

# THE ANASTYLOSIS AND CONSERVATION OF ARCHITECTURAL NICHES IN MARINA EL-ALAMEIN

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Putting together sculptural elements of architectural decoration in an effort to restore structures of sometimes monumental nature can be the most interesting task for a conservator of archaeological sites. It is certainly a challenge. On top of this, anastylosis in such historic complexes is the sole restoration activity that is accepted and recommended by all current conservation doctrines. Apart from Jarosław Dobrowolski's now well-known reconstruction of the monumental pillar tombs, which was the first conservation intervention of the kind to be carried out in Marina el-Alamein,<sup>1</sup> the anastylosis of three elegant *aediculae*, discovered in three separate buildings of the ancient town, constitutes an especially noteworthy example of this

kind of execution. Work on the project, now completed, lasted a number of seasons.<sup>2</sup>

Exacting care for surviving elements of architectural decoration and their proper, one would even say didactic, display is a special duty in view of the uniqueness of the form of these elements. These objects are virtually the sole example of a specific type characterized by simplification and decorative geometrizing. This kind of stylization used to be connected chiefly with Petra, where architectural decoration representing similar forms was first recognized and consequently referred to as 'Nabatean'.<sup>3</sup> Soon, however, it was recognized in other regions as well.<sup>4</sup> Stylized elements, foremost a specific type of

- 1 J. Dobrowolski, *PAM II, Reports 1990* (1991) 44-47; *PAM III, Reports 1991* (1992), 39-48; *PAM V, Reports 1993* (1994), 34-39.
- 2 The work was carried out by members of the Polish-Egyptian Restoration Mission to Marina el-Alamein, including: Andrzej B. Biernacki, archaeologist; Eryk Bunsch, sculptor conservator; Rafał Czerner, architect conservator (anastylosis design); Irma Fuks-Rembisz, sculptor conservator; Wiesław Grzegorek, architect and building engineer (in charge of the building works); Stanisław Medeksza, architect conservator (Mission director); Małgorzata Ujma, art restorer (wall paintings), Piotr Zambrzycki, art restorer (stone), responsible for choosing conservation methods.
- 3 E. Netzer, *Nabatäische Architektur. Insbesondere Gräber und Tempel* (Mainz am Rhein 2003), 162; A. Kammerer, *Pétra et la Nabatène. L'Arabie Pétrée et les Arabes du Nord dans leurs rapports avec la Syrie et la Palestine jusqu'à l'Islam* (Paris 1930), 488.
- 4 A. Negev, *Tempel, Kirchen und Zisternen. Ausgrabungen in der Wüste Negev. Die Kultur der Nabatäer* (Stuttgart 1983), 110; G. Foerster, *Masada V. The Yigael Yadin Excavations 1963-1965 Final Reports. Art and Architecture* (Jerusalem 1995), 113-123; G.R.H. Wright, *Ancient Building in Cyprus, Vol. I* (Leiden-New York-Köln 1992), 458; L. Borchardt, "Der Augustustempel auf Philae", *Jdl XVIII* (1903), 73f., 83-84, Fig. 6, 14 and Pl. 3; O. Rubenson, "Aus griechisch-römischen Häusern des Fayum", *Jdl XX* (1905), 10, Fig. 19; M. Sabottka, "Ausgrabungen in der West-Nekropole Alexandriens (Gabbari)", in: *Das römisch-byzantinische Ägypten, Akten des Inter. Symp. 26-30 Sept. 1978 in Trier* (Mainz 1983), 200-201, Pl. 41.1; W.A. Daszewski, "Nouvelles recherches sur la côte Nord de l'Égypte. Un type méconnu de chapiteaux", *EtTrav XV* (1990), 113-114.

capital, have been discovered in Arabia, Cyprus and Egypt. Indeed, researchers have been fairly unanimous in considering the latter region as the place of origins for the type. It is currently held that forms of this kind were developed in Ptolemaic Egypt with Alexandria and its vicinity being possibly the main center.<sup>5</sup> W.A. Daszewski was the first to point out the prevalence of this kind of architectural remains in Marina el-Alamein, drawing attention to the fact that the site was a major center of this type of decoration.

