



UNIVERSITÀ
DEGLI STUDI
FIRENZE

FLORE

Repository istituzionale dell'Università degli Studi di Firenze

Photogrammetric data base web share for knowledge and safeguard of the cultural heritage

Questa è la Versione finale referata (Post print/Accepted manuscript) della seguente pubblicazione:

Original Citation:

Photogrammetric data base web share for knowledge and safeguard of the cultural heritage / O. Bucolo; E. Costa; D. Miron; G. Tucci. - In: INTERNATIONAL ARCHIVES OF THE PHOTOGRAMMETRY, REMOTE SENSING AND SPATIAL INFORMATION SCIENCES. - ISSN 1682-1750. - STAMPA. - XXXVI-5/C34:(2005), pp. 1018-1020. (XX CIPA International Symposium "International Cooperation to Save the World's Cultural

Availability:

The webpage <https://hdl.handle.net/2158/256748> of the repository was last updated on

Publisher:

S. Dequal

Terms of use:

Open Access

La pubblicazione è resa disponibile sotto le norme e i termini della licenza di deposito, secondo quanto stabilito dalla Policy per l'accesso aperto dell'Università degli Studi di Firenze (<https://www.sba.unifi.it/upload/policy-oa-2016-1.pdf>)

Publisher copyright claim:

La data sopra indicata si riferisce all'ultimo aggiornamento della scheda del Repository FloRe - The above-mentioned date refers to the last update of the record in the Institutional Repository FloRe

(Article begins on next page)

PHOTOGRAMMETRIC DATA BASE WEB SHARE FOR KNOWLEDGE AND SAFEGUARD OF THE CULTURAL HERITAGE

O. Bucolo, E. Costa, D. Miron, G. Tucci

^aCISDA, Politecnico di Torino, Viale Mattioli 39, 10125 Torino, ITALY - [ornella.bucolo](mailto:ornella.bucolo@polito.it); [evandro.costa](mailto:evandro.costa@polito.it); daniela.miron@polito.it

^bDINSE, Politecnico di Torino, Viale Mattioli 39, 10125 Torino, ITALY - grazia.tucci@polito.it

KEY WORDS: Cultural, Databases, Documentation, Heritage, Photogrammetry

ABSTRACT

The architectural photogrammetric LAB is provided by a photogrammetric archive that counts about 2500 photographs, on film and paper support, which are about architectural and cultural patrimony of the Piedmont and Valle d'Aosta region. These images constitute a very precious documentation useful both from the metric point of view and from the knowledge point of view, as they cover a significant period of time for the evaluation of the transformations that have occurred in fact the first photographs are dated back to the 70's. In considering this there are aims to be pursued such as: - giving higher visibility to the rich patrimony of images of which the Lab is provided - programming the recording in that way to constitute a reference even for those corporate bodies preplaces to the safeguard of the cultural heritage - rendering of common and accessible patrimony, a documentation already historicized and metrically valid. From here the initiative to propose a catalogue of the photogrammetric takings creating a dynamic system connected to a data base, accessible on the internet, visitable through web pages planned for the aims proposed and the users. The informative system is planned and created in collaboration with the Hyarc Lab (Cisda) and, the programming part with the CESIT (Informatic Center of a Ateneo) The work foresees a planning phase of the informative system and a phase of acquisition in digital formats programmed by the photographs present in the archive, assuring the maintenance of the metric characteristics The systematic organization of the work constitutes a valid starting point for the management of the existing archive and for the acquisition of the future taking, principally coming from the digital sensors.

Nowadays there are lots of European countries that, from culture and different experiences in the conservation and restoration field, share the necessity to elaborate and create new models and instruments that intervene with the cultural patrimony that guarantees permanence and transmission into the future.

The Dutch example which has 48 teams of technicians that work full time all over the country doing monitoring services, prevention and maintenance of the patrimony, adding the Fiandre and other countries including Italy with the "Central Institute of Restoration (it has the scientific responsibility) and the Lombardia region which has a guide role in the creation of similar projects.

In fact, with the Italian law 84\1998, it has been financed for 28 billion, the "organic plane of inventory, cataloguing and elaboration of the RISK paper of the cultural goods" with the aim to profound and nationalize the knowledge and the relationship between the heritage and territory through an informative territorial system organized on two levels: a central level (central pole, care of Central Institute of Restoration), the cartographic and alphanumeric data can be managed, moved up to a national level, relative to degrade factors and to the distribution of the heritage; a local level (regional Poles) which besides integrating into the system the territorial dangerousness of the local data, picks up the punctual information of the cultural heritage, on their state of conservation (cataloguing) allowing the valuation of their vulnerability.

The vulnerability and dangerousness indicators of the territorial context allow them to value the condition of risk in which the monument undergoes. In 1998 the Lombardia region, according to the Minister, started the regional Pole of the risk paper picking up punctual information about the cultural heritage, integrating the ambient risk data, correlating the historical buildings to the territorial context.

