

**THE EDICULA IMMERSIVE EVENT**  
**19 December 2022**

Timoleon Kouimtzoglou  
National Technical University of Athens

**Varnakova Katholikon**  
Architectural survey and documentation

Interdisciplinary Collaboration team for the Architectural Survey and Documentation:

**Professor Antonia Moropoulou**, School of Chemical Engineering, Research Program Supervisor

**Associate Professor Haralampos Mouzakis**, School of Civil Engineering, Research Program Main researcher

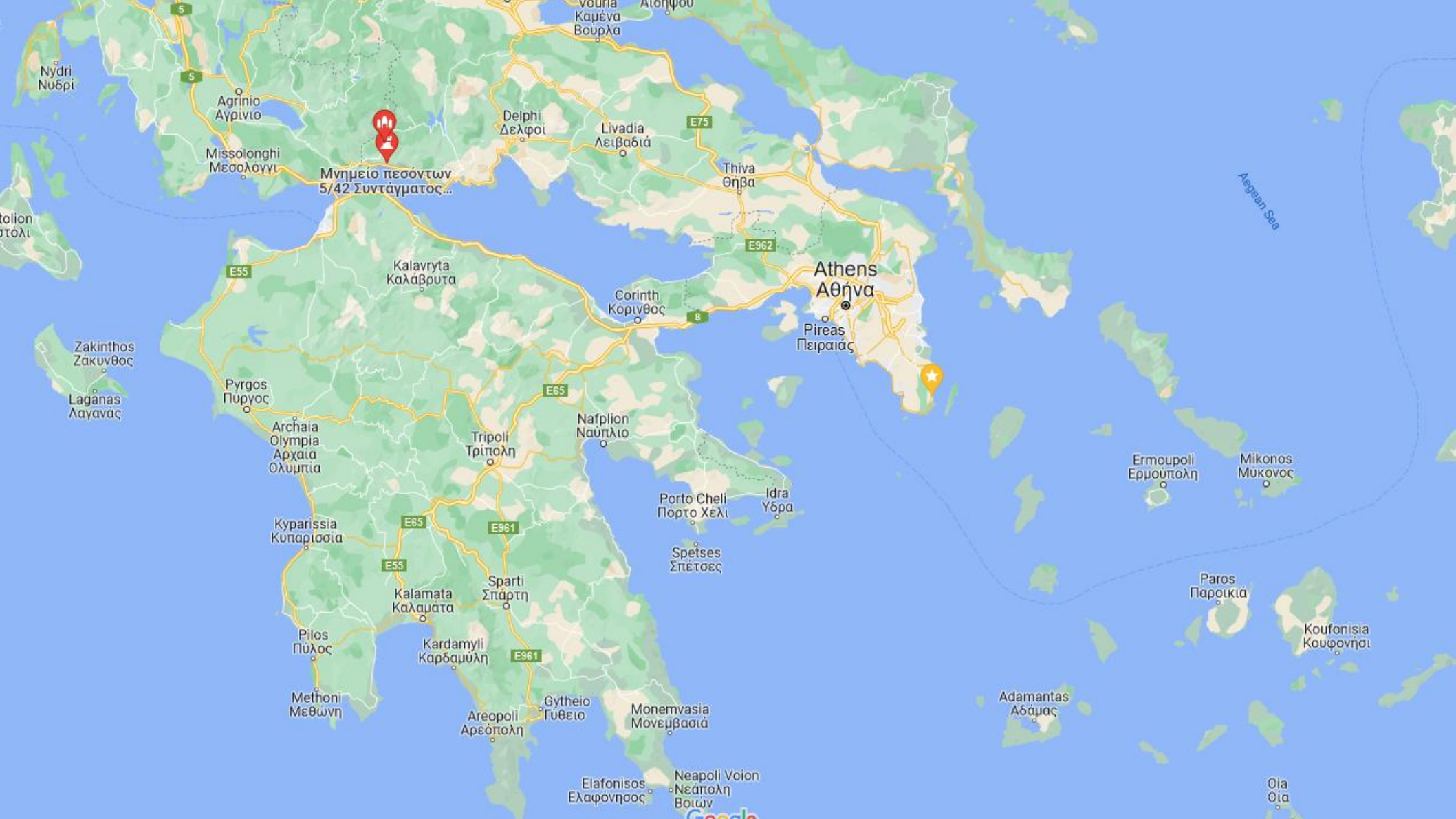
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**Georgios Bletsas-Yfantis**, Civil Engineer NTUA, Msc Conservation of Building Materials

**Zografia Karekou**, Architect Univ. Patras, Msc Conservation of Building Materials

**Elissavet Tsilimantou**, Rural, Surveying and Geoinformatics Engineer

**Georgios Andriotakis**, Architect, Architectural Proposal



Nydri  
Νύδρι

Agrinio  
Αγρινίο

Missolonghi  
Μεσολόγγι

Μνημείο πεσόντων  
5/42 Συντάγματος...

Delphi  
Δελφοί

Livadia  
Λειβαδιά

Thiva  
Θήβα

Athens  
Αθήνα

Pireas  
Πειραιάς

Corinth  
Κόρινθος

Kalavryta  
Καλάβρυτα

Zakynthos  
Ζάκυνθος

Laganas  
Λαγανάς

Pyrgos  
Πύργος

Archaea  
Ολυμπία

Tripoli  
Τρίπολη

Nafplion  
Ναύπλιο

Porto Cheli  
Πόρτο Χέλι

Idra  
Ύδρα

Spetses  
Σπέτσες

Kyriassia  
Κυπαρισσία

Pilos  
Πύλος

Kalamata  
Καλαμάτα

Sparti  
Σπάρτη

Kardamyli  
Καρδαμύλη

Methoni  
Μεθώνη

Areopoli  
Αρεόπολη

Gytheio  
Γυθείο

Monemvasia  
Μονεμβασιά

Elafonisos  
Ελαφώνησος

Neapoli Voion  
Νεάπολη Βοιών

Ermoupoli  
Ερμούπολη

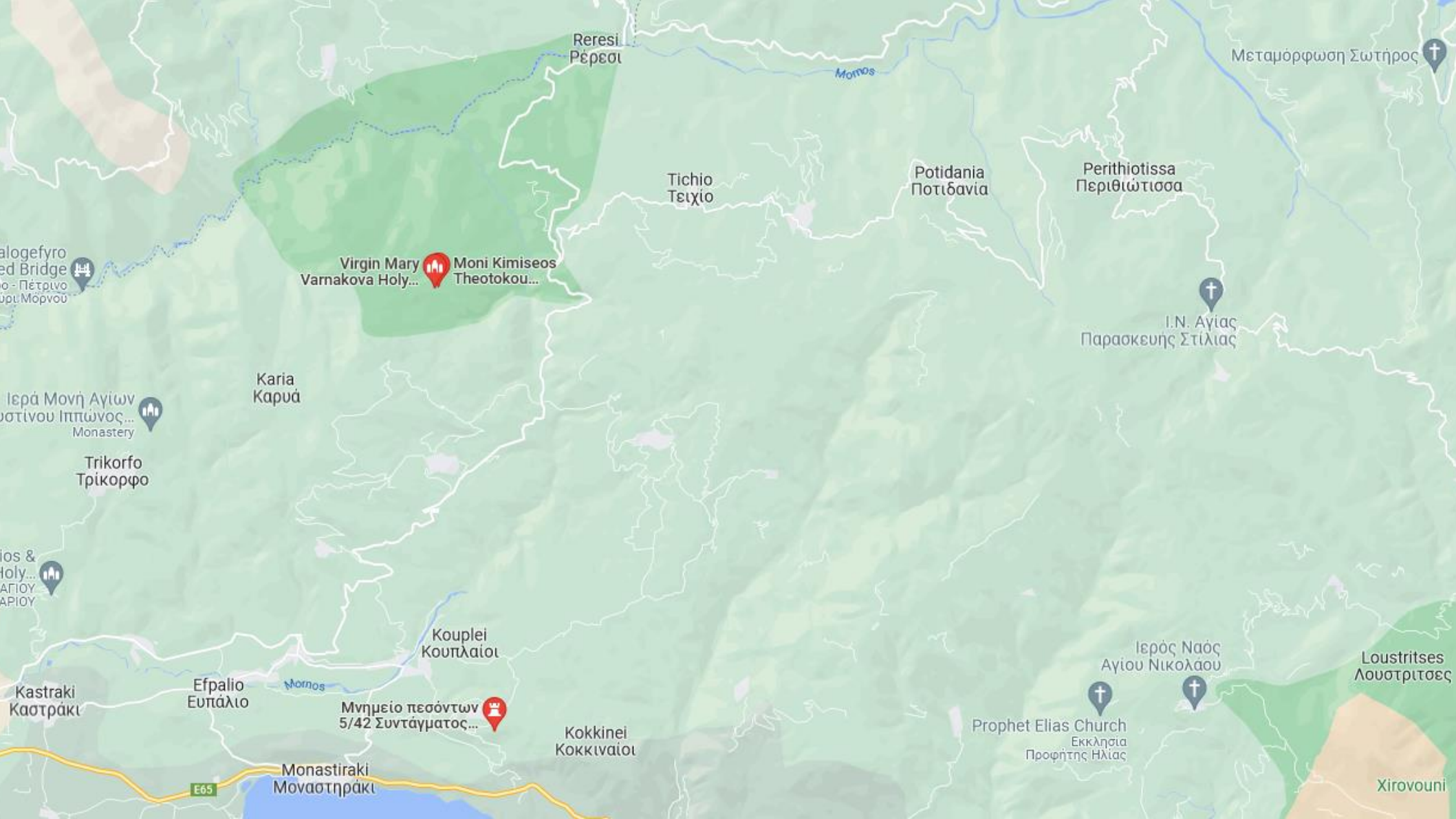
Mikonos  
Μύκονος

Paros  
Πάρος

Koufonisia  
Κουφονησί

Adamantas  
Αδάμας

Oia  
Οία



Reresi  
Ρέρεσι

Momos

Μεταμόρφωση Σωτήρος

Tichio  
Τειχίο

Potidania  
Ποτιδανία

Perithiotissa  
Περιθιώτισσα

Virgin Mary  
Varnakova Holy...



Moni Kimiseos  
Theotokou...

aloge fyro  
ed Bridge  
ο - Πέτρινο  
υρι Μορνού



I.N. Αγίας  
Παρασκευής Στίλιας

Karia  
Καρυά

Ιερά Μονή Αγίων  
Ιωάννου & Παύλου  
Μοναστήρι

Trikorfo  
Τρίκορφο

ios &  
Holy...  
ΑΓΙΟΥ  
ΑΡΙΟΥ

Kastraki  
Καστράκι

Efpalio  
Ευπάλιο

Kouplei  
Κουπλάιοι

Μνημείο πεσόντων  
5/42 Συντάγματος...



Kokkinei  
Κοκκιναίοι

Monastiraki  
Μοναστηράκι

E65

Prophet Elias Church  
Εκκλησία  
Προφήτης Ηλίας



Ιερός Ναός  
Αγίου Νικολάου



Loustritses  
Λουστρίτσες

Xirovouni





Virgin Mary  
Varnakova Holy...

Moni Kimiseos  
Theotokou...

