

THE MAIN PUBLIC BUILDINGS OF DOCLEA: ARCHIVAL, ARCHAEOLOGICAL AND ARCHITECTURAL RESEARCH

1. STATUS OF DOCUMENTATION AND METHODOLOGICAL ISSUES

In over 128 years from the beginning of systematic archaeological explorations of Doclea only slightly more than 20% of the city total area (25 ha) has been excavated. Furthermore, the main buildings are in a poor state of conservation and maintain very few traces of the floor and wall decoration. Not even one building has been precisely dated. Moreover, almost no architectural fragment remains *in situ*. The main architectural elements recovered in the central area of the city were positioned in the *forum*, without reference to their provenience (JOVIĆEVIĆ 2010). This location and other nearby areas accommodate just over 200 such fragments, which make a reconstruction of the main buildings considerably more difficult.

Moreover, a large number of architectural fragments were taken away from the site, destroyed or built into surrounding private houses. Due to the insufficient attention paid to the situation by State institutions and to the consequent devastation wreaked on Doclea, the site nowadays is poorer than it was back in the late 19th and the early 20th centuries. For that reason, it was of fundamental importance to find documents in the archives and museums in Austria, France, Italy, Great Britain, Russia, the Czech Republic, Serbia, Croatia and Montenegro (KOPRIVICA 2013, 1-3). These researches were aimed at finding the documents of the earlier explorers of Doclea, as well as documentary photographs that – probably due to the earlier focuses of primary interest – did not find a place in their published works (Fig. 1). Inevitably, the documentation of the archaeological exploration of Doclea, carried out under different methods, is not of a homogeneous quality: it is imprecise for the most part and very often preserved without any photographic documentation and sketches.

From an archaeological perspective, first there was carried out a bibliographical research. It was thus possible to observe that until now and in all the main works concerning Doclea, the building typologies (*forum*, *basilica*, temples, baths, *domus*) have been analysed in a generic way, mainly by simply comparing their plans with others. However, and especially in the absence of excavation data, an analysis of the existing structures must combine archaeological and architectural methods, according to the most modern theories of the so-called archaeology of architecture, if one wishes to appreciate the Roman buildings of the city. Thus we employ archaeological methodology to

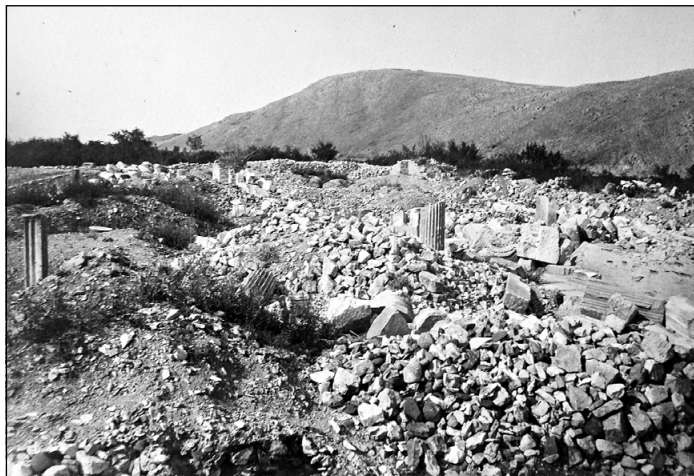


Fig. 1 – Doclea, *forum* and *basilica* (photo by Josef Wüncch, 1890, Archaeological Museum, Split).

investigate the history of the monuments and their architectural evolution over time, analysing the structural features that mark the different building phases.

We started by applying these methods of analysis to the monuments in the *forum* area and in the main *thermae*, where we collected a series of data that we are now processing. We are also documenting, classifying and studying the architectural elements scattered across the site, trying to work out their locations and functions, with the ultimate goal of producing a 3D reconstruction of the main buildings.

T.K., C.S.

2. THE PUBLIC BUILDINGS OF DOCLEA IN THE CONTEXT OF ROMAN ARCHITECTURE: A GENERAL OVERVIEW

The appearance of Roman-type buildings is generally considered evidence of the ‘Romanization’ process. Although this concept is widely discussed today (REVELL 2014), it cannot be denied that the Roman presence in a territory is recognized nowadays above all by the architecture: the different buildings represent a precise style of life and of political-social organization, which was adopted by local communities from the age of Augustus onwards, with some regional characteristics. A Roman city is characterized by its administrative and cult buildings, by hydraulic, hygienic and commercial structures, and by entertainment buildings (MACDONALD 1965; WARD-PERKINS 1974; GROS 1996; ULRICH, QUENEMOEN 2014; MARCONI 2015). In Doclea, the last

