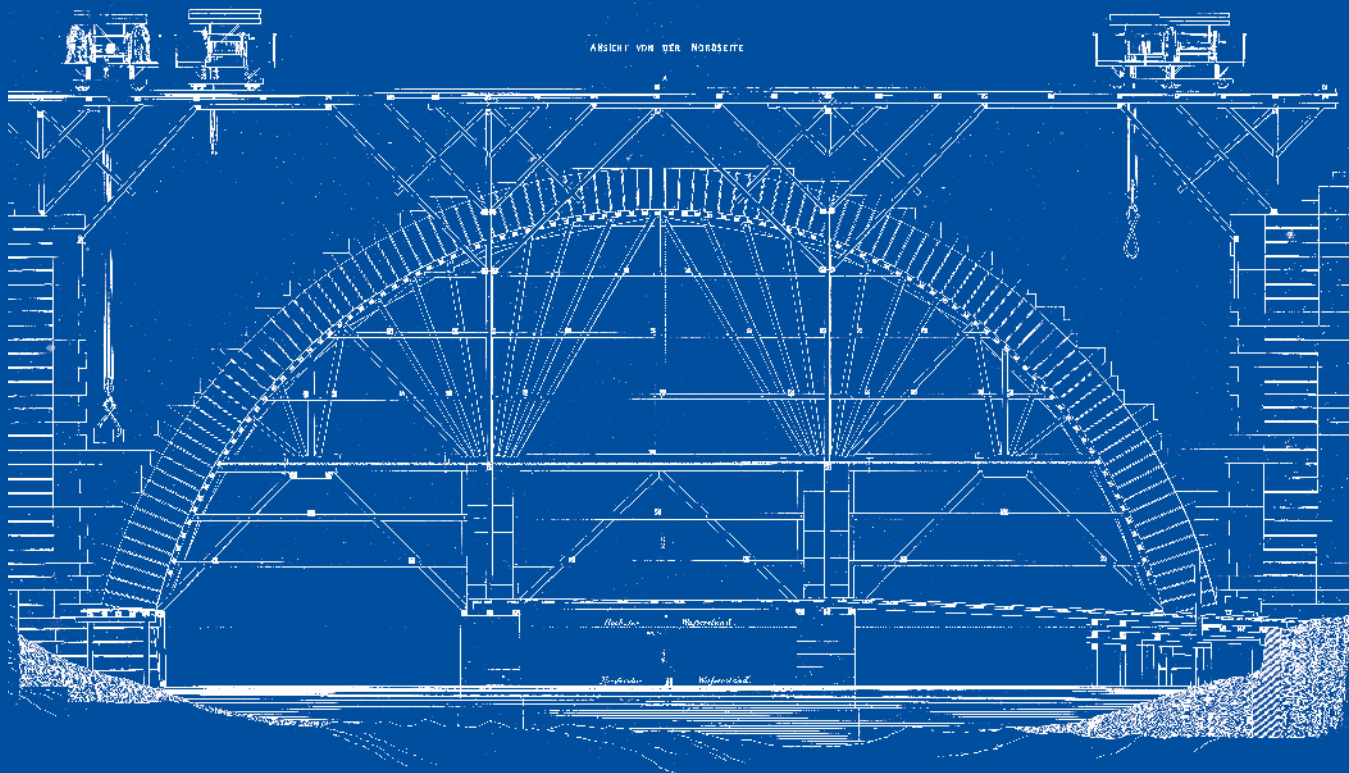
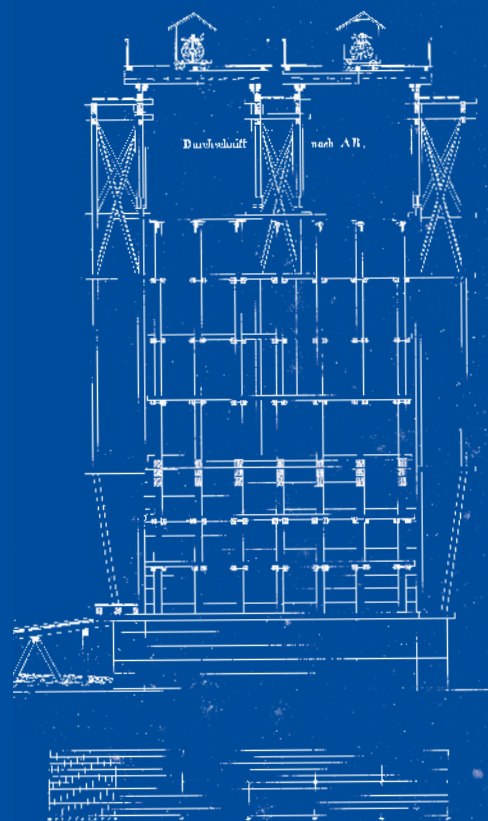


Proceedings of the 8th International Congress on Construction History  
Stefan Holzer, Silke Langenberg, Clemens Knobling, Orkun Kasap (Eds.)



# Construction

# Matters



Stefan Holzer, Silke Langenberg,  
Clemens Knobling, Orkun Kasap (Eds.)