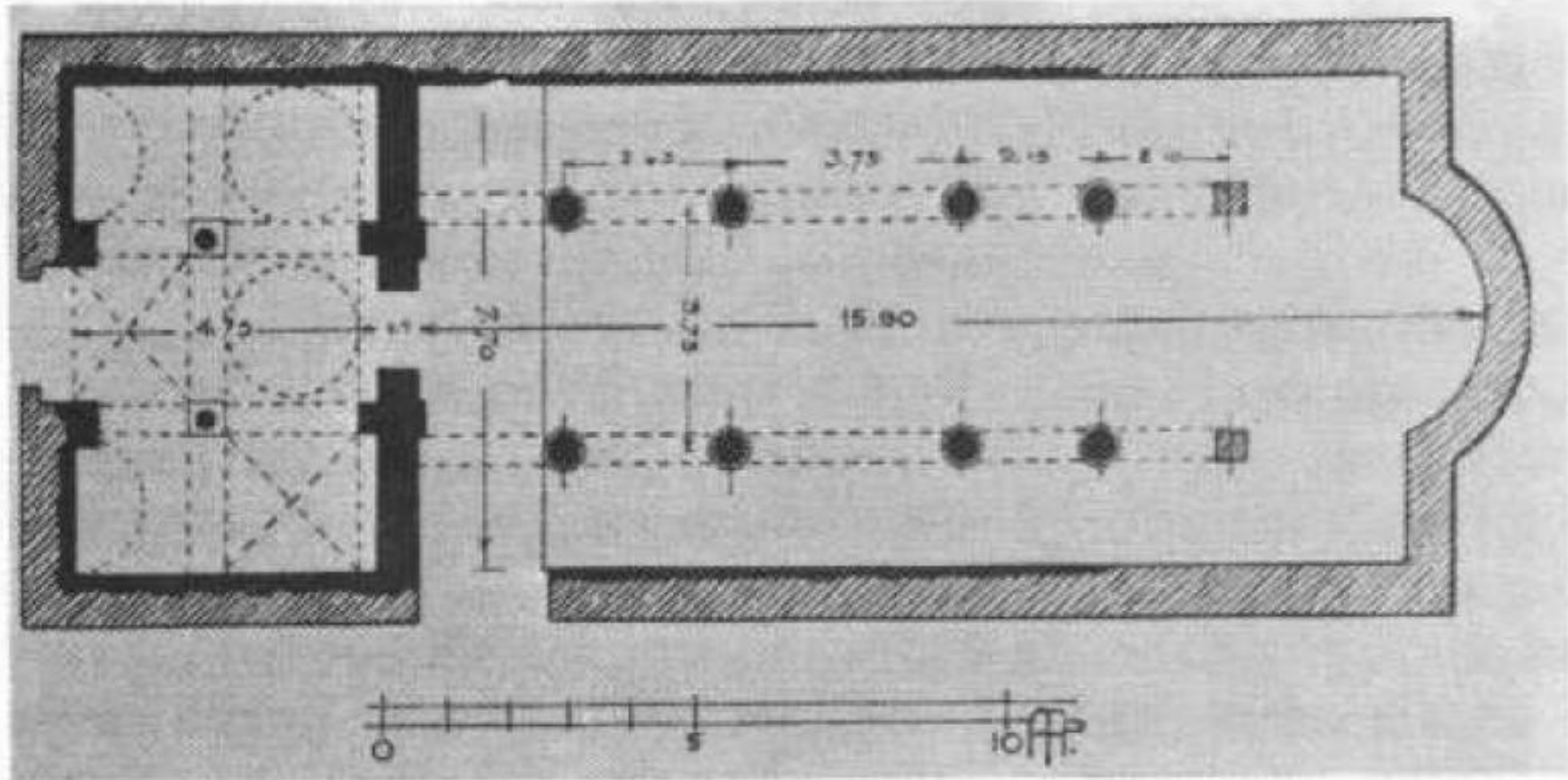
Google

Layers









1. Κατοψη του νέου καθολικού της μονής Βαρνακοβας  
 Αποτύπωση Α. Ορλάνδου, 1919.

Survey Plan by A. Orlandos 1919



Metal Reinforcements for masonry support





Metal Reinforcements for masonry support





Existence of a dense metal construction for the support of the masonry.

Existence of metal mesh grid covered with plastic sheets in order to prevent fall of rocks and mortar detaching from the upper areas of the monument.























## **Architectural Survey Site Specific Difficulties**

Existence of a Dense metal construction for the support of the masonry.

Existence of metal mesh grids covered with plastic sheets in order to prevent fall of rocks and mortar detaching from the upper areas of the monument.

This construction prevented easy access to all parts of the monument.

Some parts of the monument had no direct access at all (upper parts of the smaller domes, central dome,...).

Absence of work levels and scaffolding.

Poor lighting conditions.

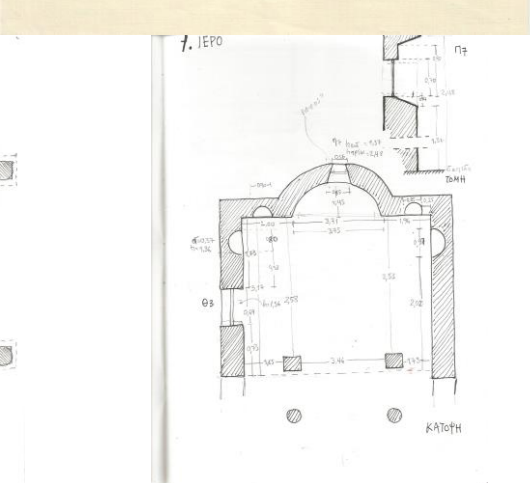
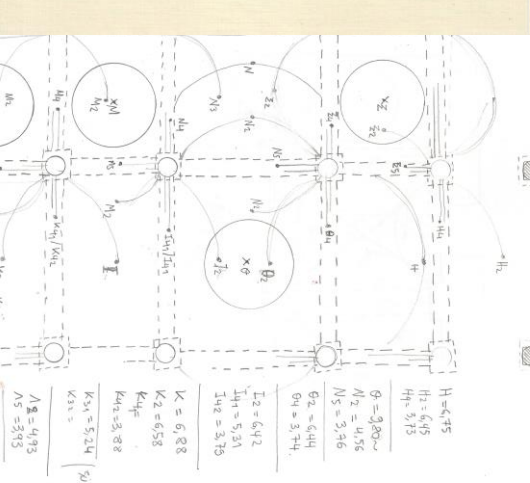
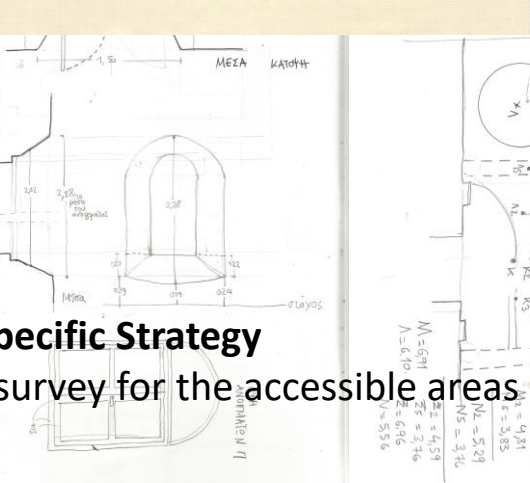
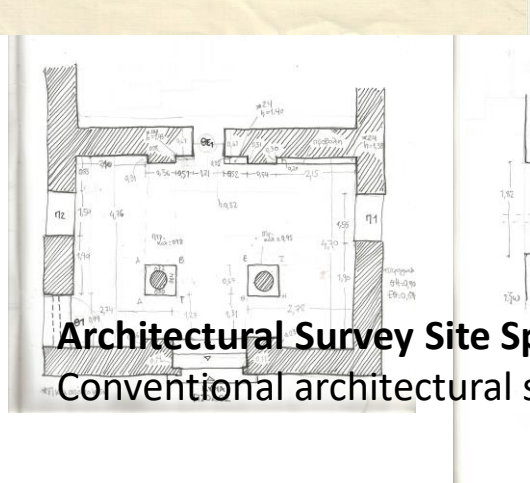
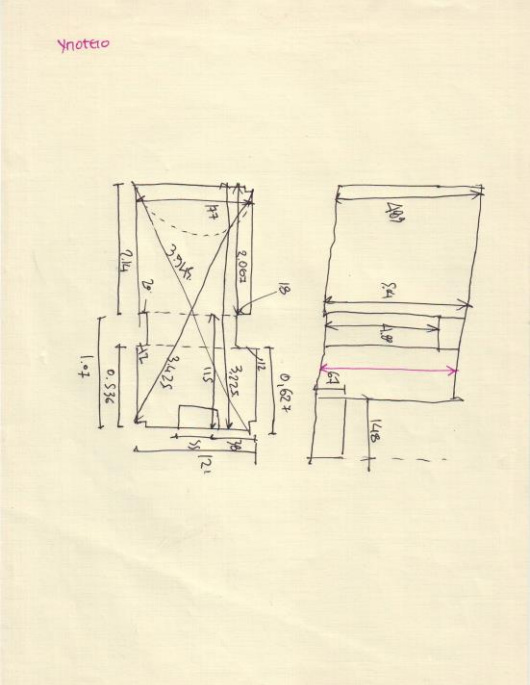
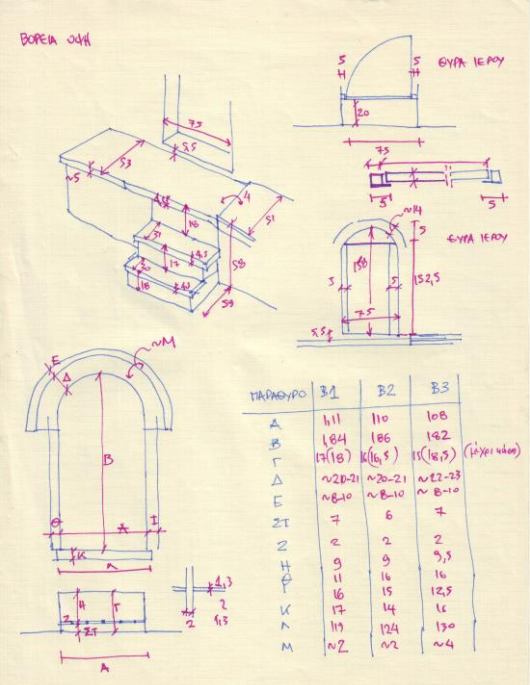
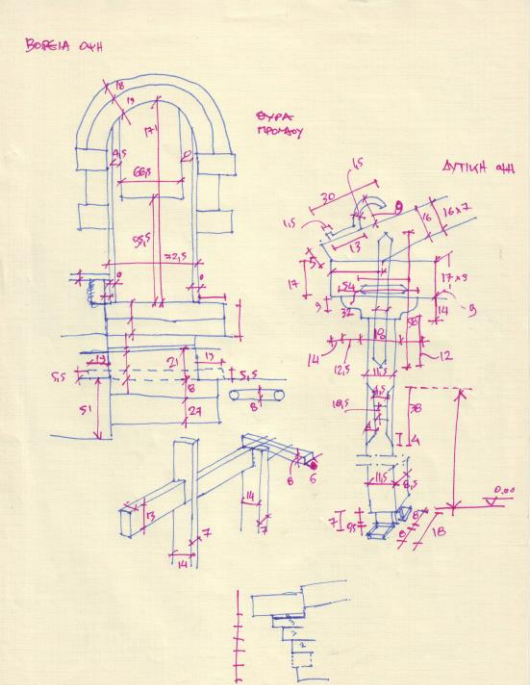
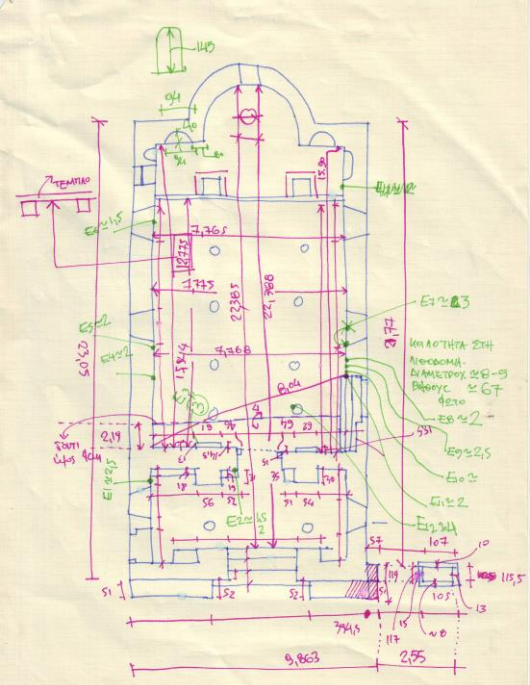
## **Architectural Survey Site Specific Strategy**

1. Conventional architectural survey for the accessible areas
2. 3d Scanning for the interior and the exterior of the monument
3. Creation of coloured exterior models with the use of photogrammetric methods

The result was the collection of data that when combined together offered an almost complete survey of the monument which allowed for the continuation of the study at the time from the other researchers.

A series of 3d models were created that helped to produce architectural 2d survey documentation.