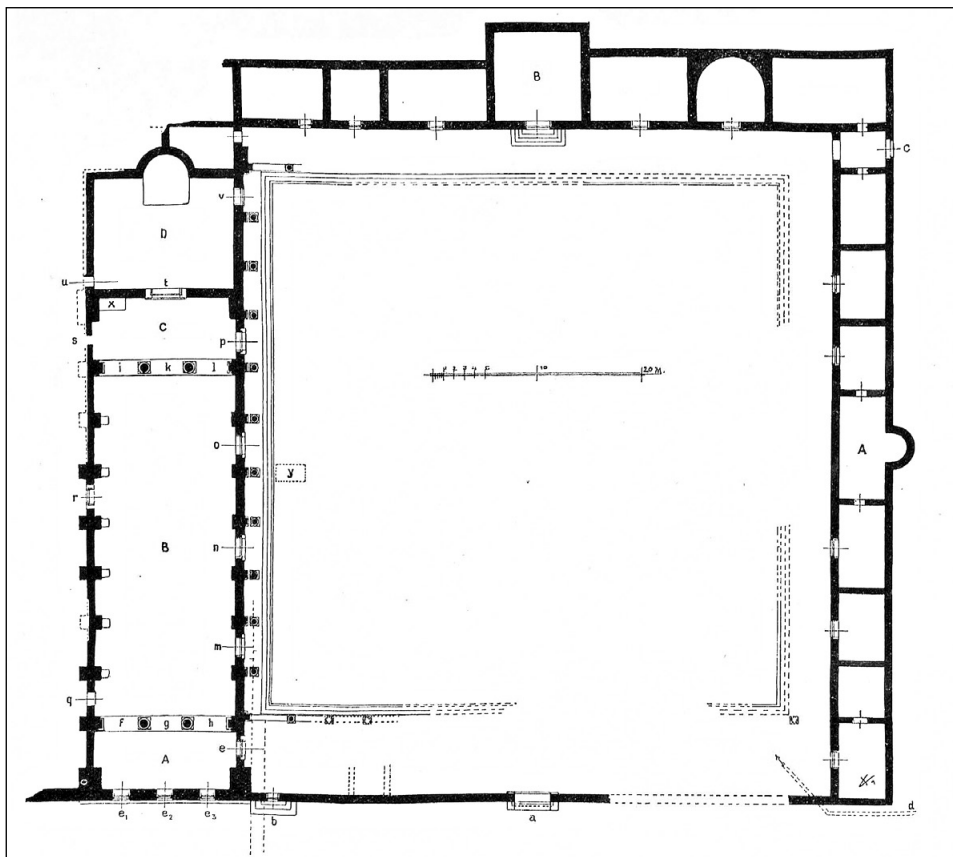


Fig. 2 – Doclea, plan of the *forum* (after STICOTTI 1913, fig. 57).

group have not been identified so far, but they certainly had to exist somewhere (DRAŠKOVIĆ 2013). It is of great value to analyse the main buildings of Doclea as an expression of a typically Roman architectural culture, but keeping in mind the possibility of identifying local or regional characters or features referring to this specific area of the Empire. To be complete, such a type of analysis would have to take into account the archival data and the elements arising from the direct archaeological and architectural analysis of the structures. In this phase of our research, however, we present the results of a bibliographical survey, on which the subsequent observations will be based.

The main excavated buildings of Doclea are located in the western sector of the city, along the WE road identified as the *decumanus* (Plate 2). On the S side of the road there are the so-called temple of the goddess Roma, a



Fig. 3 – Doclea, *basilica* and *forum* (March 2017).

private house, the so-called temple of Diana, a large thermal complex and a smaller bath-system. On the N side, there are the *forum* with the *basilica*, and another temple, identified as the *Capitolium*.

Our analysis starts with the *forum*, the most representative monumental complex of a Roman city (GROS 1996, 207-234). Doclea's *forum* is a large paved area (Fig. 2), which is square in shape and surrounded by porticoes and buildings (total area 59×75 m), except on the S side, where the main street passed (WILKES 1969, 371; STICOTTI 2013, 106-138). The *forum* was dedicated by M. Flavius Fronto and his wife Flavia Tertulla, in memory of their son M. Flavius Balbinus, as indicated in an inscription; according to another inscription – now lost – the Doclean *municipium* council erected an equestrian statue of the young M. F. Balbinus. In Sticotti's opinion, the statue might have been located in front of the *basilica*'s eastern facade, immediately beside the stairway; a pedestal there was covered by inscriptions referring to the boy and reiterating a more detailed text than that inscribed in the architrave on the *basilica* (STICOTTI 1913, 133-135; STEVOVIĆ 2014, 37).

On the N side of the *forum* square, there are rooms of different sizes: in the middle is a *podium* 8 m square and 1.5 m high whose access steps are not preserved. A row of rooms is situated also on the E side, while on the W

there is a large *basilica*: it is divided into two parts – the larger is rectangular, 53×16 m, with pairs of columns that demarcated the nave on the two short sides, and the smaller (10×16 m) lies to the N with an apse in the northern wall (Fig. 3).

The structure of the Doclea *forum* is quite original in the architecture of the Adriatic region. The better-known *fora*, such as those of Pula, Zara and Narona, all built in the Augustan age, have a rectangular shape (RINALDI TUFI 2012, 479). Nevertheless, a slightly squarer plan is attested in some smaller towns in Dalmatia like *Asseria* and *Aequum* in the second half of the 1st century AD (WILKES 1969, 368, fig. 18). This plan could have been inspired by military architecture, where an elongated hall usually occupies one of the sides of the area (GROS 1996, 226) and in particular by the *castra* that were built in large numbers during the intense military activity of the Flavian emperors (RINALDI TUFI 2012, 479). The type of square *forum* is well attested in this period in Britain as in the case of the *forum* in Silchester (FULFORD 1993). As in the *fora* of Britain, in Doclea too we note the absence of a real temple; only the square hall on the *podium* in the middle of the N side seems to have had a special function. According to S. Rinaldi Tufi, the *forum*'s plan finds a good parallel in Rome, in the architecture of the *Templum Pacis* (MENEHINI, SANTANGELI VALENZANI 2007, in particular 61-70; GAGIOTTI 2009), although there are many differences in size and organisation.

