



**HAL**  
open science

# Architectural Polychromy at Hekatomnid Labraunda

Jesper Blid

► **To cite this version:**

Jesper Blid. Architectural Polychromy at Hekatomnid Labraunda. Virtual Retrospect 2017, Maud Mulliez; Caroline Delevoie, Nov 2017, Pessac, France. pp.113-121. hal-03151437

**HAL Id: hal-03151437**

**<https://hal.science/hal-03151437v1>**

Submitted on 24 Feb 2021

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution - NonCommercial - NoDerivatives 4.0 International License

## Tiré-à-part des Actes du colloque

### Virtual Retrospect 2017

M.Mulliez, éd. (2019), Restituer les couleurs // Reconstruction of Polychromy, Actes du Colloque *Virtual Retrospect 2017*, Archeovision 8, Éditions Ausonius, Bordeaux



J. Blid  
*Architectural Polychromy at Hekatomnid  
Labraunda*

pp.113-121

# Architectural Polychromy at Hekatomnid Labraunda

Jesper Blid, Austrian Academy of Sciences  
Institute for the Study of Ancient Culture (IKAnt), Vienna  
[jesperblid@yahoo.se](mailto:jesperblid@yahoo.se)

**Résumé :** Cet article est consacré aux découvertes anciennes et plus récentes de la polychromie architecturale dans le programme de construction hékatomnide de Labraunda en Carie. Y sont notamment étudiés l'usage de moulures en plâtre peint et en marbre, ainsi que le rôle décoratif important que joue le bronze. Convaincu que la polychromie des bâtiments Hékatomnides, à l'instar de la conception même de l'architecture, s'est inspirée à la fois des pratiques ioniques d'Asie mineure et doriques grecques, je propose d'illustrer ici les caractéristiques expérimentales et novatrices du programme de construction dans son ensemble.

**Mots-clefs :** architecture hékatomnide, Labraunda, Carie, bronze, bleu égyptien, plâtre peint, ocre jaune, ocre rouge

**Abstract:** This article explores old and new discoveries of architectural polychromy in the Hekatomnid building programme at Labraunda in Karia. It addresses the use of painted plaster and marble mouldings, while also scrutinising the abundant decorative role of bronze. I argue that the polychromy of the Hekatomnid buildings, like the architectural design itself, drew on both Asia Minor Ionic and Greek Doric practices. It thus exemplifies the experimental and innovative features of the building programme at large.

**Keywords:** Hekatomnid architecture, Labraunda, Karia, bronze, Egyptian blue, painted plaster, yellow and red ochre

The sanctuary of Zeus at Labraunda is located in ancient Karia in south-western Asia Minor<sup>1</sup>. Labraunda commands a prominent position on a slope high up in the Latmos Mountains, at an altitude of about 650 m above sea level (fig. 1). During the first half of the IV<sup>th</sup> century B.C., the sanctuary was expanded and its annual festival extended owing to the generous patronage of the ruling satrapal

family, usually referred to as the Hekatomnids. The family originated from the ancient Karian capital of Mylasa, which they connected to Labraunda with a paved processional road traversing, according to Strabo, a distance of 60 stadia<sup>2</sup>. The Hekatomnids' beneficence towards the sanctuary began during the rule of Hekatomnos (392-377 BC), the founder of the dynasty, and reached its peak during the satrapy of his son and heir, Maussollos (377-352)<sup>3</sup>. The Hekatomnids transformed the modest rural sanctuary into a Hellenised architectural landscape of international character by erecting, for instance, a peripteral temple, banquet buildings, propylons and a stadium<sup>4</sup>. This generous Hekatomnid patronage was possibly prompted by the hereditary priest office that the family may have held at Labraunda<sup>5</sup>.

On the basis of preserved dedication inscriptions, seven buildings at Labraunda can (most probably) be attributed to the Hekatomnid satraps Maussollos and Idrieus (351-344)<sup>6</sup>.

2. Strabo 14.659. For a general introduction to the site of Labraunda, see Hellström 2007.

3. Most of the architraval dedications on Hekatomnid buildings at Labraunda were made by Maussollos' brother and successor, Idrieus. However, the dedications by Idrieus were probably made before the death of Maussollos as he uses the toponym "Mylaseus" after his name, which would be less likely after he assumed power as satrap following the death of Artemisia in 351/350. See Hellström & Blid, *forthcoming*.

4. Pre-Hekatomnid Labraunda was most likely a small-scale and predominantly open-air sanctuary. Herodotos (5.119-121) mentions a sanctuary of Zeus at Labraunda consisting of a "grove of plane trees". Archaeological investigations have also identified the remains of a temple in antis, which, in a secondary phase, was rebuilt and enlarged by the Hekatomnids. For a chronology and discussion of the earliest temple, see Hellström & Thieme 1982, 40-41; Thieme 1993, 47-55, pl. 9; Hellström 2007, 111; Baran 2009, 301-304.

5. See Ruzicka 1992, 30.

6. Stoa of Maussollos: I.Labraunda 13. Andron of Maussollos: I.Labraunda 14. Andron A: I.Labraunda 15. Temple of Zeus:

1. I am grateful to Alain Guimier, Pontus Hellström, Agneta Freccero, Olivier Henry, Ulrike Koch Brinkmann, Joanne Dyer and Jan Stubbe Østergaard for their assistance and many helpful comments.

