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Archive of European Architecture : A Proposal for Collaborative Action

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Advances in information technology - particularly in multi media - offer a major challenge to the European Schools of Architecture. This paper proposes a collaborative venture in the compilation of an Interactive Multi-Media Archive of great european Architecture (IMAGE:A). It envisages an agreed specification and common mediums for access to and development of the archive. Discussion of this important initiative will, hopefully, feature throughout the Conference.

Introduction

Our architectural heritage is rich and diverse; it contributes to the quality of European life but also attracts hundreds of thousands of visitors to Europe from all over the world. Yet it is subject to the threats of insensitive planning, atmospheric pollution and commercial exploitation. There is urgent need to compile an archive of text and images which is extendible, accessible, reproducible, robust and organised in such a way as to support scholarship and scientific investigation.

The emerging multi-media technologies offer the opportunity to achieve this ambitious objective by allowing the cross-referenced conflation of drawings, photographs, written text, photographs, transparencies, video, computer images, computer animation and the spoken word within a single inexpensive computing environment. Simple applications in related fields already exist (e.g. the system in the National Gallery in London) but substantive research and development is required to achieve the functionality which the technology promises and the user requires.

It is proposed to develop, through collaboration amongst ECAADE members, an interactive multi-media archive which is sufficiently robust and flexible to allow conflation of material gathered by Schools of Architecture throughout Europe into a single accessible archive for use by students and scholars within and beyond Europe.

A great deal of pilot work has already been carried out by the University of Strathclyde and La Terza Università di Roma and the concept has been presented to conferences of the EAAE and ECAADE.

The Concept

The concept, developed during the pilot-study, is an interactive multi-media archive system which can be made freely available to Schools of Architecture throughout Europe. Students in these Schools, as part of their study of the Architecture of their region, will make accessions to the archive; the substantive part of each record will be according to agreed guidelines but there will also be the opportunity for 'free format' information.

The structure of the archive system will allow the records generated by every School to be merged into a single comprehensive cross referenced archive.

The overall structure of the system (Figures 1 to 4) comprises three dimensions (or indices): time, space and 'depth' (from historical period through 'movement', architect and individual building). By means of a set of tools, the user will be able to:

- enquire: defining a range of values on one or more indices will allow selection of matching records (e.g. architects in Austria and Germany from 1900 to 1930).
- sort: selected records or entire stacks will be able to be sorted in ascending or descending order in response to an ordered choice of indices.
- browse: the user will be able to move through the records randomly and arbitrarily.
- navigate: the user can navigate purposefully from one record to the next on any particular index or jump to a record in another stack for which a cultural or historical link exists.
- link: each user can form new 'personal' links and create dedicated stacks relating to specific lines of enquiry.

The system is seen as having four main areas of application:

- Didactic: teachers of architecture can define a programme of study as a navigational 'map' for different topics (e.g. the Renaissance, nationalism in Germany) at different levels of depth.
- Design: the "enquiry" mode of use will allow students (or architects) to search for precedents by defining cultural, formal or technical parameters (e.g. find me theatres with thrust stages and a concrete structure).
- Research: an international bibliographic database integrated in the archive will allow scholarly research in the field of architectural studies.
- Cultural: the archive can be made available in public institutions as a 'virtual museum of architecture'.

Figures 5 and 6 give an impression of how the system will present itself to the user.

Methodology

To achieve a prototype implementation of the IMAGE:A concept, development is required in two inter-related areas:

- specification of the structure and content of the records in the archive.
- development of a robust and flexible software system for accession to and use of the archive.

Structure and Content of the Archive

A great deal of effort has been invested by the University of Strathclyde and the Third University of Rome during the pilot phase of this project in formulating a consensus on the structure and content of the proposed archive. The concept has been discussed with the Council members of EAAD and ECAAD and presented to the annual conferences of both associations.