D. Srejšović has also proposed for the *forum* of Doclea the function of a *Caesareum* or place of imperial cult (SREJŠOVIĆ 1967). Moreover, according to I. Stevović, intensive connections existed between this part of the Balkans and the eastern provinces, where quadrangular plans of *fora* are also present (STEVOVIĆ 2014, 118). In particular, the *forum* of Cyrene shows interesting similarities with that of Doclea in the shape and in the placement of the *basilica* along one of the sides (TRIFOGLI 2014). Oriental elements can also be recognized in its architectural decoration. Accordingly, this theme of connections with the East deserves to be explored further.

It is also important to understand the function of the square hall on the *podium* that occupies a prominent position within the complex. According to some scholars, it may be the *curia* (WILKES 1969, 371). P. Sticotti already observed how small it was for this function (STICOTTI 1913, 111), and Ch. Balty believes rather that it should be interpreted as the main temple of the *forum*: the room would be the *cella* itself and the width of the portico act as the *pronaos* (BALTY 1981, 380). The temple could be compared with that of the Cambodunum-Kempton *forum* of the Flavian period, being of similar proportions and structure, with a wall that protrudes from the adjacent rooms (BALTY 1981, 380). The use of the portico as *pronaos* would once again recall the architecture of the *Templum Pacis*, even if of very different proportions. Moreover, the pattern of the *Templum Pacis* enjoyed considerable success

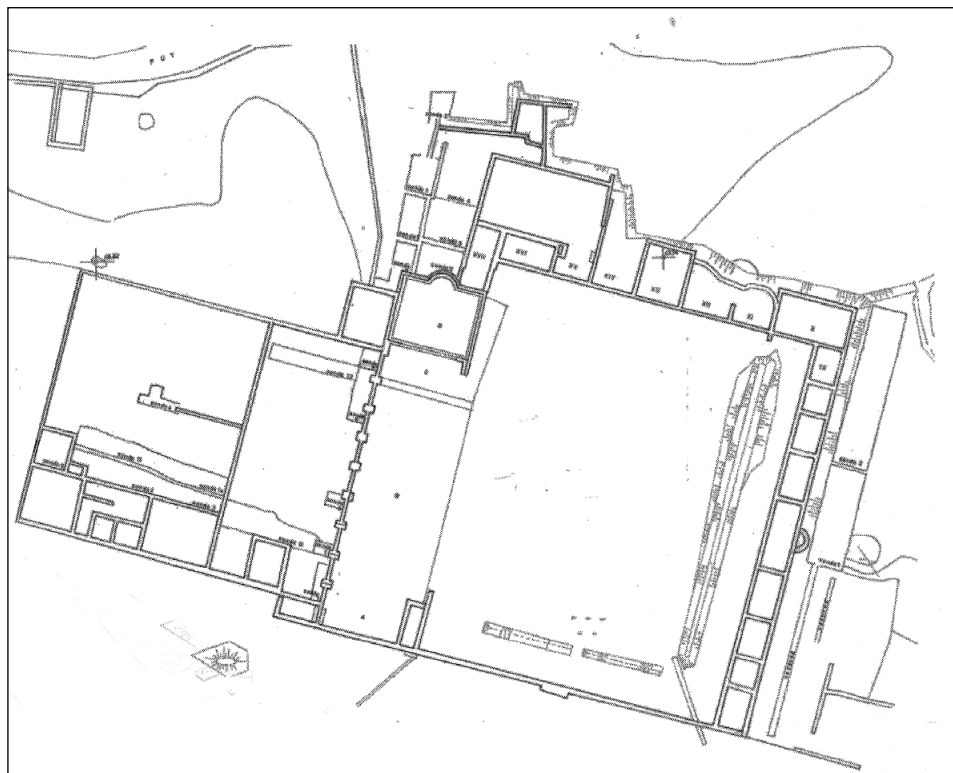


Fig. 4 – Doclea, plan of the *forum* and of the quadrangular building on the W side (Administration for the Protection of Cultural Properties, Cetinje, Doclea Excavations Documentation, 1998).

in the Roman world, for example being reflected in the provincial *forum* of Tarragona (MAR 1993). The *curia* at Doclea should rather be identified in the terminal part of the *basilica*, with its apse and originally with mosaic floors (BALTY 1981, 382). J.A.R. Munro considered that the *forum*'s eastward and northward rooms were shops, while P. Sticotti argued that they were *scholae*, *exedrae* or *tabernae* (MUNRO *et al.* 1896, 7; STICOTTI 1913, 109).

Ch. Balty dates the *basilica* in the 2nd century AD and precisely to the time of Trajan, on the basis of fragments of inscriptions (BALTY 1981, 382; STICOTTI 1913, 133-137 and 164-169). P. Sticotti noticed some similarities between the *basilica* and the peristyle of Diocletian's palace in Split (STICOTTI 1913, 121-122). According to I. Stevović, the building underwent renovations at the end of the 3rd century or the beginning of the 4th century, as did the baths as well (STEVOVIĆ 2014, 120). The analysis of the masonry structures confirms the remaking of the *basilica* and other rooms of the *forum*. The

