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Doctoral Dissertation

Cultural landscape of the jurassic belt of defensive architecture - a digital model of representation in the process of heritage conservation and popularisation

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I. Introduction

1. Characteristics of the subject and topic of the work

The subject of the thesis is an analysis of the cultural landscape of the Jurassic belt located on the Kraków-Częstochowa Upland, focused on the defensive architecture of this region. This area is unique in many respects, both natural and cultural. Rock caves and shelters, numbering in the thousands, are associated with the history of the earliest, Paleolithic human settlements. From the northwest of Poland extends the Upland range with numerous rock outcrops, forming natural sculptural monuments in a wavy, gentle landscape. Further to the south, deep rock ravines and gorges appear, with the famous Ojców and Mników. The so-called "Eagle Nests," as the defensive structures of the Jura are commonly referred to, are often described as the most beautiful group of castles founded by Casimir the Great, but the fortified history of this area dates back much further.

The discussed area had key significance due to its protection of the former capital of the country and the course of the main European trade route. From the perspective of modern systematics applied in studies on defensive art, we find numerous examples of almost all known defense systems here. These fortifications gained particular importance during the reign of King Casimir the Great[1]. They became a symbol of the ruler's power and the country he sought to build. They are an expression of the famous saying about this monarch: "He found Poland wooden and left it brick." When these fortifications were ruined, the romantic premises of the 18th century endowed them with new significance. Portrayed by Amilcar Kosiński[2], Napoleon Orda[3], Zygmunt Vogel[4], or Kazimierz Stroczyński[5] in paintings and literary works, they became monuments of power, fall, and transience, thus permanently embedding themselves in Polish culture.

However, the landscape is changing. It was not spared by industrialization and the rampant urbanization of the second half of the 20th century, contributing to destruction and devastation. Therefore, this landscape needs to be protected, preserved, and revitalized even more strongly and actively as a priceless part of our country and our identity.

2. Scientific problem, hypothesis, and research questions

Preliminary research indicates a lack of studies that would systematically and comprehensively present knowledge about the objects located in the area of the Jurassic belt, treated as a cultural landscape. There is a noticeable problem of a lack of a uniform and systematized knowledge base regarding these objects. The issue of conserving ruins, which remains relevant, also reemerges in this context. Although protecting the entire area presents significant challenges, there is a fundamental need for scholarly supplementation of the

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[1] J. Wyrozumski, Kazimierz Wielki, [Casmir the Great], Zakład Narodowy im. Ossolińskich, Wrocław, 1986.

[2] A. Kosiński, Przejażdżki po kraju: powiastki i obrazki [Trips around the country: stories and pictures], 3 volumes, Warszawa, 1847.

[3] Z. Kocielska, Z. Tobiaszowa, Katalog rysunków architektonicznych ze zbiorów Muzeum Narodowego w Krakowie. Vol. I. Rysunki Napoleona Ordy [Catalog of architectural drawings from the collections of the National Museum in Krakow. Vol. I. Drawings of Napoleon Orda], PWN, Warszawa, 1975.

[4] K. Sroczyńska, Zygmunt Vogel rysownik gabinetowy Stanisława Augusta [Zygmunt Vogel, draftsman in Stanisław August's office], Zakład Narodowy im. Ossolińskich, Wydawnictwo Polskiej Akademii Nauk, 1969.

[5] K. Stronczyński, Opisy i widoki zabytków w Królestwie Polskim, (1844-1855) [Descriptions and views of monuments in the Kingdom of Poland, (1844-1855)], Vol. IV: Gubernia płocka, edit. Robert Kunkel with Wojciecha Szymańskiego, Warszawa 2013.

missing, organized knowledge about it. Source materials and existing scientific and popularizing studies are insufficient and do not exhaust the entire issue. The fragmentation of knowledge, marginalization of certain areas, and discoveries of new heritage elements make it difficult to conduct a reliable valorization of resources and encompass them with effective conservation protection. It should be noted that the most crucial research took place before the year 2000, and many of them are no longer current.

The scientific problem of the thesis is to identify and address the gap in systematic and comprehensive knowledge concerning the objects located in the area of the Jurassic belt, treated as a cultural landscape. Existing studies and source materials are incomplete and do not cover all aspects of this subject matter, making reliable valorization of resources and their effective conservation protection challenging. Furthermore, the academic work aims to explore how the supplementation and organization of the missing knowledge, coupled with the digitization of objects, can lay the foundation for creating a digital representation model. Such a model could, in turn, contribute to creating a uniform information exchange system that could be used for both conservation and popularization purposes. The ultimate goal, therefore, is not only to fill existing gaps in knowledge but also to develop new, effective methods of managing and protecting this unique cultural heritage.

At this point, the author posits the hypothesis that the supplementation and systematization of knowledge, along with the digitization of objects in the Jurassic belt area, will enable the creation of a uniform information system that can serve conservation, scientific and popularization purposes.

To confirm or refute the hypothesis, an attempt can be made to answer the following in-depth research questions:

1. What are the main gaps in the current knowledge about the objects located in the area of the Jurassic belt?
2. What is the state of research on individual objects?
3. Which heritage elements are currently marginalized or overlooked in research?
4. What data sources are available and how can they be utilized?
5. Are there modern technologies that can accelerate the process of collecting and organizing data?
6. What are the possibilities for applying digital technologies in the research process?
7. How can digitization aid in creating a uniform information system?
8. In what ways will the system support conservation activities?
9. What are the possibilities for using the system to popularize knowledge about the heritage of the Jurassic belt?

3. Research objective

Given the discussed issues, four equivalent objectives can be distinguished in the study:
Scientific objective: The development of scientific knowledge in the field of History of Architecture and defensive structures of the Jurassic belt, with a specific focus on research questions regarding the evolution and application of various defensive forms in the historical

contexts of the region, as well as their state of preservation, degree of transformations, and state of protection;

Methodological objective: Testing and validation of the heritage architectural representation model, with particular emphasis on its application in the conservation and restoration process of objects. Determining the research methodologies that will be used to achieve this goal;

Application objective: Description of the proposed methodology in the conservation and design process, a proposal for a database of objects from the Jurassic belt;

Popularization Objective: Promoting the history and cultural values of the objects of the Jurassic belt at the local, national, and European level. Utilization of digital models and other digital tools in the educational and popularization process.

4. Scope of the study

The geographical scope of the study includes the area of the present Silesian and Lesser Poland voivodeships, particularly focusing on the Kraków-Częstochowa Upland and its surroundings [Fig.1]. The decision regarding this delimitation of activities stems from the existence of the popular Eagles' Nests Tourist Trail and the Eagles' Nests Landscape Park in this area, which is part

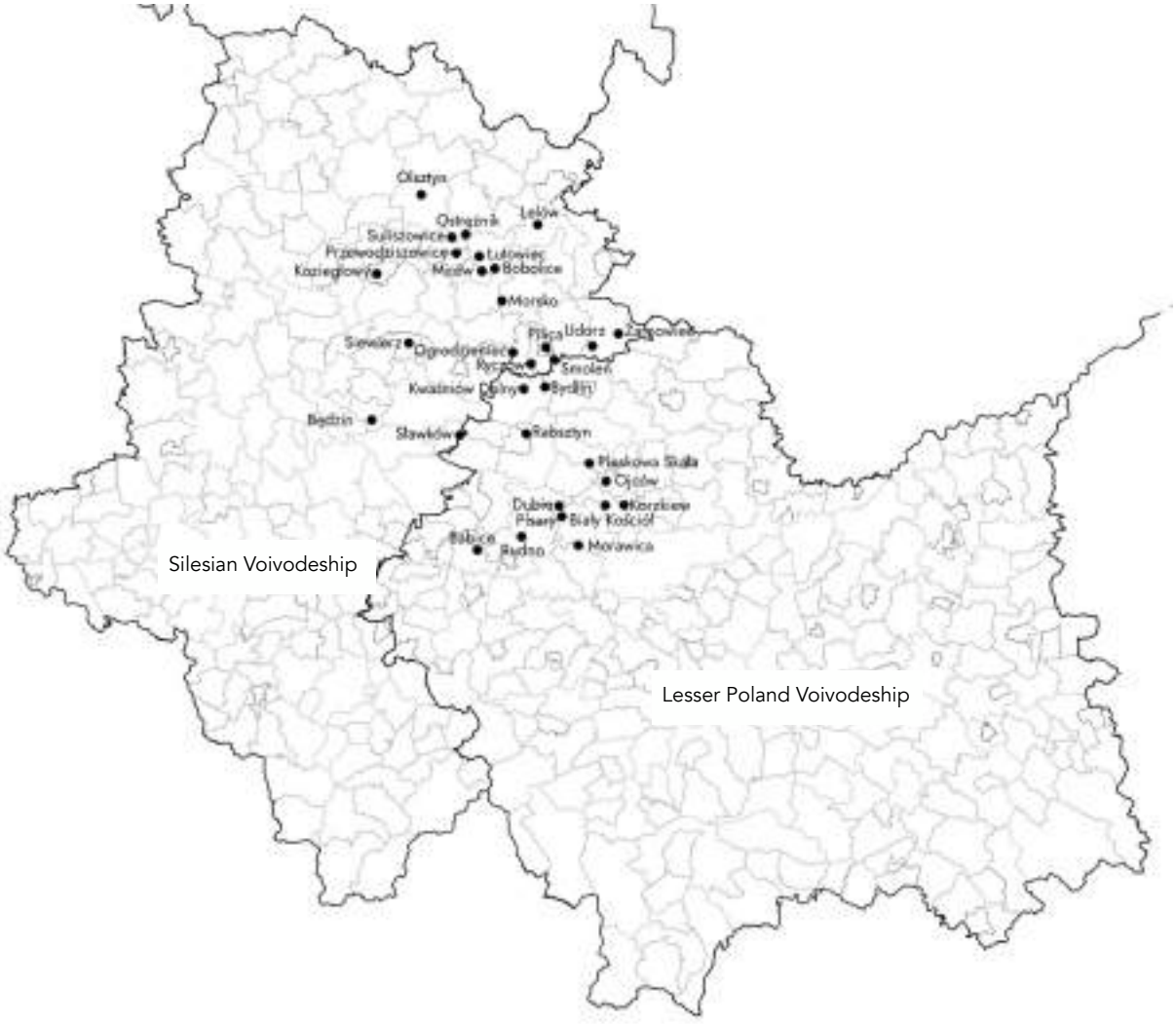

Fig. 1. Selected defensive structures in the Silesian and Lesser Poland Voivodeships, elaborated by the author

of the Complex of Landscape Parks of the Silesian Voivodeship and the Complex of Landscape Parks of the Lesser Poland Voivodeship. Moreover, the area stands out in the literary analysis as significant in terms of the combination of cultural heritage and landscape and natural values. Their integration is primarily possible due to the location in the north-western part of the historical Land of Krakow (later the capital voivodeship of Krakow), directly adjacent to the western border of Lesser Poland with Silesia. Consideration was also given to the development of these objects along major communication and trade routes. The studies of Janusz Bogdanowski[6] and Michał Uruszczak[7] had a significant influence on the delimitation of the area. The study covers the area of the Kraków-Częstochowa Jura, located on the Kraków-Częstochowa Upland, which extends from the Old Market in Częstochowa to the Upper Vistula Valley in the north of Krakow. From the east and west, besides following the current borders of this geographical region, the delimitation was adopted based on the borders of the Polish State from the XIII/XIV century and the borders of the Krakow voivodeship from the XVII century. The relationships between individual objects located in this area and their impact on strengthening the border belt were also considered.

The name of the study area used in the work[8] became customary in the nomenclature at the turn of the XIX and XX centuries. This area, treated as a separate geographical region, has been studied in terms of natural, geographical, and also partially architectural aspects (selected castles included in the so-called Eagles' Nests Trail).

The time frame of the main study covers the period when the first known masonry defensive structures in this area were built, which is from the 13th century. Their heyday falls in the 14th and 15th centuries, especially during the reign of Casimir the Great. The research time extends to contemporary times and includes a series of historical events that influenced the form and functioning of the selected objects.

The substantive scope of the study includes an analysis of literature on selected defensive architectural objects in the Jura Belt, which were part of an important defensive line from approx. the 13th to the 15th century. During literary research and archival queries, previously unpublished materials were obtained. Transformations and conservation works on each of the objects were also analyzed. During in situ visits, a photographic inventory was made, and as a result, point clouds were created using the photogrammetric method. Based on the collected database, digital twin models of selected objects were created, supplemented with selected information to create H-BIM models. As a final result, an original model of digital representation of objects was proposed.

The possibilities of using the created models for scientific, educational, promotional, and tourist purposes were also briefly discussed. A supplement to the work are the collected

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[6] J. Bogdanowski, Dawna linia obronna jury krakowsko-częstochowskiej: problemy konserwacji i adaptacji dla turystyki, [The former defense line of the Krakow-Częstochowa Jurassic: problems of conservation and adaptation for tourism] Ochrona Zabytków 17/4 (67), 1964, pp. 3-36.

[7] M. Uruszczak, Wyspy obronne Wyżyny Krakowsko-Częstochowskiej oraz ich turystyczne znaczenie [Defensive islands of the Kraków-Częstochowa Upland and their tourist importance], Prace Komisji Krajobrazu Kulturowego, 35/2017, 2017, pp. 75-90.

[8] The official name of this region is Wyżyna Krakowsko-Częstochowska (Krakowsko-Częstochowska Upland) but the names used in literaturę are also Jura Krakowsko-Częstochowska, Warowny Pas Jurajski (Fortified Jurassic Belt) and Jura.

legends and beliefs associated with the described objects. They were obtained during literary research, archival studies, review of internet sources, and interviews with people associated with the functioning of the objects and the local community.

5. Author's methodology

5.1. Research procedure plan and scheme

The research procedure plan [Fig.2] assumed a multi-stage, interdisciplinary process of researching the cultural landscape of the Jura Belt, with an emphasis on the defensive architecture of this region. After conducting preliminary studies, a hypothesis and a research problem were formulated. In the first stage, a thorough analysis of literature and archival materials was carried out, which allowed for a fuller understanding of the historical role and significance of defensive objects in this region. The next phase involved field research, during which photographic inventories were made, and conversations with the local community and object caretakers were conducted. This information served as the basis for analysis and interpretation aimed at valorizing resources and identifying key needs in terms of conservation and popularization. The acquired data became the basis for developing an original model of digital representation. The research was summarized with conclusions and guidelines.

5.2. Research methods

A mixed method was chosen for conducting the study, consisting of historical-interpretative, simulation and modeling, experimental methods, as well as case studies[9]. These were divided into three main parts: library and archival inquiries, field research, and the development of digital representation models. The materials gathered during the research and the results developed were discussed in the study, summarized, and partially presented using Object Cards in the final catalog (see p. 326).

5.3. Research techniques

In the first stage of data collection, the following inquiries were conducted: literature, archives, cartographic collections, technical and project documentation (from various sources), and online photography databases. During field research, photographic inventories were created to develop photogrammetric models of selected objects. Photos were taken from the ground and from the air using a drone, also for the purpose of documenting and showcasing the contemporary condition of the discussed locations. During local visits, open interviews were conducted with tourists, facility managers, and nearby residents, gathering information about their subjective perception of the place, history, and familiarity with local beliefs. In the final stage, an analysis of the collected materials was performed, and a digital representation model was developed. Photogrammetry technique based on the taken photos was used first, followed by the creation of geometric models expanded with the gathered data. As a complementary element, the capabilities of the model in VR technology and its use for popularization purposes were tested.

[9] E. Niezabitowska, Metody i techniki badawcze w architekturze [Research methods and techniques in architecture], Wydawnictwo Politechniki Śląskiej, Gliwice, 2014

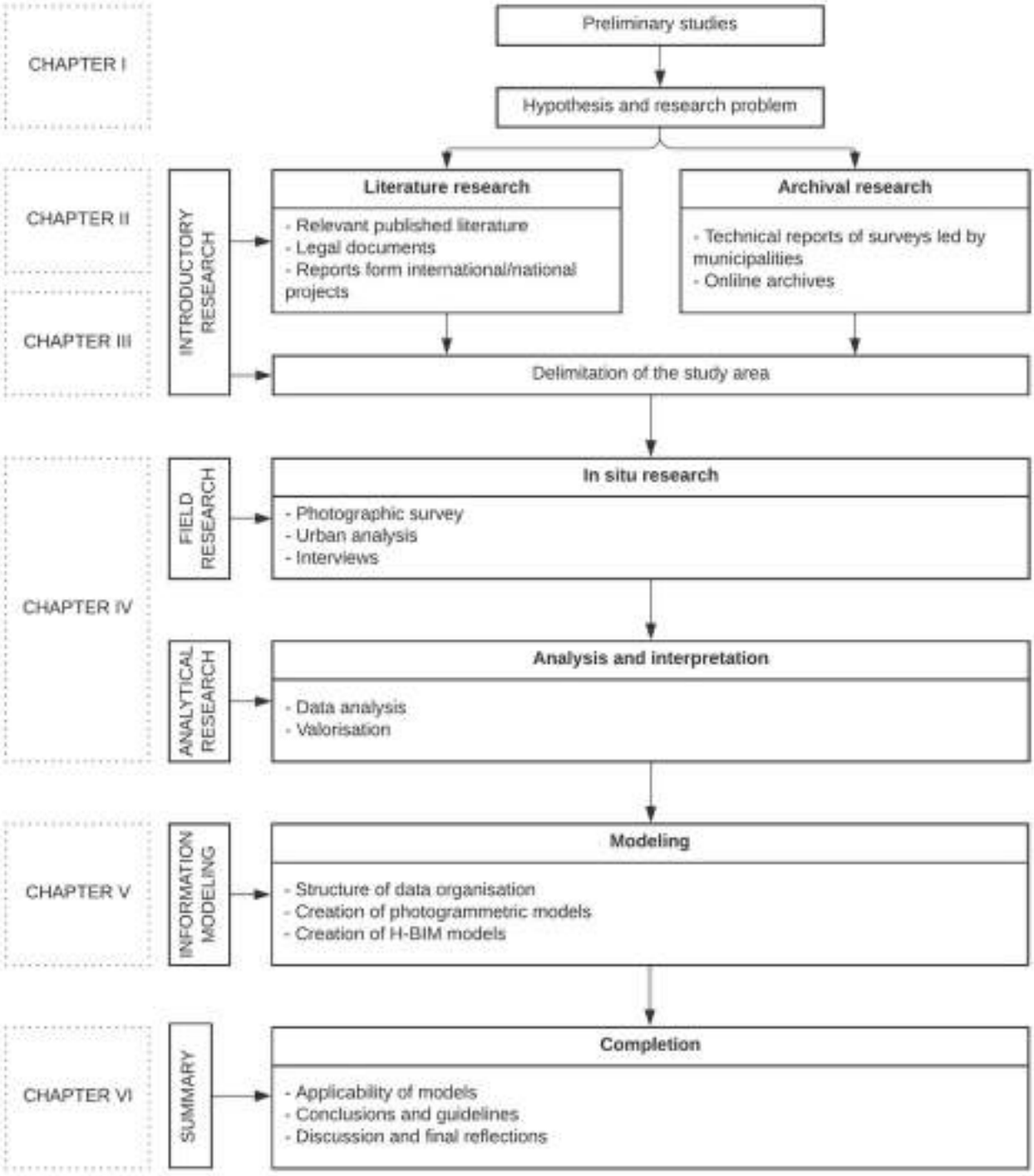

Fig. 2. Research procedure diagram, elaborated by the author

5.4. Research tools

Tools used in the research:

- **Photographic camera:** Panasonic Lumix GH5 with Sigma 16mm, f/1.4 lens;
- **Drones:** Mavic 2 Pro from DJI equipped with a 20MP Hasselblad L1D-20c gimbal camera. The camera provides a 1-inch 1" CMOS sensor with an adjustable aperture of f/2.8 to f/11, support for a 10-bit Dlog-M color profile, and captures 4K 10-bit HDR video, and Phantom 4 Pro from DJI equipped with Sensor: 1-inch CMOS, Lens: FOV (field of view) 84°, 8.8 mm/24 mm (35 mm equivalent), f/2.8 - f/11, auto focus, maximum video resolution: 4K (4096×2160) 60fps;
- **3D modeling software:** Autodesk Revit 2019/2023;
- **Point cloud creation software:** Agisoft PhotoScan, Autodesk ReCap 2019, and Polycam;
- **Ontological model development software:** Protege;
- **VR Goggles:** Oculus Quest.

6. Justification for the selection of the topic

The topic of the thesis was chosen due to the author's personal ties with the Kraków-Częstochowa Upland. Growing up in this region, she could observe the gradual degradation and disappearance of defensive artworks created in the area of the Upland. The author was able to witness the transformations of this region and noticed certain inaccuracies and irritating alterations inconsistent with conservation art. This extraordinary area, where the built landscape complements the natural landscape so perfectly, is undergoing irreversible changes and commercialization on a large scale due to the owners' desire for profit. It is also impossible to ignore the fact that this region stands out in Poland and even Europe. Not only because of its morphology but mainly due to its connection with significant historical events and the extraordinary wealth of various defensive systems in this small area.

Thanks to the substantive support from the University of Cassino and Southern Lazio in Italy, where the author completed a research internship, digital tools were used in the thesis to support the process of data collection and segregation. Italian reference objects and conservation approaches were also presented. The cooperation had a significant impact on the model of object representation.

II. State of Knowledge

The state of knowledge was analyzed by dividing it into literature regarding the heritage of medieval defensive architecture in Europe, including Poland, covering cultural and architectural issues, as well as conservation practices related to these objects. Studies on the heritage of medieval defensive architecture within the borders of the Silesian and Lesser Poland voivodeships, located on the Kraków-Częstochowa Upland, and the state of their protection were also analyzed.

This chapter also describes the state and availability of source materials gathered for further research. The sources were obtained through archival and library queries. Archival research was conducted in state archives (State Archive in Katowice), voivodeship conservators of monuments archives (Silesian and Lesser Poland, including the branch in Częstochowa), county and municipal conservators of monuments, collections of castle museums, and also from the collections of the Soprintendenza Archeologia, Belle Arti e Paesaggio per le Province di Frosinone, Latina e Rieti - Territorial Office of Cassino.

Extremely valuable information was acquired thanks to the courtesy of researchers of medieval architecture and owners of selected objects, who shared their private collections, including thanks to the courtesy of the Museum of the Zagłębie Region in Będzin or the guardians of Bąkowiec Castle.

Digitized archival collections, available digitally, including the collections of the National Digital Archive, were also analyzed. Another noteworthy source were archival photographs in the collections of private individuals, published on blogs and online portals, e.g., Fotopolska.eu, Facebook fanpages, and Instagram.

The library query included the most important public libraries of both voivodeships – the Scientific Information Center, CINiBA Academic Library, Silesian Library. The query was also conducted in extensive collections made available by the Silesian Digital Library, Digital Library of Lublin University of Technology, Digital Library of the University of Wrocław, Digital Lower Silesia, POLONA National Digital Library, Europeana European Digital Library and Archive, and the Repository of the Krakow University of Technology. Resources of The University Library System of the University of Cassino and Southern Lazio were also used.

In the following literature analysis, a number of important pieces of information were expected to be found. The most important included: definitions and classifications of different types of medieval castles and fortresses, the historical context of their origin, and their role in the societies in which they functioned. It was also important to familiarize oneself with conservation practices and methods of protecting these monuments, including the analysis of challenges and problems associated with them. In the case of studies focused on the Silesian and Lesser Poland voivodeships, information regarding the architectural and cultural specificity of this region and the state of heritage protection in these areas was also desirable.

1. State of knowledge regarding general research

1.1. Heritage of medieval defensive architecture in Europe

Medieval castles were a dominant element of the landscape of Europe between the 9th and 15th centuries. Scholars have conducted extensive research on the architecture, function, and symbolism of castles. This literature compilation includes a brief review of some key issues related to medieval castles in Europe. In the scientific literature, two main categories of works on castles can be noted. The first category includes works containing inventory descriptions, while the second focuses on the analysis of the mechanisms of fortress operation in the context of medieval society and attempts to reconstruct their historical appearance.

One of the first cataloging studies, fitting into the first category, originated in 19th-century France. A small group of wealthy enthusiasts undertook an extensive project to inventory ruins from the medieval period. They commissioned the most talented artists to immortalize these places, compiling the results in substantial albums organized by province. Over four decades, publications titled "Voyages pittoresques et romantiques dans l'ancienne France"[10] fueled interest in the Gothic style.

More significant works for French castles were published in the 20th century. In 1954, the first cataloging study on castles in France titled "Les châteaux de France"[11] by Marie Bayer was released. An example of this approach is also the collective work of Ch.L. Salch, J. Burnouf, J. Fino[12]. Somewhat contrary to the title, it gathers information about 9,821 French castles, city walls, defensive mansions, fortifications surrounding churches, monasteries, etc., thus about all fortified buildings; among them, entries about the fortified residences of lords, i.e., proper castles, decidedly prevail.

The first more significant work for British castles was developed by A. Hamilton Thompson (1873 – 1952), who partially summarized the resource of defensive architecture in England, limiting himself only to their functioning in the Middle Ages[13]. S. Toy, on the other hand, compiled a catalog of all castles in Great Britain[14].

The German architect and conservator of monuments Bodo Ebhardt collected in two volumes "Deutsche Burgen"[15] between 1899-1908, the more important German castles and the evolution of their development and military art. A work of similar nature to the mentioned work of Ch.L. Salch, J. Burnouf, J. Fino is also a monumental work by F. W. Krahe[16], containing data on 4,000 castles from the German area, including both Tyrol and German-speaking cantons of Switzerland, as well as, for example, Pomerania, thus covering a total area of about 600,000 km2.

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[10] Voyages pittoresques et romantiques dans l'ancienne France [Picturesque and romantic journeys in ancient France], ed. Charles Nodier, Isidore Taylor, and Alphonse de Cailleux,1820-1878.

[11] M. Bayet, Les châteaux de France [The castles of France], Librairie Hachette, Paryż, 1954.

[12] Ch.L. Salch, J. Burnouf, J. Fino, L'atlas des chateaux forts en France [The atlas of castles in France], Strasbourg, 1977.

[13] A. Hamilton Thompson, Military Architecture in England During the Middle Ages, London, Oxford University Press, 1912.

[14] S. Toy, Castles of Great Britain, London, 1966.

[15] B. Ebhardt, Deutsche Burgen [The German Castles], vol. 1-2, Berlin, 1899-1908.

[16] F.W. Krahe, Burgen des deutschen Mittelalters [Castles of the German Middle Ages], Grundriss Lexicon, Augsburg, 1996.

Defensive architecture in Spain is also the subject of many studies. Among the first, though not by native authors, are "Castles in Spain"[17] and "Castles From the Heart of Spain."[18]

Bodo Ebhardt also summarized the resources of military architecture in Italy with a study titled "Die Burgen Italiens."[19] In a similar compilation, Italian castles collected in Ugo Nebbia's work "Castelli d'Italia"[20] are described.

Such catalog-type studies have been created for most European countries. The above-mentioned examples have become pioneering works, which have had a significant impact on the development of subsequent research and analysis in this field.

A certain supplement to the topic related to defensive structures are publications discussing their functions and roles they played in society and summarizing certain trends in the development of fortress architecture.

Firstly, it is worth mentioning the works analyzing spatial layouts and the architectural development of castles. Viollet-le-Duc, whose opinion had such a significant impact on the development of conservation thought, mainly described French medieval castles and discussed the processes of construction and functioning of the first defensive structures[21]. From a scientific point of view, the development of medieval French fortresses is described by Fino in his work "Forteresses de la France médiévale"[22]. This is a very thorough work analyzing the development of military architecture in France, which many later ideas are based on.

A very significant work for military architecture in England is "A History of Fortification from 3000 BC to AD 1700"[23] by S. Toy. He himself researched most of the described places, drew maps of the terrain and sections. The book also contains 200 photographs, maps, and plans. One of the most influential works on medieval castles by S. Toy is "Castles: Their Construction and History." [24] The author examined the architectural evolution of castles from the early motte-and-bailey castles to later stone castles. He also discussed the social and political functions of castles, as well as their role in military actions. Another seminal work by R. Liddiard is "Medieval Castles"[25], in which he discussed the evolution of military architecture from the Norman conquest of England to the end of the medieval period.

In recent years, researchers have focused more on the cultural significance of castles. In "The Castle in Medieval England and Wales"[26], Colin Platt argued that castles were not only military fortifications but also symbols of power and status. Platt also explored the cultural significance of building castles, especially the ways they were used. A comprehensive publication on the development of castle studies in England is "Castle Studies in Transition: A Forty Years Reflection" by Higham[27]. John R. Kenyon[28] described the comprehensive study of

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[17] O.D. Washburn, Castles in Spain, Meksyk, 1957.
[18] A.A. Weismuller, Castles from the heart of Spain, Londyn, 1967.
[19] B. Ebhardt, Die Burgen Italiens [Italian castles], vol. 1-6, Berlin, 1909-1927.
[20] U. Nebbia, Castelli d'Italia [Italian castles], Novara, Istituto Geografico De Agostini, 1955.
[21] E.E. Viollet-le-Duc, Reasoned dictionary of French architecture from the 11th to the 16th century (1/9), Paris: Rue Bonaparte, 1854.
[22] F. Fino. Forteresses de la France médiévale [Medieval fortresses of France]. Paris, 1967.
[23] S. Toy, A History of Fortification from 3000 BC to Ad 1700, Melbourne-Londyn-Toronto, 1965.
[24] T. Sidney, Castles: Their Construction and History, Dover Architecture, 1985.
[25] R. Liddiard, Medieval Castles, History at the Higher Education Academy, University of Warwick, 2010.
[26] C. Platt, The Castle in Medieval England and Wales, Bounty Books, 1996.
[27] R. Higham, Castle Studies in Transition: A Forty Year Reflection, Castles, Landscapes and Lordship conference held at York, 2009.
[28] J.R.Kenyon, Castle Studies in Britain since 1945, School of History and Archaeology, Cardiff University, 2010.

castles in Great Britain in his doctoral thesis. One of the newer works addressing the whole issue is "Castles: Their History and Evolution in Medieval Britain" and "Castle: A History of the Buildings that Shaped Medieval Britain"[29], as well as the Oxford edition of "Early Medieval Architecture and Medieval Architecture in Western Europe"[30].

A clearly emerging trend in literary studies is the extensive consideration of the very function of the castle. A common position among today's researchers is the opinion that castles were built primarily to show status and served socio-political functions, with defense being a secondary role[31]. In "Castles in Medieval Society"[32], Charles Coulson emphasized the importance of castles as centers of economic activity. Coulson argued that castles were not only military fortresses but also trade centers, especially in regions where roads were poor or non-existent.

Finally, several recent studies have focused on the role of castles in shaping national identity. In "Castles in Context: Power, Symbolism and Landscape, 1066 to 1500"[33], Robert Liddiard argued that castles were used to express regional identities, especially in areas where cultural and linguistic differences existed. Liddiard also explored the role of castles in shaping national identities, particularly in the context of the Norman conquest of England. He also discussed the cultural significance of military architecture, especially the ways it was used to express power and status. To this group, we can also add the study by Adam Miłobędzki dedicated to the architecture and construction of the Golden Age of Poland of the last Jagiellonians and the first elected monarchs, published in 1970 in the volume of historical confrontations[34]. It can be compared with the work of Hungarian researcher E. Fügedi[35], and also with the book by N.J.G. Pounds[36]. Both discuss castles in the context of social changes, castles serving the people living in them, not fortresses seen through the eyes of military historians and typologists of military architecture. A similar character to the discussed works is also found in the book by Belarusian researcher M.A. Tkaczoj[37] and studies by L.Kajzer[38].

There have also been works dealing with more general trends in the military architecture of Europe, attempting to summarize certain tendencies. One of the earliest and most influential works on this subject is "The Art of Warfare in Western Europe during the Middle Ages from the Eighth Century"[39] by J.F. Verbruggen. He studied the development of

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[29] M. Morris, Castles: Their History and Evolution in Medieval Britain, Pegasus Books Ltd, New York, 2017; M. Morris, Castle: A History of the Buildings that Shaped Medieval Britain, Windmill Books, London, 2012.

[30] R. Stalley, Early Medieval Architecture, Oxford University Press, Oxford, 1999.; R. G. Calkins, Medieval Architecture in Western Europe, Oxford University Press, Oxford, 1998.

[31] Ch. Coulson, Castles in Medieval Society, Oxford University Press, 2010; M. Johnson, Behind the Castle Gate, Routledge London, 2002.

[32] Ch. L.H. Coulson, Castles in Medieval Society. Fortresses in England, France, and Ireland in the Central Middle Ages, Oxford, 2004.

[33] R. Liddiard, Castles in Context: Power, Symbolism and Landscape, 1066 to 1500, Windgather Press, 2005.

[34] A. Miłobędzki, Architektura i społeczeństwo [Architecture and society], [in:] Polska w epoce Odrodzenia [Poland in the era of the Renaissance], ed. A. Wyczański, Warszawa, 1970.

[35] E. E. Fügedi, Castle and society in medieval Hungary, 1000-1437, Budapest, 1986.

[36] N.J.G. Pounds, The medieval castle in England and Wales. A social and political history, Cambridge, 1990, ed. 2, 1994.

[37] M.A. Tkaczoj, Zamki i ludi [Castles and people], Mińsk, 1991.

[38] L. Kajzer, Zamki i społeczeństwo. Przemiany architektury i budownictwa obronnego w Polsce w X-XVIII wieku [Castles and society. Changes in architecture and defensive construction in Poland in the 10th-18th centuries], Łódź, 1993.

[39] J.F. Verbruggen, The Art of Warfare in Western Europe during the Middle Ages from the Eighth Century, The Boydell Press, 1954.

military architecture from Roman times to the late Middle Ages, including the use of castles, fortified cities, and city walls. He also discussed the role of military architecture in shaping medieval warfare, especially in the context of siege warfare. Another important work is William Anderson's "Castles of Europe: From Charlemagne to the Renaissance"[40], a history of European castles, discussing their strategic and artistic significance from the Middle Ages to the 16th century. Another significant work on this subject is "The Medieval Castle" by Philip Warner[41]. Warner studied the development of castles throughout Europe, emphasizing the differences between castle designs in different regions. He also discussed the changing nature of castle warfare, especially the impact of gunpowder on castle defense. Meanwhile, Hans-Joachim Mrusek presented an overview of European trends and selected examples in the book "Burgen in Europa"[42].

There is also a vast amount of literature on technical issues. One aspect of military architecture that has received much attention in recent years is the impact of gunpowder technology on the design and construction of fortresses. In "Gunpowder and Galleys: Changing Technology and Mediterranean Warfare at Sea in the Sixteenth Century"[43], John Francis Guilmartin Jr. examined the ways in which gunpowder technology transformed naval warfare and the design of maritime fortifications. Another area of research of interest to scholars is the construction techniques used in building medieval defensive structures. In the book "Castle Builders: Approaches to Castle Design and Construction in the Middle Ages"[44], Malcolm Hislop presented an overview of construction techniques used in building medieval castles in Europe. He emphasized the importance of the availability of local building materials, the use of skilled labor, and the application of innovative techniques, such as ribbed vaulting. Another important work is "Cathedrals and Castles: Building in the Middle Ages"[45] by French historian Alain Erlande-Brandenburg. The book focuses exclusively on architecture. The author mainly concentrates on the architecture (master mason) and the building process, such as the transportation of materials, laying foundations, and erecting walls and vaults.

Increasingly, castles are also being looked at as modern tourist attractions. Many publications on this subject can be found, especially in digital sources. These include an analysis by Wojciech Cynarski[46] or an article by Jacek Kulpinski and others[47] on the contemporary functioning of fortified structures.

Apart from general studies, many works have also been created discussing specific objects and the problems they face, from spatial arrangements and symbolism to conservation

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[40] W. Anderson, Castles of Europe: From Charlemagne to the Renaissance, Crescent, 1970.

[41] P. Warner, The medieval castle. Life in a fortress in peace and war, Penguin Classic History, 1971.

[42] H.J. Mrusek, Burgen in Europa [Castles in Europe], Leipzig, 1973.

[43] J. F. Guilmartin, Gunpowder and Galleys: Changing Technology and Mediterranean Warfare at Sea in the Sixteenth Century, Cambridge University Press, 1975.

[44] M.J. Baillie-Hislop, Castle Builders: Approaches to Castle Design and Construction in the Middle Ages, Pen and Sword Archaeology, 2016.

[45] Erlande-Brandenburg, Alain, The Cathedral Builders of the Middle Ages. Découvertes Gallimard ("New Horizons") series. London, UK: Thames & Hudson, 1995.

[46] W. Cynarski, Castles as the heritage of Polish fortification art and as a tourist attraction, "IDO MOVEMENT FOR CULTURE. Journal of Martial Arts Anthropology", Vol. 12, no. 4 (2012), pp. 44–55.

[47] J. Kulpiński, B. Prukop, P. Rut, A. Rejman, P. Świder, W.J Cynarski, Defensive Strongholds and Fortified Castles in Poland—From the Art of Fortifications to Tourist Attractions. Sustainability 14, 3209, 2022.

issues. Extremely important examples are the post-conference publications titled "Defensive architecture of the Mediterranean."[48] These are the result of the work of many researchers from different countries presenting their research findings at the annual Fortmed[49] conference, which deals with the issues of castles and fortifications in the Mediterranean Basin area. This is an incredibly rich contemporary collection that has been discussing current problems of this area for several years.

A significant part of the literature consists of popular science publications presenting selected castles of the world in the form of catalogs or descriptions. Some also explain in a simplified way the functioning of medieval castles[50]. An interesting publication in this field is "How To Read Castles"[51] by Malcolm Hislop. This work describes in an accessible way the architecture of defensive structures and fortified elements.

In shaping ancient studies, numerous 18th-century graphic representations of the remains of ancient Roman monuments played a significant role. Among them, the engravings of Giovanni Battista Piranesi[52] [Fig.3], which were widespread in Europe at that time and emphasized the picturesque nature and beauty of ancient architectural monuments, come to the fore.

Fig. 3. [from the left] Temples of Iside and Serapi, 1759 and View of the Capitoline Hill, 1775, Giovanni Battista Piranesi, source: https://www.artsy.net/ [access: 11.11.2022]

In Poland, painters and draftsmen also played a similar role with respect to native architecture, their work dedicated to historical monuments, then called "national relics", stemmed from a patriotic foundation. The work of Zygmunt Vogel[53] comes to the forefront [Fig.4]. While traveling around the country, he created many watercolors, gouaches, and drawings depicting the preserved monuments of

[48] Post conference monographs: Defensive architecture of the Mediterranean, Vol.1. and Vol.2. Editor: Pablo Rodriguez-Vavarro, Universitat Politecnica de Valencia, 2015; Vol.3. and Vol. 4 Editor: Giorgio Verdiani, DIDAPRESS, 2016, Vol.5 Editor: Victor Echarri Iribarren, Publicacions Universita d'Alacant, 2017, Vol. 6. Editor: Angel Benigno Gonzalez Aviles, 2017, Vol.7., Vol.8. and Vol. IX Editor: Anna Marotta, Roberta Spallone, Politecnico di Torino, 2018, Vol. X, Editor: Julio Navarro Palazon, Luis Jose Garcia-Pulido, Universidad de Granada, 2019, Vol. XI and Vol. XII. Editor: Julio Navarro Palazon, Luis Jose Garcia-Pulido, Universidad de Granada, 2020, Vol. XIII., Vol. XIV and Vol. XV. Editor: Marco Giorgio Bevilaqua, Denise Ulivieri, Universita di Pisa, 2023.

[49] https://www.fortmed.eu/index_en.html [dostęp: 01.09.2023].

[50] C. Gravett, Zamki świata [Castles of the world], Thalamus Publishing, Taschen, 2001.

[51] M. Hislop, How To Read Castles, Bloomsbury Academic, 2013.

[52] L. Ficacci, Piranesi. The Complete Etchings, Taschen, 2022.

[53] K. Sroczyńska, Zygmunt Vogel. Rysownik gabinetowy [Zygmunt Vogel. Office draftsman], Wrocław 1969.

Polish architecture. In 1806, Vogel published a text-accompanied collection of copper engravings[54], depicting, among others, castles in Łobzów and Kazimierz Dolny, Tenczyn, Krzyżtopór, and the ruins of the castle in Ojców.

In the 19th century, to this collection of graphics, which partially contributed to initiating research on castles in Poland, Napoleon Orda should also be added [Fig.5]. His watercolors and lithographs depicted 19th-century Poland. These views sustained the enthusiasm for work on defensive structures, which were undertaken increasingly often at that time.

In the Austrian partition, the activities of Maciej Bogusz Zygmunt Stęczyński deserve attention [Fig.6]. His drawings with descriptions, which were the result of many years of wandering around Lesser Poland, were published in 1847 and 1848 under the title "Okolice Galicji"[55] (Outskirts of Galicia), and then in 1852 in the collection "Pamiątka Malownicza czyli 48 Widoków Galicji"[56] (Picturesque Souvenir or 48 Views of Galicia).

Fig. 4. [from the left] Castle in Ojców, 1787 and Tęczyn, 1794, Zygmunt Vogel, source: http://www.pinakoteka.zascianek.pl/ [access: 11.11.2022]

Fig. 5. [from the left] Castle in Ogrodzieniec and Ojców, ok. 1870, Napoleon Orda, source: http://www.pinakoteka.zascianek.pl/, [access: 11.11.2022]

54 Z. Vogel, Zbiór Widoków słynniejszych pamiątek narodowych [A collection of views of the most famous national souvenirs], 1806-1807.

55 B.Z. Stęczyński, Okolice Galicji [Galicia area], Lwów, 1847

56 W. Wiśniewski, Stęczyński (1814-1890). Pierwszy miłośnik Tatr, Beskidów i Sudetów [Stęczyński (1814-1890). The first lover of the Tatra Mountains, Beskids and Sudetes], Kraków, 2006.

Fig. 6. [from the left] Devil's stone in Krynica, 1848, Castle in Podhirtsi, Zlochiv region, from the west, 1848, Maciej Bogusz Zygmunt Stęczyński, source: http://artinfo.pl/, [access: 11.11.2022]

In the world literature concerning the history of military art, there are numerous books, articles, and studies. In this rich canon, Polish bibliography occupies an impressive, and moreover, dynamically growing niche, especially in recent decades. Even such hitherto underestimated periods as the era of the Congress Kingdom find their place in it. Despite the broad scope, there are several dominating research trends that have been shaped over the last century.

Dominik Ziarkowski identifies three important periods in the history of scientific research on castles in Poland, including the fortresses located in the area of the Krakow-Częstochowa Upland[57]. The beginnings of exploring castles are associated with journeys of a sightseeing nature undertaken by scholars and artists to describe and depict monuments and other peculiarities, as well as so-called antiquarian research developed during the 19th century. The second period dates from the late 19th century to World War II. Studies on selected castles were created by archaeologists, art historians, and information about the Jura castles was also included in synthetic works on medieval art. The third research period was initiated after World War II and is characterized by a significant intensification of research efforts, resulting in numerous detailed studies and broader syntheses devoted to defensive architecture monuments.

For the purposes of this work, research on Polish castles will be discussed analogously to the European ones. Two trends can be distinguished among them: inventory and catalog studies and attempts at synthetic presentation of information about defensive objects, discussing their forms and functions, as well as attempts at reconstruction. In the compilation, there are studies that combine both these features, if one was preceded by the inventory of the discussed objects, they are assembled in the first section.

[57] D. Ziarkowski, Zamki na Wyżynie Krakowsko-Częstochowskiej. Problemy konserwacji i udostępniania dla turystyki [Castles in the Krakow-Częstochowa Upland. Problems of conservation and access for tourism], 2014, Kraków

Inventory and Catalogue Research

The exploration of medieval Poland's defensive architectural wonders began as these remarkable structures embarked on their inevitable journey of decay. As the 18th century transitioned into the 19th century, the gradual deterioration of these edifices became increasingly apparent. This period was marked by a renewed fascination with ancient architectural marvels, fueled by significant archaeological findings and captivating visual representations. The Romantic era's profound admiration for antiquity served as a catalyst for an ambitious restoration project, kickstarted by the meticulous documentation of these historical treasures. In the year 1827, General Maurycy Hauke issued a set of directives aimed at comprehensively documenting these historical landmarks, with a particular focus on "historical castles and defensive fortifications." Simultaneously, Wawrzyniec Surowiecki embarked on a similar initiative to inventory these architectural wonders. These endeavors marked the beginning of a concerted effort to assess the condition of defensive architectural structures within the borders of Poland.[58].

The operation was interrupted after the fall of the November Uprising but was resumed in 1844 by the archaeologist and numismatist **Kazimierz Stronczyński**[59], whose travels provided detailed descriptions and drawings of individual monuments[60]. In his report, he documented a total of 79 castles situated within the confines of the Kingdom of Poland, classifying them into **royal, bishopric, and privately owned castles**. This marked the inaugural endeavor to classify castles based on their purposes and administrative roles. Simultaneously, the Krakow Scientific Society issued a call for gathering information about historical monuments and released a "Manual for Researching and Examining Antiquities."[61]. Within this segment, there existed a subsection designated as "Ancient Fortresses," serving as a comprehensive guide for the initial documentation of fortresses. This guide covered a wide array of elements, comprising the fortress's geographic coordinates, its current condition in terms of preservation, its architectural design, the materials used in its construction, and the construction methodologies employed to bolster its walls. Significantly, a significant emphasis was placed on the central stronghold, mandating an accurate depiction of its placement within the fortress and a meticulous representation of its shape, whether it took on a circular, rectangular, or polygonal form.

The publications "Tygodnik Ilustrowany" and "Kłosy," which have been in circulation since 1861, assumed a crucial role in popularizing topics pertaining to architectural history. In the literary work titled "Ancient Poland" (1843-1846), authored by Michał Baliński and Tymoteusz Lipiński, there were comprehensive depictions of castles, even encompassing

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[58] B. Guerquin, Zamki w Polsce [Castles in Poland], Arkady, Warszawa, 1984, p. 8.

[59] E. Skotniczna, Popularyzacja zabytków ojczystych w grafice polskiej XIX wieku [Popularization of native monuments in Polish graphics of the 19th century], Ochrona Zabytków, 2013, 1-4, pp. 327-347

[60] Kazimierza Stronczyńskiego opisy i widoki zabytków w Królestwie Polskim (1844-1855). T. I. Ogólne sprawozdanie z delegacji. Wyd. Krajowy Ośrodek Badań i Dokumentacji Zabytków [Kazimierz Stronczyński's descriptions and views of monuments in the Kingdom of Poland (1844-1855). T. I. General report of the delegation. Ed. National Center for Research and Documentation of Monuments], Biblioteka Uniwersytecka w Warszawie, Warszawa, 2009.

[61] Skazówka poszukiwań i badań starożytności [A guide to searching and researching antiquity], Oddział archeologii i sztuk pięknych, Krakowskie Towarzystwo Naukowe, Kraków, 1850, pp. 20-21

previously undisclosed historical representations. Following this, in the year 1880, the publication of volumes for the Geographical Dictionary of the Kingdom of Poland and other Slavic territories was initiated. This extensive collaborative initiative featured highly meticulous descriptions of castles, often rooted in archival sources that are presently no longer accessible[62].

The commencement of systematic investigation is linked to the efforts of Władysław Łuszczkiewicz and Marian Sokołowski in the vicinity of Gniezno, particularly at Ostrow Lednicki. Their work resulted in the complete unveiling of the Piast palatium and chapel's walls. As a result of this research, Marian Sokołowski was able to release a substantial publication in 1876, entitled "Remains on the Island of Lake Lednica"[63]. It's worth highlighting that M. Sokołowski, for the very first time, approached the investigation of the defensive attributes of a princely residence with a wide-ranging comparative perspective. His examination extended beyond local boundaries, as he incorporated examples from different European regions and took into account literary sources from the same era across Europe. A remarkable aspect of his extensive research was M. Sokołowski's pioneering effort in Poland to identify distinct periods in the evolution of defensive architectural design.

- Years 900-1100 – no stone castles
- 1100-1200 – existence of walls
- 1200-1300 – introduction of towers
- 1300 and beyond – building of stone castles.

Władysław Łuszczkiewicz also undertook methodical surface research of the castles in Lesser Poland, including Lipowiec, the castle on Wawel, and castles in Melsztyn [Fig.7], Rożnów, Wiśnicz, and Dobromil[64]. The mere dissemination of these discoveries undeniably warrants recognition and underscores Łuszczkiewicz's pioneering contribution to the scientific literature of that time.

Fig. 7. Ruiny zamku Melsztyn wg Władysława Łuszczkiewicza 1866, source: http://mbc.malopolska.pl/dlibra/doccontent?id=71237. p.22. [access: 24.04.2021]

[62] B. Guerquin, Zamki w Polsce [Castles in Poland], Arkady, Warszawa, 1984. p. 8.

[63] M. Sokołowski, Ruiny na Ostrowie jeziory Lednicy: studjum nad budownictwem w przedchrześcijańskich i piérwszych chrześcijańskich wiekach [Ruins at Ostrów, Lake Lednica: a study of construction in the pre-Christian and first Christian centuries], Kraków, 1876.

[64] W. Łuszczkiewicz, Zabytki dawnego budownictwa w Krakowskiém [Monuments of old construction in Krakow], Vol. 2-3, Kraków, 1866.

Back in 1888, Stanisław Tomkiewicz and Henryk Lindquist[65] embarked on groundbreaking research that involved both comprehensive excavations and the uncovering of buried walls. This event was a significant milestone in Poland as it represented the first concerted effort to conduct thorough investigations that seamlessly merged historical records with the remnants of Wołek Castle's original defensive framework. For quite some time, this publication served as a model for the examination of medieval Polish castles.

Acknowledging the significant influence of the Krakow or, on a broader scale, the Galician context in the study of castles in Poland up to World War I, it is noteworthy to highlight the contributions of 19th-century German publications. During this period, there was a substantial work by Kurt Bimler titled "Die schlesischen massiven Wehrbauten"[66], summarizing German research in the region. Among the numerous authors dealing with the castle architecture of the northern territories, Conrad Steinbrecht[67], whose works on the architecture of the Teutonic state in Prussia, are still fundamental, should be mentioned first and foremost.

A very important position in Polish literature is held by the exhaustive, extensive work on Wawel Castle, the first volume of which was prepared by Stanisław Tomkowicz[68] in 1908. Volume 2, published in 1913, encompassed the entirety of archival resources available at that specific juncture. These archival materials had been systematically assembled by a group of conservators in Western Galicia, commencing in 1902. This concerted endeavor was intricately linked to the planned research and ensuing restoration initiatives associated with the castle. This historical structure had been relinquished by Austrian military forces and subsequently transferred to national authorities for custodianship. The comprehensive monograph dedicated to Wawel Castle, whose principal objective was to consolidate all extant archival and iconographic materials, while simultaneously deriving interpretative insights and attempting to establish a coherent chronological framework for individual architectural elements, constituted the indispensable foundation for forthcoming conservation endeavors.

Within this scholarly exposition, Stanisław Tomkowicz adeptly incorporated contemporary literature that bore relevance to the subject matter at hand. In the introductory section, he diligently provided a comprehensive historical overview of defensive construction, presenting an innovative framework for periodization. Although subsequent research and discoveries did not consistently corroborate all of Stanisław Tomkowicz's propositions and conjectures, it is of paramount importance to recognize that his endeavors constituted the foundational bedrock for subsequent investigations conducted on the premises of Wawel Hill in the ensuing years.

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[65] S. Tomkowicz, H. Lindquist, Szczątki średniowiecznego zameczku zwanego Wołek na gruntach wsi Kobiernice, Sprawozdania Komisyi do Badania Historyi Sztuki w Polsce 3 [Remains of a medieval castle called Wołek on the grounds of the village of Kobiernice, Reports of the Commission for the Study of the History of Art in Poland 3], tabl. III-IV., p. 1-6.

[66] K. Bimler, Fürstentum Breslau : Kreise Breslau, Neumarkt, Namslau ; Die Schlesischen Massiven Wehrbauten. Band 1. Fürstentum Breslau. Kreise Breslau [Principality of Breslau: Districts of Breslau, Neumarkt, Namslau; The Silesian massive defensive structures. Volume 1. Principality of Breslau. Wroclaw districts]. Neumarkt Namslau, 1940.

[67] C. Steinbrecht, Untersuchungs- und Wiederherstellungs-Arbeiten am Hochschloss der Marienburg [Investigation and restoration work on the Marienburg High Castle], Berlin: Verlag von Ernst & Korn, 1885.

[68] S. Tomkowicz, Wawel Castle. Lecture given in Warsaw in January 1917.

During the interwar era, a cadre of young architectural historians affiliated with Wrocław University of Technology, under the leadership of Oskar Sosnowski, assumed a prominent role in the study of Polish castles. In the 1930s, primarily under Sosnowski's auspices, extensive research endeavors focusing on Polish castles were set in motion. The establishment of the Section of Fortress History during that period oversaw the meticulous execution of comprehensive inventory measurements employing precision surveying instruments. This meticulous undertaking culminated in the nearly exhaustive inventorying of castles situated in the regions of Volhynia and Podolia[69] was carried out. The results of this work were only partially published in the post-war years.

One of Oskar Sosnowski's students was Bogusław Guerquin, who, at that time, had worked on his doctoral dissertation focused on Jazłowiec Castle. However, this dissertation was not published until 1960.[70]. He belonged to an important research center in Poland – the Chair of the History of Polish Architecture at the Wrocław University of Technology, which undertook work on Silesian castles. The result of this work is many monographs of individual castles and an attempt at a catalog approach in the book "Silesian Castles"[71] published in 1957. Their research is supported by many contemporary publications, including the extensive study "Not Only Castles"[72].

Bogusław Guerquin is also the author of the first such impressive catalog "Castles in Poland"[73], which is preceded by an attempt to summarize research and general characteristics of defensive objects. The complement and continuation of this position is the "Lexicon of Castles in Poland"[74] published in 2001.

The publication by Tomasz Jurasz titled "Castles and Their Secrets"[75] is a work between a guide and a popularizing publication. The reader can get acquainted with eighty of the most famous castles, their history, legend, origin, and fall. This selection of objects was preceded by a significant introduction "From the Gord to the Bastion," discussing the development of defensive architecture in our country.

One of the newer works on Polish castles is a guide compiled by Jerzy Smoczyński[76]. He described selected objects, also adding small schematic plans, short descriptions, and tourist information about visiting. The whole is preceded by a brief introduction concerning the development of castles in Poland and their classification according to functions. All these features make the study valuable in terms of content and explain in an accessible way the principles and reasons for the functioning of castles in the country.

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[69] L. Kajzer, S. Kołodziejski, J. Salm, M. Gaworski, Leksykon zamków w Polsce [Lexicon of castles in Poland], Arkady, Warszawa, 2022. p.16.

[70] B. Guerquin, Zamek Jazłowiecki [Jazłowiec Castle], Wydawnictwo Naukowe PWN, 1960.

[71] B. Guerquin, Zamki Śląskie [Silesian Castles], 1957.

[72] Nie tylko zamki [Not only castles], ed. E. Różycka-Rozpędowska, M. Chorowska, Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław, 2005.

[73] B. Guerquin, Zamki w Polsce [Castles in Poland]. Arkady, Warszawa, 1984.

[74] L. Kajzer, S. Kołodziejski, J. Salm, M. Gaworski, Leksykon zamków w Polsce [Lexicon of castles in Poland], Arkady, Warszawa, 2022.

[75] T. Jurasz, Zamki i ich tajemnice [Castles and their secrets], ISKRY, Warszawa, 1972.

[76] J. Smoczyński, Zamki [Castles], carta blanca, Warszawa, 2009.

Currently, most catalog publications are only created in the form of tourist guides, most often concerning selected regions in Poland. An example of such a publication is the series "Castles and Fortified Objects" by Agnieszka and Robert Sypkowie[77]. The series of guides is dedicated to selected castles in the country, presented with a short description; some objects also have plans and possible reconstructions.

Synthetic Research

In the latter portion of the 19th century, the initial fascination with local historical landmarks and antiquities underwent a transformation into a rigorous scientific investigation. This scholarly pursuit transcended the mere examination of historical records and encompassed a comprehensive exploration of architectural designs, construction methodologies, and their broader artistic milieu. This holistic approach to the study of architectural monuments was closely intertwined with the emergence of art history as an academic discipline, which marked its inception in the Polish territories, notably in Krakow. The genesis of this scholarly field is frequently attributed to the pioneering research endeavors set in motion by Władysław Łuszczkiewicz (1828-1900) during the latter part of the 1860s[78]. The Commission of Art History, established at the Academy of Arts and Sciences in 1873[79], created favorable opportunities for conducting modern historical and artistic research. One of the primary proponents behind the establishment of the Commission was Władysław Łuszczkiewicz. He commenced his career as the secretary, later ascending to the role of chairman from 1878 to 1892. After his term, another distinguished scholar, Marian Sokołowski, assumed leadership. It's noteworthy that Marian Sokołowski concurrently held the position of the inaugural chair of Art History in the Polish territories, which was established at Jagiellonian University in 1882[80]. Commencing in 1877, the Commission of Art History initiated the publication of its journal titled "Reports," which, after World War I, underwent a renaming to "Works of the Commission of Art History." This journal marked a significant milestone as the first specialized Polish periodical in the realm of art history. Within its pages, a diverse array of contributors, including art historians, architects, and historians, presented their scholarly contributions. During this period, the journal included several noteworthy publications dedicated to specific castles, notably those situated in the Krakow-Częstochowa Upland, as part of the "Reports of the Commission for the Study of Art History in Poland."

Feliks Jan Szczęsny Morawski made a pioneering effort within Polish literature to visually depict certain castles, including Rytra and Tropsztyn, through drawings [Fig.8]. In these illustrations portraying castle edifices, prominently featuring towers adorned with battlements

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[77] A. Sypek, R. Sypek, Zamki i obiekty warowne. Ziemi Krakowskiej [Castles and fortified buildings. Krakow Land], Almapress, 2007.
[78] A. Bochnak, Zarys dziejów polskiej historii sztuki [An outline of the history of Polish art history], Kraków 1948, p. 8; A. Małkiewicz, Z dziejów polskiej historii sztuki. Studia i szkice [From the history of Polish art history. Studies and sketches], Kraków 2005, p. 108.
[79] J. Kalinowski, Dzieje i dorobek naukowy Komisji Historii Sztuki Akademii Umiejętności i Polskiej Akademii Umiejętności 1873–1952 oraz powstanie Katedry Historii Sztuki Uniwersytetu Jagiellońskiego[The history and scientific achievements of the Art History Commission of the Academy of Arts and Sciences and the Polish Academy of Arts and Sciences 1873–1952 and the establishment of the Department of Art History at the Jagiellonian University], [in:] Dzieje historii sztuki w Polsce. Kształtowanie się instytucji naukowych w XIX i XX wieku [The history of art history in Poland. The formation of scientific institutions in the 19th and 20th centuries], ed.A. Labuda, Poznań 1996, p. 24.
[80] A. Małkiewicz, Z dziejów polskiej… [From the history of Polish…], op.cit., pp. 19–20.

and drawbridges, he conspicuously indicated the sections of the walls that had endured with dashed lines.[81].

The earlier mentioned inventory research initiated by Oskar Sosnowski and Władysław Łuszczkiewicz resulted in the publication in 1936 of a work by Aleksander Król titled "Outline of Defensive and Military Construction in Old Poland"[82], when addressing the wide spectrum of topics related to defensive construction, a pivotal development occurred with the dedicated inclusion of early medieval construction aspects in a specific chapter dedicated to wooden and earthen fortifications. This represented a groundbreaking departure from the prevailing periodization criteria of the era, which typically categorized castles based on the progression of military technology. In contrast, Aleksander Król introduced a classification system that relied on changes in architectural style. For instance, he conducted in-depth examinations of defensive structures from the Romanesque era and beyond. This approach unquestionably improved the clarity in presenting the entire subject matter. However, it simultaneously did not facilitate the precise identification of functional transformations within these structures. This publication, as a result, functioned as an exhaustive synthesis of the knowledge available concerning Polish castles during that specific time period.

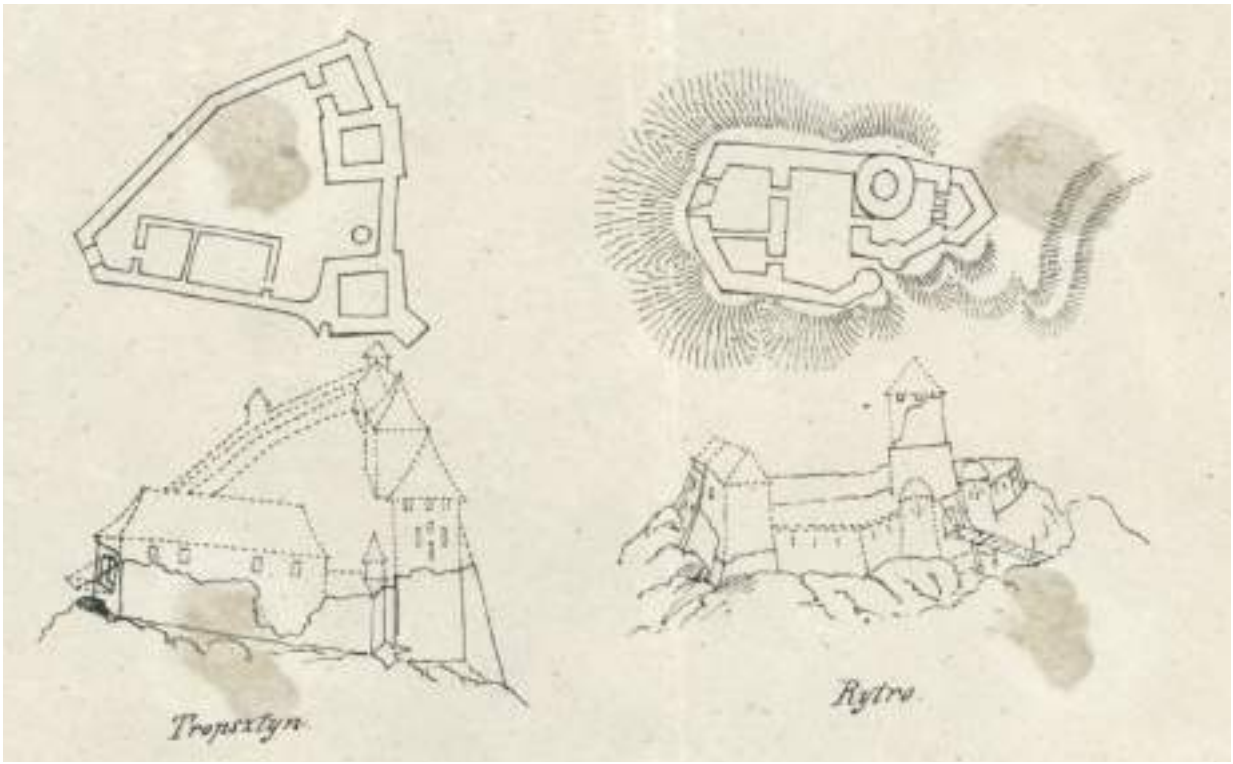

Fig. 8. Castle in Tropsztyn and Rytro, Feliks Jan Szczęsny Morawski, 1863, source: https://polona.pl/ [access: 07.11.2022]

The landscape underwent a transformation following World War II, with the study of castles extending beyond the exclusive purview of architectural historians. In 1978, Mieczysław

[81] B. Guerquin, Zamki w Polsce [Castles in Poland], Arkady, Warszawa, 1984. p. 10.
[82] A. Król, Zarys budownictwa obronnego i wojskowego w dawnej Polsce [An outline of defense and military construction in ancient Poland], Warszawa, 1936.

Zlat authored an article titled "The Medieval Castle as a Challenge in Art History," emphasizing the significance of embracing an interdisciplinary perspective in the investigation of castles[83].

Similarly, in Szczecin, an undertaking was initiated by Zbigniew Radecki. As the author of comprehensive monographic studies on numerous castles, he aimed to employ a holistic approach in researching the history of the castles located in Western Pomerania in 1969[84].

The Krakow center played an integral and distinctive role in this scholarly undertaking. Situated within the Krakow branch of the Polish Academy of Sciences, the Committee of Urbanism and Architecture was established under the auspices of Krakow-based architects, and it established a specialized division specifically focused on military architecture. This section drew in a multitude of scholars and researchers from diverse regions across Poland. It is imperative to underscore the community of architectural historians that coalesced within the Krakow center, gravitating around prominent figures such as Józef T. Frazik and Janusz Bogdanowski. Additionally, it is noteworthy to mention the existence of the "Historical-Geographical Dictionary of Medieval Lesser Poland" project, which is currently under the leadership of Waldemar Bukowski.

An interesting study is a work by Antoni Piskadło[85], which presents selected aspects of defensive architecture worldwide, not just in Europe. It is an extremely comprehensive study presenting the development of selected trends in the construction of defensive structures and selected examples from around the world. Against their background, Polish implementations are described. The author in the study points out some stylistic influences that appear in native solutions.

Currently, one of the most important and most synthetic works is the study by Janusz Bogdanowski[86], which describes not only defensive systems and elements but also the history of the development of defensive structures. It addresses issues of protection and conservation problems but primarily analyzes selected premises as elements of the landscape and for the first time in literature invokes the form of protection that is the Cultural Park.

Nowadays, there are few synthetic studies being developed. Among the few are the publications of the Royal Castle in Warsaw titled "The Beginnings of Stone Castles in Poland up to the Mid-14th Century"[87] and "The Great Masonry. Castles in Poland during the reign of Casimir the Great"[88]. Both positions are collections of articles developed by contemporary researchers and are attempts to describe both of these issues. Both studies are post-conference publications.

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[83] T. Ratajczak, Polska historia sztuki wobec badań kastelologicznych [Polish art history and castellological research], "Artium Quaestiones" XXV, 2014, pp. 55-69.

[84] Z. Radecki, Średniowieczne zamki Pomorza Zachodniego [Medieval castles of Western Pomerania], Państwowe Wydawnictwo Naukowe, 1976.

[85] A. Piskadło, Grody, zamki, fortece. Budownictwo i architektura obronna do schyłku średniowiecza [Castles, castles, fortresses. Construction and defensive architecture until the end of the Middle Ages], Wydawnictwo Ministerstwa Obrony Narodowej, 1977.

[86] J. Bogdanowski, Architektura obronna w Krajobrazie Polski [Defensive Architecture in the Polish Landscape], Wydawnictwo Naukowe PWN, 2002.

[87] Początki murowanych zamków w Polsce do połowy XIV w. [The beginnings of brick castles in Poland until the mid-14th century], ed. M. Bis, W. Bis, Art Regia, 2016.

[88] Wielkie murowanie. Zamki w Polsce za Kazimierza Wielkiego [Great bricklaying. Castles in Poland under Casimir the Great], ed. A. Bocheńska, P. Mrozowski, Art Regia, 2019.

1.2. Issues of protection

Currently, the most frequently discussed issue in literature is the matter of protection and conservation of ruins, including castle ruins. Many studies have been published on this subject.

The problems of conservation theories of the 19th and early 20th centuries have been detailed in both international and Polish publications. Therefore, we can mention only a few of the latest Polish publications, such as: "Monument and History: Around the Problems of Conservation and Protection of Monuments in the 19th Century," edited by Piotr Kosiewski and Jarosław Krawczyk; Andrzej Tomaszewski's "Towards a New Philosophy of Heritage"; Andrzej Kadłuczka's "Protection of Architectural Monuments. Vol. 1, Development of Doctrines and Theories"; or the 4th edition of Edmund Małachowicz's classic "Conservation and Revalorization of Architecture in the Cultural Environment."

A very rich source of studies is the collection of ICOMOS publications on the conservation protection of defensive objects and ruins, published regularly since 2007[89]. "Protection and Conservation of Castle Ruins - Selected Issues and Examples"[90] concludes with the Castle in Ruin Charter and the Charter for the Protection of Historical Ruins, adopted by the Resolution of the General Assembly of PKN ICOMOS Members on December 4, 2012, developed by researchers from the Faculty of Architecture, Warsaw University of Technology. Research towards the creation of the Castle in Ruin Charter was outlined in the previous study entitled "Castles in Ruin - Principles of Conservation Procedures"[91].

Increasingly, social issues are being raised in heritage protection. In the article "The Social Value of Architectural Monuments in Light of Selected UNESCO, ICOMOS, Council of Europe Documents Shaping the Theory of Cultural Heritage Protection"[92] by Jolanta Sroczyńska, the role of architectural monuments as an important element of cultural heritage is emphasized. The article is based on documents such as UNESCO, ICOMOS, and the Council of Europe, which are crucial for the theory and practice of cultural heritage protection. The

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[89] Ochrona zabytków architektury obronnej. Teoria i praktyka. [Protection of monuments of defensive architecture. Theory and practice], ed. B.Szmygin, ICOMOS, 2007.; Zabytki architektury obronnej [Monuments of defensive architecture], ed. B.Szmygin, ICOMOS, 2007.; Zamki, grody, ruiny [Castles, strongholds, ruins], ed. B.Szmygin, ICOMOS, 2009.; Ochrona, konserwacja i adaptacja zabytkowych murów: Trwała ruina II [Protection, conservation and adaptation of historic walls: Permanent ruin II] ed. B.Szmygin, ICOMOS, 2010.; Obwarowania miast. Problematyka ochrony, konserwacji, adaptacji i ekspozycji [City fortifications. Issues of protection, conservation, adaptation and exhibition], ed. B.Szmygin, ICOMOS, 2010.; Zamki w ruinie – zasady postępowania konserwatorskiego [Castles in ruins – principles of conservation procedures], ed. B.Szmygin, ICOMOS, 2012.; Historyczne ruiny – ochrona, użytkowanie, zarządzanie [Historic ruins – protection, use, management], ed. B.Szmygin, ICOMOS 2018.; Zespół zamkowy w Janowcu: cena wartości i plan zarządzania [The castle complex in Janowiec: value price and management plan], ed. B.Szmygin, ICOMOS, 2020.; Transnational model of sustainable protection and conversation of historic ruins: best practices handbook. ed. B.Szmygin, ICOMOS, 2020.; Transnational model form of socially useful use of historic ruins: best practices handbook. 2020. Guidelines of modern management of historic ruins: best practices handbook. ed. B.Szmygin, ICOMOS, 2020.; Guidelines for elaboration of plans of management, use and protection of historic ruins, ed. B.Szmygin, ICOMOS, 2020.; Historyczne ruiny II - ochrona, użytkowanie, zarządzanie. ed. B.Szmygin, ICOMOS, 2021.

[90] B. Szmygin, P. Molski, Ochrona i konserwacja ruin zamkowych - wybrane problemy i przykłady [Protection and conservation of castle ruins - selected problems and examples], PKN ICOMOS, Warszawa, 2013.

[91] B. Szmygin, P. Molski, Zamki w ruinie - zasady postępowania konserwatorskiego [Castles in ruins - principles of conservation procedures], PKN ICOMOS, Warszawa, 2012.

[92] J. Sroczyńska, Wartość społeczna zabytków architektury w świetle wybranych dokumentów UNESCO, ICOMOS, Rady Europy, kształtujących teorię ochrony dziedzictwa kulturowego [The social value of architectural monuments in the light of selected UNESCO, ICOMOS and Council of Europe documents shaping the theory of cultural heritage protection], Journal of Heritage Conservation, 65/2021.

author points out that architectural monuments have a social value that goes beyond their historical and artistic aspect. Above all, they are important for the identity of local communities, conveying information about their history, traditions, and culture. Moreover, architectural monuments are an important element of urban and rural landscapes, giving them unique character and aesthetics.

Jan Janczykowski, former Lesser Poland Provincial Heritage Conservator, presents the outline of the history of research and conservation of defensive architectural monuments in Poland in his article[93].

UNESCO, ICOMOS, and Council of Europe documents emphasize the necessity of protecting architectural monuments as common heritage for all humanity. They draw attention to the need to preserve the authenticity of monuments and sustainable development that takes into account their social value. They also point to the importance of education and public awareness to promote the protection of cultural heritage. The author also highlights the role of management and conservation of architectural monuments in light of these documents. She points to the need for cooperation between various institutions and organizations, as well as the involvement of local communities and experts in the process of protecting cultural heritage. In the summary of the article, Jolanta Sroczyńska states that architectural monuments have not only historical and artistic value but also great social significance. Therefore, the protection of cultural heritage is extremely important, and UNESCO, ICOMOS, and Council of Europe documents provide important guidelines for practice and theory concerning the preservation and promotion of architectural monuments.

Also important from the perspective of the discussed work is the Declaration on the Conservation of the Genius Loci (Spirit of Place) of the ICOMOS General Assembly in Quebec (2008)[94].

In addition to doctrinal documents, the current legal acts regulating the conservation process and the protection of the monument and its surroundings should be mentioned. They include:

- Ustawa z dnia 23 lipca 2003 r. o ochronie zabytków i opiece nad zabytkami (The Act of July 23, 2003, on the protection of monuments and the guardianship of monuments),
- Ustawa z dnia 7 lipca 1994 r. Prawo budowlane (The Act of July 7, 1994, Building Law),
- Ustawa z dnia 27 marca 2003 r. o planowaniu i zagospodarowaniu przestrzennym (The Act of March 27, 2003, on spatial planning and development).

The executive acts to the laws are regulations. Significant from the perspective of the scope of the study are:

- Rozporządzenie Ministra Kultury z dnia 27 lipca 2011 r. w sprawie prowadzenia prac konserwatorskich, prac restauratorskich, robót budowlanych, badań konserwatorskich, badań

[93] J. Janczykowski, Zarys historii badań i konserwacji zabytków architektury obronnej w Polsce [An outline of the history of research and conservation of monuments of defensive architecture in Poland], Spotkania z zabytkami, 2004.

[94] Declaration on the Preservation of Genius Loci, 16th General Assembly of ICOMOS Quebec, October 4, 2008 r. [in:] Vademecum Konserwatora Zabytków [Vademecum of the Conservator of Monuments], Międzynarodowe Normy Ochrony Dziedzictwa Kultury, 2015. pp. 179-181.

architektonicznych i innych działań przy zabytku wpisanym do rejestru zabytków oraz badań archeologicznych (The Regulation of the Minister of Culture of July 27, 2011, on carrying out conservation works, restoration works, construction works, conservation research, architectural research, and other activities at the monument entered in the register of monuments as well as archaeological research);
- Rozporządzenie w sprawie warunków technicznych, jakim powinny odpowiadać budynki i ich usytuowanie (Regulation on the technical conditions that buildings and their location should meet).

According to the law, the document regulating the protection of monuments is also the Spatial Development Plan. In this regard, in the Silesian region, the applicable document is the Spatial Development Plan of the Silesian Voivodeship (Protection of Landscape and Cultural Values) dated August 10, 2004. It should be conducted in such a way that preserved values can be passed on to future generations. Their protection imposes strict conditions regarding the preservation of the authentic substance, form, function, and location of the monument. To meet these requirements, the monument must be in good technical condition. However, contemporary actions and interventions in historic buildings should not go beyond necessary ongoing conservation.

In the context of castle preservation, many scientific conferences have taken place, such as the "Medieval and Modern Castles - Boundaries and Forms of Protection in the 21st Century" held on September 28-29, 2022, organized by ICOMOS in collaboration with the Castle Museum in Malbork[95], in which the author also participated.

Another conference on a similar topic is scheduled for November 7-8, 2023, in Warsaw. It is titled "Rebuild, Change, Preserve? Castles in the Polish Landscape" organized by the National Institute for the Conservation of Monuments in cooperation with the Association of Art Historians and the Association of Monument Conservators[96].

1.3. Summary

This text provides a comprehensive overview of scientific literature on medieval castles in Europe, ranging from inventory studies from the 19th century to more analytical and culturally oriented research from recent years. It encompasses various aspects such as architecture, social and cultural functions, as well as the development of these structures in the context of historical and technological changes.

The two main categories of works are inventory descriptions and analyses of castle operations. The former often consist of catalogs and collections of graphics that document the condition and appearance of castles. The latter category focuses more on functional and social aspects, including the roles castles played in society and their influence on shaping national and regional identities.

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[95] http://www.icomos-poland.org/en/2-uncategorised/404-konferencja-sredniowieczne-i-nowozytne-zamki-granice-i-formy-ochrony-w-xxi-wieku-28-29-09-2022.html, [access: 23.06.2022]

[96] https://nikz.pl/konferencjazamki/?fbclid=IwAR0j-Xkl5hc_dbwHFN0eIML6SC0gn07jHNdLQw1pH1dFx-P5ZYnrR76_mYU, [access: 23.06.2022]

Significant contributions in this field come from various European countries - France, Germany, the United Kingdom, Spain, and Italy - and often concentrate on castles in specific regions. The authors of these works examine not only the architectural and functional aspects of castles but also their roles in warfare, society, and the economy.

Recently, scholars have increasingly emphasized the cultural and socio-political functions of castles, arguing that they were significant not only as defensive structures but also as symbols of power, centers of trade and economic activity, and even as tools for shaping identity.

While diverse, these works aim to understand and document various aspects of medieval castles, from their construction and functions to their role in society and their impact on the history and culture of Europe. They serve as the foundation for current and future research, which is likely to continue discussions on the functions and significance of these structures.

Inventory and cataloging studies related to medieval defensive architecture in Poland began in the late 18th and 19th centuries and have continued to the present day. Initially, they were aimed at preserving disappearing heritage. In 1827, systematic inventory work began and was resumed in 1844 by Kazimierz Stronczyński, who introduced the first categorization of castles based on their functions.

2. State of knowledge regarding detailed research

2.1. Literature on defensive structures in the jurassic Kraków-Częstochowa Upland

In view of the subject matter described in the examples of literature on Jurassic castles discussed above, similar trends as before can also be distinguished. Remaining in the division between catalog and inventory studies, it can be noted that they are divided into collective and those concerning individual objects or smaller groups of them. The second group of studies deals with cross-sectional descriptions about the region in question or specific research issues described using selected examples. On the subject of Jurassic castles, a great number of studies have been written, especially discussing these issues from a historical perspective; the following list contains mostly pioneering positions or setting the pattern of work for subsequent works. According to the author, an important addition to this list of literature are studies described as "supplementary literature", which complement the Jurassic picture of the cultural landscape and emphasize the importance and value of this region on a national and supra-national scale. Popular studies in the form of guidebooks and educational studies, popularizing knowledge of the history of castles, are also an important aspect of the literature on Jurassic castles.

Inventory and Catalogue Research

The first catalog compilations appeared as early as the 19th century. Most of the first compilations were directed to Polish castles in general, among which were single castles from the Krakow-Czestochowa Upland. Under the leadership of Kazimierz Stronczyński, a group of

scholars conducted the first extensive inventory of castles in the Kingdom of Poland between 1844 and 1855. They gathered descriptions, drawings, and watercolors, primarily focusing on medieval structures - castles and churches. Many castles were inventoried during this period, including several in the Krakow-Częstochowa Upland.[97] However, due to the propagandistic nature of this initiative, the results of their work were not published at that time. They appeared second only a decade ago, with scientific additions[98]. These descriptions provide valuable information about the state of preservation and the landscape significance of these buildings and ruins. When combined with the watercolors, they constitute an excellent documentation of the appearance of castles in the mid-19th century.

Zygmunt Simon[99] authored a description of castles in the northern and central parts of the Krakow-Częstochowa Upland, which was also published during the interwar period. In his work, Simon pointed out the poor state of preservation of a significant portion of the ruins and the lack of initiatives related to their protection. He emphasized the aesthetic and landscape value of the Jurassic castles and proposed one-day excursion routes related to visiting these objects.

Father Jan Wiśniewski is the author of inventory studies of churches and monuments in the Olkusz county and the area of the Archdiocese of Częstochowa.[100] Like the first mentioned publication, this one was focused on the region, but not exclusively on castles. Churches and many more monuments were also included. In the publication related to the first area, which contributed to the popularization of knowledge about the monuments in the Prądnik Valley region[101], we can find quite extensive information about Ojców Castle, Pieskowa Skała, and Rabsztyn. In the second publication, related to the Częstochowa diocese, in addition to historical information, legends related to Będzin Castle, Bobolice, Mirow, and Olsztyn are also presented.

Many castles from the area also appeared in the "Catalog of Art Monuments in Poland," published since the 1950s. This publication included the castles of the Kraków-Częstochowa Upland within the Krakow[102] and Katowice voivodeships[103] according to the administrative division of that time. Although the descriptions in the catalog were brief, they emphasized the importance of these castles for Polish cultural heritage. More detailed information about these castles can be found in the works of Włodzimierz Błaszczyk from the 1960s[104].

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[97] B. Guerquin, Zamki w Polsce. Warszawa, Arkady, p. 9.

[98] Kazimierza Stronczyńskiego opisy i widoki zabytków w Królestwie Polskim (1844–1855) [Kazimierz Stronczyński's descriptions and views of monuments in the Kingdom of Poland (1844–1855)], t. II: Gubernia Radomska, oprac. K. Guttemejer, Warszawa 2010.

[99] Z. Simon, Warownie i zamki starodawne na szlaku Danków – Częstochowa – Rabsztyn – Częstochowa [Old Fortresses and Castles on the Danków – Częstochowa – Rabsztyn – Częstochowa Route], Częstochowa, p. 8.

[100] J. Wiśniewski, Historyczny opis kościołów, miast, zabytków i pamiątek w Olkuskiem [Historical Description of Churches, Towns, Monuments, and Memorabilia in the Olkusz Region], Marjówka Opoczyńska, 1933.

[101] J. Wiśniewski, Ojców i Pieskowa Skała [Ojców and Pieskowa Skała], Marjówka 1934.

[102] Katalog Zabytków Sztuki w Polsce, t. 1: Województwo krakowskie [Catalog of Art Monuments in Poland, Vol. 1: Krakow Voivodeship], J. Szablowski (red.), Warszawa 1953.

[103] Katalog Zabytków Sztuki w Polsce, t. 6: Województwo katowickie [Catalog of Art Monuments in Poland, Vol. 6: Katowice Voivodeship], I. Rejduch-Samkowa i J. Samek (red.), z. 1: Powiat będziński, oprac. E. Dwornik-Gutowska i M. Gutowski, Warszawa, 1961.

[104] W. Błaszczyk, Zamki Jury Krakowsko-Wieluńskiej [Castles of the Kraków-Wieluń Upland], Częstochowa 1965.

Stanisław Kołodziejski's monograph delves more into the subject of medieval defensive residences in former Małopolska[105]. It focuses on their origin, functions, and patrons. This work also includes a final catalog listing the more important buildings – castles and guardhouses – in Biały Kościół, Bydlin, Korzkiew, Koziegłowy, Mirowo, Morsko, Pilica, Tenczyn, and Udorze. This is an example of one of the first compilations dealing exclusively with castles from the Jurassic area, although only from the Lesser Poland part.

Jurassic castles also appear in the aforementioned studies by Bogusław Guerquin "Castles in Poland"[106] and "Lexicon of Castles in Poland"[107] by Leszek Kajzer, Stanisław Kołodziejski i Jan Salm.

Another example of a collective though more descriptive study is Tomasz Swiecki's 1816 attempt to describe so-called ancient Poland, in which he focused on the area between Krakow and Olkusz, looking for influential Polish families[108]. The author was particularly fascinated by the picturesque locations of the castles while also providing the reader with a wealth of historical information about Tenczyn, Ojcow, and Pieskowa Skała. In his work, he also highlighted other examples of defensive architecture, including the castles in Będzin, Lelów, Ogrodzieńec, Olsztyn, Rabsztyn, Smoleń, and Żarnowiec.

Similar example can be work published in 1822 by Ambroży Grabowski (1782-1868) titled "Historical Description of the City of Krakow and Its Vicinity." Grabowski's works[109], published between 1822 and 1905, emphasized the beauty of these locations, stemming from their geographical settings, and provided significant historical information about them. In his work he mentioned also castles in Tenczyn and Pieskowa Skała.

In his "Description of the Kingdom of Poland[110], Józef Mikołaj Wiślicki presented characteristics of selected castles, focusing on their history, architecture, and state of preservation. One of the mentioned castles was Rabsztyn. His observations regarding Rabsztyn were interesting for two reasons: on one hand, he depicted various phases of its construction and decay, and on the other hand - unlike the others - he attempted to date individual elements of the structure while describing its architecture. Therefore, it can be considered that it was also one of the first research papers, because in addition to describing the existing state, historical analysis was also attempted.

Most sites from the area in question are included in the study of Michał Baliński and Tymoteusz Lipiński[111]. Their work placed significant emphasis on the Prądnik Valley along with the castles in Ojcow and Pieskowa Skała. Furthermore, their compilation contains extensive

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[105] S. Kołodziejski, Średniowieczne rezydencje obronne możnowładztwa na terenie województwa krakowskiego [Medieval Defensive Residences of the Nobility in the Kraków Voivodeship], Kraków 1994.

[106] B. Guerquin, Zamki w Polsce [Castles in Poland]. Arkady, Warszawa, 1984.

[107] L. Kajzer, S. Kołodziejski, J. Salm, M. Gaworski, Leksykon zamków w Polsce [Lexicon of castles in Poland], Arkady, Warszawa, 2022.

[108] T. Święcki, *Opis starożytnéy Polski [Description of Ancient Poland]*, Warszawa 1816, p. 129.

[109] A. Grabowski, Historyczny opis miasta Krakowa i jego okolic [Historical Description of the City of Krakow and Its Surroundings], Kraków 1822, pp. 216–220.

[110] J. M. Wiślicki, Opis Królestwa Polskiego pod względem historycznym, statystycznym, rolniczym, fabrycznym, handlowym, zwyczajowym i obyczajowym [Description of the Kingdom of Poland in historical, statistical, agricultural, industrial, commercial, customary, and cultural terms], t. 1, Warszawa 1850, p. 106.

[111] M. Baliński, T. Lipiński, Starożytna Polska pod względem historycznym, geograficznym i statystycznym opisana [Ancient Poland described in terms of history, geography, and statistics], t. 2, Warszawa 1844, p. 82.

information regarding episcopal castles (Siewierz and Lipowiec), knight's castle (Tenczyn), and, in a somewhat less detailed manner, the castles in Bobolice, Mirów, and Pilica.

One of the first attempts to compile information about the castles located in the Małopolska region was made by Marian Kornecki in his work titled "Zamki i dwory obronne Ziemi Krakowskiej"[112] in 1966. This work focuses on selected defensive structures in the discussed area, complemented by brief descriptions, photographs, and floor plans. The author also tried to summarize the previous conservation research conducted in this region in the introductory section.

Among the studies on fortifications in the Krakow region, it is worth mentioning the publications Gabriel Leńczyk[113]. It is similar to previously mentioned Marian Kornecki but it provides precise descriptions of defensive structures and a brief overview of archaeological research on castles.

The aforementioned inventory activities primarily contributed to the discovery of numerous historical facts about Jurassic castles, while also highlighting their artistic, landscape, and often patriotic values. The actions taken by the authors, on one hand, marked the conclusion of the initial phase of research, and on the other hand, drew attention to the fundamental need to protect these objects, which can be seen as a stimulus for subsequent, more meticulous research. These isolated mentions and small discoveries about individual sites led to further work already being conducted on specific sites, the results of which are summarized below.

One of the earliest publications dedicated to the Jurassic fortifications is Roman Hubicki's work from 1858. The author of "Description of Three Castles in the Vicinity of Krakow in the Pilecki District"[114] and the owner of the castles in Smoleń, Pilica, and Ogrodzieniec provided valuable information about the history of the discussed monuments in his work.

Other researchers such as Julian Bartoszewicz, focused on detailed descriptions in their works, thus compiling extensive historical data about the fortresses in Pieskowa Skała and Ojcow[115].

Another example of an inventory of monuments from the Krakow area from this period is the one conducted by Józef Łepkowski[116]. He included the castles that were located in Galicia in the 19th century - Tenczyn and Lipowiec. The author paid particular attention to the history and state of preservation of Lipowiec Castle, providing detailed information.

One of the most complete studies of a single object was written by the Władysław Łuszczkiewicz. His research on the episcopal fortress in Lipowiec provided a wealth

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[112] M. Kornecki, Zamki i dwory obronne Ziemi Krakowskiej, Wydział Kultury Prezydium WRN w Krakowie, Wojewódzki Konserwator Zabytków, Kraków, 1966

[113] G. Leńczyk, Katalog grodzisk i zamczysk z terenu Małopolski [Catalog of strongholds and castles in Lesser Poland], Kraków 1983.

[114] R. Hubicki, Opis trzech zamków w bliskości Krakowa w okręgu Pileckim [Description of three castles near Krakow in the Pilecki district], Warszawa 1858.

[115] J. Bartoszewicz, Historia pierwotna Polski. Wydanie pierwsze z rękopisu T.III. [A Primitive History of Poland. First edition from the manuscript T.III], Nakładem Kazimierza Bartoszewicza, Warszawa 1879.

[116] J.Łepkowski, Przegląd zabytków przeszłości z okolic Krakowa [Review of Historical Monuments from the Krakow Area], Warszawa 1863.

of valuable information. Considering historical and architectural analysis, the author concluded that the castle could have been built in the early 14th century, possibly on the foundations of an older wooden structure. Władysław Łuszczkiewicz also noted the gradual expansions of the castle carried out by successive Krakow bishops.

His contributions also extended to the creation of detailed architectural documentation of objects. The plans and sections he produced were based on meticulous measurements of the structures. His works, published in several installments in the 1860s, included studies of two castles - Tenczyn and Lipowiec[117]. These studies encompassed architectural measurements, historical and stylistic descriptions, as well as attempts to date the monuments based on formal characteristics and construction materials. Thus, these were further attempts to scientifically describe Jurassic castles and date them.

During a similar period, a historical study of Tenczyn was also produced, which, when combined with measurements taken, helped determine the castle's fate. Historian Stanisław Smolka's work dedicated to the Tęczyński family provided a wealth of historical details regarding Tenczyn Castle. From his research, we learn that Nawój of Morawica, a significant political figure during the reign of King Władysław Łokietek, ordered the clearing of the Tęczyński forest and the establishment of a new settlement around 1320[118]. Shortly thereafter, a castle was built on the hill, which Smolka attributes to Nawój's son, Jędrzej.

A much later study written by Nikodem Pazjderski, also centered on Tenczyn Castle[119] and was the first in-depth study of this object after Second World War, analyzing its architectural development, especially the Renaissance expansion from around 1570.

Stanisław Tomkowicz, a distinguished art historian active in the late 19th and early 20th centuries, contributed to the research on Pieskowa Skała Castle[120]. Although he utilized information from other researchers in his 1904 monograph, he also provided many new data based on historical sources. Tomkowicz meticulously described the castle's architecture, paying close attention to details and attempting to date different parts of the structure. He also noted that Pieskowa Skała Castle consists of elements from various epochs.

From more specialized analyses, it is worth mentioning Tadeusz Przypkowski's work on Pieskowa Skała Castle[121], in which he described the conservation work carried out there. During these works, part of the plaster was removed, confirming Stanisław Tomkowicz's previous suspicions of the transformation of the original arcaded courtyard through the thickening of the pillars. Przypkowski also pointed out architectural references of the castle's gateway to the works of Italian architect Giacomo Vignola at Palazzo Farnese[122].

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117 W. Łuszczkiewicz, Zabytki dawnego budownictwa w Krakowskiém [Monuments of Old Architecture in Krakow], z.I, Kraków, 1864 and IV, Kraków 1867.

118 S. Smolka, Szkice historyczne, Serya druga [Historical Sketches, Series Two], Warszawa 1883, p. 55.

119 N. Pajzderski, Zamek Tęczyński, „Sprawozdania Komisyi do Badania Historyi Sztuki w Polsce"[Tęczyński Castle, "Reports of the Commission for the Study of the History of Art in Poland], vol. 8, 1912, p. 327– 352.

120 S. Tomkowicz, Zamek w Pieskowej Skale [Castle in Pieskowa Skała], Kraków 1904.

121 T. Przypkowski, O zamku w Pieskowej Skale [About Castle in Pieskowa Skała], „Prace Komisji Historji Sztuki", vol. 5, 1930–1934, p. IIIb-IVb.

122 H. Stierlin, Perły architektury pałacowej [Pearls of palace architecture], G+J RBA, Warszawa, 2007.

Also Alfred Majewski conducted particularly thorough research on Pieskowa Skała Castle in the 1940s and 1950s. Majewski not only studied but also supervised the renovation of this monument. He shared information about his discoveries made during the work in the publication "Ochrona Zabytków" ("Protection of Monuments")[123]. His research was later summarized in a work published in 1953, consisting of three parts: the castle's history, architectural analysis, and an account of the conservation efforts conducted from 1948 to 1952. Majewski reconstructed the successive stages of the castle's construction and provided detailed information about the Renaissance reconstruction carried out by Stanisław Szafrańec. A crucial moment in the castle's history associated with the year 1578 was linked by Majewski to an inscription found on the window frame at the entrance gate to the castle's arcaded courtyard[124].

Stanisław Tomkowicz dedicated a separate study to Korzkiew Castle[125], presenting an extensive history of the locality and providing numerous details about the village and the castle's ruins. He also described the castle's surroundings and structure, emphasizing its medieval character and architectural features from the 16th century. The text also featured photographs illustrating the appearance and decoration of the castle at the beginning of the last century.

At the turn of the 20th and 21st centuries, research on Korzkiew Castle was continued, closely related to its reconstruction by a private investor. In 1998, Benedictine Paweł Szczaniecki presented a historical monograph of the castle, which provided new information about its history and owners. Piotr Szlezynger[126], in his publication, described not only the history of the castle but also the process of its reconstruction. Romualda Lelek[127] focused on the ceramic artifacts discovered during archaeological research.

Before World War I, two detailed analyses of Jurassic castles were published in the "Reports" of the Art History Commission. The first, authored by Adolf Szyszko-Bohusz, focused on three castles, including Ogrodzieniec[128]. Despite the lack of precise research, the author believed that the castle was built in the 16th century, inspired by Wawel Castle[129].

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123 A. Majewski, Architektura i rzeźba renesansowa zamku w Pieskowej Skale [Renaissance Architecture and Sculpture of Pieskowa Skala Castle], „Ochrona Zabytków", R.1,1948,nr3/4, pp. 130–134.

124 Ibidem, p. 9.

125 S. Tomkowicz, Dwór obronny szlachecki z XVI w. w Korzkwi, „Sprawozdania Komisyi do Badania Historyi Sztuki w Polsce" [A 16th-century noble defensive manor in Korzkwi, "Reports of the Commission for the Study of the History of Art in Poland."], vol. 7, 1907, p. 271-285.

126 P. S. Szlezynger, Zamek w Korzkwi – badania historyczne i ikonograficzne, projekty, etapy odbudowy [Korzkiew Castle - Historical and Iconographic Research, Projects, Stages of Reconstruction], „Ochrona Zabytków", 2003, nr 3–4, p. 5–24.

127 R. Lelek, Ceramika z Zamku w Korzkwi (XVI-XVII w.) [Ceramics from the Castle in Korzkiew (16th-17th centuries)], Księgarnia Akademicka, 2004.

128 A. Szyszko-Bohusz, Trzy nasze zamki. Czersk, Chęciny, Ogrodzieniec, „Sprawozdania Komisyi do Badania Historyi Sztuki w Polsce ["Three of Our Castles: Czersk, Chęciny, Ogrodzieniec," "Reports of the Commission for the Study of the History of Art in Poland."], vol. 8, 1912, p. 229–270.

129 Ibidem, p. 259, 269.

After World War II, Ogrodzieniec Castle in Podzamcze[130] became a center for historical-architectural and archaeological research. The work began in 1949, involving the necessity of conserving the ruins and making them accessible for tourism. During the initial work, parts of the former cloisters and various stone elements were discovered. Due to the poor state of preservation, there was also a need for intensive conservation of the castle walls.

Subsequent research on Ogrodzieniec Castle was conducted by experts from the Warsaw University of Technology, along with collaborating archaeologists. Their findings were published in specialized journals in the 1950s and 1960s. Andrzej Gruszecki, from the Warsaw University of Technology, thoroughly analyzed the successive stages of the castle's construction, identifying five main phases of its expansion[131].

One of the few castles that was partially explored in the interwar period is the Castle in Ojców. The monograph written by Emilia Sukertowa on Ojców Castle[132] was supported by a thorough analysis of historical sources, presents the castle's history from its inception to Poland's regaining of independence

Alicja Falniowska-Gradowska[133] contributed to a deeper understanding of the history of Ojców and its castle through a meticulous analysis of sources, reconstructing the object's history from legendary beginnings to contemporary times. One of the most recent studies on the castle is by Maria Bicz-Suknarowska, who provides a brief overview of its history and proposes renovation ideas[134]. Additionally, the works of Michał Wojenka[135], who discovered numerous artifacts during archaeological research, should not be overlooked.

The decision to conduct research on Będzin Castle was made in connection with the reconstruction of the object commissioned by the Ministry of Culture and Art. Architectural analysis was conducted by Zygmunt Gawlik[136], who presented his findings in an unpublished report. He believed that the oldest element was a tower built of limestone from the mid-13th century. The castle was subsequently modified, mainly during the time of Casimir the Great, and underwent another expansion in the 16th century. The building suffered fires in the 17th century, and its restoration in the 19th century, according to the design by Franciszek Maria

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130 J. Jamroz, Sprawozdanie z robót zabezpieczających przeprowadzonych w zamku w Ogrodzieńcu w czasie od 15 IX do 30 XI 1949 [Report on the Protective Work Carried Out at Ogrodzieniec Castle from September 15th to November 30th, 1949], Kraków 1949, maszynopis, WUOZ Katowice, n. 3211/VII.

131 A. Gruszecki, Rozwarstwienie chronologiczne zamku w Ogrodzieńcu [Chronological Layering of Ogrodzieńec Castle], Warszawa 1973, typescript, WUOZKatowice, n. III/2407b.

132 E. Sukertowa, Zamek w Ojcowie. Przyczynek do dziejów zamku i rodów staroęcieńskich w Ojcowie [Ojcow Castle: A Contribution to the History of the Castle and Ancient Families in Ojców], Warszawa 1922.

133 A. Falniowska-Gradowska, Ojców w dziejach i legendzie [Ojców in History and Legend], Ojców 1995.

134 M. Bicz-Suknarowska, Zamek w Ojcowie. Historia, teraźniejszość, możliwości rewaloryzacji, „Prądnik. Prace i Materiały Muzeum im. Prof. W. Szafera", vol. 16, 2006, pp. 255–266.

135 M. Wojenka, Dzieje zamku w Ojcowie w świetle dawnych i nowszych badań [The history of the castle in Ojców in the light of old and new research], Wrzechświat, Vol 123, no. 10-12, 2022.

136 Z. Gawlik, Wyniki badań na zamku w Będzinie [Research Findings at Będzin Castle], b.m. i b.d., typescript, n inv. I/15a.

Lanci, met with Gawlik's disapproval. Additionally, Wacław Podlewski[137] win his unpublished lecture, drew attention to an earlier, wooden stronghold existing in this place.

History and Architecture of Olsztyn Castle, near Częstochowa, have been extensively researched. In the late 1950s and 1960s, Włodzimierz Błaszczyk[138] conducted archaeological research in this area, uncovering many relics, including wall foundations and remnants of a utility building. Zygmunt Holcer[139] also focused on this castle, publishing an extensive article on its history many years later, along with an attempt to reconstruct its original appearance based on preserved ruins and historical sources. An article containing an inventory of the castle from 1632 can also be found in the literature. Karol Nabiałek provided a detailed history of the castle from the late 14th century in his book dedicated to the Olsztyn starostwo.

In the 1980s, Jacek Pierzak conducted research that led to the discovery of traces of the Krakow bishops' castle in Sławków. He established the connections of the castle with Bishop Paweł of Przemanków, responsible for building the defensive walls and making modifications to the original layout in the 14th century. Information about the castle's destruction in the 15th century was also uncovered. Jacek Pierzak provided an analysis of artifacts found during the research[140].

Research on the ruins of Rabsztyn Castle continued at the turn of the 20th and 21st centuries. Jacek Pierzak initiated the first archaeological reconnaissance of this fortress. Additional research was conducted in connection with the construction of a bridge to the castle gate, designed by Waldemar Niewalda. Most of these studies focused on the gatehouse, with the intention of its potential reconstruction. Sławomir Dryja identified several stages of construction of this part of the castle and developed a precise timeline and iconography[141].

It is also worth mentioning several studies that devote attention to more than one Jurassic object. Belong to them study carried by Tadeusz Szydłowski[142]. He devoted much attention to Jurassic castles in his book on Piast architecture from 1928. Referring to the accounts of Jan Długosz and Janko z Czarnkowa, which attribute the construction of many brick castles to Casimir the Great, the author described various castles (Będzin, Bobolice, Lipowiec, Mirów, Olsztyn, Rabsztyn, Smoleń), considering their layouts, architectural forms, and state of preservation.

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137 W. Podlewski, Referat dotyczący projektu technicznego rekonstrukcji zamku w Będzinie sporządzonego przez inż. arch. Zygmunta Gawlika – opracowany na podstawie zlecenia Centralnego Zarządu Muzeów i Ochrony Zabytków Ministerstwa Kultury i Sztuki [Lecture on the Technical Reconstruction Project of Będzin Castle Prepared by Architect Zygmunt Gawlik – Developed on Commission from the Central Directorate of Museums and Heritage Protection of the Ministry of Culture and Arts]nr MOZ/Zm/Będzin/15/56 z dn. 22.VI.56 r., b.m. 1956, typescript, WUOZ Katowice, n. 3194/VII.

138 W. Błaszczyk, Zamek w Olsztynie [Castle in Olsztyn], „Ziemia Częstochowska", vol. 4, 1961, p. 65–78.

139 Z.Holcer, Dwie lustracje zamku w Olsztynie koło Częstochowy [Two Inspections of Olsztyn Castle near Częstochowa], „Sprawozdania z Komisji Naukowych PAN",t.13/1, 1969, p. 311–313.

140 J. Pierzak, Średniowieczny Sławków odsłania swoje tajemnice [Medieval Sławków Reveals Its Secrets], Katowice 1988.

141 S. Dryja, Sprawozdanie z nadzorów archeologicznych prowadzonych przy odbudowie mostu do budynku bramnego zamku w Rabsztynie [Report on Archaeological Supervision Conducted during the Reconstruction of the Bridge to the Gatehouse of Rabsztyn Castle], Kraków 2005, WUOZ Kraków, n. 46.833/09.

142 T. Szydłowski, Pomniki architektury epoki piastowskiej we województwach krakowskiem i kieleckiem [Architectural Monuments of the Piast Era in the Kraków and Kielce Voivodeships], Kraków 1928, p. 101.

Small defensive structures in the Krakow-Częstochowa Upland, especially those with poorly preserved ruins, rarely attracted the attention of researchers. Besides the well-studied Korzkiew Castle, only a few smaller castles and watchtowers have been the subject of more in-depth research. Examples include the ruins in Bydlin, Ryczów, and Biały Kościół[143].

In the early 21st century, limited historical and archaeological research was conducted in Bobolice. The focus was mainly on the moat, the gate tower, and the southern part of the lower castle. Medieval ceramics were discovered, and several construction stages were identified[144].

Iconographic studies of Jurassic castles are equally important for understanding their former appearance. Unfortunately, sources older than the late 18th century are very rare. These analyses typically complement historical research. The only comprehensive work in this area is the publication by Teresa Małkowska-Holcerowa, which pertains to graphics stored in Krakow institutions. There are also works focused on the iconography of specific castles, such as Będzin[145], Ojców[146] or Pieskowa Skała[147].

Synthetic Research

In recent decades, many synthetic works on the castles of this region have gained significance. Although they summarize earlier discoveries regarding defensive architecture, they often bring new insights, especially concerning lesser-known fortresses. They also help place these castles in a broader historical and architectural context.

Marceli Antoniewicz[148] in his research, analyzed the relationship between economic support and the fortified residence of administrators in the Krakow-Częstochowa Upland. He focused on the development of defensive construction in the region and commented on the idea of a "defensive system," advocated by Janusz Bogdanowski. However, Marceli Antoniewicz did not find conclusive evidence either confirming or denying the existence of such a system. In his analyses, he concluded that during the reign of King Casimir the Great, a regional defensive system was established on the Krakow-Częstochowa Upland, forming a subsystem of the overall state defense.

In his other book he addressed a similar topic but focused on all medieval castles and guardhouses in the Krakow-Częstochowa Upland, analyzing them from a historian's

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143 A. Celichowski, S. Styczyński, Studium historyczno-przestrzenne rejonu wzgórza zamkowego w Bydlinie woj. katowickie [Historical and Spatial Study of the Castle Hill Area in Bydlin], Łódź 1991, typescript, n. 31.637/00.

144 S. Dryja, W. Niewalda, Zamek w Bobolicach w świetle prac badawczych przeprowadzonych w 2002 roku [Bobolice Castle in the Light of Research Conducted in 2002], „Ziemia Częstochowska", vol. 29, 2002, p. 27–44.

145 B. Szyndler, Ikonografia zamku w Będzinie, [in:] Zamki i przestrzeń społeczna w Europie Środkowej i Wschodniej, M. Antoniewicz (red.), Warszawa 2002, p. 537–542.

146 W. Niewalda, H. Rojkowska, Badania ikonograficzne i architektoniczne zamku w Ojcowie w 1991 roku [Iconographic and Architectural Research on Ojcow Castle in 1991], [in:] Badania naukowe w południowej części Wyżyny Krakowsko-Częstochowskiej [Scientific Research in the Southern Part of the Kraków-Częstochowa Upland], J. Partyka (red.), Ojców 2001, p. 426–434.

147 O. Mikołajski, Najstarsze widoki zamku w Pieskowej Skale [The Oldest Views of the Castle in Pieskowa Skała], [in:] Badania naukowe w południowej części Wyżyny Krakowsko-Częstochowskiej [Scientific Research in the Southern Part of the Kraków-Częstochowa Upland], J. Partyka (red.), Ojców 2001, p. 413–418.

148 M. Antoniewicz, Zamki na Wyżynie Krakowsko-Częstochowskiej w przestrzeni społecznej XIV-XV wieku [Castles in the Kraków-Częstochowa Upland in the Social Context of the 14th-15th Century], [in:] Zamki i przestrzeń społeczna w Europie Środkowej i Wschodniej [Castles and Social Space in Central and Eastern Europe], red. M. Antoniewicz, Warszawa, 2002, pp. 275-314

perspective[149]. The author attached great importance to various factors influencing the development of defensive construction in the region, such as geography, politics, and socio-economic issues. Furthermore, he examined the strategic significance of these fortifications during armed conflicts.

In the late 20th century, Antoni Piskadło dedicated a short chapter to the "Eagle Nests" in his work "Grody zamki fortece,"[150] where he emphasized the contributions of King Casimir the Great to the development of the fortified landscape and the interconnected defensive system of individual sites in the Jurassic region.

Leszek Kajzer's work titled "Castles and Society"[151] from 1993 stands out among other publications. Kajzer goes beyond describing defensive architecture and connects it with its societal significance, which often influenced the creation, development, and functions of castles from the early Middle Ages to the 18th century. This interdisciplinary approach allowed for the presentation of not only the technical aspects of castles but also their place in a historical and cultural context. Kajzer correctly emphasized that building castles by King Casimir the Great was part of the process of centralizing royal power. He also highlighted the architectural diversity in Casimir's castles, challenging the theory of a specific "Casimirian castle"[152]. In his analyses, Kajzer occasionally provided examples from the Krakow-Częstochowa Upland, such as castles in Pilica or Pieskowa Skała, especially when discussing bastion fortifications[153].

As mentioned before, Janusz Bogdanowski suggested in his articles that fortifications in the Krakow-Częstochowa Upland were part of a deliberate defense plan for the border between Lesser Poland and Silesia[154]. In his publications, he also focused on the typology of these structures and the challenges associated with their conservation. In contrast, Stanisław Kołodziejski[155], while addressing archaeological issues, questioned the idea of the existence of a medieval defensive line, citing a lack of data and concerns about overinterpretation of evidence. This contributed to a division among researchers and resulted in the creation of two camps. Although most of them, such as Marceli Antoniewicz[156], Janusz Bogdanowski[157] and

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[149] M. Antoniewicz, Zamki na Wyżynie Krakowsko-Częstochowskiej. Geneza – funkcje – konteksty [Castles in the Krakow-Częstochowa Upland. Origin – functions – contexts], Kielce 1998.

[150] A. Piskadło, Grody, zamki, fortece. Budownictwo i architektura obronna do schyłku średniowiecza. Wydawnictwo Ministerstwa Obrony Narodowej, 1977

[151] L. Kajzer, Zamki i społeczeństwo. Przemiany architektury i budownictwa obronnego w Polsce w X–XVIII wieku [Castles and Society: Transformations in Architecture and Defensive Construction in Poland from the 10th to the 18th Century], Łódź 1993.

[152] Ibidem, pp. 134–135.

[153] Ibidem, pp. 229–230.

[154] J. Bogdanowski, Dawna linia obronna Jury Krakowsko-Częstochowskiej. Problemy konserwacji i adaptacji dla turystyki [The Former Defensive Line of the Kraków-Częstochowa Upland: Conservation and Adaptation Challenges for Tourism], „Ochrona Zabytków", R. XVII, 1964, n.4, pp. 3–36.

[155] S. Kołodziejski, Z problematyki badań średniowiecznych zamków na Wyżynie Krakowsko-Częstochowskiej [On the Issues of Researching Medieval Castles in the Kraków-Częstochowa Upland], „Archeologia Historica Polona", t. 5, 1997, pp. 23–36.

[156] M. Antoniewicz, Zamki na Wyżynie Krakowsko-Częstochowskiej. Geneza – funkcje – konteksty [Castles in the Krakow-Częstochowa Upland. Origin – functions – contexts], Kielce 1998, pp. 60–69.

[157] J. Bogdanowski, Dawna linia obronna Jury Krakowsko-Częstochowskiej. Problemy konserwacji i adaptacji dla turystyki [The Former Defensive Line of the Kraków-Częstochowa Upland: Conservation and Adaptation Challenges for Tourism], „Ochrona Zabytków", R. XVII, 1964, n. 4, p. 6.

Bogdan Guerquin[158] adhered to the idea of a deliberately created system or defensive range in the presented area.

In the 1990s, many works on castles in Małopolska and the Kraków-Częstochowa Upland were created. One of the most important is Janusz Bogdanowski's book, which focuses on the defensive buildings of the Kraków-Częstochowa Upland from prehistory to the 20th century, with an emphasis on the Middle Ages and modern times, presenting the development of successive defensive systems[159].

Analyzing the cited literature, it can be concluded that the most influential works are the publications of Janusz Bogdanowski, whose research and considerations provide the most extensive picture of the Jura and its defensive structures and situate it as part of the cultural landscape, harmonizing with the natural landscape.

It is also worth citing several examples of popular literature, which broaden the image of the discussed area and contribute to society's education in this area.

The area boasts a wealth of **popular literature**, ranging from collections of legends and stories to extensive guidebooks. Story collections usually focus on selected objects assumed by the authors to be the most popular[160]. There are also works aiming to introduce the history of objects through short descriptions and available illustrations, including drawings[161]. An interesting series includes publications under the title "Zamki i obiekty warowne" (Castles and Fortified Objects) by Almapress, among which titles like "Zamki i obiekty warowne Jury Krakowskop-Częstochowskiej"[162] (Castles and Fortified Objects of the Kraków-Częstochowa Upland) and "Zamki i obiekty obronne Ziemi Krakowskiej"[163] (Castles and Fortified Objects of the Krakow Region) have been released. These publications provide descriptions of selected objects along with layouts, as well as proposals for their reconstruction.

There is also an extensive collection of **guides.** To start, it's worth mentioning the groundbreaking publication, which is the first guide to the Kraków-Wieluń Jura authored by Kazimierz Sosnowski[164], who also contributed to the establishment of the Eagle Nests Trail in 1950. It's impossible to list all popular publications of this type. Thus, one of the first color guides specifically covering the Kraków-Częstochowa Upland from 1994 is noteworthy. It includes hiking trails, brief descriptions of attractions, maps, and colorful photographs[165]. Many guides are also published directly by the two voivodeships, including "Jura Krakowsko-

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158 B. Guerquin, *op.cit.*, p. 49.

159 J. Bogdanowski, *Sztuka obronna*, „Natura i kultura w krajobrazie Jury" [Defensive Art, 'Nature and Culture in the Landscape of the Jura Region], t. 2, Kraków 1993.

160 M. Budny, Legendy i opowieści niesamowite o zamkach jurajskich oraz duchach w nich mieszkających zebrane i opisane przez Małgorzatę Budny Legends and amazing stories about Jurassic castles and the ghosts living in them collected and described by Małgorzata Budny], DIKAPPA, Dąbrowa Górnicza, 2006.

161 M. Budny, Zamki Jurajskie na XIX-wiecznych rycinach [Jurassic castles on 19th-century engravings], DIKAPPA, Dąbrowa Górnicza, 2006.

162 R. Sypek, Zamki i obiekty warowne Jury Krakowsko-Częstochowskiej [Castles and fortified buildings of the Kraków-Częstochowa Upland], Almapress, Bydgoszcz, 2003.

163 A.Sypek, R. Sypek, Zamki i obiekty warowne Ziemi Krakowskiej [Castles and fortified buildings of the Krakow Land], Almapress, Bydgoszcz, 2007.

164 K. Sosnowski, Jura Krakowsko-Częstochowska [Kraków-Częstochowa Upland], Sport i Turystyka, Warszawa, 1955

165 S. Bronisz, K. Pucek, A. Stróżecki, Wyżyna Krakowsko-Częstochowska. Przewodnik [Kraków-Częstochowa Upland. Guide]. Wydawnictwo kartograficzne EKO-GRAF, Wrocław, 1994.

Częstochowska i region północno-zachodni"[166] (Kraków-Częstochowa Upland and the North-Western Region) and "Odkryj Małopolskę"[167] (Discover Lesser Poland).

Analyzing the history of research on the castles in the Kraków-Częstochowa Upland, it can be observed that efforts to recognize these monuments have been ongoing for approximately two centuries. Initial investigations primarily focused on uncovering the histories of specific castles. During the turn of the 19th and 20th centuries, a keen interest in these structures was displayed, primarily by art historians and architects, who analyzed their architecture and attempted to reconstruct various stages of their construction. However, it was only after World War II that a significant increase in interest in these objects became evident, often associated with conservation efforts.

Currently, it can be said that the castles known as the "Eagle's Nests" have been well-researched from historical, architectural, and archaeological perspectives. Nevertheless, ongoing research continues to yield new discoveries, indicating that the secrets of these fortresses have not been fully revealed. It is worth noting that many detailed works on this subject have not been published but are instead preserved in conservation archives, making their broad accessibility to the public challenging.

2.2. Collected source materials, archive, and unpublished research

Extensive conservation studies have been carried out on the Jurassic castles, with a predominant focus on architectural and archaeological research conducted during the 20th century. The primary source of research materials has been the Provincial Office for the Protection of Monuments located in Krakow, Katowice, and its Częstochowa branch. Additionally, valuable materials have been graciously provided by organizations such as the Association of Małopolska Landscape Parks, the Association of Silesian Landscape Parks, and the Union of Jurassic Communes.

Research on **Ogrodzieniec Castle** has been both vibrant and abundant, with a wealth of materials housed in the Archive of the Provincial Conservator of Monuments in Katowice. Archaeological research within the castle grounds has primarily centered on the central courtyard. These efforts have enabled the identification of various stratigraphic layers associated with different periods in the castle's existence, accumulating a rich collection of artifacts dating from the 14th to the 17th century. It is noteworthy to emphasize the significant, albeit unpublished, contributions of Janusz Bogdanowski[168] regarding the preservation of the cultural landscape of the ruins and their surroundings.

One of the more extensive studies at Ogrodzieniec Castle was conducted by Andrzej Gruszecki. He prepared a detailed report on field research conducted at the castle in

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[166] A. Miszta, E. Wieczorek, Jura Krakowsko-Częstochowska i region północno-zachodni województwa śląskiego Kraków-Częstochowa Upland and the north-western region of the Silesian Voivodeship], Śląska Organizacja Turystyczna, Katowice, 2015.

[167] K. Bzowski, Odkryj Małopolskę, Departament Kultury, Dziedzictwa Narodowego i Turystyki Urzędu Marszałkowskiego Województwa Małopolskiego [Discover Małopolska, Department of Culture, National Heritage and Tourism of the Marshal's Office of the Małopolska Voivodeship], Kraków, 2008

[168] J. Bogdanowski, Wytyczne konserwatorsko-krajobrazowe zagospodarowania otoczenia zamku w Ogrodzieńcu [Conservation and Landscape Guidelines for the Development of the Surroundings of Ogrodzieniec Castle], Kraków 1964, typescript, n. VIII/4993. WUOZ Katowice.

