The paper aims to deliver a brief outline of the architectural development and discerned types of architecture of both Germanic and Roman origin on the territories north to the middle Danube. The four centuries of the local development was somehow disturbed during the Marcomannic wars. This large-scale conflict resulted in the Roman military occupation of the neighboring regions (Moravia, South-western Slovakia and Lower Austria). The main attention of the paper is given to the development in Moravia, while the other regions have their specific aspects and some of the examples of the Roman architecture on the barbarian territories also differ in chronological context. One of the most significant region containing both Germanic and Roman architecture monuments is located along the middle course of the river Thaya, specifically in the Mušov region and its vicinity. There can be found the only terrain evidences of the Roman architecture in the Czech Republic.

Keywords: Roman architecture, Germanic architecture, Roman army, Germanic tribes, Roman Period, Marcomannic wars, Middle Danube area, South Moravia, Mušov, Burgstall, Pasohlávky

Introduction

The territories north to the Middle Danube were in immediate neighborhood of the Roman provinces Noricum and Pannonia Superior during the whole Roman Period (Fig. 1). These areas were inhabited by the Germanic tribes of Marcomannii and Quadii maintaining vivid political and economic relations, sometimes disturbed with occasional military conflicts. This "contact zone" is characterized with diffusion of the Roman material culture into the Germanic context. Forms of distribution of the imported goods within the Germanic society reflects certain features of social difference and according to their context the same way of usage as on the provincial ground. The Marcomannic wars brought the Roman army including its building construction concepts and technologies deep into the Germanic territories.

Beside the settlement activities from the other archaeological periods, the most important examples of both Germanic and Roman origin can be found near at present defunct village Mušov on the middle course of river Thaya and adjoined areas (Fig. 2:1). During the Roman Period these territories were densely populated.
In 2006 there was excavated an extensive Germanic settlement in Pasohlávky near Mušov in location "U vodárny" (Fig. 2:1), revealing examples of the whole array of local Germanic architectural tradition, including numbers of above ground structures. The local geology conditions are represented with mostly sandy subsoil with occasional clay and gravel intrusions. The total excavated area was 4.6 hectares and estimated volume of removed overburden is 84 thousand cubic meters (Fig. 3). The elevation of subsoil on the whole excavated area varies between 172 and 175.5 meters above the sea level. In total there were found 1040 settlement features, counting mostly post-hole features. Remarkable is the fact that even in case of such enormous number of settlement features there was no evidence of superposition. This recognition strongly supports the presupposition one phase duration of the settlement. The beginnings of development and productive activities of the settlement are preliminarily dated to the period around the year 180 and the end is set preliminarily to the end of the 2nd century AD and the first decades of the 3rd century AD. Significance of the settlement is emphasized by vicinity to the central

and represent a core part of the Germanic settlement area in the southern Moravia. It was also possibly one of the reasons for why the Roman military leadership chose this location for emergence of the military logistic base (Fig. 2:2; Komoróczy – Vlach 2010). Long term archaeological interest of the Institute of Archaeology of Academy of Sciences Brno has already revealed several examples of the Roman and Germanic types of the architecture within the Mušov region.

**Germanic architecture**

So far, there have been registered more than 400 Germanic settlement components from the Moravia (Fig. 1; Tejral 1998). Regrettably, the most of them are known only through surveys and field prospections, thus not giving any information about the architectural concepts of the indigenous building techniques (Droberjar 1997). Only few of them have been excavated thoroughly so far. Naturally, every excavated Germanic settlement also yields countless settlement objects, which function and architectural form or representation cannot be discerned clearly, thus they are not considered in this paper. According to ascertained archaeological material their interpretations vary from the storage, raw-material gathering to the waste disposal pits.

