

THE EMPLOYMENT OF PROCESSING IN DIGITAL FORM OF IMAGE IN PHOTOGRAMMETRY FOR READING THE CHURCH ESTATE

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In quality of president of the Fondazione Italiana Fotogrammetria Architettura I address my greeting and best wishes to all the people attending the meeting.

Our Fondazione, confirming its own theories developed through international seminars and meetings (April 1986 - June 1991) has established and verified the following master points (1st enclosure):

- 1) **Architectonic Photogrammetry** must be intended as a discipline about architectonic representation made of three-dimensional scale pictures;
- 2) **Direct Photogrammetry** means the technique which makes it possible for us to relief the dimension of an object from the three-dimensional picture;
- 3) **Inverse Photogrammetry** must be intended as the technique which enables us to report the pre-fixed dimensions on the three-dimensional picture.

Nowadays, in the Italian schools and universities, we are going on using the graphic language in the architecture study.

The depiction of those "undepictable" monuments addressed to our descendants is made of plane graphic representations, which value is less than an identikit.

Photographic language, then, is often requested even if not taught!

Photogrammetry and cartography are still confused in their techniques because the photogrammetric survey can give a graphic elaborate, but that is non identified with the graphic elaborated one.

For a correct use, we must necessarily use some "interpreters" to translate the informations from the photographic to graphic language.

To understand perfectly a photographic reproduction of architecture, the architect, the history critic and common man use a category of "interpreters".

But reading architecture and particularly the holy one, needs so many competences that a single "interpreter" can't pretend to get: to file the cartographic representation of a building, even if of numeric kind, would be like (this is stated by Professor Antonio Daddabbo: Director of the Cattedra di Fotogrammetria Architettura - Politecnico di Bari) filing "I Promessi Sposi" by summarizing it or commenting on it.

Unfortunately, during the IV National Photogrammetry Meeting occurred in 1988 in Bari about the matter: "Holy Architecture: use, documentation, planning", same photogrameters pretended to survey the holy building without properly knowing its origins.

During the International meeting of last june in Bari, rose that the main characteristic of a new kind of survey and of a Survey Centre will be to supply by a dynamic survey of the building through time and space, useful in real time.

The survey of an holy building can not be limited to the graphic representation but must start from a functional analysis of the monument.

Nowadays technology help us to do this besides explaining and file it: we must, then, to secure for our descendants the indirect use of cultural works which for same reason (natural and artificial elements) are subjected to changes.

As on medical grounds, for the cultural works we need a photogrammetric study not for topographic aims and use.

Among this point of view is developed the collaboration with the Collegio dei Geometri di Roma and the Cattedra di Fotogrammetria Architettonica of the Politencio of Bari.

Infact the Collegio dei Geometri di Roma will be next october 1991, present at a work of photogrammetric survey in Assisi, with particular care to the works in favour to Convent of S.Damiano.

Besides the Fondazione Italiana Fotogrammetria Architettonica, the Collegio dei Geometri della Provincia di Roma and the Cattedra di Fotogrammetria Architettonica of Bari's Politecnico, through the president of the Foundation, they signed in Bucarest on august 9th 1991 co-operation plans with Governement Body of Romania.

This co-operation plans will begin in april 1992 with the start of a photogrammetric documentation's project about church estate placed in the town of Tirgoviste.

This work will develop in the didactic curriculum of professional-training of "Analista Edile" ¹ and in the project called to "Fotogrammetria e Tutela del Territorio" ².

Infact remarking that photogrammetric survey is not only identified with the graphic representation and, as a consequence of this, in order to use the new technologies, is necessary, in our opinion, to acquire a new mentality.

This is the reason because in the programme "Fotogrammetria e Tutela del Territorio", we consider the formation plan, begun in 1985 by the professorship of architettonic photogrammetry at the school of Bari, a very important step.

To verify the programme of teaching already started, we have planned a photogrammetry course to be attended by almost twenty students next year.

