

PRELIMINARY RESULTS OF A STRATIGRAPHIC ANALYSIS OF LATE ROMAN AND EARLY BYZANTINE ARCHITECTURE IN THE RESIDENTIAL QUARTER OF JIYEH

Michał Dzik

Institute of Archaeology, University of Rzeszów

Abstract: The paper discusses the results of the first season of research undertaken to establish and document the architectural stratification of the residential quarter in Jiyeh (ancient Porphyreon). The research was started on a separate complex of 14 rooms. Three phases of building development in the late Roman and early Byzantine periods were distinguished. Evidence was found of the division of this complex into three houses. Remains of stairways identified in two of the houses proved the existence of double-storey buildings. In the northern house of the complex, the layout of recesses and corbels preserved in the walls suggests the presence of a wooden gallery, communicating at ground level with rooms on the upper floor. This paper presents also some preliminary remarks on the functional division of the houses.

Keywords: late Roman/early Byzantine architecture, domestic architecture, multi-storey house, village house, Phoenicia, Lebanon, Jiyeh/Porphyreon

In 2013, research was undertaken aimed at establishing and documenting the architectural stratification of the residential quarter from the late Roman and early Byzantine periods in Jiyeh (ancient Porphyreon), seen to the flooring and street layer, successively cleared since 2008 (Waliszewski, Juchniewicz, and Gwiazda 2012; Waliszewski and Gwiazda 2013; on the earlier work done at the site, see Waliszewski et al. 2006). For the purposes of this project,

a method of documenting architectural elements was developed, enabling the collection of data of potential significance, first for a stratigraphic analysis of the quarter and second, for studies of changes of construction techniques and technologies. The premises of the method are presented in the first part of the article, while the second part is devoted to a summary of the most important conclusions resulting from a stratigraphic analysis.

DOCUMENTATION METHOD

The data-collecting method stems from principles applied earlier to site documentation. Thus, architectural elements were described by area, identified with specific rooms and sections of streets.

The descriptive documentation of each segment was divided into two stages:

1. Encloser sheets

Prepared separately for individual walls of a given area, with a separate number assigned to each wall. The sheets include basic information on a particular structure, its dimensions and the absolute height of the visible foundations and ceilings. They also contain photographs and drawings of the enclosers, on which the stratigraphic units distinguished in the wall faces have been marked. Included are phases of wall construction, plasterwork, door and window openings, recesses, stairs and other architectural elements. Unit descriptions are provided in the form of tables, supplemented when necessary with descriptions. In wall descriptions, attention was paid to elements like thickness, type of stone and dimensions, as well as the way they were worked, the mortar type based on macroscopic assessment, and also the types of stone bondwork in the wall. The sheets also present unit stratification in the form of a Harris matrix.

2. Area sheets

Sheets contain two drawings of each area, one presenting the location in relation to adjacent rooms, and the other a calibrated and oriented drawing with the marked location of distinguished units within an area.

The sheets also include a list of units with a description of their functions and the numbers of identical units allotted in neighboring areas; a description of the area, including its dimensions, a summary characterising the building and state of preservation of the walls, window and door openings, and the floors; stratigraphy of the units with the neighboring encloser areas, presented in the form of a Harris matrix; an initial analysis of the relative chronology of the units from the formation of an area within its borders, supplemented with a description of the occupational phases of a given room; and finally any comments concerning work conducted within a given area to date.

Each stratigraphic unit number consists of three elements: the area number, the encloser number and the appropriate unit number (e.g., 23.A.1). Obviously, the described documentation method may result in one stratigraphic unit having two or more numbers, if it is, for example, a partition wall shared by a couple of rooms. However, the positive aspects of this method greatly outweigh the inconvenience, as the method enables a systematic approach to research. This is of huge importance, considering the substantial size of the site and the multiple phases that it spans.

The photographic documentation, prepared for all rooms included in the research project, constitutes an important supplement to the descriptive documentation. Orthophotographic documentation has also been prepared for some selected areas.

RESULTS

The research began in the northeastern part of sector D, cleared for the first time during Roger Saidah's excavations in 1975 (Saidah 1977). Fourteen rooms, identified as 1–4, 7, 21–26, 48, 70 and 71, were located in this area, forming a separate building complex, surrounded by streets save for the southwestern side [Fig. 1]. Initial studies of this fragment of the quarter have dated the architecture to the late Roman and early Byzantine periods; the area remained in use in all likelihood through the mid-7th century. It could have encompassed a house consisting of at least nine rooms (Nos 1–4,

7, 21, 22, 70 and 71). After some time, certain door openings were blocked and the building complex was divided into two houses, with separate entrances leading into the street (Waliszewski and Gwiazda 2013: 331–332). The present stratigraphic analysis verified this idea and identified a number of development phases.