**Architectural Survey Site Specific Strategy**  
Conventional architectural survey for the accessible areas





## Architectural Survey Site Specific Strategy

3d Scanning for the interior and the exterior of the monument





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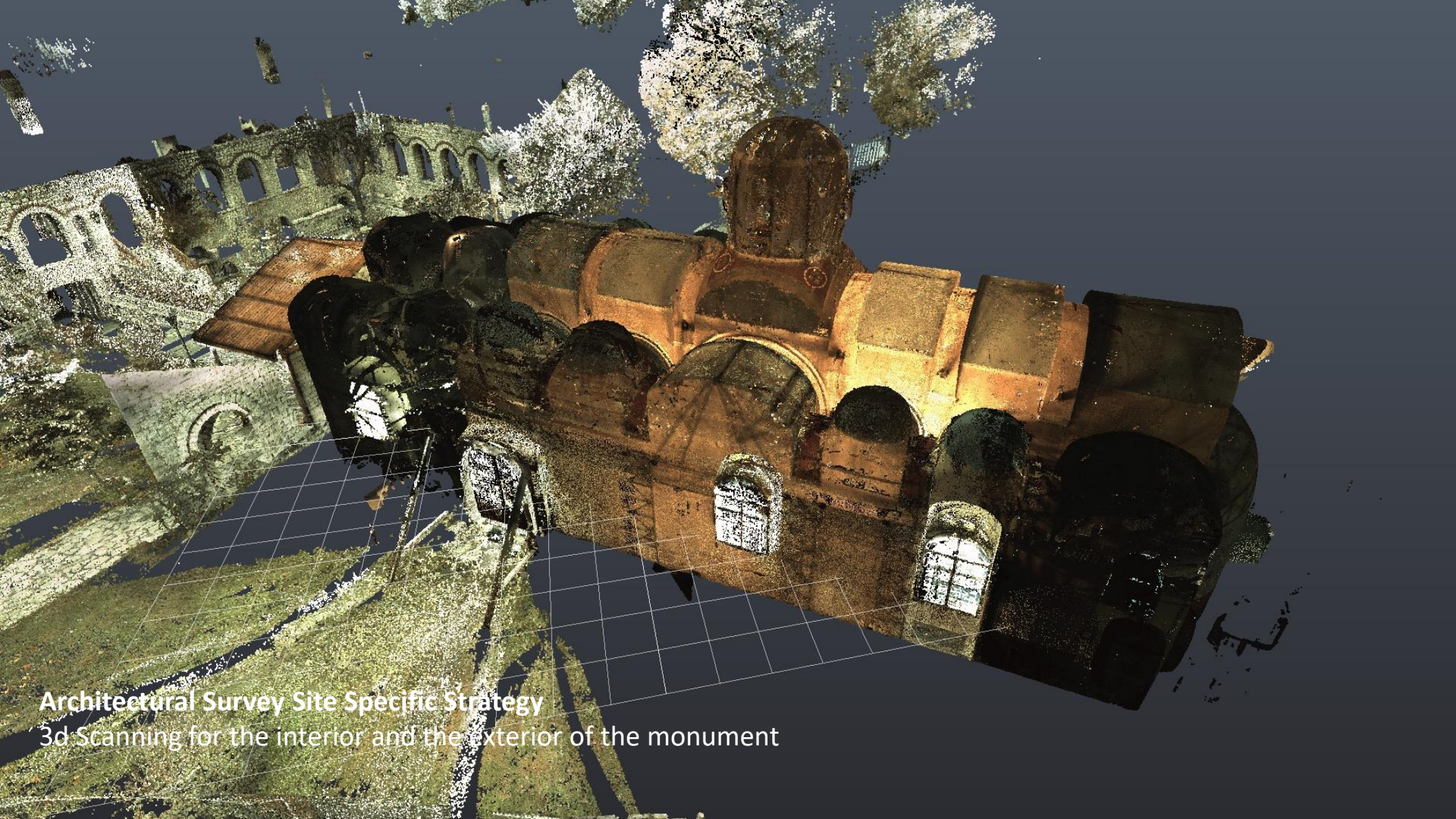




## Architectural Survey Site Specific Strategy

3d Scanning for the interior and the exterior of the monument

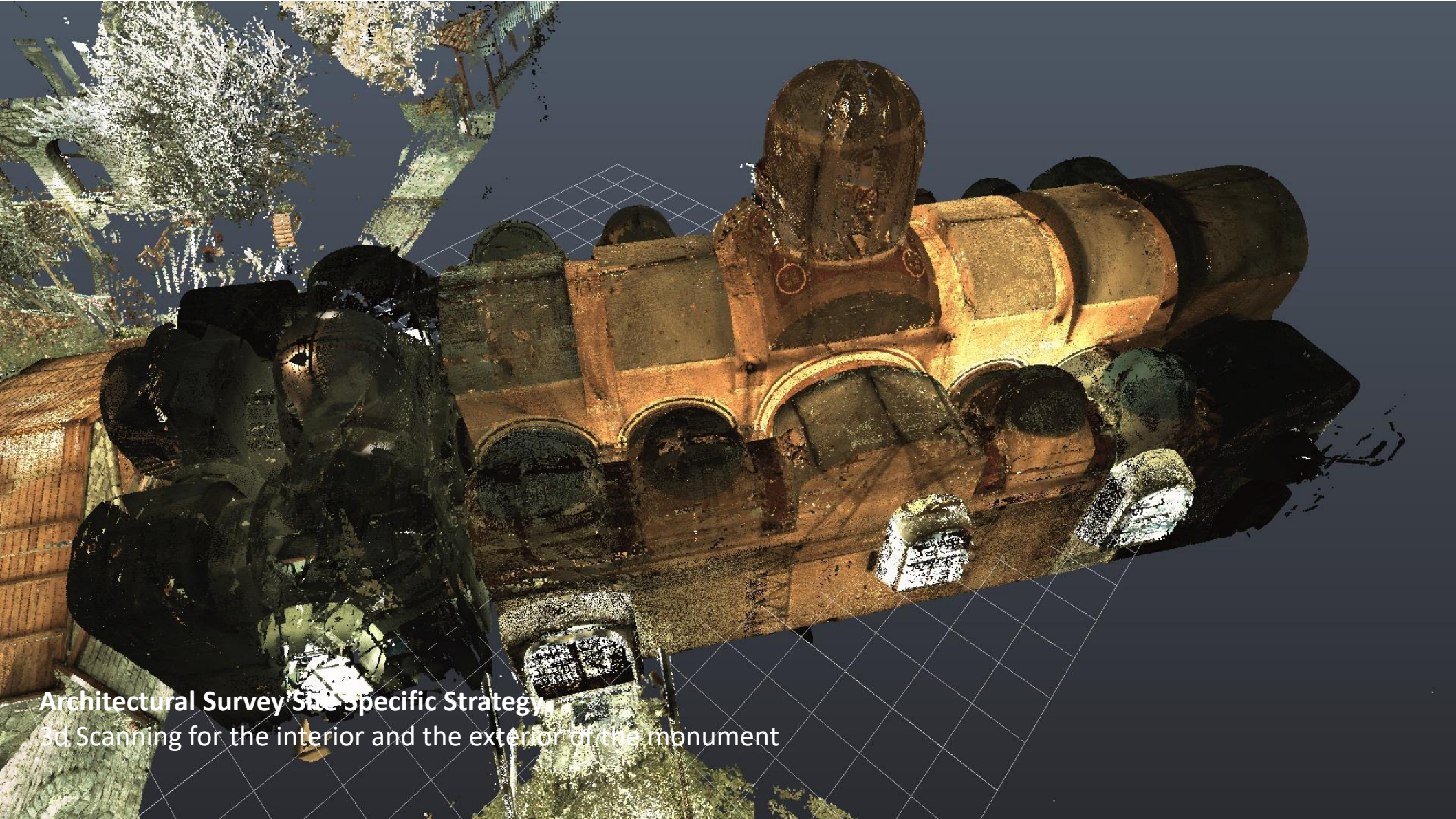




## Architectural Survey Site Specific Strategy

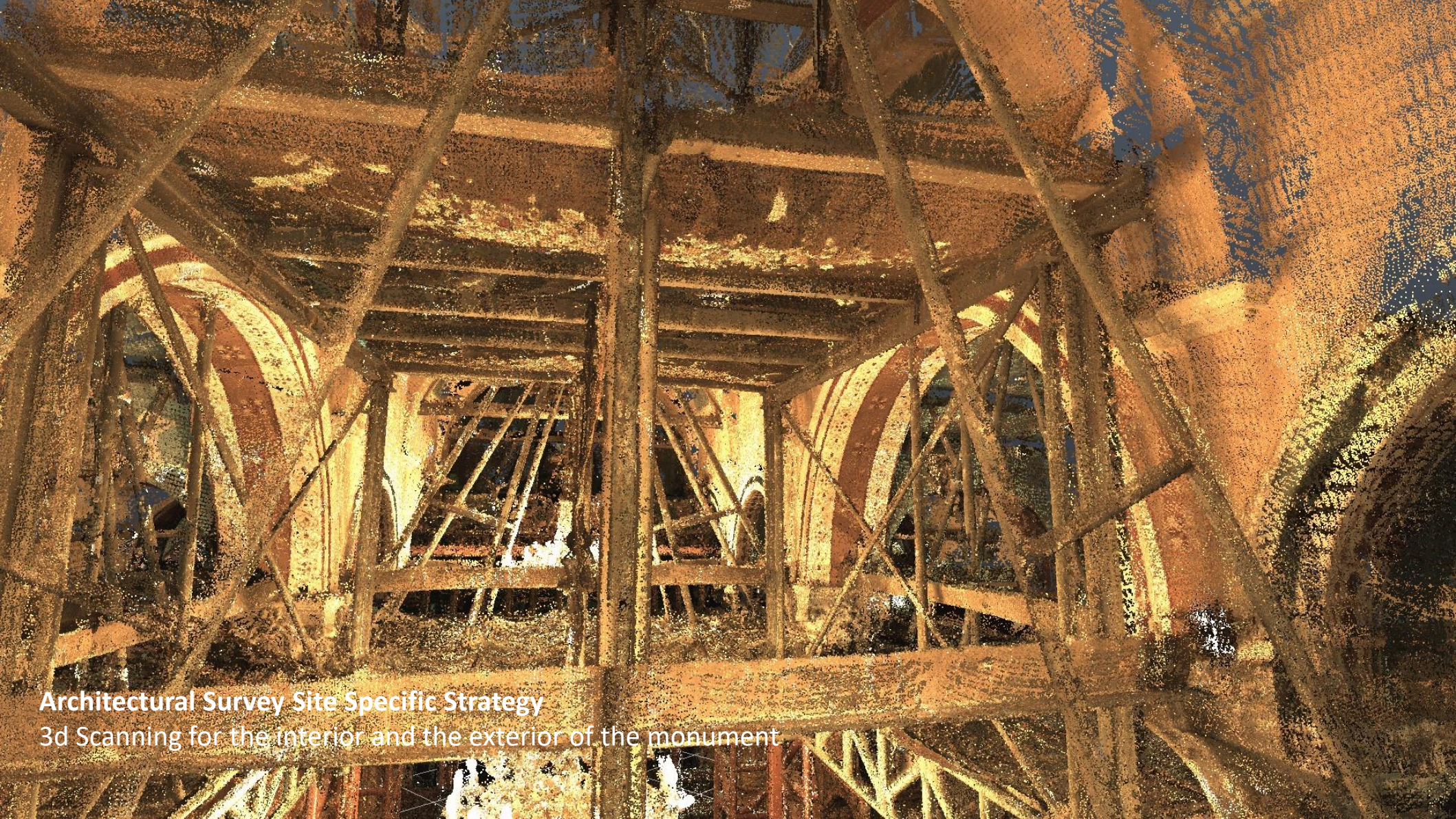
3d Scanning for the interior and the exterior of the monument





Architectural Survey Site Specific Strategy  
3d Scanning for the interior and the exterior of the monument