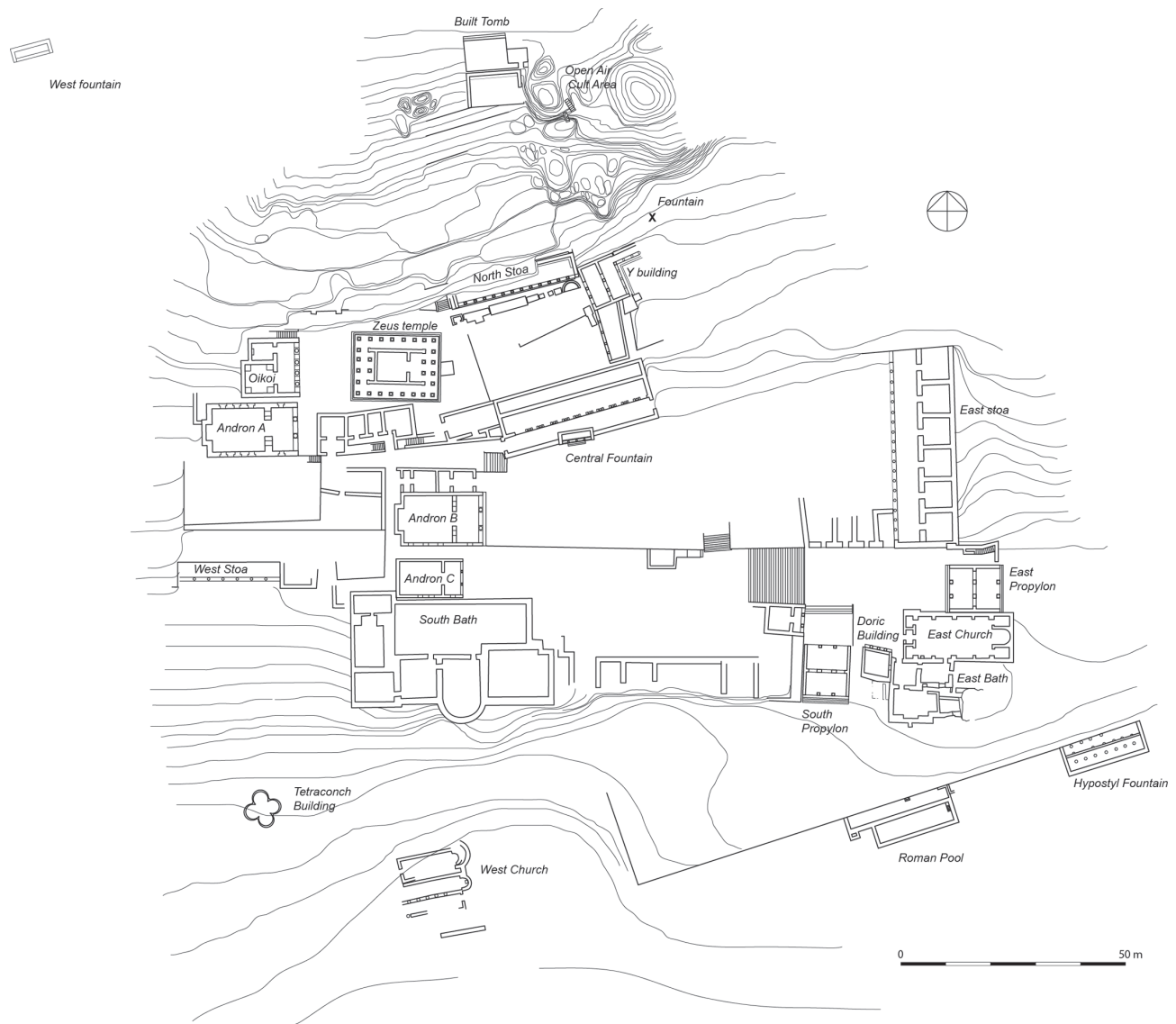


Fig. 1. General plan of Labraunda (O. Henry 2018).

At least two further buildings stylistically appear to belong to the same period<sup>7</sup>. Furthermore, additional Ionic architectural members that have been found in secondary contexts appear to originate from two different, as-yet unidentified, Hekatomnid structures<sup>8</sup>. A monumental fountain house in the south-eastern sector of the site, and which was recently excavated, might also be added to this list<sup>9</sup>. The Hekatomnid buildings at Labraunda have certain traits in common. Their

foundations and walls are, in most cases, built from ashlar blocks from locally quarried gneiss, while the façades and entablatures are of white marble, which was brought from elsewhere.<sup>10</sup> Various structural features, such as sockets and shelves for beams and particular types of clamp holes, moreover, testify to extensive use of wood above the level of the column capitals.

The monumental architecture commissioned by the Hekatomnids at Labraunda and elsewhere is generally recognised as experimental and non-canonical. It drew on a combination of Anatolian, Greek and even Achaemenid

1. Labraunda 16. The Oikoi: I. Labraunda 17. The South Propylon: I. Labraunda 18. The Doric House: I. Labraunda 19.

7. The East Propylon and East Stoa.

8. Reused in the floor of the West Church: Blid 2016, 102-105.

9. The so-called "Hypostyle Fountain" has been proposed to be of Hekatomnid date; see Henry *et al.* 2015, 383.

10. A recent study of marble from Labraunda suggests that the marble for the andrones came from Herakleia: Freccero 2015, 19-27, 32-37.

styles and principles. As for polychromy, studies have been conducted on colour remains from the most renowned building projects – the Maussolleion of Halikarnassos and the Temple of Athena Polias at Priene<sup>11</sup>. At Labraunda, vestiges of paint have been noted on various architectural members since the Swedish excavations began in 1948. This article aims to bring together previous findings as well as to add more recent and previously unpublished discoveries to the corpus. More specifically, this article intends to focus on the polychromatic effect achieved by combining various materials, particularly marble and bronze, in Hekatomnid buildings at Labraunda. The colour remains from Labraunda should be studied within the larger context of the Hekatomnid building programme and its experimental architecture. How does the eclecticism and aesthetic fluidity of the overall architectural programme relate to the colour scheme of the buildings? How did previous decorative traditions and practices from a wider geographical area influence the use of colour at Labraunda,



Fig. 2. Restored east façade of the Temple of Zeus (Hellström & Thieme 1982, pl. 46).