September 1966[169] and in 1971[170]. Furthermore, he also developed the chronological stratification of the castle in 1973 based on earlier research.[171] The culmination of the research conducted at that time was the final report prepared by E. Cozaś[172].

Important information regarding the state of the castle can be found in the technical descriptions prepared by W. Łopatowa[173]. They contain detailed descriptions of the technical and operational project for the tourist development of the castle.

Teresa and Zygmunt Holcer compiled a comprehensive historical data summary about the castle based on source materials dating back to the early 12th century. This compilation, combined with the field research, allowed for a better understanding of the castle's development process up to contemporary times[174].

There are no more recent materials available about Ogrodzieniec Castle beyond those from the 1970s. It's possible that there were later conservation efforts or works conducted on the castle, but there are no documents in the archives confirming this.

At the turn of the 1960s and 1970s, architectural research was conducted on **Siewierz** Castle with the aim of assessing the state of preservation of the structure and preparing it for restoration. Based on assessments of the castle's technical condition[175], scientific principles were developed for the reconstruction project[176]. These principles were preceded by the aforementioned architectural and historical studies[177]. Further expertise and protective work were carried out in the 1990s. During that time, emergency safeguards and cleanup operations were performed, as described in detail in the found reports[178].

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[169] A. Gruszecki, Sprawozdanie z uzupełniających badań terenowych architektoniczno-historycznych przeprowadzonych na zamku w Ogrodzieńcu we wrześniu 1966 r. [Report on additional architectural and historical field research carried out at the castle in Ogrodzieniec in September 1966.], typescript, no. II/784a.

[170] A. Gruszecki, Zamek w Ogrodzieńcu. Badania architektoniczno-historyczne. Część I. Sprawozdanie za rok 1971 [Castle in Ogrodzieniec. Architectural and historical research. Part I. Report for 1971], typescript, no. III/2163a.

[171] A. Gruszecki, Rozwarstwienie chronologiczne zamku w Ogrodzieńcu [Chronological stratification of the castle in Ogrodzieniec], Warszawa 1973, typescript, no. III/2407b.

[172] E. Cozaś, Sprawozdanie z prac konserwatorskich na zamku Ogrodzieniec [Report on conservation works at Ogrodzieniec Castle], Kraków, 1972, no. 4664.

[173] W. Łopatowa, Opis techniczny do projektu techniczno-roboczego zagospodarowania turystycznego zamku w Ogrodzieńcu [Technical description for the technical and working design of the tourist development of the castle in Ogrodzieniec], no. 1967, typescript, no. II/801a.; W. Łopatowa, Opis techniczny do projektu szkicowego zagospodarowania turystycznego zamku w Ogrodzieńcu (skrzydło płd., Kurza Stopa, majdan płn.) [Technical description for the sketch design of the tourist development of the castle in Ogrodzieniec (southern wing, Kurza Stopa, northern majdan)], no. 1968, typescript, no. II/812a.; W. Łopatowa, Opis techniczny do projektu techniczno-roboczego zagospodarowania turystycznego (część druga) zamku w Ogrodzieńcu (skrzydło płd., Kurza Stopa, majdan płn.) [Technical description for the technical and working design of the tourist development (part two) of the castle in Ogrodzieniec (southern wing, Kurza Stopa, northern majdan)], no. 1970, typescript, no. II/821a.

[174] T. Holcerowa, Z. Holcer, Zamek w Ogrodzieńcu. Dane historyczne opracowane na podstawie materiałów źródłowych (okres do początków XVII w.) [Castle in Ogrodzieniec. Historical data based on source materials (period until the beginning of the 17th century)], Kraków 1974, typescript, no. III/2415a.

[175] T. Franczak, Opinia o stanie technicznym ruin zamku w Siewierzu woj. katowickie [Opinion on the technical condition of the castle ruins in Siewierz province Katowice], Kraków 1965, typescript, no. II 1116b.

[176] Sibińska U., Wiśniewski M., Naukowe założenia do projektu odbudowy zamku biskupów krakowskich w Siewierzu na podstawie badań architektoniczno-historycznych przeprowadzonych w r. 1970 [Scientific assumptions for the project of rebuilding the castle of the Krakow bishops in Siewierz based on architectural and historical research conducted in 1970], typescript, nr inw. II/115a.; Sibińska U., Wiśniewski M., Badania architektoniczne ruin zamku biskupiego w Siewierzu. Wnioski konserwatorskie [Architectural research of the ruins of the bishop's castle in Siewierz. Conservation applications], Kraków 1972, typescript, no. III/2156a.

[177] Pelczar Z., Buszydlik K., Dębowski T., Siewierz, Powiat Zawiercie, Zamek, Dokumentacja fotograficzna z badań w 1970 roku [Siewierz, Zawiercie County, Castle, Photographic documentation of research in 1970], Siewierz, 1970, no.1111a.

[178] Pająk Z., Jóźwiak I., Ekspertyza. Stan techniczny ruin zamku w Siewierzu wraz ze sposobem wykonania doraźnych zabezpieczeń [Expertise. Technical condition of the ruins of the castle in Siewierz along with the method of implementing ad hoc security measures], Gliwice 1997, no. 8466.

Although the initial plans about restoration were not realized, subsequent preservation work was based on prior research. In a year 2005, Artur Rok[179] conducted a thorough analysis of the history and architecture of the castle, publishing the results in several works. Additionally, archaeological research in 2007 yielded interesting information, revealing, among other things, that the initial fortress was a wooden and earthen structure surrounded on all sides by a sandy rampart. The castle underwent additional restoration work from 2019 to 2021, but the documents related to these works are not yet available.

An interesting discovery is the master's thesis prepared by M. Malanek, focusing on the architecture of the castle of the Krakow Bishops in Siewierz[180].

Among the noteworthy studies, it is important to mention the investigation of the Będzin fortress. This research was led by Zygmunt Gawlik[181], who meticulously documented his findings in a concise yet unpublished report. Complementing this report, Wacław Podlewski[182] contributed an unpublished presentation, shedding light on the existence of an earlier wooden settlement at the Będzin Castle site. In the late 1950s, archaeological research on the Będzin Castle was also undertaken by Włodzimierz Błaszczyk[183].

Information about opinions and sentiments related to the reconstruction can be found in a press release about the castle's restoration written by R. Romański[184].

In the 1960s, a spatial development plan for the areas surrounding the castle was also prepared[185]. The most recent archived inventory work was conducted in the 1980s[186].

Not many studies were conducted at Ostrężnik Castle. All of them were carried out in the late 20th and early 21st centuries. In 1994[187], a topographic map was created, and

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[179] A. Rok, Założenia konserwatorskie docelowego zabezpieczenia ruin zamku biskupów krakowskich w Siewierzu. Zabezpieczenie i ekspozycja w formie „trwałej ruiny"[Conservation Principles for the Future Preservation of the Episcopal Castle Ruins in Siewierz. Preservation and Display in the Form of a 'Permanent Ruin], Kraków 2005, p. 1, WUOZ Katowice,n. 11048.; Kubica S., Błach M., Projekt robót zabezpieczająco-porządkowych na zamku w Siewierzu [Design of security and cleaning works at the castle in Siewierz], Siewierz 1998, typescript, no. 8467.

[180] Malanek M., Architektura zamku biskupów krakowskich w Siewierzu, Praca magisterska [Architecture of the Krakow bishops' castle in Siewierz, Master's thesis], no. II1101a/1.

[181] Z. Gawlik, Wynika badań na zamku w Będzinie [The results of research at Będzin Castle], typescript, n. I/15a. WUOZ Katowice.

[182] W. Podlewski, Referat dotyczący projektu technicznego rekonstrukcji zamku w Będzinie sporządzonego przez inż. arch. Zygmunta Gawlika – opracowany na podstawie zlecenia Centralnego Zarządu Muzeów i Ochrony Zabytków Ministerstwa Kultury i Sztuki [A presentation on the technical reconstruction project of Będzin Castle prepared by Architectural Engineer Zygmunta Gawlik – developed based on a commission from the Central Directorate of Museums and Heritage Conservation of the Ministry of Culture and Art] nr MOZ/Zm/Będzin/15/56 z dn. 22.VI.56 r., b.m. 1956, typescript, n. 3194/VII. WUOZ Katowice.

[183] W. Błaszczyk, Założenia projektowe dla zagospodarowania otoczenia zamku i Góry Zamkowej w Będzinie [Design guidelines for the development of the surroundings of Będzin Castle and Castle Hill in Będzin], 1958, typescript, nr inw. I/36a. WUOZ Katowice.

[184] R. Romański, Informacja o odbudowie zamku w Będzinie [Information about the reconstruction of the castle in Będzin], Stalinogród 1956, typescript, no. I/60a.

[185] S. Sepioł, Plan zagospodarowania przestrzennego otoczenia Zamku w Będzinie [Spatial development plan for the surroundings of the Castle in Będzin], Katowice, 1962, no. I/29.

[186] B. Batko, Będzin - Zamek Kazimierzowski, Inwentaryzacja Architektoniczno-Budowlana [Będzin - Kazimierzowski Castle, Architectural and Construction Inventory], Vol. 1 and Vol. 2, Kraków, 1989, no.1708.

[187] L. Trepka, Trzepietowski M., Mapa sytuacyjno-wysokościowa „Zamczysko" Ostrężnik [Situational and altitude map of "Zamczysko" Ostrężnik], Biuro Usług Geodezyjnych „Geomap" w Myszkowie, Myszków, 1994.

archaeological research on the medieval castle ruins was conducted in the years 2000[188] and 2002[189].

Similarly, very few studies and works have been carried out at Pilica Castle due to an ongoing property dispute, making any works impossible. However, in the years 1987-1989, J. Janczykowski and M. Bicz-Suknarowska conducted architectural research at the site[190].

In the 1950s, an inventory of Olsztyn Castle was conducted[191], supplemented with historical descriptions and a historical timeline authored by Teresa Małkowska-Holcerowa[192]. The topic of conserving the castle ruins was revisited in the 1990s when another inventory of the castle was conducted[193]. A few years later, a construction project for the protection and restoration of portions of the castle walls and tower was completed[194]. Subsequent protective and educational work was carried out in the years 2015/2016[195] and 2020[196].

Basic technical studies and protective work were carried out in smaller defensive structures, including watchtowers, and also at Morsko Castle.

In the 1980s, Zygmunt Holcer and Teresa Małkowska-Holcer conducted extensive historical analyses of the castles in Rabsztyn, Tenczyn, and Smolen. These works included detailed descriptions of the history of each fortress, information about ongoing restoration work, and a rich collection of illustrations related to Rabsztyn and Tenczyn Castles[197]. Furthermore, noteworthy are the research efforts of Janusz Kurtyka, who focused on the Tęczyński family and their properties, including the history and architecture of Tenczyn Castle[198].

After the inventory at Rabsztyn Castle in 1989[199], the first significant changes began in 2018 when a permanent exhibition project was created, along with a proposal to make all the

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188 S. Kołodziejski, Tutak J., Sprawozdanie z badań archeologicznych ruin średniowiecznego zamku w Ostrężniku, gmina Janów, Województwo Śląskie [Report on archaeological research on the ruins of the medieval castle in Ostrężnik, Janów commune, Silesian Voivodeship], Kraków, 2000, no. 3973.

189 S. Kołodziejski, Sprawozdanie z badań archeologicznych ruin średniowiecznego zamku w Ostrężniku, Gmina Janów, Województwo Śląskie [Report on archaeological research on the ruins of the medieval castle in Ostrężnik, Janów Commune, Silesian Voivodeship], Kraków, 2002, no. 4059.

190 J. Janczykowski, M. Bicz-Suknarowska, Badania architektoniczne Pałacu w Pilicy [Architectural research of the Palace in Pilica], Kraków, 1987-1989, no. 3985/IX.

191 E. Zoga, Inwentaryzacja zamku w Olsztynie [Inventory of the castle in Olsztyn], Kraków, 1959, no. 426.

192 T. Małkowska-Holcerowa, Dokumentacja naukowa. Ruiny zamku w Olsztynie [Scientific documentation. Ruins of the castle in Olsztyn], Kraków, 1959, no.427.

193 B. Batko, Inwentaryzacja zamku w Olsztynie, Krakowskie Przedsiębiorstwo Geodezyjne [Inventory of the castle in Olsztyn, Krakow Geodetic Enterprise], Kraków, 1991.

194 B. Paliszkiewicz, Projekt budowlany. Ruiny zamku w Olsztynie i Baszta Sołtysia, Zabezpieczenie i odtworzenie fragmentów murów przed Basztą Sołtysią na terenie Zamku w Olsztynie [Construction project. Ruins of the castle in Olsztyn and the Mayor's Tower, Protection and restoration of fragments of the walls in front of the Mayor's Tower in the Castle in Olsztyn], Częstochowa, 2003, no. 4221.

195 W. Niewalda, M. Mamica, Ślęzak S., Projekt koncepcyjny zabezpieczenia i przystosowania ruin zamku dolnego w Olsztynie pod kątem ekspozycji wystawienniczej [Conceptual design for securing and adapting the ruins of the lower castle in Olsztyn for exhibition purposes], Częstochowa, 2016, no. 9940.

196 M. Mrzygłód-Tomasik, Program prac konserwatorskich odsłonięcia, zabezpieczenia i uczytelnienia reliktów murów budynku bramnego na zamku w Olsztynie [A program of conservation works to expose, secure and make legible the relics of the walls of the gate building at the castle in Olsztyn], Kraków, 2020, no.11951.

197 T. Małkowska-Holcerowa**,** Zamek Tenczyn k. Rudna pow. chrzanowski, woj. krakowskie. Materiały ikonograficzne [Tenczyn Castle near Rudno, Chrzanów County, Lesser Poland Voivodeship: Iconographic Materials], Kraków 1969, typescript, n. 582/77. WUOZ Kraków.

198 J. Kurtyka, Tęczyńscy: studium z dziejów polskiej elity możnowładczej w średniowieczu [The Tęczyński Family: A Study of the History of the Polish Noble Elite in the Middle Ages], Kraków 1997.

199 B. Batko, Inwentaryzacja zamku w Rabsztynie Inventory of the castle in Rabsztyn], Kraków, 1989, no. 26878/89.

rooms accessible to visitors because previously[200], it was not possible to enter the castle grounds. Opened in spring 2023, the castle features numerous modern additions and the reconstruction of the tower and portions of the walls.

Tenczyn Castle underwent a conservation renovation in four stages[201], concluding in 2008, along with an application for its recognition as a historical monument[202].

In the 1960s and 1970s, thorough architectural studies were carried out on the ruins of Lipowiec Castle. The initial measurements at the castle were carried out and documented by D. Mazurowa[203]. Subsequently, architectural studies focused on the castle's gatehouse were conducted at the castle between 1967 and 1970 by A. Swaryczewski[204]. Olgierd Zagórowski provided an in-depth historical study of this site. Subsequent research conducted in conjunction with conservation work unveiled elements such as Gothic window frames and stone remnants of a bridge[205]. Teresa Holcerowa compiled this information, preparing a synthetic study in the 1960s that later served as the basis for her book published in 1989 by PTTK[206]. The castle remained closed for several recent years due to renovations and was reopened with a new exhibition during the September Juramania event in 2023.

Towards the end of the 1950s, comprehensive research on the history of Ojcow Castle was initiated. During this time, a comprehensive historical documentation was produced, shedding light on the building's history from the 14th century onwards. Józef Frazik[207] described the results of initial architectural studies. However, more comprehensive work on the castle took place in the 1990s when archaeological research was conducted alongside renewed architectural analysis.

In recent years, the most extensive work was carried out by M. Macioszek, who renovated the remains of the perimeter walls in 2015[208] and once again secured the walls and necessary installations. The work program was then expanded to include the landscaping of the area, including the design of an observation footbridge[209].

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[200] A. Kadłuczka, K. Kołodziejczyk, D. Przygodzki, M. Węgiel, Rabsztyn. Zamek średni. Scenariusz wystawy., Studio architektoniczne - Archecon [Rabsztyn. Medium castle. Exhibition scenario., Architectural studio - Archecon], Kraków, 2018, no. 69585/18.

[201] M. Filipowicz, A. Filipowicz, Program prac IV-go etapu remontu konserwatorskiego zamku Tenczyn do realizacji w roku 2013 – aktualizacja projektu budowlanego z 2008 r., [Program of Work for the Fourth Stage of the Conservation and Renovation of Tenczyn Castle to be Implemented in 2013 – an Update of the 2008 Building Project], Kraków, 2008, no. 44646/08.

[202] A. Laskowski, S. Kołodziejski, M. Rabajczyk, A. Siwek, Zamek Tenczyn w Rudnie. Dokumentacja do uznania za pomnik historii [Tenczyn Castle in Rudno. Documentation to be recognized as a historical monument], Kraków, 2009/2010, no. 71240/18.

[203] D. Mazurowa, Pomiar inwentaryzacyjny [Inventory measurement]. Zamek w Lipowcu., Kraków, 1959 , no. 36.698.

[204] A. Swaryczewski, Badania architektoniczne przedbramia zamku w Lipowcu według stanu prac z lipca 1970 r. (trzeci etap) [Architectural research of the foregate of the castle in Lipowiec according to the progress of works in July 1970 (third stage)], Kraków 1970, typescript, no. 46.224/09.

[205] T. Holcerowa, Sprawozdanie z prac konserwatorskich przy ruinach zamku w Lipowcu w sezonie budowlanym 1963 roku [Report on Conservation Work at the Ruins of Lipowiec Castle in the Construction Season of 1963], Kraków 1964, maszynopis, nr inw. 42.264/07. WUOZ Kraków.

[206] T. Holcerowa, Zamek w Lipowcu. Tekst objaśniający: część I – Historia zamku, część II – Przewodnik po zamku [Lipowiec Castle: Explanatory Text - Part I: Castle History, Part II: Castle Guide], Kraków 1968, typescript, n. 42.265/07. WUOZ Kraków.

[207] J. T. Frazik, Ojców – woj. krakowskie. Zamek. Sprawozdanie z badań terenowych, Kraków 1958 [Ojców - Krakow Voivodeship. Castle. Field Research Report, Krakow 1958], typescript, n. 441/77. WUOZ Kraków

[208] M. Macioszek, Projekt budowlany, Projekt pozostałości murów obwodowych zamku w Ojcowie, remont ścian, dachu i posadzki baszty wraz z odtworzeniem dwóch stropów schodów i okien. [Construction design, Design of the remains of the perimeter walls of the castle in Ojców, renovation of the walls, roof and floor of the tower along with the reconstruction of two staircase ceilings and windows.] WUOZ Kraków, 2015, no. 64.575/16

[209] M. Macioszek, D. Tylka, Uszczegółowienie programu prac konserwatorskich. [Detailing the conservation work program.], Kraków, 2017, no. 66032/17.

The earliest historical note about Korzkiew Castle dates back to 1912. In it, S. Tomkowicz analyzes the 16th-century nobleman's residence[210]. In the 1950s, extensive research was conducted on Korzkiew Castle at the behest of the Krakow conservator of monuments. Adam Małkiewicz[211] prepared a detailed study concerning the history and architecture of the castle, identifying five main phases of construction and underscoring the need for further research and preservation efforts. A decade later, the Krakow branch of the Polish Tourist and Sightseeing Society (PTTK) initiated efforts to restore the castle, led by Waldemar Niewalda, resulting in valuable new information regarding the castle's history and architectural transformations[212].

A comprehensive description of Pieskowa Skala Castle can be found in the "Teki Krakowskie." It includes detailed historical accounts as well as a description of the architecture and its details. It also discusses the stylistic influences evident in the structure[213]. As an interesting addition to the conservation documentation from 2014-2016[214], there is a 3D reconstruction of the northern bastion of the castle[215]. The latest renovation work at the castle was carried out in 2019. It included portions of the ground floor of the southern wing and the reconstruction of installations[216].

The castle in Bydlin[217] was studied in the 1990s, allowing for the reconstruction of its history and a more accurate understanding of its structure. It was revealed that the castle consisted not only of the two well-known ruins—the residential building and the courtyard surrounded by a wall—but also of a previously unidentified tower with a gate passage, integrated into the defensive wall. During that time, a concept for the development of the castle hill area was also created, and it continues to be in use today[218].

The guardhouse in Ryczów was examined under the directive of the Voivodeship Conservator of Archaeological Monuments in Katowice in the 1990s. The research confirmed its establishment in the 14th century, likely as a royal guardhouse. The main structure featured a

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[210] S. Tomkowicz, Dwór szlachecki z XVI w. w Polsce. Korzkiew [A noble manor house from the 16th century in Poland. Korzkiew], Sprawozdania Komisji do Badania Historii Sztuki w Polsce, vol. VIII, manuscript, Kraków, 1912.

[211] A. Małkiewicz, Ruiny zamku w Korzkwi. Dokumentacja architektury, Kraków 1959 [Ruins of the Castle in Korzkiew. Architectural Documentation, Krakow 1959], typescript, nr inw. 210/77. WUOZ Kraków

[212] W. Niewalda, Ruiny zamku w Korzkwi. Ekspertyza architektoniczno-historyczna, Kraków 1969 [Ruins of the Castle in Korzkiew. Architectural-Historical Expertise, Krakow 1969], typescript, nr inw. 3862/78. WUOZ Kraków.; W. Niewalda, Architektoniczne badania murów obronnych, baszt, bramy i przedbramia zamku w Korzkwi [Architectural research of the defensive walls, towers, gate and foregate of the castle in Korzkiew], Kraków 1972, typescript, no. 3863/78.

[213] A. Majewski, Teka Krakowska 2, Pieskowa Skała, Państwowe Wydawnictwa Techniczne, 1953, no. 455/77.

[214] A. Piotrowski, Konserwacja zamku Pieskowa Skała 2014-2015, dokumentacja konserwatorska [Conservation of Pieskowa Skała castle 2014-2015, conservation documentation], Kraków, 2016, no. 65652/17.

[215] D. Śliwińska, K. Mazur, Rekonstrukcja 3D bastionu północnego Zamku w Pieskowej Skale [3D reconstruction of the northern bastion of the Castle in Pieskowa Skała], Kraków, 2014-2015, no. 65043/16.

[216] G. Lechowicz, Prace budowlane na Zamku w Pieskowej Skale obejmujące remont części pomieszczeń parteru skrzydła południowego, przebudowę instalacji wewnętrznych: wody, kanalizacji, elektrycznych i c.o., przebudowę kominów wraz z montażem urządzeń wzbudzających ciąg [Construction works at the Castle in Pieskowa Skała, including renovation of some rooms on the ground floor of the southern wing, reconstruction of internal installations: water, sewage, electrical and heating, reconstruction of chimneys along with the installation of draft-generating devices], Kraków, 2019, no.75089/20.

[217] B. Muzolf, Bydlin – gm. Klucze woj. katowickie. Zamek rycerski na górze Św. Krzyża – opracowanie badań archeologicznych [Bydlin – Klucze Commune in the Silesian Voivodeship. Knight's Castle on Mount Święty Krzyż – Archaeological Research Report], vol. 1, Łódź 1990, typescript, n. 31.593/00. WUOZ Kraków.

[218] A. Celichowski, Styczyński S., Koncepcja planu zagospodarowania rejonu wzgórza zamkowego w Bydlinie [Concept of a development plan for the castle hill area in Bydlin], Łódź, 1991, typescript, no. 31.639/00.

2- or 3-story dwelling and a defensive tower. Beneath it lay a courtyard, presumably surrounded by an earthen rampart and wooden utility buildings. The guardhouse was abandoned in the 15th century[219].

Research on the ruins of Biały Kościół Castle took place between 1993 and 1995, organized by the Jurassic Landscape Parks Team. Stanisław Kołodziejski oversaw the work[220]. Based on limited remains, attempts were made to reconstruct the fortress's plan, which included a residential-defensive tower and two courtyards. Artefacts discovered at the site dated back to the 14th century. Kołodziejski suggested that the castle may have been the residence of the Syrokomla family in the early 14th century, subsequently destroyed due to a construction accident. The family may have then relocated to Korzkiew and erected a new fortress there.

The first protective works on the residential-defense tower in Kwaśniów Dolny were carried out only in 2008[221]. During this time, a series of measures were implemented to prevent further deterioration of the tower.

Supplementary literature

Considering that the Kraków-Częstochowa Upland is an exceptionally rich example of a Cultural Landscape, this work also analyzed literature that complements the image of this region. These primarily pertain to natural conditions.

Each part of the Kraków-Częstochowa Upland has a distinct character of terrain relief shaped by geological and geomorphological processes. Consequently, different characteristic landscape features are found in various regions. The most significant element of the landscape in the Upland is the exposure of limestone rocks. Rock formations can be found on valley slopes or in the form of isolated rock outcrops on plateaus. This type of terrain morphology is attractive to cave enthusiasts and climbers. It has led to a series of popular and scientific publications describing rock formations in the Jura, as well as the opportunities and values associated with caving and climbing. In the 1980s, Mariusz Szelerewicz and Andrzej Górny[222] compiled all the discovered caves in the Jura, along with their plans and brief location descriptions. Małgorzata and Jan Kiełkowski[223] compiled rock formations suitable for climbing, describing them and providing drawings of their locations with marked climbing routes.

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[219] J. Pierzak, D. Rozmus, Średniowieczny zamek w Ryczowie, gm. Ogrodzieniec, woj. Katowice, „Śląskie Prace Prahistoryczne" [Medieval Castle in Ryczów, Ogrodzieniec Commune, Silesian Voivodeship, 'Silesian Prehistoric Works], vol. 3, 1994, pp. 162–172.

[220] S. Kołodziejski, Wstępne sprawozdanie z archeologicznych prac badawczych i działań konserwatorskich przeprowadzonych w roku 1995 na terenie reliktów średniowiecznego zamku w Białym Kościele [Interim Report on Archaeological Research and Conservation Activities Conducted in 1995 at the Site of the Medieval Castle Remains in Biały Kościół], gm. Wielka Wieś, Kraków 1995.

[221] A. Młynarczyk, F. Pachla, Projekt prac zabezpieczających zabytkowy budynek wieży mieszkalno-obronnej przy ul. Dworskiej 17 w Kwaśniowie Dolnym [Design of works securing the historic building of the residential and defense tower at ul. Dworska 17 in Kwaśniów Dolny], woj. Małopolskie, Kraków, 2008, no. 46066/08.

[222] M.Szelerewicz, A. Górny, Jaskinie Wyżyny Krakowsko-Wieluńskiej [Caves of the Krakow-Wieluńska Upland], Wydawnictwo PTTK „KRAJ", Warszawa-Kraków, 1986.

[223] M. Kiełkowska, J. Kiełkowski, Przewodnik wspinaczkowy [Climbing guide]. Mirów. EXPLO, Gliwice, 1994.

Numerous publications have also been created on the natural and cultural values of the Jura, including Józef Partyka's guidebook to the Ojców National Park[224] and Julian Zinkow's series of short books on National and Landscape Parks, including the Jurassic Landscape Parks and Ojców National Park[225]. Both works provide descriptions of the natural and cultural values of the region, including tourist trails and selected historical sites, along with a brief history of the Jura.

2.3. Summary

Throughout different periods, many researchers and historians have made significant analyses and discoveries that have enriched our knowledge of these objects. These studies focus on various aspects such as the history of construction, architecture, geographic and social context, as well as the state of preservation and conservation of these monuments. These studies aimed not only to deepen historical knowledge but also to assess the technical condition of the structures and the possibilities for their restoration and conservation. In addition to scientific research, there is also a wealth of popular literature, including tourist guides and collections of legends, which further emphasize the significance and attractiveness of these monuments. In summary, these works form the foundation for understanding the history and culture of the region and for the protection and promotion of architectural heritage.

In general, research on the castles in the Kraków-Częstochowa Upland has been ongoing for about two centuries and continues to advance, although new discoveries still emerge. Unfortunately, many detailed studies remain unpublished and are stored in archives, which makes their dissemination challenging.

3. Conclusions

Despite the significance of the Kraków-Częstochowa Upland, the scientific literature lacks comprehensive, updated research encompassing both historical aspects and contemporary issues related to conservation and commercialization. Existing studies are often fragmentary, and their marginalization or lack of updates hinders a thorough valorization and systematic protection of this area.

Furthermore, there is a lack of an interdisciplinary approach that would consider historical, cultural, and technological aspects of the problem. Modern technologies can offer unique opportunities for the protection and revitalization of this area, but their potential is not yet fully utilized in conservation practice.

Another deficiency is the access to an updated, unified knowledge database that could serve both researchers and practitioners in the field of conservation and cultural heritage management. In this context, the author sees the need for further in-depth research.

[224] J. Partyka, Ojcowski Park Narodowy [Ojców National Park], Sport i turystyka, Warszawa, 1988.
[225] J. Zinkow, Zespół Jurajskich Parków Krajobrazowych. Ojcowski Park Narodowy [Jurassic Landscape Park Complex. Ojców National Park]. Wydawnictwo PTTK „KRAJ", Warszawa, 1990.

III. GENERAL RESEARCH

In European culture, a castle plays an archetypal, spiritual role, connecting various architectural complexes into one whole. Although the shape and decorations of individual castles are mainly the result of local historical and cultural traditions, as well as defensive needs, their deeper meaning is based on universal ideas. These are the ideals of supreme power, common feudal law, defense, and subjugation—values that are the foundation of the political and legal culture of medieval Europe[226]. It is worth tracing the development of the first castles in Europe more closely, as over the centuries, defensive construction has played a key role in shaping the history and landscape of Europe. The beginnings of castle construction are associated with a period in which the need for protection and control over the territory led to innovative architectural solutions.

General research is an introduction to detailed studies and contains a preliminary approach to the subject of castles. The origins of defensive construction in Europe, including Poland, are briefly discussed. The whole is presented on selected examples. The chapter concludes with topics related to the protection of castle ruins, from conservation methods to legal possibilities, social education, and the potential use of digital tools and their usefulness in protecting castle ruins.

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[226] E. V. Kilimnik, Kul'turnoistoricheskiye osobennosti feodal'nykh zamkov Tsentrall'noy Yevropy [Cultural and historical features of feudal castles in Central Europe], Zapadnoy Ukrainy i Belorussii XI-XVII, Ekaterinburg, 2011, p. 322

1. Castles in general terms

Etymology

In the terminology related to defensive architecture, the concept of "castle" has its etymological roots in the Latin word "castellum". It is a diminutive form of "castrum", which served as a term for any fortified position. Similar lexemes also occur in other Romance and Germanic languages, such as French "château", Spanish "castillo", Portuguese "castelo", or Italian "castello". This indicates the widespread use of this term in different cultures and languages, underlining its universal significance[227].

Factors influencing the location of castles

Choosing the right location, ensuring safety, water supply, and proximity to communication routes, was a crucial issue when building a fortress. Based on the criterion of location, three basic types of castles are distinguished: lowland, upland, and cliff castles. Castles built in flat areas were surrounded by natural floodplains, swamps, and river branches. They could also easily be surrounded by a moat or a system of moats. Rock fortresses located on mountain tops and castles built on high river cliffs were exceptionally difficult to access.

The terrain played a significant role in deciding the location of castles. For example, in Germany, castles built on elevated terrains, like Marksburg, dominated; statistics show that as many as 66% of all known medieval castles in this country were located on hills, compared to 34% situated in lower areas[228]. In contrast, the situation in England was different, with a smaller number of castles in upland areas[229].

Castles had various functions to fulfill, resulting in their diverse locations. The final decision on the castle's location was the result of many considerations, including the need for strategic defense and other factors such as resource availability or location relative to existing roads. For instance, numerous castles were located along historic Roman roads, which continued to be used as main communication arteries in the Middle Ages.

Wherever possible, pre-existing defensive structures, such as Roman forts or prehistoric hill fortifications, were incorporated into the plans of newly built castles. Locations with good visibility and natural defensive barriers were also chosen, serving not only to facilitate defense but also as a visual symbol of power[230].

Urban castles had a special role, especially in controlling demographic and production centers. For example, after the Norman conquest of England in the 11th century, most royal castles were located in or near cities, reflecting their significance in managing urbanizing societies[231].

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[227] O. Creighton, R. Higham, Medieval Castles. Shire Archaeology, 2003, p.64.
[228] F.W. Krahe, Burgen und Wohntürme des deutschen Mittelalters [Castles and Residential Towers of the German Middle Ages] (in German). Stuttgart, DE: Thorbecke, 2002, pp. 21-24.
[229] O. Creighton, *Castles and Landscapes.* London, UK: Continuum, 2002, p.36.
[230] Ibidem, pp. 35-41.
[231] Ibidem, p.36.

Materials

The material used for castle construction varied, depending on the location. The first defensive structures were made of wood. In later constructions, the main building material was local stone. Fortresses located on hills and mountains were predominantly built from stone blocks: limestone, granite, or basalt[232]. For the construction of lowland castles, bricks and glacial erratics were used. The stability of the structures was ensured by mortar, made from lime, sand, and water. Wood was also used, but mainly in a supplementary role, for example, in the construction of roofs or internal partitions[233].

Defensive elements

Years of research have allowed the identification of only ten fundamental defensive elements in the history of defensive art [Fig.9]. These are, in the order of their appearance in the history of fortifications:

- Wall - a simple or convex curved wall, rampart, or palisade.;
- Recess - a simple but concave recess in the wall;
- Tower - a tall structure defended not by walls but by its upper terrace;
- Bastion - similar to a tower but equipped with a complete set of gunports in the walls for active defense;
- Bastionette - a low bastion, almost concealed in the moat and fully adapted for firearms use;
- Ravelin - a five-sided bastion[234].

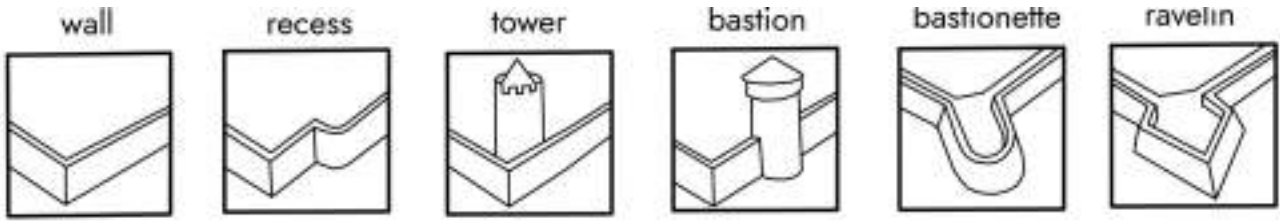

Fig. 9. Defensive elements, elaborated by the author, based on J. Bogdanowski

Defensive systems

Castles can also be classified based on the defensive system they were equipped with [Fig.10]. There are several recognized systems: wall-based, recess-based, tower-based, bastion-based, bastionette-based, and others typical of modern fortifications[235]. Depending on the existing system, it was possible to conduct frontal, cross (pinching), or lateral (flanking) defense.

In a wall-based system, there are simple sections of walls that typically connect at right angles. With this arrangement, only frontal defense was possible.

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[232] C. Coulson, Castles in Medieval Society: Fortresses in England, France, and Ireland in the Central Middle Ages,Oxford University Press, 2003, p.121.

[233] M. Johnson, Behind the Castle Gate: From Medieval to Renaissance, Routledge, 2002.

[234] J. Bogdanowski, Architektura obronna w Krajobrazie Polski [Defensive architecture in the Polish landscape], Wydawnictwo Naukowe PWN, 2002. p.21.

[235] Ibidem

In the bay-based system, the wall section is not a straight line but bends or curves outward. This allowed for the elimination of dead spaces or the strengthening of particularly vulnerable defense points, such as gates. This system enabled both frontal and cross or flanking defense.

In the tower-based system, defensive towers were added to the walls, which could stand separately, connect with the wall, or slightly project beyond it. This enabled vertical frontal defense of the most threatened section of the outer defenses. However, the lack of gunports at wall level and the limited projection of the tower's outline beyond the wall did not allow for flanking defense. Towers also served as watchtowers, observation points for early threat detection. They were often used as refugia, the final defense point to which defenders would retreat if the gate fell or the walls were breached. The lower levels of the tower were used as prisons, while higher levels housed storage and living quarters.

The introduction of bastions, which extended significantly beyond the line of the walls and had gunports at various heights, created the possibility of both vertical frontal and horizontal flanking defense. The wall segments connecting individual bastions were called curtains. Most often, bastions opened inward towards the castle's interior. This design had two tactical advantages: first, it allowed for the rapid replenishment of ammunition or ascent to higher levels, and second, if a bastion fell, the enemy could not use it as a position to fire upon the courtyard or the inner ring of walls. A transitional form between a bastion and a bastioned system was the puntone bastion (known as a protobastion), which was always pentagonal in shape.

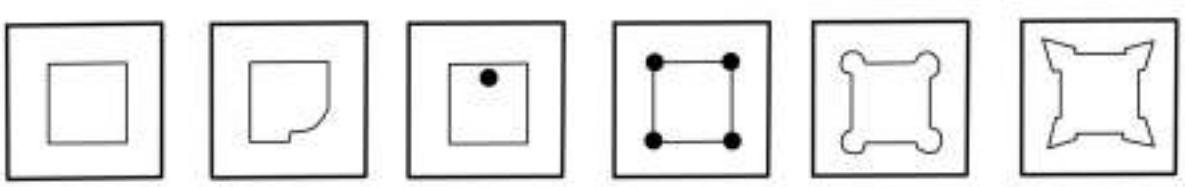

Fig. 10. Schematics of defensive systems, elaborated by the author, based on J. Bogdanowski

2. Development of defensive construction in Europe - general overview

In the early stages of castle construction in France, these fortifications were typically situated on terrain encircled by a moat, and the excavated earth from the moat was used to create steep banks and a raised area within. This elevation served as a formidable barrier to impede attackers' access. At the summit of these moat banks, a wooden palisade was constructed using substantial tree trunks connected with earth. Along the upper perimeter of this palisade, a wooden platform was installed to provide a walkway, while beneath the platform, earthworks were fashioned to widen the base of the palisade [Fig.11]. This outer ring of defense encompassed a complex of essential structures necessary for the functioning of the armed garrison. These included assembly halls, kitchens, barns, storage facilities, stables, animal enclosures, workshops for carpenters and blacksmiths, wells, and even a chapel[236].

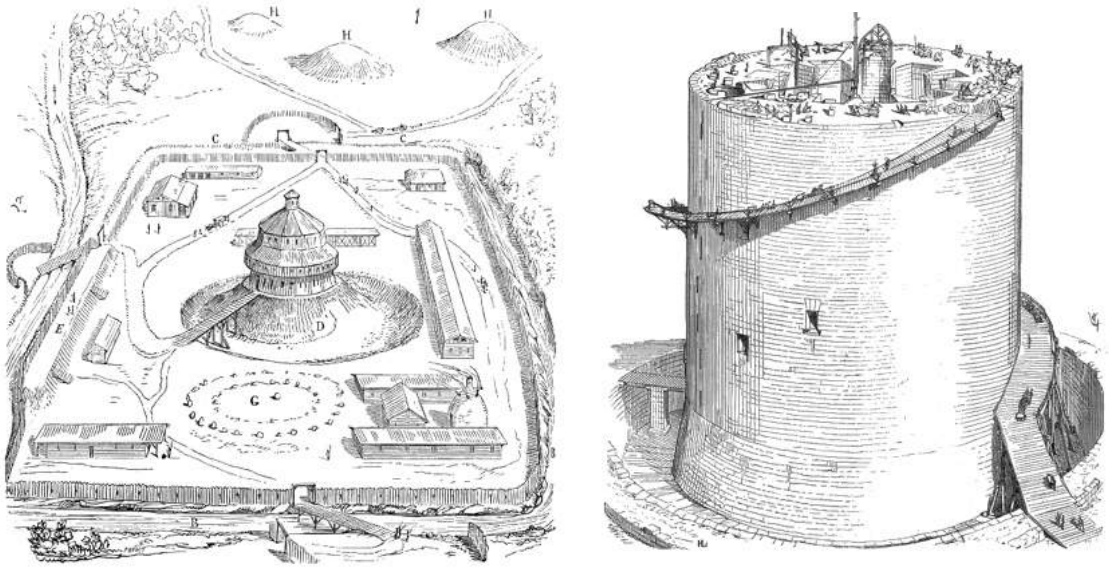

Fig.11. [from the left] La Tusque Castle in Sainte-Eulalie d'Ambares (Gironde) and construction of the large tower at Coucy Castle in France, source: Dictionary of French Architecture from 11th to 16th Century, Eugène Viollet-le-Duc.

In later castle designs, it became common to incorporate a hipped roof that notably extended well above the parapet. A prevalent architectural style was characterized by castles of the castrum type, which featured rounded towers situated at the corners [Fig.12]. H. J. Mrusek, a German researcher, proposes that this distinctive form of feudal castle, known as a castrum, emerged in France during the 13th century. He suggests that its origins can be traced back to the architectural blueprints of Roman military encampments[237].

The proliferation of defensive castles, which initially emerged predominantly in northwestern France, gradually spread throughout the entirety of Europe. The unique architectural features and appearance of these castles were influenced by the geographical characteristics of the region and the financial means of the ruling powers. However, the growing prevalence of castles raised apprehensions, especially for the French monarch.

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[236] C. Gravett, The History of Castles: Fortifications Around the World, Lyons Pr, 2001, pp.12-13.
[237] H. Mrusek, I. Roch-Lemmer, Burgen in Europa [Castles in Europe], Leipzig, 1975. p.52-60.


Fig. 12. [from the left] Château d'Anjony and Lassay Castle 15th century, France. source: source: http://www.hebus.com/image-98895.html, http://www.chateauxmedievaux.com/lassay.php [access: 23.05.2020]

During the 13th century, castles with a rectangular layout became increasingly prevalent. This shift was significantly influenced by Frederick II (1220-1250), who drew inspiration from the Byzantine fortifications he encountered during the Fifth Crusade. Castles from this era typically featured key elements such as a donjon (referred to here as a mastio), serving as a defensive tower, as well as a palace. These castles were surrounded by robust curtain walls and fortified towers.

In the 14th century, further advancements in castle construction were introduced, including features like machicolations and scarping at the base of the walls to enhance their defensive capabilities. As the 15th century unfolded and the use of firearms became more widespread, castles began incorporating elements such as gunports, round towers, and specialized fortifications for artillery.

In Northern Italy during the 15th century, a distinctive architectural trend emerged, characterized by the layout of square-shaped towers [Fig. 13]. Ugo Nebbia, an Italian scholar specializing in medieval fortifications, also considers these castles as examples of the so-called castrum. This particular architectural form entailed the rectangular arrangement of towers, reflecting influences from Roman building traditions[238].


Fig. 13. Castello di Soncino, 15th century, Italy, source: https://www.lorenzotaccioli.it/soncino-e-rocca-sforzesca-cosa-vedere-nel-borgo/, [access: 23.05.2020]

[238] U. Nebbia, Castelli d'Italia [Italian Castles], Novara, Istituto Geografico De Agostini, 1955, p.64.

Castles found in the Iberian Peninsula region can be distinguished by specific architectural elements, such as battlements designed in stepped patterns and jutting spurs. These castles often incorporate corner towers and towers embellished with bay windows [Fig. 14]. In the context of Spanish castle architecture, it is noteworthy that distinctive structures are visible at the tops of the central towers. Traditionally, small turrets were placed at the corners of the tower's parapets, serving to underscore the martial character of these feudal lord residences[239].

An interesting type of Spanish castle is those located on mountain crags. Some of them resemble enormous ships in appearance, which is why they are called "gran buque" [Fig. 15].

Fig. 14. Castillo de Coca, Segovia, Spain, XVth century, source: https://www.revisitinghistory.com/castles/spain/coca-castle/, [access: 23.05.2020]

Fig. 15. Photogrammetric model of the Penafiel castle of the "gran buque" type. Source: sketchfab.com, [access: 23.05.2020]

The primary architectural forms of Portuguese castles are towers and citadels, which, however, exhibit a variety of designs. One of the most impressive examples is the Breganza fortress (Fig. 14), with its oldest parts dating back to 1187. Citadels often include donjons, as seen in Amieira[240], built in the second half of the 14th century by Álvaro Gonçalves Pereira, prior of the Order of St. John.

[239] O. D. Washburn, Castles in Spain, Mexico, 1957. p. 320.

[240] M. Botto, O Castelo de Amieira do Tejo – enquadramento histórico e razões de uma intervenção [The Castle of Amieira do Tejo – historical context and reasons for intervention], Estudos - Património, 10, 2007, pp. 125-132.

In terms of architectural style, these castles exhibit clear Syrian influences, which include a rectangular courtyard surrounded by rectangular corner towers. The main tower is usually placed at the entrance and features distinct traits reminiscent of Moorish architectural design. This Moorish influence in architecture is also noticeable in other castles like Trancosa [Fig.16] or Silves, where square towers and turrets are indicative of this style. Conversely, the presence of cylindrical towers indicates French influences. It's worth mentioning that Moorish architectural elements persisted in Portuguese architecture for a longer duration compared to neighboring Spain.

Fig. 16. [from the left] Castle in Breganza and Castle in Trancosa, source: https://aunclicdelaaventura.com/que-ver-en-braganza-norte-de-portugal/, https://miscastillos.blog/2018/03/09/castelo-e-muralhas-de-trancoso/ [access: 17.03.2021]

Castles designed in the German style, featuring both round and rectangular towers, emerged as a predominant architectural characteristic in northern Saxony and the southern part of the Trans-Danube region [Fig. 17]. These constructions typically comprise a central enclosed building with two or three stories, encircled by a basic defensive wall. The central building often takes on an irregular shape, mirroring the rugged terrain in which it is situated. The castle complex commonly incorporates a courtyard as well. In contemporary Germany, various castle layouts can be identified all described by E.V. Klimnik and L.P. Kholdova[241].

Fig. 17. [from the left] Castle Prunn and Maus Castle, source: https://www.spottinghistory.com/view/5813/prunn-castle/, https://www.travalour.com/attraction/8181-maus-castle, [access: 17.03.2021]

[241] E.V. Klimnik, L.P. Kholdova, The Medieval Castle as a Symbol of Military-Political, Economic and Legal Power in the European Regions of the 10th-17th Centuries, Terra Sebus: Acta Musei Sabesiensis, Special Issue, 2014, p.461.

A specific category of fortifications was characterized by extraordinarily thick walls known as "Schildmauer." These walls not only accommodated defensive towers but also incorporated various other structures within them. A notable example of this architectural style can be seen in Schonburg on the Rhine. However, these thick protective walls gradually fell out of use during the 14th century. They experienced a revival when artillery technology became widespread. In the earlier stages of castle development, many fortifications relied on robust outer walls as the primary defensive barrier, with the tower serving as an additional means of defense. By the 11th century, the distinction between a tower and a wall had become less clear-cut[242].

Most German castles include a central tower known as the "Bergfried," and it is probable that the roots of this construction can be linked to Roman frontier fortifications. Much like the defensive towers seen in Anglo-Norman castles, commonly referred to as the "keep," the entrance to these towers was usually positioned on the first floor..

In Germany, the custom of dividing inherited land gave rise to the construction of castles featuring a unique arrangement. These castles consisted of clearly defined segments, each owned by a separate branch of the family. These castles were referred to as "Ganerbenburg." Similar instances of this architectural concept can also be observed in southern France.

Motte and bailey fortifications, as depicted in Figure 19, stand as the earliest genuine medieval castles constructed under Norman influence. They comprise two fundamental elements: an elevated earth mound, recognized as the "Motte," and an enclosed region known as the "Bailey." Atop the Motte, one would typically find a wooden watchtower or observation platform, encompassed by a wooden enclosure or palisade for added protection. The Bailey, distinct from the Motte and linked by a detachable bridge, functioned as a residential space for inhabitants and a shelter for livestock. The entire castle was further fortified by a trench, often filled with water, and access was facilitated through the operation of a drawbridge[243].

Fig.18. Pevensey castle in East Sussex, source: https://castle-photography.co.uk/pevensey-castle/, [access: 17.03.2021]

[242] Krahe, Friedrich-Wilhelm (2002). Burgen und Wohntürme des deutschen Mittelalters [Castles and Residential Towers of the German Middle Ages] (in German). Stuttgart, DE: Thorbecke. pp. 21-24.
[243] S. Toy, Castles of Great Britain, Heinemann, Londyn, 1966, pp. 160-176.

Fig.19. Reconstruction of a motte and bailey castle in Suffolk, Castle Acre Castle, showing the bailey adjacent to the motte, source: https://castellogy.com/ [access: 17.03.2021]

Stone Keep Castles [Fig. 20] represent a type of castle that succeeded the earlier motte and bailey designs. These castles were distinguished by the existence of a substantial stone keep featuring thick walls and minimal windows. Staircases provided access to the keep, with living quarters typically situated on the upper levels, while kitchens were commonly placed on the ground floor. The castle was encircled by a robust stone wall equipped with watchtowers[244].

Fig.20. Reconstructed View of the Tower of London, with the Completed White Tower, c.1240, Ivan Lapper, Goodrich Castle, source: Tower of London – Historic Royal Palaces, https://artuk.org/, https://www.english-heritage.org.uk/, [access: 17.03.2021]

Concentric fortresses [Fig.21], emerged during the 12th and 13th centuries, presenting formidable challenges for would-be conquerors. Their distinctive hallmark lay in the inclusion of dual defensive walls: an inner stone wall, lofty and robust, accompanied by an outer stone wall, of slightly lesser height. Archers positioned on the inner wall could unleash their arrows unhindered above the heads of those stationed on the outer fortification. The intervening expanse between these two walls earned the ominous moniker of the "perilous gap," for any unfortunate individual tumbling into it faced near-certain doom at the hands of defenders.

[244] R. Liddiard, Medieval Castles, History at the Higher Education Academy, University of Warwick, 2010, pp.16-18.

Frequently, an encircling moat encircled the entire castle, and access to the stronghold was granted through the operation of a drawbridge[245].

Fig. 21. Dover Castle, Beaumaris Castle, Beaumaris Isle of Anglesey, Wales. source: https://www.historyextra.com/, https://www.castlesandmanorhouses.com/photos-wales.htm, [access: 17.03.2021]

Much like the situation in England, Scotland witnessed the construction of straightforward fortifications situated on man-made mounds within its territories. These mounds typically functioned as administrative hubs for various regions. However, in contrast to England, the prevalence of stone castles in Scotland remained limited until the 13th century. Scottish castle architecture also bore the imprint of French influence. Notably, a substantial cylindrical tower, resembling a keep, can be found in Dirlton, encircled by a defensive curtain wall. Similarly, in Bothwell along the banks of the River Clyde, we encounter structures reminiscent of French castles, such as Coucy Castle[246].

The architectural design of castles in the Netherlands, as well as in nearby regions, frequently displayed resemblances to French and German castle styles. However, there were also unique structures, particularly from earlier periods, which are notably prevalent in the Netherlands. A prime example is one of the oldest Dutch castles, the Burcht in Leiden, dating back to approximately 1150 and situated atop a hill. The hill's pinnacle was encircled by defensive walls, forming an expansive courtyard. Within this space, a tower was erected, although its walls didn't reach the towering heights seen in many English castles. Noteworthy features included arches that supported a gallery, a distinctive element that later became commonplace in Dutch castles and those built in the lower Rhine region.

The Netherlands, with its predominantly flat landscape, indeed favored the construction of straightforward earthwork fortifications. One notable example, aside from Castle Burcht, is the Castle of Brederode in Santpoort. Built in the 13th century, this castle originally featured a central keep surrounded by a curtain wall, similar to the architectural style seen in Teylingen and Oostvoorne [Fig.22].

During the 13th century, as trade and commerce flourished, the need for more substantial fortifications grew. Rectangular or square-shaped castles became more prevalent, often featuring multiple towers. A remarkable illustration of such a castle is Muiderslot Castle,

[245] Ibidem

[246] T. Sidney, Castles: Their Construction and History, Dover Architecture, 1985, pp.45-60.

constructed in the late 13th century. It boasted four prominent corner towers, reflecting the evolving architectural trends of the time. Moreover, Helmond Castle, built in the early 15th century, not only had a round corner tower but also displayed a blend of both French and Dutch influences in its design. This castle served as a testament to the dynamic interplay of architectural styles in the region. In the case of Sluis, the influence of French architects in the 14th century played a significant role in its design, although the castle eventually met with destruction, its history mirrors the geopolitical changes in the region during that period.

Another architectural style that emerged early in the Netherlands was castles incorporating besieging towers, which later became the prevailing model in Flanders. Initially, these castles appeared during the Romanesque period, although no such structures have survived to the present day. Nonetheless, a few castles built by feudal lords in the 13th century have endured. Typically, they commenced with a tower, often square and constructed of brick. Subsequently, a wing was added, resulting in an L-shaped structure reminiscent of Scottish castles. The corners were interconnected by curtain walls, forming a small courtyard with defensive attributes. In the later medieval period, an outer wall, primarily for protection, was typically appended to shield other residential buildings. As was the case with castles elsewhere, over time, the emphasis shifted from defense to the comforts of daily life.

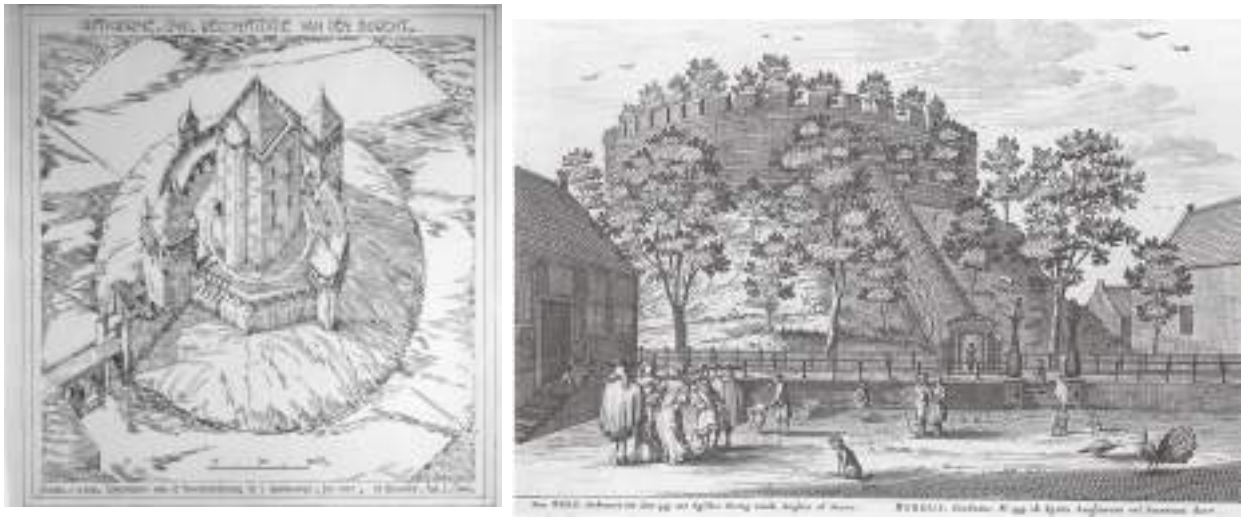

Fig. 22. Reconstruction of the castle in Oostvoorne and Burcht Castle, Źródło: Rijksdienst voor het Cultureel Erfgoed, http://www.schouteninleiden.nl/, [access: 17.04.2021]

Belgium's castles exhibit many resemblances to those found in the Netherlands, yet they also bear the imprint of French architectural influences. The origins of Belgian castles trace back to the 11th century, marking the emergence of these medieval strongholds. Given the largely level topography, it was common for Belgian castles to be encircled by water-filled moats. An illustrative example can be seen in Gravensteen in Ghent, where side towers appear to seamlessly blend into the defensive walls. The synthesis of defensibility and comfort became a hallmark of castle design in the Flanders region. Throughout their history, castles in this area were typically constructed as polygonal structures with corner towers, followed by the gradual evolution of architectural styles beyond the earthen fortifications. In subsequent periods, many

of these castles underwent transformations and adaptations. For instance, Gaasbeek Castle [Fig 23], provides a prime example of such modifications, where the original structure was extensively altered, or in some cases, completely rebuilt to accommodate changing needs and preferences[247].

Fig. 23. [from the left] Gravensteen Castle and Gaasbeek Castle, source: http://mypostcard-page.blogspot.com/, https://www.tripadvisor.com/. [access: 17.04.2021]

Austria's diverse and extensive landscape has given rise to a wide array of defensive fortifications. Particularly in the eastern regions of the country, numerous castles were strategically positioned along ancient prehistoric German roads with the specific aim of safeguarding against Turkish incursions. Among these structures were some rather rudimentary earthworks that might not align with the conventional perception of what constitutes a "castle."

In Austria during the 12th century, the predominant form of defensive fortification was the stone tower. These towers were typically commissioned by ecclesiastical figures and influential members of the aristocracy, later followed by knights and nobles who held official positions corresponding to their roles and responsibilities. It was customary to construct these towers before any other edifices, a practice notably observed in Styria. These early towers were characterized by their modest diameter and square configuration, primarily serving utilitarian defensive functions rather than serving as residential spaces[248].

Soon afterward, often in close proximity to the tower and frequently utilizing one of its walls, basic halls were constructed. Castles in regions like Styria, Carinthia, and Tyrol displayed an inclination for adopting irregular shapes, adapting harmoniously to the undulating terrain of their locations. Some of these castles, due to their diminutive size and secluded positions, were likely inhabited only during times of imminent threat.

Within the central core of many castles, the addition of an observation tower was a common feature, as exemplified by Hardegg [Fig.24]. These castles were typically established in regions influenced by the Habsburg dynasty, encompassing areas such as Switzerland, the

[247] R. Higham, Castle Studies in Transition: A Forty Year Reflection, Castles, Landscapes and Lordship conference held at York, 2009, pp. 5-18.
[248] J.F. Verbruggen, The Art of Warfare in Western Europe during the Middle Ages from the Eighth Century, The Boydell Press, 1954, 257-300.

Czech Republic, and Slovenia. Even in the challenging construction conditions of Burgenland, castles emerged, eventually earning the region its name. Several observation towers bore a resemblance to Roman watchtowers but were notably taller in stature. These towers were predominantly erected towards the latter part of the Middle Ages, strategically positioned to assert control over key routes traversing valleys. The management of these roads held immense significance in establishing effective authority over the surrounding areas.

This era came to a close by the end of the 14th century when greater emphasis was placed on residential comfort, leading to the construction of separate residential quarters. Typically, such an undertaking necessitated the expansion of the castle. During this period, observation towers began to serve residential purposes, with larger ones featuring broader windows and more thoughtfully designed internal spaces. Older towers were also renovated in a similar manner. For example, in Krempelstein [Fig. 24], the lord's comfort took precedence over defensive considerations[249].

The strategies employed for castle defense also underwent transformations over time. Moats were often dug or walls were raised around donjons or barbicans, but the construction of comprehensive defensive walls encompassing the entire castle gradually became less prevalent. Inside the castle confines, there was a growing trend towards erecting additional structures such as barns, stables, and artisan workshops. Despite the evolving emphasis on comfort, Austrian castles retained a relatively compact and austere character in comparison to their counterparts in Germany. Their primary purpose remained the safeguarding of the fortress against external threats, while also ensuring the security of the castle lord and the local inhabitants.

A significant number of Austrian castles are strategically positioned in mountainous terrains and at elevated altitudes within mountain ranges. Most of these castles display distinctive and irregular shapes that are carefully adapted to the unique topography of their specific locations.

Fig. 24. [from the left] Castle in Hardegg, Castle in Krempelstein, source: https://museu.ms/museum/details/16271/hardegg-castle, http://www.burgenkunde.at/specials/luftbildaufnahmen/luftbildaufnahmen_07.htm,[access: 23.04.2021]

[249] Ibidem, p.67-68

Similar to Austria, castles in Switzerland were meticulously adapted to the unique landscapes upon which they were situated, with a particular emphasis on the significance of incorporating towers. As time advanced, these castles began to emerge in settings beyond villages and farmlands, often perched on hilltops, mountain summits, or even nestled within mountainous terrains. These carefully chosen locations not only rendered the castles more impervious to conquest but also left a lasting impression on visitors, serving as a testament to the prestige of their owners. Nevertheless, this method of construction eventually saw a shift, with the proliferation of urban towers becoming more prominent, exemplified by structures like the defensive tower in Frauenberg. In the majority of state-owned and feudal castles, the inclusion of towers also remained a prevalent feature[250].

Differentiating between an observation tower and a residential tower could pose a considerable challenge, given that both served pivotal roles in Switzerland's castle architecture. In line with Austria's approach, these structures prioritized defensive functions over residential comfort. As a common practice, the ground level of the principal building was allocated for storing supplies, housing the kitchen, and, on occasion, even serving as stables. Remarkably, in certain instances, this very same building could double as a defensive tower. In a few unique cases, the entrance was ingeniously integrated into a natural mountain cave, where the natural terrain shift acted as an additional layer of fortification, further bolstering the castle's defenses.

Swiss castles, like their Austrian counterparts, demonstrated an evolution in design and strategic placement. Initially constructed in villages and amid agricultural lands, they eventually started to grace hilltops, mountain summits, and even mountainous terrain. Such locations not only fortified their defenses but also symbolized the prestige and power of their owners.

Furthermore, it's noteworthy that Switzerland's historical context was shaped by a complex interplay of regional powers and shifting allegiances, contributing to the rich tapestry of its castle history.

A striking illustration of this cliffside fortress phenomenon can be found in Kropfenstein [Fig. 25]. These fortifications, intricately nestled within the rocky terrain, occasionally led to rumors of them being the abodes of knight-robbers, although historical records provide no concrete evidence to support such claims. The enigmatic and remote appearance of these castles likely fueled such stories.

Moreover, castles in Switzerland had multifaceted roles beyond defense. Many were strategically situated along crucial trade routes and mountain passes, where they served as pivotal points for collecting tolls from travelers. This additional function highlighted the practical significance of these strongholds in facilitating commerce and controlling key transportation routes in the region's historical context[251].

Aside from mountain and waterfront castles, a variety of other castle types also grace the Swiss landscape. While rectangular castles may be relatively uncommon, they do have their presence. An exemplary case is Marschlins [Fig. 25], located in the canton of Grisons. Its

[250] Ibidem, p. 89

[251] H.J. Mrusek, Burgen in Europa [Castles in Europe], Leipzig, 1973, pp. 56-65.

construction commenced in the 13th century and exhibits a style akin to a castle crafted under the patronage of Emperor Frederick II in southern Italy.

In the Vaud canton, one encounters castles reminiscent of those found in previous regions, indicative of Savoyard influences. However, it was in subsequent periods that Italian influences began to take root, notably with a heightened focus on the residential aspects of castle design, a shift that materialized in the late 14th and early 15th centuries. An illustrative example can be found in Vufflens Castle, which was commissioned by a vassal of the Duke of Savoy. This evolving architectural trend emphasized the blending of regional and international influences, adding depth and diversity to Switzerland's castle heritage.

In the later phases of the Middle Ages, a distinctive pattern of castle evolution unfolded, characterized by expansions within their fortified precincts. This trend, while reminiscent of developments in Germany, was also shaped by the specific strategic advantages of each castle's location. Some castles enjoyed such naturally defensible positions that the need for additional fortifications was minimal. In cases where castles were situated on gentle mountain slopes, their expansion typically occurred within the confines of their original walls. Conversely, castles positioned on flat terrain often necessitated the construction of exterior walls featuring formidable defensive towers.

Moreover, the influence of defensive architecture extended beyond castles to encompass cities themselves. Cities like Fribourg, for instance, were enveloped by imposing defensive walls. During the late Middle Ages, it became increasingly common practice to incorporate defensive towers into the city walls, adding an additional layer of security to urban centers. This architectural trend contributed to the overall fortification of cities and castles alike during this period[252].

Fig. 25. [from the left] Castle Kropfenstein, Castle Marschlins, source: A. Michael, https://www.heritagedaily.com/2022/01/kropfenstein-cave-castle/142458, https://www.burgenwelt.org/schweiz/marschlins/object.php, [access: 23.04.2021]

[252] Ibidem, p.104.

During the 13th century, Denmark saw the development of certain defensive structures known as "voldsteder," which took the form of fortresses strategically situated on artificially constructed hills. These hills often supported wooden towers that bore a resemblance to the North German tower designs. Similar fortifications were also erected in southern Sweden, as exemplified by Sölvesborg.

Around the mid-13th century, there was a notable transition towards the construction of stone towers. Among the earliest instances is Bastrup in northern Zealand, Denmark, likely built during the reign of Waldemar the Great (1157-1182). Waldemar's rule marked the beginning of brick construction in Denmark. Moreover, the formidable earthen fortification known as Danevirke was reinforced with stone walls during his reign.

Towards the end of the 12th century, Knut Eriksson undertook the construction of fortresses featuring towers along the eastern border of Sweden, primarily as a safeguard against pirates from Courland in Ösel. Over time, fortresses in key locations such as Stockholm, Kalmar, and Bornholm underwent significant expansions. On the island of Gotland, structures known as "kastels," which could be rectangular or round towers, began to appear in the early 13th century. Their precise purpose ranged from serving as shelters during times of peril, functioning as lighthouses, to being employed as storage facilities, adding versatility to their role in the defensive landscape[253].

As the 13th century unfolded, a noticeable transformation took place in fortress design as the trend shifted away from standalone towers. Instead, comprehensive complexes of structures began to emerge within fortress layouts. This shift was observed across various regions, but Scandinavia faced particular constraints when it came to sourcing building materials.

One of the earliest and most remarkable examples of this transition can be found in the town of Visby on the picturesque island of Gotland in Sweden. Here, advanced fortifications were erected, featuring a combination of curtain walls and imposing towers. These structures represented a departure from the solitary tower approach and showcased the evolving trends in defensive architecture. Concurrently, Denmark witnessed the rise of fortifications characterized by round towers, bearing distinct influences from northern Germany and the Baltic states. It's highly likely that these influences were direct imports from regions like the Rhineland and Westphalia.

In Sweden, substantial changes in fortification design were implemented under the stewardship of the royal castle administrator, Birger Jarl. He played a pivotal role in overseeing the construction of fortresses in key locations like Stockholm, Nyköping [Fig. 26], and Örebro. Birger Jarl's visionary directive was to create fortresses where towers and buildings were integral components, interconnected by curtain walls, rather than being isolated structures within the fortifications. This architectural evolution allowed for the fortresses to expand in size and complexity, although they still did not reach the grandeur of castles found in the Southern European regions.

[253] Ibidem, p.200.

These developments in fortress design not only reflected the changing defensive needs of the time but also demonstrated the ingenuity and adaptability of northern European architects in creating structures suited to their unique circumstances.

A similar development occurred in Denmark, exemplified by Hammershus, for instance. It was only in the latter half of the 19th century, during the reign of Waldemar IV (1340-1375), that fortresses featuring round flank towers began to be erected. Kalundborg serves as an example of such a fortress. It exhibits influences from Teutonic Order castles, featuring rectangular layouts, regular courtyards, and rectangular corner bastions, albeit without flank towers. This architectural approach is also evident in the fortresses of Tavastehus (Finland) and Västervik (Sweden), both of which are now in ruins[254].

However, even as the Middle Ages progressed, towers didn't completely vanish from the Scandinavian landscape. Some were retained as habitable structures that still possessed their defensive attributes, particularly within ancient castles like Gurre in Denmark. In the case of Gurre Castle, its central tower likely boasts foundations dating back to the Romanesque era, a testament to the enduring legacy of tower architecture. This tower stands proudly within an almost square courtyard from the 14th century, featuring four corner towers that subtly protrude from the walls. The fortifications surrounding this castle offer a compelling example of military architecture in Denmark, drawing comparisons to the formidable walls observed in Teutonic Order castles or Mediterranean fortresses. Moreover, in Gjorslev, situated in Zealand, one can encounter a cross-shaped tower that bears resemblance to the Trio tower in Ireland. This unique structure once served as the residence of the bishop of Roskilde, adding a layer of historical richness to its presence. The cross-shaped design not only provided additional living space but also symbolized the religious significance of the bishopric, reflecting the fusion of defensive and spiritual elements in medieval tower architecture.

Intriguingly, these towers in Scandinavia demonstrate the adaptability of architectural forms over time. While they initially served as defensive strongholds, their evolution into habitable spaces and the incorporation of symbolic elements showcased the multifaceted nature of these structures. This architectural diversity reflects the changing needs and aspirations of the societies that inhabited and modified these towers over the centuries, underscoring their enduring relevance in the region's history.

As the Middle Ages neared its conclusion, the conventional castle structure in Scandinavia gradually evolved into more integrated complexes of buildings. This transformation was particularly pronounced in Denmark and Sweden, where the aristocracy often spearheaded the construction of these fortresses while preserving certain traditional elements. Surprisingly, despite the advent of gunpowder and its significant impact on fortifications worldwide, the architectural design of Scandinavian castles remained relatively unaffected. In some cases, defensive walls were fortified by being made thicker, as exemplified by Glimmingehus in Sweden. Over time, many Scandinavian castles underwent extensive

[254] M.J. Baillie-Hislop, Castle Builders: Approaches to Castle Design and Construction in the Middle Ages, Pen and Sword Archaeology, 2016, pp. 34-37.

renovation or even complete reconstruction efforts, reflecting the enduring importance of these structures in the region's history[255].

Fig. 26 [from the left] Nykoping Castle and Glimmingehus Castle, source: https://www.tripadvisor.com/Attraction_Review-g189867-d2688825-Reviews-Nykoping_Castle-Nykoping_Sodermanland_County.html, https://www.xn--sterlen-80a.se/glimmingehus/, [access: 23.04.2021]

The historical journey of castles in what is now the Czech Republic embarked upon its path in the 12th century and remained actively involved in defensive endeavors until the early 17th century, a period marked by the tumultuous events of the Thirty Years' War. The Czech Republic stands as a treasure trove of castles, making a significant mark even on the European scale of castle heritage.

Among these architectural gems, Přimda claims the distinction of being the oldest medieval stone castle, with its origins tracing back to a time before 1121. The early third of the 13th century witnessed the construction of several other castles, all proudly showcasing the Romanesque architectural style. This distinguished group includes names like Landštejn, Strakonice, Loket, and Blatná [Fig. 27]. However, a pivotal moment in Czech castle history unfolded after 1230 when the groundwork was laid for a comprehensive network of royal castles, concurrently marking the emergence of noble castles in the region. In the latter half of the 13th century, the landscape saw the ascent of substantial square residential towers, colloquially known as donjons. These imposing structures soon became iconic symbols of medieval architecture in the Czech lands, leaving an indelible mark on the region's castle heritage[256].

Within the Czech Republic, a diverse array of castle types can be found, each bearing traces of influences from neighboring states. One noteworthy example is the Ganerbenburg castle, distinguished by its multiple cores, each serving as a residence for separate owners. This architectural concept finds its roots in Germany, as mentioned earlier, but has also found expression within the Czech lands. Instances of this castle type can be discovered in the Czech Republic, with notable examples such as Choustník and Skála near Přeštice. Furthermore, in the region of Moravia, examples from the first half of the 15th century showcase the adaptation of this architectural style, demonstrating the dynamic interplay of influences and innovations in Czech castle construction. These Ganerbenburg castles not only offer a glimpse into medieval

[255] Ibidem, p. 123

[256] F. A. Heber, Böhmens Burgen [Bohemia's castles], Vesten und Bergschlösser, 1843–1849.

architectural diversity but also speak to the complex social and familial structures that these fortresses housed, underscoring their multifaceted historical significance[257].

During the 13th and 14th centuries, noble castles in the Czech lands predominantly took on a tripartite structure. This architectural configuration featured three essential components: a tower, often round in shape and prominently positioned at the forefront of the castle; a fortified palace; and an encompassing defensive wall. This design philosophy manifested in notable castles like Šelmberk, Vlašim, and Zvířetice.

An alternative castle layout adopted a block design approach, wherein the central donjon interconnected with the wings of the palace, effectively shaping a structure that enveloped a central courtyard on three or four sides. This distinctive arrangement can be witnessed in the layout of castles such as Orlík near Humpolec and Nový Herštejn. These diverse architectural approaches not only reflect the ingenuity of castle builders in adapting to different terrain and strategic needs but also offer valuable insights into the evolving dynamics of castle design during this period in the Czech Republic's history.

When exploring the rich tapestry of castle architecture in the Czech Republic, one can discern the echoes of foreign influences, including the notable imprint of French design. These French-inspired castles introduced a distinct aesthetic characterized by the presence of regular multi-towered structures. These castles often boasted round flanking towers that played a pivotal role in bolstering the castle's active defense capabilities. The introduction of this architectural style left a lasting mark on the Czech castle landscape.

A trailblazing example of this influence is evident in the construction of Týřov (depicted in Figure 27), where the fusion of local and French design elements created a unique architectural masterpiece. Following Týřov, the trend of multi-towered, French-style castles continued with the creation of Džbán and Konopiště. These castles stand as living testaments to the dynamic interplay of architectural ideas and cultural influences that shaped Czech castle design, offering visitors an opportunity to journey through history and experience the convergence of styles in a truly captivating manner.[258].

Fig. 27. [from the left] Blatná Castle and Týřova Tower, source: https://www.hrady-zriceniny.cz/f_blatna.htm, https://www.hrady-zriceniny.cz/f_tyrov.htm, [access: 23.04.2021]

[257] M. Placek, Hrady a zámky na Moravě a ve Slezsku [Castles in Moravia and Silesia],1996.
[258] Z. Fisera, Skalní hrady zemí Koruny české [Rock castles of the lands of the Czech Crown], 2004.

Conclusions

The above comparison of selected countries and their castle structures illustrates the typological changes in European castles and allows us to trace the evolving trends within them. This general overview serves as a cultural reference point, enabling us to understand the unique features and development of Polish castles. Understanding how different cultures and eras influenced the architecture and functions of castles in Europe can shed light on the influences that shaped castles in Poland, including those discussed in detail in Chapter IV.

In this section, we outlined the evolution of castle forms and layouts in Europe. It was observed that the initial castle designs typically manifested as single structures with a surrounding moat. In later periods, complex castle structures began to take the form of layouts with round towers placed at the corners, resulting in a more compact plan.

The initial castle forms drew inspiration from Roman castrum, exhibiting regularity in their layouts. In the Iberian Peninsula, a characteristic feature of castle architecture was the proliferation of battlements and corner towers, typical of the Moorish style. Over time, these principles began to give way to comfort and stylistic trends, leading to greater diversity in forms and constructions.

The castles analyzed in the chapter can be typologically divided into highland castles, including those with artificially constructed mounds, and lowland castles, which are also located along waterways. A distinct and intriguing category includes castles built on rocks, examples of which can be found in Switzerland.

The presented combinations and variations demonstrate the diverse nature of European fortresses. Typologically, we have distinguished wall systems, tower structures, bastion systems, and bastei systems, all representative of different periods and regions in Europe.

As one of the most representative and later developments, we presented the forms of "palazzo in fortezza." Such arrangements also appeared in Poland, including one in the discussed area, as will be illustrated by the example of Pilica Palace in Chapter IV.

3. Development of defensive construction in Poland - general overview

The Polish word "zamek" corresponds to the Latin "castrum" and, according to the definition by Jerzy Smoczyński[259], it refers to a complex of defensive elements that, when combined with residential buildings, create a compact, enclosed entity. In literature, the term "zamek" is commonly used to describe those objects where three typical components can be identified: obstacle, position, and refuge. Various hindrances, such as rivers, lakes, or steep terrain, along with man-made barriers like moats, obstructed the path of potential intruders attempting to reach the castle. In terms of defensive positions within the castle, the typical choices included walls, towers, and bastions. Simultaneously, a refuge signified a structure with both residential and ceremonial purposes.

Bogusław Guerquin defines a "zamek" as a complex of defensive elements and residential buildings linked within a closed defensive perimeter, originating in the feudal system as a center of princely power, a seat of nobility, a knight's residence, or a military outpost[260].

Janusz Bogdanowski proposed the following definition: a "zamek" is an independent defensive structure with a compact layout, originating in the medieval period, combining a dominant defensive function with residential and economic functions. The castle was adapted for defense within a closed defensive perimeter[261].

The history of stone castles in the territory of present-day Poland, as categorized by Bogusław Guerquin, can be divided into four fundamental periods[262]:

1. The dawn of the castle-building era in Lower Silesia, around 1200-1320, marked the inception of the first stone fortresses. These formidable structures, predominantly crafted from stone, typically encompassed a comprehensive architectural ensemble. Within their walls, one could find not only the essential elements of a surrounding wall, gateway, and tower but also the inclusion of a residential dwelling, combining both functionality and defense.

2. The period spanning from 1320 to 1410 carried immense significance, as rulers focused on establishing a robust defensive framework for the kingdom. Simultaneously, clergy members took proactive measures to safeguard themselves by constructing fortified residences. This era also witnessed the Teutonic Order undertaking the construction of formidable strongholds, often referred to as "castle-monasteries." These structures bore testimony to the multifaceted nature of medieval fortifications, serving both religious and defensive purposes.

3. The third phase, spanning from 1410 to 1530, ushered in a transformative period marked by the widespread adoption of artillery in warfare. This pivotal shift necessitated a fundamental rethinking of defensive constructions to withstand the onslaught of cannon fire. Consequently, fortified walls designed to resist bombardment became integral features of many castles during this era. Notably, numerous castles founded during this period found their

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[259] J. Smoczyński, Zamki [Castles], Carta Blanca, Warszawa, 2009,p. 10.

[260] B. Guerquin, Zamki w Polsce [Castles in Poland], Arkady, Warszawa, 1984. p. 8.

[261] J. Bogdanowski, Architektura obronna w Krajobrazie Polski [Defensive Architecture in the Polish Landscape], Wydawnictwo Naukowe PWN, 2002. p.19.

[262] B. Guerquin, Zamki w Polsce [Castles in Poland], Arkady, Warszawa, 1984. p.10.

origins in the ambitions of knightly and noble families, each striving to create a fortress that was both formidable and adaptable to the changing dynamics of warfare.

4. The final stage in the evolution of fortification construction in Poland unfolded between 1530 and the mid-17th century, marking the culmination of this architectural journey. During this era, state-of-the-art castles emerged, boasting modern defenses that epitomized the latest advancements in fortification technology. These castles stood as testaments to the relentless pursuit of defensive excellence, reflecting the ever-evolving nature of castle construction in Poland and the broader context of European history.

Throughout history, a multitude of fortresses met their unfortunate demise due to a series of conflicts that ravaged the land. These turbulent periods included the Northern Wars, with the Swedish Deluge being a particularly notable chapter in this turbulent history. The Silesian Wars and the harrowing Thirty Years' War also took their toll on these fortifications, leaving many of them battered and in ruins. Tragically, for some, the path to obscurity or even their disassembly for construction materials became an inevitable fate during the challenging times of partition.

In the tumultuous epochs of World War I and II, certain fortifications once again found themselves in the line of fire, enduring further damage. However, even those that managed to weather the storms of conflict were not immune to the ravages of neglect and indifference during the era of the Polish People's Republic. These periods of neglect not only bore witness to the decay of these historical treasures but also underscored the complex relationship between heritage preservation and the ever-evolving tides of history.

Property types of castles in Poland[263]

The earliest architectural endeavors in Polish lands often centered around the consolidation of royal or ducal authority. As history unfolded, prominent knights, revered bishops, and influential magnates followed suit, undertaking ambitious construction projects to manifest their power and prestige. This diverse landscape of medieval structures can be categorized into two broad classifications: state-owned and private castles, each serving unique functions and bearing distinctive characteristics.

Within the realm of state-owned castles, one encounters the grandeur of royal fortresses, the strategic significance of ducal strongholds, and the resolute presence of Teutonic Order fortifications. These formidable structures stood as bastions of authority, safeguarding the interests of the state and its rulers.

On the other hand, private castles encompassed a diverse array of architectural wonders. These included episcopal castles, which served as the fortified abodes of bishops, and knightly castles, which echoed with the chivalric ideals of their noble owners. Additionally, the landscape featured capitular castles, bearing witness to the collective power of

[263] The types of castles based on their sponsors are mentioned here because they will also develop in a similar manner in these distinct groups and will be discussed in detail in the Jura region. Therefore, the author believed it was worth presenting this division in the context of Poland. It is also the most common classification in Polish literature due to the largest number of shared characteristics.

ecclesiastical chapters, and monastic castles affiliated with esteemed orders such as the Templars and Hospitallers. Each of these private castles, with its unique ownership and purpose, contributed to the rich tapestry of Poland's medieval architectural heritage, reflecting the multifaceted nature of medieval society and its aspirations[264].

Royal castles

Royal castles, an integral part of state-owned fortifications, served as the prestigious abodes for monarchs or their appointed representatives. These monumental structures, commissioned by the monarchy across different epochs, fall into three primary categories: fortified royal residences, official lodgings for royal dignitaries, and strategic border fortresses.

A remarkable surge in royal castle construction marked the era under Casimir the Great's rule, and the years immediately following his reign witnessed the completion of numerous castles initiated by this monarch. Historians often dub the period spanning from 1320 to 1410 as the "golden age of royal castles." It is estimated that during Casimir the Great's 37-year reign, a grand total of 36 defensive strongholds were either built from scratch, enhanced, or had their construction set in motion[265]. Astonishingly, some of these castles, albeit substantially modified over time, continue to stand today, bearing witness to their historical significance, while the fate of others remains shrouded in obscurity[266].

Another significant monarch in the annals of Polish castle construction was Władysław Jagiełło. He continued the legacy initiated by Casimir the Great and held a special affection for Nowy Korczyn Castle. Interestingly, King Jagiełło diverged from the tradition of residing at Wawel Castle [Fig. 28], opting instead to traverse his kingdom extensively and take up residence in specially arranged accommodations scattered throughout the land.

In the realm of royal foundations, it's worth highlighting Piotrków Trybunalski, where a castle-tower was erected between 1506 and 1548. Unlike its medieval counterparts, this structure served more as a lavish dwelling than a fortified stronghold.

The pivotal year 1550 is widely acknowledged as marking the end of the medieval castle era in Poland. Following this, castles underwent a transformation into fortified Renaissance residences. Interestingly, this transition period coincided with a time when these fortifications were less frequently financed by rulers, who often grappled with financial limitations, and were instead undertaken by influential magnates seeking to assert their influence and power[267].

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[264] L. Kajzer, S. Kołodziejski, J. Salm, M. Gaworski, Leksykon zamków w Polsce [Lexicon of castles in Poland], Arkady, Warszawa, 2022. p.16.

[265] B. Guerquin, Zamki w Polsce [Castles in Poland], Arkady, Warszaw, 1984. p. 12.

[266] T. Jurasz, Zamki i ich tajemnice [Castles and their secrets, ISKRY, Warszawa, 1972.

[267] J. Smoczyński, Zamki [Castles], carta blanca, Warszawa, 2009, p.6

Fig. 28. [from the left] Reconstruction of Wawel Castle from the first half of the 14th century according to J. Bogdanowski, Figure A. Wagner, Tower Castle in Piotrków Trybunalski, „Kłosy", sources: https://medievalheritage.eu/, https://muzeumpiotrkow.pl/, [access: 24.01.2022]

Ducal castles

A remarkable and remarkably well-preserved collection of castles, still standing strong today, can be found in the form of ducal castles, primarily situated in regions like Pomerania, Mazovia, and Silesia. These strongholds were established by rulers of states and duchies who harbored grand ambitions and possessed a keen understanding of their political importance. As architects, they frequently drew inspiration from esteemed models, including the illustrious Wawel Castle and the formidable Teutonic Order fortifications.

Much like their royal counterparts, ducal castles fall within the realm of state-owned castles, with their functions varying according to their location and intended roles. Within the domain of ducal foundations, one could encounter residences for rulers, administrative hubs, and frontier outposts serving as defensive bastions. The scale of construction exhibited considerable diversity. Ducal residences in Lower Silesia (such as Brzeg and Książ) or Pomerania (like Szczecin and Darłowo) were notably more imposing in comparison to Mazovian fortresses (e.g., Ciechanów [Fig. 29] and Liw). Among the most prominent benefactors behind the creation of ducal castles were figures like Bolko I the Strict in Lower Silesia and Janusz I the Elder in Mazovia, both belonging to the Piast dynasty. In Pomerania, the Gryfici dynasty played a pivotal role in the development of distinguished residences[268].

A typical ducal castle was a multifaceted structure, characterized by various essential components. These included the ruler's residence, which featured opulent grand halls, chambers designated for ladies, courtiers, and servants, along with accommodations for the garrison responsible for maintaining security. A notable towering structure, often referred to as the "keep," assumed the role of the last line of defense, with its dungeons often serving as prison facilities. Furthermore, the castle usually incorporated a chapel, which could be situated in a separate building or integrated into the gatehouse. The castle's robust and imposing defensive walls were equipped with designated spaces for kitchens and provisions storage. Within the outer bailey, designated for practical and logistical functions, a wide array of facilities could be found.

[268] Ibidem, p. 7

Situated strategically on hilltops, along rugged riverbanks, or amidst marshy wetlands, these castles were not only constructed for security reasons but also to offer a measure of comfort and convenience. These fortresses served as witnesses to pivotal historical moments and showcased the ever-evolving architectural and defensive techniques of their respective epochs[269].

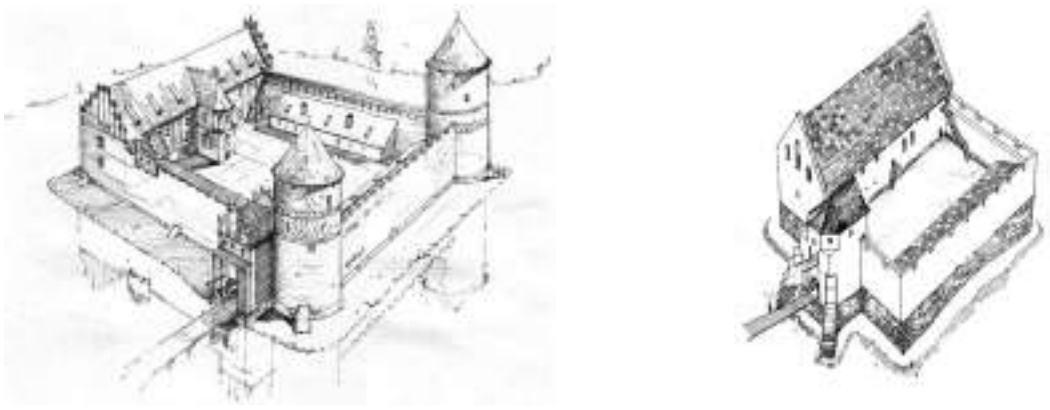

Fig. 29. [from the left] Reconstruction of the 16th-century Ciechanów Castle according to W. Wółkowski, reconstruction of a 16th-century castle, drawing by A. Wagner, sources: https://medievalheritage.eu/, [access: 24.01.2022]

Bishop's Castles

In the 14th century, during the reign of King Casimir the Great, the construction of Royal Castles served as an inspiration for numerous individuals who sought to replicate the grandeur of the king's residences and fortifications [Fig. 30]. Notably, during this period, the second most influential figure in the kingdom, following the king, was the Archbishop of Gniezno. The archbishop held nearly equivalent privileges and income as the king. Therefore, it comes as no surprise that high-ranking church officials of that era also undertook the construction of castles and fortified residences[270].

The clergy initiated the construction of fortresses primarily with the aim of safeguarding church assets and providing a safe haven for clergy. As a result, these fortresses were mainly established in the central hubs for administration in church-owned lands, typically located far from the kingdom's borders. They often served as repositories for the bishop's valuable possessions, administered justice to individuals involved in unlawful activities, and welcomed esteemed artists to adorn both the castle and the church under the bishop's jurisdiction with their artistic creations.

By the 15th century, the construction of fortresses primarily for administrative purposes had ceased, giving way to the creation of magnificent residences with defensive features. These residences symbolized the power and status of their founders, offering a comfortable lifestyle and protection from marauding groups. Around the mid-17th century, many of these bishop's residences suffered defeats; amid the Swedish Incursion, they fell under enemy control, suffered extensive looting, and endured severe structural harm. Regrettably, a handful

[269] Ibidem, p. 13.

[270] A. Sypek, R. Sypek, Zamki i obiekty warowne. Ziemi Krakowskiej [Castles and Fortifications of the Krakow Land], almapress, 2007, pp.4-12.

of these strongholds never managed to fully restore themselves from the profound destruction they suffered[271].

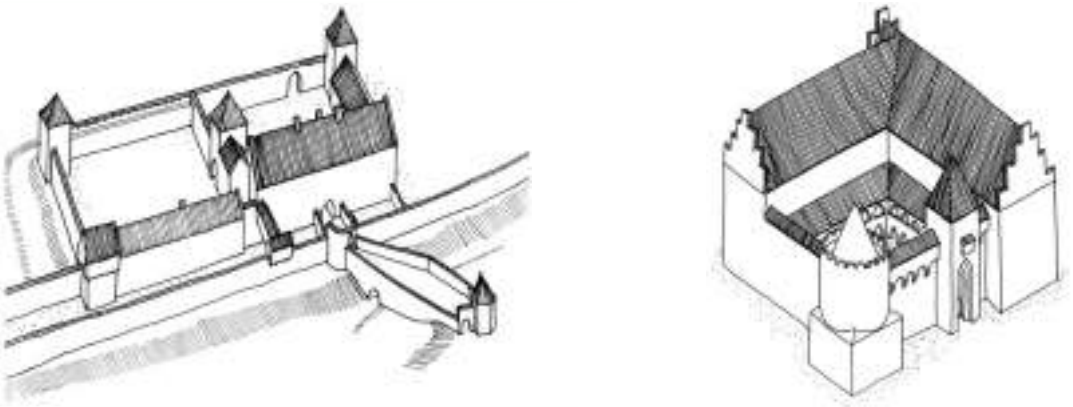

Fig. 30. [from the left] Reconstruction of the 15th-century Braniewo Castle according to Z. Nawrocki, and reconstruction of the 14th-century castle with additions by J. Salma, source: https://medievalheritage.eu/, [access: 24.01.2022]

Knightly castles

The establishment of the initial knightly fortresses, serving as the abodes of noble households possessing limited land holdings, did not commence until the 14th century. Before this era, monarchs regarded the construction of fortified residences by their vassals with disapproval and at times even resisted it, wary of potential threats posed by influential families. Consequently, rulers favored the idea that these families did not possess fortified strongholds.

It was only during the rule of Casimir the Great that an individual's wealth and social status began to influence the size and grandeur of the dwelling they could construct. Remarkable mansions, which, aside from their defensive role, also represented the affluence and prestige of their founders, were erected by notable individuals of their era, such as Spytek (the pioneer of the Leliwita family's influence and the architect behind castles in Tarnów and Melsztyn [Fig. 31]) or Mikołaj Nałęcz (the castle in Wenecja near Żnin).[272].

Knightly castles typically encompassed a residential building, a surrounding perimeter wall, and a tower, rendering their layout relatively similar to fortresses erected by rulers. However, they tended to be smaller in scale, not matching the grandeur of royal constructions. Due to financial constraints, alternative forms of defensive structures, such as defensive manors or the so-called "gródki stożkowate," were more prevalent during this era. These structures were characterized by an artificial hill enclosed by a moat and a palisade, often featuring a central wooden dwelling[273]. These constructions were not known for their durability, and as a result, they have not endured to the present day. Their existence is primarily documented through archaeological investigations, as exemplified in the case of Siedlątkowo. The situation differed somewhat in southern Poland, where it was more feasible to acquire stone blocks for use as building material. Consequently, stone defensive towers were erected in that region[274].

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[271] Ibidem, p. 17

[272] B. Guerquin, Zamki w Polsce [Castles in Poland]. Arkady, Warszawa:1984. p. 230

[273] Początki murowanych zamków w Polsce do połowy XIV w. [The beginnings of stone castles in Poland up to the mid-14th century], red. M. Bis, W. Bis, Art Regia, 2016, pp.45-60.

[274] J. Smoczyński, Zamki [Castles], carta blanca, Warszawa, 2009, pp.14-15.

The 15th century saw a significant rise in private construction in Poland. Former knights and a growing wealthy nobility shifted their focus from building fortifications to constructing castles. The emerging affluent elite were no longer satisfied with merely creating defensive strongholds for safety during times of danger or for protecting their assets and subjects. Instead, they aimed to build residences that would symbolize their social status and material prosperity. This desire motivated the founders of castles in locations such as Oporów, Dębnia, and Szamotuły.

In the 16th century, there was a shift towards building residences where the emphasis on defense often took a back seat to the comfort and luxury of the occupants. This era saw the emergence of modern castles designed in the "palazzo in fortezza" style[275].

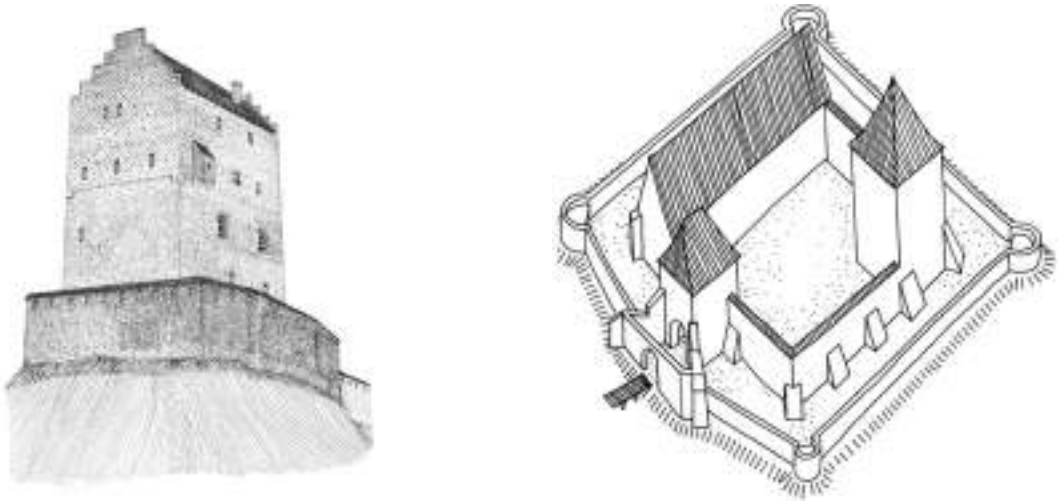

Fig.31. Reconstruction of the castle in Wenecja according to J. Salma, view of the Melsztyn Castle in the 19th century in a woodcut based on the drawing by Jan Matejko, source: https://medievalheritage.eu/, [access: 24.01.2022]

Knightly Orders' Castles

Teutonic Knights

Teutonic fortifications, often found near rivers and lakes, evolved from wood and earthen defenses to brick and fieldstone structures. Construction typically started with a residential building in a walled courtyard, as seen in Nidzica [Fig.32]. Additional wings, like a second one in Działdowo and a third in Ostróda, were later added[276]. Eventually the final morphology of Teutonic castles had four wings which can be fully seen in Malbork, the most known Teutonic Castle in Poland. This architectural approach gave rise to the most renowned form of Teutonic residences—the convent castle, a fortified monastery. To be more specific these structures featured four wings arranged in a square layout, with a substantial, tall tower situated in one corner and three smaller towers positioned at the remaining corners. The various wings of the castle typically housed essential facilities, including a chapel, refectory, chapter house, dormitory, infirmary, and the commander's chamber. The part called "high"

[275] J. Bogdanowski, Architektura obronna w Krajobrazie Polski [Defensive Architecture in the Polish Landscape], Wydawnictwo Naukowe PWN, 2002. p. 77.
[276] J. Smoczyński, Zamki [Castles], carta blanca, Warszawa, 2009, pp.14-15.

castle, was typically encircled by a wall and sometimes a ditch. The castle was safeguarded by a fortified outer bailey.

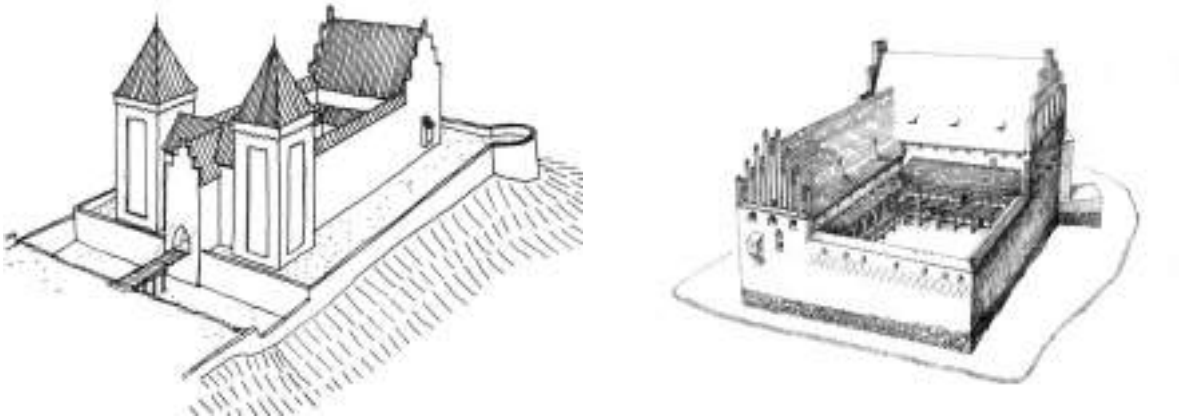

Fig. 32. [from the left] Reconstruction of the Castle in Nidzica, from the Northeast, according to O. Kloeppl Reconstruction of the Castle in Barciany, from the Southwest, drawing by A. Wagner, source: https://medievalheritage.eu/, [access: 24.01.2022]

The Hospitallers

The Order of St. John, also known by various names such as the Hospitallers, Rhodes Knights, and Maltese Knights, had its origins dating back to 1070. Initially, their primary mission revolved around providing care to ailing pilgrims in the Holy Land. The Joannites, as they were commonly referred to, made their presence felt in the region that now constitutes Poland during the 12th century[277].

Joannite castles often followed a quadrilateral style with a residential building connected to one of the four curtain walls, sometimes with a corner tower. These towers initially had a square shape but later became cylindrical as they grew taller [Fig. 33]. Some of these castles had previously belonged to the Templar Order, adding historical continuity to their presence in the region[278].

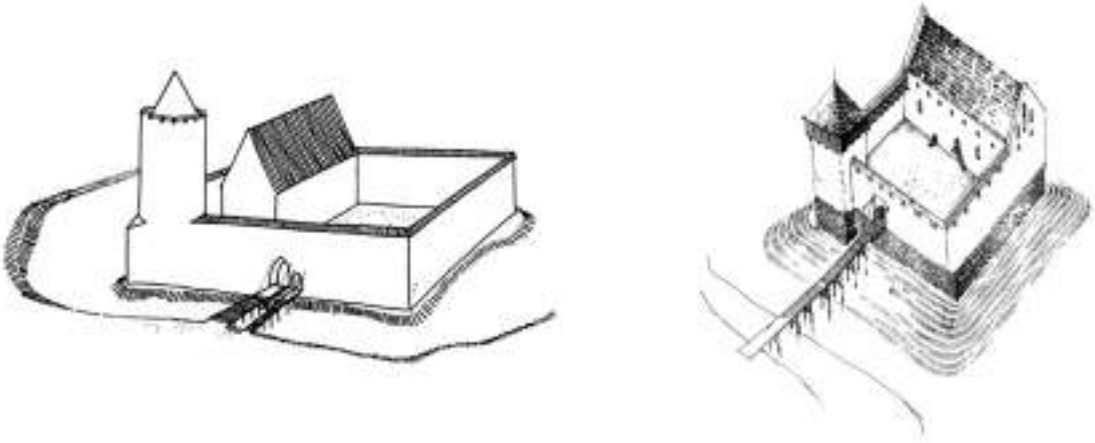

Fig. 33. [from the left] Reconstruction of the Swobnica Castle from the late 14th century according to Z. Radacki, reconstruction of the Łagów Castle from the 14th century according to A. Wagner.,source: https://medievalheritage.eu, [access: 24.01.2022]

[277] Ibidem
[278] Ibidem

The Templars

The Templar Order, officially called the Poor Fellow-Soldiers of Christ and of the Temple of Solomon, was established in 1118 with the primary aim of safeguarding the Kingdom of Jerusalem and providing protection for pilgrims from non-believers. Over time, the order accumulated substantial wealth, primarily through offering banking services to pilgrims and European nobles. Ironically, this wealth ultimately played a role in its downfall[279].

The Templars erected impressive castles both in the Holy Land and Western Europe [Fig.34]. Nevertheless, in the areas that correspond to present-day Poland, like Chwarszczany, their primary emphasis lay in creating fortified rural settlements complete with farmstead ponds and agricultural installations. There were instances, such as in Rurka, where these settlements were completely devoid of defensive fortifications[280].

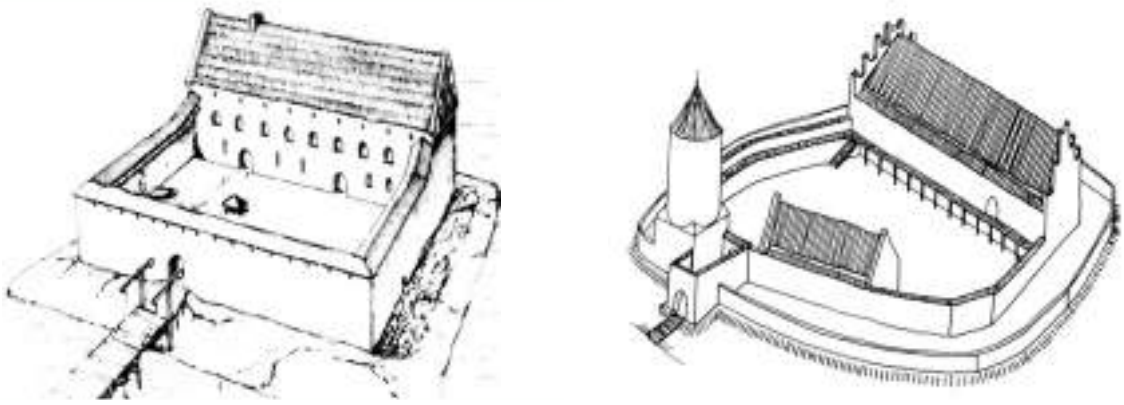

Fig. 34. [from the left] Reconstruction of Drahim Castle from the 14th/15th century according to Z. Radacki, Reconstruction of Świdwin Castle from the early 16th century according to A. Kąsinowski and H. Paszun,source: https://medievalheritage.eu, [access: 24.01.2022]

Conclusions

In conclusion, this chapter outlined the characteristics of Polish defensive structures and demonstrated how they fit into the broader European defensive systems. It can be observed that the early fortifications in Poland had a layout similar to the English motte and bailey style. In the Jura region, there was a prevalence of upland castles and elaborate fortifications on rocky terrain, emphasizing the diversity and richness of defensive forms in Poland (this area will be discussed in detail in Chapter IV).

The overview also highlighted that the distinct spatial arrangements in Poland are reflected in the specific ownership situation of castles. The wealth and variety of fortifications are particularly evident in later, modern reconstructions. A unique place in the Polish defensive landscape is occupied by monastic foundations, where German influences dominate. Characteristic of these are structures designed on a plan similar to a square, with a closed inner courtyard.

In summary, the review of Polish defensive structures reveals their diversity and richness of forms, as well as their connections to broader European trends and influences. Here, one

[279] J. Smoczyński, Zamki [Castles], carta blanca, Warszawa, 2009, pp.14-15.

[280] L. Kajzer, S. Kołodziejski, J. Salm, M. Gaworski, Leksykon zamków w Polsce [The Lexicon of Castles in Poland], Arkady, Warszawa, 2022. p.365.

can find elements typical of various regions in Europe, as well as unique features specific to Poland, making a significant contribution to the study of European defensive architecture.

4. Issues of castle ruin protection

Preserving historical ruins is a constant topic of discussion within conservation circles, primarily due to their significant cultural value, size, location, and symbolism. Furthermore, ruins can be considered unique heritage sites because they represent a wide range of values that heritage experts deem important, yet they often lack practical contemporary use. This specific characteristic makes ruins an exceptionally clear and instructive case in heritage management debates. Consequently, this issue is frequently addressed, and its significance extends beyond the category of ruins itself[281].

In this context, the author has identified two main approaches to the conservation of castle ruins: conservation methods and non-conservation methods. Regarding conservation methods, the possibilities are diverse. They range from maintaining a "permanent ruin" where the objective is to preserve the object in its current state, to various types of reconstructions and restorations aimed at restoring the original form, to contemporary reconstructions and complete rebuilds. Each of these methods has its advantages and disadvantages, and their application depends on the historical, cultural, and technical context. On the other hand, non-conservation methods also play a crucial role in preserving castle ruins. These methods encompass legal protection, which provides formal frameworks for the preservation and restoration of historic sites, raising societal awareness about the significance of cultural heritage, as well as tourism aspects and digital methods like digitization and 3D modeling, which can aid in documenting and promoting these unique locations.

In each case, both conservation and non-conservation methods can be discussed through specific case studies, allowing for a deeper understanding of the complex processes behind the protection of castle ruins. By combining various strategies and approaches, we can not only secure these valuable assets for future generations but also breathe new life into them within the context of contemporary culture and education. Below, examples of preservation representing the mentioned categories are presented.

4.1. Conservation protection methods

Conservation - Permanent Ruin

Lindisfarne Monastery on Holy Island [Fig.35] was one of the most significant centers of early Christianity in Anglo-Saxon England. It continues to be a pilgrimage destination, and the causeway leading to it further intensifies interest in this place. The site is preserved in the form of a permanent ruin, and conservation efforts were aimed at educating about its historical significance and preserving the appropriate exhibition area for the ruins.

[281] B. Szmygin, Zabytkowa ruina tak lub nie [Historic ruin yes or no], [in:] Zamki w ruinie - zasady postępowania konserwatorskiego [Castles in ruins - principles of conservation procedures], ICOMOS, Warszawa-Lublin 2012, p.5.

Fig. 35. Interior of Lindisfarne Priory, Thomas Girtin, 1796-1797, The Ruins of Lindisfarne Priory in England as an Example of the English School, source: https://www.followthevikings.com/visit/lindisfarne, https://www.britishmuseum.org/collection/object/P_1855-0214-21, [access: 13.05.2021]

A somewhat different example is Sandsfoot Castle [Fig.36]. This is also a site preserved in the form of a permanent ruin with a secured exhibition area, but the conservation work was primarily aimed at making it accessible to visitors. Consequently, contemporary elements unrelated to the original structure were added to the site. In order to open Sandsfoot Castle to a wide audience, the project received partial funding from the Heritage Lottery Fund. The implementation included the conservation of stonework elements and the installation of a new lightweight walkway inside the castle. The stonework conservation work was carried out using lime mortar, with minimal reinforcements and interventions to preserve the original structure of the castle. Soft cladding was applied to the tops of the walls, replacing the existing cement cladding. The designed walkway is a discreet element that harmoniously blends into the ruined landscape of the castle, at the original floor level. Thanks to these efforts, Sandsfoot Castle was removed from the English Heritage register of endangered sites and is now accessible to visitors[282].

Fig. 36. Engraving of Sandsfoot Castle by Samuel and Nathaniel Buck, 1733, Current ruins of Sandsfoot Castle, Source: https://www.portlandhistory.co.uk/sandsfoot-castle.html, http://levitate.uk.com/project/sandsfoot-castle/, [access: 13.05.2021]

[282] Levitate Project, http://levitate.uk.com/project/sandsfoot-castle/ [access: 06.04.2021]

Restoration - Additions, Reconstructions

Thanks to her stay at the University of Cassino and Southern Lazio, the author had the opportunity to become acquainted with an example of restoration work carried out at Rocca Janula Castle in Cassino [Fig.37]. At the turn of the 1990s and 2000s, the ruins of the deteriorated castle were partially reconstructed, including some of the outer walls and internal buildings. These actions were taken due to the poor structural condition[283]. Despite valid reasons for these additions, they have sparked considerable controversy among Italian researchers and specialists.


Fig. 37. Engraving of Rocca Janula Castle in the 19th century, source: Soprintendenza Archeologia, Belle Arti e Paesaggio per le Province di Frosinone, Latina e Rieti - Territorial Office of Cassino, Cassino, Rocca Janula Castle, photo by G. Masella

Contemporary additions

Another popular solution is complementing objects by adding contemporary forms and materials. This generally adheres to the accepted principles of conservation art, where newly added elements distinguish themselves from the existing fabric. An example of this is Astley Castle [Fig.38], which, thanks to new reinforcements, regained its former residential function, albeit in a modified form. This safeguarded the ruins from complete disappearance, although it completely changed their character in the landscape. A similar, but perhaps more vivid example is Castillo de Matrera [Fig.39]. Thanks to the concrete structure, the relics of the tower's walls were preserved. Due to the location of the object, their new appearance gave a new character to the surroundings.

Contemporary additions can also take the form of installations not permanently connected to the historical fabric, as exemplified by Castillo de Garcimunoz [Fig.40]. Here, modern installations have been carefully integrated into the site's surroundings without permanently altering the historical fabric. These installations, ranging from interpretive signage to interactive exhibits, serve as valuable educational tools. They help visitors better understand the historical significance of the castle and the broader context in which it existed. What makes such additions particularly noteworthy is their ability to draw in tourists and enrich their engagement with the site. By providing informative displays or immersive experiences, they transform the castle into a living history lesson.

[283] M. Wałek, Applying digital tools as an effective support for conservation research and design process: The Rocca Janula Castle in Cassino, Lazio, Archeologia e Calcolatori, 31.2, 2020, pp. 245-256.

Fig. 38. Astley Castle in Warwickshire, source: https://www.protectahome.co.uk/case-study/astley-castle-warwickshire/ [access:13.04.2021]

Fig. 39. Castillo de Matrera, source: https://www.archdaily.com/783861/cadiz-castle-restoration-interesting-interpretation-or-harmful-to-heritage, [access:13.04.2021]

Fig. 40. Castillo de Garcimunoz, source: https://www.archdaily.com/790597/refurbishment-of-garcimunoz-castle-izaskun-chinchilla, [access:13.04.2021]

Reconstruction

Perhaps the most controversial form of preservation is the reconstruction and restoration of castle ruins, which often occur without scientific foundations and fundamental research. An example of restoration is the Bojnice Castle [Fig.41] . However, the premise for the restoration in this case was a fire that consumed a large part of the neo-Gothic structure.

Fig. 41. View of the castle from the 19th century, before neo-gothic rebuilding, Bojnice Castle, source: https://medievalheritage.eu/en/main-page/heritage/slovakia/bojnice-castle/, [access:13.04.2021]

4.2. Other forms of protection

Legal protection

Different countries have different legal systems, so the presented examples will be analyzed solely in the context of Polish law. The basis for the protection of monuments in Poland is the existing law and the procedures established within it. This applies to both the Act on the Protection of Monuments and the Care of Monuments, as well as other legal acts issued under it and the applied rules of administrative proceedings based on the Administrative Procedure Code.

An extremely important aspect of protecting any valuable object is legal protection. In Poland, there are five basic forms of protection for monuments:[284]:

- Listing in the monument register.
- Inclusion on the List of Heritage Treasures.
- Recognition as a historical monument.
- Establishment of a cultural park.
- Determination of protection requirements in the local spatial development plan or in the location decision.
- Listing on the UNESCO list.

When determining the scope of conservation work on specific monuments, the content of the decision to list the monument in the register is of crucial importance. This pertains to the protection of the monument in terms of both chronological (valorization) and spatial aspects (the area listed in the register and protected on that basis). In the case of historic castles, the adopted provisions in documents forming the basis of legal protection are also crucial, and undoubtedly, these include decisions to list the monuments in the register. Jakub Lewicki distinguishes four ways in which applications for listing are described: an imprecise listing in the register without specifying the scope and form of protection and without a sentence (elaboration) in the decision, listing in the register without a precise specification of the scope and form of protection, listing only the object without specifying the scope and form of protection in the decision or the sentence of the decision, and listing the object along with indicating its valuable elements and specifying the scope and form of protection either in the decision or the sentence of the decision[285].

The result of an imprecise decision to list a monument in the register is the issuance of conservation guidelines and decisions that can be overturned. In such cases, a different program of work is usually implemented, which may meet with the objection of the supervising conservator or specialist.

An example of a correctly executed listing is the castle in Rytro [Fig.42]. Leaving the castle in the form of a permanent ruin is the result of a precise listing in the register[286]. Based on this, the castle and its surroundings are protected, and attempts at reconstruction are met with a refusal from the supervising conservator.

This approach underscores the importance of a well-considered and accurate listing process. By recognizing the historical and architectural value of a monument and enshrining it in the register, authorities can effectively safeguard it from well-intentioned but potentially damaging efforts to alter its character or integrity.

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[284] Ustawa z dnia 23 lipca 2003 r. o ochronie zabytków i opiece nad zabytkami [Act of July 23, 2003 on the protection and care of monuments]

[285] J. Lewicki, Ochrona prawna a trwałą ruina czy odbudowa, O sprzeczności polskiej teorii i praktyki konserwatorskiej [Legal protection and permanent ruin or reconstruction, On the contradictions of Polish conservation theory and practice]. p. 57 [in:] Castles in ruins - principles of conservation procedures.

[286] List of immovable monuments entered in the register of monuments (Book A) - as of June 30, 2023, source: https://nid.pl/zasoby/rejestr-zabytkow-zasoby/ [access: 25.06.2023]


Fig. 42. Rytro, the castle and its surroundings, Castle listed in the register as a permanent ruin („ruiny zamku, XV", nr rej.: 11-146-Kr/935 z 20.19.1936 oraz 25 z 18.04.1968)

Building Social Awareness

Social awareness and establishing connections with castle ruins are of paramount importance in their preservation and conservation for future generations. A aware community is more inclined to take action to protect and preserve ruins. This can include community initiatives, reporting threats, or even participating in restoration work. Social awareness can influence decision-making processes at the local and national levels, increasing the chances of allocating funds for protection and renovation. Castle ruins often serve as symbols of local or national identity. Creating bonds with such places can strengthen the sense of community and responsibility for heritage preservation. The bond between the local community and castle ruins can promote forms of sustainable tourism that generate income while aiding in preservation. A strong connection with castle ruins can help preserve local legends, history, and traditions associated with the site, further enhancing its cultural value.

Tourism Development

Creating tourist routes of various themes and structures around castle ruins can have many benefits for their preservation and promotion. Well-planned and attractive tourist routes can attract more visitors and, consequently, increase social awareness of the significance of the ruins. Increased tourism can generate income that can be reinvested in the protection and maintenance of the ruins. Introducing professionally managed tourist routes can help maintain the condition of the ruins, for example, through regular inspections and conservation efforts. Introducing diverse tourist routes tailored to different visitor groups, from history enthusiasts to families seeking recreation, can increase the versatility and attractiveness of ruins, ultimately contributing to their preservation and conservation in the long term.

An example of promoting defensive structures is the famous Loire Valley Castles route [Fig. 43]. The image of these structures has become a kind of brand, contributing to their perpetuation in social awareness.

A fascinating example of heritage promotion is the creation of the "Cammino 100 Torri" [Fig.44] trekking trail in Italy, which spans 1,284 kilometers and allows visitors to explore a hundred coastal defensive towers.

Fig. 43. Loire Valley Castles[287], source: https://www.architecturaldigest.com/gallery/loire-valley-chateaus, [access:13.04.2021]

Fig. 44. Cammino 100torri, source: https://www.cammino100torri.com/2020/12/21/le-torri/, [access:13.04.2021]

Digitalisation

Invaluable assistance in the preservation of ruins comes from the increasingly widespread use of digital tools. Examples of the most commonly used techniques include photogrammetry and laser scanning. These techniques allow for the creation of a digital counterpart of a monument with all its spatial details. Researchers are increasingly showing that the most effective results come from combining both techniques. In the article "Documentation of cultural heritage using digital photogrammetry and laser scanning,"[288] the importance of precise documentation in the protection and scientific research of cultural heritage during restoration and renovation processes is discussed. The use of close-range photogrammetry as an effective method for documenting cultural heritage, which has evolved with advancements in computer and information technologies, is emphasized. The article also mentions the growing popularity of terrestrial laser scanning as another technology for documenting cultural heritage. Terrestrial laser scanning records dense 3D point data on object surfaces with high accuracy. The point cloud data obtained can be used to generate 3D models and digital ortho-images [Fig.45]. Overall, the article highlights the benefits and possibilities of

[287] https://www.google.com/maps/d/u/0/viewer?mid=17xv_crXIBNWmndMUmVK-ls73I6_X_Bjt&ll=47.51547254492279%2C0.6283945025336379&z=9 [access:23.04.2021]

[288] Y. Naci. Documentation of cultural heritage using digital photogrammetry and laser scanning. Journal of Cultural Heritage -2007, pp. 423-42.

close-range digital photogrammetry and terrestrial laser scanning in documenting cultural heritage, enabling precise measurements and facilitating the creation of 3D models [Fig. 47].