Ten areas (1, 2, 3, 21, 22, 23, 24, 25, 70 and 71) were documented in the first stage of fieldwork. Part of the documentation for rooms 4 and 7 was also prepared. The architecture within the quarter presents a fairly diversified state of preservation. The southern part, in which some



Fig. 1. Residential quarter in the northeastern part of sector D; highlighted in grey, elements included in the stratigraphic analysis of the architecture conducted in 2013 (Prepared by M. Dzik, original plan by M. Puzkarski)

remnants of walls reached a height of over 2 m, is in the best condition. In the northern part, the height of most of the walls was about 1.50 m. Walls bordering the street on the northern side were in the worst state, no more than the lowest course in some places. All the rooms had floors, including stone, lime and mosaic (plain *opus tessellatum*) flooring; some were seriously damaged by pillaging and illicit digging, very recently in some cases. All the rooms were initially plastered. Currently, the plasterwork covers from several

to over eighty per cent of the wall surfaces, though most frequently only the basecoat remains.

Over a quarter of the walls raised in the late Roman and early Byzantine periods used standing walls as a foundation [Fig. 2:A]. Fairly often they constituted part of the new structures, rising to a height of approximately 0.60 m above the level of the youngest floors. Therefore, it is possible that the regular street layout enclosing the studied area on the north, east and south was inherited from earlier

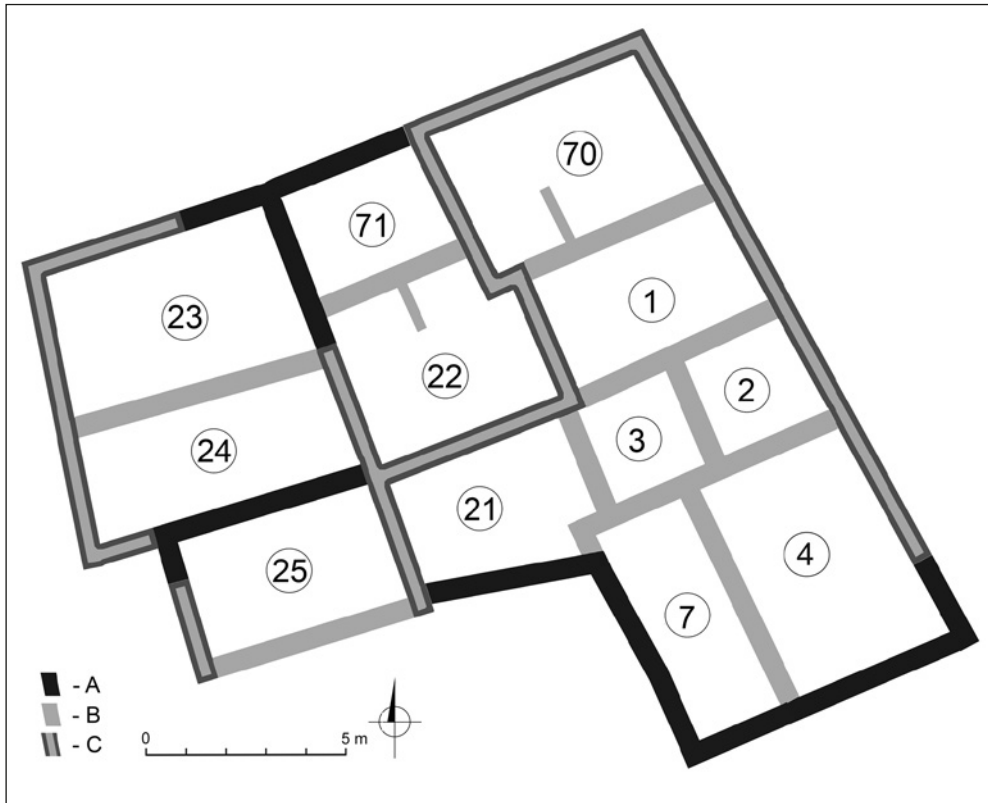


Fig. 2. Structures from the late Roman period: A – walls which are a continuation of the earlier wall layout; B – walls which are not a continuation of the previous wall layout; C – walls in the case of which their dependency (or lack thereof) on the previous wall layout was not established (Drawing M. Dzik)

phases in settlement development. Almost a third of the walls were constructed on new foundations, without any links to the earlier buildings. For a significant part of the walls it could not be determined at the present stage of research whether they were a continuation of earlier structures or not. The field of observation was very restricted owing to the presence of early Byzantine occupational levels. Almost all the wall segments were raised with the use of lime-ash or lime mortars (the only exception is one of the phases between areas 21 and 25 constructed without the use of mortar). Sand conglomerates (*ramleh*) were a common building material. Limestone ashlar were also used sporadically in the walls. The presence of more or less numerous reused stone blocks was evidenced for all of the walls from this period. They originated most frequently from dismantled structures, as indicated by the remains of plasterwork, visible on the internal surfaces of the blocks. These also included stones taken from other structures, such as an oil press, for example, elements of which were noted in the north wall of areas 4 and 7. The thickness of bearing walls from this period ranged between 0.38 m and 0.48 m, most often 0.40 m to 0.44 m. Values below 0.41 m were ascertained only for partition walls. Wall thickness higher than the standard in some cases seems to have been a consequence of these walls being adapted to the size of reused blocks originating from older dismantled structures. In the case of almost all the walls enclosing the examined rooms, the bond consisted of single bull header ashlar tying the wall transversely, separated by segments made of bull stretcher blocks or, much more often, irregularly laid stones [Figs 3, 4]. The described bond

was not a strictly observed rule in any of the walls.

