CASTELLA MARIS BALTICI 6

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On September 18–22, 2001 the Symposium Castella Maris Baltici VI was held in Lithuania. This is already the 6th symposium for the researchers of the medieval castles. The first symposium was held in Turku, Finland in 1991, the second – in Nyköping, Sweden in 1993, the third - in Malbork, Poland in 1995, the fourth - in Estonia in 1997, and the fifth – in Denmark in 1999.
The topic of the conference held in Lithuania was "Contacts and Genetically Dwellings in the Castle Buildings". Over 40 scientists participated in the conference from Denmark, Belarus, Finland, Sweden, Switzerland, Germany, Russia, Great Britain, Poland, Latvia, Estonia, and Lithuania. In the conference there were not only reports presented but also the most famous castles of Lithuania visited in Vilnius, Trakai, Kernavė, Kaunas and Klaipėda.
The time of this conference coincided with the European Heritage Days "Defensive Fortifications in Lithuania".
This conference was organised by the Public Institution Academy of Cultural Heritage established by Vilnius University, Vilnius Academy of Arts, Vilnius Gediminas Technical University, Ministry of Culture of the Republic of Lithuania and Department of Cultural Heritage Protection. The Symposium Castella Maris Baltici VI was sponsored by the Department of Cultural Heritage Protection.
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Especial thanks deserve my colleagues who organised this event Rita Mosiejienė, dr. Justina Poškienė and dr. Gintautas Zabiela.

Dr. Albinas Kuncevičius

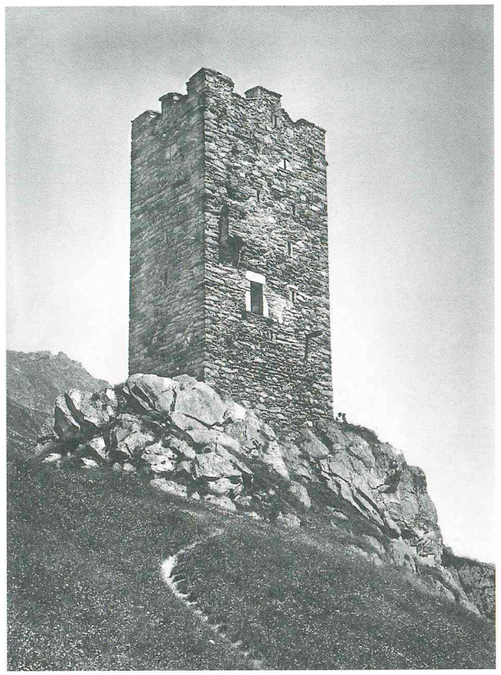

Abb. 11. Hospental. Das eingehängte Dach musste bald nach seiner Fertigstellung wegen der winterlichen Schneemassen umgebaut werden

Abb. 12. Ramosch/Tschanüff. Da der mürbe Fels (links im Bild) abzustürzen drohte, musste die Burg im 18. Jahrhundert aufgegeben werden

te (oder die Bauherren?) über die Vorgaben der Umwelt, des Geländes, der Bodenbeschaffenheit oder des Klimas hinweggesetzt haben. Wenn man aber die Natur quasi vergewaltigte, forderte diese stets über kurz oder lang ihren Preis in Form von Umbauten, Nachbesserungen oder, im schlimmsten Fall, vorzeitiger Preisgabe der Anlage. Viele Burgen sind nicht Ruine geworden, weil sie durch Feuer, Erdbeben und Feindeshand zerstört worden wären oder weil sich ihre Besitzer den Unterhalt nicht mehr hätten leisten können, sondern weil es ihre Erbauer versäumt hatten, sich mit den natürlichen Vorgaben des Bauplatzes und all den damit verbundenen Problemen ausgiebig und weitsichtig zu befassen (Altenberg, Freudenau, Schiedberg, Sculms, Ramosch/Tschanüff, Abb. 12).

Literaturhinweis:

Zu den Standorten der im vorliegenden Text zitierten Burgen vgl. Burgenkarte der Schweiz, 4 Blätter, hg. v. Schweiz. Burgenverein, Wabern/Bern 1974–85.

Erstinformationen und weiterführende Literatur bei Bitterli Thomas, Schweizer Burgenführer, Basel-Berlin 1995.

Abbildungen: Photoarchiv des Schweizerischen Burgenvereins.

