

# THE PRINCIPLES OF THE SEVILLE CHARTER

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## ***Abstract:***

*Nowadays the worldwide application of computer-based visualisation in the field of archaeological heritage may be described as full of "lights and shadows". The spectacular growth of cultural tourism and the amazing technological advances in recent years have led to the development and implementation of a myriad of projects to investigate, preserve, interpret and present various elements of archaeological heritage using computer-based visualisation.*

*These projects have demonstrated not only the extraordinary potential of computer-based visualisation but also its many weaknesses and inconsistencies. Therefore, there is a clear need for a theoretical debate with practical implications to enable heritage managers to use the best that new technology can offer them in this area while minimizing its most controversial applications.*

*The Spanish Society of Virtual Archaeology (SEAV) is working in this direction thanks to the collaboration of hundreds of researchers worldwide. Thanks to this international effort is currently working on the elaboration of an international document called Seville Charter.*

## **1. INTRODUCTION**

Today, the worldwide application of computer-based visualisation in the field of archaeological heritage may be described as full of "lights and shadows". The spectacular growth of cultural tourism and the amazing technological advances in recent years have led to the development and implementation of a myriad of projects to investigate, preserve, interpret and present various elements of archaeological heritage using computer-based visualisation. These projects have demonstrated not only the extraordinary potential of computer-based visualisation but also its many weaknesses and inconsistencies. Therefore, there is a clear need for a theoretical debate with practical implications to enable heritage managers use the best that new technology can offer them in this area while minimizing its most controversial applications. In short, some basic principles must be established to govern practices in this growing field.

The London Charter (<http://www.londoncharter.org>) is currently the most advanced international document in this direction. Its various updates reveal the overwhelming need to find a document with recommendations that can serve as a basis for designing new projects with greater rigour in the field of cultural heritage, but also to propose new recommendations and guidance tailored to the specific needs of each branch of learning and community of experts. For this reason, the objectives set out in The London Charter aim to "offer a robust foundation upon which communities of practice can build detailed London Charter Implementation Guidelines". And we must not forget the immeasurable scope of the concept of Cultural Heritage, which encompasses such broad areas as monumental, ethnographic, documentary, industrial, artistic, archaeological and oral heritage.

The London Charter takes full account of the Cultural Heritage as a concept, and therefore the specific needs required by each of its constituent parts. For this reason, the Preamble to the London Charter recognises these needs: “as the aims that motivate the use of visualisation methods vary widely from domain to domain, Principle 1: “Implementation”, signals the importance of devising detailed guidelines appropriate to each community of practice”. Principle 1.1 recommends: “Each community of practice, whether academic, educational, curatorial or commercial, should develop London Charter Implementation Guidelines that cohere with its own aims, objectives and methods”. It therefore seems obvious that, given the importance of archaeological heritage as part of cultural heritage, and since many recognise the existence of a community of experts who focus specifically on the concept of Virtual Archaeology, consideration must be given to the preparation of guidelines, documents and recommendations that even following the general guidelines established by the London Charter, take into account the specific nature of Virtual Archaeology.

The principles discussed below aim to increase the conditions of applicability of the London Charter in order to improve its implementation specifically in the field of archaeological heritage, including industrial archaeological heritage, simplifying and organising its bases sequentially, while at the same time offering new recommendations taking into account the specific nature of archaeological heritage in relation to cultural heritage.

## 2. DEFINITIONS

**Virtual archaeology:** the scientific discipline that seeks to research and develop ways of using computer-based visualisation for the comprehensive management of archaeological heritage.

**Archaeological heritage:** the set of tangible assets, both movable and immovable, irrespective of whether they have been extracted or not and whether they are on the surface or underground, on land or in water, which together with their context, which will also be considered a part of archaeological heritage, serve as a historical source of knowledge on the history of humankind. The distinguishing feature of these elements, which were or have been abandoned by the cultures that produced them, is that they may be studied, recovered or located using archaeological methodology as the primary method of research, using mainly excavation and surveying or prospection techniques, without compromising the possibility of using other complementary methods for knowledge.

**Comprehensive management:** this includes inventories, surveys, excavation work, documentation, research, maintenance, conservation, preservation, restoration, interpretation, presentation, access and public use of the material remains of the past.

**Virtual restoration:** this involves using a virtual model to reorder available material remains in order to visually recreate something that existed in the past. Thus, virtual restoration includes virtual anastylosis.

