

Architectus

DOI: 10.37190/arc230101 Published in open access. CC BY NC ND license

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Silesian landscape with a castle in the background. A Wrocław donjon of the prince-crusader

Introduction

The moment of occurrence of new western models of a feudal seat in Central and Eastern Europe with a dominant role of the main tower is difficult to determine precisely. Contrary to the legend about the fall of Prince Popiel and the beginnings of the Piast dynasty, which was popularized by Gallus Anonymous, there is at present a lack of strong premises which would allow us to look for towers of *donjon* (keep) and bergfried types in Polish lands in the period preceding the fragmentation of Poland [1, p. 158 ff.]. Probably, only the so-called Wawel Belfry - the oldest well-known representative of towers of the Final Defense in Piast Poland, whose construction should be connected with a workshop working on the construction of Saint Wenceslaus Hermanian Cathedral (1090–1142) [2] – constitutes a reflection of processes taking place in Europe during the reign of the Salian and Hohenstaufen dynasties. As a result, a multi-tower model of the ruler's residence, which was different from the Carolingian and Ottonian models, was established. In the case of Silesia, the existence of such a tower for the first time can be found indirectly in Słup, i.e. one of the rural properties of magnates, which was mentioned in 1177 [3, pp. 437-450], [4, p. 111]. We already know subsequent examples of donjon and bergfried towers from the archaeological research on the princely residences in Wrocław, Wleń, Legnica [5]-[8], and in other districts of the then Poland and in close proximity, i.e. from the residence in Kalisz-Zawodzie [9], palatium in Ostrów Lednicki [10] as

well as in Chełm [11], Lublin [12], Bieławin [13] or Stołpie [14]. The abbey tower from Lubiń, which is known from excavations, should also be mentioned here [15]. Wleń "donjon" with a careful dimension stone structure (with a "staufen" dimension stone of *Buckelquader* type) and a very early chronology, should be considered today as an extremely reduced palace building rather than a residential tower [16, p. 232 ff.].

Donjon (*dunjo*, *dungeo*, *domniono*, *domnio*, *dungjo*, *donejon*, *dongion*, *keep*, *kype*, *torreón*, *dongione*, *maschio*, *mastio*, *fortified tower*) – a residential and defense tower, a specific form of defensive residence, which represented a palace in a verticalized form, constitutes first of all a symbol of strong central power, which was perceived in all of Europe identically [17]–[19]. Unlike bergfried (belfry), it was not only the last shelter of a feudal, but above all his apartment and usually the main representative building, i.e. the object which was constantly inhabited in the period of peace. Keep is a specific product of the feudal system, which had a characteristic structure, spatial and functional disposition and communication [20].

The theme of this article is the cultural landscape of Silesia in the first years of the fragmentation and in the times of *melioratio terrae*, initially dominated by the Piast conflict with the magnates (1145–1201), and then by successful economic and settlement experiments as well as by huge architectural and urban investments (1201–1241) of the European impetus. The collision of the "old order", which was impersonated by the magnates, with the unification attempts of the Silesian Piasts initially brought defeat to the rightful rulers of this district. Almost 20 years of exile spent not only at the Hohenstaufen's imperial residence in Altenburg, but above all on long travels, war expeditions and crusades in Europe and the Holy Land, made it possible to acquire priceless experiences which soon led to the cultural and economic breakthrough in the

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south-western lands of District Poland. The brick architecture with Lombard's origin, which to the north of the Alps was associated with Italian aspirations and the power of the Hohenstaufen policy, became a symbol of deep transformations. Soon it also became a dominant element in the panorama of metropolitan Wrocław, being a noticeable counterweight to the stone investments of the powerful Włostowic family, matching the works of Anno II - the bishop of Cologne or Bernward - Hildesheim Bishop. The first in this row, however, was an extremely unique and experimental defensive structure of a donjon type, i.e. a manifesto of power of Prince Bolesław I the Tall [Bolesław I Wysoki] returning from the exile (1163–1201). Despite the siege and even burning, it ultimately allowed the prince to survive in rebellious Wrocław which was dominated by conspiracy aristocrats. The purpose of this work is to show its phenomenon against the background of similar European facilities and to trace the mechanisms of the construction of other pioneering defensive buildings during the crusades and the economic breakthrough which ended the early Middle Ages in Central and Eastern Europe. This study analyzed the results of archaeological and architectural research as well as historical sources, in particular little-known episodes from the Milan's expedition of Frederick I Barbarossa, which show the genesis of the "brick breakthrough" in Germany and Poland at the turn of the 3rd third of the 12th century in the new light.

A donjon (keep) and Lombard brick define a "new world" of the crusades era, i.e. the world of rent economy and feudalism. Initially, it is a world strongly dominated by the Hohenstaufens. The authors of the article are particularly interested in showing a very early chronology of these transformations in comparison with the rest of Europe (Windsor, Chateau-Gaillard, Coucy), which stands in opposition to the existing opinions on a provincial character of the "eastern German Reich March" and the assumptions of the "colonization" theory, which essentially diminishes the merits of Polish rulers in the development of civilization of Silesia. It is also important to show the uniqueness not only of the Wrocław building, but almost all very early European keeps which usually have the character of one-time experiments without standardization features.

The first Silesian residences – traditional palatia?

The high capital status of Wrocław already in the times of Gallus Anonymous (2nd decade of the 12th century) is indicated by the chronicler as *Sedes regni Principales* [21]. As one of the key centers of the monarchy of the first Piasts, it was not by accident that in 1000 it became one of the episcopal capitals of the Archdiocese of Gniezno. However, it cannot boast the relics of the early Piast palatium, which is still waiting for its discoverer. Perhaps, its residues should be sought in the so-called Czech gord in the eastern part of Ostrów Tumski [22]. The existence of an older gord temple from the 10th century in the place of the present Saint John Cathedral, which preceded the construction of three extensive Romanesque buildings and present Gothic, was confirmed archeologically [23]. In the case of the western gord, we have mentions of the original St. Marcin Chapel from 1149 and 1193 only, which has not been located in a confirmed way so far [24].

Similarly, the question of the original episcopal residence in Wrocław remains unanswered. In the years of Walter from Malonne [Wauthier de Malonne] service (1149-1169), the construction of a new Romanesque cathedral, the so-called Walter's, began [23]. The currently existing late-Roman episcopal palatium in Ostrów Tumski is the oldest stone residential building known to us which belonged to feudal lines from the circles of the clergy [25]. Although a *curia* was mentioned as early as 1213, the oldest known building in this place only slightly precedes the construction of the early Gothic presbytery of the 4th cathedral in Wrocław, dated to the years 1244-1272. Researchers relate the construction of this residence to the 2nd quarter of the 13th century. It was a two-storey brick building on a rectangular plan, measuring approximately 28.5×11.4 m, surrounded by buttresses with a symmetrical tripartite interior [8, pp. 65–67].

