International Institute for Bau-biologie® & Ecology

IBE 203.8

IBE 203.8 Architectonics

BRINGING TOGETHER TECHNOLOGY AND DESIGN METHODS TO PROVIDE THE INFORMATION NEEDED TO CREATE HEALTHY HOMES AND WORKPLACES

Architectonics (Form & Function) – IBE 203.8

Welcome

Thank you for choosing IBE for your educational needs. Current environmental realities demand a new approach to ensuring that our homes, schools and office buildings support the health and wellness of all who dwell there. We strive to provide the latest information and cutting edge methodology on the vital, complex relationship between the natural and the built environments. May you find your educational experiences enlightening, and take this knowledge out into your community for the benefit of all. **Michael Conn**, *Executive Director*, Institute for Bau-Biologie & Ecology.

Course Navigation

You will find that it is very easy to navigate through this course.

- Progress through the lessons using intuitive navigation tools. When you study, make sure to be aware of and use all supporting materials, such as pdf files, video and audio clips, links to other websites or relevant articles or papers, as well as the online forum.
- The last lesson will give you the option of downloading an electronic version (PDF) of the course. Please be aware that this information is copyright protected.
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- When you have finished the entire Course Pack, a Certificate of Completion is available online.

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Building Structure and Housing Development Planning

Building Construction and Build Definitions

In order to find a proper entrance to the concept of building in general as well as to both those above terms in particular we will introduce here at the beginning a kind of thought model or "picture":

BUILDING CONSTRUCTION

- Interrelation between buildings and the form of building or object masses of equal or different type
- Kind of construction, the way single or a number of buildings, machines are constructed

BUILD

- Style of construction
- Type of system, the way building materials and components are being assembled (steel frame structures, pre-cast reinforced concrete structures, wood or frame structure, prefabricated structure)

We are dealing here with two distinctly different areas which belong together and consequently are often being mixed up . The reason why we are looking separately at a theme that basically is not to be divided is the chance of observing it from different viewpoints. The activity, we are concerned about, is taking place in the physical universe (totality of micro and macro cosmos, of which it occupies, in fact, only a minute part).

1. The individual human being, both alone and in his social community, can be considered part of it but, at the same time, holding a position which is separated from it.
2. In addition to the above phenomena, which might be considered natural, another "artificial" one was added by human activity -the built environment. We might call it civilization and culture. Here the activity of building as the more important part of environmental change can be considered the link in the development between nature and human beings.

It is quite obvious that with regard to our specific life these three described areas are each an undividable unit or at least a whole where its forming parts are actively or passively interdependent.

It should be pointed out that housing belongs beside food and clothing as a basic to existence for (current) human beings. In order to determine quality of life, all three of them – being prerequisites of existence – would have to be taken into consideration.

Just by his very existence and his way of behavior it can be postulated that the human being – as an individual and as a group – is an influencing quantity in this picture.

It appears that:

- the physical universe (all material things or that which can be sensed either with the natural senses or with his artificial extensions) influences life on various levels.
- qualities of mental nature (immaterial things) exert a very distinct influence on life- mental principles (varying by location and time) always through history influenced the form of existence
- satisfactory results in the execution of life in general or in parts of it (to create housing) come only about when all three above aspects are being considered as a whole.

These three aspects cannot be separated from each other and should not, if life is to be balanced.

It becomes rather obvious that in the process of analyzing the area of building and life not only natural science should be used but also borderline sciences[1] and the humanities. This will ensure a balanced process and result.

Building Construction

If we put our attention on building construction as defined above, i.e. the shapes and masses of single buildings, and in particular their relative position to each other, we find ourselves looking at history. That is to say a review of the various possible building constructions is an historic one. Conclusions for present time and the future have to come that way. It is not necessarily so that the known building constructions of the past are the only ones or only suitable ones for today and tomorrow. We can only speculate why houses have been built as they were built.

Two of the theories which try to explain the reason for building and architecture, may serve to express the main idea in a variety of interpretations.

The Material Reason of Building

The most commonly presented arguments with regards to the necessity of building consists of the following reasons:

- The climatic circumstances that do not allow the human being to be exposed to nature without experiencing problems in his bodily makeup. These consist of climatic changes, or they might arise because people migrated into areas with a climate basically unsuitable for his constitution.
- The other theory dwells on the fact that humans (contrary to animals) could develop in a different direction because they utilize their hands and their brains and therefore did not have to adapt to the natural climate. This fact in combination with a mentally present demand for shelter and protection helped him to create dwellings that were distinctly different from nature.

