Review of Building IT 2000

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Synopsis

Building IT 2000 is a Building and Information Technology database which is presented in Hypertextformat. Its production has been co-ordinated by the CICA (the Construction Industry Computer Association), an independent association serving the needs of computer users, specifiers and suppliers in the Construction Industry.

The stack is a collection of structured information prepared by a group of experts in computing and the construction industry. As such it represents an interesting advance from two points of view:

>   *1. It is a valuable source of information in its own right. It could provide a resource for students of architecture which could be used as a self-teaching package.*

>   *2. It points a possible way forward for the development of similar hypertext based teaching packages which could be developed by academics within the European teaching community.*

Introduction

The CICA in the UK have coordinated the production of the Building IT 2000 [1] Hypertext package as part of their role (amongst other roles) as information disseminators in the Construction Industry. The CICA have produced many valuable, current books, booklets and other such information in hard copy form in the past. For example, recently they commissioned a critical study of microcomputer based CAD systems for the Construction Industry [2] and have collated information on trends in the Construction Industry over the past few years [3,4].

However, this is the first time that the CICA have circulated information in this form, and we should consider the initiative to he a foretaste of what we might expect in the field of electronic information exchange in Construction Industry education and practice. Hypertext has been heralded as an obvious environment within which we can produce teaching and information schemes and the Building IT 2000 package reviewed here exists as both a HyperCard stack for the Macintosh, developed along the lines described by Goodman [5,6], and as Hypertext (running with Toolbox and Windows 3) on the IBM PC compatibles range.

2. Objectives of the Project The stated objectives of the project are as follows: "to establish the implications of advances in computers and communications for the structure and working methods of the UK building industry [7]. It was to examine the following issues up to the year 2000 :-(i) Current developments in the Building Industry (ii) Trends in Computer systems (iii) Implications of new user interfaces (iv) Changes in the industry independent of IT (v) Changes in technology affecting building types (vi) The implications for education, training and continuing professional development."

An abstract from the HyperCard stack shown in Figures 1 - 1 3 and 4 give a good indication of the nature and format of the information presented.
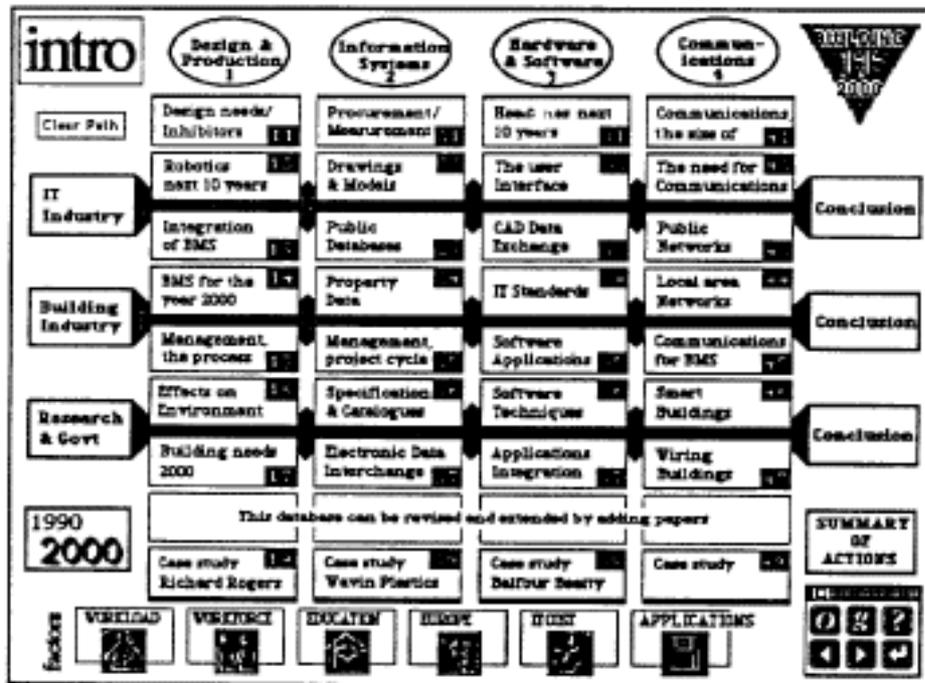

