

[Volume XXXVIII-5/W16](#)

Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XXXVIII-5/W16, 121-127, 2011  
www.int-arch-photogramm-remote-sens-spatial-inf-sci.net/XXXVIII-5-W16/121/2011/  
doi: 10.5194/isprsarchives-XXXVIII-5-W16-121-2011  
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## METRIC SURVEY OF THE MONUMENT OF QUEEN ELISENDA'S TOMB IN THE MONASTERY OF PEDRALBES, BARCELONA

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Keywords: Cultural Heritage, Digital Photogrammetry, Laser Scanning, Modelling

**Abstract.** When an urban development is planned the cartography of this territory is necessary, in the same way before starting a project to rehabilitate a monument the graphic information about it has to be available. At present, different techniques are available which allow to obtain three-dimensional models with a different accuracy level and runtimes.

This paper shows the work carried out to obtain the graphic information and three-dimensional models that are necessary for the rehabilitation project of the tomb of Queen Elisenda in the Monastery of Pedralbes, Barcelona (Spain). This monument has the peculiarity of being symmetrical about the wall separating monastery church and the cloister. To do this, different techniques have been used that allow us to obtain an accurate model and as complete as possible, for the analysis of the construction process of the monument.

In order to achieve the complete architectural survey the integration of laser scanning and photogrammetric data, and CAD models has been necessary. Due to the detail of the sculptures and the Queen's sarcophagus two sensors, with different resolution, range and accuracy, have been used to obtain the laser scanning data. Stereo pairs have been taken to obtain the 3D model of these elements to complete the model and obtain an ortophotography.

In this way, a comparative analysis of both techniques has been carried out, in order to decide which one is the suitable for certain application. This investigation has been restricted to the tomb, in the two symmetrical parts of the monument.

[Conference Paper](#) (PDF, 591 KB)

Citation: Núñez, M. A., Buill, F., Regot, J., and Mesa, A.: METRIC SURVEY OF THE MONUMENT OF QUEEN ELISENDA'S TOMB IN THE MONASTERY OF PEDRALBES, BARCELONA, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XXXVIII-5/W16, 121-127, doi: 10.5194/isprsarchives-XXXVIII-5-W16-121-2011, 2011.