Elsewhere in Egypt, the occurrence of these forms is sporadic. In Marina, they prevail.

Moreover, the characteristic geometric stylization concerned not only the best known pseudo-Corinthian capitals referred to hitherto as 'Nabatean', but also pseudo-Ionian and Doric examples, as well as entire architectural orders, entablatures and cornices included.<sup>6</sup> Thanks to the large number of remains discovered in Marina, it proved possible to reconstruct the principles behind the constitution of these orders.<sup>7</sup>

## THE AEDICULAE AND THEIR CONSERVATION

Initial exploration of the house ruins in Marina el-Alamein, fragmentarily cleared by Egyptian antiquities inspectors, led to the discovery of elements of architectural niches. Fragments of an *aedicula* were excavated at the time in and around House H9, giving an idea of the exceptional richness of architectural decoration of this kind. Once the particular pieces of this niche were put together, a task completed in 1988 by W.A. Daszewski, a theoretical

reconstruction of the *aedicula* became possible [Fig. 1].<sup>8</sup>

In 1998, clearing work inside a nearby house designated as H10 led to the discovery of a much larger and, more importantly, complete niche [Fig. 2]. The sill of the niche was found *in situ* in the wall. The painted decoration from inside the niche had also survived fragmentarily.<sup>9</sup> A theoretical reconstruction of the architectural setting of the *aedicula* and the

- 5 Daszewski, "Nouvelles...", op. cit., 121-123; J. Patrich, "The formation of the Nabatean capital", in: *Judea and the Greco-Roman World in the Time of Herod in the Light of Archaeological Evidence* (Göttingen 1996), 204; P. Pensabene, "Elementi Architettonici di Alessandria e di altri siti egiziani", *Repertorio d'Arte dell'Egitto Greco-Romano*, Serie C, III (Roma 1989), 63, 131; O. Callot, "Éléments d'architecture romaine a Larnaca", *RDAC* 1988, 225; Wright, op. cit., 462; A. Hermary, "L'architecture religieuse a Chypre a l'époque impériale: traditions et innovations", in: *Chypre. La vie quotidienne de l'antiquité a nos jours*, Actes du Colloque 15-17 nov. 1982, Musée de l'Homme (Paris 1985), 131; A. Hermary, M. Schmid, "Le sanctuaire d'Aphrodite à Amanthonte", in: *Praktika tou Dhefterou Dbiebnous Kyprologikou Synedriou* (Nicosia 1985), 286, note 16.
- 6 S. Medeksza, R. Czerner, "Rescuing Marina El-Alamein: a Graeco-Roman town in Egypt", *Minerva* 14, no. 3 (May/June 2003), 21-22.
- 7 R. Czerner, "Aleksandryjskie stylizowane trzy porządki architektoniczne", in: *Nie tylko Zamki* (Wrocław 2005), 283-298.
- 8 J. Radzik, "Aedicula", in: *Archaeological Background and Conservation Problems*, vol. 1 (Warsaw 1991), 45-46; cf. also W.A. Daszewski, "Nouvelles...", op. cit., 113, Fig. 2; id., "A la recherche d'une Égypte peu connue: Travaux sur la coté nord-ouest, a Marina el-Alamein, CRAI (avril-juin 1993), 415-416.
- 9 Estimated at about 25% of the original. For detailed description and iconographic analysis, as well as suggested dating, cf. S. Medeksza, "Marina el-Alamein, grecko-rzymskie miasto w Egipcie. Badania architektoniczno-urbanistyczne i restauracja relikwów architektury mieszkalnej", in: *Conservatio est aeterna creatio* (Toruń 1999), 117-154.

modular order in which it was raised was undertaken at the time [Fig. 3],<sup>10</sup> adding to the existing body of evidence on niche settings and stylized architectural orders. An analysis of proportions could also be made based on a comparison with the inventory drawings of the said *aedicula* from House H9. Fieldwork in House H21c in 2000, brought the discovery of a small niche of similar form and proportions, carved in a single block of stone [Fig. 4]. The next year further elements of yet another architectural niche were discovered in Hall H21"N". Once these were joined to elements collected during early Egyptian explorations in the late 1980s, they proved to be part of a huge *aedicula*, which could now be recon-

structed. All these niches were constructed of elements that belonged to the stylized pseudo-Corinthian order so typical of Marina, and all were virtually complete.