Figure 1 Information areas addressed by Building IT 2000

Review

The development of effective teaching media on computers requires careful planning and consideration. Although HyperCard presents a potentially exiting and fruitful environment for the development of such media Brown [8] pointed out some of the problems related to such ventures. Added to the fact the mastering the mechanics of these environments (such as scripting with HyperCard) there is the problem of standing back at the outset of development and devising what information is to be included and how the information is to be structured and linked. It is this structure and linking which, when accomplished well gives a dimension to the information which the conventional book or video tape cannot match.

The co-ordinators of the Building IT 2000 project have clearly given consideration to how the information is to he structured and what needs to be covered. It is clear that the information technology scene is changing so quickly that having the information describing it in a form which can be easily added to, amended and re-structured offers real potential advantages.
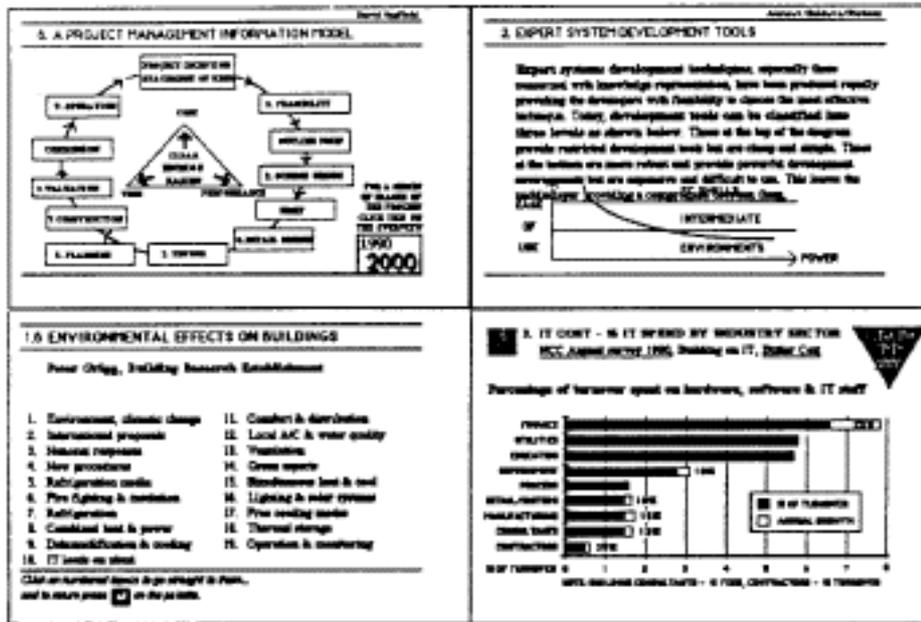

Figure 2 Abstract of cards from the Building IT 2000 stack

Some details

Building IT 2000 comes compressed onto two disks along with the decompression utility DDEXPAND. In addition to the software version of the package, Building IT 2000 is also available as a 5000 word summary report and as a full report, printed from hypertext, at 172 pages in length.

The Macintosh version of the stack runs on a Mac 11 with HyperCard 2.02 or later. The PC version needs a 386 processor, 4 MBytes of memory and Windows 3.

There are around 500 cards in the database and these can be viewed in any order, the choice being driven by the user. There are, though, three specific routes mapped out (each consisting of 40-50 cards) for three specific audiences:

        a)   The IT Industry

        b)   The Building Industry

        c)   Research and Government

In addition to these specific navigation routes which the user can choose to follow there is a more general navigation aid called 'The Palette'. This is a small window with six buttons which take the user to an overview; a glossary; a help screen; the last card: the next card; or on a path retracing route through the cards looked at so far.

The contents of Building IT 2000 have been assembled from contributions by a number of experts in the IT and construction industries who have covered areas as diverse as Procurement to Robotics. The 'papers' provided by these experts form the core of Building IT 2000 but around this core there are a small number of case studies of both construction industry practices and projects.

