VIRTUAL COMMUNICATION AND IT IN ARCHITECTURAL EDUCATION AND PRACTICE

RESEARCH IN THE DEPARTMENT OF COMPUTER AIDED ARCHITECTURAL DESIGN, FACULTY OF ARCHITECTURE, SLOVAK UNIVERSITY OF TECHNOLOGY, BRATISLAVA

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Research and innovation in the field of IT and communication facilities and technologies represents a new dimension, characteristic for the end of 20th and beginning of 21st century. Information technologies provide great opportunities in the process of architectural and urban design creation and spatial evaluation. They are very powerful tools for the architect, either in practice or still student, to express his thoughts, work, design. Information technologies also present strong means for communication in the process of generation of architectural and urban design.

Main target in the educational activity of the Department of Computer Aided Architectural Design at the Faculty of Architecture is to train students in making the most efficient choices for software methods and technologies, which they use in their studio project works in architecture, landscape design, interior or industrial design. The aspects of teaching, research activity and own architectural practice creativity is in many way stressed.

One of the dominant research targets are the long - distance communication media and their use in data transfer via electronic nets when solving common international projects. Practical outputs of this research of innovation of ICT and systems to the academic, educational and practical activities in architecture and urban design are videoconferences, on-line communication and transfer of the data, projection and sound, using Internet and HTML pages for architectural studio projects platform and for long distance education and tutorial. The main goal is to verify the possibilities of cooperation without boundaries in the future common Europe, which allows to involve experts from various geographical territories and various professions into the project solution in the global net.

International Virtual Student Studio Projects

Under the supervision of I. Koščo, many International virtual student studio project works have been administrated and resolved as cooperation between the Department of Computer Aided Design Faculty of Architecture, Slovak University of Technology and other European universities.

Some of the projects:

- BRAGRALUWI (Bratislava-Graz-Luton-Wien), 1996 Computerised Architectural Data Presentation
- DANUBE DOCKLANDS ZONE IN BRATISLAVA, international virtual student studio project, 2000-2001
- TELEREGION, long distance communication and cooperation, 2000-2001
- STREET OF 21st CENTURY (international student competition under the supervision of EUROARCH, ECAIT - IAA), 2001-2002
Basic principles solved by these projects:

1. Digital adaptation and net accessing of the project, environmental details and other records needed in architectural and urban landscaping educational process or practice
2. Long distance communication and consultation through Internet
3. Presentation of the studio project works in various stages of elaboration before the wide expert community
4. Visual presentation of the studio project works using online animation, which enables the evaluation of architectural and urban design space and structure
5. Long distance communication with inward or foreign institutes, also with the students and lecturers from the external organizations
6. Design of the methodology of utilization ICT for the acknowledgement of the architectural subjects and examinations graduated abroad

Structure of Projects Organization:

- Workshop • 6th EAEA Conference • Bratislava 2003 • 117
International Virtual Student Projects – Examples:

- **BRAGRALUWI**

- **Danube Docklands Zone in Bratislava**
Martin Čonka: Danube Docklands Area

- **Street of 21st Century**
  In 2001 the Danube Dockland Project expanded to the interesting Bratislava city area between Old Bridge and planned Kosicka Bridge. This area was also included into international student competition „Street of 21st Century“, organized by the International Academy of Architecture – European Centre for Architecture and Information Technologies.
  Whole project was available in digital form on Internet http://www.fa.stuba.sk/street21/bratislavastreet21.html and could be used for studio project layout. In this project participated our students and students from University of Luton - from architectural and urban detail design, to big annual studio projects, as well as diploma works.
  Web Page Structure was composed by:
  1. Terms of regional planning (given by City council of Bratislava)
  2. Planning details – such as photo-documentation of the area, 2D and 3D vectorised digital data, raster data, aerial views, various actual articles, etc.
  3. Presentation of results, student projects

**Samples:**

2. Planning details

![Planning details sample images]
3. Presentation of results

Main targets of all these projects were:

- extension of existing know-how and facilities in personal computing and IT in architectural and urban design modelling, in education and practice,
- extension of exploitation of Internet and global computer nets, so as the coherent digital communication technologies for the professional cooperation
- enabling the students, senior lecturers, professors and other professional authorities to take part in scientific and technological oriented common virtual studio project works
- reaching the higher standard of exploitation of ICT, beside the mutual exchange of cultural information

Videoconferences

Special part of virtual communication in architectural education and practice in various stages of concept and project design represent videoconferences. Videoconference represents nowadays one of the very modern forms of communication in scientific community. Videoconference is based on on-line data, audio and video interchange, which allows mutual audibility and visibility of the videoconference participants, who can be geographically very distant. It represents the synchronous communication type, which requires from its participants to be present in the same time, though not in the same place.

We can say that videoconference moves the communication to higher standards. Transfer of the projection is not the only added value, videoconference also improves the participants cooperation. During the videoconference meeting is, for instance, possible to follow and share the documents, opened on particular PC, and even to permit the videoconference participant to make long distance corrections in them.
Videoconference can recompense the number of classical conferences, taking place simultaneously in various distant parts of the world. Participants of such videoconference can be in the huge auditorium, small presentation room, or simple behind their own personal computers with video camera device, and they can mutual dispute so easy as though they were in the same room.

**Videoconferences Bratislava – Luton**

Graphical examples

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**Conclusions**

The experiences, with CAD based design projects linking students or professionals at different centres via Internet, have shown that this form of collaborative work can be effective and rewarding. Building, architectural and urban designs are always a multi-disciplinary process, and the more frequent and flexible interactions between specialists, offered by new technologies, result in improved design quality.

Practices with an international portfolio of works can use new technologies to maintain closer contact with their local advisors, design and procurement teams can be selected on the basis of their sustainability for projects, with the economics of geography being relatively unimportant. The economic and management advantages offered by electronics networks, which enable the most efficient and able specialist to work together on a common design database without any geographical limitations, will be even more extended in the future.