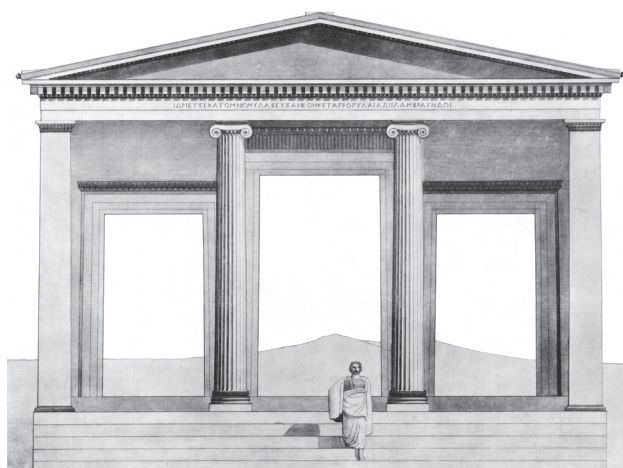


Fig. 3. Restored south façade of the South Propylon (Jeppesen 1955, pl. 21).

11. See Jenkins *et al.* 1997; Jenkins 2006; Koenigs 2015.

and can similar tendencies be seen in other Late Classical and Early Hellenistic buildings in western Asia Minor?

#### THE IONIC ORDER

The Maussolleion and the Temple of Athena preserve remains of paint on architectural members of the Ionic order, while, at Labraunda, colour remains are found on both Ionic and Doric elements, which most likely predate the examples at Halikarnassos and Priene<sup>12</sup>. Most architectural fragments at Hekatomnid Labraunda that preserve vestiges of painted decoration are Ionic and belong to the Temple of Zeus (fig. 2) and the South Propylon (fig. 3), both of which were dedicated by Idrieus<sup>13</sup>. Red and reddish-brown paint is visible on four geison blocks from the temple (fig. 4)<sup>14</sup>. These colour remains were discovered on the bed mouldings of the geison blocks; that is, on the bead-and-reel astragal and leaf-and-dart (Lesbian) cyma. Brownish-red colour was furthermore spotted “on the oculus of the dart, on the background of the astragal, and some even on the astragal itself”<sup>15</sup>. In the 1850s, Charles Newton observed the same colour scheme at the Maussolleion at Halikarnassos<sup>16</sup>, while the Temple of Athena at Priene also preserves comparable colour remains<sup>17</sup>. Yet, the occurrence of red paint on the actual beads of the astragal at the Temple of Zeus is not, to the best of my knowledge, found elsewhere and could well be the result of later repainting or miscolouring. It seems to me that applying the same colour to both the ornament and its background contradicts the general principle of Greek architectural polychromy, whose aesthetic imperative was to achieve a stark contrast between ornaments by alternating distinct colours<sup>18</sup>.



Fig. 4. Geison moulding of the Temple of Zeus with remains of red paint (A. Nilsson 1949).

12. Based on our current knowledge, we cannot, however, corroborate that these colour remains at Labraunda date to the IV<sup>th</sup> century.

13. Hellström & Thieme 1982; Jeppesen 1955. See also n. 6, above.

14. Hellström & Thieme 1982, 21.

15. Hellström & Thieme 1982, 21.

16. See Jenkins *et al.* 1997, pl. 1.

17. Koenigs 2015, 41-43.

18. Stanzl (2015, 183), for instance, argues that the optical effect in ancient architectural polychromy was achieved by colouring only the background of architectural ornaments and not primarily the ornament itself. Archaic examples of this principle have been observed close to Labraunda on architectural terracottas from Euromos, although these feature dark-coloured bead-and-reels on a white background. See Ateşlier 2011, 286-287, fig. 7.



Fig. 5. Top – architraves A 16 A (right) and B (left) of the South Propylon (P. Hellström 1978); centre – remains of red paint (J. Blid 2017); bottom – infrared photography showing luminescent remains of Egyptian blue (A. Guimier 2017).

In fact, examples from both Halikarnassos and Priene testify to the practice of applying contrasting colours on the bead-and-reels, which have white or yellow painted beads on a red background<sup>19</sup>. At Priene, red also seems to be the preferred background colour of leaf-and-dart ornaments, even though blue paint covers the background of such an ornament on the abacus crown of the column capitals<sup>20</sup>. The abacus on the column capitals at the Maussolleion also contains traces of a blue background<sup>21</sup>. The seemingly more common use of red backgrounds for leaf-and-dart ornaments can also be seen at later III<sup>rd</sup>-century buildings in western Asia Minor such as the mausoleum at Belevi (the actual leaves of the ornament

19. cf. Jenkins *et al.* 1997, pl. 1; Koenigs 2015, 42, 298 (cat. no. 257), 400 (cat. no. 676).

20. Koenigs 2015, 42, cat. no. 208.

21. Koenigs 2016, 194.

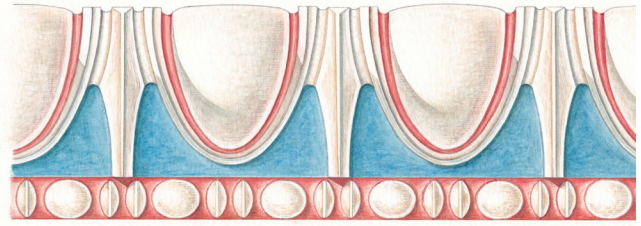


Fig. 6. Colour reconstruction of crowning moulding of architrave A 16 A (J. Blid 2018).

are painted blue)<sup>22</sup> and on similar ornaments on the so-called “Ptolemaion” at Limyra<sup>23</sup>. Thus, similar decorative practices seem to occur in the region during both the IV<sup>th</sup> and III<sup>rd</sup> centuries.