Terhi Mikkola

SPATIAL ORGANIZATION IN THE LATE MEDIEVAL CASTLE OF HÄME, FINLAND

Die Organisation der Räume auf der Burg Hämeenlinna im Spätmittelalter

Die Burg Hämeenlinna liegt im Innern des Landes von Finnland. Sie wurde am Ende des 13. Jahrhunderts oder im 14. Jahrhundert vom König von Schweden und Finnland gegründet. Im Spätmittelalter war die Burg ein Sitz der Verwaltung des Burglehens und von einem Vogt des Königs verwaltet. Die Burg hatte für die Verteidigung des Reiches militärische Bedeutung. Bei dieser Untersuchung werden die inneren Aktivitäten der Burg behandelt und vor allem auf die Frage geachtet, wie sich die Organisation der zwischen den Einwohnern und den Arbeitern der Burg in der Einteilung der Räume der Burg spiegelt. Bei der Untersuchung wird die Access-Analyse verwendet, um aufzuklären, wie die Räume der Burg im Verhältnis zu den anderen Räumen standen und wie die Möglichkeiten waren, sich zwischen diesen verschiedenen Räumen zu bewegen. Die Funktion der Räume wurde auf Grund der Konstruktionsformen mit Hilfe der “Decision-tree“- Methode bestimmt. Im Spätmittelalter waren die Innenräume der Burg in vier Gruppen geteilt, die verschiedenen Funktionen dienten. Die Räume, deren Funktionen am besten festzustellen waren, waren der nordwestliche Flügel mit Wohnräumen im Verteidigungsräume der oberen Geschosse mit Wohnräume in dem nordöstlichen Flügel.

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The Häme Castle

Häme Castle is located in Inner Finland, in the northern part of the town of Hämeenlinna on the western shore of the lake Vanajavesi (Fig1,2). It was established in the late 13th or early 14th century by the Swedish Crown, which ruled Finland at that time.Häme Castle has a long and varied history of use. In the Middle Ages, the castle either belonged to the Swedish Crown or was held in fief by a liege lord appointed by the king, depending on the situation of the realm. In the administrative reforms carried out by King Gustav Vasa, Häme Castle came under the direct authority of the king, and the bailiffs taking care of the castle and its fief were accountable to the king for their actions. (Vilkuna 1998,12-16). Häme Castle lost its position as the administrative centre of the province in the 1630s, after which the castle only had significance in military administration. (Gardberg 1993,62; Lindeqvist 1926, 49).

Fig. 1. Häme Castle. View from the northwest (Photo Martti Lampila)

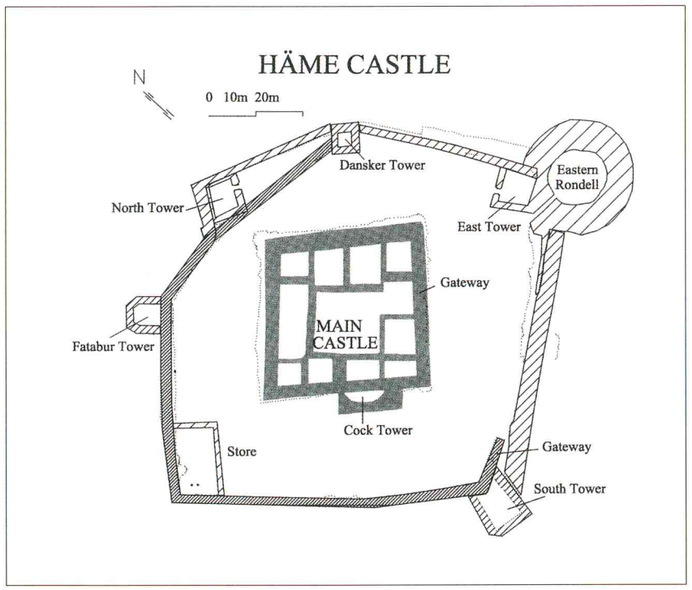

Fig. 2. Main castle and Outer bailey of Häme Castle (Luppi 1992 and 1996. Illustration by K. Uotila 1998)

During the earlier part of the Middle Ages, the main castle served as accommodation for the castle's staff, but during the 16th century it became cramped and uncomfortable. New dwelling and working rooms were built next to the protective curtain wall and even outside it. (Vilkuna 1998:24–25). Attempts to make the castle suitable for living were made starting from the 1560s. The final end to the castle's use as a dwelling came in the form of a fire in 1659. The building remained in a state of disrepair until repairs began at the beginning of the 18th century in order to renovate the castle into a garrison. During the Finnish War, in 1808, the castle fell under Russian military rule. Häme Castle was also used as a prison from the 17th century onwards, but actual repairs to change the plan of the castle did not begin until the 1830s. The use of the main castle as a prison continued until 1953, when the Finnish Council of State made a decision to restore Häme Castle as a historical building monument. The investigation and restoration of the main castle was completed in 1979 and the outer bailey in 1988. (Ailio 1917:148–155; Drake 1968:24–25; Gardberg 1993:62–63; Luppi 1992:1; Stenius 1973:4, 10–15, 18–22, 26, 32).