# **Construction Matters**

Proceedings of the 8th International Congress on Construction History

**ETH** zürich

**DARCH**  
Department of Architecture

Konstruktionserbe  
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sulla Scienza e l'Arte del Costruire  
nel loro sviluppo storico*

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## Latrine towers. Models, uses and diffusion in Mediterranean architecture from the 12th to the 14th century

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**Abstract:** Sources on the types and uses of latrines in medieval architecture are sporadic and general. Moreover, studies on the subject are rare, unlike those published for the Roman period. The aim of this paper is to study the hygienic spaces in thirteenth-century residences, in particular the latrine towers in curial palaces, analyzing their models and later applications. The historical and typological-architectural context will also be established by means of comparisons with hygienic facilities used in the Islamic context, in Norman and Swabian castles and palaces in southern Italy, in European residential and castral buildings, and in Outremer crusade architecture, with particular attention to that of the Hospitaller Order: the Crac des Chevaliers and the Acre complex. These are two very important testimonies in the development and diffusion of the latrine tower model in Europe, of which the tower of the Pontifical Palace of Viterbo is one of the first examples. The Tower of Viterbo was built during the works commissioned by Pope Clement IV. He was a supporter and admirer of the Hospitallers, with whom he had been in frequent contact. Charles I of Anjou also had close contacts with the Hospitallers, and he was probably responsible for the construction of another latrine tower in the residence of the SS. Quattro Coronati in Rome. The Viterbo tower typology was the model for the similar structure in the Papal Palace in Avignon.

### Introduction

The aim of this paper is to study hygiene spaces in thirteenth-century residences. In particular, it analyzes latrine towers in curial palaces, architectural models and later applications. The aim is to determine whether it is possible to trace a model of a latrine tower used by architects of this type of residential building, and what kind of diffusion this architecture solution enjoyed. Hence this analysis allows us to identify cultural contact and influences among processes of exchange and interconnection between the Mediterranean and Europe.

It should be specified that in this paper we will only consider those towers that were designed exclusively, or almost exclusively, for the purpose of housing latrines and located in a position isolated from the rest of the palatial environment, although not far away.

At the present stage of research, it is certainly not possible to give a definitive answer to some questions, such as how models and technical-constructive interpretations are transferred from one context to another. The topic has received little attention from scholarship and deserves new archaeological-architectural studies and further reflection: as we are attempting in this conference session. So, this work can only be seen as a first approach to research that clearly needs much more analysis and development.

The method used in the present work is based on source analysis, historical-architectural, typological and comparative research, starting from the example of the latrine tower in the Papal Palace of Viterbo, built as part of the works ordered by Clement IV, sure model of the similar tower in the palace of Benedict XII in Avignon. There may be contemporary

evidence to that of Viterbo in Rome also, if the hypothesis advanced here—that a tower in SS. Quattro Coronati was for a latrine—is confirmed by further archaeological research.

In order to understand the reasons for the use of this specific type of building, to find a possible model and to contextualize it, comparisons were made with hygienic facilities used in the Islamic context, in Norman and Swabian construction in the Italian south, in European residential and castral construction, and in Outremer Crusader architecture.

The data are still preliminary, and it is difficult at this stage to draw conclusions that consistently define direct dependencies. Nevertheless, a first and partial result shows how precisely in the context of the Crusader architecture, and especially in that of the Hospitaller Order in the Acre complex and the Crac des Chevaliers, an important and, I would say, direct trace can be found for the evolution of hygienic systems and spaces in the European world.

For the Middle Ages, studies on the subject are rather rare, unlike those published for the Roman period (Sabine 1934; De Tommasi 1981; Mesqui, and Faucherre 1992; Mesqui 1993, II, 169–180; De Tommasi 1995; Guerrand 1997; Mesqui 2003; Birke 2007; Zorić 2012; Wagener 2014; Fallacara, Occhinegro, and D'Amato 2015; Cressier, Gilotte, and Rousset 2016)

### 1. Origin, context and forms of the latrine tower in curial palaces in Italy

First of all, we must note a considerable vagueness in the written sources regarding the types, uses and functions of latrines in medieval architecture. For this reason, the material

remains of the structures are very important. Often, however, we are faced with lost contexts, either because they were installed in mobile facilities or because they were carved out of buildings that were later demolished or rebuilt.

It is worth mentioning briefly the most common types of latrines, all with a gravitational disposal system: 1) *pit*: niche in the thickness of the wall, with drainage channel also in the thickness of the wall, over a ditch; 2) *inclined channel*: niche in the thickness of the wall, with inclined drainage channel carved into the outer wall curtain; 3) *overhanging*: niche in the overhang of a wall, also in an angular position, with direct evacuation over a ditch, without drainage channel. The earliest examples of the pit latrine type have been identified as structures—even multi-storeyed ones—built within the wall structures of *donjons*, city walls or gates. Between the second half of the eleventh century and the thirteenth century, we find numerous examples of the second type of latrine, with a sloping channel, which, like the pit latrine, was very often connected to the main chamber or hall of the main tower. The same can be said for overhanging latrines, which are very common but less well preserved. In spite of their widespread use (until the fifteenth century) and the greater simplicity of their construction, since they did not require any structural work inside the walls, this type of latrine seems to be the least functional from a hygienic point of view and the most exposed in terms of security in the event of a military attack on the main tower (Mesqui, and Faucherre 1992; Mesqui 1993, II, 169–180).