Two architrave blocks from the south façade of the South Propylon were found in the area west of the Temple of Zeus (fig. 5)<sup>24</sup>. Faint traces of red paint can still be seen on block A 16 B on the crowning moulding on the background of the bead-and-reel astragal, but no colour has been found on the actual beads, in line with observations made at Halikarnassos and Priene. During the archaeological campaign of 2017, I also detected minute reddish-brown spots in the canalis surrounding the eggs of the ovolo, which I believe could be traces of red colour. These remains are, however, less evident than those on the astragal. The observed colour scheme of the crowning architrave moulding of the South Propylon corresponds closely to Newton’s documentation of painted ovolos from the Maussolleion<sup>25</sup>. Furthermore, during the 2017 campaign Alain Guimier detected substantial remains of Egyptian blue on the background of the egg-and-dart ovolo of the aforementioned architrave by means of infrared photography (fig. 5). Thus, it is clear that blue paint was used to flank the area between the eggs of the ovolo, while red was used as the background for the bead-and-reel astragal (fig. 6). The large concentration of Egyptian blue may indicate that the area had a deep blue hue. Blue backgrounds for egg-and-dart mouldings also occur on architrave crowns on the Temple of Athena at Priene<sup>26</sup>. Astragals with a red background and egg-and-dart ovolos with a blue background also occur at Belevi<sup>27</sup>. Ohnesorg, furthermore, mentions an Ionian cyma with a blue background at Ephesos, probably belonging to the younger Artemision<sup>28</sup>. Even though variations may occur, I believe that these examples from Labraunda, Halikarnassos

22. Praschniker & Theuer 1979, 64, fig. 49a.

23. Stanzl 2015, 183-184, figs. 13-14.

24. Architraves: A 16 A and B; see Jeppesen 1955, 26; Crampa 1972, 15-16, pl. 3.

25. Jenkins *et al.* 1997, pl. 1. Moreover, the recorded colours found on architectural members from the Maussolleion are blue and red, and feature gilded elements (39).

26. Koenigs 2015, 41-43, pl. 40.

27. Praschniker & Theuer 1979, 64, fig. 49.

28. Ohnesorg 2007, 125.

and Priene represent a reliable sample, suggesting a standard way of painting some of the most common Ionic architectural ornaments of the region during the IV<sup>th</sup> and III<sup>rd</sup> centuries. In most cases, the colour scheme seems uniform and consistent, which may indicate a resilient polychromatic practice that was respected during secondary restorations.

#### MIXED ARCHITECTURAL ORDERS

The most unique buildings at Hekatomnid Labraunda are the two royal banquet buildings (andrones) which were dedicated by Maussollos and presumably Idrieus to the local deity Zeus La(m)braundos<sup>29</sup>. The buildings are monumental in scale, measuring about 12 m in width by 21-22 m in length, and feature an Ionic distyle in-antis porch in front of a square cella. The andrones were planned according to Ionic principles of design but crowned by a Doric entablature featuring a frieze of alternating triglyphs and metopes<sup>30</sup>. The preserved state of the andrones differs greatly. The Andron of Maussollos (Andron B) still retains much of its marble decoration, whereas its lateral gneiss walls are less well preserved. Conversely, at the younger andron (Andron A), the gneiss walls on the south side stand to their full height of 25 courses (six to seven of which are, at present, below ground level) – c. 12.5 m (fig. 7) – whereas very little remains of the marble façade. In terms of preservation, therefore, the two andrones can be said to make up for each other's shortcomings.

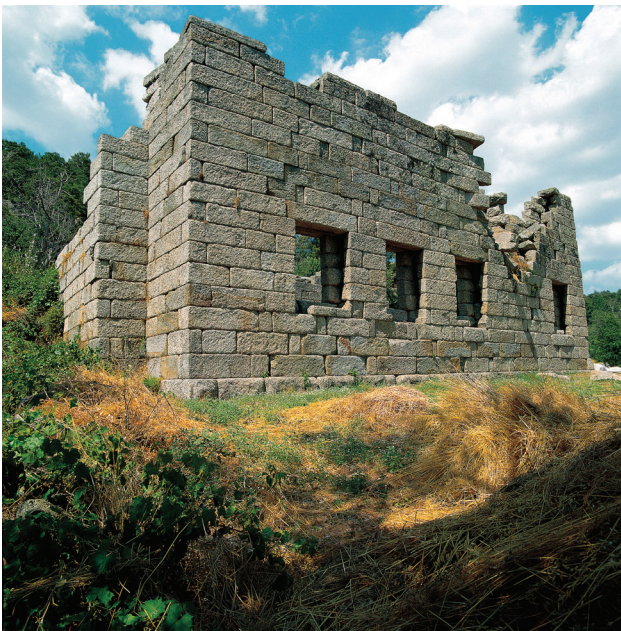


Fig. 7. Andron A seen from the south (A. Konyalı 2009).

29. See Hellström & Thieme 1981; Hellström & Blid, *forthcoming*.

30. Hellström & Blid, *forthcoming*.

Even though no painted decoration has been observed on the Ionic marble members of the andrones, the Andron of Maussollos preserves red paint on both horizontal and raking geison blocks on the fascia at the back of the soffit<sup>31</sup>. The practice of colouring this fascia red is also found on several Doric buildings of mainland Greece, for instance on the only slightly earlier Temple of Asklepios at Epidauros<sup>32</sup>. As the Doric order does not appear to have been well established in the area of Karia before the Hekatomnids, it is likely that both the use of the architectural order itself and its associated painted decoration at Labraunda were inspired by contemporary artistic practices common in regions farther to the west.