In 2006 there was excavated an extensive Germanic settlement in Pasohlávky near Mušov in location "U vodárny" (Fig. 2:1), revealing examples of the whole array of local Germanic architectural tradition, including numbers of above ground structures. The local geology conditions are represented with mostly sandy subsoil with occasional clay and gravel intrusions. The total excavated area was 4.6 hectares and estimated volume of removed overburden is 84 thousand cubic meters (Fig. 3). The elevation of subsoil on the whole excavated area varies between 172 and 175.5 meters above the sea level. In total there were found 1040 settlement features, counting mostly post-hole features. Remarkable is the fact that even in case of such enormous number of settlement features there was no evidence of superposition. This recognition strongly supports the presupposition one phase duration of the settlement. The beginnings of development and productive activities of the settlement are preliminarily dated to the period around the year 180 and the end is set preliminarily to the end of the 2nd century AD and the first decades of the 3rd century AD. Significance of the settlement is emphasized by vicinity to the central
Fig. 2: 1 – The area centered round the Roman military base at Mušov-Burstall. 2 – Fortified area of the military base at Mušov-Burgstall and evidences of Roman architecture.
The most typical type of Germanic settlement architecture represents a simple sunken-floor house, widely spread also beyond the study area (cp. Kolník 1998; Droberjar 1997, Tejral 1998; Leube 2009, 143-153). Generally, it consists of sublevel rectangular shaped single room with post-holes, which spatial distribution has also typological significance and sometimes even chronological importance (Fig. 4:1). The most frequent type has 6 post-holes in hexagonal displacement inscribed into the sunken part of a house. Another frequent displacement is arranged in 2 rows of 3 post-holes in shorter sides of the sunken part. The posts bore roof probably made of thatch (Fig. 4:2). Usually, the sunken part also has a roof entrance recess. The most typical orientation is east-west but naturally there is also variability. They are usually interpreted as dwellings with possible craft activities based on characteristic finds such as loom weights or production waste. Living space area of such buildings varies between 10 and 20 square meters, while the depth of the sunken part is mostly around half of meter, which also depends significantly on the local overburden conditions. This type of architecture is widely documented on numbers of south Moravian Germanic settlements such as Vyškov, Křepice or Blučina (Droberjar 1997, Abb. 11, Tejral 1998, 191ff., Abb. 8-12). The sunken park of the building is sometimes interpreted as a cellar, covered under the wooden floor (e.g. Leineweber 1998, 90-91, Abb. 10).

In Pasohlávky was found in total 13 dwellings of this construction. None of them provided traces of inner equipment or furnishing. Nevertheless within the study area there are cases with documented remnants of fireplaces. They contained considerable amount of the Germanic pottery production and also items of everyday use. Some of the yielded unusual kinds of finds such as chainmail armor or wheel bodies form a Roman wagon, which may be explained by proximity of the Roman military base...
Fig. 4. – Examples of the Germanic sunken-floor houses and digital reconstruction.
Above ground structures

Significance of the settlement in Pasohlávky is underlined by considerable amount of uncovered above ground \(^2\) structures. Dense concentrations of post-holes are dislocated on the most of 4.6 hectares excavated area and they show examples of large variety of such structures. Though such kinds of structures have been discovered on the other Germanic settlements in the study area previously, it was never in such high numbers, as it is e.g. usual for the northern barbarian territories (cp. Michałowski 2003). The lack of above ground structures in some cases might have been caused by local geomorphologic and overburden disturbance conditions of preservation or the applied excavation method.

One of the largest recognized buildings with four central bearing posts was located in western part of the excavated area and covers up the extent of more than 60 square meters (Fig. 5:1). Unique disposition has no analogies among the others above ground structures in the area. This extraordinary architectural concept could be associated with presence of higher social rank or prestige. The building complex is also accompanied with significant number of other above ground structures represented with dense clusters of post-holes. The whole complex is separated from the eastern side with the ditch, recognized in a few courses of the total length of 65 meters, implying existence of some kind of enclosure and inner settlement segmentation.

In Pasohlávky were also recognized post-hole dispositions, widely interpreted as granaries (for western Germany cp. Leube 2009, 159-161). The most of them represent a simple 4 post rectangular structure type but in one case was also documented 10 post type covering the extent of 16 square meters (Fig. 5:2). Total number of 7 so far recognized granaries is also distinctively higher than it is usual on the Germanic settlements in the study area. Certainly, we cannot rule out possibility that some of the 4 post-hole structures could have sheltered some other previous activity, which is archaeologically untraceable. Comparing with other excavated Germanic settlement contexts of the similar nature the number of documented granaries is clearly higher in Pasohlávky. Nevertheless, in the settlement context to the north of the middle Danube is widely registered presence of storage pits, which had served for the same purpose.

Hopefully, in the future it will be possible to detach individual settlement structures using spatial statistics, density resolution analyses and dislocation of recorded archaeological features (Fig. 5:1), combined with their morphological comparison and not least the acquired archaeological material from individual features. For example complicated disposition in the western part of the settlement may be partially enlighten using spatial distribution of depths of the features revealing presence of significantly deeper structures. Also in the perimeter wall line of the outstanding above ground structure shows different depth of 2 post-holes opposite to the 2 centrally placed bearing post-holes, implying some kind of construction relations.