All these efforts increasingly lead to the creation of HBIM (Historical Building Information Modeling) models as a form of protection and information storage for objects. BIM (Building Information Modeling) has gained recognition worldwide in the collection of information about historic buildings and their representation. In recent years, several research projects have demonstrated the potential of BIM technology in architectural heritage[289]. The process of digitizing existing artifacts of artistic and historical significance is referred to as H-BIM (Historical Building Information Modeling) and is becoming increasingly important. A multidisciplinary approach that combines different fields such as restoration, history, and data collection seems to be one of the best ways to manage various aspects and knowledge.

Large-scale work in the use of HBIM technology for conservation and management is conducted by the University of Pavia, and their activities are recognized and utilized throughout Europe. One of the key projects is PROMETHEUS. Its goal was to implement interdisciplinary action for the documentation and structuring of information about architectural heritage, educating scientists in the constructive and historical value of cultural heritage trails[290]. As part of the research project, an information system ready for implementation was developed, designed for the management and valorization of cultural trails. The entire system was based on BIM collaboration, with models created based on point clouds from laser scanning and photogrammetry. The research was carried out on historic sites along the Upper Kama Trail (Russia)[291]. This is an example of building a very effective management system and utilizing collected information in the conservation process in collaboration with specialists from various fields.

Another project conducted on a similar scale but with different goals is the research conducted in Jerusalem under the leadership of the same research team. The aim of this research was to develop documentation for the streets of the Bab Azhar district, Sultan Sulemain Street, Salah Eddin Street, and the monumental cemetery[292]. The research was carried out using integrated methods to create interactive archival resources, use, and understanding of the discussed urban spaces. In particular, the focus was on the use of virtual reality[293]. As demonstrated by the documentation of the streets of Jerusalem, the best results in data acquisition come from integrating laser scanning and photogrammetry techniques.

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[289] M. Murphy, E. McGovern, S. Pavia, Historic building information modelling (HBIM). Struct. Surv., 27, 2009, pp. 311–327.; S. Logothetis, A. Delinasiou and E. Stylianidis,, Building Information Modelling for Cultural Heritage: Areview, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.,II-5/W3, 2015, pp.177- 183. N. A. Megahed, Towards a theoretical framework for HBIM approach in historic preservation and management. Archnet-IJAR, Int. J. Architectural Research, Vol.9/Issue3, 2015, pp.130-147.

[290] A. Dell'Amico, Memoria e modello digitale. La costruzione di un sistema informativo per la salvaguardia del patrimonio architettonico diffuso dell'Upper Kama. Restauro Archeologico, 2022, pp. 32-53.

[291] R. De Marco, A.Pettineo, The Recognition Of Heritage Qualities From Feature-Based Digital Procedures In The Analysis Of Historical Urban Contexts, The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences. XLVI-2/W1-2022, 2022, pp. 175-182.

[292] R. De Marco, A. Dell'Amico, M. Canestrale, Il Rilievo Digitale Per La Documentazione Morfolo-Gica: Diagnostica E Recupero Del Complesso Monu-Mentale Di Al-Jazzar Ad Acri, Israele, [In:] Reuso 2018: L'intreccio Dei Saperi Per Rispettare Il Passato Interpretare Il Presente Salvaguardare Il Futuro, 2018, pp.195-206.

[293] S. Parrinello, F. Picchio, R. De Marco, Documentation systems for a urban renewal proposal in developing territories: the digitalization project of Bethlehem Historical Center, IEEE International Workshop on Metrology for Archaeology and Cultural Heritage, 2018, pp. 211-217.

Another example of a digital tool used in the preservation of architectural heritage is virtual reality (VR) and augmented reality (AR) technologies. These technologies allow the creation of a virtual model of a heritage site, enabling users to explore its history and learn about elements that may be inaccessible to visitors. Some relevant scientific publications on this topic include "The application of virtual reality technology in the digital preservation of cultural heritage"[294] and "Augmented reality technology for heritage visualization and communication" (2013) by J.C. Torres et al., as well as "Augmented Reality in Cultural Heritage: An Overview of the Last Decade of Applications"[295] by Boboc R.G. et al.

Digital records also enable the creation of reconstructions without physically altering the historic structure, preserving its authenticity [Fig.46 and 48]. Advanced monitoring systems and drones are used for real-time monitoring of the condition of objects, while GIS (Geographic Information Systems) and artificial intelligence assist in efficient conservation management and planning. All of these efforts are supported by the digitization of archives and the widespread use of social media, making heritage more accessible and ensuring its preservation for future generations. Geographic Information Systems (GIS) and artificial intelligence further enhance conservation efforts. GIS technology helps in the efficient management and planning of conservation activities. It allows experts to analyze data related to the site's location, environmental factors, and historical context, facilitating informed decision-making in conservation practices.

Fig. 45. Photogrammetric model of a defensive tower ruin in Switzerland. Ascan Lang, source: https://www.facebook.com/groups/dronecaptures/permalink/3575686616036269/, [access:13.06.2022]

Fig. 46. Model 3D of Rotunda of St George and St Adalbert on Rip, source: https://www.kroscloud.com/rotunda-of-st.-george-and-st.-adalbert-on-rip/cuic/sc, [access:13.06.2022]

[294] H. Zhong, L. Wang, H. Zhang, The application of virtual reality technology in the digital preservation of cultural heritage. Computer Science and Information Systems, 2021, pp.1-17.
[295] R.G. Boboc et al., Augmented Reality in Cultural Heritage: An Overview of the Last Decade of Applications, Applied Sciences, 12(19), 2022.

Fig. 47. Digital reconstruction of Slovakian Castle, Overhe4d, source: https://www.facebook.com/overhead4D/photos/pb.100023594515684.-2207520000/1402769750170537/?type=3, [access:05.10.2022]

Fig. 48. Reconstruction of Beaumaris Castle in Wales., source: https://www.bbc.com/news/uk-wales-north-west-wales-36645610, [access:05.10.2022]

5. Conclusions

In the analyzed chapter, the author addresses the crucial issue of protecting castle ruins, distinguishing between two fundamental approaches: conservational and non-conservational. The significant diversity of conservation methods allows for the adaptation of preservation strategies to the specific nature of each object, considering its historical, cultural, and technical context. These methods encompass the preservation of ruins in their existing state, various forms of supplementation and reconstructions, as well as complete reconstructions, each of which has its unique advantages and disadvantages.

On the other hand, non-conservational methods play a key role in the conservation process, from legal aspects and raising social awareness to the use of modern technologies such as digitization and 3D modeling.

Discussions about the value of conserving ruins have been ongoing for many years, illustrating that actions in this area are a complex and multidimensional task. The integration of various forms of protection and the consideration of ruins as elements of disappearing heritage, which can find their extension in digitization, are of paramount importance.

In light of the above considerations, it can be concluded that both conservation and non-conservation methods are essential for the effective protection of castle ruins. The diversity of available strategies allows for a holistic approach to the problem, considering both technical and socio-cultural aspects, which is crucial for preserving these important elements of cultural heritage.

IV. DETAILED RESERACH

This chapter constitutes a detailed analysis of defensive structures located in the Jurassic region. The subject of the research is the architectural and functional evolution of these structures, starting from primitive fortifications, through the first stone castles, to monumental fortresses established during the reign of King Casimir the Great. The chronological context also includes the history of their later fates, which often led to their decline and disappearance.

As part of the analysis, location-related issues were also considered, examining the impact of site selection on their construction, exposure, and relationships with the surrounding landscape. The typology of the structures in different historical phases, both in the medieval and modern periods, was also examined. The analysis focuses not only on historical and architectural aspects but also on the current state of preservation of the structures. In this context, conservation efforts undertaken so far were discussed, as well as identified problems and challenges facing those responsible for their protection.

The chapter concludes with the valorization of the studied structures, aimed at assessing their cultural and historical value. The ultimate goal of this scientific endeavor is to provide a comprehensive overview that not only enriches existing knowledge about defensive structures in the Jurassic region but also serves as a tool for further research and actions aimed at their preservation and restoration.

Detailed research served as the basis for the next stage of the work, which was the creation of a digital representation model based on HBIM modeling.

1. Introduction

1.1. Kraków-Częstochowa Upland - characteristics of the natural landscape

The Kraków-Częstochowa Upland, also known as the Kraków-Częstochowa Jura, is an unique region in southern Poland[296]. Covering an area of 2615 square kilometers, it forms a belt approximately 20 kilometers wide and about 80 kilometers long, spanning across two voivodeships - Silesian and Lesser Poland[297]. The boundaries of the Jura can also be defined between the cities of Częstochowa and Kraków, as well as by the rivers - the northern part of the Upper Vistula watershed and the southwestern part of the Upper Warta watershed, extending to its gorge. This region is characterized by an exceptional landscape, unusual on the national scale, which combines diverse topography, featuring elevations created by various rock formations in terms of altitude, karst valleys, springs, and numerous caves.

What further distinguishes the Kraków-Częstochowa Upland is the remarkable concentration of biodiversity resulting from its geographic location, climatic changes during the Quaternary period, the diversity of its terrain and climate, and the long-lasting influence of human activity. Taking into account all the above-mentioned factors, it can be concluded that this is one of the most attractive regions on the map of Poland, with a rich tourist, sports and recreational offer[298].

The lower part of the Jurassic belt exhibits significant topographical diversity, encompassing the Tenczyński Ridge covered with forests and the Krzeszów Valley, through which the Rudawa River flows. However, the larger part of the Kraków-Częstochowa Upland, situated to the north of the Krzeszów Valley, has a more homogeneous character and resembles a plateau. Distinguishing elements of the landscape in this area are numerous rocky outcrops, as well as deep valleys taking the form of karst gorges. One of the largest examples is the Prądnik Valley along with the picturesque Sąspowska Valley, which flows into it. Other valleys, though considerably shorter and shallower, also contribute to the landscape by joining the Krzeszowice Trench and cutting through the steep and high ridge on the plateau[299].

The upper part of the Upland stretches from the valleys of the Przemsza and Szreniawa rivers in the south, also referred to as the region of the Wolbrom Gate, to the point of the Warta River's gorge near Częstochowa in the north. A characteristic feature of this area is the numerous ranges of hills, which typically run across the Upland's ridge. It is worth mentioning three main ranges: the Smoleńsko-Niegowonickie Range, the Zborowsko-Ogrodzienieckie Range, and the Olsztyńsko-Mirowskie Range[300]. To the west, the boundary of the Upland is defined by a distinctive rocky ridge known as the Kuesty, which stretches from Klucze to Częstochowa. In this area, the edge of Kuesty, built of hard Upper Jurassic limestone, reaches a

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[296] J. Pleszynik, Jurajska kraina Przewodnik turystyczny [Jurassic Land Tourist Guide], Związek Gmin Jurajskich, Katowice-Ogrodzieniec, 2023, p.5.

[297] K. Bzowski Jura Krakowsko-Częstochowska Pełna wrażeń [Kraków-Częstochowa Upland full of experiences], Helion S. A. 2022, p.48.

[298] J. Pleszynik, Jurajska kraina Przewodnik turystyczny, op.cit., p.3.

[299] S. Michalik, Wyżyna Krakowsko-Wieluńska… [Kraków-Wieluńska Upland…], op.cit., pp. 27–30.

[300] J. Jędrys, T. Grabowska, M. Krajewski, J. Matyszkiewicz, J. Żaba, Założenia strukturalne górno-jurajskich budowli węglanowych na Wyżynie Krakowsko-Wieluńskiej w świetle badań magnetycznych [Structural assumptions of Upper Jurassic carbonate structures on the Krakow-Wieluńska Upland in the light of magnetic research], [in:] Zróżnicowanie i przemiany środowiska przyrodniczo-kulturowego Wyżyny Krakowsko-Częstochowskiej [Diversity and changes in the natural and cultural environment of the Krakow-Częstochowa Upland], Vol.1. Przyroda, Jed.. Partyka, Ojców 2004, pp.19–26.

height of 390 meters above sea level and descends steeply in a southwest direction towards the Warta River valley. The height difference at Kuesty near Żarki is approximately 70 meters and constitutes one of the most attractive panoramic viewpoints in the entire Kraków-Częstochowa Upland[301].

In the northern part of the Kraków-Częstochowa Upland, numerous valleys with gentle terrain contours can also be found. These valleys primarily serve as water drainage channels, especially during spring thaws or after heavy rainfall. River valleys are less common in this region. One of the more interesting examples is the section of the Warta River valley near Częstochowa and the valley of the Wiercica River in the Złoty Potok area. Similar to the southern part of the Kraków-Częstochowa Upland, diverse rock formations, caves, and grottoes can be found here as well. The highest concentration of such features can be found in the vicinity of Strzegowa, Smolenie, Trzebiatów, in the Wiercica River valley, and in the Sokolich Mountains[302].

As previously indicated, the terrain of the Kraków-Częstochowa Upland is administratively divided between two voivodeships. The northern part falls within the Silesian Voivodeship, while the southern part belongs to the Lesser Poland Voivodeship. Within the Kraków-Częstochowa Upland, there are over thirty municipalities, the majority of which have a suburban character. This is a result of the proximity of this area to major urban centers, such as Kraków to the south, the Upper Silesian metropolitan area to the west, and Częstochowa to the north. Demographically, the combined population of both mentioned voivodeships constitutes over 20% of the entire country's population - the Silesian Voivodeship is currently home to 4.403 million people, accounting for 11.6% of the total population[303], while Lesser Poland has 3.432 million people, making up 9% of Poland's population[304]. All of this contributes to a significant number of tourists who often take advantage of the attractions of the Jura, choosing to go on short day trips or longer vacations here[305]. However, the location of the region also brings certain risks associated with industrial activities and urbanization processes, which lead to gradual development of the Jura's rural areas in the vicinity of larger cities[306]. The Kraków-Częstochowa Upland is an area of great scientific, educational, and landscape importance, so it is necessary to preserve and manage its diverse values while ensuring sustainable and responsible access for tourists.

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[301] K. Bzowski Jura Krakowsko-Częstochowska Pełna wrażeń [Kraków-Częstochowa Upland full of experiences], Helion S. A. 2022, p.170.

[302] S. Michalik, Wyżyna Krakowsko-Wieluńska… [Kraków-Wieluńska Upland…], op.cit., pp. 32–33.

[303] The condition and demographic structure of the population and the number of buildings and apartments in the Silesian Voivodeship - final results NSP 2021 https://katowice.stat.gov.pl/opracowania-biezace/opracowania-sygnalne/ludnosc/stan-i-struktura-demograficzna-ludnosci-oraz-liczba-budynkow-i-mieszkan-w-wojewodztwie-slaskim-wyniki-ostateczne-nsp-2021,5,1.html [access: 01.09.2023]

[304] The condition and demographic structure of the population and the number of buildings and apartments in the Lesser Poland Voivodeship - final results NSP 2021 https://www.malopolska.uw.gov.pl/Docs Stan%20i%20struktura%20demograficzna%20ludno%C5%9Bci%20oraz%20liczba%20budynk%C3%B3w%20i%20mieszka%C5%84%20w%20wojew%C3%B3dztwie%20ma%C5%82opolskim%20%E2%80%93%20wyniki%20ostateczne%20NSP%202021%20.docx [access: 01.09.2023]

[305] R. Pawlusiński, Samorząd lokalny a rozwój turystyki. Przykład gmin Wyżyny Krakowsko-Częstochowskiej [Local government and tourism development. Example of communes in the Kraków-Częstochowa Upland], Kraków 2005, pp. 39–40.

[306] J. Partyka, Konflikt czy symbioza przyrody i kultury na przykładzie Wyżyny Krakowsko-Częstochowskiej [Conflict or symbiosis of nature and culture on the example of the Krakow-Częstochowa Upland], [in:] Człowiek w ogrodzie Pana. XX seminarium Sacrum i Przyroda [Man in the Lord's garden. 20th Sacred and Nature seminar], ks. J. Klimek i J. Partyka (red.), Ojców 2012, pp. 163–172.

The topography of the Kraków-Częstochowa Upland is the result of long-term rock erosion processes, creating a unique and picturesque landscape. This is also why this area is so attractive to tourists, nature enthusiasts, as well as rock climbers and cave explorers.

The most characteristic rock formations in the Kraków-Częstochowa Upland are built from Upper Jurassic limestone. These are sedimentary rocks that formed in the late Jurassic period, around 150 million years ago, at the bottom of prehistoric seas[307].

In the area under study, three types (facies) of limestone can be distinguished: tabular, rocky, and bank[308]. Among these, rocky limestone is the dominant type of rocks found in the natural outcrops of this region. They exhibit the highest resistance to weathering and erosion among the mentioned forms[309]. Besides Upper Jurassic limestone, other sedimentary rocks like shale and sandstone can also be found in the Kraków-Częstochowa Upland [Fig.49]. However, limestone dominates and gives the characteristic appearance to the landscape.

[307] U. Myga-Piątek,Krajobraz kulturowy jako "genius loci" Wyżyny Krakowsko-Częstochowskiej, in: [J. Partyka, W cieniu zamczyska Bonerów] Oddział PTTK Ojców 2006, p. 87.

[308] Z. Musielewicz, op.cit., pp. 10–11.

[309] R. Gradziński, M. Gradziński, Budowa geologiczna i rzeźba [Geological structure and relief], [in:] R. Gradziński, M. Gradziński, S. Michalik, Przyroda, Natura i kultura w krajobrazie Jury [Nature and culture in the Jura landscape], vol.3, Kraków 1994, pp. 25–27; M. Gradziński, R. Gradziński, R. Jach, Geologia, rzeźba i zjawiska krasowe okolic Ojcowa -Geology, relief and karst phenomena around Ojców], [in:] Monografia Ojcowskiego Parku Narodowego [Monograph of the Ojców National Park]. Przyroda, J. Partyka i A. Klasa (red.), Ojców 2008, pp. 37–42.

Fig. 49. The location and regionalization of the Kraków-Częstochowa Upland, Source: J. Kondracki[310], 1988

One of the most distinctive features of the terrain is the limestone monadnocks, which are isolated, steep limestone rocks or groups of these rocks that rise above the surrounding plain or terrain, creating impressive rock formations[311]. Examples of such formations include Maczuga Herkulesa in Pieskowa Skała [Fig.50], Sokolica in Dolina Będkowska, or Okiennik Wielki near Skarżysko. Some of these rock formations reach elevations above 500 meters above sea level, such as Skałka 502 near Jerzmanowice (512,8 m above sea level) or Góra Janowskiego (Zamkowa) in Podzamcze (515,5 m above sea level)[312]. The Kraków-Częstochowa Upland is also known for several characteristic "gates," which are narrow passages, valleys, or gorges that mark the entrances to this picturesque region. Among the most famous are the Krakowska Gate[313] [Fig.51] in Ojców and the Bolechowice Gate near Bolechowice[314].

The great diversity of rock formations is reflected in literature, which uses various terms like pulpits, turrets, spires, maces, or tower walls to describe their distinctive shapes[315]. Additionally, it's worth noting that the monadnocks in the Kraków-Częstochowa Upland not only offer interesting viewpoints and landscapes but also provide excellent opportunities for rock climbing[316]. The most popular ones are in Olsztyn, Łutowiec, near Rzędkowice, an area of limestone monadnocks stretching for five kilometers between Podlesice and Kroczycami, with Góra Zborów leading the way[317], or in Mirów.[318]

Related to the characteristic geological structure of the Kraków-Częstochowa Upland are the underground karst forms in the form of caves. These caves are secondary caves, meaning they form as a result of long-term dissolution processes of rocks by water[319]. Caves are often important sites for archaeological research. The social perception of cave archeology in the Kraków-Częstochowa Upland region is dominated by the belief that it is mainly related to the Paleolithic. This belief results from impressive archaeological discoveries that have shaped our knowledge of human prehistory in Poland since the 19th century. Nevertheless, the information potential of cave sites is not limited only to the Stone Age. Research to date indicates that many karst caves are important multicultural archaeological sites, often containing rich finds from younger periods of prehistory and historic times[320]. Archaeological

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310 J. Kondracki, Geografia regionalna Polski [Regional geography of Poland], 2nd ed. Warszawa, 2000.

311 S. Bronisz, K. Pucek, A. Stróżycki, Wyżyna Krakowsko-Częstochowska przewodnik [Kraków-Częstochowa Upland guide], Eko-Graf, Wrocław 1994, p. 12.

312 J. Pleszynik, op. cit., p. 5.

313 K. Bzowski, Jura Krakowsko-Częstochowska pełna wrażeń [Kraków-Częstochowa Upland full of experiences], Helion S. A 2022, p.20.

314 K. Bzowski,Jura Krakowsko-Częstochowska pełna wrażeń [Kraków-Częstochowa Upland full of experiences], Helion S. A 2022, p.20.

315 J. Nita, Walory krajobrazowe form skalnych na Wyżynie Częstochowskiej [Landscape values of rock formations in the Częstochowa Upland] [in:] Zróżnicowanie i przemiany środowiska przyrodniczo-kulturowego Wyżyny Krakowsko-Częstochowskiej. [Diversity and changes in the natural and cultural environment of the Krakow-Częstochowa Upland], vol. 1: Przyroda, ed. J. Partyka, Ojców, 2004, pp. 55–60.

316 Jura Krakowsko-Częstochowska i region północno zachodni województwa śląskiego [Kraków-Częstochowa Upland and the northwestern region of the Silesian Voivodeship], Śląska Organizacja Turytyczna, Wydanie II, Katowice 2015, p. 5.

317 R. Pawlusiński, op.cit., p. 49.

318 M. i J. Kiełkowscy, Przewodnik wspinaczkowy Mirów [Mirów climbing guide], Explo, 1994, p. 7.

319 M. Szelerewicz, A. Górny, Jaskinie Wyżyny Krakowsko-Wieluńskiej [Caves of the Krakow-Wieluńska Upland], Kraj, Warszawa-Kraków, 1986, p.11.

320 M. Wojenka, Jaskinie Wyżyny Krakowsko-Częstochowskiej w średniowieczu. Wstęp do problematyki [Caves of the Kraków-Częstochowa Upland in the Middle Ages. An introduction to the issues], [in:] Prądnik. Prace i Materiały Muzeum im. Prof. Wł. Szafera [Prądnik. Works and Materials of the Prof. Wł. Szafer Museum], p. 8.

activities in caves in the Kraków-Częstochowa Upland have been conducted for over 150 years. Count Jan Zawisza is considered the pioneer of these activities, who in 1871, using a pickaxe and shovel, started excavations near Ojców in the Łokietka cave[321]. This event should be considered the beginning of research on cave archeology in Poland[322].

The work of Kazimierz Kowalski in 1951, which focused on the Kraków-Wieluń Upland, is the first step in researching caves in this region. Within this study, over 500 caves were identified in the discussed upland. Their number is impressive, and new ones are constantly being discovered[323]. So far, over 1500 caves have been found in the Kraków-Częstochowa Upland, making this region one of the richest in caves in Poland[324]. Some of the leading caves in the Kraków-Częstochowa Upland include Jaskinia Wierna, which is the longest cave in this area (1027 m), Jaskinia Studnisko, which is the deepest cave (77.5 m), and Jaskinia Łokietka, the most well-known due to its accessibility to tourists.

The water network in the Kraków-Częstochowa Upland is relatively limited due to the absence of major rivers on the surface. However, several main watercourses traverse this region, including the Warta, Pilica, Biała Przemsza, Czarna Przemsza, Rudawa, Prądnik, and Dłubnia rivers. Numerous karst springs are also found in this area[325]. Some valleys contain small lakes, and channels and reservoirs have been created, affecting the landscape of this region. Despite the limited extent of its water network compared to other regions, the Kraków-Częstochowa Upland's hydrology plays a crucial role in shaping its natural beauty and ecological diversity.

Fig.50. Hercules' Club (Maczuga Herkulesa), source: photo by the author

[321] J. Zawisza, Ojcowska dolina i jej okolice [Ojców Valley and its surroundings], [in:] „Biblioteka Warszawska", 4, pp.53–58.

[322] M. Wojenka, Jaskinie Wyżyny Krakowsko-Częstochowskiej w średniowieczu. Wstęp do problematyki [Caves of the Kraków-Częstochowa Upland in the Middle Ages: Introduction to the Issue], op. cit., p. 8.

[323] K. Kowalski, Jaskinie Polski, t. 1: Jaskinie Wyżyny Krakowsko-Wieluńskiej [Polish Caves, vol. 1: Caves of the Kraków-Wieluńska Upland,], Kraków 1951.

[324] https://orlegniazda.pl/nature/15948/jaskinia-wierna-w-niegowej (access: 28.09.2023)

[325] J. Partyka, Ojcowski Park Narodowy przewodnik [Ojców National Park guide], Sport i Turystyka, Warszawa 1988, p. 13

Fig.51. Krakow Gate (Brama Krakowska), photo by the author

The natural environment of the Kraków-Częstochowa Upland is biodiverse. Much of this is due to a man who, through his activities related to traditional agriculture, mowing meadows, or grazing animals in less fertile areas, contributed to changes in the degree of forestation in this area[326].

The diversity of plant species found in the Kraków-Częstochowa Upland is one of the most floristically valuable areas in Poland, alongside the Tatra and Pieniny mountains[327]. Among them are xerothermic plants (about 300 species), that have adapted to dry and high-temperature conditions, such as steppe grasses or thermophilic flowers (astra gawędka, Transylvanian pearlwort)[328]. Furthermore, on the Jurassic limestone substrate, you can find calciphilic plants like the green hellebore and various species of orchids. In the forests of the Upland, you can encounter typical forest trees and shrubs such as beech, hornbeam, and lime. Wetland areas in the valleys host vegetation typical of humid habitats, while along rivers and streams, aquatic plants thrive. There are also endemic species that occur only in this area[329]. It should be noted that in terms of plant diversity, the southern part of the Kraków-Częstochowa Upland stands out with significantly greater species richness. As you move northward, there is a noticeable decrease in plant diversity[330].

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326 B. Fojcik, Mchy Wyżyny Krakowsko-Częstochowskiej w obliczu antropogenicznych przemian szaty roślinnej (Mosses of the Kraków-Częstochowa Upland in the face of anthropogenic changes in plant cover], Wydawnictwo Uniwersytetu Śląskiego, Katowice 2011, p. 19.

327 S. Bronisz, K. Pucek, A. Stróżycki, Wyżyna Krakowsko-Częstochowska [Kraków-Częstochowa Upland] op.cit., p. 13.

328 K. Bzowski,Jura Krakowsko-Częstochowska pełna wrażeń, op.cit., p.154.

329 J. Zinkow, Ojcowski Park Narodowy. Przewodnik przyrodniczo-krajoznawczy. Część 1: Park Krajobrazowy Stawki. Park Krajobrazowy Orlich Gniazd [Ojców National Park. Nature and sightseeing guide. Part 1: Stawki Landscape Park. Eagles' Nests Landscape Park], Zespół Jurajskich Parków Krajobrazowych, Warszawa 1990, p. 14.

330 S. Michalik, Wyżyna Krakowsko-Wieluńska… [Kraków-Wieluńska Upland…], op.cit., p. 55; Idem, Świat roślin i zwierząt Wyżyny Krakowskiej [The plant and animal world of the Kraków Upland], [in:] R. Gradziński, M. Gradziński, S. Michalik, op.cit., p. 57.

The forest cover [Fig.52 and 53] of the entire Upland is moderate, at 27%. However, in light of conducted research, a tendency can be observed toward the continuous expansion of the forested area in the Kraków-Częstochowa Upland. On one hand, this masks the diversity of the terrain, while on the other hand, the presence of trees on rocky hills accelerates the erosion processes (through biological weathering and the intensification of mechanical and chemical abrasion). As a result of the ongoing increase in forest cover, rock outcrops and castles become completely invisible, and xerothermic vegetation, which requires sunny habitats, disappears[331]. One of the most heavily forested areas within the Kraków-Częstochowa Upland (approximately 75%) is Ojcowski National Park, where the plant cover contrasts significantly with the agricultural land surrounding the park. It's worth mentioning that the largest concentrations of forests are in the eastern part of the region[332]. In the southern part of the Kraków-Częstochowa Upland, mixed forests, where oak and pine trees predominate, are common. However, in these forests, you can also find other tree species like spruce and beech, contributing to habitat diversity[333]. The further north you go, the more you will encounter monotypic pine forests, especially on poor river sands. Pine trees are well-suited to low moisture and poor soil conditions[334].

It's important to note that many vascular plant species found in the Kraków-Częstochowa Upland are legally protected. Protecting these plants is crucial not only for their ecological value but also for the cultural and scientific heritage of the region. These plant species are an integral part of this unique ecosystem and help preserve the biodiversity of the area. Their presence on the limestone castle hills of the Jura not only adds natural value but also historical and scientific significance, making this area even more fascinating and valuable[335].

The natural environment also includes fauna, which, much like the flora in the Kraków-Częstochowa Upland, is characterized by significant diversity and richness in the world of animals. However, not all animal groups have been thoroughly researched, making it difficult to precisely determine the total number of species inhabiting this area. Among the wildlife in the Jura region, you can encounter various animals such as numerous butterflies (queen of Spain fritillary, swallowtail), the Eurasian wryneck, kingfisher, merlin, moose, beaver, European green toad, European tree frog, European adder, European fire-bellied toad, numerous lizards, and the European pond turtle.

Due to the diversity of habitats, this area is an attractive environment for bats, which are a distinctive symbol of the Jura. Bats can be found in various parts of the Kraków-Częstochowa Upland, including forests, caves, and open areas. In forests, they can use tree hollows and rock crevices as shelter during the winter hibernation period. These flying mammals are particularly attracted to the numerous caves and grottoes found in the area. Some bat species also use

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331 J. Nita, U. Myga-Piątek, Krajobrazowe skutki wzrostu powierzchni leśnych na Wyżynie Częstochowskiej [Landscape consequences the growth of forests of the Częstochowa Upland], [in:] Prace Komisji Krajobrazu Kulturowego Nr 16 [The Works of the Commission for Cultural Landscape No. 16], Komisja Krajobrazu Kulturowego PTG, Sosnowiec, 2012, p. 203.

332 R. Pawlusiński, op.cit., p. 53.

333J. Pleszynik, op. cit., p. 6

334 K. Sosnowski, Jura Krakowsko-Wieluńska [Kraków-Wieluń Upland], Sport i Turystyka, Warszawa, 1955, p.12

335 Zob. E. Witkowska, Rzadkie gatunki roślin naczyniowych wybranych wzgórz zamkowych i strażnic na Wyżynie Krakowsko-Częstochowskiej [Rare species of vascular plants of selected castle hills and watchtowers in the Krakow-Częstochowa Upland], [in:] Zróżnicowanie i przemiany… [Diversity and transformation…], t. 1, op.cit., pp. 199–204.

buildings, bridges, and other artificial structures as shelter. In the entire country, the presence of 27 bat species has been confirmed[336]. In the Kraków-Częstochowa Upland, over 20 of these species find shelter, including the greater mouse-eared bat (Myotis myotis), Brandt's bat (Myotis brandtii), Blyth's bat (Myotis blythii), and barbastelle (Barbastella barbastellus), among others[337]. Each of these species may prefer slightly different habitats and has specific requirements for shelter and food. It's worth noting that all bat species in Poland are legally protected. The threats to their population include habitat loss, pesticide use, and diseases. Therefore, continuous protection and monitoring of bat populations in the Kraków-Częstochowa Upland are essential tasks for scientists and ecologists.

The Kraków-Częstochowa Upland is undoubtedly an area of exceptional, diverse, and invaluable natural value. It is a place where the richness of inanimate nature, plant and animal worlds, give a unique character to this small part of our country and represent an important part of the natural heritage of this region of Poland. These natural treasures significantly contribute to the tourist attractiveness of this region, which captivates with its uniqueness, picturesque scenery, and great scientific value. Beyond its scientific merits, the upland's natural beauty and unique charm make it a cherished destination for outdoor enthusiasts and adventurers. Hikers, climbers, and nature lovers find solace and inspiration amid its rugged terrain, limestone cliffs, lush forests, and serene lakes.

Fig. 52. Forests near the guardhouse in Suliszowice, photo by the author

[336] https://upwr.edu.pl/aktualnosci/nietoperze-chronmy-nocnych-mieszkancow-wroclawia-3528.html (access: 28.09.2023r.)

[337] W. Grzywiński, J. Nowak, A. Węgiel, Nietoperze Ojcowskiego Parku Narodowego – stan poznania [Bats of the Ojców National Park - the state of knowledge], [in:] Zróżnicowanie i przemiany… [Diversity and transformation…], vol. 1, op.cit., p. 367.

Fig. 53. Forests near the castle in Morsko, photo by the author

1.2. Kraków-Częstochowa Upland - characteristics of the cultural landscape

Landscape plays a significant role in every area as it represents the visual representation of a particular region. The most basic definitions describe landscape as the "physiognomy of the earth's surface" where both natural and cultural elements can be observed[338].

Landscape can also be seen as the result of the interaction between natural systems and human activities. Therefore, both the natural environment, which provides a space for everyday life, and the creations of human activity, with a significant impact on historical, architectural, and artistic heritage, are important. Importantly, both of these elements constantly interact - humans transform the landscape according to their needs, and at the same time, the landscape affects human well-being and the character of their activities[339].This mutual correlation between human activity and the natural environment can lead to both diversification and degradation of the landscape.

The landscape of an area is not just the sum of individual elements that can be identified based on their characteristics. The concept of landscape represents a space that humans explore on various levels, depending on the current situation defined by natural and cultural conditions, which are also subject to change over time. The relationship between an

[338] S. Sacha, Rola i znaczenie krajobrazu dla turystyki i rekreacji [The role and importance of landscape for tourism and recreation], „Folia Turistica", n. 6, 1996, p. 89.

[339] https://rcin.org.pl/Content/83105/PDF/WA51_108228_r2019-t91-z3_Przeg-Geogr-Chmielew.pdf [access:24.05.2022]

individual and the surrounding geographical environment is therefore an ongoing process that undergoes transformations in different historical periods[340].

Landscape theory is a field of science that deals with the study and analysis of various aspects and relationships within the landscape, including its structure, evolution, functions, and the impact of interactions between humans and the natural environment on the shaping of the landscape. This theory also examines how the landscape is perceived and interpreted by people and how it influences their actions and decisions.

In landscape theory, we can highlight several main types of landscape. In the context of landscape architecture, a common division includes three main types: primary, natural, and cultural landscapes. The cultural landscape can further be categorized as either harmonious or, unfortunately, degenerated[341]. From a practical standpoint, we most often deal with cultural landscapes because the majority of areas have already been significantly altered by human activity. Janusz Bogdanowski long ago observed that in Poland, primary landscape practically does not exist, and natural landscape occupies very limited spaces[342].

It is also worth emphasizing that an important aspect of cultural landscape is that it always exists in the "here and now," but one can observe the presence of elements originating from different periods (so-called historical layers in the landscape)[343].

Fig. 54. Ruins of Bydlin Castle against the backdrop of a Jurassic village, Pilica Palace against the backdrop of village buildings and fields, photo by the author

[340] U. Myga-Piatek, Krajobraz kulturowy jako genius loci Wyżyny Krakowsko-Częstochowskiej [Cultural landscape as the genius loci of the Krakow-Częstochowa Upland]. [in:] W cieniu zamczyska Bonerów [In the shadow of the Boner castle], red. J. Partyka, Polskie Towarzystwo Krajoznawcze, Ojców, 2006, pp. 87-98

[341] J. Bogdanowski, M. Łuczyńska, Z. Novák, Architektura krajobrazu [Landscape architecture], Warszawa – Kraków 1973, pp. 32–33.

[342] J.Bogdanowski, Kształtowanie i ochrona krajobrazu w aspekcie rekreacji [Shaping and protecting the landscape in the aspect of recreation], [in:] Społeczne potrzeby i uwarunkowania rozwoju turystyki i rekreacji w Polsce [Social needs and conditions for the development of tourism and recreation in Poland], T. Jarowiecka (red.), Scientific Journal no 16, AWF, Kraków 1978, pp. 183.

[343] F. Plit, Krajobraz kulturowy – czym jest? [Cultural landscape - what is it?], Warszawa 2011, p. 78.

It's also worth emphasizing that an important aspect of the cultural landscape is that it always exists in the "here and now," but you can observe the presence of elements from different periods (so-called historical layers in the landscape)[344].

The landscape of the Kraków-Częstochowa Upland presents itself as a diverse environment. It primarily consists of landforms (such as rocks, hills, gorges) and cover (including forests, buildings, fields)[345]. The unique cultural landscape of the presented region is the result of the long-term presence and activities of humans in this area, where traces of their work harmoniously intertwine with the attributes of the natural environment [Fig.54]. It is this harmony between the material traces of human activity and the values of nature that gives this area its unique character, determining the genius loci of this region[346].

The landscape of the Kraków-Częstochowa Upland is surrounded by numerous creations of human activity, including numerous historical landmarks that serve as dominant features of the landscape. Special attention should be paid to the picturesque ruins of castles, often located directly on limestone rocks or hills of this area, which can evoke admiration for the uniqueness of the Jurassic landscape in many observers[347]. We should not forget about the other components of the cultural heritage in this region: historic residences, religious architecture, and the architecture of towns and villages with a regional or contemporary character, all of which contribute significantly to the specificity of the entire region of the Jura[348].

Within the Kraków-Częstochowa Upland itself, one can also observe a fairly diverse landscape. The southern part is distinguished by the presence of religious architecture - monasteries (such as the Camaldolese in Bielany and the Benedictines in Tyniec)[349], manors in Modlnica and Tomaszowice, as well as the slightly western ruins of Tenczyn Castle in Rudno and Lipowiec Castle in Babice. The northern regions are characterized by prominent limestone hills on which numerous "Eagle Nests" are located, including the Mirów Castle, Ogrodzieniec Castle, Olsztyn Castle, Rabsztyn Castle, and Smoleń Castle[350]. However, the most majestic, in terms of landscape, is the area around Ojców, where you can find all the previously described landforms[351]. In this region, castles in Pieskowa Skała, Ojców, and Korzkiew are also noteworthy. In the beautiful natural surroundings, there are many historical places of religious worship, such as the church and monastery in Czerna, temples in Bolechowice, Giebułtów, and

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344 F. Plit, Krajobraz kulturowy – czym jest? [Cultural landscape – what is it?], Warszawa 2011, p. 78.

345 R. Sypek, Zamki i obiekty warowne Jury Krakowsko-Częstochowskiej [Castles and fortifications of the Kraków-Częstochowa Upland], Almapress, p. 7.

346 U. Myga-Piątek, Krajobraz kulturowy jako genius loci Wyżyny Krakowsko-Częstochowskiej [Cultural landscape as the genius loci of the Krakow-Częstochowa Upland], [in:] W cieniu zamczyska… [In the shadow of the castle…], op.cit., p. 92.

347 W. Kosiński, Krajobraz jurajski – walory, zniszczenia, perspektywy [Jurassic landscape – values, destruction, prospects], [in:] Zróżnicowanie i przemiany środowiska przyrodniczo-kulturowego Wyżyny Krakowsko-Częstochowskiej, t. 2: Kultura, J. Partyka (red.), Ojców 2004, pp. 47–74.

348 U. Myga-Piatek, op.cit., p. 92.

349 A. i R. Sypek, Zamki i obiekty warowne ziemi krakowskiej [Castles and Fortifications of the Krakow Region], Almapress, Warszawa, p. 126

350 Jura Krakowsko-Częstochowska i region północno zachodni województwa śląskiego [The Kraków-Częstochowa Upland and the north-western region of the Silesian Voivodeship], op. cit, p. 54

351Województwo Małopolskie, Odkryj Małopolskę, Przewodnik po wybranych trasach i szlakach turystycznych [Discover Lesser Poland, Guide to Selected Tourist Routes and Trails.], Departament Kultury, Dziedzictwa Narodowego i Turystyki Urzędu Marszałkowskiego Województwa Małopolskiego Kraków 2008 p. 12

Korzkwi, as well as modern temples in Smardzowice and Sułoszowa. Of course, there are many other historical landmarks and elements of the cultural landscape, but it would be challenging to list them all comprehensively.

Fig.55. Regional Ensemble "MOGILANIE" from Mogilany. Krakowian Costumes from Bronowice. Source: https://www.etnozagroda.pl/krakowiacy/stroacute-j-i-ubioacute-r-codzienny-krakowiakoacute-w-zachodnich [access: 25.04.2022]

Fig.56. Sułoszowa, photo by the author

Fig.57. Sułoszowa, photo by the author

The notion of a "fortified environment" pertains to the deliberate organization of space with the intention of providing defense. Professor Janusz Bogdanowski introduced this terminology into the Polish language during the 1970s and 1980s. A fortified environment encompasses not just elements of military installations and objects but also other structures associated with defense, like logistical support, transportation networks, bridges, engineering works, terrain layouts, and elements for concealment. This concept seeks to extend beyond the conventional understanding of "Architectura Militaris," which primarily focuses on the construction and armament of military facilities. The fortified environment broadens this notion, encompassing more comprehensive aspects relevant to defense. Depending on the defensive systems that have influenced its development, the fortified environment can assume various configurations. What links them is their defensive purpose and their adaptability to strategic demands and the technologies of their respective eras[352].

The present-day role of historical fortified environments lacks a definitive approach. On one side, they serve as historical remnants of military and defensive activities, offering educational, touristic, and cognitive potential. Conversely, numerous of these regions have been deserted and are deteriorating. Contemporary trends like industrial transformation, political shifts, or economic changes can impact the destiny of fortified environments.

[352] Z. Myczkowski, K. Wielgus, J. Środulska-Wielgus, W. Rymsza-Mazur, K. Chajdys, Rejestracja krajobrazów warownych jak podstawa rewitalizacji dawnych twierdz Registration of fortified landscapes as a basis for the revitalization of old fortresses]. Wiadomości konserwatorskie 23/2008, 2008

Decisions regarding their conservation, adaptation, or potential removal must also be made, considering their historical importance and contemporary utility. In the context of contemporary spatial planning, fortified environments become subjects of analysis and discussion, both at local and national levels. The registration of fortified environments and their inclusion in heritage preservation and spatial planning procedures can play a role in safeguarding their historical, cultural, and touristic significance.

One of the key determinants in the development of the entire cultural landscape in the Jura region was the development of settlement. Settlement processes in the Częstochowa Upland have a long history dating back to the Paleolithic era. People chose these areas for habitation and utilization due to favorable conditions that suited their needs and capabilities[353].

During the early Middle Ages, the development of defensive settlements was observed - densely populated objects surrounded by walls and moats, constructed mainly from stone. In the Małopolska region, there were about thirty such settlements at that time (e.g., Góra Birów, Gąszczyk)[354].

The beginnings of the establishment of the oldest towns in the Kraków-Częstochowa Upland can be traced back to the 13th and 14th centuries. The increasing sense of security among the local population had a crucial impact on the intensification of settlement processes[355]. Therefore, the 13th and 14th centuries were a time of shaping the basic structure of the urban settlement system. During this period, a precisely defined network of towns was created, where the distance between them did not exceed one day's journey, or about 17-20 km. Such a well-developed network of medieval towns resulted from both the need for long-distance transit trade and local market demands[356].

During the medieval period in the Częstochowa Upland, the construction of fortifications was a significant phenomenon, occurring in the 14th century during the reign of Casimir the Great. The purpose of these fortifications was to secure the borders of the Crown against the influence of Silesia, which was then under the control of the Kingdom of Bohemia. As a result of these actions, defensive residences were built, owned by the nobility or clergy, such as Bydlin, Korzkiew, Tenczyn, Smoleń, Mirów, Lipowiec, Ryczów, Łukowiec, Przewodziszowice, Olsztyn, Ostrężnik, Ogrodzieniec, Bobolice, and Rabsztyn.

The population inhabiting the Kraków-Częstochowa Upland region primarily engaged in agriculture, and only in the towns did small-scale trade develop. Additionally, in the Jura region, there were many industrial establishments that utilized the energy from fast-flowing rivers and streams. These included paper mills, mills, sawmills, and gunpowder factories. In particular, in the southern part of the Upland, there were many such establishments, and the proximity to Kraków provided opportunities for selling their products. The period of the 16th century was especially favorable for this area, as well as for the entire Polish-Lithuanian Commonwealth. During this time, mining towns (where lead, silver, iron ore, and black marble

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353 J. Kostrzewski, W. Chmielewski, K. Jażdżewski, Pradzieje Polski [The Prehistory of Poland], PWN, Warszawa 1965.

354 W. Antoniewicz, I. Wartogłowski, Mapa grodzisk w Polsce [The Map of Strongholds in Poland], Kraków, 1964.

355 M. Antoniewicz, Przeszłość Żarek. Powstanie i rozwój miasta na przestrzeni sześciu wieków. Częstochowa 1982.

356 U. Myga-Piątek, Krajobrazy kulturowe Wyżyny Krakowsko-Częstochowskiej. Rozważania o przyrodzie, historii, wartościach i zagrożeniach [Cultural Landscapes of the Kraków-Częstochowa Upland: Reflections on Nature, History, Values, and Threats], [in:] Prace Komisji Krajobrazu Kulturowego Nr 10 [The Works of the Commission for Cultural Landscape No. 10], Komisja Krajobrazu Kulturowego Polskiego Towarzystwa Geograficznego, Sosnowiec, 2008, p. 341.

were extracted) located in the Jura, such as Olkusz and Sławków, gained particular importance. Unfortunately, the Swedish invasion in the years 1655-1657[357] resulted in the bankruptcy of many towns and significant damage to most castles[358].

The majority of the population residing in the Kraków-Częstochowa Upland belongs to the ethnographic region of Western Krakowiaks [Fig.55]. In the past, Western Krakowiaks were characterized by many unique elements, such as traditional attire, artistic decorations in courtyards, rooms, and shrines, as well as specific customs related to various holidays and rural weddings. Nowadays, most of these distinctive features have disappeared, although they can still be encountered, especially in ethnographic museums and regional homes. Some of these traditions can still be found in villages scattered between Krakow and Częstochowa, which represent a unique cultural value of this region[359].

It is regrettable to note that traditional wooden residential and agricultural buildings are gradually and irreversibly disappearing from the landscape of the Jura villages[360]. In the characteristic style of this area, houses were constructed in a log cabin structure, initially with a four-pitched roof, later replaced by a gabled roof covered with thatch. The external walls of these homes were often covered with lime, sometimes mixed with ultramarine. The immediate surroundings of the house typically included decorative gardens, backyard flower gardens, or orchards[361]. Agricultural buildings were also usually constructed from wood. In the village of Sułoszowa, you can find many ancient examples of traditional wooden architecture. In the regions of Lelów and Mstów, there are clusters of barns located just outside the villages. Additionally, in the valleys of rivers like Prądnik, Dłubnia, and Wiercica, you can find numerous traditional water mills[362]. Nowadays, there is also a trend of giving old wooden buildings a second lease of life, transforming them into new structures adapted to modern standards, which can serve various functions, including holiday cottages[363].

An integral part of the Kraków-Częstochowa Upland landscape, which is still much more extensive in terms of preserved specimens, is the architecture associated with chapels and wayside crosses. Some church-related customs have been preserved. Various traditions are still practiced, such as creating Easter palms, celebrating Śmigus-Dyngus (Easter Monday water fight), organizing May Day festivities at chapels, blessing herbs on the Feast of the Assumption, decorating graves during Easter and All Saints' Day, as well as wearing traditional Krakow costumes, which are mainly worn by regional groups and girls scattering flowers during the Corpus Christi procession[364].

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[357] The Swedish Deluge is the term used to describe the Swedish invasion of Poland that took place from 1655 to 1660 during the Polish-Swedish War. This armed conflict had significant historical significance for both Poland and Sweden.

[358] A. Siwek, op.cit., s. 22.

[359] O. Dyba, Zarys etnograficzny Wyżyny Krakowsko-Częstochowskiej [Ethnographic outline of the Kraków-Częstochowa Upland], [in:] Zróżnicowanie i przemiany…[Diversity and transformation…], vol. 2, op.cit., pp. 181–184.

[360] A. Nowicka, Architektura regionalna na terenie Jury Krakowsko-Częstochowskiej, praca doktorska pod kierunkiem prof. dr hab. inż.arch. Elżbiety Trockiej-Leszczyńskiej, Wrocław 2022.

[361] A. Bach, M. Uruszczak, Zachowanie drewnianych domów wiejskich i ich otoczenia metodą pozostawienia in situ na obszarze Jury Krakowsko-Częstochowskiej [The preservation of the wooden cottages and their surroundings in the area of Jura Krakowsko-Częstochowska using the method of leaving in situ], [in:] Architektura Krajobrazu Tom nr 3-4 [Landscape Architecture Volume No. 3-4], Wydawnictwo Uniwersytetu Przyrodniczego we Wrocławiu, 2005, pp.45-48.

[362] R. Pawlusiński, op.cit., s. 62.

[363] A. Bach, M. Uruszczak, Zachowanie drewnianych domów wiejskich i ich otoczenia metodą pozostawienia in situ na obszarze Jury Krakowsko-Częstochowskiej, op. cit, pp.45-48.

[364] A. Siwek, op.cit., p. 26.

It's worth noting that in the 19th century, the southern part of the Kraków-Częstochowa Upland had developed spa functions. Two spas operated in this area - Krzeszowice and Ojców. The first of them existed earlier, by the end of the 18th century. It was the first and most important spa with medicinal and recreational character in Galicia, based on the utilization of discovered sulfur springs. The spa complex, built between 1778-1789, included the classical-style "Vauxhall" palace, a set of 25 residential cottages for visitors, two baths, a hospital, an inn, and other utility buildings[365]. However, in the second half of the 19th century, the spa function gave way to the growing mining and industry controlled by the Potocki family, who managed Krzeszowice. The beginnings of the spa in Ojców date back to 1855 when Lucjan Kowalski opened the first bathing facility. At the turn of the 19th and 20th centuries, due to the lack of proper mineral springs and other therapeutic values, spa guests had access to water and steam baths (inhalations) and were encouraged to explore the surroundings[366]. In 1894, a significant hydropathic facility called "Goplana" was built, which operated until the 1930s. However, after its demolition, the spa functions gradually disappeared, and they were not reinstated after World War II[367].

The intangible folk heritage of the mentioned area also includes numerous legends and tales, often passed down in various popular publications, especially in tourist guides. Among these stories are well-known narratives such as the one about King Łokietek, who hid in the forests and caves of Ojców, about figures like Witysław and Szczebrzyce, about the formation of the Błędowska Desert, about a devil who sought revenge on the residents of Olkusz, about the miner Paweł and the treasurer of Olkusz. Many legends are also associated with the mysterious rock called Maczuga Herkulesa, located near Pieskowa Skała Castle. According to one version of this legend, it is the same rock on which the devil demonstrated his power to Twardowski, grabbing it with one hand and turning it "upside down." Other tales attribute this act to Krakus, who supposedly flipped the rock after defeating the Wawel Dragon (hence it is sometimes called Maczuga Krakusa or Pałka Krakusa). At least one legend is connected to almost every castle in the Kraków-Częstochowa Upland[368].

The cultural landscape also encompasses local traditions. One of them is undoubtedly the tradition of serving "prażonki," a dish prepared from potatoes (usually sliced), with the addition of lard, onions, sausage, bacon, and sometimes also beets and carrots, then stewed in an iron kettle over an open fire. This tradition is associated with the autumnal potato harvest and aims to nurture and promote a local tradition that has lasted for over 200 years. The

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365 E. Ostrowska, Krzeszowice. Zarys dziejów miejscowości i uzdrowiska z rodziną Potockich w tle [Krzeszowice. An outline of the history of the town and spa with the Potocki family in the background], [in:] J. Partyka (red.) Zróżnicowanie i przemiany środowiska przyrodniczo-kulturowego Wyżyny Krakowsko-Częstochowskiej, T. II. Kultura [Diversity and Changes in the Natural and Cultural Environment of the Kraków-Częstochowa Upland, Vol. II: Culture, edited by J. Partyka], OPN, Ojców, 2004, p.

366 R. Pawlusiński, Historia rozwoju turystyki na Wyżynie Krakowsko-Częstochowskiej do 1989 roku [Translation: History of Tourism Development in the Kraków-Częstochowa Upland Until 1989], Prace Geograficzne, Zeszyt 117, Instytut Geografii i Gospodarki Przestrzennej UJ, Kraków 2007, p. 82.

367 A. Mitkowska, Uzdrowisko w Ojcowie i jego park zdrojowy [The health resort in Ojców and its spa park], „Prądnik. Prace i Materiały Muzeum im. W. Szafera", vol.10, 1995, pp. 111–115; D. Ziarkowski, Kreacja, zmierzch, dziedzictwo uzdrowiska w Ojcowie [Creation, twilight, the heritage of the health resort in Ojców], [in:] Turystyka uzdrowiskowa. Stan i perspektywy [Spa tourism. Status and prospects], ed. M. Boruszczak Gdańsk 2009, pp. 137–142.

368 M.Budny, Legendy i opowieści niesamowite o zamkach jurajskich oraz duchach w nich mieszkających, Dikappa, 2009.

production of the first cast iron kettles in the Poręba area began in 1799. This custom became so popular that it even has its annual festival in Poręba[369].

Another recurring event is the Apple Festival in Mstów. The municipality is known for having the largest concentration of fruit orchards in the Silesian Voivodeship (200 hectares). During the event, you can buy fresh fruits (apples, pears, plums, cherries, raspberries, cherries), preserves, juices, pastries, and cider at local orchardists' stalls[370].

The Jura region can also be described as the Polish Cappadocia. A common feature of these two areas is hot air ballooning shows and competitions. It is a cyclical sports event that takes place in two municipalities (Olsztyn and Janów) in cooperation with the Silesian Aero Club. The competition is accompanied by an airshow, attracting a large number of aviation enthusiasts[371].

In recent years, the Kraków-Częstochowa Upland has been laying the foundations for the development of new local traditions (the first edition of the event took place in 2018). Two voivodeships, along with municipalities and cities in the Kraków-Częstochowa Upland region, as well as many cultural institutions and associations, have actively engaged in creating a project aimed at promoting this unique area and building a lasting network of cooperation. The result of this collaboration is "Juromania - the Festival of the Kraków-Częstochowa Upland," which aims to raise awareness about the region and extend the tourist season in the Jura. Juromania seeks to transport participants into the atmosphere of medieval castles and fortresses. There are jousting tournaments, historical reenactments, as well as tastings of regional dishes and numerous educational workshops. For the more adventurous, there are climbing activities under the supervision of instructors, as well as hikes and guided tours[372].

In the Kraków-Częstochowa Upland, the Union of Jurassic Municipalities was established in 1991, which currently gathers 34 municipalities in this area. This voluntary association of municipalities was created to present the Kraków-Częstochowa Upland as a region with a unified and consistent character, especially in terms of tourism. Among the other motivations for the Union's activities, one can mention: promoting tourism, protecting natural and cultural values, economic and cultural integration of municipalities, cooperation and exchange of experiences in the field of local self-government, and popularizing landscape-friendly architecture[373].

The actions taken by the Union of Jurassic Municipalities have contributed to several awards over the past years:

- In 2012, the Trail of the Eagles' Nests received the title of laureate (Golden Certificate of the Polish Tourist Organization) in the competition for the Best Polish Tourist Product, organized since 2003 by the Polish Tourist Organization[374],

- In 2021, Juromania - the Festival of the Kraków-Częstochowa Upland received the Certificate of the Polish Tourist Organization[375],

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[369] J. Pleszynik, op. cit., p. 47.

[370] https://www.mstow.pl/art/4558,swieto-jablka-2022 [access:03.03.2023]

[371] https://dlapilota.pl/wiadomosci/polska/vi-jurajskie-zawody-balonowe-juz-od-jutra [access:13.09.2023]

[372] https://www.juromania.pl/staticcontent/1014018 [access:12.09.2023]

[373] https://www.jura.info.pl/kategorie/zwiazek-gmin-jurajskich [access:12.09.2023]

[374] https://certyfikaty.polska.travel/#about [access:12.09.2023]

[375] https://certyfikaty.polska.travel/certyfikaty-2021/juromania-swieto-jury-krakowsko-czestochowskiej/ [access:12.09.2023]

- In 2022, the Kraków-Częstochowa Upland was awarded the title of Polish Tourist Brand, for which the Ministry of Sport and Tourism, together with the Polish Tourist Organization, is responsible[376].

The cultural landscape of the Kraków-Częstochowa Upland presents a fascinating mosaic of history, nature, and culture. It is an area rich in monuments, legendary castles, picturesque villages, and beautiful rock landscapes. However, despite its unique charm, it is currently threatened by various challenges.

One of the main challenges is the increasing urbanization and construction, which carries the risk of losing the authentic character of this region. The spread of residential settlements and commercial facilities affects landscape degradation and folk culture, and also raises questions about the preservation of historical heritage.

Furthermore, the growing tourist activity can contribute to environmental degradation and an increase in waste. Sustainable tourism management is necessary to protect the unique flora and fauna and maintain ecosystem integrity.

It is also worth noting that the traditions and folk culture that have long shaped life in the Jura are also at risk of being forgotten. Centuries-old customs, legendary stories, and traditional crafts are slowly losing significance in society. Therefore, it is important to support efforts to preserve, cultivate, and promote these cultural values[377].

In conclusion, the cultural landscape of the Kraków-Częstochowa Upland is a treasure that requires special care and protection. Challenges related to urbanization, tourism, and the preservation of cultural heritage are real, but with the right conservation measures, education, and social cooperation, this unique region can be preserved for future generations.

1.3. Forms of nature and cultural heritage protection

The protection of the natural and cultural landscape in the Kraków-Częstochowa Upland is one of the most significant challenges we face in the face of increasing urbanization and tourism development. This unique area, rich in natural and cultural heritage, is our legacy, and it is crucial to preserve the uniqueness of this landscape for future generations.

The first step in preserving the natural landscape in the Jura is to maintain the integrity of nature. This area is home to many unique plant and animal species and is characterized by picturesque rock formations. Therefore, it is important that the growing tourist activity is sustainable to avoid harming nature and ecosystems. Proper hiking trails, monitoring, and environmental education are crucial in this context.

Currently, a significant part of the Kraków-Częstochowa Upland enjoys legal protection [Fig.58]. However, the development of a comprehensive system for the protection of nature and the landscape in this area required considerable time and resulted from years of effort.

In the early 20th century, more specific initiatives related to nature conservation in the Kraków-Częstochowa Upland emerged. At that time, the first proposals to establish protected areas, such as the Wiercica Valley and the Prądnik Valley, were made in collaboration with the

[376] https://www.polskiemarkiturystyczne.gov.pl/ [access:12.09.2023]

[377] Park kulturowy szansa i wyzwanie [Cultural Park: Opportunity and Challenge], Narodowy Instytut Dziedzictwa, Warszawa 2022, p. 7.

then-owners of these areas - the Raczyński family in Złoty Potok and the Czartoryski family in Ojców. Naturalists, including the significant figure for the Kraków-Częstochowa Upland, Professor Władysław Szafer, emphasized the need to preserve natural values and the landscape[378]. However, formal nature protection structures were only established after World War II. In 1956, Ojcowski National Park was established, largely based on interwar projects by Stanisław Richter and Władysław Szafer. Currently, this park covers an area of 2,146 hectares and is the smallest of the national parks in Poland, dedicated to the protection of nature and the landscape in the valleys of the Prądnik and Sąspówka rivers[379].

In the 1950s and 1960s, the idea of creating landscape parks covering significant areas of the Kraków-Częstochowa Upland emerged at the Faculty of Architecture of the Kraków University of Technology. The main proponent of this idea was Professor Zygmunt Novák[380]. He advocated the establishment of the Jura Landscape Park as an area dedicated to sightseeing, recreation, and leisure. However, this idea was only realized in the years 1980-1982 when the Jura Landscape Parks Group was established. Initially, these parks covered areas in the Katowice Voivodeship, and later in the Krakow and Częstochowa Voivodeships. As a result of this process, seven landscape parks were created: Bielańsko-Tyniecki, Rudniański, Dłubniański, Dolinki Krakowskie, Tenczyński, Orlich Gniazd, and Stawki. In the beginning of 2009, the Jurassic Landscape Parks Group became a part of the Landscape Parks Group of the Małopolskie Voivodeship, which continues to operate to this day[381]. The main goals of the group include nature conservation, landscape protection, preservation of cultural values, public education, optimal land management considering ecological aspects, and promoting tourism and recreation development[382]. The group currently consists of eleven landscape parks: Dolinki Krakowskie, Tenczyński, Rudniański, Wińsko-Lipnicki, Orlich Gniazd, Bielańsko-Tyniecki, Pasma Brzanki, Ciężkowicko-Rożnowski, Dłubniański, Popradzki, and Beskid Mały[383].

Of particular note among the mentioned parks is the Orlich Gniazd Landscape Park. It is an interesting example because, on one hand, it is the largest landscape park in the Kraków-Częstochowa Upland (covering an area of 60,000 hectares), and on the other hand, due to its location in the Małopolskie Voivodeship (12,842.2 hectares) and Śląskie Voivodeship (47,397 hectares)[384], it falls under the supervision of both the Landscape Parks Group of the Małopolskie Voivodeship and the Landscape Parks Group of the Śląskie Voivodeship.

In addition to the Ojców National Park and the aforementioned landscape parks, the system of nature protection in the Kraków-Częstochowa Upland also includes other forms of safeguards. In the region, there are approximately 30 reserves, living and non-living nature, mainly of a forest and landscape nature. It is also worth emphasizing the presence of numerous natural monuments, of which there are around 300. These typically include rock formations, unique trees, historic avenues, village gardens, parks, caves, and springs. Certain areas of the

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[378] J. Pleszynik, op. cit., p. 7.

[379] K. Bzowski,Jura Krakowsko-Częstochowska pełna wrażeń, op.cit., p. 198.

[380] J. Zinkov, Zespół Jurajskich Parków Krajobrazowych Ojcowski Park Narodowy [Complex of Jurassic Landscape Parks Ojców National Park], Wydawnictwo PTTK KRAJ, Warszawa 1990, p. 5.

[381] https://zpkwm.pl/o-nas/informacje-ogolne/ [access:15.09.2023]

[382] https://zpkwm.pl/o-nas/czym-sie-zajmujemy/ [access:15.09.2023]

[383] https://zpkwm.pl/parki-krajobrazowe/ [access:15.09.2023]

[384] J. Pleszynik, op. cit., p. 8.

Upland are also protected as ecological areas, such as the Błędowska Desert, and as documentary sites. It should be noted that in recent years, there has been consideration of establishing the Jurassic National Park in the northern part of the Upland, encompassing the Wiercica Valley and Sokole Góry with the ruins of the Olsztyn Castle. However, this idea has not yet gained the approval of local municipal authorities[385].

In the area of the Kraków-Częstochowa Upland, you can also find Natura 2000 sites, which currently include eight protected areas.

However, cultural landscape is not just about nature but also the legacy of human activity. Unique architecture, historical monuments, traditions, and legends are an integral part of this region. To preserve them, support for cultural research, conservation, and education is necessary. Museums, regional chambers, and community organizations play a crucial role in this regard.

In the protected areas of the Kraków-Częstochowa Upland, there is not only rich nature but also numerous objects of cultural heritage that are subject to protection. According to estimates by Robert Pawlusiński, there are over 2,600 architectural monuments in the Kraków-Częstochowa Upland, of which 261 have been officially entered into the register of monuments[386]. This entry into the register of monuments is one of the fundamental forms of cultural heritage protection in Poland. The presence of so many architectural monuments from the Kraków-Częstochowa Upland in the register of monuments results from both the cultural richness of the region and the growing awareness of the need to protect cultural heritage in nature-protected areas. Ojcowski National Park is a good example. In collaboration with the Provincial Conservator of Monuments in Krakow, the park conducted an inventory of monuments within the park and its vicinity in the 1980s. Thanks to this initiative, many objects were officially entered into the register of monuments, which was a step towards their protection[387].

It is also essential to emphasize the importance of responsible infrastructure development. The construction of new facilities and settlements should be carefully planned and take into account the protection of the natural and cultural landscape. Appropriate regulations and spatial development rules are crucial.

There is a challenge associated with the care of cultural heritage in the Kraków-Częstochowa Upland, as protection applies to individual monuments entered into the register, rather than historical complexes or the surroundings of former buildings. However, regulations that protect the cultural landscape in the areas of the Ojcowski National Park and The Landscape Parks Group of the Lesser Poland Voivodeship have improved this situation. For a long time, Polish law did not provide for area protection, which was paradoxical because the only available option was to protect cultural heritage through the nature conservation act[388]. However, the Act on the Protection of Monuments and the Care of Monuments from 2003 introduced the possibility of protecting area-based cultural heritage through the establishment of cultural parks. In Poland, over 30 cultural parks have been created, but none of them covers

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385 J. Partyka, Konflikt czy symbioza… [Conflict or symbiosis…], op.cit., p. 169.

386 R.Pawlusiński, op.cit., pp.58–59.

387 D. Ziarkowski, Zabytki a turystyka…[Monuments and tourism…], op.cit., p. 92.

388 A. Böhm, Ochrona przyrody jako szansa ochrony dóbr kultury [Nature conservation as an opportunity to protect cultural assets], [in:] Ochrona dóbr kultury… [Protection of cultural assets…], op.cit., p. 19.

the area of the discussed Kraków-Częstochowa Upland[389], so the protection of the cultural landscape is carried out within the existing forms of nature protection.

It is worth noting that there is also an ongoing initiative aimed at placing the cultural heritage from the Kraków-Częstochowa Upland on the UNESCO World Heritage List. The most recent attempt to apply for UNESCO listing took place in 2019.

In recent years, there has been a growing awareness of the need to protect the landscape values of the Kraków-Częstochowa Upland, as reflected in numerous scientific studies and the implementation of restrictions in protected areas. For example, in the Ojców National Park, all investments must undergo rigorous scrutiny and approval by the park's architect. Additionally, the Jurassic Landscape Parks Group has developed a catalog of construction projects recommended for use within the Jura region[390]. The landscape of the Kraków-Częstochowa Upland is considered one of the most valuable areas in Poland, both in terms of natural and cultural heritage, as confirmed by environmental experts.

It is worth emphasizing that the protection of the Jurassic landscape is an ongoing and dynamic process. There is a growing awareness of the need to preserve this unique area, which is reflected in the increasing number of efforts to protect both nature and culture. However, there are also challenges, such as urbanization pressure and the growing tourism industry, which require balanced actions to maintain the integrity of this exceptional landscape.

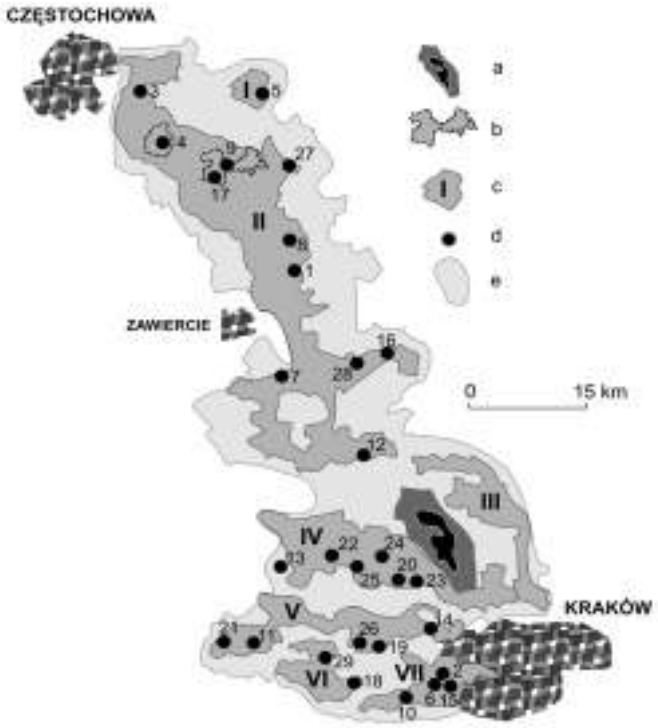

Fig. 58. Forms of nature protection in the Kraków-Częstochowa Upland: a - Ojcowski National Park ; b - proposed Jurassic National Park; c - Jurassic Landscape Parks Group; d - reserves; e - area of protected landscape, compilation: J. Partyka[391].

[389] Lista polskich parków kulturowych zamieszczona jest na stronie internetowej Narodowego Instytutu Dziedzictwa: https://www.nid.pl/pl/Informacje_ogolne/Zabytki_w_Polsce/Parki_kulturowe/Zestawienie_parkow/miejsce.php?ID=3710, [access:08.05.2021].

[390] W. Kosiński, Krajobraz jurajski… [Jurassic landscape…], op.cit., pp. 66–67.

[391] J. Partyka, Wyżyna Krakowsko-Częstochowska… [Kraków-Częstochowa Upland…], op.cit., pp. 101-103.

Summary

The Kraków-Częstochowa Upland is a space where humans and nature have coexisted for millennia. The landscape here is characterized by its rich natural heritage, including landscape parks, nature reserves, Natura 2000 areas, and Ojcowski National Park. These areas demonstrate the significance of this region for biodiversity conservation and its uniqueness on a national scale[392]. Local communities play a vital role within this landscape. They transmit traditions, folklore, indigenous tales, and narratives through generations, bestowing a distinctive character and ambiance upon these areas. The contemporary regional culture is deeply intertwined with historical roots and the natural surroundings, and its preservation is essential for upholding the essence of these locales. Consequently, the Kraków-Częstochowa Upland is a terrain that has been shaped not solely by natural forces but also by human endeavors and the extensive history of the region. It stands as a landscape where nature, culture, and history seamlessly merge, forming a phenomenon deserving of safeguarding and reverence.

The exceptional natural ambiance and cultural authenticity have transformed the Kraków-Częstochowa Upland into a region extensively explored by tourists and enthusiasts of local heritage. This locale offers a wide array of attractions catering to both educational and recreational tourism, as well as specialized interests. Typically, the tourist infrastructure complements the spatial arrangement of the region harmoniously. Nevertheless, the influx of mass culture poses a risk to this equilibrium. The colonization of the landscape for residential purposes under the guise of "recreation" has become prevalent. These landscapes are evolving into symbols of a consumerist era where the genius loci yields to "spiritual deserts" – locales bereft of communal spirit[393].

Recognizing that the cultural landscape constitutes a form of communal heritage is crucial. It can be viewed as a collaborative endeavor spanning numerous generations, serving as a shared asset for the residents of a particular region. Our perspective on space, which encompasses the assets we own, has the potential to promote the concept of place identity when consciousness and appropriate actions take into account traditions and local norms. Conversely, an inconsiderate and negligent approach to property can result in the degradation of the landscape and hinder the connection between individuals and their sense of belonging to a place. Through the process of perceiving space, private property becomes intertwined with public property and is regarded as a communal asset[394]. The lack of awareness among residents in this regard leads not only to the decline but even to the degradation of the landscape.

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[392] M. Głowacki, Parki krajobrazowe Wyżyny Krakowsko-Częstochowskiej [Landscape parks of the Kraków-Częstochowa Upland]. Warszawa, Wydawnictwo Naukowe PWN, 2003.

[393] K. Rembowska, Miasto jako przestrzeń kulturowo znacząca. W: Kulturowy aspekt badań geograficznych [The city as a culturally significant space. In: Cultural aspect of geographical research], Studia teoretyczne i regionalne, ed. E. Ormowska. T.I.V. Wrocław, 2004.

[394] M. Pietras, U. Myga-Piątek, Własność prywatna, własność publiczna: o znaczeniu posiadania dla kształtowania krajobrazu oraz relacji człowieka z miejscem i przestrzenią [Private property, public property: about the importance of ownership for shaping the landscape and human relations with place and space], [in:] Krajobraz kulturowy. Aspekty teoretyczne i metodologiczne [Cultural landscape. Theoretical and methodological aspects], ed. U. Myga- Piątek, Prace Komisji Krajobrazu Kulturowego PTG, Sosnowiec, 2005, pp. 78-89.

As indicated by the concise overview presented in this chapter, the Kraków-Częstochowa Upland holds remarkable value in both its natural and cultural dimensions. Consequently, it becomes imperative to champion a comprehensive safeguarding approach for this region. This approach should not compartmentalize nature conservation and heritage protection but rather be applied holistically as landscape preservation[395]. Only then can numerous threats be overcome, and the unique natural-cultural mosaic, so characteristic of the Kraków-Częstochowa Upland, can be preserved.

A holistic approach to landscape preservation acknowledges the intricate interplay between natural and cultural elements within this remarkable region. It recognizes that the historical and cultural heritage is intimately intertwined with the natural environment. The castles, fortifications, and architectural remnants that dot the landscape are not separate from the land itself; they are integral components of the upland's identity. Similarly, the diverse ecosystems, geological formations, and flora and fauna are inseparable from the cultural heritage, as they have shaped the history and way of life of the people who have inhabited this region for centuries.

Moreover, a holistic approach encourages collaboration among various stakeholders, including government agencies, conservation organizations, local communities, and researchers. This collective effort ensures that a wide range of expertise and resources are harnessed to protect and sustain the region's unique character.

In conclusion, the Kraków-Częstochowa Upland's remarkable value, both natural and cultural, calls for a holistic approach to safeguarding its integrity. By recognizing the inseparable link between nature and culture within this landscape and addressing the complex challenges it faces through integrated efforts, we can aspire to preserve the unique mosaic that defines this region for generations to come.

[395] Por. W. Kosiński, Architektura w parkach narodowych. Przeszłość – teraźniejszość – przyszłość [Architecture in national parks. Past – present – future], [in:] Ochrona dóbr kultury…[Protection of cultural assets…], op.cit., p. 57.

2. Historical development of castles and watchtowers in the Kraków-Częstochowa Upland

The historical development of defensive structures in the Jura region will be discussed in line with the widely accepted trend in the literature. During this period of evolution, we can distinguish the first stone fortifications, followed by castles founded and initiated during the reign of Casimir the Great, and subsequently the construction of episcopal, knightly, and aristocratic castles in the following years. After this stage, there comes a period of modernization driven by new architectural trends and the need for improved residential functions. Then, from around the 17th century onwards, there is a period of decline for nearly all the discussed fortifications. The historical aspects are quite comprehensively covered in the literature by authors such as Janusz Bogdanowski[396], Leszek Kajzer et al.[397], Bohdan Guerquin[398], and more recently, Dominik Ziarkowski[399]. They are presented in this work to provide context and emphasize the importance and necessity of preserving the heritage discussed in Chapter V.

2.1. First fortifications in the Jura region

Prehistory

The Krakow-Częstochowa Upland is an area that provided several basic yet essential resources for members of the Homo species. These resources included food (migrating animals in the valleys), sources of water (rivers, lakes, and karst springs), materials for tool and hunting weapon production, and most importantly, shelter (caves and rock shelters)[400]. It was these caves that played a crucial role as a refuge for people inhabiting this region during the Paleolithic period.

Searching for the earliest evidence of human presence in the Kraków-Częstochowa Upland, one can come across findings related to the Neanderthal period. Archaeological studies have shown that Neanderthals already inhabited the Na Biśniku Cave in the Częstochowa Upland around 160,000 years ago[401]. Through archaeological research conducted in this cave, the longest sequence of cultural layers in Poland has been revealed, encompassing settlements of both Neanderthals and anatomically modern humans[402]. In these layers of cave sediments, tools made of both flint and bone were discovered, as well as the remains of animal bones, which were remnants of their food, and ashes and charcoal from

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396 J. Bogdanowski, Sztuka obronna, Natura i kultura w krajobrazie Jury [Defensive Art, Nature and Culture in the Landscape of the Jura], t. 2, Kraków 1993, p. 21

397 L. Kajzer, S. Kołodziejski, J. Salm, op.cit.,

398 B. Guerquin, Zamki w Polsce….,s. 314.

399 D. Ziarkowski, Zamki na Wyżynie Krakowsko-Częstochowskiej. Problemy konserwacji i udostępniania dla turystyki [Castles in the Krakow-Częstochowa Upland. Problems of conservation and access for tourism],,Kraków, 2014.

400 M. Sudoł, K. Cyrek, Osadnictwo paleolityczne na Wyżynie Ryczowskiej (środkowa część Wyżyny Częstochowskiej) [Paleolithic settlement in the Ryczowska Upland (central part of the Częstochowa Upland)], Acta Universitatis Nicolai Copernici Archeologia, 13 april 2017, Vol. 34, pp. 41–42.

401 R. Pawlusiński, op.cit., p. 56.

402 K. Cyrek, P. Socha, K. Stefaniak, T. Madeyska, J. Mirosław-Grabowska, M. Sudoł, Ł. Czyżewski, Palaeolithic of Biśnik Cave (Southern Poland) within the environmental background, Quaternary International, Volume 220, Issues 1–2, 15 June 2010, pp. 5-30.; It cannot be ruled out that the first inhabitants were Homo erectus, which would constitute a unique case not only in Poland but also in Europe. The oldest layer containing artifacts indicating the activity of early hominids inside Biśnik Cave is dated to over 500,000 years ago. This means that Biśnik Cave is the oldest known cave site in Poland containing evidence of human presence.

ancient hearths[403]. This discovery offers a glimpse into the distant past when these early humans made their mark in this region. Traces of their encampment have also been found in other locations in different parts of the Jura region, including the „Ciemna" Cave in Ojców [Fig.59], where the earliest evidence suggests a period of around 120,000 years ago. These findings provide invaluable glimpses into the Neanderthal way of life and their adaptation to diverse landscapes.

Modern humans began to appear in the Kraków-Częstochowa Upland approximately 40,000 to 10,000 years ago[404]. During this period, various cultures emerged in the Kraków-Częstochowa Upland, such as the Orynik culture, the Early Gravettian culture, and the Jerzmanowice culture.These cultures left their unique imprints on the region, shaping its social and material landscape[405].

During the Neolithic period, which occurred around 5300 years before our era, the inhabitants of the Kraków-Częstochowa Upland participated in a multitude of endeavors that not only molded their own existence but also left a lasting impact on subsequent societies. During this period, humans led a partially settled way of life. They cultivated plants such as wheat, barley, peas, and beans, as well as domesticated animals. Gathering and hunting continued to play a significant role in acquiring food. This period is also associated with the beginnings of barter trade, the development of weaving skills, and further advancements in stone toolmaking and the firing of clay vessels, figurines, and ornaments[406]. One fascinating aspect of that time was the practice of extracting flint. In this period, the most ancient recognized farming communities were also founded within this vicinity, which marked a significant shift in the way people lived. Artifacts and other archaeological findings that showcase the diversity of cultures from that period can now be viewed at the Archaeological Museum in Krakow[407]. These treasures provide a window into the dynamic and evolving societies that once thrived in the Kraków-Częstochowa Upland, underscoring the enduring significance of this historical and archaeological heritage.

Another entirely separate yet primitive complex of structures includes rock terraces surrounding the rudimentary walls of cave entrances. Examples of such constructions worth mentioning are Mników and Prądnik Korzkiewski[408] representing a fascinating aspect of the cultural heritage of the Kraków-Częstochowa Upland region [Fig.60].

The Bronze and Iron Ages are associated with the permanent development of settlements in the Kraków-Częstochowa Upland. The choice of settlement locations during this time was heavily influenced by both the availability of water sources and natural defensive

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403 M. T. Krajcarz, K. Cyrek, M. Gola, Osadnictwo paleolityczne w Jaskini Biśnik w zapisie antropogenicznych biomarkerów [Palaeolithic settlement in Biśnik Cave as derived from anthropogenic biomarkers], [in:] Prace i Studia Geograficzne, Vol. 51, 2013, p. 58.

404 J. Partyka, J. Żółciak, Dziedzictwo kulturowe Ojcowskiego Parku Narodowego [Cultural Heritage of Ojców National Park] [in:] J. Partyka, Ochrona dóbr kultury i historycznego związku człowieka z przyrodą w parkach narodowych [Preservation of cultural heritage and the historical connection between humans and nature in national parks], Ojców, 2003, p. 355.

405 http://www.jura-pilica.com/?prehistoria,7 [access: 23.09.2023]

406 http://jurapolska.com/pradzieje.php [access: 23.09.2023]

407 A. Siwek, Dzieje, zabytki i kultura ludowa [History, Monuments, and Folk Culture] [in:] O Zespole Jurajskich...[About the Complex of Jurassic Landscape Parks…], op.cit., p. 21.

408 G. Ossowski, Trzecie sprawozdanie z badań antropologiczno-archeologicznych w jaskiniach okolic Kraków [Third Report on Anthropological and Archaeological Research in Caves near Krakow], Kraków, 1882.

features[409]. The primary activities of the people during this time were focused on agriculture and animal husbandry, including the raising of pigs, sheep, and cattle. Simultaneously, there was significant development in craftsmanship. Among the cultures that were present, notable ones included the Lusatian culture, Przeworsk culture, and Pomeranian culture.

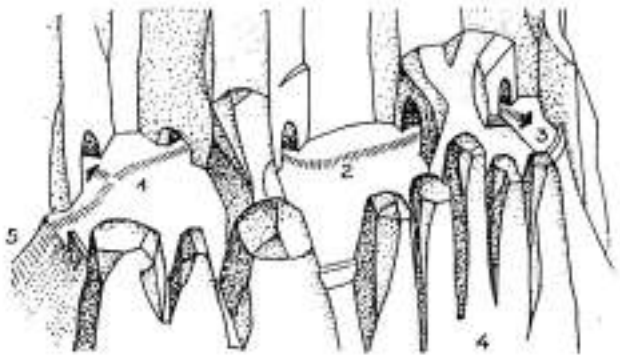


Fig. 59. [from the left]: Defensive settlement in front of the Ciemna Cave (Ojców), situated on a rock ledge shielded by the Rękawica ridge, authored by J. Bogdanowski, view of Rękawica before the Krakowska Gate, photo by the author.

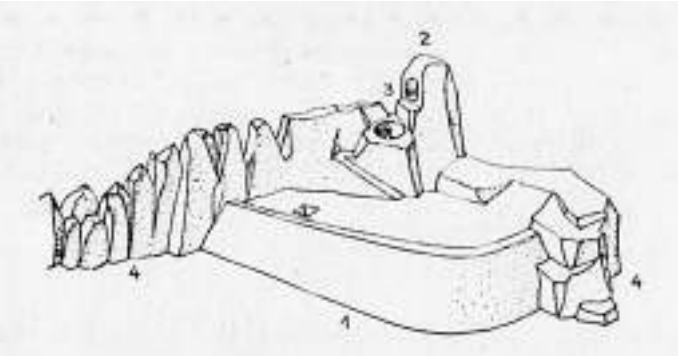


Fig. 60. [from the left]: Okiennik Wielki hillfort, authored by J. Bogdanowski, View of Okiennik Wielki, photo by the author.

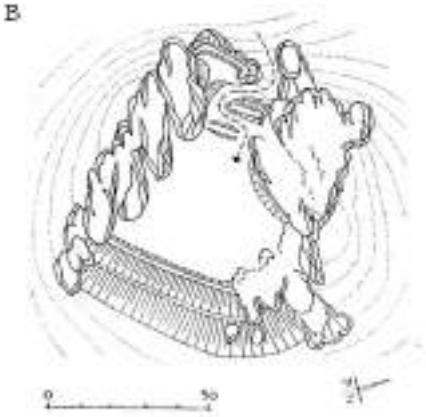


Fig. 61. [from the left]: Birów hillfort, authored by J. Bogdanowski, View of the reconstruction of the hillfort on Góra Birów, photo by the author.

[409] J. Jędrysik, Rozwój i charakter osadnictwa na obszarze Jury Polskiej w późnej epoce brązu i wczesnej epoce żelaza [Development and character of settlement patterns in the area of the Polish Jura in the Late Bronze and Early Iron age], [in:] Śląskie Sprawozdania Archeologiczne, Tom 60/1 [Silesian Archaeological Reports, Volume 60/1], Uniwersytet Wrocławski. Instytut Archeologii, Wrocław, 2018, pp. 63-68.

Another type of defensive settlements is "oborzyska," sometimes referred to as "ogrojce," bearing a likeness to impenetrable pits encircled by upright stone barriers and frequently linked by stone entrances such as in Ojców. They are characterized by the maximum utilization of natural terrain features for defensive purposes, and their significance is confirmed by the fact that they were inhabited in the early Middle Ages[410].

Early Middle Ages

The early medieval period in the Kraków-Częstochowa Upland is represented by the flourishing of numerous wooden-earth hillforts that, despite being constructed many centuries ago, have left lasting traces that can still be admired today. The oldest of these settlements date back to the 7th century, corresponding to the late period of the Great Migration. It was during this time and in the subsequent centuries that the first settlements were established, serving as precursors to future monumental stone castles. Interestingly, these structures had a defensive character and played a crucial role in the region. As examples of the oldest settlements, one should mention hillforts such as Słupsko near Kostkowice, Mount Birów, Złoty Potok, and Gąszczyk[411]. A common characteristic of these hillforts (fortified settlements) was the utilization of the natural landscape features. These hillforts were strategically located on hills, near rocks, or above cliffs. The predominant practice involved constructing defensive walls made of stones, earth, and loamy clay.

It's challenging to determine the exact quantity of hillforts as their remnants are currently visible surface traces and require archaeological research. Below are just some of the hillforts visible on LIDAR maps, identified by the author based on historical sources and archaeological findings.

The establishment of hillforts, and later defensive castles, contributed to the development of settlement, as settlements typically grew in the proximity of strongholds. During the division of Poland into districts, the Kraków-Częstochowa Upland served as the border between the Krakow district and the Silesian one. Apart from the city of Krakow and its immediate vicinity, prior to the 14th century, habitation was sporadic and isolated, progressively complemented by the formation of rural communities following leasehold regulations[412].

The development of settlement also led to the development of architectural systems and, consequently, to the construction of the first stone structures. A portion of these fortifications were constructed anew, whereas numerous others were situated atop preexisting hillforts, such as Koziegłowy Castle and Udorz Castle.

The act of constructing new stone fortifications or repurposing existing hillforts marked a transition from less durable materials to more resilient and imposing structures. Stone, with its

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410 G. Ossowski, S.J. Czarnowski, op.cit.

411 I. Miklas, Wczesnośredniowieczne grodziska na Wyżynie Krakowsko-Częstochowskiej. Zarys problematyki [Early medieval burgs of the Kraków-Częstochowa Upland. An outline of the problem], [in:] Prace Naukowe Akademii im. Jana Długosza w Częstochowie, Zeszyty Historyczne 2017, t. XVI [Research Papers of the Jan Długosz Academy in Częstochowa, Historical Series 2017, Vol. XVI], Wydawnictwo im. Stanisława Podobińskiego Akademii im. Jana Długosza w Częstochowie, 2017, pp. 353–371.

412 P. Kiryk, Z dziejów urbanizacji Wyżyny Krakowsko-Częstochowskiej w średniowieczu [From the History of Urbanization in the Kraków-Częstochowa Upland in the Middle Ages] [in:] J. Partyka, Zróżnicowanie i przemiany środowiska przyrodniczo-kulturowego Wyżyny Krakowsko-Częstochowskiej, t. 2: Kultura [Diversity and Changes in the Natural and Cultural Environment of the Kraków-Częstochowa Upland,v. 2: Culture] Ojców, 2004, p. 25.

inherent strength and longevity, represented a significant advancement in architectural technology. It allowed for the creation of imposing walls, towers, and defensive features that could withstand the test of time and various threats.

Furthermore, the construction of these stone structures often signaled the growing importance of the settlements they protected. As centers of power, culture, and commerce, these castles played pivotal roles in shaping the region's history and identity. They became not only symbols of protection but also focal points of authority and influence.

In summary, the development of settlement in the Kraków-Częstochowa Upland paved the way for advancements in architectural systems, leading to the construction of the region's first stone structures. The adaptation of preexisting hillforts into these stone fortifications, as exemplified by Koziegłowy Castle and Udorz Castle, illustrates the dynamic interplay between history, culture, and architecture in this unique region. These structures stand as enduring testaments to the resilience and innovation of the people who shaped the Kraków-Częstochowa Upland's architectural heritage

Będkowice

Bytom

Góra Balika

Grodziec

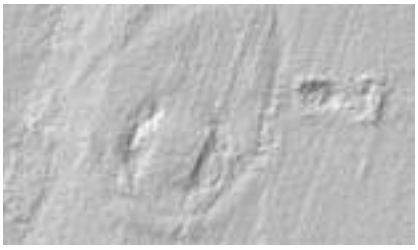
Ibramowice

Kamieniec

Kostkowice

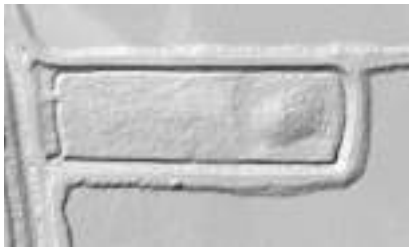
Góra Wał

Mstów



Koniecpol

Olkusz



Szczekociny

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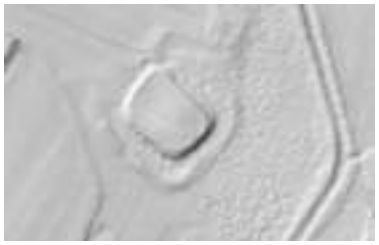

Woźniki

Złoty Potok

Żarnowiec

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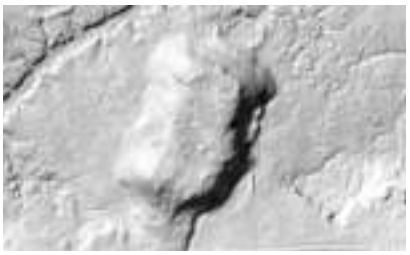
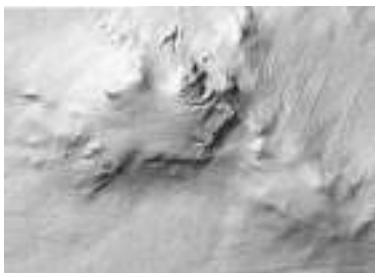


Lelów

Podlesie



Kusięta

Błeszno

Fig. 62. Outlines of ancient hillforts in the Jura region, elaborated by the author, based on LIDAR data from www.geoportal.gov.pl.

Fig. 63. Castles with the borders of Kraków-Częstochowa Upland, elaborated by the author

Historical and Territorial Background

The origins of the boundary separating Silesia from Lesser Poland have their origins in the early tribal division of the Piast dynasty. This border was modified several times, both through decisions related to different conflicts involving the military between regional rulers. A significant turning point occurred in 1179 when Kazimierz Sprawiedliwy (Casimir the Just) made a decision that drew Silesia into closer proximity with Krakow. The border regions frequently served as battlegrounds and experienced border adjustments, particularly in the era of of Poland's fragmentation and efforts to unite the nation. As time passed, Czech influence in Silesia grew more pronounced, notably in the end of the 13th century and the beginning of the 14th century when dukes from Silesia started to pledge feudal allegiance to Bohemian monarchs.

The reliance of Silesia on Bohemia also played a role in shaping the boundaries between Poland and Bohemia, especially in the context of the national identity of the Poles. The strategies employed by dukes of Silesia in the era of fragmentation of Poland further complicated the situation, leading to many local divisions. In addition to royal castles, knightly knightly, ducal and episcopal castles were also built.

2.2. The earliest stone structures

Bishop's castles are the oldest stone castles that can be found in the Kraków-Częstochowa Upland. Among them, Lipowiec and Sławków[413] [Fig. 63] are notable examples.

The history of the castle of the Krakow bishops in Lipowiec[414] began in the second half of the 13th century, probably as a primitive wooden-earth watchtower. Between the 13th and 14th centuries, the castle underwent significant reconstruction under the initiative of Bishop Jan Muskata. As a result of these works, stone defensive walls were added to the castle, and a dominant stone tower was erected. Interestingly, structures made of wood for both residential and economic purposes were not abandoned, giving the fortress a unique character. Lipowiec Castle also had a noteworthy role during important armed conflicts in which Bishop Muskata was involved. His actions were focused on countering Władysław Łokietek, and the castle served as a strategic control point. Important decisions were made here, and defenses were organized during these historical clashes.

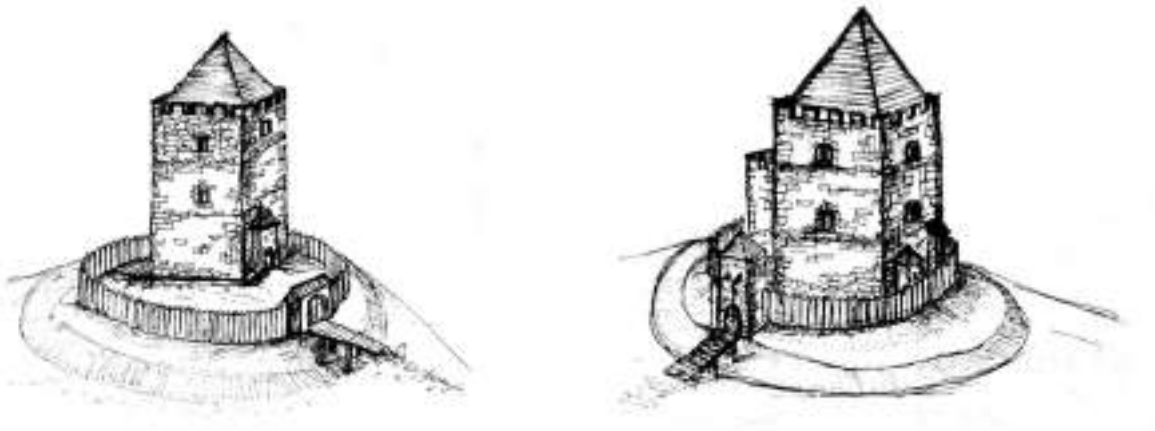


Fig. 64. Reconstruction of the tower in Sławków from the second half of the 13th century and after the expansion in the early 14th century. Source: Collections of the Regional Museum in Sławków.

Among the oldest preserved stone defensive structures in the Kraków-Częstochowa Upland, it's worth mentioning the castles in Będzin and Olsztyn.

The fortifications in Będzin were constructed atop the location of a former wooden and earth fortification. The oldest element of this castle is the cylindrical tower, riginating in the latter part of the 13th century[415]. The initiator of the construction of this fortress remains an

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413 J. Pierzak, Zamek biskupów krakowskich w Sławkowie, woj. katowickie – jedno z najstarszych murowanych założeń obronnych w Polsce południowej, „Sprawozdania Archeologiczne", t. 45, [The Castle of the Bishops of Krakow in Sławków, Katowice Voivodeship - one of the oldest fortified masonry complexes in southern Poland, 'Archaeological Reports,' vol. 45], 1993, p. 228–229.

414 T. Holcerowa, Zamek w Lipowcu. Tekst objaśniający: część I – Historia zamku, część II – Przewodnik po zamku, [Castle in Lipowiec. Explanatory Text: Part I - History of the Castle, Part II - Castle Guide], Kraków 1968, p. 1, typescript, Provincial Office for the Protection of Monuments in Krakow (later: WUOZ Kraków), n. 42.265/07; Eadem, Lipowiec – dawny zamek biskupów krakowskich [Lipowiec - Former Castle of the Bishops of Krakow], Warszawa, 1989, p. 6.

415 W. Błaszczyk, Będzin przez wieki. Dzieje miasta i jego rozwoju urbanistyczno-przestrzennego od średniowiecza do połowy XX wieku na podłożu osadnictwa w starożytności i wczesnym średniowieczu [Będzin through the centuries: The History of the City and its Urban and Spatial Development from the Middle Ages to the Mid-20th Century on the Basis of Settlement in Antiquity and the Early Middle Ages], Poznań, 1982, p. 622.

open question. There are many theories that associate the Będzin Castle with figures such as Duke Bolesław Wstydliwy, Leszek the Black, or the Czech king Wenceslaus II[416].

In its initial phase of development, Olsztyn Castle was a watchtower with a tall, cylindrical tower[417]. The first mentions of it can be found in records from the legal proceedings between Archbishop Jakub Świnka and Bishop of Krakow Jan Muskata (some sources attribute the name "Przymiłowice" to the castle). The name "Olsztyn" that is currently used in documents only appears from 1341 and is associated with the expansion of defensive structures carried out by King Casimir the Great[418]. The modifications made in the mid-14th century transformed Olsztyn into the largest fortress in the Krakow-Częstochowa Upland.

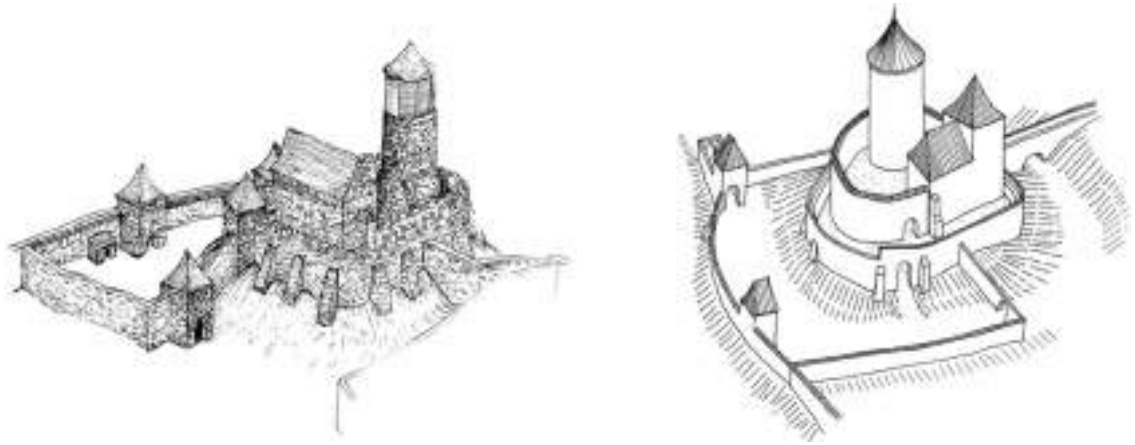

Fig. 65. Reconstruction of the Będzin Castle, according to K. Michalski and J. Salma., source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/bedzin-zamek/, [access:18.12.2022]

Presumed structures from the 13th and 14th centuries.

During the turn of the 13th and 14th centuries, it is presumed that there were brickwork elements in the castles in Lelów, Żarnowiec, and also in Skała[419].

Documents from the early 14th century confirm the existence of a castle in Lelów. Konrad Mazowiecki is considered the initiator of the construction of this defensive structure. The castle was built in the mid-13th century, but due to numerous invasions, it was repeatedly damaged. It is difficult to determine the extent of modifications made by King Casimir the Great. Unfortunately, this castle did not survive to the present day, and now there is a cemetery on its site. This fact further limits the possibilities of conducting research in this area[420].

The origins of the castle in Żarnowiec date back to the begun of the 10th century, making it one of the oldest structures in the Kraków-Częstochowa Upland. This fortress was likely rebuilt at a later date, with the renovations attributed to the reign of King Kazimierz

416 J. Krajniewski, Będzin. Początki miasta [Będzin: The Beginnings of the City], Będzin, 2008, p. 16.
417 J. Smoczyński, Zamki [Castles],Carta Blanca, Warszawa 2009, p. 248.
418 L. Kajzer, S. Kołodziejski, J. Salm, M. Gaworski, Leksykon zamków w Polsce Wydanie II [Lexicon of Castles in Poland, 2nd Edition], Arkady, 2022, p. 336.
419 M. Antoniewicz, Zamki na Wyżynie Krakowsko-Częstochowskiej. Geneza..., [Castles in the Kraków-Częstochowa Upland: Genesis...], op.cit., p. 61.
420 L. Kajzer, S. Kołodziejski, J. Salm, M. Gaworski, Leksykon zamków w Polsce Wydanie II [Lexicon of Castles in Poland, 2nd Edition], Arkady, 2022, p. 265.

Wielki (Casimir the Great), as suggested by Jan Długosz.[421] The Żarnowiec Castle had both defensive and administrative significance in the region. It served as an important point in the defensive system, protecting the surrounding areas from potential threats.

The stronghold in Skała, built in the beginning of 13th century is an interesting point in the study of history. Initially, it was confused with other locations, especially Pieskowa Skała due the name similarities. Currently, it is presumed that this was placed on Kocica Hill in Sułoszowa, where relics of its structure have been discovered.

2.3. Castle constructed at the initiative of Casimir the Great

The emergence of castles in Europe can be intimately linked to the feudal system and the intricate socio-political transformations of the medieval age. In contrast, the Polish experience presents a unique narrative, where the evolution of defensive architecture finds its origins in distinctive social and political contexts. These contexts were cultivated during the epoch of the aristocratic monarchy and were significantly shaped by the reign of King Kazimierz Wielki (Casimir the Great).[422]

In the Polish context, feudalism assumed a distinctive character influenced by the dynamics of national integration and the principles of "Coronae Regni Poloniae," exerting a profound influence on the formation of political and fortification structures. From an administrative perspective, the nation was structured hierarchically, with the starosta's office (district governor) occupying the apex and overseeing the administration of regional fortresses. This dynamic played a pivotal role in the evolution of stone fortifications.

Transformations within the Polish framework following the pivotal year of 1370, marked by Louis I of Anjou's ascension to the throne, instigated a heightened significance of castles under noble ownership and a dispersion of authority. Within this backdrop, the progression of feudalization and adherence to the "Coronae Regni Poloniae"[423] doctrine experienced additional metamorphoses, bringing the Polish system into greater alignment with contemporary models observed in various European nations. Nevertheless, a compelling trend toward centralization persisted, particularly within the ranks of the knightly class, as they were committed to safeguarding the unity and cohesion of the Kingdom of Poland.[424]

Starting from the transition between the 13th and 14th centuries, the construction of stone castles commenced due to the initiatives of princes, kings, bishops, and knights.[425] A substantial quantity of these defensive edifices materialized during the rule of King Kazimierz Wielki, with particular emphasis on the Kraków-Częstochowa Upland, which transformed into a frontier zone delineating Lesser Poland and Silesia, a region that was part of the Czech lands at the time.

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[421] M. Antoniewicz, Zamki na Wyżynie Krakowsko-Częstochowskiej. Geneza..., [Castles in the Kraków-Częstochowa Upland: Genesis...], op.cit., p. 35.

[422] J. Le Goff, Kultura średniowiecznej Europy [The Culture of Medieval Europe], Warszawa 1970, pp. 105, 310-311, 353-354, 445-447.

[423] K. Grzybowski, Corona Regni Polonia, „Czasopismo Prawno-Historyczno", T.IX (1957), z. 2, pp. 299-331.

[424] Z. Wojeciechowski, Państwo polskie w wiekach średnich. Dzieje ustroju [The Polish State in the Middle Ages: Political History] Poznań, 1948, p. 107; J. Bardach, Historia państwa i prawa Polski, [The History of the State and Law in Poland] T.I. Warszawa, 1964, pp. 445-447.

[425] These castles will be discussed in more detail in the following chapters of the dissertation.

Between 1333 and 1370, spanning the rule of King Casimir the Great, the field of defensive architecture within the Kingdom of Poland underwent a phase of notable advancement. Scholars approximate that approximately 80 castles were erected within the realm during this era, with almost half of them being directly associated with the king's patronage. The Kraków-Częstochowa Upland also witnessed a fervent period of castle construction during this time. Historical estimates suggest that, under the directives of Kazimierz Wielki, numerous fortresses and smaller watchtowers were constructed in this particular region. Marceli Antoniewicz[426], in his analysis of medieval sources, categorized these foundations into three main groups as presented in the table below:

Tabel.1. Main castle foundations, elaborated by the author

No	Source attributing the building initiative to King Casimir the Great	Examples of objects
1	14th-century chronicles, later confirmed by Jan Długosz	Będzin, Bobolice, Krzepice, Lelów, Ojców, Olsztyn
2	Jan Długosz	Żarnowiec, Pieskowa Skała
3	Castles omitted in historical sources	Ogrodzieniec, possibly Ostrężnik and Rabsztyn, along with several smaller guardhouses

King Casmir the Great, when initiating the construction of castles in the Jura region, primarily chose areas where existing strongholds or defensive structures already existed. A perfect example of this approach is the Będzin Castle, which, according to archaeological research, was built on the foundations of an earlier fortification from between 11th-13th centuries.[427] A similar strategy was employed for the castles in Lelów, Żarnowiec, and Olsztyn. In Krzepice, also during this period, there was a wooden stronghold that was replaced by a sturdy stone royal castle. However, just like in the case of the castles in Lelów and Żarnowiec, this castle did not survive to our times, and its structures were dismantled in 1840[428].

The castles located in the Prądnik Valley, namely Ojców and Pieskowa Skała [Fig.66], were probably built on new sites, although earlier defensive structures existed in their vicinity.

The first mention of Ojców Castle appears in the chronicles of Jan z Czarnkowa. The stronghold in Ojców was part of the estate managed by the burgrave Zaklik of Korzkiew, a fact confirmed in a document from 1370. It was likely built around the mid-14th century with funds from King Casimir the Great. This information is indirectly confirmed in a document from 1354, in which the King of Poland obtained the village of Smardzowice in exchange for the land on which he built a solid stone fortress[429].

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426 M. Antoniewicz, Zamki na Wyżynie Krakowsko-Częstochowskiej. Geneza..., [Castles in the Kraków-Częstochowa Upland: Genesis…] op.cit., p. 27.

427 L. Kajzer, S. Kołodziejski, J. Salm, op.cit., p. 91.

428 A. Gruszecki, Zamek w Krzepicach, „Ochrona Zabytków" [The Castle in Krzepice, 'Heritage Conservation] R. 12, 1959, nr 3–4, pp. 185–207.

429 L. Kajzer, S. Kołodziejski, J. Salm, M. Gaworski, Leksykon zamków w Polsce Wydanie II [Lexicon of Castles in Poland, 2nd Edition], Arkady, 2022, p. 332.

Fig. 66. Reconstruction of Pieskowa Skała Castle from the late 14th century, according to W. Bosak., source: https://medievalheritage.eu, [access: 24.01.2022]

The origins of Ogrodzieniec Castle are likely associated with a wooden and earthen hillfort known as "Wilcza Szczęka," which existed during the reign of Duke Bolesław Krzywousty[430]. In the mid-14th century, at the initiative of King Casimir the Great, a stone castle in the style of Italian Gothic was built on the ruins of the old hillfort. It served as one of the guard posts on the border between the Crown and Silesia. The first leaseholder of the castle was a knight named Przedbórz of Brzezie, bearing the Zadora coat of arms. The earliest written mentions of the castle appear in sources in 1386 when it was handed over to Włodek of Charbinowice by Władysław Jagiełło[431].

The origin of Rabsztyn Castle [Fig.67] is similarly problematic. The first mention of it in sources dates back to the late 14th century when it was transferred by Jagiełło to Spytek of Melsztyn. However, most historians date the construction of the castle to the mid-14th century, during the reign of Kazimierz Wielki. Nevertheless, it cannot be entirely ruled out that the original castle was built even before his ascension to the throne, perhaps during the period when he was the founder of the Kraków Academy.[432]

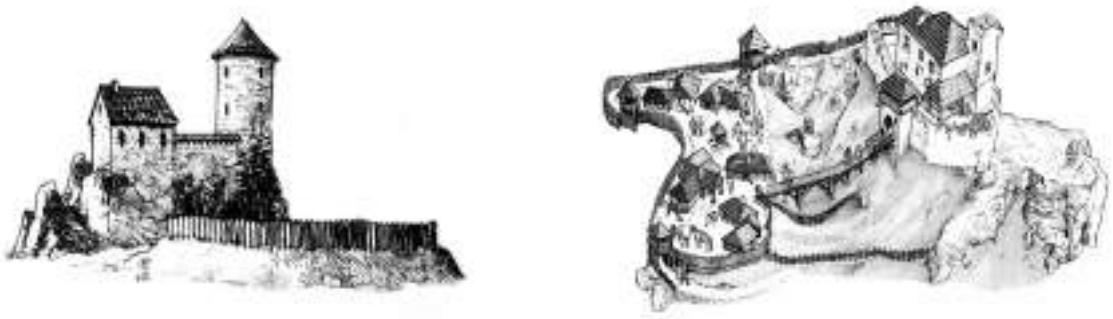

Fig. 67. Reconstruction of Rabsztyn Castle from the 13th/14th century from the southern side, according to A. Sypek and B. Drejewicz, and reconstruction of Ostrężnik Castle from the 14th century with the southern gate, according to M. Szelerewicz, source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/rabsztyn-zamek/, https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/ostreznik-zamek/, [access"13.05.2021]

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430 M. Poleski, Zamek Ogrodzieniecki na tle najbliższej okolicy, jego przeszłość i stan obecny, Warszawa 1913, p.

431 L. Kajzer, S. Kołodziejski, J. Salm, M. Gaworski, Leksykon zamków w Polsce Wydanie II [Lexicon of Castles in Poland, 2nd Edition], Arkady, 2022, p. 380.

432 L. Kajzer, S. Kołodziejski, J. Salm, op.cit., p. 411.

Bobolice Castle is mentioned both in the chronicles of Jan z Czarnkowa and Jan Długosz in the context of defensive actions taken by King Casimir the Great, emphasizing its significance in the history of the Kingdom of Poland. This structure was most likely built from scratch in an entirely new location. In 1370, King Louis I of Hungary transferred Bobolice to Duke Władysław Opolczyk as part of a coronation gift, seeking his support in dynastic plans[433]. Subsequently, Władysław Opolczyk handed Bobolice over to the Hungarian Andrzej Schony of Barlabas, displaying disloyalty to the Polish crown, which greatly concerned Władysław Jagiełło. As a result, in 1391, Jagiełło invaded Opolczyk's territories and forcibly captured Bobolice Castle along with the surrounding lands[434].

Another example of a castle that was built "from scratch," without pre-existing structures on the site, is the castle on Ostrężnik Hill. It is located halfway between Bobolice and Olsztyn. Although construction work on the castle was never completed, there are many speculations that Kazimierz Wielki initiated this project. This hypothesis suggests that the castle construction might have started during the later period of the monarch's rule and was halted after his death in 1370. While this theory seems highly plausible, the current state of knowledge does not allow for its full confirmation.[435]

Fig.68. Reconstructions of watchtowers in Suliszowice, Przewodziszowice, and Ryczów, according to B. Drejewicz, source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/przewodziszowice-zamek/, [access:23.05.2021]

The castles built during the reign of Kazimierz Wielki in the Jura region seem to be the result of a construction process that occurred in stages and had different chronological contexts. Surprisingly, written sources do not provide detailed information regarding the dates of construction of these individual fortresses. Marceli Antoniewicz's analysis suggests the existence of two potential phases in the creation of castles in the Jurassic region.

The first of these phases, lasting until around 1345, likely focused on the construction of fortresses associated with towns such as Będzin, Rabsztyn, or Lelów. During this earlier phase, castles in Krzepice, Pieskowa Skała, and Ojców were also built. It is fascinating that these early castles could be associated with the intensive development of urban areas and the strategic context of those territories.

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433 J. Smoczyński, Zamki [Castles],Carta Blanca, Warszawa 2009, p. 253.

434 L. Kajzer, S. Kołodziejski, J. Salm, M. Gaworski, Leksykon zamków w Polsce Wydanie II [Lexicon of Castles in Poland, 2nd Edition], Arkady, 2022, p. 87.

435 B. Guerquin, op.cit., p. 246; M. Antoniewicz, Zamki na Wyżynie Krakowsko-Częstochowskiej. Geneza…, [Castles in the Kraków-Częstochowa Upland: Genesis...], op.cit., p. 41–43.

The second phase of castle construction in the Jura region, which probably took place in the last decade of Kazimierz Wielki's rule, appears to be more complex and intricately related to plans concerning Silesian territories. During this period, castles in Bobolice, Ogrodzieniec, Ostrężnik, and numerous central guardhouses on the Jura may have been built. These castles and fortifications of the second phase may reflect the strategic goals of the monarch, which were linked to his efforts to regain territories in Silesia.

It's important to note that besides the monumental castles, there were also more modest guardhouses referred to with the single word "fortalicium" (distinguishing them from the powerful "castrum" used for castles). These guardhouses, although much smaller and simpler in terms of their defensive features, played a crucial role in the defensive borderline. Interestingly, these guardhouses were usually located in close proximity to the castles, often just a few kilometers away. Due to their strategic locations and the proximity to larger defensive complexes, it suggests that guardhouses, such as Suliszowice and Przewodziszowice [Fig.68], probably cooperated with the castle on Ostrężnik Hill, similarly to the guardhouses in Łutowiec and Mirow [Fig.69] with Bobolice, and the guardhouse in Klucze with Rabsztyn Castle[436].

It's worth emphasizing that the numerous initiatives related to the construction of defensive structures undertaken by King Casimir the Great significantly contributed to the increased military importance of the Kraków-Częstochowa Upland region. In the 14th century, the border of the Kingdom of Poland ran through this area, separating it from the Silesian duchies. The castles and fortifications built in towns in this area played a crucial role in defense, and their significance persisted in the subsequent centuries.

2.4. Episcopal strongholds

In the Kraków-Częstochowa Upland, we are not only fascinated by royal castles and modest guardhouses but also encounter episcopal fortresses. Regarding the properties belonging to the bishops of Kraków, Lipowiec and Sławków have already been mentioned as some of the oldest fortified masonry structures in these lands. We also cannot overlook the castle in Siewierz, which, although it came into the hands of the bishops of Kraków only in 1443, deserves our attention. This castle was acquired by Cardinal Zbigniew Oleśnicki from Duke Wacław I of Cieszyn and probably originated in the 14th century, replacing an earlier castellan stronghold located in its vicinity. The transformation of the Siewierz Castle engaged the bishops of Kraków for centuries, especially in the 15th and 16th centuries.[437].

However, it should be emphasized that more numerous than episcopal castles were those owned by knights, which were founded by influential feudal lords and better-off knights. Often, these castles represented the continuation of the advancement in the construction of personal protective structures, replacing earlier strongholds and fortified manors that were present in feudal centers of power[438].

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[436] M. Antoniewicz, Zamki na Wyżynie Krakowsko-Częstochowskiej. Geneza… [Castles in the Kraków-Częstochowa Upland: Genesis...] op.cit., pp. 43–46.

[437] A. Rok, Dzieje zamku w Siewierzu. Krótki zarys historii i architektury [The History and Architecture of Siewierz Castle: A Brief Overview], Siewierz 2011, pp. 21–31.

[438] S. Kołodziejski, Średniowieczne rezydencje obronne możnowładztwa na terenie województwa krakowskiego [Medieval Defensive Residences of the Local Elite in the Krakow Voivodeship], Kraków 1994, p. 56.

In the majority of cases, private castles in the Kraków-Częstochowa Upland were built in the 14th century. To erect them, approval from the king was often required, suggesting that initially, they served a simple defensive purpose, similar to earlier strongholds. However, after the death of King Kazimierz Wielki, all restrictions on castle construction were lifted, paving the way for the creation of impressive residences that combined defensive functions with residential ones.