## Architectural Survey Site Specific Strategy

3d Scanning for the interior and the exterior of the monument

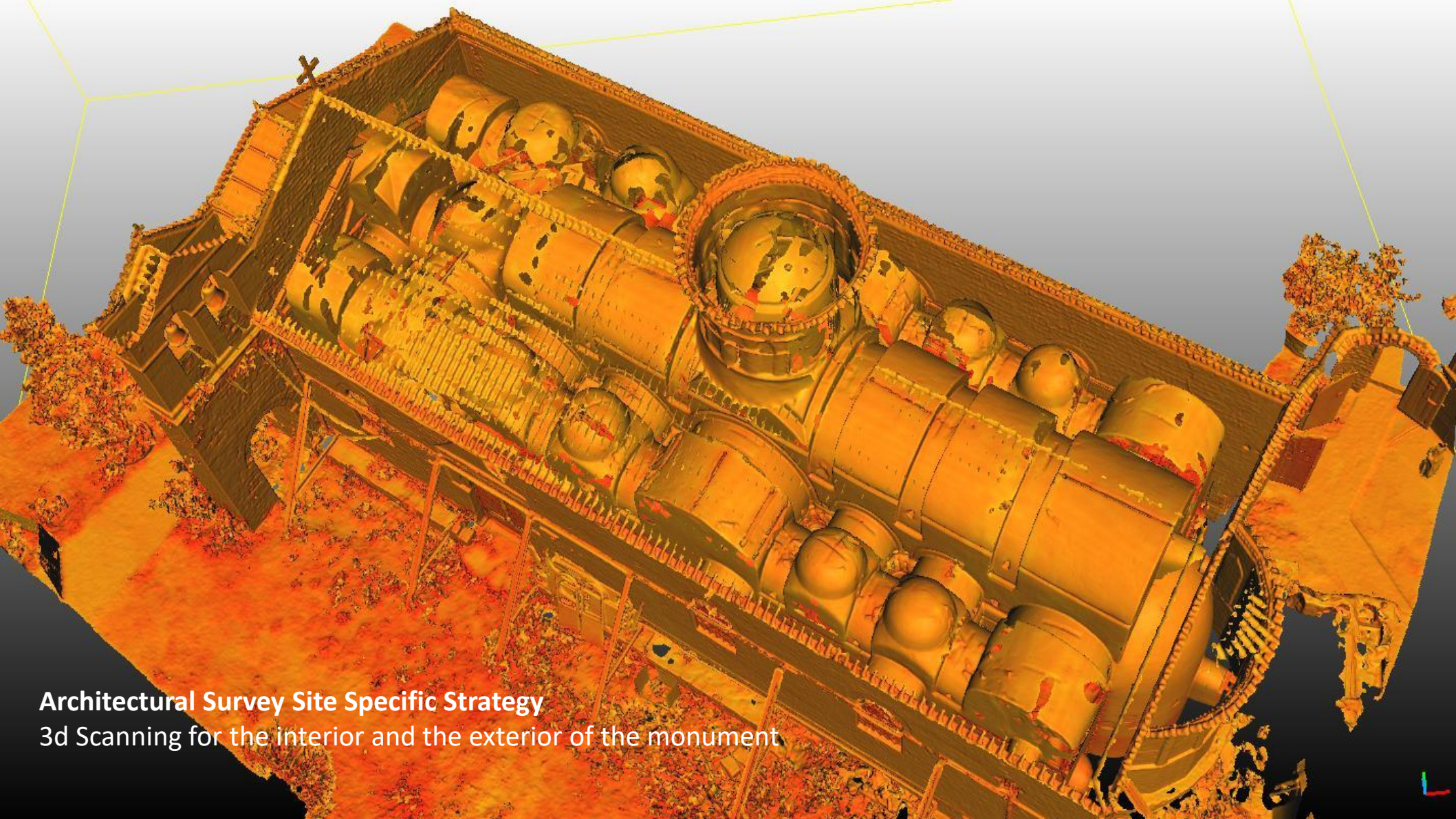




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3d Scanning for the interior and the exterior of the monument