The residential area in question was not constructed at one specific time, but was rather built as a result of a few larger building investment projects, supplemented by numerous smaller undertakings. This is well illustrated by the situation observed on the western fringes of areas 22 and 71 [Fig. 5]. It is possible to observe three phases of alterations introduced over time in the studied period, corresponding to the main development stages of the complex. In the first and oldest stage, at least part of the wall was raised on top of a set of walls which had been constructed in the Hellenistic period or even earlier (their face was revealed in 2012, in a trial trench excavated in area 23). The layout of buildings from the first phase has yet to be examined in detail. The south wall of area 22 was certainly in existence at the time, as was the north wall of area 71 with an exit leading into the street. However, there was no wall separating areas 22 and 71, while the course of the east enclosing wall of the room which functioned in this spot remains unknown

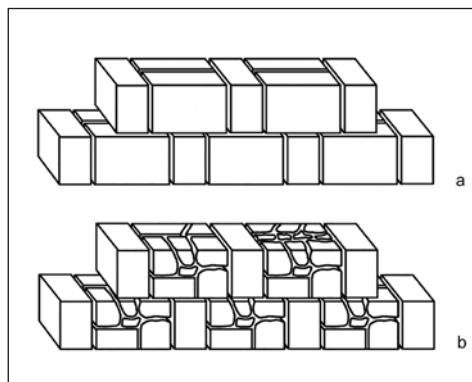


Fig. 3. Wall bonds most frequently encountered in the complex (Drawing M. Dzik)



*Fig. 4. Examples of wall bonds: top, south wall of area 25; bottom, east wall of area 22
(Photos M. Dzik)*

at the current stage of research. At the time, a door opening was situated at the southern edge of the west wall [Fig. 5:a]. The door jamb preserved on the southern side and the threshold (or its base), consisting of four blocks laid vertically in a bull header course, make up the remains of this door opening. The threshold

permitted the width of the opening to be established at 0.65 m. Another doorway existed in all probability in the middle part of this wall. This was indicated by two features: 1) an analogical layout of stones in the suspected threshold of the first opening, and 2) the presence of a doorway in this spot in subsequent

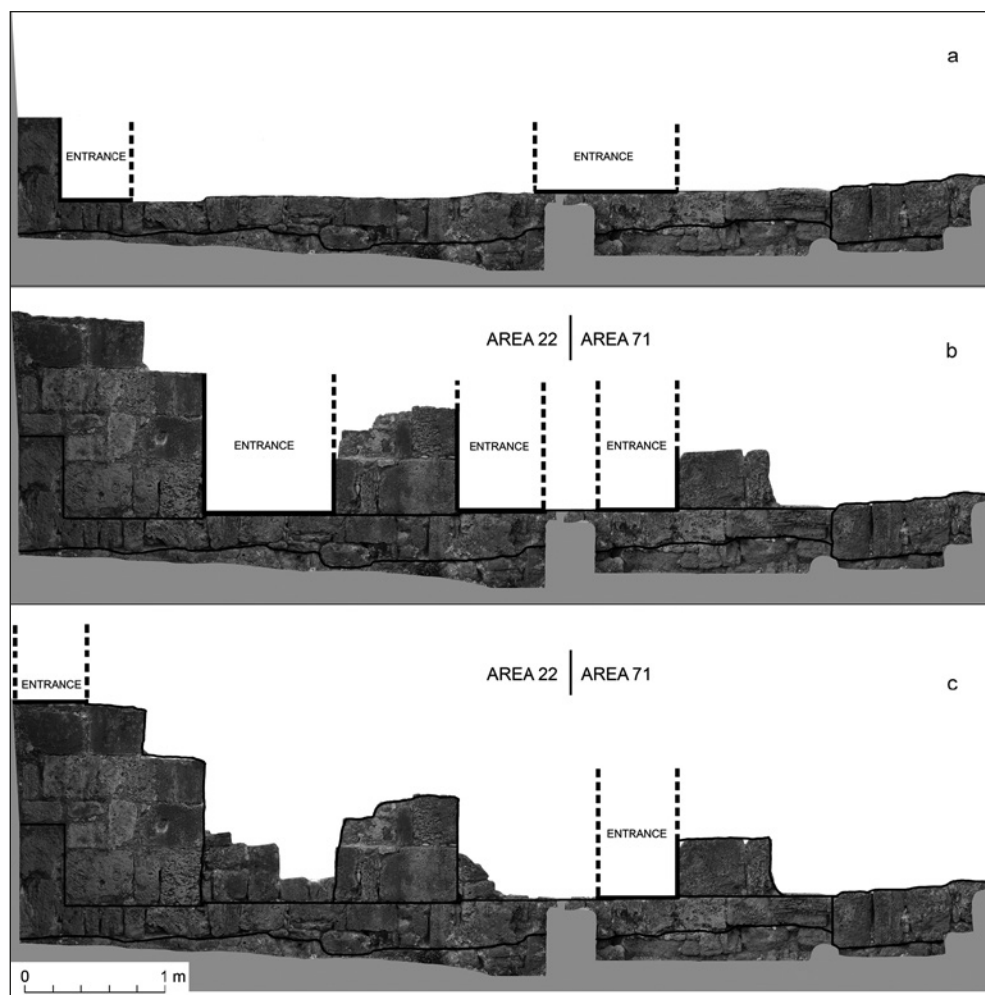


Fig. 5. West wall of areas 22 and 71; remains of walls and layout of door openings: a – first phase; b – second phase and beginning of third; c – introduced in the course of the third phase (Prepared by M. Dzik, original orthophoto R. Solecki)