In the European context, most of the hygienic structures that are still preserved more or less intact are part of castral and residential architecture between the eleventh and fourteenth centuries. These structures are mainly included in the building systems of the main tower of the fortress or are connected to the great halls of representation, and finally found they can be installed in the more proper defensive sectors, such as towers and patrol paths (Mesqui 1993, II, 169–180). In this sense, we can make a useful comparison with the spaces reserved for hygiene in the Islamic fortresses of the Middle East, like in Cairo's Eastern Walls (late twelfth century); or, in early thirteenth century, at Bosra, where the latrines are only provided in the residential areas of the two huge towers that enclose the northwest and northeast corners of the citadel; or again, at the same time, in the eastern towers of Qal'at Nadjm Castle (Yovitchitch 2016).

In the Iberian Peninsula, on the other hand, the earliest examples of latrines date back to the Umayyad Emirate and can be equipped with running water and fine decorative elements, as in the *qasr* of Madīnat al-Zahrā' (Vallejo Triano 2016). Then there are many studied cases of public spaces dedicated to hygiene, especially near mosques. Moreover, the widespread existence of latrines in al-Andalus housing distinguishes Andalusian culture from that prevailing in the rest of Europe (Reklaityte 2016).

The long tradition of water use and hygiene practices, mainly related to religious prescriptions, has made Islamic culture an indispensable reference in the study of sanitary spaces.

This is certainly also true for the Southern Italy. The Norman palace of Zisa in Palermo used advanced hydraulic arrangement techniques that should be compared to those known in Islamic palace architecture. Each of the three floors had two latrines carved out of two small elbow rooms on either

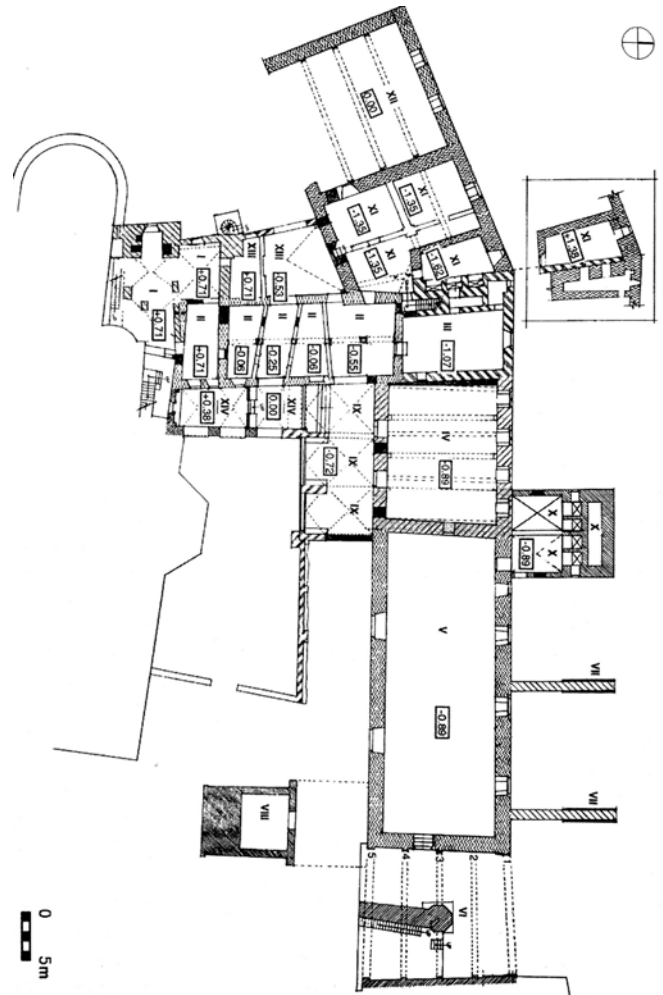


Figure 1. Viterbo, plan of the papal palace: on the right (no. X) the latrine tower (Radke 1996, drawing 2).

side of the central body. These rooms were well insulated, closed by a small door and preceded by a corridor (Pezzini 2016). These are well-integrated spaces within the building that do not occupy separate tower structures. Other examples of latrines associated with Norman castral residences have been identified in Entella, Calathamet and Segesta, and even in this case we do not see a monumentalization of the space dedicated to hygiene.

The sophisticated hygienic systems of Frederick II's castles in Sicily and Apulia, from Castel Maniace to Castel del Monte, can also be linked to Islamic architecture (Zorić 2012).

In the Castle of Capitanata, the traditional pit typology is followed for the latrines inserted in some of the octagonal towers, with seats, remains of basins and with vertical channels, identified as drainage channels, ending in a pit (De Tommasi 1981; Fallacara, Occhinegro and D'Amato 2015).

However, we do not yet have enough studies for a systematic and comprehensive analysis of the issue. For the time being, we have to proceed by making use of archaeological-architectural research on individual monuments.

Unfortunately, in some cases a direct view is no longer possible, as in the case of the papal palaces in Rome. Although, from what we know from written sources, there were certainly spaces for latrines, we do not know their typology (Gigliozzi 2003; Le Pogam 2005, 620–623; Monciatti 2005). For this reason, we do not have an internal reference for the *extra*

*Urbem* papal residences. In the transition from the Frederician to the Papal context, something obviously changed. The latrine system we observe in the Papal Palace of Viterbo now occupies a specially built tower.

