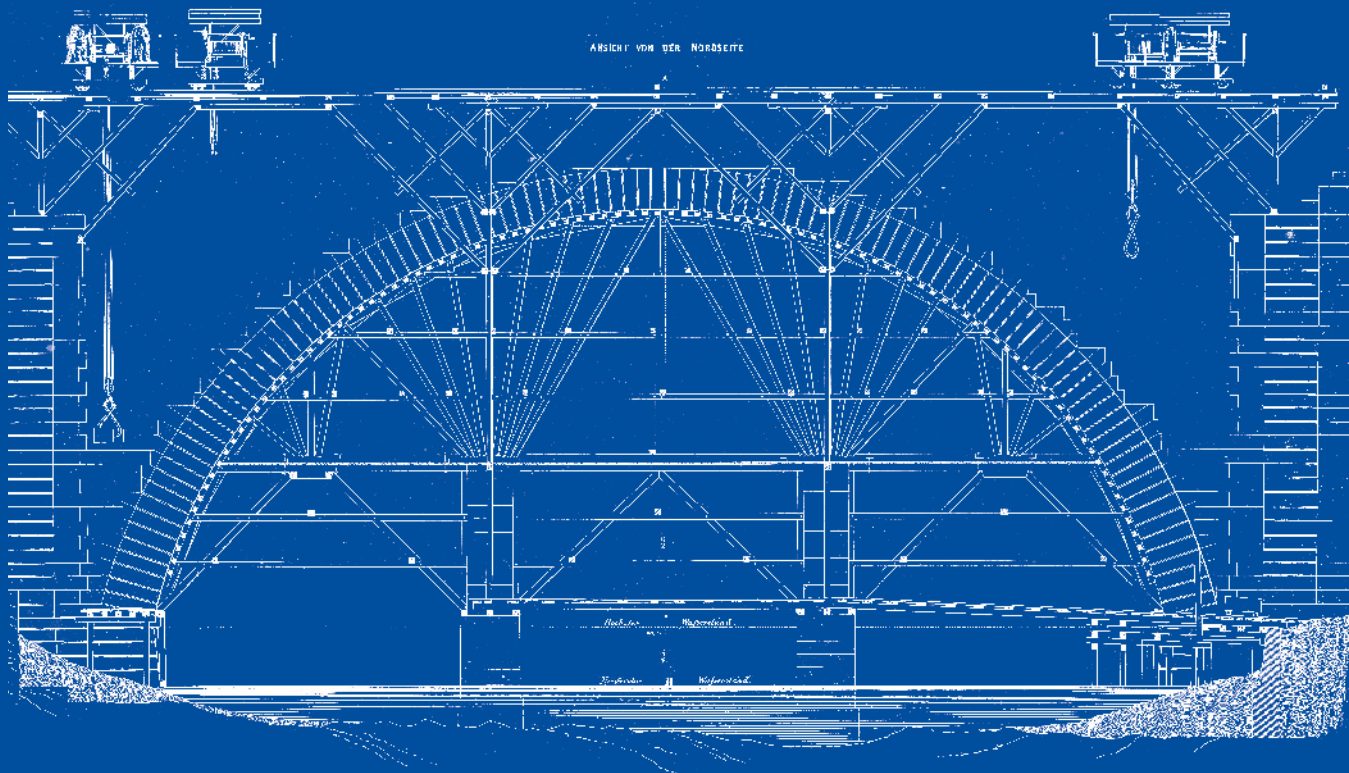
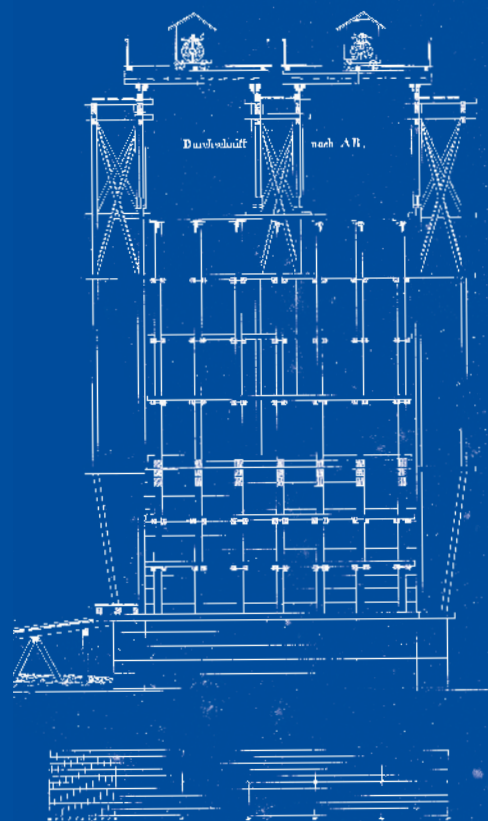


Proceedings of the 8th International Congress on Construction History
Stefan Holzer, Silke Langenberg, Clemens Knobling, Orkun Kasap (Eds.)