Paradoxically, we have the most information about the first residences of Wrocław magnates. In Wrocław, whose position on the map of the Piast monarchy increased significantly at the end of the 11th century, magnates became a dominant political force in the 1st and 2nd thirds of the 12th century [4], [26]. The counts certainly stood out in the foreground, i.e. Magnus (1051-after 1109), probably a descendant of King Harold II Godwinson of England [27, pp. 196 ff.], Piotr Włostowic (1080-1153) [28, pp. 507-510] and Jaksa (died after 1168/1178) who was identified with Jaksa of Kopanica, Duke of Stodorans and Jaksa of Miechów, a noble from the Gryfit family [26, pp. 10–12]. The political crisis of 1093, which was inspired by the Bohemians, brought about the Wrocław-Kruszwica rebellion and the so-called Magnus' rebellion, when power in Wrocław was temporarily transferred to Zbigniew, the elder son of Duke Władysław Herman (1079-1102). After 1097, by the will of the ruler, Wrocław became the capital of the district of his younger son Bolesław III Wrymouth [Bolesław III Krzywousty] [29, pp. 293-298]. At the turn of the 12th century, the center already formed an early urban agglomeration, the important elements of which were the right-bank market Ołbin, Wyspa Piaskowa and the extensive left-bank settlement [30]. The Włostowices had at least two residences known to us, one of which – though still under discussion - had systematic archaeological and architectural research, whereas the other was most probably immortalized on the viewing plan of Wrocław by Barthel and Barthel the Younger Weiners from 1562. In the light of previous analyses and interpretations, these residences, however, did not differ in their character from the Piast palatia of Poznań, Ostrów Lednicki, Giecz, Przemyśl or Wiślica [31], [32]. These would be traditional palaces with private chapels, i.e. in the case of Sobótka-Górka with a rectangular plan, whereas in the case of Wrocław-Olbin, most likely in the form of a central building with a tower, similar to St. Prokop's rotunda in Strzelno [33]. There is no reason to look for elements of Norman motte castles in their program, especially towers in keep or belfry types. On the other hand, as we known from sources, the manor house of Count Mikora – another important figure of the 12th-century Wrocław, the founder of St. Peter's Church in Ostrów Tumski – has not yet been located. It was supposed to be situated in western Ołbin [34].

Civil war, exile and return of the Silesian Piasts

The position of Wrocław aristocrats, high and stable in the times of Bolesław III Wrymouth and Vladislaus II [Władysław II], broke down violently during the hot period of the civil war in Poland (1145-1146), as a result of the conflict of the ruler with count palatine Piotr Włostowic. However, the devolutionary trends were already too strong. Even the kidnapping, imprisonment, mutilation and exile of the magnates, instead of calming down the situation and pacifying the moods, led to the rebellion in the country which ended with the expelling of Prince Władysław II from Poland. The country was also left by his wife Agnieszka of Babenberg and their sons Bolesław I the Tall, Mieszko IV Tanglefoot [Mieszko IV Platonogi] and Konrad Spindleshanks [Konrad Laskonogi], who found shelter at the imperial residence in Altenburg [35]–[37]. Despite good welcome and the will to support the exiles with military help, King Konrad III Hohenstauf - under the influence of Bernard of Clairvaux - made preparations for the crusade, postponing even his own imperial coronation in Rome. Neither Konrad III's unsuccessful expedition in 1146 which was organized on the eve of the Second Crusade, nor even a devastating military and prestigious defeat inflicted on Bolesław IV the Curly [Bolesław IV Kędzierzawy] in 1157 by Frederick Barbarossa restored power to the exiles. It only happened in 1163, after the death of Władysław II the Exile [Władysław II Wygnaniec] and Agnieszka. Bolesław IV the Curly, who was recognized as a legitimate Polish ruler by the emperor, kept the key Silesian castles for himself, probably Wrocław as well as Głogów and Opole. Bolesław and Mieszko regained them with their army before 1166, using the defeat of Bolesław IV the Curly Prussian crusade to strengthen their power.

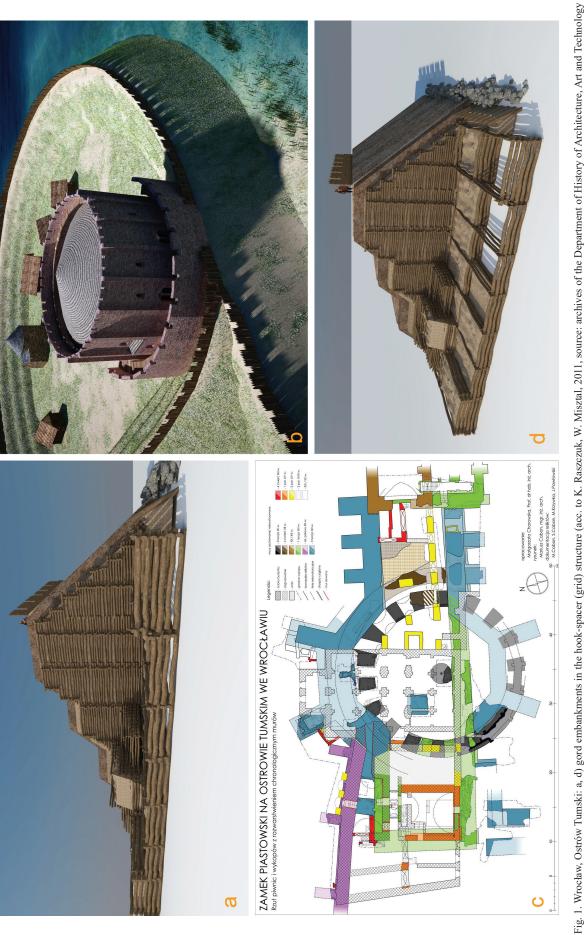
When Bolesław I the Tall entered Wrocław with his army, the magnates initially supported the prince, however later – dissatisfied with the authoritarian rule of Barbarossa's protege – often undermined his supremacy. Despite many thoughtful steps, which were aimed at raising the economic potential of Silesia – visible especially in the Wrocław early agglomeration, which Jewish merchants, Walloon weavers and German guests came to, and in the Katzbach Foothills, where the gold extraction was intensified – Bolesław I the Tall again had to look for shelter abroad due to turbulent events which took place in the years 1172 and 1177.