### 1.1. The Viterbo Papal Palace

The northern tower of the papal palace in Viterbo (Fig. 1), built during the pontificate of pope Clement IV between 1266 and 1268, is certainly a latrine tower (Gigliozzi 2003) and not a “wardrobe tower,” i.e., a room for storing precious objects (Radke 1996). It is possible that the term “*warderobba*” used in the sources has led to an interpretive misunderstanding. In fact, the word can also mean “latrine” in medieval sources (Greig 1982).

The analysis of this architectural structure has opened the field of research for possible models and subsequent applications. The identification of this tower as a space for latrine is supported by its structural characteristics. In fact, the tower is hollow and divided inside by masonry partitions. Then there are some rectilinear niches with holes in the floor level and corresponding drainage channels. There are also two small single lancet windows in the east and west alcoves for ventilation. These forms are similar to those of the latrine tower built in the papal palace of Avignon in the fourteenth century. (Fig. 8) The internal system is also found in other fourteenth-century examples in France, such as the latrines in residence of Largoët-en-Elven or in the towers of Vincennes. (Fig. 2)

Despite these unequivocal data, some scholars have not accepted this interpretation for the functions of the Tower of Viterbo (Le Pogam 2005, 84–86; Monciatti 2005, 45; Brancone 2010, 44–45). They have preferred to reposition themselves on Radke’s traditional attribution, but without arguing the reasons from an architectural-archaeological point of view. On the other hand, archival sources on the organization of papal building sites in the second half of the thirteenth century are actually very vague in tenor, with often indeterminate and imprecise indications.

Therefore, a careful study of the architectural structure is essential. Up to the first floor, it is a hollow tower, divided vertically into two sections, one of which opens to the escarpment, which in turn is divided into two other vertical

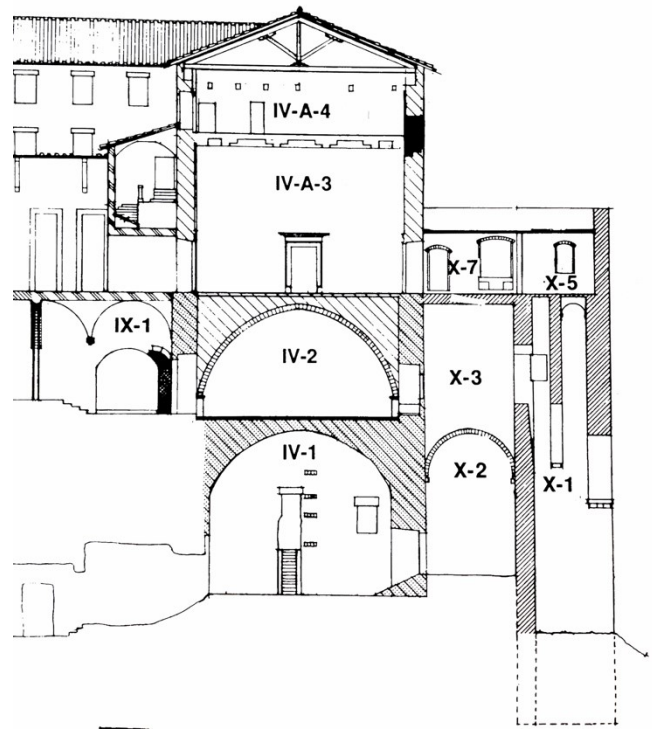


Figure 3. Viterbo, Papal Palace, section of the latrine tower (Radke 1996, drawing 9).

parts by a partition supported by an arch resting on corbels. (Fig. 3) The innermost wall, which separates the road from the slope, is marked by four drainage channels (Fig. 4), keeping the same depth from top to sliding end, which correspond to the four hanging niches. Two open cavities above the niches should be interpreted as housing for water cisterns.

The latrines were originally accessible only from the central room of the Clement IV building, intended for the curial offices, by means of an external wooden balcony that connected the respective entrances in the corner between the eastern side of the tower and the northern side of the Clementine room. A similar connection was made on the west side of the tower, but on the upper floor, which was probably intended for the guard’s quarters or for the storage of weapons, as in Avignon. It was accessible only through a

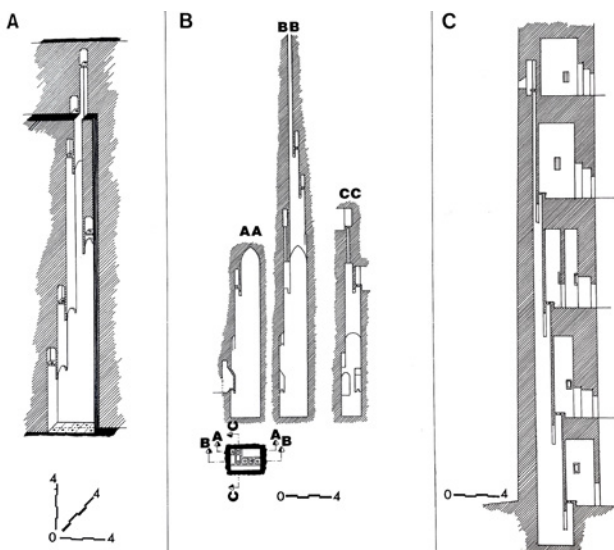


Figure 2. Largoët-en-Elven (A), Vincennes, village tower (B); Vincennes, *tour maîtresse* (C) (Mesqui 1993, II, 171).



Figure 4. Viterbo, Papal Palace, latrine tower (Autor).