Construction

Matters



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A late-Hohenstaufen castle and its living comforts: the Palas of Gravina in Puglia

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Abstract: The castle of Gravina in Puglia is one of the summer residences used by the rulers during late Hohenstaufen and early Angevin times in Southern Italy. Erected between the 1230s and 1240s, the building was embedded in nature and furnished with amenities to ensure the utmost comfort of that time. These features were primarily gathered within the *Palas*, i.e. the castle's section designed to host the sovereigns in the most representative chambers, offering excellent landscape view. Due to the castle's ruined state and the absence of comprehensive restoration records, the *Palas* was examined by combining architectural investigation, analysis of historical sources and photographs, and comparison with similar edifices. The results presented belong to the interdisciplinary project "Summer Residences and Retreats of the Rulers around Mount Vulture". The study reveals that the medieval *Palas* had two stories connected by a spiral staircase. On the ground floor there was an extended hall, while the upper floor consisted of three rooms. They were orientated outwards, with huge *bifora* windows overlooking the landscape, where the rulers engaged in falconry and fishing. Adjoining towers, serving most likely as toilets, were accessible from the rooms equipped with chimneys. The analysis demonstrates that the *Palas* underwent several alterations over the centuries, including the addition of an early modern loggia. Its current state of ruin results from numerous changes in ownership, re-purposing, neglect, and weathering.

Note on authorship: G. Pollini: Introduction, § 1, 6, 7, and Conclusion; J. Dreiling: § 2, 3, 4, and 5.

Introduction

The research presented here is part of the project "Summer Residences and Retreats of the Rulers around Mount Vulture. Living Comfort and Experience of Nature in the Late Hohenstaufen-Early Angevin Southern Italy", funded by DFG and FWF, headed by Prof. Dr. Kai Kappel and Prof. Dr.-Ing. Klaus Tragbar.

In the thirteenth century, in southern Italy, under Emperor Frederick II, his son Manfred, and King Charles of Anjou, rulers built summer residences informed by Arab, Byzantine, and Norman cultures. The castles of Lagopesole, Palazzo San Gervasio, and Gravina in Puglia form a coherent group of retreats nestled in wooded areas between Apulia and Basilicata. They are strategically perched on hills adjacent to the Apennines, providing both strategic visibility and scenic views of the surrounding landscape. Ancient Roman roads provided access to these sites: Gravina and Palazzo San Gervasio were served by the Via Appia, while Lagopesole was accessible via the Via Herculia. Rulers and their courts had to travel extensively to reach these castles, where they would have resided for extended periods, immersing themselves in the surrounding nature and partaking in recreational activities like fishing and falconry in the lakes and forests that once defined the regions. These factors would have co-conditioned the layout, living conditions, and technological conveniences of the structures to ensure a comfortable long-term stay.

Although it is the most dilapidated of the three buildings, Gravina's castle is a noteworthy monument. Until now,

scholars have frequently published about it, but in-depth inquiries are still lacking. The study of its architecture has been limited due to the difficulty of identifying early modern modifications to the medieval structure and to the absence of detailed restoration records from the last century.

The observations on the castle presented in this article are first steps in an ongoing research focused on intersections of architecture, practices of leisure, and the natural environment. Particular emphasis was given to its *Palas*, i.e. the portion intended to house the sovereigns and, therefore, furnished with the most representative and comfortable chambers. This part was meticulously analyzed, with an on-site investigation, in combination with the study of medieval and early modern documents as well as unpublished photos and notes by Arthur Haseloff (1872–1955), archived by Christian-Albrechts-Universität of Kiel.

The following questions were addressed: How was the *Palas* organized, and what were its features in the Middle Ages? What kind of living comforts did it provide, if any? How did the rulers establish connections with the surrounding landscape from the castle? What alterations has the *Palas* undergone over the centuries, and what were the reasons for its ruinous state?

1. Architectural and Historical Survey

The castle (29.46 × 58.84 m) is located north of the town center, at the top of a hill (Fig. 1). The structure has a rectangular open courtyard, accessed from the shorter eastern façade through



Figure 1. Gravina, castle from the southwest (Brandl 2023).