The remains of the niche from House H10 turned out to include all the elements of its setting. It was the first time that explorations of the houses in Marina had yielded such a fully and well preserved example. Thus, the decision was made to prepare an anastylosis of the element. Inventory and reconstruction studies, which followed, helped to understand, as it turned out later, the typical arrangement of such niches, opening the way to the reconstruction of another two niches in a more distant future.



Fig. 1. Remains of an *aedicula* from House H9. State in 1988  
(Photo W.A. Daszewski)

10 R. Czerner, "Aedicula z domu H10 w Marinie El-Alamein w Egipcie. Analiza architektoniczna, rekonstrukcja", *Architectus* 2(8) (2000), 3-14.

Elements of the pseudo-Corinthian order constituted the setting of all the discovered architectural niches. Standing on a projecting sill, supported on a high *sima*, were two engaged columns projecting from the wall face. On the inside of the niche, each engaged column had a flat pilaster of the same size and proportions, set perpendicularly to it. The beginnings of a similar pilaster, but disappearing almost at once into the wall, stood by each of the engaged columns also on the opposite side, that is, on the outside of the

niche. The capitals of the engaged columns supported the architrave, which encompassed the *aedicula* in a rectilinear 'horse-shoe'. There were no friezes above this, the architrave directly bearing the cornice.

The flat underside of the cornice stone, which projected beyond the architrave, bore sculpted decoration in the form of an offset profile, made up of simplified flat grooved modillions alternating with broader square hollow ones. This kind of architectural decoration was introduced in the Hellenistic period, around the first half

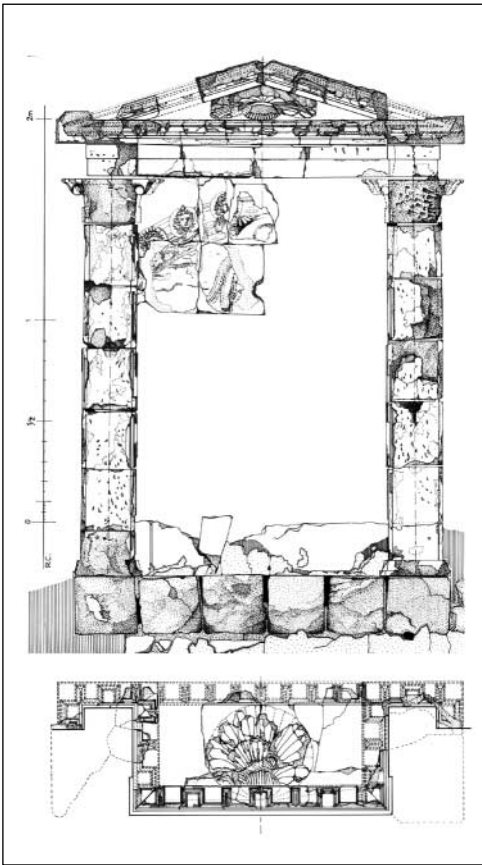


Fig. 2. Aedicula from House H10. Reconstruction and inventory drawing of discovered elements (R. Czerner)



Fig. 3. Reconstruction of the form of the aedicula from House H10 (R. Czerner)

of the 2nd century BC, and was one of the forms characteristic of it virtually at the same time in various places around the Mediterranean.<sup>11</sup> At Marina, it is typical of the stylized architectural order in vogue among the builders of the ancient town.