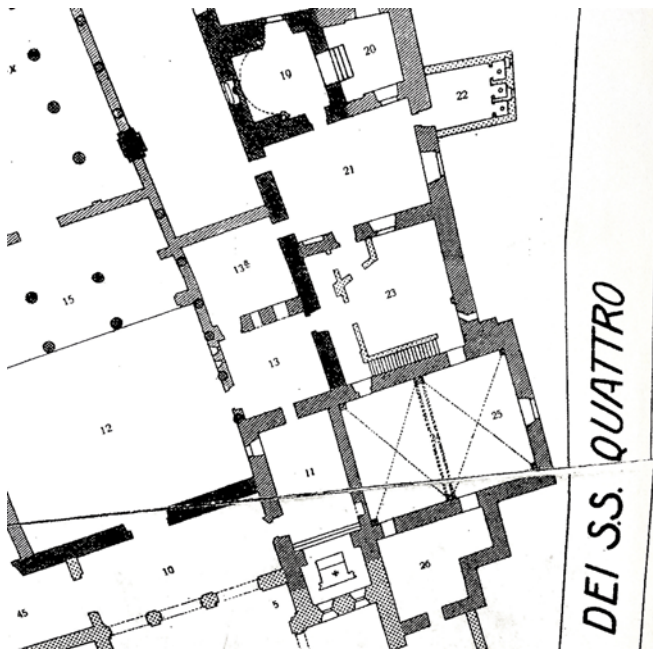


Figure 5. Plan of the Santi Quattro Coronati complex, detail of the cardinal residential area with the presumed latrine tower on the right (22) (Muñoz 1914).

wooden gallery built along the north side of the hall on the third floor of the pope Alexander IV building.

This kind of indirect, almost hidden access should not be interpreted as an expedient to reinforce the defensive and security needs of the Tower, which was in no way a place for the storage of treasures or other valuable materials, as has been mistakenly thought. On the contrary, it should be understood as part of the system of isolation of the spaces intended for latrines. It was precisely the need to isolate these spaces and to prevent bad smells from disturbing the chambers or halls to which the latrines were connected that justified the frequent construction of “elbow” corridors in the walls, ventilated by narrow windows and closed by wooden doors (Mesqui, and Faucherre 1992).

And in the light of this peculiar and widespread system, one can also better explain the otherwise mysterious full-thickness “elbow” staircase of the papal palace of Orvieto, built in the wing of pope Martin IV—the French Simon de Brion—between 1281 and 1285. Here, in the outer corner between the hall and the tower, one can still see a protruding corner niche, although it has been much modified, which can be traced back to a protruding latrine.

The Tower of Viterbo is an exceptional case, dated almost *ad annum*. Its construction also confirms the ability of the papal patronage, well embedded in the context of cultural relations and exchanges of an international nature, to make use of original building types imported from external contexts, even if they were dropped into a site system that, as a whole, conformed to local practices (Gigliozzi 2007).

### 1.2. The Santi Quattro Coronati residence in Rome

In the current state of knowledge, it is not possible to identify specific priorities for latrine towers among the individual and rare European examples of the thirteenth century. But perhaps still within the limits of the century is an example of a tower that could be considered a latrine tower, erected

in the northwestern corner of the cardinal’s residence of the Santi Quattro Coronati in Rome (Muñoz 1914; Barelli 2006). (Fig. 5)

The residence of cardinal Stefano Conti, built in the 1240s, stands out as an innovative model of donjon in the architectural landscape of early thirteenth-century Rome, and here remained almost completely isolated. Its origin is identified not only in the context of Norman-Swabian architecture but especially in that of the Crusader world (Gigliozzi, and Pistilli 2022). And it was Frederick II himself who determined its introduction in Rome as a real architectural novelty.

In fact, in October 1239, the emperor had promised to rebuild the recently collapsed Frangipane Tower, known in the sources as the *Turris Cartularia*, located almost next to the Arch of Titus. Its forms were similar to those of a real donjon. We must take into account the almost simultaneous construction of the two Roman forts and the role of Stephen Conti as Vicar Apostolic during the exile of Innocent IV (forced there by Frederick II). We can therefore speculate that the keep of the cardinal’s residence could have been a kind of “answer” to Frederick II’s tower, standing in forms of greater monumentality and in a sense “hiding” the imperial fortress from the view of the Lateran (Gigliozzi 2014).

Stefano Conti’s residence was later enlarged and the alleged latrine tower was built as part of these works. (Fig. 6) Its shape is narrow and slender, with open windows only in the upper part, and it has received little attention from archaeological studies. In the meantime, we can rely on pictorial evidence, namely the well-known view of the monastery by Ettore Roesler Franz from 1884, which shows that in the outer



Figure 6. Rome, Santi Quattro Coronati, cardinal residence, the presumed latrine tower on the right (Autor).