There is wide agreement on the broad structure of the archive; much research remains to be done on the actual form and content of individual records. This form and content is crucial to the successful integration of records compiled in different regions into a truly European archive.

Software System for the Archive

No commercially available software package (e.g. Hypercard, Macromind Director, Authorware) can deliver the functionality which the concept demands. It is necessary therefore to carry out research and development which will result in substantive extensions to available packages. The strategy proposed is to produce a prototype system at the end of Year 1 which is based on programming the new colour version of Hypercard enhanced with external coding and embodying some 60% of the proposed functionality; this will allow selected Schools of Architecture to commence record gathering and provide feedback. At that point in time a review will be made of available commercial software and a decision taken on how best, over the second year, to achieve the remaining 40% of the functionality.

The technical issues which the research is currently addressing include:

Automatic Search for Conceptual Links

It is necessary to develop the means whereby clicking on any word in the text of any record will implement a search for the same word in the text of any other record.

Automatic Indexing of Records

It is necessary to develop the means of automatically updating the indices when adding new records, deleting records or changing the order of records.

Automatic Linking

When adding, deleting or changing the order of records, the system must be able automatically to form the links to the appropriate records (if they exist) at both the higher and lower levels of the hierarchy.

Automatic Picture Links

In order to view images taken from more than one record simultaneously on the screen, without the user having to create new links, the system must automatically link to the picture file in the archive folder (if it exists) in response to the user clicking on a drawing name.

Pasting Pictures on Cards

When pasting pictures onto cards the system must read the picture from the clipboard file and write it in the resource fork of the archive stack, automatically giving it the name read from the assigned field of the card; the system has then to read the resource picture and, after scaling and clipping it correctly to the frame, put it in a dedicated memory buffer every time the card is opened.

Consistency and Protection

The implemented system has to be developed in such a way as to respect the complete modular data structure of the conceptual model. It is also extremely important for the system to differentiate the functions available to 'user' as opposed to 'author'; for this reason, certain features and functions are restricted in user mode, as follows.

User Mode

automatic link search
automatic picture links
automatic links to lower level
not enabled
not enabled
not enabled

Author Mode

add or modify text
add name of pict file
add names for lower link
paste pictures in frame
add or delete cards
drawing on cards

The technical issues which the research will address in the near future include:

Navigational Exceptions

It is necessary to develop the facility, while browsing in either time or space, to make navigational steps in the third dimension or to jump to a specific required record and then continue in the original browsing mode.

Localisation

Many users will have an interest specific to a particular locality. The facility will be developed which allows the user to select a geographical environment and "zoom" to increasingly detailed scales, including an individual building within a city.

Navigational Environments

The facility will be developed whereby the user can temporarily redefine the archive to contain only those records within a particular geographical area or historical time period.

Enquiry Tools

The tools for formulating particular enquiries, based on the field in each record will be developed. For instance, the query: find me art deco houses in Brussels and Glasgow.

Personal Links

Each record will hold a list of conceptually related topics which can be automatically linked at any level in the index. The facility will be developed to allow individual users to identify particular links as a means of creating a personalised dedicated stack reflecting the individual users particular knowledge. In this way, information flows in two ways: from the archive to the user and from the user to the archive.

Authors Menu

To allow the system to be used independently from any hypercard command, the 'author' mode interface will be designed to use a menu and floating palette to allow new records, text and images to be added.

Management of the Project

Success of the concept is dependent on confidence in the technical and academic content of the programme. The structure of the hardware and software system has to be right; the content of the records has to be relevant and complete; the mechanisms for accession and access have to be easy to use.

It is suggested that this project - a unique collaboration within ECAADE - can deliver a prototype which has the confidence of the major Schools of Architecture throughout Europe. This confidence will be secured through monitoring by the Council Members of EAAE and ECAADE over the period of the research.

The University of Strathclyde and La Terza Università di Roma have already made a major investment in the concept of IMAGE:A.

