

## The International Day for Monuments and Sites

### Theme for 2009 – “Heritage and Science”

### Celebrate the world’s heritage on 18 April 2009!

On the proposal of ICOMOS, 18 April was endorsed as *The International Day for Monuments and Sites* by UNESCO in 1983. This special day offers an opportunity to raise public awareness concerning the diversity of the world’s heritage and the efforts that are required to protect and conserve it, as well as to draw attention to its vulnerability. For several years now, ICOMOS suggests a topic to be highlighted on this occasion. This has allowed our members and our committees to hold activities, conferences, colloquia or other events to raise awareness on this cultural heritage among the public, the owners or the public authorities by linking a global theme to local or national realities.

We thank you in advance for all your initiatives and ask you to inform the ICOMOS Secretariat, as early as possible, of the activities you plan to undertake for 18 April, but also to share their results with us (programme, participation, publications). This will help us to disseminate information and to gather conclusions on all your activities, so as to be able to testify of the vitality of ICOMOS’ network.

For further information on the Day, previous themes, support material and the calendar of activities foreseen in 2009 – consult <http://www.international.icomos.org/18thapril/index.html>. We will post information as it comes in.

### About the theme

There are two major streams to the theme of *Heritage and Science* that has been chosen for International Day for Monuments and Sites 2009: one being the role that science (and the scientific process) has played in the creation of heritage, and the other being the contribution that science (and technology) offers to the study of heritage.

It is now difficult to separate science and technology; whilst science (as a system of processes and a body of knowledge about the physical world) can often exist without technology, the converse is not true. Technology is a system of tools and procedures concerned with modifying the physical world, and to a great extent is based on science.

The bulk of the World’s tangible heritage, excluding perhaps completely natural landscapes, is the result of this practical application of knowledge. A structure like the Ironbridge (UK) clearly shows the influence of science and technology in its construction; not only the bracing that disperses the load but also the mining, smelting, transport infrastructure and organised labour components that made the structure possible. The Temples of Angkor (Cambodia) not only illustrate an understanding of astronomy, but also of hydrology, mechanics and the requirements for tools suitable for the quarrying of the stone, placing the blocks, and the execution of the reliefs and frescos. The site of Maritime Greenwich (UK) is noted for its association with the science of astronomy and the determination of position and time; whilst being architecturally significant, it is primarily a monument to scientific endeavour. It is also a monument to the practical application of science, as the manufacture of the transit telescope and the precision timepieces depended on the availability of suitable materials and tools. Fundamentally, without science and technology, no monument or structure could exist.

The contribution that science and technology can now make to the conservation, preservation and even understanding of cultural heritage is rapidly evolving and expanding. For example: the use of lasers for the treatment of surfaces and the measurement of shape and form; non-destructive methods of exploration and examination; chemicals and compounds for treating artefacts and structures; isotope analysis to determine causes of stone deterioration; the analysis of compounds using X-ray diffraction and mass spectrometers; the use of information systems to store and analyse data; structural analysis and finite element modelling as a means of planning repair works; and even the use of communication technology for the dissemination of research and developments. Unfortunately, not all contributions are positive; the development of modern weapons explosives also facilitated the reduction of the Bamiyan Buddhas to rubble, and destroys much other tangible and intangible heritage on a daily basis.

The selection of the theme for the International Day for Monuments and Sites offers an opportunity to review and acknowledge the role of science (and technology) in cultural heritage from the two points-of-view mentioned above. It also provides an incentive to discuss potential benefits and threats that science may provide in the future, with respect to the safeguarding of the 'things we want to keep'.

### **The Scientific Council's Initiative - Technological Change**

The United Nations has declared 2009 the International Year of Astronomy – for which UNESCO has been designated lead agency, and the World Heritage Centre continues to develop its "Astronomy and World Heritage Initiative". To complement this, ICOMOS will celebrate its International Day for Monuments and Sites on 18 April 2009 under the working title, *Heritage and Science*. One of the ways ICOMOS will contribute to the exploration of this topic is through its Scientific Council (SC). The Scientific Council consists of the Presidents, or their designated representatives, of all the 28 ICOMOS International Scientific Committees (ISCs). One of its mandates is to develop "umbrella" themes for interdisciplinary research. Since 2006, that theme has been *Global Climate Change and its effects on cultural heritage*, which resulted, among other, in a one-day symposium during the Advisory Committee meeting in Pretoria in October 2007.

At the 16<sup>th</sup> General Assembly in Quebec 2008, the Scientific Council chose to continue with the theme of change under the banner *Changing World, Changing Views of Heritage: the impact of global change on cultural heritage*. Moving from Climate Change to Technological Change (2009), and from there to Social Change (2010), all three change elements will be brought back together as sub-themes to complement and enhance the theme of natural disasters chosen for the 17<sup>th</sup> General Assembly (2011, Isfahan, Iran).

Like Climate Change, each theme will be the topic of a one-day symposium during the annual Advisory Committee meeting. The symposia will use a similar format to the one held in Pretoria, including breakout sessions with the Scientific Council identifying issues related to each ISC in order to develop recommendations. Papers produced in advance of the symposia will provide contributions to the *Heritage at Risk* publication.