The ruler undoubtedly had to strengthen his residence in Wrocław quite early. At that time, towers of churches which were funded by Włostowic family definitely stood out in the panorama of the town, manifesting the balance of forces in the capital of Silesia and already competing in terms of monumental architecture and economic power with the capital city of Cracow [38, p. 50]. A symbolic counterweight for the investments of rebellious aristocrats was necessary – a clear dominant designating *axis mundi* and redefining space of the capital's gord and town.

The princely donjon (keep) in Ostrów Tumski – a manifesto of power of the Piasts returning from the exile

Among the representatives of the Piast dynasty, there are few rulers who owe their "second life" and posthumous fame to archaeologists. In this group we can certainly include Prince-Crusader Bolesław I the Tall - still some time ago a Wanderer, repatriate, malcontent – returning from exile in 1163, a pretender to the throne of united Poland, man of great ambitions and expectations which he was not able to meet in the realities of fragmented Poland [36]. In the light of archaeological research of the last four decades, he was, however, a farsighted ruler with the widest horizons among the Piasts. As a participant in the Italian expedition and the Crusader from the Hohenstaufen's retinue, and earlier a permanent visitor to Kievan Rus' courts, he well learned defensive architecture and military art of the East and West. As an efficient organizer - a supporter of economic and legal reforms - he acquired valuable allies in Cistercians, Norbertines and Augustinians to cooperate with in the economic reconstruction of Silesia [36]. And it was religious workshops that appeared shortly thereafter as experts not only in terms of colonization, but above all in the field of architecture, promoting brick as the basic building material, both at German and Polish courts.

It was Bolesław who most likely erected the first castle in rebellious Wrocław and situated it in Ostrów Tumski in the area of Western Gord (Fig. 1), having experiences from the time of the strengthening of Wleń, Grodziec, and Legnica [35], [36]. The archaeological and architectural research by Edmund Małachowicz brought the discovery of impressive relics of this completely forgotten brick building, which is the second, maybe the third - after Wawel and Wleń – castle in the lands of Poland [5]. The functional interpretation of its individual elements, which was introduced by the discoverer, for several decades constituted the applicable interpretation of our knowledge about the Wrocław castle, although at that time many researchers commented on the vision of the Wrocław residence of the Piasts [24]. In the light of research which was carried out in the years 2010–2014, this image has changed significantly [39]. From the panorama of the oldest residence, a rectangular keep or bergfried disappeared. In fact, it was a fragment of a later palace building from the time of Henry I the Bearded [Henryk I Brodaty] and the so-called eighteen-sided chapel turned out to be a secular defensive and representative building, most likely of a keep character (Figs. 1b, c). Today, we perceive a rectangular in plan residential object not as a Premonstratensian monastery, but rather as a palatium or school of good manners (*Kinderstube*) building. The youngest building in this complex, which was erected on the sophisticated club-like octagon plan with polygonal apses and the presbytery also closed in a polygonal way - according to the interpretation of the explorer - undoubtedly served as a court chapel [40], although - which we know for sure



of the Wroclaw University of Science and Technology), b) eighteen-sided donjon (acc. to M. Chorowska, M. Krzywka), c) projection of relics with chronological stratification (acc. to M. Chorowska, M. Caban)

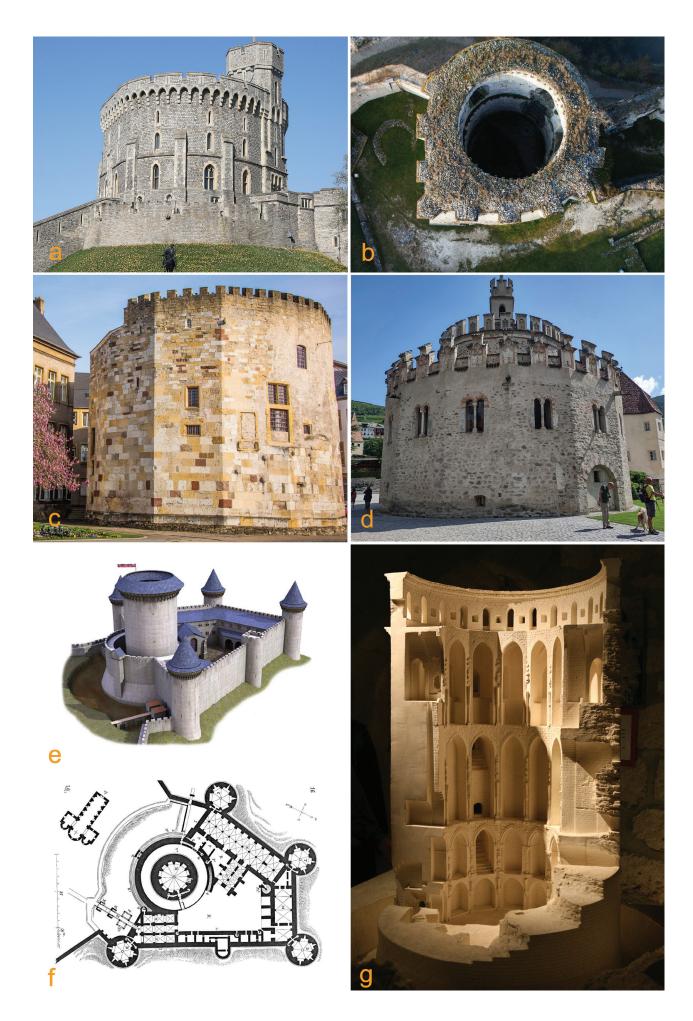
II. 1. Wrocław, Ostrów Tumski: a, d) wały grodowe w konstrukcji hakowo-przekładkowej (wg K. Raszczuka i W. Misztala, 2011, źródło: archiwum Katedry Historii Architektury, Sztuki i Techniki Politechniki Wrocławskiej), b) donżon osiemnastoboczny (wg M. Chorowskiej i M. Krzywki), c) rzut reliktów z rozwarstwieniem chronologicznym (wg M. Chorowskiej i M. Cabana)

today – in the next, already second residence. However, neither the relics of either the first palatium, nor the original, at the latest of the 12th-century Saint Martin's Chapel, have been discovered until today [5], [24]. The residence of Bolesław I the Tall was strengthened with massive wood and earth embankments in the hook and spacer (grate) structure (Figs. 1a, b, d). The characteristic inclination of the embankment's face constituted an obstacle difficult to overcome, which was in formal terms similar to solutions commonly used in the masonry (stone) form in the Holy Land (such as in Krak de Chevaliers). Of course, this image of the Wrocław castle still requires research.

