

DOCUMENTATION OF HERITAGE AT RISK

Wars and Documentation

The question is: should destroyed cultural monuments be reconstructed or not? For many monuments this has already been done. The citizens of Vienna wanted St. Stephen Cathedral back after World War II, also the Burgtheater and the Opera. The Warsaw citizens wanted the old Warsaw back. Many castles and houses in Europe were burnt down and have been reconstructed. The Zwinger in Dresden again became a tourist attraction. After the recent war in Yugoslavia, Dubrovnik has been repaired and partly reconstructed. It cannot be a general decision not to reconstruct. The will of the people is decisive. Maintenance, refurbishments, even modernisations with architectonic changes, and reconstructions are part of a monument's and our history.

When a war starts, people have other priorities than the documentation of others' monuments, but

a good camera is easy to find and can be used at least for photographic recording of everything they or their family hold dear in the neighbourhood. CIPA has prepared the '3x3 Rules for Simple Photogrammetric Documentation of Architecture'. The English text of this guideline can be found at: www.univie.ac.at/Luftbild-archiv/wgv/3x3.html

Humans and Change Detection

The human vision system – two eyes and a large brain – is well developed for the detection of sudden changes, necessarily, because fast movements of objects, animals, enemies or vehicles mean danger for us. However, slow changes in front of us are not so easily detected – and very slow changes not at all, or only after a greater time interval: for example, the growth of children, of plants, changes of form or colours of objects. The most characteristic features remain in our memory, 'unimportant' features do not. We generalise. For detailed comparisons we need an 'eye-crook': intelligent photography. Any building is slowly changing; this is also the case with a town's rooftop landscape. Any documentation of architecture or landscape without intelligent photography is incomplete.

Photography for Change and Trend Detection

The purpose of photographic documentation is not an issue for itself, it is a task for future use. To take images just for a publication immediately afterwards, or just for demonstration of the view of the site, is a poor documentation. Maintenance and future management of the site need more. Photography is needed not only to prove a state or to give evidence of the past, but also to allow for change and trend detection.

As a zero/base document for any later comparison we use normal or – professionally – special photographs, analog or digital, black and white or colour, still video or film, normal or wide angle or panoramic, as appropriate. For easy comparisons, we should have concentric images, taken from one and the same standpoint in order to really detect the changes of objects, instead of those taken according to different perspectives. Also the time of the year and of the day should be comparable; thus we can overlook the

differences of light and shadows and concentrate on the real changes of the site. The same camera and objective is fine, but not absolutely required, because in any case concentric photography is a cross-section document of the same bundle of rays and any pair of images will be collinear and rectifiable to each other. However, the film type should be the same as the last time. If it is wished to change from black and white to colour images, both are necessary. Black and white for the comparison with the last epoch and colour as a new beginning for the follow-up comparisons.

The standpoint, therefore, has to be carefully recorded on a sketch or map or protocol for later use, or reconstructed by resection prior to production of the follow-up photography.

Monitoring photography is more than 'just' photography. The special requirements need special consideration, need thinking about consequences. Monitoring is a duty if we want to detect changes in due time, so that the costs of interventions are a minimum, or if we want to prove that everything is unchanged, complete and the same.

Monitoring World Heritage Sites

Utmost care is required for World Heritage Sites, the best of the best, the masterpieces of human skills, the models for future ideas, the teachers of taste and beauty. Many of them are at important places of memory and history. World Heritage Sites should be documented professionally. In any case UNESCO requires revisiting and periodic reporting to be well done by international experts of ICOMOS, ICCROM, IUCN to check the sites and ensure that the criteria for nomination are still valid and that the international contract is fulfilled.

Each site has its specialties. For each site a management plan has to be made and followed, which has to also include rules for the monitoring and visualisation of any change of the site, be it according to time, erosion, ageing, decay, or according to interventions of any kind by human actions. The monitoring has to include the environment, which is an important part of a site. World Heritage at Risk also needs special care in between the routine periods of reporting.

UNESCO reporters complain that the monitoring documents are mostly incomplete or not available. The experts of CIPA can assist with these urgent problems.

Monitoring of Landscapes

As well as cultural and 'natural' landscapes, let us also include Historical Parks and Gardens and the rooftop-landscapes of villages, towns and cities. All need observation from the air or space and comparisons of aerial or space photographic documents. Changes occur by human interventions, natural and human-made catastrophes. Many changes can be detected from the air, and CIPA experts are familiar with the range of changes that can be revealed this way. Terrestrial monitoring and control alone are not enough, because many changes in the environment are not detectable from the ground.

Aerial and space photography are not always the same. Scale, distance, metric and colour resolution, spectral sensitivity, position

control and relative coincidence, time of the day and of the year, weather and specially haze conditions, speed and motion compensation, sharpness correction, form of the terrain and its reflectivity, information storage of control information and digital terrain models – are some of the keywords used in this connection. The existence of adequate maps and orthophotos (images differentially and exactly rectified to map geometry for any patch and point of it) are a fundamental requirement for comparisons. But these have to be prepared, updated and replaced during the year prior to UNESCO site inspections in order to guarantee that the necessary materials are available in time. For the detection of change using orthophotos, special digital techniques are in use that are not commonly known.

Once again, the processes need to be adapted to the possibilities and requirements of the special site, and must be discussed separately with the State Parties for each site. There are excellent professional methods available, and also methods that are special-purpose, low cost, fast and sufficiently accurate.

For aerial and spatial photography co-ordination is required with the national mapping authorities.