Supported on the extreme outer cornices were the slabs of a triangular tympanum, decorated in the same manner as the cornices. In plan, the tympanum with cornice did not follow the outline of the niche, but formed a ceiling covering it. The underside of this had an open seashell in stuccowork in the middle. In the *aedicula* from House H10, the two sets of

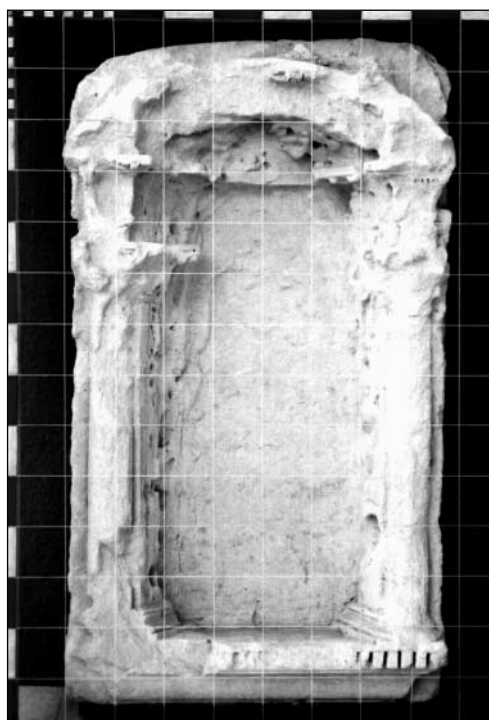


Fig. 4. *Aedicula* from House H21c  
(Photo R. Czerner)

pilasters and engaged columns from either side of the niche, instead of being straight, were slightly inclined towards the center. This imparted on the niche an optical illusion of height and slenderness. Its place up on the wall was known. The niche was inserted into the wall thickness, but its setting also projected from the wall face. The material used was a local limestone. Individual architectural elements, mainly the sides and sill, were made up of smaller parts, which corresponded in size to available blocks of stone, mostly of typical dimensions.

The elements of the niche from House H10 were put together and conserved over the next two seasons [Fig. 5]. The fragments of figural painted decoration from the background of the niche were conserved and transferred to a new ground at the same time,<sup>12</sup> but were not replaced in the reconstructed *aedicula*. They will be displayed separately in a museum setting in the future.

In preparation for the project, it was necessary to consolidate the surviving part of wall below the niche and to reinforce the sill. Once the substructure was ready, the sides of the niche setting were raised, erecting the bases on surviving original outlines of where they had stood. The authentic elements were put together using lime mortar with white cement added, forming thin joints in order to achieve the exactly reconstructed proper height. The convergence of the niche opening toward the top was also achieved by inclining the columns and pilasters by 1.5 cm on either side. Finally, the reconstructed back wall of the niche was plastered.

11 H. von Hersberg, *Konsolengeisa des Hellenismus und der frühen Kaiserzeit* (Mainz 1980), 87ff. (also includes an outline of research on the subject); Pensabene, *op. cit.*, 99-100ff., 131.

12 The wall painting was conserved by restorer Maciej Dąbrowski.



Fig. 5. *Aedicula from House H10 after anastylosis and conservation (Photo R. Czerner)*



Fig. 6. *Aedicula from House H9 after partial anastylosis and conservation (Photo R. Czerner)*

All the original elements were cleaned, desalinated and consolidated before being mounted. The conservation was particularly exacting in the case of the cornices, especially their underside decoration, which demanded protection, reinforcement and reconstruction of losses of the finely carved filigree decoration. Broken pieces were stuck together,<sup>13</sup> and the losses filled in with stone replacements or putties in case of the more minor ones.<sup>14</sup> The conserved and partly reconstructed elements were then strengthened with ethyl silicate impregnates.<sup>15</sup> The same method was applied to the conservation of the two slabs of the tympanum, although structural needs required that some of the ancient elements be replaced with new ones.