phases. The reconstructed width of the second opening was 1.07 m. Both doorways most probably led to further rooms inside, which did not have to be enclosed analogically, as in the case of the layout of the later rooms 23 and 24. For the purposes of this article, they have been designated as 23a and 24a.

The second phase was marked by a thorough reconstruction [Fig. 6]. The walls enclosing the later rooms 22 and 71 were almost completely dismantled. Only the lowest courses remained, to the level of the door sills, with the southeastern and southwestern corners of area 22 left untouched. Additionally, the north wall of area 71 was probably not dismantled, which is however difficult to determine

due to its state of preservation. This is also the period when enclosers between rooms 22 and 71 were constructed, as well as the currently seen walls that enclose the area from the south, which may have been erected in a new location. However, such a significant reconstruction does not mean that the spatial organization of the area was completely modified. New walls were erected in place of the previous ones on the northern, western and southern sides. A doorway leading from area 71 into the street was also situated in exactly the same spot as before. In all probability, rooms 23a and 24a continued to exist, which is suggested by the location of the door openings in the west wall of areas 22 and 71 [Fig. 5:b]. Admittedly, the layout

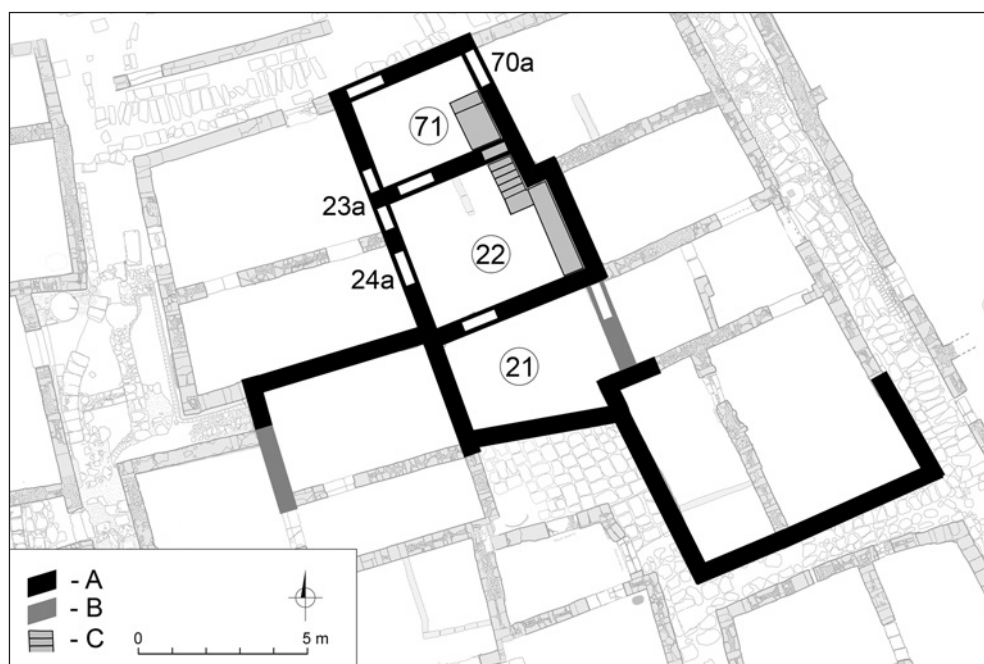


Fig. 6. Residential quarter during the second phase: A – walls constructed at the beginning of the second phase and older walls; B – walls erected during the second phase; C – staircase and gallery (Prepared by M. Dzik, original drawing M. Puzzkarski)

of these entrances was modified slightly, but the two rooms obviously did not cease to exist. As a result of the construction of a wall separating areas 22 and 71, the northern entrance between areas 71 and 23a was narrowed from 1.07 m to 0.64 m. Most probably, in an effort to retain a direct connection between areas 22 and 23a, another doorway was introduced on the other side of enclosure 22/71, which was 0.67 m wide. The door opening between rooms 22 and 24a was also moved and widened to 1.03 m.

In the second phase, a door opening in the east wall of area 71 probably already existed, leading to another internal room, provisionally identified as 70a. However, the layout of the rooms from that period situated to the east of areas 22 and 71 has yet to be established in a separate test trench in the area. The entrance in the south wall of area 22 led into a room which for an indefinite period of time was a partly open space or enclosed by walls made of perishable organic material. This is indicated by two building events, executed sometime after the construction work from the beginning of the second phase was completed. The first was the masonry work done on the east wall of area 21, as well as the simultaneous raised height or reconstruction of the south wall. The other modification introduced at that time consisted of raising the height of the west wall, carried out unusually for this period without the use of mortar. Some time later, the passageway between areas 22 and 21 was blocked; however, it is

unknown whether this was done during the second or third phase.

