

# PHOTOGRAPHIC RECTIFICATION AND PHOTOGRAMMETRIC METHODOLOGY APPLIED TO THE STUDY OF CONSTRUCTION PROCESS OF THE PROVINCIAL FORUM OF TARRACO

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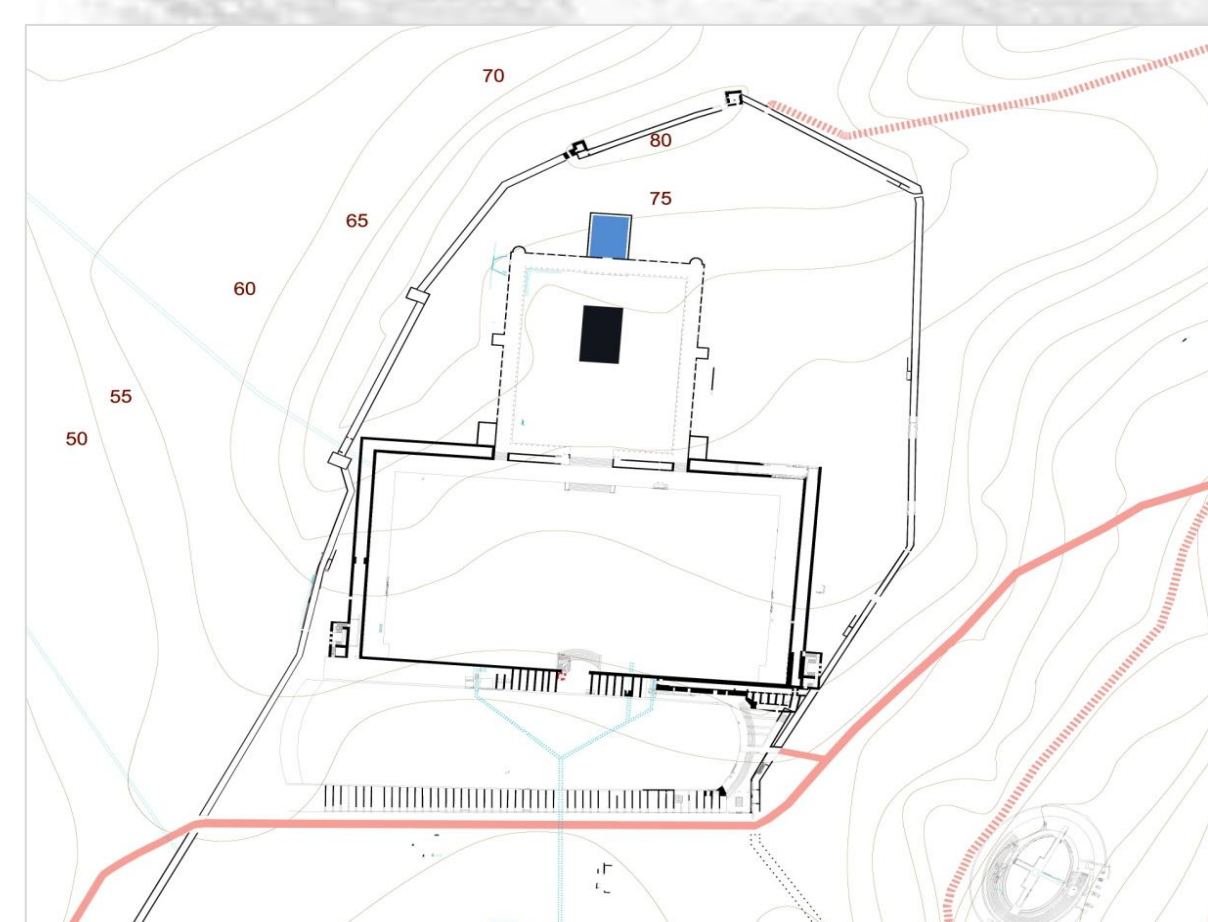
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## INTRODUCTION



The Provincial Forum of Tarraco consist of the imperial cult complex which soars above the acropolis of the Roman colony since the Flavian era.

Looking for a technical assessment of Roman architecture, where the construction processes of the Provincial Forum are elucidated, photographic-rectification and photogrammetric methods have been used to ensure an accurate and essential graphic documentation.