It's in this context that it is collocated to the initiative to propose a cataloguing of the photogrammetric takings existing in the Fotoril (architectural photogrammetry lab of the Facolta' di Architettura di Torino), creating a dynamic system joined to a data base, accessible on the web, visitable through web pages projected for

the aims proposed and the programme users.

The lab, provided with a photogrammetric archive that counts about 2500 frames, on film and paper support, which are about architectural and cultural patrimony of the Piedmont and Valle d'Aosta region. These images constitute a very precious documentation useful both from the metric point of view and from the knowledge point of view, as they cover a significant period of time for the evaluation of the transformations that have occurred, in fact the first frames are dated back to the 70's. When the deontological needs that pervade the architectural historian and the renovator, always require faith in the metric and qualitative in the representation, the return to the close range photogrammetry discipline becomes important.

For these characteristics, the photogrammetric technique is an indispensable instrument for every professional category involved in the restoration, on the study of the historical patrimony, in deformation and in the controlling of the big manufactures.

In consideration to this the aim is to give more visibility to the rich patrimony of images of which the lab is provided and to programme the cataloguing in a way to build a reference for those public corporations, giving historical documentation to the common patrimony.

It's established a proper index, in line with the indications given by the ICCD able to not only accept the existence of eventual photogrammetric takings, but also, where possible, direct and supply a service where it will be possible to estimate the territorial relapses.

The work foresees a phase of projecting the informative system and a phase of acquisition in programmed digital format of the existing frames, guaranteeing maintenance of the metric characteristics.

The informative system is projected and created in collaboration with the HypArc of the C.I.S.D.A. and, the programming part of the CESIT (Information Centre Ateneo).

It's already predisposed a basis card that contains the most significant parameter of the images, of the camera and eventual supports being able to allow the orientation.

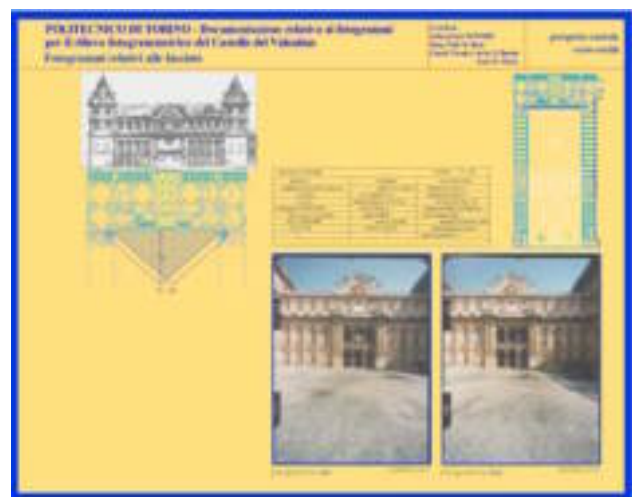


Figure 1. Valentino's Castle Turin. An Example of stereoscopic couple card obtain in different periods. Central prospect towards the backyard (up);stereoscopic of the open gallery of the stair; stereocouple central body .

We want to predispose a model of a data base and project the future transposition in digital format of the material nowadays onto film.

This involves a study on the digitalization mode to guarantee the maintenance of the metric characteristics and also provides a study phase and an evaluation of the costs.

Once this protocol of filing is planned, all the following acquisitions (like on films or directly on digital format) will be constantly updated.

The systematic organization of the work constitutes a valid start point for the managing of the existing archive and the acquisition of the future takings coming from digital sensors.