Häme Castle has been a subject of study for over two hundred years. Traditionally, researchers have been interested in questions concerning the castle's age, founder and situation in the early medieval province of Häme. More recent studies have investigated

the castle's housekeeping and everyday life, as well as the outer bailey and the power of the lords of the castle. (e.g. Ailio 1917; Appelgren 1891; Drake 1968, 1996, 2001; Hockman 2000; Limnell 1748; Luppi 1996; Salminen 1990; Uotila 1998: 113–119; Vilkuna 1996, 1998). I wanted to concentrate on the internal functions of the castle and how the organization of the relationships between the residents and the people who worked there can be seen in the spatial organization of the castle. These kinds of questions have been discussed particularly in the Nordic Countries and the Great Britain since the 1980s (e.g. Andersson 1997, Erikson 1995, Fairclough 1992, Hansson 2000, Mogren 1995, Nordeide 2000).

Space as a Subject of Research

The study of a castle's internal organization, that is, what was done where and who did it, has been approached, on the one hand, through archaeological artefacts and, on the other hand, through structures. Artefact-based analyses work best with sites that have been in use for a short period of time. The best solution, of course, would be to use both kinds of source material, but in the case of Häme Castle, the use of artefacts turned out to be problematic. In connection with my research, I went through the artefacts recovered from the main castle, which according to my calculations amount to approximately 2,300 items. There are thousands more from the outer bailey wards. The variety of artefacts is extensive and their dating range is equally broad, all the way from the Middle Ages to the 20th century. The amount of artefacts discovered in the main castle is not great when compared with the castle's seven hundred years of history – only a little over three hundred finds for every century. Furthermore, when you consider the numerous repairs carried out in the castle at different times, in connection of which the rooms have been thoroughly cleaned out and renovated, using artefacts as the basis of formulating my research question did not seem like a very fruitful starting point. On the whole, though, the find material from Häme Castle is an interesting subject of research which gives information about material culture, consumption habits and everyday life in the castle. I will surely return to these questions in my later studies.

There is, however, good and varied material available concerning the structures of the main castle at Häme Castle: research reports of the various investigations carried out in the castle, Knut Drake's thorough doctoral dissertation on the castle's building history and plans made of the main castle rooms for different purposes, dating as far back as the end of the 17th century. Taking into consideration my source material, I eventually decided to use the so-called Access Analysis in my research. The creators of Access Analysis, Bill Hillier and Julienne Hanson, published "The Social Logic of Space" in 1984, in which they described several methods that they had developed for studying buildings and environment. Out of these methods, Access Analysis is best suited for studying and perceiving the spatial organization of wide and complex buildings, which is why archaeologists have adopted and applied the method to their own research materials (e.g. Andersson 1997; Fairclough 1992; Foster 1989; Mathieu 1999; Nordeide 2000). The use of the analysis has also resulted in studies that have been criticised for making generalisations and oversimplified interpretations (see e.g. Chapman 1990, Brown 1990, Samson 1990). In my view, what is essential about the methods presented in the manifesto-like work of Hillier and Hanson is how they can be applied to one's own research material. By leaving out excessive interpretative generalisations, the analysis becomes a practicable method describing spatial organization that is well suited for analysing and comparing the structure of one or more sets of spaces.

Access Analysis is based on the accessibility of different spaces from a chosen starting point, or so-called carrier space, which can be, for example, the outside of a building. Separate spaces that have been distinguished by certain criteria are represented by a symbol, for instance a circle, in an access diagram. Accesses between spaces are marked with lines (Fig 4). Spaces are organized in the diagram according to the smallest possible number of access points from the carrier space (starting point), so that all spaces that are equally far from the carrier space are placed on the same horizontal plane (Hillier, Hanson 1984: 147-149). An access diagram does not correspond to plan drawings of buildings. Adjacent rooms on the same floor may be far away from each other when looking at access points. The benefit of the access diagram, when compared to traditional plan drawings, is that one can see from it which rooms are connected and how one can move between them. Floor plans show how rooms on the same floor are located in relation to each other, but the relationships between rooms on different floors do not stand out clearly, when one wants to examine the spatial organization of the whole building simultaneously.