During the second phase a stone platform was erected in room 71 [Figs 7, 8].¹ It was part of a staircase leading to a higher level in room 22, most probably onto a wooden gallery. This structural element has been reconstructed from the layout of recesses and corbels of stone and mortar, found in walls enclosing room 22 on the east and south. This structure was located at a height of about 1.85 m above the youngest floor. It can be presumed that there was a passageway (or passageways) from the gallery to a higher utility level, to the east or south of area 22. Yet another wooden structure was located in the southeastern part of area 21. The observed layout of the recesses suggests the presence of wooden joists for a raised platform situated at a height of about 1.60 m above the youngest floor. It is uncertain in the present stage of research whether it performed the role of a connecting passageway. There are some circumstances to indicate that up until the overbuilding of the south wall of room 21, it might have led into area 20.

The beginning of the third phase of the building, of which rooms 22 and 71 constituted the axis, was marked by a large investment project involving the reconstruction and at points, construction from the foundation up, of a wall establishing the external limits of the building complex [Fig. 9]. Simultaneously, walls were raised enclosing areas 1 and 24 from the south. It is worth noting that the

¹ The object was documented photographically in 2008. In 2010, it was destroyed as a result of illicit digging and pillaging. The dimensions, stratigraphic relations and function of the platform were reconstructed in 2013 based on archival documentation, preserved fragments of the base and layout of the plasterwork and mortar on adjacent walls in area 71. The conclusions reached became the basis for determining the function of corresponding platforms, located in a few other rooms on site.



Fig. 7. Area 71 in 2008: top view with a stone platform, part of the staircase, in the bottom right corner (Photo M. Bogacki)

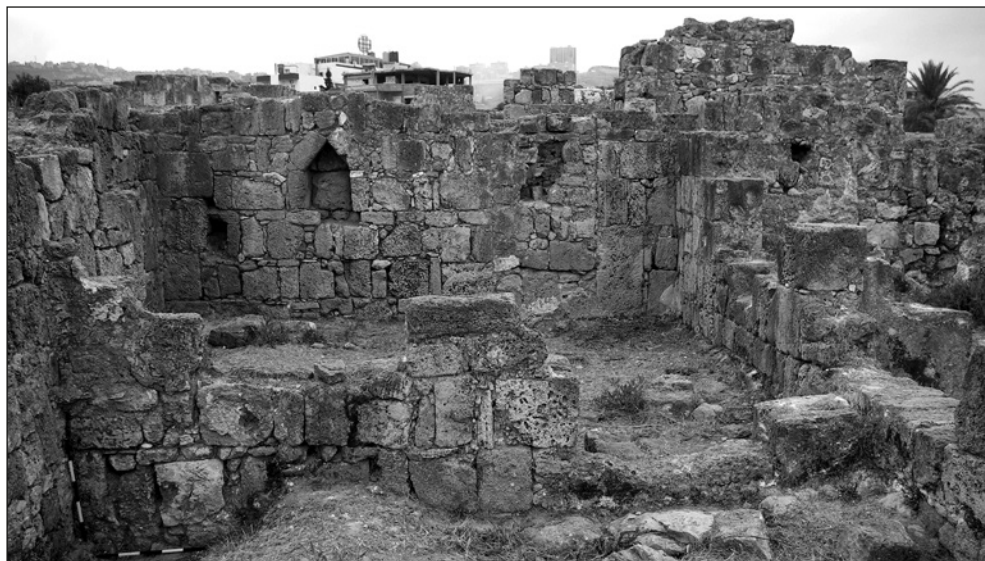


Fig. 8. View from area 71 southward in 2013: at bottom left, space left by a stone platform destroyed in 2010; in the background, the south wall of area 22 with a pentagonal niche (Photo M. Dzik)

partition walls between areas 1 and 70, 23 and 24, and 2/3/4/7 were constructed only after some time had passed. It is possible that these spaces were initially separated by walls made of organic material, which were replaced over time with masonry. The high number of entranceways leading in from the street should also be taken into account. Along with the reconstruction of the wall enclosing the complex, entranceways were introduced in the west wall of area 24, the south wall of area 23 (a second entrance, from the west, was later added) and the east wall of area 4. The entrance to area 71 remained intact, but the entrance to area 2 might also have been introduced at this time. At least one external door

opening, to area 24, was used probably only for a short period. It was blocked no later than when the masonry wall separating rooms 23 and 24 was introduced. While the question concerning reasons behind the introduction of several external doorways must be left unanswered, it might be suggested that the aim was to have separate entrances to utility rooms or perhaps the rooms inside were used by different owners, or finally, that some of the rooms might have performed functions unconnected directly to the house function (e.g., trade or rental purposes).

