Virtual Heritage: Reconstructing the Past: Reconfiguring the Future

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Abstract. This paper attempts an overview of the contribution which emerging information technologies - viz CAD, Multimedia, Virtual Reality and the Internet - can make to the presentation, understanding and preservation of the rich architectural heritage which exists in almost every cultural context.

1. Introduction

This paper is a celebration of the union of emerging high technology with issues of culture and history which are clearly of social importance.

Europe is hugely rich in architectural and archaeological heritage which is commanding increasing interest not only of Europeans but of visitors from all over the world.

As interest intensifies, the environmental threat to some sites accelerates. Venice is under touristic siege, Stonehenge is a battleground between conservationists and "new-age" Druids and the cave paintings of Lascaux can no longer be seen by any but the privileged few.

Virtual Reality (- an overly used but ill-defined term -) is, the authors believe, an information technology which can provide a convincing, and enhanced, experience of environments which:

i. exist, but are too remote, costly or hazardous, to visit.
ii. don't yet exist but are planned, such as architectural designs or urban plans.
iii. never will exist, other than in the imagination.
iv. existed in the past and are now threatened or already lost.

This paper has its focus on the latter category, i.e. what is now becoming known as Virtual Heritage (VH), but it puts VH in the context of the broader spectrum of simulated experiences of past, present and future environments of cultural significance.

The paper draws largely on the work of ABACUS, the Architecture and Building Aids Computer Unit, Strathclyde. The examples of the application of IT to VH include:

i. a virtual reality experience of Historic Scotland's premier historical site: Skara Brae, the most complete Neolithic settlement in Northern Europe.
ii. a computer based archive of rare and normally inaccessible 17C and 18C drawings of Scottish buildings from four seminal sources.
iii. a multimedia CD-ROM featuring some 50 of the most wonderful interiors of Glasgow's architectural treasures.
iv. a massive 3-D model of Glasgow (some 10,000 buildings located on the hilly terrain of the city), which is now accessible on the Internet.

The paper concludes with conjectures, based on the examples given, of how emerging information technologies can help secure a future for the past.