Happily, we reach the 4th issue; one year after starting the “CIPA newsletter project”.

This issue is dedicated to:
- the 25th CIPA symposium on heritage documentation, which is organized in Taipei, Taiwan, 30 Aug. - 5 Sep., 2015; for more information visit http://www.cipa2015.org
- projects like the “Conservation of the Archaeological Site Bagan (Myanmar)” and the “Mardin historical city in Tur Abdin region in Turkey”
- the Great Buddha in Bamiyan, Afghanistan
- workshops and events; forthcoming and past
- our supporters

As you all know, the CIPA newsletter is open to everyone interested in or working in the area of cultural heritage. Our aim is to promote views, events and developments occurred in the fields covered by CIPA. Feel free to send us your work, an article or news that could be easily disseminated in the cultural heritage community. We do count on your support.

The second year for the CIPA newsletter (starting from the 5th issue), it is scheduled on a different format. We aspire to have new design and structure too. I would appreciate a lot if you could send us ideas and suggestions.

Enjoy reading!

Editor's Note
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25th CIPA symposium

www.cipa2015.org
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For a long time, CIPA has been making great efforts integrating technology with the pressing needs of cultural heritage conservation experts. Capacity building and dissemination of this field is also its major concern. CIPA holds an International symposium biennially, where experts contribute with the latest scientific researches and applications, providing an unique forum for specialists in conservation and technology to communicate and exchange ideas.

Symposium Topics

- Data acquisition and recording Techniques
  - Laser scanning and 3D imaging
  - Mobile mapping applications
  - Photogrammetric recording with 3D cameras
- Platform, data-based and application
  - GIS tools and applications
  - Web-based application
  - Portals and digital libraries
- Digital processing and modeling
  - Post processing
  - Digital 3D modeling
  - Modeling methods for architecture and archaeology
- Application
  - Reproduction techniques and rapid prototyping
  - Applications of BIM-HBIM
  - Disaster prevention and monitoring
- Special session and Case studies
  - Technologies aimed at Preventive maintenance and monitoring of sites
  - Cultural heritage conservation on globalization and localization
  - Multi-cooperation for cultural heritage conservation
  - Cross border for cultural heritage conservation
  - Integration, conservation on tangible and intangible cultural heritage

Submitting and Reviews

Paper manuscripts should be submitted electronically through the Copernicus system. Submissions for the joint event are completely electronic, and both the paper and all supplementary material must be submitted through the online submission website. The submissions due date and schedule will be announced soon.

The authors may choose one of two types for submission.
- Full Papers (6 pages max.): The paper will be peer-reviewed, and published in the ISPRS ANNALS after acceptance.
- Extended Abstracts (500 to 1000 words): The papers published in the ISPRS Archives are based on an abstract-only review procedure.
- Posters: May describe work in progress, or completed projects, to assure the inclusion of recent research and work process.
Mardin is a world-renowned historical city in Tur Abdin region in Turkey with its extraordinary tangible and intangible culture. As stunning cut-stone masonry, which is rooted from deep history is one of Mardin’s very distinctive values. Thanks to the wealth of high-quality limestone sources that were formed between Lower Eocene and Lower Oligocene within Hoya Formation, the region became a center for the splendid cut-stone working tradition.

Mardin in the midst of Mesopotamian Plain offers unique open stone and underground quarry caves dating from antiquity. Recently, on June 25th, 2014, the Turkish TRT News and Anadolu Agency (AA) aired the observations made by two archaeologists, Asst. Prof. Güner Coşkunus and Asst. Prof. Minna Lonnqvist, of the Archaeology Department, Mardin Artuklu University in these ancient limestone quarries. The program and internet blogs raised the importance in saving these forgotten ancient sites.

The quarries of Mardin consist of open quarries and of underground caves in several floors, with a number of entrances and chains of galleries. The quarry caves are magnificent as a cathedral and they arouse admiration in visitors. During the antiquity, vertical limestone blocks were carved out from high-quality rock for construction purposes in them; vertical working is typical of underground quarries from antiquity. A room-and-pillar technique is used in mining in Mardin forming separate rooms.

At first glance, scattered sherds in and around the quarries, stylistic and technical features of quarries and their resemblance to those of dated Roman sites like Dara in Mardin as well as their architectural plan suggest that these ancient stone quarries can be dated to Late Roman/Byzantine period. Comparable underground stone quarries to those in Mardin are also known, for example, in Britain, Spain, Slovenia, Bosnia, Italy, Israel and in the Jordan valley. These all are dated to the Roman period, some continued in use in the Byzantine period. Most likely Mardin’s ancient quarries were used in previous and later periods as well. A recent usage is also visible from fresh surfaces. Oral history studies of the first author of this paper also support this field observation. Once these ancient quarries were used for construction of historical city of Mardin and perhaps also for other cities in Tur Abdin region.