The Provincial Forum of Tarraco between Flavian and Anotine era

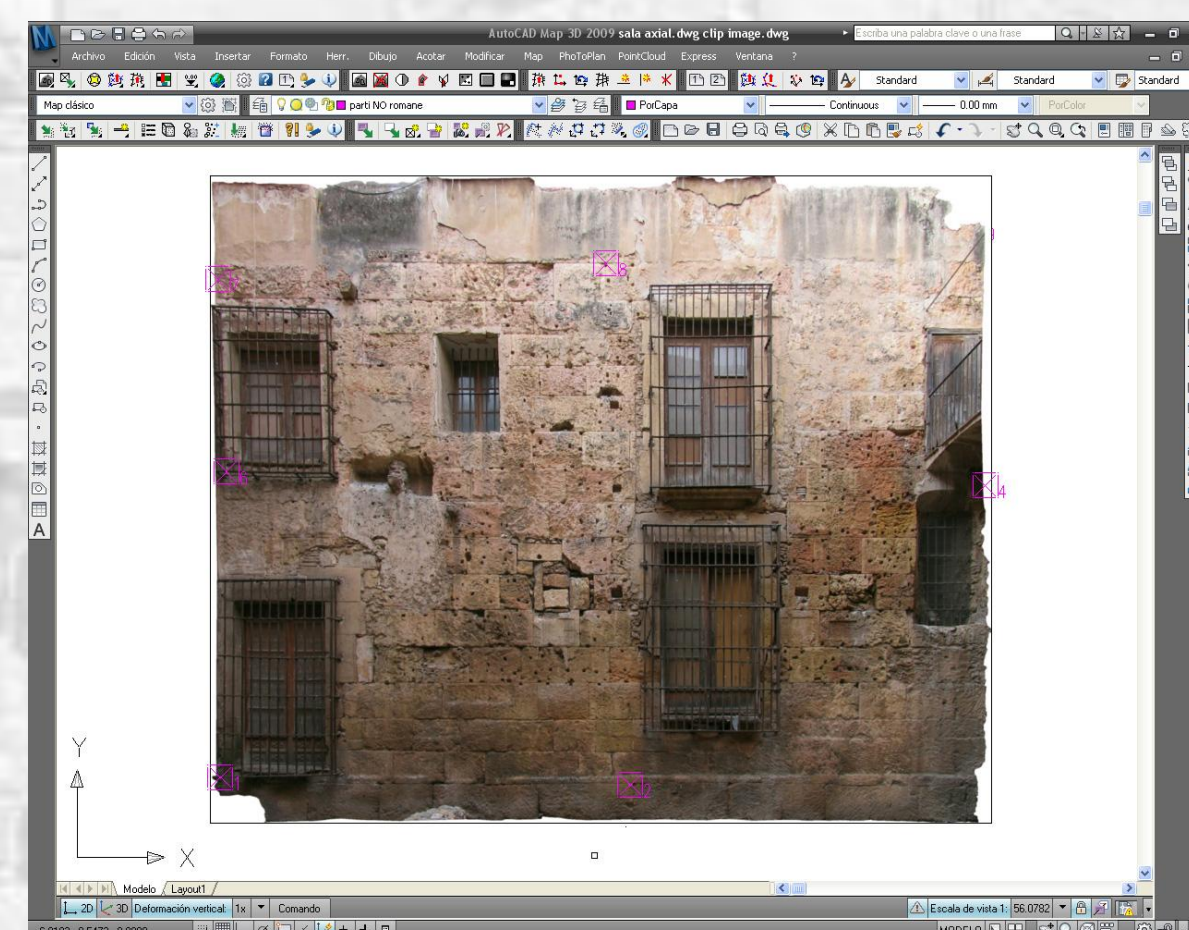
## AIMS

The aim of the project was to collect graphical documentation for:

- ✓ The determination of the evidences of stratigraphic architectures and constructions belongs to the Roman era in the Provincial Forum;
- ✓ Recording the construction variants identified though the analysis of building techniques;
- ✓ The diagnosis of structures to be used for future restorations.