Peter Bunyan, Peter Waters

2. THE CURRENT STATE OF INTERFACES

PCs play the greatest part in building information technology and indeed the most significant improvements have been in PC interfaces.

Interface options.

The two main interfaces are:
command line and
graphical with speech,
touch and optical
character recognition
(OCR) technologies
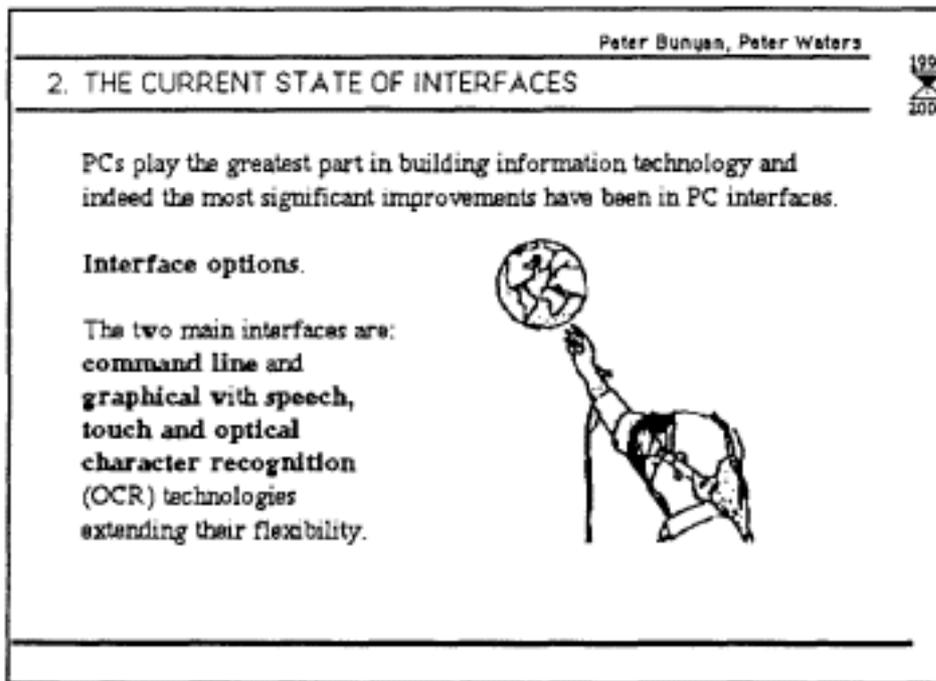extending their flexibility.

Figure 3 Typical card in Building IT 2000

The whole package represents an interesting and worthwhile attempt to assemble Construction Industry IT information in a computerised form. It is recognised by the authors that the stack, as it stands, does not represent a complete description of the state of the art, but what it does represent is a solid foundation on which to build. However, in addition to adding information 1 feel that the authors also need to concern themselves with how the information is structured and presented. For instance, in terms of structure there might be some worth in establishing different 'novice' and 'experienced user' routes through. And in terms of presentation the thoughtful use of animation and slide show techniques help to turn information like this into more than just an electronic book.
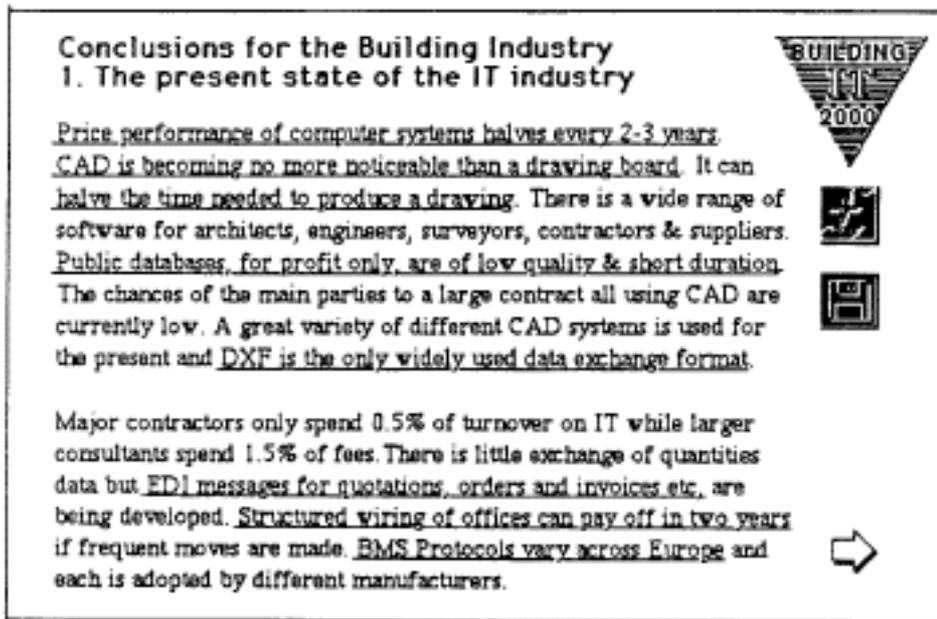
Conclusions for the Building Industry
1. The present state of the IT industry