Roman architecture on the Germanic territories

The region with unique information potential is located around the well-known Roman military base at Mušov-Burgtall (Fig. 1), located about 80 kilometers to the north from Vindobona (Tejral 1990; Tejral 1997; Tejral 1999; Komoróczy 2008; Komoróczy – Vlach 2010, 251-253). There can be found the only examples of the Roman architecture in the southern Moravia. Up to now fortification system of at least 2.2 kilometers has been identified enclosing the area of more than 35 hectares (Fig. 2:2). Mildly elevated hill surrounded from the south and the east by extensive bottom-lands provided sufficient strategy conditions for build-up of the central military base with the logistic operation centre. The north-eastern side was secured by 2 kilometers long V-shaped ditch and the surrounding area was complemented with additional military installations (Mušov- Na Pískách, Ivaň, Přibice). So far, the archaeological context with remains of the Roman architecture has been excavated on 4 locations within the fortified area. The second group of structures resembling the Roman construction technologies built deep inside the barbarian territories under different or unclear circumstances such as Cífer-Pác (Kolník 1998, 157-158, Abb. 12), Bratislava-Dúbravka or Milanovce is beyond the scope of this presentation (cp. Tejral 1999).

Mansio

The first phase of archaeological excavations at Mušov during the late 30’s of the 20th century revealed two foundations located in the north-western parts of the flat hilltop (Fig. 6:1; Gnirs 1976, 80f.; Tejral, 1986, 395f.; Tejral 1992, 381f.). The eastern regularly divided building covering the area of 120 sq m has two distin-
Fig. 5: – The settlement in Pasohlávky: 1 – Extensive building and other settlement features with designation of depth. 2 - Examples of Germanic above ground structures.
guishable construction phases. The 1st includes room
No. 1 and 2 without under-floor heating system. Dur-
ing the second phase the building was extended along
the main axis and equipped with the heating system.
Another construction was discovered to the south-
west and consists of at least 4 rooms, some of them
equipped with hypocaustum. According to the ground
plan it counts among the bathhouse type structures. In
2000 minor excavations were carried out in the east-
er and northern part of rooms V and VI. Besides the
previously discovered construction features there was
observed a number of post-holes in the perimeter wall
line and also outside the building implying the presence
of post-hole structures, perhaps apoditerium connected
to the bathhouse. Both buildings present a combination
of substructures built of bricks, timber (hypocaustum,
praefurnium) and mortar plastered vertical construc-
tions (so-called "Fachwerk"; Baatz 1973; Tejral 1999,
94; Komoróczy 2003, 31f.). Roofs were covered with
tegulae and imbrices. The results from the first excava-
tions led by Anton Gnirs before 2nd World War were
interpreted as a praetorium with the bathhouse dated to
the Marcomannic wars. Still the interpretation of the
buildings is largely complicated as the previous meth-
odology of field research has not paid regard to the pos-
sible presence of post-hole structures, as was proven
during the latest excavations. Also this interpretation
was based on misunderstanding of the local geological
context (Tejral 1986, 407). On the basis of this recog-
nition the building complex has number of analogies in
both civilian and military context of the provincial
architecture such as Lockley type that are most often
found in the villas in Britannia (Ellis 1995, 168; Black
1994, 100, Fig. 1). It was also corroborated that this
ground plan as a whole is widespread and characteristic
to so-called mansio, in most cases as a part of a larger
construction enclosure. Considering the bathhouse at
Mušov data available to us at present are insufficient
for precise functional determination of individual
rooms. However it’s apparent that the building belongs
to the simple type called Reihentyp (Baatz 1969, 65)
with rooms situated along one straight axis. Regretta-
bly, none of the buildings were excavated thoroughly
and available evidences of other structures imply that
the both buildings formed a kind of closed unit serv-
ing needs of prominent military personnel or certain
civilians. The eastern corridor shaped room may also
resemble so-called "winged corridor" type villa but
because of not full conjunction with the other build-
ing we cannot rule out the presence of porticus rather
than closed walls. The available information testify for
the development form the simple two room structure
without the heating system aimed to enlargement of
the residential building by another two rooms, simulta-
neously with construction of the baths (Komoróczy
2009, 1425-1426).

Residential building with apse

Another structured building was uncovered in 1993
during the rescue excavations on the terrace location
Neurissen, situated on the eastern foothill of the Burg-
stall (Fig. 6:2; Bálek – Šedo 1996, 403f.; Šedo 2001, 216;
Komoróczy 2006). On the edge of the terrace there was
ascertained course of the fortification in form of single
V-shape ditch and remains of earth-wooden rampart,
supplemented with post-holes of three watch tower
and a one gate dispositions. The building was defined
by system of construction trenches covering total ex-
tent of 880 square meters – in dimensions 44 by 20 met-
ters. There was no evidence of usage of stone or brick.
The central part holds an apsidal room and two sym-
metrical rectangular rooms connected to the peristyle
court with eight post-holes. Corridor shaped room is
adjooned from the eastern side as well as small room to
the peristyle. The occurrence of architectural features
such as peristyle court and apse-terminated room in
the camp architecture is usually connected with a high
social prestige. Such disposition is typical for provincial
villa type buildings where such space represents a tri-
dinium, predominantly orientated towards a peristyle.
Also additional north wall covering actual vaulted wall
of the apse is not unusual in such circumstances. The
extent of apse and tridinium counts among the most
extensive construction features of the same interpreta-
ton. Both outstanding dimensions and the very inner
structure point out potential presence of distinguished
social prestige or military rank.