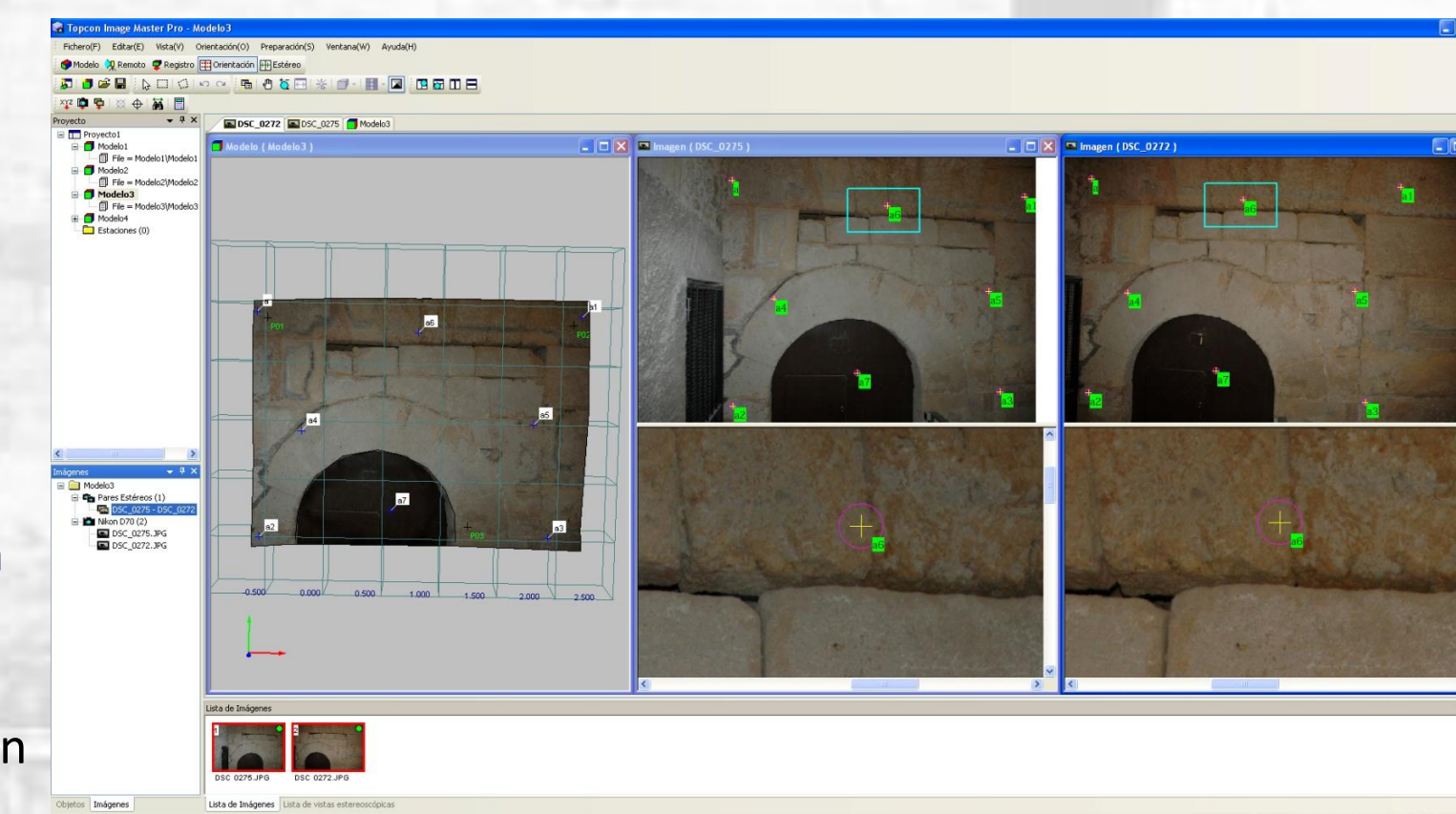
## METHODOLOGY

Depending on the structure of interest and the amount of available data, a two-dimensional reproduction software –Photoplan software- or a digital model software – Topcon-Image Master- were used.