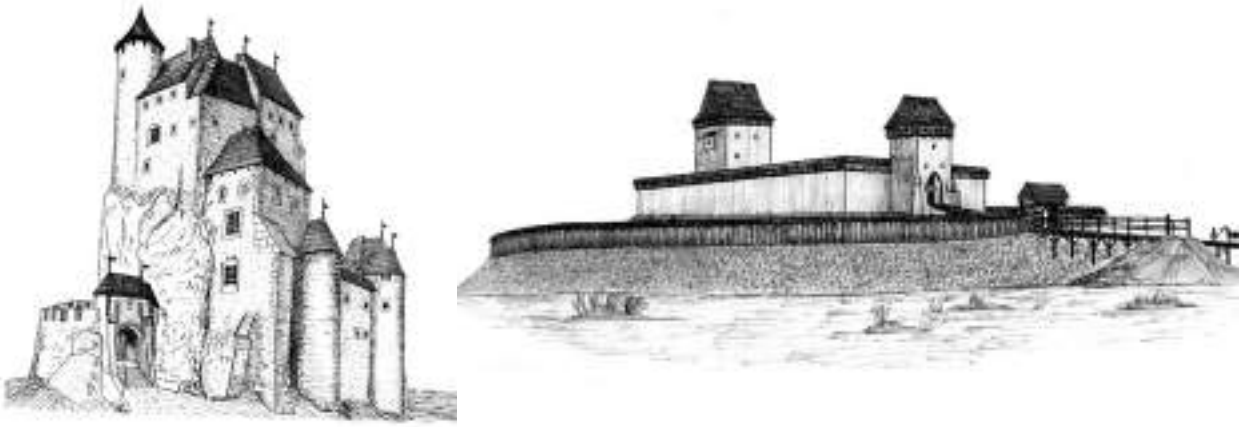

Fig. 69. Reconstruction of the 15th-century Mirow Castle and the late 14th-century Koziegłowy Castle, based on K. Moskała's work., source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/mirow-zamek/, https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/kozieglowy-zamek/, [access:23.05.2021]

2.5. Knightly castles

Among the knightly castles built in the Krakow-Częstochowa Upland, two fortresses located near Krakow are noteworthy. We are talking about the modest, although currently only partially preserved, remains of the castle in Biały Kościół and the castle in nearby Korzkiew. It is likely that both of these fortresses were associated with the Zaklik family, who used the Syrokomla coat of arms, although we have full historical confirmation only in the case of the castle in Korzkiew.[439]

The ruins of the castle in Biały Kościół [Fig.70] were probably constructed in the beginning of the 14th century. The history of this fortress was likely relatively short, and it was quickly abandoned. The owners decided to build a new stronghold in Korzkiew, which seems to align with the history of the area. Originally, the name "Korzkiew" referred to the hill, which in 1352 was acquired by Jan of Syrokomla, probably with the intention of constructing a defensive fortification there. The presence of Korzkiew Castle is substantiated by historical documents dating back to 1388-1389, although it is plausible that its history predates these records.[440]

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[439] S. Kołodziejski, Zamek w Białym Kościele, „Teki Krakowskie", t. 2 [The Castle in Biały Kościół, v. 2], 1995, p. 94–96.

[440] W. Niewalda, Średniowieczny zamek w Korzkwi w świetle ostatnich badań architektoniczno-historycznych, „Teki Krakowskie", t. 2 [The Medieval Castle in Korzkiew in Light of Recent Architectural and Historical Research], 1995, p. 104; P. Sczaniecki, Zamek w Korzkwi i jego właściciele (dziesięć opowieści), [The Castle in Korzkiew and Its Owners (Ten Stories)], Kraków 1998, pp. 24–25; P. S. Szlezynger, Zamek w Korzkwi i jego otoczenie. Problemy odbudowy i zagospodarowania [The Castle in Korzkiew and its Surroundings: Issues of Reconstruction and Development], Kraków 2005, p. 23.

In the areas of Bydlin and Udórz, the first signs of private castles appeared at the end of the 14th century, although today only small fragments of these historical residences have survived.

One of the notable castles in the Kraków-Częstochowa Upland is the Bydlin Castle, its historical roots tracing back to the late 14th century. The earliest documented reference to this castle appears in 1398, just a decade after the first official records of the village of Bydlin. During this period, the ownership of Bydlin was vested in two knights, Niemierza and Pełka. Intriguingly, there exists a local tradition suggesting a possible connection between these knights and Kazimierz Wielki (Casimir the Great), one of the most prominent monarchs in Polish history. However, it's essential to note that conclusive historical evidence to substantiate this tradition remains elusive.[441]

Another castle worth our attention is the castle in Udorze. Its origins date back to the turn of the 14th and 15th centuries and are associated with the figure of Iwo of Obiechów, who bore the Wieniawa coat of arms. Unfortunately, the construction of this castle was not completed. [442] However, it's worth noting that in the nearby vicinity of the preserved castle fragments, there are traces of an older settlement that probably existed in this area from the late 8th century to the first quarter of the 13th century.[443]

Regarding other medieval castles associated with knightly families, there are only occasional mentions in historical records. Examples include the castle in Bobrek on the Przemsza River, probably built in the second half of the 14th century, and the castle in Siedlec, located near Będzin and recorded at the beginning of the 15th century. [444] As for the castle in Siedlec, there is even a hypothesis that its remains were incorporated into a later palace, but to confirm this theory, detailed archaeological and architectural studies are necessary.[445]

In essence, the Udorze, Bobrek, and Siedlec castles, along with the ancient settlement remnants, are valuable historical and archaeological treasures that offer windows into the past of the Kraków-Częstochowa Upland. They provide opportunities for researchers and history enthusiasts to delve deeper into the region's medieval history, uncovering the stories of the people and events that shaped its rich cultural heritage.

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[441] B. Muzolf, Bydlin – gm. Klucze woj. katowickie. Zamek rycerski na górze Św. Krzyża – opracowanie badań archeologicznych, t. 1, [Bydlin - Klucze Municipality, Silesian Voivodeship. Knight's Castle on Mount St. Cross - Study of Archaeological Research v.1], Łódź 1990, pp. 3–9, maszynopis, WUOZ Kraków, nr inw. 31.593/00; A. Celichowski, S. Styczyński, Studium historyczno-przestrzenne rejonu wzgórza zamkowego w Bydlinie woj. katowickie [Historical and Spatial Study of the Castle Hill Area in Bydlin, Silesian Voivodeship], Łódź 1991, p. 4, typescript, WUOZ Kraków, nr inw. 31.637/00; S. Kołodziejski, Średniowieczne rezydencje obronne…, [Medieval defensive residences…], op.cit., pp. 121–122.

[442] M. Antoniewicz, Zamki na Wyżynie Krakowsko-Częstochowskiej. Geneza…, [Castles in the Kraków-Częstochowa Upland. Genesis…], op.cit., p. 58; L. Kajzer, S. Kołodziejski, J. Salm, op.cit., p. 510.

[443] M. Broda, Wyniki badań archeologicznych wczesnośredniowiecznego grodziska w miejscowości Udórz w 1988 roku, [Results of archaeological excavations at the early medieval settlement in the village of Udórz in 1988], [in:] J. Partyka, Zróżnicowanie i przemiany środowiska przyrodniczo-kulturowego Wyżyny Krakowsko-Częstochowskiej, t. 3: Suplement [Diversity and Transformations of the Natural and Cultural Environment of the Kraków-Częstochowa Upland, Vol. 3: Supplement], Ojców 2005, pp. 101–108.

[444] M. Antoniewicz, Zamki na Wyżynie Krakowsko-Częstochowskiej. Geneza… [Castles in the Kraków-Częstochowa Upland. Genesis…], op.cit., pp. 59–60.

[445] S. Kołodziejski, Średniowieczne rezydencje obronne… [Medieval defensive residences], op.cit., pp. 174–175.

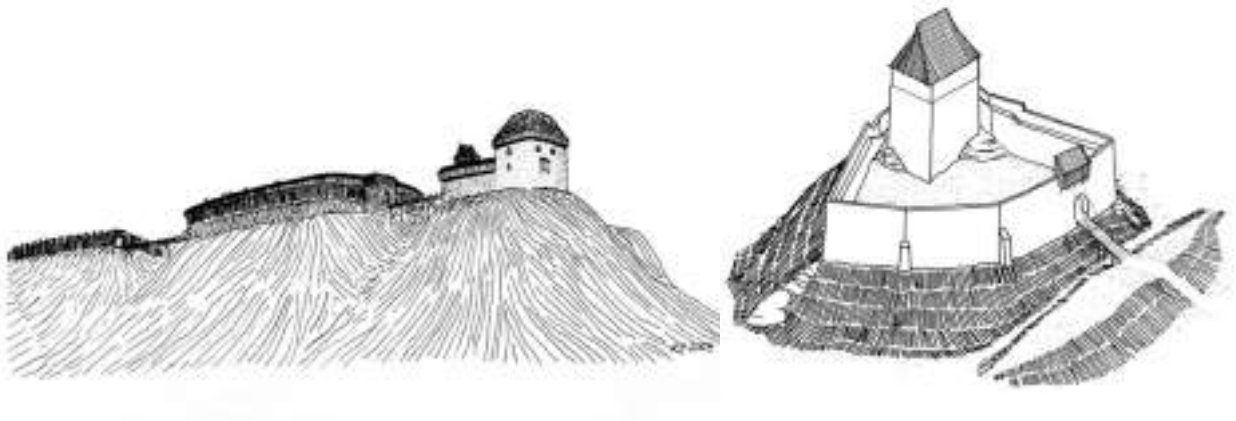

Fig. 70. Reconstruction of the castle in Biały Kościół by K. Moskała and reconstruction of the castle in Korzkiew from the second half of the 14th century by W. Niewalda, source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/wielka-wies-zamek-trzewlin/, https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/korzkiew-zamek/, [access:23.05.2021]

The remaining medieval knightly castles in the mentioned region are primarily known through historical references. Among these, we can highlight the castle located near the Przemsza River in Bobrek, likely constructed during the latter part of the 14th century. Similarly, the castle in Siedlec, near Będzin, features in historical records with its fortalicium noted in the early 15th century[446]. However, it's worth noting that in the case of the Siedlec castle, the possibility exists that its remnants may be incorporated within a later palace structure. Confirming or disproving this hypothesis would necessitate in-depth archaeological and architectural investigations[447].

In a broader context, it's important to underline that during the period spanning from the late 13th century to the first half of the 15th century, nearly 30 castles were constructed within the Kraków-Częstochowa Upland. This region stood out as a notably well-fortified area during that historical epoch. Subsequently, over the following centuries, these Jurassic fortresses underwent various modifications and transformations, a historical trajectory that is also worth briefly examining.

2.6. Noble Castles

The village of Morawica was the oldest residence of the Toporczyk family, and their presence likely dates back to the 11th century. The first fortified residence might have been established around that time, although a stone castle was probably built a bit later, likely in the 14th century. Unfortunately, this structure did not survive to the present day. Historical documents mention that in 1408, the Tęczyński family handed over a part of the castle to the church. There is a hypothesis that some fragments of the castle might be integrated into the current rectory building.[448]

Tenczyn Castle, located in the present-day village of Rudno, was another crucial residence of the Toporczyk family. While the first records about it date back to the early 15th

[446] M. Antoniewicz, Zamki na Wyżynie Krakowsko-Częstochowskiej. Geneza…[Castles in the Kraków-Częstochowa Upland. Genesis…], op.cit., s. 59–60.
[447] S. Kołodziejski, Średniowieczne rezydencje obronne... [Medieval defensive residences], op.cit., s. 174–175.
[448] Ibidem, pp. 161–162; L. Kajzer, S. Kołodziejski, J. Salm, op.cit., p. 313

century, it is believed that its construction might have started in the 14th century under the patronage of the voivode of Kraków, Andrzej of the Topór coat of arms, who adopted the name Tęczyński.[449] Janusz Kurtyka dates the oldest part of the castle to a period between 1331 and 1361, although there are also theories connecting the early construction with a previous period, linking it to Nawoja of Morawica, Andrzej's father, who, in 1319, decided to clear a forest, later known as Tenczyn, to establish a settlement.[450][451]

The third significant residence of the Toporczyk family was the village of Pilica, which they began to possess in the 13th century. In the subsequent century, they initiated the construction of a stone castle, and the family branch adopted the name Pilecki. The castle, known in medieval sources as Pilica or Pilcza, began to be called Smoleń from the 16th century onwards. It is highly likely that the castle was built after the middle of the 14th century by Otto of Pilica, who accumulated substantial wealth and political influence during the reign of King Casimir the Great.[452] Although the first confirmed owner of these lands was John of Pilica, Otto's father, there is a possibility that it was he who decided to construct a stone defensive residence.[453]

Another significant noble family in the Kraków-Częstochowa Upland was the Lisów family. The fortifications built by them date back to the 14th century and appear to have been constructed in a relatively short period. The most significant castle in this group is Koziegłowy, located to the west of the city. It is believed that the initiator of its construction might have been Krystyn[454] or his ancestor, Prandota[455]. Krystyn also played a decisive role in the construction of Mirow Castle, which is located just under two kilometers from Bobolice. It's worth noting that there was a smaller watchtower on this strategic hill, likely from the time of King Casimir the Great. However, in the 1390s, King Władysław Jagiełło decided to grant these lands to the Koziegłowy family to transform the watchtower into a castle stronghold. The first written mention of Koziegłowy Castle dates back to 1405.[456]

Another structure that came into the possession of the Lisów family, specifically the Koziegłowy branch, was Bąkowiec Castle. Its construction is probably dated to the second half of the 14th century, although there is a hypothesis that it might have initially been one of the numerous watchtowers erected during the time of King Casimir the Great. However, it was not

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[449] B. Guerquin, op.cit., p. 308; T. Małkowska-Holcerowa, Ruiny zamku Tenczyńskiego we wsi Rudno (miejskie województwo krakowskie). Dokumentacja historyczna [Ruins of Tenczyn Castle in the village of Rudno (Kraków Voivodeship). Historical Documentation.], Kraków 1986, p. 23, typescript, WUOZ Kraków, no. 11.949/86

[450] J. Kurtyka, Latyfundium Tęczyńskie. Dobra i właściciele (XIV–XVI wiek) [The Tęczyn Latifundium. Properties and Owners (14th–16th century)], Kraków 1999, pp. 63–64.

[451] S. Kołodziejski, Średniowieczne rezydencje obronne… [Medieval defensive residences], op.cit., pp. 186–187; L. Kajzer, S. Kołodziejski, J. Salm, op.cit., p. 431

[452] T. Małkowska-Holcerowa, Z. Holcer, Zamek w Smoleniu (województwo katowickie). Opracowanie historyczne [Smoleń Castle (Silesian Voivodeship). Historical Study.], Kraków 1987, s. 36, maszynopis, WUOZ Katowice, nr inw. 3061. Zob. też M. Antoniewicz, Zamki na Wyżynie Krakowsko-Częstochowskiej. Geneza…, [Castles in the Kraków-Częstochowa Upland. Genesis…], op.cit., p. 52.

[453] L. Kajzer, S. Kołodziejski, J. Salm, op.cit., p. 461.

[454] M. Antoniewicz, Zamki na Wyżynie Krakowsko-Częstochowskiej. Geneza… [Castles in the Kraków-Częstochowa Upland. Genesis…], op.cit., pp. 53–54.

[455] J. Laberschek, W sprawie początków miasta Koziegłowy, „Teki Krakowskie", t. 2 [Regarding the beginnings of the town of Koziegłowy, v. 2], 1995, pp. 119–120.

[456] M. Antoniewicz, Zamki na Wyżynie Krakowsko-Częstochowskiej. Geneza… [Castles in the Kraków-Częstochowa Upland. Genesis…], op.cit., s. 54–55; L. Kajzer, S. Kołodziejski, J. Salm, op.cit., p. 308.

until 1435 that Krystyn of Koziegłów junior, the son of the founder of Mirow Castle, took over Bąkowiec Castle.[457]

It is worth emphasizing that between the late 13th and the first half of the 15th century, approximately 30 castles were built in the Kraków-Częstochowa Upland, thanks all mentioned foundations. After this period, there were virtually no new fortifications constructed in accordance with the scope of the research. All the mentioned structures underwent numerous renovations and substantial expansions in the following years.

2.7. The history of castles in a later period

During the medieval period, castles and fortifications built in the Kraków-Częstochowa Upland played a significant role. Their function extended beyond defense; these structures also served as places of residence in later centuries. The history of these castles is full of interesting facts and events. Here are a few notable points:

1. Changes of Ownership: Many castles changed hands over the years, influencing their fate and appearance.
2. Changes in Appearance and Function: Owners of castles in the Jura often undertook renovations to adapt them to changing needs. This led to a variety of architectural styles and sizes for these structures.
3. Abandonment of Castles and Watchtowers: Most castles in the Jura were eventually destroyed and/or abandoned in the 17th or 18th centuries. This typically marked the beginning of their gradual decline and transformation into ruins. It's fascinating how these mighty fortifications lost their original purpose due to socio-economic evolution. Some smaller watchtowers, such as Łutowiec, Przewodziszowice, or Suliszowice, were abandoned much earlier, possibly by the late 15th century.[458] This shows that the process of abandonment for some Jura castles began relatively early. An exceptional case is the watchtower in Ryczów. It functioned as a lookout post until the 15th century[459], demonstrating how some castles in the Jura were used for specific purposes for only a limited period before entering a different phase in their history.

The fate of royal castles

The trajectories of royal castles, leaving behind diverse historical legacies, were variable. In most cases, starosties were established within them, managed by stewards appointed by the king. However, some of these buildings periodically or permanently passed into the possession of other dukes or influential noble families.

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[457] M. Antoniewicz, Zamki na Wyżynie Krakowsko-Częstochowskiej. Geneza… [[Castles in the Kraków-Częstochowa Upland. Genesis…], op.cit., pp. 56–57.

[458] W. Błaszczyk, Inwentaryzacja średniowiecznych zamków i strażnic warownych na Wyżynie Jurajskiej, „Rocznik Muzeum w Częstochowie", t. 2, [Inventory of Medieval Castles and Fortified Watchtowers in the Jura Krakowsko-Częstochowska Upland, "Yearbook of the Museum in Częstochowa", v. 2], 1966, p. 28.

[459] J. Pierzak, D. Rozmus, Średniowieczny zamek w Ryczowie, gm. Ogrodzieniec, woj. Katowice, „Śląskie Prace Prahistoryczne", t. 3, [Medieval Castle in Ryczów, Ogrodzieniec Municipality, Silesian Voivodeship, "Silesian Prehistoric Works," Vol. 3] 1994, p. 171.

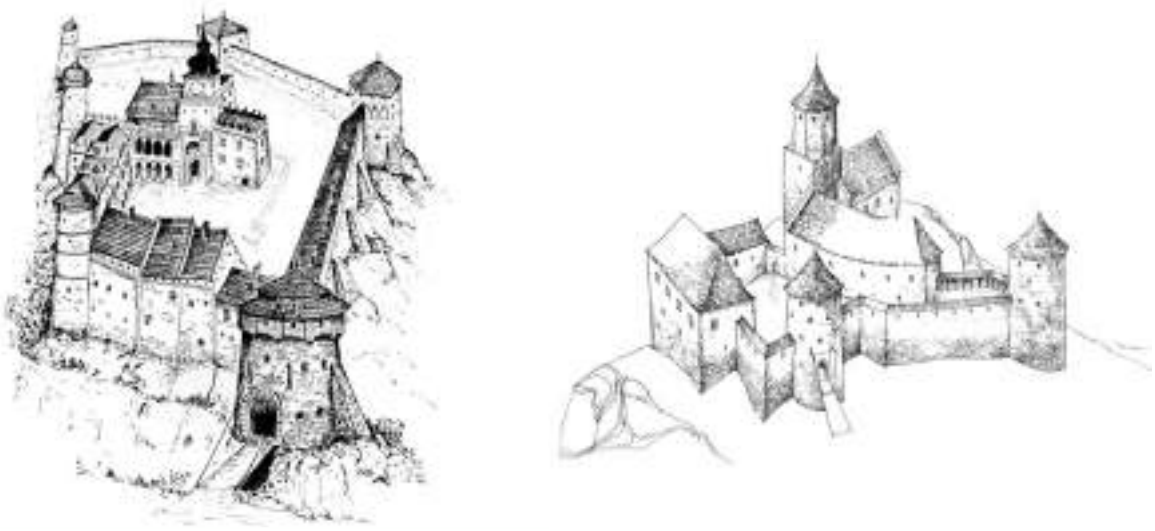

Fig. 71. Reconstruction of Lipowiec Castle from the late 16th century, created by R. Kubiszyn based on a drawing by J. Gumowski from 1934. Reconstruction of Pieskowa Skala Castle from the turn of the 15th and 16th century, drawing by A. Wagner., source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/rudno-zamek-tenczyn/, https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/pieskowa-skala-zamek/, [access:23.05.2021]

As early as 1370, three castles in the northern part of the Jura – Krzepice, Olsztyn, and Bobolice – were transferred by Louis the Hungarian to Duke Władysław Opolczyk. In the later years of the 14th century, Władysław Jagiełło seized control of these castles through military means and subsequently reintegrated as a royal property[460], establishing them as seats of royal stewards. Other castles founded by Casimir the Great, such as Ojców[461], Będzin[462] i Lelów[463], remained the property of Polish kings until the partitions of the country. In these fortifications, burgraves, stewards, and tenant farmers were in charge, often coming from prominent Małopolska noble families.

Rabsztyn Castle, located near Olkusz, was transferred as collateral to Spytek of Melsztyn by Władysław Jagiełło in the late 14th century. In the subsequent years, it was administered by burgraves associated with the Toporczyk family and by stewards, including Crown Marshals Zygmunt Myszkowski and Mikołaj Wolski in the early 17th century.[464]

One interesting example of a defensive castle transitioning from royal hands to private ownership is Pieskowa Skała Castle. In the second half of the 14th century, Louis the Hungarian granted this castle to the Szafrański family of Łuczyce, and ownership rights were confirmed in 1422 by King Władysław Jagiełło. The Szafrański family held the castle until the early 17th century, after which it changed owners among families, including the Zebrzydowski, Wielkopolski, and Mieroszewski families.[465]

The fate of Ogrodzieniec Castle also involved changing owners. After being granted by Władysław Jagiełło in 1386, the castle belonged to the Włodków family until 1470. In later

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[460] B. Guerquin, op.cit., p. 107; M. Antoniewicz, Zamki na Wyżynie Krakowsko-Częstochowskiej w przestrzeni…[Castles in the Kraków-Częstochowa Upland], op.cit., p. 282.

[461] A. Falniowska-Gradowska, Dzieje zamku ojcowskiego…[The History of Ojcow Castle], op.cit., pp. 83–86.

[462] L. Kajzer, S. Kołodziejski, J. Salm, op.cit., p. 90.

[463] Ibidem, p. 266.

[464] Z. Holcer, Zamek w Rabsztynie…, t. 1 [Castle in Rabsztyn], op.cit., pp. 1–9. L. Kajzer, S. Kołodziejski, J. Salm, op.cit., pp. 410–412.

[465] A. Majewski, Zamek w Pieskowej Skale… (1953) [Castle in Pieskowa Skała…], op.cit., pp. 5–18; J. Partyka, Ojcowski Park Narodowy. Przewodnik turystyczny [Ojców National Park. Tourist Guide], Warszawa 2006, pp. 95–103.

periods, it frequently changed hands among different noble families, including the Pilecki, Boner, and Męciński families.[466]

Royal castles, which were administered by stewards, typically did not undergo as extensive expansions as private castles. However, efforts were made to maintain them in good condition through repairs and reconstructions following enemy attacks.

In some cases, stewards from prominent families undertook significant modernization efforts, as can be observed when looking at Rabsztyn Castle. The transformation of this castle was so radical that it practically ceased to exist in its original form.[467] In the 16th century, it was expanded by the Boner family and further enlarged in the early 17th century by Zygmunt Myszkowski.[468] There are many legends and stories about how these renovations affected life within the castle. It is suggested that Bobolice Castle underwent expansions in the 15th century and then again in the 16th century, during the reigns of the Myszkowski and Męciński families.[469] Similar modernizations also occurred at Olsztyn Castle, which had been granted to noble families since the late 14th century. In the mid-15th century, it underwent modernization, and further work was undertaken in the 16th century during the rule of Mikołaj Szydłowiecki and Piotr Opaliński.[470] In the 17th century, the royal fortress in Ojcow underwent significant architectural changes. Steward Mikołaj Koryciński carried out this work, hoping for reimbursement from the Polish treasury. As a result of these modernizations, the castle not only improved in appearance but also in functionality. Additions included a residential building erected on the castle's old walls, renovation of the bridge's pillar structure and gate, construction of new auxiliary buildings, and fortifications surrounding the courtyard.[471]

Similarly, other state-owned castles underwent periods of reconstruction. For example, in the 16th century, Będzin Castle gained a second residential floor, and in the 17th century, it was rebuilt twice after fires and destruction caused by the Swedes.[472] Similar modernization efforts affected Krzepice Castle, which was expanded and further fortified at the end of the 16th century, and then once more in the second half of the 17th century.[473]

The fate of knights' castles

Castles that once served as knightly strongholds underwent significant transformations in terms of ownership. Nevertheless, it's worth noting that many of them remained under the control of the same families for long periods, evolving into the prestigious residences of noble families.

An example of this is Tenczyn Castle, which remained in the possession of the Tęczyński family until 1637[474] when the family line died out. In Korzkwi, the Korzkwi family resided for a significant period, and in the following centuries, it was inhabited by the Ługowscy family

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[466] L. Kajzer, S. Kołodziejski, J. Salm, op.cit., pp. 391–392.
[467] B. Guerquin, op.cit., p. 219.
[468] Z. Holcer, Zamek w Rabsztynie…, t. 1, [Castle in Rabsztyn…, v.1], op.cit., p. 21–27.
[469] B. Guerquin, op.cit., p. 107.
[470] Ibidem, s. 236; L. Kajzer, S. Kołodziejski, J. Salm, op.cit., p. 347.
[471] A. Falniowska-Gradowska, Dzieje zamku ojcowskiego… [The History of Ojcow Castle], op.cit., pp. 38–39.
[472] Z. Gawlik, Wyniki badań na zamku w Będzinie, b.m. i b.d., s. 3, [Results of Research at Będzin Castle], typescript, WUOZ Katowice, nr inw. I/15a.
[473] A. Gruszecki, Zamek w Krzepicach…, [Castle in Krzepice…],op.cit., pp. 190–194.
[474] J. Kurtyka, Latyfundium Tęczyńskie…, [Tęczyn Latifundium…], op.cit., p. 36.

(16th-17th century) and then the Jordanowie family (17th-18th century). Similar continuity in family tradition was present in the case of Smoleń Castle, which belonged to the Toporczyk-Pilecki family from its creation until 16th century.[475] A similar situation occurred in Ogrodzieniec Castle and Pieskowa Skala Castle.

Castles built in the medieval period were often subject to expansions in later centuries, changing their structure both to enhance their defensibility and improve the living conditions of their inhabitants. Often, construction work was the result of events related to military actions or natural disasters. It's important to emphasize that the expansion of castles more frequently concerned those that were the private residences of noble families. Some of these fortifications reached impressive sizes, reflecting the importance and artistic culture of their owners.

An example of such expansion is Ogrodzieniec Castle [Fig.72], which in the first half of the 16th century was transformed into a massive Renaissance residence by its owner, Jan Boner.[476] Similarly, Tenczyn Castle underwent a transformation into a noble residence around 1570. Another significant modernization of this stronghold took place at the turn of the 16th and 17th centuries with the aim of increasing its defensibility. During that period, a circular entrance gate (barbican) was constructed, located furthest to the northwest, leading to a narrow, vaulted vestibule where shooting slits were placed in the outer walls.[477]

Pieskowa Skała Castle is another interesting example of a fortress that underwent significant expansion in the 16th century. Initiated by Stanisław Szafraniec, the expansion aimed to enrich the existing Gothic structures with Renaissance elements, particularly focusing on the expansion of the arcades around the courtyard. In the middle of the next century, thorough rampart defenses were constructed, and the chapel of St. Michael was built, marking a crucial stage in the evolution of this castle.[478]

The fate of noble castles

Transformations in the architecture of smaller noble and state-owned castles also occurred, although they were typically not as extensive as the earlier-described modifications. Nevertheless, some of these changes proved to be remarkably significant, as illustrated by the example of Korzkwi Castle. The castle in Korzkwi was gradually expanded in several phases. Initially, it was a modest structure, which underwent expansion in the late 15th and early 16th centuries, followed by substantial modernization in the 1580s. Around 1720, Michał Jordan continued the work, which included the restoration of interior decorations, roof replacement, and the construction of new farm buildings within the courtyard.[479] These actions significantly transformed the appearance of Korzkiew Castle.

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[475] W. Niewalda, Średniowieczny zamek w Korzkwi…[Medieval Castle in Korzkiew…], (1995), op.cit., pp. 104–107.
[476] T. Holcerowa, Z. Holcer, op.cit., pp. 4–5.
[477] B. Guerquin, op.cit., p. 308.
[478] D. Ziarkowski, Przemiany krajobrazu architektonicznego na przykładzie zamku w Pieskowej Skale [Transformations of the architectural landscape on the example of the castle in Pieskowa Skała,], [in:] Mijające krajobrazy Małopolski [Passing landscapes of Małopolska], ed.J. Partyka, Kraków 2011, pp. 164–165.
[479] W. Niewalda, Problemy badawcze i adaptacyjne zamku w Korzkwi, „Teki Krakowskie", t. 7 [Research and adaptation problems of the castle in Korzkiew, "Teki Krakowskie", v. 7], 1998, pp. 51–52

The fates of Bydlin Castle, Pilica Castle (also known as Smoleń Castle), and Morsko Castle were different. In the first half of the 16th century, Seweryn Boner, the owner of Bydlin, focused his efforts on expanding Ogrodziec Castle, leaving Bydlin Castle neglected. By the late 16th century, Bydlin Castle had already turned into a ruin, and Mikołaj Firlej transformed it into a church dedicated to the Holy Cross.[480] Pilica Castle, also known as Smoleń Castle in the medieval period, also fell into ruin by the late 16th century, and its owner, Wojciech Padniewski, settled in the farmstead on the castle hill. In 1610, a new defensive residence was built there[481], modeled after Italian castello villas, making it a unique example of a defensive structure built entirely from scratch in the early modern period on the Jura. Morsko Castle, originally inhabited by the Włodków family and later successively by the Zborowski, Brzeski, and Giebułtowski families, faced unfavorable circumstances and was abandoned in the 17th century.[482]

The main functions of the castles in the Kraków-Częstochowa Upland were related to defense. The military significance of the castles in the Jura region still existed in the second half of the 16th century. Archduke Maximilian Habsburg began his armed campaign for the Polish throne in 1587 after the death of Stefan Batory. Some of these castles played a certain role in the battles against his troops. During those times, the castle in Olsztyn demonstrated effective defense against enemies[483], cooperating well with the neighboring castle and church, both located on a hill in Korzkiew.[484] However, Maximilian Habsburg's troops managed to capture the Ogrodzieniec Castle[485], which likely resulted in damage to the fortress in Bobolice.[486] The crucial battle during this campaign took place in Krzepice. After a failed attempt to capture Krakow, Maximilian, along with his forces, retreated to Krzepice, where he expected support from Nicholas Wolski, the Grand Marshal of the Crown, who was the castellan of the castle at that time.

The fate of episcopal castles

It's worth taking a closer look at the events in northwestern Małopolska, where the episcopal castle in Sławków experienced the most rapid and violent downfall. In 1455, it fell victim to the destructive invasion of Polish-Moravian troops who fought alongside King Kazimierz Jagiellończyk against the Teutonic Knights. The episcopal castle was reduced to ruins, and the bishops were forced to relocate to a nearby manor.[487] However, two other castles, also belonging to the Kraków bishops, Lipowiec [Fig.71] and Siewierz, although they

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480 B. Muzolf, op.cit., p. 12.

481 L. Kajzer, S. Kołodziejski, J. Salm, op.cit., p. 461.

482 J. Janczykowski, Zamek w Pilicy [Castle in Pilica], [in:] J. Partyka, Zróżnicowanie i przemiany środowiska przyrodniczo-kulturowego Wyżyny Krakowsko-Częstochowskiej, t. 2: Kultura [Diversity and changes in the natural and cultural environment of the Kraków-Częstochowa Upland, v. 2: Culture], Ojców 2004, p. 89–98.

483 J. Laberschek, Częstochowa i jej okolice w średniowieczu [Częstochowa and its surroundings in the Middle Ages], Kraków 2006, p. 157; K. Nabiałek, Starostwo olsztyńskie od XIV do połowy XVII wieku [Olsztyn starosty from the 14th to the mid-17th century], Kraków 2012, p. 348.

484 P. S. Szlezynger, Kościół pod wezwaniem Narodzenia św. Jana Chrzciciela w Korzkwi [Church of the Nativity of St. John the Baptist in Korzkiew], Kraków 2004, p. 70.

485 L. Kajzer, S. Kołodziejski, J. Salm, op.cit., p. 394.

486 Ibidem, p. 94.

487 J. Pierzak, Zamek biskupów krakowskich…, [The Castle of the Bishops of Krakow], op.cit., p. 229;

faced various misfortunes, continued to function for a much longer time. Lipowiec remained in the possession of the bishops until the death of Bishop Kajetan Sołtyk in 1789 when it passed into state ownership.[488] On the other hand, the castle in Siewierz remained in ecclesiastical hands even longer, and the last bishop to reside in the significantly damaged building was Bishop Feliks Paweł Turski, who left it only in 1800.[489]

Fig. 72. Reconstruction of Ogrodzieniec Castle from the 16th century, western view according to J. Gumowski, drawing by R. Kubiszyn, and reconstruction of the Pilcza 16th-century castle from the southern side, drawing by A. Wagner, source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/ogrodzieniec-podzamcze-zamek/, https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/smolen-zamek/, [access:23.05.2021]

The episcopal castles in Lipowiec and Siewierz underwent multiple transformations in terms of their architecture. Significant modifications were made as early as the 15th century, probably under the guidance of Bishops Wojciech Jastrzębiec and Zbigniew Oleśnicki. During that period, the castle complex was expanded with a bailey, and the castle began to function as a prison.[490] Over the centuries, further renovation and expansion work was carried out, restoring the castle to life after the destruction caused by the Swedish invasion in 1657. In the 18th century, it was converted into a correctional facility for the clergy.

The Siewierz Castle also underwent numerous changes in its appearance. In the 15th century, the focus was primarily on strengthening its defenses after it came under the control of the Kraków bishops. In the 16th century, thanks to Bishop Piotr Tomicki, it was transformed into a Renaissance-style representative residence. Another significant modernization took place at the turn of the 17th and 18th centuries, including the addition of an eastern wing and interior transformations.[491]

Swedish Deluge

In an era when the art of warfare was rapidly advancing, castles that were once considered impregnable fortresses lost their unbeatable status. In the second half of the 17th century, well-organized and equipped enemy armies posed almost insurmountable challenges

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[488] O. Zagórowski, Lipowiec. Zamek biskupów i dom poprawy dla księży, „Nasza Przeszłość", t. 12 [The Castle of the Bishops and a Reformatory House for Priests, "Our Past," Vol. 12], 1960, p. 194

[489] A. Rok, Siewierz. Dzieje zamku, Siewierz [History of Siewierz Castle], 2003, p. 25.

[490] O. Zagórowski, Zamek biskupi… [The Bishop's Castle…], op.cit., pp. 178–195; T. Małkowska-Holcerowa, Lipowiec – dawny zamek…[Lipowiec - Former Castle…], op.cit., pp. 5–16.

[491] A. Rok, Założenia konserwatorskie docelowego zabezpieczenia ruin zamku biskupów krakowskich w Siewierzu. Zabezpieczenie i ekspozycja w formie „trwałej ruiny" [Conservation Plans for the Permanent Preservation of the Ruins of the Castle of the Bishops of Krakow in Siewierz. Preservation and Presentation as a "Permanent Ruin"], Kraków 2005, pp. 29–33.

to these castles. For some castles, the Swedish invasion meant irreversible destruction, and their walls ceased to play any role. An example of this tragic fate is the Olsztyn Castle, which has remained nothing more than a ruin since the invasion in 1656. In 1772, its dismantling even began, with the materials used for the construction of a church, symbolizing a farewell to the past.[492] The invaders also set fire to the Rabsztyn Castle, transforming it from a once majestic residence into an abandoned and desolate fortress. The downfall of the Bobolice Castle was also an inevitable consequence of the "Deluge." Although it survived until 1700, it was never successfully rebuilt to its former glory.[493]

In the history of the castles in the picturesque Kraków-Częstochowa Upland, the dramatic events of 1655-1657 left a deep mark. It was during this period that the Swedes invaded these lands, leaving behind nothing but destruction and devastation. As a result of the Swedish invasion, state-owned castles suffered significant damage, leading to long-lasting and irreversible consequences for these structures. Attempts at reconstruction were made in later years for some of them.

Będzin Castle provides a fascinating example of revival after the Swedish devastation in 1660. It remained functional for many decades; however, in the early 19th century, it gradually began to deteriorate into ruins.[494] A similar story unfolded with Krzepice Castle, which quickly regained its former glory after the Swedish invasion. Nevertheless, despite these efforts, it only survived for a century, as evidenced by the inspection of 1765.[495] By then, it couldn't escape the ongoing degradation, which was visibly apparent.

The castle in Ojcow stands out among the royal castles in the analyzed area as it was not destroyed by the Swedes. In 1655, they converted it into a warehouse for weapons and provisions, but it survived this difficult period without major devastation, even hosting the chancellor in 1656.[496]

The Swedes also contributed to the destruction of bishopric and knightly castles. In 1655, Lipowiec fell victim to their attack, and two years later, the foreign army left the fortress in flames. Nevertheless, the castle was quickly subjected to the process of reconstruction and remained under the control of the Krakow bishops for a significant part of the 18th century until it was occupied by the Austrians at the end of that century. It was only around 1800 when a fire broke out, ultimately concluding the history of the castle.[497]

The bishopric castle in Siewierz also underwent a process of reconstruction after the Swedish invasion, but in the 18th century, it began a slow process of degradation and was eventually abandoned in 1800.[498]

Even the most impressive castles of noble owners, such as Tenczyn, Ogrodzieniec, and Pieskowa Skała, were not spared from the destructive impact of the Swedes. Tenczyn surrendered without resistance in 1655. When leaving the castle, the invaders devastated its palace residence, although the exact extent of this damage remains unclear. However, it can be

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[492] L. Kajzer, S. Kołodziejski, J. Salm, op.cit., p. 347.
[493] Ibidem, p. 412.
[494] Z. Gawlik, op.cit., p. 3.
[495] A. Gruszecki, Zamek w Krzepicach…, op.cit., p. 194.
[496] A. Falniowska-Gradowska, Dzieje zamku ojcowskiego… [The history of the father's castle…], op.cit., p. 45.
[497] T. Małkowska-Holcerowa, Lipowiec – dawny zamek… [Lipowiec – a former castle…], op.cit., pp. 13–14.
[498] A. Rok, Dzieje zamku w Siewierzu… [The history of the castle in Siewierz…], op.cit., pp. 26–31.

assumed that it was significant, as the castle, which later passed into the hands of noble families like the Sieniawskis, Czartoryskis, and Potockis, quickly fell into ruins.[499]

In the 18th century, the fate of the castle underwent significant changes as it ceased to serve as a residential place. The situation worsened further after the castle chapel was closed in 1769, contributing to the gradual decline of the structure. It's worth noting that Ogrodzieniec Castle, despite not suffering significantly during the Swedish invasion in 1655, experienced further damage in the early 18th century when the troops of Charles XII burned down the fortress in 1702. From that moment, the castle gradually lost its former beauty and significance, and in the early 19th century, a decision was even made to dismantle its walls, marking another stage in the history of this stronghold.[500]

Pieskowa Skała Castle seems to be the most successful case of reconstruction after the damage caused by the Swedes. Both after the "Deluge" and the destruction of the early 18th century, the fortress was restored to its original state. However, catastrophes did not spare the Pieskowa Skała residence in subsequent years. In 1718, the castle fell victim to a fire that almost completely destroyed its furnishings but wa later rebuilt in 1760. In the 19th century, the castle suffered again due to a fire in 1850 and during the January Uprising in 1863. In the early 20th century, the Joint-Stock Company Castle Pieskowa Skała was established, which purchased the castle from the Treasury of the Kingdom of Poland, temporarily secured it, and began transforming it into a summer resort. It's worth emphasizing that Pieskowa Skała Castle, as the only one in the discussed area, avoided complete ruin until World War II.[501] This is also the reason why this castle currently presents itself in its fullest form and closely resembles its most developed phase of functioning.

The modern era

In the 17th and 18th centuries, many castles in the area of the Kraków-Częstochowa Upland suffered irreparable devastation. During this period, these architectural structures lost practically all aspects of their military utility, while their residential or administrative functions, which some of them still possessed, gradually became marginalized. It was an era of decadent decline, even for those fortresses that had escaped destruction by the Swedes. The fates of the castles that were not destroyed in the Swedish battles varied. Morsko Castle was abandoned in the 17th century because the owners were looking of higher standards of living[502], Mirów Castle suffered complete destruction a hundred years later.[503] The castle in Korzkiew served its residential function until 1806 when it was transformed into an exclusive warehouse and granary, simultaneously relocating residential activity to a newly built manor nearby.[504] The neighboring Ojców Castle housed residents until 1803, after which rapid degeneration and decline befell this historical structure.[505]

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[499] B. Guerquin, op.cit., p. 308.

[500] L. Kajzer, S. Kołodziejski, J. Salm, op.cit., p. 394.

[501] A. Majewski, Zamek w Pieskowej Skale… [Pieskowa Skała Castle…] (1953), op.cit., pp. 10–15.

[502] B. Guerquin, op.cit., p. 219.

[503] L. Kajzer, S. Kołodziejski, J. Salm, op.cit., p. 309.

[504] W. Niewalda, Problemy badawcze i adaptacyjne… [Research and adaptation problems…], op.cit., p. 52.

[505] A. Falniowska-Gradowska, Dzieje zamku ojcowskiego… [The history of the father's castle…], op.cit., p. 73

In the 19th century, against the backdrop of castles disintegrating, new conflicts related to the Kraków-Częstochowa Upland emerged. Following the partitions of the Polish-Lithuanian Commonwealth, this region was initially divided by the occupiers - Russia and Prussia. The southern part of the Upland became part of the Free City of Kraków, which was later absorbed by Austria in 1846. Nevertheless, the significant majority of the discussed area fell under Russian rule in the Kingdom of Poland.[506]

The area of the Kraków-Częstochowa Upland played a crucial role during the January Uprising of 1863. Significant battles took place in this region, such as the battles in Glanów, Szycach, Skala, Ibramowice, Pieskowa Skala, under Żarki, and Golczowice. Today, traces of those events can be found in the form of graves of insurgents in Olkusz, where Andrey Potyebnia is also buried.[507]

During World War II, most of the Kraków-Częstochowa Upland fell within the borders of the General Government, with the exception of the Klucze and Olkusz regions, which were directly incorporated into Nazi Germany. The end of the conflict marked a period of dynamic industrial development in the western part of the Upland. Along the railway route connecting Warsaw with Vienna, many new industrial plants were established, which unfortunately had a negative impact on the ecosystem of this area. Simultaneously, the unique natural and cultural heritage of the Jura was recognized, leading to the implementation of various conservation measures. Ojców National Park was established in 1956, and a quarter of a century later, the Jurassic Landscape Parks Complex was created. In the 19th century, the first attempts at the protection and reconstruction of castle ruins, including those in Będzin and Ojców, emerged. Unfortunately, the results of these efforts were limited, and many of these historical objects gradually succumbed to degradation. It was only after World War II that more systematic conservation work began on some of these landmarks.[508]

Summary

The evolution of fortifications in the Kraków-Częstochowa Upland over time highlights the mutual relationship between humans and their environment.

The beginnings of settlement in the Kraków-Częstochowa Upland date back to ancient times, with evidence of Neanderthal activity dating to around 160,000 years ago, found in the Biśnik Cave. However, it was only with the arrival of modern humans during the Upper Paleolithic period, around 35,000 to 30,000 years ago, that these areas saw significant human presence. During the Neolithic era, these unique lands became a hub for flint mining and the birth of the first agricultural settlements, marking a pivotal moment in the history of this fascinating region where people began to form their societies and harness the benefits of nature.

In the medieval period, the area of the Jura Mountains saw the construction of many majestic defensive structures, including wooden and earthwork strongholds dating back to the

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[506] A. Siwek, op.cit., p. 22.

[507] K. Grodziska, Powstańcze szlaki. Wydarzenia 1864–1873 r. w Ojcowie i w dolinie Prądnika [Insurgent routes. Events 1864–1873 in Ojców and the Prądnik valley, [in:] J. Partyka, Tradycja Powstania Styczniowego w Ojcowie 1863–2003 [The tradition of the January Uprising in Ojców 1863–2003] , Ojców 2003, pp. 7–32.

[508] A. Siwek, op.cit., pp. 22–23; R. Pawlusiński, op.cit., p. 58.

7th century. Yet, it wasn't just these primitive constructions that captured the interest of people at the time. Impressive stone castles were also erected, including the famous episcopal fortresses in Lipowiec and Sławków, which drew attention with their grandeur. It was during the reign of King Casimir the Great (1333-1370) that military architecture flourished in these regions, and the picturesque Kraków-Częstochowa Upland gained several magnificent castles and watchtowers. The generosity of kings, bishops, and wealthy knights who funded these castles was immense, and it's worth noting that during the reign of Casimir the Great, obtaining royal permission for castle construction was an essential step.

In the subsequent centuries, these monumental fortresses changed hands, underwent expansion or destruction, and sometimes even abandonment. The majority of these fortifications fell into disuse in the 17th or 18th century, initiating the slow process of their decay. Some royal castles transformed into starosties, while others came under the control of various princes or noble families, as was the case with the castles in Krzepice, Olsztyn, and Bobolice, which passed under the rule of Władysław Jagiełło in the 14th century.

Unfortunately, most of these magnificent structures suffered damage in the 17th century and never regained their former glory or fulfilled their original defensive functions. However, the history of these castles continues to captivate researchers and heritage enthusiasts, and among these charming ruins lie unforgettable stories of bygone eras [Fig.73-76].

Amidst the picturesque ruins that dot the landscape of the Kraków-Częstochowa Upland, one can still find echoes of the past – silent witnesses to the grandeur and complexity of medieval life. These evocative remnants not only offer a tangible connection to history but also inspire a sense of wonder, inviting us to explore and appreciate the enduring heritage embedded within the region's charming and resilient castles.

Fig.73. View of Będzin Castle from 1865 by Feliks Brzozowski, source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/bedzin-zamek/, [access:23.05.2021]

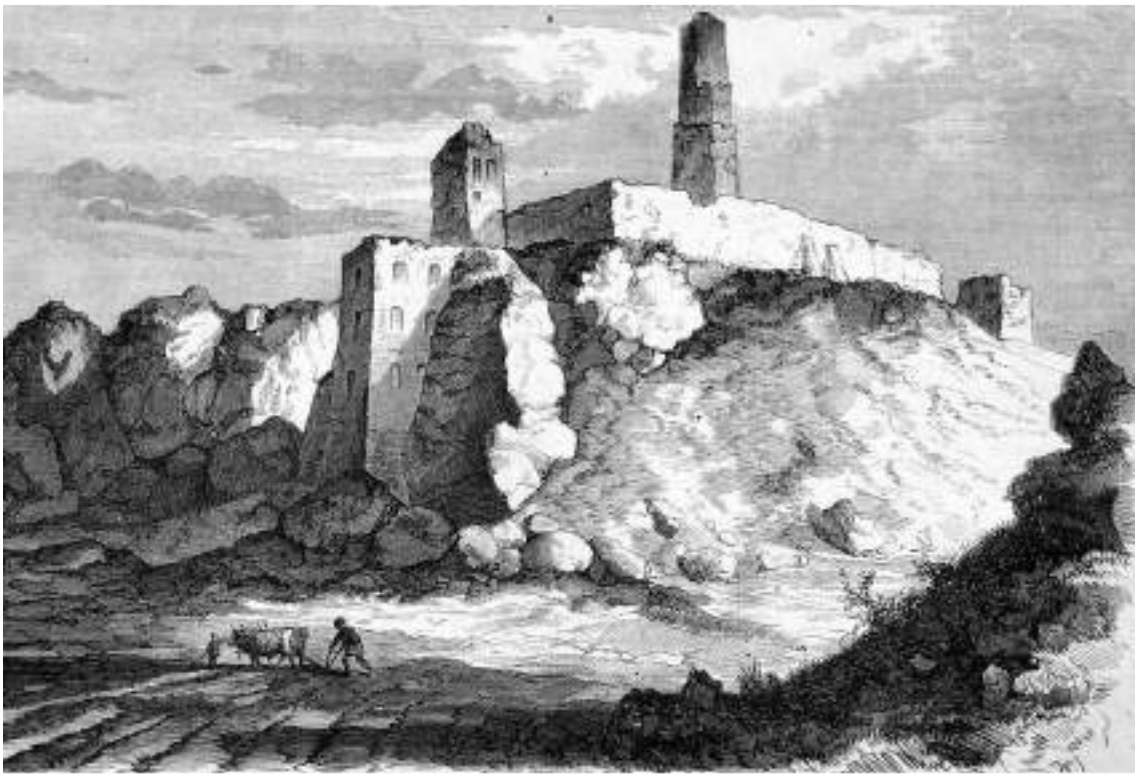

Fig.74. View of Olsztyn Castle from the north in 1863, woodcut by F. Kostrzewski, source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/olsztyn-jura-zamek/, [access:23.05.2021]

Fig. 75. View of the castle in Siewierz from 1881 on a lithograph by Napoleon Orda, source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/siewierz-zamek/, [access:23.05.2021]

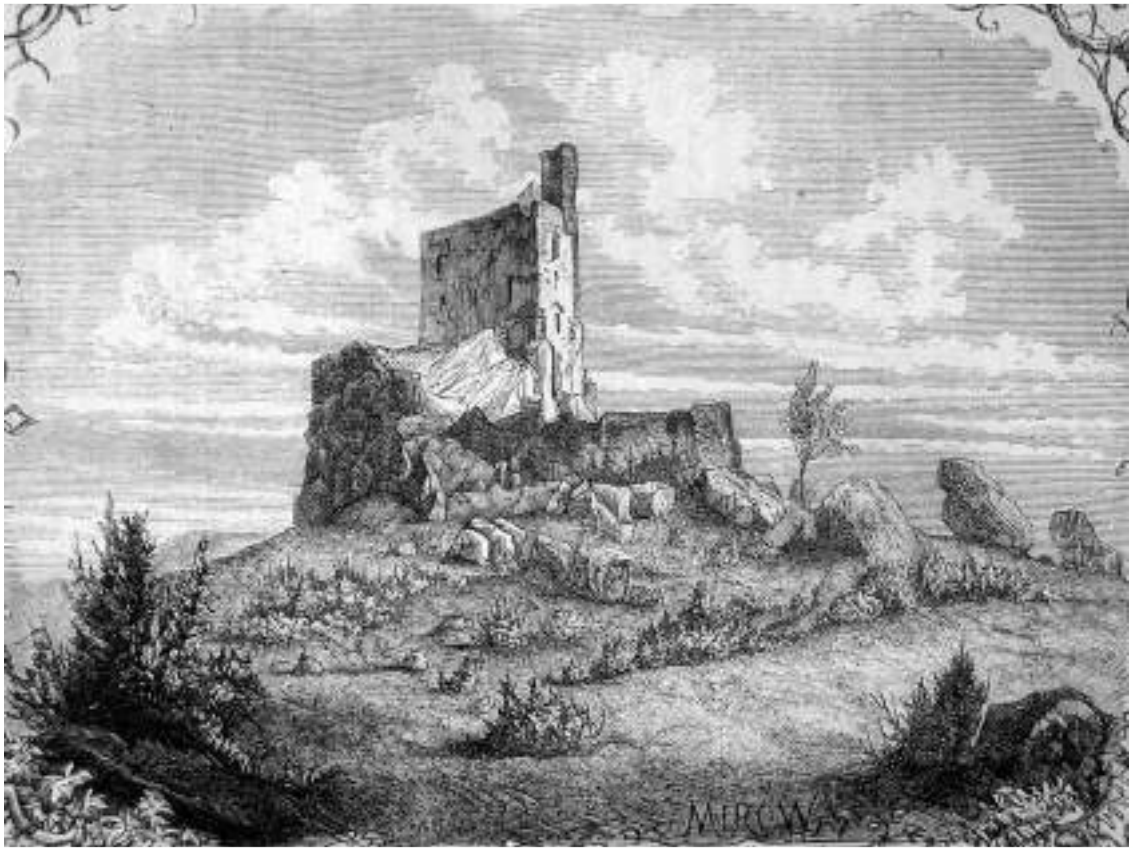

Fig. 76. View of the castle from 1874 from the north-west, according to F. Kostrzewskiego, source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/mirow-zamek/, [access:23.05.2021]

3. Defensive architecture in the Jurassic Belt - spacial typology

3.1. Location

3.1.1. Placement of structures within the borders of the Polish State at the time of their creation (13th-14th Century)

Jurassic castles are primarily located along major transportation routes that were actively used during their construction. This location was not accidental but resulted from strategic planning aimed at controlling important trade and communication routes. Two significant sites within the Kraków-Częstochowa Upland that stand out due to their strategic location are the castles in Olsztyn and Rabsztyn. They are situated precisely at the intersection of two crucial transportation routes, which was of great significance for controlling movement in the area during those times.

These structures were positioned not only along major transportation routes but also along the boundary between Małopolska and Silesia during the reign of King Kazimierz Wielki. Będzin, as the most advanced point toward this border, played a special role. Its location on the route connecting Małopolska, Silesia, and Bohemia emphasized the strategic importance of the castle in the context of regional communication and defense [Fig.77].

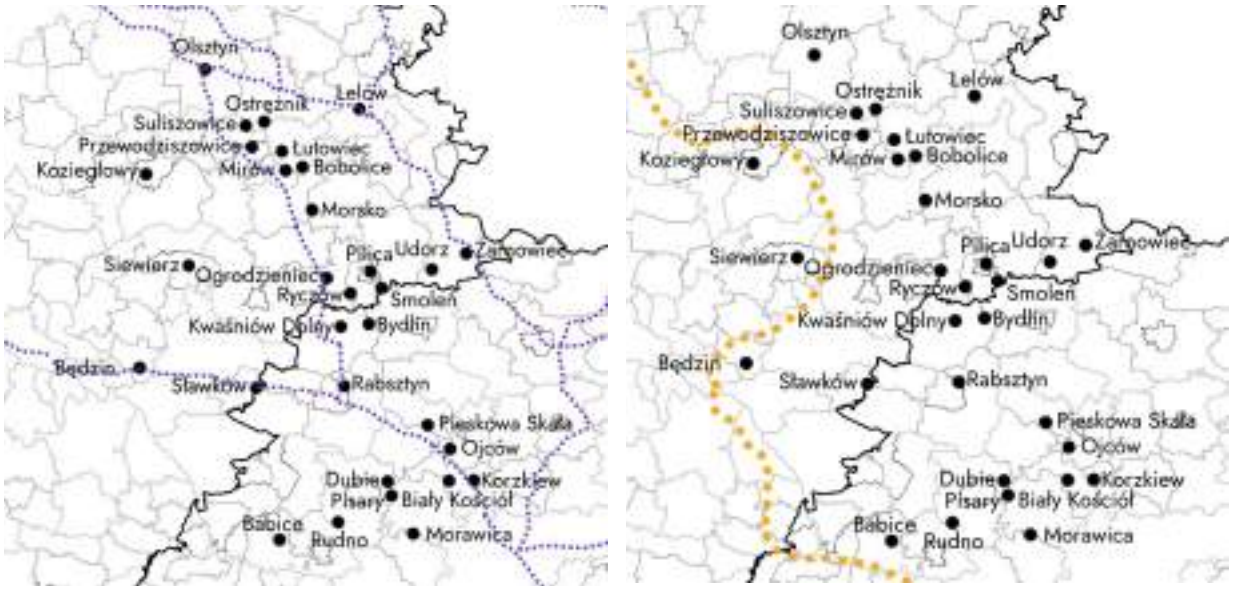

Fig. 77. Main Communication Routes in the 14th Century, Border between Bohemia and Małopolska during the Reign of King Kazimierz the Great, elaborated by the author, based on E. Niewiadomski, Atlas do dziejów Polski zawierający 13 mapek kolorowych.

Some of the structures within the Kraków-Częstochowa Upland were founded on the foundations of ancient hillforts or in their immediate vicinity, drawing upon their strategic locations and earlier settlement traditions. Among such establishments erected in places or in close proximity to former hillforts are castles like those in Koziegłowy and Olsztyn.

Many structures in the Kraków-Częstochowa Upland were strategically positioned near natural water sources such as rivers or streams. Access to water was of paramount importance

both for the daily life of the castle's residents and for defensive purposes, as it facilitated the supply of water in case of a siege. Examples of such castles include Będzin and Siewierz, situated along the Black Przemsza River. In areas where access to natural water sources was difficult or impossible, architectural solutions such as excavating a greater number of wells within the castle were employed to ensure an adequate water supply for its inhabitants and defenders.

3.1.2. Castles in the context of urban structures

Jurassic castles, scattered throughout the Kraków-Częstochowa Upland, exhibit diverse locations that undoubtedly influenced their function and significance within the settlement network. The author distinguishes three types of castle locations in relation to urban structures [Fig.78].

The first type is **integrated castles**, which were built in close proximity to existing towns or settlements. Over time, these castles not only began to dominate the urban landscape but also became an integral part of the settlement fabric, often connected by city walls or other fortifications. Examples include the castles in Będzin and Olsztyn.

The second type is **accompanying castles**. Although they were established in the immediate vicinity of settlements, they functioned as separate entities. They often served as administrative or defensive centers for the surrounding lands but were not directly integrated into the local settlement network. These castles typically had their own defensive systems and served as centers of local authority but were not directly connected to city walls.

The last type is **isolated castles**, which usually originated on lowlands or hills, far from any form of development. Their isolated location made them strictly defensive in nature, serving as refuges during invasions or as observation points. These castles were rarely associated with the settlement network and were often difficult to access, further enhancing their strategic importance. Many castles of this type served as episcopal residences.

Fig. 78. The Location of Castles in Będzin, Siewierz, and Bydlin within the Context of Medieval Settlements as Examples of Integrated, Accompanying, and Isolated Castles., elaborated by the author

In the context of the evolution of the spatial structure of towns and villages, we observe a significant increase in the degree of urbanization, which in many places has also affected the areas surrounding historical castles. Although many of these monumental structures have been

surrounded by modern or adaptive architecture, their typological relationship to the settlement unit remains unchanged [Fig.79 and 80].

Fig. 79. The Location of Castles in Będzin, Siewierz, and Bydlin within the Context of Contemporary Development. elaborated by the author

Fig. 80. The Location of Castles in Będzin, source: https://www.slazag.pl/zamek-w-bedzinie-jest-jak-z-nie-tego-swiata-przywoluje-pamiec-o-dawnych-dziejach-grodu-nad-czarna-przemsza, Siewierz, and Bydlin within the Context of Contemporary Development, photos by the author

3.1.3. Relation of structures to the immediate surroundings and exposure

The relationship between architectural structures and their immediate surroundings is a dynamic interplay that shapes both the physical appearance and cultural significance of these edifices. Many of these castles have transcended their original military purposes to become touristic icons, drawing visitors from far and wide to explore their grandeur and immerse themselves in the rich narratives they hold. To meet the demands of tourists, castle owners have introduced a range of attractions designed to captivate visitors.

The surroundings of castles, steeped in history and tradition, are not immune to change. In recent years, a notable transformation has been the gradual integration of new single-family houses into the vicinity of these fortresses.

Over time, many castles have evolved into iconic landmarks that hold a special place in the hearts of their respective regions due to their high visibility in the surroundings.

The relationship between architectural structures and their immediate surroundings can be illustrated through chosen examples that showcase the diverse ways in which built environments interact with and respond to their context [Fig.81-92].

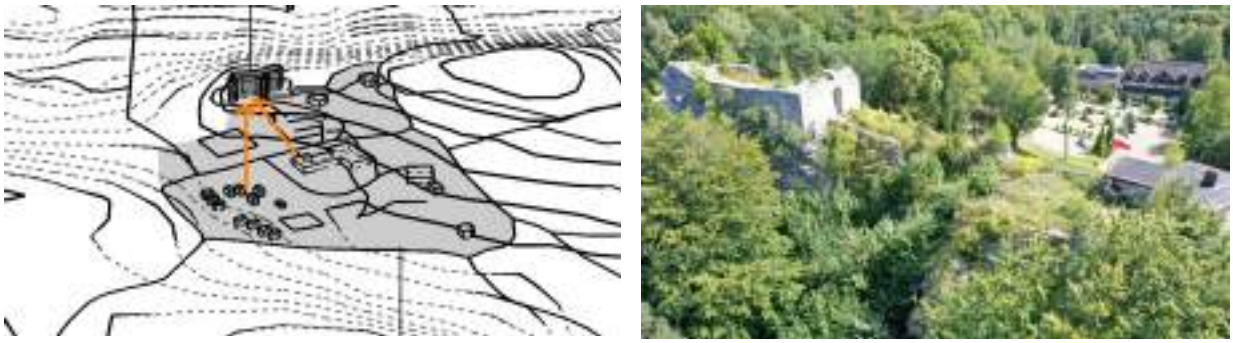

Fig. 81. Morsko Castle in the Context of the Surrounding Development, elaborated and photo by the author

Fig. 82. Ogrodzieniec Castle, elaborated and photo by the author

Fig. 83. Przewodziszowice Watchtower, elaborated and photo by the author

Fig.84. Mirów Castle, scheme elaborated by the author, photo source: https://orlegniazda.pl/ [access:21.05.2022]

Fig. 85. Bibolice Castle, elaborated and photo by the author

Fig. 86. Siewierz Castle, elaborated and photo by the author

Fig.87. Pilica Castle, elaborated and photo by the author

Fig.88. Pieskowa Skała Castle, elaborated and photo by the author

Fig. 89. Olsztyn Castle, elaborated and photo by the author

Fig. 90. Pilcza Castle, elaborated and photo by the author

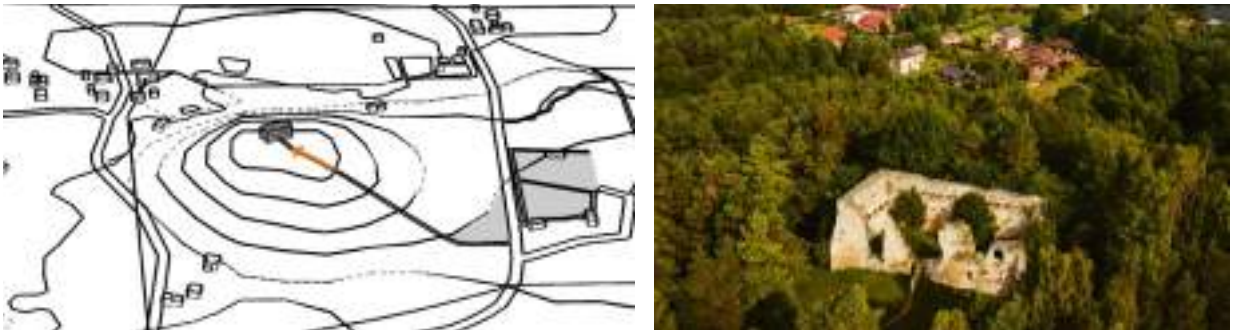

Fig. 91. Bydlin Castle, elaborated and photo by the author

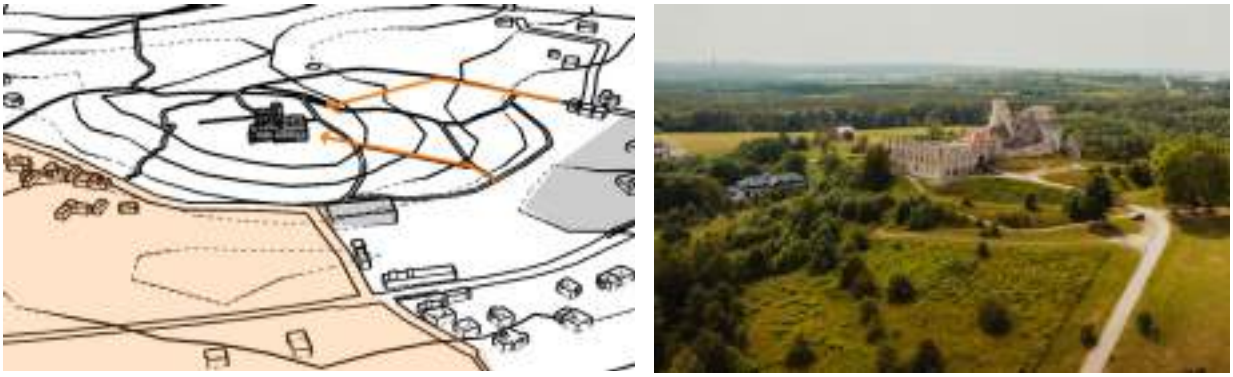

Fig. 92. Rabsztyn Castle, elaborated and photo by the author

The exposure of castles in the Kraków-Częstochowa Upland is incredibly diverse [Fig.93-98], stemming from their varied locations and historical roles. Some of these fortifications, perched on hills or limestone rocks, dominate the landscape and are easily recognizable even from a great distance. Their prominent position ingrains them in human consciousness as symbols of local history and identity. Other castles are less conspicuous, hidden among trees or situated in a way that doesn't immediately stand out in the landscape.

Janusz Bogdanowski identified three levels of exposure: close, panoramic, and distant. Close exposure refers to views that enclose certain spaces, directing the gaze, panoramic as a view of the structure against the backdrop, and distant as a wide-open view of the landscape[509].

Contemporary factors have also influenced how these castles are perceived. On one hand, growing trees and vegetation may obscure these once-dominant structures, altering their "readability" in the landscape. On the other hand, urban expansion and infrastructure development can make castles that were once integrated into the urban fabric now seem less organic to it. As a result, both natural and anthropogenic factors affect how these historical objects are currently exposed and perceived, which in turn has implications for their cultural and tourist significance.

Castles with **panoramic exposure**, which has the most impact on the landscape, include Olsztyn, Pilcza, Bobolice, and Mirów. The visibility range of Olsztyn Castle spans several kilometers and is prominently displayed from nearby hills, including the "Little Giewont." However, the area between these two points is gradually being filled with single-family houses, negatively impacting the entire exposure zone. The picturesque view of the castle is disrupted. Bobolice Castle, while having a **smaller exposure zone**, is also highly visible in the surrounding landscape.

A noteworthy example is the **exposure of objects against the backdrop**, to which the Pieskowa Skała complex can be attributed. The areas near Maczuga Herkulesa serve as an exposure zone, but the object also presents itself remarkably from the access road. It is visible against the backdrop of the Ojców National Park at all times.

There is also a group of objects with very limited current exposure. These include Sławków Castle, the remnants of Ostrężnik Castle, and Bydlin Castle. Large afforestation of the area has contributed to this, as well as small exposure zones or their absence. Additional elements, including new construction that completely encroached upon the Sławków Castle complex, temporary installations at Bydlin Castle, and a large number of souvenir stands and additional attractions near Ogrodzieniec Castle, have disrupted the exposure of these castles.

More relations of structures and landscape exposures of the castles can be found in the Object Cards in Annex (see p. 326).

[509] J. Bogdanowski, Architektura obronna w krajobrazie Polski [Defensive architecture in the Polish landscape], Wydawnictwo Naukowe PWN, 2002, p.211

Fig. 93. Olkusz Castle as an Example of Panoramic Exposure, elaborated by the author

Fig.94. Bobolice Castle as an Example of Close Exposure, elaborated by the author

Fig. 95. Pieskowa Skała Castle as an Example of Background Exposure, elaborated by the author

Fig. 96. Sławków Castle as an Example of Significant Concealment by New Construction, elaborated by the author

Fig. 97. Ruins of Ostrężnik Castle as an Example of Concealment by Vegetation and Complete Lack of Exposure Zone, elaborated by the author

Fig.98. Ruins of Bydlin Castle as an Example of a Small Exposure Zone Integrated into Greenery, elaborated by the author

3.1.4. Conclusions

The factors influencing the distribution of castles in the Kraków-Częstochowa Upland do not differ significantly from those in Europe as a whole. The leading element was natural conditions. Due to their location, we can distinguish upland and lowland castles, but also, typical for the Upland, upland castles situated on crags and watchtowers located on larger, singular rock formations [Fig.99].

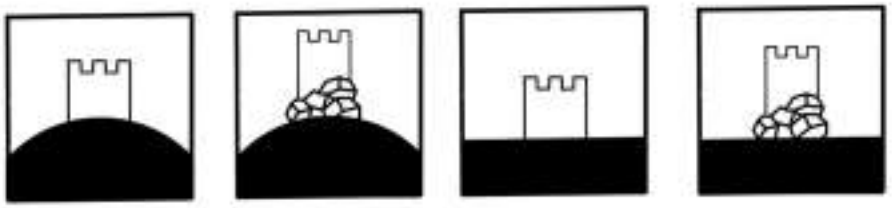

Fig. 99. Diagram illustrating four types of Jurassic castle locations., elaborated by the author

Upland castles with rocky crags possessed natural defensive advantages, but they were often supplemented with moats. Lowland castles were further fortified with ramparts and moats, and their location in open spaces allowed for early response in case of an attack. Another crucial natural factor was the availability of water supply, which is why many of these structures are located near rivers or watercourses. Examples of upland castles include Będzin and Bydlin. Olsztyn was situated on an elevation or in conjunction with an existing crag. Lowland castles include Koziegłowy and Siewierz. All watchtowers are examples of structures located on individual rock formations.

A significant factor in the settlement's activation and the selection of new fortification locations was the region's position at the crossroads of important transportation routes connecting Silesia with Małopolska. The famous route from Krakow to Wrocław passed through this area, going through Żarki, Olsztyn, Częstochowa, Kłobuck, where it connected with the old Krakow-Wielkopolska route leading through Olsztyn, Mstów, Kłobuck, and Krzepice to Kalisz and Poznań[510].

Some structures were built from scratch, but others were located on the site of existing hillforts and settlement networks. Structures located in close proximity to towns or settlements often transformed the region into a fortified town surrounded by walls.

The development of the western border also played a significant role, contributing to the strengthening of selected points meant to protect the capital of Poland and provide access from the direction of Czechia and Silesia.

Another important aspect was the availability of materials, and as Janusz Bogdanowski emphasizes, the possibility of escape[511]. Therefore, nearby caves or former hillforts provided additional advantages when locating new castles.

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[510] B. Wyrozumska, Drogi w ziemi krakowskiej do końca XVI wieku [Roads in the Krakow region until the end of the 16th century], Wrocław 1977, pp. 16, 60-65.

[511] J. Bogdanowski, Architektura obronna w krajobrazie Polski [Defensive architecture in the Polish landscape], Wydawnictwo Naukowe PWN, 2002, p.211

Castles in the Kraków-Częstochowa Upland are characterized by a significant diversity of exposure, resulting from their unique locations and historical roles. The diversity and uniqueness of these castles influence how they are perceived and their significance in local culture and identity.

We can distinguish three scales of exposure - panoramic, close, and distant, allowing for various experiences and perceptions of these historical objects, depending on their placement in the landscape and surroundings. Both natural and anthropogenic factors, such as infrastructure development and urbanization, as well as changes in the natural environment, such as growing trees, can alter the "readability" of these historical structures in the landscape [Fig.100].

Fig.100. Types of exposition, elaborated by the author

Some castles, such as Olsztyn or Bobolice, despite differences in exposure scale, are highly visible in the landscape. However, contemporary buildings and human activities can disrupt their picturesque qualities and have a negative impact on the entire exposure zone. In the case of other castles, like Sławków or Ogrodzieniec, new elements such as buildings or commercial installations can completely obscure the structures or disrupt their exposure, altering the perception and tourist experience.

The way these castles are exposed and perceived has significant implications for their cultural and tourism significance. The diversity and uniqueness of castle exposure in the Kraków-Częstochowa Upland are undoubtedly valuable in themselves, but observed contemporary changes in the landscape and infrastructure present new challenges. Therefore, there is a growing need for conscious management and protection of the landscape around these historical objects to preserve their value, scenic beauty, and importance for regional culture and tourism.

Fig. 101. Ruins of Olsztyn Castle overlooking the village, postcard 1900-1930, source: WUOZ Częstochowa

Fig. 102. Ruins of Siewierz Castle above the Czarna Przemsza River, 1918-1930, source: www.fotopolska.eu

3.2. Composition of structures

The castle complexes located in the discussed geographical location - the Kraków-Częstochowa Upland - as a functional-spatial whole, represent a unique synthesis of architectural fabric that evolved over centuries of their existence. This makes the analysis of their spatial and architectural layouts a challenging task. As a result, the preserved castles and their ruins currently present themselves as a complex assembly of walls and buildings constructed in different periods.

Even a brief analysis of the plans of the Jurassic castles reveals significant diversity in terms of both size and spatial arrangements. The irregularity in the distribution of these defensive structures is noticeable. This irregularity was primarily due to the nature of the terrain on which they were built - rocks, hills, and slopes of valleys provided natural defensive locations. The architecture of the castles had to adapt to the topography of the land. Even in the modern era, due to challenging terrain, the castles were not fully regular and symmetrical, as exemplified by Pieskowa Skała, Ogrodzieniec, and Rabsztyn. The only fully regular and symmetrical castle is Pilica Castle, which was built from scratch in the 17th century. However, the irregular character of the castles was also a result of defensive considerations, which required the placement of various buildings and defensive structures in specific locations to effectively repel the attacks of advancing siege technology.

Taking all this into consideration, Janusz Bogdanowski, an expert in defensive architecture, divided the defensive objects in the Jurassic Carpathian Landscape into spatial layouts and defensive elements, starting from the earliest wall objects in caves. Most of the castles were built in a tower style in the 14th century, with modifications in later periods that transformed them into tower, bastion, and bastei types.

It should be emphasized that castles in these areas served two main functions - defensive and residential. The defensive function was a priority, especially in medieval fortresses, which clearly influenced their architecture. Defensive walls, towers, turrets, and later bastions and ramparts dominated the castle layout. In addition to these functions, castles could also serve administrative, judicial, prison, or representative roles. In the modern era, the residential and representative functions gained importance, resulting in the expansion of some castles with extensive wings containing residential and representative chambers for the castle owners. Examples include Tenczyn, Ogrodzieniec, and Pieskowa Skała.

Defensive castles in the Kraków-Częstochowa Upland did not play a significant military role, although their remains symbolize the power of the Kingdom of Poland during the reign of King Casimir the Great. The level of fortification of this area during his rule was an important representative element, and the power of the castles reflected the power of the ruler.

All of these functions influenced the spatial layouts of the discussed objects and their expansion in later centuries.

Another characteristic feature of these castles is the building material, which is limestone. In Małopolska, this material was widely available, so it's not surprising that it was used both in the Middle Ages and in modern times. Examples include the Renaissance part of Ogrodzieniec Castle or the seventeenth-century palaces in Rabsztyn. Brick, on the other hand,

was mainly used for window and door frames, as seen in Lipowiec and Rabsztyn. In some cases, such as Pieskowa Skała, larger parts of the buildings were constructed from brick. However, most medieval castles had irregular and uneven walls filled with boulders, stones, and lime mortar[512]. Only a few exceptions, such as the defensive tower of the royal castle in Ojcow, were built from perfectly matched limestone blocks.

Limestone, being the primary building material, conceals fascinating stories of the castles in the Kraków-Częstochowa Upland area. However, it wasn't just the limestone that made these buildings stand out. Brick, although less common, had its unique uses that gave the castles an unparalleled character.

Lipowiec and Rabsztyn castles are excellent examples of using brick to decorate and reinforce window and door openings. These subtle details added a refined accent to the raw structure of the castle. Not only that, but brick was also used in some castles, such as Olsztyn and Rabsztyn, especially in their upper parts of the construction. When examining castles like Lipowiec and Rabsztyn, you can see how artistically brick was used to give them a unique appearance. Even larger elements, like the upper part of the tower in Olsztyn or sections of the attic crowning Tenczyn's bastion, were sometimes built using brick. There are even speculations that the highest parts of castle towers in Będzin[513] and Rabsztyn were constructed using brick, although in the case of the latter castle, we only have evidence in the form of 19th-century iconography.

As we delve into the history of castles, we discover that they were not ordinary buildings. They were usually not richly decorated, and their structures were primarily adapted for defensive purposes. Therefore, we avoid using traditional stylistic categories such as "Gothic castle" or "Renaissance castle." Instead, these buildings are classified based on the various defensive systems that evolved over the centuries. According to the research of Janusz Bogdanowski on the defensive architecture of Poland, including the Kraków-Częstochowa Upland, several periods and corresponding defensive systems can be identified. We will focus here on the periods related to stone castles, covering the late 13th to mid-17th centuries[514].

During this long evolution of castles, not only did defensive systems change, but their functions and historical-artistic values also evolved. Thanks to this heritage, we can discover fascinating stories and secrets that these castles in the Kraków-Częstochowa Upland area hold.

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[512] L. Kajzer, S. Kołodziejski, J. Salm, Leksykon zamków w Polsce [Lexicon of Castles in Poland], ed. L. Kajzer Warszawa 2012, p. 18.
[513] J. Krajniewski, Będzin. Początki miasta [Będzin. The Beginnings of the City], Będzin 2008, p. 40.
[514] J. Bogdanowski, Sztuka obronna, Natura i kultura w krajobrazie Jury [Defensive Art, Nature and Culture in the Landscape of the Jura], t. 2, Kraków 1993, p. 21

3.2.1. Jurassic castles of the medieval phase

Fig. 103. External walls of the Bydlin Castle, photo by the author

The most important elements of castles included **external fortifications** [Fig.103], entrance defenses, towers of various forms and purposes, and buildings inside the defensive walls that served various residential, economic, and service functions[515]. It's interesting to note that these same elements can be found in both royal castles and private fortresses. The difference lay in the layout and expansion of these elements, depending on the significance of a particular castle.

Castles in the vicinity of the medieval border between Lesser Poland and Silesia also had similar architectural elements. However, their shapes and sizes were adapted to the specific roles of each castle. It's fascinating to see how diverse these structures were depending on their location and function.

The perimeter walls were an integral part of every castle. Constructing them on rocky terrain or on terraces carved into the rocks to prevent landslides presented significant engineering challenges. Notably, these walls served both passive defense by dividing defenders from attackers and active defense through crenellations and projecting galleries. In later times, starting from the second half of the 15th century, gunports on the upper parts of the walls allowed the use of firearms[516]. It's intriguing to see how castle defense technology evolved over the centuries. ade to enclose the castle area in a shape resembling a square or, more generally, a quadrilateral.

Unfortunately, in most castles in the Kraków-Częstochowa Upland, the medieval perimeter walls have not been fully preserved, which poses a unique challenge for researchers. Nevertheless, it can be observed that the shapes of these walls were often adapted to the terrain's topography, showcasing an interesting example of architectural adaptation to geographic conditions.

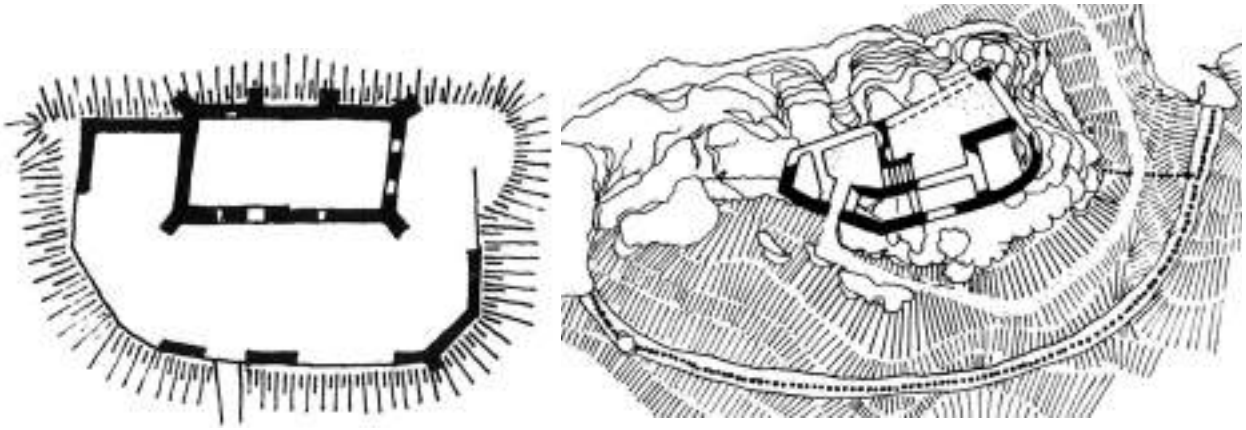

Fig. 104. Coastal layouts in Bydlin and Biały Kościół., source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/bydlin-zamek/g,access:13.02.2022]

[515] B. Guerquin, *op.cit.*, p. 34; L. Kajzer, S. Kołodziejski, J. Salm, *op.cit.*, p. 26.
[516] Ibidem, p. 35; L. Kajzer, S. Kołodziejski, J. Salm, *op.cit.*, p. 26.

Fig. 105. Tower of the Rabsztyn Castle, photo by the author

Another characteristic element was the towers [Fig.105-109]. These **towers** often represented the oldest masonry structures introduced into earlier wooden and earthen strongholds to enhance their defensive capabilities[517]. It's worth mentioning that these towers, such as the cylindrical tower of Lipowiec Castle, were initially used as standalone structures and later became part of larger castle complexes. This process can also be observed in the case of the episcopal castle in Sławków[518]. These towers played a crucial role in the castle's defense and came in various forms, from round to quadrangular, adding a fascinating aspect to defensive architecture.

One particularly unique feature among the castles in the Jura region is the octagonal tower at Kazimierz Castle in Ojców. Positioned atop a prominent rock formation, this tower posed a significant challenge for potential attackers, as its elevated location made access difficult. Additionally, it served as the ultimate bastion of defense for the castle's garrison, providing a last line of protection in times of conflict. This tower exemplifies a remarkable adaptation to both the natural terrain and the essential defensive function of the castle, highlighting the ingenuity of medieval architects and builders[519].

The presence of such towers not only enhanced the defensive capabilities of these castles but also added to the overall architectural diversity and historical richness of the Kraków-Częstochowa Upland. These structures bear witness to the strategic importance of the region and the evolving methods of fortification employed throughout its history. Exploring these towers offers a glimpse into the past, where their imposing presence and strategic significance were integral to the survival and prominence of these medieval strongholds.

Fig. 106. Ojców Castle, plan according to B. Guerquin, source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/ojcow-zamek/, [access: 24.05.2022]

[517] J. Bogdanowski, Dawna linia obronna Jury Krakowsko-Częstochowskiej. Problemy konserwacji i adaptacji dla turystyki, „Ochrona Zabytków" [The Former Defensive Line of the Kraków-Częstochowa Upland. Conservation and Adaptation Challenges for Tourism, 'Heritage Conservation], R. XVII, 1964, nr 4, p. 7–8.

[518] M. Antoniewicz, Zamki na Wyżynie Krakowsko – Częstochowskiej [Castles in the Kraków-Częstochowa Upland], Kielce 1998, p. 43-44.

[519] L. Kajzer, S. Kołodziejski, J. Salm, *op.cit.*, p. 38, 459.

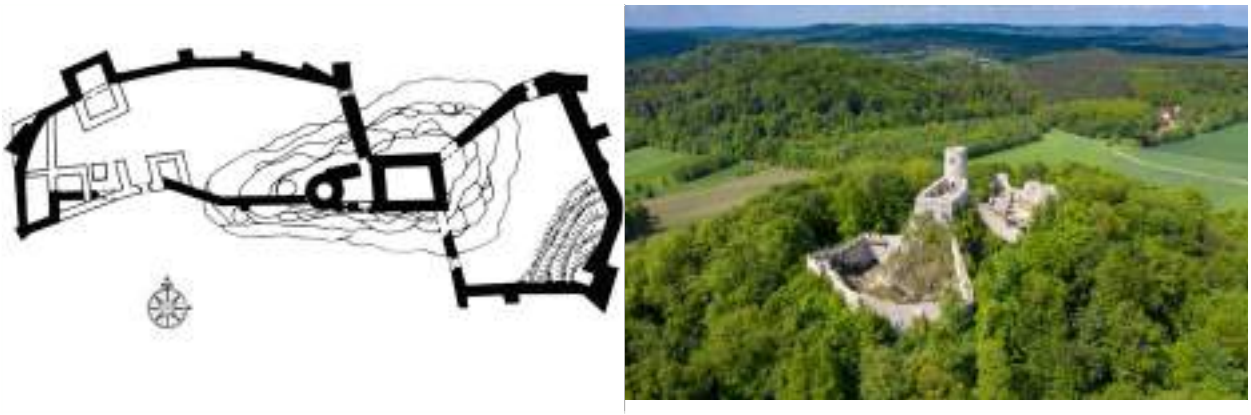

Fig. 107. Pilcza Castle in Smoleń, plan according to Catalog of Artifacts in Poland, source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/smolen-zamek/, photo by the author

Fig. 108. Olsztyn Castle, plac according to Catalog of Artifacts in Poland, source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/olsztyn-jura-zamek/, photo by the author

Fig. 109. Będzin Castle, plan according to W. Błaszczyk, source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/bedzin-zamek/, [access:24.05.2022]

Fig.110. Two outer baileys of Pilcza Castle, photo by the author

Spatial arrangement

In the Kraków-Częstochowa Upland, the residential buildings within medieval castles took on various forms and sizes, providing a remarkable example of architectural diversity. They were often closely linked to the defensive walls, forming a coherent complex around an inner courtyard, which also housed other important elements such as wells or outbuildings[520].

An example of such an arrangement can be found in the medieval phase of Pieskowa Skała Castle[521], where residential buildings were harmoniously arranged around the courtyard. In contrast, in Ojców, the residential building was located on a promontory jutting southward. This historical site likely originated in the 14th century and underwent numerous alterations, including those made in the 17th century during the Koryciński period. Today, only relics of this building remain, known from iconography, including Zygmunt Vogel's watercolor from 1787. Another non-existent building, with a rectangular layout, constituted the western front of the complex.

In the context of the diverse layouts of medieval castles in the Jura region, particular attention is drawn to the preserved ruins of the upper castle in Olsztyn. Despite the challenging terrain, the perimeter wall takes on the shape of a relatively regular quadrangle, which is a unique case in this area. In the southeastern corner, there is a well-preserved cylindrical tower rising on a rocky elevation. To the north, a longitudinal residential house adjoined the perimeter wall, running the entire length of the inner courtyard. Similar placement of residential wings around the courtyard can be found at Lipowiec Castle, which was constructed over a longer period, from the 14th to the 15th century[522].

It is also worth noting that some castles used wood for the construction of their buildings. These wooden structures served various functions, both residential and ancillary (agricultural or service-related). Their significance in the life of the castle was substantial, though unfortunately, their appearance is challenging to reconstruct as they have not survived to our times. In the earliest period, wooden buildings were placed within the defensive walls, as seen in Ojców. In later years, especially in the 15th and 16th centuries, some castles in the Jura region were expanded with baileys [Fig.110], which became an integral part of the castle's defensive system[523]. Wooden construction predominated on these baileys, although, regrettably, it has not survived to our times in most cases.

In larger castles, chapels were often present, serving an important role in castle life. These chapels were sometimes separate structures, as seen in Tenczyn Castle[524], where the chapel adjoined the eastern side of the gatehouse tower. These chapels, with altars facing east, were typically situated near or above the main castle gate, consistent with medieval tradition. Chapels were also present in Lipowiec, Ogrodzieniec, and Ojców[525] castles, although their

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520 L. Kajzer, S. Kołodziejski, J. Salm, *op.cit.*, p. 347.

521 J. Bogdanowski, *Sztuka obronna… [Defensive Art…]*, *op.cit.*, p. 152.

522 Ibidem, p. 18.

523 B. Guerquin, *op.cit.*, p. 54.

524 T. Małkowska-Holcerowa, Ruiny zamku Tenczyńskiego we wsi Rudno (miejskie województwo krakowskie). Dokumentacja historyczna, Kraków 1986 [The Ruins of Tenczyn Castle in the Village of Rudno (Kraków Voivodeship). Historical Documentation, Krakow 1986], p. 9, typescript, WUOZ Kraków, nr inw. 11.949/86.

525 A. Falniowska-Gradowska, Dzieje zamku ojcowskiego [The History of Ojców Castle], Ojców 1999, p. 16.

placement within the castle complex could vary. This is a fascinating aspect of life in medieval castles, highlighting the significance of religion during those times.

In smaller castles, especially those from the medieval period, a simplified layout is often observed, focusing on a few key elements such as the defensive system based on defensive walls, the presence of a tower, and the functionality of residential buildings. A perfect example of this simplified layout can be seen in the upper castle of Smoleń, which serves as an interesting research subject[526]. In its central part, a cylindrical tower dominates, remarkably well-preserved to this day, reaching a height of about 16 meters. The uniqueness of this solution lies in the tower's dual role, serving both as a defensive element and a living space. The tower was integrated into the defensive walls of the castle from the western side, opposite which there was a residential building. Archaeological evidence indicates the foundation layout of this building, which resembled a rectangular shape. A small courtyard likely played a crucial role as the central living area within the castle, situated between the tower and the residential building. Additional elements included two extensive baileys, which were added during later stages of the castle's development[527]. The eastern bailey likely served mainly agricultural purposes, while the western bailey served as a connection between the residential and agricultural areas, creating an internal ecosystem for the castle. It's worth noting that this layout resembles the structure of Rabsztyn Castle, suggesting that certain architectural solutions were used in different fortifications.

In the case of some smaller castles, the tower served a dual role as a defensive element and living space. In such cases, the architectural program focused on defensive walls and a tower that functioned as both a residence and a defense point. An example of this approach is the original form of Korzkiew Castle, dating back to the 14th century. It was a residential complex surrounded by irregular walls, reminiscent in shape of a triangle. One of the corners of these walls, on the north side, had a rectangular-plan tower that served as the central point of the defensive system. Interestingly, this tower also served as a residence. In the subsequent centuries, Korzkiew Castle[528] [Fig.111] underwent expansion, gradually evolving from a simple fortification into an elaborate fortress. In the 15th century, two additional towers were added to the outer part of the walls on the southern side, further increasing its defensive potential. At the end of the 16th century, a new residential wing was added, adjoining the oldest tower on the northeast side, showcasing how the castle's structure adapted to changing needs and increasing defensive requirements. This is a fascinating case of how the history and evolution of castles reflected changes in social and military life during those times.

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[526] T. Małkowska-Holcerowa, Z. Holcer, Zamek w Smoleniu (woj. katowickie). Opracowanie historyczne wykonane na zlecenie Wojewódzkiego Ośrodka Badań i Dokumentacji Zabytków w Katowicach [Smoleniu Castle (Silesian Voivodeship): Historical Study Prepared on Behalf of the Voivodeship Center for Heritage Research and Documentation in Katowice], Kraków 1987, s. 4, typescript, WUOZ Katowice, nr inw. 3061.

[527] T. Frazik, Ojców – woj. krakowskie. Zamek. Sprawozdanie z badań terenowych, Kraków 1958 [Ojców - Krakow Voivodeship. 207 Castle. Field Research Report, Krakow 1958], typescript, n. 441/77. WUOZ Kraków

[528] W. Niewalda, Średniowieczny zamek w Korzkwi w świetle ostatnich badań architektoniczno-historycznych [Medieval Castle in Korzkiew in the Light of Recent Architectural and Historical Research], „Teki Krakowskie", vol. 2, 1995, p. 101–112; Idem, Problemy badawcze i adaptacyjne zamku w Korzkwi [Research and Adaptive Challenges of the Castle in Korzkiew], „Teki Krakowskie", vol. 7, 1998, p. 51–52.

Fig. 111. Korzkiew Castle according to W. Niewalda, source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/korzkiew-zamek/, [access:24.03.2022]

A similar layout to that used in Korzkiew can be found in the medieval castle of Bydlin, built at the end of the 14th century. In this case, the tower was replaced by a defensive building with an elongated plan, which was buttressed at the corners. Such a structure is referred to in literature as a "kasztel."[529] Research on Bydlin Castle conducted by Błażej Muzolf in 1989 revealed that this building had at least three stories and a single entrance placed along the central axis. Its rear facade was incorporated into the irregularly shaped perimeter wall, where the northeastern part had a gate tower. It is likely that the residential building was constructed first, with the perimeter wall being erected shortly afterward, probably in the 14th century[530].

Another group of castles in the Jura region consists of small fortifications built on rocky terrain, where the irregular shape of the perimeter walls and closely packed buildings resulted from topographical conditions and limited space availability. In this category of castles, Morsko, Biały Kościół, Udórz, Bobolice, and Mirowo stand out. In these castles, the "kamieniec," a building combining residential and defensive functions, played a key role. Archaeological work and scientific research conducted by a team of scientists under the direction of Professor Mariusz Gwiazda have shown that, in some cases, the defensibility of these fortifications was supported by a tower, as seen in Mirowo, where it was incorporated into the southwestern elevation of the upper castle. Nevertheless, the state of preservation of some of these monuments (Biały Kościół, Udórz) makes it difficult to accurately reconstruct their original forms. In the case of Udórz Castle, researchers even suggest that construction work, initiated at the turn of the 14th and 15th centuries, may have never been completed[531]. Another fortress that was likely never fully completed is Ostrężnik Castle, associated with King Kazimierz Wielki (Casimir the Great). Compared to the previously mentioned castles, its remains are distinguished by significant dimensions. This castle consisted of a masonry upper part and a lower bailey surrounded by defensive ramparts. The remains of the masonry part take the form

[529] Por. J. Bogdanowski, Sztuka obronna… [Defensive Art…], *op.cit.*, s. 38, 42.
[530] Muzolf B., Bydlin – gm. Klucze woj. katowickie. Zamek rycerski na górze Św. Krzyża – opracowanie badań archeologicznych, t. 1, Łódź 1990 [Bydlin – Klucze Municipality, Silesian Voivodeship. Knight's Castle on Mount Holy Cross – Archaeological Research Compilation, Vol. 1, Łódź 1990], p. 21–24, typescript, WUOZ Kraków, nr inw. 31.593/00.
[531] L. Kajzer, S. Kołodziejski, J. Salm, *op.cit.*, p. 510

of an elongated polygon outlined by perimeter walls. In the northwest corner, a longitudinal building, likely residential, adjoined them. On the southeast side, traces of a small structure protruding outside the walls have been preserved, possibly a defensive tower or a gate leading to the bailey[532].

The most modest architectural solutions are encountered in the case of the smallest medieval fortifications, known as "strażnice obronne" (defensive watchtowers), erected in the northwestern part of Małopolska. This is an interesting aspect of historical research, often placed in the context of more elaborate defensive systems, confirming Bohdan Guerquin's hypothesis[533].

Small watchtowers of this type were present in places such as Ryczów [Fig.112], Suliszowice, Przewodziszowice, Łutowiec [Fig.113], and Klucze (although the latter, unfortunately, did not survive to our times). Today, remnants of these objects are scarce, but the most can still be seen in the fortifications in Ryczów and Przewodziszowice[534].

A characteristic feature of these watchtowers was their location on the summits of small and hard-to-reach rocks. These fortifications consisted of irregular, single-space buildings, referred to in historical literature as "kamieńce" (small stone structures). Besides the kamieńce, these watchtowers adjoined small baileys outlined by defensive walls or ramparts. The term "kamieniec" referred to buildings with two or three stories that served as small towers.

In the 15th century, most castles in the Krakowsko-Częstochowska Upland underwent modernization aimed at strengthening their defensibility. However, watchtowers, due to the small size of the rocks on which they were located, had limited expansion possibilities and quickly fell into disuse. In larger castles, the reinforcement of defense was achieved through the addition of extra stories to towers or, more frequently, by adding bastions, significantly enhancing their defensive capabilities.

As new types of firearms, such as artillery[535], developed, further modernization of late medieval castles became necessary. Around the mid-15th century, the tower of Lipowiec Castle was significantly raised, and the newly added superstructure featured positions for artillery pieces and a defensive terrace with loopholes. This is an excellent example of adapting a tower for the use of artillery.

Nevertheless, the possibilities of reinforcing the firepower of the towers were limited due to their location within the perimeter defined by the defensive walls. In response to this, bastions began to be constructed, projecting beyond the outline of the defensive walls, allowing not only frontal but also lateral defense. Bastions could take on various cross-sectional forms, including circular, square, or irregular, and they could be either open at the rear in the form of oriel windows or enclosed on all sides. Thanks to such innovations, castles continued to serve as important defensive and strategic centers in the region[536].

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[532] A. Gruszecki, Zamek w Ogrodzieńcu. Badania architektoniczno-historyczne. Część I. Sprawozdanie za rok 1971 [Castle in 170 Ogrodzieniec. Architectural and historical research. Part I. Report for 1971], typescript, no. III/2163a.
[533] Ibidem, p. 49.
[534] J. Bogdanowski, Dawna linia obronna… [Former defensive line…], op.cit., s. 8.
[535] J. Bogdanowski, Szuka obronna...*[Defensive Art]*, op.cit., p. 36.
[536] Ibidem, p. 43–44.

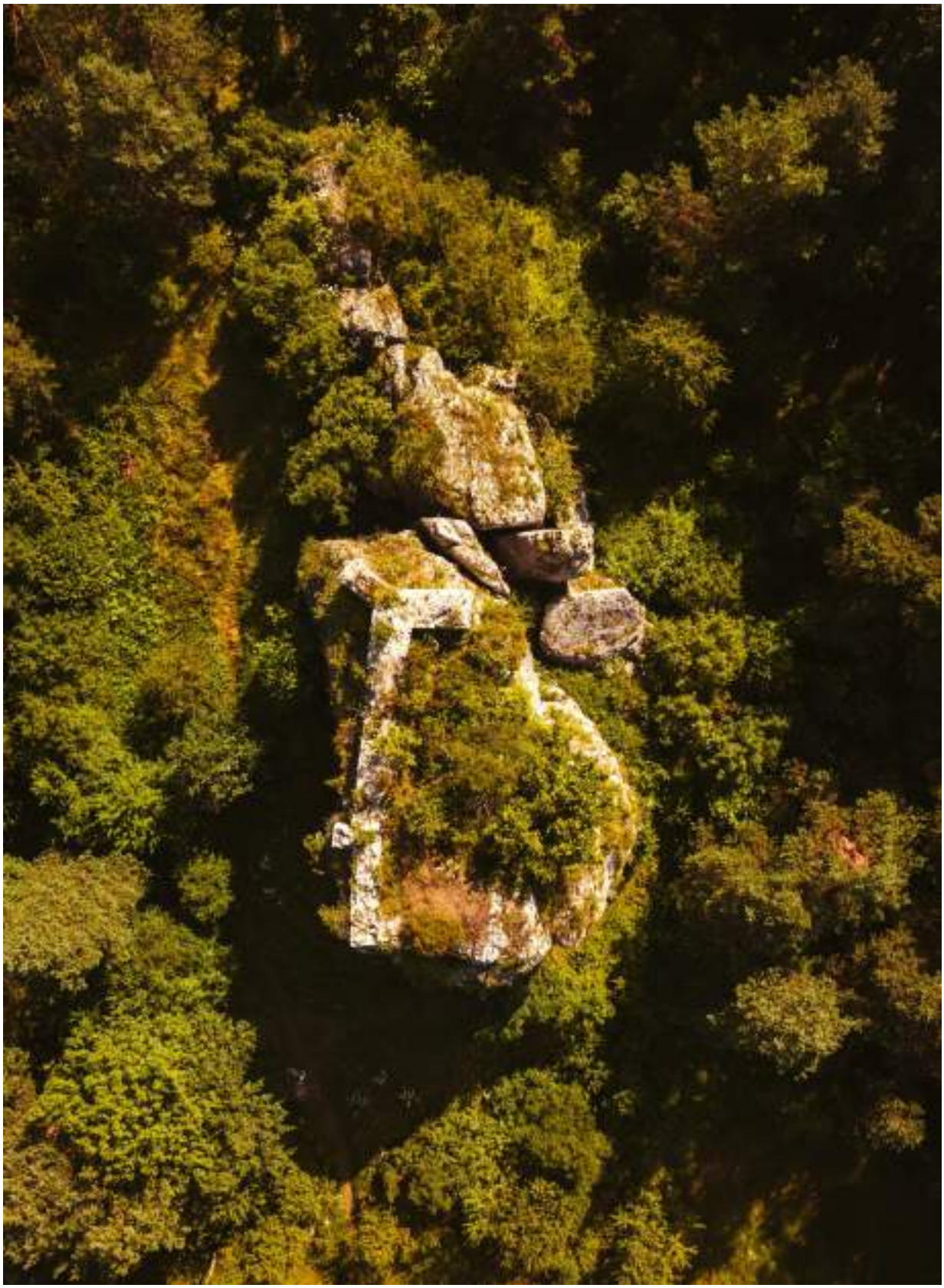

Fig. 112. Ryczów Watchtower, photo by the author

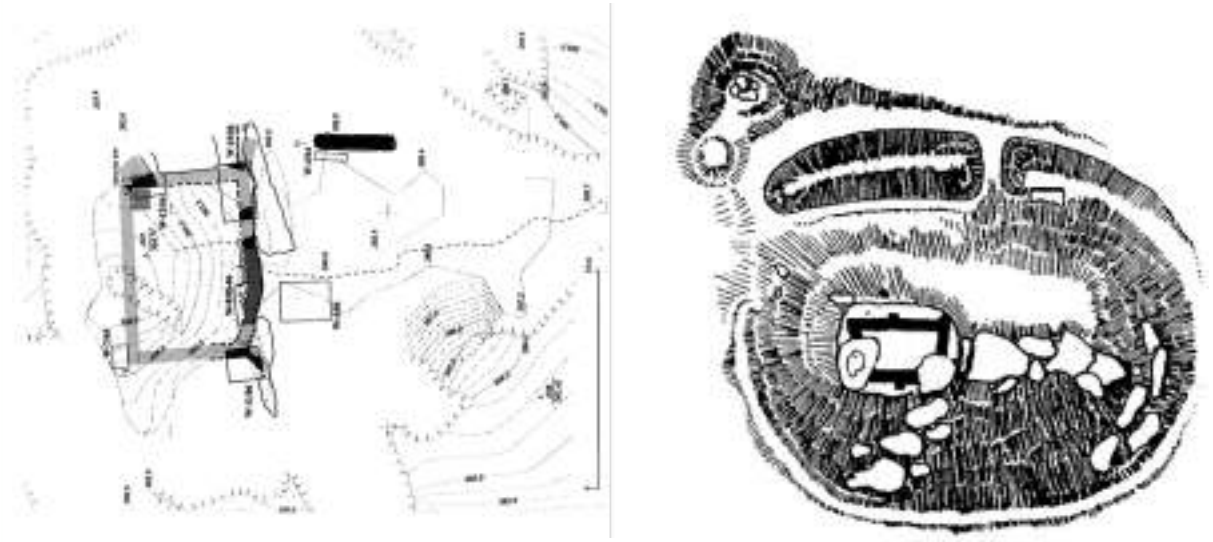

Fig. 113. Watchtowers in Łutowiec, according to Cz. Hadamik, source: WUOZ Kraków and Ryczów, according to Z. Lisa and W. Mszycy, source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/ryczow-zamek/

Oriel bastions, also known as half-bastions, played a crucial role in fortification systems. Their significance has been confirmed by the results of archaeological research, including findings at Lipowiec and Ojcow, where remnants of these bastions were discovered in 1991[537]. It's also worth mentioning Smoleń, where two oriel bastions were found along the walls, defining both baileys[538].

In the 15th century, square bastions appeared in front of the defensive walls of Korzkiew Castle, as discussed earlier. Circular bastions were also significant, as seen in Pieskowa Skala, forming a defensive bulwark on the eastern side. Furthermore, at Tenczyn Castle, two cylindrical bastions flanked the eastern section of the walls. Existing sources and research suggest they may have been built in the 15th century, although it cannot be ruled out that they were added during the Renaissance reconstruction of the castle. Semi-circular bastions were probably added to Bobolice Castle in the 15th century[539].

Bohdan Guerquin distinguished three types of bastions: tower bastions (adapted only for firearms), low bastions formed from open semi-cylindrical towers, and elongated bastions projecting beyond the walls[540]. An example of the third type is the mentioned beluard in Ogrodzieniec, which also served as an arsenal[541].

Among other defensive structures from the 15th century, it is worth mentioning some gate buildings, such as the one at the Kraków Bishops' Castle in Siewierz. The gate bastion at Ojców Castle falls into the same category, featuring a characteristic oriel above the entrance. Perhaps already in the 15th century, earth fortifications, or terraces, outside the walls of some

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[537] Ibidem, p. 45.

[538] P. Lasek., Obronne siedziby rycerskie i możnowładcze w czasach Kazimierza Wielkiego [Defensive Knightly and Noble Residences in the Times of Casimir the Great] [in:] Wielkie murowanie. Zamki w Polsce za Kazimierza Wielkiego [The Great Walling: Castles in Poland during the Reign of Casimir the Great], ed. A.Bocheńska, P. Mrozowski, Warszawa 2019, p.67.

[539] J. Bogdanowski, Dawna linia obrony… [Former Defensive Line…] op.cit., p. 13.

[540] B. Guerquin, *op.cit.*, p. 61.

[541] J. Bogdanowski, *Sztuka obronna…[Defensive Art], op.cit.*, p. 56.

castles, such as Bydlin, Mirów, and Rabsztyn, were constructed. These types of fortifications were developed and improved in subsequent centuries.

All these structures, regardless of the type of defensive system, were closely related to their surroundings, often adapted to the natural terrain. Therefore, it is worthwhile to analyze their relationships with the environment and any changes that occurred in their vicinity. Nevertheless, to begin with the research, it is essential to assess their state of preservation.

3.2.2. Reconstructions after XVth century

The areas of the Kraków-Częstochowa Upland, from the late 13th to the early 15th century, were densely populated with defensive structures. However, apart from the castle in Pilica, no new fortifications were seen being built on these lands. Instead, existing fortresses underwent frequent modernizations and transformations.

Historical changes and new defensive solutions in the castles of the Kraków-Częstochowa Upland are a significant component of the history and architecture of medieval fortifications in this region. Scientific research plays a crucial role in better understanding these changes and the evolution of defensive structures over the centuries.

In the modern period, two main tendencies were observed: the continuation of improving the defenses of castles and a greater emphasis on their residential and representative functions. These changes were particularly evident in the case of some castles located in the Jura region.

Transformations in the structure of existing castles can be divided into actions taken on privately owned properties, such as Ogrodzieniec [Fig.114], and those in public ownership, entrusted to individuals serving in the executive branch[542].

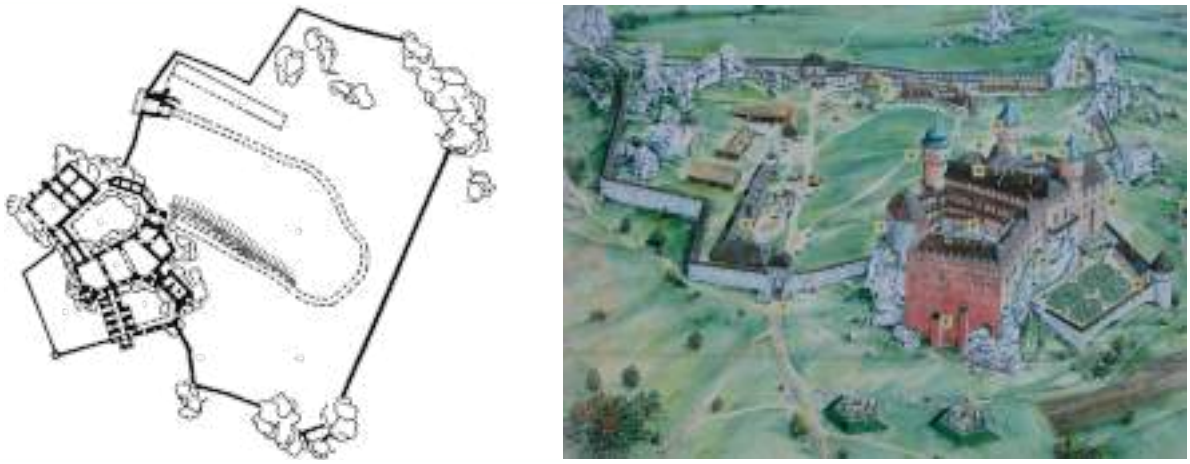

Fig. 114. Ogrodzieniec Castle in the 16th century, source: https://www.zamkipolskie.com/ogro/ogro.html, [access:24.04.2022]

[542] D. Kmiotek, Ogrodzieniec, Dąbrowa Górnicza 2009 , p. 87.

Private Castles

In the 16th century, significant transformations took place in some castles, such as Ogrodzieniec, Tenczyn, and Pieskowa Skała, which are described below in chronological order.

Ogrodzieniec

The castle was expanded between 1530 and 1545 at the initiative of Seweryn Boner, the governor of Krakow. During these works, the oldest part of the castle, located on the hill, was adapted, creating the southern wing reinforced with two impressive cylindrical towers. The third tower with a gate on the ground floor was erected in place of the original entrance gate. Additionally, a northern wing with a regular interior layout in the shape of a rectangle was built. After Seweryn Boner's death, his son Stanisław continued the work, adding a narrow western wing that closed the main courtyard. The castle was also fortified from the south with the construction of a large rectangular pavilion known as "Kurza Noga."[543]

It's worth noting that during the modernization of Ogrodzieniec Castle [Fig.114], possibly at the initiative of Stanisław Boner or Mikołaj Ligęza, a belvedere was built near the entrance gate to the upper castle. Its purpose was to eliminate dead angles of fire and protect the approach to the upper castle.

As a result of these transformations, Ogrodzieniec Castle took on a form consisting of four wings surrounding an inner courtyard. Additionally, a second courtyard was created, separated by a curtain wall between "Kurza Noga" and the belvedere. Despite challenging terrain and the need to adapt to existing buildings, efforts were made to achieve a Renaissance regularity in the spatial layout[544].

A significant fact is that these architectural transformations that took place in the castles belonging to influential Małopolska families are an essential part of the history and architecture of medieval fortifications in the region.

The Renaissance expansion of Ogrodzieniec Castle significantly improved the living conditions of its inhabitants and raised the prestige of the owners. In the 16th century, Ogrodzieniec Castle became one of the most important defensive architecture objects in the Kraków-Częstochowa Upland region, practically rivaling the size and significance of Wawel Castle in Krakow[545]. Not only elements related to representation and housing were modernized, but also those related to defensive aspects.

During the strengthening of the castle, innovative defensive solutions were introduced, including the construction of bastions aimed at protecting the southern front. At the same time, the first elements of a new defensive system known as the bastion system began to appear. Bastions were developed based on the prototype of bastions and took on various structural forms, including masonry variants, wood-earth variants, and bastions made of earth, which were usually adapted for defense against artillery. Bohdan Guerquin classified three main types of bastions: tower-shaped (adapted only for firearms), low bastions derived from semi-

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[543] L. Kajzer. S. Kołodziejski, J. Salm, *op.cit.*, p. 394–395.

[544] A. Gruszecki, Wyniki badań zamku w Ogrodzieńcu w latach 1964–1965 [Results of Research on Ogrodzieniec Castle in the Years 1964-1965], „Kwartalnik Architektury i Urbanistyki", vol. 11, 1966, z. 3, p. 285.

[545] W. Strzelecki, *op.cit.*, p. 149.

cylindrical open bastions, and elongated and extended bastions beyond the main defensive walls. It was precisely this third type that was an essential element of the defensive concept associated with Tenczyn Castle[546] [Fig.115].

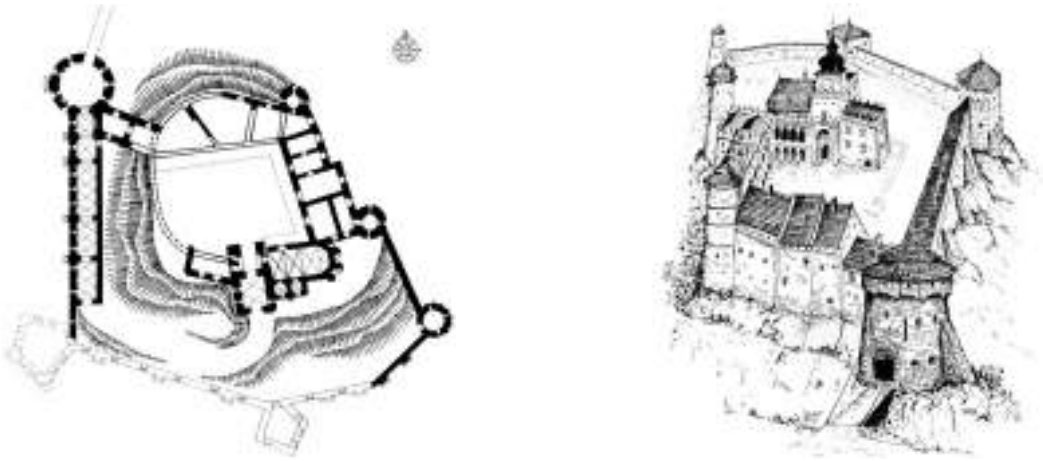

Fig. 115. Castle in Tenczyn according to B. Guerquin and R.Kubiszyn, source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/rudno-zamek-tenczyn/, [access:24.03.2022]

Tenczyn

Tenczyn Castle also underwent significant modernization in the second half of the 16th century, likely initiated by Jan Tęczyński. The historic Gothic-style defensive castle was transformed into a Renaissance triple-wing palace with a courtyard surrounded by arcades. The castle's defensive system was significantly reinforced through the addition of an external circuit of walls equipped with bastions and bastions. This outer ring of walls also defined two spacious outer courtyards, located to the south and west[547].

The most characteristic and interesting defensive element of Tenczyn from this period was a large, round gate bastion, often referred to as a "rondel" or barbican. This bastion was placed on the so-called "neck," and its shooting gallery led to the lower castle courtyard. Its main task was to secure the northwest front. It's worth noting that while this type of defensive solution was not common in castles in the Kraków-Częstochowa Upland, it served as inspiration for many defensive structures, including the famous Barbican in Krakow, which was built at the end of the 15th century[548].

In addition to the bastion, two high Italian-style bastions were also built in the fortifications of Tenczyn, located to the south and southwest of the castle. They were likely constructed at the end of the 16th century or at the turn of the 16th and 17th centuries.

The aesthetic aspirations of the castle's owners in Tenczyn [Fig.115] are expressed in the preserved fragments of attics crowning some residential buildings and bastions. Researcher Teresa Małkowska-Holcerowa[549], while analyzing the decorative elements used in these crowns, such as rusticated pilasters, semi-circular scrolls, and consoles, dates these attics to the late 16th century.

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[546] T. Małkowska-Holcerowa, Ruiny zamku Tenczyńskiego… [Ruins of Tenczyn Castle…], op.cit., p. 67.
[547] J. Bogdanowski, *Sztuka obronna…[Defensive Art…], op.cit.*, p. 55–56.
[548] Ibidem, p. 157.
[549] T. Małkowska-Holcerowa, Ruiny zamku Tenczyńskiego… [Ruins of Tenczyn Castle], op.cit., p. 67.

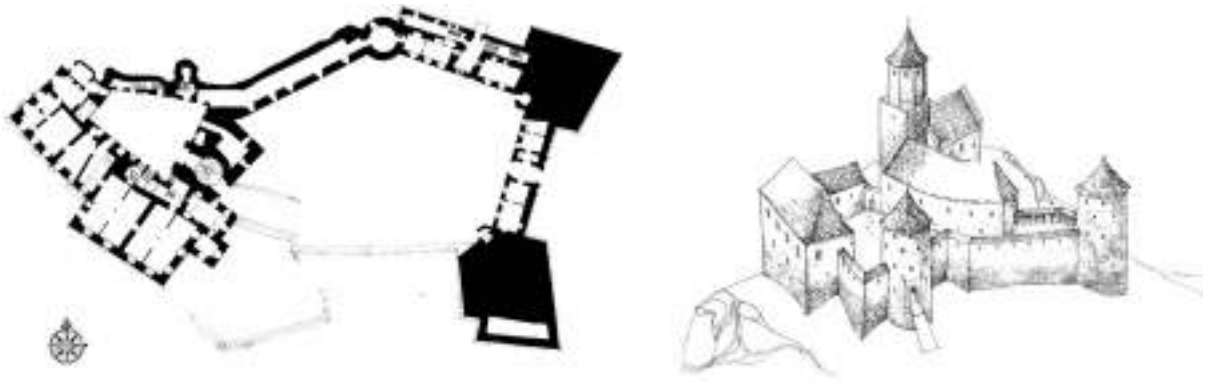

Fig. 116. Castle in Pieskowa Skała, source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/pieskowa-skala-zamek/, [access:23.05.2023]

Pieskowa Skała

In the same period, renovation work was carried out at Pieskowa Skala Castle [Fig.116], which transformed it into a Renaissance residence. These actions were initiated by the then owner, Stanisław Szafrańec, and led to the creation of a four-wing complex centered around a trapezoidal courtyard surrounded by arcades. The main wings of the castle were built on the south and west sides, utilizing the existing walls of the Gothic lower castle. Due to the varied terrain, these parts had different numbers of stories, with five levels facing the Prądnik Valley and three levels facing the courtyard. The lower levels contained cellars and utility rooms, the ground floor served practical purposes, and the top two floors were furnished with elegant chambers and guest rooms with a regular spatial layout. The defensive walls of the Renaissance part of the castle were separated from the upper castle by a parapet wall on the north side. Additionally, towards the end of the 16th century, the eastern wing absorbed the Gothic entrance tower, which underwent a thorough reconstruction[550].