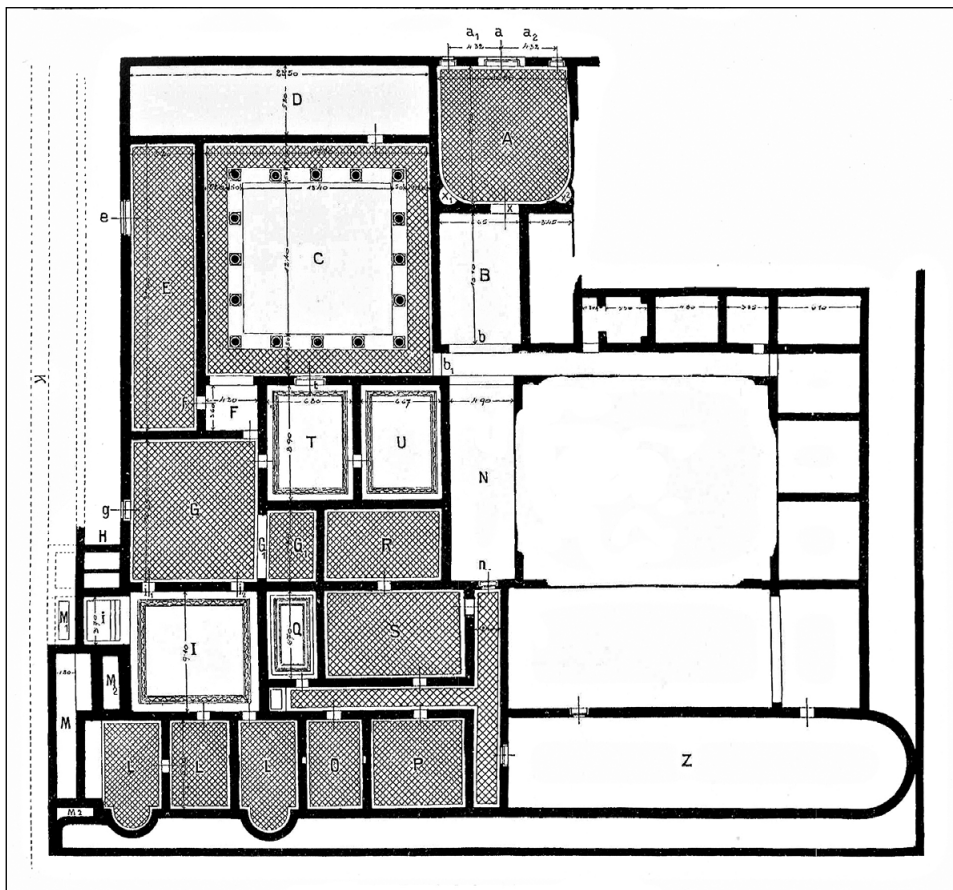


Fig. 5 – Doclea, plan of the large *thermae* (after STICOTTI 1913, fig. 52).

present study will investigate these aspects in detail in order to better understand these changes.

On the W side of the *forum*, there is a quadrangular structure, with some rooms in the S part. This is certainly built in a later phase: it could be interpreted as a market (GROS 1996, 450-464; RINALDI TUFFI 2012, 480). The excavations, however, are unpublished (Fig. 4).

In front of the *forum*, a large bath complex has been excavated (STICOTTI 1913, 98-103). This occupies an area of 3960 square meters. P. Sticotti, on the basis of the elements that the excavations revealed, but which have now quite completely disappeared, not only reconstructed the luxurious character of the baths, decorated with marble and mosaics, but also tried to identify the

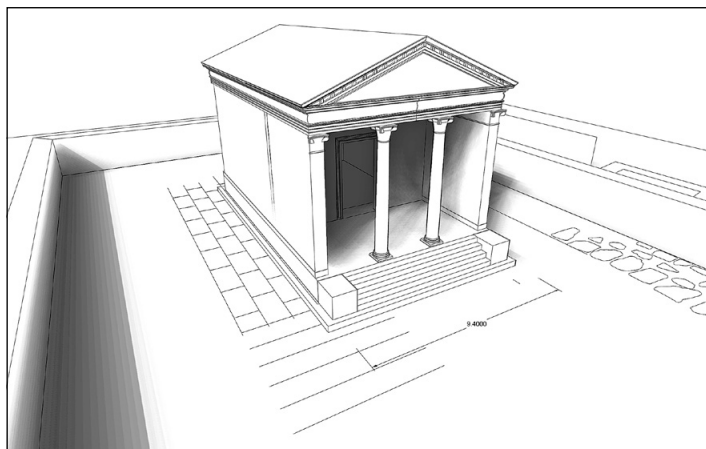


Fig. 6 – Doclea, so-called temple of the goddess Roma, hypothetical reconstruction (A. D'Eredità).

functions of the individual rooms, at least for the western part (Fig. 5). The scholar interpreted this section as that reserved for men. From a vestibule with niches in two corners, you entered a rectangular room and then a colonnaded courtyard, considered as a gym. From this courtyard, you had access to a series of rooms, among which Sticotti distinguished a *frigidarium* with a tub and some apsidal *calidaria*. Most of the rooms to the S (including the apsidal rooms) have been completely destroyed by the railway. The eastern part of the structure, less studied, could have had a similar plan, with at least a large courtyard (NIELSEN 1990, II, 41, n. 333). These baths are more elaborate and luxurious than those excavated in Salona (WILKES 1969, 381), but they do not seem to have had an axial and symmetrical arrangement, by which they could be recognized as having a so-called «imperial» plan (RINALDI TUFFI 1989, 93; 2012, 479). According to some scholars, the baths were built in the early years of the Flavian city (WILKES 1969, 379-381), but they clearly display different building phases, attested to by the overlapping of masonry structures. Research carried out in 1997-1998, but unpublished, has shown that in the *thermae* there are at least four different phases (see the following paragraph).

To the E of these structures another smaller bath complex has been identified (850 sqm). The two bath complexes were probably connected, because from the geophysical surveys the presence of structures are detected between the two buildings (see COZZOLINO, GENTILE in this volume).