No archaeological work has been done yet on these secluded impressing ancient ruins in the midst of the city. Moreover, the quarries are under great risk of being destroyed because of intensive and fast urban development. Some portion of them is already gone and the rest is waiting for urgent attention and care.

The quarries have a significant amount of archaeological deposit filled with sherds, bone, and chips of worked stone blocks with and inside of the quarry caves. This provides a unique opportunity to explore the mechanism of stone block production, architectural specificities of quarry caves, questions involved in technical, labor division, operation of organization, ownership, payment and production as well as age and perhaps gender division as well as to date them. In other words, archaeological excavations would offer a good chance to understand economical, political, administrative and social aspects of quarries through time.

The ancient quarries both in old and new part of the city are one of the main sources of highly qualified stone blocks that used in fascinating silhouette and history of Mardin as well as of Tur Abdin region in general. Comparison between stone blocks removed from these quarries with the civil, religious, administrative and defensive architecture of Islamic and Christian eras in Mardin clearly indicates the continuation of mystery in stone working tradition.

These admirable historical quarries are definitely worthy to be preserved as a historical landscape in Mardin’s aspiration for the UNESCO World Heritage status. In addition, scientific researches should start soon in future, and some parts should be opened for tourism. Quarry caves can be used as an attractive stage for non-harmful musical and art performances as well.

The Venice Charter by UNESCO emphasizes that the historical monument does not only concern the architectural concept of the work itself but also its rural or urban surroundings, where the monument evolves representing human heritage (Article 1). The sites where monuments are met need to hold the integrity of the site, and special attention should be paid to site clearance and presentation that it is done in a decent way (Article 14). UNESCO’s Valetta Principles state the ways for the integration of such historic and traditional elements into the needs of the contemporary society so that protection and conservation go hand in hand with a contemporary life in a harmonious way. Change that is managed well can be a chance to improve the quality of historic towns and areas based on the nature of a site.

The quarries in Mardin provide us with valuable information of the mining techniques, economy, administration, architecture etc. of the ancient world. This information needs to be saved. Following the spirit of the Venice Charter and Valetta Principles, Mardin provides potential to preserve the quarry caves and open quarries in an integrated way by landscaping as common heritage to be passed to the future generations. No doubt that preserving traditional architectonic culture will add more quality in urban spaces.

Projects

Santana chairs workshop for Bagan, a potential UNESCO World Heritage site

Prof. Mario Santana contributes to the Conservation of the Archaeological Site Bagan (Myanmar), he was invited by UNESCO’s Bangkok office to provide advice on the design and deployment of a heritage inventory of this important site and potential nomination to the UNESCO World Heritage List.

For this reason he has attended and chaired a two workshop organized by this distinguished organization on June and August 2014 at the Bagan Museum of Archaeology.

One of UNESCO’s office in Bangkok projects deals with providing technical assistance for the conservation of built heritage in Bagan. The project includes helping the authorities develop an updated inventory system for the site, with a focus in the first instance on the monuments. During the meetings, distinguished member of Myanmar’s government, Japanese government, EFEEO, ICOMOS and other experts reviewed the existing inventories and current inventory system at Bagan.
The Great Buddha in Bamiyan, Afghanistan 40th anniversary of its stereo-photogrammetric documentation

Robert Kostka, Graz
With David Braslav, Minneapolis and Walter Kuschel, Graz

Following a scientific expedition to the High Hindu Kush, on 30 August 1970 the team of Robert Kostka, David Braslav and Walter Kuschel, successfully captured detailed 3-dimensional geometry of the Great Buddha in Bamiyan, Afghanistan using stereo-photogrammetry. The documentation from that study was published in 1974 as a paper entitled “Stereo Photogrammetric Imaging of the Great Buddha in Bamiyan” in the International Afghanistan Journal by the Academic Printing and Publishing House in Graz (Dr. Karl Gratzl). The report contains several figures, including a detailed vertical contour map of the Buddha statue with 20 centimeter contour intervals.

In March 2001, when the Great Buddha statue was destroyed, it became the target of worldwide interest. Only after the destruction of the statue did the World Heritage Committee of UNESCO decide to include the cultural landscape and archaeological remains of the Bamiyan Valley in the list of World Heritage Sites.