The elegant character of Pieskowa Skala Castle [Fig.116] was emphasized not only through the arcades but also through carefully executed architectural elements and decorative details. Among them were carved mascarons adorning the courtyard and a scenic loggia located in the eastern projection. This loggia was covered with geometric decorations executed in the sgraffito technique and crowned with an attic. According to the research results of Alfred Majewski, this attic originally crowned individual wings of the castle (similar to Tenczyn), later replaced by a crowning cornice that supported gable roofs, which became common in later periods[551].

These historical facts and research findings showcase the evolution and architectural richness of the Renaissance castles of Tenczyn and Pieskowa Skala, serving as a significant element of the history and culture of this region.

In the context of the described expansion of Pieskowa Skala Castle, unlike Ogrodzieniec and Tenczyn Castles, the main emphasis was almost exclusively on aesthetic matters, overlooking essential aspects related to defense. It wasn't until around 1640 that

[550] A. Majewski, Zamek w Pieskowej Skale… [Castle in Pieskowa Skała] (1953), op.cit., p. 51–52.
[551] Ibidem, s. 54.

Michał Zebrzydowski decided to address these shortcomings by introducing two bastions on the eastern side, connected by a curtain wall with an entrance gate. These bastions were based on an acute angle, characterized by significant height and multiple shooting levels, with terraces and parapet railings at their summits. The northern bastion was connected to an outbuilding with a Gothic circular tower, while from the southern bastion, two concentric walls were built, creating a connection with the southern wing of the castle. As a result of these actions, the space in front of the Renaissance fortress took the form of a large inner courtyard. Additionally, it's worth noting that around the mid-17th century, the fortress at Pieskowa Skala was enriched with a domed central chapel, located on the northern side and accessible from the second-floor arcades. Its architecture was characterized by elegance and symmetry, and the interior of the dome was adorned with finely crafted stucco decorations, dated to the period of its construction[552].

Fig. 117. Rabsztyn Castle, plan, source: WUOZ Katowice, reconstruction according to A.Sypek i B. Drejewicz, source: https://medievalheritage.eu/pl/strona-glowna/zabytki/polska/rabsztyn-zamek/, [access:23.05.2023]

Public Castles

Regarding castles in the Kraków-Częstochowa Upland area that underwent significant transformations in the modern period, apart from the three mentioned private cases, it is also worth mentioning the castles of Bishop Siewierz and Royal Rabsztyn [Fig.117], which were administered by stewards[553].

Siewierz

In the 15th century, the fortress in Siewierz was equipped with its first masonry elements, including an outer wall with a gate from the south and a cylindrical tower inside the castle. In the 16th century, both the gate and the cylindrical tower were removed. In their place, a gate tower was erected, which had a square base and an octagonal upper part, built from the north before 1518. Shortly afterward, within the defensive walls, residential wings were added, arranged around a courtyard, imitating the style of Renaissance residences.

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[552] A. Miłobędzki, Architektura polska XVII wieku [Polish Architecture of the 17th Century], Warszawa 1980, p. 248; M. Kurzej, Siedemnastowieczne sztukaterie w Małopolsce [Seventeenth-Century Stuccowork in Lesser Poland], Kraków 2012, p. 557–558.

[553] A. Sypek, R. Sypek, Zamki i obiekty warowne Jury Krakowsko – Częstochowskiej [Castles and Fortified Structures of the Kraków-Częstochowa Upland], Warszawa 2004, p.24.

In 1575, thanks to Bishop Franciszek Krasiński, steps were taken to strengthen the castle's defensive capabilities. For this purpose, an external defensive wall was added, and the space between the walls was filled with earth, creating a platform for artillery. Additionally, the entrance gate was reinforced by adding a two-level bastion as a forward gate, which served as an expanded barbican. Such bastions, likely evolving from medieval gate structures, were characteristic of Silesian areas like Wrocław or Jawor. In the case of Siewierz, the mentioned bastion was strategically placed in the central part of the curtain wall, allowing for effective defense of both its flanks.

Rabsztyn

Likely at the turn of the 16th and 17th centuries, architectural transformations took place at Rabsztyn Castle. Although these changes are attributed to Zygmunt Myszkowski[554], the Grand Crown Marshal and the starost of Rabsztyn during this period, some sources suggest that the initiator of these changes could have been his successor as the starosta, Mikołaj Wolski[555].

As a result of these actions, an extensive, lower part of the castle was created, situated to the south and east in relation to the existing medieval fortress on the higher hill. This new part of the castle had the character of a noble residence and practically lacked defensive elements. Three two-story residential wings were built around the inner courtyard, while retaining the original courtyard of the upper part of the castle to the west[556]. The new section stood out with consistent dimensions and functions of the different wings, as well as rhythmic placement of windows, with larger openings on the first floor, known as the "piano nobile." The entrance to the castle was located to the north[557], through the gate tower, preceded by a bridge on pillars. Unfortunately, only the main walls and fragments of partition walls have survived from this ambitious project.

Olsztyn

The architecture of other castles in the Jura region also underwent evolution in the modern period, although the scope of the work is not always possible to reconstruct precisely due to the integration of new elements with existing structures. Furthermore, most castles have a low level of preservation. Source records, especially surveys of royal castles, provide valuable assistance in understanding these architectural changes from the 16th to the 18th century.

An example is Olsztyn Castle near Częstochowa, which underwent reconstruction in the 16th century on the commission of Mikołaj Szydłowiecki, who simultaneously held the positions of starost and leaseholder of the castle[558].

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554 Z. Holcer, Zamek w Rabsztynie (woj. katowickie) i dawny dwór starościński. Opracowanie historyczne [The Castle in Rabsztyn (Silesian Voivodeship) and the Former County Manor: Historical Study], t. 1: Tekst, Kraków 1983, s. 26, typescript, WUOZ Kraków, nr inw. 51.923/11.

555 L. Kajzer, S. Kołodziejski, J. Salm, *op.cit.*, p. 412.

556 J. Sypień, Zamek Rabsztyn [Rabsztyn Castle], Olkusz 2018, p. 34.

557 Z. Holcer, Zamek w Rabsztynie… [Castle in Rabsztyn], t. 1, *op.cit.*, p. 26; B. Guerquin, *op.cit.*, p. 266.

558 J. Bogdanowski, *Sztuka obronna…[Defensive Art…]*, *op.cit.*, p. 55–56.

Various modifications were introduced at Olsztyn Castle in the 16th century, including the enlargement of the complex and the reconstruction of existing buildings. A part known as the lower castle was separated, and two large outer baileys were created to the northeast and southwest, surrounded by walls and moats. Mikołaj Szydłowiecki began the construction of an extensive residence in the area of the lower castle, but the work was not completed. Despite these changes, the upper castle remained the central part of the complex, where a beautifully decorated residential sector was created, as documented in control documents. At the same time, efforts were made to strengthen the defensive features of the castle, resulting in the construction of a two-story artillery tower on the northeast outer bailey. This well-preserved structure was located at a lower level of the terrain, to the north of the upper castle[559].

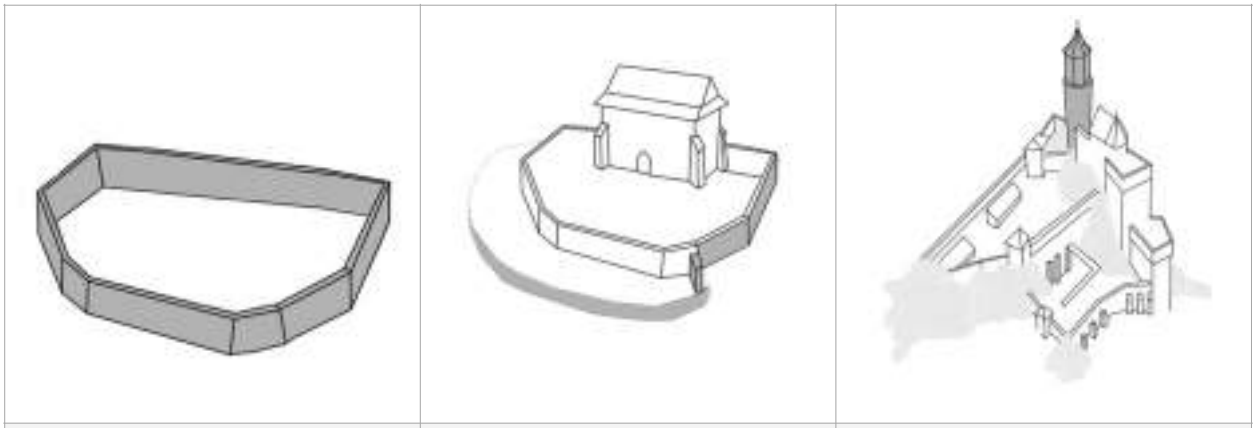
The 16th-century modifications at Olsztyn Castle exemplify the evolving needs and aspirations of the time. The expansion of living quarters, the establishment of outer baileys, and the construction of the artillery tower all reflect the dynamic interplay between aesthetics, functionality, and defense that characterized castle development during this period. Today, Olsztyn Castle stands as a tangible testament to these historical transformations and serves as a window into the complex and multifaceted history of castle architecture and life in the Kraków-Częstochowa Upland.

[559] Ibidem, p. 79–81.

3.2.3. Conclusions

In the discussed structures, one can recognize the types of defensive systems [Fig.118] identified by Janusz Bogdanowski, which were mentioned in Chapter III[560]. Just like everywhere in this area, they appear in various modifications and in combination with the landscape in which they are situated. Except for the Pilica Castle, none of the castles have a symmetrical layout. The first strongholds were built in the "wall-type" category, which was later modified in subsequent centuries. It is not possible to definitively match a type to a specific object because during the early modern period, they underwent numerous expansions, resulting in some systems overlapping and appearing in modified forms. There are objects in which certain defensive elements appear for the first time [Fig.119].

Fig. 118. Defensive systems, elaborated by the author, based on J. Bogdanowski



Strongholds - wall-type	Bydlin in the first phase - recess type	Olsztyn in the first phase - tower-type
Pieskowa Skała 15th/16th century - bastion type	Pilcza XVI wiek - bastionette type	Tenczyn - ravelin type

Fig. 119. Defensive system elements present in examples of Jura architecture, elaborated by the author.

[560] J. Bogdanowski, Dawna linia obronna…[Former defensive linę], op.cit., p. 19.

4. Current state of defensive castles in the Kraków-Częstochowa Upland

4.1. Protection, conservation, and restoration of objects

The topic related to the preservation of Jurassic castles is incredibly complex and difficult to comprehensively describe. Indeed, each of these historical objects must be analyzed separately because there are various approaches and detailed conservation strategies in place. Probably the main reason for this situation is the lack of a coherent conservation plan for the Jura region, which was already identified half a century ago by Janusz Bogdanowski[561]. He emphasized the lack of a deep understanding of the cultural and historical significance of fortifications in this area, as well as their division into two parts under the care of conservators from Krakow and Katowice, which complicated the coordination of activities. In today's times, it can be noted that although the state of knowledge has significantly improved, there is still a division of the area into the southern part, supervised by the conservator of Lesser Poland, and the northern part, the responsibility of the Silesian conservator. Currently, after further experiences related to the protection of castles and ruins, the situation seems even more diverse. Due to this diversity and the difficulty in formulating general conclusions regarding conservation efforts, each of these objects will be discussed separately in this chapter. The order is arbitrary, and any potential relationships between the objects, as will be the case with Bobolice and Korzkiew, will be discussed as they arise.

Będzin

The history of conservation work on Będzin Castle began when the structure was earmarked for demolition in 1825. In 1934, Count Edward Raczyński turned his attention to the castle, seeking a new location for the AGH University of Science and Technology. The project for the planned reconstruction was entrusted to Franciszek Maria Lanci [Fig.120] at that time[562]. Lanci gained significant recognition in Poland, including his contribution to the restoration project of the Royal Castle on Wawel Hill in 1830. Unfortunately, the plans for the neogothic reconstruction of the former residence of Polish kings were not realized, mainly due to the outbreak of the November Uprising[563]. Details of his project were published in the "Przyjaciel Ludu"[564] magazine a few years later.

This particular project was significant in the context of preserving historical heritage, serving as evidence that even in times of political turmoil, people eager to preserve and restore the former glory of the past could not only find appropriate funds but also experts to achieve this goal.

An extremely important aspect of the Będzin Castle renovation process was the evolution of Lanci's project itself. The initial two projects envisioned transforming the ruins into a romantic residence, which, however, posed a risk of losing the original character and structure

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[561] J. Bogdanowski, Dawna linia obronna…[Former defensive linę], op.cit., p. 19.
[562] https://rekonstrukcjeiodbudowy.pl/zamek-w-bedzinie-historia-obudowy/ [access:24.11.2022]
[563] J. Frycz, *op.cit.*, p. 53–54.
[564] „Przyjaciel Ludu", 1843, nr 13, p. 100.

of the building. Probably one of these earlier concepts was published in the "Przyjaciel Ludu" magazine in 1843.

Fig. 120. Illustration of Będzin Castle after the restoration carried out by F. M. Lanci, lithograph by C. Sommer, "Tygodnik Ilustrowany" (Illustrated Weekly), 1861, issue 87.

Franciszek Maria Lanci, known for his Neo-Gothic architectural designs, introduced significant changes to the final project for the castle. In the project, he included a lowered tower (turret) crowned with battlements. Many new windows and passages were planned, including entirely new ones leading to the courtyard. The most distinctive element is the pointed-arch arcade wall, which is still present in the castle today[565]. Unfortunately, the plan could not be realized due to the political situation in Poland and the ruling authorities at the time. Lanci's ultimate solution provided an example of a balance between restoration and the preservation of the castle's original structure and character but was widely criticized in the beginning of 20th century.

In addition to English Neo-Gothic influences, in the architecture of Będzin Castle, one can also notice some Italian inspirations, such as semicircular closures of certain windows and brickwork frames. As suspected by J. Frycz[566], the aforementioned arcade wall was intended to give the ruins a more ancient character and symbolize Roman aqueducts [Fig.121].

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[565] Z. Gawlik, Wyniki badań na zamku w Będzinie [The Results of Research at Będzin Castle], b.m. i b.d., s. 4, typescript, WUOZ Katowice, nr inw. I/15a.

[566] J. Frycz, *op.cit.*, p. 61.

Fig. 121. Photos before and after the reconstruction of Będzin Castle according to M. Lanci's project, source: WUOZ Katowice

Further discussions about the reconstruction arose during the interwar period due to the deteriorating condition of the castle. In the early 20th century, parts of the walls and towers had collapsed. A new reconstruction project was prepared by Adolf Szyszko-Bohusz, along with the Department of Architecture at the Warsaw University of Technology, which he led[567]. Due to the somewhat controversial reconstruction proposals, the project did not receive permission for construction, and the rest of the discussions were interrupted by the outbreak of the Second World Wa[568]r.

The topic of castle reconstruction resurfaced immediately after the war when the Castle Reconstruction Committee was established. Adequate funds were gathered, and new specialists were found to present their proposals. Subsequently, archaeological work commenced. The entire project was supported by Bogdan Guerquin and Zygmunt Stępiński. They disagreed with Lanci's Neo-Gothic forms and envisioned only fragmentary preservation of his reconstruction. The work was carried out only partially, primarily focusing on archaeological research[569]. Subsequently, the work was once again suspended.

Effective reconstruction, which has been preserved to this day, was carried out in the 1950s based on Zygmunt Gawlik's design[570]. The work lasted from 1952 to 1956 and included the process of removing debris from the courtyard and the reconstruction of the defensive walls. Stones used during the renovation were obtained from the dismantling of ruined buildings in the town itself, partially constructed earlier using material taken from the castle. The next step was securing and adapting the cylindrical tower and raising the level of the residential building with a corner turret. Then the roof was covered with shingles, and interior

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567 R. Romański, op.cit., p. 2; P. Dettloff, Ochrona zabytków architektury obronnej w 20–leciu międzywojennym w Polsce. Między konserwacją a odbudową [Protection of Defensive Architecture Monuments in Poland in the Interwar Period: Between Conservation and Reconstruction], [in:] Ochrona zabytków architektury obronnej. Teoria a praktyka [Preservation of Defensive Architecture Monuments: Theory versus Practice], M. L. Lewicka (red.), Lublin – Warszawa 2008, pp. 98–100.

568 W. Błaszczyk, Będzin przez wieki. Dzieje miasta i jego rozwoju urbanistyczno-przestrzennego od średniowiecza do połowy XX wieku na podłożu osadnictwa w starożytności i wczesnym średniowieczu [Będzin Throughout the Centuries: The History of the City and Its Urban and Spatial Development from the Middle Ages to the Mid-20th Century on the Basis of Ancient and Early Medieval Settlement], Poznań 1982, pp. 64–67.

569 R. Romański, Informacja o odbudowie zamku w Będzinie [Information about the reconstruction of the castle in Będzin], Stalinogród 1956, typescript, no. I/60a.

570 Z. Gawlik, Wynika badań na zamku w Będzinie [The results of research at Będzin Castle], typescript, n. I/15a. WUOZ Katowice.

work involved the renovation of ceilings, staircases, plaster, and installations[571]. The work was overseen by Roman Romański, and the stonemasonry was executed under the leadership of the master stonemason Stanisław Bednarz.

Fig. 122. Castle during reconstruction in the 1950s, source: WUOZ Katowice

Indeed, as many researchers have noted, the reconstruction process may not have been preceded by a sufficient amount of archaeological and historical research. This is also indicated by the numerous proposed reconstruction options, which were preserved in the archives in Katowice and varied significantly from each other. The choice of the version that was ultimately realized was likely influenced by financial considerations and the minimal required labor input. The entire restoration work faced criticism from experts, especially in the context of the turret on the residential building, which significantly altered the proportions of the castle. The designer also introduced new windows in this turret and in the residential building, which did not find justification in historical-iconographic sources or existing decorations in Będzin [Fig.122].

Będzin Castle was in very poor condition, significantly complicating the reconstruction process. The lack of sufficient iconographic documentation and substantial changes made during the 19th-century reconstruction posed additional challenges. It is worth noting the opinion of Janusz Bogdanowski, who considered the approach to the work inappropriate, as he strongly emphasized in his statements[572]. Currently, the reconstruction of this object no longer generates as much emotion, and experts' attention is focused on more recent expansions, which will be discussed in the following points, including Bobolice Castle and Mirow Castle.

In 2009, a project for the reconstruction of the lower castle was proposed, with the aim of serving educational purposes. However, it did not receive a favorable opinion from the conservation community. All versions of the project are still available on the author Maciej Małachowicz's website[573].

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[571] W. Podlewski, Referat dotyczący projektu technicznego rekonstrukcji zamku w Będzinie sporządzonego przez inż. arch. Zygmunta Gawlika – opracowany na podstawie zlecenia Centralnego Zarządu Muzeów i Ochrony Zabytków Ministerstwa Kultury i Sztuki [A presentation on the technical reconstruction project of Będzin Castle prepared by Architectural Engineer Zygmunta Gawlik – developed based on a commission from the Central Directorate of Museums and Heritage Conservation of the Ministry of Culture and Art] nr MOZ/Zm/Będzin/15/56 z dn. 22.VI.56 r., b.m. 1956, typescript, n. 3194/VII. WUOZ Katowice.

[572] J. Bogdanowski, Dawna linia obronna… [Former defensive line], op.cit., p. 22.

[573] https://www.rewaloryzacja.com/pracownia/projekty/bedzin_koncepcja/prezentacja.htm?fbclid=IwAR3SU9gAMBvQrYMaj0Sf_gH2EZTLAB9-j-F8w3QhXaGEPkA-PPdFX7yeMSc [access: 13.05.2022]

Presently, the castle is maintained in good condition and serves as a museum of the Dąbrowa Basin, also offering catering services. Regular conservation work is carried out to ensure its durability and preserve its historical value. In recent years, no major conservation work has been performed on the property.

Fig. 123. Będzin Castle, photo by the author

Ojców

In a similar period to the idea of reconstructing Będzin Castle, there was also a proposal for the reconstruction of Ojców Castle. At that time, the ruins of Ojców Castle were in much worse condition than those of Będzin Castle. However, as early as 1943, a reconstruction project for Ojców Castle by the same author, Franciszek Maria Lanci, appeared in "Przyjaciel Ludu." Like the project for Będzin, this plan was not implemented, but it did initiate initial conservation work at the castle[574]. The plans included impressive battlements as ornamentation for the defensive tower, the reconstruction of the gate tower, and the residential quarters. The facades were to be adorned with large, semicircular windows, reminiscent of those in Będzin Castle. The project also envisioned the introduction of crenellations, which were intended to lend the castle an even more majestic appearance. The residential building was to be adorned with decorative, polygonal turrets in the corners, creating an effect reminiscent of miniature octagonal defensive towers. It should be emphasized that the description of this project for the reconstruction of Ojcow Castle [Fig.124] clearly indicates that the architect did not aim for an exact replica of the historical castle's forms but rather presented his own vision of a Gothic-Romantic-style castle. Iconographic sources, including a drawing based on a watercolor by Zygmunt Vogel, served as the foundation for the reconstruction of the castle in the Gothic-Romantic style, to which the designer gave his own unique interpretation[575].

Similar to the gate tower, the entrance tower was depicted in a drawing by Józef Simmler from around 1860, which is currently held in the collections of the National Museum in Krakow[576]. This clearly indicates that efforts to restore and preserve the heritage of Ojców

[574] D. Ćwiertnia, I. Płuska, M. Bicz-Suknarowska, M. Wojenka, A. Weber, Prace remontowe i konserwatorskie na zamku w Ojcowie w latach 2018-2019 [Repair and conservation work on Ojców Castle took place in 2018-2019], Prace i materiały Muzeum im. Prof. Władysława Szafera, Prądnik, 2021, p. 71-94.

[575] Zob. J. Banach, Zygmunta Vogla „Zbiór widoków sławniejszych pamiątek narodowych"[Zygmunt Vogel's "Collection of Views of Famous National Monuments], 1806.

[576] W. Niewalda, H. Rojkowska, Badania ikonograficzne i architektoniczne zamku w Ojcowie w 1991 roku [Iconographic and Architectural Studies of Ojcow Castle in 1991], [in:] Badania naukowe…[Scientific research….], op.cit., p. 428 oraz il. 6 na p. 430.

Castle were undertaken by successive generations of owners and history enthusiasts who sought to revive the castle's former glory and significance.

It is essential to highlight that research and iconographic analyses are valuable tools in reconstructing historical objects and help us understand the processes of restoration and conservation that occurred in the past. Thanks to these sources, we can better comprehend how Ojcow Castle's appearance changed over the centuries and the efforts made to preserve its cultural heritage for future generations.

The next significant changes to the castle occurred at the end of the 19th century when Count Ludwik Krasiński decided to rebuild the entire castle. However, he began with the reconstruction of the octagonal tower, which was restored according to the designs of Tadeusz Stryjeński and Tomasz Pryliński[577]. The tower's reconstruction project, developed between 1891 and 1893, underwent modifications, taking into account Count Krasiński's suggestions from 1893. The preserved project in the Ojców National Park archives outlined the plan for five levels, accessible through carefully designed stairs along its walls.

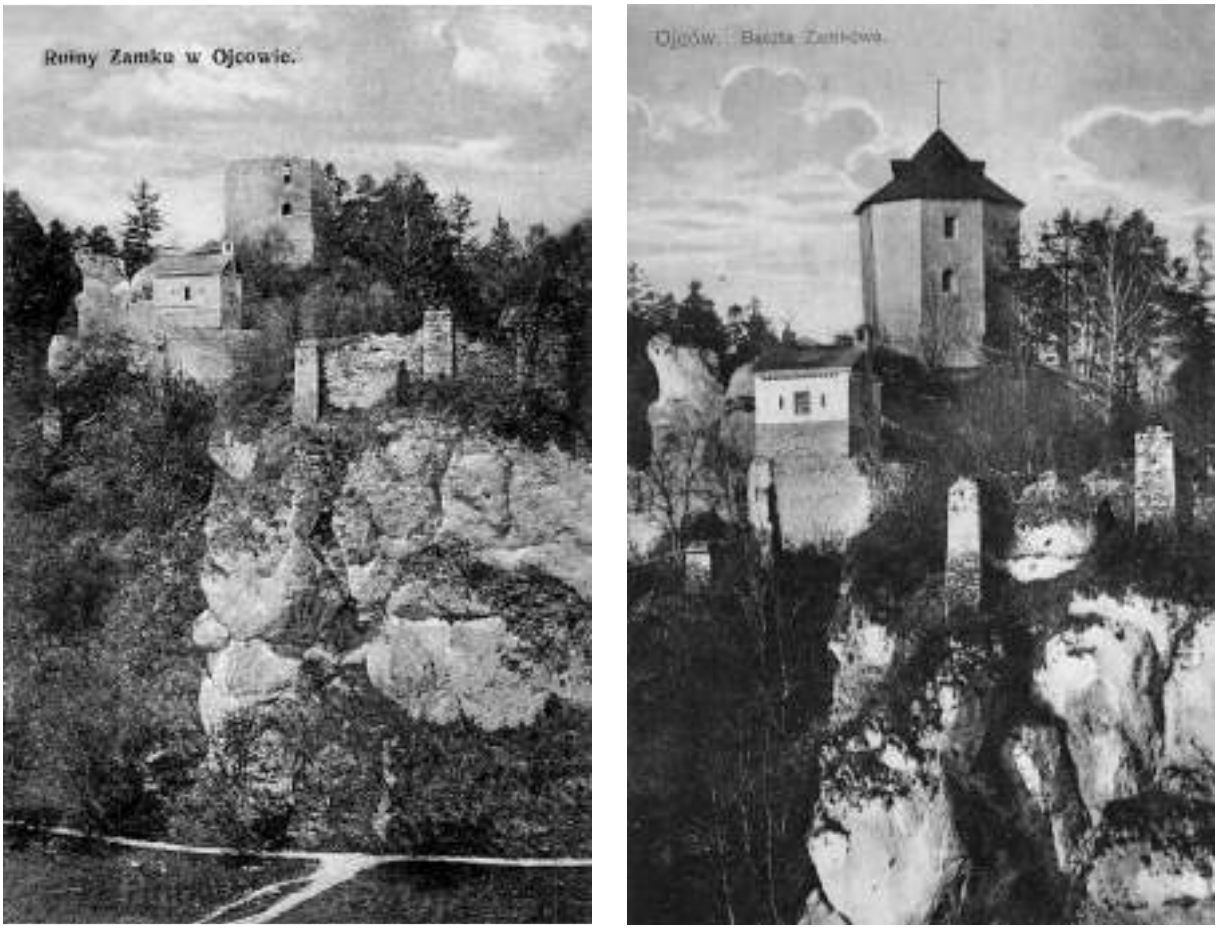

Fig. 124. The castle before and after partial reconstruction carried out by Ludwik Krasiński, source: WUOZ Kraków

The external architecture aimed to showcase the castle's grandeur. Tadeusz Stryjeński's plans included adding a small oriel above the main entrance and regularly spaced keyhole

[577] D. Ziarkowski, Próby restauracji wieży zamku w Ojcowie w końcu XIX wieku oraz w latach 1912-1914 [Efforts to restore the tower of Ojców Castle took place at the end of the 19th century and again between 1912 and 1914], Prace i Materiały Muzeum im. Prof. Władysława Szafera, 25, Prądnik, p. 219-238.

loopholes, serving both decorative and defensive purposes. The upper part of the tower was designed with a prominent gallery suspended on machicolations, giving it a majestic appearance. The ambitious project also featured a high pyramidal roof, making the tower a distinctive landmark and a picturesque addition to the landscape. These well-thought-out changes and reconstruction plans enhanced the castle's appeal to visitors. The grand ambitions for reconstructing Ojców Castle's tower were abruptly halted in 1895 due to Ludwik Krasiński's passing. Consequently, the tower, left partially in ruins, deteriorated over time, with falling wall fragments posing a threat to its complete destruction. However, there was renewed hope in the interwar period when Princess Maria Ludwika Czartoryska initiated efforts to restore the historic fortress. These efforts included excavations within the castle's grounds and reinforcing the walls near the entrance gate to secure this crucial structural element. The most significant step, though, was the reconstruction of the upper part of the tower, which had previously suffered partial damage and demolition.

Fig. 125. Ojców Castle, photo by the author

However, all of these efforts only served to slow down the ongoing degradation of the castle[578]. In 1956, Ojcowski National Park took over the castle. Despite limited funding, they initiated small-scale research and continued with further protective measures[579].

In 1958, the ruins of Ojców Castle became the subject of in-depth historical, archaeological, and architectural research. Researchers carefully analyzed the condition of this historical monument and concluded that the castle was not suitable for full reconstruction. Instead, the decision was made to secure it and open it to visitors to preserve its heritage for future generations.

It was Józef Frazik, a historian and architect, who played a crucial role in this process and formulated an extensive list of tasks to be carried out in various parts of the castle. First and foremost, he emphasized the need to clean and plaster the entrance gate, which was one of the most characteristic elements of the fortress[580].

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[578] Ibidem

[579] D. Ćwiertnia, I. Płuska, M. Bicz-Suknarowska, M. Wojenka, A. Weber, Prace remontowe i konserwatorskie na zamku w Ojcowie w latach 2018-2019 [Repair and conservation work on Ojców Castle took place in 2018-2019], Prace i materiały Muzeum im. Prof. Władysława Szafera, Prądnik, 2021, p. 71-94.

[580] J. T. Frazik, Ojców – województwo krakowskie…[Ojców - Krakow Voivodeship], op.cit., p. 4–6.

The castle's defensive tower was an extremely important element. Józef Frazik suggested transforming it into a lapidarium, a place where architectural fragments and historical sculptures are exhibited. At the same time, he recommended the creation of a staircase inside the tower and the reconstruction of the ceilings. In the longer term, consideration was given to rebuilding the floor that was destroyed in the 19th century, along with its crenellated parapet and distinctive roof, reminiscent of the forms known from the iconography of castle architecture.

Thanks to the efforts of Józef Frazik and other dedicated individuals, today's visitors can continue to explore the history and beauty of Ojców Castle, which, despite its condition, has retained its unique cultural and historical value.

The planned conservation program for Ojców Castle faced certain limitations and delays. Between 1958 and 1963, due to limited financial resources, only the most urgent actions to secure this historical site could be undertaken. These actions included partially cleaning and removing debris from the castle and filling in gaps in its structure. Unfortunately, it was not possible to implement the full conservation program at that time[581].

Conservation work resumed in 1991 when further efforts were made to clear the ruins. The remnants of the former residential building were removed, and the cellar relics of this part of the castle were partially secured. Additionally, the central section of the northern perimeter wall was reinforced. These actions significantly improved the castle's security, although there were still areas that required further work.

Subsequent work was carried out in 2006-2007. It's worth noting that in 2006, Maria Bicz-Suknarowska presented two proposals for the revitalization of the castle[582]. The first one aimed at securing and making various parts of the complex accessible and creating an educational space to help visitors better understand the castle's history. The second variant envisioned more advanced work, such as raising the tower by one or two stories and reconstructing the lower part of the residential building and certain sections of the perimeter walls. However, to date, only a few of these proposals have been realized.

In 2015, under the direction of Mirosław Macioszka, renovation work was carried out on the remaining sections of the castle's perimeter walls, as well as the restoration of the walls, roof, and flooring of the tower, along with the reconstruction of two floors, stairs, and windows. In years 2017-2019, conservation work was performed on the northern wall of the castle, with the restoration of internal elements. As part of these efforts, an observation platform was also constructed, offering impressive views of the Prądnik Valley. Since 2016, research efforts led by individuals like Andrzej Weber successfully secured funding through the Regional Operational Program. The project as a whole was under the supervision of Prof. Dr. hab. Ireneusz Płuski, responsible for conservation oversight, Eng. Maria Bicz Suknarowska, overseeing architectural and research aspects, and Dr. Michał Wojenka, in charge of archaeological supervision.

Despite these achievements, it is clear that much remains to be done to fully restore the historical significance and splendor of Ojców Castle [Fig.125]. Conservation and revitalization

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581 M. Bicz-Suknarowska, *op.cit.*, p. 265.

582 M. Bicz-Suknarowska, M. Wojenka, Sprawozdanie z nadzorów badawczych architektonicznych i archeologicznych prowadzonych na zamku w Ojcowie w roku 2007 podczas remontu zamkowej studni [Report on architectural and archaeological research inspections conducted at Ojcow Castle in 2007 during the renovation of the castle well], typescript, Ojcowskiego Parku Narodowego, WUOZ Kraków.

efforts continue to be a challenge but remain crucial for preserving this important cultural heritage[583].

Pieskowa Skała

Certain protective and adaptive works were carried out in the early 20th century at Pieskowa Skała Castle, which by the late 19th century was in a deplorable state and faced the serious risk of falling into ruin. The financial situation of the Pieskowa Skała estate was so dire that it became necessary to auction it off. It was during this time that a grassroots initiative to save this exceptional monument was born, with writer Adolf Dygasiński as its initiator. In the early 20th century, a joint-stock company was established in Warsaw, which acquired the castle and converted it into a guesthouse[584]. However, the guesthouse ceased its operations in the summer of 1939 [Fig.126].

Fig. 126. The castle on a postcard from 1902 and an aerial photograph from 1930/1935, source: WUOZ Kraków

For many years, the castle remained vacant and fell into ruin. The issue of its restoration resurfaced shortly after the war, initiated by the General Conservator of Monuments, Jan Zachwatowicz, who appointed Alfred Majerski as the Head of the Castle Reconstruction Committee in Pieskowa Skała. The initial work began in 1948[585]. During these research activities, many fascinating discoveries were made, shedding new light on the castle's history. Most notably, Renaissance cloisters on the first and second floors were revealed, which had been hidden since the 18th century behind a thick brick wall. In the spherical triangles between the archivolts of the cloisters, 25 mascarons were discovered, depicting stylized human and animal heads, constituting a significant decorative element.

Importantly, all historical and iconographic sources of the castle were also collected, complementing the comprehensive archaeological research.

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583 M. Macioszek, Projekt budowlany, Projekt pozostałości murów obwodowych zamku w Ojcowie, remont ścian, dachu i posadzki baszty wraz z odtworzeniem dwóch stropów schodów i okien. [Construction project, Project of the remains of the castle's perimeter walls in Ojców, renovation of the walls, roof, and tower floor, including the reconstruction of two stairwell ceilings and windows.] WUOZ Kraków, 2015, no 64.575/16

584 A. Majewski, Spotkanie z Pieskową Skałą [Meeting with Pieskowa Skała]. „Spotkania z Zabytkami", [R. 18]: 1992 nr 4 (62) pp. 2–5.

585 A. Wójcik-Łużycki, Rewaloryzacja zamku w Pieskowej Skale - wielkie dzieło prof. Alfreda Majewskiego [The revitalization of Pieskowa Skała Castle - a great achievement of Professor Alfred Majewski], Prace i Materiały Muzeum im. Prof. Władysława Szafera, 25, Prądnik, p. 179-190.

During conservation work, a Renaissance loggia in the bay at the entrance gate to the courtyard was also uncovered, which had been bricked up in the 18th century. Additionally, fragments of plant-themed and allegorical paintings were found on the interior walls of the southern cloister and in three rooms on the second floor. These latter paintings were associated with the foundation activity of Michał Zebrzydowski from the mid-17th century[586].

These valuable discoveries and efforts aimed at preserving and reconstructing the historical heritage of Pieskowa Skała Castle highlight the immense importance of conservation and historical research in the field of culture and art. Thanks to these endeavors, present generations can continue to explore the history of this charming place [Fig.127].

Fig. 127. Cloisters after the reconstruction in 1962, courtyard from the 1980s, source: WUOZ Kraków

Conservation and reconstruction work at Pieskowa Skała Castle was carried out with consideration for many aspects of scientific accuracy and comprehensiveness. After the discovery of the cloisters, there was a need to reinforce the pillars, and in some cases, replace them entirely. Reconstruction was also carried out on elements that had been damaged or not preserved, such as the central pillars of the viewing loggia[587], window frames, and four Renaissance portals. Reconstruction was based on fragments of stonework found on-site. In order to restore structural integrity, reinforced concrete ceilings were installed, and the roof structure, which was covered with roof tiles, was replaced.

It is worth noting that some aspects of the reconstruction have sparked controversy, such as the addition of a superstructure to the bay adjoining the uncovered viewing loggia, which was transformed into a tower. The architect justified this decision by the need to introduce a vertical accent in place of the demolished tower, which was added in the 19th century by Mieroszewski above the loggia. Despite these discussion points, it must be emphasized that the process of reconstructing Pieskowa Skała Castle was carried out with consistency while contributing to the discovery of many new facts about the monument itself, its various construction phases, and historical furnishings[588].

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[586] J. Dutkiewicz, Nowoodkryte dekoracje malarskie [Newly Discovered Painted Decorations], „Ochrona Zabytków", R. 1, 1948, nr 2, p. 72–73.

[587] A. Majewski, Zamek w Pieskowej Skale…[Castle in Pieskowa Skała], (1953), *op.cit.*, p. 63.

[588] S. Tomkowicz, Zamek w Pieskowej Skale [Castle in Pieskowa Skała] , Kraków 1904, pp. 16, 20.

For many years, the castle continued to function in its existing state. It was only in 2016 [589]that another renovation was completed, during which the facades were restored, and all the roofs were replaced. Currently, additional changes are also being introduced, which are expected to continue until April 2024. The most significant undertaking will be the ongoing modernization of the courtyard. Many rooms, including the crypt and the chapel of St. Michael, will also undergo modernization[590].

Currently, the castle is open to tourists and has been equipped with educational boards and historical exhibitions. This place has become not only an attractive tourist destination but also an educational center that allows visitors to delve into the history and culture of the region [Fi.128].

Fig. 128. Castle in Pieskowa Skała, photo by the author

Tenczyn

The initial research and protective work at Tenczyn Castle were conducted as early as 1867 by Władysław Łuszczkiewicz. Then, 20 years later, further stabilization work was carried out at the request of the Potocki family to secure the ruins[591].

A bit more extensive work on the castle was carried out on the commission of Adam Potocki between 1912 and 1914. During that time, one of the restorers from Wawel, Zygmunt Hendel, worked at the castle. These efforts involved the facade of the former southwestern wing, the gate tower (including the reconstruction of embrasures and windows), and the construction of stairs leading from the courtyard to the second-floor level of the eastern wing. To undertake the latter project, a portion of the courtyard was cleared, revealing a stone foundation under the cloisters. It is likely that during this period, the entrance arcade of the barbican was also reconstructed, with a stone cartouche bearing the Tęczyński coat of arms added to it [592]. The primary objective of these conservation efforts was not only to preserve the

[589] A. Piotrowski, Konserwacja zamku Pieskowa Skała 2014-2015, dokumentacja konserwatorska [Conservation of Pieskowa Skała castle 2014-2015, conservation documentation], Kraków, 2016, no. 65652/17.

[590] https://lovekrakow.pl/aktualnosci/zamek-w-pieskowej-skale-czekaja-duze-zmiany-i-to-pod-okiem-odwiedzajacych_39809.html [access: 24.04.2022]

[591] J. Janczykowski, Karta ochrony historycznych ruin - teoria a praktyka. Przykłady z Małopolski [Preservation of Historical Ruins - Theory and Practice. Examples from Lesser Poland], Ochrona Dziedzictwa Kulturowego, 6, 2018, pp. 87-95.

[592] B. Batko, Inwentaryzacja zamku w Rabsztynie Inventory of the castle in Rabsztyn], Kraków, 1989, no. 26878/89.

historical Tenczyn Castle but also to restore its former grandeur and character, allowing it to maintain its important place in the history and landscape of the region.

Thanks to the work carried out at that time, the castle was successfully entered into the Registry of Monuments in 1930, making it one of the first objects in the then Małopolskie Voivodeship to be registered.

Fig. 129. Tenczyn Castle in 1910 and in 1924, source: Cyfrowa Biblioteka Narodowa Polona

Subsequent work was carried out here after World War II, but none were sufficient for the extensive needs of the property. These efforts encompassed a range of activities, including clearing debris from the castle grounds, restoring the tops of walls, and reinforcing them by adding a reinforced concrete ceiling in the tower and a concrete floor at the level of the second floor of the eastern wing. However, subsequent conservation work was limited and insufficient. The situation was complicated by geological factors since the castle was built on volcanic rock (melafir), which is physically unstable and led to displacements and damage to the ruins. The ineffectiveness of earlier protective actions contributed to the progressive deterioration of the state of the Tenczyn Castle ruins, eventually leading to their closure to visitors. This situation posed a significant challenge to the cultural heritage of the region.

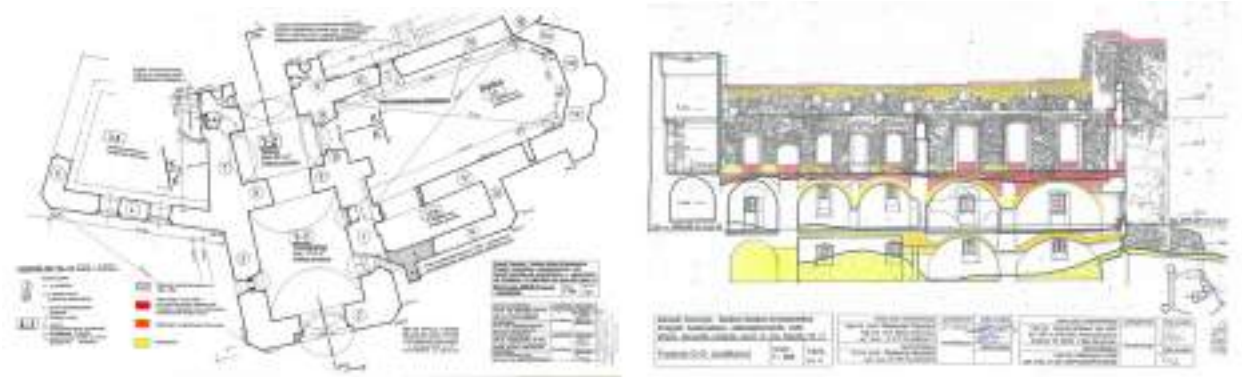

Fig. 130. A fragment of the construction project development for securing the ruins of Tenczyn Castle in Rudno from 2008, source: Regional Office for the Protection of Monuments in Krakow.

In 2008, the Krzeszowice municipality initiated the development of a comprehensive project for securing the castle ruins, authored by Maria Filipowicz and Aleksander Filipowicz with the participation of Waldemar Niewalda. This project was approved by the Provincial Conservator of Monuments and received permission for the necessary construction work

[Fig.130]. In 2010, the project received initial financial support from the Ministry of Culture and National Heritage[593]. It is worth noting that the "Save Tenczyn" Association played a significant role in securing funds for the rescue of this former residence of the Tęczyński family. This association actively promotes the idea of caring for the castle ruins and effectively pressures local authorities and the Ministry of Culture and National Heritage to provide financial support.

Thanks to the ministry's funding, conservation work on Tenczyn Castle has been ongoing since 2010. In the four stages conducted so far, it has been possible to secure and partially reconstruct the entrance bastion, known as the "Barbakan," and the adjacent defensive corridor. Substantial work has been done on the upper castle, including the renovation of the gate tower's facade and other structures, and the gate tower itself received a new roof. Furthermore, the upper castle courtyard has been tidied up, removing vegetation and some debris, revealing fragments of the Gothic curtain wall that separated the upper castle from the west[594].

However, the larger portion of the lower castle still awaits its preservation, except for the aforementioned bastion and defensive corridor. Working on this historical monument remains a challenge, but with the commitment of the local community and ministerial support, there is hope for further progress in its restoration and preservation for future generations.

The concept of conserving Tenczyn Castle can be broadly described as an effort to stabilize and understand the state of the ruins while allowing for a moderate degree of reconstruction. Key elements subjected to reconstruction include the topping of the barbican with a guard walkway, intended to be equipped with battlements, and the reconstruction of the walls of the defensive corridor leading from the barbican to the lower castle courtyard. Additionally, some vaults in certain rooms have been reconstructed. This conservation concept serves as an example of a harmonious approach between preserving the ruins in their current state and full-scale reconstruction, especially in the case of heavily degraded ruins.

However, it's important to note that some aspects of this approach may raise certain controversies. An example is the use of large-span brick arches in some places to stabilize the walls. While these constructions are crucial for the structural safety, they introduced unfavorable changes in the aesthetics of the ruins. Nevertheless, alternative solutions in this case would be challenging to implement, given the risk of the walls collapsing. It's worth mentioning that this idea was inspired by Zygmunt Hendel [Fig.131][595].

Analyzing this conservation concept demonstrates the aim to strike a balance between preserving the historical character of the ruins and ensuring their stability and safety for visitors. Furthermore, in 2009, the National Center for Research and Documentation of Monuments submitted documentation for recognition as a historical monument, prepared by Andrzej Laskowski in cooperation with Stanisław Kołodziejski, Martyna Rabajczyk, and Andrzej Siwiek[596].

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[593] J. Janczykowski, Karta ochrony historycznych ruin - teoria a praktyka. Przykłady z Małopolski [Preservation of Historical Ruins - Theory and Practice. Examples from Lesser Poland], Ochrona Dziedzictwa Kulturowego, 6, 2018, pp. 87-95.

[594] Ibidem, p.91

[595] Ibidem, s. 91

[596] A. Laskowski, Zamek Tenczyn w Rudnie, Dokumentacja do uznania za pomnik historii [Tenczyn Castle in Rudno, Documentation for Recognition as a Historical Monument], WUOZ Kraków, nr inw. 71.250/18

Fig. 131. Tenczyn Castle, photo by the author

Subsequent stages of conservation work at the castle were completed in 2020 and 2021. As part of the eleventh stage, the Tęczyńska Tower, the Małgorzata Tower, and the wall between them were included. The work was carried out by the company F.H. "Lipiński" from Krakow[597]. The twelfth stage of work at the castle was completed in 2021. The work included the curtain wall and the southern wall of the eastern residential wing[598].

Pilcza in Smoleń

At Smoleń Castle, archaeological investigations have been carried out repeatedly, starting from 1994 under the supervision of Błażej Muzolf[599]. It is on the basis of these investigations that all subsequent plans for the conservation and restoration of the property have been prepared. Until the renovation in 2012, access to the premises was prohibited.

In 2012, the Pilica municipality became the owner of the remnants of Smoleń Castle, which were in a deplorable state. When a section of the western sub-castle walls collapsed, it became necessary to restrict access to the castle by placing warning signs. This event was of great significance in the context of the castle's history, serving as a catalyst for actions aimed at its protection and restoration of its former glory[600].

The town and municipality of Pilica initiated a project with the goal of transforming these ruined remains into an attractive destination for tourists. The plan envisioned carrying out conservation work in three stages to ensure the complete restoration and protection of the castle. The first stage focused on conserving the western sub-castle, which had suffered the most due to the collapse of the walls[601].

The next stage of the work encompassed the upper castle and the eastern sub-castle, which held significant historical and architectural value. Through these efforts, the aim was to restore the former glory and unique character of these parts of the castle. The ultimate goal of

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597 https://dziennikpolski24.pl/gmina-krzeszowice-zamek-tenczyn-po-renowacji-dwoch-baszt-nawoja-i-malgorzaty/ar/c1-15327094 [access:02.04.2021]

598 https://rekonstrukcjeiodbudowy.pl/zamek-tenczyn-w-rudnie-zakonczenie-xii-etapu-prac-budowlano-konserwatorskich/ [access: 03.06.2022]

599 http://www.pilica.pl/kategorie/zamek_w_smoleniu#!lightbox[roadtrip]/1/ [access: 23.08.2021]

600 P. Dettloff, Atrakcyjność współczesnej ruiny. Współczesne funkcjonowanie historycznych ruin zamków w Małopolsce [The Attractiveness of Contemporary Ruins: The Contemporary Functioning of Historical Castle Ruins in Lesser Poland], Ochrona Dziedzictwa Kulturowego, 6, 2018, pp.53-71.

601 Ibidem, p. 4.

the project was to develop the ruins and create the necessary tourist infrastructure around them. This way, the castle ruins were intended to attract visitors while also serving as a place commemorating the rich history of the region.

The implementation of these plans breathed new life into the Smoleń Castle ruins, restoring their former splendor and opening the doors to tourists and history enthusiasts. Thanks to meticulous conservation and restoration efforts, this place has become an important point on the cultural and tourist map of the Pilica municipality[602].

Fig. 132. Pilcza Castle in 1920-1939, source: Illustration from Marian Kornecki's book "Castles and Fortified Manor Houses of the Krakow Region," Artistic and Graphic Publishing, Krakow 1966; Castle in 1970-1975, source: Private collection of T. Chrzanowski.

During the conservation work on the grounds of Smoleń Castle [Fig.133], a decision was made to thoroughly remove invasive flora. Unregulated vegetation, through its biotic impact, can lead to further degradation of historic structures, especially through the expansion of root systems. Additionally, specialized restoration work was undertaken, especially in strategic areas such as sections of the walls on the south and west sides.

A significant part of the entire process was the concept of highlighting the differences between original medieval and modern-era fragments and contemporary reconstructions. Such differentiation, illustrated, for example, by the entrance gate, allows visitors to gain a deeper understanding of the chronology of the site and the methodology used during its restoration. While certain aspects of the conservation, such as the distinctive line of the walls, may appear anachronistic in the context of historical ruins, the overall results are satisfying. Thanks to these efforts, the ruins of Smoleń Castle are regaining their once-monumental character, attracting history enthusiasts, and becoming an important element of the cultural heritage of the region.

The contemporary history of monument conservation presents us with an impressive circuit of the forecastle walls and parts of the upper castle. These structures, bearing witness to many eras, have regained their former majesty through modern restoration methods. During the work, some external elements of the walls and interior divisions were reconstructed. It is noteworthy that many medieval castles used wooden passages for guards, and passages inspired by them appeared in certain sections of the eastern courtyard, making it easier for tourists to explore[603].

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[602] http://www.jura-pilica.com/?wrzesien-2012.-prace-remontowe-na-zamku-w-smoleniu [access:20.04.2020]; http://zawiercie.naszemiasto.pl/artykul/zamek-w-smoleniu-doczeka-sie-wreszcie-renowacji,1474717,t,id.html [access: 20.04.2020]

[603] http://www.jura-pilica.com/?wrzesien-2012.-prace-remontowe-na-zamku-w-smoleniu,458 [access: 20.04.2020]

During the reconstruction, care was taken not to lose the original architectural details of the facility, such as portals and remnants of ancient stoves. These elements, after thorough restoration, look impressive against the limestone walls. Sturdy wooden ladders, similar to those used in castles in other parts of Europe in the Middle Ages, lead visitors to the previously inaccessible upper castle. There, on the tower, there is an observation terrace from which you can admire the panorama of the Jura Highland, which was the site of many historical battles and events.

In 2014, the Renova[604] company developed a securing project for the walls on the western, eastern, and upper castle sections, along with tourist infrastructure. As emphasized by the project's authors, the facility was in poor condition due to the lack of any preventive or protective actions in the long period preceding the current renovation and conservation efforts.

Fig. 133. Pilcza Castle in Smoleń, photo by the author

Bydlin

Between World War I and World War II, the area of the Bydlin Castle hill was subject to conservation and cleanup efforts. The ruins of Bydlin Castle came under the ownership of the County Government Association in Olkusz, which initiated the creation of a historical reserve. The aim was to commemorate the Battle of Krzywopłoty, where the legions led by Józef Piłsudski, a significant figure in Polish history during the struggle for independence, fought on November 18-19, 1914. In the context of these events, the existing chapel on the adjacent cemetery was restored, and a common grave was erected for the legionnaires who lost their lives in that conflict[605] [Fig.134]. The period between the World Wars thus witnessed a renaissance of interest in Bydlin Castle, not only for its architectural and historical value but also for its role in commemorating the nation's struggle for freedom. Today, the castle's ruins, the

[604] A. Grubiak, Zamek w Smoleniu-zabezpieczenie ścian na podzamczu zachodnim, wschodnim oraz zamku górnym wraz z infrastrukturą turystyczną - Etap IIA [Smolen Castle - securing the walls of the lower castle (western and eastern parts) and the upper castle along with tourist infrastructure - Stage IIA], Warszawa, 2014, WUOZ Katowice, nr inw. JPVIII

[605] A.Celichowski,S.Styczyński, Studium historyczno-przestrzenne rejonu wzgórza zamkowego w Bydlinie woj. katowickie [Historical and Spatial Study of the Castle Hill Area in Bydlin, Silesian Voivodeship], Łódź 1991, p. 6, typescript, WUOZ Kraków, nr inw. 31.637/00.

restored chapel, and the common grave stand as tangible symbols of remembrance and honor, paying tribute to the enduring spirit of those who fought for a free and independent Poland.

Fig. 134. Ruins of Bydlin Castle in 1935, source: private collection, and 1960-1966, source: WUOZ Kraków

From a scientific and historical perspective, it's worth noting that Piłsudski's legions played a crucial role in Poland's efforts to regain independence after years of partitions. The Battle of Krzywopłoty was one of many episodes in the legions' struggles that would later lead to international successes[606].

Regarding the castle's surroundings, conservation work was carried out on the trenches from World War I, indicating their strategic importance in the region. Furthermore, the decision to plant rowan trees in the area had both practical and symbolic significance. Rowan is a tree deeply rooted in Polish culture and folklore. Although many conservation efforts were undertaken, it's uncertain whether the castle ruins were directly involved in these conservation activities[607].

After World War II, the Bydlin Castle ruins [Fig.134] were not conserved at all. During reconnaissance surveys conducted in 1990, their condition was described as poor. In 1991, documentation with a historical and spatial study of the Bydlin Castle hill was prepared by Andrzej Celichowski and Stanisław Styczyński on behalf of the Management of the Jura Landscape Parks in the former Katowice Voivodeship[608].

In 2008, the municipality of Klucze initiated a project aimed at renovating and preserving the Bydlin Castle ruins, which received approval from the Regional Conservator of Monuments. Conservation efforts focused on removing vegetation from the ruins and reinforcing the walls by filling in gaps and repairing cracks using injection techniques. In certain sections, additional masonry was chosen for increased stability.

Castles like the one in Bydlin were crucial defensive points in medieval Poland and played an important role in the country's political and military landscape. The Bydlin Castle ruins bear witness to ancient times, and their conservation allows for the preservation of an important part of Polish heritage. From a scientific perspective, the injection method used in

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606 B. Muzolf, Bydlin – gm. Klucze woj. katowickie. Zamek rycerski na górze Św. Krzyża – opracowanie badań archeologicznych [Bydlin – Klucze Commune in the Silesian Voivodeship. Knight's Castle on Mount Święty Krzyż – Archaeological Research Report], vol. 1, Łódź 1990, typescript, n. 31.593/00. WUOZ Kraków.

607 A. Celichowski, S. Styczyński, Koncepcja planu zagospodarowania rejonu wzgórza zamkowego w Bydlinie [Concept of a development plan for the castle hill area in Bydlin], Łódź, 1991, typescript, no. 31.639/00.

608 Ibidem.

conservation work allows for the strengthening and stabilization of building structures without the need for demolition or significant intervention in the existing structure. The work was completed in early June 2012, demonstrating dedication and effectiveness in protecting such important historical sites[609].

The conservation efforts have effectively secured the monument. Given the condition of the ruins, a method was chosen not only to protect them but also to highlight their structure. While the crowns of the walls have a smooth finish, some may consider sloping finishes to be more aesthetically pleasing. In Bydlin, a specific cement mortar was also applied to the tops of the walls, but its intense color may not necessarily align with the historical character of the walls.

Currently, the castle is overgrown with vegetation. The area around the castle is well-maintained. Informational and educational plaques are placed along the road to the castle. Furthermore, new tourist infrastructure, such as seating areas and bicycle stations, has been established in the vicinity of the property.

Fig. 135. Castle in Bydlin, photo by the author

Ogrodzieniec

In 1949, the initial, emergency conservation work was carried out on the Ogrodzieniec Castle ruins, primarily involving the removal of collapsing debris and reinforcement of critical points of the walls. In the following decade, in the 1960s, a more advanced concept for the castle's restoration emerged, aiming not only to remove damages but also to restore the historical structure's legibility and reinforce the most severely damaged construction sections. Between 1964 and 1973[610], a series of scientific research and conservation work was conducted. During this time, while clearing the area, architectural elements from the Boner dynasty period were discovered, enhancing the understanding of the castle's historical structure. The "soft" masonry technique used in the conservation process aims to maximize the preservation of the original wall substance while ensuring its stability. Modern conservation

[609] http://www.wiadomosciolkuskie.pl/aktualnosci/215–zakonczono-prace-konserwatorskie-ruin-zamku-w-bydlinie [access: 16.06.2020 r.].

[610] A. Gruszecki, Sprawozdanie z uzupełniających badań terenowych architektoniczno-historycznych przeprowadzonych na zamku w Ogrodzieńcu we wrześniu 1966 r. [Report on Supplementary Architectural-Historical Field Research Conducted at Ogrodzieniec Castle in September 1966], typescript, WUOZ Katowice, nr inw. II/784a.

techniques involve identifying new construction elements to differentiate them from the original ones, hence the use of narrow strips of zinc sheeting in the joints. The use of flat stones with various patterns in areas requiring additional support serves not only as a technical measure but also an aesthetic one that emphasizes the historical character of the building. Contemporary heritage conservation research emphasizes the need for an approach that combines the care for historical authenticity with modern reinforcement techniques[611].

Fig. 136. Ogrodzieniec Castle in 1914, source: Society for the Care of Historical Monuments; and in 1968-1970, source: private collection.

Research conducted in 1973 by the Warsaw University of Technology, led by Andrzej Gruszecki and Piotr Biegański, concluded with a description of the chronological layering of Ogrodzieniec Castle. Detailed analytical descriptions with illustrative material of all sequentially examined sections of the castle were provided in comprehensive research reports from the years 1964-1973.

The restoration work on the Ogrodzieniec Castle [Fig.136] ruins followed the guidelines of the traditional English method of heritage conservation. This conservation approach asserts that historical ruins should be preserved in their original form, without unnecessary modifications or the addition of decorative elements. A key element is the discovery and preservation of authentic construction fragments, as well as strengthening the walls by adding masonry to the upper parts using lime mortar. In the case of the work in Ogrodzieniec [Fig.137], a cement component was added to the mortar, a relatively rare practice in medieval Europe. It's worth noting that the English method of heritage conservation, originating in the 19th century, has always emphasized adapting historical sites to be attractive and accessible to visitors while preserving their historical value[612].

These protected ruins continue to exist today. The owner is considering future work on the castle to add contemporary roofing, although this has not been officially confirmed. Unfortunately, despite the well-preserved state of the ruins and all the work carried out at the castle, the property has not been granted the status of a "Monument of History." This is due to the excessively expanded and disruptive tourist infrastructure that affects the perception of the site.

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[611] Idem, Rozwarstwienie chronologiczne… [Chronological Stratification…], op.cit., p. 15.

[612] Idem, Trwała ruina zamku ogrodzienieckiego–próba adaptacji angielskiej szkoły konserwacji ruin [Durable Ruin of Ogrodzieniec Castle – An Attempt at Adaptation Using English School of Ruin Conservation],„Ochrona Zabytków", R. 30, 1977, nr 1–2, p. 31–44.

Fig. 137. Ogrodzieniec Castle, photo by the author

Lipowiec

In the 1960s, an extensive conservation effort was carried out on the ruins of Lipowiec Castle [fig.138]. The initiative, aimed at preparing the site for public visits, was led by the Ministry of Culture and Art in collaboration with the Museum and Heritage Protection Board[613]. The main castle and defensive walls were completed in 1969, while work on the outer gate was finished in 1975[614].

Initially, the site was cleared of rubble, and then conservation work began on the walls and interiors. Due to the decision to preserve the character of the ruins, the primary focus was on strengthening and replacing missing elements, especially in the most vulnerable areas. Reconstruction was only performed on certain perimeter walls and parts of the castle's corners. Protecting the upper parts of the walls posed a significant challenge, which was addressed by removing the top layer of the walls, applying insulation, and re-inserting the crown with waterproofing materials[615].

Fig. 138. The 1890s-1900s, source: National Digital Library Polona, Ruins of Lipowiec Castle 1971-1972, Photo by Jan Siudecki. Postcard issued by the Publishing Office „Ruch."

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[613] A. Swaryczewski, Badania architektoniczne przedbramia zamku w Lipowcu według stanu prac z lipca 1970 r. (trzeci etap) [Architectural research of the foregate of the castle in Lipowiec according to the progress of works in July 1970 (third stage)], Kraków 1970, typescript, no. 46.224/09.

[614] T. Małkowska-Holcerowa, Lipowiec – dawny zamek…[Lipowiec – The Former Castle], op.cit., p. 16.

[615] T. Holcerowa, Sprawozdanie z prac konserwatorsko-budowlanych… [Report on Conservation and Construction Works at the Ruins of Lipowiec Castle in 1961–1962 (Kraków Voivodeship, Chrzanów County)], op.cit., p. 3–6.

During the conservation work in the 1960s, numerous artifacts were also discovered, allowing for a deeper understanding of daily life in the castle during its peak functioning period. In the context of research conducted within the castle's architecture, significant intervention and conservation efforts were observed within the defensive structures. The analysis of conservation actions carried out in the facility highlighted the reconstruction of the stairwell that originally connected the ground floor to the upper levels, the laying of floors using clinker bricks in rooms cleared of detrital accumulations, and the strengthening of exposed Gothic vaults.

In certain sectors of the first floor of the southern wing, the decision was made to implement reinforced concrete ceilings. This technological choice was driven by structural and functional considerations. Due to the lack of preserved written or iconographic sources documenting the original construction of the timber beam ceilings, contemporary structural solutions were adapted. It's important to emphasize that the goal was to continue the historical narrative of the site, hence the decision to expose traces of formwork to highlight the authenticity of the intervention[616].

In 2016, further conservation work was carried out based on a work program prepared by Marcin Książek and Katarzyna Kasperkowicz[617].

In 2020, renovation and conservation work commenced [Fig.139]. As part of the investment, the facade and the tower's crown were conserved, and its terrace, balustrades, ladders, and stairs were replaced. Protective work was carried out on the guardhouse, gunpowder storage, and castle walls, and lintels and window openings of the courtyard were reconstructed. The castle was opened to the public on September 9, 2023[618].

Fig. 139. Castle Lipowiec in Podzamcze Babice. Photo by Kozak1410, CC BY-SA 3.0

Olsztyn

The conservation of the remains of Olsztyn Castle [Fig.140] took place in the early 1950s and primarily focused on strengthening the artillery tower's walls. The work primarily aimed to maintain the existing state, sometimes with its consolidation, achieved through procedures such as re-masonry of the wall crowns, filling gaps with new building materials,

[616] A. Kulig, Zamki w ruinie – jako obszar nowych interpretacji i ekspozycji [Ruined Castles - An Area for New Interpretations and Exhibitions], [in:] Zamki w ruinie… [Castles in ruin…], op.cit., p. 96.
[617] http://mnpe.pl/wp-content/uploads/2018/03/zamek-lipowiec-program-prac-konserwatorskich.pdf [access: 23.06.2023]
[618] https://radiokrakowkultura.pl/podcasty/zamek-lipowiec, [access:14.09.2023]

eliminating cracks, and creating a rainwater drainage system. Subsequent protective measures were carried out in 1990 by Maria Dziuba-Filipowicz and Waldemar Niewalda. The same team in 2020 prepared a project for further conservation work, including the exposure, protection, and presentation of relics of the gate wall above Olsztyn Castle.

In 2003, there was also the protection and restoration of fragments of the walls in front of the Sołtysia Bastion, and in 2016, a project was undertaken to adapt the lower castle ruins for exhibition purposes. None of these works introduced significant changes, and the site is currently maintained with minor additions and reconstructed fragments[619].

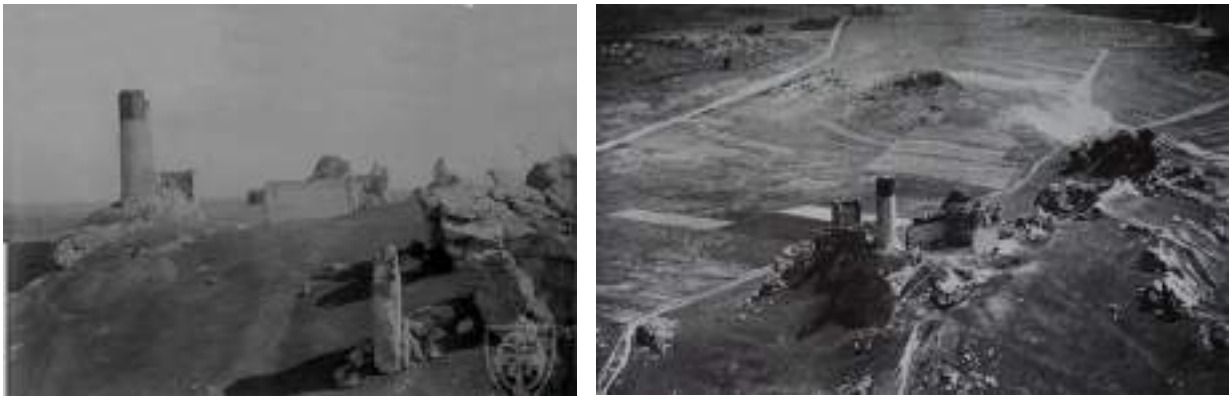

Fig.140. Olsztyn Castle in 1911-1914, source: Society for the Care of Historical Monuments, castle in 1920-1930, source: Poland in Landscape and Monuments, published by Dr. Tadeusz Złotnicki, Warsaw 1930.

In the early 1950s, a carefully planned restoration of Olsztyn Castle's remnants was conducted[620], focusing mainly on strengthening the structure of the artillery tower. These efforts were of immense historical and scientific significance as they allowed for a better understanding of the defensive architecture of that era. During the restoration, the emphasis was placed on preserving the existing state with appropriate consolidation, including actions such as reconstructing the upper portions of the walls, filling gaps with new building materials, eliminating existing cracks, and creating a rainwater drainage system. This advanced approach to conservation not only preserved the castle but also valuable historical and scientific information.

In 1990, Maria Dziuba-Filipowicz and Waldemar Niewalda continued with protective work, using the latest technologies and research methods[621]. Their efforts contributed to a deeper understanding of the castle's history and its significance in the regional context. In 2020, these same experts prepared a project for further conservation actions aimed at exposing, securing, and making accessible for visitors the fragments of the gate wall above Olsztyn Castle[622]. This project was a significant step in showcasing the cultural heritage of this site and its role in history.

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[619] J. Bogdanowski, Dawna linia obronna…[Former defensive line], op.cit., p. 20.

[620] E. Zoga, Inwentaryzacja zamku w Olsztynie [Inventory of the castle in Olsztyn], Kraków, 1959, no. 426.

[621] B. Batko, Inwentaryzacja zamku w Olsztynie, Krakowskie Przedsiębiorstwo Geodezyjne [Inventory of the castle in Olsztyn, Krakow Geodetic Enterprise], Kraków, 1991.

[622] M. Mrzygłód-Tomasik, Program prac konserwatorskich odsłonięcia, zabezpieczenia i uczytelnienia reliktów murów budynku bramnego na zamku w Olsztynie [A program of conservation works to expose, secure and make legible the relics of the walls of the gate building at the castle in Olsztyn], Kraków, 2020, no.11951.

Additional protective measures were undertaken in 2003, focusing on the protection and restoration of fragments of walls in front of the Sołtysia Bastion. This allowed for a better understanding of the castle's defensive functions and its evolution over the centuries. In 2016, a project was carried out to prepare the lower castle ruins for exhibition purposes, opening up new research and educational opportunities. It's worth noting that none of these works significantly altered the appearance of the castle, which is currently maintained in excellent condition with minor additions and reconstructed elements, serving as a fascinating subject for historical and scientific research [Fig.141].

In September 2023, the reconstructed part of Olsztyński Castle is scheduled to open. The most significant change will be the possibility of visiting the tower, which was previously inaccessible to tourists. Some of the caves discovered beneath the castle a few years ago will also be made accessible to visitors.

Fig. 141. Olsztyn Castle, photo by the author

Mirów

In Mirów [Fig.142], an extensive set of works was carried out, driven by the need for a comprehensive reconstruction of the most damaged wall of the tall residential tower, starting from its foundations. However, this was a minor reconstruction. Currently, there are ongoing efforts to rebuild the fortress. Unfortunately, the author did not obtain permission from the private owner to access archival materials or the current project being implemented at the castle[623].

Mirów Castle's ongoing restoration project is emblematic of the broader commitment to preserving and celebrating the historical heritage of the Kraków-Częstochowa Upland. It serves as a reminder of the region's rich and multifaceted history, offering visitors an opportunity to connect with the past and appreciate the architectural and cultural treasures that define this remarkable landscape. The castle of Mirów near Bobolice stands as a testament to the Kraków-Częstochowa Upland's historical legacy, and the meticulous efforts undertaken to restore it deserve our admiration and support. The castle is a valuable link to the region's past, and the cautious and thoughtful approach should be taken in its restoration to ensure that its significance endures for generations to come.

[623] A. Kudła, *op.cit.*, p. 29.


Fig. 142. Mirów Castle in 1920-1940, source: https://fotopolska.eu/179704,foto.html?o=b299. Mirów Castle during restoration, photo by the author.

Ryczów, Suliszowice, Przewodziszowice, Łutowiec

In the case of the guardhouse ruins in Ryczów, the most conservative approach was adopted, which took into account not only aspects of historical authenticity but also the scientific value of this site. The main goal of the work was to remove the overgrown vegetation on top of the rock to reveal the original appearance of the building. All remnants of the monument, including the damaged corner of the residential building, were left in their existing state to preserve historical and scientific authenticity. The substance and appearance of the historical walls remained unchanged, preserving the integrity of their crowns. Only in the place of the most significant damage was the wall slightly rebuilt to ensure stability. The relics of Ryczów [Fig.144] primarily consist of remnants of the main walls, which are located in a difficult-to-access area. Below, right by the rock, traces of a moat and external ramparts, which likely surrounded the entire castle complex, have been preserved[624].

In the case of the guardhouse in Suliszowice, although more intensive actions were taken to strengthen the structure, they did not yield entirely satisfactory results from a conservation perspective. The original face of the wall was preserved, but both its base and crown were partially reconstructed. Nevertheless, these actions provided valuable scientific information about the history and construction of this guardhouse. As for the lower castle in Suliszowice, remnants of earthen ramparts can still be seen. Modest traces of the medieval castle can be observed on the top of a separate limestone rock. A fragment of the wall constructed from limestone rocks has been preserved, rising on a plateau measuring 40x60 meters. Currently, a section of 19.5 meters in length and up to 1.8 meters in thickness is extant. Unfortunately, access to this site is impossible as it is located on private, fenced land.

In Przewodziszowice [Fig.143], remnants of the perimeter walls, approximately 26 meters in length and 1 to 1.8 meters in thickness, can still be observed, situated on the edges of the hill. The remnants of the guardhouse in Przewodziszowice have been overgrown with vegetation, and the crowns of the walls are noticeably weakened, with loose and falling stones visible.

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[624] J. Pierzak, D. Rozmus, Średniowieczny zamek w Ryczowie, gm. Ogrodzieniec, woj. Katowice, „Śląskie Prace Prahistoryczne" [Medieval Castle in Ryczów, Ogrodzieniec Commune, Silesian Voivodeship, 'Silesian Prehistoric Works], vol. 3, 1994, pp. 162–172.

Fig. 143. Remnants of the watchtower in Ryczów. (Photo from the publication 'Spotkania z Zabytkami' No. 2 (108) 1996), Suliszowice 1960-65, private collection, Przewodziszowice 1995, private collection J. Borkowski.

Fig. 144. Watchtower in Ryczów, Remnants of the guard tower in Suliszowice, Remnants of the guard tower in Przewodziszowice, photo by the author

Łutowiec [Fig.145] is an example of a guardhouse where no conservation work has been carried out. The meager remnants, which consist of a very small section of rubble stone wall (approximately 3.5 meters in length and a maximum width of 0.7 meters), are visible on the eastern side of the rocky outcrop. According to Czesław Hadamik's findings, this fragment belonged to the perimeter wall of the small upper courtyard. Generally, the monument is very poorly discernible in the terrain. The site was only registered as a historical monument after a legal battle with the owner[625].

Fig. 145. Remnants of the watchtower in Łutowiec, photo by the author

Morsko

Between 1929 and 1933, architect Witold Czeczott constructed a new residential building at the foot of this fortress[626]. These structures were built using quarried limestone, and a lime and cement mixture was used for the mortar. These new buildings consisted of rectangular blocks with varying numbers of stories: single-story (facing southeast and

[625] B. Guerquin, Zamki w Polsce…[Castles in Poland], p. 219.
[626] Ibidem

southwest) and two-story (facing southwest) [Fig.146]. Some of them were set into the natural rock. The facades are characterized by simplicity and austerity, without the use of plaster or decorations, and the windows are irregularly placed as rectangular openings. In the corner of the building, especially in the southeast part, a semicircular tower rises, giving the entire complex a unique character[627].

According to the registration documentation, conservation work was carried out in 1961, which involved raising and securing the tops of the walls. Interestingly, the upper castle has survived in good condition as a stable ruin. Unfortunately, the newly constructed buildings are now neglected and unused.

The interiors have been vandalized, and the remaining parts of the buildings have deteriorated significantly, with an unclear layout and visible cracks and gaps, posing a risk of collapse. The rock on which the castle was built is subject to erosion processes. Attempts to restore the ruins have been made, but the difference between the old and new elements is poorly visible, and the reconstruction of the wall crown was carried out without considering its original cross-section. These objects are of great historical and scientific significance as evidence of ancient construction techniques and architecture[628].


Fig. 146. Bąkowiec Castle in Morsko, photo by the author

Sławków

Another remarkable case is the ensemble of ruins of a medieval residence of Krakow bishops in the town of Sławków [Fig.147]. The discovery of these artifacts took place in the 1980s during archaeological research led by Jacek Pierzak. The identified structural fragments underwent careful conservation, and it was decided to make them accessible as an archaeological reserve.

As a result of advanced research, it was possible to fully reconstruct the original layout of the gatehouse and reveal fragments of a paved castle courtyard dating back to the 14th century. The initiative to create an archaeological reserve was led by Jacek Pierzak, and the funding for its establishment came from the Provincial Conservator of Monuments in Katowice. The restoration work was carried out by the "Prodosław" company, and the institution responsible for the entire investment project was the Municipal Cultural Center in Sławków.

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627 M. Herczyńska, Karta Ewidencyjna Zabytków Architektury i Budownictwa, Archiwum Delegatury w Częstochowie WUOZ Katowice [Record Card of Architectural and Construction Monuments, Archive of the Delegation in Częstochowa, Regional Office for the Protection of Monuments in Katowice], 2001.

628 J. Bogdanowski, Dawna linia obronna… [Former defensive line], op.cit., p. 19–20.

This reserve was opened to the public in October 1990[629], and since then, the area has been carefully maintained and fenced to protect and preserve the historical artifacts.


Fig. 147. Sławków Castle, photo by the author

Pilica

After the end of World War II, numerous initiatives were undertaken to protect and renovate Pilica Castle. However, despite these efforts, the task proved to be exceptionally challenging because the castle and its fortifications were in an advanced state of decay.

In 1945, Pilica Castle was taken over by the State Treasury, and its fate became associated with various purposes. At one point, it served as an orphanage, especially from the 1970s onwards, which introduced further conservation challenges. In 1958, a renovation of the damaged part of the north-western bastion was carried out. However, it is worth noting that the decision was made not to restore the corner turret, which was an important decision regarding the castle's shape[630].

Unfortunately, the conservation work, which was not carried out by adequately qualified specialists, contributed to further degradation of the palace's interior decorations. In the 1980s, the brick cladding on the entire north-western front of the fortifications was replaced. This operation, although supervised by the Provincial Conservator of Monuments in Katowice, was unfortunately not preceded by archaeological research, leading to the loss of valuable traces of earlier fortification phases. Additionally, it's worth mentioning that during the renovation works, fragments of engravings and wall paintings were discovered, providing new information about the historical decor of Pilica Castle. These discoveries prompted more detailed research into the history of Pilica Castle and its cultural heritage.

Unfortunately, the unlucky fate associated with the conservation of Pilica Castle [Fig.148] continued into the early 1990s. At that time, Barbara Piasecka-Johnson acquired the castle with plans to transform it into her residence. In 1991, there was an attempt to revitalize the old part of the castle, including the construction of a new guardhouse at the entrance gate. As part of an ambitious project to adapt the palace, extensive strengthening of the foundations

[629] J. Pierzak, Wyniki najnowszych badań nad zamkiem biskupów krakowskich w Sławkowie [Results of the Latest Research on the Castle of the Bishops of Kraków in Sławków], „Śląskie Prace Prahistoryczne", t. 3, 1994, p. 137–138.
[630] https://zabytek.pl/pl/obiekty/pilica-zespol-palacowo-parkowy [access: 23.04.2023]

and the excavation of cellars in the rock were carried out for economic purposes and the storage of art collections[631].

Unfortunately, in 1991, the claims of former castle owners also arose, interrupting the renovation work and initiating a lengthy legal process. Since then, there has been a gradual degradation of this valuable monument with its 17th-century residential-defensive architecture. Additionally, due to these legal issues, it was not possible to continue conservation work or further actions aimed at restoring the castle to its former glory. It is worth emphasizing that Pilica Castle is not only a piece of history but also an important element of the cultural heritage of the region, and its degradation represents a loss for the community and history.

Unfortunately, the current condition of the monument is very poor, and the complicated legal situation complicates conservation efforts.

Fig. 148. Pilica Palace, photo by the author

Siewierz

The castle of the Krakow bishops in Siewierz [Fig.149] has been a subject of conservation efforts on multiple occasions in the past. One of the significant moments in its renovation history occurred in the years 1954-1955 when a partial reconstruction of the bastion walls took place, and gunports within the castle were restored.

However, it's worth noting that these conservation works were met with some controversies. Janusz Bogdanowski, a well-known critic and researcher of cultural heritage, expressed particular dissatisfaction with the way the reconstruction was carried out. His criticism mainly focused on the method of marking the reconstructed areas by covering them with cement mortar[632]. The property was entered into the Registry of Monuments in 1967.

Between 1969 and 1974, substantial efforts were made to bring the castle back to life. These works included re-masonry and repair of damaged wall and vault fragments, securing the upper parts of the walls, and partially clearing the courtyard, which was a significant step in preserving the historical heritage. Nevertheless, these efforts seem modest compared to the exceptionally ambitious castle reconstruction plans that emerged in the early 1970s. These

[631] J. Janczykowski, Zamek w Pilicy… [Castle in Pilica], *op.cit.*, p. 95–96.
[632] J. Bogdanowski, Dawna linia obronna…[Former defensive line], op.cit., p. 22.

concepts envisaged the complete reconstruction of the entire castle, relying on credible historical sources and iconography of the era. The reconstruction project included recreating the castle wings along with their characteristic double-pitched roofs, restoring the original tower crown, and raising the walls of the entrance barbican. Interestingly, the barbican was to remain open since there were no iconographic evidence about its original appearance[633].

Fig. 149. Ruins of Siewierz Castle 1918-1939, source: NAC - National Digital Archives www.nac.gov.pl/

In 1997, a thorough analysis of the conservation condition of Siewierz Castle was conducted. These studies unequivocally showed that the architectural structure of the object was in a critical state, requiring urgent intervention. In response to these findings, an extensive conservation program was formulated, which included both short-term protective measures such as renewing the surfaces of the walls, eliminating unnecessary vegetation, and reconstructing specific segments, as well as long-term actions like thermal insulation and the installation of specific reinforced concrete structures[634].

Despite these recommendations, during the period from 1999 to 2002, the implementation of these actions was fragmented, focusing mainly on protecting the upper parts of the walls and limiting access to the castle interiors for unauthorized persons. In 2005, a comprehensive project authored by Artur Rok aimed to adapt the facility for tourism while preserving its historical character.

Conservation and renovation works conducted between 2007 and 2010 aimed to restore the historical splendor of the castle and enable an understanding of its centuries-old history. During the renovation work, the most vulnerable sections of the castle walls, which had significantly weakened over the years, were strengthened. Adapting a tower as an observation point allowed visitors to enjoy a panoramic view of the surroundings, which is a typical function

633 A. Rok, Zamek w Siewierzu. Założenia konserwatorskie i rewaloryzacja zabytkowej ruiny [The Siewierz Castle: Conservation Principles and Revitalization of the Historic Ruins], Ochrona Dziedzictwa Kulturowego, 2018, pp. 153-162.

634 U. Sibińska, M. Wiśniewski, Naukowe założenia do projektu odbudowy zamku biskupów krakowskich w Siewierzu na podstawie badań architektoniczno-historycznych przeprowadzonych w r. 1970 [Scientific Foundations for the Reconstruction Project of the Castle of the Bishops of Kraków in Siewierz Based on Architectural-Historical Research Conducted in 1970], typescript, WUOZ Katowice, nr inw. II/115a.

of such structures in medieval castles. The reconstruction of a wooden bridge over the moat restores the authentic means of access to the castle from its heyday.

The use of granite cobblestone on the courtyard pays homage to typical 18th-century surfaces when stone became a popular finishing material. Marking the location of the 14th-century defensive tower with limestone allows for a better understanding of the layout and functions of different parts of the castle throughout its history. Contemporary archaeological presentation methods, such as glass floors, enable the non-invasive exposure of historical building layers, which is an essential aspect of today's heritage conservation.

The protection of cellars and foundations demonstrates the conservators' care for the entire castle structure, including elements not visible on a daily basis but crucial for the overall stability of the object. Such a holistic approach to heritage conservation emphasizes the importance of preserving cultural heritage in its entirety[635].

Since those events, researchers and conservators continue their efforts to preserve and protect the castle of the Krakow bishops in Siewierz. Thanks to advancements in heritage conservation and new technologies, more precise and scientific restoration work is possible, allowing for the restoration of the former glory of this historical site. Additionally, ongoing archaeological research can provide new information about the history and structure of the castle, contributing to a better understanding of its past. In 2022, renovation and conservation work was carried out on the external walls and buttresses, among other efforts [Fig.150].

Fig. 150. Siewierz Castle, photo by the author

Rabsztyn

After the end of World War I, available sources suggest that there were intentions for the renovation and structural reinforcement of the castle walls in Rabsztyn [Fig.151]. Historical analysis indicates that such an initiative might have been motivated by the destruction suffered by the upper tower of the castle before 1911, caused by treasure seekers. Nevertheless, for reasons unknown, these intentions were not fully realized.

In the 1960s and 1970s, diagnostic studies were conducted, including technical inventory and photogrammetric documentation based on aerial photographs. In 1986, the

[635] U.Sibińska, M.Wiśniewski, Badania architektoniczne ruin zamku biskupiego w Siewierzu. Wnioski konserwatorskie [Architectural Research on the Ruins of the Episcopal Castle in Siewierz. Conservation Conclusions], Kraków 1972, s. 1–5, typescript, WUOZ Katowice, nr inw. III/2156a.

focus was on securing the northern facade of the modern segment of the complex. Between 1996 and 1999, work was carried out to remove stone debris from the cellars, renovate ceilings, and eliminate vegetation from the castle hill. Since the year 2000, thanks to the initiative of the "Zamek Rabsztyn" Association, conservation efforts gained new momentum. Financial support for these activities came from the Olkusz municipality, which also secured funding from the Ministry of Culture and National Heritage[636].

Fig. 151. Rabsztyn 1920-1925, source: Polska w krajobrazie i zabytkach Wydawnictwo dra Tadeusza Złotnickiego Warszawa 1930, Rabsztyn 1986, source: https://fotopolska.eu/Rabsztyn/b3017,Zamek_w_Rabsztynie,24,48.html?f=173539-foto, [access: 24.04.2023]

As part of the conservation work at Rabsztyn Castle, one of the priority initiatives was the renovation of the gate complex. Advanced archaeological-architectural research was conducted in 2003 by specialists Sławomir Dryja and Waldemar Niewalda. The latter was responsible for the architectural design of the bridge and gate complex. An essential source material during the research was a watercolor painting by Zygmunt Vogel from the late 18th century, depicting the condition of a portion of the castle's entrance. This phase was finalized in 2009. Subsequent stages of the work focused on the structural reinforcement of the southern and eastern elevations of the structure. These tasks included interventions such as repairing damaged sections of walls, injecting specialized mortar based on white cement, and using stainless steel rods for strengthening[637]. Experts have raised significant concerns regarding certain conservation practices, particularly the use of aggressive mortar that could potentially harm the stone structure. Another issue of concern is the disregard for proper wall moisture isolation. Furthermore, there have been efforts to reconstruct the upper section of the castle, which features its distinctive cylindrical tower. The appearance of this tower is extensively documented in various iconographic sources, with Zygmunt Vogel's watercolor being a notable example [Fig.152].

[636] http://www.rabsztyn.ilkus.pl/stowarzyszenie.html (access: 14.07.2021 r.)

[637] S. Dryja, Sprawozdanie z nadzorów archeologicznych prowadzonych przy budowie mostu do budynku bramnego zamku w Rabsztynie [Report on Archaeological Supervision Conducted During the Construction of the Bridge to the Gatehouse of Rabsztyn Castle], Kraków 2005, WUOZ Kraków, nr inw. 46.833/09.

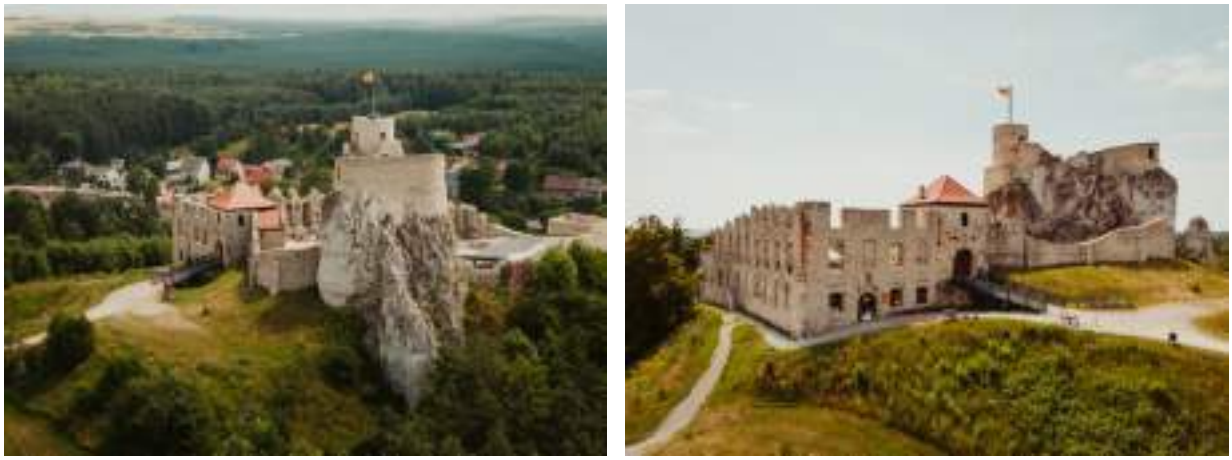

Fig. 152. Rabsztyn Castle, photo by the author

Korzkiew

Zamek w Korzkwi, położony w malowniczej okolicy niedaleko Krakowa, stał się przedmiotem iIntensive debates regarding the necessity of protective actions ensued for the castle in Korzkiew. Its historical structure began to deteriorate as early as the 19th century. Faced with ongoing degradation, shortly after the end of World War II, the initiative for initial conservation work was launched to preserve its authentic cultural value. In the latter half of the 1950s, Adam Małkiewicz, an eminent expert in the field of art, conducted a detailed analysis of the historical and architectural character of this structure. His expertise revealed that due to the advanced level of damage, the castle, despite its significance, was not a candidate for full restoration. Nevertheless, he emphasized the need for care and protective measures to ensure the object's durability for future generations. In response to these concerns, the Committee for the Study and Protection of the Castle in Korzkiew was established in 1967 under the auspices of the Krakow branch of the Polish Tourist and Sightseeing Society (PTTK), with Prof. Jerzy Małecki at its helm. Thanks to the commitment of this team, various conservation actions were undertaken between 1968 and 1969, including clearing the site of debris, reinforcing the ruin with temporary roofing, and conducting extensive archaeological research that served as the basis for accurate architectural documentation[638].

Dr. Waldemar Niewalda, in the context of analytical and conservation activities at the historic site, developed a detailed plan for adaptive and protective measures, drawing inspiration from historical curiosities. In his proposals, he stressed the necessity of stabilizing the structural walls, ensuring long-term protection of this historical site. Dr. Niewalda also recommended the reintegration of missing segments and moderate reconstruction of selected architectural components. His inspiration came from historical sources and iconography, allowing for the recreation of the object's former appearance. Referring to architectural forms from the early 19th century presented by Józef Peszko, Dr. Niewalda suggested using a multi-pitched roof covered with wooden shingles, which would restore the historical character of the object. In the 19th century, shingled roofs were popular in the region due to the availability and

[638] W.Niewalda, Ruiny zamku w Korzkwi. Ekspertyza architektoniczno-historyczna [Ruins of the Castle in Korzkiew: Architectural and Historical Expertise], Kraków1969, maszynopis, WUOZ Kraków, nr inw. 3862/78.

durability of this material. Regarding the residential tower, Dr. Niewalda[639] recommended its adaptation for museum and exhibition purposes, preserving its authenticity while making it accessible to visitors. Meanwhile, the Renaissance part of the building was proposed to be transformed into a conference and service space, including a winery or bar, to preserve its character and historical charm. The attic space was envisioned for hotel purposes, providing an excellent way to commercialize this unique place.

Fig. 153. Korzkiew Castle in 1910, source: Society for the Care of Historical Monuments, Castle in 1960-1970., source: https://fotopolska.eu/Korzkiew/b46654,Zamek_Korzkiew.html?f=497132-foto, [access:23.04.2023]

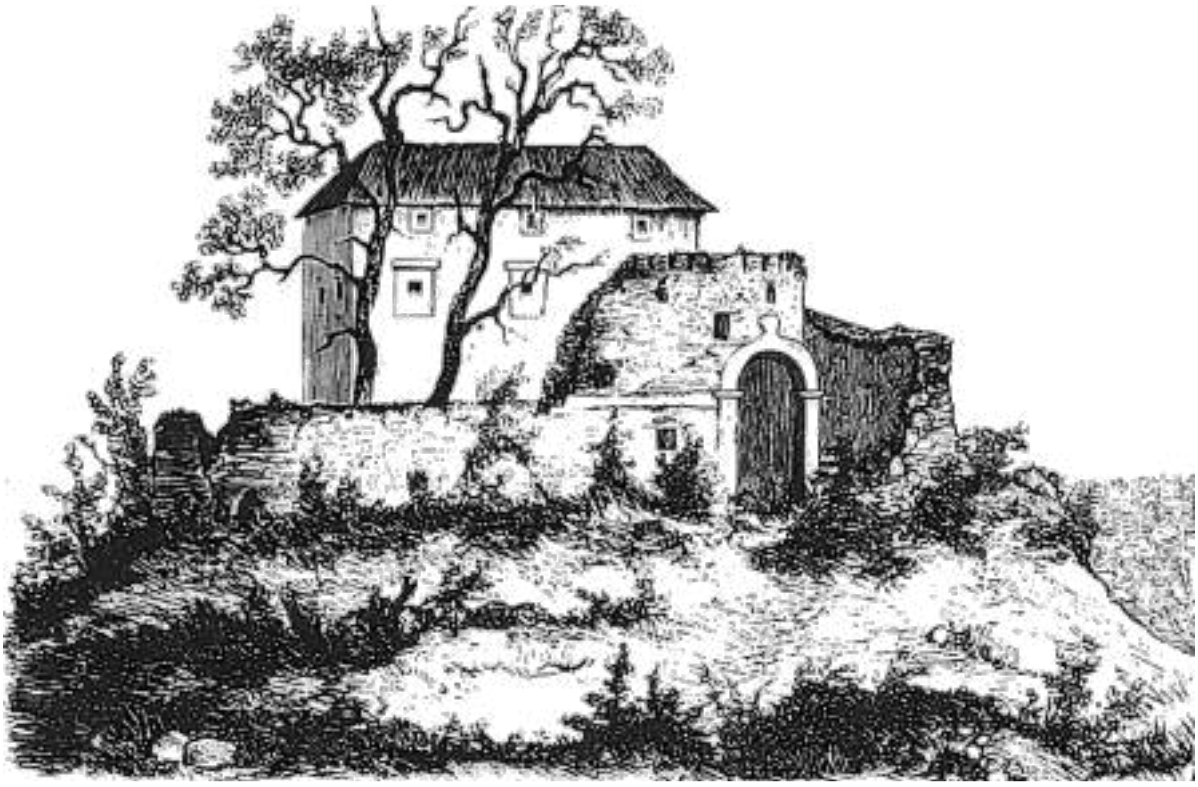

Fig.154. View of the Korzkiew Castle according to F. Kostrzewski, „Tygodnik Ilustrowany", source: https://www.zamkipolskie.com/korzkiew/korzkiew.html, [access:13.04.2023]

639 Idem, Korzkiew – zamek. Ekspertyza konserwatorska [Korzkiew Castle: Conservation Expertise], 1969/1970, s. 4–6, typescript, WUOZ Kraków, nr inw. 214/77.

Fig.155. The project of Korzkiew Castle reconstruction - south elevation by B.J. Lenda, 2003 source: http://www.korzkiew.pl/pl/plany_odbudowy/, [access:13.04.2023]

The Committee for the Study and Reconstruction of the Castle sought to implement this outlined plan, with ambitions to turn the castle into an attractive tourist and leisure center. Some actions, mainly focused on renovation and security, were taken between 1970 and 1971, along with cleanup efforts on the castle grounds. However, in the following year, the Committee had to abandon further efforts due to insufficient financial resources for conservation and the withdrawal of approval for the complete reconstruction of the castle by the Regional Conservator of Monuments. In the 1970s, the castle could not be fully restored to its former glory due to limited financial resources and issues related to cultural heritage preservation. The idea of reconstructing the castle gained new life in the 1990s when the decision was made to comprehensively "reconstruct" the fortress. This determined approach aimed to restore the castle to its former glory and bring it to life as an important tourist attraction. The decision to reconstruct the castle was part of a larger trend in Europe where many historic monuments were being renovated or rebuilt to preserve cultural heritage and attract tourists.

It's important to note that the final reconstruction plan prepared in 2003 differs significantly from existing iconography and historical sources. This difference becomes particularly noticeable when compared to Franciszek Kostrzewski's illustration published in "Tygodnik Ilustrowany" in 1860 [Fig.154 and 155]. In this historical drawing, the castle is depicted with its characteristic hipped roof. However, the new project envisioned a significant change by raising the roof in the "Krakow style" and covering it with roofing tiles. This is crucial because it not only changes the appearance of the castle but also its historical architectural context.

Furthermore, the originally inhabitable part of the castle had three stories, which significantly differs from the reconstruction plan, which included up to five stories, including two attic levels. This difference in the number of stories may impact the preservation and presentation of the castle's interiors, which is crucial for maintaining its authentic character.

However, one of the most critical aspects is that the reconstruction of the gate tower and the tower in front of the perimeter wall on the southwestern side, as per the 2003 project, is purely hypothetical. There is only general information from archaeological-architectural research regarding these parts of the building, but there is insufficient information about their exact appearance. This means that the reconstruction of these elements relies to some extent on speculation and interpretation, which may affect the authenticity of the final project.

Now, thanks to efforts undertaken since the 1990s, the castle stands as a significant point on the region's tourist map. The reconstructed fortress is now an attraction that draws many visitors, offering them the opportunity to discover the history and architecture of this extraordinary place. Currently, the castle functions partially as a hotel and is open to visitors [Fig.156].

Fig. 156. Castle in Korzkiew, source: https://orlegniazda.pl/, https://tymrazem.pl/, [access:23.03.2022]

Bobolice

In 1960, the Bobolice Castle [Fig.157] became the subject of conservation efforts aimed at preserving and protecting this historic site from further degradation. Special attention was focused on the areas most vulnerable to wall erosion. As part of these actions, localized reconstruction of foundations and upper parts of the walls was carried out, restoring their former glory and stability. Furthermore, precise repair work was conducted, eliminating gaps and cracks that could jeopardize the castle's integrity.

Another significant step in the preservation of this monument came in 1990 when historical-architectural documentation of the castle was meticulously prepared by Marceli Antoniewicz. This documentation became a valuable source of information for scientists and art historians, aiding in restoring the castle to its former appearance. In the following years, precise

photogrammetric documentation of the ruins was also conducted, providing additional data and materials for scientific analysis[640].

Fig. 157. Ruins of Bobolice Castle in 1932-1939, source: National Digital Library Polona, Ruins of Bobolice Castle in 1954, source: https://fotopolska.eu/Bobolice/b283,Zamek_w_Bobolicach.html?f=1995239-foto, [access: 23.05.2022]

However, despite the importance of these actions for documenting the castle, full-scale conservation work did not commence until the "reconstruction" took place in the first decade of the 21st century. The reconstruction of a durable ruin contradicts the principles of the Venice Charter, but there is an increasing trend of such actions being taken in various countries. The project for the reconstruction of Bobolice Castle was based on the results of archaeological-architectural research conducted in the early 21st century and on the description from an inventory of the castle dating back to 1700.

However, this description did not provide sufficient details to accurately reconstruct the appearance of the building. The main goal of the project was to restore the upper castle to its 17th-century appearance and partially rebuild the remaining parts of the complex. During the reconstruction, the gatehouse was rebuilt, although its shape was subject to the designer's interpretation. Similarly, the southern part of the middle castle was reconstructed in an arbitrary manner[641].

The most accurate reconstruction focused on the upper castle's structure, where relics had been preserved. However, even in this case, some details, such as roofing and a wooden bay window in the northwestern wall, were hypothetical and related to the designer's interpretation. The new castle was constructed using reinforced concrete structures and then clad with limestone. The perimeter wall was raised, and its peaks were equipped with battlements.

Despite efforts, some critics, including Paweł Dettloff, argue that the current Bobolice Castle does not faithfully represent historical reality and does not preserve the authenticity of the original castle ruins. They point to differences between the reconstruction and the historical

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[640] W.Jagodzka-Hadamik, Zamek w Bobolicach. Konsekwencje „odbudowy" historycznej ruiny dla krajobrazu kulturowego Wyżyny Krakowsko-Częstochowskiej [Bobolice Castle: Consequences of the "Reconstruction" of a Historical Ruin for the Cultural Landscape of the Kraków-Częstochowa Upland], [in:] Akademia Dziedzictwa 2001–2013. Przegląd problemów badawczych z zakresu zarządzania i ochrony dziedzictwa kulturowego w Polsce [Heritage Academy 2001-2013: Overview of Research Issues in the Management and Preservation of Cultural Heritage in Poland], B. Szyper, M. Wiśniewski (red.), Kraków 2013, p. 88.

[641] B. Szmygin, Trwała ruina. Granice i uwarunkowania działań konserwatorskich na przykładzie zamku w Janowcu nad Wisłą [Durable Ruin: Limits and Conditions of Conservation Activities Illustrated by the Example of Janowiec Castle on the Vistula], „Ochrona Zabytków", 1997, nr 1, p. 12–18.

state, which have sparked controversy and dissatisfaction among heritage and history enthusiasts [Fig.158].

Fig. 158. Bobolice Castle, photo by the author

Ostrężnik

In the 1960s, Włodzimierz Błaszczyk, during an inventory of lesser-known fortifications in the Kraków-Częstochowa Upland, identified the surface remains of these structures[642].

In the year 2000, under the leadership of Stanisław Kołodziejski and Joanna Tutak[643], advanced archaeological research was conducted, including excavation work, cleaning of the historic ruins, precise measurements, and the analysis of collected samples. Two years later, in 2002, Kołodziejski consistently sought to deepen the research. Although the research team devoted a lot of effort, none of the analyses confirmed the earlier hypothesis proposed by Bohdan Guerquin regarding the royal lineage of the castle. It's worth noting that in the history of archaeology, there have been difficulties in unequivocally confirming the origins of historical objects. Such studies require not only an analysis of material evidence but also the interpretation of written sources and comparisons with other findings from the same period.

Archaeological research indicates the preservation of uneven remnants of curtain walls, whose height does not exceed one meter. In the research area, fragmentary remnants of residential buildings and structures with rectangular geometry, likely a tower, are also noticeable. Despite subtle characteristic features, it is possible to identify earthen ramparts surrounding the lower parts of the defensive structure. Analyzing the hillside in the sector corresponding to the upper castle, foundations of a perimeter wall with an approximate length of 144 meters are observed. Research on wall parameters suggests a thickness of about 2.2 meters in the northern and eastern sectors, while in the southern and western parts, it measures approximately 1.6 meters. Within the upper castle complex, rectangular structures with dimensions of 10 x 30 meters were identified, adjacent to the northwestern segment of the perimeter wall. The area surrounding the ruins is currently dominated by young, dense vegetation. This vegetation succession, combined with the degradation of the state of

[642] W. Błaszczyk, Inwetaryzacja nieznanych średniowiecznych zamków warownych na Wyżynie Jurajskiej [Inventory of unknown medieval fortified castles in the Jurassic Highlands], [in:] Badania archeologiczne na Górnym Śląsku [Archaeological research in Upper Silesia], Biuletyn Śląskiego Instytutu Naukowego", no 40, Katowice 1964, pp. 102-106

[643] S. Kołodziejski, J. Tutak, Sprawozdanie z badań archeologicznych ruin średniowiecznego smaku w Ostrężniku, Gmina Janów, województwo śląskie, przeprowadzonych w sierpniu 2000 roku, WUOZ Katowice, oddział Częstochowa [Report on archaeological research on the ruins of medieval taste in Ostrężnik, Janów Commune, Silesian Voivodeship, carried out in August 2000, WUOZ Katowice, Częstochowa branch]

preservation of the ruins, poses a challenge for the accurate reconstruction of the original architectural structure of the object. In the vicinity of the ruins' entrance, there is an information board, the legibility of which has significantly deteriorated [Fig.159 and 160].

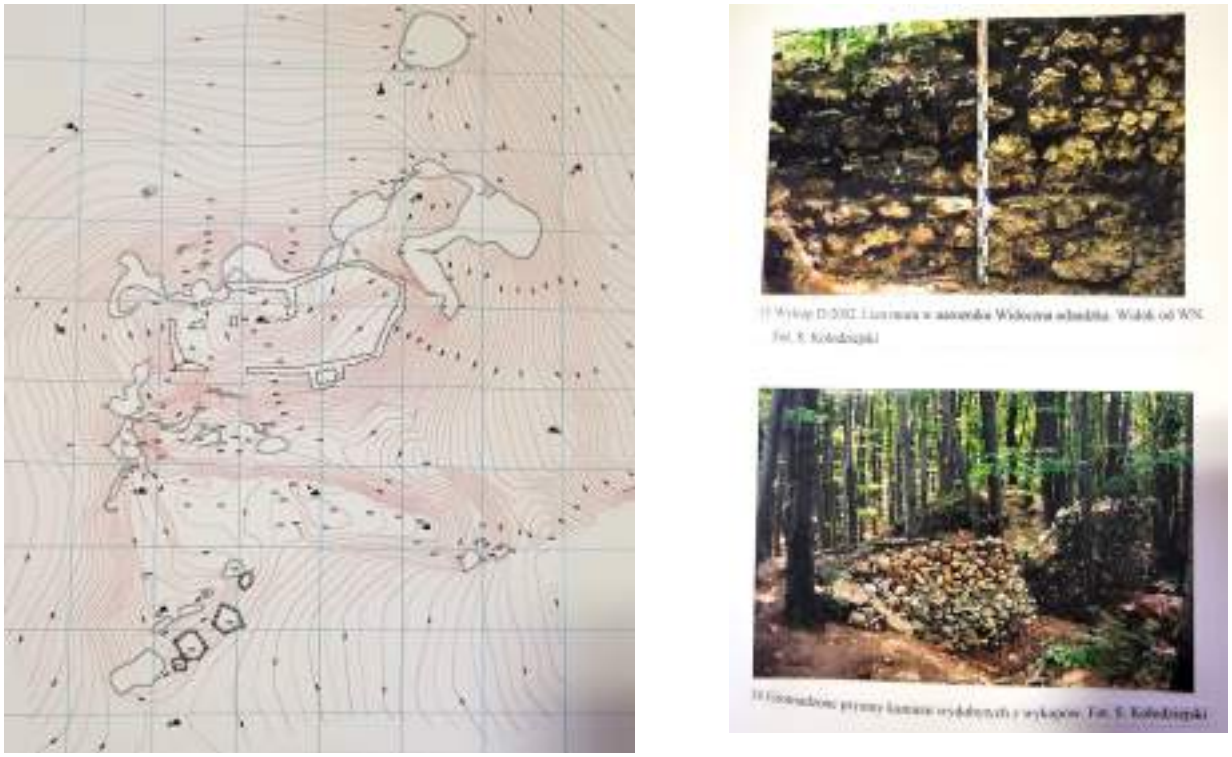

Fig. 159. Fragments from the archaeological report of 2002, source: WUOZ Częstochowa

Fig.160. Remnants of Ostrężnik Castle, photo by the author

Udórz

The exact dating of when the castle was abandoned and devastated remains unclear, and historical sources do not provide complete information regarding the evolution of its structure over the centuries [fig.161]. Archaeological research conducted on the hilltop has revealed fragments and outlines of stone walls, which are key to reconstructing the original form of the defensive structure. Presently, this area is dominated by lush vegetation, which may be indicative of a long period of neglect and ecological succession processes typical of abandoned areas in Central Europe[644].

[644] B. Guerquin, Zamki w Polsce….,s. 314.

Fig. 161. Relics of the castle in Udorze, source: http://anwi.bikestats.pl/, [access: 12.07.2021]

Kwaśniów Dolny

During the conflicts related to World War II, the manor structures were destroyed in a tragic fire. As a result of these events, the damaged tower served auxiliary functions for decades as an agricultural building. Thanks to accidental discoveries and conservation efforts, the structure was preserved from complete demolition and gained the status of a protected monument. In 2011, a decision was made to renovate it: the walls were supplemented, stone portals were restored, and the entire structure was covered with a new hipped roof. The current architectural analysis of the tower in Kwaśniów [Fig.162] indicates the preservation of two floors, each with two rooms featuring characteristic barrel vaults, providing evidence of the historical construction techniques used in the region[645].

Fig. 162. Remainings of the castle in Kwaśniów Dolny under conservations works in 2010, source: https://zamki.rotmanka.com/,[access: 12.07.2021]

[645] Decision No. A-114/M regarding the inscription of a cultural asset in the register of immovable monuments of the Małopolskie Voivodeship, dated October 17, 2007, MWKZ Kraków

Pisary

By the end of the 1950s, due to neglect, the historic site began to deteriorate. However, in the late 1960s, a decision was made to restore it. In the 1980s, the interior of this historic place came to life with the "Lamus" art gallery [Fig.163]. Although it is currently unused, it represents an important trace in the cultural heritage of the region. Among the preserved structures from the original manor complex, there are the brewery buildings, a traditional granary, and a characteristic barn from the early 19th century. In the mid-19th century[646], these brewery buildings were adapted for estate purposes, transforming them into stables. After the end of World War II, these spaces were used by the "Herbapol" herbal medicine facilities and also served as a center for veterinary activities[647]. Although the surroundings of the site are overgrown with lush vegetation, making access difficult, it's worth noting the preserved fragments of the historic fencing grid. Entrances to the buildings are secured, indicating care for their preservation. The entire complex, along with the adjacent park, is privately owned and inaccessible to visitors.

Fig. 163. Pisary Castle, photo: Municipal Office Archive

Castles not preserved

Wielka Wieś

There is no available data regarding potential modifications to this structure. The downfall of this fortress can be attributed to a construction disaster that caused a collapse of the western and northern portions of the outer wall. The foundations of the residential tower, fragments of the eastern wing, and remnants of defensive walls are noticeable. There is also a clear division of the structure into lower and upper sections..

Morawica

In the historical analysis of the castle's decline, one of the key events contributing to its neglect is attributed to the decision of the Tęczyński family to abandon it. The Tęczyński family, who played a significant role in medieval Poland, owned the castle for many centuries. In later periods, the architectural ruins became a source of building material for religious purposes –

[646] red. J. Szablowski, Katalog Zabytków Sztuki w Polsce [Catalog of Artistic Monuments in Poland], t. I: Województwo krakowskie, Warszawa 1953

[647] J. Zalitacz, Uzdrowisko Krzeszowice i okolice [Krzeszowice Spa and its Surroundings]; 2006; p.180-181.

initially a chapel, which later evolved into a church structure, and they also contributed to the construction of the rectory. A contemporary architectural analysis of the area where the castle once stood points to the presence of a church dedicated to St. Bartholomew[648]. Due to the construction techniques used in the medieval era, there is a presumption, based on archaeological research, that remnants of the original castle's defensive system may have survived in the foundations of modern buildings.

Lelów

In the early 19th century, the structure was in a state of neglect, leading to its gradual degradation[649]. Due to its dire condition, a decision was made to completely dismantle the remaining remnants of the building in 1804-05. Today, in the area that was once a witness to the might of the defensive complex, there is a cemetery. Unfortunately, field studies have not revealed any traces or visible remnants of this historical structure.

Żarnowiec

In the late 18th century, the castle was destroyed by a fire, and documents from 1789 only confirm the existence of ruined buildings surrounded by a moat. Over the years, especially in the 19th century, the remains of the structure were progressively dismantled. Research regarding potential transformations of the castle in the past is still incomplete. Despite the passage of time, there are no visible significant surface traces of its presence on the site of the former complex. Nevertheless, subtle and increasingly faded traces of the moat indicate the former existence of this formidable structure[650].

Dubie

Currently, the main foundations are covered by a layer of soil, although stone supports have been uncovered. To the south of the tower, there was a spacious triangular-shaped courtyard located on a flat and sloping part of the hill. Natural protection against invaders came from the steep, rocky slope on the southwest side, while on the northeast side, defensive walls were used along with simple defensive structures, likely made of wood or a combination of wood and earth. Historically, the courtyard served as a residential area within this defensive complex. Furthermore, conservation studies suggest that the fortifications may have been rebuilt several times in response to the evolving defensive techniques of the Middle Ages[651].

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[648] G. Leńczyk, Katalog grodzisk i zamczysk z terenu Małopolski, Muzeum Archeologiczne w Krakowie, Kraków 1983, na podstawie: S. Tomkowicz, Morawica, Teka Grona Konserwatorów Galicji Zachodniej [Catalog of Settlements and Castles in the Małopolska Region, Archaeological Museum in Krakow, Krakow 1983, based on: S. Tomkowicz, Morawica, Records of the Circle of Conservators of Western Galicia] , t. II, 1906, p. 194–204.

[649] B. Guerquin, Zamki w Polsce…. [Castles in Poland], p.195.

[650] L. Kajzer, S. Kołodziejski, J. Salm, Leksykon zamków w Polsce [Castle Lexicon in Poland], *p. 558.*

[651] M. Uruszczak, Czternastowieczne wieże strażnicze Jury Krakowsko - Częstochowskiej w świetle badań nad sztuką obronną w czasach Kazimierza Wielkiego [Fourteenth-century guard towers of the Kraków-Częstochowa Upland in the light of research on defensive art during the time of Casimir the Great], Czasopismo-Prawno-Historyczne, Vo. 55, N. 2 (2003) p. 187-210

Koziegłowy

In the late 16th century, specifically in 1598, the castle structure was completely destroyed, likely due to wartime actions or typical neglect of that era. During the 19th-century industrialization and infrastructure expansion, the remnants of this former fortress were dismantled, and the stones obtained from this site were used to construct local roads and bridges, which was a common practice at the time. There is now no trace of this former stronghold [Fig.164]. Only subtle irregularities in the terrain in the area of marshy meadows on the northeast outskirts of the town may suggest the presence of the former architectural structure, a fact confirmed by archaeological research conducted in this area[652].

Fig. 164 Remains of the castle in Koziegłowy, photo by M. Walentek.

4.2. Eagle's Nests Trail and Jurassic Strongholds Trail as forms of protection

The protection and renovation of historical castle structures are undoubtedly important, but equally significant is the promotion of these places through tourist trails. Through such efforts, tourist interest is increased, which translates into education about the region's heritage and the acquisition of funds for the conservation of these landmarks. These initiatives have their roots in the activities of the Polish Tourist Society in the interwar period. One notable trail was designed in 1930 by Stanisław Leszczycki, which covered the Kraków region. This trail, spanning approximately 100 km, led from Kraków to Ojców, passing through the charming valleys of the Kraków region, reaching Czerna, Krzeszowice, and Tenczyn, then continuing through Mników, Kryspinów, and Bielany back to Kraków[653]. Hikers on this route could admire many architectural gems, including castles in the southern part of the Jura region. It's worth noting that Leszczycki promoted the idea of a trail encompassing the entire Kraków-Częstochowa Upland. This idea was further developed by Kazimierz Sosnowski in the 1930s, who created the famous Trail of the Eagle's Nests.

The proposal for a trail connecting two key cities in Poland, Kraków and Częstochowa, was published in the prestigious geographical magazine "Ziemia" in 1948[654]. The author, Kazimierz Sosnowski, drew attention to three unique features of the landscape of the Kraków-Częstochowa Upland that should be emphasized on the planned trail: unique geological formations, picturesque castle ruins, and miniature deserts unusual for Poland. One key aspect

[652] L. Kajzer, S. Kołodziejski, J. Salm, *op.cit.*, p. 231-232.
[653] S. Leszczycki, Szlak turystyczny w okolicy Krakowa [Tourist trail in the Krakow area], Kraków 1930.
[654] K. Sosnowski, Jurajski szlak „Orlich Gniazd" [The Jurassic Trail "Eagle Nests."], „Ziemia", R. 39, 1948, nr 6, p. 122–129.

he highlighted was the location and historical significance of the fortresses in the region, which is also evident in the choice of the name "Eagle's Nests" for the proposed trail.

In Sosnowski's vision, the main trail was characterized by a straightforward and clear route of approximately 130-150 km, with additional branches taking into account other important natural and cultural attractions. The main trail included castles in places such as Ojców, Pieskowa Skała, Rabsztyn, Podzamcze (Ogrodzieniec), Bobolice, Mirow, and Olsztyn. Additionally, one of the branches led to the castle in Korzkwi, and others to the ruins of the Smoleń Castle and the residence in Pilica.

Interestingly, despite including many key castles in the region, some located further west, such as Tenczyn, Lipowiec, Sławków, Będzin, or Siewierz, were not included in the main trail. This underscores the unique character and selection of places that Sosnowski considered most representative of the landscape and history of the Kraków-Częstochowa Upland.

Less than two years after the initial concept was presented, the Trail of the Eagle's Nests route was largely specified. Sosnowski enthusiastically pointed out that even before its official designation, this trail had gained significant popularity among various tourist groups and solo travelers. Its route and the adjacent landmarks gained popularity, mainly thanks to a guidebook to the Upland written by Sosnowski[655] himself and numerous guidebooks and maps published in subsequent years[656].

Over the years, the Trail of the Eagle's Nests underwent many modifications, leading to its expansion. In 2005, its total length was almost 160 kilometers. Significant changes were introduced due to safety issues. For example, the section between Ojców and Pieskowa Skała was relocated to the upland, away from the main trail in the Prądnik Valley. Nevertheless, some parts of the trail were adapted to include more historic sites, such as the ruins of castles in Bydlin, Morsko, and Smoleń, which originally belonged to one of the alternative paths.

Currently, the responsibility for managing the Trail of the Eagle's Nests lies with the Association of Jurajski Municipalities, headquartered in Ogrodzieniec. This organization is involved in the protection of nature and cultural heritage and actively promotes the tourist region. The association also maintains the official website of the Trail, where a map of the route, information about individual castles, and various useful data are available. In 2012, the Trail of the Eagle's Nests was honored with a prestigious award from the Polish Tourist Organization in the category of "Best Tourist Product."

The evolution of the Trail of the Eagle's Nests has been fascinating. Although originally conceived as a trail for hiking enthusiasts, alternative paths for car tourists were created shortly thereafter. In 1999, an impressive 180-kilometer-long Eagle's Nests Cycling Trail was established[657].

The success of the Trail of the Eagle's Nests is also attributed to its concept, which focused on connecting many castles and watchtowers into a cohesive and attractive system for tourists. As a result, places that were once attractive only to a few have become a magnet for

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[655] Idem, Jura Krakowsko-Wieluńska [The Kraków-Wieluń Upland.], Warszawa 1955.