Some of the initial investment in the concept has been subsidised by funding from the EU ERASMUS and TEMPUS programmes and through such European agencies as ECAADE (European Computer Aided Architectural Design Education) and EAAE (European Association for Architectural Education).

Conclusion

The future is now ripe for ECAADE to seek the financial sponsorship necessary to achieve the ambitious goal of a pan-European archive of the continent's rich architectural heritage.

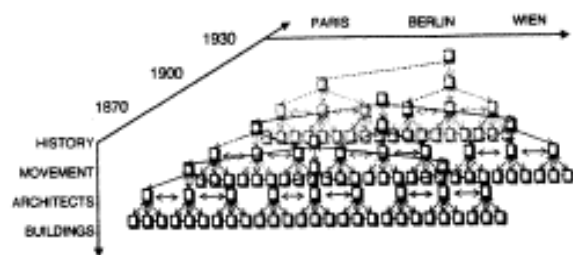


Figure 1

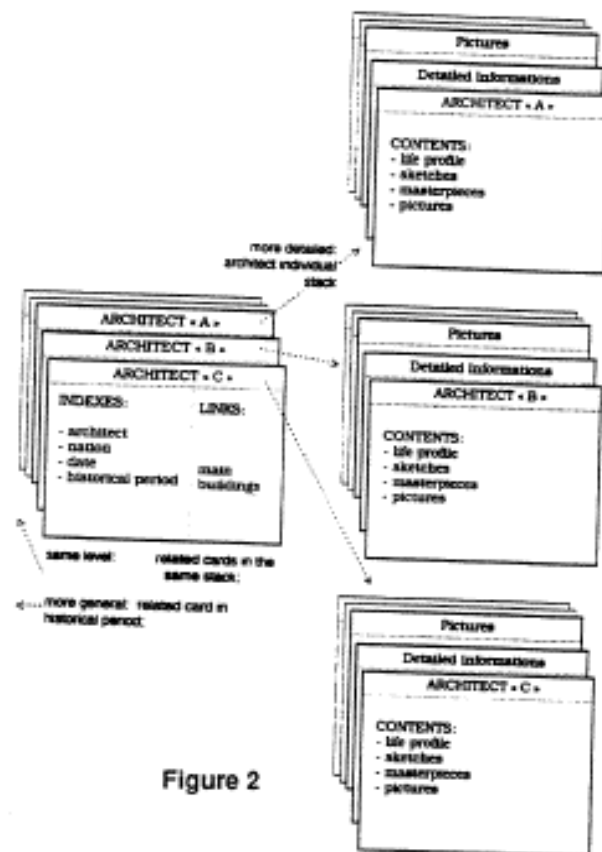
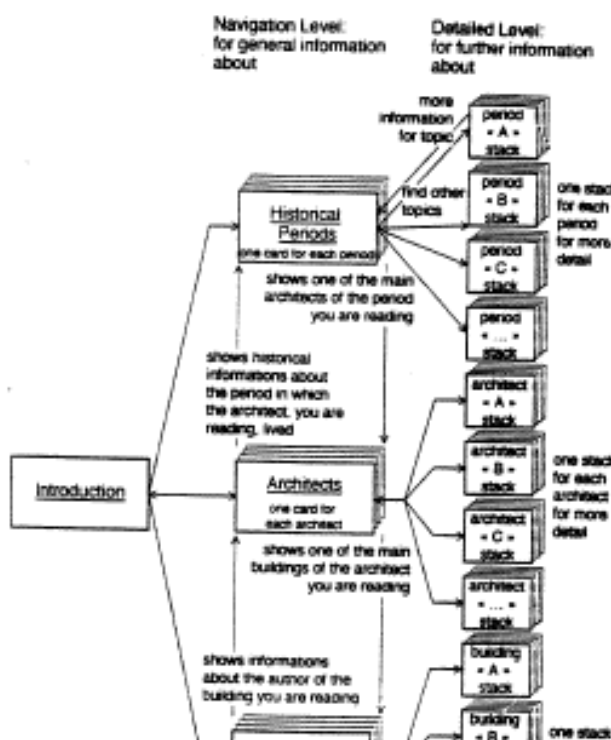