In 2004, thirty years after publication of the report, the original photogrammetric images were donated to the Bibliotheca Afghanica in Switzerland, where they were further processed by Professor Armin Grün at the ETH Zurich. Based on his work, a 2.5-meter high and 700kg model of the Buddha was created, and exhibited in Japan in the summer of 2005 in the Swiss Pavilion at the World Exhibition EXPO 2005 in Aichi. In addition, an award-winning film about the fate of the large Buddha statues “The Giant Buddhas” was produced by the Swiss filmmaker Christian Frei. In the spring of 2014 on the occasion of the 40th anniversary of the first publication of the paper, it was scanned and placed on the website http://www.geoimaging.tugraz.at/download/Buddha_Bamyian_1974.pdf of the Institute of Remote Sensing and Photogrammetry, Graz University of Technology. With this, results of the study are made available through open access to a much larger audience.

The additional photo by Herfried Gamerith from the year 1965 will provide the possibility for comparing the height and condition of the Buddha as it was in 1965.

References


2006: STEIERNÄRKISCHE LANDESBIBLIOTHEK: Stationen an der Seidenstrasse, Ausstellungskatalog. Veröffentlichungen der Steiermärkischen Landesbibliothek, Nr.31/2006. 32 S.


The Great Buddha in Bamiyan, Afghanistan Photo by Herfried Gamerith, 1965

3D-ARCH 2015 – ISPRS workshop on 3D Virtual Reconstruction and Visualization of Complex Architectures

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The 6th 3D-ARCH international workshop will be held in Avila (Spain) on 25-26-27 February 2015. The event is the 6th in a row after the successful editions in Venice (2005), Zurich (2007) and Trento (2009, 2011, 2013). The 2015 edition will focus on the steps and processes for smart 3D terrestrial modelling, accessing and understanding of virtual environments from multiple data sources. Topics are limited to:

- Multi-source data and multi-sensors approaches
- Low-cost sensors and open-source algorithms for terrestrial 3D modeling
- Automation in data registration
- Image matching and 3D reconstruction
- Point cloud analysis
- Procedural modeling
- Accuracy requirement and assessment in 3D reconstructions
- Virtual and Augmented Reality applied to the visualization and conservation of complex architectures and heritage

The event will have single-track technical sessions with oral presentations and poster sessions.

More information can be found at http://www.3d-arch.org

CIPA summerschool – 5-12 July 2014, Paestum (Italy)

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The school was held in the archaeological area of Paestum and hosted 26 participants from 16 different nationalities (Italy, France, Belgium, The Netherlands, Faro Island, USA, Germany, Greece, Serbia, Afghanistan, Romania, Spain, Czech Republic, Brasil, Ecuador, Indonesia).

The event was supported by the Archaeological superintendence for the provinces of Salerno, Avellino, Benevento and Caserta and by the National archaeological museum of Paestum. The school gave the opportunity to scholars, PhD students, researchers and specialists in the surveying and heritage fields to refresh and deepen their knowledge and expertise with reality-based 3D modeling techniques. Theoretical lectures were followed with field acquisitions (photogrammetry and laser scanning) and data processing. The participants learned the basics in 3D surveying and data acquisition (with digital cameras, laser scanning sensors and UAV platforms) as well as practice with data processing methods for 3D models and metric products generation. The participants, during the practical works, were divided in groups and, with the help of some tutors, they exercised with photogrammetry, 3D scanning and topography both in the archaeological area and in the nearby museum. Each group was responsible of the digitization of artifacts and big structures and in the last day the achieved results were presented.
Feedback from the participants of the summerschool in Paestum
Vesna Stojakovic – University of Novi Sad, Serbia
Silvia Ferrari – University of Catania, Italy

I participated in the 2014 edition of the CIPA summerschool and I am very satisfied with the event. I have learned a lot and it seems that the course was very useful to all participants, despite the diversity in the terms of professional background and experience in different topics involved. The organization was great, lecturers and assistants were ready to answer all our questions and even to stay the whole night with the participants to support us and help during the data processing. The achieved results were very interesting considering the fact that summerschool lasted just one week. However, main contributions in my opinion were insights to actual problems, clues and hints and general collaboration. Whole team, lecturers, assistants and participants, were very nice and most importantly the summerschool was altogether really lovely and fun.

I participated in the CIPA Cultural Heritage summerschool and it was an invaluable occasion of learning something new about surveying within an exciting, multi-cultural and friendly environment and a beautiful location. I had never had the chance of experiencing photogrammetry and the use of high technological instruments such as laser scanners. During the course, I could try a number of different practical approaches for solving survey problems while receiving some insights into the basic rules that regulate the way photogrammetry and topography work. I could compare different reality-based surveying and modeling techniques applied to objects with great differences through the large number of case studies the tutors presented during their lessons. In addition, the course was well planned and organized even if the huge amount of technical information, although necessary, is hard to digest when it is the very first time you deal with it. I would like to point out that even though the course was demanding, especially during the long hours of data processing, there was enough time to enjoy the local facilities (such as the beach and swimming pool), finding a good balance between working and living. I had a really great time in Paestum and I enjoyed one of the closing party even! Thank you for this special experience!