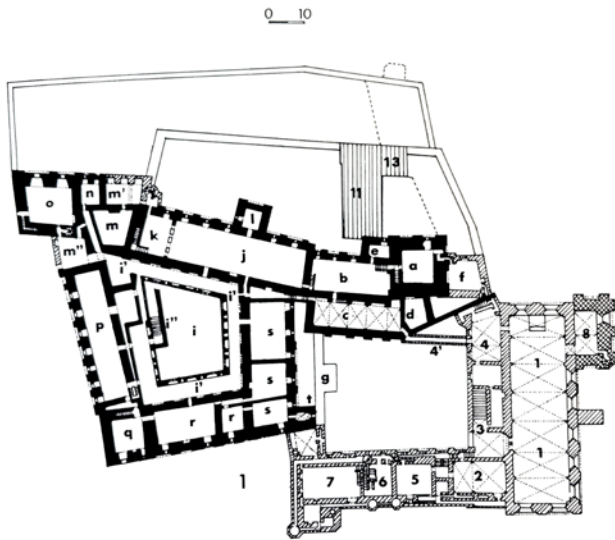


Figure 7. Avignon, plan of the papal palace, with the latrine tower, (n) between the kitchen (m) and the Tour the Trouillas (o) (Mesqui 1993, II, 115).

western wall of the apparatus, at the lower level, there was a “wolf’s mouth” opening (no longer recognisable today), probably the outlet of a drainage channel. However, it is still possible to see the very small and narrow single lancet windows, open on three sides, on the upper level of the tower, which, because of their small size, must have been ventilation openings for the latrine room, which does not seem to have been originally ventilated and lit by other windows.

The current state of the curtain walls also reveals later openings, both at the level of the small single-lancet windows and on the upper floor, where an original window framed in white marble remains on the east side. However, it is difficult to reconstruct the number and arrangement of the original openings due to the impossibility of analysing the structures in detail and the fact that no elevation plan of the tower has yet been published. Moreover, the absence of openings along much of the tower’s height, as well as its structural isolation from the building to which it is attached, suggests that the interior of this part of the structure was hollow and therefore housed a pit latrine system. Unfortunately, it is not currently possible to see the inside of the tower and therefore to verify whether or not there are drainage channels in the thickness of the wall.

This tower was built some time later than the building commissioned by Stefano Conti. In fact, the Cardinal’s donjon was successively extended to the west by various patrons, among whom Charles I of Anjou was probably one. He occupied the *palatium* of the Santi Quattro Coronati in 1265 as Senator of Rome, a position he held until 1278. The fact that this French king, a friend of Clement IV and a frequent visitor to the Papal Palace in Viterbo, was responsible for the construction of a latrine tower in the Santi Quattro Coronati complex seems a plausible hypothesis. It is also possible that this structure was the direct precedent for the tower of Viterbo, whose architectural structure, however, is much more articulated and refined, ultimately owing to other models.

I repeat that the current state of research does not allow us to know whether similar devices were built in the Lateran and Vatican complexes or in other cardinal residences, while

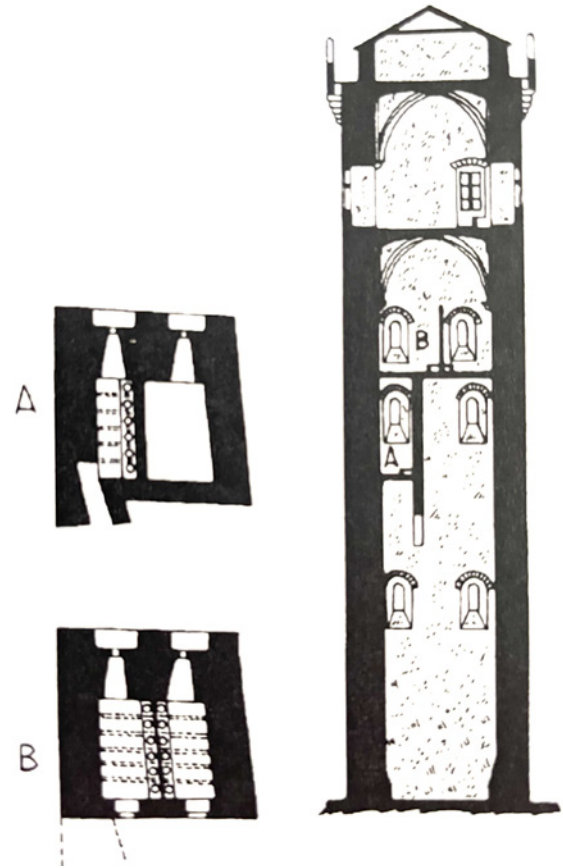


Figure 8. Avignon, papal palace, plan and section of the latrine tower, according to Gazagne’s drawings (Vingtain 1999, 168).

the fourteenth-century example in Avignon, typologically identical to the tower in Viterbo, is known (Vingtain 1999).

The latrine tower in the papal palace of Avignon, the smallest of all the towers, was in an isolated position from the rest of the buildings due to the reconstruction of pope Benedict XII (1334–1342). The tower was located to the east of the kitchen and outside the walled enclosure built by this pope. (Fig. 7) For this reason, it is likely that its role was also to defend the palace on this side. The tower (Fig. 8) is hollow inside up to the first floor of the latrines, which occupied only the northern part of the tower and were at the level of the cloister courtyard. The second floor corresponded to the level of the *tinellum magnum* and covered the entire surface of the tower, with two rows of seats and a cross vault. Above this level was built a final floor, also vaulted, used in different periods as a room for the palace guard or as a weapons store. Access was through the corridor located to the north of the kitchen tower. The inner cavity of the tower, which suggests the pit type, was connected to a sewer (Labande 1925; Vingtain 1999).

