

Practice and On -Line Learning

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In response to the growing need for the provision of continuing education for architects in practice, the Open University has been examining the possibilities of offering postgraduate courses in the Built Environment. The Open University is a unique institution within the UK, in that all of its 150,000 students are taught through supported open learning. The production of teaching material for distance learning on this scale has involved the exploration of various teaching and learning methods. The OU has had over 25 years experience of distance learning as such and although many of its current teaching methods lend themselves admirably to the development of computer based distance learning, there is still ample opportunity to exploit new technologies in teaching methods. Recent developments within the field of multimedia, video conferencing etc. lend themselves admirably to visually orientated subjects such as architecture. Over the last year the programme of development into the Built Environment has involved the production of 3 pilot modules in the areas of Conservation, Sustainability in Architecture & Planning, and in Construction Technology. These modules are currently being developed for production on CD-ROM, but with a long term view that they may be offered on-line.

This paper will discuss how computer technology can be utilised in continuing education beyond schools of architecture and into a practice based environment.

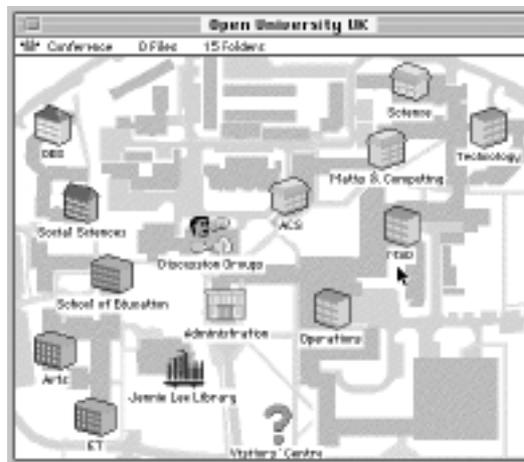
The Working Environment

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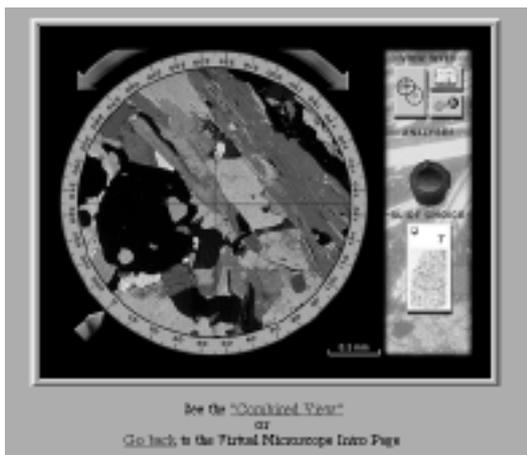
The Open University is a unique institution within the UK, in that all of its 150,000 students are taught through supported open learning. From its conception in 1969, the University has conducted its courses through set publications, video tape, audio tape, television transmission and summer schools. Last year the University set up the 'Knowledge Media Institute' (KMi) with the purpose of investigating the future of open learning through harnessing and shaping the technologies that underpin it. KMi is largely about front-line research, investigating the practicalities of such areas as on-line learning, active books, digital journals and argumentation etc. but also offers support and guidance to academic staff undertaking computer based course development. A wide variety of projects have been developed over the past year including the KMi Stadium, a virtual, interactive lecture theatre, a virtual microscope and a virtual summer school.



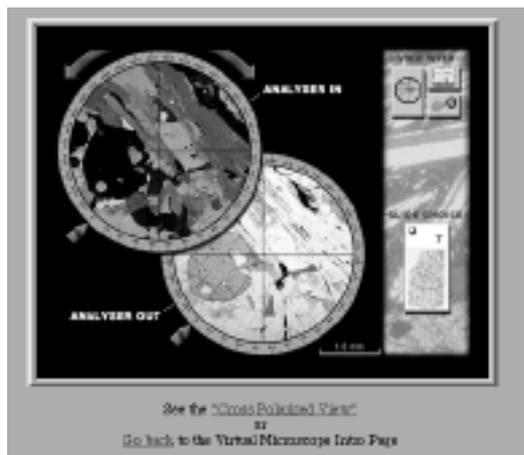
The virtual stadium



The virtual summer school



The virtual microscope



General Course Intentions

The Built Environment is a new area for the Open University and although various members of staff from both the faculties of Arts and Technology are undertaking research within the area, course development is in its infancy. The funding of the project required any course development to be at a postgraduate level. Along with the Open University's already developed system of open learning, there was an identified growing market for continuing professional development (CPD) within the construction industry, leading the course team to opt for the development of CPD modules that would eventually lead to a postgraduate degree.