[656] Idem, Szlak Orlich Gniazd [[The Jurassic Trail "Eagle Nests."]„Ziemia", R. 41, 1950, nr 7–8, p. 142.

[657] Sz. Czajkowski, Waloryzacja potencjału turystyczno-kulturowego Szlaku Orlich Gniazd [The valorization of the tourist and cultural potential of the Eagles' Nests Trail], „Turystyka Kulturowa", 2014, nr 1, p. 78–100.

tourists from all over the country. This has particularly benefited lesser-known places, which now attract hordes of visitors[658].

One should also not forget about other trails, such as the Blue Trail of the Jurassic Strongholds, which, although occasionally overlapping with the main Eagle's Nests route, offers unique experiences by leading through less frequented corners and ruins. This particular trail has a length of 152 km. In this region, you can also find other less-traveled routes, such as the Yellow Zamonit Trail or the Green Millennium Trail. However, Krzysztof Bzowski's guidebook includes many combinations of excursions, categorized into hiking, cycling, equestrian, or climbing routes. There are also thematic suggestions, including tracing the hiding places of King Łokietek, Jurassic legends, and many more.

4.3. Conclusions

The beginnings of conscious and scientifically based conservation and restoration of monuments in Polish lands date back to the late 18th century and are associated with the birth of archaeology, historicism, and the intensification of patriotic sentiments during the pre-Romantic and Romantic periods. However, the implementation of specific actions for the protection of monuments was hindered due to the loss of independence, lack of financial resources, and a romantic cult of ruins that dominated for a long time. The love for architectural remnants woven into the natural landscape, on the one hand, contributed to the destruction of castles in the discussed area, including their partial dismantling. On the other hand, it saved them from complete degradation, allowing them to survive in the form of ruins.

Before World War II, most castles in the Jura region were not under conservational protection, leading to a deterioration of their technical condition. Nevertheless, in the 19th and early 20th centuries, there were isolated initiatives related to the conservation and restoration of some castles. More systematic work began only after 1945. Most of these activities were well-documented, thanks to preserved reports on the conducted work stored in conservation archives in Kraków and Katowice. Some projects related to the reconstruction, conservation, or adaptation of castles for new purposes were discussed in publications, although most of the documentation exists as unpublished studies. The analysis of these materials, combined with an assessment of the effects of conservation work visible in the case of individual monuments, shows that various approaches were used for castles and their ruins after the war. Some objects underwent thorough restoration, often combined with reconstruction, while others were secured as permanent ruins or subjected to ad hoc, often insufficient, conservation efforts. Nevertheless, despite numerous conservation interventions, many monuments are still threatened by ongoing degradation. Furthermore, not all actions taken towards castles and ruins can be positively assessed.

Over the past few decades, there has been varying intensity of conservation efforts related to castles in the Kraków-Częstochowa Upland. The majority of interventions took place in the early post-war years - at the end of the forties and in the fifties. The Ministry of Culture and Art initiated extensive restoration actions for Pieskowa Skała and Będzin Castles, and many other objects were subject to securing efforts by conservation offices in Kraków and Katowice.

[658] R. Wolski, *op.cit.*, p. 129.

In the subsequent two decades, the number of conservation interventions decreased, but significant initiatives were still undertaken, such as comprehensive actions aimed at securing the Lipowiec and Ogrodzieniec Castles as permanent ruins. In later years, especially after the political transformation, a drastic decline in conservation activities was observed, leading to a significant deterioration in the condition of many monuments. It was only in the recent period that this negative trend was overcome. State financial resources and funds from the European Union were obtained, enabling significant conservation work to be carried out, including in Bydlin, Smoleń, Rabsztyn, and Tenczyn. Unfortunately, a new threat to ruins has emerged in the form of "reconstruction" actions carried out by private investors, which often do not take into account the historical and architectural values and the characteristic forms of the buildings.

In general, due to the diverse nature of the carried-out works (conservation, restoration, reconstruction) and the scope of these activities (complete, partial, permanent, one-time, etc.), the topic of conservation of Jurassic castles can be divided into several groups [Fig.165], which stand out[659]:

1) Castles restored after World War II: Pieskowa Skała,
2) Castles secured as permanent ruins: Ogrodzieniec, Lipowiec, and Ojców,
3) Fortresses subjected to ad hoc conservation actions aimed at maintenance, securing, and possible highlighting of the ruins: Olsztyn, Ryczów, Suliszowice, Przewodziszowice, Morsko, Sławków, Smoleń, Bydlin, and Pilica,
4) Castles subjected to conservation with elements of reconstruction: Siewierz, Tenczyn, Rabsztyn, Mirów, Kwaśniów Dolny, Pisary,**
5) Castles rebuilt at the turn of the 20th and 21st centuries: Korzkiew and Bobolice,
6) Historical sites lacking conservational protection: Biały Kościół, Ostrężnik, Udórz, Łutowiec, Koziegłowy.

* Only the existing objects were considered in this division.
** Mirów will likely soon be included in the group of rebuilt castles.

[659] D. Ziarkowski, Zamki na Wyżynie Krakowsko - Częstochowskiej. Problemy konserwacji i udostępniania dla turystyki [Castles on the Krakow-Częstochowa Upland. Problems of conservation and access for tourism], Proksenia, Kraków, 2014, p.150.

Fig. 165. Current state of castle preservation in the Jura against the background of the Jura Landscape Parks complex, elaborated by the author

5. Valorization

The history of conservation attitudes and the valuation of historical monuments are closely intertwined. Valuation is based on various criteria that serve as the basis for assessing, selecting, or classifying objects. In the field of conservation, the diversity of understanding value leads to the application of multiple criteria and methods for determining them[660].

Assessing the architectural value of historical monuments has always been a subject of debate among scientists and specialists in the fields of conservation and heritage protection. These discussions began at the very inception of this scientific discipline, and despite two centuries passing, it has not been possible to create a unified set of criteria for assessing the value of these objects.

In the 19th century, these debates gained strength, dividing theorists into two main factions: the restoration school, initiated by Eugène Viollet-le-Duc, and the conservation school. The restoration school focused on the reconstruction of objects, emphasizing stylistic principles and the creativity of the designer. This approach was criticized by proponents of the

[660] Słownik 100 potrzebnych słów [Dictionary of 100 words you need], red. Bralczyk Jerzy, PWN, Warszawa 2005, p. 336

conservation school, who viewed historical monuments as sources of value requiring protection.

Among the critics of Eugène Viollet-le-Duc was John Ruskin, who, in his work "The Seven Lamps of Architecture,"[661] focused on various aspects of architecture, highlighting the value of authenticity and the necessity of preserving all signs of the past. Similar views were held by the Italian conservator Camillo Boito, who emphasized the importance of a monument as a witness to history[662].

19th-century conservation thoughts, such as those formulated by Alois Riegl, had a significant influence on the 20th-century approach to heritage preservation. Riegl proposed a division of monument value into commemorative value and currently significant value, with various subcategories[663].

Jan Tajchman, based on a slightly modified model for assessing the value of monuments created by Walter Frodl[664], distinguishes the following criteria for analyzing and evaluating the value of a monument: 1. authenticity, 2. integrity, 3. historical-scientific value, 4. historical-emotional value, 5. artistic value, 6. aesthetic value, 7. utility value. The Monument Protection Act also highlights the need to consider the historical, artistic, and scientific values of monuments.

UNESCO's Convention introduced the concept of Outstanding Universal Value[665] (OUV), which is transcultural and independent of the traditions of a particular culture.

Recent publications, such as those by Jan Tajchman, Michał Witwicki, Andrzej Buchaniec, or collective works edited by Bogusław Szmygin, demonstrate continued interest in the issue of monument valuation in architecture[666]. All of these works make an original contribution to the discussion on criteria and methods for assessing the value of architectural monuments.

Due to the specificity of the studied heritage as a valuation system, the criteria of Jan Tajchman and the assumptions of the Monument Protection Act were adopted as a starting point. Valuation was therefore developed based on criteria such as authenticity, integrity,

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[661] Ruskin J. The Seven Lamps of Architecture, [in:] The complete works of John Ruskin, ed. Cook E.T., Wadderburn A., Longmont, Green and CO, New York 1903, p. 221.

[662] Kosiewicz P., Krawczyk J., Zabytek i historia. Wokół problemów konserwacji i ochrony zabytków XIX wieku [Monument and history. On the problems of conservation and protection of 19th century monuments], Muzeum Pałac w Wilanowie, Warszawa 2012, pp. 38-50.

[663] Krawczyk J., Alois Riegel, Georg Dehio i kult zabytków [Alois Riegl, Georg Dehio and the cult of monuments], Oficyna Wydawnicza „Mówią wieki", Warszawa 2006, pp. 41-64.

[664] Frodl Walter, Pojęcia i kryteria wartościowania zabytków, ich oddziaływanie na praktykę konserwatorską [Concepts and criteria for the valuation of monuments, their impact on conservation practice], BMiOZ seria B, t. XIII, Ministerstwo Kultury i Sztuki. Zarząd Muzeów i Ochrony Zabytków, Warszawa, 1966.

[665] The World Heritage List. What is OUV? Defining the Outstanding Universal Value of Cultural World Heritage Properties, ed. Jokilehto Jukka, Cameron Christina, Parent Michel and Petzet Michael, Hendrik Bäßler Verlag, Berlin 2008.

[666] J. Tajchman, Konserwacja zabytków architektury – uwagi o metodzie, Ochrona Zabytków [Conservation of architectural monuments - notes on the method, Monument Protection], 1995, nr 2, pp. 150–159; M. Witwicki, Kryteria oceny wartości zabytkowej obiektów architektury jako podstawa wpisu do rejestru zabytków [Criteria for assessing the historic value of architectural structures as the basis for entry in the register of monuments], Ochrona Zabytków, 2007, nr 1, s. 77–98; A.Buchaniec, Autentyzm – podstawowa wartość w konserwacji zabytków architektury, rozprawa doktorska napisana na Wydziale Architektury Politechniki Krakowskiej pod kierunkiem dr.hab.inż.arch. Bonawentury Macieja Pawlickiego [Authenticity - a basic value in the conservation of architectural monuments, doctoral thesis written at the Faculty of Architecture of the Krakow University of Technology under the supervision of Dr. Hab.Ing.Arch. Bonawentura Maciej Pawlicki], Kraków 1999.

historical-scientific value, historical-emotional value, and utility value. However, aesthetic value was omitted from the system because it is difficult to objectively evaluate these objects in these criteria due to their state of preservation and numerous alterations. The assessment was expanded to include landscape values.

The value of authenticity was considered in terms of the original forms up to the layering that occurred until World War II, given the intensification of conservation work after 1945. The value of integrity, historical-scientific value, and artistic value were assessed in the same categories as Jan Tajchman[667].

In the historical-emotional value, three important aspects were distinguished: symbolic values, understood as historical symbols; emotional values, which encompass personal and commemorative significance; and social values, representing places of importance to the wider community. Utility value was expanded to include adaptive aspects for education and tourism. Landscape values were evaluated in the context of how the objects fit into the landscape.

1. Authenticity
2. Integrity
3. Historical-scientific value
4. Historical-emotional value
   - Symbolic values
   - Emotional values
   - Social values
5. Artistic value
6. Utility value
   - Educational and outreach value
   - Touristic value
   - Economic value
7. Landscape values

Valuation is not presented in a tabular or numerical form because the issues being described are complex, and oversimplification would result in the omission of important values. This is especially important when it comes to emotional values, which also represent the essence of the "genius loci."

5.1. Authenticity of substance (Antiquity Value)

This criterion can be considered within the previously presented division into groups based on conservation work carried out. The highest level of authenticity is characteristic of objects preserved in the form of permanent ruins, including Ogrodzieniec, Lipowiec, and Ojców, as well as objects without conservation protection. The absence of additions has not significantly compromised their historical fabric. Objects with lower authenticity in this regard include the castles in Olsztyn, Ryczów, Suliszowice, Przewodziszowice, Morsko, Sławków, and all

[667] J. Tajchman, Standardy w zakresie projektowania, realizacji i nadzorów prac konserwatorskich dotyczących zabytków architektury i budownictwa [Standards for the design, implementation and supervision of conservation works concerning architectural and construction monuments], Toruń-Warszawa, 2014, pp.9-10

others where additions or reconstructions of parts of the objects have been made. Despite minor additions, guardhouses in this group exhibit the highest authenticity, often due to the lack of subsequent conservation actions. The least favorable assessment in this regard applies to reconstructed objects, where the new material is often difficult to distinguish from the historical fabric. This group includes Bobolice, Korzkiew, and Będzin.

5.2. Integrity

Relatively few objects in the discussed area exhibit high levels of integrity. In this regard, unlike the previous category, reconstructed objects perform the best. They are the only ones that constitute enclosed structures. This group also includes Pieskowa Skała. Objects with the lowest level of integrity are those that have survived only partially, such as guardhouses, although in some cases, the outline of the entire object can be discerned, as well as remnants in Ostrężnik.

5.3. Historical-scientific value

The group of reconstructed objects unquestionably possesses the lowest scientific value. Due to the blurring of distinctions between added tissues, they offer little to no architectural research value. Additionally, during fieldwork, the surroundings of the castles were excavated (as can be observed in the photographic inventory in Mirow), making them of no value for archaeological research either. Due to the lack of research and iconography for Bobolice Castle, as well as its low integrity before reconstruction, the author negatively assesses these actions, particularly in terms of historical-scientific value. She believes that not only has it been deprived of historical-scientific value but also distorts the historical image of this object. Despite their partial preservation, the objects in Biały Kościół, Ostrężnik, Udorze, and Koziegłowy hold significant scientific value, especially since extensive research has not been conducted there, or, as in the case of Łutowiec, no research has been conducted at all.

5.4. Historical-emotional value

The majority of the castles hold symbolic value. As mentioned earlier, the most deeply rooted value is associated with the symbol of the power of the Polish state, especially during the reign of Kazimierz Wielki (Casimir the Great). They also symbolize the passing of a certain era for the Polish nation. In contemporary times, emotional values associated with these objects are also created due to their image as portrayed, among other things, in film productions. Well-known film shoots increase social pride and attachment to the objects. An example of such situations is the castle in Olsztyn, where scenes for "The Saragossa Manuscript" and "Countess Cosel" were filmed in the 1960s [Fig.166].

Fig. 166. "The Manuscript Found in Saragossa," directed by Wojciech Has, source: film still; "Countess Cosel," directed by Jerzy Antczak, source: National Film Archive, OKO.

From more recent productions that have captured the audience's attention were the shots for the Netflix series "The Witcher" at Ogrodzieniec Castle [Fig.167]. They contributed to immense satisfaction within the local community, which was reflected in social media.

Fig. 167. Scenes from the series "The Witcher," source: Netflix.

Social attachment is influenced by mass events organized at the castles. The annual "Juromania"[668] event is highly popular, offering educational and entertainment activities for people of all ages. Thanks to this, the castles can be enjoyed by not only tourists but also the local community. Unfortunately, objects with a low level of preservation do not hold significant emotional value and are not included in cultural events. Very often, these objects are not widely known at all.

5.5. Artistic value

As Jan Tajchman explains, "In the case of architecture, skillfully combining functional, structural, and compositional aspects, as well as decorative solutions, is of fundamental importance"[669]. According to the author, due to their decorative solutions, Pieskowa Skala Castle and Pilica Castle hold high value. However, limited remnants and archival materials indicate a rich decoration inspired by Italian influences could also be found in Ogrodzieniec and Rabsztyn. Regarding composition, the layouts in Olsztyn and Ojców deserve attention.

[668] https://juromania.pl/ (access: 23.06.2023)

[669] J. Tajchman, Standardy w zakresie projektowania, realizacji i nadzorów prac konserwatorskich dotyczących zabytków architektury i budownictwa [Standards for the design, implementation and supervision of conservation works concerning architectural and construction monuments], Toruń-Warszawa, 2014, pp.9-10

Despite the low level of integrity, the castle ruins blend exceptionally picturesque with the surrounding greenery. The guardhouses are characterized by high structural value, given their locations. They are an example of extremely complex construction and building techniques, including the transportation of materials to the top of limestone rocks. These objects had no ground-level access.

5.6. Utilitarian value

Understood as the potential for adaptation to contemporary functions, including educational and promotional purposes, virtually all objects exhibit educational potential, even those with limited preservation. Objects with the highest integrity and few additions have the greatest tourism potential. An important factor is the presence of tourist infrastructure, including dining options, souvenir shops, parking facilities, and restrooms. All these conditions are met by Ogrodzieniec Castle, Rabsztyn Castle, Pieskowa Skala Castle, Bobolice Castle, and Korzkiew Castle. According to the author, the most underutilized potential in this regard is seen in Morsko Castle and Pilica Castle. Due to financial and legal issues, these are objects whose potential remains untapped. Considering economic values, there is an ongoing program to build the brand of the Jura region. One of its manifestations is the previously mentioned "Juromania" event..

5.7. Landscape value

In terms of landscape composition, the objects located in the Prądnik Valley within the Ojców National Park are particularly remarkable, namely Pieskowa Skala Castle and Ojcow Castle. Aside from being integrated into the landscape, these objects also offer picturesque views of the valley from their positions. Objects classified as panoramic viewpoints, including Olsztyn Castle, have a significant impact on the landscape. They define its distinctive features and serve as landmarks. A significant change has occurred in the case of Mirów Castle and Bobolice Castle. Their uniqueness was defined by their location and landscape connection. These objects were so close to each other that they could be admired simultaneously. The reconstruction of Bobolice Castle and ongoing work at Mirów Castle have irreversibly transformed this panorama. Negative effects of changes in the surroundings, although reversible, can also be observed at Ogrodzieniec Castle. The area beneath the castle is saturated with tourist and gastronomic attractions due to its increased commercial value, which disrupts the perception of the object in the landscape. It is largely obscured or visible only in the presence of gaudy advertising signs.

Summary

To sum up the different values discussed above the author decided to place them in the table [Tab.1] and confront them with the six conservation state groups (see p.218). This can show relationships within those group and underline the similarities and differences.

6. Conclusions

The Krakow-Częstochowa Upland, inhabited since Neanderthal times, represents an incredible wealth of both cultural and natural heritage that has shaped millennia of coexistence between nature and humans. With its landscape parks, nature reserves, the Ojcow National Park, and Natura 2000 areas, this region is a unique treasure not only on a national but also on a global scale.

Local communities play a fundamental role in shaping the region's landscape, preserving and passing down traditions, folklore, legends, and stories from generation to generation. The contemporary regional culture, deeply rooted in history and the landscape, is meticulously nurtured, helping to preserve the unique character of this place.

The diversity and uniqueness of the region attract tourists and enthusiasts of landscape exploration, offering various possibilities for discovery, relaxation, and specialized learning. Nevertheless, the harmonious tourist infrastructure is threatened by the development of mass culture and changes in the landscape, which could lead to degradation and the loss of the region's identity.

As an expression of intergenerational responsibility, the cultural landscape of the Krakow-Częstochowa Upland constitutes public heritage that requires awareness and care from its inhabitants. As Ortega y Gasset noted, our relationship with space reflects our identity. Therefore, due to its natural and cultural richness, this region deserves integrated protection to preserve its unique mosaic.

This area, rich in medieval defensive structures, castles, and fortifications, is a key element of Poland's cultural and historical heritage. Despite changes in ownership, expansion, and damage, the region still captivates with its diversity and cultural wealth, and integrated landscape conservation is crucial for preserving this place for future generations.

The factors influencing the distribution of castles in the Krakow-Częstochowa Upland are similar to those observed throughout Europe, with dominant natural influences. Castles in highland and lowland areas, as well as those characteristic of the Jura region, perched on rock formations and sentry posts on rocky outcrops, are identifiable types.

The distribution and typology of castles were shaped by natural conditions, the strategic location of the region on important trade routes, the development of borders, and the availability of materials. These factors, along with their historical, scientific, artistic, and practical values, contributed to the diversity and uniqueness of the castles, which in turn influenced their role in local culture and identity.

Changes in the natural environment and infrastructure development can affect the perception of these structures in the landscape. Therefore, there is a need for conscious management and protection of the landscape around these historic sites.

The history of conservation and restoration of historic monuments in Poland dates back to the late 19th century, but it is an ongoing and evolving process. To ensure the integrity and value of these monuments, efforts are made to restore their authenticity and authenticity, while also preserving their social and cultural roles.

Considering the uniqueness of the Krakow-Częstochowa Upland region, it is important that conservation and restoration work be carried out with respect for the historical identity and context of the place, taking into account the current needs of the local community and tourists.

Table 2. Valuation Summary, elaborated by the author

	Restored Castles after World War II	Castles Preserved as Permanent Ruins	Maintenance, Preservation, or Accentuation of Ruins	Castles Subjected to Conservation with Elements of Reconstruction	Castles Reconstructed at the Turn of the 20th and 21st Centuries	Historical Monuments Devoid of Conservation Protection
Authenticity of Substance	The castle has undergone multiple restorations and has received favorable reviews regarding the preservation of its original substance.	The absence of reconstructions has not compromised their historical fabric. They are characterized by the highest level of authenticity.	Minor additions do not diminish the authenticity of the substance. The only point of contention here is the finishing of the wall crown in Bydlin.	Contemporary additions clearly stand out against the limestone ruins.	They possess the lowest level of substance authenticity. New material is often difficult to distinguish from the historical fabric.	They exhibit the highest level of authenticity. The absence of conservation efforts has had a positive impact on this aspect.
Integrity	As one of the two groups comprising enclosed properties, it possesses all the elements.	They exhibit very low integrity, with some ruins being accentuated.	Low in comparison to the original design.	Low in comparison to the original design.	As one of the two groups, they are enclosed properties and have all the elements.	They have the lowest integrity.
Historical-Scientific Value	The castle boasts well-preserved historical substance and a protected urban layout.	These properties continue to be the subject of archaeological research.	High potential for scientific research, with many elements preserved.	Significant renovations of castles often involved alterations to the original substance and surroundings, which diminishes their value.	They have the lowest scientific value due to frequent distortions that alter the historical structure.	They demonstrate high value in terms of archaeological research.
Historical-Emotional Value	The castle is deeply ingrained in the public consciousness and has become a symbol of the region and the Ojców National Park, with significance extending beyond the local level.	Thanks to numerous events and the castle's appearance in a Netflix series, Ogrodzieniec Castle has the most supportive community.	Conversations with visitors indicate a strong attachment to Pilica Castle, which served, among other things, as a school and left a lasting impression on the local community.	Siewierz Castle and Rabsztyn Castle have become indicators of the region's attractiveness.	These castles have divided public opinion. The castle in Będzin, which has been in its current form the longest, evokes the least emotion.	These objects are often unknown and do not exist in the public consciousness.
Artistic Value	Pieskowa Skała Castle features rich ornamentation and decorative solutions.	Within this group, Ogrodzieniec Castle stands out for its preserved fragments of exceptional details.	Structurally valuable are the watchtowers and Morsko Castle, as well as the details in Pilica.	Within this group, Tenczyn Castle stands out due to the richness of its defensive elements.	There are few iconographic materials from the period before their ruination concerning this group.	Little is known about these objects, and their current artistic value is impossible to assess.
Utility Value	The castle has become a renowned brand that attracts numerous tourists each year.	This group of properties is often a venue for large summer events.	They have significant utility potential.	Reconstructed elements allow for the introduction of permanent exhibitions.	The high integrity of the properties allows for permanent and temporary exhibitions.	The relics have utility potential, although it remains untapped.
Landscape Value	Pieskowa Skała Castle is an example of a picturesque property located in the Prądnik Valley.	Their impact on the landscape has remained unchanged since the 17th century.	They blend harmoniously with the landscape in the most balanced manner.	Reconstructed towers serve as distinctive accents in the landscape.	They have dramatically transformed the landscape.	They often blend into the landscape, becoming a part of it, obscured by vegetation.

These efforts should be conducted in accordance with the principles of cultural heritage conservation, while also considering ecological, aesthetic, and functional aspects.

In recent decades, there has been a surge in efforts to preserve castles and ancient ruins in the Kraków-Częstochowa Upland. Some sites have been well-maintained, but others have been neglected, leading to architectural deterioration. Some restored fortifications from the mid-20th century now need further restoration. Changing environmental conditions, including climate change, urbanization, and land use changes, threaten these sites.

Climate change, rising temperatures, and extreme weather events can accelerate building material deterioration. Researchers are exploring advanced materials and climate-adaptive design to ensure long-term resilience. Efforts to protect architectural remnants in locations like Ostrężnik, Udorz, Biały Kościół, and the watchtower in Łutowiec are commendable. Overgrown vegetation is accelerating deterioration and obscuring original forms. Urgent steps are needed, including tree removal and structural protection.

In regions like Udorz, reconstruction and supplementation of missing sections are necessary. Without commitment to preservation, further decay is likely. Well-executed conservation actions can preserve relics for research and education.

Biały Kościół's ruins have improved due to archaeological and architectural research in the 1990s. However, comprehensive protection plans have not been fully realized, and the exposed fragments are deteriorating.

The watchtower in Łutowiec has nearly been completely destroyed and forgotten, highlighting the need for preservation.

Bąkowiec Castle in Morsko is deteriorating due to limited funding for conservation work, despite efforts to seek financial assistance.

Research is also needed for the object in Suliszowice, but access is restricted by private ownership. Conservation efforts should extend to the surroundings and exhibition zones of these sites. Special attention should be given to the castle in good technical condition but with significant issues in the surrounding area, including Ogrodzieniec, where changes are reversible but substantial, Bobolice and Mirów, where unfortunately the changes are irreversible due to a too small protected zone around the castle. Awareness should be raised, and the scope of protection should be carefully formulated when adding new objects to the heritage registry.

Today, private investors sometimes disregard historical and cultural values, emphasizing the need for vigilant oversight and cooperation between public and private stakeholders to preserve Poland's cultural heritage.

V. Proposal for Digital Representation of Castles in the Jurassic Belt

Based on the collected materials, a method for organizing data has been proposed, which can be utilized in further research and conservation as well as promotional activities.

This chapter presents this proposal for a digital ontology-based representation model aimed at supporting the representation and management of information and knowledge during activities related to the conservation of architectural heritage, particularly in the case of objects in the Jurassic belt. Despite the significant impact of Information and Communication Technologies (ICT) on architectural heritage, current approaches to their use often focus on creating tools and methodologies that are flexible and reusable. However, this often leads to the proposal of overly simplified procedures that do not meet expectations during conservation design. Therefore, each stage of the process, such as knowledge acquisition, value assessment, diagnostics, design, construction, and conservation, is considered separately, which unfortunately often negatively affects the final result.

The first section contains a description of the author's digital representation model, presenting its main elements, structure, and content. This includes both the theoretical foundations of the model and practical aspects of its implementation and use. The next section is dedicated to data acquisition methodology and the process of creating photogrammetric models. It provides a detailed description of techniques and tools used for data collection, as well as the necessary steps to create precise and faithful photogrammetric models, which serve as the foundation for further work. In the following part of the chapter, practical use of the model and data organization are presented using selected examples. Various usage scenarios are discussed, demonstrating the flexibility and versatility of the proposed model in the context of information and knowledge management regarding architectural heritage. The final section of the chapter focuses on the possibilities of applying the collected data and created models. Potential areas and projects in which knowledge and information gathered through the proposed model can bring the greatest benefits are discussed. Additionally, potential directions for further research and model development are explored. Some of the gathered information are also presented in the form of analog Object cards in the Annex (see. p……). Those and other necessary information may be stored in the proposed digital representation model.

The aim of this chapter is not only to present the theoretical foundations of the model but also to illustrate its practical application and potential in the context of the protection and conservation of architectural heritage.

1. Author's model of digital representation of Jurassic Castles

While information and communication technologies (ICT) have proven their effectiveness in certain aspects of representing historical architecture, like accurately depicting three-dimensional artifacts and digitally archiving documentation, there have been criticisms and constraints regarding their practicality in architectural heritage preservation projects. One such constraint is the excessive standardization found in current ICT-supported modeling approaches and tools, which fail to consider the unique and distinctive characteristics of historical architecture. Another limitation arises from the interdisciplinary nature of research and conservation in this field, involving various specialists, each employing their own models, techniques, tools, and terminology. This complexity makes it difficult to establish a cohesive ICT framework that can efficiently manage diverse information sharing and collaboration.

Given the intricate nature of the information needed to create a thorough portrayal and grasp of architectural heritage, the author proposes that a representation and knowledge management framework designed by experts in heritage conservation could gain advantages from incorporating information ontologies. In the realm of information technology, ontologies serve the purpose of establishing a consistent knowledge base rooted in a fundamental representation system, facilitating the modeling of a particular knowledge domain. These ontologies consist of various components such as "classes," "properties," and "relations." In essence, an ontology outlines the concepts relevant to a specific knowledge area, including their meanings, descriptions, and interconnections, thus forming a structured representation of content within a logical framework overseen by the project's domain experts[670].

These ontologies can encompass all the gathered information necessary for the implementation of a conservation project and simultaneously validate the way knowledge is presented. The construction of ontologies should be a collaborative effort involving computer experts and domain specialists. Computer experts, particularly those well-versed in ontology representation language (Web Ontology Language - OWL), develop programs and ensure logical coherence. On the other hand, domain specialists, who are experts in cultural heritage, provide the knowledge required to support the preservation of a historic structure, spanning from the project's inception to its ongoing use and maintenance. They oversee the ontology's structure and assess its appropriateness and suitability of content.

Formalizing such knowledge involves crafting precise definitions for the meanings of concepts and meticulously detailing the logical framework within which these meanings are represented. The objective is to scrutinize the description of both individual elements and relationships, encompassing both tangible and abstract aspects, which contributes to a deeper and more comprehensive comprehension of the knowledge domain. Additionally, this approach facilitates the management of the ongoing dialogue between analysis and interpretation, a characteristic feature of conservation projects[671].

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[670] T. Gruber, A translation approach to portable ontology specifications, Knowledge Acquisition 5 (2) (1993) 199–220.; N. Guarino, P. Giaretta, Ontologies and knowledge bases, towards a terminological clarification, [in:] N. Mars (Ed.), Towards Very Large Knowledge Bases: Knowledge Building and Knowledge Sharing, IOS Press, Amsterdam, 1995, pp. 25–32.

[671] D. Fiorani, Materiale/Immateriale. Frontiere del restauro, Mater. Strut. Prob. Conserv 5–6 (2014), pp.9–23.

Based on this model, in addition to considering building characteristics such as shape, construction, and materials (provided by architectural surveying, damage assessment, chemical, biological, or physical studies, etc.), indirect knowledge is also taken into account[672]. Indirect knowledge encompasses a variety of crucial assumptions derived from research carried out within the conservation project. Initially, the author assembles a dataset that should be integrated into the envisioned model through a process involving literature review and consultations with experts. To decide which ontological model to adopt for organizing the gathered data, a thorough grasp of their applications in analogous research endeavors has been acquired.

1.1. Related research

After conducting a thorough literature review, it was observed that there exist multiple ontological models related to cultural heritage that accommodate the inclusion of geometric data. However, none of these models were identified as effectively merging this aspect with intangible values or specifying the relationships between objects or their constituent elements. Among the prominent ontological models in this domain, CIDOC CRM[673], stands out as a highly advanced ontology that offers semantic frameworks for the integration, mediation, and accessibility of information[674] pertaining to cultural heritage. CIDOC CRM possesses the capability to manage various categories of information, including GLAM (galleries, libraries, archives, museums), and it aligns with ISO standards governing the realm of cultural heritage.

Several other ontological initiatives are concentrated on depicting cultural heritage within particular nations, including the Bulgarian ontology network CHH-OntoNet[675] and the General Catalog of the Italian Ministry of Culture[676]. Furthermore, the CURIOCITY ontology, which incorporates UNESCO's definitions and employs a three-tiered architectural structure, facilitating a modular approach, is worth noting. Additionally, there is the M.O.M. (Museum and Metadata)[677] ontology designed for the management of cultural heritage information.

It's important to highlight that these ontologies are created within the framework of cultural heritage administration and make use of diverse domain ontologies like CIDOC CRM, EDM, ORE, FOAF, DC, and SKOS as required[678]. Additionally, there have been trials aiming to employ ontology-based models for the portrayal of historical artifacts, particularly in areas such as architecture, engineering, and construction[679].

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672 S. Settis, L'illusione dei beni digitali, Boll. ICR 5 (2002), pp.18–20.

673 N. Crofts, M. Doerr, T. Gill, S. Stead, M. Stiff, Definition of the CIDOC Conceptual Reference Model, ICOM/CIDOC Documentation Standards Group e CIDOC CRM Special Interest Group, 2010.

674 B. Ranjgar, A.S. Niaraki, M. Shakeri, S. Choi, An ontological data model for points of interest (POI) in a cultural heritage site. Herit. Sci. 2022, 10, 22.

675 V.A. Ivanova, A. Stoyanova-Doycheva, S. Stoyanov, T. Glushkova, E. Doychev, Cyber-Physical-Social Systems and Applications: Part 1: Reference Architecture; LAP LAMBERT Academic Publishing: Saarland, Germany, 2019.

676 V.A.Carriero, A. Gangemi, M.L. Mancinelli, L. Marinucci, P.V.A.G. Nuzzolese, C. Veninata, ArCo: The Italian cultural heritage knowledge graph. In The Semantic Web—ISWC; C. Ghidini, O.Hartig, M. Maleshkova, V. Svátek, I.Cruz, A. Hogan, J. Song, M. Lefrançois, F. Gandon, Eds., Springer: Cham, Switzerland, 2019, pp. 36–52.

677 https://cuseum.com/blog/moma-and-the-exciting-possibilities-with-museum [access:22.04.2023]

678 A. Hajmoosaei, P. Skoric, Museum ontology-based metadata–M.O.M. In Proceedings of the 2016 IEEE Tenth International Conference on Semantic Computing (ICSC), Laguna Hills, CA, USA, 4–6 February 2016.

679 A.Pinto, Y. Cardinale, I. Dongo, R. Ticona-Herrera, An Ontology for Modeling Cultural Heritage Knowledge in Urban Tourism. IEEE Acces,s 2022.

While the CIDOC CRM model was primarily developed for cataloging the documentation of cultural heritage, other domain-specific ontologies have gradually been introduced to represent other aspects of the cultural heritage conservation process. For example, Cacciotti et al.[680] proposed the Monument Damage Information System (MONDIS), which focuses on an ontological framework that enables a systematic approach to documenting damaged historical objects, their diagnosis, and potential interventions.

While the literature on ontologies for cultural heritage is extensive, few attempts to apply an ontology-based approach to architectural heritage have been made. Agathos and Kapidakis [681] used the CIDOC CRM template to develop the Architectural Metadata Scheme (ARMOS) for cataloging architectural heritage, focusing particularly on the formal aspects of architectural design. In the context of the research process, Mecca et al.[682] proposed highly specific ontologies for the diagnostic process in earthen architecture to formalize various sets of guidelines for information.

1.2. Proposed model structure

Due to in-depth literature research, the decision was made to use the CIDOC CRM system due to its flexibility. Based on the author's experience, missing elements of the model can be supplemented through Building Information Modeling (BIM), which will also provide geometric data and can serve as a storage place for some of the collected materials, including photos, descriptions, and other graphic data.

The CIDOC CRM (Conceptual Reference Model) is an international ISO standard (ISO 21127:2006) developed by the International Committee for Documentation (CIDOC) of the International Council of Museums (ICOM). This model was created to facilitate the integration, communication, and exchange of information related to cultural heritage among different institutions and computer systems. CIDOC CRM is an ontology that offers a set of definitions and formal structures for describing relationships between cultural heritage objects and their multidimensional context, such as people, places, events, and production techniques.

The model is constructed with three categories of information: Classes (Entities), Properties, and Instances. It includes a set of classes representing various aspects of cultural heritage, such as Objects, Persons, Events, Places, Time, etc. Each class is denoted, for example, E1, E2, and so on. Classes are organized hierarchically, where general classes are at a higher level, and more specialized classes are subclasses. CIDOC CRM defines a series of properties that describe relationships between different classes. Each property has a specified range and domain, indicating which classes can be connected using that property. Properties

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[680] R. Cacciotti, M. Blasko, J. Valach, A diagnostic ontological model for damages to historical constructions, J. Cult. Herit. 16 (1) (2015) pp. 40–48.

[681] M. Agathos, S. Kapidakis, A meta-model agreement for architectural heritage, metadata and semantics research, Commun. Comput. Inf. Sci. 390, 2013, pp.384–395.

[682] S. Mecca, M. Masera, C. Cirinnà, Knowledge management approach for conservation of Earthen Architecture, in: Conference Proceedings of Joint CIB W65/W55/W86 Symposium, Rome, 2006.

and classes are not used directly but through their instances. Instances are specific occurrences of classes and properties, representing real objects, people, places, and so on.

A complement to this structure can be the Heritage Building Information Modeling (HBIM) model. HBIM is a specialized variant of Building Information Modeling (BIM) focused on managing information related to cultural heritage, especially historic buildings. The HBIM model enables the collection, management, and analysis of diverse information about architectural heritage objects.

In the HBIM (Heritage Building Information Modeling) model, it is possible to include precise three-dimensional geometric models of building elements, information about construction materials, data on the technical condition, and any structural damages. Additionally, this model allows for the integration of archival and historical documentation, such as drawings, photographs, and texts describing the history of changes and modifications to the building, emphasizing its cultural and historical value.

One of the key aspects of the HBIM model is the ability to include data related to conservation and restoration. It can contain records of conservation work carried out, information about the techniques and materials used, as well as plan for future conservation actions and interventions. This enables efficient management of the protection and maintenance process of the historic building.

The HBIM model also takes into account specifications and characteristics of materials used in the building, as well as information about construction and craftsmanship technologies employed during the original construction and subsequent interventions. This data is essential for understanding the unique properties and conservation requirements of heritage objects.

An important element of the HBIM model is also information about the use and management of the building. It includes data on security, fire protection systems, other technical installations, and information about maintenance and operational costs. The model also allows for the integration of results from structural, thermal, and acoustic analyses, as well as predictions regarding the future behavior of the building and the impact of external factors.

Additionally, the HBIM model enables the storage of data from 3D scanning and photogrammetry, including images, point cloud models, mesh models, and textures obtained from scanning data. These detailed representations of the building are essential for accurately documenting its current state and planning conservation work.

Finally, the HBIM model includes legal and administrative information, such as ownership documents, entries in the heritage register, conservation decisions, as well as contact and administrative details, enabling comprehensive management of all aspects of the heritage object.

Through this multidimensional data integration, the HBIM model facilitates conservation work, technical condition monitoring, as well as the promotion and education related to cultural heritage.

The arrangement of the utilized classes along with a description of their properties is located in the Annex.

As tools for data processing in the model, Protégé 5.6.2. was chosen for structuring data, and Autodesk Revit 2020 software for modeling. Below is a proposal for the organization of this model:

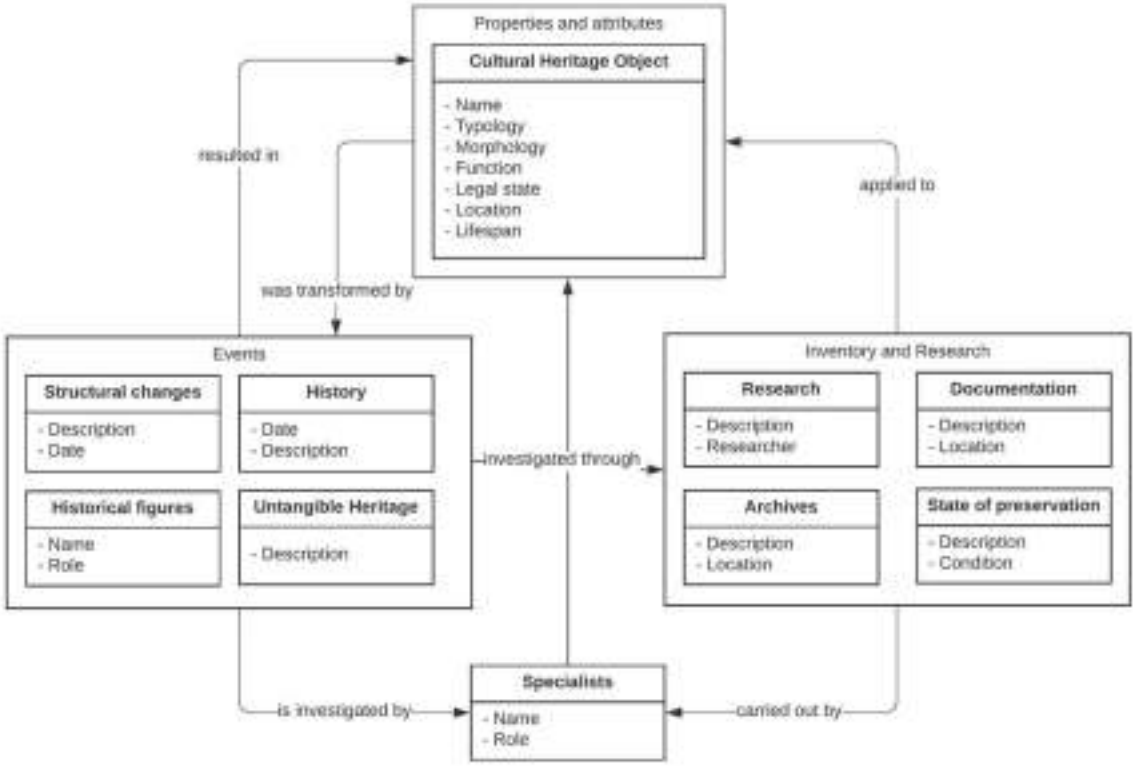

Fig. 168. Data Organization Schema in the Author's Representation Model, elaborated by the author

The representation model has been divided into four main sets of information: Properties and Attributes, Events, Inventory and Research, Specialists. Each set is assigned selected "Classes" from the CIDOC CRM model. Within them, "Dependences" and "Relations" between individual data can also be specified [Fig.168].

The Class: Documentation is based on the previously mentioned HBIM model created in Autodesk Revit software. Autodesk Revit is a Building Information Modeling (BIM) tool that allows for the creation of precise object representations. Here, data related to the object's geometry and selected dependencies will be included.

To maintain consistency between the CIDOC CRM ontology and the Autodesk Revit model, data management BIM software (such as Revit API or other tools) can be utilized. These tools allow for the mapping of attributes and relationships between the two layers. For example:

- A unique CIDOC CRM identifier can be assigned to each Revit element as its BIM identifier.
- Information about location (E53 Place) in CIDOC CRM can be mapped to geographic coordinates of Revit elements.
- The existence time of an object (P4) in CIDOC CRM can be assigned to dates in the Revit model.

The result is a holistic platform for which the author proposes the name **"CastleHIM (Castle Heritage Information Model)"** for the digital representation, documentation, and exploration of castles in the Kraków-Częstochowa Upland, serving research, conservation, and educational purposes.

2. Methodology for data acquisition for the model

Organizing digital data for defensive structures in the Kraków-Częstochowa Upland is key to effective analysis, management, and presentation of these resources. The proposed model mentioned above must include the mentioned data. As part of the conducted research, the author has obtained a substantial amount of information about the discussed objects, as described earlier. Based on the collected materials, a proprietary method for organizing data, utilizing object cards (see p. 324) as the result of detailed attributions, has been proposed. This method can be employed in further research, conservation efforts, and promotional activities, serving as an analog database for the model. Simultaneously, in-situ research was conducted, which also involved the inventory of objects using photogrammetry techniques. The next section outlines the process of collecting digital data that complements the representation model and serves as the basis for creating the H-BIM (Heritage Building Information Modeling) model in Autodesk Revit software.

2.1. Photogrammetric models - data processing

As part of the in-situ research, drone photography and photogrammetry techniques were employed. The drone model used in the study was the DJI Mavic 2 Pro, equipped with a lens with an aperture range of f/2.8-f/11 and a 4K resolution camera (3840×2160) capable of recording in Dlog-M (10-bit) color mode and supporting HDR video (HLG 10-bit).

Digital photogrammetry has a significant advantage in quickly acquiring measurement data using relatively inexpensive equipment. Since the flights were conducted in an urban area adjacent to single-family homes, which constitute the city center, the flights were conducted following the national scenario NSTS-01. According to regulations, the flights were carried out by a certified UAV pilot wearing a reflective vest, and safety and emergency procedures were followed. The flights were recorded using the Droneradar application. In the case of flights conducted in wooded areas, they were classified as Open category flights.

Stage 1

To conduct the aerial surveys, PIX4D software was utilized. To ensure the highest quality model, flights were conducted around noon whenever possible, taking into account weather conditions and object accessibility. The flights were pre-planned to ensure the highest level of safety and to increase the speed and efficiency of fieldwork [Fig.169]. The mission plans prepared for the flights assumed a double grid coverage with an 80% overlap of images. Camera parameters were set at an 80-degree angle. Additionally, a circular mission was conducted with the camera set at a 4-degree angle. An exception was made for the Bąkowiec Castle in Morsko. Due to the large number of trees and a very sunny day, a double grid

coverage flight was prepared at 80 degrees and 45 degrees angles, supplemented by a circular mission with a 4-degree camera angle. Detailed parameters for all missions and their results can be found in the Technical Flight Summary in the Annex (see p.324).

The altitude at which the flights were conducted depended on the object's height, the amount of vegetation, and the expected model quality. The speed of all flights was set to the lowest available in the software.

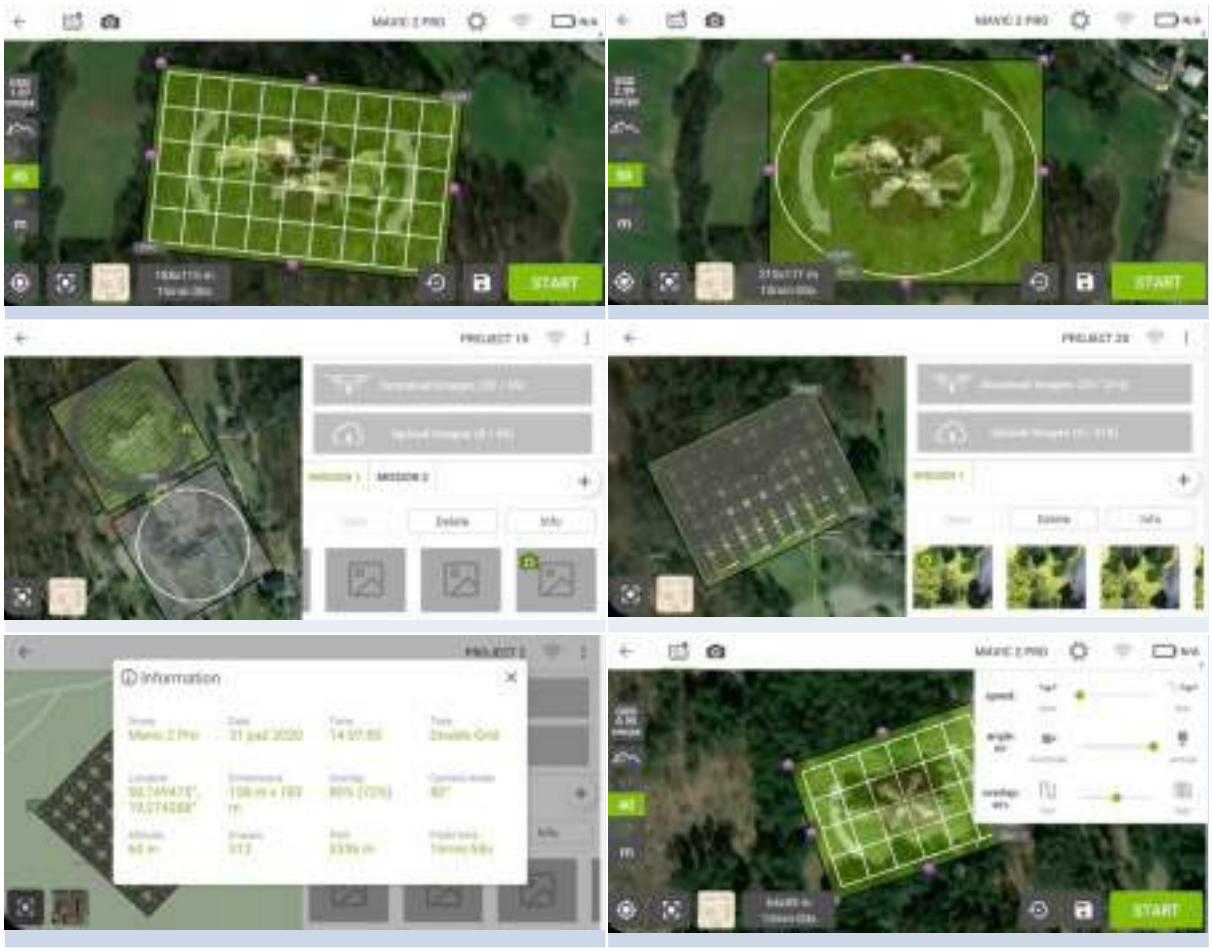

Fig. 169. Stage 1. Photogrammetric flight plans for Pilcza Castle, Bąkowiec Castle, and the watchtower in Ryczów, elaborated by the author in Pix4D.

Stage 2

The obtained photographic data and calibration results allowed for the implementation of the 3D modeling process. In this regard, specialized software, AgiSoft Metashape, was used, which enables the generation of three-dimensional models from automatically generated point clouds [Fig.170]. In the process of creating point clouds, after approving the quality of the captured images, a model with a small number of Tie Points was prepared first. Subsequently, a Dense Cloud was created and subjected to manual cleaning. Some models, due to their complexity, required a different point cloud creation process. This group included the ruins of Olsztyn Castle, for which photos were taken using two different drones: DJI Mavic 2 Pro and DJI Phantom 4 Pro. As a result, two separate point clouds were created, which were then manually aligned using markers [Fig. 170 - Fig. 176].

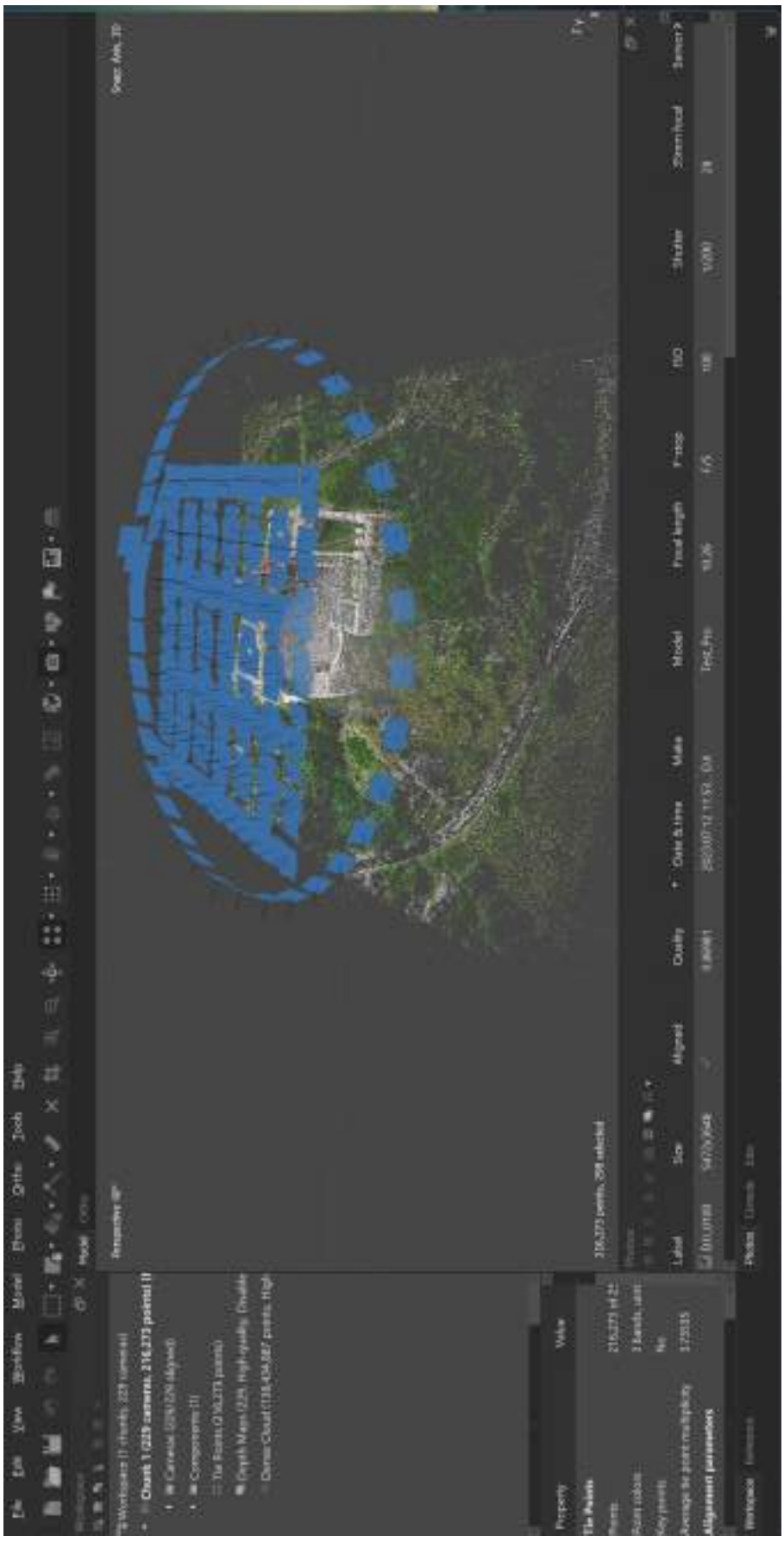

Fig. 170. Stage 2. Location of cameras for Rabsztyn Castle, elaborated by the author

Fig. 171. Stage 2. Tie points for Rabsztyn Castle, elaborated by the author

Fig. 172. Stage 2. Dense Cloud for Rabsztyn Castle, elaborated by the author

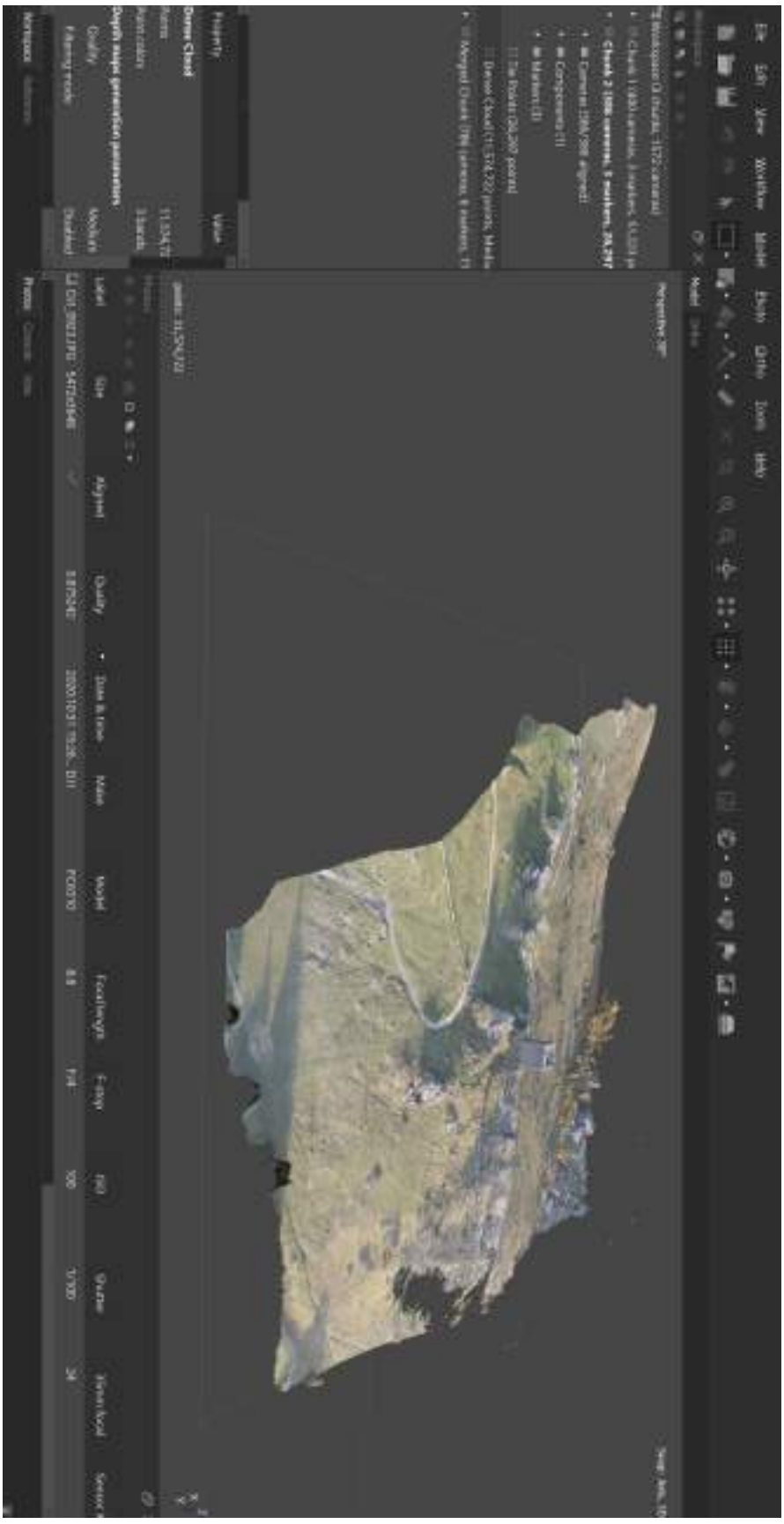

Fig. 173. Stage 2. Partial model for Olsztyn Castle, elaborated by the author

Fig. 174. Stage 2. Second half of Olsztyn Castle, elaborated by the author

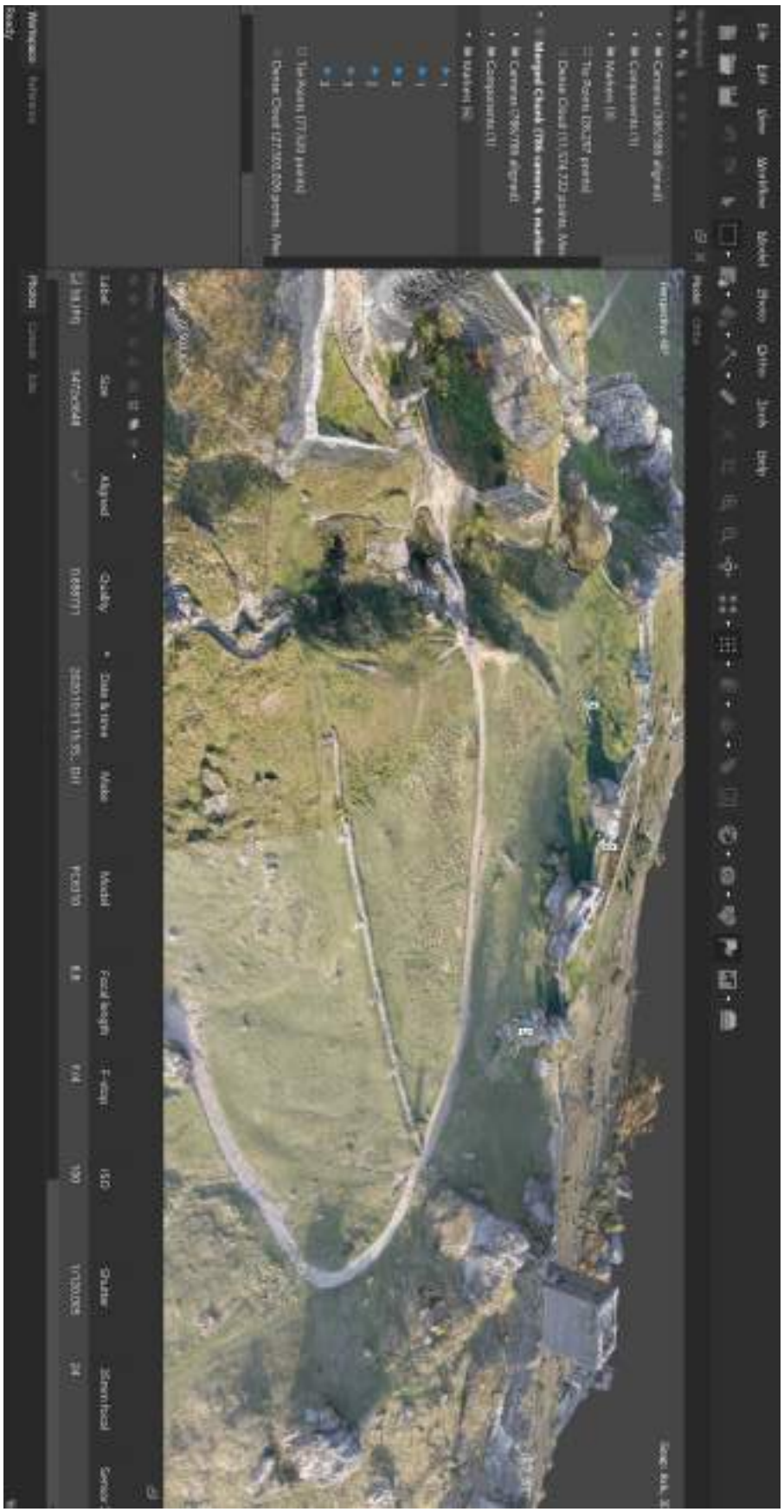

Fig. 175. Stage 2. Point cloud creation process by common points for Olsztyn Castle, elaborated by the author in Agisoft Metashape

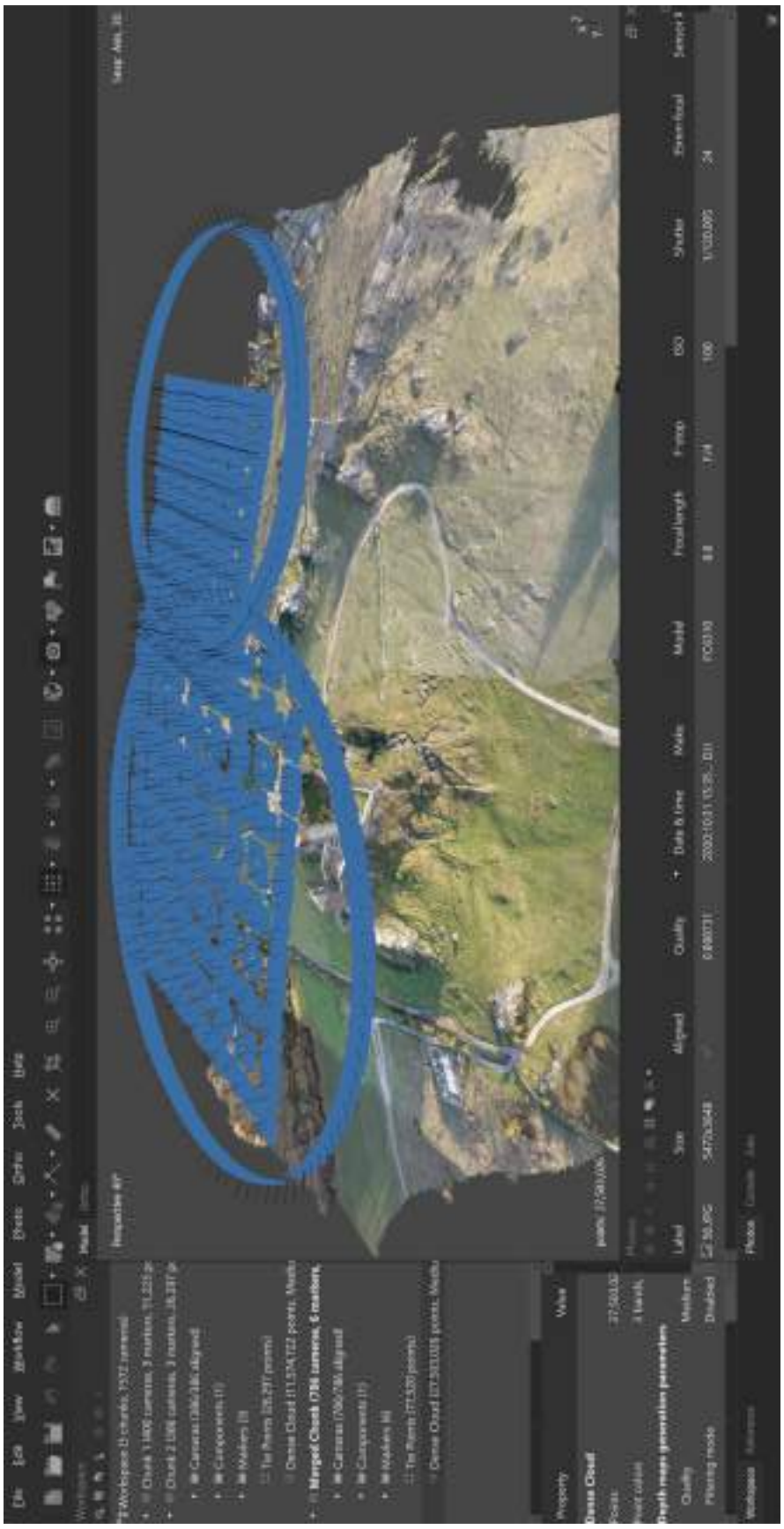

Fig. 175A. Stage 2. Stitched model with camera locations for Olsztyn Castle, elaborated by the author in Agisoft Metashape

Stage 3

In addition to the preservation and restoration efforts discussed earlier, it's worth considering a forward-looking approach that can greatly contribute to educational and outreach endeavors. This approach involves the development of mesh models generated from the collected point clouds. The quality of these models' textures is contingent upon the caliber of the photos captured during the scanning process and the parameters set within the Agisoft Metashape software, which plays a pivotal role in this context. Notably, the models have been primarily constructed based on the Dense Cloud, although it's worth mentioning the possibility of creating them using the Tie Points and Depth Maps clouds as well [Fig.176-177].

What's particularly important is that all these models have been exported in .LAS format and thoughtfully integrated into a database hosted on the SketchFab website. This innovative step allows for convenient viewing and interaction with each individual model that has been meticulously developed as part of this comprehensive dissertation project. It's important to note that access to these models is restricted solely to those with the designated link, ensuring that they remain secure and are not visible to other users on the platform.

This approach opens up a world of possibilities for not only scholars and researchers but also for educators, students, and the broader public. These immersive 3D models can serve as powerful educational tools, enabling individuals to explore and learn about these historical sites in a dynamic and engaging manner. Moreover, they can facilitate remote access to cultural heritage, transcending geographical limitations and providing a virtual window into the past. Such initiatives align with the broader goal of democratizing access to our cultural heritage and fostering a deeper appreciation for history and preservation efforts among people of all backgrounds and ages.

Fig. 176. Stage 3. Process of creating a polygonal mesh for Rabsztyn Castle, elaborated by the author in Agisoft Metashape

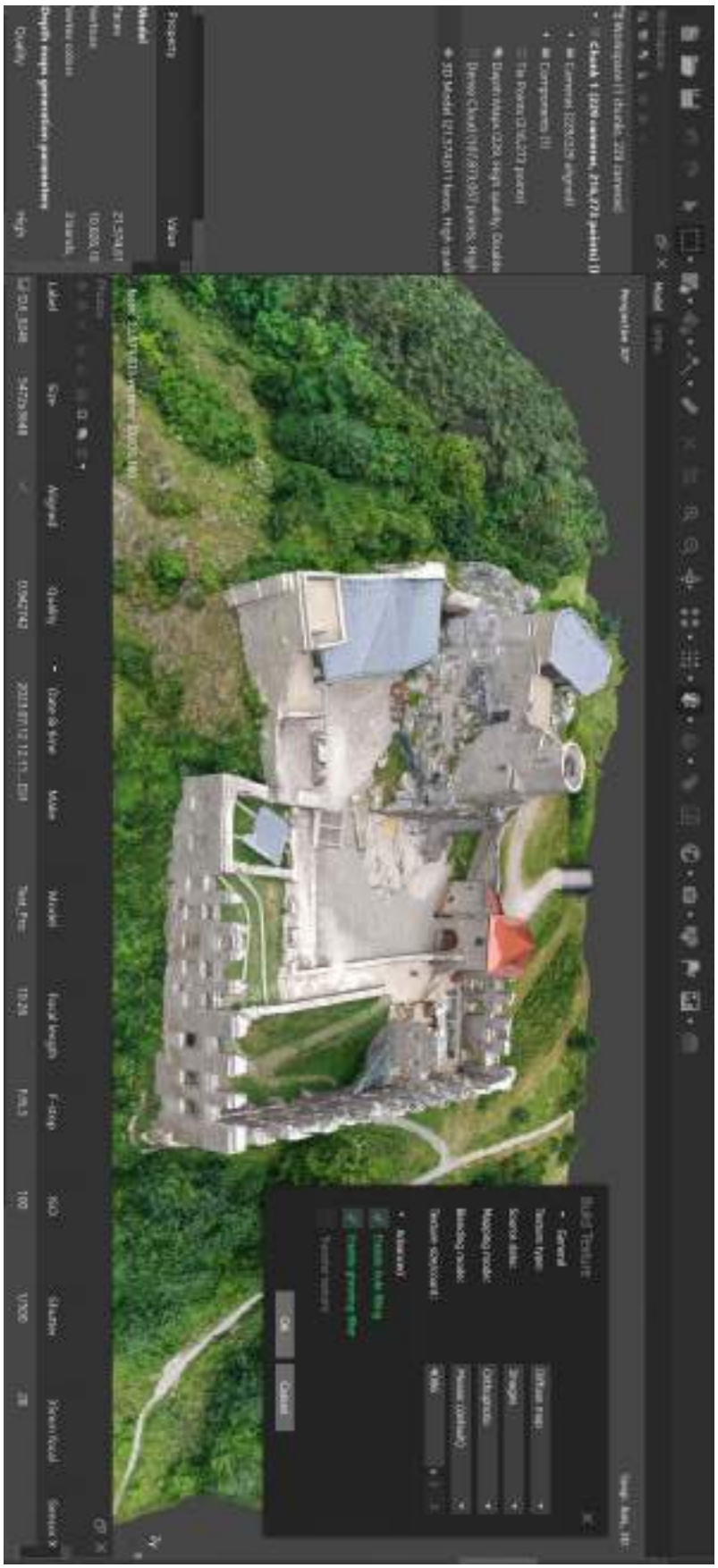

Fig. 177. Stage 3. Process of creating textures for Rabsztyn Castle, elaborated by the author in Agisoft Metashape

Fig. 178. Rabsztyn Castle, 229 photos, 138 434 887 points, elaborated by the author in Agisoft Metashape

2.2. Photogrammetric models - overview

In this section of the doctoral thesis, a comparison of photogrammetric models created for an in-depth analysis and interpretation of spatial data collected during the research is presented. The aim of this comparison is to provide a clear and comparative analysis of different models generated based on various parameters and datasets. The tables contain key information about each model, including the number of photos used to create it and the point cloud quality, which is an indicator of the model's precision and accuracy. This allows for the evaluation of not only the quality of the model itself but also the effectiveness of the methodology used to generate it. As a result, the reader gains a fuller understanding of both the potential and limitations of photogrammetry in the context of the research conducted in this work [Fig178-Fig.194].

More precise information about each flight parameters can be found in the Annex at the end of this dissertation. Those include time of the flight and settings of the camera.

Not all the castles have been photographed for the models due to complicated locations requiring probably different tools such as laser scanning or due to lack of agreement from the owner. Fortunately some models could be obtained from private collectors and added to the database. This may also allow to collect bigger data set also from the previous years before this research was conducted to compare and understand the structural changes on the objects.

The models are available at the author's account on Sketchfab: https://sketchfab.com/magdalenawalek

Fig. 179. Siewierz Castle, 225 photos, 160 804 257 points, elaborated by the author in Agisoft Metashape

Fig. 180. Olsztyn Castle, 786 photos, 27 503 026 points, elaborated by the author in Agisoft Metashape

Fig. 181. Przewodziszowice Watchtower, 176 photos, 83 706 843 points, elaborated by the author in Agisoft Metashape

Fig. 182. Łutowiec Watchtower, 65 photos 43 257 413 points, elaborated by the author in Agisoft Metashape

Fig. 183. Mirów Castle, mesh model, source: Sketchfab.com, sold for the database by R. Szymaniuk

Fig. 184. Bobolice Castle, mesh model, source: Sketchfab.com, sold for the database by R. Szymaniuk

Fig. 185. Morsko Castler, 396 photos, 547 654 041 points, elaborated by the author in Agisoft Metashape

Fig. 186. Ogrodzieniec Castle, mesh model, source: Sketchfab.com, sold for the database by R. Szymaniuk

Fig. 187. Będzin Castle, 87 photos, 12 794 504 points, elaborated by the author in Agisoft Metashape

Fig. 190. Ryczów Watchtower, 222 photos, 92 453 928 points, elaborated by the author in Agisoft Metashape

Fig. 191. Pilcza Castle, 309 photos, 141 319 765 points, elaborated by the author in Agisoft Metashape

Fig. 192. Bydlin Castle, 193 photos, 95 780 617 points, elaborated by the author in Agisoft Metashape

Fig. 193. Sławków Castle, 225 photos, 89 561 370 points, elaborated by the author in Agisoft Metashape

Fig. 194. Sławków Castle, 339 photos, 123 162 571 points, elaborated by the author in Agisoft Metashape

3. CastleHIM model - data organization

The process of modeling information in the Protege software was a crucial step in creating the HBIM model. After applying the CIDOC CRM ontology, it became possible to structure and organize the collected data. Importing the ontology into the Protege software ensured not only consistency but also data interoperability, which formed the basis for further work on the model. Building upon the proposed structure, an advanced database was created, allowing for efficient categorization, analysis, and processing of information. Implementing this process in Protege facilitated the later integration of geometric, material, and historical data in the HBIM model, reinforcing the value and precision of the gathered knowledge about the studied object. Integration with the CIDOC CRM ontology also ensured that the model complied with international standards for cultural heritage documentation, significantly enhancing its value and functionality for specialists from various fields [Fig.195].

In the process of developing the model, the Protege program was utilized for precise and systematic data modeling. This process began with the importation of the CIDOC CRM ontology, which served as the foundation and structural framework for organizing the collected information. Subsequently, the gathered data was divided into four main sets of information defined as: Properties and Attributes, Events, Inventory and Research, and Specialists. For each of these sets, relevant classes from the CIDOC CRM ontology were assigned, enabling a clear and systematic structuring of the data. Additionally, dependencies and relationships between individual pieces of data were identified, allowing for the creation of multidimensional connections and relationships between different elements of information [Fig.197 and 198].

Special attention was devoted to the "Documentation" class, which served as one of the main tools for integrating data into the HBIM model. Within this class, information and data from the Autodesk Revit model were included, allowing for the creation of accurate representations of objects and their geometry, as well as revealing selected dependencies.

The process of creating the HBIM model, initiated based on the point cloud, gathered source materials, and in-situ research, represented a comprehensive approach that combined cutting-edge technologies with in-depth historical analysis. In the initial phase of this endeavor, a priority was to assemble an extensive database related to the object, which included 3D scanning to create a detailed point cloud [Fig.199], as well as the acquisition of all available source materials, such as drawings, photographs, archival documentation, and witness accounts [Fig.195-Fig.201].

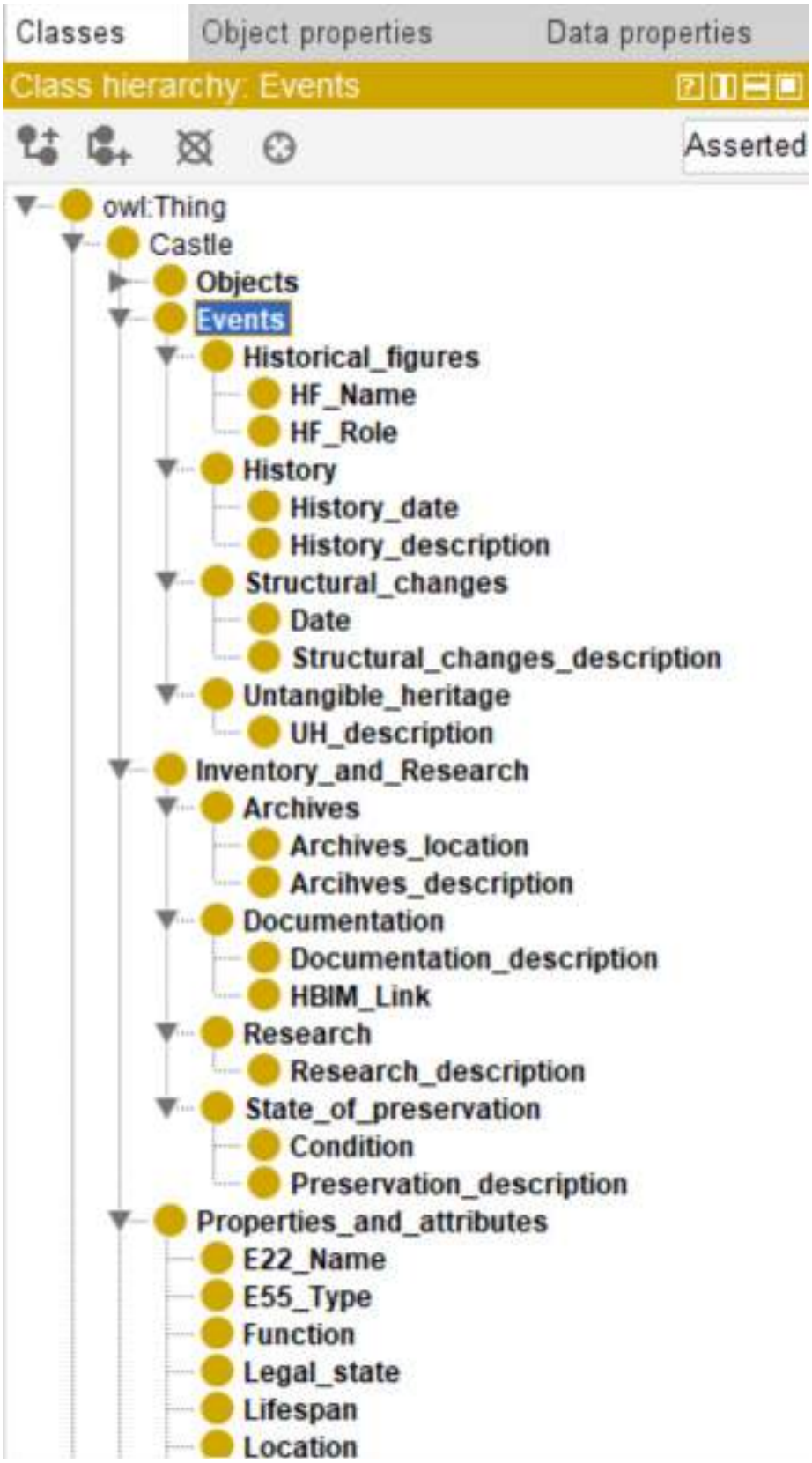

Fig. 195. Data model structure in the Protege program p.1, elaborated by the author

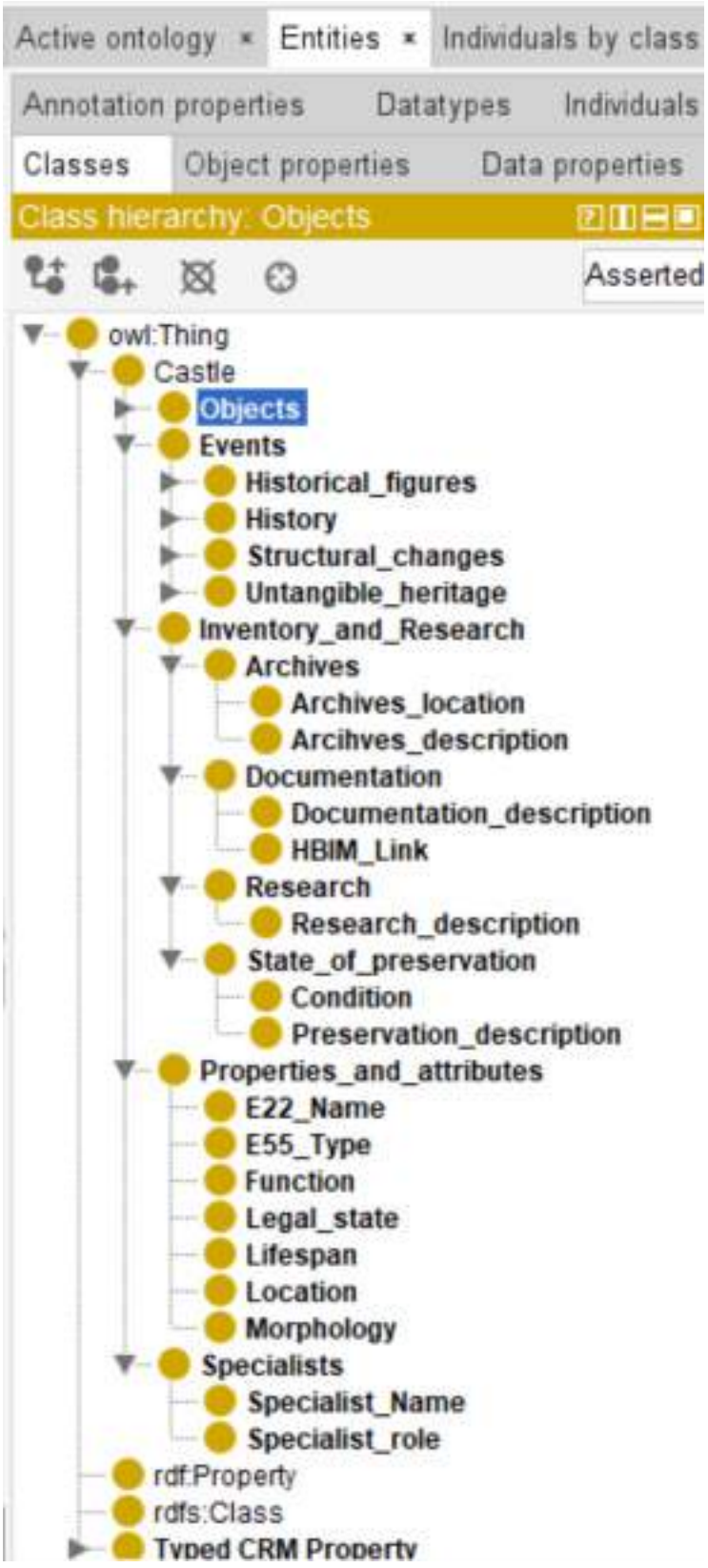

Fig. 196. Data model structure in the Protege program p.2, elaborated by the author

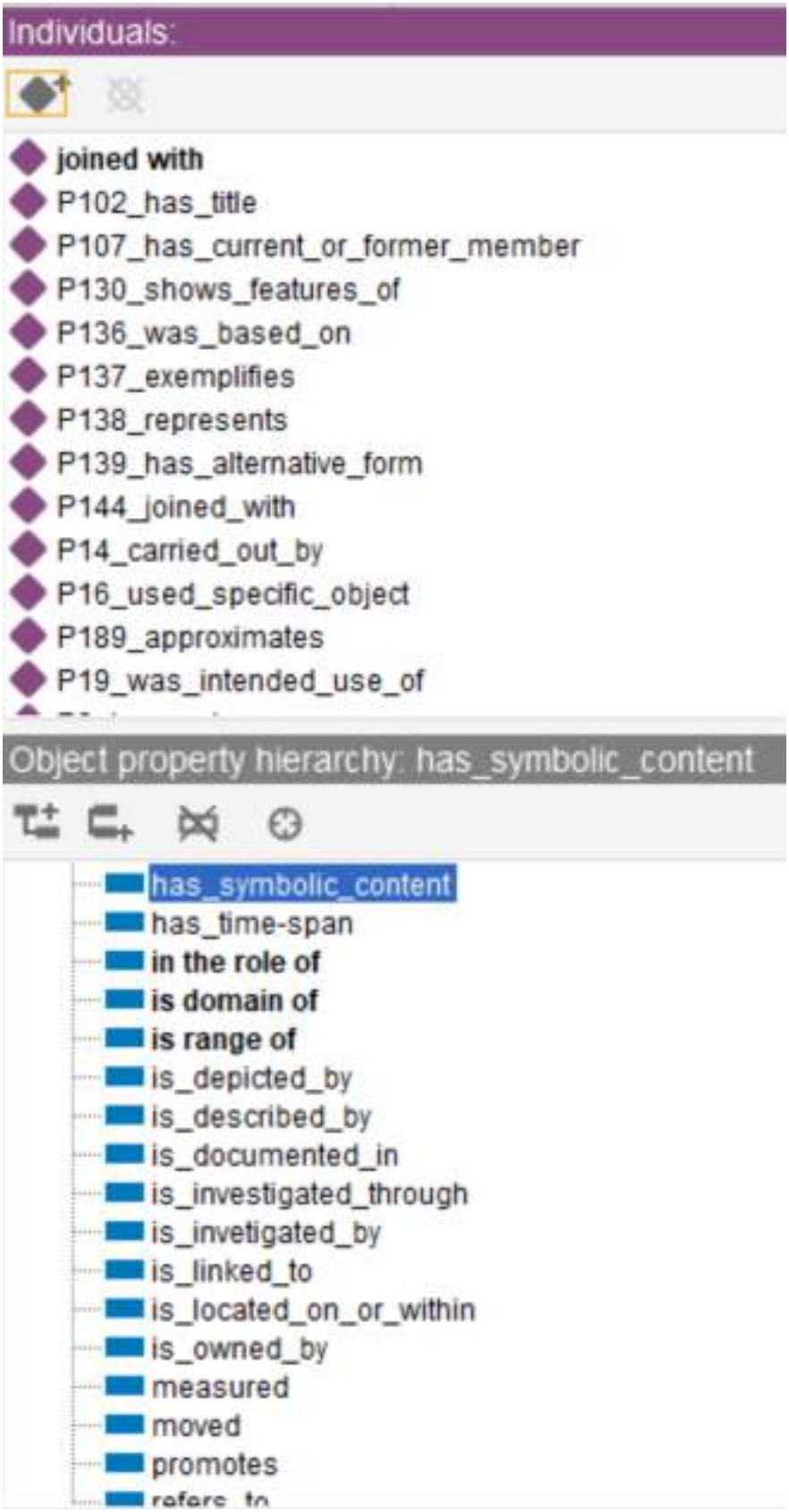

Fig. 197. Object properties and relationships p.1 , elaborated by the author

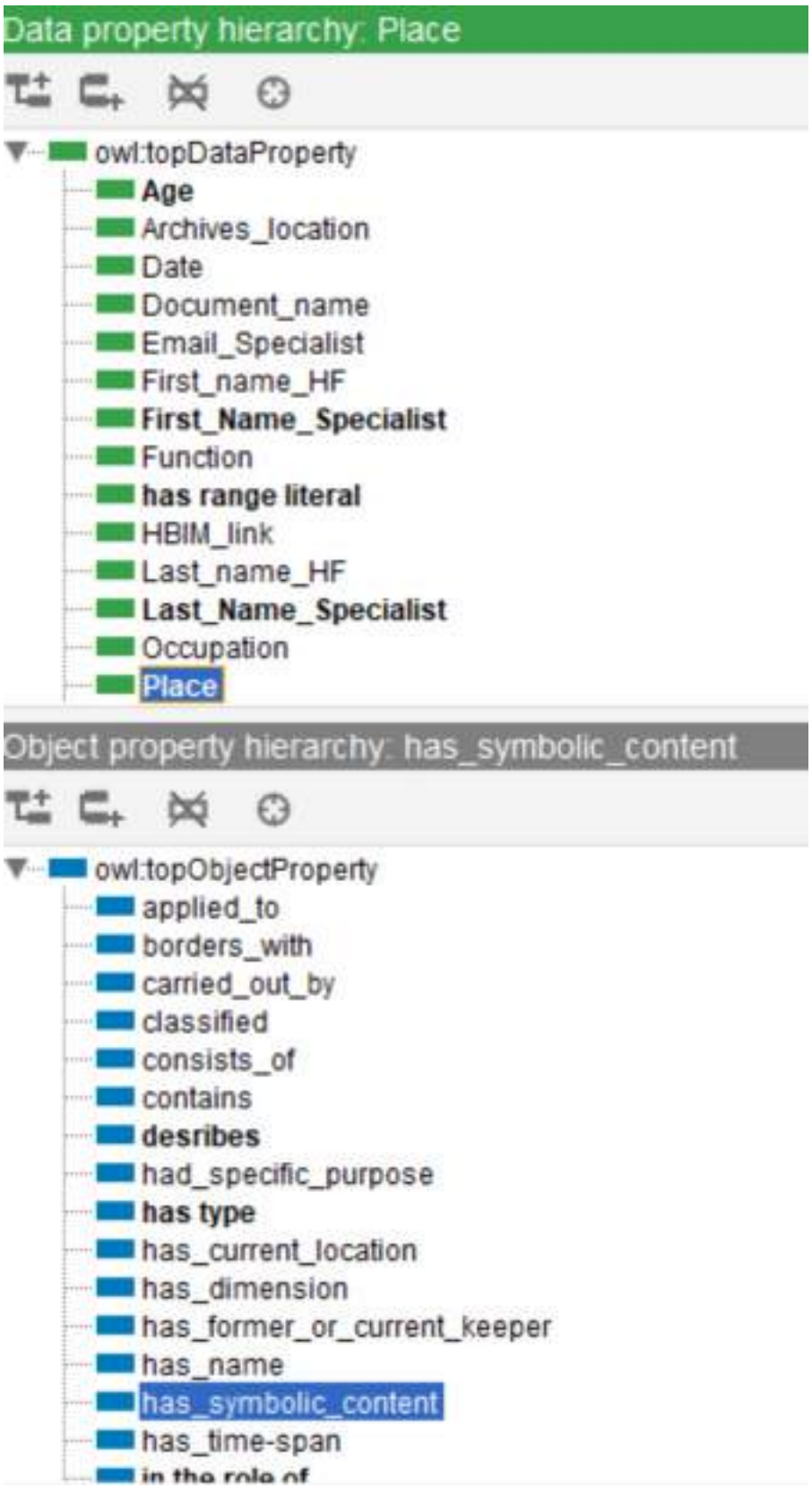

Fig. 198. Object properties and relationships p.2, elaborated by the author

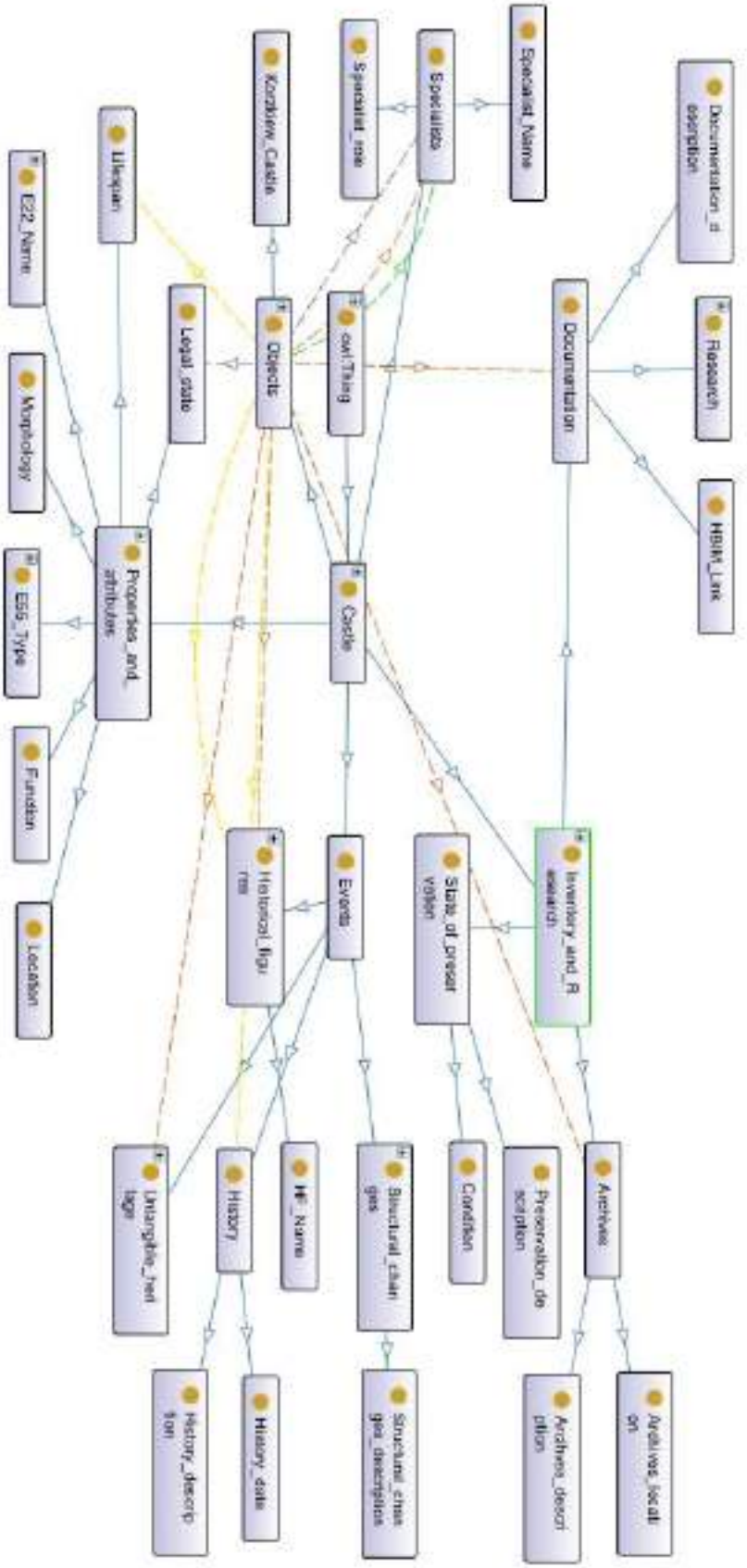

Fig.199. Diagram of relationships between classes, elaborated by the author in Protege

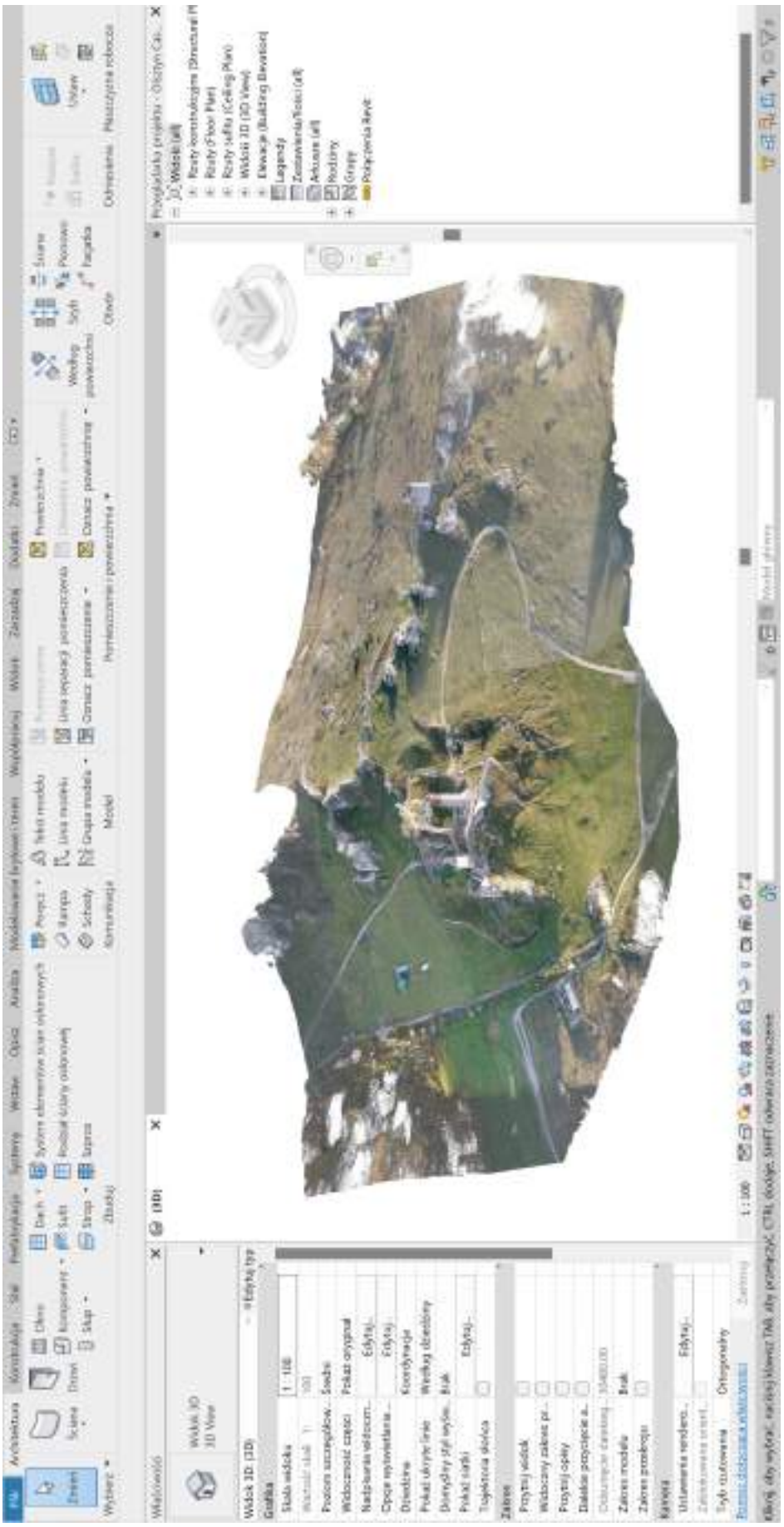

Fig.200. Creating the model based on the point cloud, elaborated by the author

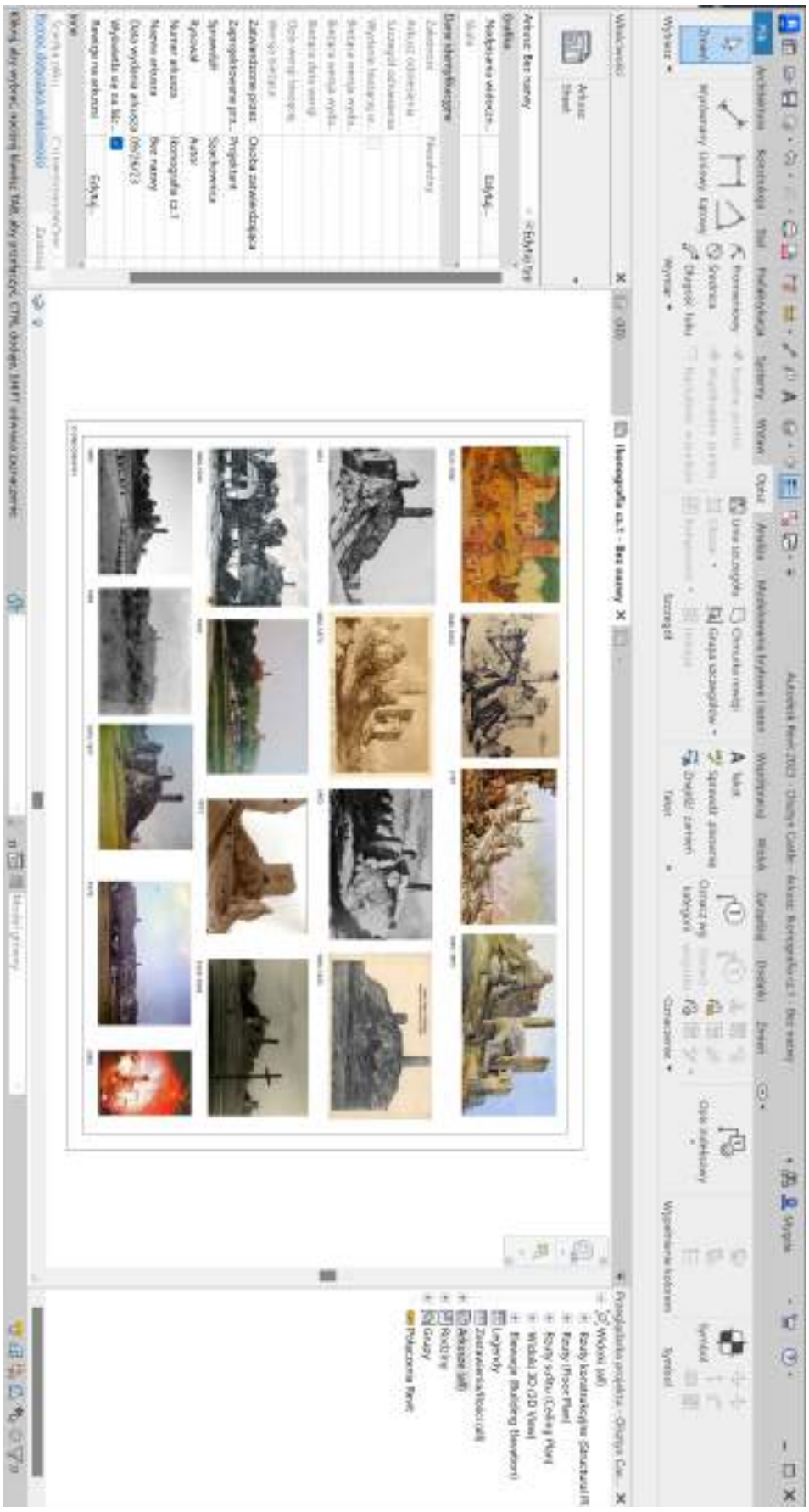

Fig. 201. Augmenting the model with archival materials including iconography, elaborated by the author

Simultaneously with the data collection process, detailed in-situ research was conducted. These studies proved to be crucial, allowing for the identification of original elements, recognition of subsequent modifications, and assessment of the structural condition. They made it possible to fully understand the historical value and uniqueness of the object.

The next stage was the 3D modeling process. By using the point cloud and the gathered source materials, a detailed three-dimensional model of the object was created. In this phase, not only the form and structure of the object were taken into account but also the textures and materials from which the monument was constructed.

Upon completing the 3D modeling process, the data integration phase followed. The 3D model was then combined with the information obtained from in-situ research and source materials, resulting in the creation of the HBIM model - a comprehensive tool that integrates geometric, material, and historical aspects.

In the HBIM model for the castles in the Krakow-Częstochowa Upland, the first crucial element is the inclusion of accurate three-dimensional geometric models of the building elements. These models not only represent the physical dimensions, form, and structure of the buildings but also take into account the unique architectural and artistic features that give the monument its characteristic identity. They are created using advanced 3D scanning and photogrammetry techniques, allowing for the capture of the finest details and nuances of the structure. Once integrated into the HBIM model, these models serve as the foundation for further analysis and documentation, enabling precise assessments of the object's condition, identification of areas requiring conservation intervention, and the planning and simulation of future restoration and conservation work. As a result, specialists have the opportunity for an in-depth analysis and assessment of the historic object, which is essential for the protection and preservation of its cultural and historical value for future generations.

In the segment related to material and construction data, the HBIM model stores essential information about the diversity of materials used in each part of the castle. It includes detailed data not only on the types of stone, wood, or metal but also precise information about craftsmanship and construction techniques employed during both the original construction and subsequent interventions or conservation work. Such an approach not only allows an understanding of how the castle was built and how it evolved over the centuries but also provides crucial data necessary for planning and executing conservation, renovation, and maintenance work on the monument.

Within the HBIM model, detailed information about the technical condition of individual castle elements is collected and systematically updated. Records related to current damage, their extent, and the history of repairs and interventions enable continuous monitoring of the structural condition of the object. Such a comprehensive database is indispensable for specialists, both for the ongoing assessment of the technical condition of the monument and for planning future conservation work. It also serves as an important source of knowledge about the changing condition of the object over the years and allows for the tracking of the history of all interventions and repairs. [Fig. 202 and 203]

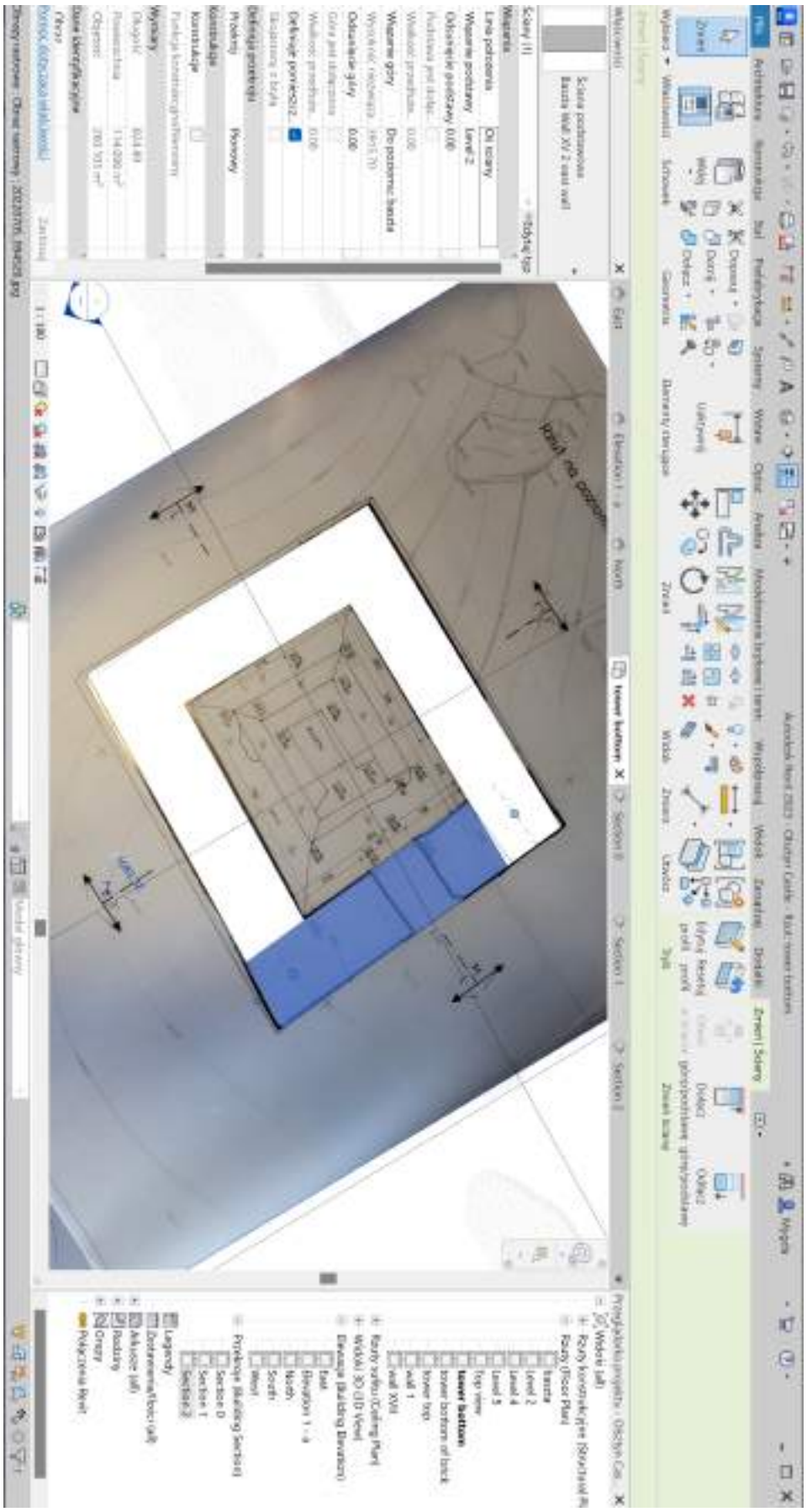

Fig. 202. Modeling Based on Point Cloud and Archival Research, elaborated by the author

Fig. 203. Modeling Based on Point Cloud and Archival Research, elaborated by the author

The irregularity of the elements made it impossible to create a library of parametric models. Objects do not have repeatable elements or common elements with other objects in the research group. Each element was modeled manually.

The HBIM model serves as a platform for the integration of a wide range of archival and historical documentation. It includes not only drawings, plans, and photographs but also textual descriptions, reports, and all other available materials that testify to the history and evolution of the castle. Access to such an extensive, integrated database is invaluable for researchers, conservators, and all those interested in understanding the multidimensional cultural and historical value of the castle.

Integration of information about performed and planned conservation and restoration work is another key element of the HBIM model. It includes detailed records of the techniques and materials used, as well as changes that have been made to the structure of the object. Access to this data allows not only for monitoring and planning the conservation process but also for a deep understanding and appreciation of the unique properties and conservation requirements of heritage objects. This enables informed and responsible management of the monument, taking into account its unique values and needs.

Data related to the use and management of the building are an essential part of the HBIM model. This model includes information about security measures, fire protection systems, other technical installations, as well as data regarding maintenance and operational costs. Access to this data facilitates current facility management, allows for the planning of conservation and renovation work, and enables the monitoring of maintenance-related expenses.

The HBIM model also provides storage for data obtained through advanced technologies such as 3D scanning and photogrammetry. It contains images, point cloud models, mesh models, and textures derived from scanning data. These detailed representations of the building are indispensable for accurately documenting its current state, planning future conservation work, and conducting structural analysis of the structure. They allow for the precise visualization of each element of the building, which is essential for effectively managing the heritage preservation and maintenance process [Fig.183].

The CastleHIM model is characterized by a high level of interactivity, allowing various user groups such as conservators, historians, or engineers to gain a deep understanding of the structure and details of the object. The model's availability to a wide audience enables its use for educational and research purposes, simultaneously promoting the cultural heritage of the region.

It is a dynamic tool capable of regular updates and adaptation in response to newly discovered data, research, and changing object management needs. The flexibility of this technology allows for continuous improvement and customization of the model, resulting in its relevance and utility in various fields [Fig.204].

Fig. 204. Ability to include information about damages, elaborated by the author in Revit

Fig. 205. The ability to date elements that are part of the complex elaborated by the author in Revit

In the Protege program, users have the ability to add links to HBIM (Heritage Building Information Modeling) models as direct references for each object. This approach provides easy and quick access to key information and resources related to a specific object. HBIM models are of utmost importance in the context of managing information about historic buildings, allowing for efficient storage, analysis, and sharing of data.

Individual elements within the HBIM model, such as walls, ceilings, floors, or architectural details, have their unique references within the database structure. This means that each element is identified and located in a way that allows for quick retrieval and access. As a result, Protege users can not only browse and analyze data from the HBIM model but also easily link it to other informational resources.

Enabling fast and easy access to individual elements of the HBIM model through the Protege program is crucial for many professionals, such as heritage conservators, architects, and engineers. This allows them to efficiently manage data related to architectural heritage, which is essential for the preservation and protection of the historical value of buildings, as well as for the planning and execution of conservation and restoration work [Fig.205].

Additionally, the database structure in which HBIM models are stored is designed to facilitate easy integration with other systems and applications. This means that the information contained in HBIM models can be easily shared and utilized at various stages of managing a historic building, from the design phase through implementation, and on to maintenance and conservation stages. All of this makes using Protege for managing HBIM models exceptionally flexible and efficient [Fig.206-Fig.209].

Fig.206. Material Information, elaborated by the author in Revit

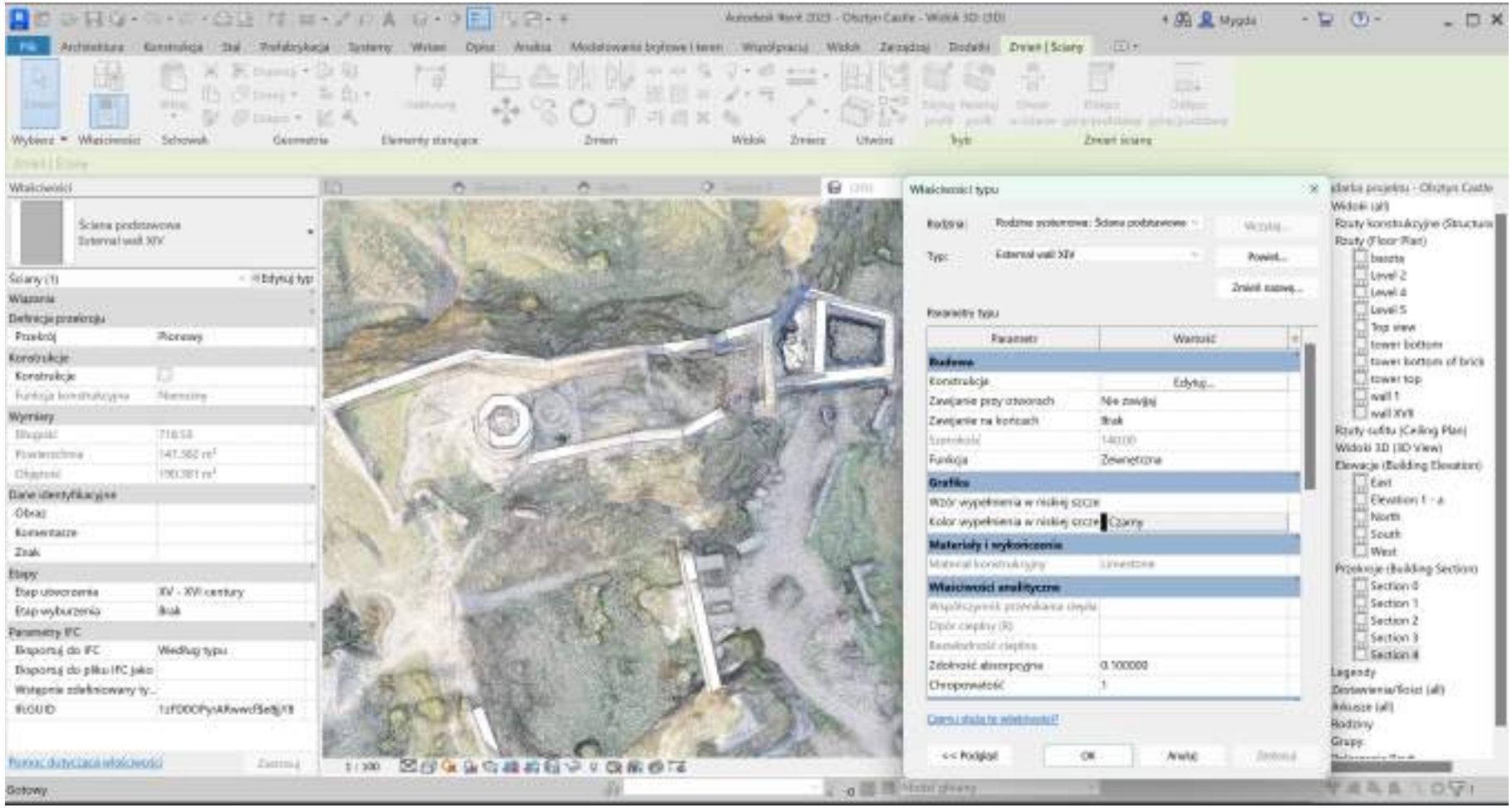

Fig. 207. Material Parameters, elaborated by the author in Revit

Fig. 208. Link to the HBIM Model in the CastleHIM Database, elaborated by the author

Fig.209. Object Morphology, elaborated by the author

4. Conclusions

The process of information modeling in the Protege program served as the foundation for creating the HBIM model. The integration of the CIDOC CRM ontology allowed for the effective structuring and organization of data, ensuring their consistency and interoperability. This resulted in the development of an advanced database that enables effective categorization, analysis, and processing of information, which was necessary for integrating geometric, material, and historical data in the HBIM model.

The use of technologies such as 3D scanning and in-situ investigations was crucial for obtaining detailed information about the studied object. These methods allowed for the accurate representation of the form, structure, and textures of the heritage site, as well as the identification of original elements, later modifications, and assessment of the technical condition of the structure.

Integration with the CIDOC CRM ontology ensured the compliance of the model with international standards for cultural heritage documentation. This significantly increased the value and functionality of the HBIM model for professionals from various fields, enabling more efficient and informed heritage management.

The digital representation of the fortification heritage of the Kraków-Częstochowa Upland in the CastleHIM database is only a proposal. Nevertheless, the issue of preserving these resources is of great importance. Regardless of the tools used, digitization processes should be implemented for these objects, as well as for archives whose state of preservation is beginning to deteriorate.

Fig. 210. Rabsztyn Castle 3D model, elaborated by the author

VI. Summary

1. Discussion and Final Reflections

To substantiate the hypothesis, further tests and investigations need to be conducted in collaboration with specialists in the relevant field. As part of the discussion, it is advisable to begin by addressing the research questions that were formulated at the outset of the study.

1. **What are the main gaps in the current knowledge about the objects located in the area of the Jurassic belt?**

The main gaps in the current knowledge about the objects located in the area of the Jurassic belt revolve around the lack of comprehensive and organized data. There is often a shortage of detailed information regarding the historical, architectural, and cultural significance of individual objects within this region.