Few remains of painted ornaments have been found on the marble members of the two andrones. However, it is clear from the preserved marble antae of the Andron of Maussollos that the gneiss walls behind the marble façade were plastered both inside and out<sup>33</sup>. The antae were bonded to the gneiss walls at every second course, and the bonded area was point-dressed in order to attach the plaster. The anta bond is reassessed with a 1 cm-deep offset on the exterior, and c. 2 cm on the interior, which means that a thicker layer of plaster covered the interior walls. The exterior was presumably whitewashed to better match the marble façade. Olivier Henry has brought to my attention that, during the 2014 excavations inside Andron A, a number of white, red and black plaster fragments were found in the cella<sup>34</sup>. While the majority of the fragments are white, various hues of yellow, blue, red and pink have also been discovered<sup>35</sup>. The remains are currently being studied by Agneta Freccero, who has concluded that the plasters were painted in the *al fresco* technique, with the addition of paint applied *al secco*<sup>36</sup>. The yellow and red pigments were ochre, and the black were carbon. A recent carbon-14 analysis of a selected sample determined a date of approximately the II<sup>nd</sup> century B.C., and could thus belong to a restoration of the original wall decoration<sup>37</sup>. The recent excavations inside Andron A have unearthed numerous dark bluish-grey and white fragments of pebble mosaics from a later pit carved into the original floor<sup>38</sup>. According to the preliminary study conducted by Anne-Marie Guimier-Sorbets, they seem to belong to two different pavements, both of which were originally located inside Andron A and probably date to the first construction phase of the building. They seem to have depicted a floral pattern and a wild animal.

31. *Ibid.* (cat. nos. B-G3 and B-G20).

32. Erected between c. 400-390 B.C.: Prignitz 2014, 248–249. The Andron of Maussollos was probably built during the early reign of Maussollos in the 370s.

33. Hellström & Blid, *forthcoming*.

34. Personal communication.

35. Henry *et al.* 2015, 352.

36. Henry *et al.* 2018, 297.

37. Henry *et al.* 2018, 297.

38. Henry *et al.* 2015, 352-353, figs. 89-90.

The polychromatic effect of the andrones was not restricted to painted marble decorations and wall plasters. The frames of the high doorways were all cased in bronze. The bases of both doorframes are preserved in the Andron of Maussollos. They are cut from blue limestone, which contrasts with the white marble of the threshold in a lithic bichromy comparable to a similar practice at the Maussoleion at Halikarnassos<sup>39</sup>. The bases were equipped with a number of sockets for a wooden frame. Hellström has demonstrated that this type of wooden frame is normally associated with a bronze casing, similarly to the Treasury of the Athenians at Delphi<sup>40</sup>. This conclusion is in line with previous studies, which have suggested that wooden doorframes continued to be used as late as the IV<sup>th</sup> century (and even during the Hellenistic period at Labraunda) because the wood was cased in bronze<sup>41</sup>. We should thus not be surprised that wood was used in prestigious buildings, such as the andrones, which were built by wealthy patrons as “the choice was not between stone and less-prestigious wood but

rather between stone and bronze”<sup>42</sup>. The wooden double doors of both andrones would, of course, also have been sheeted with bronze (fig. 8). The height of the doorway of the Andron of Maussollos was most likely 5.23 m, measured from the threshold. The frame would thus have carried close to 30 m<sup>2</sup> of bronze, and even more in Andron A, given that the entrance wall is considerably thicker. Furthermore, the seven window frames of the Andron of Maussollos and the ten of Andron A also appear to have been cased with bronze on the interior, while the exteriors had window boards and -frames in marble<sup>43</sup>. The intercolumniations of the Andron of Maussollos were, moreover, closed with bronze grilles. On Andron A, a green patina, presumably a discolouration resulting from bronze mounts, was discovered around the pierced “ears” of the triglyphs of the front façade<sup>44</sup>. These were probably used to support pendant decorations, for instance garlands, hanging in front of the metopes between each triglyph. Thus, the quantity of bronze employed for the decoration of the andrones is noteworthy and it must have given to large parts of the buildings a radiant appearance.

I have based the polychromy of the graphical reconstruction of the Andron of Maussollos (fig. 8) on various finds and parallels. (1) I have reconstructed the majority of the walls as white, as most of the plaster fragments excavated in the cella of Andron A are white. The accentuated (black) orthostat follows the special treatment of the stone blocks at this location. The orthostat is crowned by a hypothetical intermediate zone (red) up to the level of the low binding course (course 8). (2) The door- and window frames and the doors of the Ionic porch are cased with bronze. There are also bronze grilles in the intercolumniations. (3) The colour of the entablature is hypothetical and follows the common Doric practice observed at various locations in the ancient Greek world.<sup>45</sup> The painted blue tympanon is based on well-preserved Hellenistic tombs (e.g. Tomb of the Palmettes and Tomb of Judgement) at Lefkadia.

The best-preserved building at Labraunda planned according to a Doricising design



Fig. 8. Graphical reconstruction of the Andron of Maussollos (J. Blid 2017).

39. Jenkins *et al.* 1997, pl. 21.

40. Hellström & Blid, *forthcoming*. See also: Büsing 1994, 89-90; Büsing-Kolbe 1978, 146, 157-158, 162, 169.

41. Büsing 1994, 89-90; Büsing-Kolbe 1978, 146, 157-158, 162, 169.

42. Hellström & Blid, *forthcoming*.

43. Hellström & Blid, *forthcoming*.

44. Oral testimony given by Eric Berggren (who participated in the early excavations).

45. For a regional example from the Hellenistic period, see, for instance, the observed colour remains on the Doric proskenion of the theatre at Priene: Rumscheid 1998, 174-175. Painted blue regulae have also been noted at the Ptolemaion in Limyra: Stanzl 2015, fig. 15.