Workshop quarters

Another type of Roman utility architecture was un-
covered in 1990 during the excavations on the south-
eastern slope of the hill Burgstall (Fig. 7:2). On the mod-
erate terraced slope with minor levels were found the
rests of 6 earth-wooden single-room structures with no
terrain evidence of using bricks or stone. Each of them
had above ground construction with postholes in the
corners and in the middle of theirs longer sides. Propor-
Fig. 6: 1 - Mansio complex, 2 - Workshop quarters.
tions of the buildings varied between 3 to 3.5 meters at width and 5 to 5.5 meters at length. These structures were also accompanied by relics of 4 simple circular kilns dislocated amongst the structures. Classification of this non-standard architecture within the frame of the Roman presence in Mušov during the Marcomannic wars is strongly implied by the presence of considerable amount of Roman finds including deposit of iron tools and fittings, found on the floor in one of the buildings (Komoróczy 1999). More than 50 percent of the metal items discovered here belong to the damaged and no longer used weaponry and other military equipment intended for reuse. Interpretation suggesting the presence of the Roman military workshop specialized mainly on the metal-works is also supported by couple of finds of unfinished bronze Kniefibels. In spite of such evidences presented structures do not concur with the typical ground plan of fabricae in Roman military installations in any of their characteristics (Bishop 1985).

**Valetudinarium**

Recent excavations in year 2009 have revealed foundations of the most extensive Roman building found in Mušov so far (Fig. 7:1). Two winged rectangular shape with a courtyard and characteristic division of inner space is common for all the Roman military hospital – valetudinarium. (Komoróczy – Vlach 2010, 252) Archaeological evidences consist only of the system of trenches implicating timber framework construction without using either brick or stone. The orientation corresponds with the residential building with the apse and is aligned along the axis of the two known gates. Regrettably about the 1/3 has been destroyed previously and preserved dimensions are 42 by 58 meters, thus covering extent of nearly 1 400 square meters. It makes it the most extensive building from the Protohistoric periods in the Czech Republic. Also in case of presumed side ratio 1:2 (usual for other oblong shaped examples of the same type of Roman architecture; e. g. Haltern-Hauptlager, Neuss, Housesteads, Inchtuthill), the whole build up extent would be about 2 200 square meters. Each wing of the building is divided into wards and small corridors connected to the main central-placed corridor. Sufficient lighting conditions were probably provided by heightened central corridor roof. On the south-western side of the building was uncovered asymmetrically situated entrance 5 meters wide. Perhaps the main entrance, usually complemented with porticus was on the opposite side of the building, which was not preserved. Both the significance and the extent of the building underline the scale and importance of Roman military operations on the barbarian territories during the Marcomannic wars.

**Conclusions**

According to archaeological evidences so far, it is apparent that the short Roman military presence on the barbaric territories north to the Middle Danube area had no significant influence towards the local architectural tradition. The example of such unchanged development comes directly from the top of the hill, where has been discovered a Germanic settlement dated to the period right after the Marcomannic wars. Even this close presence of the Roman architecture didn’t encouraged locals to reuse of abandoned buildings of significantly higher standards and there are also evidence of dismantling of these buildings and reuse of the Roman building material.

The main features of the character of the Germanic architecture on the study area might be noted as relatively unified with wide array of irregularities, strictly in simple building techniques without using advanced building materials (stone, bricks). Analytical difficulties are also deepened by some aspects of interpreting disclosed settlement contexts within the chronological constrains as well as archaeological transformations and processes of the very emergence of consecutive stratigraphy.

Besides all the directly excavated above mentioned evidences of the Roman architecture within the area of the military base at Mušov, also recent non-destructive geophysical surveys imply possible presence of another Roman building. The spatial structure of magnetic anomalies in the center of steeped south-eastern part of the fortified area might resemble a shape of a principia corresponding with the functional concept of forum. However, it is necessary to verify such prospection results through the multidisciplinary designed archaeological probing or excavation, which would give further insight into architectural concepts, building techniques and environmental context of these structures as well as dating and function determination based on acquired archaeological material.
Fig. 7: 1 - Residential building with apse, 2 - Valetudinarium.
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