2. **What is the state of research on individual objects?**

The state of research on individual objects varies significantly. While some prominent sites may have received substantial attention, many lesser-known heritage elements remain under-researched or unexplored. This discrepancy highlights the need for a more balanced and comprehensive approach to research.

3. **Which heritage elements are currently marginalized or overlooked in research?**

Heritage elements that are currently marginalized or overlooked in research often include smaller, less prominent structures such as the watchtowers, as well as aspects of intangible cultural heritage such as local folklore, traditions, and oral histories associated with the Jurassic belt. These aspects are crucial for a holistic understanding of the region's heritage.

4. **What data sources are available and how can they be utilized?**

Data sources available for research on the Jurassic belt include archival records, historical documents, archaeological findings, and local knowledge. These sources can be utilized by systematically digitizing and organizing them for easy access and analysis.

5. **Are there modern technologies that can accelerate the process of collecting and organizing data?**

Modern technologies such as Geographic Information Systems (GIS), 3D scanning and modeling, remote sensing, and digital mapping can significantly accelerate the process of collecting and organizing data about the objects in the Jurassic belt.

6. **What are the possibilities for applying digital technologies in the research process?**

Digital technologies can be applied in the research process by creating digital databases, virtual reconstructions, and interactive educational resources. These technologies facilitate data sharing, analysis, and visualization, enhancing research capabilities.

7. **How can digitization aid in creating a uniform information system?**

Digitization can aid in creating a uniform information system by standardizing data formats and metadata, making it easier to compare and integrate information from various sources. This system can serve as a comprehensive repository of knowledge about the Jurassic belt

8. **In what ways will the system support conservation activities?**

The uniform information system can support conservation activities by providing a centralized platform for monitoring the condition of heritage elements, tracking conservation efforts, and sharing best practices. It can also help prioritize areas in need of preservation.

9. **What are the possibilities for using the system to popularize knowledge about the heritage of the Jurassic belt?**

The system can be used to popularize knowledge about the heritage of the Jurassic belt by creating virtual tours, educational materials, and online exhibitions. These resources can engage the public and promote cultural awareness and tourism in the region.

In summary, addressing the gaps in knowledge about the Jurassic belt's heritage requires a multifaceted approach that combines traditional research methods with modern digital technologies. This approach can help preserve and promote the rich cultural and historical heritage of the region.

The proposed data organization model can be a first step towards creating a unified protection plan for this area and, used for tourist and popularization purposes, can positively influence the state of knowledge about these sites and their perception by visitors.

2. Final conclusions

The doctoral thesis focused on the analysis of the fortified landscape of the Jurassic strip in the Kraków-Częstochowa Upland. This region, rich in natural and cultural resources, features examples of almost all known defensive systems, which gained significance during the reign of Kazimierz the Great. These objects, although ruined, have been immortalized by artists and are an important element of Polish culture. The landscape transformations indicate the necessity for active protection and revitalization of this heritage.

Over various historical periods, numerous researchers and historians have conducted significant analyses and made discoveries that significantly contributed to deepening the knowledge about these objects. These works focus on various aspects, such as construction history, architecture, geographical and social context, and the state of preservation and conservation of monuments. The aim of these studies was not only to deepen historical knowledge but also to assess the technical condition of the structures and the possibilities for their renovation or conservation. In addition to scientific works, a wide range of popular literature is available, including travel guides and collections of legends, which further emphasize the importance and attractiveness of these places. Together, these publications provide a foundation for understanding the history and culture of the region and for protecting and promoting architectural heritage.

In general, research on the castles in the Kraków-Częstochowa Upland has been conducted for about two centuries and is becoming more advanced, but new discoveries are still being made. Unfortunately, many detailed works remain unpublished and are stored only in archives, which poses a barrier to their wide distribution. Despite the significance of the Kraków-Częstochowa Upland, a lack of comprehensive and current research in scientific literature is observed, addressing both historical aspects and contemporary challenges related to conservation and commercialization. Existing works are often fragmentary, and their marginalization and lack of updates hinder a thorough valorization and systematic protection of this area.

There is also a lack of an interdisciplinary approach that would consider both historical, cultural, and technological aspects. Modern technologies can offer unique opportunities for the protection and revitalization of this region, but their potential is not yet fully exploited in conservation practice.

An additional drawback is the lack of access to updated, coherent knowledge base, which could be used by both scientists and practitioners in the field of conservation and heritage management. In this context, the author sees the need for further, in-depth research.

In European culture, the castle plays an archetypal, spiritual role, harmoniously combining various architectural elements into a coherent whole. Although the form and decoration of individual castles mainly result from local historical and cultural traditions, as well as defensive requirements, their deeper meaning is rooted in universal ideas. They represent ideals of supreme power, universal feudal law, defense, and subjection – these are values that constitute the foundation of medieval political and legal culture in Europe. The origins of castle

building are associated with an era when the growing need for protection and dominion over the territory led to the search for innovative architectural solutions.

The Kraków-Częstochowa Upland is an area where nature and man have coexisted for millennia. The unique protected areas located here, such as landscape parks, reserves, or Ojcowski National Park, are key to preserving biodiversity. Local communities, passing on traditions and legends, introduce a unique character and atmosphere to this region. Regional culture, deeply rooted in history, harmonizes with the natural landscape, creating a phenomenon that deserves respect and protection.

This region, abundant in various attractions, attracts lovers of nature and culture, but this also carries the risk of disturbing its harmony through mass tourism and disturbing the cultural balance. Introducing elements of mass culture and taking over the landscape under the pretext of "recreation" can lead to its degradation.

The cultural landscape of the Upland is a public value, expressing the responsibility of many generations for its shape and constituting the identity of the inhabitants. As Ortega y Gasset noted: "Show me the landscape you live in, and I will tell you who you are." A conscious approach to this heritage can strengthen the identity of the place, while careless treatment can lead to its disappearance.

The Kraków-Częstochowa Upland is a region of great value both naturally and culturally. Therefore, introducing integrated protection covering both nature and cultural heritage is crucial for preserving the unique mosaic characteristic of this area.

The beginnings of settlement in the Kraków-Częstochowa Upland date back to Neanderthal times, with the oldest traces discovered in the Na Biśnik Cave from about 150,000 years ago. Modern humans settled in these areas during the Upper Paleolithic period, about 35-30 thousand years ago. The Neolithic era brought the development of flint mining and the emergence of the first agricultural settlements.

In the Middle Ages, the area of the Upland was enriched with numerous defensive structures, including wooden-earth strongholds dating back to the 7th century, and stone castles, such as the episcopal ones in Lipowiec and Sławków. During the reign of Kazimierz the Great (1333-1370), military architecture flourished, and several castles and watchtowers, funded by kings, bishops, and wealthy knights, were built in the Upland. At that time, royal permission was required to build a castle.

In the following centuries, these castles underwent various fates – they changed owners, were expanded, destroyed, or abandoned. Most of them fell into disuse in the 17th or 18th century, initiating their process of ruination. Some castles, such as Krzepice, Olsztyn, and Bobolice, in the 14th century fell into the hands of Władysław Jagiełło, while others functioned as starosties. Many objects did not survive to the present day, having been destroyed in the 17th century and not regaining their former glory or defensive functions.

The factors shaping the distribution of castles in the Kraków-Częstochowa Upland do not significantly differ from those across Europe, and natural conditions were key. We distinguish upland castles, located on rock outcrops, such as Będzin or Bydlin, and lowland

ones, such as Koziegłowy or Siewierz, which had various defensive systems and were located near water sources.

The region's location at the intersection of significant communication routes was also meaningful for the localization, fostering the activation of settlement. Many structures were newly built, but some were constructed on the sites of already existing strongholds. The development of the western border influenced the strengthening of strategic points, and the availability of materials and the possibility of escape were additional advantages in choosing a location.

The castles in the Jura are characterized by diversity and uniqueness, resulting from their location and historical roles. The diversity of exhibitions, influenced by natural and anthropogenic factors, is significant for culture and tourism. Some castles, like Olsztyn or Bobolice, are clearly visible, but modern buildings can obstruct their visibility. Therefore, there is a need to protect the landscape around these structures to preserve their value and significance for the region.

In the analyzed objects, one can notice a variety of defensive systems, identified by Janusz Bogdanowski and described in Chapter III. In the studied area, these systems occur in various variants and are strongly integrated with the surrounding landscape. Except for the establishment in Pilica, none of the castles have a symmetrical layout. Original strongholds were constructed according to the wall type, which underwent modifications in subsequent centuries. It is not possible to unequivocally assign one type to a given object, as they underwent numerous expansions in the modern era. As a result, different systems often overlap, appearing in altered form. In some objects, we can observe the emergence of unique defensive elements.

The beginnings of conscious conservation of monuments in Polish lands date back to the late 18th century, associated with the birth of antiquarianism and the intensification of patriotic feelings. However, the implementation of protective measures was limited for various reasons, including the loss of independence and lack of funds. A love for ruins, on one hand, led to the destruction of castles, but on the other hand, prevented their total degradation.

Before World War II, most castles in the Jura were not protected, which contributed to their destruction. However, conservation initiatives appeared starting in the 19th century. Systematic work began mainly after 1945, and its documentation is primarily stored in archives in Krakow and Katowice. Analysis of these materials shows a variety of approaches to castle conservation after the war.

In recent decades, the intensity of conservation efforts has varied. Initially, many interventions were observed, later their number decreased, and the condition of the monuments deteriorated. Recently, thanks to national and European funds, many significant conservation works have been carried out. However, there are also “reconstruction” activities by private investors, which do not always respect the value of the monuments.

Several groups of castles can be distinguished, depending on the nature and scope of work: restored castles, secured as ruins, subjected to ad hoc conservation works, with elements

of reconstruction, rebuilt, and those without protection. Some castles are hard to categorize clearly into one group, and this division aims to show the diversity of approaches to conservation. It is essential to characterize these various conservation treatments and understand their impact on the state of the preserved objects.

Local communities, preserving traditions and regional culture, significantly influence the character of this area, which attracts tourists. The development of mass culture and landscape changes pose a threat to preserving the unique character of the region, an important element of Poland's heritage, rich in castles and medieval structures. Changes in the environment and infrastructure can affect the perception of monuments, hence the importance of conscious landscape management and conservation work, considering the needs of the community and tourists, as well as heritage protection principles.

Despite the effectiveness of information and communication technologies (ICT) in representing historical architecture, e.g., in three-dimensional modeling of artifacts or digital archiving, doubts arise regarding their usefulness in heritage conservation projects. One problem is the standardization of modeling approaches, which does not always respect the uniqueness of historical architecture. The second is the complex, interdisciplinary nature of research and conservation processes, making it difficult to create a cohesive ICT system.

Given these challenges, the author sees the potential in using informational ontologies to create a coherent knowledge base, allowing for effective domain modeling. These ontologies, developed by IT and domain specialists, enable the formal representation of knowledge and allow a deep understanding of a given domain, taking into account various information and aspects, both physical and abstract.

Regardless of the use of digital or traditional tools, actions should be taken to standardize the protection plans for the Kraków-Częstochowa Upland area, as all elements of its fortified landscape represent unique value.

Usability of collected data and models

Scientific/research objectives

Historical Research: Researchers and historians can access detailed historical data linked to architectural representations. This aids in conducting in-depth analyses of castle history, including architectural evolution, ownership changes, and historical events.

Conservation Planning: Conservation professionals can use the model to assess the condition of castles and plan conservation efforts effectively. They can link specific conservation activities to Revit models, ensuring that interventions are precisely targeted.

Architectural Analysis: Architects and architectural historians can utilize 3D Revit models to examine architectural elements, styles, and building techniques. Linking these models with historical and conservation data enriches architectural analysis.

Interdisciplinary Studies: Professionals from various fields, including archaeology, geology, and materials science, can access integrated data for interdisciplinary research, facilitating holistic studies of cultural heritage sites.

Data-Driven Decision-Making: Decision-makers in heritage management and preservation can make informed choices based on comprehensive data. This includes prioritizing conservation efforts, planning visitor experiences, and allocating resources efficiently.

Collaborative Research: Researchers and professionals from different disciplines can collaborate seamlessly, thanks to the standardized CIDOC CRM data structure. This fosters interdisciplinary research and holistic heritage preservation strategies.

Educational/touristic objectives

Educational Resources: Educational institutions can use these models as teaching tools. Students can explore historical, architectural, and conservation aspects interactively, enhancing their understanding of cultural heritage.

Virtual Learning: Virtual tours and educational apps based on the models provide immersive learning experiences. Students and the general public can virtually explore castles, learning about history and conservation efforts.

Heritage Tourism: Promote cultural heritage tourism by providing online platforms that offer virtual tours and information about the castles. This attracts tourists interested in history and architecture.

Public Engagement: Encourage public engagement with cultural heritage through interactive exhibitions and apps. Visitors can explore the digital models during physical visits to castles or from the comfort of their homes.

Museum Exhibits: Museums can incorporate interactive displays using these models to showcase the history and conservation efforts of local castles, enhancing the museum experience.

Conservation Advocacy: Raise awareness about the importance of heritage preservation and conservation among the general public. Use these models in advocacy campaigns to illustrate the value of cultural heritage.

Heritage Training: Train heritage professionals, tour guides, and volunteers using these models to provide accurate information about castles and promote responsible tourism.

Online Resources: Create websites or apps that offer accessible information about castles, catering to both professionals and the general public. These platforms can include historical narratives, 3D models, and conservation updates.

Protection should encompass not only the building structures but also the adjacent **exhibition areas.** Adequate management of these areas is crucial to counteract potentially destructive activities, such as constructing single-family houses in their vicinity. Implementing such a comprehensive protection strategy will allow **preserving the historical and cultural heritage** of the Jura castles, safeguarding them against irreversible changes and interventions that may harm their integrity and historical and scientific value.

In the author's opinion, the most appropriate forms of protection for the Jura castles are precise entry into the **heritage register**, which accurately defines the scope and subject of

protection, and potentially creating a **cultural park**. Within such a park, it is essential to control how sites are developed, monitor the quantity and quality of commercial zones, and designate landscape protection zones. Such measures can ensure effective protection and sustainable development of these historical sites while guaranteeing their preservation for future generations.

The sites and their surroundings should undergo **digitalization**, one of the most accurate methods of preservation. The changes that have occurred in these sites over the past few years are significant and hard to record. Implementing digitization technologies would allow continuous monitoring of ongoing works and documenting all modifications and changes, crucial for preserving the authenticity and integrity of the discussed monuments. This method would also facilitate widespread sharing of information about the sites, their history, and value, contributing to increased awareness and respect for these valuable elements of cultural heritage. During this research, drastic changes occurred in the castles in Rabsztyn, Siewierz, Mirow, and Lipowiec.

Fig. 188. Sculptures on the Pilica Castle, photo by the author

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IX. Index of Tables and their sources

X. Abstract

Key words: Cultural Heritage, Jurassic Belt, Cultural Landscape, Defensive Architecture, Digital Documentation

This thesis delves into an in-depth analysis of the cultural landscape within the Jurassic belt of the Kraków-Częstochowa Upland, focusing on the historical defensive architecture that defines this unique region. The area stands out not only for its natural beauty but also for its rich cultural heritage, with thousands of rock caves and shelters dating back to Paleolithic human settlements. The landscape varies from gentle, sculptural rock outcrops to deep ravines and gorges, including famous sites like Ojców and Mników. The "Eagle Nests," a group of castles founded by Casimir the Great, serve as iconic symbols of this region's historical significance, which extends far beyond the medieval era.

The study highlights the critical role this region played in protecting the former capital of the country and the main European trade route. It presents a comprehensive overview of various defense systems found in the area, showcasing their importance during King Casimir the Great's reign and their enduring legacy as symbols of national identity. Through the lens of artists and writers such as Amilcar Kosiński, Napoleon Orda, Zygmunt Vogel, and Kazimierz Stroczyński, these fortifications have become enduring monuments, representing power, decline, and change, firmly embedding themselves in Polish culture.

However, the cultural landscape of the Jurassic belt has not remained immune to the forces of industrialization and urbanization, leading to destruction and devastation. Therefore, this thesis emphasizes the urgent need for the preservation and revitalization of this priceless heritage as an integral part of Poland's cultural identity.

The scientific problem addressed in this thesis is the absence of systematic and comprehensive studies providing a unified knowledge base on the cultural objects within the Jurassic belt. Current source materials and studies are fragmented and insufficient, hindering the effective conservation of this heritage. The research aims to bridge this knowledge gap and explores the potential of digitization to create a uniform information exchange system for conservation and popularization.

The hypothesis posits that the supplementation and systematization of knowledge, along with the digitization of objects in the Jurassic belt area, will lead to the development of a uniform information system. This system can serve dual purposes: conserving this unique cultural heritage and making it more accessible for popularization. Ultimately, the thesis seeks not only to fill existing knowledge gaps but also to pioneer innovative methods for managing and protecting the cultural heritage of the Jurassic belt, preserving it for future generations.

Streszczenie w języku polskim

Słowa kluczowe: Dziedzictwo kulturowe, Pas Jurajski, Krajobraz Kulturowy, Architektura Obronna, Dokumentacja Cyfrowa

Praca skupia się na dogłębnej analizie krajobrazu kulturowego w obrębie pasa jurajskiego na Wyżynie Krakowsko-Częstochowskiej, koncentrując się na historycznej architekturze obronnej, która definiuje tę unikalną krainę. Obszar ten wyróżnia się nie tylko ze względu na swoje piękno naturalne, ale także ze względu na bogate dziedzictwo kulturowe, z tysiącami jaskiń i schronień skalnych, które sięgają czasów osadnictwa paleolitycznego. Krajobraz ten różni się od delikatnych, rzeźbiarskich ostańców skalnych po głębokie wąwozy i jarugi, w tym słynne miejsca jak Ojców i Mników. "Orle Gniazda", grupa zamków założonych przez Kazimierza Wielkiego, stanowią ikoniczne symbole historycznego znaczenia tej krainy, które sięgają daleko poza średniowiecze.

Studium podkreśla kluczową rolę, jaką ta kraina odegrała w ochronie dawnej stolicy kraju i głównej trasy handlowej Europy. Przedstawia kompleksowy przegląd różnych systemów obronnych znajdujących się w tym obszarze, prezentując ich znaczenie podczas panowania Króla Kazimierza Wielkiego i ich trwały dziedziczny wpływ jako symbole tożsamości narodowej. Dzięki oczom artystów i pisarzy, takich jak Amilcar Kosiński, Napoleon Orda, Zygmunt Vogel i Kazimierz Stroczyński, te fortyfikacje stały się trwałymi pomnikami, symbolizującymi władzę, upadek i zmiany, trwale wpisując się w polską kulturę.

Jednak krajobraz kulturowy pasa jurajskiego nie pozostał odporny na wpływ procesów industrializacji i urbanizacji, co doprowadziło do dewastacji i zniszczeń. Dlatego też ta praca dyplomowa podkreśla pilną potrzebę zachowania i ożywienia tego bezcennego dziedzictwa jako integralnej części kulturowej tożsamości Polski.

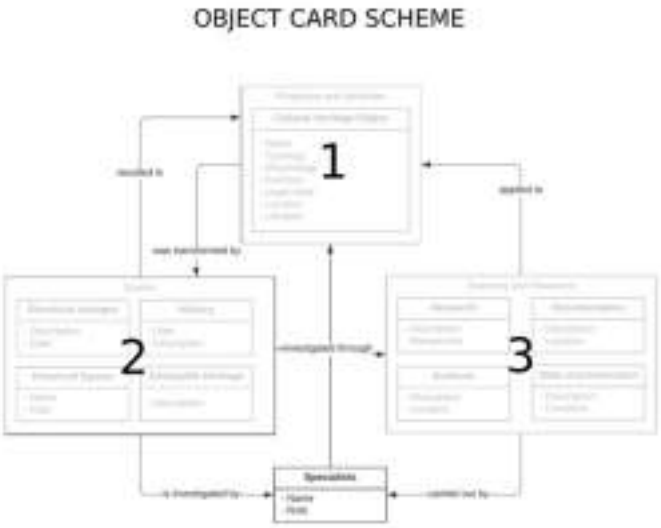
Problemem naukowym poruszonym w tej pracy dyplomowej jest brak systematycznych i kompleksowych badań, które dostarczałyby jednolitej bazy wiedzy na temat obiektów kulturowych w obrębie pasa jurajskiego. Obecne materiały źródłowe i badania są rozproszone i niewystarczające, co utrudnia skuteczną ochronę tego dziedzictwa. Badania mają na celu wypełnienie tej luki w wiedzy oraz zbadanie potencjału digitalizacji do stworzenia jednolitego systemu wymiany informacji służącego celom konserwacji i popularyzacji.

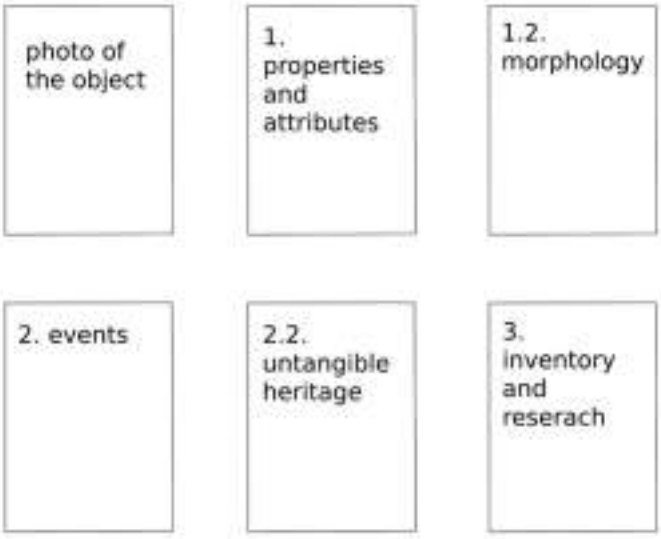
Hipoteza zakłada, że uzupełnienie i uporządkowanie wiedzy, w połączeniu z digitalizacją obiektów w obszarze pasa jurajskiego, przyczyni się do stworzenia jednolitego systemu informacyjnego. Taki system może służyć podwójnemu celowi: ochronie tego unikalnego dziedzictwa kulturowego oraz ułatwieniu jego dostępności dla celów popularyzacyjnych. Ostatecznym celem pracy dyplomowej jest więc nie tylko wypełnienie istniejących luk w wiedzy, ale także opracowanie innowacyjnych metod zarządzania i ochrony dziedzictwa kulturowego pasa jurajskiego, aby zachować je dla przyszłych pokoleń.

XI. Annex

1. Object cards

The object cards were created in correlation with the proposed data organization model. Each part is related to one of the groups from the scheme. If the presented castle does not have certain specifications the object cards are being modified to fit the amount of information.





Olsztyn Castle

Fig.1. Olsztyn Castle, elaborated by the author

1. Properties and attributes

Address: Zamkowa Street 18, 42-256 Olsztyn
Date of Establishment: 13th/14th century
Owner:
Type: Royal Castle
Protection: Listed as a historic monument
Function: Throughout the entire Middle Ages, the royal castle served important roles as a border fortress and a local prison. Currently, the structure is preserved in a permanent state of ruin and operates as a tourist attraction during regular hours.

Location

Exhibition of the Site: The castle, situated on a hill, overlooks the town. It has numerous panoramic viewpoints. It is not obscured by trees or surrounding buildings. The exhibition zone on the side facing the so-called "Little Giewont" has been encroached upon by the development of residential housing.

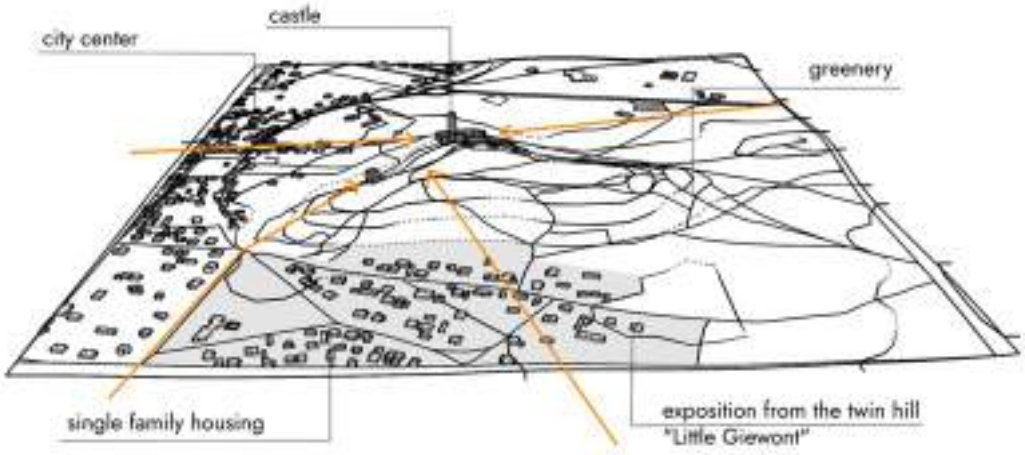
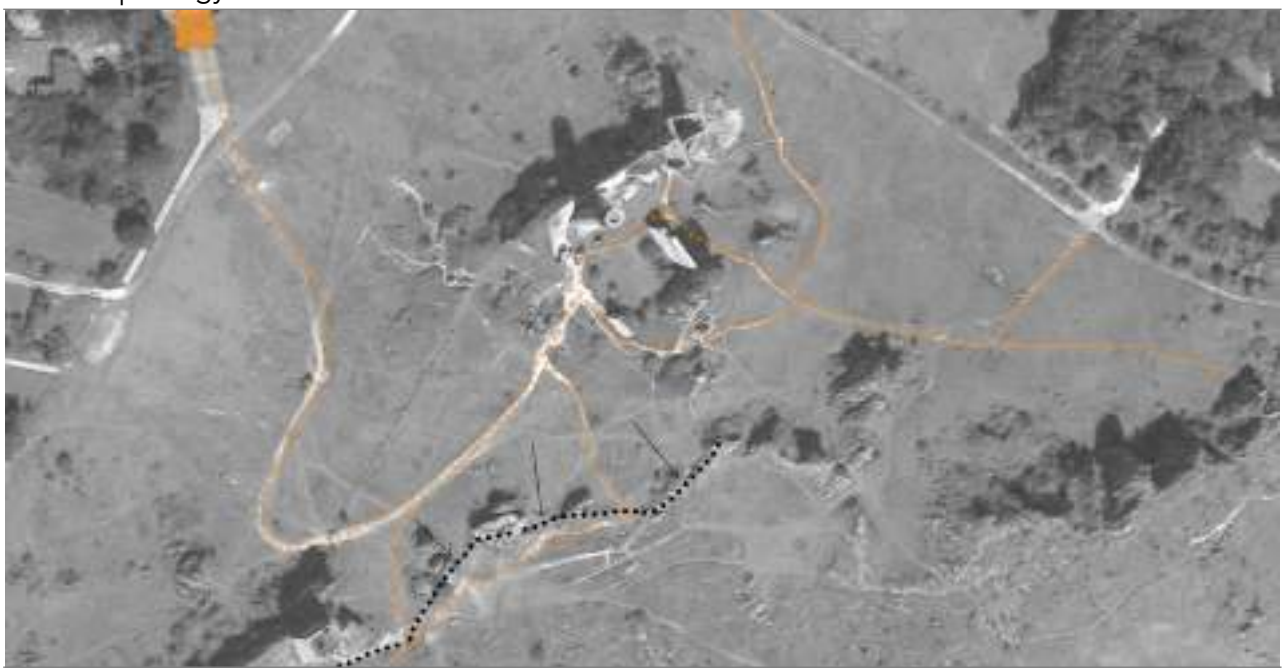


Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.1. Morphology



Surroundings of the Site: The site consists of the ruins of the upper castle with a tower of ultimate defense, fragments of outer walls, relics of a chapel, and a tower known as the "Mayor's Tower." At the foot of the site, a small parking area has been located. Paths leading to the ruins are covered with gravel and grass. Alongside the remains of the outer walls, entrances to the caves are situated.

Tower of the Final Defense - Keep

Upper Castle Walls

Mayor's Tower

Remnants of the Outer Walls

Fig. 3. Schemes, elaborated by the author

2. Events

Timeline:

13th century:
Existence of a rocky watchtower in Olsztyn.

14th century:
Expansion of the fortress by King Casimir the Great.

1358 or 1360:
Imprisonment of Maciek Borkowic in the Olsztyn dungeon.

1370:
Transfer of the castle from Louis of Hungary to Duke Władysław Opolczyk.

1391:
Recovery of the fortress from Opolczyk's forces by the troops of Władysław Jagiełło.

15th-16th century:
Expansion and modernization of the castle serving as the residence of the castellan.

1587:
Siege of the fortress by the forces of Archduke Maximilian Habsburg.

1656:
Destruction of Olsztyn during the Swedish Deluge.

1st half of the 18th century:
Demolition of the castle walls for building materials.

History: In the 13th century, a watchtower graced the summit of a rocky hill. However, during the 14th century, the reign of Casimir the Great ushered in an era of expansion, transforming the tower into a vital stronghold within the region's landscape. In 1370, the custody of the castle was entrusted to Władysław Opolczyk by Louis of Hungary. Following Opolczyk's passing, efforts were made to separate the territory from Poland, culminating in 1393 when the castle was restored to the Polish Crown. Struggles for control over the fortress persisted for several years, even after Jagiełło's capture of Częstochowa. Throughout the 15th century, the castle faced numerous incursions and endured a siege led by Maximilian Habsburg in 1587, yet it stood resolute. However, the castle suffered devastation at the hands of the Swedes in 1656 and was left in ruins, never to be rebuilt.

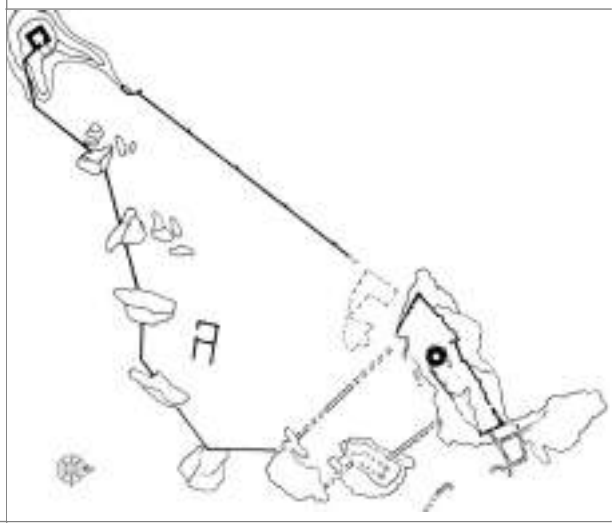


Fig. 4. Reconstruction and plan, source: medievalheritge.com

2.2. Untangible heritage

Legend 1: There exists a tale surrounding the castle concerning a spectral presence that roams the fortress during the dark hours of the night. This apparition is believed to be none other than Maciek Borkowic, the Voivode of Poznań and a formidable adversary of King Casimir the Great. Maciek Borkowic led a confederation against the king and was subsequently banished from the land. Upon his return, he persisted in conspiring against the monarch, leading to his eventual capture in Kalisz and a dire fate: death by starvation in the dungeons beneath Olsztyn Castle's main tower. In these dim confines, the captive received meager sustenance, consisting of just a jug of water and a bundle of hay daily. It is said that he endured this torment for a harrowing 40 days, with his agonizing moans and curses echoing throughout the castle. Some even claim that driven to madness by hunger, he resorted to gnawing and consuming his own flesh. A lingering, unverified rumor suggested that this cruel punishment was exacted as a result of the king's personal vendetta, stemming from suspicions of a clandestine liaison between Maciek Borkowic and the queen.

Legend 2: Another legend harks back to a historical incident and recounts the sorrowful wailing of a child, audible on breezy evenings near the castle. During the siege of the castle in 1587 by Maximilian Habsburg, the son of the Olsztyn burgrave, Kacper Karliński, was taken captive. In the face of spirited Polish resistance, Maximilian issued a chilling command: to place the abducted child on the castle's front lines. As the burgrave Karliński had solemnly vowed to defend the castle until the end, he took it upon himself to ignite the cannon's fuse as the Austrians drew near. The castle was successfully defended, but amid the fallen adversaries, the lifeless body of his own child was discovered. Overwhelmed by this tragedy, the burgrave withdrew to a place of penance. Seeking solace in prayer, he ultimately met his demise at Jasna Góra.

Legend 3: Another narrative harkens to later times when the castle lay in ruins. In the vicinity of the castle, a destitute boy was tending to a herd of cows. On a fateful day, a group of malevolent acquaintances approached him and callously hurled his hat into the castle's dungeon. Undaunted, the boy descended into the depths and encountered a black dog, which, according to legend, served as a guardian of concealed treasures. Astonishingly, this dog spoke to him in a human voice and filled his hat with riches. Upon resurfacing, the boy's friends caught sight of the newfound wealth and yearned for a similar blessing. One among them instructed that his own hat be cast into the dungeon, descending to retrieve it himself. Regrettably, he never returned, and ever since, his spirit has occasionally been glimpsed in the vicinity of the forbidding dungeon.

Source: http://zamekolsztyn.pl/pl/o-zamku/legendy/

3. Transformations and Preservation Status

Transformations: During the 16th century, the compound encompassed both the upper and lower castles, along with sprawling suburban areas. The upper castle, perched atop the highest crest of the rocky ridge, comprised a tower, a dwelling structure, and an intricate network of tunnels hewn into the limestone rock. In the initial decades of the 18th century, the castle fortifications were dismantled to provide construction materials, with some of these resources contributing to the erection of St. John the Baptist Church in Olsztyn, among other projects.

1640-1650

1787

1911

1990-1995

Preservation Status: Some remnants of the upper castle and the tower have endured over time. The location has been safeguarded and has undergone preservation initiatives, which encompass activities like fortifying and strengthening the ruins, including minor refurbishments and the reconstruction of specific wall segments.

Bastion

Castle

Transformations: Source: fotopolska.eu
Preservation status: photos by the author

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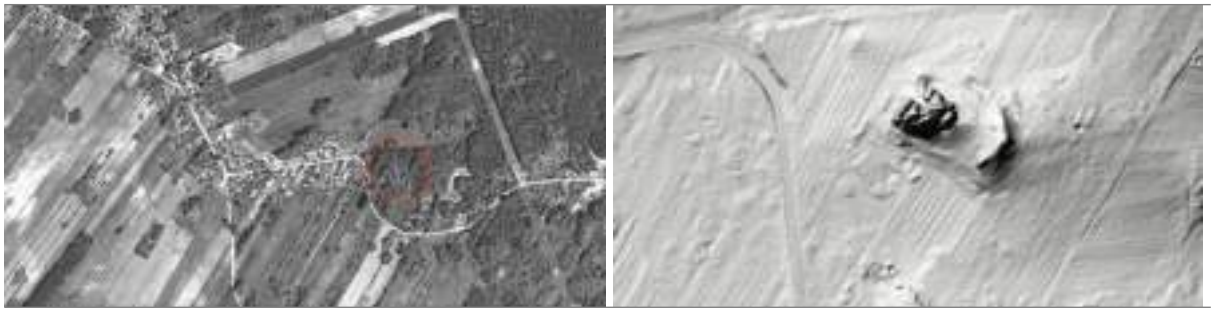
Suliszowice Watchtower

Fig.1. Suliszowice watchtower, elaborated by the author

1. Properties and attributes

Adress: Suliszowice 4, 42-310 Suliszowice
Date of Establishment: 14th century
Owner: Private
Type: Watchtower
Protection: Listed as a historic monument
Function: Originally served defensive functions. Currently, in the hands of a private owner, it is completely inaccessible.

Location



Exposition: The watchtower is almost not visible from the ground, surrounded by trees

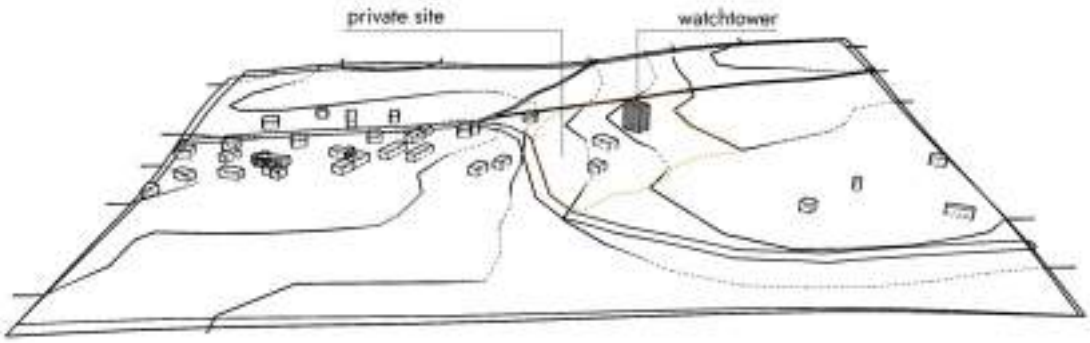
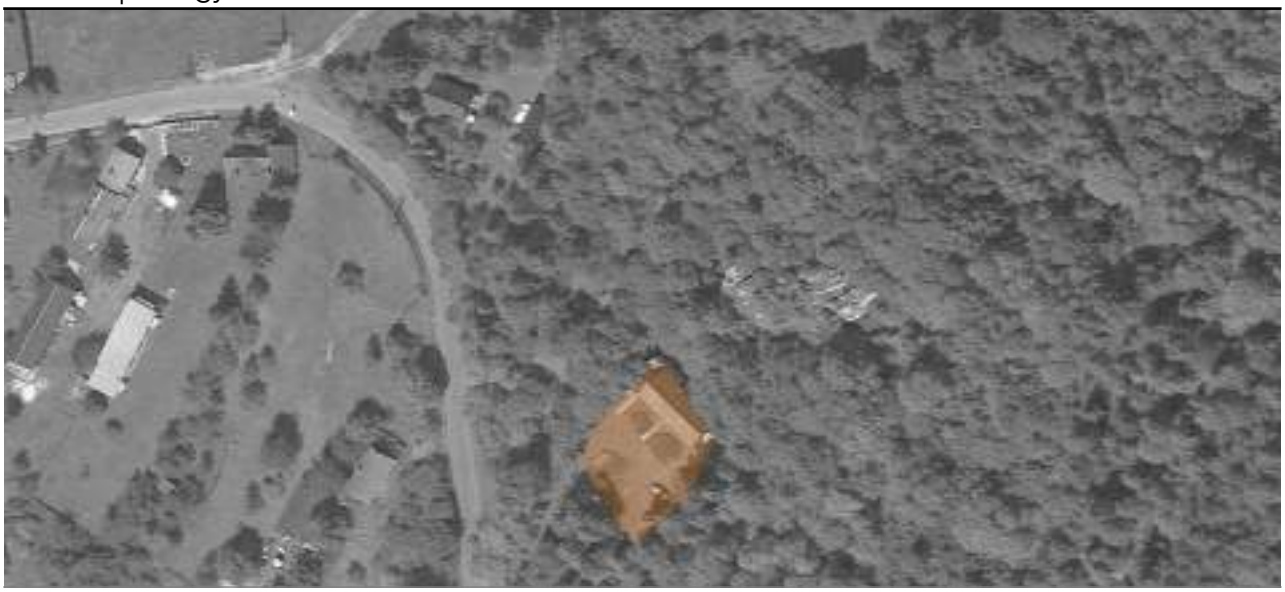


Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.2. Morphology



Surrounding: The nearest surrounding are trees and the house of the private owner. The is no access to the site.

Fig. 3. Schemes, elaborated by the author

2.Events

TImeline:

Early 14th century: An important but not entirely safe communication route passed through the area.

End of the 14th century (likely): The guardhouse was constructed during the reign of King Casimir the Great by the then-warden of Suliszowice.

After the death of King Casimir: The surrounding lands transitioned to the lordship of Duke Władysław Opolczyk.

Subsequently: The guardhouse in Suliszowice lost its significance.

History: In the early 14th century, this region played a vital yet somewhat tenuous role as a transportation route. It is presumed that by the end of the 14th century, under the reign of King Casimir the Great, the overseer of Suliszowice probably constructed the watchtower. Nevertheless, as the king passed away and the nearby lands came under the ownership of Duke Władysław Opolczyk, the significance of the Suliszowice watchtower diminished.

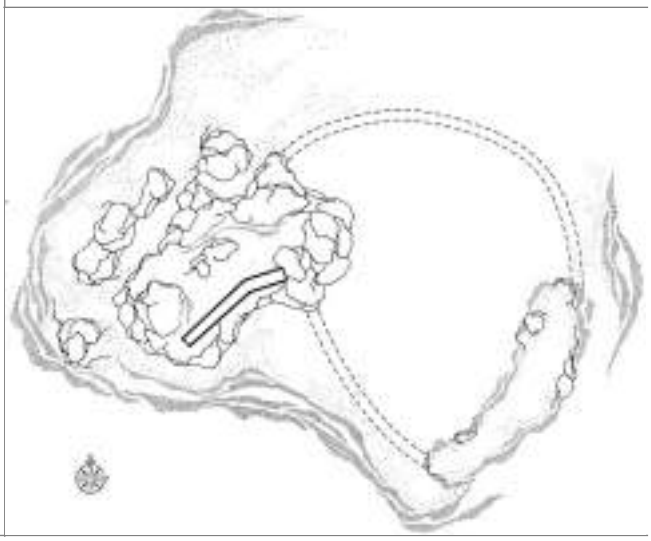


Fig. 4. Plan, source: medievalheritge.com

3.Transformations and Preservation Status

Transformations: The guardhouse was constructed on an irregular plan. In addition to the tall, round tower, there was a residential building for the crew, as well as a gate tower.

Preservation status: There are partial pieces of walls still visible

Fig. 5. Watchtower in Suliszowice, photo by the author

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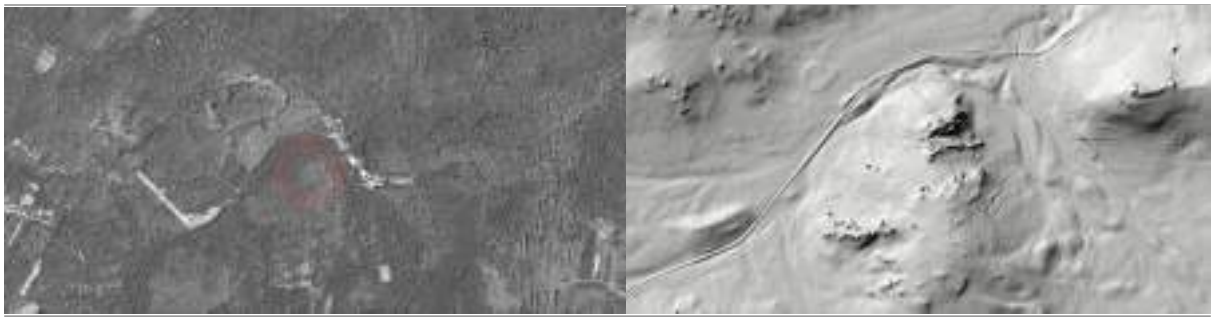
Ostrężnik Castle

Fig. 1. Castle Ostręznik, photo by the author

1. Properties and attributes

Adress: 42-253 Złoty Potok
Date of Establishment: 14th century
Owner: Private
Type: Castle
Protection: Listed as a historic monument
Function: The original function is unknown. Currently, the remains are deteriorating without care.

Location



Exposition: The castle is almost not visible surrounded by the trees and greenery.

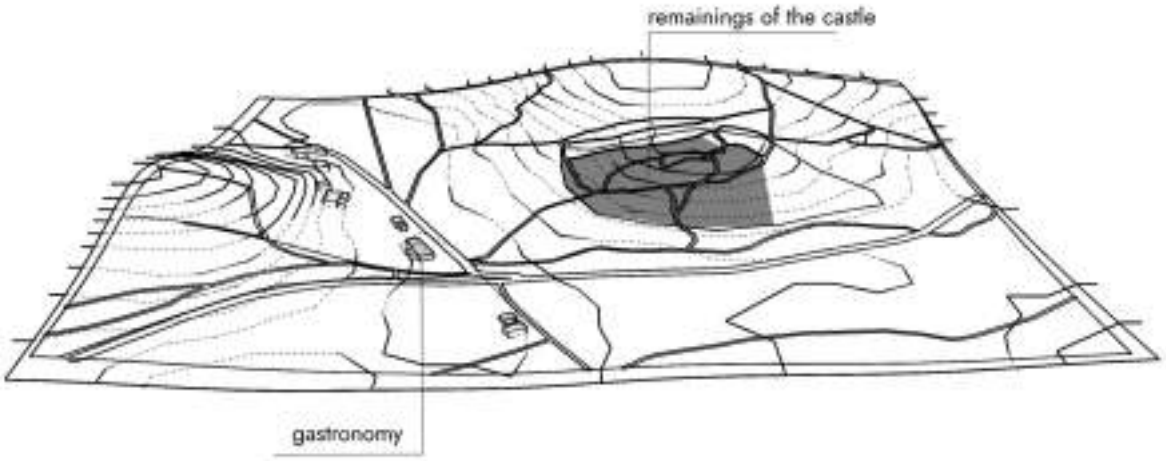
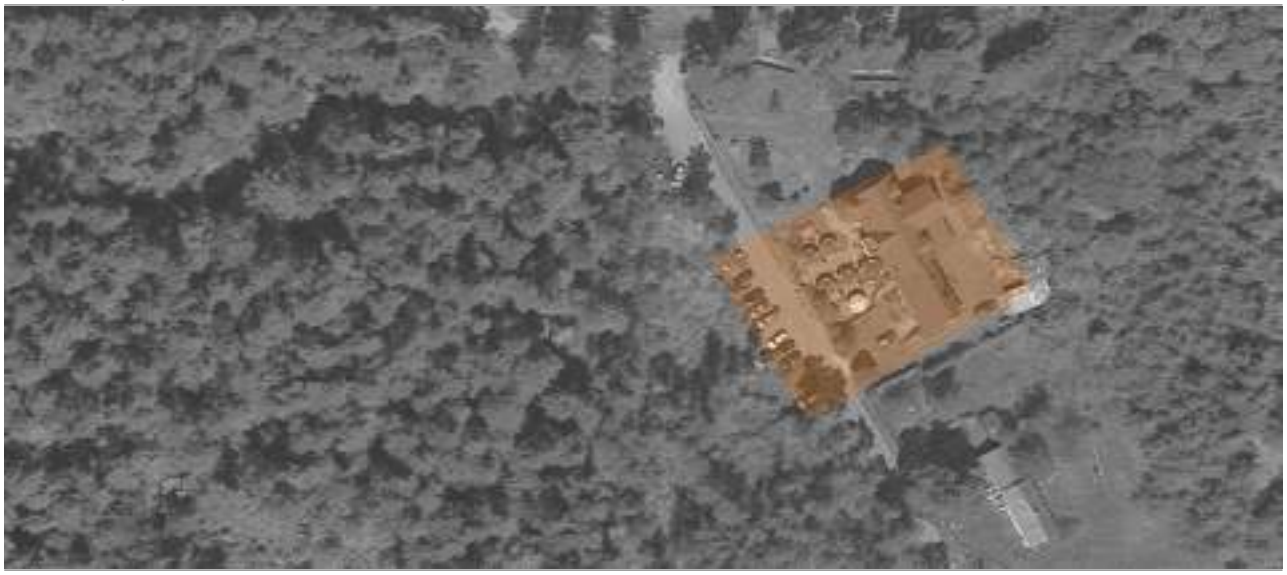


Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.2. Morphology



Description: The castle is in pieces and no full perimeter walls were preserved

Fig.3. Elaborated by the author, based on Google Maps

2. Events

Timeline:

Before the 14th Century: Historical sources make no mention of the fortress in question.

14th Century: the construction of the fortress was not completed before the death of Casimir the Great.

15th Century (First Half): The fortress, despite not fulfilling the intended role established by Casimir the Great, possibly saw some use. It is suggested that Nikolai Siestrzenec may have utilized the fortress's walls during this period.

15th Century (First Half): Nikolai Siestrzenec's potential use of the unfinished castle is speculated to be related to criminal activities in the immediate vicinity, possibly using the fortress as a "base camp" for activities such as robbery.

History: There are no historical documents that reference the fortress, and Bohdan Guerquin tried to explain this situation. He suggested the theory that construction might have been abandoned after Casimir the Great's death, and consequently, the castle was considered unimportant enough to complete. This theory is generally regarded as correct. Although the castle did not serve the original purpose intended by Casimir the Great, there is a possibility that its walls were utilized by Nikolai Siestrzenec in the early 15th century.

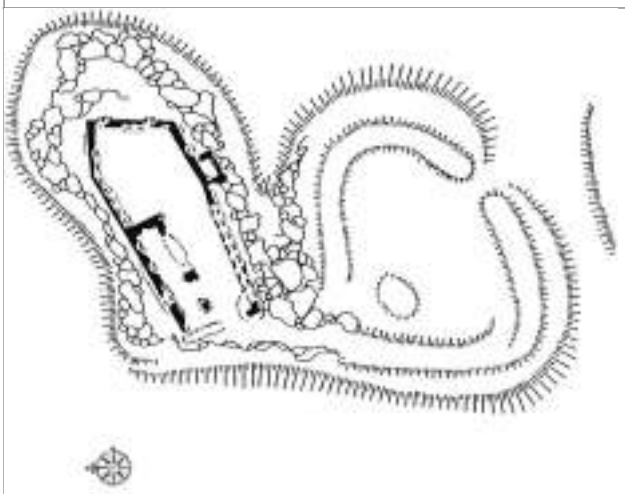


Fig. 4. Plan, source: medievalheritge.com

3. Transformations and Preservation Status

Transformations: The castle encompassed a minimum of 4,000 square meters in terms of its area. The Ostrezhniki castle was divided into two distinct sections. Atop the rocky hill's highest point stood the main castle, often referred to as the upper castle, which conformed to the natural contours of the rocks. It was encircled by a 150-meter-long wall, covering an approximate area of 1,500 square meters. Within its confines, a single structure existed, positioned against the northern wall, measuring 30 meters in length and 10 meters in width. A square tower had been added to the castle proper's southern wall, serving as the gateway to the underground. South of the upper castle lay an expansive forecourt. According to Bohdan Guerquin, it occupied an area of 2,500 square meters, while Waldemar Blaszczyk, who conducted field measurements, estimated it at 7,000 square meters.

State of preservation: the relics are in a very bad condition, they are heavily mixed with greenery

Fig.5. Photos by the author

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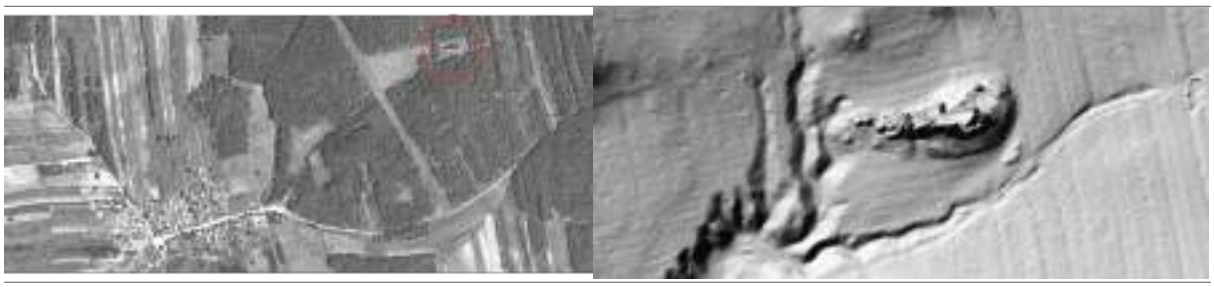
Przewodziszowice Watchtower

Fig.1. Przewodziszowice Watchtower, photo by the author

1. Properties and attributes

Adress: 42-310 Żarki
Date of Establishment: 14th century
Owner: Private
Type: Watchtower
Protection: Listed as a historic monument
Function:Originally a defensive function, now an unprotected ruin.

Location



Exposition: The watchtower is not visible from the main street. It has very little exhibition zone. It is separated by the greenery.

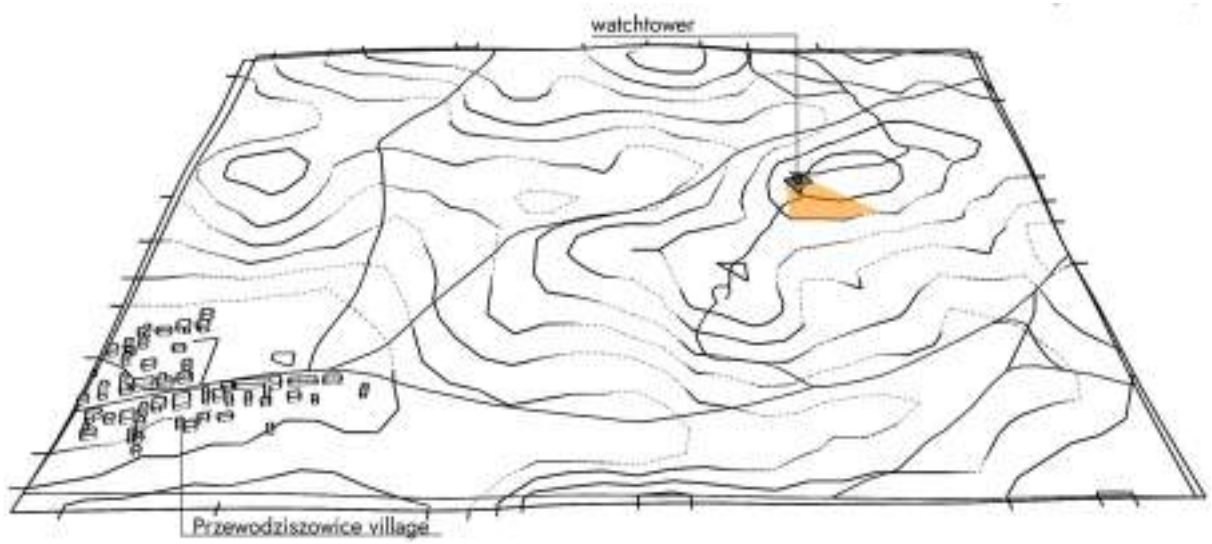
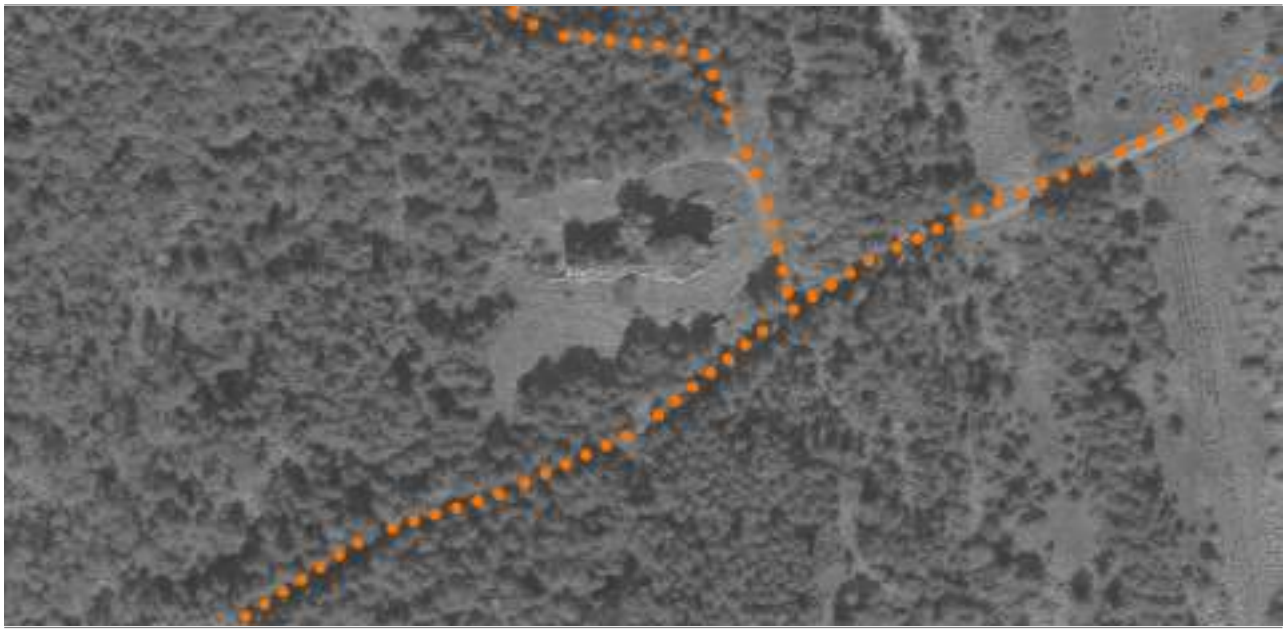


Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author



Description: The only remaining of the structure are pieces of walls.

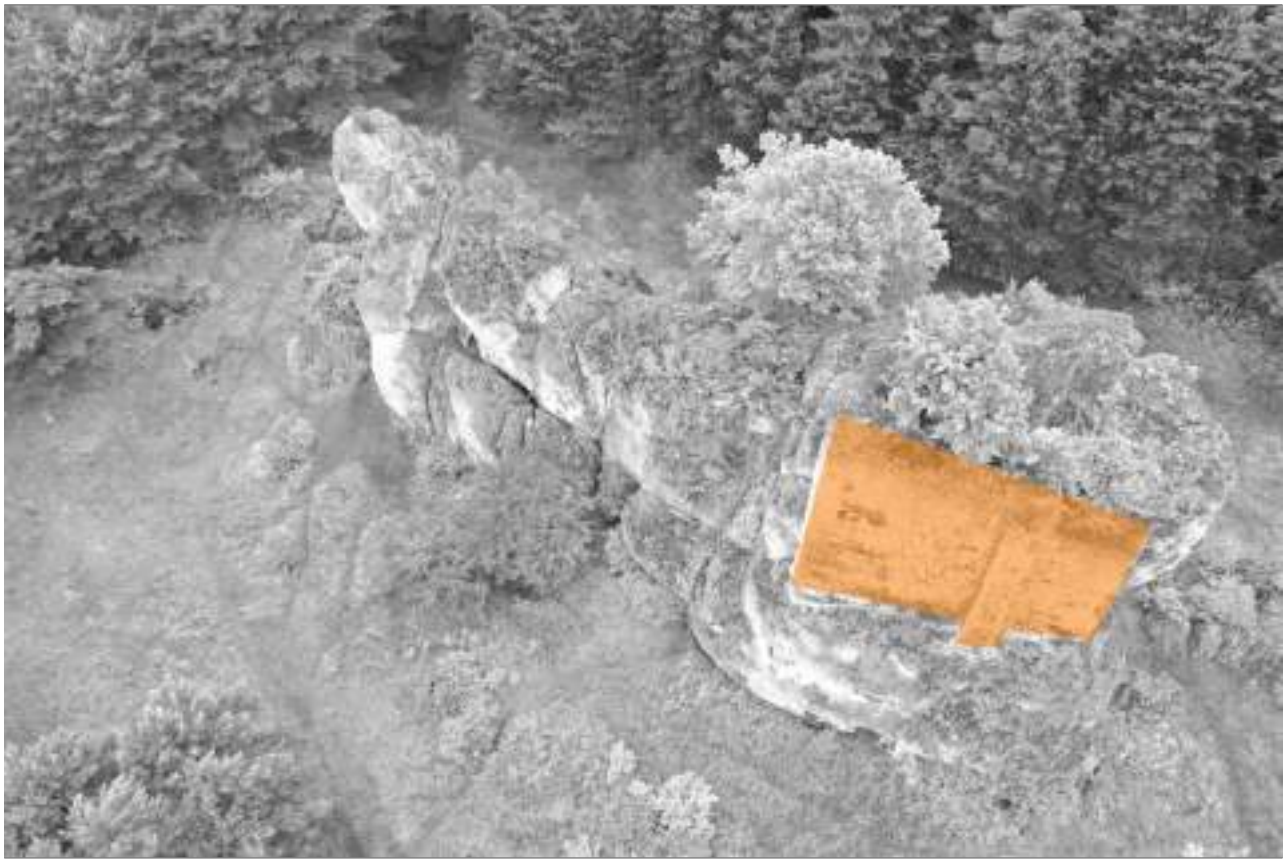


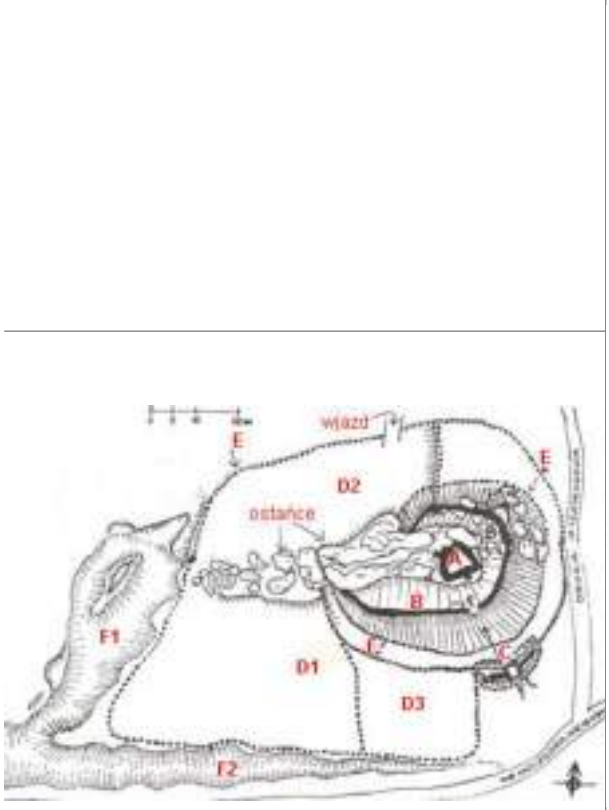
Fig. 3. Schemes by the author

2. Events

Timeline

XIV century - first mentions

History: Located atop secluded limestone cliffs in proximity to other watchtowers, these edifices held dominion over the entire vicinity and offered sanctuary to the local populace during the Bohemian invasions in the era when John of Luxembourg held sway. There exists a hypothesis proposing that the Duke of Opole might have ordered the construction of these watchtowers between Częstochowa and Olkusz.



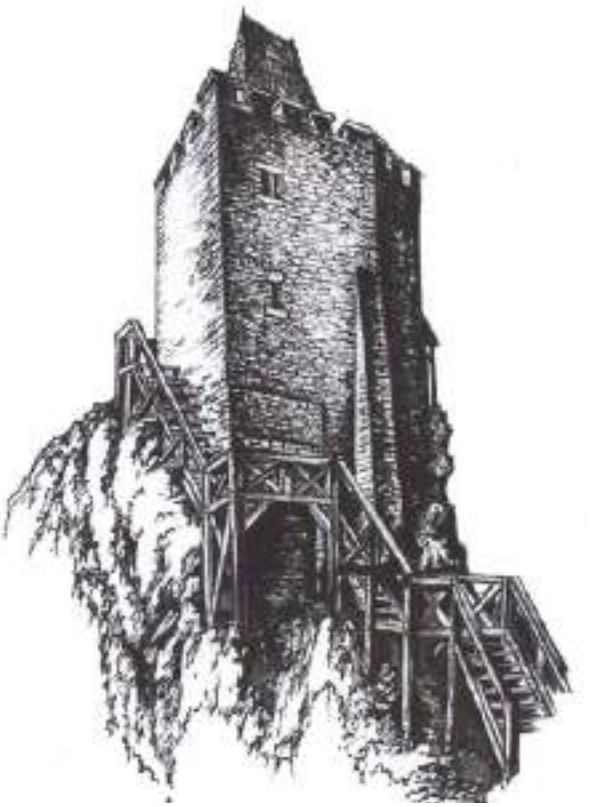


Fig. 4. Reconstruction and plan, source: medievalheritge.com

2.1. Untangible heritage

Legend 1: A widely accepted belief is that between 1426 and 1454, the castle came under the ownership of Nikolai Kornicz, known as Siestrzenec. He gained notoriety as a knight-robber who exclusively targeted and looted magnates and wealthy merchants. Interestingly, his actions earned him sympathy from peasants and the less privileged, rendering all attempts to suppress his activities futile. In 1432, during a gathering of Silesian and Polish nobles in Bedzin, Kornicz was officially branded a troublemaker, leading to a substantial bounty being placed on his head. Various accounts diverge regarding his fate; some claim he was captured and swiftly executed, while others contend that he continued his covert depredations for the next two decades. The castle's well, which still exists today, hidden beneath layers of stones near a prominent rock, is central to tales of fabled riches supposedly concealed within. On misty mornings, a mysterious figure cloaked in a hood is said to materialize above the well, believed by some to be none other than Kornicz himself, diligently guarding his hidden treasures.

Source: https://www.zamkipolskie.com/

Transformations: It was built of broken limestone. It consisted of two parts: the upper one - a masonry building on a rock, and the lower one - surrounded today by poorly visible ramparts and a moat. The masonry building, erected on a steep rock spur, had an area of about 125 m2. Today, a fragment of the wall on the southeast side of the rock is visible, reconstructed and secured in the 1960s.

State of preservation: No archaeological research has been conducted on the lower part of the watchtower so far. The facility is in a very poor state of preservation. It has not undergone any conservation work.

Fig. 5. Przewodziszowice, photo by the author

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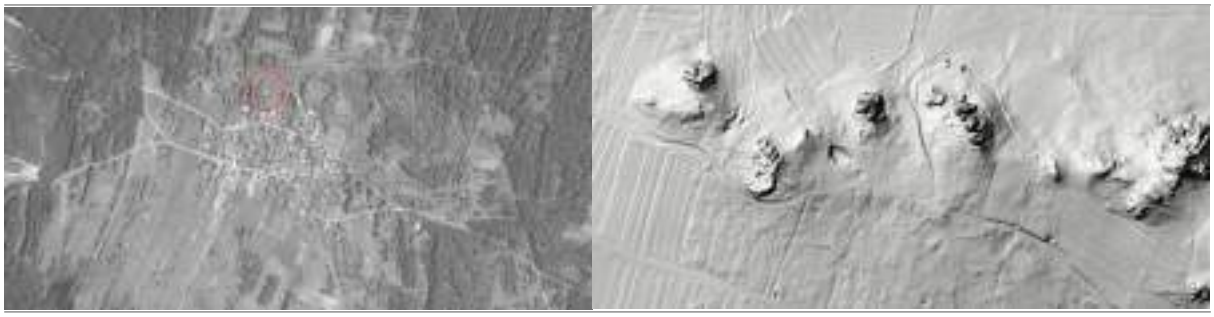
Łutowiec Watchtower

Fig. 1. Łutowiec, photo by the author

1. Properties and attributes

Adress: 42-320 Łutowiec
Date of Establishment: 14th century
Owner: Private
Type: Stronghold
Protection: Listed as a historic monument
Function: It originally served a defensive function. Currently in the form of a ruin without a tourist setting.

Location



Exposition: It has a wide exposition zone from the fields.

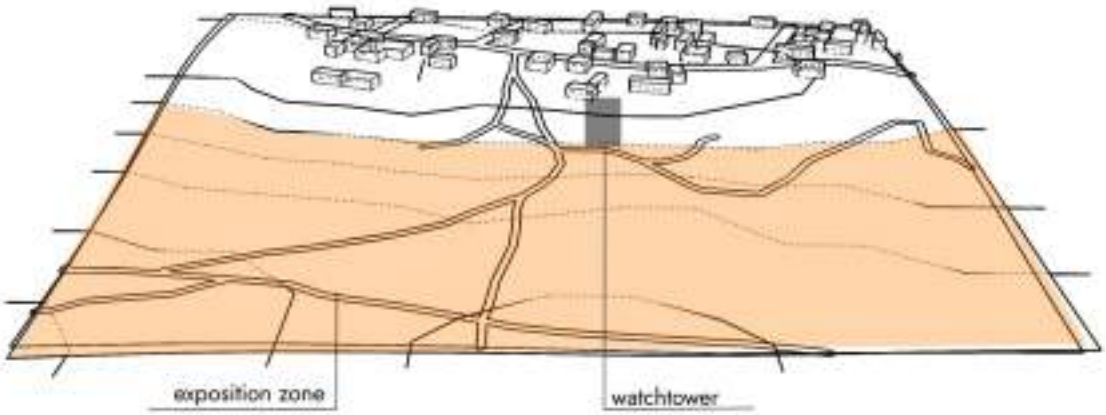


Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.1. Morphology

Surrounding: It is surrounded mostly by fields and isolated from the village with the tree line

Fig. 3. Scheme by the author

2. Events

Timeline

1399: The first historical source mentioning Lutowiec dates back to this year. Although the document does not specifically mention the castle, it is believed that the castle likely existed at this time.

Unknown Founding Date: The founder of the castle is difficult to determine, and the limited remains of the castle make it challenging to ascertain its original size and layout.

1470s or 1480s: Recent hypotheses propose that the castle may have been constructed later, possibly by Wladyslaw Opolczyk during the 1470s or 1480s.

1408: In this year, the village of Lutowiec came under the ownership of the Koziegłowski family.

15th and 16th Centuries: The exact date when the fortress fell into disrepair is unknown, but it is believed to have possibly happened around the turn of the 15th and 16th centuries.

History: Lutowiec is first mentioned in 1399, likely already housing a castle, although it's unclear who built it due to limited remains. Bohdan Guerquin attributes it to Casimir the Great, part of the kingdom's western defense system. Recent theories suggest Wladyslaw Opolczyk might have constructed it in the 1470s or 1480s. In 1408, the Koziegłowski family took ownership. The fortress's decline around the 15th to 16th century is uncertain.

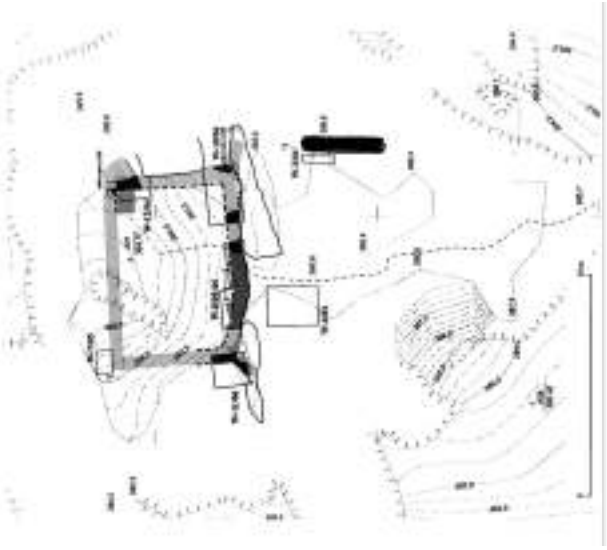


Fig. 4. Plan, source: medievalheritge.com

3. Transformations and Preservation Status

Transformations: A masonry building was erected on a rocky outcrop nearly 20 meters high. The preserved fragment proves that it occupied the entire surface of the rock. It may have had a very complex character. On the north side stood a tall semicircular tower, connected by a wall to the guard rooms. The interior of the watchtower could be accessed by ropes and ladders (as in Ryczow). On the south side, the area around the rock rises gently. It can be inferred that a farm maypole was located here. The wood and earth fortifications were in the shape of a horseshoe connected to a building on the rock. It cannot be ruled out that the whole thing was surrounded by a moat.

State of preservation: The object is in a very poor state of preservation. It has not undergone any conservation work.

Fig. 5. Łutowiec, photo by the author

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Mirów Castle

Fig. 1. Mirów, photo by the author

1. Properties and attributes

Adress: 42-320 Mirów
Date of Establishment: 14th century
Owner: Private
Type: knights castle
Protection: Listed as a historic monument
Function: It was originally used for defense and residential functions. Currently under reconstruction, it will be open to the public.

Location

Exposition: The castle has got an exposition view in the line straight to Bobolice Castle which is nearby. It is hight visible from the city.

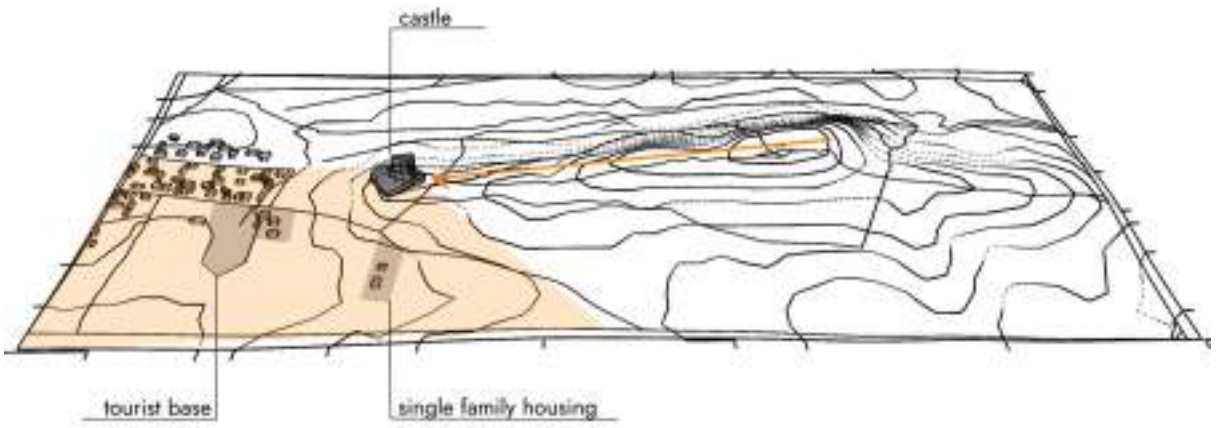

Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.2. Morphology

Surrounding: Nearby there is a tourist base with parking lot and gastronomy. Close to the castle there is more and more single family houses built.

Walls

Bastions

Tower

Recess

Fig. 3. Scheme by the author

2. Events

Timeline:

Unknown Date (Before Casimir the Great): The castle in Mirów is not mentioned in the list of fortresses erected by Casimir the Great. It is believed to have existed either during the reign of the last Piast or to have been erected by a private founder.

1460s: There is a possibility that the castle was in the possession of the Lis family during this decade. The Lis family also held the nearby castle in Koziegłowy.

1405: The existence of the Mirów castle is first documented in a 1405 document. This document mentions an unknown Sasin, who held the position of burgrave at the local castle.

1422: In this year, Mirów was purchased by Piotr w Bnina.

Late 15th Century: The castle came into the possession of the Myszkowski family by the end of the 15th century.

1633: The Myszkowski family owned the castle until this year.

After 1633: Ownership of the castle passed to the Korycinski and Męcinski families.

1797: The castle was abandoned in this year.

History: Mirów Castle's omission from Casimir the Great's fortress list suggests two potential scenarios. It either predates the rule of the last Piast ruler or was constructed by a private individual. In the 1460s, it is conceivable that the Lis family, who also controlled nearby Koziegłowy Castle, held ownership of Mirów Castle. The castle's first documented mention dates back to 1405 when an individual named Sasin served as the burgrave at the local castle. In 1422, Mirów was acquired by Piotr w Bnina, and by the late 15th century, it had passed into the possession of the Myszkowski family.

Source: B. Guerquin, Zamki w Polsce [Castles in Poland], Arkady, 1984, p.16

Fig. 4. Reconstruction and plan, source: medievalheritge.com

Legend: Myths surrounding the Jura castles are abundant, and though they may have slight regional variations, they share common elements. The tale centers on two identical twin brothers who lived in Mirów and Bobolice, leading prosperous lives and storing their wealth in interconnected dungeons beneath both castles. These riches were believed to be guarded by a malevolent witch and a spectral dog.

At one point, one of the brothers returned from a war, accompanied by a captivating princess. Tragically, both twins fell in love with her. Overwhelmed by jealousy, one of the brothers imprisoned the princess in a dungeon and appointed the witch as her guardian. Unable to endure the separation, the other brother ventured into the dungeon, where he and the princess began to share a forbidden affection. The jealous brother, witnessing this betrayal, fatally struck his sibling with a single sword blow. Consumed by despair, he descended into madness and met a tragic end, reportedly struck by lightning one fateful evening.

According to the enduring legend, the princess remains trapped within the dungeon to this day, while the vengeful witch occasionally emerges to frighten unsuspecting travelers.

Source: https://www.zamkipolskie.com/

3. Transformations and Preservation Status

Transformations: It was not until the end of the 14th century that Krystyn of the coat of arms of Lis from Koziegłowy, after receiving the Mirovo domain, proceeded to transform the watchtower into a castle. It is likely that King Władysław Jagiełło, when handing over the castle to Krystyn, instructed him to carry out this expansion. As the seat of the Myszkowski family, it was enlarged and modernized. The main building was increased by two stories, and the residential tower was also raised to five stories. It was also at that time that the lower castle was built, with an entrance leading to it through the gate tower. The lower castle included residential and farm buildings.

1895

1907

1925

1995

State of preservation: Not much remains of the lower castle, only the foundations of some buildings. The upper castle, on the other hand, is quite well preserved. The castle is currently undergoing reconstruction.

Transformations: Source: fotopolska.eu
Preservation status: photos by the author

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Bobolice Castle

Fig. 1. Bobolice, photo by the author

1. Properties and attributes

Adress: Bobolice 1, 42-320 Bobolice
Date of Establishment: 14th century
Owner: Private
Type: knights castle
Protection: Listed as a historic monument
Function: It was originally used for defense and residential functions. Now rebuilt and open to the public.

Location

Exposition: Very exposed in the landscape, it has long exposure axes, surrounding is being built up with single family houses

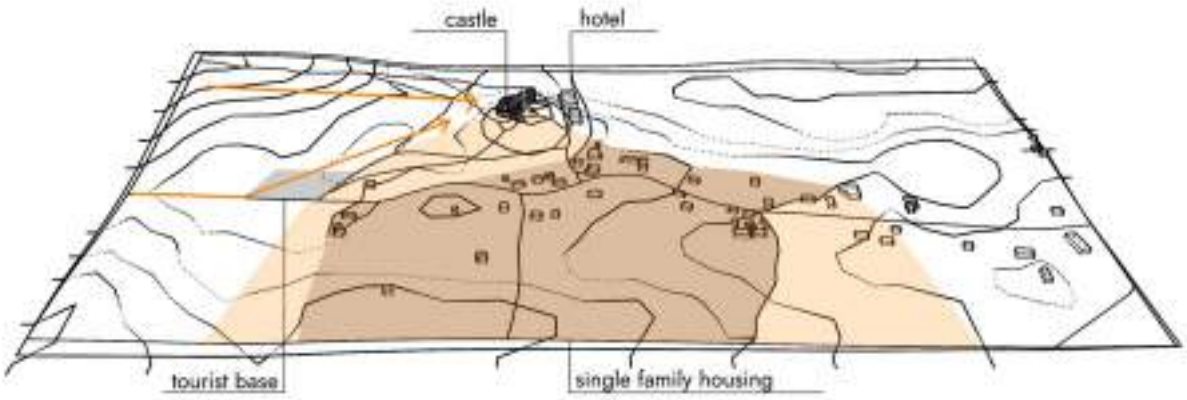

Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.1. Morphology

The surroundings: The facility is located near the castle in Mirow. There is a parking area and hotel-restaurant buildings on the premises. Nearby, plots of land with "castle view" are also available for sale.

External walls

Tower

Internal buildings

Fig. 3. Scheme by the author

Timeline

1370-1396: The castle was under the control of Wladyslaw Opolczyk during this period.

1396: The castle was restored to the Kingdom and came under the ownership of Wladyslaw Jagiello.

Late 14th Century - Late 16th Century: The distinguished Krez family acquired ownership of the castle, holding it for nearly 200 years.

1587: The castle was captured by the army of Archduke Maximilian.

1587: It was subsequently recaptured by the Zamoyski army.

Late 16th Century: The castle came into the possession of the Myszkowski family.

17th Century: Ownership of the castle passed to the Męcinski family.

17th Century (During the Deluge): The castle was unable to withstand an attack by the Swedish army and fell into disrepair.

Late 17th Century (During John Sobieski's Time): John Sobieski, en route to relieve Vienna, stopped in Bobolice but had to spend the night in tents, suggesting that the castle was no longer in use.

Late 18th Century: Attempts were made to rebuild the castle, but these efforts were eventually abandoned.

History: Between 1370 and 1396, Wladyslaw Opolczyk held control of the castle, and it was then returned to the kingdom by Wladyslaw Jagiello. Subsequently, it was granted to the respected Krez family, who maintained ownership for nearly two centuries. In 1587, the castle was captured by Archduke Maximilian's forces but later reclaimed by Zamoyski's army. It then passed into the possession of the Myszkowski family and later the Męcinskis. During the 17th century, it became vulnerable during the Swedish Deluge, leading to abandonment and decay. Although John Sobieski briefly paused at Bobolice while en route to relieve Vienna, he had to spend the night in tents. Despite subsequent efforts to restore it, these initiatives were ultimately abandoned in the late 18th century.

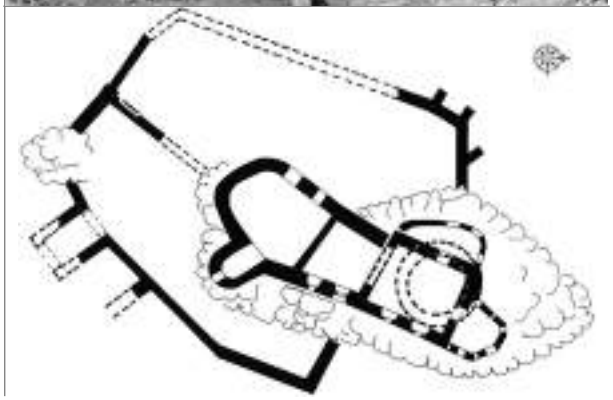

Fig. 4. Reconstruction and plan, source: medievalheritge.com

2.1. Untangible heritage

Legend: As per the ancient narrative, the owners of the Bobolice and Mirów castles were a pair of brothers, Mir and Bobol, bound by an unbreakable bond. Their names bestowed upon the towns of Mirów and Bobolice bore testament to their deep connection. United in numerous campaigns, they returned with substantial spoils, which they divided fairly, bringing prosperity to the local community. To safeguard their riches from potential thieves, Mir and Bobol ingeniously crafted an underground tunnel connecting their two castles, aided by a formidable witch who deterred unwelcome intruders.

However, fate took an unforeseen turn when Bobol returned from a campaign in Russia not only with riches but also with a captivating maiden who captured both brothers' hearts. Their affection for her grew uncontrollable, and they decided to let destiny determine her betrothal. Fate favored Bobol, and he quickly wed the enchanting young woman. Nevertheless, love's intricate web ensnared them all, as Mir found it impossible to accept that the love of his life was now married to his brother. The young lady, too, harbored feelings for the other sibling. Consequently, the star-crossed lovers clandestinely met in the tunnel, taking advantage of the witch's absence during her sabbatical.

Their secret rendezvous were short-lived, as one fateful day, Bobol discovered them together. Consumed by jealousy, he lost control, seized a sword, and tragically killed his own brother. To compound the tragedy, he ordered his beloved wife to be entombed within a tower.

According to the enduring legend, on moonlit nights, a spectral lady, dressed in white, can still be seen within the tower, gazing sorrowfully toward Mirów Castle.

Source: https://www.zamkipolskie.com/

3. Transformations and Preservation Status

Transformations: Bobolice Castle was built on an irregular plan that matched the shape of the limestone rock. In the upper part there was a cylindrical tower.

1932

1954

1968

2011

State of preservation: the castle is rebuilt

Transformations: Source: fotopolska.eu
Preservation status: photos by the author

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Morsko Castle

Fig. 1. Morsko, photo by the author

1. Properties and attributes

Adress: Zamkowa 70, 42-400 Zawiercie
Date of Establishment: 14th century
Owner: Private
Type: Knights castle
Protection: Listed as a historic monument
Function: Originally, it had defensive and residential functions. Now in the form of a ruin surrounded by a resort.

Location

Exposition: Most of the exposition zone is in the tourist base which is a private summer camping. The castle is surrounded by the trees and not visible from one elevation

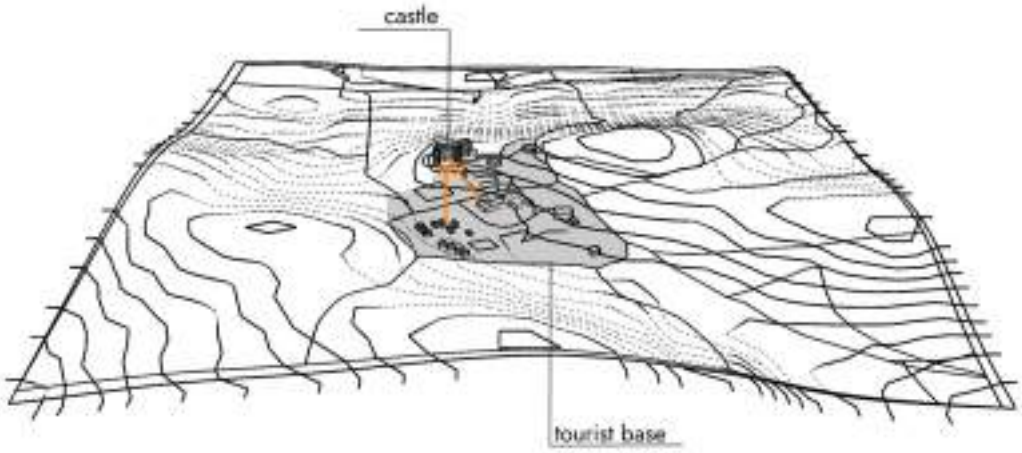
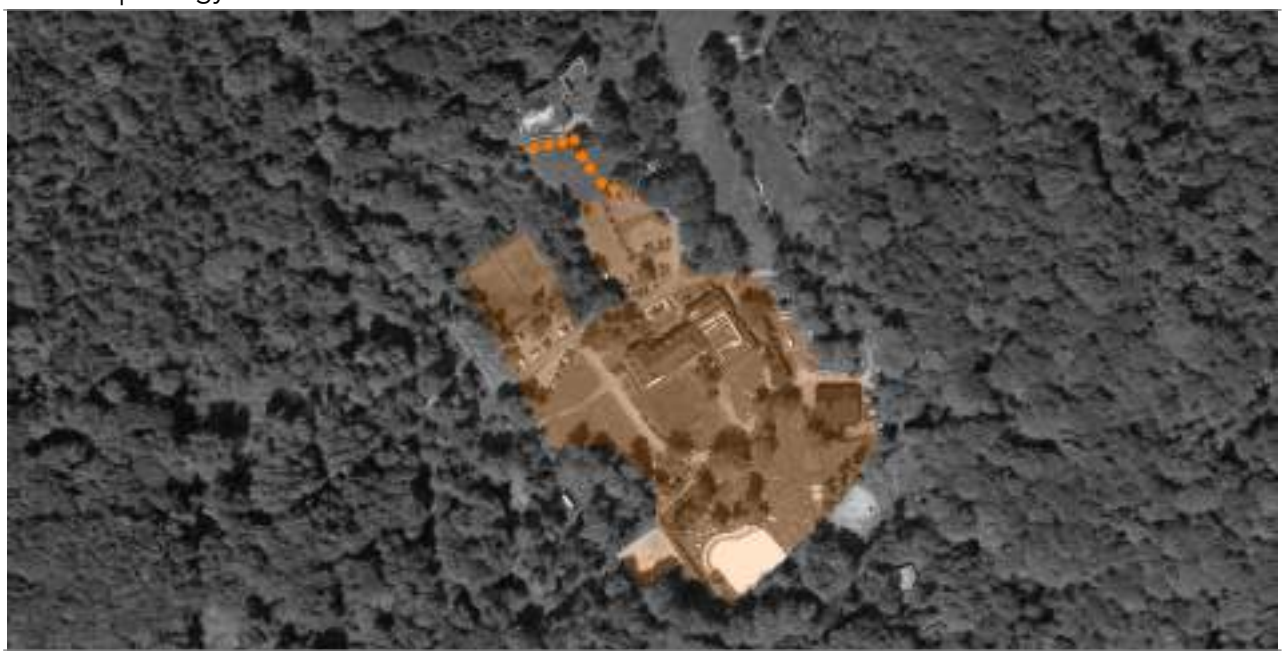


Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.1. Morphology



Description: The main walls are strictly connected with the limestone. The castle is very isolated. It's only neighbourhood is the summer camp

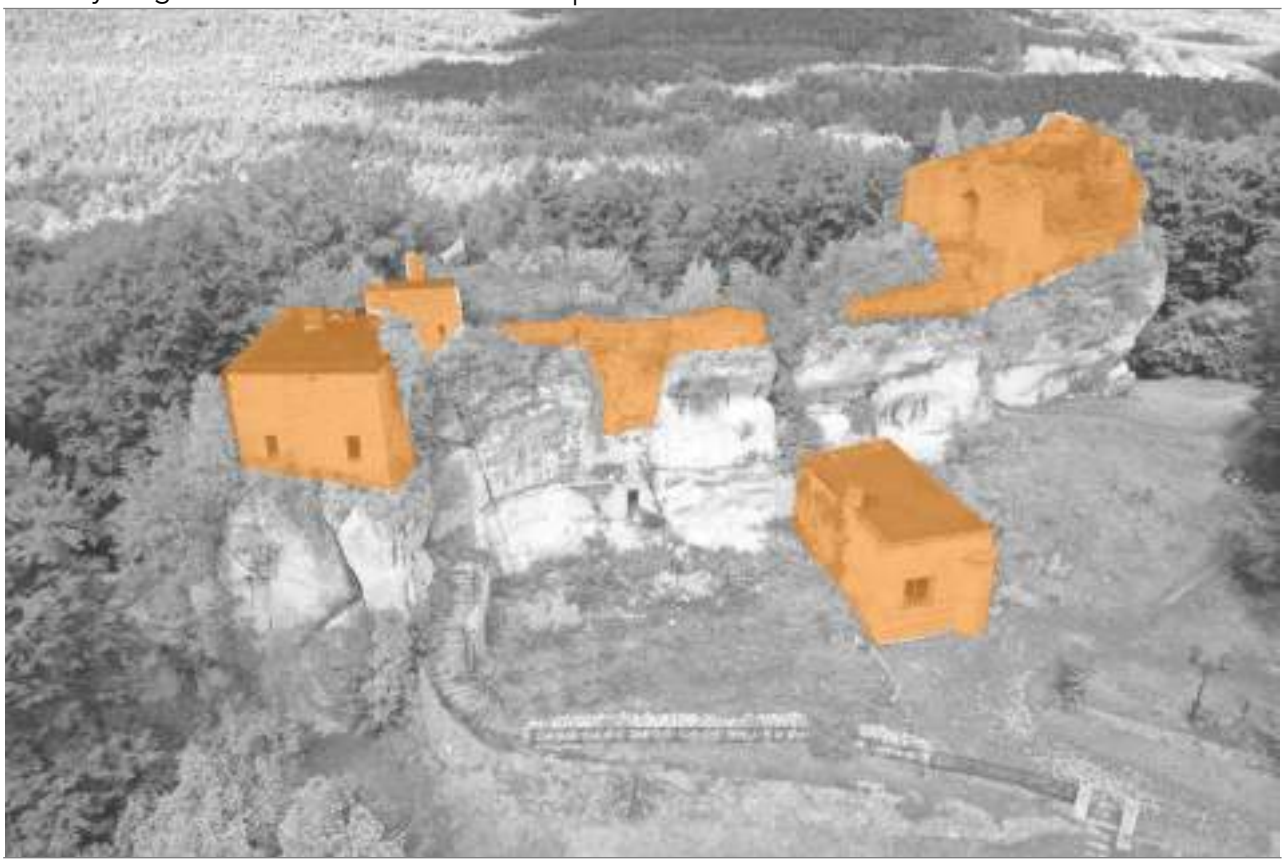


Fig. 3. Scheme by the author

3. Events

Timeline:

14th Century: The castle's construction is initiated by the Wlodek family. The knight Mikołaj Strzała is the first known owner.

1392: Ownership changes hands, and Piotr of Marcinowice becomes the new owner of the castle.

1413-1434: Jan of Sieciechowice becomes the owner of the entire area, and the function of burgrave at the Morsk castle is temporarily entrusted to a knight named Piotr of Lis, bearing the Lis coat of arms

1435: The estate, including the castle of Bąkowiec, is taken over by Krystyn of Koziegłowy and his descendants

Subsequent Centuries: Ownership of the castle and estate passes through various families, including the Włodek, Zborowski, Brzeski, and Giebułtowski families.

Early 17th Century: By this time, the property is in a state of severe disrepair, and it is eventually abandoned.

History: The remains of a 14th-century knightly castle originally constructed by the Wlodek family are present here. Historical records indicate that the first known owner was the knight Mikołaj Strzała. In 1392, following the end of Opolczyk's rule, a new proprietor emerged in the form of Piotr of Marcinowice. During the years 1413 to 1434, the entire region fell under the ownership of Jan of Sieciechowice, and the role of burgrave at the Morsk Castle was temporarily entrusted to a knight named Piotr of Lis, bearing the family's coat of arms.

Source: B. Guerquin, Zamki w Polsce [Castles in Poland], Arkady, 1984, p.219

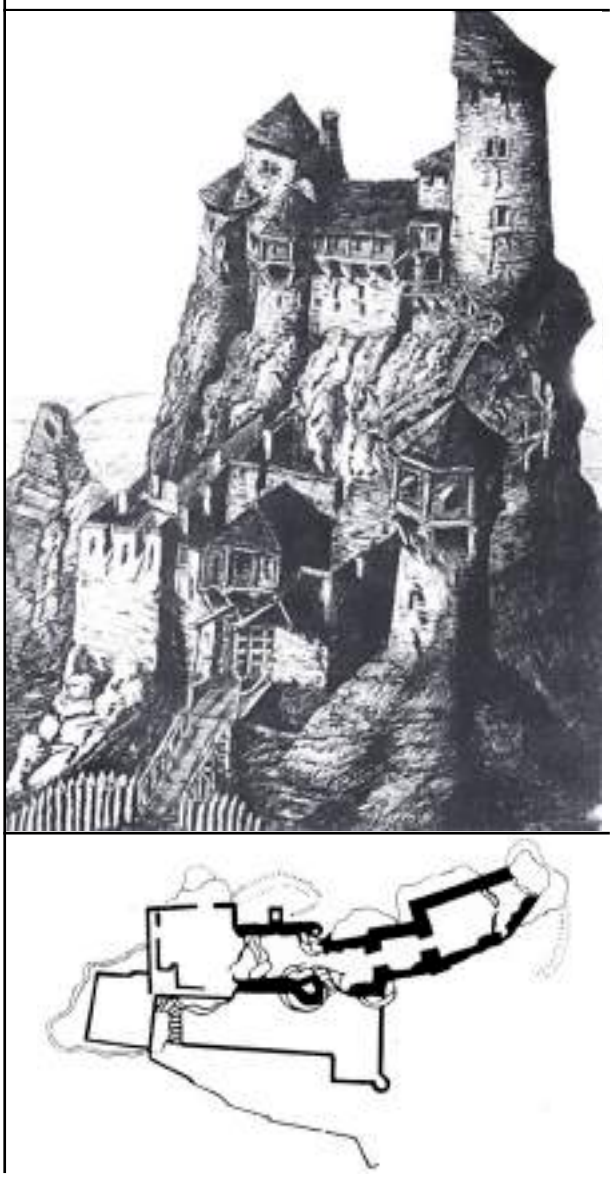


Fig. 4. Reconstruction and plan, source: medievalheritge.com

Legend: The Bąkowiec Castle's ruins have given rise to a multitude of captivating legends.

One of these narratives recounts the tale of a powerful lord responsible for erecting the castle, within whose walls he concealed an immense fortune. Tragically, he embarked on a journey to war with his retinue, never to return, leaving his treasures deeply ensconced within, awaiting rediscovery.

Another legend revolves around two brothers bearing the name Morski, who held dominion over Bąkowiec Castle in bygone eras. Their unruly and predatory lifestyle became intolerable to the local populace. The brothers crossed a perilous threshold when they abducted the wife of the village headman. Fueled by fury, the betrayed husband resolved to exact vengeance, rallying a group of men to teach the audacious brothers a lesson. Okiennik Duży became their base of operations as they prepared for the assault. When the moment was ripe, they launched their attack, emerging triumphant. The castle lay in ruins, its garrison vanquished, yet the avenger himself met his demise in the heat of battle.

Yet another legend depicts retribution befalling a merciless lord. In days of yore, the castle was under the dominion of Lord Morski, who possessed a beautiful and youthful daughter. She fell in love with a penniless young man, and their affection was reciprocated. However, her father adamantly opposed their union. He resolved to imprison his daughter in a dungeon, where she met a tragic end, succumbing to hunger. The heartbroken lover, driven by a thirst for revenge, assembled a band of followers, relentlessly haunting the castle. The fortress became impregnable, preventing anyone from entering or departing. The inhabitants within languished in starvation, their desperation culminating in a bold confrontation with the castle. As they readied for battle, a tempest of cataclysmic proportions erupted, and lightning bolts from the heavens razed the castle walls, entombing the garrison beneath. Since that fateful day, during the most ferocious storms, a sinister figure, sometimes identified as the avenger or the ruthless lord himself, materializes on the castle ruins. In other renditions, it is the specter of the starved daughter, her ghostly form weeping inconsolably while seated upon a rock.

Source:https://www.zamkipolskie.com/

Transformations: The castle was constructed in the form of an irregular polygon encompassing an area of roughly 500 square meters. Positioned on opposite sides of the rock, to the north and south, were two residential structures, creating a courtyard with two semicircular towers at its center. These elements were linked by a perimeter wall. To the east, there existed a pre-castle complex, featuring additional buildings and protected by a rampart, palisade, and a dry moat. In 1927, architect Witold Czeczott acquired the property and utilized material from the original walls to construct a building within the southern rock. Following the conclusion of World War II, the site was purchased by the Zabrze Coal Industry Repair Plant and underwent transformation into a recreational destination. An additional structure and a ski lift were introduced at the base of the rock.

1951 1960

State of preservation: Today, the site continues to serve a recreational function, and the ruins are only accessible from the outside.

Transformations: Source: fotopolska.eu
Preservation status: photos by the author

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Siewierz Castle

Fig. 1. Siewierz, photo by the author

1.Properties and attributes

Adress: Tadeusza Kościuszki, 42-470 Siewierz
Date of Establishment: 14th century
Owner: Private
Type: The castle of the Krakow bishops
Protection: Listed as a historic monument
Function: It originally served as the residence of the Krakow bishops. Currently, in the form of ruins, it serves as a tourist attraction.

Location

Exposition: It has a wide space between the Czarna Przemsza River and the city where it is mostly visible

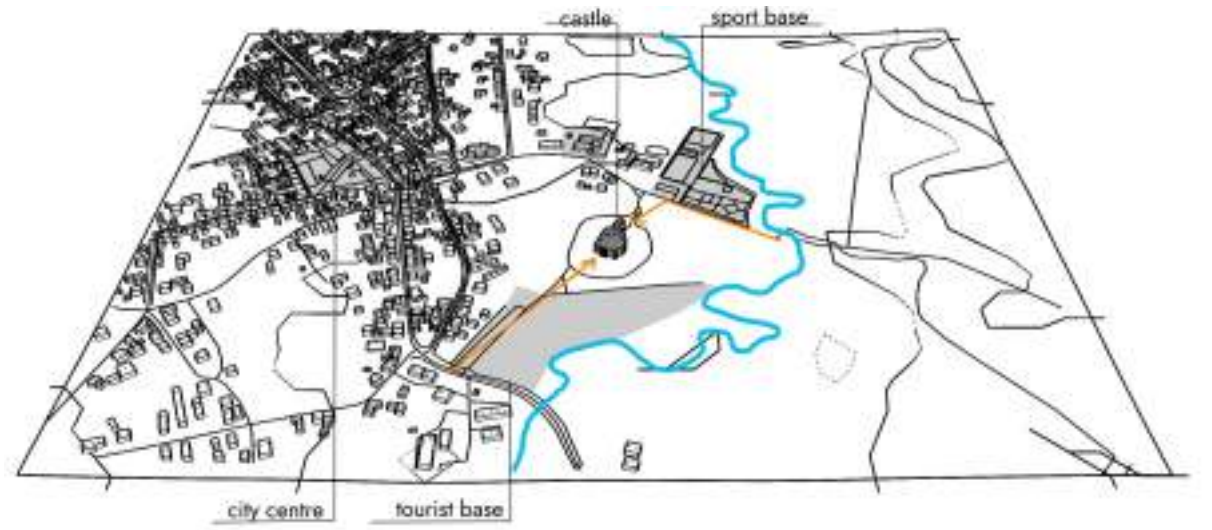
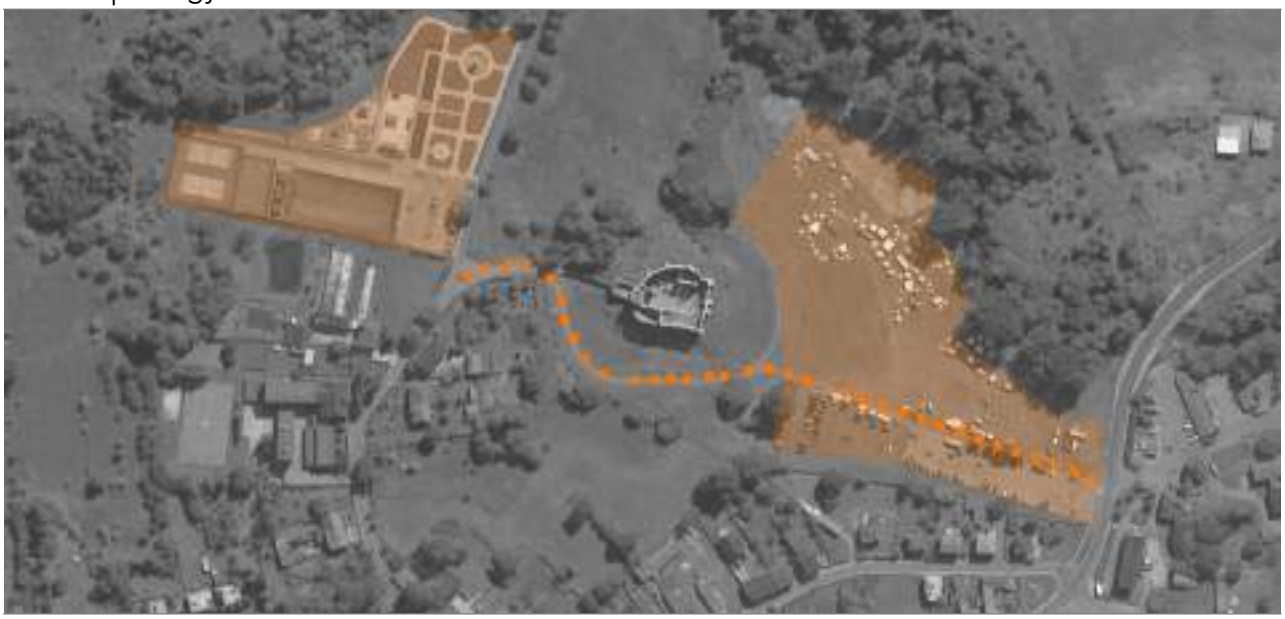
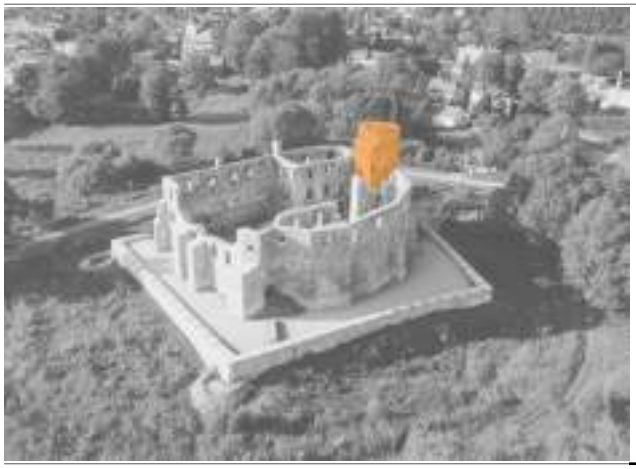


Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.1.Morphology



S**urroundings** Near the complex, there is a sports and recreational center. It has a large forecourt where tourist facilities are organized.



Tower

Walls

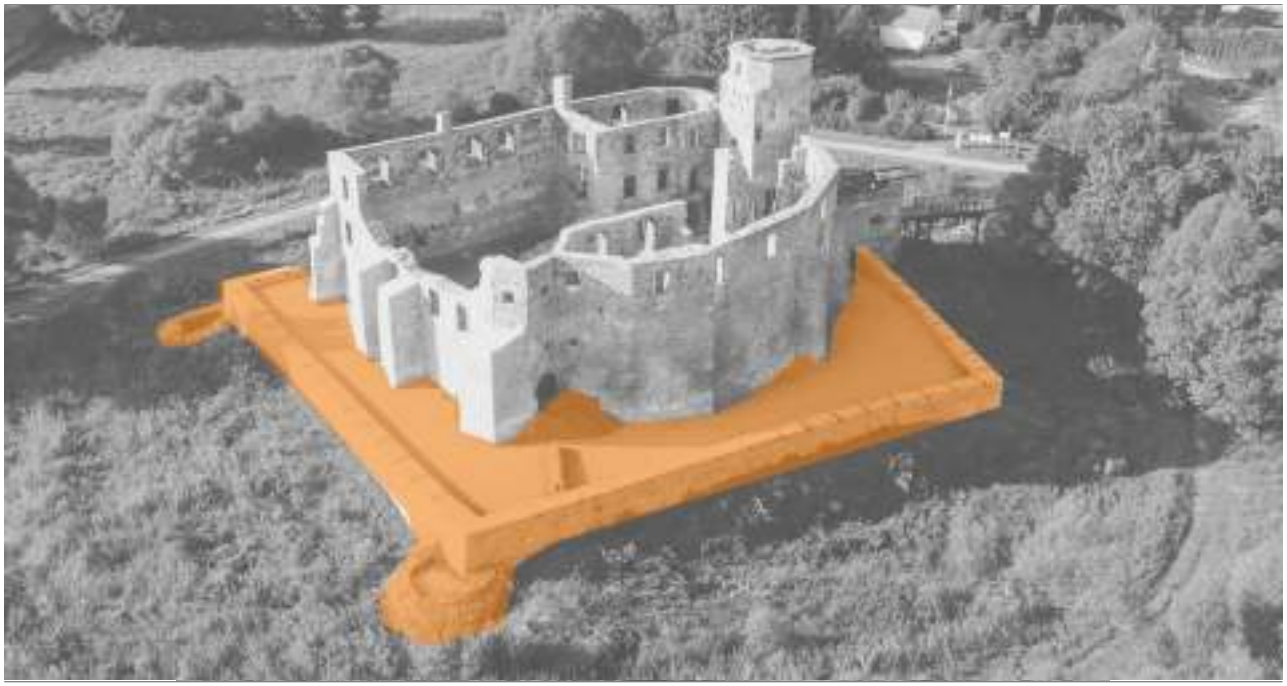


Fig. 3. Scheme by the author

2. Events

Timeline

Before 1170s: The lands are part of the Krakow region.

13th Century: The lands come under the rule of the Opole dukes.

13th Century: A ducal stronghold with a garrison is established in the area, with local castellans responsible for its protection.

Until the Mid-15th Century: Siewierz remains part of the Silesian duchies.

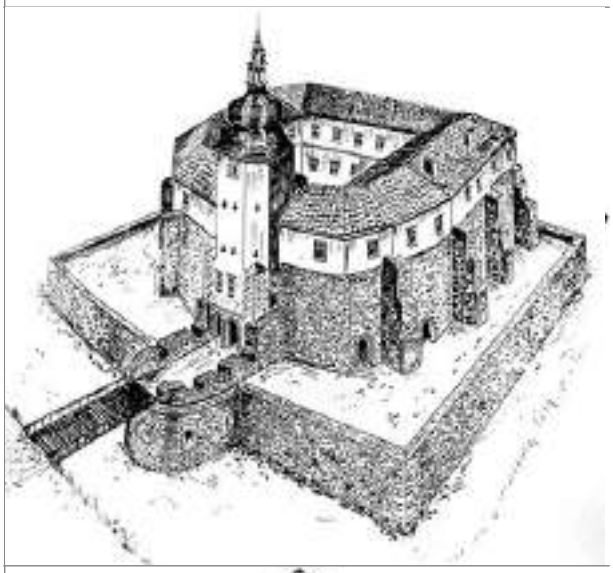
1443: Wacław I, the Duke of Cieszyn, sells the town and its surrounding lands to Krakow Bishop Zbigniew Oleśnicki.

After 1443: The Siewierz region does not become part of the Crown but remains an autonomous possession of subsequent Krakow bishops.

Throughout History: Successive Krakow bishops, including Jan Konarski, Piotr Tomicki, Jan Lataski, Andrzej Zebrzydowski, Filip Padniewski, and Franciszek Krasiński, contribute to the embellishment and fortification of the Siewierz Castle.

History: Historical records unveil a captivating narrative of land ownership in this region. Originally affiliated with the Krakow region until the 1170s, these lands transitioned to the rule of the Opole dukes in the 13th century. During this era, a ducal fortress was steadfastly maintained at this location, under the watchful protection of local castellans.Siewierz retained its status as an integral part of the Silesian duchies until the mid-15th century. In a momentous twist of fate in the year 1443, Wacław I, the Duke of Cieszyn, orchestrated the sale of the town and its surrounding territories to Krakow Bishop Zbigniew Oleśnicki. It's noteworthy that the Siewierz region maintained its autonomy, distinct from the Crown, under the successive governance of Krakow bishops.

Source: B. Guerquin, Zamki w Polsce [Castles in Poland], Arkady, 1984, p.219



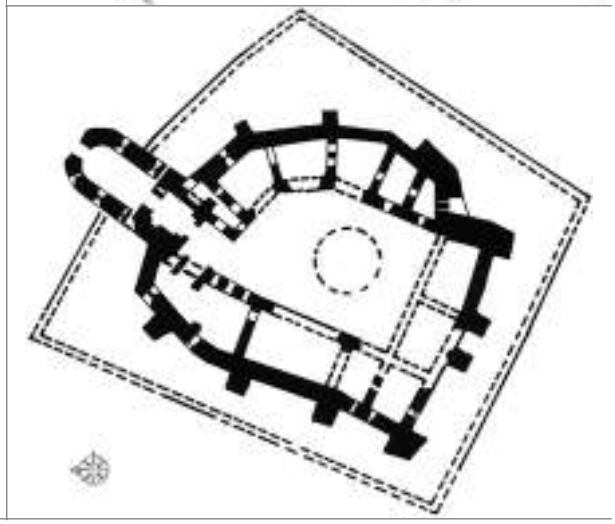


Fig. 4. Reconstruction and plan, source: medievalheritge.com

3. Transformations and Preservation Status

Transformations: The foundation of the stone castle's construction can be traced back to the early 15th century. During this period, a cylindrical stone tower, boasting a diameter of 9 meters, emerged at the heart of the settlement. Concurrently, work began on the perimeter wall, featuring an entrance located in the southern segment. Prior to the year 1518, another gate tower was added, this time on the northern side of the compound. On the directives of Bishop Jan Konarski, a residential structure was erected to the east of the tower. In all likelihood, during the 1530s, the previously mentioned tower was disassembled, with the materials repurposed for constructing the southern and western wings of the castle. Consequently, the castle's character underwent a transformation, assuming the guise of a Renaissance dwelling. Over the years, the castle underwent various modernizations until its unfortunate destruction at the hands of the Swedish forces.

1650

1859

1939

1955

State of preservation It is currently secured in the form of a permanent ruin.

Transformations: Source: fotopolska.eu
Preservation status: photos by the author

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Będzin Castle

Fig. 1. Będzin, photo by the author

1. Properties and attributes

Adress: Zamkowa 1, 42-500 Będzin
Date of Establishment: 13th century
Owner: Private
Type: knights castle
Protection: Listed as a historic monument
Function: Originally served defensive functions and now serves as a tourist attractions.

Location

Exposition: It is located in the city centre. Visible only from a few parts. Covered by greenery.

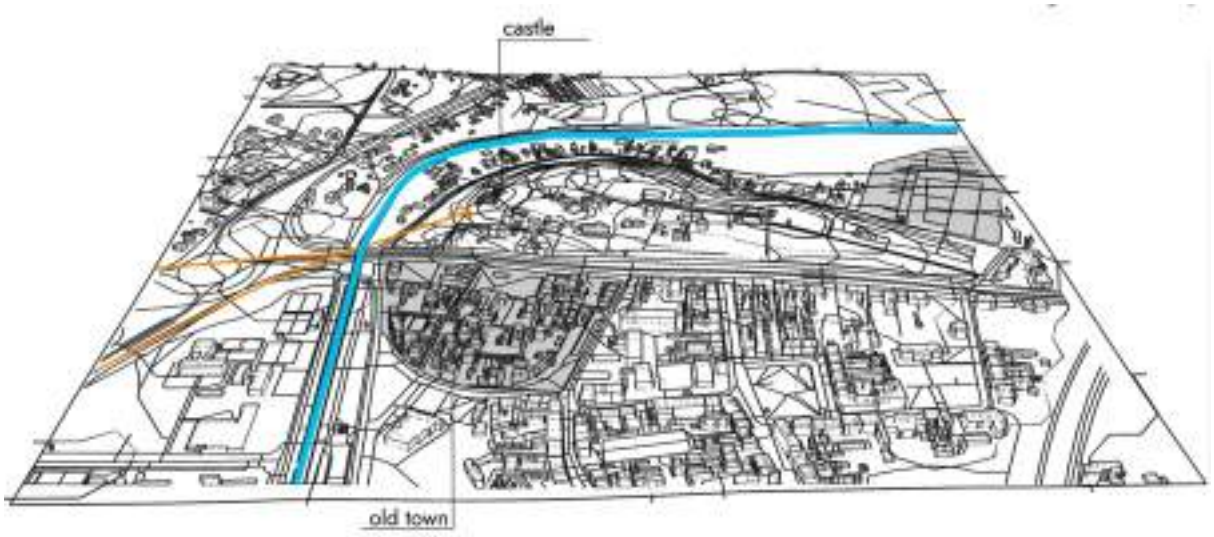
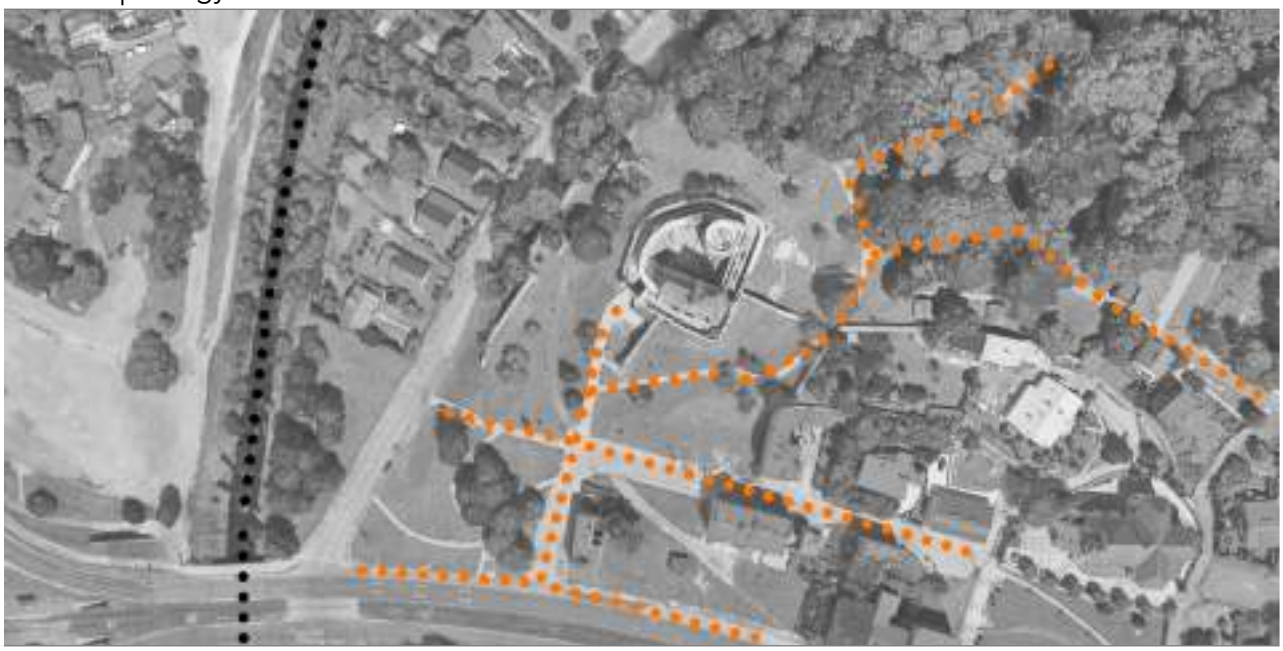


Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.1. Morphology



Otoczenie założenia: Obiekt składa się z ruin zamku górnego z wieżą ostatecznej obrony, fragmentów murów zewnętrznych, reliktów kaplicy oraz baszty tzw. „Sołtysiej". U podnóża obiektu zlokalizowano niewielki parking. Trasy prowadzące do ruin wyłożone są piachem oraz trawą. Wzdłuż pozostałości murów zewnętrznych usytuowane są wejścia do jaskiń.

