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Project Description

The Protean Block House

pro·te·an (*adj.*)

1. Readily taking on varied shapes, forms, or meanings.
2. Exhibiting considerable variety or diversity.



In the world of the future, the permanent house is no longer the standard. Easily accessible high-speed travel and increasing globalization have created an environment in which people need to and are able to relocate to distant parts of the world easily and quickly. This has created a type of neo-nomadic lifestyle, wherein people pack up not only a suitcase of personal items, but often their entire living space, bringing their home with them. This lifestyle of regular relocation, along with increasing urban density, has brought about a re-evaluation of the spatial requirements of the individual, and the traditional form of the dwelling house has given rise to a new type of space in which every surface is inhabitable.

The Protean Block House is the basis for a new type of inhabitation, one which addresses the issues confronting the new world by creating a versatile space, integrated into nearly any environment; easily transported, this house accommodates the everyday living requirements of its inhabitants. This house is conceived as a block containing an internal space which can be easily modified by its user to fit his specific requirements and desires. In this design, the notion is introduced of molding not the built form, but the negative space created by it. Instead of imposing positive mass to frame their space, the inhabitants of the Protean house will carve out a negative space from the mass of the block to fulfill their particular living requirements.

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Structure

The structure of the Protean Block is based on a system of interchangeable panels which are secured onto a 3mx3mx3m cubic frame. As lifestyles change, or families increase in size, the users of this house are not limited to a single block. Each block can be combined with other blocks of the same size to create larger interior spaces. There are 3 primary types of panels: 1. the standard light wall panel 2. the service panel 3. the access panel. The combination of these depend on the requirements of the building. If the structure is being used, for example as a remote outpost, it would perhaps only require five light wall panels and one access panel. If, on the other hand, the block is being used as a multi-family dwelling, one might create a combination of multiple blocks using a series of light wall panels and access panels where required, as well as a service panel which would contain connections for all plumbing services. A series of interior partitions would also be available to separate the interior spaces.

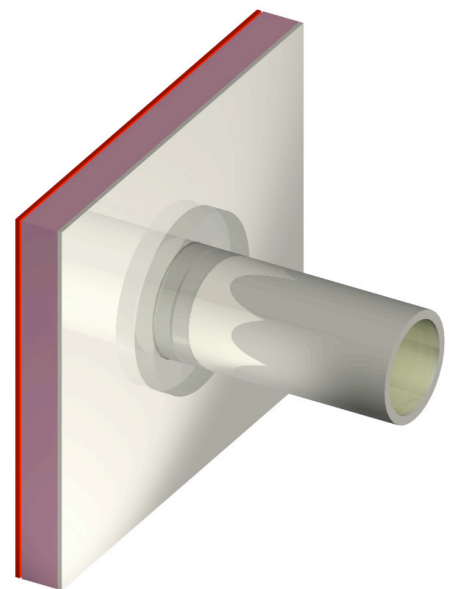
Composition of Panels

Luminous wall panel:

- 2mm Titanium-clad stainless steel shell
- Internal aluminum frame
- 50mm Rigid Polystyrene insulation
- 5mm moulded plastic interior shell
- Punctuated by a grid of 100mm dia. Carbon fibre tube containing fibre optic strands and 20mm ventilation tubes
- Powerpack (220 V power connections)

Service panel:

- 2mm Titanium-clad stainless steel shell
- Internal aluminum frame
- 100mm PVC plumbing pipes
- 12mm copper pipe (HW/CW)
- 50mm Rigid Polystyrene insulation
- 5mm moulded plastic interior shell
- Powerpack (220 V power connections)



close-up detail of one carbon fibre tube puncturing through the wall panel

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Composition of panels (cont'd)

Access panel:

2mm Titanium-clad stainless steel shell
Internal aluminum frame
50mm Rigid Polystyrene insulation
5mm moulded plastic interior shell
Punctuated by a grid of 100mm dia. Carbon fibre tube containing fibre optic strands and 20mm ventilation tubes
Powerpack (220 V power connections)
Allow for 2100x900 door opening

Carbon/Fibre/Optic Tubing

The tubes puncturing through the wall panels are the elements which create the interior space of the house. The block is installed with the tubes fully recessed. The occupants of the block then proceed to push out the tubes, wherever they wish to create interior space. Tubes are pushed fully to the exterior where the occupant wishes to have a flat surface, and are locked in place at certain heights to create interior furniture. To create comfortable and usable surfaces (i.e. a table top, or bed), an extra surface attaches to the ends of the tubing. The realm of the solid wall and the role of furniture are discombobulated resulting in an entirely user-defined environment. The tubes are also used as a source of passive lighting to the interior. Fibre optic strands reflect the exterior lighting conditions inside of the building, and at night, in turn, they reflect the interior condition on the outside.

Key Conceptual Precedents

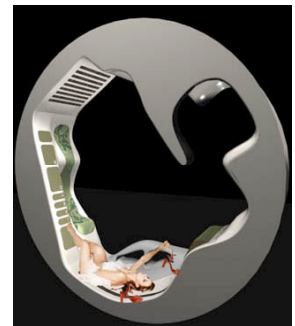
The design of the Protean Block House reinterprets the traditional notion of dwelling space, taking away defined spatial function and making every surface inhabitable. The interior space is “carved” out of the interior mass by means of a series of shifting surfaces. This dwelling unit is adaptable not only in its physical nature, but in its geographic location as well. This unit is very mobile, able to accommodate the nomadic tendencies of the aforementioned proposed future society. These key concepts were informed by a number of precedents, including the “turnOn – urban sushi” project by AllesWirdGut (AWG), the “Plastic Spray House” by Archigram, the “Plug-in City” also by Archigram, and the traditional Mongolian Ger.