With experience gained in completing the anastylosis of the niche in House H10 and the results of theoretical studies on the position and setting of such niches in the walls of buildings in Marina, it was now possible to reconstruct the niche from House H9. This was done in 1999 and 2000. This *aedicula* had been the first to be discovered and its arrangement had been reconstructed explicitly. However, it had lacked a specific architectural context (see note 8 above). Now it became clear that it should be restored in the wall at the back of the room interpreted as the *andron*.

At the time of the original discovery the only parts of the niche that were missing was one side and sill. Particular

elements were in excellent condition. Unprotected, however, they slowly disintegrated in open storage on the site. The key dimensions of the niche could still be taken when the reconstruction project began, and there were also the original inventory drawings to fall back on. The setting of this *aedicula* was practically the same as in the case of the niche from House H10 [cf. *Fig. 1*]. Instead of a triangular tympanum, it had a semicircular one, the plan of which followed to some extent the offsets of the architrave. As for the details, apart from a much more varied decoration of the underside of the cornices, the main difference was a much further going stylization of the pseudo-Corinthian column capitals. All the elements, including the open conch on the soffit of the tympanum, were made in stone and much more finely executed. The technological differences were due to the small dimensions of the niche as a whole, permitting less elements to be used in its construction.

When it undertook the conservation and anastylosis of this niche, the Mission found the elements heavily eroded due to the dry environment in which the unprotected blocks had been stored, unintentionally and without fault on the part of the discoverers, for an extended period between the activities of two successive conservation teams. It was now deemed aesthetically unjustified to restore from the severely distorted authentic blocks what had originally been the most decorative

13 ARALDITE AW 1306 (Ciba-Geigy) resin was used with crushed limestone as filler. Connections were stabilized with stainless steel rods where deemed necessary. Losses were filled in with local limestone, the same kind that had been used for the original elements. A different limestone provided by the Egyptian side and used as a rule in other works on the site, proved too hard as a replacement, threatening to have a detrimental effect on the original parts of the niche, if used in its conservation. The only exception to this decision to use local stone for filling losses in architectural elements were the main parts of the tympanum slabs, which required a stronger stone for structural reasons.