Tower

Internal structures

First line of defensive walls

Second line of defensive walls

Fig. 3. Scheme by the author

2. Events

Timeline

9th-10th centuries: First fortifications constructed on Castle Hill above the Black Przemsza River.

Bolesław Wstydliwy establishes a defensive stronghold at the site, aiming to control the trade route from Kraków to Wrocław.

Construction of the stone castle takes place during the reign of Casimir the Great, with the residential building serving dual

purposes as a defensive structure and tower. Development of a small suburban settlement into a city begins, enclosed by walls along with the castle and church, under Casimir the Great's rule.

Będzin plays a vital role in the defensive line on the border with Czechia during the Middle Ages, often facing attacks from Silesian princes on military expeditions.

1589: The Będzin Pact is signed in the castle, resulting in Austrian Archduke Maximilian renouncing his claims to the Polish throne.

1683: King Jan III Sobieski stays at Będzin Castle en route to the relief of Vienna.

History: In 1991, archaeological investigations unveiled a fascinating history of the fortifications on Castle Hill, perched above the meandering Black Przemsza River. The genesis of these defenses dates back to the confluence of the 9th and 10th centuries. Bolesław Wstydliwy, the ruler who asserted control over the Kraków district amidst territorial divisions, strategically positioned a defensive stronghold here. His aim was to secure authority over the vital trade route linking Kraków to Wrocław.

The construction of the stone castle unfolded during the reign of Casimir the Great. While the residential edifice served defensive purposes, it also assumed the role of a formidable tower. As the castle took form, the adjacent suburban settlement began to burgeon into a full-fledged city. Casimir the Great wisely fortified this emerging urban center, encircling it with protective walls that encompassed the castle and the church.

During the medieval epoch, Będzin occupied a pivotal role as a bulwark on the border with Czechia. Situated just ahead of the renowned "Eagle Nests" line, it stood as the first line of defense against the incursions of Silesian princes into these lands. In a significant historical event, the Będzin Pact of 1589 was sealed within the castle's walls. This pact witnessed the Austrian Archduke Maximilian, held in captivity, renouncing his claims to the Polish throne. Additionally, in 1683, King Jan III Sobieski chose Będzin Castle as a stopping point on his journey to Vienna to provide crucial relief.

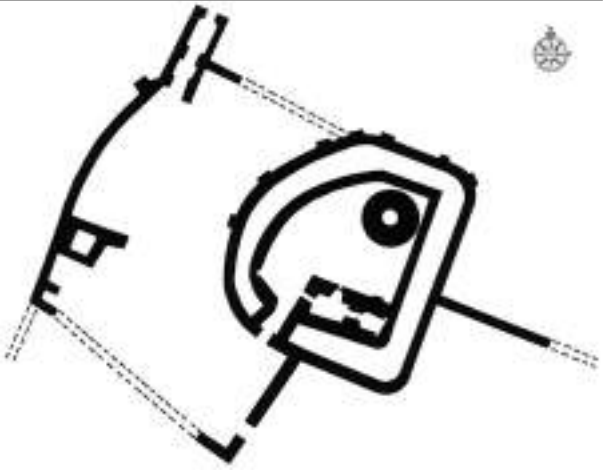


Fig. 4. Reconstruction and plan, source: medievalheritge.com

Legend 1:
Centuries past, a tale whispers of a moment when King Kazimierz Wielki ventured through this enchanting realm, drawn by the captivating beauty that surrounded him. His eyes fixated on the picturesque castle hill that gracefully rose above the serene waters of the Black Przemsza River. His fascination was so profound that he ordered his entire retinue to pause, granting them a respite in this tranquil haven.

It is told that during this interlude, the foundation of the nearby town of Czeladź was born. Historically, this account appears shrouded in uncertainty, for King Kazimierz Wielki continued to bestow town privileges upon Będzin. Nevertheless, the settlement predates these events, known in earlier eras as Bendyn or Banden.

But how did this appellation come into existence?

Legend 2:
Another chronicle unravels the narrative of an unwavering companion and trusted confidant of King Bolesław Chrobry, a steadfast comrade named Benda. Their enduring friendship sprouted from their shared upbringing at the princely court, where they matured side by side, honing their skills in the chivalric arts. As they advanced into adulthood, they fought as comrades in numerous military campaigns, emerging victorious against countless Slavic tribes. Many years later, in recognition of Benda's unwavering loyalty and selfless dedication, the king gifted him the lands along the Black Przemsza River, along with the adjacent settlements. Captivated by the natural splendor of the land and its untamed wilderness, Benda chose a rocky hill nestled by the river's edge as his dwelling.

However, facing a shortage of labor to swiftly construct a fortified castle, he directed the local populace to engage in arduous toil. Those among the common folk who resisted this labor were seized, and under Benda's vigilant watch, they toiled ceaselessly to complete the castle.

Despite the eventual completion of the castle, none among the laborers received any recompense for their grueling efforts. The oppressed and maltreated people, resentful of their master, uttered curses against him, and grim retribution visited him for the injustices he had perpetrated. One fateful day, tragedy struck when a colossal rock detached from a cliff, crushing his wife and children before his very eyes. Overwhelmed by profound sorrow and humility, Benda embraced a life of asceticism, donning the robes of a monk, and departed from the castle. He found solace in a modest hermitage in Gołonóg, seeking redemption for his sins and dedicating the remainder of his life to assisting the local settlers while leading a life of austere simplicity.

Source: https://www.zamkipolskie.com/

3. Transformations and Preservation Status

Transformations: It is highly probable that during the 13th century, the initial wooden fortifications witnessed their first transformation with the introduction of a masonry element —a circular tower positioned at the base of a square structure. This circular tower was formerly situated in the northwest corner of the edifice, and the entire complex was enveloped by a dual system of fortifying walls. Subsequently, the castle experienced a gradual decline, and it wasn't until the year 1834 that earnest endeavors were initiated to resurrect it from the shroud of neglect. Spearheading the ambitious reconstruction project was Franciszek Maria Lanci, driven by a vision that encompassed the establishment of a mining school within the castle's walls, aimed at catering to the burgeoning demands of the coal mining industry in the vicinity.

1800

1945

1956

unknown date

Fig. 3. Scheme by the author

State of preservation: After the damages incurred during the Second World War, the destroyed walls were fully restored, and currently, the castle operates as a vibrant cultural center, hosting exhibitions and events.

Transformations: Source: fotopolska.eu
Preservation status: photos by the author

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Pilica Castle

Fig. 1. Pilica, photo by the author

1. Properties and attributes

Adress: Zamkowa, 42-436 Pilica
Date of Establishment: 17th century
Owner: Private
Type: defensive residence
Protection: Listed as a historic monument
Function: Originally, it served both defensive and residential purposes. After the Second World War, it was used as an orphanage. Currently, it is unused.

Location

Exposition: It has the main axis of exhibition. It is almost not visible due to the tall greenery and external walls.

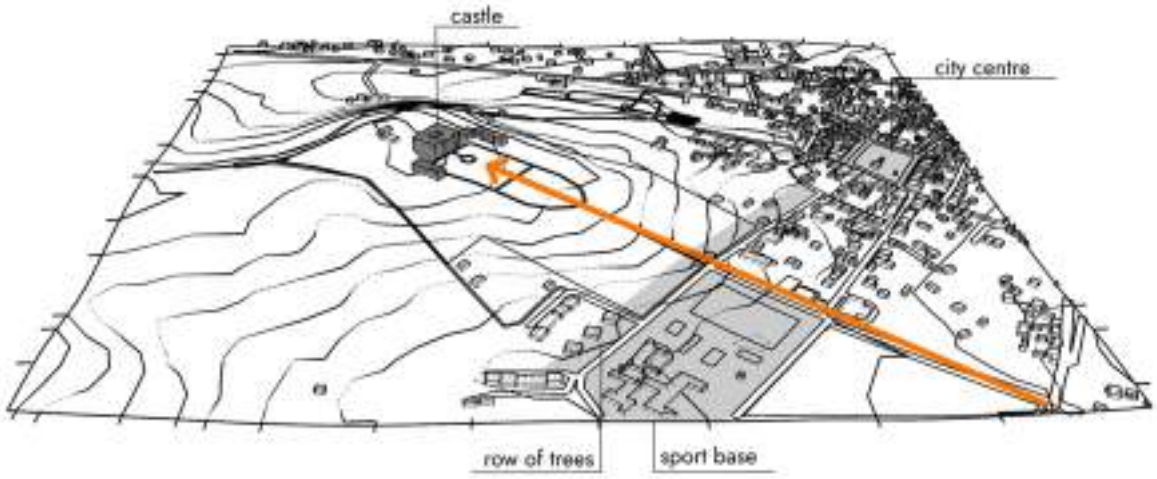

Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.2. Morphology

Surrounding: Surrounding the facility is a park-like estate with a fountain. A guard post is located at the entrance to the property. The estate's buildings consist of two wings of the castle that encircle the open courtyard.

Castle

Defensive walls

Fig. 3. scheme, elaborated by the author

2. Events

Timeline:

14th Century: The Toporczyk family, later known as the Pilecki family, initially resides in and rules over the Pilica estate from Smoleń Castle.

16th Century: Elżbieta Pilecka marries Wincenty Granowski, bringing Pilica as her dowry into the Granowski family.

17th Century (1570): Jan Pilecki sells Pilica to Bishop Filip Padniewski.

17th Century (1610): Władysław Padniewski, the nephew of Bishop Filip Padniewski, abandons Smoleń Castle and constructs a magnificent new defensive residence within the town of Pilica. The palace comprises forty rooms adorned with Italian stucco, and the dining hall features a coffered panel ceiling.

17th Century: Pilica passes through various hands, including Jerzy Zbarski and Konstanty Wiśniowiecki.

17th Century (1636): Pilica becomes part of Stanisław Warszycki's possessions when his daughter marries into the estate, bringing it as her dowry.

17th Century (1655): During the Swedish Deluge, the castle is captured.

17th Century: Pilica changes hands once more, this time under the ownership of Maria Sobieska (née Wesslów), who undertakes renovations of the castle after the damages incurred during the war.

History: Pilica's history is closely tied to Smoleń Castle, initially governed by the Toporczyk family, later known as the Pilecki family. Their rule over Pilica endured for generations until Elżbieta Pilecka, marrying Wincenty Granowski, introduced a significant change by bringing Pilica into the Granowski lineage.
The legacy of Elżbieta persisted under the Leliwici-Pileccy family, her descendants, who continued to govern Pilica. In 1570, Jan Pilecki relinquished his ownership, passing Pilica to Bishop Filip Padniewski. In 1610, Władysław Padniewski constructed an opulent defensive residence within Pilica, adorning it with Italian stucco, including a dining hall with an intricately coffered ceiling. Ownership shifted through Jerzy Zbarski and then Konstanty Wiśniowiecki. In 1636, Konstanty's daughter married Stanisław Warszycki, endowing Pilica to him as her dowry. The castle faced the upheaval of the Swedish Deluge, experiencing capture in 1655 and later falling into Swedish hands during the Northern War. In the late 17th century, Maria Sobieska (née Wesslów), the custodian of Pilica, initiated an ambitious restoration project to revive the castle after wartime damages.

Fig. 4. plan, source: medievalheritge.com

3. Transformations and Preservation Status

Transformations: Warszycki fortified the palace with bastion fortifications in a rectangular layout measuring 170x300 meters. Subsequent changing owners paid decreasing attention to the residence, and it wasn't until 1852 that the industrialist Krystyn August Moes renovated the deteriorating buildings. After a fire, the next renovation was undertaken by L. Epstein. In 1989, the castle passed into private hands, initiating extensive restoration work.

State of preservation: Currently, the facility is in very poor condition, and no conservation or utilization efforts are being undertaken.

Preservation status: photos by the author

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Guerquin B. Zamki w Polsce [Castles in Poland], Arkady. Warszawa 1984.

Fig. 3. plan, source: medievalheritge.com

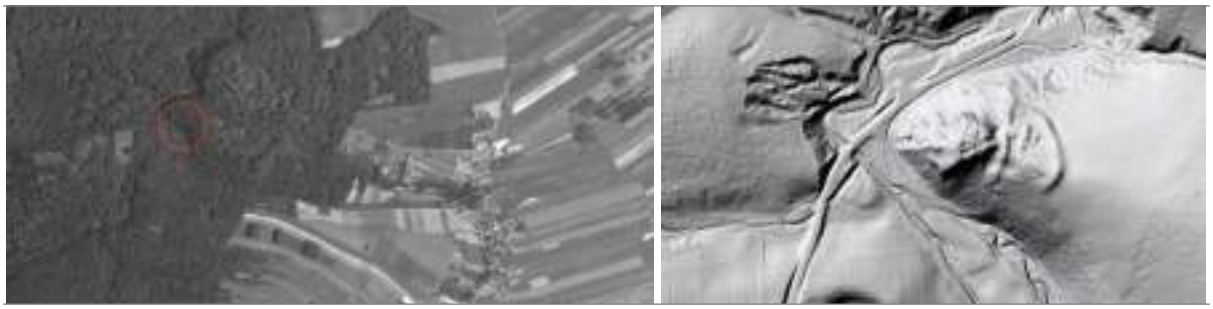
Udórz Castle

Fig. 1. Udórz, source: https://www.zamkipolskie.com/udorz/udorz.html

1. Properties and attributes

Adress: Suliszowice 4, 42-310 Suliszowice
Date of Establishment: 14th century
Owner: Private
Type: Stronghold
Protection: Listed as a historic monument
Function: Originally served defensive functions. Currently, in the hands of a private owner, it is completely inaccessible.

Location



Exposition of the Site: The castle, situated on a hill, towers over the town. It offers multiple viewpoints and is not obscured by trees or surrounding buildings. The exhibition zone on the side facing the so-called "Little Giewont" has been affected by the development of single-family housing.

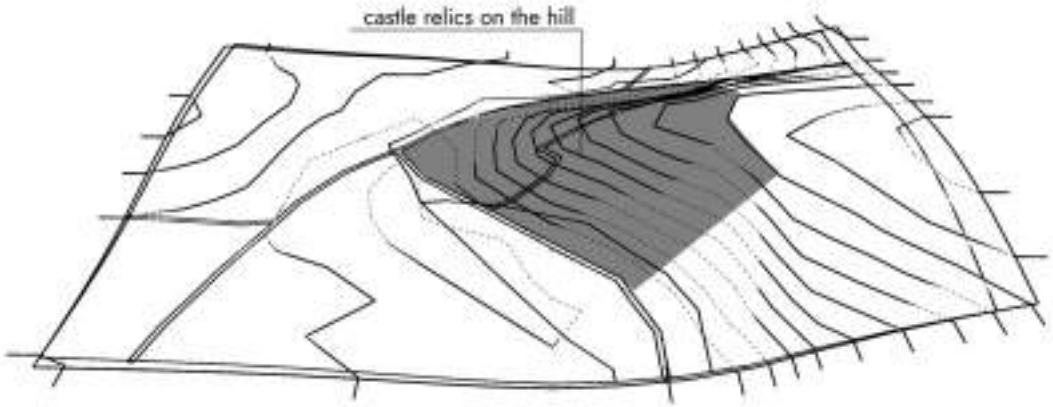
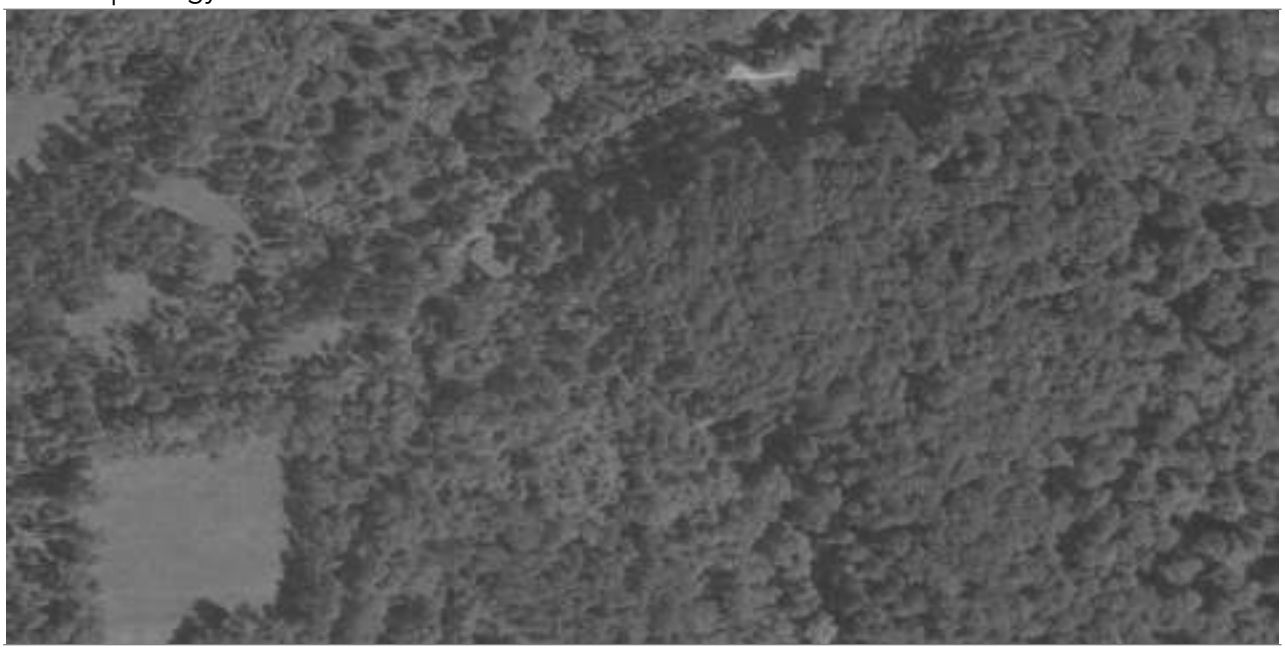


Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.2.Morphology



Otoczenie założenia: The object is surrounded by a forest.

2. Events

Timeline

In 1365, ownership of the village, previously belonging to the Order of the Holy Sepulchre, was transferred to private individuals.

The construction of the stone castle is presumed to have taken place at the turn of the 14th and 15th centuries, with Udorze Iwo of Obiechów, bearing the Więniawa coat of arms, believed to be its founder. He served as the Kraków voivode from 1398 to 1400 and later as the Rus starost from 1411 to 1421.

After 1581, the property, which had previously belonged to Mikołaj Długosz, came under the ownership of Andrzej Koryciński.

Descriptions from the late 18th century make reference to remnants of castle ruins.

History: In 1365, the village, previously associated with the Order of the Holy Sepulchre, changed hands and became privately owned. The construction of the stone castle, believed to have occurred between the late 14th and early 15th centuries, possibly under the supervision of Lord Udorze Iwo of Obiechów, who served as Kraków voivode from 1398 to 1400 and later as the Rus starost from 1411 to 1421, appears to have remained incomplete and uninhabited according to recent archaeological findings.

Fig. 3. plan, source: medievalheritge.com

3. Transformations and Preservation Status

Transformations: The assumed reasons for the interruption of construction work have not been explained by the explorers. However, it was noted that the earth fortifications adjoining from the east were most likely built much earlier by the Lusatian culture of the Hallstatt period (around 700-400 BCE). The stone castle was built on the northern slope of the hill above the Udorka River. This complex had an irregular pentagonal shape with dimensions of 30x11x31x19x20 meters. It may have included a large residential building composed of smaller adjoining structures. Stone foundations and small fragments of perimeter walls have been preserved. Despite the limited historical value of the building itself, it is worth visiting this place, especially due to the mysterious atmosphere that prevails here.

State of preservation: Depopulated, hilly area covered with dense forest.

Preservation status: source: https://www.zamkipolskie.com/udorz/udorz.html

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Guerquin B. Zamki w Polsce [Castles in Poland], Arkady. Warszawa 1984.

Pilcza Castle

Fig. 1. Pilicza, photo by the author

1.Properties and attributes

Adress: Smoleń 61, 42-436 Smoleń
Date of Establishment: 14th century
Owner: Private
Type: Knights castle
Protection: Listed as a historic monument
Function: Originally served defensive functions, now open to the tourists.

Location

Exposition: The castle towers above its surroundings. Its distinctive features serve as a symbol of the region.

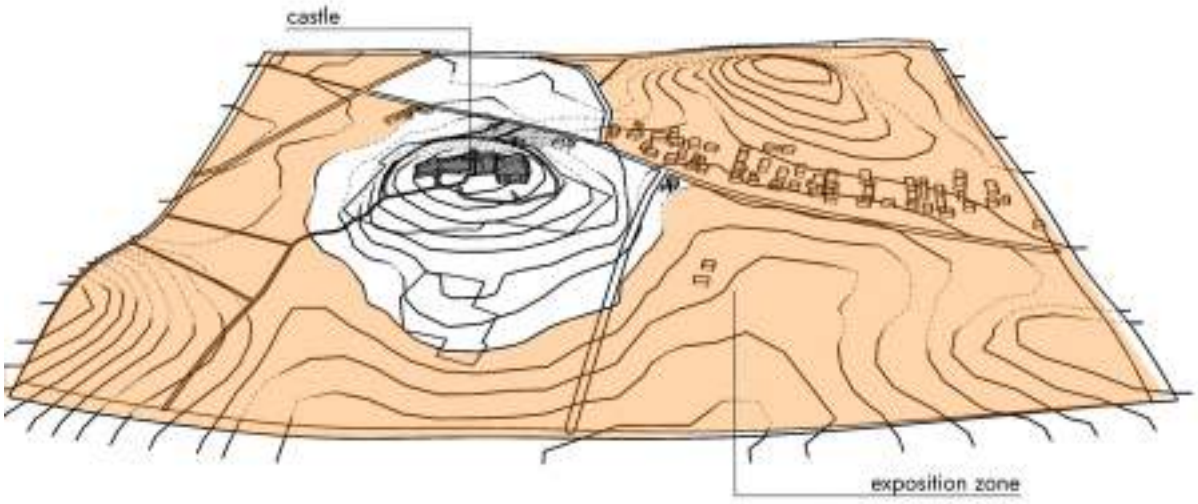
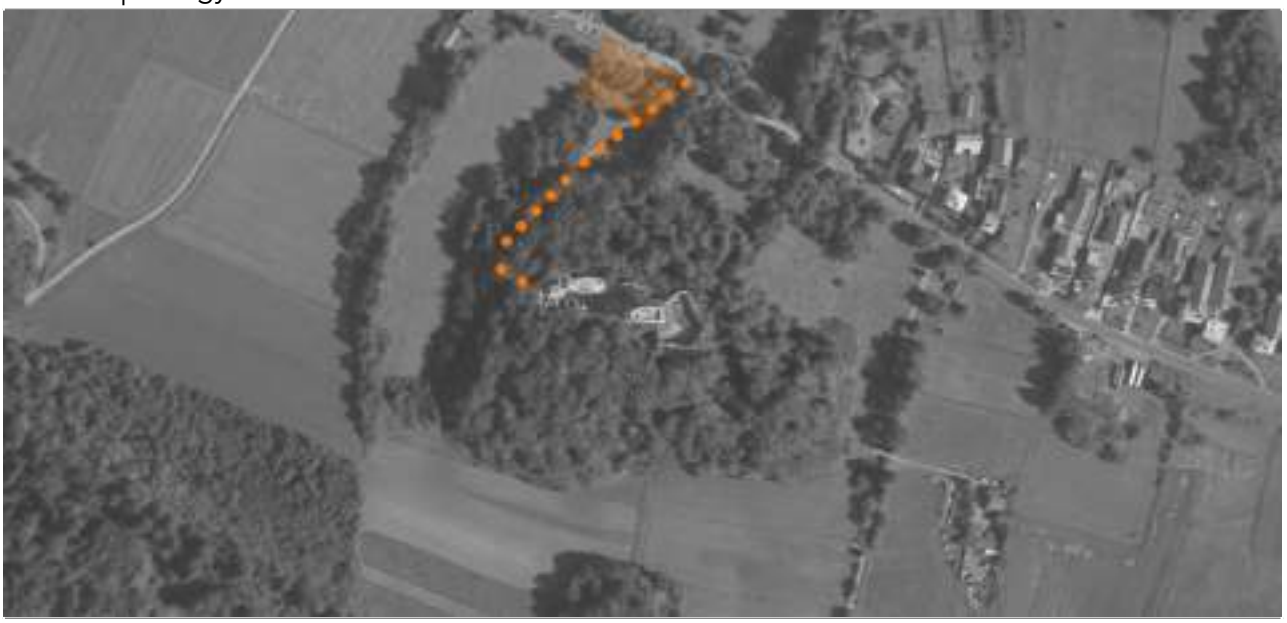


Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.1. Morphology



Surrounding: The castle is located on the hill covered with trees. At the bottom there is a small zone for tourists with a parking lot.

Tower

Upper castle

Lower castle

Fig. 3. Scheme by the author

Timeline

13th century: Likely the first wooden fortifications were established in the area.

1300: The wooden and earthen stronghold was completely destroyed during the conflict between Władysław Łokietek and Wacław II for the Polish crown. It's possible that the mention of destruction refers to fortifications on the neighboring Biśnik Hill. The Pilica land was owned by the Toporczyk family at this time.

Mid-14th century: Jan of Pilica or his son Otton erected the stone castle, Pilica, on top of the rock.

1389: Otton passed away, and his daughter Elżbieta married Wincenty of Grabów, of the Leliwa coat of arms.

Late 14th to early 15th century: The castle passed into the ownership of their son, Jan, voivode, and castellan of Kraków, who adopted the surname Pilecki.

1570: Jan Pilecki sold the castle to Bishop Filip Padniewski.

After 1570: The castle was no longer used as the owner's residence.

1610: Wojciech Padniewski built a castle in Nowa Pilica, and Smoleń was completely abandoned.

History: The earliest wooden fortifications in this area likely date back to at least the 13th century. Unfortunately, in 1300, during the conflict between Władysław Łokietek and Wacław II over the Polish crown, the wooden and earthen stronghold was completely razed. It's possible that the reference to the destruction of the stronghold could be related to fortifications on the nearby Biśnik Hill. At that time, the Pilica land was under the ownership of the Toporczyk family.

Shortly thereafter, before the mid-14th century, Jan of Pilica or his son Otton constructed a stone castle called Pilica on top of the rocky terrain. In 1389, Otton passed away, and his daughter Elżbieta married Wincenty of Grabów, belonging to the Leliwa coat of arms. Subsequently, the castle came into the possession of their son, Jan, who served as the voivode and castellan of Kraków and adopted the surname Pilecki. The last member of the Leliwita-Pilecki family to own the castle was Jan, who, in 1570, sold it to Bishop Filip Padniewski. The bishop later passed it on to his nephew, Wojciech. However, the castle ceased to be used as a residence for its owners after this point. By 1610, when Wojciech Padniewski constructed a new castle in Nowa Pilica, Smoleń was entirely deserted.

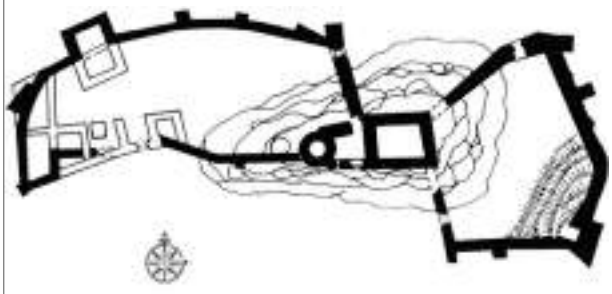


Fig. 4. plan, source: medievalheritge.com

2.1.Untangible heritage

Legend 1: Close to the castle lies the Zegarowa Cave, which has a peculiar reputation. According to local lore, on New Year's Eve, one can hear the echoing toll of 12 clock strikes emanating from its depths. In bygone times, it was believed that the clarity of these chimes foretold the fortune of the castle's heirs. If the sound was crisp and clear, it boded well for the family's fortunes in the coming year. Conversely, if the strikes sounded hoarse, it was seen as an omen of impending tragedy within the family. On a particular New Year's Eve, a grand celebration was in full swing at the castle, and amidst the revelry, the mysterious clock's legend resurfaced. Excitement swept through the gathering, and they ventured towards the cave. However, when the lord of the castle heard the grinding of the clock's mechanism, his heart grew heavy with concern for his beloved daughter. Tragically, a few days later, the castle received grievous news – a plague had struck his daughter's estate, claiming the lives of his cherished kin. Consumed by grief, the father ordered the cave's entrance to be sealed, ensuring that the enigmatic clock's ticking would trouble them no more.

Legend 2: Within the confines of Pilcza Castle, there stands an imposing well, masterfully hewn from a solitary rock. After the demise of the estate's owner, his three sons found themselves at odds over the equitable division of their inheritance. Eventually, the brothers settled on a peculiar trial – the one who could leap across the well would lay claim to the most splendid part of the castle. A loyal servant, who held an unwavering affection for the young lords akin to his own sons, overheard their discord and devised a plan. Craftily, he fashioned a net and lowered it into the well. When the contest commenced, the brothers scattered, and to their astonishment, all three tumbled into the well's depths simultaneously. In that perilous moment, the devoted servant leaped in to rescue them. Before pulling them to safety, he extracted a promise from the brothers to reconcile. This dramatic event led to a profound understanding among the siblings, and they regarded the servant as family for the remainder of their days.

Source: https://www.zamkipolskie.com/

3. Transformations and Preservation Status

Transformations: In the western section of the complex, a towering structure measuring 7.5 meters in diameter was erected. From this central tower, the perimeter walls extended along the edge of the rocky terrain. The entrance to this tower was situated atop the walls. As for the eastern part of the rock, it was reserved for a residential building. Shortly after the initial construction of the castle on the rock, two outer wards were added to its layout. In the western outer ward, a well was meticulously carved into the rock, reaching an impressive depth, rumored to be over 100 meters. This outer ward was further fortified by two semi-bastions. Entrances to these outer wards were strategically placed on the southern side, while small gates for inter-ward communication were positioned on the northern side. During the 15th century, the complex underwent expansion, during which the semi-bastions were transformed into towers. As the 15th century transitioned into the 16th century, construction efforts were reignited, resulting in the enlargement of the western outer ward and the erection of a new residential building in the western corner.

1858

1860

1899

1920

State of preservation: Castle has been restored with elements of reconstruction

Transformations: Source: fotopolska.eu
Preservation status: photos by the author

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Sławków Castle

Fig. 1. Sławków, photo by the author

1. Properties and attributes

Adress: Browarna, 41-260 Sławków
Date of Establishment: 13th century
Owner: Private
Type: The castle of the Krakow bishops.
Protection: Listed as a historic monument
Function: Originally, it served defensive and residential purposes. Currently, it exists in the form of permanent ruins.

Location

Exposition: It has a very small exposition zone. It is hidden behinds the single family houses and adverisement banners

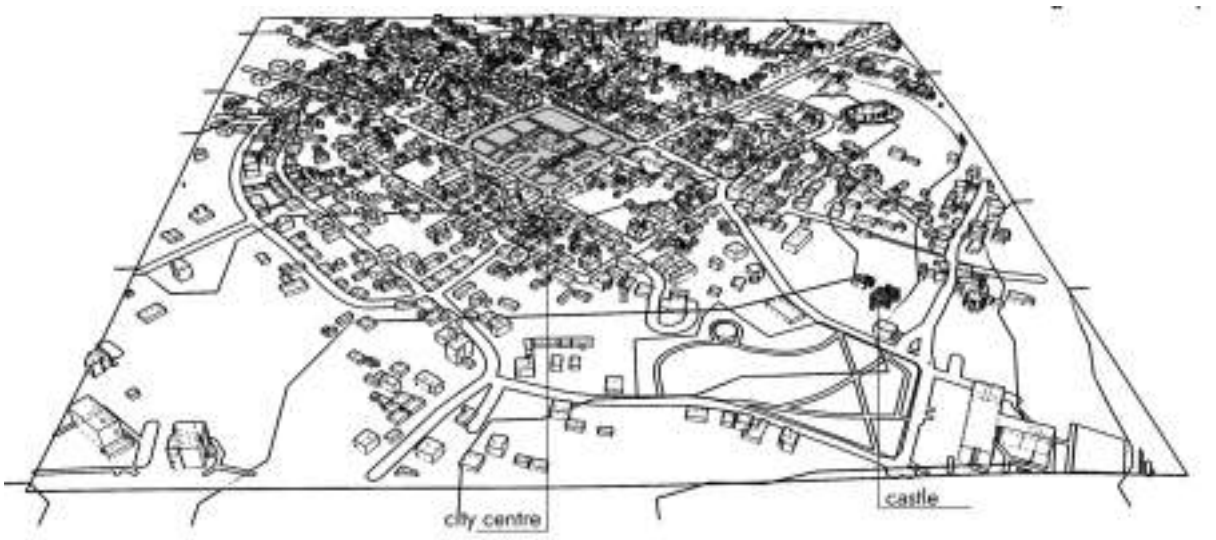
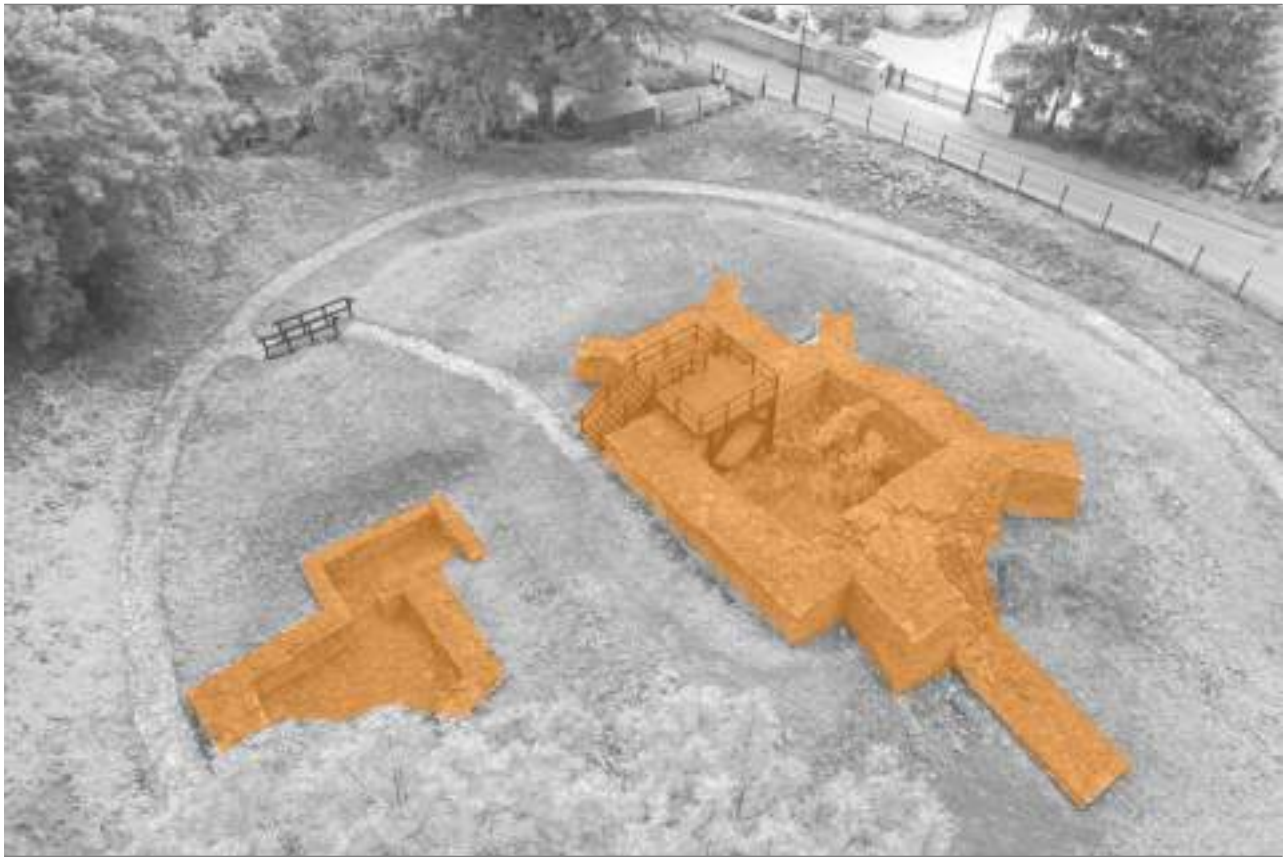


Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.1. Morphology

Surroundings: it contains the remaining of the castle along with wooden stairs, there is a small resting area, no tourist base



Remaining walls

Fig. 3. Scheme by the author

Timeline

Around 1289: First mention of Sławków Castle.

Henryk IV Probus captures Sławków and Pieskowa Skala castles during his expedition to Kraków and entrusts them to Burgrave Henryk of Woszów.

In 1291, both castles are granted to King Wacław II of Bohemia as fiefs.

The castle and town, owned by Bishop Jan Muskaty of Kraków, become the main support for the Bohemians in their struggle for the Kraków throne against Duke Władysław Łokietek.

In 1309, the castle comes under the control of Władysław Łokietek.

Czech forces led by John of Luxembourg capture the castle in 1327.

King Charles Robert of Hungary intervenes, leading to the withdrawal of Czech troops in 1328.

In 1337, Bishop Jan Grot resides in the castle.

Hussite invasions in 1433-1434 cause damage to the castle.

The castle is destroyed in 1455 by the mercenary forces of George Stosz of Olbrachtowice and Mikołaj Świeborowski.

History: The earliest recorded mention of the castle in Sławków dates back to approximately 1289. During his expedition to Kraków, Henryk IV Probus seized control of both the Sławków and Pieskowa Skala castles. These strongholds were then entrusted to the burgrave Henryk of Woszów. In 1291, both castles were granted to King Wacław II of Bohemia as part of a fief. During this period, the castle and the town, which were under the ownership of Jan Muskaty, the Bishop of Kraków, played a pivotal role in supporting the Bohemians in their struggle for the Kraków throne against Duke Władysław Łokietek. By 1309, the castle had come under the control of Władysław Łokietek. In 1327, Czech forces led by John of Luxembourg successfully captured the castle. However, the intervention of King Charles Robert of Hungary, who was an ally of Łokietek, forced the Czech troops to withdraw. In 1328, Pope John XXII issued an order for the Hungarian forces to vacate Sławków. Subsequent papal actions resulted in the castle and town being returned to their rightful owners, the Bishops of Kraków. By 1337, Bishop Jan Grot had taken up residence in the castle. Unfortunately, the castle endured damage from two Hussite invasions in 1433-1434. In 1455, the castle met its demise at the hands of mercenary forces commanded by George Stosz of Olbrachtowice and Mikołaj Świeborowski.

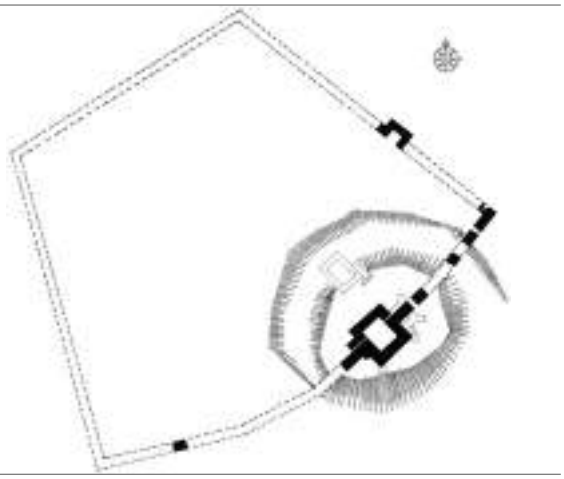


Fig. 4. plan, source: medievalheritge.com

3.Transformations and Preservation Status

Transformations: The initial castle, which was erected under the guidance of Bishop Paweł of Kraków from Przymankowo, saw its construction commence in the latter part of the 13th century. It took on an irregular rectangular design, measuring approximately 120 by 100 meters. Robust perimeter walls were fortified with distinctive, shell-like bastions. Regrettably, the castle remained incomplete. One of these shell-like bastions, specifically the eastern one, underwent a transformation into a combination residential and defensive tower during the latter part of the 13th century. This tower was encircled by a seven-meter-wide moat and protected by a palisade. In the early 14th century, further enhancements were made to the castle, including the addition of a staircase structure to the tower and the construction of a gatehouse. An earthwork rampart was also established around the entire complex, utilizing the original walls as its foundation. Moving into the 16th century, a new residence for the Bishops of Kraków was erected on the western side of the moat. Meanwhile, the old castle fell into a state of complete disrepair and ruin. The remnants of this original structure were brought to light through archaeological excavations carried out between 1982 and 1994.

1536

2000

2015

2016

State of preservation: it is kept a permanent ruin

Transformations: Source: fotopolska.eu
Preservation status: photos by the author

Antoniewicz M., Zamki na Wyżynie Krakowsko-Częstochowskiej. Geneza – Funkcje – Konteksty [Castles in the Kraków-Częstochowa Upland: Genesis - Functions - Contexts], Katowice– Kielce, 1998.

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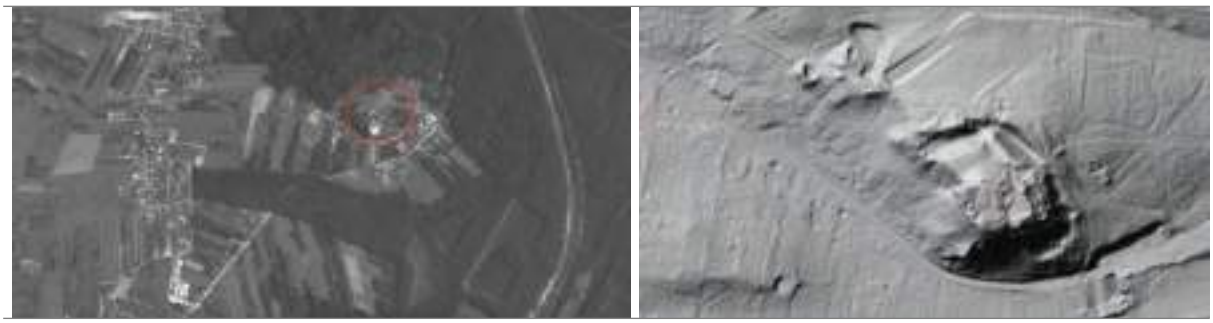
Rabsztyn Castle

Fig. 1. Rabsztyn, photo by the author

1. Properties and attributes

Adress: 32-300 Rabsztyn
Date of Establishment: 14th century
Owner: Private
Type: Knights castle
Protection: Listed as a historic monument
Function: Originally served defensive functions, currently open for the tourists

Location



Exposition: It is highly visible from in the region

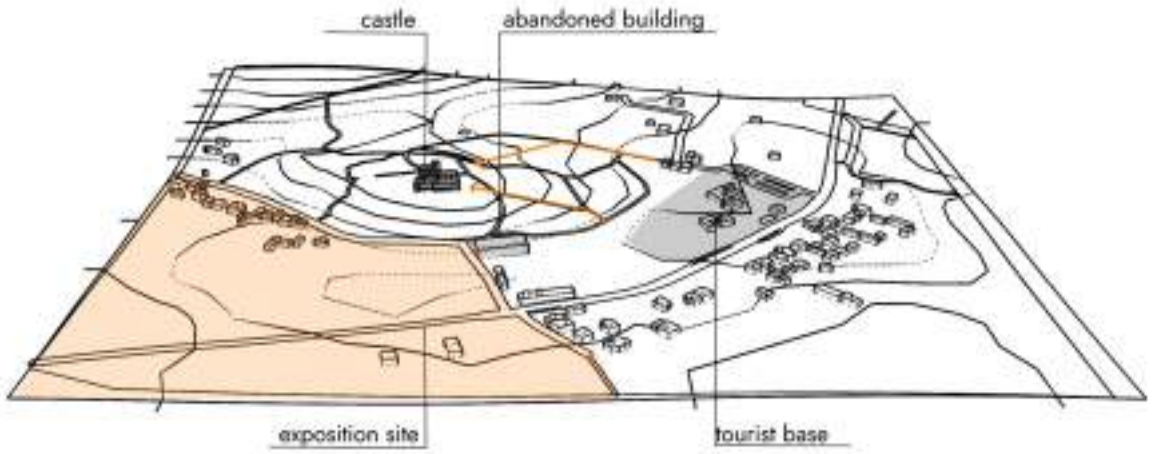
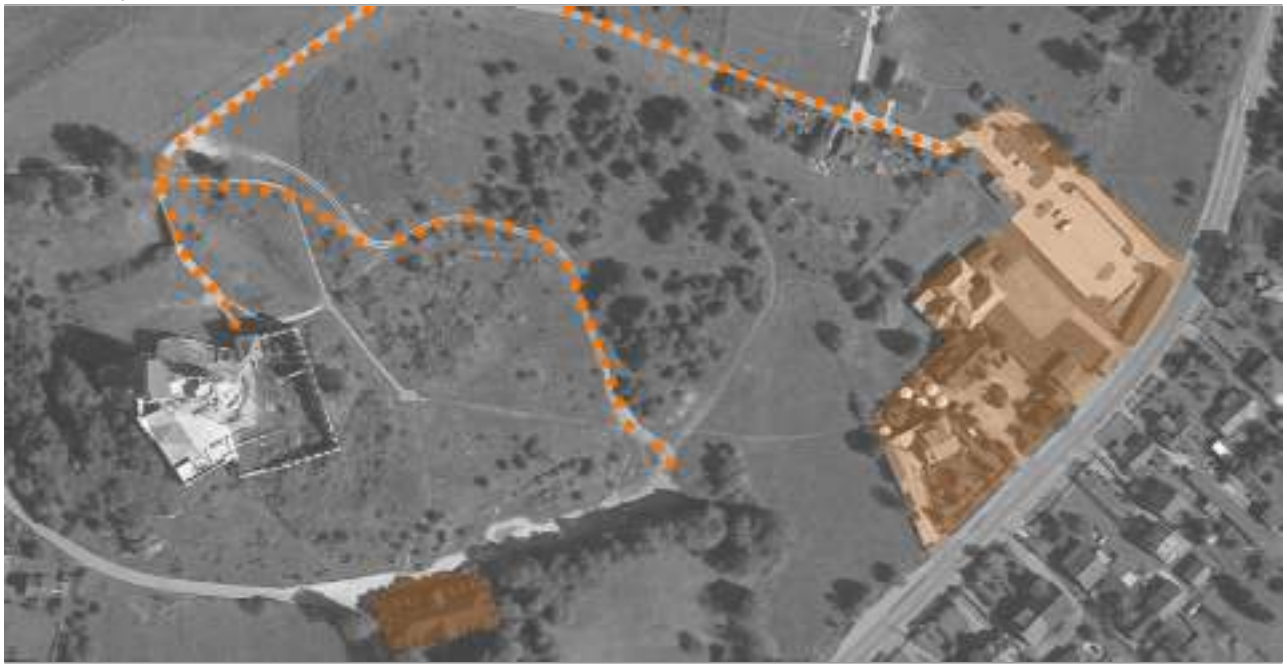


Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.1. Morphology



Otoczenie założenia: The site consists of the ruins of the upper castle with a tower of the final defense, fragments of outer walls, remnants of a chapel, and a tower called "Sołtysia." At the base of the site, there is a small parking area. Paths leading to the ruins are covered with sand and grass. Alongside the remnants of the outer walls, entrances to caves are located.

Tower

External walls

Fig. 3. Scheme by the author

2. Events

Timeline:

Late 13th century: Initial wooden and earthen buildings and fortifications are believed to be established.

14th century: Construction of the castle.

1396: First confirmed mention of the castle, referring to the chaplain of the castle chapel.

Until 1441: The castle is owned by Spytkek of Melsztyn and remains in the possession of the Melsztynski family.

1441: The castle is confiscated by the king for disloyalty and becomes part of Jadwiga of Książ's dowry.

Transfer of ownership to Andrzej Tęczyński from the Toporczyk family.

1442: King's command to strengthen the castle under Andrzej Tęczyński's ownership.

Subsequent ownership by the Boners, who serve as Rabsztyn starostas for three generations.

1592: Mikołaj Wolski becomes the next starosta.

Later, Zygmunt Myszkowski, the Grand Marshal of the Crown, takes over as the owner.

Early 17th century: Zygmunt Myszkowski likely expands the Rabsztyn fortress into a Renaissance residence, partly losing its defensive nature.

History: The origins of this site are believed to trace back to the late 13th century when the first wooden and earthen structures and fortifications were established. The construction of the castle itself occurred during the 14th century. The earliest confirmed reference to it dates back to 1396, mentioning the chaplain of the castle chapel. During this period, the castle was under the ownership of Spytkek of Melsztyn and remained in the possession of the Melsztynski family until 1441 when it was seized by the king due to disloyalty and became part of Jadwiga of Książ's dowry. Subsequently, it passed into the hands of Andrzej Tęczyński, a member of the Toporczyk family. In 1442, King's orders prompted Andrzej Tęczyński to fortify the castle. Following Andrzej's passing, his son adopted the name derived from the Rabsztyn residence. When the Rabsztyn lineage of this family ceased to exist in 1509, the castle became the property of the Boners, who held the position of Rabsztyn starostas for three generations. In 1592, Mikołaj Wolski assumed the role of starosta, succeeded by Zygmunt Myszkowski, the Grand Marshal of the Crown. It is likely that in the early 17th century, Zygmunt Myszkowski expanded the Rabsztyn fortress into a Renaissance residence, partly diminishing its defensive character.

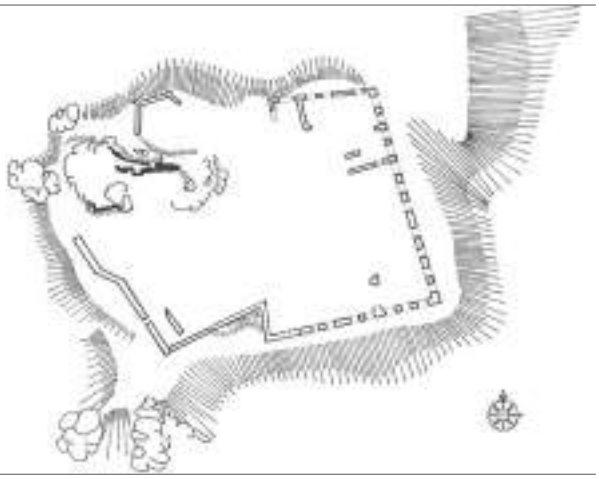


Fig. 4. plan, source: medievalheritge.com

2.1. Untangible heritage

Legend of the Enchanted Knights:
As the legend goes, the castle's visible ruins offer only a glimpse of a deeper mystery concealed beneath - an enchanted castle. Below ground, within its chambers, people have been transformed into stone figures: a young boy adorned with a diamond ring, a girl bedecked with a pearl necklace, and in adjacent halls, rows of iron knights rest under a powerful enchantment. Supposedly, once a year, on Palm Sunday, during a procession originating from the nearby church, the ring on the boy's finger stirs. During this brief moment, the knights awaken from their slumber and revel in the castle chambers until nightfall. As midnight approaches, they return to their stone-like slumber. This enchanting cycle repeats annually until the diamond ring on the boy's petrified hand slips off. At that precise moment, the knights will be freed from their mystical imprisonment. Awakened, they will rally under the boy's leadership to defend Poland against its adversaries. Other enchanted armies will also arise to join their cause. Following their triumphant victory, the girl adorned with pearls will bestow a pearl upon each knight as a token of gratitude for saving their homeland. The legend's conclusion hints at its origins during a period when Poland was under foreign rule. Nevertheless, the specific identities of the boy, the girl with the pearl necklace, and the knights in the enchanted castle remain undisclosed.

Sobótka:
Legends also tell the story of a remarkable maiden named Sobótka, who resided among the nearby rocks. On a fateful day, as she was about to marry Sieciech in the forest, a gang of brigands ambushed them. Fearlessly, Sobótka seized a sword and courageously repelled the attackers. In honor of her bravery, bonfires called "sobótki" are lit each year on St. John's Day.

Underground Passages:
Legend has it that the castle featured an underground passage connecting it to the nearby Januszkowa Góra hill. Another tale suggests a subterranean corridor extending from the castle to the church in Olkusz. The latter legend tempted treasure hunters in the mid-19th century, resulting in the detonation of the massive cylindrical tower located in the castle's western section. Interestingly, the castle's ruins have continued to attract treasure hunters in modern times. In the mid-1990s, a conservationist conducting inspections stumbled upon a recent excavation at the lower castle. The dig led to the discovery of an underground chamber's vault, fortunately beyond the reach of the amateur treasure hunter. Archaeologists swiftly secured the site and conducted excavations, ultimately revealing a chamber containing remnants of flooring and 17th-century ceramic tiles.

Swarm of Bees:
Another legend recounts the escape of a swarm of bees from the surrounding villages. The villagers pursued the bees until they reached the remains of Rabsztyn Castle. The swarm settled at the hill's summit, which was inaccessible due to a magical goat with a lengthy beard guarding the entrance.

Source:https://www.zamkipolskie.com/

3. Transformations and Preservation Status

Transformations: The castle was situated exclusively on the highest section of the hill, perched atop the rock. At this location, there stood a lofty cylindrical tower, while a perimeter wall traced the edge of the rock. During the 16th century, at the base of the upper castle, a lower castle was erected. This lower castle featured a three-winged palace spanning two floors, boasting a total of 40 rooms. The entire complex was isolated from the remainder of the hill by a deep moat, bridged from the south. Regrettably, during the Swedish Deluge, as enemy forces retreated, they ransacked and devastated the castle, and it was never reconstructed. It saw partial use until the early 19th century. In the latter half of the 19th century, treasure hunters completed the castle's destruction by detonating the sole remaining section - the tower and the walls of the lower castle.

1792

1810

1930

1949

State of preservation: The castle has undergo conservations works with elements of restoration

Transformations: Source: fotopolska.eu
Preservation status: photos by the author

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Pieskowa Skała Castle

Fig. 1. Pieskowa Skała, photo by the author

1. Properties and attributes

Adress: Sułoszowa 5, 32-045 Pieskowa Skała
Date of Establishment: 14th century
Owner: Private
Type: Castle
Protection: Listed as a historic monument
Function: Originally served defensive functions restored and open for tourists

Location

Exposition: it is highly visible from the road and and exposition zone next to the castle

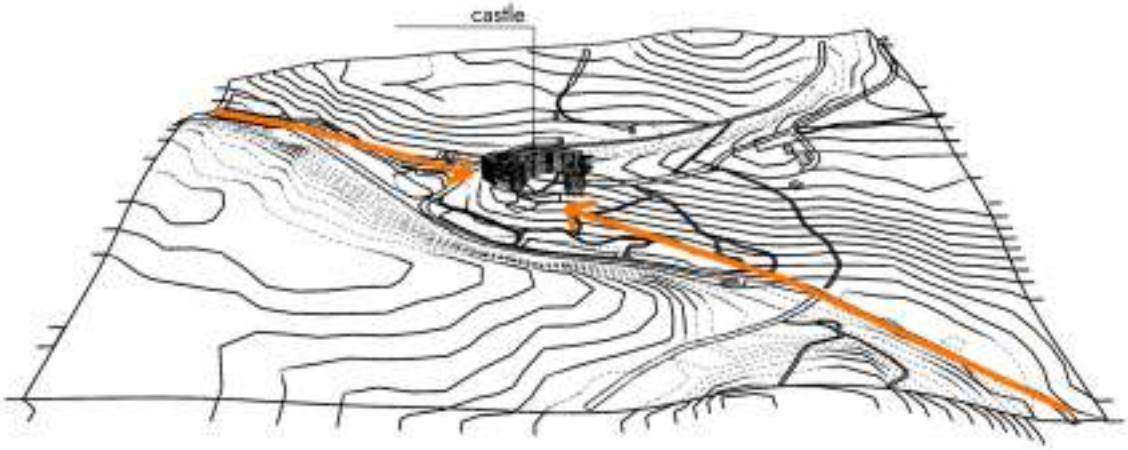

Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.1.Morphology

Surroundings of the Site: The site consists of the ruins of the upper castle with a tower of final defense, fragments of outer walls, remnants of a chapel, and a tower known as "Sołtysia." At the base of the site, there is a small parking area. Paths leading to the ruins are covered with sand and grass. Alongside the remnants of the outer walls, entrances to caves are located.

Towers

Walls

Fig. 3. Scheme by the author

Timeline

1377: King Louis I of Hungary grants the castle in Pieskowa Skala, originally founded by King Casimir the Great, to Piotr Szafraniec of the Starykoń coat of arms.

1398: Piotr Szafraniec passes away, and his son, Piotr, inherits the castle, holding titles such as chamberlain, castellan, and voivode of Kraków.

1422: Jagiełło confirms ownership of the castle to Piotr Szafraniec.

Late 15th century: The castle passes into the possession of Piotr's brother, Stanisław, and later to Stanisław's son, Hieronim Szafraniec.

1608: Jędrzej, the son of Stanisław Szafraniec, inherits the castle and bequeaths it, along with adjacent properties, to Maciej Łubnicki.

Subsequent years see ownership by Barbara Sośnicka, Samuel Śladkowski, Jan Zebrzydowski of the Radwan coat of arms, and then his son, Michał Zebrzydowski, who takes over in 1640.

1655: During the Swedish Deluge, the castle is occupied by Swedish forces, resulting in significant damage.

20th century: The castle is transformed into a guesthouse and serves this purpose until the outbreak of World War II in 1939.

Post-World War II: The state assumes ownership of the castle, and in 1950, the Ministry of Culture and Art takes responsibility for its preservation.

1948-1968: Restoration work, overseen by Alfred Majewski, emphasizes the castle's Renaissance architecture.

History: Długosz makes reference to the castle in Pieskowa Skala, attributing its establishment to King Casimir the Great. In 1377, King Louis I of Hungary granted ownership of the castle to Piotr Szafraniec of the Starykoń coat of arms. Upon Piotr Szafraniec's passing in 1398, the castle passed into the hands of his son, Piotr, who held notable titles such as chamberlain, castellan, and voivode of Kraków. His ownership of the castle was officially affirmed by a privilege from Jagiełło in 1422. Subsequently, the castle changed ownership, first to his brother Stanisław and later to Hieronim Szafraniec, Stanisław's son. The final heir of the Szafraniec family to possess the castle was Jędrzej, Stanisław's son, who, lacking offspring, passed on Pieskowa Skala along with its adjacent properties to Maciej Łubnicki in 1608. The castle then saw a succession of owners, including Barbara Sośnicka, Samuel Śladkowski, Jan Zebrzydowski of the Radwan coat of arms, and subsequently his son, Michał.
In 1640, Michał Zebrzydowski assumed control of Pieskowa Skala. However, during the Swedish Deluge in 1655, the castle fell into Swedish hands and endured significant damage. In the 20th century, the castle was repurposed into a guesthouse, a role it fulfilled until the outbreak of World War II in 1939. Following the war, the state assumed ownership of the castle, and from 1950, the Ministry of Culture and Art took responsibility for its preservation. Restoration efforts, overseen by Alfred Majewski from 1948 to 1968, brought to light the Renaissance architecture of this historical monument.

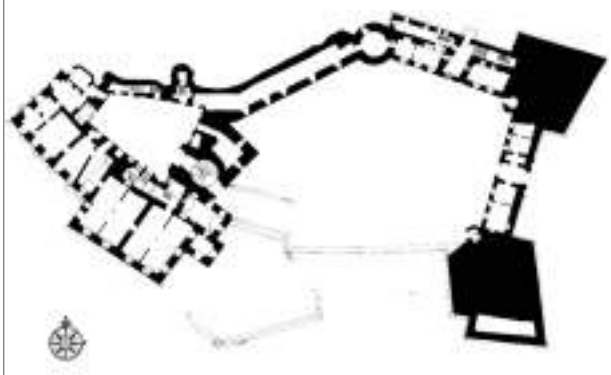

Fig. 4. plan, source: medievalheritge.com

2.1. Untangible heritage

The initial legend centers on Piotr Szafraniec, a figure rumored to dabble in alchemy and practice dark magic. His obsession involved attempting to transmute common metals into gold. Allegedly, he was also responsible for numerous murders. The story goes that he would entice merchants to the castle, hosting lavish feasts for them. When they retired for the night, they unknowingly fell victim to a trap he had set. Instead of solid floors, the chambers were said to conceal trapdoors, through which the unfortunate merchants would plummet onto the rocks below, meeting a grim fate.

Another legend is tied to a tower known as "Dorotka." It is said that one of the Szafrańcs held a beautiful girl named Dorota captive within its confines, with the intent to starve her into submission after she refused his proposal. Prior to this, he had dealt with her beloved, ordering a brutal execution by dragging him behind horses across the hill. Supposedly, for a time, Dorota's loyal dog would bring her morsels of food in its mouth. Unable to bear the separation from her beloved, she chose to leap from the tower. However, due to her prior prayers to St. John Cantius, she miraculously returned to life. An alternative version suggests that the tower imprisoned Szafrańc's unfaithful wife, and it was she who took the fateful plunge.

Additional legends revolve around a nearby rock formation named "Maczuga Herkulesa." One of these legends posits that Krakus, offering a weapon used to vanquish the Wawel Dragon as a sacrifice to the gods, drove his mace into the earth at this location. Over time, it melded with the ground and became encased in rock.

Source: https://www.zamkipolskie.com/

3. Transformations and Preservation Status

Transformations: In its initial stage, the castle likely occupied the highest portion of the hill, featuring a square tower at its base and an octagonal tower in the upper segment. Hieronim later expanded and enhanced his residence. During this expansion, the perimeter walls were augmented with a round tower containing a gate, and an additional tower was constructed at the eastern end of the protruding walls. Moving into the 16th century, a two-story pavilion was affixed to the preexisting southwest wing, extending towards the gate tower. Subsequently, the gate tower was reduced in height, and its two preserved floors were integrated into the new eastern wing. In the third phase of reconstruction, an extra floor was added to cover the entire southern and eastern wings, aligning them with one another. Additionally, cloisters were erected around the courtyard during this phase.

1968

1970

1980

2005

State of preservation: It is kept in very well technical state

Transformations: Source: fotopolska.eu
Preservation status: photos by the author

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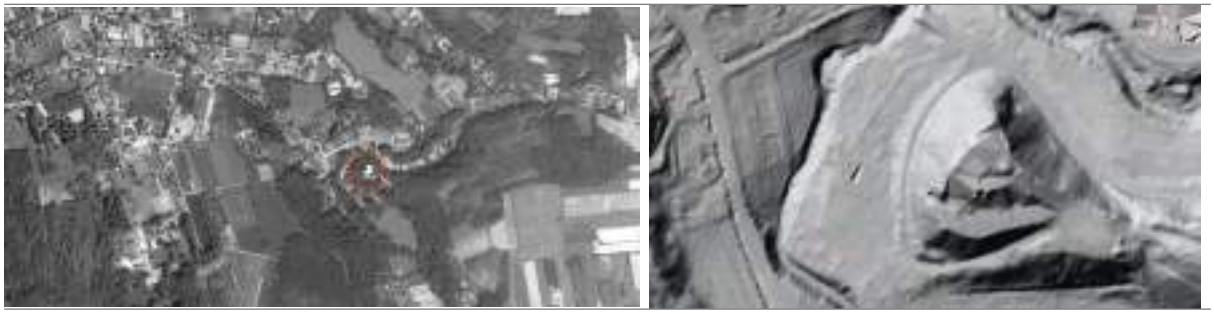
Korzkiew Castle

Fig. 1. Korzkiew, source: https://aw-foto.pl/zamek-w-korzkwi/

1. Properties and attributes

Adress: Zamek, 32-088 Korzkiew
Date of Establishment: 14th century
Owner: Private
Type: Castle
Protection: Listed as a historic monument
Function: Originally served defensive functions, currently turned into a hotel

Location



Exposition: the castle is hidden behind the trees, it's mostly visible from the main path leading to it

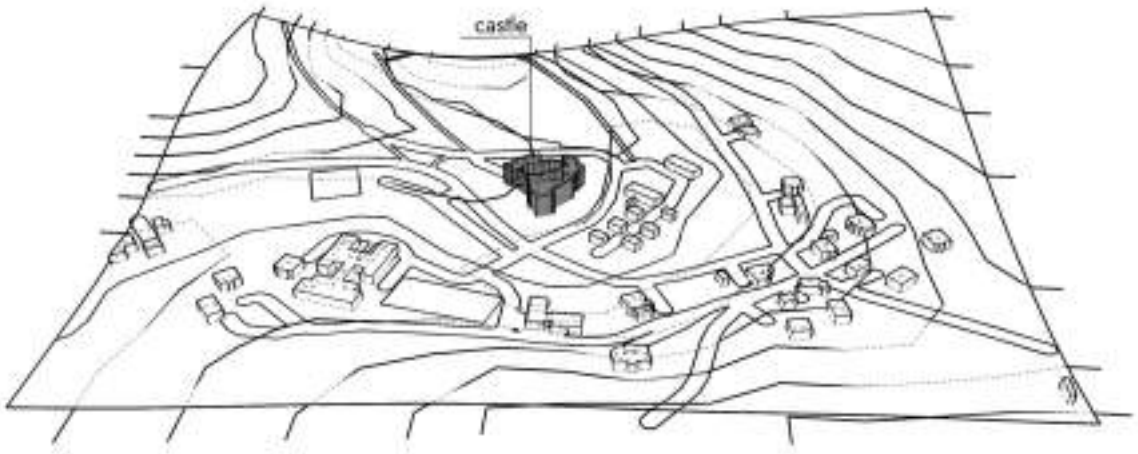
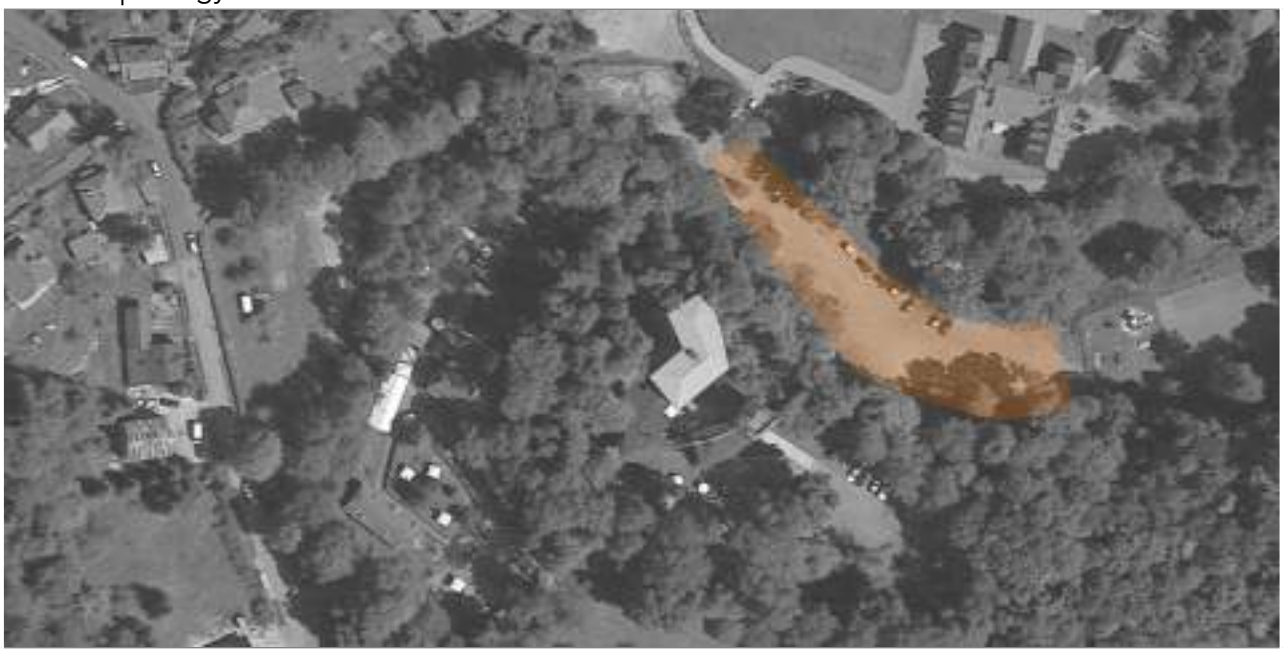


Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.1. Morphology



Surrounding: At the bottom of the hill there is a parking lot located

Compact structure of buildings

Fig. 3. Scheme by the author

2. Events

Timeline

After 1352: Castle in Korzkwa is established following a construction catastrophe at the castle in Wielka Wieś, with Kraków judge Jan de Syrokomla acquiring undeveloped land.

1388: Matthias, the castellan of Korzkwa, is mentioned in historical records.

1400: Johann, the vicar of the subcastle Korzkwa, is listed in a court record.

Subsequent years: The castle in Korzkwa changes ownership frequently over time.

History: According to the consensus of historians, the castle in Korzkwa represented the realization of the knightly Zaklik family, bearing the Syrokomla coat of arms. Its establishment is dated to the period after 1352 when, following a construction catastrophe at the castle in Wielka Wieś, Kraków judge Jan de Syrokomla acquired undeveloped land. The existence of a masonry residence is confirmed by documentation from the 14th century: in 1388, Matthias, the castellan of Korzkwa, was mentioned, and in a court record from 1400, Johann, the vicar of the subcastle Korzkwa, is listed. The castle changed owners frequently over the years.

Source: B. Guerquin, Zamki w Polsce [Castles in Poland], Arkady, 1984, p. 173

Fig. 4. Reconstruction and plan, source: medievalheritge.com

2.1.Untangible heritage

One legend speaks of sleeping knights buried beneath the castle courtyard, ancient warriors from centuries past. Their existence was apparently validated by a bioenergy therapist invited by the current castle owner. The castle's conservation efforts are meticulously carried out to ensure these knights' eternal rest remains undisturbed. In exchange, the knights are thought to diligently watch over the castle's guests.

Another tale tells of a stone bench within the park where, in the summer, the devil purportedly takes his seat after midnight, his eyes gleaming with intense wildness, and his hooves producing deafening echoes throughout the village. These unsettling sounds, not the mistaken belief in wedding music from the castle, are said to cause sleepless nights for the locals. While wandering the park's pathways, observant individuals may notice distinctive marks etched into the stones – remnants of the devil's presence.

The subsequent legend relates to the castle and the church, which, as the story goes, were once connected by a suspended rope bridge in the 15th century. This bridge spanned the valley between the hills, allowing the owners of the Korzkiew estate to traverse from the castle to the church, high above the heads of the local peasants. Tragically, it is said that one of the estate owner's daughters met her end by falling from this hanging bridge. From her grieving mother's tears, the Korzkiewka stream is believed to have originated, now flowing between the castle and the church.

source: https://www.zamkipolskie.com/

3. TRANSFORMATIONS AND STATE OF PRESERVATION

Transformations: In the 16th century, the complex encompassed both the upper and lower castles as well as an extensive lower castle area. The upper castle, situated at the highest point of the rocky ridge, consisted of a tower, a residential building, and a labyrinth of caves hewn into the limestone rock. In the first half of the 18th century, the castle structures were dismantled, and the materials were repurposed, including the construction of St. John the Baptist Church in Olsztyn, among other uses.

1810

1905

1960

1960

State of preservation: the castle has been rebuilt

Transformations: Source: fotopolska.eu
Preservation status: source: https://www.zamkipolskie.com/korzkiew/korzkiew.html

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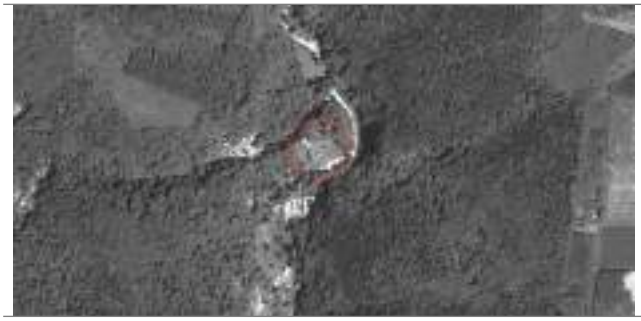
Ojców Castle

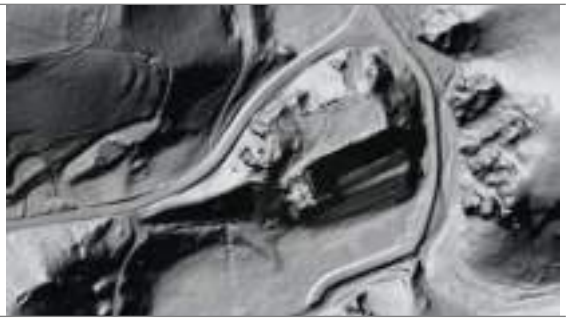
Fig. 1. Ojców, photo by the author

1. Properties and attributes

Adress: 32-047 Ojców
Date of Establishment: 14th century
Owner: Private
Type: Castle
Protection: Listed as a historic monument
Function: Originally served defensive functions, currently open for tourists

Location





Exposition: the castle is not very visible because of the greenery

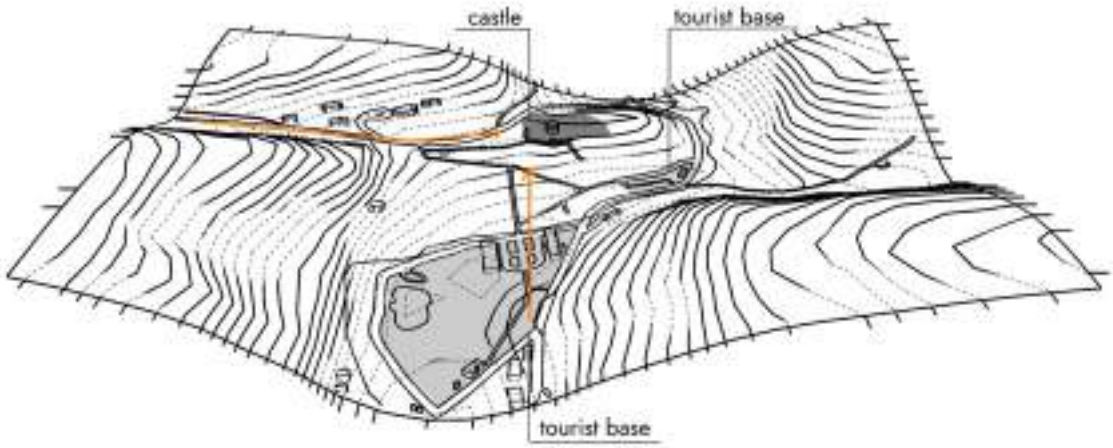
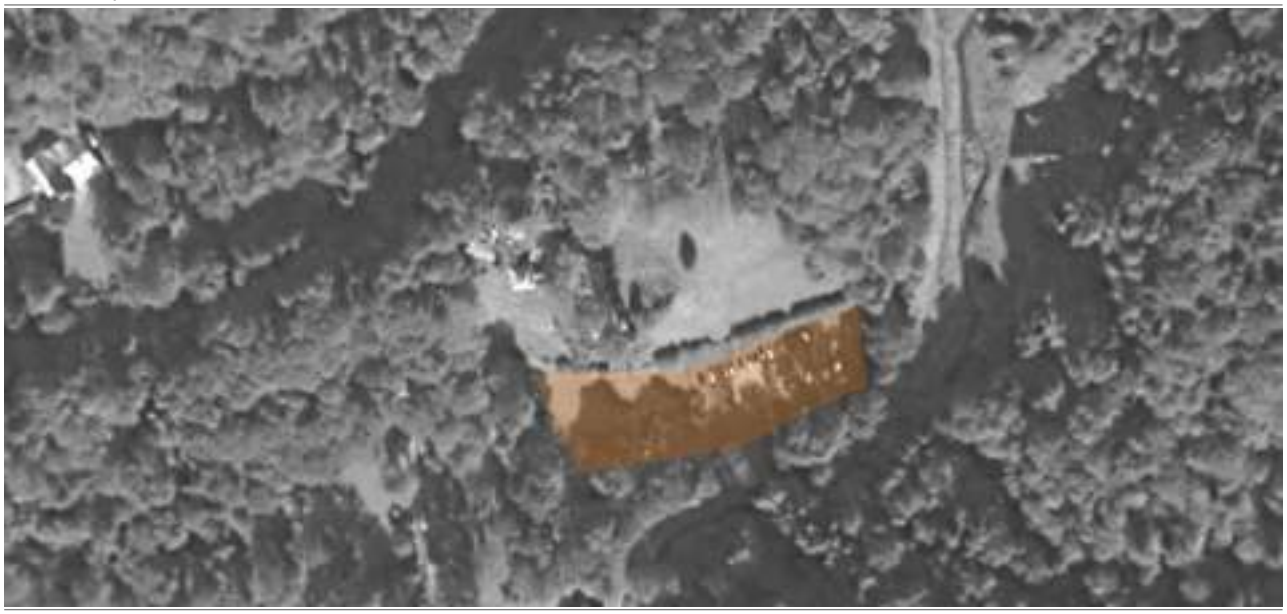


Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.1.Morphology



Surroundings of the Complex: The site comprises the ruins of the upper castle with a tower of final defense, fragments of outer walls, remnants of a chapel, and a tower known as the "Sołtysia." At the base of the complex, there is a small parking area. Paths leading to the ruins are covered with sand and grass. Along the remnants of the outer walls, entrances to caves are situated.

Gatetowers

Relics of the external walls

Fig. 3. Scheme by the author

2. Events

Timeline:

14th century - Construction of the castle by Casimir the Great

1404 - The castle comes into the possession of Piotr Szafrańec

1440 - The castle is acquired by Mikołaj of Balice

1588 - The castle is cared for by Piotr Myszkowski

17th century - The Koryciński family buys the castle

1655 - The castle is destroyed by the Swedes

1829 - The castle is dismantled

1893 - Preservation of the castle ruins

History: The castle was constructed in the 14th century. The first official to work at the castle was the burgrave Zaklika de Kozkow. Subsequently, the castle was leased to Hinczka of Rogowo and later to Piotr Szafraniec, who also owned the castle in Pieskowa Skala. One of the last stewards was Piotr Myszkowski. Unfortunately, these administrators did not reside at the castle during their tenure, which led to the rapid deterioration of the structure. In the 17th century, the Koryciński family took over the property and initiated its reconstruction. However, ownership of the castle changed hands frequently thereafter. In the 19th century, the castle fell into complete ruin.

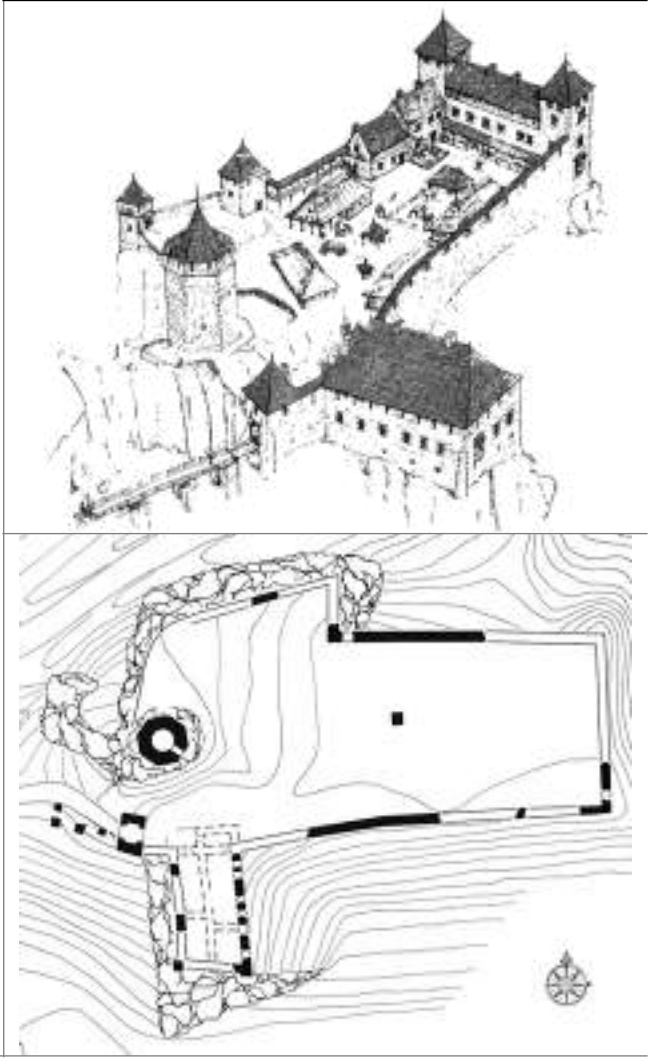


Fig. 4. Plan, source: medievalheritge.com

3. Transformations and Preservation Status

Transformations: The castle comprised an octagonal tower, which served as the ultimate line of defense, positioned atop rocks that rose above the surrounding terrain. An irregular defensive wall encircled the hill, and adjacent to the base of the octagonal tower stood a square gate tower. In the 17th century, there are records of reconstruction and expansion efforts conducted by Mikołaj Koryciński. These endeavors resulted in the creation of an impressive residence, complete with a new residential structure, positioned on a rocky promontory extending southward near the entrance gate. The currently preserved features include the gate tower, the octagonal tower, the ground floor sections of the southern building, and remnants of the defensive walls. Within the courtyard, a well has also been retained. The bridge leading to the gate tower is now represented by partial stone pillars. Inside the octagonal tower, you can observe remnants of stairs and a 14th-century fireplace.

1787

1806

1912

1920

State of preservation: the gate tower has been reconstructed, the external walls are saved as ruins

Transformations: Source: fotopolska.eu
Preservation status: photo by the author

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Ogrodzieniec Castle

Fig. 1. Ogrodzieniec, photo by the author

1. Properties and attributes

Adress: Zamkowa, 42-440 Podzamcze
Date of Establishment: 14th century
Owner: Private
Type: Knights castle
Protection: Listed as a historic monument
Function: Originally, it served both defensive and residential purposes. Now, in the form of a ruin, it serves as a tourist attraction.

Location

Exposition: The castle is highly visible from the surrounding. The main visibility axis is partially interrupted by the touristic base elements.

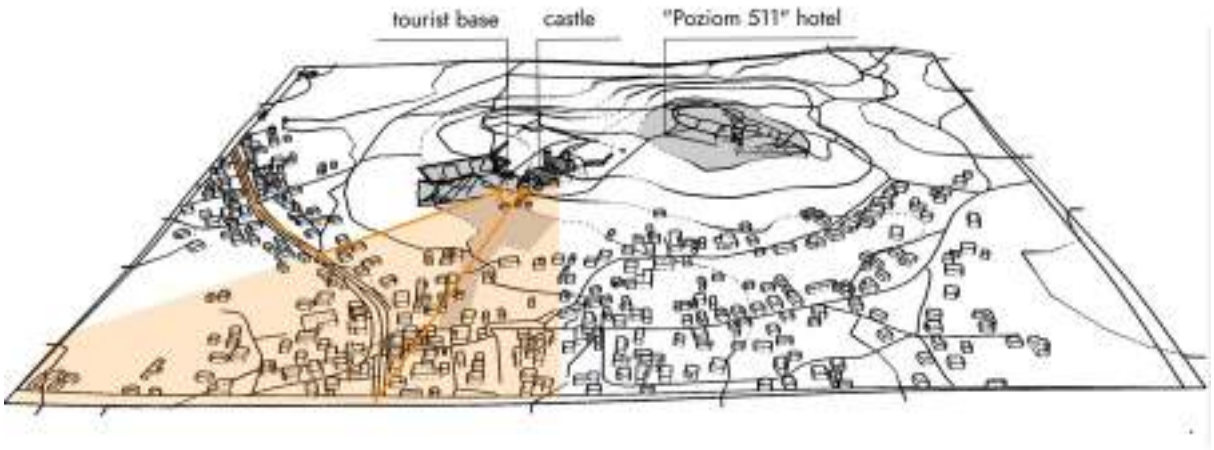
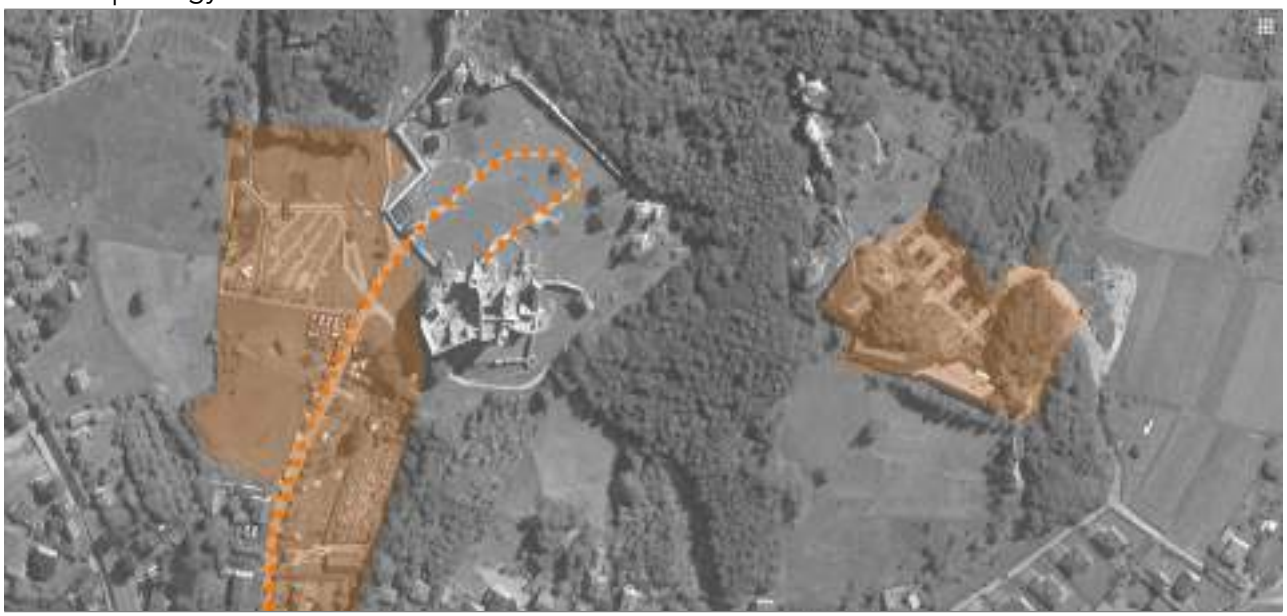


Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.1 Morphology



Description: The entrance is surrounded mostly by the touristic base.There is a hotel at the back of the castle. There is no parking lot.

Towers

External walls

Fig. 3. Scheme by the author

Timeline

Mid-14th Century: The first stone defensive structures of the castle are constructed. The exact date of the castle's construction remains unknown.

Until 1470: The castle is owned by the Włodko Sulimczyk family, who held it for an unspecified period.

1470: Krakow's townspeople, including the Salomons, Rzeszowskis, Pileccys, and Chełmskis, purchase the castle, transferring ownership from the Włodko Sulimczyk family.

After 1470: The castle passes into the possession of Jan Boner following its acquisition by the townspeople.

After Jan Boner's Death: Ownership of the castle transfers to Seweryn Boner, Jan's nephew.

Subsequently: Jan Firlej, the Grand Marshal of the Crown and the husband of Zofia (Seweryn Boner's daughter), becomes the new owner of the castle.

1587: During the Austrian retreat from Krakow, the castle is occupied by the mercenary forces of Archduke Maximilian Habsburg.

1655: The castle sustains damage during the Swedish occupation.

1659: Stanisław Warszycki, the Castellan of Krakow, acquires the castle.

Until the Late 18th Century: The Męciński family assumes ownership of the castle, but due to financial constraints, they cannot maintain it effectively.

1702: The castle is set ablaze, resulting in its final destruction.

History: The initial proprietors of the castle were members of the Sulimczyk family, specifically recognized as the Włodko Sulimczyk family. Although the precise date of the castle's establishment remains undisclosed, findings from archaeological investigations suggest that the earliest stone defensive structures were erected in the mid-14th century. The Włodko Sulimczyk family retained ownership of the castle until 1470 when it was bought by Krakow's citizens, including the Salomons, Rzeszowskis, Pileccys, and Chełmskis. Subsequently, the castle changed hands to Jan Boner after their purchase. Following Jan Boner's demise, the castle became the inheritance of Seweryn Boner, his nephew, and later, it was transferred to Jan Firlej, the Grand Marshal of the Crown, who was married to Zofia, Seweryn Boner's daughter.
In 1587, during the Austrian withdrawal from Krakow, the castle was seized by Archduke Maximilian Habsburg's mercenary forces, and it sustained damage during the Swedish occupation in 1655. Four years later, Stanisław Warszycki, the Castellan of Krakow, acquired the castle. Subsequently, the Męciński family possessed the castle until the close of the 18th century, though they struggled to afford its upkeep. The castle faced its ultimate destruction in 1702 when it was set on fire.

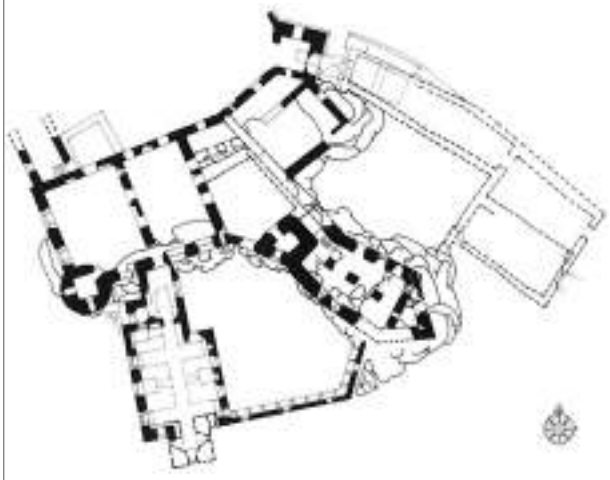


Fig. 4. Reconstruction and pllan, source: medievalheritge.com

Regarding the Black Dog

Legends and contemporary inhabitants alike affirm the presence of a massive black canine with a three-meter-long chain that appears at the castle during the night. Elderly locals recount that after nightfall, no horse dared to pass through the castle gate, despite the ample grass within the castle courtyard. Two farmers still vividly recall their encounter with this colossal black dog back in the 1960s. They had ventured to graze their cows in Gieble on the eve of a local celebration, with the intention of arriving in Gieble early the next morning. More recently, a young man, initially skeptical of the stories told by the local elders, decided to spend the night in the castle courtyard. He later admitted that in the dead of night, he first heard the sound of a chain clinking, followed by a menacing growl behind him. Although the moon bathed everything in its full light, he saw nothing when he turned around, yet the eerie sound persisted. Filled with dread, he sprinted as fast as he could, feeling a chilling breath on his neck, until he reached the pond. As he plunged into the water, a gigantic dog's head materialized in front of him. Fortunately, summer nights are relatively short. In the distance, a rooster's crow signaled the break of dawn, prompting the black dog to emerge from the water and swiftly retreat to the castle.

The origins of this legend date back to the 17th century when Mikołaj Firlej sold the castle to Stanisław Warszycki. While history commemorates Warszycki as a patriot who valiantly fought alongside King Jan Kazimierz during the Swedish Deluge, defending places like Częstochowa and hosting esteemed Polish dignitaries, alternative accounts reveal a different narrative. Warszycki was rumored to be cruel, demonstrating a penchant for torture and employing it even for minor offenses. He particularly mistreated his successive wives, subjecting one to public flogging and walling another alive within a section of the castle. According to the narratives passed down through generations, Warszycki was abducted by the devil during his lifetime and transported to hell. From there, he returns to the castle at night to safeguard his concealed treasures, hidden from all. These riches were purportedly intended as his daughter's dowry; however, despite his immense wealth, Warszycki did not provide his daughter with a single coin.

source: https://www.zamkipolskie.com/

3. Transformations and Preservation Status

Transformations: Between 1530 and 1545, the structures and defensive components of the Sulimczyk family's stronghold were deconstructed. Seweryn Boner, in the mid-16th century, constructed a castle complex that encompassed both the upper and lower castles, occupying an area of 3.5 hectares. The lower castle, enclosed by a stone wall, accommodated stables and structures for guards and attendants. A substantial six-story gate tower, complete with crucial gunports, safeguarded the entrance to the castle. Ornamental cloisters encircled the courtyard. In the southeast corner, a cylindrical tower loomed over the residential edifices. The castle's chambers were primarily located in the northern and southern buildings. The lower levels contained cellars, the castle well, and the kitchen. Despite the absence of numerous elements, the castle presents a remarkably picturesque image.

1862

1911

1915

1989

State of preservation: It is preserved as a permanent ruin

Transformations: Source: fotopolska.eu
Preservation status: photo by the author

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Bydlin Castle

Fig. 1. Bydlin, photo by the author

1. Properties and attributes

Adress: Suliszowice 32-310 Bydlin
Date of Establishment: 14th century
Owner: Private
Type: Knights castle
Protection: Listed as a historic monument
Function: Originally served defensive functions, currently in a form of permanent ruin

Location

Exposition: It has very small field of exhibition. It is hidden in the trees.

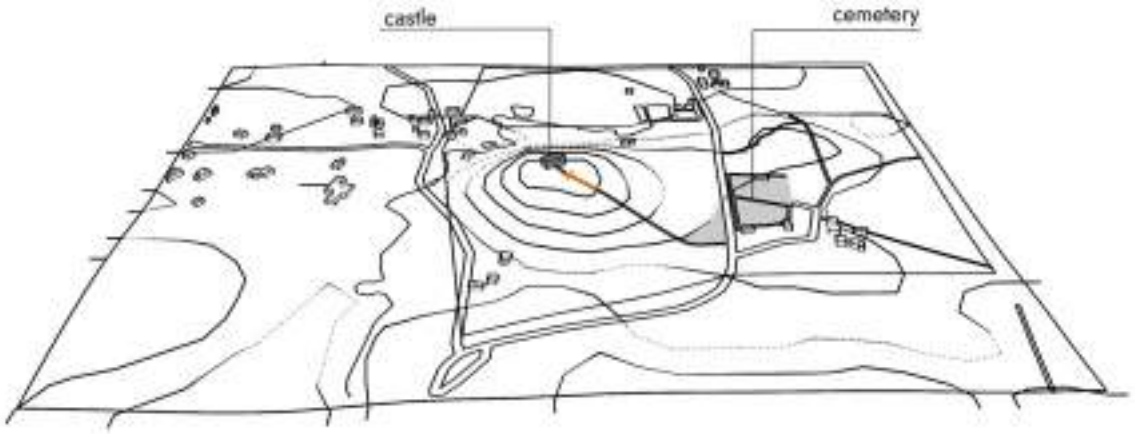
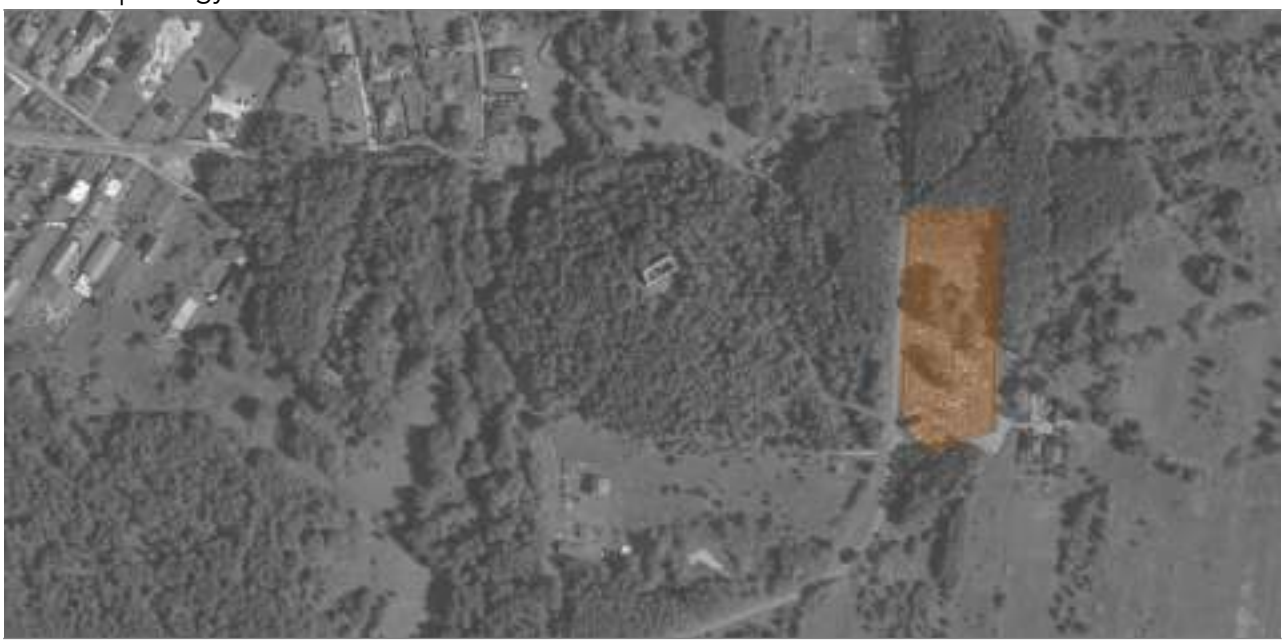
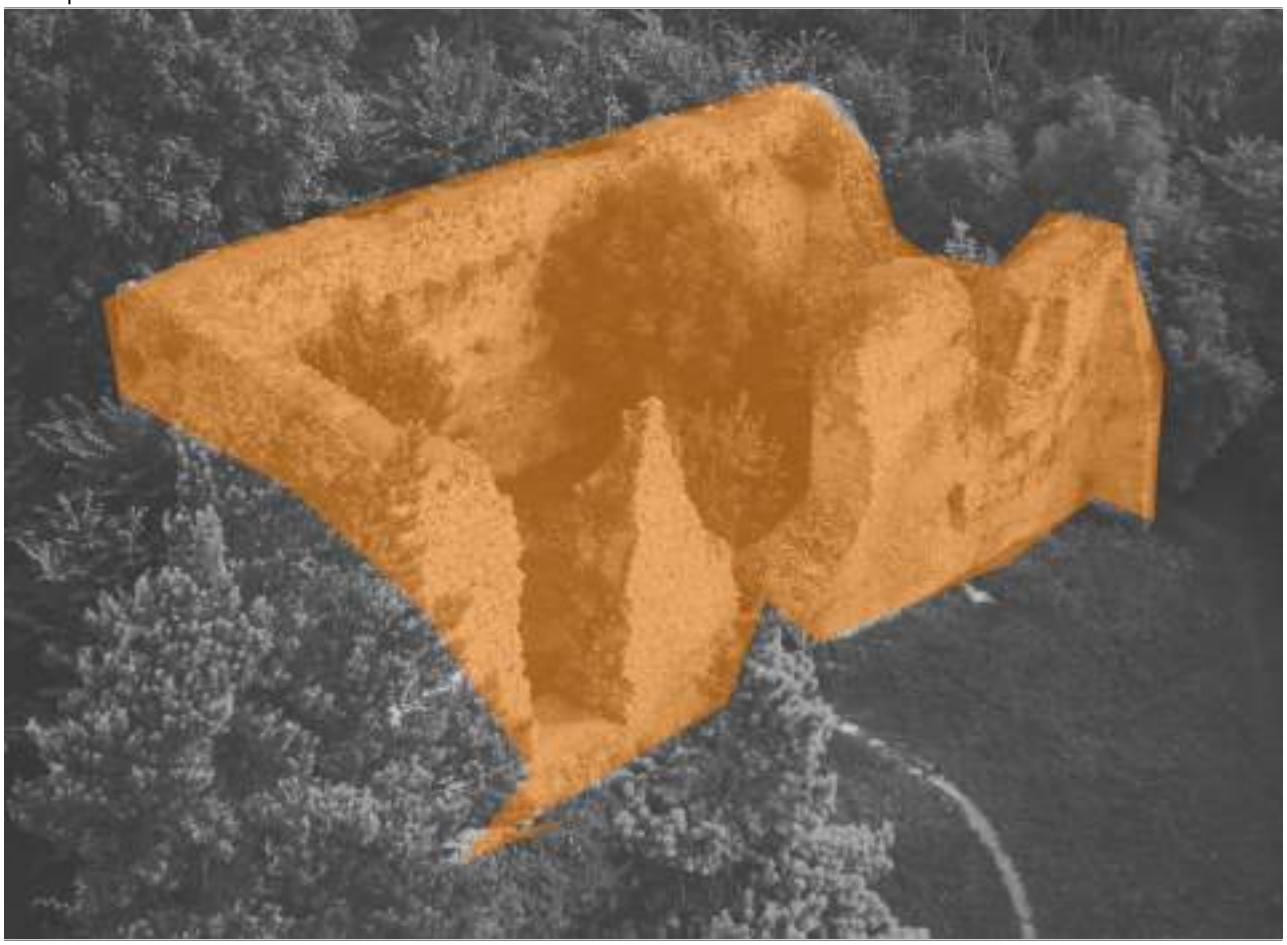


Fig. 2. Maps, elaborated by the author based on geoportal.gov.pl, schemes elaborated by the author

1.1. Morphology



Surrounding: The castle is in the forest. At the bottom of the hill there is an exhibition about Krzepice battle.



Remaining walls

Fig. 3. Scheme by the author

2. Events

Time line

14th century: Construction of the knightly castle on a high limestone ridge.

Late 16th century: Ownership of the castle transferred to Jan Firlej, who converted it into an Arian congregation.

1594: Jan's son, Mikołaj, transformed the castle into a Catholic Church of the Holy Cross.

Subsequent centuries: The church underwent multiple reconstructions after raids.

Late 18th century: The church was abandoned and fell into ruin.

History: The remnants of a medieval knight's castle, dating back to the 14th century, stand atop a steep limestone ridge, strategically positioned for defensive purposes. During the latter part of the 16th century, the castle fell under the ownership of Jan Firlej, who repurposed it into an Arian congregation's place of worship. Subsequently, the castle underwent yet another transformation - in 1594, Jan's son, Mikołaj, converted it into a Catholic Church dedicated to the Holy Cross. Despite undergoing multiple reconstructions following various incidents, the church eventually fell into disuse and decay by the late 18th century.

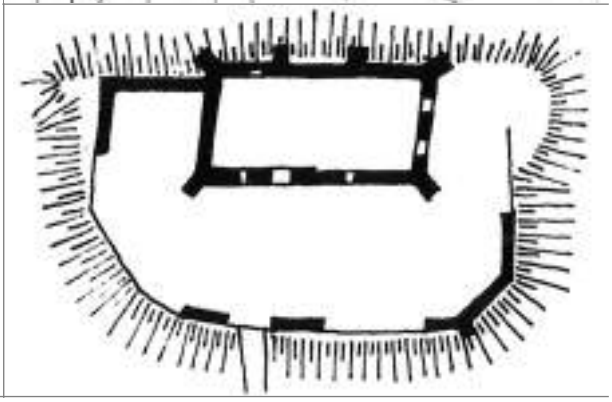


Fig. 4. Reconstruction and pllan, source: medievalheritge.com

3. Transformations and Preservation Status

Transformations On three sides, there were marshes, and the only gentle slope of the hill was cut through by a moat. A small courtyard adjoined the tower on the southeast side, and the entire area was surrounded by a wall.

1935

1960

1995

1990-1995

State of preservation: The walls are in a very fragile condition.

Transformations: Source: fotopolska.eu
Preservation status: photo by the author

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TECHNICAL FLIGHT SPECIFICATIONS

BĘDZIN (5 pm), 2020		
Category \ Type of mission	Double grid mission	Circular mission
Time of the flight	16min:30s	4min:30s
Altitude	50 m	30 m
Speed	Slow	Slow
Angle	80°	4°
Overlap	90% (high)	-
Number of pictures	188	99
Outcome (1-10)	7	4
Full model	Y	N
Comments	Blurred photos	Blurred photos, didn't capture the whole object, the towers are missing

PILCZA (11 am), 2023		
Category \ Type of mission	Double grid mission	Circular mission
Time of the flight	16min:24s	16min:42s
Altitude	45 m	50 m
Speed	Slow	Slow
Angle	80°	4°
Overlap	70% (high)	-
Number of pictures		
Outcome (1-10)	8	7
Full model	Y	Y
Comments	-	High amount of greenery made it difficult to fully show the structure

RYCZÓW (11 am), 2023		
Category \ Type of mission	Double grid mission	Circular mission
Time of the flight	10min:45s	10min:06s
Altitude	45 m	50 m
Speed	Slow	Slow
Angle	80°	4°
Overlap	80% (high)	-
Number of pictures		90
Outcome (1-10)	10	8
Full model	Y	Y
Comments	-	-

BYDLIN (11 am), 2023		
Category \ Type of mission	Double grid mission	Circular mission
Time of the flight	13min:02s	8min:52s
Altitude	25 m	30 m
Speed	Slow	Slow
Angle	80°	14°
Overlap	80% (high)	-
Number of pictures		32
Outcome (1-10)	10	8
Full model	Y	Y
Comments	-	High amount of greenery made it difficult to fully show the structure

RABSZTYN (9 am), 2023		
Category \ Type of mission	Double grid mission	Circular mission
Time of the flight	15min:32s	3min10s
Altitude	50 m	50 m
Speed	Slow	Slow
Angle	80°	10°
Overlap	80% (high)	-
Number of pictures	189	36
Outcome (1-10)	10	8
Full model	Y	Y
Comments	-	-

SŁAWKÓW (11 am), 2023		
Category \ Type of mission	Double grid mission	Circular mission
Time of the flight	15min:19s	3min:01s
Altitude	30 m	30 m
Speed	Slow	Slow
Angle	80°	10°
Overlap	80% (high)	-
Number of pictures	190	36
Outcome (1-10)	10	8
Full model	Y	Y
Comments	-	-

PRZEWODZISZOWICE (10 am), 2023		
Category \ Type of mission	Double grid mission	Circular mission
Time of the flight	10min:19s	3min:36s
Altitude	40 m	45 m
Speed	Slow	Slow
Angle	80°	10°
Overlap	80% (high)	-
Number of pictures		47
Outcome (1-10)	10	8
Full model	Y	Y
Comments	-	-

ŁUTOWIEC (9 am), 2023		
Category \ Type of mission	Double grid mission	Circular mission
Time of the flight	6min:10s	3min:01s
Altitude	40 m	40 m
Speed	Slow	Slow
Angle	80°	10°
Overlap	80% (high)	-
Number of pictures		36
Outcome (1-10)	10	8
Full model	Y	Y
Comments	-	-

MORSKO (12 am), 2023		
Category \ Type of mission	Double grid mission	Circular mission
Time of the flight	20min:40s	3min:38s
Altitude	40 m	43 m
Speed	Slow	Slow
Angle	80°	8°
Overlap	80% (high)	-
Number of pictures	314	45
Outcome (1-10)	10	8
Full model	Y	Y
Comments	-	-

OLSZTYN (14 am), 2023 CZ.A		
Category \ Type of mission	Double grid mission	Circular mission
Time of the flight	16min:58s	10min:08s
Altitude	60 m	60 m
Speed	Slow	Slow
Angle	80°	10°
Overlap	80% (high)	-
Number of pictures	312	45
Outcome (1-10)	10	8
Full model	N	N
Comments	-	-

OLSZTYN (12 am), 2023 CZ.B		
Category \ Type of mission	Double grid mission	Circular mission
Time of the flight	19min:40s	12min:24s
Altitude	60 m	60 m
Speed	Slow	Slow
Angle	80°	10°
Overlap	80% (high)	-
Number of pictures	368	61
Outcome (1-10)	10	8
Full model	N	N
Comments	-	-

GLOSSARY

Castle

The Polish word "zamek" corresponds to the Latin "castrum" and, according to the definition by Jerzy Smoczyński[1], it refers to a complex of defensive elements that, when combined with residential buildings, create a compact, enclosed entity. In literature, the term "zamek" is commonly used to describe those objects where three typical components can be identified: obstacle, position, and refuge.

Bogusław Guerquin defines a "zamek" as a complex of defensive elements and residential buildings linked within a closed defensive perimeter, originating in the feudal system as a center of princely power, a seat of nobility, a knight's residence, or a military outpost[2].

Janusz Bogdanowski proposed the following definition: a "zamek" is an independent defensive structure with a compact layout, originating in the medieval period, combining a dominant defensive function with residential and economic functions. The castle was adapted for defense within a closed defensive perimeter[3].

Cultural heritage

Cultural heritage encompasses a vast and diverse range of elements, encompassing the various ways in which a community or region expresses itself. This diversity is typically classified into two primary categories: tangible and intangible cultural heritage. The tangible aspect involves physical artifacts, while the intangible aspect encompasses concepts, relationships, and affirmations[4]. To gain a comprehensive understanding, it's essential to bridge the gap between these two categories, as they collectively form a rich tapestry of a group's identity and history.

Cultural landscape

Ustawa z dnia 23 lipca 2003 r. o ochronie zabytków i opiece nad zabytkami [Act of July 23, 2003 on the protection and care of monuments] along with National Heritage Institute contains the most popular definition of cultural landscape: „Cultural landscape is a space perceived by people, containing natural elements and products of civilization, historically shaped as a result of natural factors and human activity."[5]

UNESCO defines it as "Integrated environments shaped by both natural processes and human activities," which depict the progression of human society and settlement patterns influenced by the physical features of their surroundings and the interplay of various social, economic, and cultural factors, both external and internal.[6]

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[1] J. Smoczyński, Zamki [Castles], Carta Blanca, Warszawa, 2009,p. 10.

[2] B. Guerquin, Zamki w Polsce [Castles in Poland], Arkady, Warszawa, 1984. p. 8.

[3] J. Bogdanowski, Architektura obronna w Krajobrazie Polski [Defensive Architecture in the Polish Landscape], Wydawnictwo Naukowe PWN, 2002. p.19.

[4] M. Falser, Cultural Heritage as Civilizing Mission. From Decay to Recovery. Heidelberg, New York, Springer, 2015.

[5] https://samorzad.nid.pl/baza_wiedzy/krajobraz-kulturowy-opracowania-planistyczne-sporzadzane-przez-jednostki-samorzadu-terytorialnego-jako-narzedzia-jego-ochrony/ [access:23.09.2023]

[6] https://whc.unesco.org/en/series/26/ [access:23.09.2023]

All available definitions underline the importance of connection of built heritage and natural heritage, emphasizing the fact that they are inseparable and one is fully dependent on the other.

Database structure

A database structure refers to the organization and layout of data within a database management system (DBMS). It defines how data is stored, accessed, and managed in a database[7].

Defensive systems

The best definition of defensive systems and their elements was provided by Janusz Bogdanowski[8]. Defensive systems in the context of castles refer to a combination of architectural features, structures, and strategies implemented to protect the castle and its inhabitants from external threats, such as enemy attacks or sieges. These systems were particularly important during medieval times when castles served as strongholds and centers of power. Janusz Bogdanowski recognizes six main defensive systems discussed in this thesis: wall-based, recess-based, tower-based, bastion-based, bastionette-based and ravelin based. This devision is used widely among polish researchers.

Eagles' Nests Route

A tourist route in Poland, spanning across the provinces of Lesser Poland and Silesia, meanders from Cracow to Częstochowa, passing through an array of captivating Jurassic castles and fortresses perched atop majestic 30-meter-high rock formations, aptly known as the "Eagles' Nests" due to their commanding locations. This scenic trail, distinctively marked by a red path, stretches an impressive 163.9 kilometers. Mirroring this journey is the Jurassic Bike Trail of Eagles' Nests, which follows a parallel course[9].

GIS

GIS stands for Geographic Information System. It is a technology that is used to capture, store, manipulate, analyze, and visualize geographic or spatial data. GIS allows users to understand and interpret data in a spatial context, making it valuable for a wide range of applications in fields such as geography, urban planning, natural resource management, transportation, environmental science, and more. GIS is widely used in decision-making processes, as it helps organizations and individuals make informed choices by providing insights into the relationships between different geographic elements. It can be used for tasks like urban planning, disaster management, environmental monitoring, resource allocation, and more[10].

H-BIM

HBIM stands for "Historic Building Information Modeling." It is a specialized subset of Building Information Modeling (BIM) that focuses on the digital documentation, preservation, and

[7] https://www.lucidchart.com/pages/database-diagram/database-design [access:12.09.2023]
[8] J. Bogdanowski, Architektura obronna w Krajobrazie Polski [Defensive architecture in the Polish landscape], Wydawnictwo Naukowe PWN, 2002. p.21.
[9] https://orlegniazda.pl/ [access:12.09.2023]
[10] https://www.esri.pl/co-to-jest-gis/#0 [access:12.09.2023]

management of historic and heritage buildings. HBIM is primarily used in the field of architectural conservation and historic preservation to assist in the assessment, restoration, and ongoing maintenance of historical structures[11].

Methodology

According to Elżbieta Niezabitowska[12] methodology refers to the systematic and structured approach or set of procedures and techniques used to conduct research, solve problems, or accomplish specific goals in various fields of study, including science, social sciences, business, and academia. It provides a framework for planning, executing, and evaluating processes, ensuring that they are conducted in an organized, efficient, and rigorous manner.

Method

According to Elżbieta Niezabitowska[13] a method is a systematic and organized procedure or technique that is employed to achieve a specific objective or carry out a particular task in various fields, such as science, research, engineering, business, or everyday life. Methods provide a structured approach for performing actions, solving problems, or conducting activities, ensuring that they are carried out efficiently and effectively.

Kraków-Częstochowa Upland

According to K.Sosnowski The Cracow-Czestochowa Upland (Jura Krakowsko-Czestochowska, Jura, the jurassic belt) is a geographical macro-region located, as the name suggests, between Cracow and Częstochowa in Poland. The Jura forms a strip of hills rising up to 515 m above sea level and is 80 km long[14]. It is a unique region in a scale of the whole country. It contains a mixture of natural and cultural landscape with very rich amount of species in flora and fauna as well as unique examples of architecture.

Ontology

An ontology is a formal and explicit representation of knowledge or information within a specific domain. It defines the concepts, categories, relationships, and properties that are relevant to that domain, providing a structured and organized framework for understanding and reasoning about it. Ontologies are commonly used in various fields, including philosophy, computer science, artificial intelligence, and information science. They provide a foundation for organizing, sharing, and leveraging knowledge within specific domains, contributing to better understanding, communication, and problem-solving in those domains[15].

Photogrammetry

Photogrammetry is a technique used to obtain three-dimensional information about the shape, size, and spatial characteristics of objects or scenes by analyzing two-dimensional photographs or images. It involves the process of extracting precise measurements and geometric

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[11] https://www.accasoftware.com/en/hbim-historic-buildings [access:12.09.2023]

[12] E. Niezabitowska, Metody i techniki badawcze w architekturze [Research methods and techniques in architecture], Wydawnictwo Politechniki Śląskiej, Gliwice, 2014

[13] Ibidem

[14] K. Sosnowski, Jura Krakowsko-Wieluńska [Kraków-Wieluń Upland], Sport i Turystyka, Warszawa, 1955, p.12

[15] https://www.cidoc-crm.org/ [access:12.09.2023]

data from photographs or images taken from different viewpoints. This data is used to create detailed, accurate, and often scaled 3D models or maps of the objects or terrain being studied[16].

Photogrammetry typically relies on the principles of triangulation, where the position and orientation of the camera(s) and the corresponding points on the object or scene are used to calculate the 3D coordinates of those points. This technology has a wide range of applications, including in fields such as surveying, cartography, archaeology, forestry, geology, architecture, and even in the creation of 3D models for video games and virtual reality environments. It can be performed using traditional film cameras or digital cameras, and in some cases, even using aerial or satellite imagery.

Survey

A survey is a systematic method of collecting information, data, or opinions from a group of individuals or entities to gather insights, make assessments, or draw conclusions about a particular subject or topic. Surveys are commonly used in various fields, including research, marketing, social sciences, and data analysis.

Swedish Deluge

The Swedish Deluge is the name of a historical war that took place between 1655 and 1660, primarily in the territory of the Polish-Lithuanian Commonwealth. This war resulted from Sweden's aggression against the Commonwealth. The Swedish Deluge had a significant impact on the history of Poland and Sweden, as well as the balance of power in the Baltic region. It was also one of the most important conflicts in the 17th century in Central and Eastern Europe[17].

[16] http://ww.wpg.home.pl/wpgold/fotogrametria.htm [access:23.05.2022]

[17] N. Davies, Heart of Europe: A Short History of Poland, Oxford University Press, 2001, p.134.