In the scientific environment, a stormy discussion as regards a functional interpretation issue of the eighteen-sided facility was taking place. This is probably the oldest brick object in Poland, which was erected from the "high" Lombard brick (format $7.5-8 \times 11.5 \times 25.5$ cm, arranged in the Slavonic / Wendish bond), and was recognized by Małachowicz without any doubts as a chapel from the time of Bolesław I the Tall or even Piotr Włostowic [41, pp. 263-268]. However, Jerzy Rozpędowski [42], Marian Kutzner [43] and Małgorzata Chorowska [8] considered it to be a polygonal donjon – a residential and defensive tower which constituted the core of the then castle. The arguments put forward by both sides did not make it possible to find a convincing solution to this issue for a long time. During the research in the years 2010-2014, it turned out that the arched wall of the alleged sacristy in fact ran around the entire eighteen-sided object and formed a defensive perimeter in the French chemise or German Mantelmauer type, which was additionally reinforced with an embankment and a clay coat - badly burnt as a result of the siege – and the apse reconstructed formerly by researchers did not in fact exist. Therefore, there appeared arguments which allowed us to ultimately recognize the secular and defensive character of the eighteen-sided building. The location of a polygonal tower, which was immersed in the structure of wooden and earth embankments and in a strategic place where the defensive perimeters of the gord and the outer gord coincided, also speaks for it. In the light of radiocarbon analyses of mortars, the donjon from Ostrów Tumski was constructed in the years 1166-1186 (with a probability of 68%) or 1117–1212 (with a probability of 95%) [44].

Pioneering experiments of the Crusade era

Since the discovery of relics of the eighteen-sided object, researchers thought about its genesis and function, somewhat rightly assuming that they could be closely related to each other. The convincing justification of the genesis of the phenomenon along with the indication of the cultural circle from which it comes could constitute a key argument in the discussion on the form and function of this architectural phenomenon. From the perspective of time, it can be seen that the analyses understood in this way limit us exclusively to intuitive travels around Europe of the crusades era, the results of which will always have a more or less debatable character [45], [46]. Among the great and significant European equivalents of the Wrocław donjon, there is a cylindrical tower in a Windsor Castle keep type (Fig. 2a), which is articulated with pilaster strips and was built by Henry II Plantagenet in the years 1165–1179, however, today, significantly transformed (the oldest parts of the walls dated dendrochronologically for the year 1225) or the unique experimental donjon of Château Gaillard (Eure, Normandy) (Fig. 2b), which was erected by Richard the Lionheart in 1197-1198 and along with the system of fortified towers permanently entered the history of military (militaris) architecture. Traditionally, the well-known fourteen-sided Tour aux Puces Tower in Thionville (Moselle, Lorraine/ Grand Est) (Fig. 2c) from the 11th and 12th centuries, which was transformed into the chapel, should be mentioned. The donjon of Coucy Castle in the Ardennes (Aisne, Picardia/Hauts-de-France) – despite the striking kinship of the concept - surrounded tightly by the chemise perimeter (Figs. 2e-g) and funded by the Enguerrand III de Boves from the years 1220–1242, is probably much younger than Wrocław Tower. Moreover, we can mention Torre del Oro in Seville, i.e. a twelve-sided defensive tower which was constructed in the years 1220-1221 by the Almohads and an eleven-sided tower in the donjon type of Bricquebec Castle (Cherbourg, Manche, Normandy) which was also built in the 13th century. In this group we must also include Red Tower (Kizil Kule) in Alanya (Turkey) (Fig. 3), which was constructed for Sultan Ala Ad-Din Kay Qubadh I (1220-1237) by architect Ebu Ali Reha El Kettani from Aleppo in the years 1221–1226 and which guarded the entrance to the port and shipyard. This stone and brick five-storey building is 33 m high with a diameter of 29 m and wall thickness of 12.5 m. The structure which is based on a centrally located pillar – eight-sided at the bottom and cylindrical at the top – and also houses a rainwater reservoir is of particular attention. The façades were equipped with bay windows of the machicolation character. However, these buildings can be treated as ideological models only. Further analyses inevitably lead to the conclusion that especially the period between the 2nd and 3rd Crusades is a time of intriguing experiments in the field of defensive and residential architecture, which is evidenced by a huge formal diversity of this type of towers in Europe. The richness of solutions of French donjons is striking, in particular in these examples: Etampes (Essonne, Ile-de-France), Houdan (Yvelines, Île-de-France), Niort (Deux-Sèvres, New Aquitaine), Provins (Seine -Et-marne, Île-de-France), already mentioned Château Gaillard (Eure, Normandia), and also Gisors (Eure, Normandia), La Roche-Guyon (Val-d'Oise, Île-de-France) or Château de Queribus (Cucugnan, Aude). It is the same on the British Isles, where there are towers in the donjon type, i.e. Conisbrough Castle (South Yorkshire; built in around 1180/1190 by Hamelin Plantagenet), Athlone Castle (Athlone, Westmeath, Ireland, which was built for King John in 1210 by the bishop of Norwich and Archbishop Canterbury – John de Gray), Clifford's Tower in York Castle (York, England, which was constructed for King Henry III in the years 1245-1270) or Raglan (Monmouthshire, Wales, which was erected in the place of the older 12th-century layout in the years 1430–1440).



These towers should be regarded as unique and often unrepeatable phenomena of the one-time experiments character, which preceded the appearance of simpler and more eagerly imitated forms. Contrary to the conclusions resulting from the opinion once expressed by Bernhard Grueber, i.e. Hat man einen dieser Türme gesehen und untersucht, hat man alle gesehen regarding towers of the bergfried type [17, p. 180], they are the donjons that bring a surprising variety of forms and solutions far from "standardization" or even reduction typical of the final defense towers. This is a circumstance conducive to our searches. Therefore, all analyses of the relics of the donjon of Bolesław I the Tall in Ostrów Tumski, which were conducted in isolation from the Silesian artistic, political, and economic context as well as the issue of technique and technology of construction, could not and cannot bring satisfactory results.

Roman walls of Milan. Lombard genesis of construction workshop

Analyzing in detail the relics of the eighteen-sided building, which were discovered during the archaeological research, we perfectly understand the reason why the explorer of the object, i.e. Małachowicz, probably never had any doubts about its function. In spite of the search direction we set at the beginning, the Wrocław donjon presents strong formal, technical, and technological relationships with Lombard brick architecture [20], [45], [46], which is represented mainly by central religious buildings such as, for example, Saint Lawrence Rotunda in Mantua (Fig. 4a), then by geographically closer to us Hungarian rotundas in Karcsa (Fig. 4b), Kiszombor and Gereny (Goriany) from the 4th quarter of the 12th century and early 13th century, as well as also by the rotunda in Kiev, which Małachowicz and Andrzej Grzybkowski [40] considered a direct formal model for the monument from Wrocław. However, it is certainly not the only Lombard clue in search for the genesis of the Wrocław donjon. So far, much less attention has been paid to secular buildings, especially from Roman times and the early Middle Ages.