14 Synthetic putties on the base of ADHESIL K1 silicon resin with crushed limestone as filler.

15 FUNCOSIL STEINFESTIGER 100 (Remmers).

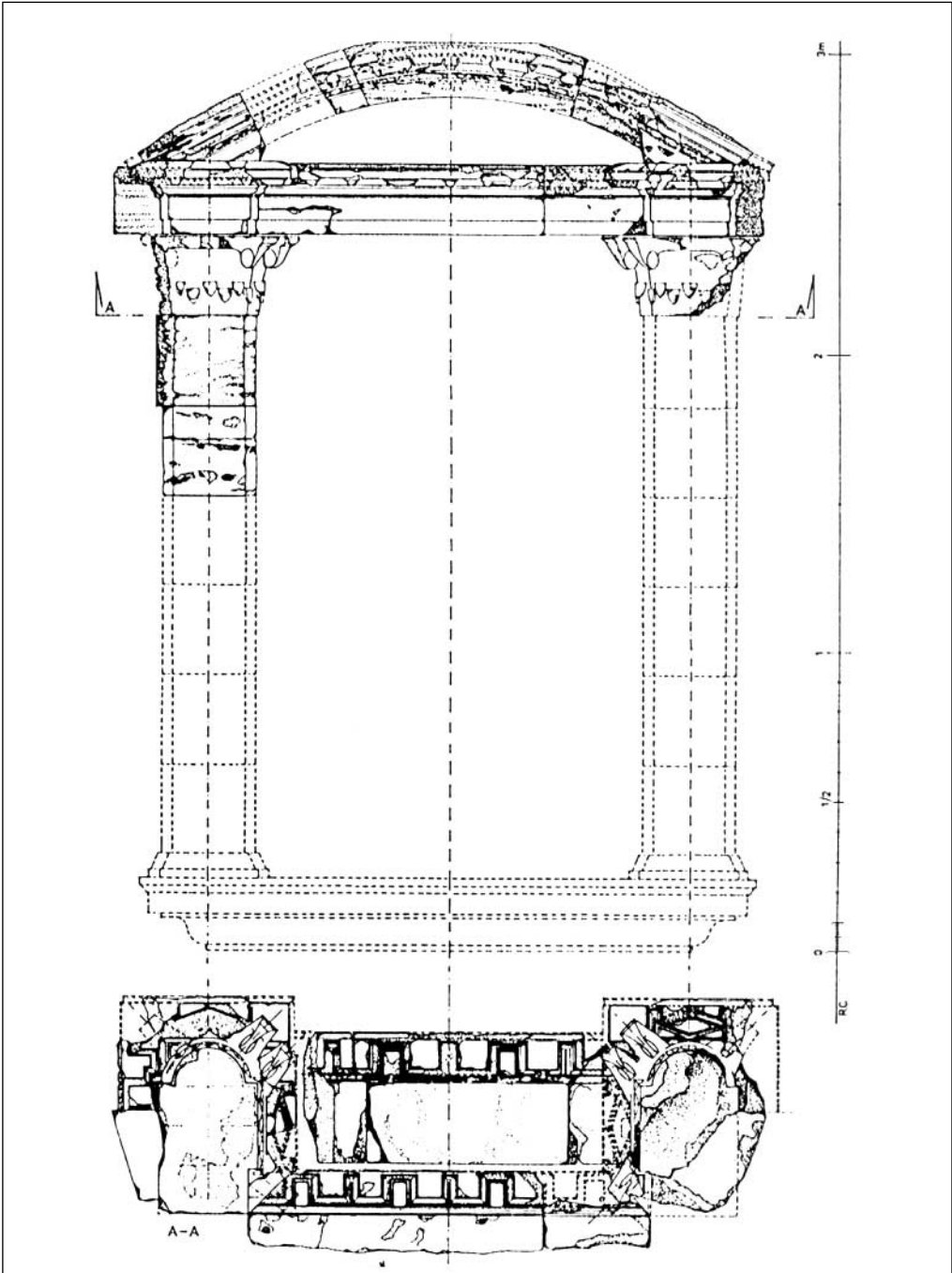


Fig. 7. Aedicula from Hall H21"N". Reconstruction and inventory drawing of discovered elements (R. Czerner)



part of the setting, that is, the architrave, cornices and tympanum.<sup>16</sup> The *aedicula*, therefore, was restored up to the capitals [Fig. 6]. Following protection with reinforcing impregnates, three authentic elements from the left side of the niche setting were put together. Like the elements of the top and in particular the capital, they were at this point little more than shapeless blocks of stone. The original sharply cut forms were no longer in evidence. They were reconstructed together with base and capital on the right side of the niche, where the original setting had been lost entirely.<sup>17</sup> The back of the niche was also reconstructed along with a sizable stretch of the wall, in which the niche had been set.

The reconstruction of the elaborate double capital, attempted in close cooperation between the architect responsible for the reconstruction design and the stone conservator and sculptor, provided interesting feedback on the execution of such forms. In the course of work on the carving of the piece and as a result of looking for ways to access specific parts with stonecutting tools, it proved possible to understand the relations between specific planes and solids forming the capital of what is considered Marina's characteristic stylized architectural order. In the effect some minor modifications had to be introduced in the design. These conclusions have since been proved correct by the discovery in a recent season of a perfectly preserved capital featuring details rendered in practically identical form.

The *aedicula* uncovered in the fill of the *andron* of House H21c in 2000 was not restored to its position in the wall of the room. Its small size and elaborate architectural form predestinate it for a museum display [cf. Fig. 4].

Of considerable dimensions, however, is the largest of the four niches discovered in Marina, the *aedicula* from the neighboring Hall H21"N". Most of the surviving elements of this niche had been discovered in the early Egyptian rescue effort on the site. Some had been taken to the stores, others were left out in the open. Upon gathering them all in one place and uncovering a few more elements, it became possible to reconstruct practically the entire top of this *aedicula* [Fig. 7].