The decision to prepare all course material for publication on CD-ROM was taken in the early stages of the course development and for a number of reasons: the most obvious being the consideration of the future plans of the university's use of the Internet structure, but also for practical reasons such the requirement for continually updating postgraduate, professionally related course material and consideration of economic factors.

The first year of course development has involved the preparation of pilot projects in various specialist areas. It was proposed that three projects be developed with relevant collaborating bodies, e.g. the Royal Institute of British Architects, The Royal Institute of Chartered Surveyors and the Royal Town Planning Institute, and has included collaboration with working practices in order to ensure that the content and focus of the modules are directly relevant to professional needs.

The nature of the project meant that it was primarily based within KMi, thus receiving programming support throughout its development. The project was broken down into 4 sections and working parties established. The sections were:

1. The development of a CD-ROM framework for modular CPD course in the Built Environment.
2. Development work to be undertaken on a conservation module.
3. Development work to be undertaken on a sustainability in architecture module.
4. Development work undertaken on a construction & technology module.

Multimedia Framework Development for CD-ROM Production

This project is the encompassing framework for the production of pilot CPD modules. The series of modules would require the development of a recognisable and flexible multimedia interface.

The exploration of the interface design addresses the following issues:

- ways in which the multimedia framework can accommodate the requirement to continually update course material.
- the degree of support and guidance offered to students from various undergraduate backgrounds as they proceed through the coursework.
- the creation of an identity for course modules within the area of the Built Environment

These issues were, to some extent, already being discussed through various other projects undertaken by the Faculty of Arts and KMi, so the Built Environment project was able to draw on some of the teaching methods developed that were applicable to art and architecture. The remainder of this paper will discuss the development of one of the modules: 'Conservation: Researching a Building History' and the resulting computer based course material.

Course Content

The pilot module 'Conservation: Reasserting a Building History' is, in the first instance, a CPD package on conservation for architects & related professionals.

Before undertaking any work to a listed building, whether conservation or conversion, it is vital to gain a clear understanding of the building in question. This module will focus on research methods and prepare students to undertake independent research on a building of their choice.

The course is centred on Pelwall House which is near Market Drayton. Pelwall is the last country house designed by the architect Sir John Soane. This house provides an admirable case study, both in terms of archive material and the physical state and history of the structure.

The course is to offer a methodological study in researching the history of a building and consist of three main elements:

- The study of the original design, drawing on archive sources from the Sir John Soane's museum and the V&A.
- The adaptation of the building in the 18th & 19th centuries drawing on both archival material and evidence from the building itself.
- The subsequent history of the building, dereliction, fire etc. Working from a range of contemporary sources and the surviving remains, and exploring how this history creates a proper understanding of the building.

Development of Computer Based Resources

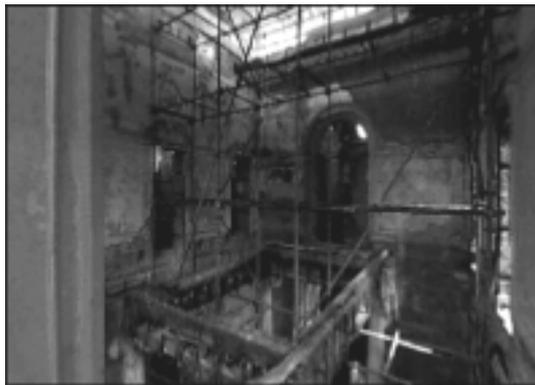
Previous computer based learning projects undertaken by the Faculty of Arts had been primarily orientated around the software acting as a 'virtual tutor', both prompting students for answers and providing various degrees of support. However, these courses differ in that they are to be offered at postgraduate level and therefore students would be expected to undertake more independent study. It was therefore decided that the support offered through multimedia would be primarily resource based.