On the E side of the *forum*, a temple, oriented NS, has been under excavation since 2009. It is a prostyle tetrastyle of about 8.5×15 m and was built in the central part of a sanctuary closed on the W, S and probably E sides by

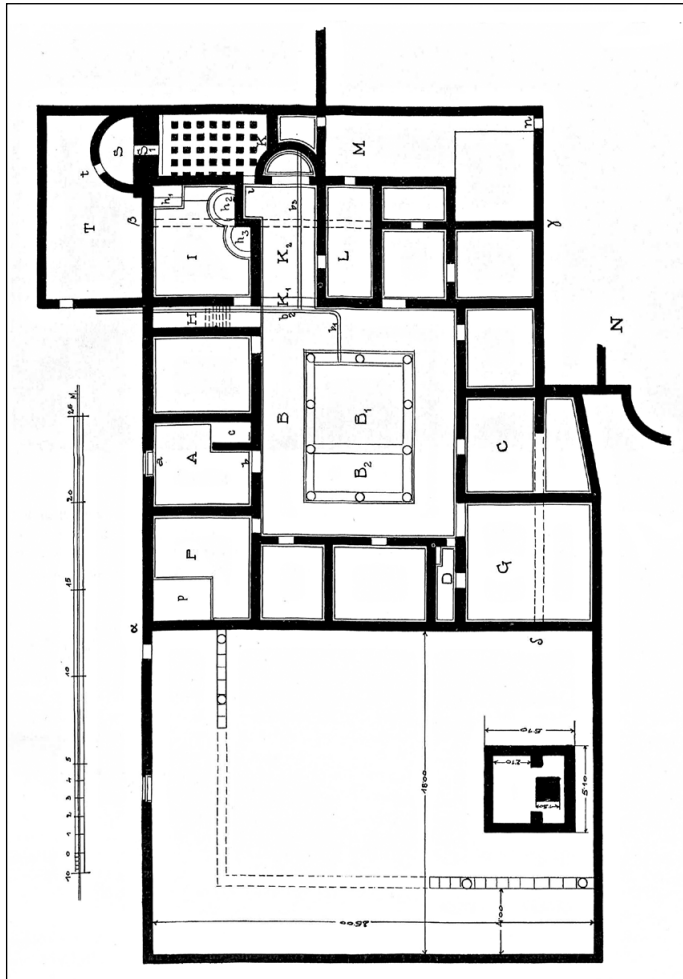


Fig. 7 – Doclea, plan of the private house (after STICOTTI 1913, fig. 37).

a set of rooms, while a porch faces onto the main street. The temple has been interpreted as the *Capitolium* of the city (BAKOVIĆ 2011), but in the other cities of the Adriatic area, these temples always face the *forum* (BAKOVIĆ 2011, 19). According to the excavation data, the construction of the temple can be set in the Flavian period, but there were several successive restorations; from the 4th century, some workshops were set up in the abandoned rooms (ŽIVANOVIĆ 2014).

Two other temples were hypothetically identified by fragments of their pedimental decorations: one depicts a bust of the goddess Roma on a clypeus and the other has a bust of Diana (STICOTTI 1913, 73-74). The first temple was prostyle in antis on a *podium* with steps in the facade (14×9.4 m); it was enclosed by a wall and faced the main road (Fig. 6). The building, the so-called temple of the goddess Roma, was probably the seat of the imperial cult (RINALDI TUFI 1989, 91). The so-called temple of Diana was very similar in plan (15×10 m) and stood within a *temenos*. Unfortunately, today the temples are almost completely destroyed. The plans follow well known models also present in the Adriatic regions, which however are usually tetrastyles on the facade (WILKES 1969, 374); but the religious buildings preserved in the *Illyricum-Dalmatia* province are not numerous (RINALDI TUFI 2012, 478).

Despite being a private house (Fig. 7), the building excavated between the two temples is of particular interest because of a little temple in its own enclosure that was incorporated into a courtyard (WILKES 1969, 375-376). Similar buildings are found inside some Pompeian houses, dating to the last phase of life of the city (BASSANI 2008, 93-98). According to J. Wilkes, «its prominent position in the city, together with the private temple, leaves no doubt that this was the residence of one of the wealthiest families, probably the *Flavii* who built the *forum*» (WILKES 1969, 376-377). The architecture of this house, however, has never been studied, although it is very interesting on grounds of the presence of the temple and a private bath.

C.S.

3. ARCHIVAL DATA FOR THE KNOWLEDGE OF THE MAIN BUILDINGS OF DOCLEA: SOME CASE-STUDIES

We will now provide some examples of how archival documentation can help to integrate the data obtained from the study of the published works and from the direct examination of the structures. In particular, we will deal with the area of the *forum* and the baths, on which we have also concentrated our archaeological and architectural analysis till now.

First of all, regarding the *basilica*, a careful reading of documents relating to previous research makes it clear that the building underwent subsequent interventions. P.A. Rovinski concluded that the *basilica*'s mosaic floor had been overlaid with marble slabs (ROVINSKI 1909, 24): the floor's two layers were indeed confirmed by the 1957 explorations (Administration for the Protection of Cultural Properties, Cetinje, Doclea Excavations Documentation 1957, 4). In the NW corner of the room C, the stone slab with inscription facing downwards was built into the second floor layer (STICOTTI 1913, 127). The 1956 Forum Exploration Report notes that underneath the *basilica* «several fragments of ornamented ceramic done in relief forms ... which