Figure 2. Gravina, castle's Palas from the southeast (Brandl 2023).

a barrel-vaulted entrance. A row of chambers runs along the northern and southern sides, of which only the outer masonry and the base of the dividing walls endure. On the exterior of these two sides, the foundation of four towers is visible: three on the southern and one on the northern part. Introduced by the remains of a loggia, the *Palas* is located in the western portion, dominating the surrounded area from the very edge of the hill, thanks to substantial hillside terracing. The outer perimeter walls of the *Palas* are the only ones that still rise on two levels and display numerous signs of their spatial division and openings to the landscape (Fig. 2). Two cisterns complete the structure, one within the courtyard and the other in the last room on the southern side, next to the *Palas*.

Historical records about the founding of the structure are lacking. However, a *castrum* in Gravina is first mentioned in 1239 (Carbonetti Vendittelli 2002, 1: 13–4) and subsequently, together with a *domus*, in the *Statutum de reparatione castrorum* from 1241 to 1246 (Sthamer 1995, 59, 105). Scholars have debated which of these two structures could be referred to the castle while understanding the specific connotations of the terms *castrum*, *domus*, or *palatium* (Haseloff 1920, 16–7; Cuozzo and Martin 2000, 25; Masini 2006, 726–28; Ambruoso 2017, 16–7). In this article, we do not aim to give a definitive answer, which would deserve further examination, and we assume that the construction was begun between the 1230s and 1240s.

The chronicler Giovanni Villani (1280–1348) describes a hunting park established by Frederick II in Gravina, suggesting that the castle was one of the *loca soliatorum* (Villani 1990, 277). Indeed, some documents of 1275, 1277, and 1281 refer the presence of a lake nearby the castle used for fishing: in 1277, King Charles ordered the Justiciar of Capitanata to catch two thousand eels and tenches from an area under his jurisdiction and transport and release them to “*panctanum nostrum Gravine*” (Filangieri et al. 2010, 206, 292, 450–52). Furthermore, a record from 1309 affirms the existence of a room within the castle once used to house falcons (Nardone 1934, 27). During this time, Gravina had shifted from Swabian rule to Angevin control, ultimately becoming a fief in 1281 (Filangieri et al. 2010, 450–52).

The Angevin source of 1309, mentioned above, stands out as the first description of the castle, recorded by a judge from Gravina, Guglielmo. He reviewed the rooms quickly, providing clues about their location and purpose, but with a focus on their actual condition. The structure appeared neglected, with empty rooms, several missing doors and roofs and a broken chimney. Nevertheless, this document reveals the presence of a chapel dedicated to Saint Catherine above the entrance, inside a now-destroyed tower, and double-

arched windows that probably illuminated the *Palas* (Nardone 1934, 25–7). The last known Angevin record by Domenico of Gravina (fourteenth century) notes that a military garrison held the castle in 1333–1335 (Domenico di Gravina 2023, 256).

In 1419, the Gravina fief, and likely the castle, passed to Francesco I Orsini (Nardone 1941, 155). His family owned it until 1816, when Filippo Bernualdo II gave up feudal rights over the city, and his successors sold the properties (Nardone 1925, 21; Mori 2016, 107, 109). Over these four centuries, there is only a source from 1608 that depicts the building, which appears significantly altered in relation to its medieval state. The chapel was relocated on the ground floor, near the main entrance; the southern side was entirely ruined; the northern side had service rooms and two-levels dwellings; and the *Palas*, preceded by the loggia, was partly used as a stable on the ground floor, with damaged roofs and restored walls on the upper level (De Marino 1979, 28–9). In 1686, the *Palas* was unsuitable for habitation, as all its rooms had fallen into disrepair (Apprezzo Notaio Gallucci 1686, 39r). Photos by Haseloff, from 1905 to 1908, show the building reduced to its perimeter walls, re-purposed for agricultural use (Fig. 3). In 1939, a lightning strike destroyed the upper southwestern part of the *Palas* (Nardone 1939). Finally, in the 1950s, the structure was stabilized and restored, and the bases of the four towers were excavated (Benedettelli 1995, 268–71).

In the next paragraphs the historical evidences were combined with an on-site observation of the structure and an examination of the material of the Haseloff archive. This should allow to falsify unfounded interpretations and open the discussion towards new hypotheses.