Several areas of the course were identified as target areas for resource development. One area examined was that of creating a comprehensive architectural 'site'. The existing building obviously plays an integral part in any conservation work. This would normally be undertaken through video documentation, but due to the necessity for keeping the initial costs down, the development team was challenged to come up with a computer based solution. As a result it was proposed that a photographic QuickTime VR be taken of the site periodically throughout the construction and renovation thus allowing the student access to pictorial documentation over time and any appropriate accompanying notes. As QTVR was relatively new to the team, it was decided that an initial test be carried out on the Sir John Soane's Museum. Subsequent movies were made of Pelwall House itself with additional back up photographs of the more significant and/or inaccessible details. It is the intention of the team to return to Pelwall once the demolition stages have been complete.

Stills from the QuickTime VR movie of the Sir John Soane's Museum

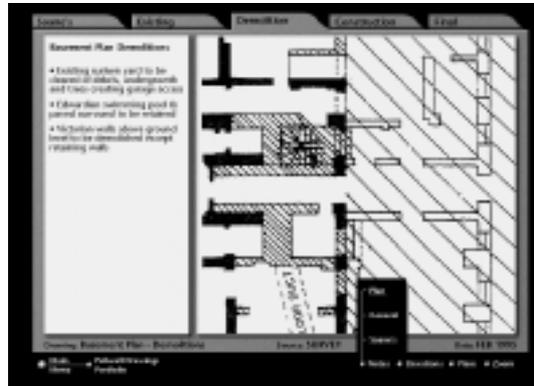


Stills from the QTVR movie of Pelwall House July '96



It is envisaged that QuickTime VR will contribute to the teaching and learning environment by promoting interactive and self motivated learning as well as simply allowing students the opportunity to explore 3-dimensional space.

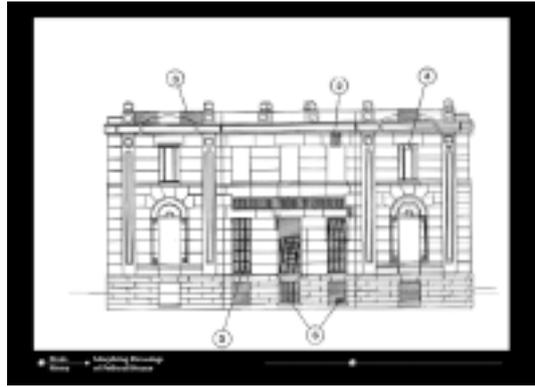
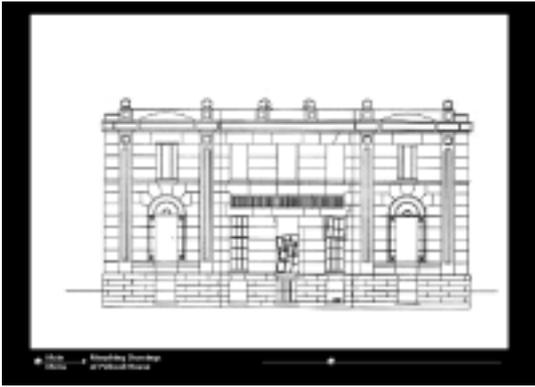
The second resource was aimed at addressing the problem of allowing the students access to a 'virtual archive'. An important part of the course is the ability to search archives for significant material and cross referencing purposes. One of the teams responses to this was the development of a 'portfolio' database.



'Portfolio' database

The third resource offers a method in which students can draw comparisons between archive drawings and possibly photographs. The 'light box' simulation simply uses the utilities offered through the levels of transparency in Photoshop.





Light box Simulation

Future Work

The pilot modules are still in development with plans for completion by January 1997. It is envisaged that further work will have to be undertaken in a number of key areas:

1. the level of tutor / student support and guidance provided in the package
2. the extent to which the images on the database may be manipulated
3. the introduction of a 3-dimensional CAD model

The other pilot projects are expected to be complete by Easter '97. At this time we should be in a better position to assess the multimedia framework developed in response to the three modules and hopefully create a generic framework which would allow any future development to be prepared much faster and therefore be more cost effective.

Notes & Acknowledgements

- (1) The KMi web page can be found at: <http://kmi.open.ac.uk/>
- (2) All drawings shown here are copyright of Barry Clayton and John Wibberby architects.
- (3) The QTVR movies were produced with permission from the Sir John Soane's Museum and The Pelwall Preservation Trust who are both involved in the development of the course material.

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