Access Analysis alone does not tell what function rooms were used for. Because I wanted to study the function of Häme Castle's rooms also on the basis of other information than just individual structural features or literary mentions, I used a decision-tree diagram, in which the rooms' function is determined with the help of yes/no questions related to their structural features (Fig 3). This method (called Feature Analysis) has previously been used together with Access Analysis by James R. Mathieu in his research on the differences and similarities of spatial organization in four Welsh castles dating from the end of the 13th century (Mathieu 1999). The be-

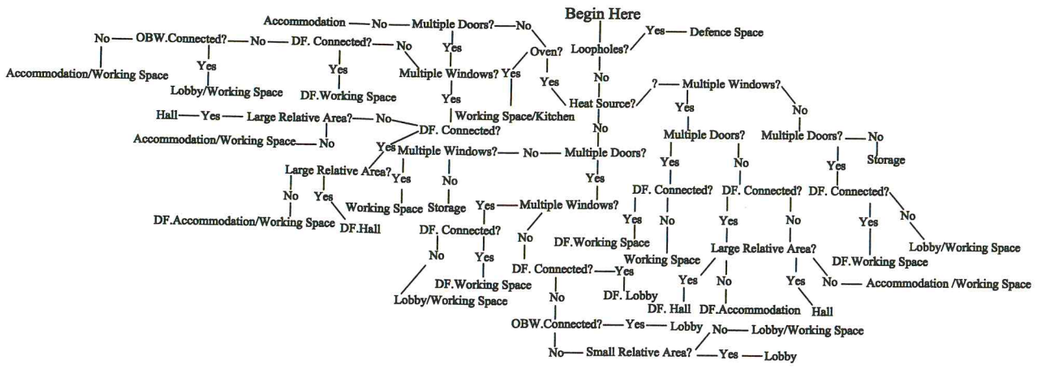

Fig. 3. Decision-tree. DF = Connected with defence space, OBW = Outer bailey ward

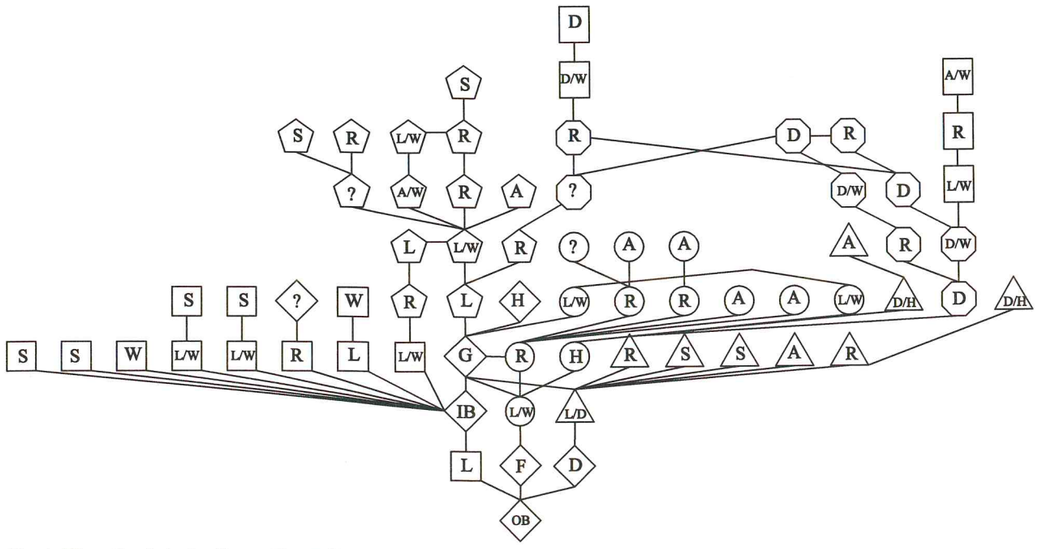

Fig. 4. Häme Castle in the Corner Tower Stage.
A = Accommodation, D = Defence space, S = Storage, L = Lobby, W = Working space, H = Hall, R = Staircase, G = Gallery,
IB = Inner bailey ward, OB = Outer bailey ward, D = Dansker tower, F = Fatabur tower, ? = Unknown
Symbols: Square = Ground floor, Circle = Northwest wing, Triangle = Northeast wing, Hexagonal = Upper floors,
Rectangle = North and West towers, Pentagonal = Cock tower, Diamond = No specific set