2. Storey Construction

Scholars disagree about the number of stories in the *Palas*. Some assume a mezzanine between the ground and upper floors (e.g. Ambruoso 2017, 20). The reason is a continuous, three to four stone layers high carving, which seems to correspond with the arrangement of some of the windows (Fig. 3). At the same time, however, this carving cuts deeply into oculi, arches, a nowadays missing staircase and a chimney, which were most likely set out of use by it. It is thus not a mezzanine of the construction period, but an alternative project for a ceiling. This carving—which cannot be studied *in situ* anymore as it was closed by the restorations of the 1950s—is better understood as the support for a later mirror vault.

The medieval *Palas* was hence two-storied. A first proposal for its construction is given here to encourage further



Figure 3. Gravina, castle's *Palas* from the southeast, detail, April-May 1907 (Kunsthistorisches Institut of Christian-Albrechts-Universität zu Kiel, Arthur Haseloffs Nachlässe, PL 2434).

discussion. A circumferential, profiled cornice indicates the position of the *Palas*' ceiling (Fig. 2). It provides only slight support on the long western wall. At the same time, numerous flat rectangular openings above this cornice are too small to accommodate load-bearing ceiling beams. Instead, arched friezes pull the cornice out of the north and south walls, creating space to hold a beam structure spanning the length of the building. The bearing function might explain the application of this element, which is typically reserved for exterior construction, to the interior.

In order to construct the ground floor of the *Palas* lengthwise, the space of 26.16×6.20 m was structured by four arches. They have partly remained in the west wall, starting with sculptured profiles at a height of 2.40 m. In addition to these four arches, there may have been a fifth arch at a height of 5.50 m, facing the centrally located main portal



Figure 4. Gravina, castle's *Palas*, wall dividing UF 18 and UF 17 and non-eroded surface below the profile, 1953 (Bibliotheca Hertziana – Roma, Schwarz, 522457).

of the *Palas*. Only ambiguous fragments of this hypothetical arch starter are preserved, and identified in 1906 by Haseloff as the beginning of a "high-seated transverse arch" (Arthur Haseloff 1906, 1102). It would have been part of the ceiling's support system, pushed above the portal's opening. Based on a first reconstruction this hypothesis as well as other solutions must be investigated further. The arch or another construction at the same position would have divided the distance of ca. 7.90 m between the central pair of arches in two sections of ca. 3.80 m and 4.10 m. Together, the five supports would have reduced the span of the ceiling beams to not more than five meters overall, as opposed to more than six meters across the short side.

The dense sequence of the supports shows that no separating walls were projected, i.e. a continuous open hall was intended. Later, this hall was given up: below the profile of the pair of wider arches a non-eroded surface indicates that both arcades were walled up to at least the height of the profiles (Fig. 4). In this way, three separate rooms were created on the ground floor (Fig. 5, the numbering given in this figure is used from now on, rooms on the ground floor will be referred as "GF", upper floor rooms as "UF" and towers as "T").

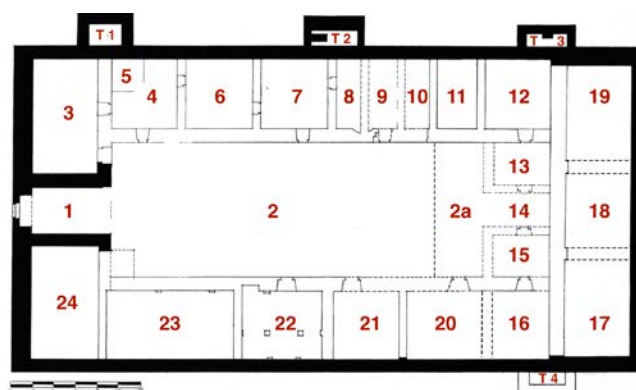


Figure 5. Gravina, floor plan with numbering (graphic redesign of floor plan by Ascani 1995, p. 219).

For the upper storey a parallel structure to the surrounding cornice of the ground floor is missing, so there is no indication for the height of the room (Fig. 3). The arrangement of the windows and the description of 1309 suggest to interpret the interlocking masonry, situated above the central pair of the downstairs arches, as walls (as opposed to arches in Biller 2021, 225). As a result, we can state that the upper floor was divided into three rooms.