### Photogrammetry rectification with Photoplan:

- ✓ Using topographic supporting points (at least 4) and the realization of a single frontal photo front
- ✓ Using a geometric method (3 different reference measures and one single photo )



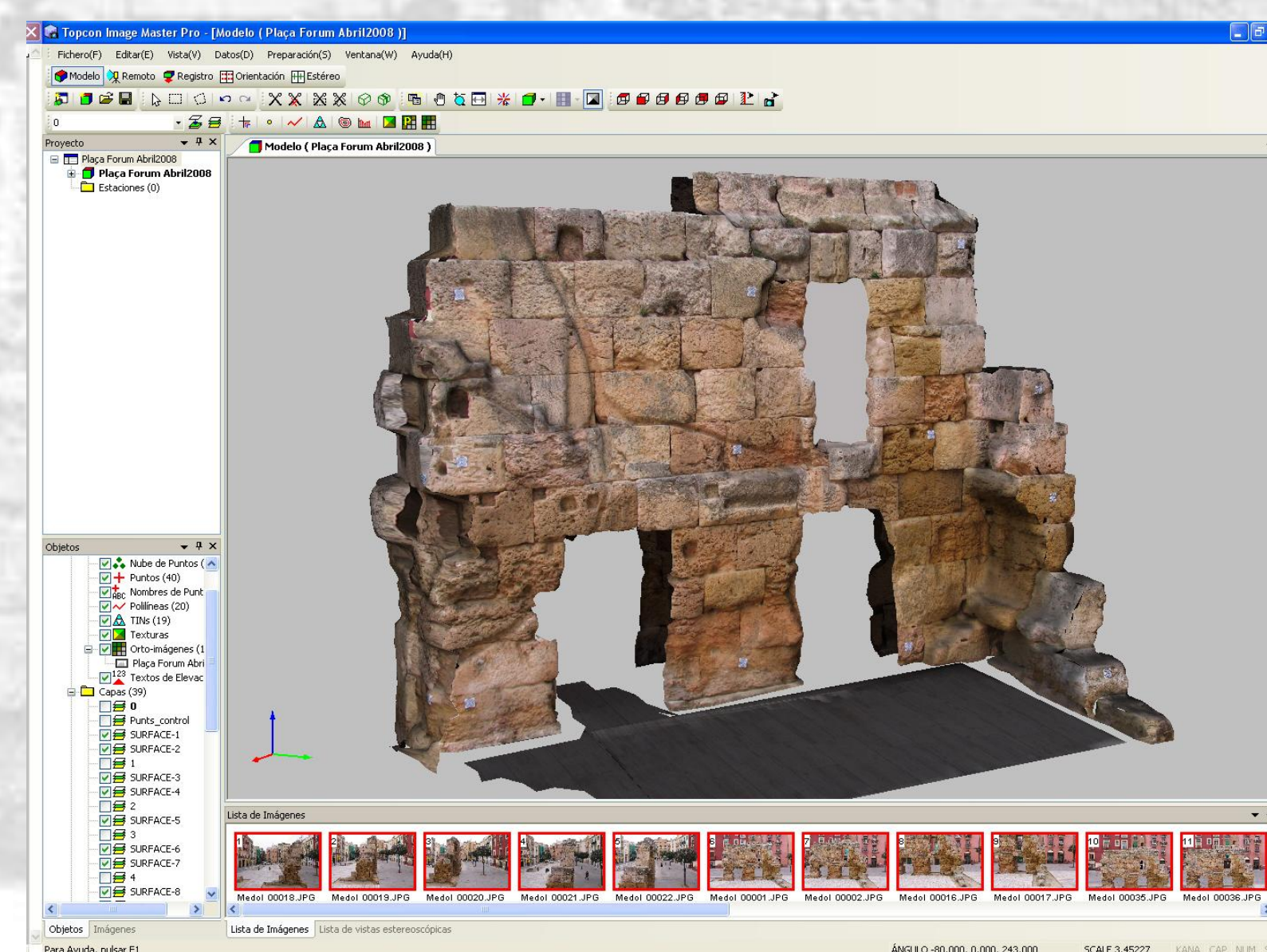
### Photogrammetric methodology with Topcon-Image Master:

- ✓ Using topographic supporting points and pairs of photos
- ✓ Using a geometric method (the identification of 6 common point in pairs of stereoscopic photos and)

## RESULTS

The combinations of orthoimages obtained through the software PhoToPlan (Kubit) and the digital models of the structures elaborated through the program Topcon-Image Master represented a perfect solution to get the results of our interest. To date, the main results obtained have been:

- ✓ the determination of modulation used in the building of the structures
- ✓ the identification of working tools used for the manufacture of buildings materials (classification of the working tools based on size of the footprints left in the worked pieces)
- ✓ The identification and the understanding of the different construction phases



Digital model of part of the wall called "Plaza de representación"



Ortho-image of wall facing of the "Torre del Pretorio"