Fig. 9. The Oikoi seen from the east (A. Konyalı 2009).



Fig. 10. Sima fragments from the Oikoi (P. Hellström 1987).

is the so-called “Oikoi”, which was dedicated by Idrieus (fig. 9)<sup>46</sup>. The building is located west of the Temple of Zeus and directly north of Andron A. The Oikoi consists of two square rooms behind a tetrastyle Doric portico, about 13 m wide. The building also contains several Ionicising elements such as fillets between the flutes of the columns, an Ionic style ovolo crown on the architrave, a (presumably) plain frieze and an Ionic geison. It is, therefore, like most other Hekatomnid buildings, “unconventional” in its use of the architectural orders. In a way, the building is the direct opposite of the andrones as it features a Doric colonnade and epistyle crowned by an Ionic frieze and cornice. The function of the building is unclear: scholars have suggested that it served either as a treasury, an archive, a prytaneion or a place for ritual dining<sup>47</sup>.

The front façade and entablature of the Oikoi are constructed from white marble, while the walls of the building are built from gneiss ashlar. The cornice was decorated at the top with a sima equipped with waterspouts in the shape of lions’ heads. Between the spouts are remains of what was once an anthemion frieze, a feature that appears in both Doric and Ionic buildings during this time (fig. 10)<sup>48</sup>. A shallow recess with a carefully smoothed bottom surface forms the frieze itself. The surface of the area surrounding the anthemion

is weathered and coarse. The shallow recess of the frieze combined with its smoothed bottom surface may have been intended to accommodate a decoration of thin inserted leaves of gold or another precious material<sup>49</sup>. The surface surrounding the frieze was probably painted, which has left it considerably more weathered<sup>50</sup>. Similar practices of contrasting a sima frieze against a darker background are known from many other buildings dating from as early as the Archaic period. Friezes displaying anthemion and other floral decorations on a painted background dating to the Late Classical and Early Hellenistic periods are known from, for instance, Priene, Belevi and tombs at Vergina and Lefkadia in Greece<sup>51</sup>. These painted backgrounds are usually dark blue. Sculptured sima decorations on a blue background have also been recorded in the late-5<sup>th</sup>-century temple at the Argive Heraion<sup>52</sup> and on the background of both the Amazon and chariot friezes of the Maussolleion at Halikarnassos, although the latter has a slightly different architectural context<sup>53</sup>. Numerous other examples of reliefs and friezes on painted blue backgrounds could be mentioned. All the discovered sima blocks at Labraunda lack sculptured decoration in contrast to

46. For further reading on the Oikoi, see Hellström 1985, 159-160; 1994, 45-50; 2007, 119. The “rooms” are mentioned in the architrave inscription made by Idrieus to Zeus of Labraunda; see n. 6, above.

47. Hellström 2007, 123.

48. The sima blocks are now kept at the Bodrum Museum of Underwater Archaeology.

49. Suggested to me by Ulrike Koch Brinkmann. Such attachments of metal and glass are known to appear in Greek architecture: see Jenkins 2006, 34; Scahill 2009, 44-45.

50. See Ohnesorg (1991, 176-177) for a discussion on weathering of marble surfaces that have been painted using different colours and techniques.

51. Praschniker & Theuer 1979, 64; fig. 49a. The Alcmaeonid Temple of Apollo in Delphi contains an early example of a sima with a blue background and red decoration (Ohnesorg 1991, 176).