At a height of 11.45 m, between the upper windows of the central hall, there is a structure similar to the hypothetical high-sitting fifth arch of the ground floor. The counterpart of the upper floor seems to determine the arrangement and size of the wall openings: it defines the height of one large opening and is flanked, as if in compensation, by two smaller windows. This observation indicates that a support was necessary to allow for a shorter length of the beams to roof this room. But if so, how were the two adjacent rooms covered? Their large windows prevented the creation of equivalents to the narrower arches on the ground floor. Fig. 3 shows deeply shaded structures next to these windows, seven or eight stone layers high. Could a required support have been split up and moved to open the wall in the middle as wide as possible? If so, why were those arches flanking the windows constructed in a different way than the arches still *in situ*? If not, what can we see there and how was the ceiling constructed instead?

3. Staircase

The staircase in the south is the only traceable access to the upper floor of the *Palas*. Its design can only be reconstructed



Figure 6. Gravina, castle's *Palas*, view of the inner corner of GF 19 with the remains of the spiral staircase and windows, October 1906 (Kunsthistorisches Institut of Christian-Albrechts-Universität zu Kiel, Arthur Haseloffs Nachlässe, PL 1525).



Figure 7. Gravina, castle's *Palas*, view of the outer south wall of GF 19 with lost staircase window, detail, October 1906 (Kunsthistorisches Institut of Christian-Albrechts-Universität zu Kiel, Arthur Haseloffs Nachlässe, F 1531).

on the base of a photograph of 1906 (Fig. 6). It shows one of the “planning lines” characteristic of Gravina, not yet been noticed in the literature. The line is a tiny recess in the form of a continuous working off of the stone, indicating the position of the outer wall of the staircase and corresponding with its foundations. This line intersects slightly with the stones of the oculus and ends a few centimeters inside the fourth arch of the southern frieze, in a way that the staircase shell may have covered a console and part of the westernmost arch. This suggests that at least the detailing was originally planned to be different. Moreover, the masonry of the upper zone was evidently cut away to accommodate the staircase shell. However, the fact that the staircase was lit by three windows clearly designed for it, argues against a fundamental change in the plan.

The first window is still outside the staircase on the west wall and can be studied *in situ*. Its southern jamb seems to anticipate the existence of the staircase as it pulls toward it in a way that may have served to illuminate the first step. The other two windows must be traced through photographs in the Haseloff archive (Figures 6–7). The second was placed next to the oculus in the south wall and probably lit the area behind the first curve. It was a slit window with straight ends (Fig. 7). Since it appears loosely filled in Fig. 6, it is difficult to establish its shape and orientation, but it may have directed light into the corner. The third window was located at the edge of the west wall to illuminate the upper turn. It



Figure 8. Gravina, castle's *Palas*, view of the reconstructed southwest corner and chimney, at the left the arch starter of GF 12 (Brandl 2023).

was well preserved in Haseloff's time, but lost in the collapse of the southwest corner in the 1930s and reconstructed in a distorted form (Fig. 8). It turned its jamb very elegantly into the concave staircase shell and may be a clue to the peculiar construction process of the castle. It was presumably realized in two stages: the main part of the window was built during the erection of the first floor wall. During the construction of the staircase, the geometrically complex inner part of the window was completed by particularly advanced craftsmanship.

This staircase shows the careful consideration given to lighting and comfort in the *Palas*: a sophisticated windowed staircase made it possible to use it—during the day—without oil lamps or other artificial light. In particular, a well-lit landing increases both comfort and safety of use.

4. Spatial Qualities

With this reconstruction, it is possible to analyze the still recognizable qualities of the *Palas*' rooms. The large hall, which extended over the entire ground floor, was accessed through the central portal (Fig. 5). It was structured by a series of straining arches and lit by four windows at different heights in the west wall, and by oculi north and south. On the way to the upper level, one would turn left, pass the impressive chimney, which could heat the entire hall, and climb up the stairs. On the second floor, the staircase arrived in the assumed UF 19. This room was opened to the west by a monumental window, perhaps framed by two arches, and heated indirectly by a smokestack running in the wall. Based on the description of 1309 (Nardone 1934, 27), it could be identified as a hall, with a *bifora* and three wooden seats. If so, the actual window would have been smaller and divided by a colonnette, the upper part filled with stone. Since the *Palas* is oriented slightly southwest, all its windows received intense light in the afternoon and evening. At the same time, they offered an excellent view of the countryside with its sprawling woods and the surrounding lakes. The wooden seats may have served as benches in the deep window reveals, as was the case in many other castles.

The central hall (UF 18) had a huge arched opening (Fig. 3). In the current phase of our research, it is impossible to ascertain whether the consoles running along the western façade of the *Palas* (Fig. 1) form a decorative or functional *ballatoio*. In the latter scenario, access to it might have been facilitated by the opening, offering the opportunity to step out and enjoy a view no longer framed. The combination of the larger opening with the high-set smaller windows may have allowed flexible regulation of light and air circulation (Figures 2–3), while there are no traces of heating in what remains of the room. It is not possible to relate it to one of the rooms described in 1309.