## 2. From European architecture to Outremer crusaders architecture and back

Based on the results of this, albeit partial, reconnaissance, I believe it is possible to trace the model of the latrine tower we see in Viterbo and later in Avignon to similar towers built as part of the Hospitaller fortified architecture: the Crac des Chevaliers and the Hospitaller complex of Acre, built between the end of the twelfth century and the beginning of the thirteenth century. In fact, they are the closest typological

examples. From a functional point of view, it is also an important trace of the development and diffusion of the latrine tower model.

In the Crac des Chevaliers, the tower was built at the northern apex of the innermost enclosure (Mesqui 2003; Biller 2006; Boas 2010, 177–179; Mesqui, and Goepp 2018). This tower has a curious plan, as its base consists of a rectangle connected to the first enclosure by a pointed barrel vault placed at the top. (Fig. 9) The tower is built outside the enclosure, leaving a free passage between the enclosure and itself, and is only connected to the upper level by a vault.

Despite its resemblance to some albarran Mudejar towers, this tower's design is more like an access tower than a tower separate from the enclosure. In fact, the purpose of this construction in front of the first enclosure was to protect the small gate of the enclosure. But an equally important function of the tower was to house latrines.

The northern façade is articulated by three mâchicoulis surmounted by discharge arches. Above, there are the holes of twelve openings with pointed barrel vaults. The three mâchicoulis do not have a defensive role, but must be connected to the twelve upper niches, giving them the function of latrines, also due to the presence of water pipes. The latrines open onto a trapezoidal room with a pointed barrel vault (Biller 2006, 117–139; Mesqui, and Goepp 2018, 304–308).

Even in the case of Acre (Fig. 10), there is already evidence of a tower used exclusively for latrines, divided into three floors and located in the northwestern corner of the architectural complex (Štern 2006; Mitchell, Huntley, and Štern 2008). Both a complex system of drainage channels built into the walls and collectors for collecting rainwater have been highlighted.

Drainage pipes installed in the walls led to an underground collection chamber, which was then drained by a central sewer. The floor of this collection room was paved with sloping smooth stone slabs to facilitate efficient flow to the main sewer. The latrines were located above the underground environment on the second and third floors of the building.

The room on the first floor (10x5x10 m high) is cross-vaulted. There are two rows of seats along the south and north walls of the room and two rows in the middle. Each row has eight seats, which were drained directly into the underground chamber by means of drainage pipes. Three windows were built into the northern wall of the hall, facing the northern moat, to allow ventilation. The upper floor, which housed

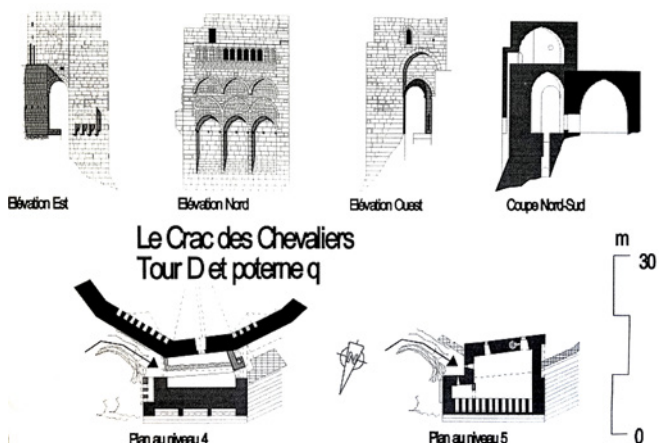


Figure 9. Crac des Chevaliers, plan, elevation and section of the latrine tower (Mesqui 2003, Plan n&b Crac).

other latrines, has not been completely preserved and another hall was built in its place during the Ottoman period. Part of the seating of this hall was discovered in another excavation carried out under the floors of the Ottoman hall. On this floor there appeared to be only two rows of seats along the walls. The discovery of a public bath system in its entirety is rare, and very few similar baths have been found in monasteries and hospitals in England and France in the thirteenth and fourteenth centuries.

The early attestation of this typology compared to known examples in Europe and its constructive originality suggest that it was precisely the needs related to the functions of care for the sick and pilgrims that stimulated a more complex design of isolated and more functional hygienic spaces. As a result, it was necessary to design a separate organism, also equipped with a hydraulic system for the disposal and channelling of waste water.

The use of a tower dedicated exclusively to latrines, conceived as an autonomous device, probably derives from this particular context, linked to the charitable vocation of the military-monastic orders. But we should not overlook the defensive function of the tower itself. This is the case of the Crac des Chevaliers. From this context, I believe it later spread to European residences, palaces and castles, which generally used simpler systems integrated directly into the walls.