Bolesław I the Tall - a participant in both famous sieges of Milan (6th August-7th September 1158 and 30th May 1161, 28th February 1162) during the Italian expedition of Emperor Frederick Barbarossa – as one of the last rulers from behind the Alps, could admire the impressive antique defensive walls of the town. These fortifications, which arouse admiration and jealousy of neighboring municipal districts in the 12th century, were erected in two phases, namely, 1st - in republican times (in around 49 B.C.) and 2nd – (after 291) during the reign of Emperor Maximian (286–305), which made Milan the capital of the Western Roman Empire. The defensive perimeter was equipped, among other things, with polygonal fortified flanking towers, from among which the octagonal tower Torre Dei Malsani (Torraccia) at Porta Ticinensis (phase I; in Carrobbio District, on the corner of Via Torino and Via del Torchio) (Fig. 5f) and the twenty four-sided tower called Massimiano (Torre di Ansperto) which belonged to the western section of the walls from the times of Maximian (phase II; at 15 Corso Magenta in the courtyard of the present Archaeological Museum) and preserved in full height (16.60 m) (Figs. 5a, d, e). The powerful walls of Milan were pulled down deliberately according to Frederick's will and shortly after conquering the town. Already

b) Château Gaillard (Eure, Normandy), castle, the donjon erected by Richard the Lionheart in the years 1197-1198, top view

d) Neustift (Novacella, Bressanone-Brixen, Vahrn/Varna, Bolzano, Southern Tyrol, Italy), augustinian abbey, sixteen-sided tower with a chapel, the so-called Engelsburg (Castello dell'Angelo), constructed by preposit Konrad von Rodank in the years 1190–1198 (photo by M. Chorowska),
 e) Coucy (Aisne, Picardia/Hauts-de-France), castle, donjon constructed by Enguerrand III de Boves in the years 1220–1242,

reconstruction of the castle according to J. Martel (source: courtesy of J. Martel, www.VirtuHall.com),

f) Coucy (Aisne, Picardia/Hauts-de-France), castle, donjon model

(photo by R. Boshi, source: https://commons.wikimedia.org/wiki/File:Modèle_du_donjon_du_Château_de_Coucy.jpg [accessed: 26.08.2019]), g) layout plan according to E. Viollet-le-Duc (source: https://fr.wikipedia.org/wiki/Fichier:Plan.chateau.Coucy.png [accessed: 26.08.2019])

Il. 2. Wybrane europejskie wieże w typie donjon i keep:

rekonstrukcja zamku według J. Martela (źródło: dzięki uprzejmości J. Martela, www.VirtuHall.com),

f) Coucy (Aisne, Picardia/Hauts-de-France), zamek, model donżonu

Fig. 2. Selected European towers of the donjon and keep types:

a) Windsor, tower of a keep type, built by Henry II Plantagenet in the years 1165-1179 with a superstructure added in 19th century

⁽photo by M. Cartwright, source: https://www.worldhistory.org/image/11556/round-tower-windsor-castle/ [accessed: 1.12.2022]),

⁽photo by F. Cormon, source: courtesy of F. Cormon),

c) Thionville (Moselle, Lorraine/Grand Est), fourteen-sided donjon Tour aux Puces from the 11th and 12th centuries, transformed into a chapel (photo by S. Thevenin, source: Musée archéologique du Pays Thionvillois – La Tour aux Puces, © Ville de Thionville),

a) Windsor, wieża w typie keep zbudowana przez Henryka II Plantageneta w latach 1165–1179, nadbudowana w XIX w. (fot. M. Cartwright, źródło: https://www.worldhistory.org/image/11556/round-tower-windsor-castle/ [data dostępu: 1.12.2022]),

b) Château Gaillard (Eure, Normandia), zamek, donżon wzniesiony przez Ryszarda Lwie Serce w latach 1197–1198, widok z góry (fot. F. Cormon, dzięki uprzejmości F. Cormona),

c) Thionville (Moselle, Lotaryngia/Grand Est), donżon czternastoboczny Tour aux Puces z XI–XII w., przebudowany na kaplicę (fot. S. Thevenin, źródło: Musée archéologique du Pays Thionvillois – La Tour aux Puces, © Ville de Thionville),

d) Neustift (Novacella, Bressanone-Brixen, Vahrn/Varna, Bolzano, Tyrol Południowy, Włochy), opactwo augustianów, wieża szesnastoboczna z kaplicą, tzw. Engelsburg (Castello dell'Angelo), zbudowana przez prepozyta Konrada von Rodank w latach 1190–1198 (fot. M. Chorowska), e) Coucy (Aisne, Picardia/Hauts-de-France), zamek, donżon zbudowany przez Enguerranda III de Boves z lat 1220–1242,

⁽fot. R. Boshi, źródło: https://commons.wikimedia.org/wiki/File:Modèle_du_donjon_du_Château_de_Coucy.jpg, [data dostępu: 26.08.2019]), g) Coucy (Aisne, Picardia/Hauts-de-France), zamek, plan założenia według E. Viollet-le-Duca

⁽źródło: https://fr.wikipedia.org/wiki/Fichier:Plan.chateau.Coucy.png [data dostępu: 26.08.2019])

