

Workshop 07 Intelligent Systems

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Architecture and The Information Era

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The last quarter of the Twentieth Century has been characterized by rapid technological development in all fields. The most significant changes that we have witnessed at the turn of the century relating to architecture and the role of the architect are the momentous developments in the exchange of information.

Accessibility, speed of transference and immediate communication have a deep influence on ways of life and creative possibilities.

As we enter the new century, hi-tech industries and services will become one of the main sources of employment worldwide. Buildings where science and hi-tech activities can be carried out optimally are a necessity, and there is a growing demand for better and more suitable facilities. This new kind of built environment will naturally change lifestyles and behavior patterns.

The history of architecture teaches us that, at times, architects were slow to grasp the potential embodied in new technologies. The leaders of the progress were other than architects.

The change is not always tangible. Just as developments in building material brought new challenges, new technologies in industry and communications open new horizons in architectural thought. We have to study and comprehend what is happening in front of us, draw the right conclusions, understand our place and our role as architects in the Era we live in, and place ourselves at the spearhead of progress.

We are aware of the classic perception of the role of the architect and his relationship with his building team. We should define the changes in this perceived role vis a vis the developments in communications and modern industry. It is indeed true that there is some measure of architectural specialization according to the designated purpose of the building, but we are not addressing the issue of one more kind of building. We are dealing with substantial alterations in the role of architecture in this new context.

What is the impact of the Information Era on Architecture?

There are many questions concerning this subject but no one decisive answer. Nevertheless, this is an important issue deserving of deep investigation and discussion. Let us examine some of its aspects:

One of the challenges facing architects in the new Era is how to settle the contradictions between "one world" born from the newest communication techniques and the yearning for local identity.

On one hand - the swiftness of information exchange between different parts of the world, the standardization of interpersonal relationships and business management and overexposure to foreign cultures - all these push for architectural globalization and blur borders and cultural characterization between different countries.

On the other hand, we are anxious witnesses to the loss of local architectural heritage, and crave the preservation and development of national architectural identity. Each nation clings to its cultural heritage and yearns for continuity. Our challenge is to settle these two conflicting tendencies.

The modern means of communication are the outcome of decades of research that created applications in consumer goods and a revolution in the industry that produces these goods. Most of them are produced in high-tech industries.

Sophisticated industries deal with diverse topics: design and manufacture of computer hardware, software for diverse purposes, different fields of electronics, such as micro-electronics and electro-optics, biotechnology and genetic engineering, pharmaceuticals, rare chemicals, agro-technics, robotics, bio-engineering, development of office equipment and many other fields.

The end products of high-tech facilities are those that enable the existence of the "Information Generation". They have become cheaper and available to all. It is hard to imagine the society, economy and culture of the Twenty-First Century generations without the constant flow of information made possible by these products.

This is a direct concern to the architectural community - we have to strive to deal with the unique problems connected with the Information Era and Architecture.

As mentioned before, we foresee that, as we progress into the new century, we shall see more and more built up areas that provide

working places for many people. These built up areas are of interest and of concern to the architectural community.

Technology-rich industry has a special nature. It is innovative, its scope and its goals adapt rapidly to new ideas and demands and it attracts people of a unique kind. We have to keep in mind that the driving force behind high-tech industries are the entrepreneurs, the inventors, the men of ideas, the thinkers and the innovators. Although money is a big factor - it is not the main element.

All this, of course, has to be taken into consideration when planning facilities to house high-tech industries and scientific research.

The location of sophisticated industries is of great importance. In many cases, such as in software development industries, we could argue that the only requirements would be comfortable and efficient office stations. This presumption is erroneous - the dynamics of the field, the teamwork, the constant interchange of personnel, the ability to expand or diminish according to present needs, the linkage of high-tech industries to other fields, require planning a flexible facility, that includes a variety of systems.

Most high-tech industries can be planned so as to be environment friendly - therefore there is nothing to prevent their incorporation in the urban fabric. In other words, most modern industry campuses are returning to the cities and can be optimally located within urban housing schemes.

The urban character of these clusters of buildings is directed by their local surroundings and by the wish to impart to the campus a unique image. It is neither a university campus, nor is it an industrial area. The leaders of these high-technology campuses and the high-tech industry managers want the campus to broadcast "success". In high-tech centers, environmental design and landscaping enhance the quality of life and give a prestigious image to the whole campus. A high-tech campus built on the right site has a better chance of success. Proximity to an upper-level population and an area of high-quality of life, enough reserve area for expansion and achievement of a "critical mass", affinity to a university or research institute - all these factors contribute to the success of a high-tech campus.

Besides choosing the right site for a high-tech campus, it is extremely important to develop a Master Plan and define its integration with in the surrounding urban neighborhood and the access routes that connect it to the main urban and national road system. The establishment of a high-tech industrial campus has an impact on the

neighboring environment. There is a constant interaction between the campus and its neighboring town fabric. The consequences of this interaction are many, but our time is too short to go into this most important subject.

Some architects may think that when planning a hi-tech facility they have to express modernism and emphasize futuristic architecture. It is not so. We have seen incredible failures that followed this line of thought. We have to put architecture in the service of the subject and not the other way round. We have to attend to the needs of the clients to the best of our visual and conceptual abilities - and I believe that this cannot be accomplished by any member of the building team, other than the architect.

The theme of the twenty-first UIA Congress "Resource Architecture" has been open to many interpretations. In the context of our paper we can say that architecture is founded on two resources: one material, the other spiritual.

The Information Era was born, and continues to develop and grow mainly on inexhaustible spiritual resources. In the course of history, radical changes in architecture occurred as a result of population migration, social changes, technological discoveries, and new building materials. All these are material resources. Today, we are dealing mainly with spiritual resources and changes in lifestyle. How will they influence modern and future architecture?

Summing up our paper we can say that accessibility, speed of transference and immediate communication have a deep influence on ways of life and creative possibilities. They have, and they will continue to have their impact on Architecture and Town Planning.

The ease in communications, the incredible progress in technology, the abundance of consumer products and services - all these factors necessarily change human society in all of its aspects. The present generations do not live, interact or work in the same manner as former generations - and therefore need a habitat suited to their needs. We architects are required to see the whole picture - to be able to learn from the past, see the present, look into the future and be the pioneers in creating the environment that will suit the needs of this Era.

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