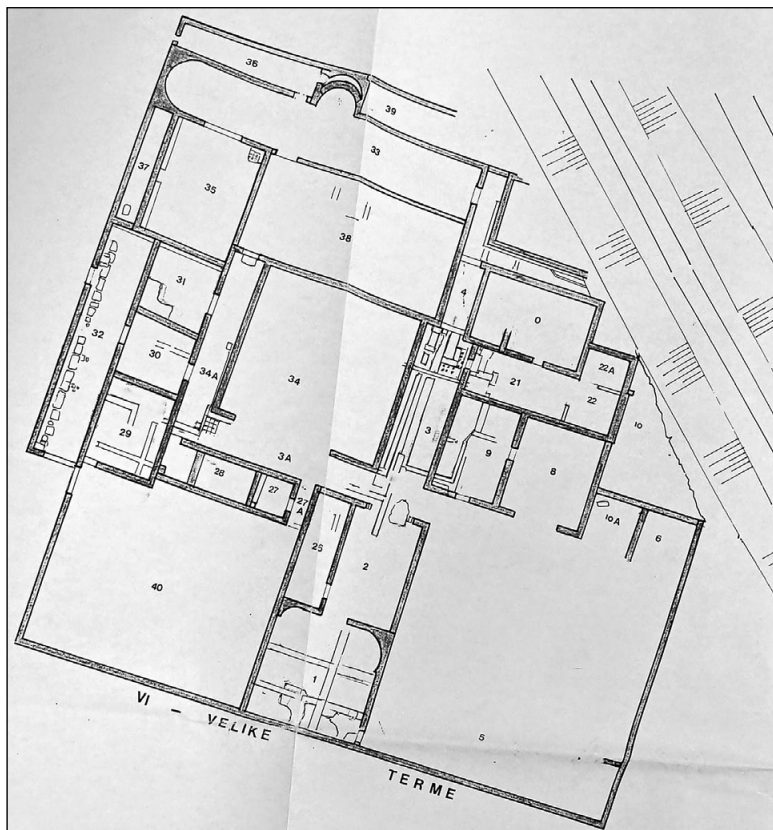


Fig. 8 – Doclea, plan of the large *thermae* (Administration for the Protection of Cultural Properties, Cetinje, Doclea Excavations Documentation, 1999).

belong to later times» have been found (Administration for the Protection of Cultural Properties, Cetinje, Doclea Excavations Documentation 1956, 5). The drawings of those fragments have not been preserved, neither we have their photos (KOPRIVICA 2016, 74).

Regarding the small rooms located in the N and S sides of the *forum* square and generally interpreted as shops or *tabernae*, Suić pointed out that these rooms did not follow a typical *tabernae* layout and that, even if they had served that purpose, their number had been small: so the question became where was Doclea's trade centre located (SUIĆ 1976, 155-156). Suić's words have been given additional strength by the SE necropolis archaeological record, demonstrating Doclea intensive economic development from the late 1st through the early 4th centuries AD.

Archival data are even more significant with regard to the baths. It is not known when the large *thermae* were constructed. Neither do we know who erected them. J.J. Wilkes considered that in the early years of the Flavian city, the *thermae* had been constructed by the members of a small group of the wealthy families of Doclea (WILKES 1969, 379-381).

The scholars place the large *thermae* to the 2nd century AD. The 1999 archaeological explorations inferred the existence of four building phases, which were not precisely dated individually nor brought into any sequential interrelationship – with the exception of some points (rooms 2 and 3, 3 and 9, 3 and 21; rooms 4B, 33 and 35) where the make-up characteristics of the floors permitted that conclusion to be drawn (Fig. 8). According to these explorations, the oldest layer is represented by the remains of the room 1 walls dated back to the 2nd century AD and the parts of the walls in rooms 3 and 9. However, the researchers do not offer sufficient data by which to derive a feasible idea of the initial structural layout. The fact that a number of the rooms of the *thermae* were demolished by the railway track construction makes the research task even more difficult. However, it is clear that the current architectural plan of the *thermae* is not from the 2nd century. According to the archaeological record so far, one cannot ascertain the date of the second and the third phases. The last construction phases have been dated to the 4th century AD, as recognized in the rooms 32, 33 and 36 (Administration for the Protection of Cultural Properties, Cetinje, Doclea Excavations Documentation 1999).

After the examination of the 1999 exploration results, it is clear why M. Suić wrote down that «the Doclea *thermae*... in their respective layout dispositions did not follow the typical Roman *therma* plan... in spite of their not reproducing the type that had already been adopted at the time of their construction» (SUIĆ 1976, 164-165). According to the contemporary body of knowledge, and while relying on Sticotti's conclusions, Suić also observed that the large *thermae* looked as if they had been formed in one construction stage. Now there is a clearer reason why the large *thermae* and the communication design between rooms does not mirror the typical architectural structure of Roman *thermae*.

The *Inventarna Knjiga (Inventory Log)* that was kept during the 1999 explorations reveals that the major finds were found in rooms 29, 30, 31 and 32 (coins, ceramic fragments, plates, *terra sigillata*, pots, and alike), which leads to the hypothesis that, at some stage, shops, i.e. *tabernae*, might have been located there (KOPRIVICA 2016, 119-120). The form of room 31, like the letter L, resembles the *tabernae* in Pompeii and Ostia. There are many known Roman *thermae* designs that included a row of shops. The Baths of Caracalla on its N terrace housed shops (YEGÜL 1992, 46).