**Virtual anastylosis:** this involves restructuring existing but dismembered parts in a virtual model.

**Virtual reconstruction:** this involves using a virtual model to visually recover a building or object made by humans at a given moment in the past from available physical evidence of these buildings or objects, scientifically-reasonable comparative inferences and in general all studies carried out by archaeologists and other experts in relation to archaeological and historical science.

**Virtual recreation:** this involves using a virtual model to visually recover an archaeological site at a given moment in the past, including material culture (movable and immovable heritage), environment, landscape, customs, and general cultural significance.

## 3. OBJECTIVES

Since the theoretical framework for the Seville Charter is the London Charter, this document would adopt all the objectives approved by the Advisory Board of the London Charter. These general objectives should be accompanied by some new objectives, namely:

- Generate easily understandable and applicable criteria for the whole community of experts, including indistinctly computer experts, archaeologists, architects, engineers, general managers or specialists in the field.

- Establish guidelines aimed at giving the public a greater understanding and better appreciation of the ongoing work of archaeology.
- Establish principles and criteria for measuring the quality of projects carried out in the field of virtual archaeology.
- Promote the responsible use of new technologies for the comprehensive management of archaeological heritage.
- Help improve current archaeological heritage research, conservation and dissemination processes using new technologies.
- Open new doors for the application of digital methods and techniques in archaeological research, conservation and dissemination.
- Raise awareness of the international scientific community of the prevailing need to make concerted efforts worldwide in the growing field of virtual archaeology.

## **4. PRINCIPLES**

### **4.1. Principle 1: Interdisciplinarity**

Any project involving the use of new technologies, linked to computer-based visualisation in the field of archaeological heritage, whether for research, conservation or dissemination must be supported by a team of professionals from different branches of knowledge.

- 4.1.1 Given the complex nature of computer-based visualisation of archaeological heritage, it can not be addressed only by a single type of expert but needs the cooperation and complicity of a large number of specialists (archaeologists, computer scientists, historians, architects, engineers etc.).
- 4.1.2 A truly interdisciplinary work involves the regular and fluid exchange of ideas and views among specialists from different fields. Work divided into watertight compartments can never be considered interdisciplinary even with the participation of experts from different disciplines.
- 4.1.3 Among the experts who must collaborate in this interdisciplinary model, it is essential to ensure the specific presence of archaeologists, preferably those who are or were responsible for the scientific management of the excavation work or archaeological remains to be reconstructed.

### **4.2. Principle 2: Purpose**

Prior to the development of any computer-based visualisation, the ultimate purpose or goal of our work must always be completely clear.

- 4.2.1 Any proposed computer-based visualisation will always aim to improve aspects related to the research, conservation or dissemination of archaeological heritage. The overall aim of the project must be encompassed within one of these categories (research, conservation and/or dissemination).
- 4.2.2 In addition to clarifying the main purpose of computer-based visualisation, more specific objectives must always be defined in order to obtain more precise knowledge of the problem or problems to be resolved.
- 4.2.3 Computer-based visualisation must be always at the service of archaeological heritage rather than archaeological heritage being at the service of computer-based visualisation. The main objective of applying new technologies in the comprehensive management of archaeological heritage must be to satisfy the real needs of archaeologists, curators, restorers, museographers, managers and/or other professionals in the field of heritage and not vice-versa.

### **4.3. Principle 3: Complementarity**

The application of computer-based visualisation for the comprehensive management of archaeological heritage must be treated as a complementary and not alternative tool to other more traditional but equally effective management instruments.

4.3.1 Computer-based visualisation should not aspire to replace other methods and techniques employed for the comprehensive management of archaeological heritage (e.g. virtual restoration should not aspire to replace real restoration, just as virtual visits should not aspire to replace real visits).

4.3.2 Computer-based visualisation should seek forms of collaboration with other methods and techniques of a different nature to help improve current archaeological heritage research, conservation and dissemination processes. To do so, compliance with “Principle 1: Interdisciplinarity” will be fundamental.

4.3.3. Nevertheless, computer-based visualisations may have be an alternative when original archaeological remains have been destroyed (e.g. due to the construction of large infrastructures), are in places that are difficult to access (e.g. when there are no roads) or at risk of deterioration due to the huge influx of tourists (e.g. rock paintings).

### **4.4. Principle 4: Authenticity**

Computer-based visualisation normally reconstructs or recreates historical buildings and environments as we believe them to have been in the past. For that reason, it should always be possible to distinguish what is real, genuine or authentic from what is not. In this sense, authenticity must be a permanent operational concept in any virtual archaeology project.