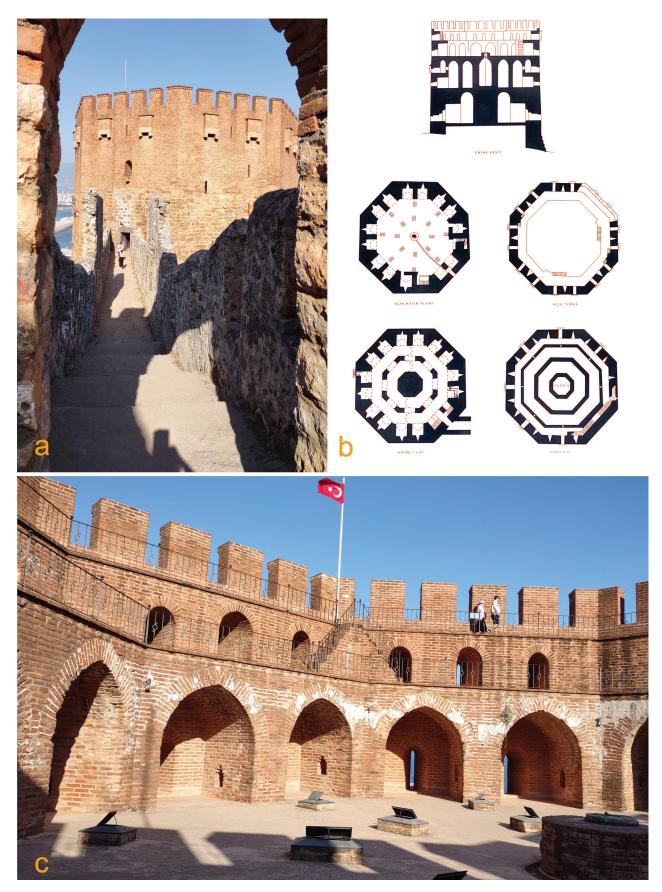


Fig. 3. Alanya (Turkey). Red Tower (Kizil Kule): a) general view (photo by M. Chorowska, 2022), b) vertical cross-section and horizontal cross-sections (source: Museum of Ethnography in Alanya), c) general view of the peripheral walls of the 3rd and 4th storeys (photo by M. Chorowska, 2022)

II. 3. Alanya (Antalya, Turcja). Czerwona Wieża (Kizil Kule): a) widok ogólny (fot. M. Chorowska, 2022),
b) przekrój pionowy i przekroje poziome (źródło: Muzeum Etnograficzne w Alanyi),
c) widok ogólny ścian obwodowych III i IV kondygnacji (fot. M. Chorowska, 2022)



Fig. 4. Selected European brick buildings of the Lombard type and works of Norbertines' and Cistercians' workshops on Lombard-German provenance:

a) Mantua, Saint Lawrence's Rotunda (after 1083) (photo by J. Hałun, source: courtesy of J. Hałun),

b) Karcsa (Borsod-Abaúj-Zemplén, Hungary), Rotunda (12th century)

(photo by Z. Strucki, source: http://naspacery.blogspot.com/2017/02/karcsa-czyli-dwa-w-jednym.html [accessed: 20.03.2023]), c) Jerichow, Norbertines' Church, cylindrical, brick inter-nave pillar (around 1148–1172) (photo by M. Caban, source: archives of KHASziT PWr), d) Wrocław, Ostrów Tumski, eighteen-sided building, central, cylindrical brick pillar (3rd third of the 12th century), source: [5, p. 66, Fig. 59]), e) Morimondo, Cistercians' Church, cylindrical brick pillars (1st third of the 13th century)

(source: http://associazioneliveart.it/wp-content/uploads/2015/05/abbazia-di-morimondo-2.jpg [accessed: 26.08.2019]),

f) Lubiąż, cellarium Cistercians' Abbey, cylindrical brick pillar (3rd third of the 12th century) (photo by R. Mruczek, 2012)

Il. 4. Wybrane europejskie budowle ceglane w typie lombardzkim oraz dzieła warsztatów norbertańskich i cysterskich

o proweniencji lombardzko-niemieckiej: a) Mantua, rotunda pw. św. Wawrzyńca (po 1083 r.)

(fot. J. Hałun, źródło: dzięki uprzejmości J. Hałuna),

b) Karcsa (Borsod-Abaúj-Zemplén, Węgry), rotunda (XII w.),

(fot. Z. Strucki, źródło: http://naspacery.blogspot.com/2017/02/karcsa-czyli-dwa-w-jednym.html [data dostępu: 20.03.2023]), c) Jerichow, kościół norbertanów, cylindryczny, ceglany filar międzynawowy (około 1148–1172) (fot. M. Caban, źródło: archiwum KHASziT PWr), d) Wrocław, Ostrów Tumski, budowla osiemnastoboczna, centralny, cylindryczny filar ceglany (3. tercja XII w.) (źródło: [5, s. 66, ryc. 59]), e) Morimondo, kościół cystersów, cylindryczne filary ceglane (1. tercja XIII w.)

e) Mornhondo, koscioi cystersow, cynnuryczne mary cegiane (1. tereja Ani w.)

(źródło: http://associazioneliveart.it/wp-content/uploads/2015/05/abbazia-di-morimondo-2.jpg [data dostępu: 26.08.2019]), f) Lubiąż, cellarium opactwa cystersów, cylindryczny filar ceglany (3. tercja XII w.) (fot. R. Mruczek, 2012) on March 19, 1162, the Milans were forced to leave their homes within eight days. From March 26, 1162, Barbarossa personally watched the work of destruction, which took place, inter alia, with great help of Italian cities competing with Milan, such as Cremona, Lodi, Pawia, Como, Novara and Vercelli [47, pp. 570–597]. Although the history of the winning duel of Bolesław I the Tall with the knight-giant, which took place in front of the imperial retinue at



Fig. 5. From Milan to Altenburg. Selected European towers on the route of Bolesław I the Tall's expedition:
a) Milan (Lombardy), twenty four-sided tower called *Massimiano (Torre di Ansperto)* (phase II – after 291) (photo by: C. Finocchietti, source: https://blogcamminarenellastoria.files.wordpress.com/2016/12/9-la-torre-poligonale-delle-mura.jpg [accessed: 6.11.2022]), b) Altenburg (Thuringia), imperial castle, the so-called Tower of Piasts (aka Flask), c) Altenburg (Thuringia), imperial castle, Hausmannsturm Tower (photo by R. Mruczek), d, e) Milan (Lombardy), twenty four-sided tower called *Massimiano (Torre di Ansperto)*, f) Milan (Lombardy), octagonal tower *Torre dei Malsani (Torraccia)* at *Porta Ticinensis* (phase I – ca. 49 BC) (photo by Z. Strucki, source: courtesy of Z. Strucki)
II. 5. Z Mediolanu do Altenburga. Wybrane wieże europejskie na trasie podróży Bolesława I Wysokiego:
a) Mediolan (Lombardia), dwudziestoczteroboczna wieża zw. *Massimiano* (Torre di Ansperto) (faza II – po 291 r.) (fot. C. Finocchietti, źródło: https://blogcamminarenellastoria.files.wordpress.com/2016/12/9-la-torre-poligonale-delle-mura.jpg [data dostępu: 6.11.2022]),

b) Altenburg (Turyngia), zamek cesarski, tzw. Wieża Piastów (znana również jako Flask),

c) Altenburg (Turyngia), zamek cesarski, wieża Hausmannsturm (fot. R. Mruczek),

d, e) Mediolan (Lombardia), dwudziestoczteroboczna wieża zw. Massimiano (Torre di Ansperto),