52. Pfaff 2003, (cat. nos. 336 and 337) 187, 189, 301.

53. Jenkins *et al.* 1997, 37-38.

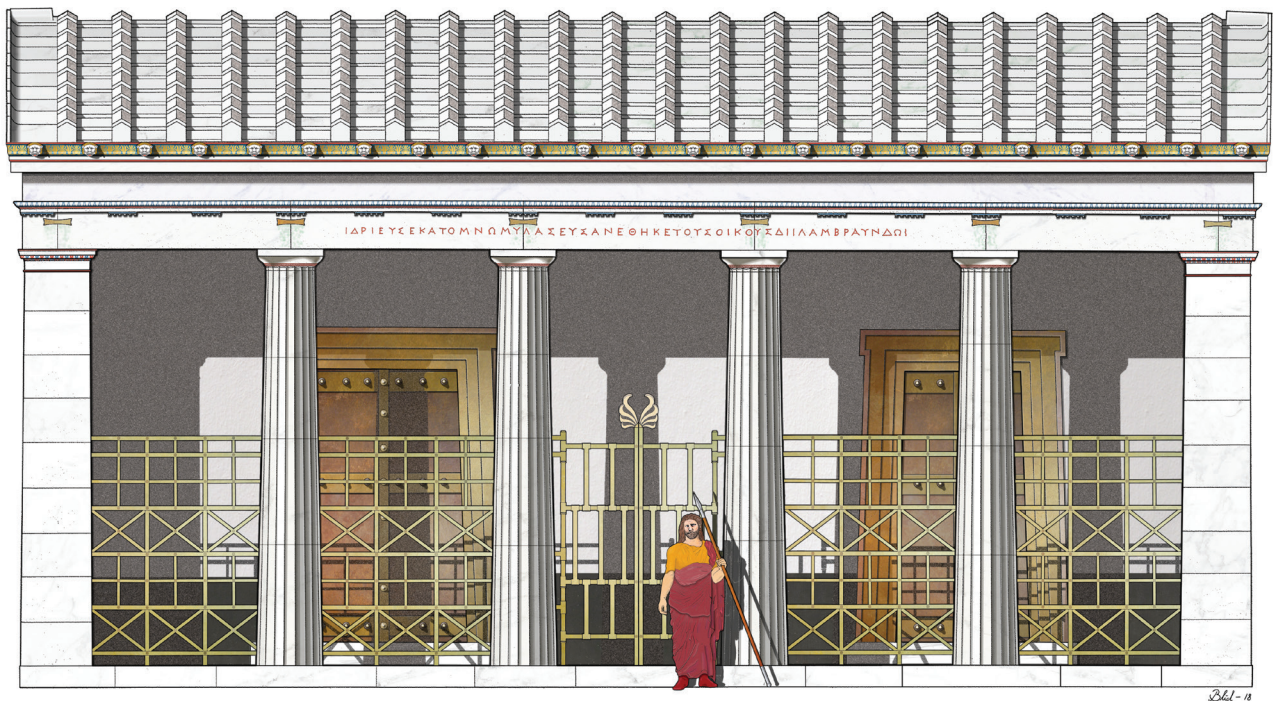


Fig. 11. Graphical reconstruction of the Oikoi (J. Blid 2018).

the elaborate examples from the Temple of Athena at Priene and the Maussoleion at Halikarnassos<sup>54</sup>. Instead, the simas at Labraunda were probably painted, while the examples from the Oikoi may have been even more developed in the use of composite materials (fig. 11).

Similarly to the andrones, the Oikoi probably had bronze-cased doorframes and doors. Furthermore, in the epistyle of the exterior façade, bronze was applied in a decorative way, as evidenced by the visible swallow-tail-shaped clamps that joined the blocks<sup>55</sup>. Such visible, decorative clamps were also common for joining stylobate and krepis blocks in the Hekatomnid buildings at Labraunda such as the Oikoi, the Temple of Zeus, the propylons and the Andron of Maussollos<sup>56</sup>. Hellström has, furthermore, noted cuttings in the column drums and anta blocks of the Oikoi for attaching bronze grilles. These grilles reached a total height of about 2.40 m<sup>57</sup>. The frequent use of bronze in the andrones was also repeated in the Oikoi and most likely achieved a similar dazzling polychromatic effect.

The colour scheme of the graphical reconstruction of the Oikoi (fig. 11) is hypothetical and based on general knowledge

of architectural polychromy of Doric elements such as anta capitals (hawk's-beak moulding in alternating red and blue and blue regulae)<sup>58</sup>. The colouring of the Ionic crown of the architrave is based on the results of the investigation of the architrave from the South Propylon (see fig. 6). The rendering of the sima is based on the assumption that the frieze of lotus-and-palmette ornaments was composed of gold leaves on a blue background.

#### THE HEKATOMNID BUILDING PROGRAMME IN COLOUR

The painted architectural decoration of the Ionic style of the Hekatomnid building projects at Labraunda, Halikarnassos and Priene indicates a shared practice. The, admittedly scant, painted Doric elements at Labraunda, however, indicate, like the architecture itself, a direct link with Greek practices. Such elements are, to the best of my knowledge, not found in Karia before the Hekatomnid period. Even though the evidence is very limited, the architectural polychromy seems to display the same aesthetic fluidity as the architecture itself. It strengthens the general image of a combination of Anatolian and Greek influences: the polychromy of the buildings consists of a combination of an indigenous Ionic style and traditional Doric practices, and is further monumentalised by an abundant use of painted plasters and bronze elements (a result, perhaps, of

54. Koenigs 2015, 110; Jeppesen 2002, 125-132.

55. Hellström 2007, 121.

56. Oikoi: Hellström 2007, 123. Temple of Zeus: Hellström & Thieme 1982, 24, pls. 5:3-4, 31, 40. The propylons: Jeppesen 1955, pls. 2-3, 17-18. Andron of Maussollos: Hellström & Blid, *forthcoming*.

57. Based on an unpublished manuscript on the Oikoi by Hellström.

58. See n. 45, above.

the legendary wealth of the Hekatomnid rulers)<sup>59</sup>. The result is a composite picture of a rich polychromatic experience at Hekatomnid Labraunda, featuring materials such as white marble, painted ornaments (on marble), colourful plasters, metals and wood. Like Hekatomnid architecture generally, the colour scheme used on Hekatomnid buildings seems to have enjoyed lasting popularity – several examples from Asia Minor prove that it was still favoured during the III<sup>rd</sup> century. Hopefully, future colour research will further underline polychromatic aspects of the diverse and dazzling architecture of the Hekatomnid period.