Figure 2

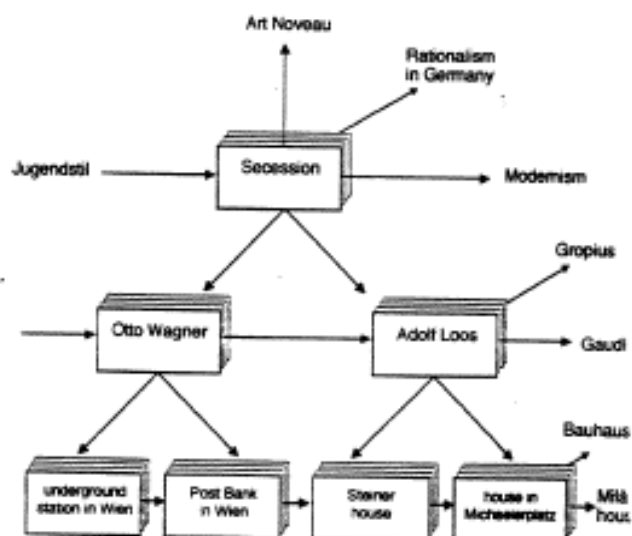
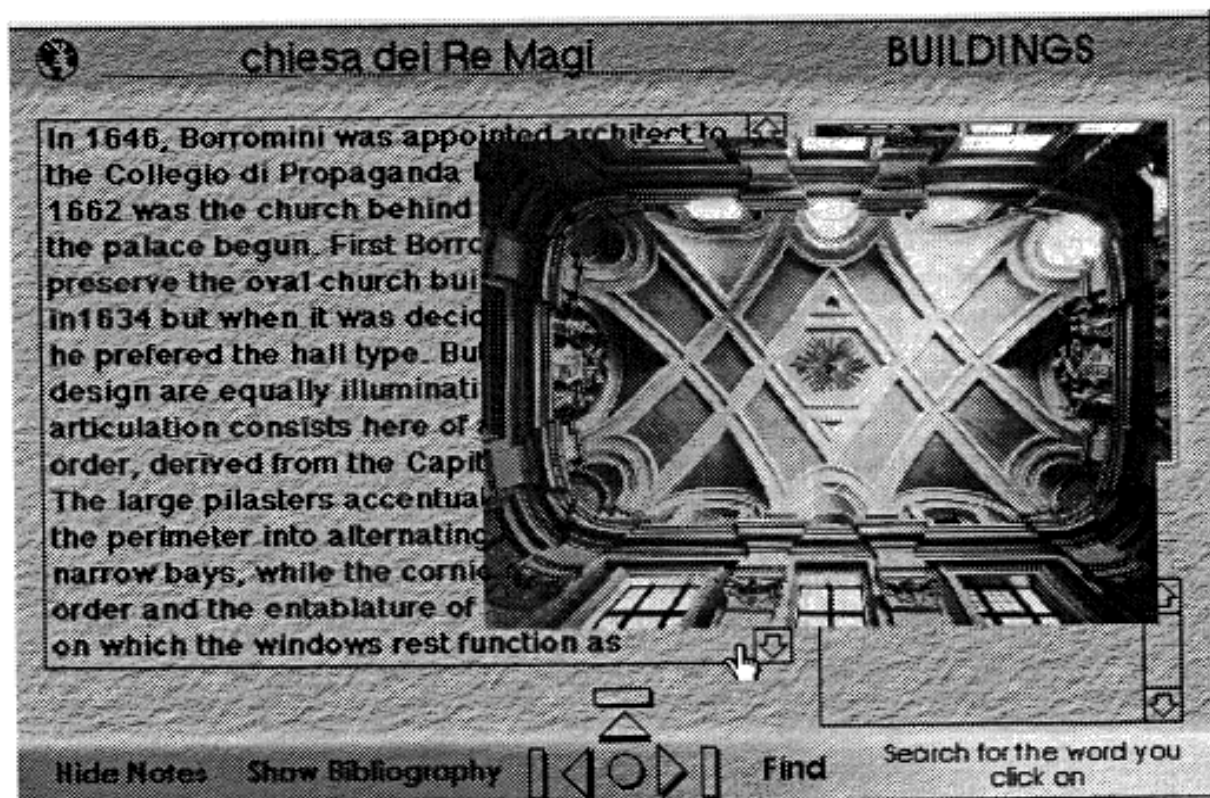