nefit of the Feature Analysis is that it requires the researchers to clearly state their reasons for assigning a certain function to a given room and it gives an opportunity to make interpretations about rooms whose function has previously not been determined, for example due to insufficient structural information. Feature Analysis takes into consideration several features of the room simultaneously, which makes it possible to question such interpretations that have given a determining importance to only one feature of a room. By combining the results from the two different analyses, one can identify spaces and sets of rooms, in this case at Häme Castle, reserved for different functions.

To define the functions of the rooms at Häme Castle, I have divided them into accommodation, defence, storage, lobby, working area and hall. On the basis of structural features, I was not able to determine a sole function for all the rooms, so some of them were assigned a designation which described several functions, such as defence/working area or accommodation/working area. This surely corresponds to reality better than defining a given room as being intended for only one function. It is likely that even those rooms which were defined on the basis of the decision-tree as having, for example, a residential function were also used as, for instance, working areas when needed. When determining room function, you in fact have to look at what use a given room was most suited for on the basis of its structural features.

I chose the criteria that define the different functional room types by adapting examples from other studies to my own material. For example, the existence of a fireplace has been considered one of the natural features of a residential room. (Hansson 2000: 27). Similarly, spaces without a heat source have been identified as storage rooms. In addition to a fireplace, features that define accommodation or a bedroom include small area, single entrance, proximity to a latrine and good lighting (Mathieu 1999: 123–124). These features point to living conveniences and privacy. In my research, I did not pay very much attention to the criteria of good lighting, that is, the existence of several windows. I identified rooms primarily as dwelling areas when they had a fireplace and only one entrance. The reason for this is the fact that rooms with windows cannot have been very comfortable in the cold North, at least not during wintertime. Despite this, most of the rooms I defined as accommodation had more than one window. I furthermore did not take into consideration access to a latrine, because there is no reliable information on the time of use of Häme Castle's privies. On the other hand, when I left out the criteria of easy access to a latrine, I could compare see after the analysis if the dwelling rooms were close to the presumed privies. The most decisive feature in my study was the presence of loopholes: If there were any loopholes in a room, I assigned it a defensive function, regardless of any other features present. If a room was connected to a space with a defensive function, i.e. separated from it by only one entrance, I identified defence as one of the room's functions. The second function was determined by other features of the room. One must of course remember that the whole castle was built for defence, and surely it could also have been defended from elsewhere than the spaces with loopholes.

The room functions derived with the help the decision-tree are interpretations, but their advantage is the fact that all rooms have been defined with the same criteria. In this way the derived results can be compared with each other. In addition to identifying the function of individual rooms, one can also make deductions about whether some part of the castle was reserved primarily for a particular function. As with Access Analysis, the use of Feature Analysis also requires detailed information about the structural features of the subject to be studied. The studies concerning Häme Castle give a good starting point to use both methods.

The Castle in the Middle of the 16th Century

In my research I carried out two of the kind of analyses described above. My deductions about the structures of the rooms are based on the source material mentioned above. The first analysis depicts what is called the Corner Tower Castle stage in Knut Drake's terminology (Fig. 4) According to Drake, this last medieval building phase of Häme Castle ended at latest by the year 1520, that is, at the end of the Middle Ages in Finland. (Drake 2001: 215). Making an access diagram of the castle's earlier stages would have been difficult, because the upper floors may then have had wooden structures which cannot be reconstructed anymore. In my research, I wanted to concentrate on the use of the main castle from the point of view of the people who lived and worked there. Therefore, I chose the outer bailey ward as the carrier space of my access diagram, and I took into consideration the entrances from the outer ward to the castle's first floor via the curtain wall's Dansker and Fatabur tower. I left other structures in the outer bailey out of the diagram also due to of problems of source criticism. Reconstructing the ward is considerably more difficult than reconstructing the spaces of the main castle. On the other hand, when I did not take into consideration the dwelling houses which, according to the archive sources, were built on the outer ward at the end of the 16th century, the analysis reveals how the structure of the main castle changed when its significance as accommodation diminished.