For the sub-theme *Technological Change*, Cliff Ogleby, President of CIPA (International Committee on Heritage Documentation), has been appointed as chair. Some of the topics that will be included are the speed of change, the impact of information technology, industrial heritage, water management, materials and techniques, disaster mitigation, climate change, and the cultural heritage of science. A scientific committee under Cliff Ogleby's direction, consisting of representatives from various ISCs and National Committees, will develop a brief that will be circulated on the SC listserv and to all of the National Committees. Interested professionals will contribute through debate of the brief until a position paper is formulated that will guide efforts on the topic up until the symposium. In addition, papers will be sought for presentation at the symposium and/or to be published in *Heritage at Risk*. These can be specific case studies or overall discussions on technological change and the heritage of science.

The symposium breakout sessions are the opportunity for those participating to contribute to the formulation of recommendations that are published in the ICOMOS newsletter as well as on the website. The recommendations become the bridge to implementation of strategies that further the Scientific Council's research in specific areas of interest.

#### **Pamela Jerome**

*Scientific Council Coordinator, President of the ISC Earthen Architecture*

#### **Cliff Ogleby**

*Chair – Technological Change sub-theme (2009), President of ICOMOS CIPA*

### **The Scientific Heritage: some introductory remarks**

The issue of scientific heritage is today placed before the international community. It appears as a relatively new challenge, both for its definition and for its assessment criteria. It has become commonplace to recall that this heritage is today under-represented on the World Heritage List. Indeed, few cultural properties explicitly acknowledge this dimension as being dominant or simply even present in the analysis of their outstanding universal value. In fact, for ICOMOS, the concept of scientific heritage has so far only been one of the cultural dimensions associated with a cultural property, often a minor, even implicit, dimension. Here a first observation can be made: if we want to promote this new category of heritage, we must review the cultural properties where it is already present, and explain how and why. There is no doubt much that can be done by simply taking a fresh look at already recognized heritage places. However, we can not do this alone; we must broaden the base of our expertise. Input from specialists on science is essential. In effect, the scientific world itself is increasingly concerned about these issues, particularly in Europe, for reasons which are interesting to explore. What is more, there are already scientific heritage specialists who share many of our concerns and our methods: the historians of science.

Methodological questions will have to be examined thoroughly first so that we can work together. The need for this is evident; the methodological question must not be underestimated, as it raises complex questions both about the legitimacy of this approach as well as about the epistemological implications. Scientists are not necessarily best placed to study heritage places and they may end up "reinventing the wheel", but on the other hand a heritage professional who uses scientific heritage as a pretext for simply re-serving us known concepts from the domains of urbanism or architecture is hardly credible either!

Another observation is necessary here: the scientific heritage has a close and rather strong link with the technical and industrial heritage, which should help us in relation to methodology, both practically and in terms of efficiency. In the field of knowledge, there is a strong link between science and technology, as is evident, but not exclusively, in the modern and contemporary world. Any technological practice employs comparison, classification, as well as trial and error, and is based on Man's rationality in the interaction with Nature. Besides, monumental technological properties, such as bridges, canals, factories, railways, mining, etc. are already inscribed on the World Heritage list. This must guide us, and we have already conducted effective operations together with specialists on industrial heritage and the history of technology. However, we have to remember the following important difference: Technology aims to produce material artefacts in the service of man (objects, production tools, infrastructure), that is to say heritage potentially falling under criteria (i) to (v) of the World Heritage Convention. This is not the case of science, whose aim is to produce knowledge, concepts and laws! Fundamentally, the scientific heritage, as the result of science, is intangible, that is to say, it falls under criterion (vi), which cannot be used alone in terms of the Convention! We must be aware of this particularity of the heritage field, while for the scientist; heritage forms an evident global entity.

Yet science is closely linked to the material, which is the basis of any heritage in terms of the World Heritage Convention: 1) its purpose, the study of nature; in this sense the field of science can offer significant heritage places linked to natural sites, 2) its tools, i.e. its instruments of observation and research sites, 3) its social gathering places and the places of its transmission, which are the cornerstones of its insertion into society. In any case, the analysis of the value of the cultural properties falling under these categories can only be made in close consideration of their scientific significance, which lies in the realm of the intangible.

Some further elements to complete this brief, therefore schematic, observation. Instruments are essential to the field of experimental sciences, but not to mathematics, which we should nevertheless not exclude a priori from our reflection on scientific heritage! Moreover, instruments are not always monumental in nature and not always immovable cultural properties. These are common heritage concepts, but they are unrelated to the scientific value: it is the quality of the instrument and its historic use which is the key factor. The concepts of integrity and authenticity will also have to be examined in the context of the scientific world, where an instrument, a laboratory, or a place are by nature intended to evolve, to adapt, to be supplanted by other facilities, other devices, and other sites better suited for research.

**Michel Cotte**

*ICOMOS World Heritage Advisor*

**Interesting links:**

- UNESCO : World Heritage – Science and Technology Expert Workshop, 21-23 January 2008:

<http://whc.unesco.org/en/events/468/>

- ICOMOS Germany- International Symposium "Cultural Heritage - Astronomical Observatories (around 1900) - From Classical Astronomy to Modern Astrophysics" - Hamburg, 14 - 17 October 2008

<http://www.math.uni-hamburg.de/spag/ign/events/icomos08.htm>

- UNESCO Astronomy and World Heritage initiative : <http://whc.unesco.org/en/activities/19/>

- International Year of Astronomy : <http://www.astronomy2009.org/>

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