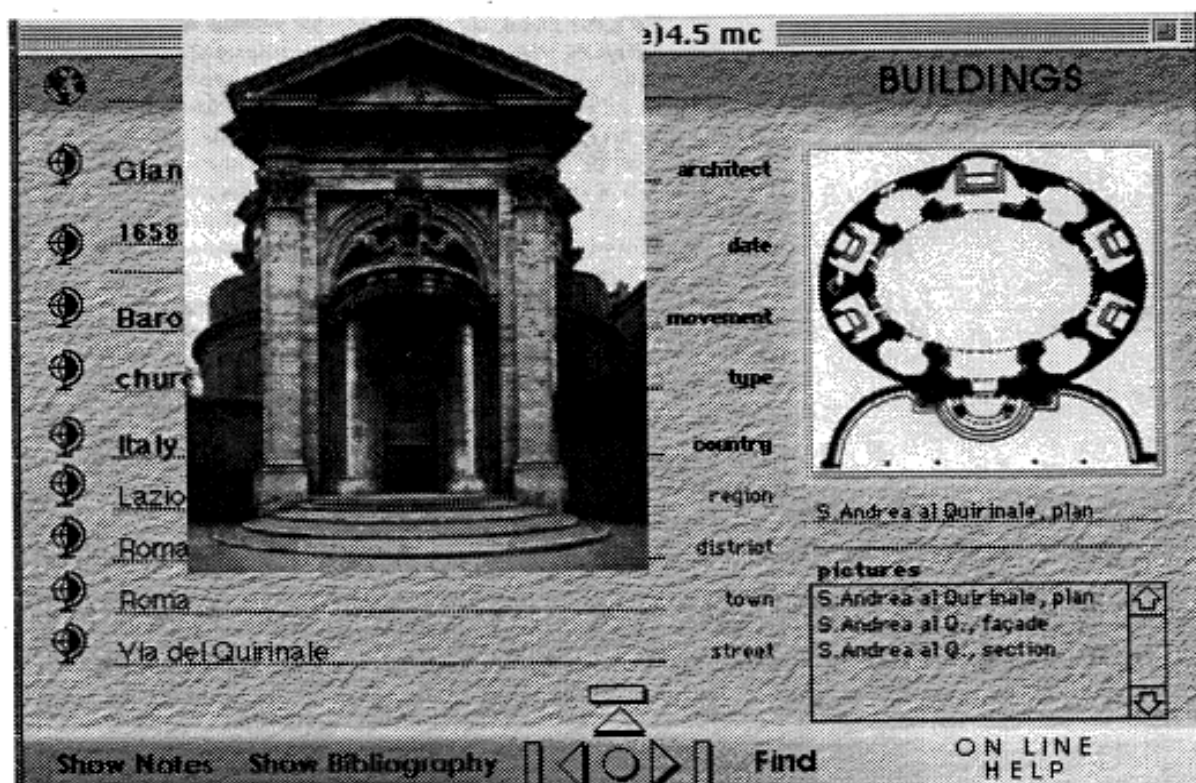


Figure 4



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