The access diagram depicting the Corner Tower Castle stage shows how the castle's space was divided into sets of rooms that had their own central space, room or lobby (Fig. 4) People could move between the central rooms along a wooden gallery encircling the castle's inner ward on the level of the first floor. One can distinguish four sets of rooms: those on the ground floor, those in the Cock tower and the rooms on the first and second floors of the north - east and north - west wings. The highest floors of the castle's wings were connected to each other by passages and stairs, and they did not form a group around a certain focal space. From the highest rooms one could access the two highest towers of the castle, that is, the west tower and the north tower. One room was left outside the groups: a hall on the first floor, which was accessible directly from the wooden gallery. According to my research, the sets of rooms were reserved for different functions. The most clearly distinguishable functions were those of the north - west wing, which was intended for living, the guardrooms in the highest floors and the residential quarters connected to them in the Northeast wing. Who then used these different spaces in the castle?

I found the required background information for my interpretations from Anna-Maria Vilkuna's doctoral dissertation on the Crown's housekeeping in Häme Castle in the middle of the 16th century, which gives information about the castle's occupants: the Crown's officials and soldiers, the servants and the artisans (Vilkuna 1998).

The north - west wing had more spaces for accommodation than any other set of rooms and additionally a hall, which was probably also intended for accommodation. In Knut Drake's suggestion for a reconstruction, the north - west wing's rooms were connected to a latrine, which is considered one of the features of dwelling quarters (Drake 1968: 94, 103). It is notable that the north - west wing was the only set of rooms from which one could not access the other parts of the castle without going through the wooden gallery. It was also the only group which one could access from the gallery via more than one doorway, and the only one not having a connection to the castle's defensive rooms. The northwest outer wall of the wing had a doorway, which has been interpreted as having led to the defensive wooden hoarding encircling the castle's outer wall, but there was no fixed staircase leading to any guardrooms in the north - west wing. It therefore seems that the residential wing of the castle was deliberately segregated from the defensive areas. In previous studies, the north - west wing has been believed to be the accommodation of the castle bailiff and other higher staff, and my research supports this hypothesis.

In addition to dwelling rooms, the north - west wing also contained lobby and working areas. From the wooden gallery one could access the wing's hall through these areas via two different routes. One route went via an imposing portal in the northeast wall of the inner ward decorated with niches and brick ornamentation, and into a lobby. From there, one ascended along a large staircase to a small tower room that had a door opening into the hall. Philip Dixon, who has studied the spatial organization of castles as a symbol of power and influence, has noticed from his material that the lord of the castle's halls were usually accessed via one or more lobbies or staircases. With this, the constable wanted to convey his power and wealth to the arriving people. (Dixon 1998: 47–48, 55). Perhaps in Häme Castle, too, the constable wanted to impress his guests by letting them walk through two imposing entrances before receiving them in the castle hall. The other route from the wooden gallery to the same hall went through a small room at the other end of the hall, which was connected to the Fatabur or storehouse tower in the curtain wall. The small room also had a stove for heating up the adjacent hall. According to the sources, the Fatabur tower was usually bustling with activity – for instance, the fabrics and other valuable goods stored there were continually taken to the castle's rooms and brought back again according to need. (Vilkuna 1998: 164–165). It would seem strange if the castle's guests would have walked through this dirty room, which rather seems to be a service area judging by its other functions.

The north - east wing housed dwelling and storage areas, but they were also connected to the guardrooms via a stair, which is why some of the rooms in the wing were given the additional functional designation of defence. From the north - east wing one had access to the curtain wall's Dansker tower, which has been interpreted as serving a defence function in the castle. Moreover, there was possibly a latrine in the tower, which would also indicate that some of the rooms in the north - east wing were intended for accommodation. Most of the castle's residents were soldiers in the middle of the 16th century, and on the basis of my analysis it would seem that the castle's north - east wing was reserved for them. From there one could access the hoarding in the highest parts of the castle, and in the halls and rooms of the wing there was enough space to accommodate the soldiers. The highest spaces in the castle's wings were reserved for defence. These guardrooms differ from the castle's other spaces in that one could move between them directly and that they were not located around a certain focal space. One could access these rooms from the stairs of the Cock tower's lobby and from the north - east wing. The possibility of moving easily from one space to the next was important for defence.