All the *aediculae* considered in the present report had the same arrangement of the setting, differing primarily in the form of the tympanum, which was either semicircular or triangular, with or without offsets in plan, featuring differences in size and in the minor details of the decoration. The range in the size of particular niches is significant, fivefold between the smallest and the biggest ones. For the sake of an example, one basic dimension, that is, the distance between the axes of the engaged columns at the top, runs from 30.3 cm for H21c, through 88.5 cm for H9 and 150 cm for H10, to 161.5 cm for H21"N". A comparison of the first two studied *aediculae* (H9 and H10) revealed already that there is a constant ratio between the height and width, similarly as there is a constant ratio between the height of the

16 Independently of the protection of authentic elements without their anastylosis, it is planned to pattern on them a reconstruction of the upper parts of the aedicula, thus completing the anastylosis at some point in the future.

17 These elements were patterned on a 1:1 reconstruction prepared by the present author, based on own studies of architectural elements of this kind, photographs of the niche taken upon discovery and old inventory drawings (which while presenting an impossible form of the capital, did provide the most important dimensions). The actual stonecutting was done by conservator Piotr Zambrzycki.

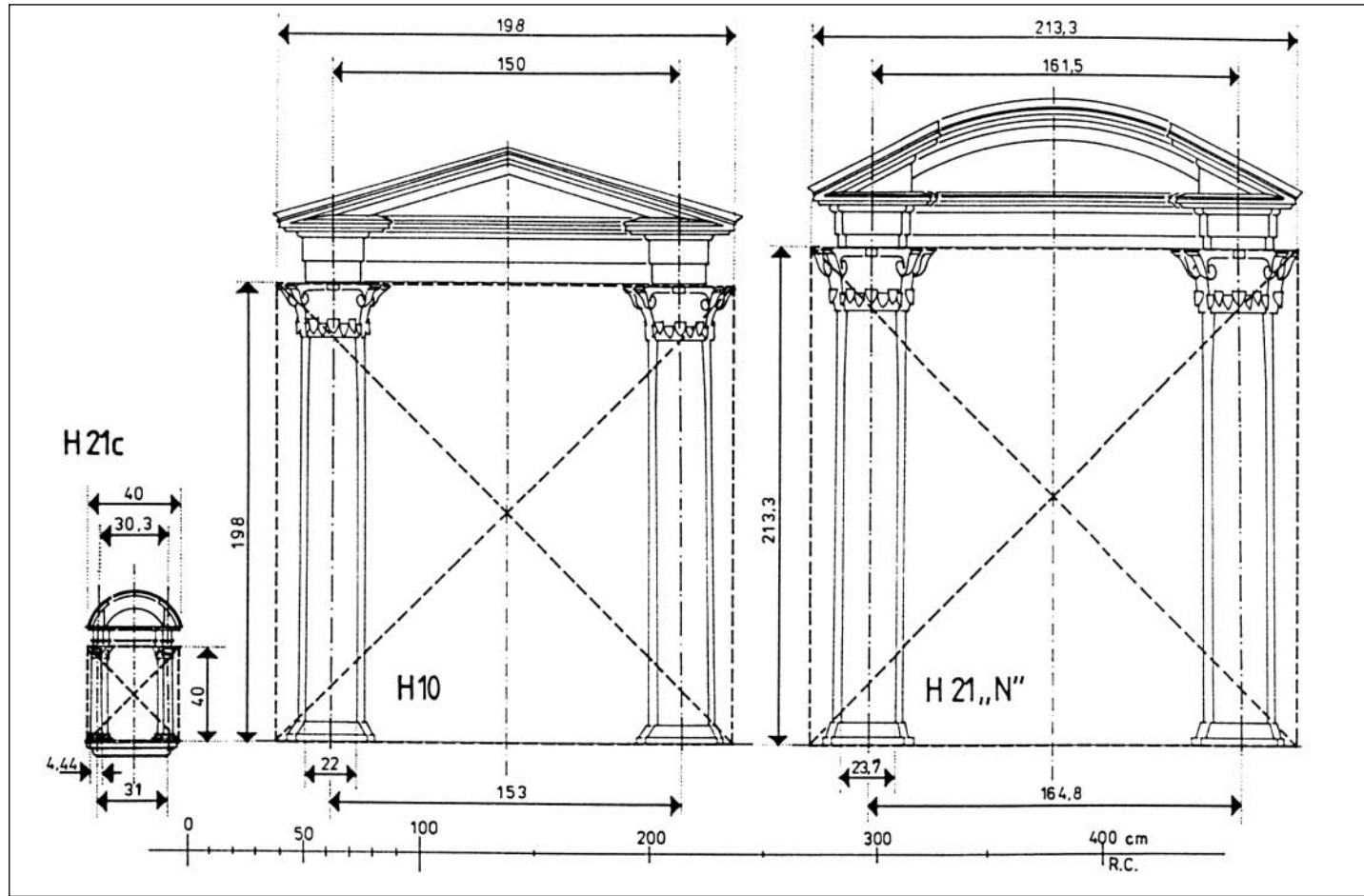


Fig. 8. Comparison of dimensions and proportions of niches from houses H21c, H10 and hall H21'N"  
(Drawing R. Czerner)

columns and their diameter at the base, as well as in the case of most other proportions [Fig. 8]. Measurements taken off yet another complete niche found in House H21c confirmed this observation. In all the recorded cases, the width between the extreme outer faces of the cornice remains equal with considerable exactness to the height of the columns. The modular height of the supports also remains constant, equaling nine diameters of the engaged columns at the base or nine widths of the pilasters. These proportions remain unchanged regardless of niche size. It all points to the existence of certain canons governing the design of such *aediculae*.

