Modular dwelling structures in organic design
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Natural Shapes For Human Housing

The future needs big series of dwelling living spaces. Before the production of those series goes on in the wellknown orthogonal cubic design shape, with the result of boring boxlike interior and outside appearance, it is about time to show what could be realized in this field with production methods and design feeling of today. Human nature asks for organic shapes of architectural design!

Prototype of organic dwelling shell unit

Since 15 years the author and his family is living in his organic designed shell house in Stuttgart Germany. This experimental dwelling scultpere has proved in the meantime to the family and for a lot of visitors, that living in such a surrounding is a very happy experience. For human psychology, anatomy and choreographic behavior bent sheltering shapes are the basis of feeling harmony safety and cosyness. Nobody changes direction rectangularly while walking. No movement of the limbs is linear. Anatomy supports two- and three-dimensional movements. People meet sitting round a table.
A new industrial challenge

There are modern Industrial Production Methods which we can use for realising this shapes of dwelling as Modular Structures. Experiences of car- and caravan-production, various supporting-structures made of metals or of concrete, also bridges with tower-like pylons are to use for spatial structures in dwelling application.

Sheltering bent shapes are the basis of Harmony Safety Cosyness

Resting

Sitting

Discussing

Walking in Curves

Agglomeration Possibilities

The normal and most used method is to place houses or living cells directly on the ground. There, the cells can be added and combined in horizontal way very simply. In order to prevent the landscape it is better to pile up the cells in various and artificial ways. The best way to get sensual agglomerations is to combine the cells hanging in supporting structures, which can be also prefabricated by special industrial production.
Exclusive individual positions above landscape

Separated position of Living Units in the space makes possible perfect natural ventilation, and avoids transfer of noise. Airodynamic organic outside shape stays silent in the wind.

Spatial cells can be taken as functional units within themselves and produced as a whole including the necessary fittings. Integrating the necessary basic furniture we will receive following advantages: Production can be rationalized so that the costs of even highly standardized living cells can be forced below the current building prices. Throughout the years there can be developed endless variety by such a design of spatial embracement and decoration, not only for interior but also for the outer appearance of the buildings.

Chances for Design Phantasy

Psychologists, artists and designers can plan and realize common concepts. It is exclusively a question of number and demand how great a variety of form, colour and material could be offered for decoration. The suggestion in front of you only represents a fraction of the vast variety of possible solutions. Like natural growth is characterized by a continuous multiplication of cells, viable, fully installed and properly furnished spatial cells are connected as ground buildings for different purposes.
Prefabricated Building Structures

Complete prefabricated Living Cells, produced in well organized factories, if optimal designed and manufactured in industrial series which allow economic production, could be a base for a new international market, with lots of jobs.

Earth saving Structures

Future Market for Industrial Production

a) Armament industries with a big power of logistic and lots of employees and engineers have to look for new goals in the new century.
b) Car production has reached a very high standard. The production methods can be used in a modified way for the industrial manufacturing of dwellings.
c) The caravan Industry can help with their construction methods.
d) There is a well organized container producing and transport system over all the world.
e) In the airplane industry there exists a lot of experience with lightweight cell production.
f) The astronautic and spacecraft industry has reached a point where further big investments seem to be not of direct interest for us. There are capacities of intelligence.
g) We have a very high standard and lots of experiences in bridge and tower constructions.
h) Sure jobs in industrial firms are more attractive than open-air working places on the building site.
Separate house-like Living-Cells in the fresh Air

Family Home

Elevation

Section

Layout

Living Cells for Spatial Town Structures

influenced by the series of production of caravans and cars, suggestions are made in order to manufacture cells in large series.

Ground units made of constructive frames in sizes of usual containers or mobile homes are the basic elements of the here presented sery. Breadness is 3,5 m, the length is 7,0 m. The height is 3,0 m including a double bottom with installation space.

The constructive frames can be combined to various clusters in a way, which allows to construct self-supporting units between 1 and about 20 space frames, with 3 storeys as a maximum.

All the walls, ceilings and bottoms which do not contact the next cells, are made as double bent shells. They have windows, doors and light cupolas in various design shapes.