During the early Middle Ages, the Cock tower protruding from the castle's south - west wing had a gate leading to the outer ward. In the late medieval times, this connection no longer existed, and the castle was entered from the outer ward through a room located on the ground floor of the Southeast wing. However, the tower still had great significance as a passage route to the castle's first floor. It contained the only internal staircase between the castle's first and ground floor. In the access diagram, I took into consideration possible wooden stairs or a ladder leading from the inner ward up to the wooden gallery on the first floor. But if these did not exist or if they were not in permanent use, the Cock tower was the only route from the ground floor to the castle's first floor. All people who wanted to get there, guests and residents alike, would have had to move through the Cock tower. The stairs leading to the first floor did not ascend directly to the central room of the tower, but to a small windowless lobby next to it. From there one could get to the wooden gallery via the central room and its lobby on the side of the inner ward. Coming from the tower to the gallery, one could immediately see on the other side of the inner ward the castle's most impressive wall, decorated with brick niches, and the portal leading to the lobby of the north - west wing's hall. People arriving to the castle were undoubtedly impressed by what they saw.

According to my interpretation, the spaces in the Cock tower were dwelling, lobby, working and storage areas. The rooms of the tower were reserved for different kinds of functions, and one cannot define the tower's function as clearly as one can identify the north - west wing as accommodation or the north - east wing as having a defensive meaning. The tower also had a connection to the ground floor and to the castle's uppermost defensive areas, which makes it even more difficult to determine its primary function. If the north - west wing was occupied by the castle bailiff and his staff and the north - east wing by soldiers, then the artisans and other servants of the castle would be unaccounted for in my research. The only fixed staircase to the castle's first floor was in the Cock tower, and its use must have been controlled to some extent. On the basis of this and the fact that the stairs led to guardrooms, I am more inclined to define the tower as being related to defence rather than as dwelling quarters. Nevertheless, the Cock tower did not have proper guardrooms with loopholes. Perhaps the tower was not intended for any individual activity, but rather in the late Middle Ages it had different spaces for different functions. It was nonetheless significant in controlling the passage between the ground and the first floor.

The spaces on the ground floor were storage and working areas according to my analysis, although these rooms were the most difficult ones in the castle to interpret. Previously, the rooms have been interpreted as working and dwelling quarters for the castle's servants, and it has been presumed that the castle's kitchen and chapel were located there (Ailio 1917: 177; Gardberg 1993: 57). The rooms on the ground floor were used for storage until the 20th century. It is possible that during floor renovations and cleaning work the fireplaces and ovens that possibly existed in the rooms have been destroyed. On the basis of my analysis, the ground floor nevertheless had more rooms suitable for storage than any of the other sets of rooms.

Changes in Spatial Organization after the 1560s

I carried out a similar analysis (to the one described above) of the spatial organization of Häme Castle after the 1560s. Individual changes, bricking up of doorways and stairs and renovation of rooms cannot be dated accurately. Therefore, my analysis does not describe any particular period of time, but rather how the late medieval spatial organization was changed after the mid-16th century. I chose the year 1560 as a hypothetical boundary, because after that the archival sources begin to have more mentions of the repairs carried out in the castle. A kind of an end to this phase is the fire of 1659, after which the use of the castle as accommodation is considered to have ended. (Drake 1968: 24–25; Ailio 1917: 148–155).

The changes carried out at Häme Castle did not affect the spatial organization of the castle very much. The changes were mainly due to some of the doorways and stairs being bricked up. By blocking up entrances, the castle in a sense returned to an earlier medieval custom of locating rooms around one central space, so that one could not walk through the rooms. When other castles in the Swedish realm were renovated into residential use from the mid-16th century onwards, halls and rooms were built in such a manner that one could move from one room to the next without going through the central space (Gardberg 1959: 377–378).

Sources indicate that after the middle of the 16th century the residents of Häme Castle began to move to the wooden buildings on the outer bailey ward, because the main castle had become uninhabitable. According to my analysis, however, the number of rooms used for accommodation in the main castle increased at this stage. One reason for why the castle now had more spaces identified as small dwelling rooms than during the earlier stage may be the fact that during the 17th century the castle became a prison. The prison needed more small spaces that were easier to guard – it was no longer so much a question of guarding the entry to the castle but rather guarding the way out of there.

