MAJOR POINTS OF EXTENSION

Digital Strategies Aimed to Valorization of Archival Heritage

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Firstly we have extended the text about the archives' tematic, underlining the importance of their preservation. We start talking about their intrinsic role of telling lost (or just imagined) architectures; continuing with the advantages (wide sharing of knowledges) and disadvantages of their digitalization (loss of the material and tactile dimensions). Faced with the great complexity of the materials available and the different interpretations of architectural documents (physical models, photographs, correspondence, structural calculations, cost and material valuations, audio and video recordings), we are looking for technical solutions capable of interpreting the available material in the best possible way for a potentially unlimited audience.
We support the idea of contemporary architecture archives as borderline heritage, a hybrid between the archive and the museum.
Another point that we have deepened is the role of scale model and maquette in the traditional arquitectural process, as presentation tool, and in the reconstruction one, as cultural heritage object.
It's been done more detailed work on the theme of photogrammetry, analysing this operational choice from a more conceptual point of view. We analyise photogrammetry and photomodelling as methods that make it possible to describe the surface characteristics of objects and create, thanks to its intrinsic three-dimensionality, models navigable from infinite points of view.
We also chose to describe in more detail the photographic shooting process thanks to the inclusion of a conceptual scheme describing shooting path, the position of lighting - soft box and lighiting- reflecting umberella.
Different phases of the image processing within the Metashape ® software are explored in depth. In particular, the alignment of the pictures and construction of the so-called gripping geometry through a geometric triangulation process; the optimization of the processing time through the cleaning of the point cloud and the depth filter values to ensure that the model is as close as possible to reality.
We introduce a completely new paragraph, focused on identifying the BIM software and modeling methods best suited to achieve fixed objectives. Mass modelling with the Revit® software allows not only to digitize the plastic model, but also to create a parametric model capable of grouping different informations (archive documents, photographs, photogrammetric surveys and 3D models made previously). Following the insertion of the point cloud on Revit®, identification of grids and reference planes and main volumetric elements, we proceeded with the modelling by local masses operating directly on the point cloud.
Within the conclusions, some considerations on the methodology applied in parametric modelling from the point cloud have been added. In this case it was chosen to use the point cloud as a simple trace from which to extrude conceptual masses. An alternative to this process could be to use plug-ins such as GreeSpider, used in other similar researches, to give to the final model a higher accuracy.
The fundamental role of BIM within such a process has also been emphasized. A tool - container within which to make more information available at the same time, giving concrete form to the initial idea of an archive-museum. A digital model, in which to insert all the information useful for the narration of the evolution of the building over time, enriched by experiences of virtual and augmented reality.