The last room of the sequence (UF 17) was particularly richly equipped. It had not one, but two monumental windows overlooking the landscape to the west and north, especially a—nowadays dried out—lake at the foot of the hill on the north, later called Pescara. The room also had a chimney in the corner of the west wall and a small door that gave access to the tower on the north side. Two hypothetical arches next to the western window could have helped to structure the room in different zones. The room is likely to have been a hall with two *bifora* and two wooden seats mentioned in 1309, even though the fireplace is not listed there (Nardone 1934, 27).

The lost tower contained a toilet: the arrangement with two barrel vaults and a toilet seat in the east is still visible on the north wall (Fig. 9) and comparable to toilets in castles such as Palazzo San Gervasio, Lagopesole and Castel del Monte (Biller 2021, 96). The facilities, and location at the end of the suite of rooms, make it likely that the northern room was intended for the private use of the lord.

5. Towers and toilets

The function of the four annexes (Fig. 5) and the question of whether they were towers has been discussed a number of times. As only their basements have been preserved, the former height of the structures seems to be unknown, but at least for the northern annex it is obvious that it was a two storied tower: the easternmost part of the *Palas*' north wall is, in fact, the rear wall of the toilet tower (Figures 9–10). In addition to the remaining interior design of the towers' upper floor, planning lines which indicate the width and height are visible (Fig. 9). Another pair of these lines can be seen for T 1 and T 2 on the south side at the full height of the medieval parts of the wall.

No castle-side entrances to the towers are recognizable apart from the exit from UF 17, so their usability is in question. So far, they have been interpreted as buttresses (Hahn 1961, 17), as functionless (Calò Mariani 1994, 141; Rescio 1999, 38), as lookouts (Benedettelli 1995, 269), as storage for water or food (Cadei 1995, 110), and recently, due to the similarity of the annexes to toilet towers of other castles, more often as toilets (Cadei 1995, 110; Leistikow 2007, 312; Biller 2021, 87, 95, 225–26). However, accessibility remains the main problem. Biller, therefore, assumes an upper floor for the south side from which the towers were accessible, analogous to UF 17, but without further evidence for this upper floor.

A new investigation could be based on the observation that, according to the floor plan, the towers are located next to rooms equipped with fireplaces (Fig. 5). Therefore, a correlation to special qualities of these rooms seems conceivable. Only one of the fireplaces is located on the upper floor (UF 17), while three are on the ground level. There was a chimney in GF 19 which heated the complete hall on the *Palas*' ground floor. In addition, there was one in a room next to the main gate in the eastern building (GF 3) and another in the courtyard wall of a later divided room in the south (GF 8/9). If the towers were to contribute to the living



Figure 9. Gravina, castle's *Palas*, exterior part of north side with the remains of the toilet and traces of attachment indicating the position of the lost tower (Kappel 2023).



Figure 10. Gravina, castle's Palas, interior part of north side with a walled up breach in the lower section, detail, November 1905 (Kunsthistorisches Institut of Christian-Albrechts-Universität zu Kiel, Arthur Haseloffs Nachlässe, F 256).

comfort of these rooms, ways of access on the ground floor would have been required.

In order to test the hypothesis, the historical photographic material was used to investigate whether evidence of earlier openings, and thus the possibility of a connection, could be found. To begin with, none of the four walls between the ground level rooms and the towers are completely medieval. On the contrary, there are restored sections wide enough to accommodate a door in three of them (GF 3, GF 8/9, GF 17). In accordance with this, the historical photographs of those three wall sections also show that there used to be (altered) openings or breaches which had been blocked off at an even earlier date (Figures 3-10). Indeed, there is a heavily used doorstep still *in situ* in the wall of GF 3 which clearly identifies the opening to T 1 as a door. Because the situation in GF 8/9 and GF 17 is so similar, those openings likely used to be doors as well. In addition, a former door in GF 17 would have been equivalent in size and position to the existing door in UF 17 (Fig. 10). In GF 8/9, the younger wall dividing the room shows consideration for an assumed door, indicating that tower and door were still in use at that time (Fig. 5). For GF 19, no rupture of the masonry in the southeast wall next to T 3 can be detected (Figures 7-8). However, in the east wall there is a door to the adjacent room (GF 12) which allowed relocation of access to the towers' ground floor. The medieval wall between T 3 and GF 12 is lost, but the starter of an arch is still *in situ* in the westernmost part and indicates the position of the former door (Fig. 8).