The commune of Bari will provide to finance this course and the study will aim to build a town in miniature (like "LEGOLAND" in Denmark), designed on computer and built using "LEGO" forms.

All students will be taught the photographic language, the observation and understanding of territory also by plane views (flights will take place with the co-operation of the local "Aereo Club", Bari-Palese).

We have already created, thanks to the participation of some students of the 1985 course now fifteen years old, a special aircraft model section inside our Foundation.

At the end of this year we hope to get to some good results of stereo photographic reconnaissances by radio-controlled aircraft models (on this occasion we are fixing a "CANON" camera of 35 mm. with a firm focus and incorporated motor on a "CESSNA 177" model with awing span of 170 cm. and a 10 cc. engine).

Next year, when the training of the very young pilots will get to the end, we intend to fix a telecamera (dimension 79 mm. x 57 mm. x 26 mm., weight 78 gr. and with a 400 mW transmitter with a weight of 160 gr.) on a "R.C. VOYAGER" aircraft with a roller diameter of 160 mm., a fuselage 1300 mm. long and a 4 stroke 200 cc. engine.

At the same time we are going on testing the use of digital image in the survey of cultural works.

Thanks to the co-operation of "Apple Computer" (through the ISIPROG s.r.l. - Apple Center - Bari) that placed a "Macintosh LC" at our disposal, we can show you a programme proof, written in the "Hypercard" language, which is aimed to advance what we intend to show in 1993, when next international architectonic photogrammetry meeting will occur in Bari (Italy).

To all of you interested in this plan, I would like to underline that, in the final report, we will show colour photographic images, related to shootings, even though our only care is for the interactive programme so to talk to the user without tiring him.

The partakers of the last meeting occurred in June know that the pattern we chose among the cultural works was the Convent of S. Damiano in Assisi, the community of which offered to co-operate in writing down the final report form.

Finally, I would like to thank you and I inform you that me and Dario Daddabbo are at your disposal to show you the programme proof as I referred to before.

1st ENCLOSURE

The Fondazione Italiana Fotogrammetria Architettonica, to acquire scientific instruments and fix methodologies to employ in its working and researching plannings, establishes the following points:

- * **architectonic photogrammetry** must be intended as a discipline about architectonic representation made of three-dimensional scale pictures;
- * **three-dimensional picture** must be intended the picture observed by stereoscopic observation of a couple of photograms obtained by an optical-mechanical or electronic way;
- * **possible graphic representations obtained by the photogrammetric survey**, direct or automatic, of the three-dimensional photographic picture must be clearly so called "**photogrammetric restitution**";
- * **photogrammetric restitution** must be intended the transformation of the two pictures, obtained by the central perspective, in one picture like an orthogonal projection;
- * **direct photogrammetry** means the technique which makes it possible for us to relief the dimension of an object from the three-dimensional picture;
- * **Inverse photogrammetry** must be intended as the technique which enables us to report the pre-fixed dimensions on the three-dimensional picture.

Footnotes

- 1) The course of "Analista Edile" is a professional training course funded by Regione Puglia - Italy, by regional resolution n° 56 on July 16th 1992, managed by A.N.C.I.F.A.P. Bari - Italy and with didactic advice of the Fondazione Italiana Fotogrammetria Architettonica and Cattedra di Fotogrammetria Architettonica of the Bari's Politecnico.
- 2) This project, "Fotogrammetria e Tutela del Territorio", is a research project united to the bilateral agreement between Regione Puglia - Italy and University of Bari - Italy, for the common use of photogrammetric instruments, signed on January 18th 1985.
The project aims to the use of the architectonic photogrammetry in the architectonic plan and in the town-planning, as diagnostic instrument about the territorial reality and as instrument of preventive representation of the territorial reality before to change it.
The project has been shown during the III National Congress of Architectonic Photogrammetry, in Italy, and it is subdivided in four sections:
Photogrammetry and Didactics - Photogrammetry and Documentation - Photogrammetry and Project - Photogrammetry and Global Civil Protection.