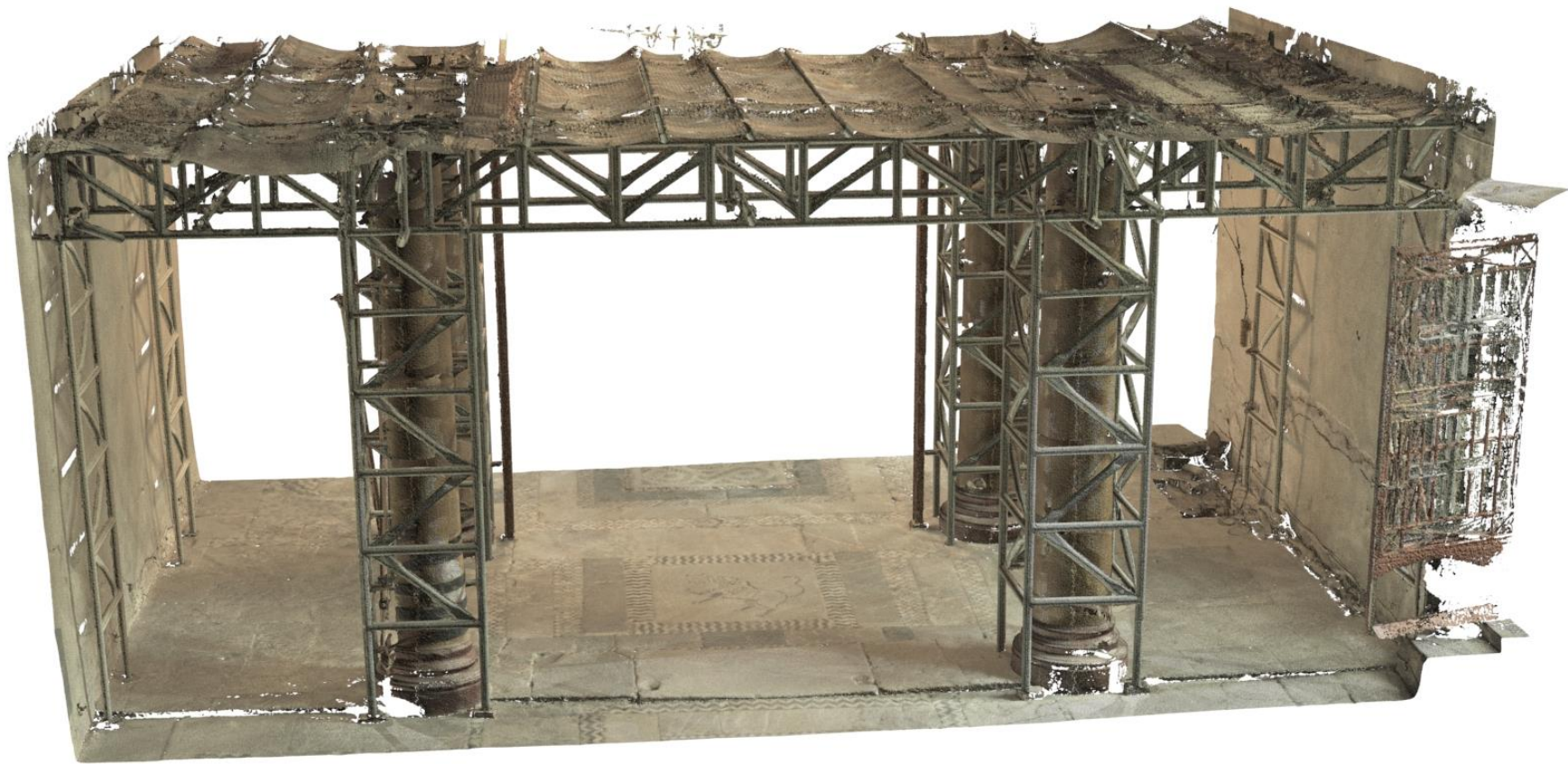




## Architectural Survey Site Specific Strategy

3d Scanning for the interior and the exterior of the monument

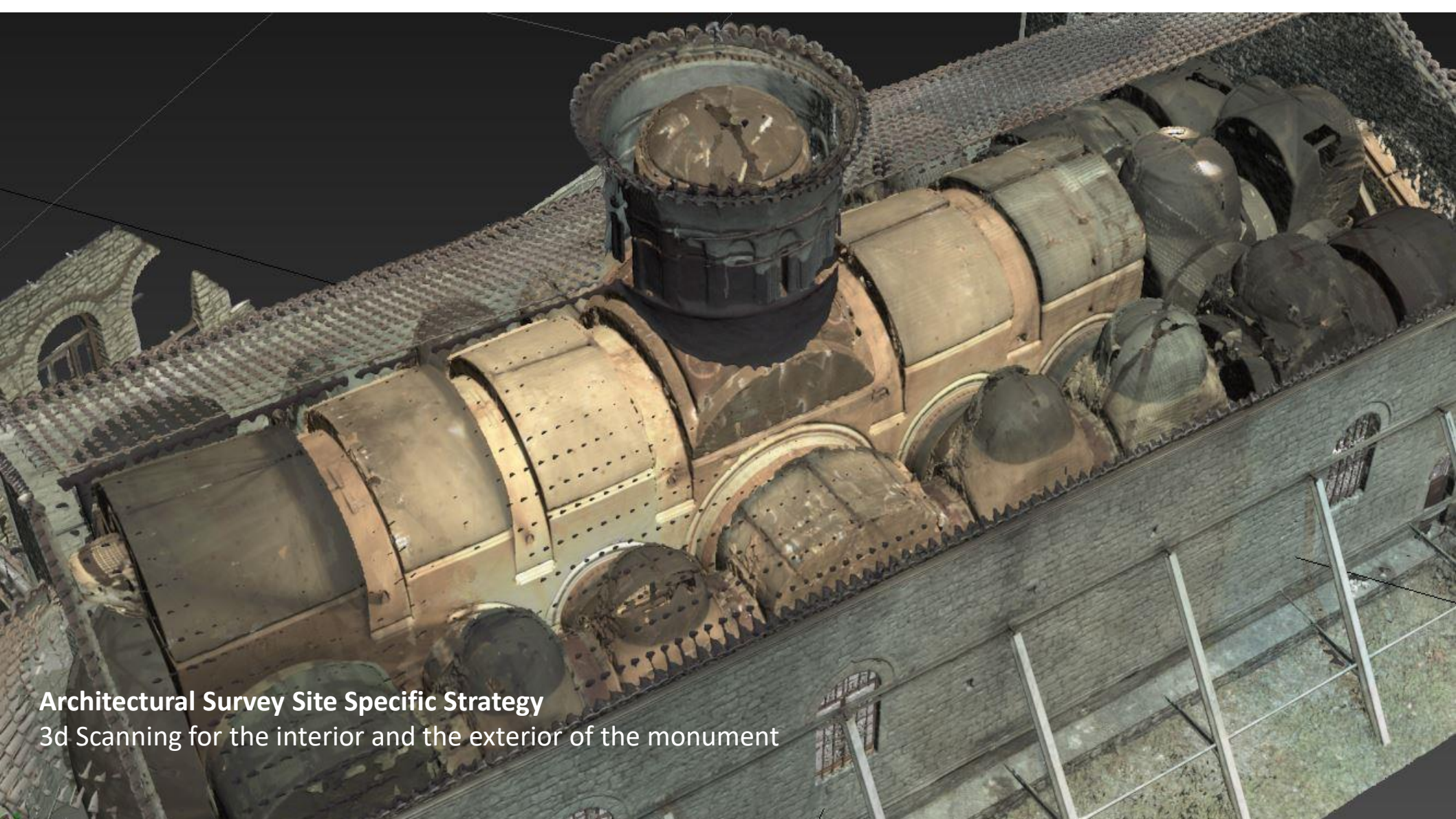




## **Architectural Survey Site Specific Strategy**

3d Scanning for the interior and the exterior of the monument





## Architectural Survey Site Specific Strategy

3d Scanning for the interior and the exterior of the monument





### **Architectural Survey Site Specific Strategy**

Creation of coloured exterior model with the use of photogrammetric methods