In fact, in order to ensure greater isolation and better hygienic conditions, the latrines were placed in a special tower close to the main structure of the building. In France, the best-known examples are at Falaise (Fig. 11), Mont-Saint-Jean (c. 1230), La Folie à Braine (thirteenth century), Roquetaillade (early fourteenth century), Pirou (fourteenth century) and those at Dorizy, Blandy, Chevreuse, Vincenne and Bastille

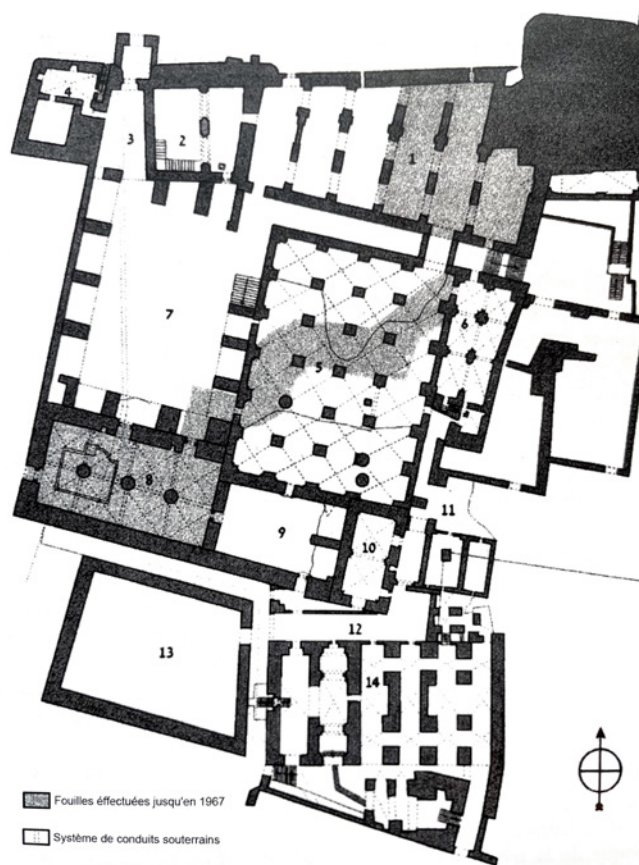


Figure 10. Acre, plan of the hospital complex, with the latrine tower (4) (Stern 2006, 54).



Figure 11. Falaise, castle, elevation with the smallest latrine tower in the middle ([https://commons.wikimedia.org/wiki/File:Falaise\\_chateau\\_guillaume\\_conquerant\\_2.jpg](https://commons.wikimedia.org/wiki/File:Falaise_chateau_guillaume_conquerant_2.jpg), CC BY-SA 3.0).

Saint-Antoine in Paris (second half of the fourteenth century). Also, the fourteenth-century latrine tower of the Papal Palace in Avignon, that of the Louvre, added in the middle of the fourteenth century by Charles V to the enclosure of Philip Augustus.

In England, the tower of Langlay Castle, also from the mid- fourteenth century, has been preserved. In Germany also preserved is the fourteenth century tower of Marienwerder (now Kwidzyn in Poland), the so-called *dansker* (Fig. 12), in the fortress of the Teutonic Order, which was connected to the castle by a bridge with a covered passage (Mesqui, and Faucherre 1992; Mesqui 1993, II, 169–180; Böhme, Friedrich, and Schock-Werner 2004, 108; Seidl 2006, 115–116).

There are not many examples of this typology, because the isolation of the construction from the areas of the building most frequented on a daily basis, even though it improved the hygienic conditions, made its use less comfortable. It was therefore justified in those (specific) cases where it was necessary to directly serve the representative wing or otherwise a space frequented by distinguished visitors or military garrisons (Mesqui, and Faucherre 1992).

The Viterbo example, dated with certainty, fits perfectly into this typology, of which it is one of the earliest examples in Europe and certainly the only one definitively identified in Italy. In addition, the tower was built next to the wing reserved for the offices of the curia and the representation, on the northern side of the palace complex.

It is no coincidence that the examples in Viterbo and Orvieto were built under the patronage of French popes, since it was in the transalpine areas that the technique of latrine construction was developed during the thirteenth century.

Above all, we should not forget that both Pope Clement IV and Charles I of Anjou were in close contact with the military orders, especially the Templars and the Hospitallers. The Pope certainly had knowledge of the affairs of the Outremer, about which he was well informed (Carraz 2023).

Through such evidence we can trace the process whereby construction techniques were transferred from Europe to the Outremer through the military orders, and how they were refined and improved from there and reimported to Europe.

## Conclusions

The emergence and development of latrine systems in medieval architecture, understood as autonomous structures



Figure 12. Kwidzyn, castle, latrine tower ([https://upload.wikimedia.org/wikipedia/commons/7/75/Kwidzyn\\_zamek.jpg](https://upload.wikimedia.org/wikipedia/commons/7/75/Kwidzyn_zamek.jpg), CC BY-SA 3.0).

with respect to other parts of residential buildings, reveals a transfer of skills, construction techniques and models that crossed the Mediterranean and involved Western Europe, first as a point of departure and then as a point of arrival.

Restricting the study to the residential buildings of the papal curia in Italy, we see that the case of the papal palace in Viterbo (1266) represents a *unicum* in the Italian panorama, with the exception perhaps of the tower of the residence in Santi Quattro Coronati (second half of the thirteenth century), whose function remains for the moment at the level of hypothesis, due to the current inability to enter the interior of the building.

The tower in which the latrines were placed in Viterbo has architectural features similar to those of the latrine tower of the papal palace in Avignon (1334–1342) and was therefore its model.

This typology finds close consistencies with the towers used as latrines built in the Crac the Chevalier and the complex of the Hospitallers of Acre in the early thirteenth century. These towers should be considered as an early example of this typology compared to the known examples in Europe, which mostly date from the thirteenth–fourteenth centuries.

The subject of this paper falls within the broader field of residential service structures. Given the vagueness of the written sources on the forms, uses and functions of sanitary rooms, it is necessary to encourage and support research in this field, both archaeological and architectural.

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