The entire history of architecture and building is based on these pictures. And we can learn from that, that the logical circumstances as well as the natural premise should and must become the basis for planning and building. Anything considered really valuable (even economy) will have to obey that principle.

The Immaterial or Spiritual Reason for Building

In many documents of different High-Cultures, golden eras and "paradises" are being mentioned. People are said to have lived in unity and harmony with the entirety of nature and -at the same time- were showing a high intellectual niveau[2]. The beingness[3], the structure of the world and life in its gigantic undivided wholeness was part of the entire human awareness. The necessity of various technological and technical installations was of no interest.

With conditions like this, where wisdom, knowledge and possibly art in its widest form belonged to the most noble phenomena of existence, architecture, expressing itself in space, matter and time, was the symbolic expression of the world structure. The whole life was documented and mirrored in architecture.

In any case, this picture reveals an aspect which is not tied to any specific purpose. And as this pattern shows in all human behavior with the intention to become dominant we might consider its right to exist. Mental and esthetic requirements appear to be as necessary as the technological and rational ones.

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[1] science which must be located on the border of several other sciences with regard to subject and methodology (bio-chemistry)
[2] a level or plateau (as of existence or achievement)
[3] he assumption or choosing of a category of identity. Beingness is assumed by oneself or given to oneself, or is attained. Examples of beingness would be one's name, one's profession, one's physical characteristics, one's role in a game.

Mode of Building

In times where people lived in caves and earth holes and built signs and symbols independently, utilizing both without having developed a interrelation in space, we can hardly speak of a mode of building.

It is in those early days, where a community started to form and where common ideas and functions, such as the expressions of life or death or for the unborn or for religious purposes (natural forces, idols) that interrelations developed, resulting in a special mode to build.

A great variety of forms have emerged over time in different areas of the world. And many of them are not known or only partly known. It is not intended to bring here an extensive historical study of the subject of modes of building. A condensed overview of the main forms will serve our purpose.

We know **dispersed forms** in various densities that do not show any structure apart from perhaps considering the influence of the sun, the wind, etc. - which have always been used in one or the other way. The common element of all dispersed forms is the single object.

They are placed at certain distances from each other, whereby the space between the objects is used as garden (Garden Cities). We also call this also the “open mode” of building. It is very commonly used in rural areas.

Influence of surroundings and lifestyle could have been responsible for certain structures within the open mode of building as well as planning policies. Here we find planning patterns of circles and squares to improve shelter and security.

The opposite of this would be the “closed mode” of building.

The various building masses are being kept apart only by yards or yard-like spaces as well as streets, drives, roads and places. Otherwise they are in physical contact to each other. An increased utilization of the land can only be achieved by building higher. The advantage of this closed mode of building (more economical) turns into disadvantages when it becomes an oversized conglomeration with inhuman conditions, such as air pollution, noise and lack of open space and green areas, especially for private use.

Between those two forms of Building Construction there are large numbers of intermediate forms such as:

- Interlocked building construction: detached houses may have car ports located among each other.
- Mode of building in rows: one family homes (mostly two stories) built in rows so that a middle house would touch a neighbor house on both the right and the left side.
- Condominiums: still relative individual houses of several stories.
- Mode of building in blocks: high rise buildings for living and commercial purposes (offices, banks, department stores etc.)
- Special forms: terrace houses, pyramids, hills of dwellings
- Subterranean dwellings
- Mobile homes: on the ground, on the water, in the air (where the latter reaches into future projects).

We should also mention caravans and camping cars. They are all placed relatively freely in a certain distance from each other on camping grounds.

Now, in this context it is very interesting to isolate the criteria which would help us to determine the mode of building acceptable to human beings with regard to health but which at the same time would not destroy natural surroundings and the ecological balance. Basically the entire field of planning (regional, town, neighborhood, and also object planning) should be reorganized taking into consideration the principles of an integral biological architecture , of health, human ecology and Bau-biologie. With regard to the grave and unacceptable circumstances in our environment it might be the final consequence.