Who is CIPA ?

From 1969 to 2000, CIPA was the Comité International de la Photogrammétrie Architecturale, jointly founded as an ICOMOS Scientific Committee under a contract with ISPRS, the International Society of Photogrammetry, Remote Sensing and Geoinformation. In 2000, CIPA decided to generalise. This is a trend among many

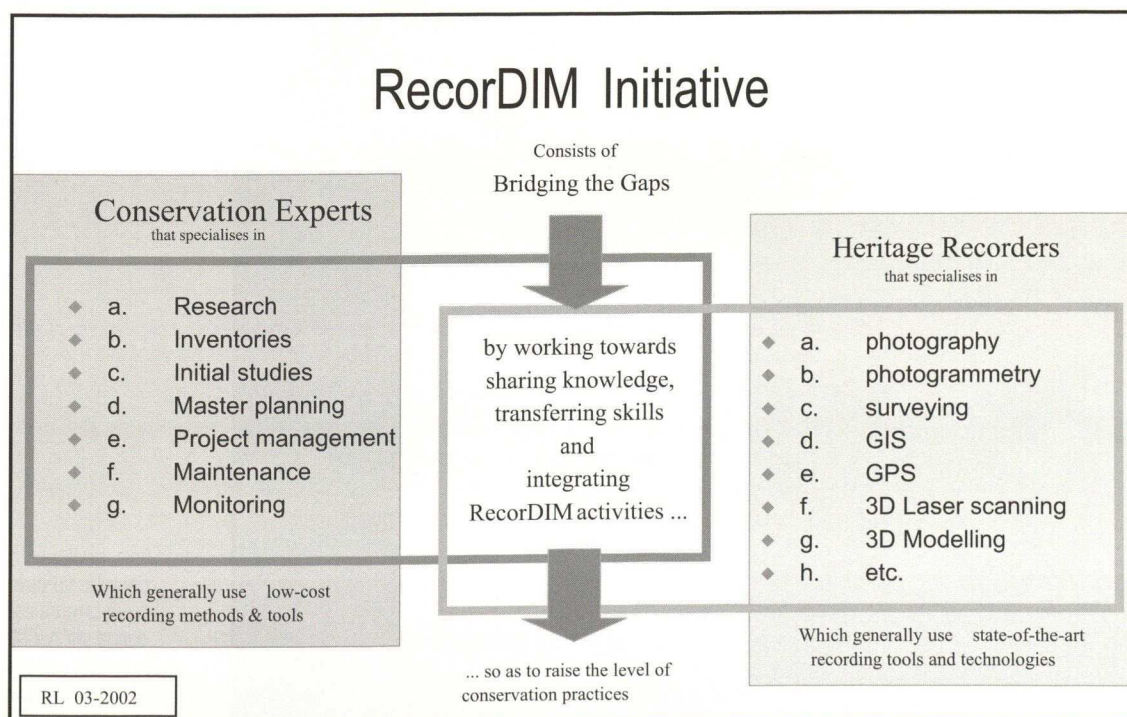
working groups, in connection with the progressive generalisation of computing and information technology. Since this decision, CIPA is known as the International Scientific ICOMOS and ISPRS Committee on Documentation of Cultural Heritage, and is working towards 'bridging the gap' between the areas of:

ICOMOS / Information Users

1. General Recording, Documentation and Information Management (RecoDIM) Tools
2. Conservation Management, Research, Analysis, Design, Maintenance and Monitoring Tools for conservation specialists involved in:
 - Archaeological Heritage Conservation
 - Architectural Heritage Conservation
 - Engineering Heritage Conservation
 - Cultural Landscapes Conservation
 - Conservation Project Management
 - other fields of conservation.

SPRS / Information Providers

1. Technical Recording, Documentation and Information Management (RecoDIM) Tools
2. Technical Measuring, Data Collection, Archiving, Retrieving, Processing and Analysing Tools for heritage recording and documentation experts applying techniques such as:
 - Photographic Recording and Documentation;



- Close Range Photogrammetry and 3D-Scanning;
- Surveying and Mapping;
- Aerial Photogrammetry for Cultural and Natural Landscapes;
- Geophysical and Aerial Methods for Archaeological-Prospetion;
- Underwater Technology and other special methods of surveying, mapping and data collection;
- Information Technology at large for all kinds of Heritage Information Systems.

CIPA is a partner in the RecorDIM Initiative that has the goal to 'bridge-the-gap' between Information Users and Information Providers. This Initiative's activities are outlined in a RecorDIM status report available at: <http://cipa.icomos.org/reports.html>

CIPA invites all National and International Committees of ICOMOS and all experts in the above areas to co-operate in

CIPA's Working and Task Groups, and to nominate National and Committee Delegates as Liaison. Heritage at Risk needs many experts. Documentation should also be collected during expeditions and Expert travels. Join CIPA!

CIPA organises International one-week Symposia that take place every second year. The next ones will be in Antalya, Turkey, in 2003 and in Torino, Italy, in 2005.

The RecorDIM Initiative Partners (CIPA-ICOMOS-GCI) are actively involved in making the up-coming 2003 CIPA Symposium in Antalya a forum for Information Users and Information Providers to meet and share their RecorDIM knowledge and experiences. This Initiative is summarised in the diagram on page 231.

For more detailed information on CIPA please see the home page of CIPA at: <http://cipa.icomos.org>

Peter Waldhaeusl, Austria
president@cipa.icomos.org
ICOMOS and ISPRS International Scientific Committee on
Documentation of Cultural Heritage