## Bibliography

- Ateşlier, S. (2011): "The Archaic architectural terracottas from Euromos and some cult signs", in: Karlsson & Carlsson, ed. 2011, 279-290.
- Baran, A. (2009): "Karian architecture before the Hekatomnids", in: Rumscheid, ed. 2009, 291-313.
- Blid, J. (2016): *Labraunda 4. Remains of Late Antiquity* (Swedish Research Institute in Istanbul), Stockholm.
- Bommelaer, J.-F., ed. (1985): *Le dessin d'architecture dans les sociétés antiques*, Leiden.
- Büsing, H. (1994): *Das Athener Schatzhaus in Delphi*, MarbWPr.
- Büsing-Kolbe, A. (1978): "Frühe griechische Türen", *Jdl*, 93, 66-174.
- des Courtils, J., ed. (2015): *L'Architecture monumentale grecque au III<sup>e</sup> siècle avant J.-C.*, Bordeaux.
- des Courtils, J. and Moretti, J.-C., ed. (1993): *Les Grands Ateliers d'architecture dans le monde égéen du VI<sup>e</sup> siècle av. J.-C.*, Actes du colloque d'Istanbul, 23-25 mai 1991, Istanbul.
- Crampa, J. (1972): *Labraunda, Swedish excavations and researches III. The Greek inscriptions*, part 2: 13-133 (ActaAth-4<sup>o</sup>, 5:3:2), Stockholm.
- Hellström, P. (1985): "Dessin d'architecture hécatomnide à Labraunda", in: Bommelaer, ed. 1985, 153-165.
- (1994): "Architecture. Characteristic building-types and particularities of style and technique. Possible implications for Hellenistic architecture", in: Isager, ed. 1994, 36-57.
- (2007): *Labraunda. A guide to the Karian sanctuary of Zeus Labraundos*, Istanbul.
- Hellström, P. and Blid, J. (forthcoming): *Labraunda 5. The Andrones*, Stockholm.
- Hellström, P. and Thieme, T. (1981): "The androns at Labraunda. A preliminary account of their architecture", *MedMusB* 16, 58-74.
- (1982): *Labraunda, Swedish excavations and researches I:3. The Temple of Zeus* (Swedish Research Institute in Istanbul), Stockholm.
- Henry, O., Andersson, E., Bost, C., Çakmaklı, Ö. D., Comito, A., Cormier-Huguet, M., De Staebler, P., Dupont, P., Ergenç, D., Frejman, A., Kepenek, B., Leboutteiller, P., Nilsson, H., Rojas, F. and Vergnaud, B. (2015): "Labraunda 2014", in: *Anatolia Antiqua* 23, 301-394.
- Henry, O., Andersson, E., Blid, J., Bost, C., Çakmaklı, Ö., Carless-Unwin, N., Çimen, G., Eyigör, A., Freccero, A., Frejman, A., Georgescu, C., Goussard, E., Guimier-Sorbets, A.-M., Hauchart, M., Hedlung, R., Lamare, N., Lungu, V., Marchand-Beaulieu, F., Sitz, A., Stojanovic, I. and Vergnaud, B. (2018): "Labraunda 2017", *Anatolia Antiqua*, 26, 209-320.
- Hoffmann, A., ed. (1991): *Bautechnik der Antike: internationales Kolloquium in Berlin vom 15.-17. Februar 1990, Diskussionen zur archäologischen Bauforschung* 5, Berlin.
- Freccero, A. (2015): "Marble trade in Antiquity. Looking at Labraunda", *Anatolia Antiqua*, 23, 11-54.
- Isager, J., ed. (1994): *Hekatomnid Caria and the Ionian Renaissance* (Halikarnassian Studies, 1), Odense.
- Jenkins, I. (2006): *Greek architecture and its sculpture in the British Museum*, London.
- Jenkins, I., Gratzu, C. and Middleton, A. (1997): "The polychromy of the Mausoleum", in: Jenkins & Waywell, ed. 1997, 35-41.
- Jenkins, I. and Waywell, G. B., ed. (1997): *Sculptors and sculpture of Caria and the Dodecanese*, London.
- Jeppesen, K. (1955): *Labraunda, Swedish excavations and researches, V/1. The Propylaea* (ActaAth-4<sup>o</sup>, 5:1:1), Lund.
- (2002): *The Mausolleion at Halikarnassos: reports of the Danish archaeological expedition to Bodrum 5. The superstructure: a comparative analysis of the architectural, sculptural, and literary evidence*, Copenhagen.
- Karlsson, L. and Carlsson, S., ed. (2011): *Labraunda and Karia. Proceedings of the International Symposium Commemorating Sixty Years of Swedish Archaeological Work in Labraunda. The Royal Swedish Academy of Letters, History and Antiquities, Stockholm, November 20-21, 2008*, Uppsala.
- Koenigs, W. (2015): *Der Athenatempel von Priene*, Wiesbaden.
- (2016): "Die Maussolleionkapitelle in London", *Halikarnassian Studies*, 6, 171-225.
- Ohnesorg, A. (1991): "Herstellung und Bemalung von Marmordächern des 6. Jhs. v. Chr.", in: Hoffmann, ed. 1991, 172-177.
- (2007): *Forschungen in Ephesos 12:4. Der Kroisos-Tempel: neue Forschungen zum archaischen Dipteros der Artemis von Ephesos*, Wien.
- Pfaff, C. A. (2003): *The Argive Heraion 1: The Architecture of the Classical Temple of Hera*, Athens.
- Praschniker, C. and Theuer, M. (1979): *Forschungen in Ephesos 6. Das Mausoleum von Belevi*, Wien.
- Prignitz, S. (2014): *Bauurkunden und Bauprogramm von Epidauros (400-350)*, München.
- Rumscheid, F. (1998): *Priene: Führer durch das "Pompeji Kleinasien"*, Istanbul.
- , ed. (2009): *Die Karer und die Anderen. Internationales Kolloquium an der Freien Universität Berlin 13. bis 15. Oktober 2005*, Bonn.
- Ruzicka, S. (1992): *Politics of a Persian dynasty. The Hekatomnids in the fourth century B.C.*, London-Norman.
- Scahill, D. (2009): "The origins of the Corinthian capital", in: Schultz & von den Hoff, ed. 2009, 40-53.
- Schultz, P. and von den Hoff, R., ed. (2009): *Structure, image, ornament. Architectural sculpture in the Greek world*, Oxford.
- Stanzl, G. (2015): "Das Ptolemaion von Limyra", in: des Courtils, ed. 2015, 175-196.
- Thieme, T. (1993): "The Architectural Remains of Archaic Labraynda", in: des Courtils & Moretti, ed. 1993, 47-55.

59. See Vitruvius, *On Architecture*, 2.8.10; transl. F. Granger (Loeb): "He [Maussollos] was enriched by enormous revenues because he ruled over all Caria". Isocrates, *To Philip*, 103; transl. G. Norlin (Loeb): "Idrieus, who is the most prosperous of the present rulers of the mainland".