D. Srejić and Č. Marković consider that it is likely that the small *thermae*, excavated in 1962 (Fig. 9), had once been an integral part of a single

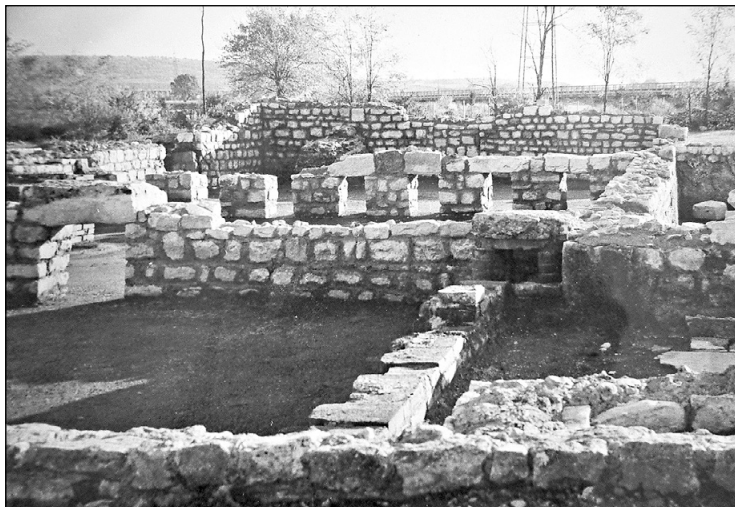


Fig. 9 – Doclea, small *thermae* (Administration for the Protection of Cultural Properties, Cetinje, Doclea Excavations Documentation, 1962).

complex with the large *thermae* and that, later, they were detached. The small *thermae* were – after being partitioned twice – used as a stand-alone building; they lasted longer than the large *thermae*, right until the 5th century AD (SREJOVIĆ 1968, 93; MARKOVIĆ 2006, 355).

T.K.

4. RECORDING METHODS AND USE OF 3D RECONSTRUCTION

Every study of ancient buildings in an urban context involves the analysis of the terrain in which they are embedded. Aero-photogrammetry is currently one of the most reliable, rapid and efficient methods for data acquisition and analysis. Photos taken from an automatic pilot system (UAV, Unmanned Aerial Vehicle, aka drone) and the subsequent process of data detection and rectification permit the generation of three-dimensional images, metrically reliable and usable as a descriptive base for the life-cycle analysis of the built environment. In Doclea, two methods of data acquisition have been used, particularly focused on the structures:

- 1) The topographical survey, performed with the total station and a differential GPS, of the main points located along the perimeter of all the emerging architectural structures to ensure a geometric consistency;
- 2) The mapping of the structures with high-resolution photographs obtained by a drone, reconstructed and rectified by softwares dedicated to the production

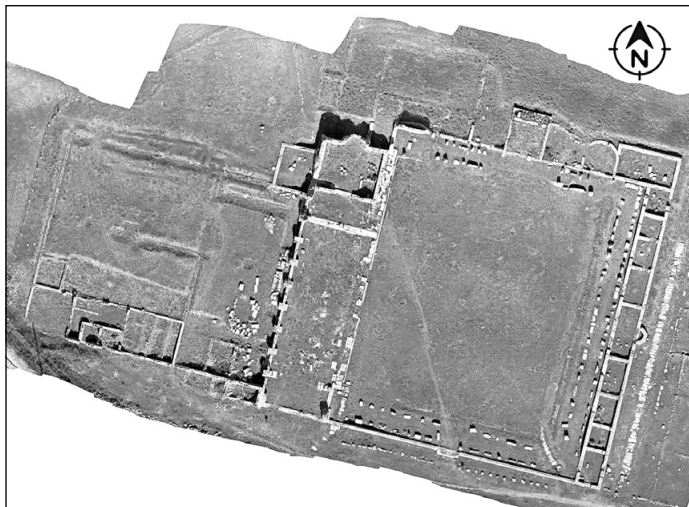


Fig. 10 – Doclea, *forum* orthophoto by drone (2017, A. D'Eredità).

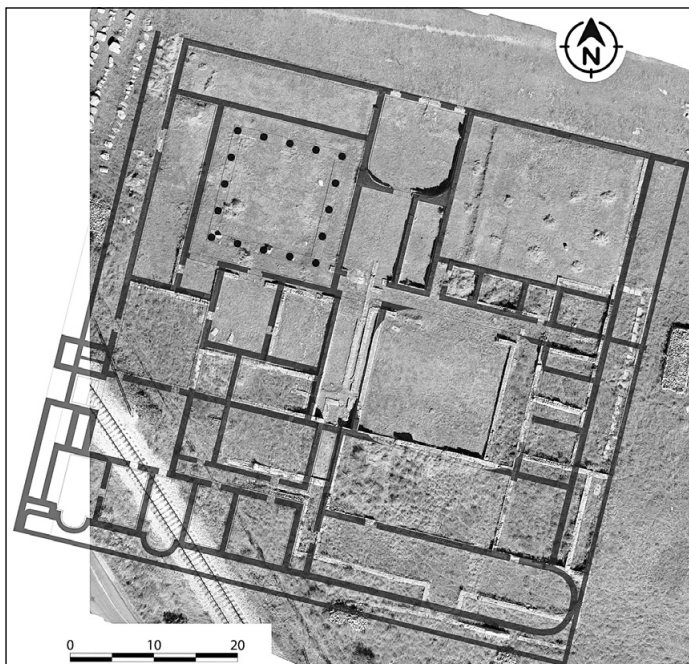


Fig. 11 – Doclea, large *thermae*: Sticotti plan over orthophoto (A. D'Eredità)



Fig. 12 – Doclea, large *thermae*: different building phases (A. D’Eredità)

of DEM and related orthophotos (Fig. 10). ‘Structure from Motion’ software was employed as the most advanced technology for aero-photogrammetric data processing. The sequential shots acquired by cameras on drones allow the drawing of three-dimensional images, thanks to the software ability to recognize the points of interest obtained by triangulation. The results are suitable for the production of plans, prospects and sections, which data provide the basis on which to set up 3D models and virtual reconstructions.