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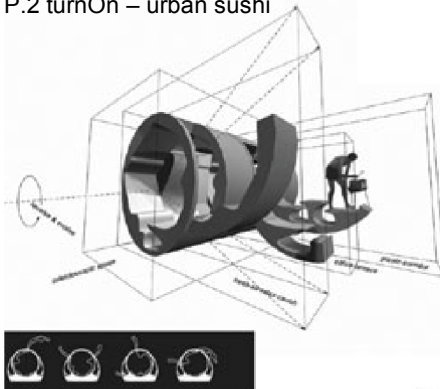
Key Conceptual Precedents (cont'd)

The notion of every surface being inhabitable is partly derived from the conceptual project “turnOn – Urban sushi by AWG, published in Archilab’s *Futurehouse*. The idea of this project is to reduce the space required for living to a minimum, and make use of every surface. There is no distinction between wall, floor or ceiling. The house is a series of cylindrical slices which rotate, “like a giant hamster wheel” to suit the needs of the inhabitant. As the slice rotates, furniture shifts to become walls, or ceiling. By rotating the form of the house, its function changes, therefore



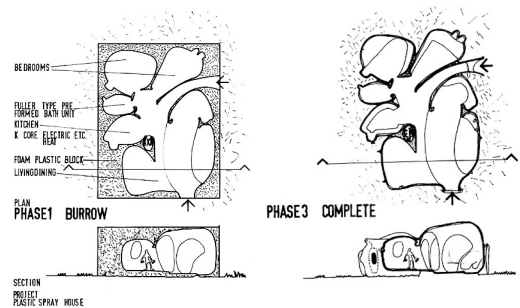
P.1 turnOn – urban sushi

P.2 turnOn – urban sushi



allowing the same space to be used for multiple functions. This project stimulated the aspect of the design of the Protean Block house in which surfaces can change, and every surface can be inhabitable. The same surface which performs one function at a certain time of day, can be modified to serve a completely different function at a different time of day. The space is highly adaptable, and can be changed by the inhabitant to suit their particular needs.

The concept of a living space being formed by the hollowing out of a positive mass to create negative space within was partly derived from Archigram’s experimental project “the Plastic Spray House”. In this design, Archigram puts forward the idea of a house that begins as a solid block of plastic and which is then “burrowed” or “hollowed out” by its owners to create spaces within, like a rabbit hole or cave. The concept of this design involves the inhabitant in a very personalized creation of living space, which is meant to suit them perfectly. Another inspirational project by Archigram was the conceptual “Plug-in City”, a proposition for a complex



P.3 Plastic Spray House – Phase 1 and 3

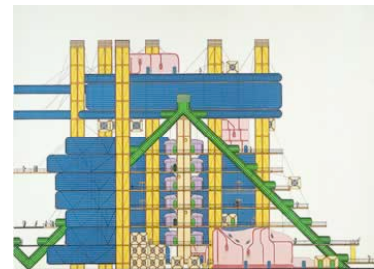
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Key Conceptual Precedents (cont'd)

framework of infrastructure into which individual living pods can be “plugged-in” to collectively form a city. Though the aesthetic and physical disposition of this project was not of interest, the notion of the individual dwelling unit with the potential to move about and relocate to different cities or communities related very much to the ‘neo-nomadic’ society of the future that has been proposed for this project. The Protean Block House is meant to be an individual unit which would be assembled according to the client’s requirements and which has the potential to be either a stand-alone structure, complete with all necessary services (i.e. plumbing, heating, electricity), or also as a simple unit, which could be assembled in the form of a community and would connect to a shared infrastructural network.

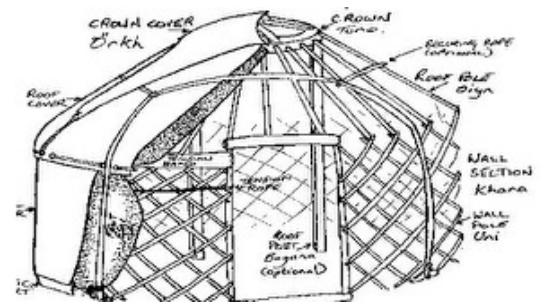
P.4 Archigram Plug-in City



P.5 Mongolian Ger

This concept of the return to a nomadic lifestyle compelled us to research traditional nomadic dwelling types. The culture of Mongolia has been and continues to be nomadic, and their traditional dwelling, the Ger has been a functional solution to the harsh climatic conditions of that part of the world for thousands of years. The Ger consists of a cylindrical wooden framework topped by a low conical roof. This framework is clad with a layer of thick felt, and secured in place with rope. This versatile vernacular construction is able not only to withstand the weather, it is also easily disassembled and reassembled, or in some cases, even transported whole. It is this aspect which incited the notion of the entire home being able to be relocated as a whole. In essence, the Protean Block House is meant to be able to be dropped in most any climate, and function properly as a home.

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P.6 Mongolian Ger

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Conclusion

The Protean Block House is meant to be a structure which can be used anywhere in the world, whether in harsh remote natural locations, or busy urban environments. The blocks can exist on their own, but also can be combined into cellular communities. They are versatile pieces of sculpture for living in, responding to predicted social and cultural conditions of a potential future.

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