Extensive construction took place in the complex during the period considered as phase three. Aside from the building of

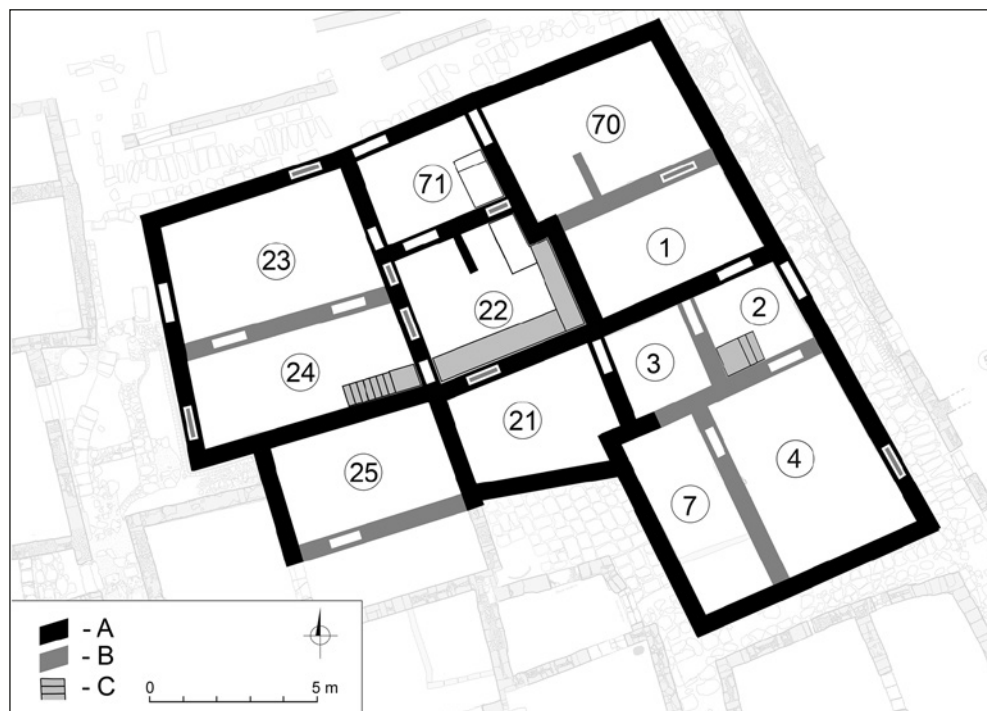


Fig. 9. *Third-phase buildings: A – walls erected at the beginning of the third phase and older walls; B – walls constructed during the third phase; C – staircase and gallery*
(Prepared by M. Dzik, original drawing M. Puzkarski)

partition walls and the blocking and introduction of doorways, in each of the rooms work was conducted on making of the floors and plastering of the walls. Traces have been found of installing connecting routes on higher levels of communication. Along with the separation of rooms 2 and 3, a staircase was constructed in the former room, analogous to the one located in area 71. In rooms 1 and 70, various architectural elements were documented in the wall bordering area 22: niches in walls and corbels made of stone and mortar, visible in three corners, possibly constituting the remains of a wooden structure connecting these rooms to the gallery in room 22. The gallery changed its course. An analysis of the form and layout of the recesses and of the traces of plaster suggested that the gallery was made longer to reach room 24, where in all probability a wooden staircase was located leading down to the ground floor [Figs 5:c, 9]. The blocking of the door opening leading to the staircase in room 71 must have been a significant modification, which influenced the solution chosen for the layout of the gallery. The question should be asked whether this led to the complete closing of access to the gallery from this part of the building or whether perhaps a new higher structure was introduced there, with a form that currently eludes us. The surviving raised stone platform in area 71 provides support for the second variant. However, it might have performed another function following the modifications, while the staircase may have been closed down completely in room 22. Theoretically, it is also possible that for a certain period the gallery was accessible exclusively from the ground floor through room 24.

For the reconstruction of the layout of the phase-three residential area two observations are of the highest significance. First of all, despite the existence of an external entrance to area 23, connecting routes were maintained between this space and rooms 22 and 71 (the blockage of the passageway between areas 22 and 23 was introduced much later). Secondly, the blocked passageway between areas 22 and 24 did not necessarily signify that they ceased to be linked [see Fig. 9]. The first of these observations leads to the conclusion that the presence of a number of external door openings is not univocal evidence for a division of the building into smaller households. In the case of the second observation, it suggests caution should be taken in making conclusions concerning the lack of a connecting passageway between rooms when there is no doorway between them. This of course applies to a situation when the enclosing walls have not been preserved to a degree allowing for the exclusion of the existence of connecting routes on a higher level.

The scope of building work introduced at the beginning of the third phase is crucial for any attempt at reconstructing spatial divisions. Only the outer walls of the complex bordering on the streets were modified along with the south walls of areas 1 and 24. This allows for the hypothesis that during this period only the external walls of the house were rebuilt. If so, separate households should have been located to the south of areas 1 and 24. Two facts serve as confirmation of this hypothesis. First of all, no traces have been found which would allow us to presume the existence of a connection between room 25 and areas 24 and 21. However, it is certain that they were in no way linked to areas

26 and 48, of which the latter performed the function of a hallway or vestibule leading out into the street. Secondly, the spatial division that was formed during the third phase in the southeastern part of the complex corresponds to the one functioning in the northern part and indicates the existence of a separate house here. In this case, the role of a vestibule was performed by room 2, which, analogically to area 71, contained a stone floor and a staircase, leading to a higher level of occupation. Therefore, the layout of rooms 25/26/48, as well as of 2/3/4/7, confirms this hypothesis.