### **Architectural Survey Site Specific Strategy**

Creation of coloured exterior model with the use of photogrammetric methods

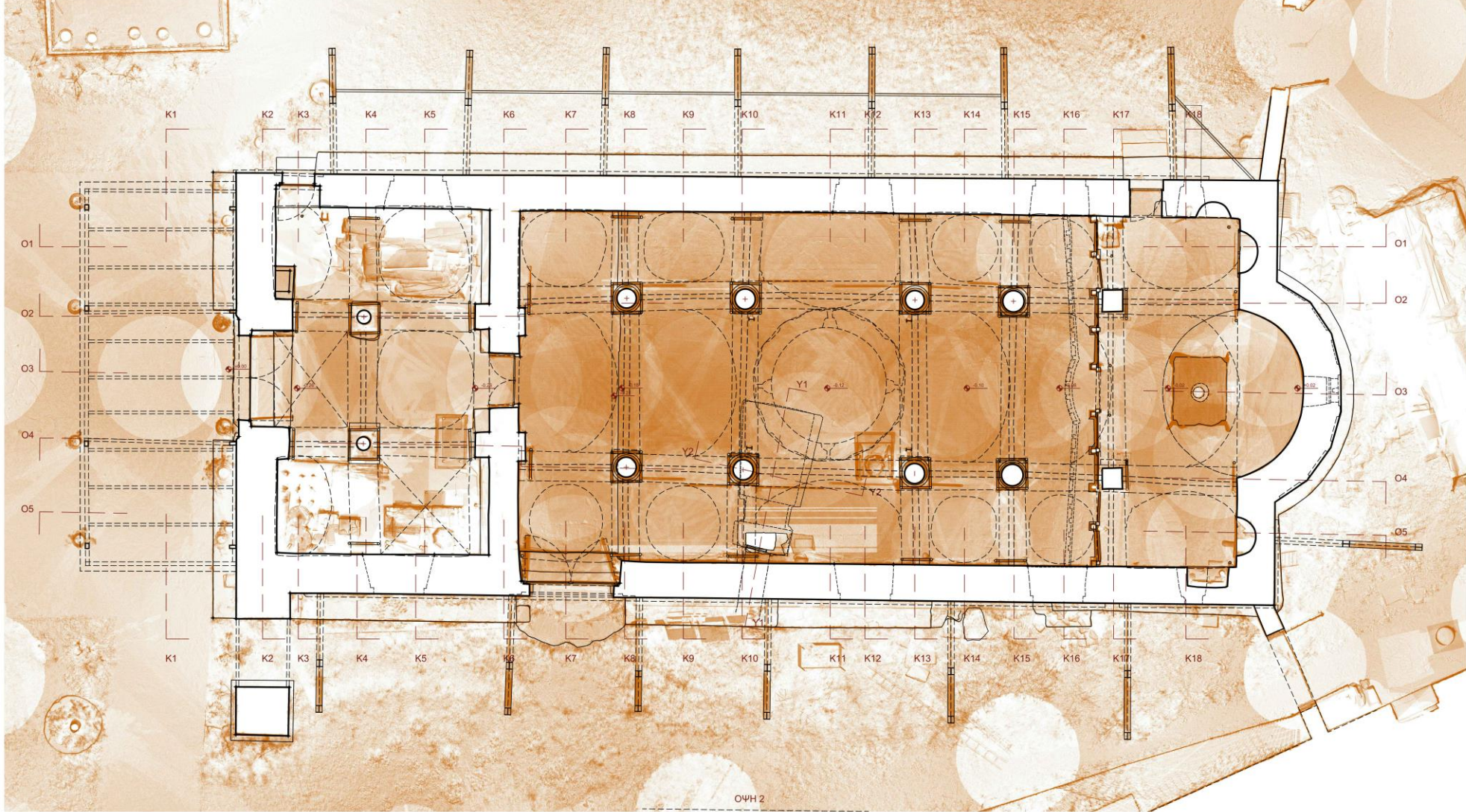




## **Architectural Survey Site Specific Strategy**

Creation of coloured exterior model with the use of photogrammetric methods



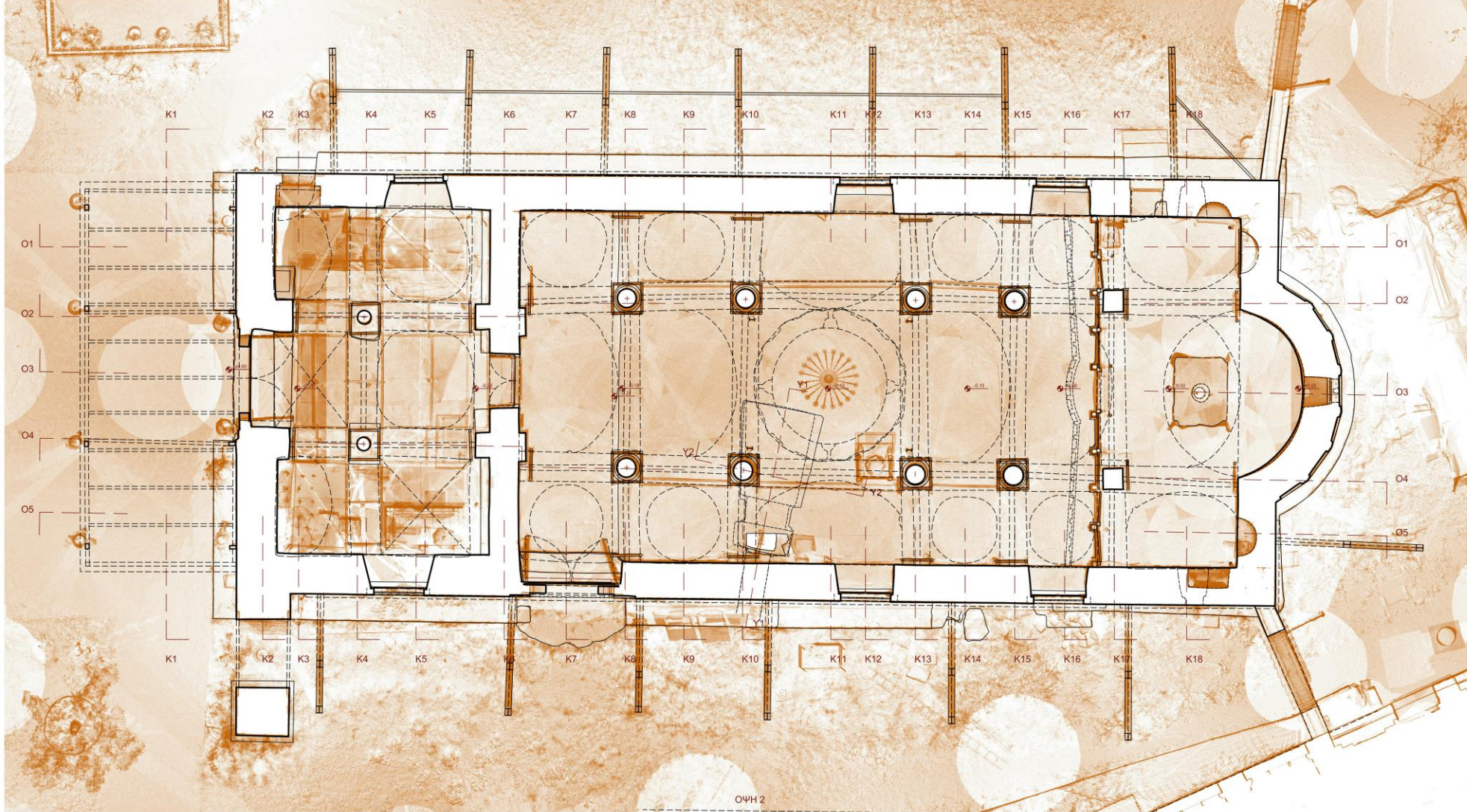


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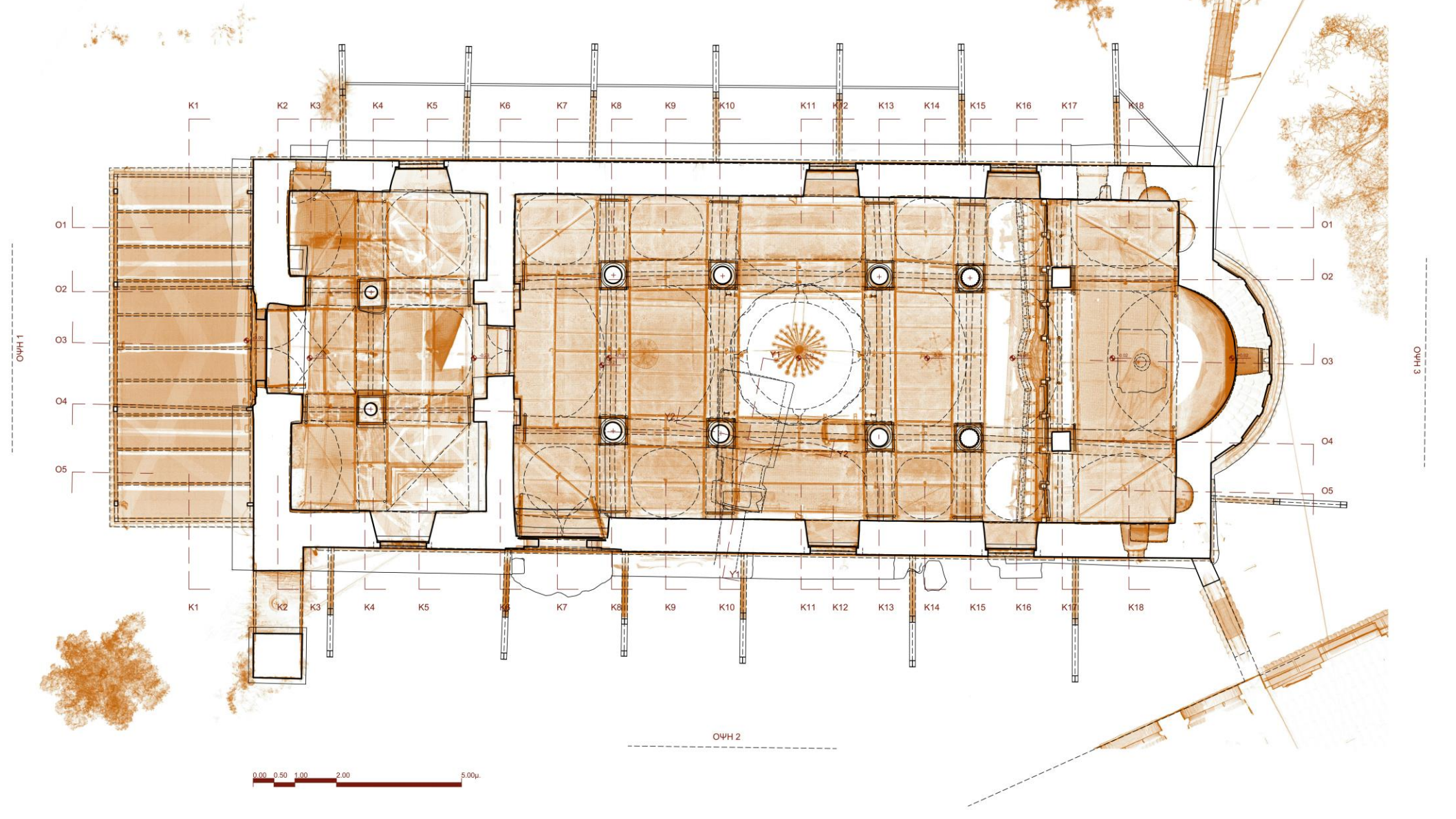
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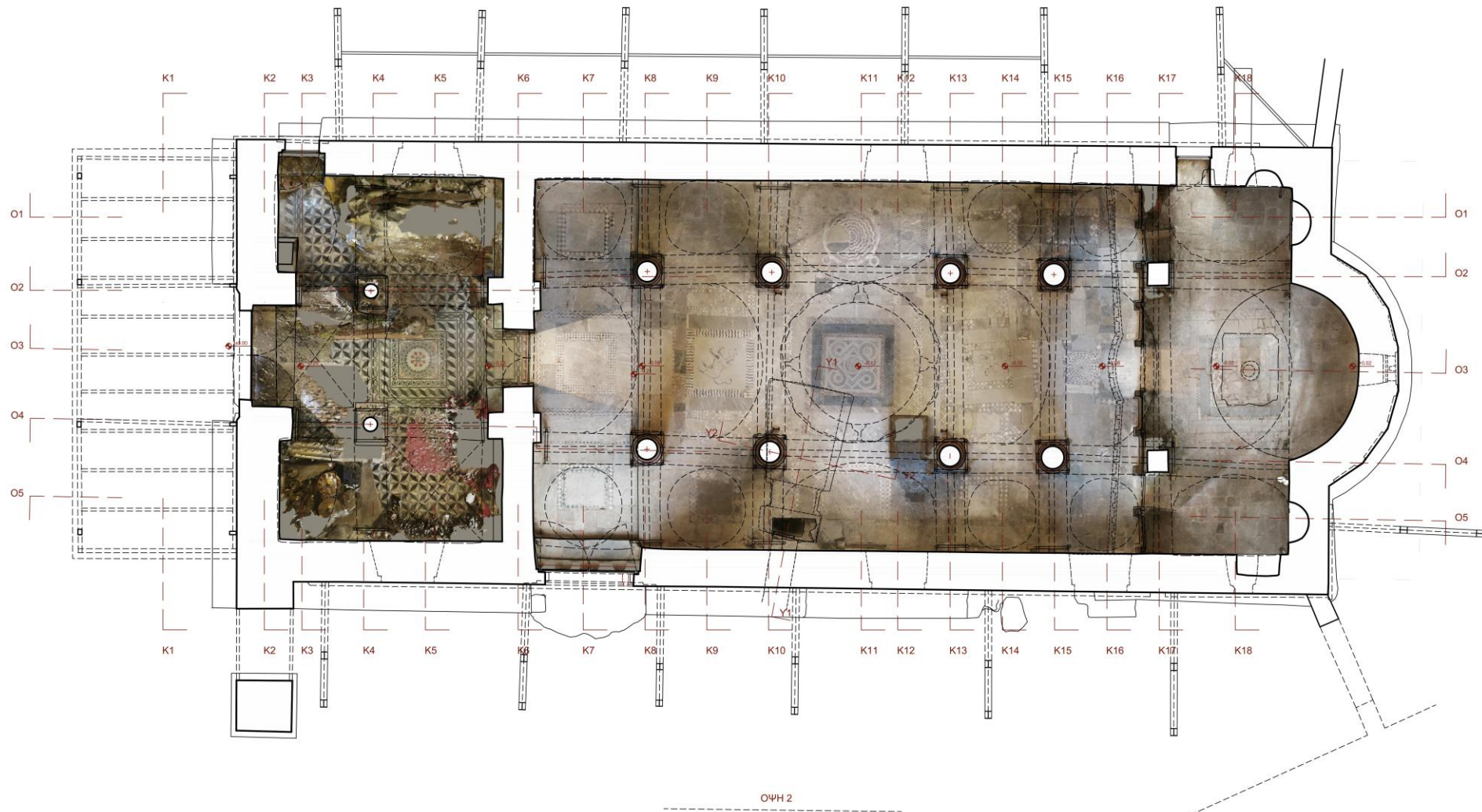
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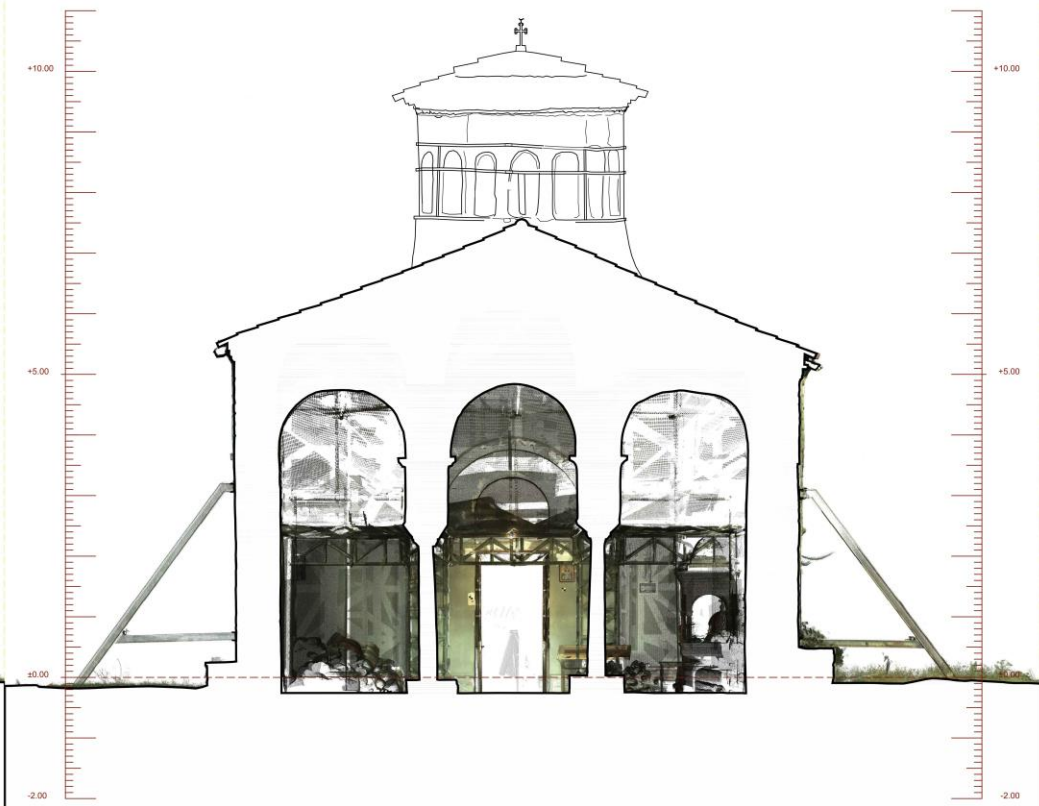
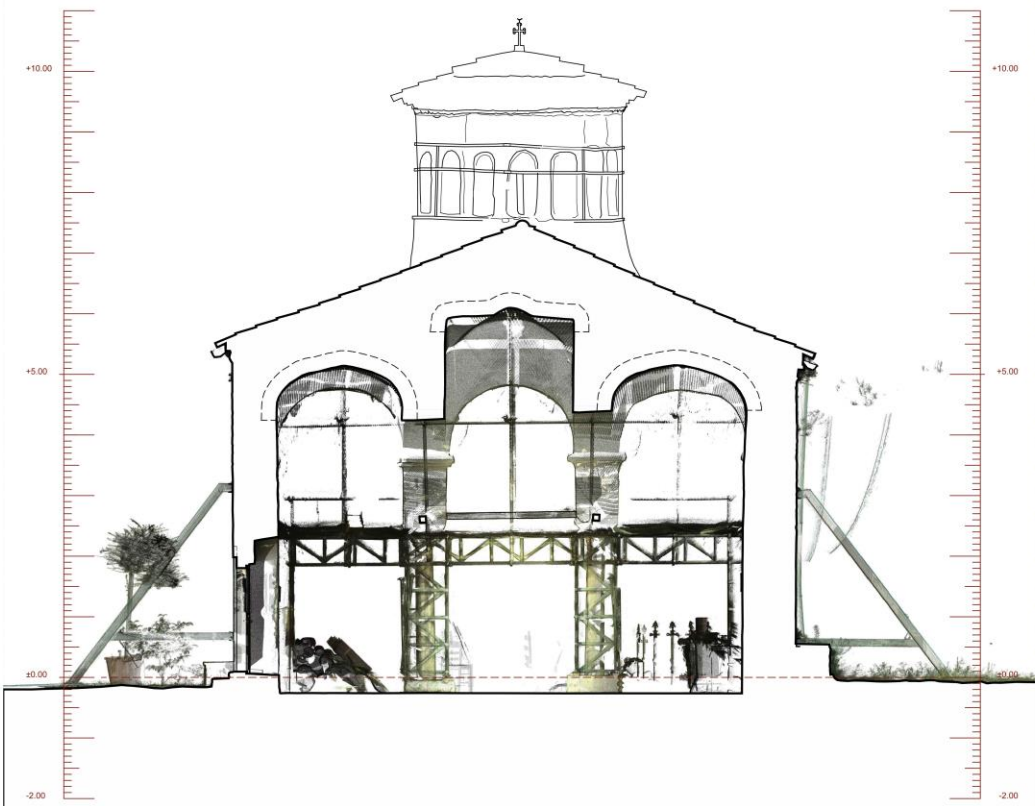