Price performance of computer systems halves every 2-3 years.
CAD is becoming no more noticeable than a drawing board. It can
halve the time needed to produce a drawing. There is a wide range of
software for architects, engineers, surveyors, contractors & suppliers.
Public databases, for profit only, are of low quality & short duration.
The chances of the main parties to a large contract all using CAD are
currently low. A great variety of different CAD systems is used for
the present and DXF is the only widely used data exchange format.

Major contractors only spend 0.5% of turnover on IT while larger
consultants spend 1.5% of fees. There is little exchange of quantities
data but EDI messages for quotations, orders and invoices etc, are
being developed. Structured wiring of offices can pay off in two years
if frequent moves are made. BMS Protocols vary across Europe and
each is adopted by different manufacturers.

Figure 4 Further example of card in Building IT 2000

Conclusions

Specific Comments about Buildings IT 2000 For anyone working in Construction Industry IT this package is worthy of investigation. For those in education the initiative is worthy of consideration as a computer aided learning package which would give students a useful grounding in the Construction Industry and IT. It could be thought of as the ECAADE lecture notes, overhauled, augmented and presented using contemporary, and wholly appropriate, technology.

I know that the authors of Building IT 2000 would be interested to hear from educators and researchers in the European Community (and wider a field) who are able to contribute to the expansion of Building IT 2000 in their particular area of expertise. There is already a European dimension to the package, but given that 1992 draws closer, this is an area worthy of particular attention and expansion at the moment.

In addition it is clear that Building IT 2000 would he more accessible if it were available in a number of languages. The authors are aware of this fact too. Consequently they would be pleased to hear from Construction Industry/IT workers who are native speakers of a particular language, but can read English.

Some General Comments about CAL.

1 believe that one way in which ECAADE could work in a very constructive way is in the establishment of a co-ordinated, Europe-wide CAL project. 1 see the functions of such a project to be to facilitate :

1. Consultation and co-operation on producing good CAL packages, in particular for teaching students.

2. Co-ordination of work so that CAL packages produced at different places can be complimentary rather than covering the same ground.

3. Translation of CAL software into a number of languages.

Building IT 2000, and several other packages already produced, represent examples of what can be done. 1 think it would be timely to begin an ECAADE-based, Europe-wide effort in this direction.

Notes and References

1. Building IT 2000 is available as a HyperCard stack for the Macintosh, Hypertext for the IBM PC range of micros or as hard copy in colour from CICA, Guildhall Place, Cambridge, UK.

2. Richens, P. Micro CAD Software Evaluated, CICA, Cambridge, 1989

3. CICA, Building on IT for the 90s: Latest Industry survey, CICA, Cambridge , 1990

4. CICA, Building on IT, CICA, Cambridge, 1987

5. Goodman, D, The complete HyperCard guide, Bantam, 1987

6. Goodman, D, HyperCard Developers Guide, Bantam, 1988

7. It is worth noting here in the present context, that the European dimension is given an important status in the project.

8. Brown, A.G.P. CBL in architectural education, ECAADE Conference, Budapest, September 1990

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