Some doubts may arise in connection to the presented division due to the presence of a door opening in the wall separating rooms 1 and 2. However, this passageway came into existence at the same time and most probably for analogous reasons

as the external entrances to rooms 23 and 24. These entrances, as emphasized above, remained linked to areas 71 and 22, and there seems to be no reason to claim that they constituted separate households. Another aspect which supports considering room 1 as part of the northern house is the fact that during the construction of the wall separating it from room 70 (linked to area 71), a doorway was retained between them. Admittedly, it was later quickly blocked, perhaps even in the course of the same investment and definitely before the laying of the floors and plastering. However, certain premises exist which suggest the existence of a connection between the rooms through a higher level of use (see the comments above on the presence of niches and so-called corbels in areas 1 and 70).

CONCLUSIONS

Despite obvious connections between the first and second phases, observable in the layout of the rooms and the course of the passageways between the rooms, there is no certainty that in both periods the buildings performed analogous functions. In addition, the observations made so far, resulting from the analysis of wall stratification, do not provide answers to the question of whether there was settlement continuity between the phases. The partial reconstruction of the earlier room layout at the beginning of the second phase might have been the result of the use of the best-preserved wall segments from the previously existing structure.

For the second phase, the results of the stratigraphic analysis conducted so far allow certain conclusions to be put forward

in reference to the structures in the northern part of the discussed complex. It seems that at the time a residential building was situated in this spot. Room 71 performed the function of a hallway or vestibule, from which two entrances led into rooms 23a and 70a. Opposite the external door, there was an entrance into area 22, whereas next to it a staircase was located leading onto the gallery situated along the east wall of this room. The presence of such a structure allows for the interpretation of this part of the building as constituting a type of atrium or second vestibule. On the ground floor level, separate entrances ran from this room to the internal rooms 23a and 24a, as well as to area 21, which initially might have been an open room. A higher level may have

been accessible from the gallery, to the east or south of area 22. The total size of this building is impossible to determine at the current stage of our research.

At least from the beginning of the third phase, there were three buildings in operation in the studied area: a northern building (areas 1, 22, 23, 24, 70 and 71), a southeastern one (areas 2, 3, 4, 7, 21) and the smallest southwestern building (areas 25, 26, 48). On the ground floor level, their occupational surface amounted to approximately 109 m², 65 m² and 42 m², respectively. In the first of these buildings, the observed continuity in the usage of rooms 22 and 71, as well as the maintaining of the link with neighboring internal rooms, including the gallery, indicate that the reconstruction in the third phase was conducted on a building which was in continuous use. Taking into account the scope of the investment marking the beginning of this phase, a question should be posed as to whether this constitutes a trace of a much larger construction enterprise, aimed at modifying the organization of the buildings in this part of the settlement. Such a possibility is suggested by the simultaneous enclosure of at least two households with a new wall and the fact that only the external walls were encompassed by this investment.

In all probability, all three buildings within the analysed quarter were residential houses; however, in the case of the largest one, the presence of separate external entrances leading into some of the rooms suggests the possibility that it also performed other additional functions. Despite the diversified sizes and number of internal rooms, all the houses had a similar spatial organization [*Fig. 10*]. The core consisted of three rooms: 71 → 70 → 1;

71 → 23 → 24; 2 → 4 → 7, 2 → 3 → 21, as well as 48 → 26 → 25. In each case, the series of rooms opens with an area with an entrance leading from the street and with a paved floor, after which a room with a limestone floor ensues, and finally a room with a mosaic floor (northern and southwestern houses) or a limestone floor (southeastern house). It is possible on this basis to reconstruct further the functional division within this layout: vestibule → cooking and living area → sleeping area; however the designation of the latter two elements is highly hypothetical. In the northern house, this system was enlarged to include a second vestibule (or atrium). In at least two of the buildings, staircases leading to the higher level of use were also present, which in the northern house most probably also served as a means of connecting rooms located on the ground floor. As already mentioned, in this building, the two vestibules and a gallery were elements which had existed at least from the second phase. Until the excavation work is extended to include a wider area, the question remains open as to whether the established principle for the organization of the rooms was also a continuation of the layout from previous periods.

Research into the architecture of the Roman and Byzantine periods in the discussed residential quarter has yet to be completed. Documentation for areas 4 and 7, as well as preparation of documentation for areas 20, 26 and 48 is planned for upcoming seasons. The answers to some of the questions concerning the spatial organization in particular phases will be determined as an outcome of correlating the results of these analyses with the effects of the excavations conducted since 2012 in areas 4 and 23.