CIPA supports the documentation workshop organized by the Hebron
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A Workshop on Heritage Documentation was held in Hebron (Palestine) from 27th April – 8th May 2014, with the support of CIPA and conducted by Dr. Antonio Almagro, honorary member of the committee. Two full weeks of training started with a general overview on the principles of documentation for Cultural Heritage and the importance of this activity for conservation, preservation and restoration. This was followed by field work and practical exercises. The workshop was divided in two blocks emphasizing two different aspects and scales of documentation, for architectural and urban heritage recording. The different methods, tools and techniques for graphic recording were presented and tested by 16 participants including total station measurements, photo rectification, stereo plotting, photo scanning and camera calibration procedure. This included architectural recording for historical analysis, material decay and structural damage, followed by lectures on representation techniques and the elaboration of final documents. Discussions were frequently conducted on the use and combination of these different tools and the results that were obtained. Final conclusions and recommendations for the undertaking of the project of recording the architectural heritage of the old city centre of Hebron were proposed and discussed.

There is a strong conviction that the teams that participated in this workshop received the basic skills necessary to accomplish this project.
In the course of its evolution mankind has created magnificent works of art whose heritage must be preserved. The digital acquisition and documentation of these masterpieces with Breuckmann 3D scanners are therefore increasingly gaining in importance — be it in architecture, fine arts, archaeology or paleontology. Breuckmann’s contact-free 3D scanning technology can be carried out in the museum as well as at the archaeological site, allowing for delicate objects to be handled with utmost care and provides detailed 3D data with high-resolution color textures for thorough studies without using the original. The German companies AICON and Breuckmann operate as full-range supplier of 3D metrology systems and offer solutions for all kind of measuring tasks; e.g. for technical and industrial engineering; for human body measurements and for arts and culture.

The Getty Conservation Institute is a private, non-profit institution that works internationally to advance heritage conservation practice through research, education, applied field work, and the dissemination of knowledge. The work the GCI undertakes seeks to address unsolved problems, to have impact beyond a particular site or object, and to be sustainable over time. The work of the GCI is primarily project based, with many projects involving close collaboration with local, national, and international partners. In all its endeavors, the Conservation Institute focuses on the creation and dissemination of knowledge that will benefit the professionals and organizations responsible for the conservation of the world’s cultural heritage. The GCI is pleased to make available online to the conservation community a wide variety of resources including publications, teaching materials, newsletter articles, conference proceedings and lectures, and videos. The GCI is based in Los Angeles and is a program of the J. Paul Getty Trust.

ART GRAPHIQUE ET PATRIMOINE (AGP), founded in 1994, is a leading company in dimensional documentation of buildings and works of art. AGP have documented more than 1,000 prestigious historic monuments in Europe, Asia and Africa, including Notre Dame Cathedral in Paris, Mont Saint Michel, the Louvre and the Palace of Versailles. AGP also produces augmented reality and interactive applications as well as films, using state of the art technologies for lasergrammetry, photogrammetry and 3D metrology. Jumieges 3D, a very innovative Augmented Reality reconstitution of the destroyed Abbey, has received the Award of the World best cultural application, given during the World Summit Award ceremony supported by the United Nations in 2013.

AGP is also developing an expertise on BIM 3D mockups specially adapted to old buildings and is cooperating with various prestigious laboratories and schools.

Scanning of Bertel Thorvalden’s “Ganymede Filling the Cup” (Thorvaldens Museum, Copenhagen, Denmark)

Precise 3D data of cuneiform scripts from the collection Hilprecht (Friedrich Schiller University, Jena, Germany/Museum, Copenhagen, Denmark)

TPLM-3D is an innovative company working primarily for Architecture, Heritage, Civil Engineering, Building, and Industry. Our Data-aquisition and processing methods are based on laser scanning and photogrammetry. Our customers are local authorities (Ministère de la Culture, Conseils généraux) for the architecture and ancient monuments sectors and international groups (EDF, Arkema, Airbus, Vinci) for the industrial and civil engineering sectors. For more than 350 projects handled since the beginning of the company in 2004, we always have brought a quality answer, tailor made to the customers needs. Today, 8 persons work for TPLM-3D and 5% of the turnover is invested in R&D on 3D modeling. We thus intend to constantly improve the quality of the work done and to propose innovative products in our production.