f) Mediolan (Lombardia), ośmioboczna wieża Torre dei Malsani (Torraccia) przy Porta Ticinensis (faza I – ok. 49 r. p.n.e.) (fot. Z. Strucki, źródło: dzięki uprzejmości Z. Struckiego)

the foot of the walls of Milan, seems to be literary fiction [48, p. 370], his participation in the siege of the city is not subject to any discussion today. Also, a direct transfer of specialists from Lombardy to Silesia through Germany in the years 1162–1163 in the situation of almost complete destruction of the city (temples were saved only) and the exile of its inhabitants, cannot be ruled out. This situation certainly results from the large brick investments which were undertaken in Germany in the times of Barbarossa, especially in Altenburg, Altzelle, and Jerichow. The very idea of possessing a donjon by the Silesian ruler can constitute an echo of years spent in exile in Turyngan Altenburg, where the family of Bolesław I the Tall had an imperial residence with the so-called Tower of Piasts (aka Flask) at their disposal (Fig. 5b). However, it is the second of the Altenburg towers – cylindrical brick bergfried (called Hausmannsturm) - that was equipped with an internal pillar which was very similar to the Wrocław Tower (Fig. 5c). Was it built in parallel to the donjon from Ostrów Tumski, already after leaving the imperial residence by the Piasts and their return to Silesia? Brick investments in the area of the imperial residence in Altenburg are undoubtedly closely related to brick Blessed Virgin Mary Augustinians Church (so-called Rote Spitzes) which was funded by Frederick Barbarossa in the years 1165-1172 and was situated next to the castle. Lombard connotations of this temple, similarly to Norbertines Church in Jerichow, are difficult to undermine today.

However, it is not the last clue in our search. Surprising in terms of form and double function is the so-called Engelsburg (Castello dell'Angelo), which functions in its original form in the perimeter of the Augustinians' abbey fortifications in Neustift (Novacella, Bressanone-Brixen, Vahrn/Varna, Bolzano, Southern Tyrol, Italy) and is situated on the route of imperial travels to Italia and inspired probably equally by the architecture of Rome and Jerusalem (Fig. 2d). A sixteen-sided two-level stone building, which combined defensive and sacred functions, was constructed in the years 1190-1198. The tower of the Hungarian Spišský Hrad Castle (Žehra, Spiš, Slovakia), which was destroyed in the 1st half of the 13th century, had a similar structure to Altenburg tower, but it was much larger in terms of size. The owners of this residence, as well as the staff of the nearby collegiate church, had, not accidentally as it seems, family contacts with Jadwiga Andechs, wife of Henry I the Bearded who was the son of Bolesław I the Tall. The life and attractiveness of Lombard models is still noticeable for a very long time. Among the relevant late chronologically secular buildings of the Northern Italian trend, the polygonal twenty-sided plan also occurs in a brick tower of Maryna Mniszchówna, which was preserved in the Kremlin walls in Kołomna (Moscow region) and erected under the guidance of Lombard architects in the years 1525–1531.

"Brick breakthrough" in Poland

The uniqueness of the eighteen-sided Wrocław donjon results equally from the unusual nature of the challenge, which the anonymous *magister operis* faced, as well as the technical and technological proficiency of the thatch itself. And it was probably - as Małachowicz claims - the Cistercian thatch which was connected with the Lubiąż abbey founded by Bolesław I the Tall in 1175, and which is associated with Blessed Virgin Mary Church there and at least the *cellarium* building in the western wing of the monastery [5], [49]. It then acted successfully in Cracow and Mogiła. Characteristic cylindrical brick pillars carrying the cross vaults of this room - identical to the pillar carrying the ceilings of the Wrocław donjon (Figs. 4d, f) - we derive from the resource of Lombard forms and Lombard-German construction workshops which constructed the famous Norbertines Church in Brandenburg Jerichow [49]–[55] or the Cistercian temple in Lombard Morimondo [45, p. 132] (Figs. 4c, e). The clear presence of the "Lombard trend" in Polish medieval architecture and sculpture was already signaled earlier [56, p. 11], [57, pp. 198-216, 244], [58, pp. 187, 194], [59, pp. 26, 65], although researchers focused mainly on its sacral manifestations. However, it is neither the first nor the last case when the thatch specializing in erecting sacral buildings faces the task of constructing a monumental secular building and this time of a representative and defensive character. The slightly older "bergfried" of Wawel was probably built by the Rhineland creators of the western towers of Herman Cathedral. Perhaps Bolesław I the Tall, besieged and defeated in 1146 together with his mother in the capital city of Kraków, could already appreciate its advantages then.

Outstanding brick implementations - both sacred and secular, residential and defensive - soon became the share of the so-called workshop of Trzebnica - Legnica of master Jakub (magister operis, mentioned in 1208 and 1234), who was known, among other things, from the construction of a palatium with three towers (including two bergfrieds) and a twelve-sided two-level Saints Benedict and Lawrence Court Chapel, Blessed Virgin Mary Cistercian Church and Saint Bartholomew in Trzebnica, Blessed Virgin Mary Collegiate Church and Saint Jerome in Głogów or Blessed Virgin Mary Parish Church and Saint Michael in Złotoryja as well as numerous village temples [7], [8], [52]. The polygonal outline of the central buildings and the polygonal elements of the longitudinal layouts - equipped with half-pillars or buttresses based on four-sided brick pedestals – are nothing more than the proof of understanding the essence of the point load of the walls, and therefore the ability to build vaults, in particular rib vaults, in which - apart from northern France - Lombardy was the leader [20, p. 122 ff.].

The task entrusted to the Lubiąż Cistercians by Bolesław I the Tall was unusual and very complicated due to the location of the tower within the old stronghold in Ostrów Tumski in the difficult, in terms of its geotechnical aspects, area of Odrzańska Island and among unstable sandy-muck layers of subsequent utility levels of residential building development and rotten structures of former gord embankments. Therefore, a point foundation was used consisting of eighteen trapezoidal in projection pillars and arcades fastening them. Also, parts of the peripheral walls had a well-thought-out structure of a polygonal outline, which enabled stiffening of individual sides with arcades directly under the crown cornice at the light recessed structure of the walls themselves.

Summary

Although the Wrocław donjon from the beginning was a pioneering experimental building and probably never found direct formal imitation – as the first in the development of the Silesian princely towers it promoted a new Western European standard of living of rulers and along with a much simpler donjon in the form from the times of Henry I the Bearded [60] and in the next decades probably influenced the spread of the tower model of the prince's residence not only in Silesia, but also in other parts of Piast Poland. Thus, it deserves – apart from Wawel Bergfried – a special place in native *militaris* architecture.