An absolute chronology of the distinguished phases remains an open issue. A basis for conclusions will derive from the dating of wall inclusions, such as coins found in the wall plasters, as well as pottery, and also charcoal which is present in relatively high amounts in the ash mortars. It is already possible to establish the *terminus a quo* for the beginning of the third phase as the second half of the 4th century AD on the basis of the analysis of ceramic material from the walls, which has been conducted by Dr. Urszula Wicenciak from the Polish Centre of Mediterranean

Archaeology, University of Warsaw. Other construction work might have been undertaken at a much later point in time, as evidenced, for example, by the presence of vessel fragments from the turn of the 6th and 7th centuries AD in the youngest layer of plaster in room 24. Simultaneously to the research conducted on the chronology, other studies are being undertaken to gather information aimed at establishing the methods used for construction work at the time. For this purpose, archeobotanical analyses of samples have already been conducted by Assoc. Prof. Monika

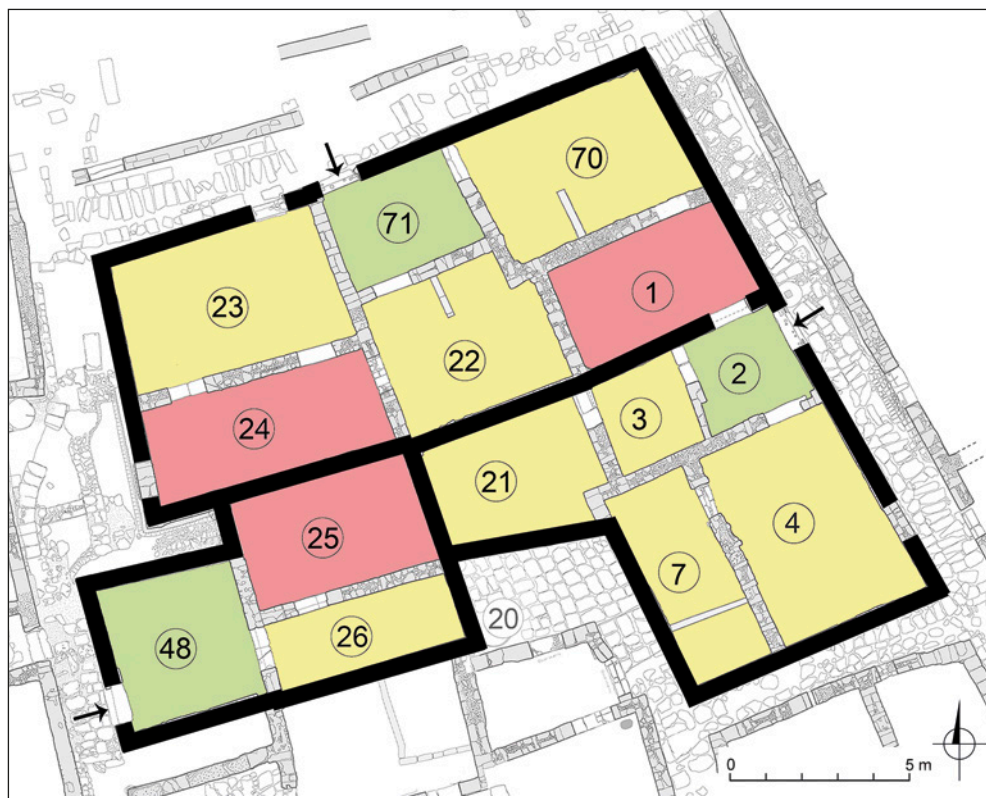


Fig. 10. A reconstruction of the division of the residential building complex, with the layout of the paved (in green), limestone (in yellow) and mosaic (in red) floors marked. The arrows indicate the main entrances to the buildings (Prepared by M. Dzik, original drawing M. Puszkarski)

Badura from Gdańsk University. Subsequently, plans are also in place to execute petrographic and chemical analyses of the mortar and plastering from the walls. When linked with the findings concerning the relative chronology of these elements in individual rooms and buildings, this research will be potentially significant for establishing the techniques and technology

used in late Roman and early Byzantine building construction.

ACKNOWLEDGMENTS

Marcin Romaniuk participated in the preparation of the documentation and in part of the field research. Szymon Modzelewski, M.A., also participated in the fieldwork.

Dr. Michał Dzik

Institute of Archaeology, University of Rzeszów
35-015 Rzeszów, Poland, ul. Moniuszki 10
mdzik@ur.edu.pl

REFERENCES

- Saidah, R. (1977). Porphyreón du Liban: une Pompéi byzantine enfouie sous le sable. *Archéologia*, 104, 38–43.
- Waliszewski, T., and Gwiazda, M. (2013). Preliminary report on the 2010 excavation season at Jiyeh (Porphyreon). *PAM*, 22, 321–333.
- Waliszewski, T., Juchniewicz, K., and Gwiazda, M. (2012). Preliminary report on the 2008 and 2009 excavation seasons at Jiyeh (Porphyreon). *PAM*, 21, 423–445.
- Waliszewski, T., Wicenciak, U., El-Tayeb, M., Domzalski, K., Witecka, A., Wagner, M., Herbich, T., Nouredine, I., Woźniak, M., Kotlewski, K., and Żukowski, R. (2006). Jiyeh (Porphyreon). Hellenistic, Roman and Byzantine settlement on the southern coast of Lebanon. Preliminary report on the 1997 and 2003–2005 seasons. *BAAL*, 10, 5–80.