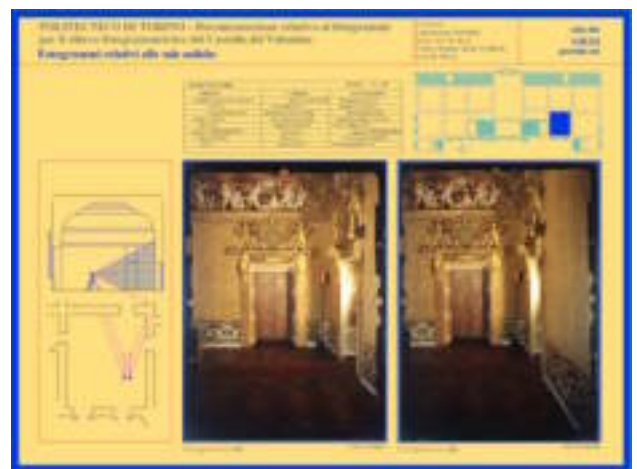
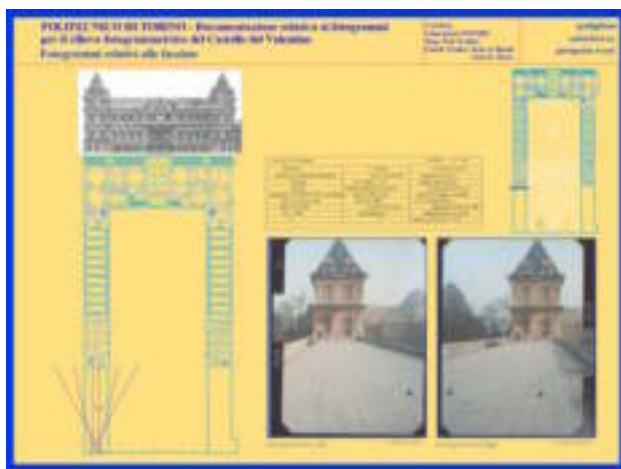
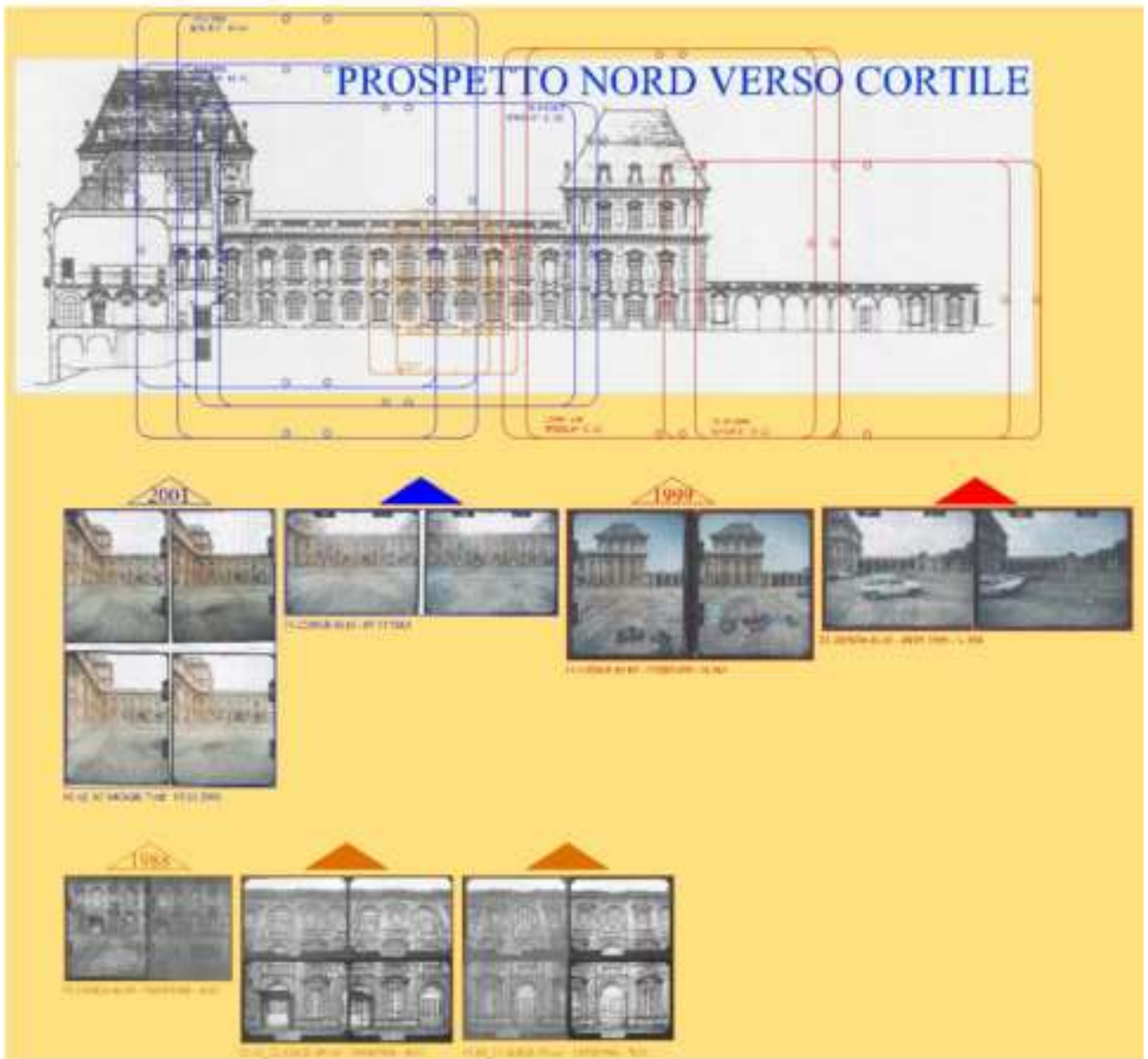


Figure 2. Valentino's Castle Turin. An Example of stereoscopic couple card obtain in different periods. North prospect towards the backyard (up) stereocouple in details of the outside (down to the left) and the lily room (on the right).