It can be concluded that two of the towers had doors connecting them directly (T 1) or indirectly (T 3) to the ground level rooms with chimneys. For the other two this is very likely (T 2 and T 4). Whether the function of all towers was identical is open to debate, as the preserved basements show different vaulting strategies and considerably varying depths. However, all of them are equipped with carefully

masoned vertical shafts. In the case of T 4, the preserved shaft presumably led from the ground floor to the underground collection pit. Therefore, the northern tower probably housed toilets on both levels of the *Palas*. We may propose that the shafts in the towers on the south side indicate the same for them, but more investigation is needed to confirm this.

For now, we can conclude that the *Palas* was equipped with at least one toilet per floor on the north side and maybe even additional ones in T 3. This compares well with the situation in Palazzo San Gervasio, where we can find towers with toilets for both building levels on both sides of the *Palas*. One of them is remarkably well preserved and testifies to the importance of toilets for living comfort. In Gravina, the basements alone were so skillfully done that it raises the question of how luxurious the upper parts, including the toilets, would have been.

6. A Swabian loggia?

Due to structural damage and a lack of sources, we cannot confirm the presence of additional windows or chimneys on the *Palas* courtyard-facing façade. The 1309 description seems to mention only the *bifora* windows on the external wall of the upper floor, giving the impression of a building more oriented towards the landscape than the courtyard.

Today, the sole visible feature in front of the *Palas* is the remains of a slightly elevated loggia (GF 2a, Fig. 11). They consist of two molded bases, one for a free-standing pillar and the other for a pilaster connected to the outer wall of chamber GF 20. Presumably, once they paired with two other pillar bases that are now missing. Along the eastern walls of rooms GF 13 and GF 15, a molding is interrupted by corridor GF 14, which leads into the *Palas*.

Several scholars believe that the loggia dates back to Swabian times (Nardone 1941, 72; Granieri 1990-1991, 13; Calò Mariani 1994, 141; Masini 2005, 780; Ambruoso 2017, 20). Only a few publications suggest it may belong to the Orsini period (Willemsen 1971, 167; Biller 2021, 98, 225). We find the latter hypothesis more convincing, as various factors foster it.

Firstly, historical sources offer some support. The 1309 report does not make any mention of the loggia. Given its



Figure 11. Gravina, castle, base of loggia and outer wall of GF 20 (Kappel 2023).

important architectural significance, it is reasonable to assume that this omission implies its complete absence. However, it does appear in 1608, described as being covered by arches, composed of fine stone pillars, and equipped with two chambers forming a corridor (De Marino 1979, 29). The documents' dates, therefore, provide the *terminus post quem* and *ante quem*. Moreover, architectural evidence bolsters the idea of a later addition to the medieval construction. The loggia appears to be connected to rooms GF 13 and GF 15. Its location, at a considerable distance from the entrance of the *Palas*, seems to have been chosen to create this pair of chambers or, in case they already existed, to incorporate them. Since these rooms are adjacent to the façade of the western building and even overlap with the carved piers of its portal, the loggia and chambers were erected after the *Palas*' construction.

Furthermore, the molding style of the pilaster bases differs from any medieval motifs in the castle, such as those in GF 18. Instead, it bears a close resemblance to an early modern design popular in the city of Gravina for several centuries. The loggia molding features sculpted elements on the cathedral's right portal and the adjacent right corner of the same façade, dating back to the late fifteenth century. This design remained influential, with variations seen even in the seventeenth century on the façade of Santa Maria delle Grazie and the entrance of the Church of Purgatory.

Can we further contextualize the creation of the loggia? It was likely added during a significant period in the castle's history when the owners aimed to enhance the entrance to the western building. This suggests that it was not constructed around 1608 when the *Palas* was in ruins and the loggia led to a stable located in GF 18 (De Marino 1979, 29). In 1560, an earthquake struck Gravina, blemishing several monuments in the city and possibly the castle (Gelao 2005, 68). At that time, the Orsini family, who did not primarily reside in the castle, might have decided against a full restoration of it. In fact, in 1583 their main residence was already in town and simultaneously they built a new palace within the city walls, i.e. the present day Palazzo Orsini (Gelao 1989, 183–84). Current research suggests the loggia was constructed by 1560.

