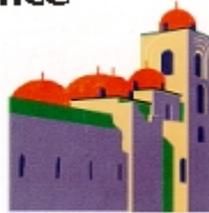# Multimedia and Architectural Disciplines

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Not everyone can read a floor plan,
but everybody knows how to watch TV.
Michael O'Malley

Abstract

This paper presents a method of using multimedia techniques in order to solve problems of visual pollution of city environment.
It is our observation that human - inducted degradation of city environmental results not only from neglect and vandalism hut also from well - intentioned but inappropriate preservation actions by uninformed designers and local administrations. Very often, a local municipality administration permit to erect an ugly, bad-fitting surroundings houses. It is usually connected with lack of informations about certain areas of a city, its features, characteristic and about present and carlier buildings. Therefore there was an experiment - a complex programme aiding the decision process as a part of the CAMUS system (Computer Aided Management of Urban Structure) which is created at Faculty of Architecture TUB. One of the integral parts of it is a block, which has been called "How would it be like to be nice around".
One of the basic elements of that system is a town data base consisting of the independent knowledge - based systems, working together in a distributed computing environment.
City administration will have access to each information from multimedia data-base.
Multimedia is also having and impact on the effectiveness of decision process in urban planning and in our fight with ugliniss of the city.

Fact 1

Our cities are ugly. Present-day parts of the city are criticised for the fact that they do not form the space, neither create the housing environment, nor adopt it to human needs and feelings. These areas are not accepted by the dwellers. People do not experience the link with their place of habitation. The area outside their own flat, "the urban area" of the estate is treated as completely alien. Research made in Polish housing estates shows that only 17 % of the polled have a good opinion about their surroundings.

Fig. 1 - "Piaski" Housing Estate in Bialystok.

Fact 2

Centres of the cities are degraded both functionally and aesthetically. Many public buildings (hotels, banks, schools, shops) have been raised without any link with the surroundings -verdure, configuration of the surface and existing buildings. Simultaneously, the historical continuum has been broken. This resulted in a complete desemantization of the downtown areas.

Reasons

What are the reasons of such bad evaluations? This results from whole-world modernistic architecture convention. All negative features are structurally coded in assumptions to this convention and result from them. Modernistic areas of the cities do not create conditions for people to identificate themselves with their place of living, for valorization of space, and its "feeling".

Attempts

Attempts to prevent the visual degradation of urban environment are made. Competitions to design important parts of the cities are announced; conferences on the problems of modern cities are held; main principles of designing in areas of historical interest are formulated. Actions taken, however, do not result in what is expected. On the contrary, they often only increase the existing chaos. A question arises why is it so, why are these attempts unsuccessful?
We observe that human-induced degradation of city environment often results from well-intentioned but inappropriate preservation actions taken by uninformed designers and local administrations. Very often local municipal administration permits to erect ugly houses which fit badly the surroundings. It is usually connected with the lack of information about certain areas of the city, their features, characteristics, and about present and earlier buildings built there.

Suggestion

The CAMUS system (Computer Aided Management of Urban Structure) is being created at the Faculty of Architecture of Bialystok Technical University. One of its integral parts is VIA - Visual Impact of

Architecture. It shall help us to answer the question, "What hould be done in order to make our surroundings look nice?".

The basic element of this system is a geometrical town data base. It will integrate various data types, such as:

- cultural heritage,
- contemporary housing,
- suggested design directions according to plans of extension of a city,
- propositions, based on work of our Faculty, which could be a useful information base for the municipal government.

Information will be presented with the help of various multimedia techniques.

What is multimedia?

Multimedia is an emerging branch of information technology which deals with the creation, storage, and preservation of information in various media forms via computer. It is currently an extremely popular application of computers because recent advances in technology have made certain hitherto impossible aspects of multimedia relatively cheap and easy to implement.