Conclusion

It has been considered that the model for Häme Castle can be found in the monastery-like castles of the Teutonic Order in the Baltic countries. Their typical shape was a square wall, which sheltered separate spaces for accommodation, dining and a chapel. The internal organization of space in the castles symbolized the social structure of the Order, and separate spaces were reserved for people carrying out different tasks. (Alttoa 1993: 10; Lovén 1996: 215; Tuulse 1942: 124–124; 1952: 174–175). The Teutonic Order's influence on the castle building in the Baltic Sea area began at the end of the 13th century. Previously it was thought that this influence lasted until the 15th century, but according to the latest research, structures were still built according to this model at the beginning of the 16th century – that is, around the same time as when the last building phase of the Häme Castle is supposed to have ended. (Alttoa 1993: 16).

Undeniably, the parallels for the plan of Häme Castle can be found in the Baltic countries. But was the spatial organization of late medieval Häme Castle a result of solutions that were modelled on monasteries or was it related to a new way of organizing castles' internal space that began at the turn of the

16th century? During the earlier Middle Ages, the purpose of a castle was to be a combined dwelling and defensive structure. In order to conquer a castle, the enemy had to come over the wall. As firearms became more common, defence was focused on the ground level and on the ramparts around the castle. At the same time, the number of troops increased and their nature changed. Previously, soldiers had been knights and thus members of the constable's party, and their rooms were located next to the constable's household, which corresponded to the communal life typical of the age of chivalry. By contrast, artillerymen and other mercenaries were considered unreliable, and constables did not want them too close. (Gardberg 1959: 376; Tuulse 1952: 215).

The one of first Nordic castles where defence was separated from the dwelling areas in the first decades of the 16th century is Malmöhus. Its main castle was used for accommodation and defence was focused on the outer ward. In the castles of the Teutonic Order, similar solutions were taken into use from the end of the 15th century. At Häme Castle, defence areas were still located in the main castle during the Corner Tower Castle stage, and in this way the castle is connected to medieval building tradition. Dwelling quarters and defence areas were integrated in a similar manner in the Olavinlinna castle founded in 1475. This practice survived in the castles built in Sweden until the 1540s. (Gardberg 1959: 111, 377; Tuulse 1942: 290; 1952: 236–237). Comparing the organization and use of space in Häme Castle with other Finnish, Baltic and Nordic castles would be interesting for studying questions of dating and building tradition. The problem is that few similar studies have been carried out, and few castles have rendered good enough source material to make similar analyses possible. I will personally continue my research of spatial organization in castles within the 'Finnish Virtual Archaeology' project that began in 2002. At the same time, I will be looking for new opportunities for analysing, modeling and visualising spatial organization.

Unpublished studies and research reports

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DIE VERTEIDIGUNGSSYSTEME VON IWANGOROD UND NARVA: WECHSELWIRKUNGEN IN DER ENTWICKLUNG IM 15.–18. JAHRHUNDERT

Fortifications systems in Ivangorod and Narva: Their simultaneous development during the 15th to 18th Centuries

The Ivangorod fortress was founded on the edgeof the Russian state in 1492 by the Grand Duke Ivan III. It was erected opposite the Castle of Narva that had been built on the western shore of the Narova. It symbolizes the conflict between East and West. Two juxtaposed hostile fortresses are extremely unusual in European history. This condition so much influenced the mutual relation between them that one might speak about one unified system of defence.

The phase of building works carried out in Ivangorod 1507-1509 was probably to some extent a reaction to the fortification of the Narva Castle. It comprised the building of a stone wall on it's north-western side right out to the point of the promontory. In connection with the new addition (an area of 6 200 m2) two towers were erected at the two ends of the shoreline area – the Well Tower and the Powder Tower.

At Narva in response to the extension of Ivangorod fortress, the forecastle 1520–1530 was extended to double it's size. It is not known how many towers were built, but investigations of the remains of the southern part and outer part have shown that they had loop-holes at ground level of the type used in Livonia at the turn of the 16th century probably – as suggested by K.Alttoa – in imitation of Ivangorod.

In 1612 Ivangorod came under Swedish reign and remained so for almost 100 years. In 1650 there was the proposal to unite Ivangorod with Narva. This idea was converted by Heinrich Sulenberg into a concrete plan with the result that the north-eastern side of Ivangorod would be surrounded by an earthen wall with three bastions, as a mirror of similar fortification works carried out in Narva. These bastions around Ivangorod were never built. The same proposal returned in a slightly different made in 1685 in a project designed by the prominent Swedish civil servant and fortification commander Erik Dahlberg. During the Great Nordic War these fortification walls were built in a smaller, simplified manner. In an engraving depicting the assault of Narva on 4 August, 1704 they are marked under the letter "R" as "the new redoubt at Ivangorod".

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