In combination with organic shaped interior design of the furniture it is possible to give to these clusters the organic character, which should be usual after the long phase of dwelling in rectangular boxes.

By adding of outside elements which are formed as terraces the outfit becomes also more various.
Hanging bridge like Supporting Structure

Stabilized by three arms, with separate plugged in Living Cells and horizontal panoramic decks.

Pylons with a height of 190 m and a distance of 220 m are the base for a system of supporting cables and decks similar to a classical suspension bridge. For stabilisation also elements of cable-stayed bridges will be used.

Two main decks 70 and 90 m over the base form a horizontal girder which stretches the cable systems. The whole construction is prestressed.

Each Pylon carries 3 arms with 12 horizontal suspended pedestrian decks. Between these streets is a vertical distance of 12 m. The pedestrian bridge ways are the streets for to reach the cell-residences which are placed there.

The streets allow also the transport of the cells from the pylon to their site. One of the lifts in the pylon is prepared in his size for the transport of cells from the base to each storey.

The vertical pylons contain several lifts with different speeds as well as the complete utilities, water supply and removal, energy supply, information system etc. All these mediums are leaded in the street decks to the living cells.

Normal street traffic and railways stay on the ground with stations near the pylons. In the storeys of residential trees there are only pedestrian ways and maybe little electric cars.
Dwelling Agglomerations on Panoramic Decks

On the living decks which are panoramic walking areas should be also plants and little trees which can be supplied with water systematically. It is to suppose that also birds discover the artificial landscape and try to live there.

If this system of settlement will become usual, all kinds of schools, leisure, administration, shopping, and also handicrafts and service stations can be agglomerated here.

Static advantageous Shell Bodywork

studies on series production have shown that organically formed shell-type spatial embracements can be produced considerably easier in large presses and in casting moulds than cubic or square building forms. The static advantages of double-bent shells can be used very well.
Morphologic Research

It is a very important research work finding among the endless possibilities of constructive and geometrical systems those which could be used as superstructures for spatial town agglomerations.

Beginning with 3 satellites, in the system can be added always new residential trees of this kind, if they are connected with one arm as a minimum, and if the here designed hexagonal supersystem of layout is the base of enlargement.

The natural landscape or the old town below is only touched by the pylons base. That means by using the space the earth can be preserved from direct settlement.

It would be of advantage for the development of "The new town" if the surface of earth below the town would not belong to single private individuals. I am sure the earth belongs to all of us like the air and the water.
Visions of High Rise

Space Structures

The form of the primary supporting structures will characterize the visual impression of the building as well as the dwelling cells themselves. Additionally those structures can let arise quite new typical skylines as a sign for the new spirit of the next century. With this kind of settlement and building systems it is possible to use unusual but very interesting sites on the whole earth as: mountain valleys, mountains, desert landscapes, zones of frost, coast and shore sites, vacation-towns. Combinations of such living cells are imaginable under big tents or pneumatic coverings in zones of extreme climates.

Under the condition that the sociological and the psychological questions of townplanning would have a realistic solution the following criterions will be important for supporting primary structures of spatial towns:

1. Durability of the main materials.
2. Resistance against partial destroying.
3. Erection and fitting with simple methods.
4. Natural sunlight for the living cell
5. Fitting and transport of the cells.
6. Changing and renewal of cells.
7. Prevention of fire accidents.
8. Internal and external traffic conceptions.
9. Installation with all the mediums of current civilization.
10. Heating and climatization of cells and common volumes.
Responsibility of Designers

The architects and engineers of these settlements have a very serious responsibility. The producing arrangements will arise only if very big series can be produced.

The kind of design of these series will determine the surrounding, the hometown of the users. The shape of this design will be of influence for the whole life of the inhabitants. Therefore this kind of design, is more important for human beings than cardesign, more important than astronautic engineering or than the design of all kind of fashion products.

If we follow the vital high demands of man as a mission and take the technical possibilities of today as our tools in harmony with the physical laws of nature, there are chances for developments far away from the wellknown stupid cubistic schemes of order.