4.4.1 Since archaeology is complex and not an exact and irrefutable science, it must be openly committed to making alternative virtual interpretations provided they afford the same scientific validity. When that equality does not exist, only the main hypothesis will be endorsed.

4.4.2 When performing virtual restorations or reconstructions, these must explicitly or through additional interpretations show the different levels of accuracy on which the restoration or reconstruction is based.

4.4.3 In so far as many archaeological remains have been and are being restored or reconstructed, computer-based visualisation should really help both professionals and the public to differentiate clearly between: remains that have been conserved “in situ”; remains that have been returned to their original position (real anastylosis); areas that have been partially or completely rebuilt on original remains; and finally, areas that have been restored or reconstructed virtually.

### **4.5. Principle 5: Historical rigour.**

To achieve optimum levels of historical rigour and veracity, any form of computer-based visualisation of the past must be supported by solid research and historical and archaeological documentation.

4.5.1 The historical rigour of any computer-based visualisation of the past will depend on both the rigour with which prior archaeological research has been performed and the rigour with which that information is used to create the virtual model.

4.5.2 All historical phases recorded during archaeological research are extremely valuable. Thus, a rigorous approach would not be one that shows only the time of splendour of reconstructed or recreated archaeological remains but rather one that shows all the phases, including periods of decline. Nor should it display an idyllic image of the past with seemingly newly-constructed buildings, people who look like models, etc., but rather a real image, i.e. with buildings in varying states of conservation, people of different sizes and weights, etc.

4.5.3 The environment, landscape or context associated with archaeological remains is as important as the ruin itself (Charter of Krakow, 2000). Charcoal, paleobotanical, paleozoological and physical paleoanthropological research must serve as a basis for conducting rigorous virtual recreations of

landscape and context. They cannot systematically show lifeless cities, lonely buildings or dead landscapes, because this is an historical falsehood.

#### **4.6. Principle 6: Efficiency**

The concept of efficiency applied to the field of virtual archaeology depends inexorably on achieving appropriate economic and technological sustainability. Using fewer resources to achieve increasingly more and better results is the key to efficiency.

4.6.1 Any project that involves the use of computer-based visualisation in the field of archaeological heritage must pre-screen the economic and technological maintenance needs that it will generate once installed and operative.

4.6.2 Priority must be given to systems that may initially require high investments but in the long term have low economic maintenance cost and offer high reliability, i.e. low-consumption systems that are resistant, easy to repair or modify.

4.6.3 Whenever possible, draw on the results obtained by previous visualisation projects, avoiding duplicity, i.e. performing the same work twice.

#### **4.7. Principle 7: Scientific transparency**

All computer-based visualisation must be essentially transparent, i.e. testable by other researchers or professionals, since the validity, and therefore the scope, of the conclusions produced by such visualisation will depend largely on the ability of others to confirm or refute the results obtained.

4.7.1 It is clear that all computer-based visualisation involves a large amount of scientific research. Consequently, for the virtual archaeology projects to achieve scientific and academic rigour it is essential to prepare documentary bases in which to gather and present the entire work process in a completely transparent fashion: objectives, methodology, techniques, reasoning, origin and characteristics of the sources of research, results and conclusions.

4.7.2 In any case, and in general, the registration and organisation of all documentation relating to virtual archaeological projects will be based on the "Principles for the recording of monuments, groups of buildings and sites" ratified by the 11th ICOMOS General Assembly in 1996.

4.7.3 In the interests of scientific transparency, it is necessary to create a large globally-accessible database with projects that offer optimum levels of quality (Art 8.4), without undermining the creation of national or regional databases of this type.

#### **4.8. Principle 8: Training and evaluation**

Virtual archaeology is a scientific discipline related to the comprehensive management of archaeological heritage that has its own specific language and techniques. Like any other academic discipline, it requires specific training and evaluation programmes.

4.8.1 High-level postgraduate training programmes must be promoted to strengthen the training and specialisation of a sufficient number of qualified professionals in this field.

4.8.2 When computer-based visualisations are designed as instruments for the enjoyment and knowledge of the general public, the most appropriate method of evaluation will be visitors' studies.

4.8.3 When computer-based visualisations are intended to serve as an instrument for archaeological research and conservation, the most appropriate archaeological evaluation method will be testing by a sufficiently representative number of end users, i.e. professionals for whom the final product is intended.

4.8.4 The final quality of any computer-based visualisation must be measured by the rigour with which it has been developed and not the spectacularity of its results. Compliance with all the principles emanating from this Charter will determine whether the end result of a computer-based visualisation can be considered "top quality".