Moreover, the 1608 description notes a staircase next to the loggia on the south side, connecting the two levels of the western building. It's still unclear whether these two structures were constructed simultaneously and if the stairway was meant to replace the missing spiral staircase in GF 19. However, what is certain is that in the early seventeenth century, the transition between the stories of the *Palas* took place on the exterior of the building rather than the interior.

7. Falconry

The 1309 document mentions a hall in the castle "*que dicitur falconeria*" (Nardone 1934, 27). The use of "*dicitur*" and the absence of animals in the description indicate that, in those times, the room was no longer used to house predatory birds. However, this detail remains significant, raising questions about its precise location within the palace and its interior organization.

According to *De arte venandi cum avibus*—the Latin treatise on ornithology and falconry written by Frederik II in the 1240s—the breeding of falcons involved several stages. Initially, the birds were kept in dark, isolated structures away

from noises. They then gradually transitioned to outdoor environments before being placed in structures within human dwellings. This final stage aimed to familiarize the falcons with various sights and sounds (Calò Mariani 1994, 139). In Gravina, the *falconeria* should have housed birds during this last phase. The 1309 document specifies that the room was above a "*salam unam terraneam*", but it is highly unlikely that it was located on the upper floor of the *Palas*, as its function would have been incompatible with such representative nature of the building. Additionally, the presence of large windows did not suit a hall for falcons: to keep the animals safe and prevent them from escaping, the openings should have been smaller and easily to be shut. It is also essential to consider that the birdhouse was a noisy, dirty, and malodorous space, which could not have been located in the nearby of the *Palas*. The room also had to be quite spacious to accommodate the birds. Regarding its internal structure, the 1309 description provides limited clues, stating that "*in tecto ipsius falconeriae sunt sale quatuor dischoperte*". Should these ruined four *sale* be considered as part of the falconry's attic, possibly used for sorting the birds, or are they separate rooms? Based on this information, a future step will involve examining the architecture in conjunction with the sources dedicated to falconry.

Conclusion

The medieval *Palas* consisted of a two-story structure, that did not include a loggia. It featured a well-organized layout that centralized the majority of the building's facilities, ensuring living comforts as room heating, natural lighting, and panoramic views.

The ground floor contained a spacious open hall with straining arches, creating a continuous space with a large chimney and at least one adjacent toilet. Access to the upper floor was provided via a well-lit spiral staircase. On this level, the area was divided into three rooms of which the last was equipped with a bathroom and a chimney. The chambers featured significant variations in their lighting systems, with large *bifora* windows designed to serve a dual purpose: filtering natural light and protecting against harsh weather conditions while offering excellent views of the surrounding landscape.

The *Palas*, strategically positioned in the western part of the castle, was designed to offer a dual perspective of seeing and being seen. It was prominently visible from the town and the Via Appia, and the rulers could gaze out from its windows, employing them for territorial control and as frames for viewing the natural environment. In Gravina, connection with nature also involved recreational activities such as falconry, which impacted the castle's architecture with a not yet located room for falcons.

Finally, the addition of the loggia highlights the importance of considering post-medieval alterations in understanding the *Palas*' history. Over the centuries, the various changes in ownership and shifts in usage have contributed to the neglect of the entire edifice, ultimately reducing it to a faint echo of its rulers' authority. Ironically, the castle's position on the hill's edge contributed to its decline, as it was left exposed to the elements when its maintenance was no longer a priority.

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Construction History is still a fairly new and small but quickly evolving field. The current trends in Construction History are well reflected in the papers of the present conference. Construction History has strong roots in the historiography of the 19th century and the evolution of industrialization, but the focus of our research field has meanwhile shifted notably to include more recent and also more distant histories as well. This is reflected in these conference proceedings, where 65 out of 148 contributed papers deal with the built heritage or building actors of the 20th or 21st century. The conference also mirrors the wide spectrum of documentary and analytical approaches comprised within the discipline of Construction History. Papers dealing with the technical and functional analysis of specific buildings or building types are complemented by other studies focusing on the lives and formation of building actors, from laborers to architects and engineers, from economical aspects to social and political implications, on legal aspects and the strong ties between the history of construction and the history of engineering sciences.

The conference integrates perfectly into the daily work at the Institute for Preservation and Construction History at ETH Zurich. Its two chairs – the Chair for Building Archaeology and Construction History and the Chair for Construction Heritage and Preservation – endeavor to cover the entire field and to bridge the gaps between the different approaches, methodologies and disciplines, between various centuries as well as technologies – learning together and from each other. The proceedings of 8ICCH give a representative picture of the state of the art in the field, and will serve as a reference point for future studies.

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