The uniqueness of the Wrocław donjon – amazing in the realities of district Poland – is no longer surprising when compared with towers of this type in Western Europe. The period of pioneering experiments with the use of experiences gained during crusades is splendidly documented by the numerous French donjons [19] and towers of the donjon (keep) type in the British Isles [61]. The originality and ingenuity of the solutions applied, however, does not go hand in hand with their subsequent standardization and many of them did not have any direct imitations.

We will probably never find out whether the "transplantation" of the tower residence model into Silesia was

directly affected by the so-called Piast Tower which was inhabited by Polish princes in the imperial Altenburg, or it is only a reflection of changes taking place throughout Europe and caused by the Second Crusade in which - under the leadership of King Konrad III Hohenstaufen - Bolesław I the Tall took part. The eighteen-sided donjon in Ostrów Tumski in Wrocław was probably built for the prince by the monastic workshop of the Cistercians, or Norbertines or Augustians soon after 1166. In the search for the genesis of this building, we cannot fail to notice the Lombard brick models among which Milan's defensive walls, which were demolished after a long siege in the years 1161–1162, probably made the biggest impression on Bolesław I the Tall. Among the defensive works, which were intentionally destroyed at that time according to the will of Emperor Frederick Barbarossa, the twenty four-sided tower has survived until today. In 1163 Bolesław returned to the country from a long exile and started the "brick breakthrough" in district Poland. This constituted one of the first stages of the great "brick revolution" north of the Alps, which was initiated by the Hohenstaufen's Italian policy (1154-1186). Great Silesian brick investments were implemented shortly after the start of the main imperial investments in the territory of Germany (Altenburg, Altzelle, Jerichow).

> Translated by Bogusław Setkowicz

Acknowledgements

The work was carried out as part of the project of the National Program for the Development of Humanities – National Heritage NPRH/DN/ SP/495215/2021/10-2 (2022) "Catalogue of castles and fortified manors of Silesia".

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Abstract

Silesian landscape with a castle in the background. A Wrocław donjon of the prince-crusader

The article is an attempt at outlining the cultural landscape of Silesia in times of breakthrough, in the 2^{nd} and 3^{rd} thirds of the 12^{th} century, which was seen through the prism of studies on the early patronage of the Silesian Piasts. The symbol of deep transformations – apart from colonization and rental economy – became the then brick architecture of Lombard genesis, which north of the Alps was connected with Italian aspirations and the imperial power of the Hohenstaufen's dynasty (1154–1186).

The purpose of this work is to present the genesis of the innovative brick eighteen-sided donjon of the princely castle in Ostrów Tumski in Wrocław against the background of the journey of Bolesław I the Tall (exile years: 1146–1163) as well as political, economic, and legal transformations which he initiated in Silesia in the first decades of *melioratio terrae* (rule years: 1163–1201). That time, which was initially dominated by the Piast conflict with magnates and then by the first successful economic and settlement experiments, preceded widely known in source literature huge architectural and urban investments of European momentum undertaken by his son Henry the Bearded (1201–1238). This work is based on archaeological and architectural research results and analyses of the selected existing tower objects, mainly European, as well as on historical sources.

The brick Wrocław donjon is a manifesto of power of Prince Bolesław I the Tall returning from the exile who regained the main gords of the province with difficulty (1163/1166). Similarly to numerous early French and English towers, it was an innovative experimental building but it did not have any direct formal imitations. In the search for its genesis, it is appropriate to refer to Lombard brick models, among which Milan's defensive walls, which were destroyed after a long siege in the years 1161–1162, can be of great importance. In 1163 Bolesław I the Tall returned to the country from a long exile and initiated a "brick breakthrough" in fragmented Poland. It constituted one of the stages of the great "brick revolution" north of the Alps, which was initiated by the Hohenstaufen's Italian policy.

Key words: Silesia, Middle Ages, Wrocław, castle, donjon, residential tower, archeology

Streszczenie

Śląski krajobraz z zamkiem w tle. Wrocławski donżon księcia-krzyżowca

Artykuł jest próbą nakreślenia krajobrazu kulturowego Śląska w czasach przełomu, w 2. i 3. tercji XII w., widzianego przez pryzmat studiów nad wczesnym mecenatem Piastów śląskich. Symbolem głębokich przemian – oprócz kolonizacji i gospodarki czynszowej – stała się wówczas ceglana architektura o genezie lombardzkiej, łączona na północ od Alp z włoskimi aspiracjami i mocarstwową polityką Hohenstaufów (1154–1186).

Celem pracy jest ukazanie genezy nowatorskiego, ceglanego, osiemnastobocznego donżonu książęcego zamku na Ostrowie Tumskim we Wrocławiu na tle podróży Bolesława I Wysokiego (lata wygnania: 1146–1163) oraz przemian politycznych i ekonomiczno-prawnych, jakie zainicjował na Śląsku w pierwszych dekadach *melioratio terrae* (lata panowania: 1163–1201). Czas ten, zdominowany początkowo przez konflikt Piastów z możnowładztwem, potem przez pierwsze udane eksperymenty gospodarcze i osadnicze, poprzedził szeroko znane w literaturze przedmiotu ogromne inwestycje architektoniczne i urbanistyczne o europejskim rozmachu podjęte przez jego syna Henryka Brodatego (1201–1238). Praca opiera się na wynikach badań archeologiczno-architektonicznych oraz analizach wybranych istniejących obiektów wieżowych, głównie europejskich, a także źródeł historycznych.

Ceglany donżon wrocławski to manifest władzy powracającego z wygnania księcia Bolesława I Wysokiego, z trudem odzyskującego główne grody prowincji (1163/1166). Podobnie jak liczne wczesne wieże francuskie i angielskie był budowlą nowatorską, eksperymentalną i nie znalazł bezpośrednich naśladownictw formalnych. W poszukiwaniach jego genezy wypada sięgnąć do lombardzkich wzorców ceglanych, wśród których istotne znaczenie mogą mieć mury obronne Mediolanu zburzone po długim oblężeniu w latach 1161–1162. Powracając w 1163 r. do kraju z długiego wygnania, Bolesław I Wysoki zainicjował "ceglany przełom" w Polsce dzielnicowej, który stanowił jeden z etapów wielkiej "ceglanej rewolucji" na północ od Alp, zapoczątkowanej przez politykę włoską Hohenstaufów.

Słowa kluczowe: Śląsk, średniowiecze, Wrocław, zamek, donżon, wieża mieszkalna, archeologia