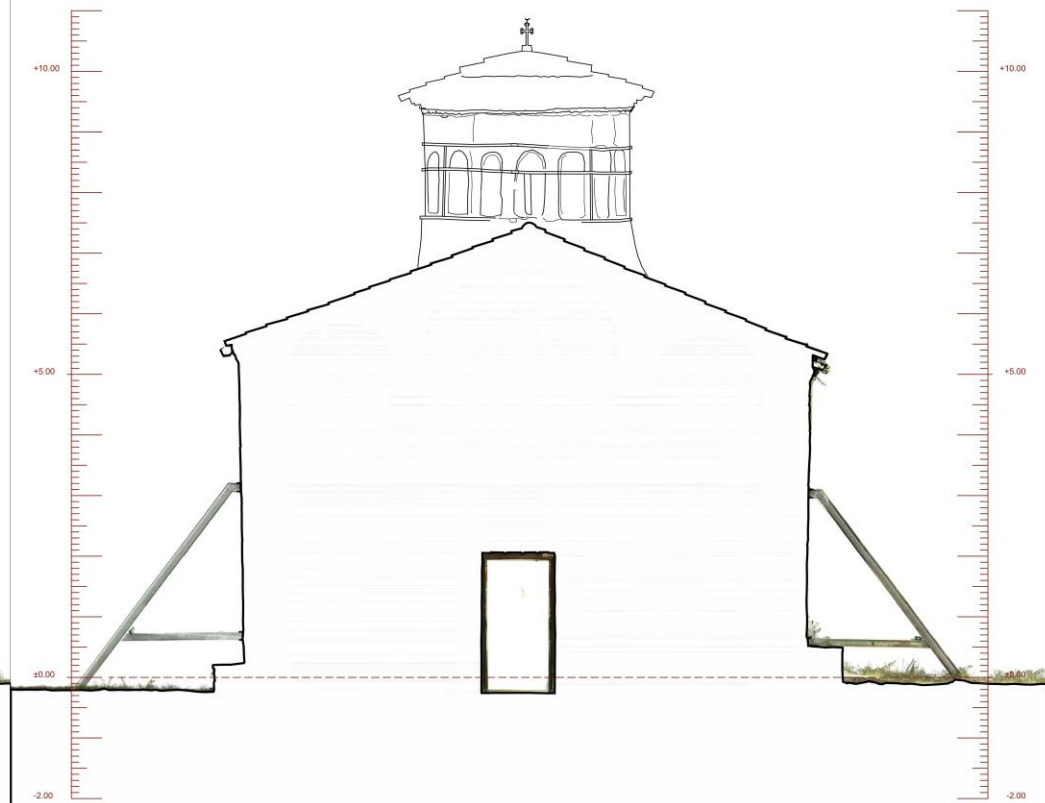




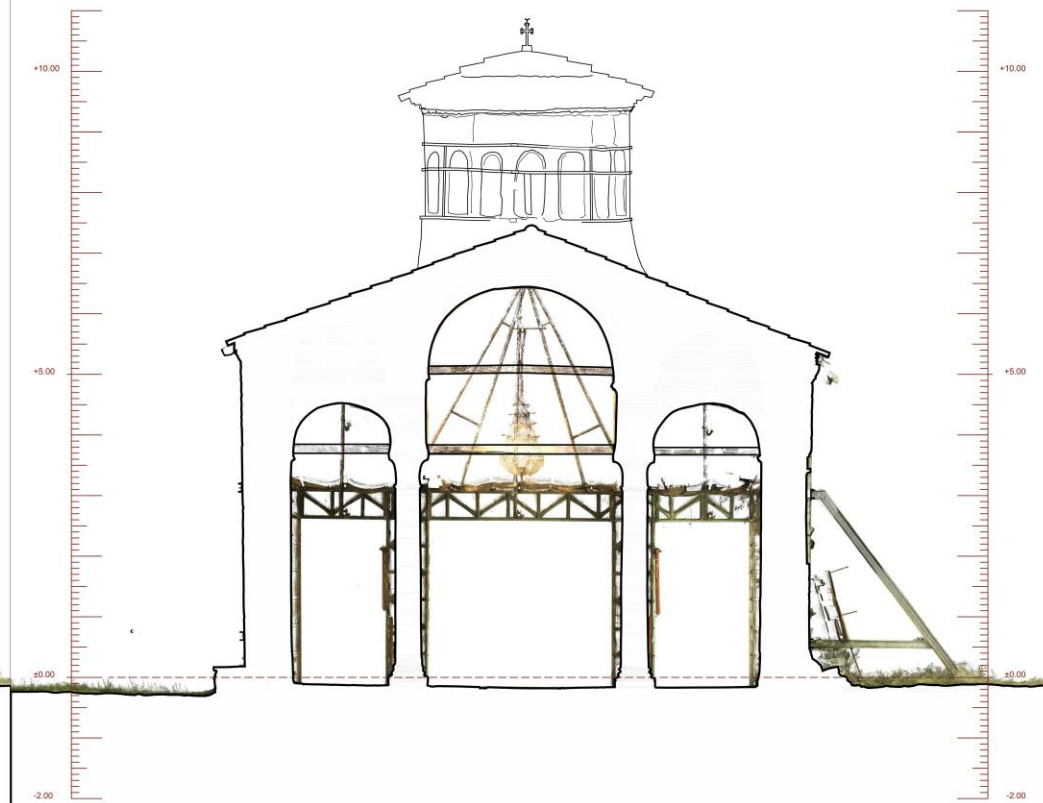
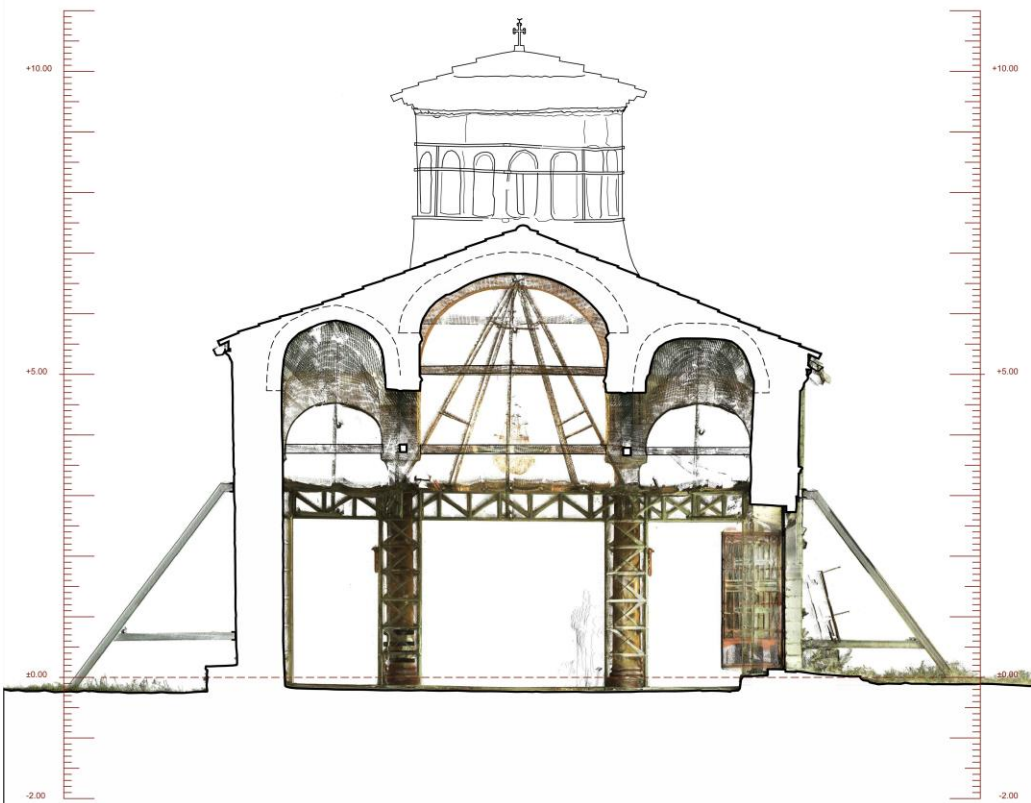




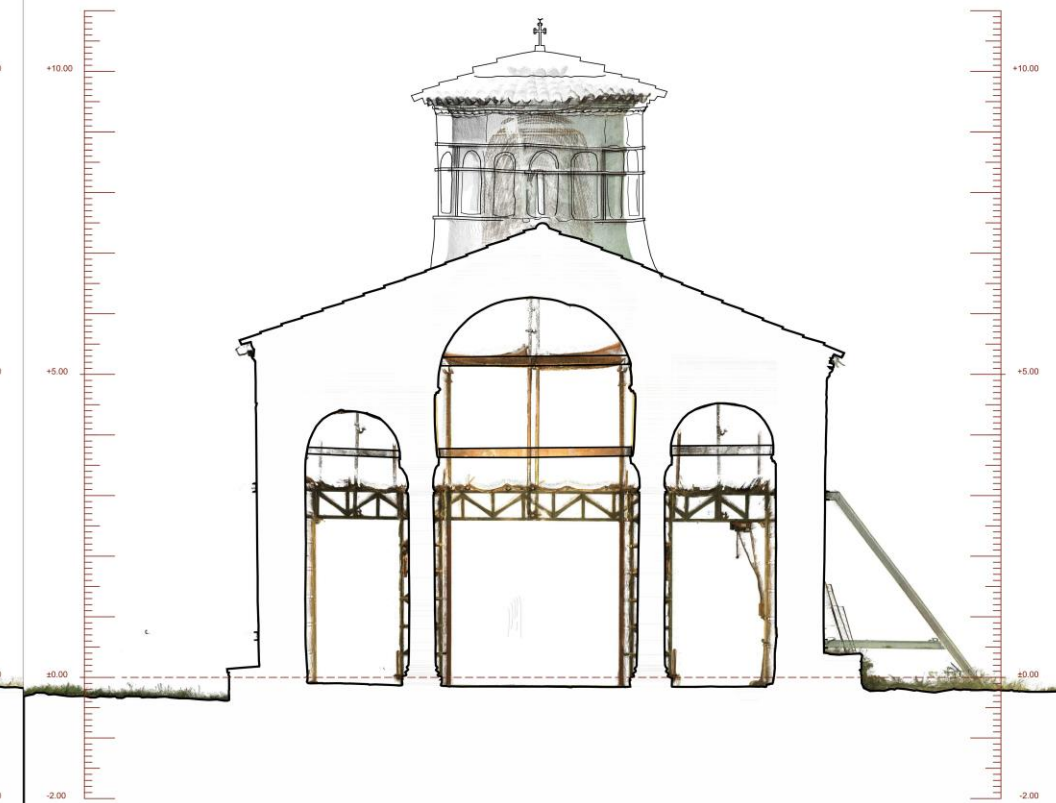
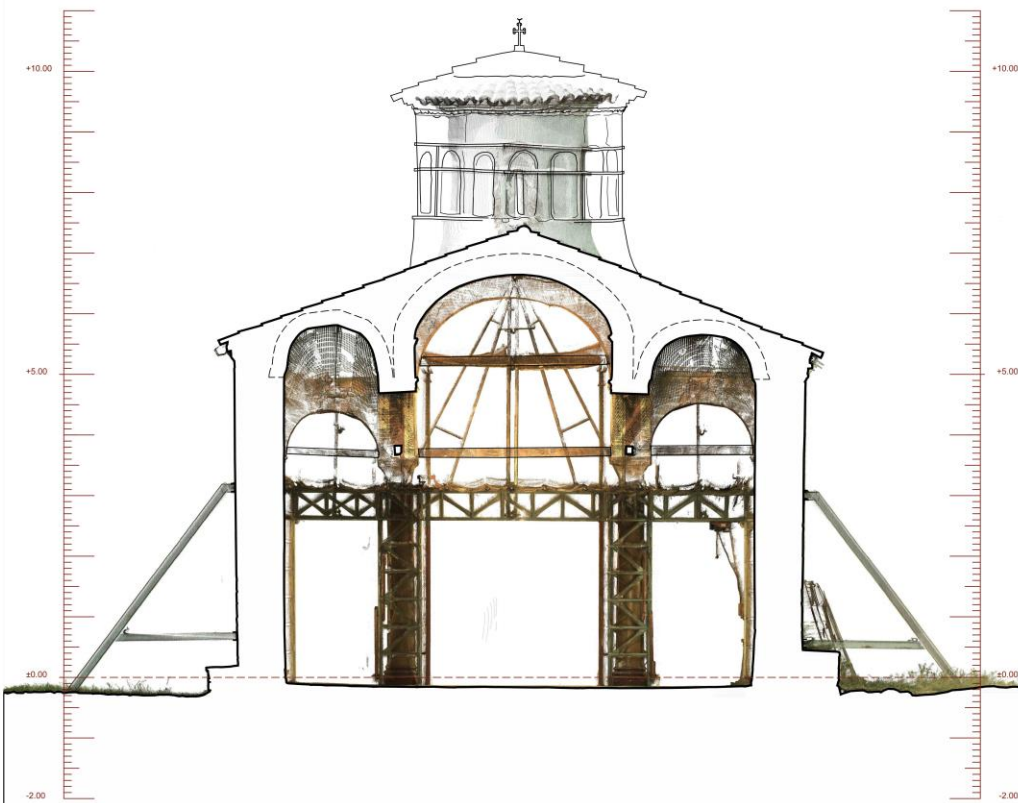




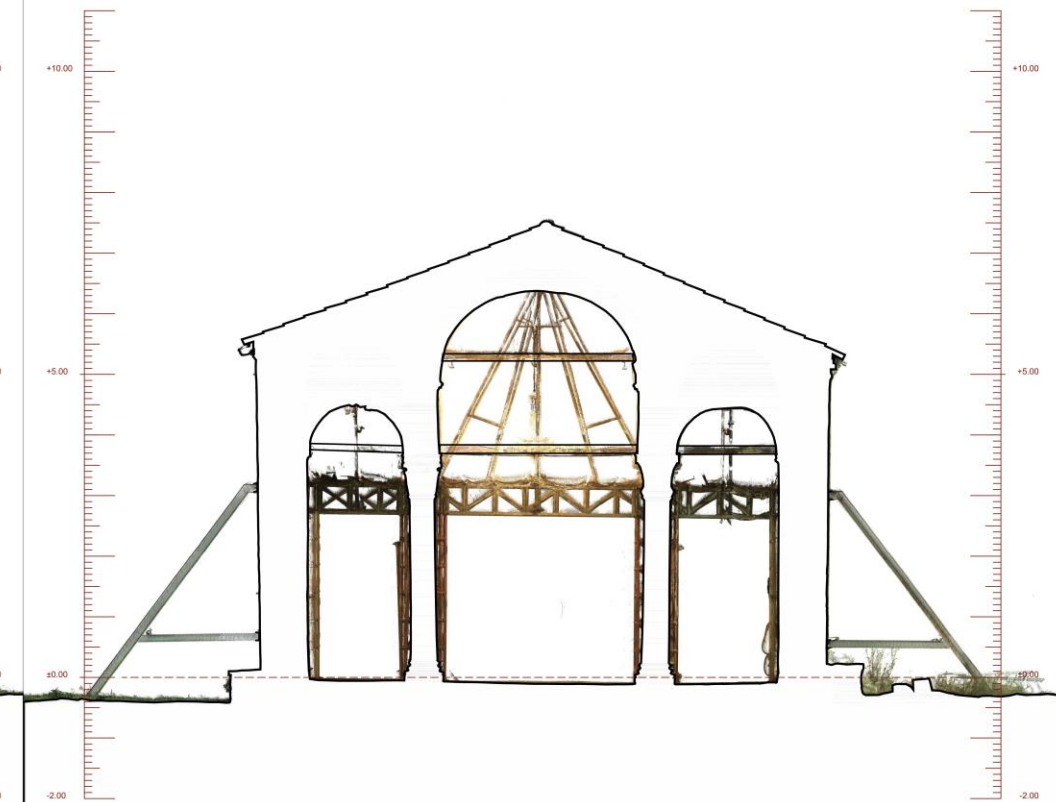
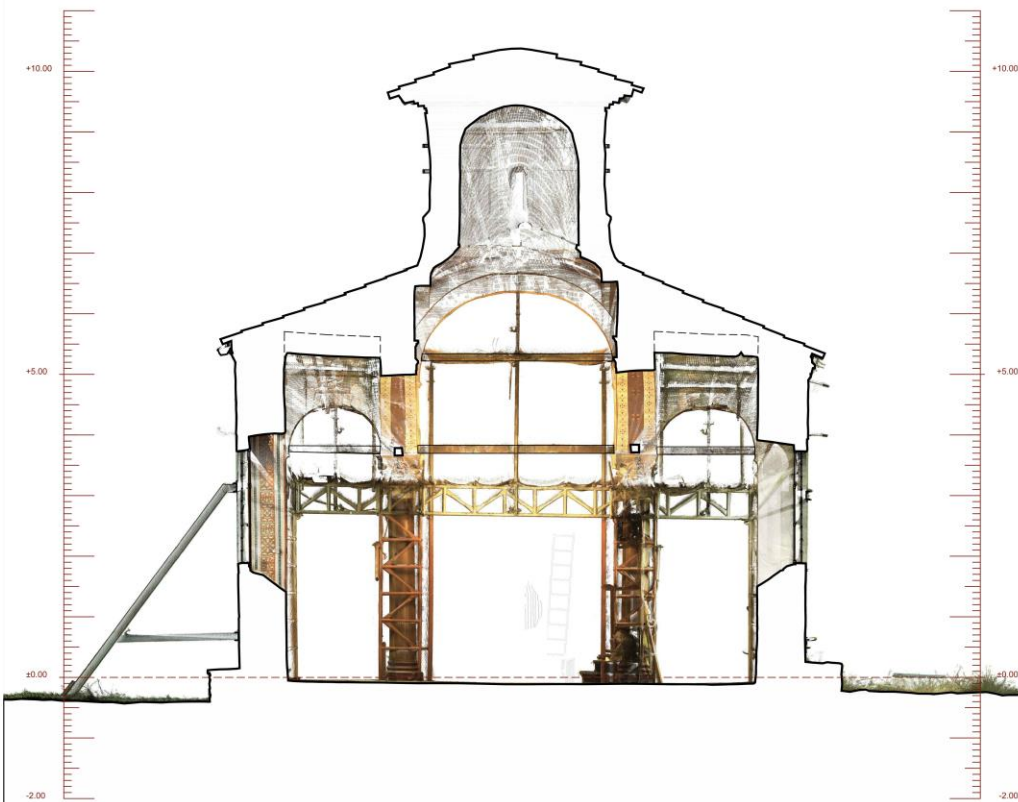