In this initial phase, only a rough three-dimensional model was created, with the aim of summarily defining the volumes of the buildings. It is a worthwhile step to confirm the archaeological and archaeometric data, such as verifying and comprehending the proportions of the architectural elements in relation to the surrounding buildings and the alignments of structures; it is also a way to theorize on the development of the built-up area, based on the traces still distinguishable on the ground. In this first phase, we analysed the construction techniques of the masonry and proceeded to a preliminary classification that will prove useful for a subsequent and more complete analysis of the structural types.

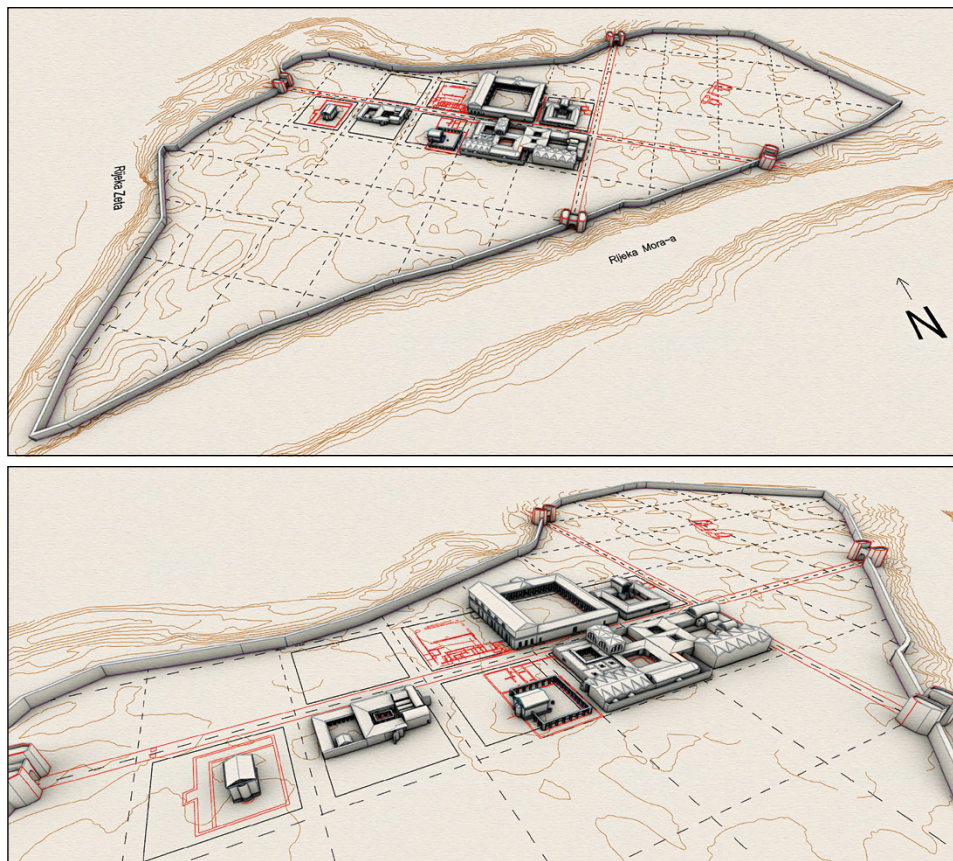


Fig. 13 – Doclea, visual reconstruction of the city: work in progress (A. D'Eredità).

In order to better define a complete image of the monuments, it is also essential to find similar architectural examples, not only for the evidence on dating they may provide, but also for supporting any virtual reconstruction of the buildings under study.

At the end of the whole process of documentation, analysis and study of archaeological and architectural data in a historical-comparative perspective, we should be able to create more refined 3D models.

The first results of our work concern the *forum* and above all the main *thermae*, one of the least studied buildings, but of great interest for the possibility of identifying different building phases. The analysis is being carried out on two levels: first, the checking of historical plans in the field, and then, the creation of a new plan. Superimposing over the plan of STICOTTI (1913, fig.

52) the photos from drone, that are accurate in their position and measurements (Fig. 11), we observed a series of discrepancies, especially in the eastern zone, at that time still only partly investigated and subsequently the focus of unpublished excavations. In the absence of archeological and stratigraphical data, we are proceeding with a detailed survey of the structures, to elucidate the different building phases. Here we present an example of the classification of the masonry structures demonstrating their belonging to different building phases: they are from a central sector of the building, where this situation is particularly evident (Fig. 12).

On the basis of this systematic study of the ancient walls, together with a careful analysis of all the architectural elements, the elaboration of a three-dimensional model was started according to the principles and aims already stated. Here, then, is the first image of our work on the monumental area of the city (Fig. 13). Visual reconstruction of monuments is one of the fundamental instruments for interpreting the past, especially if they are highly deteriorated. We feel sure that the production of coherently reconstructed models can help to spread the knowledge of the site to as broad a public as possible.

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ABSTRACT

The study of the architecture of the main public buildings of Doclea is being carried out on the basis of bibliographical and archival sources, integrated with the direct analysis of the existing structures. Research aimed at finding documents of the earlier explorers of Doclea, as well as documentary photographs, are particularly important. We also analyse the main buildings of Doclea in the context of Roman architecture, seeking to identify local and regional features. An analysis of the existing structures, combining archaeological and architectural methods, according to the most modern theories of the so-called archaeology of architecture, is essential. This same approach was applied to the monuments in the *forum* area and in the main *thermae*, where we have collected a series of data that we are now processing. The ultimate goal of our research is to produce a 3D reconstruction of the main buildings.