In contrast to an architect's traditional multimedia tools (such as physical models and sketches), computer electronic multimedia usually consist of some combination of computer graphics, sound, scanned photographs, digital animation, video, renderings, and text. Multimedia's role in our research appears to be two-pronged: impact and access. Impact is related to presentations and high-quality rendering and animations. Access is an enhanced way of gathering related information in different forms.
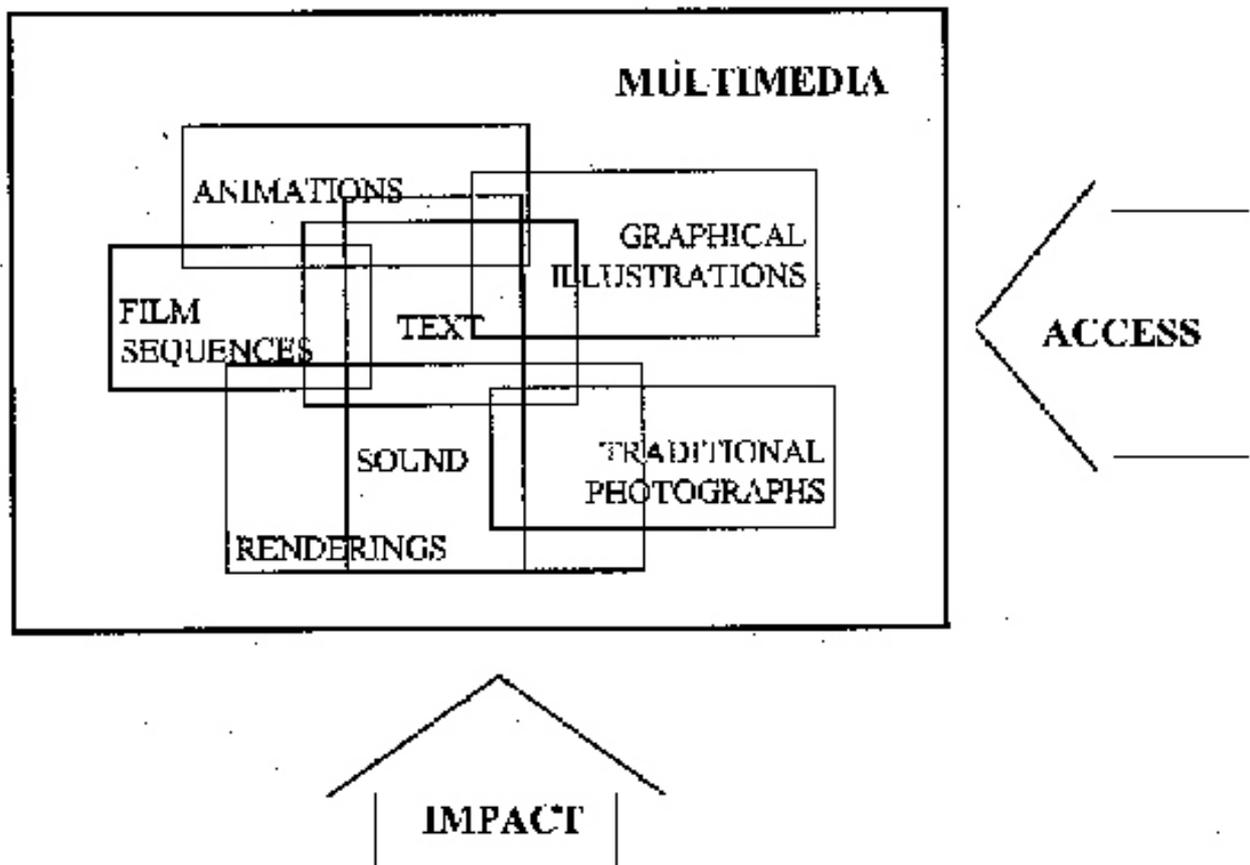

Fig. 2 - Elements of multimedia.

Why multimedia?

A designer can use various techniques to present a design. He can use handmade sketches, drawings, paintings, and scale models. However, making a striking presentation is very laborious. Multimedia offer new and improved techniques for the presentation of design proposals from computer-generated images to virtual reality. This techniques are mainly used for presentation of a final design or for the presentation of buildings that have already been constructed. It is also a good instrument to support modelling and evaluation during the design process.

"Multimedia techniques appear particularly appropriate when addressing environmental impact statements. Their ability to juxtapose many different descriptions of the same phenomenon, or different phenomena at the same location" (K. McCartney, 1993).

This allows for the better understanding of mutual relations between different spatial phenomena. Additionally, multimedia technique is especially useful in presentation of different kinds of information, both quantitative and qualitative.

Currently multimedia technologies are most often applied to presentations of graphic material. Although computer imaging is just one aspect of multimedia, it is perhaps the most often used form. Some manifestations include renderings of interiors, delighting studies, and superimposition of proposed buildings on sites to assess neighbourhood impact.

Access, the other side of multimedia, means providing references to information from a computer. The advantages of on-line access over traditional media include faster and more effective search routines (as opposed to an index at the end of the catalogue), greater variety of multimedia data types (including sound and video), multiuser access (as opposed to the single user of a catalogue), and integration of the data with other software (such as spreadsheet or CAD systems).

3D city

In our work we use the Autodesk software. Initial geometrical models of a few important parts of Bialystok have been created within the AutoCAD. Models created in this way can be enhanced using rendering packages, such as Autodesk 3D Studio. The third part of 3D information about the city are video sequences and photographs of the chosen parts of the city.

These three parts illustrate the present urban situation. They create the basis to work out our propositions of shaping the spatial form of a given area, or to check how the solutions found by other architects influence the form of this area. In order to do this, renderings of the designed structures are being worked out. In these renderings the point of view from which the building is seen equals the point the traditional photos have been taken from. For special places computer animations are made. They also correspond to the traditional video sequences. This is to avoid non-existent points of view which often appear in computer visualization. Architects make views from the points that are, for example, inside the next building, only because it is easier. We want it to be true.

Ready visualizations recorded on SyQuest disks and video tapes are delivered to the municipal government.

Technical problems

Outputting an animation to video is becoming an increasingly viable way to view a design. Do not forget, however, that video animations take enormous amounts of RAM and storage space. For storing even a few minutes of video animation we should think about storage devices, such as hard drives with capacities of one gigabyte or more.

Advantages

*It is the designer's duty to create a model and use it in order to explain the consequences of these or others spatial actions to the local authorities. It is not enough for this model to be convincing to the designer. He has to make the others convinced, too.

*Animation makes it possible to answer the question, "What if I stand here and look through, what type of view do I get?". Many people are much more capable of getting a sense of scale while looking at a TV or computer screen than when looking at a model. Computer animation shows a level of dynamics that you cannot get from any other medium. Outputting an animation to video is becoming an

increasingly viable way to view a design.
*Multimedia have an impact upon the practice of architecture.
Multimedia are New Quality.
We get the access to the information not available in traditional system. This helps us to avoid losses caused by excessive simplification or relinquishment of too laborious actions.

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