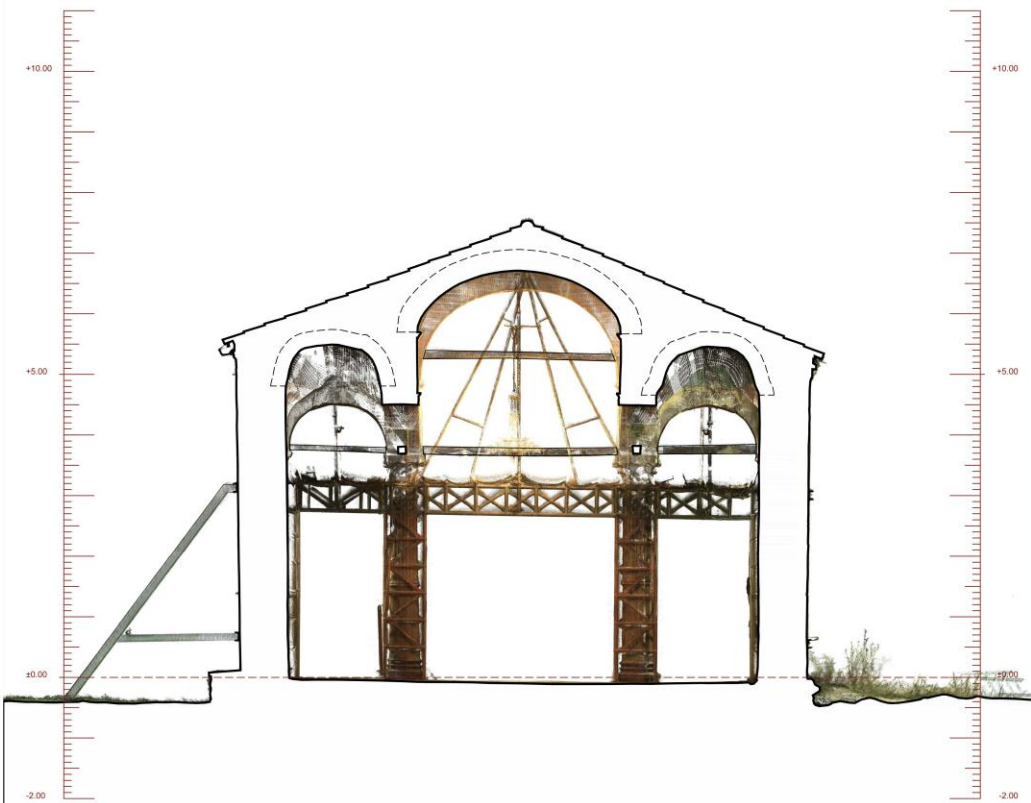




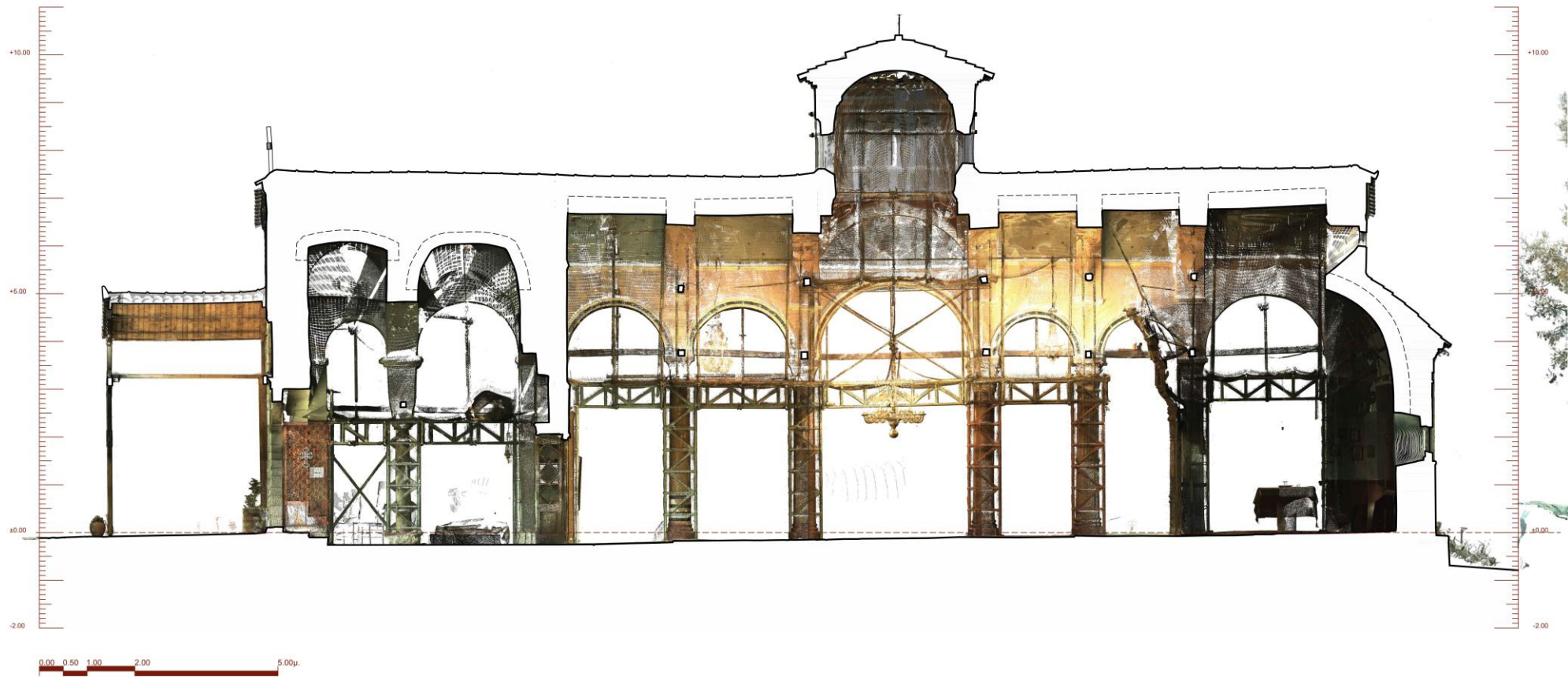




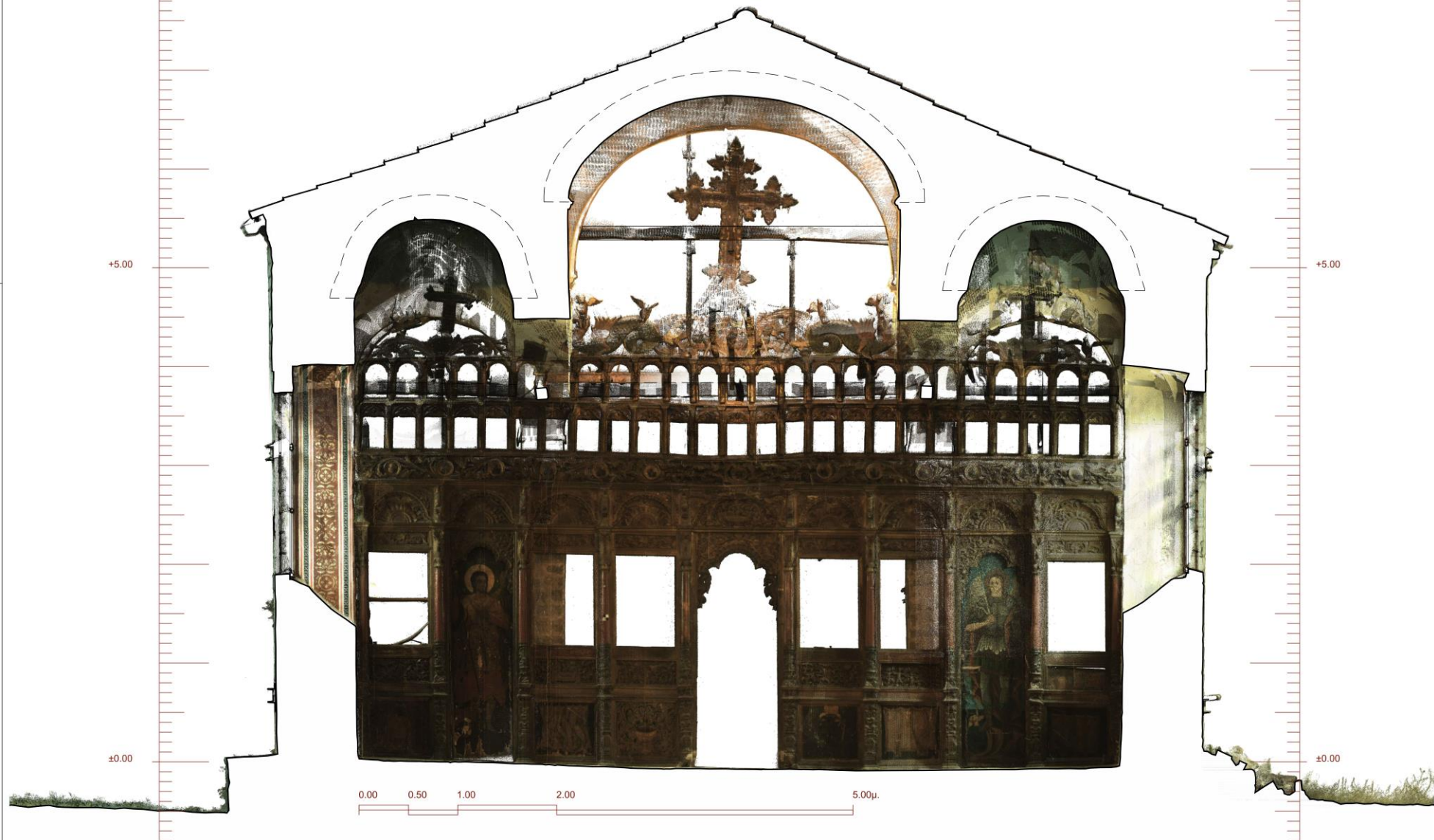












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κλίμακ



## Acknowledgements:

**Professor Antonia Moropoulou**, School of Chemical Engineering, Research Program Supervisor

**Associate Professor Haralampos Mouzakis**, School of Civil Engineering, Research Program Main researcher

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