Having made this observation, we could undertake the reconstruction of the biggest and most monumental of the *aediculae* discovered at Marina so far, that is, the niche from hall H21"N". The project was all the more tempting in view of the fact that the wall with this niche faces the entrance to the newly built site museum. The fine and monumental *aedicula* constitutes a perfect invitation to museum visitors to explore the surrounding archaeological site [Fig. 9].

The entire top of the niche proved to be preserved practically without loss: upper parts of one of the columns, capitals, entablature and cornices offset above the columns and the huge arcade of the tympanum. The only part that was missing was a small voussoir stone from the arch of the tympanum; some of the cornice edges also required restoration. Local limestone was used for the purpose.

It should be noted that the state of preservation of the top part of the niche left no doubt as to its horizontal dimensions, that is, the width, depth, outline of plan, position of pilasters, engaged columns and their capitals, recession into the wall and degree of projection from the face. The

thickness of the wall had also been established and the size of the blocks for particular elements of the niche could be reconstructed with a fair amount of certainty.

The only dimension missing from the reconstruction was the height of the *aedicula*. This was taken from the above-discussed standard for niche proportions. The unknown height of the engaged columns (and pilasters) was calculated in two ways: as equal to the width of the niche setting between the outer faces of the cornice, and as nine times the diameter of the engaged columns at the base (equal to the width of the pilasters). In both instances, the result was 213.3 cm. This confirmed the existence of a canon of proportions and the correctness of the recon-



Fig. 9. *Aedicula of Hall H21"N" after anastylosis and conservation*  
(Photo R. Czerner)

struction. Obviously, the niche was huge and of all the *aediculae* discovered so far, it had the most elaborate and intricate decoration.

The niche was reconstructed in two successive seasons, in 2002 and 2003. The elements constituting the lower parts of the architectural setting of the niche were

carved from local limestone, their form being simplified with regard to the potential original. Already tested technologies were used for the conservation of authentic elements. New stone was used for the back wall of the niche and to restore a sizable section of the wall of limestone blocks, which had served as its backdrop.