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ALTERNATIVE SPATIAL FRAMEWORKS IN HIGH-DENSITY HOUSING

by

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A thesis submitted in partial fulfillment of the requirements for the degree

Master of Architecture

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Abstract

My thesis is an investigation of alternative spatial frameworks in high-density housing. My thesis proposes that ordinary dwellings can be transformed into extra-ordinary space through the use of spatial frameworks. I believe this Habitat '02 is one possible prototype housing. Still I have to study more but, it contains a lot of potential for the future and I hope it will be an ideal project for the next generation.
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Definition

What do we want today for our new kind of urban and suburban housing environments? High-density housing becomes a new concept of lifestyle especially in a large city. Generally high-rise housing is one of the solutions to solve dwelling problems in a large city. Then, what is high-rise high-density housing? High-rise housing is approximately over 5 floors with elevator. Nowadays we would define super high rise housing as building height over 20 floors.
Significance

We can understand high density housing has continuously changed, not only in the aesthetic point of view but also public, culture, and ecology.

After WW2, there was a boom (like the baby boom) to design and built high-rise buildings. Dwellings also boomed around 1965-1975. Lots of high-rise buildings popped up at that time, and after while the boom declined. Now things are changing again because of a circle of generation.

Coming to the city, increasing the population and in limited space, high-density housing becomes a popular solution to satisfy every aspect. Generally high cost of limited land requires more usable space, and high-density space, therefore, the high-rise tower is a perfect counterplot.
My thesis proposes that ordinary dwellings can be transformed into extra-ordinary space through the use of spatial frameworks. This tower has 150 dwellings in an upper tower level, and partially sheltered parking, facilities, office space and green space with an extensive network of landscape that connect with the surrounding urban fabric.

People have variety choices when they need to buy some product. In the grocery store, people usually stand for a while in front of the cereal product corner because there are too many different brand names of one kind of cereal. However, people usually pick what they want out of many. It becomes extra ordinary after it is picked up. The ordinary cereal became extra-ordinary cereal because it is special for you. You chose yours. If you want to buy or lease a house you have to search newspapers or guidebooks to find what you want. There is no place to visit one place and pick yours. When the refrigerator in your house was run out of milk, you need to go to a near by grocery store to get it. However, if for some reason, the store also does not have the kind milk that you look for, because it is past due, or not organic, you might pick up another rather than visiting another store. Is dwelling like milk?
Proposal
Proposal

Extra-ordinary
The different approaches to the dwelling I have taken in ordinary design are in fact exploring extra ordinary experience. Using gian no @ (18 x 40 x 12) and voids stacked together in different ways gives an opportunity for spatial division. It is like Zinga a game, which takes pieces out from stacked wooden pieces. That practice gives lots of structure potential: it is an ordinary game and extra ordinary praxis.
150 Dwellings
60 single
50 couple
40 family

270 cars
2-36 sq elevators
2-240 sq stairs
180 x 96 passages
* Houses, for the vast majority of the world's population, are a mundane back drop to everyday life. Most dwellings are not really 'designed' in the basic point of view: they are produced using tested methods of construction and building forms that have evolved into traditions overtime.*

*Nicolas pople. Experimental houses. Watson-guptill publications 2000*

I went to Central Market after work to get some milk for us. I picked up just ordinary milk and went back to an ordinary home. Is there anything extraordinary? Like…
Design Development
Design Development

Transportation Circulation
Together as a super block, the tower provides the new district with an instant urbanity unlike anything to be found elsewhere!
Design Development

Floor Study
Design Development

Floor Study
Model

The demand for variation at the level of the individual dwelling "Problem of vertical repetition" in the typology of the propiedad horizontal, that is, the speculative apartment tower constructed of repeated identical floor plates

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At night, there is a void condition in high-rise buildings, especially housing towers. Office towers turn on lights on almost the whole building or whole couple of floors. They are not individual and have no character at all. Not like an office tower, the housing tower depicts a dark space for inactive space or a vacant space. The housing building never turns on the whole building's lights. I took that condition and transformed it to my concept of ordinary vs. extra-ordinary. The dark unit is a void space in my tower. The light unit is a solid in my tower.
Space divides by . Each floor has unique access. Some floors hold only one or two residences out of the usual 10 units.

Some units occupy whole floors as a private space. And some floors are shared with neighbors as a public path or park.
Parking space is no longer a dark and unsafe area in this tower. Because parking contains green spaces and outdoor playground, the parking functions as not only parking but also as a park.

Green Spaces

The parking garage has been transformed into a communal garden (green space) and recreation area.
As an urban block, Habitat'02, consisting of housing and commercial space is a part of a transformation of the suburb block.
The fully equipped recreation area is located on 3rd floor, providing easy access.
The staircase has been placed on the exterior giving the quick mobility.
The staircase has been placed on the interior giving the quick unity.
Units with garden terraces adjoined horizontally and stacked vertically into urban dwelling blocks.
The tower is provided with dwellings, parking spaces, offices and recreation areas.
Unit

1. Individual thing
2. Quantity chosen as a standard in terms of which a stated charge is made
3. Part with a special function with a large
4. Piece of furniture, equipment-designed to fit with others
5. Smallest whole number

It contains a wide variety of dwelling types (units) over one or two floors ranging from single box (18 x 40 x 12) with garden terraces to townhouses with 2nd level garden terraces, which are shared with a neighbor.
"The design of housing blocks is without doubt one of the most interesting and attractive subjects of contemporary architecture. This is because in these projects the architects face some of the most serious conflicts generated by present-day society: the problem of high-density development in large cities, the shortage of development land and the degradation of quality of life due to factors such as acoustic and environmental pollution."

Carles Broto Multiunit housing Architectural design 1997

The structure of the 25-floor tower is concrete, and floor slabs are all post-stressed. It gives structural rigidity by locating a structural core that absorbs the entire load. This makes it possible to set few columns, so it provides a free floor space. The structural solution enables the void spaces.
Side-Section
Front-Section
"Le Corbusier extended his earlier model of private dwelling units stacked into high-density, high-rise, low-cost housing to include an array of communal functions-commercial establishments, leisure facilities, and basic civic services-that broadened its components and created an integral community, or vertical garden city, based on the model of a collective.

George H. Marcus Le Corbusier the monacelli press 2000

Units with garden terraces are adjoined horizontally and stacked vertically into urban dwelling blocks. Each one has private, self-contained and modular space. However, the most important concept is unity. Your neighbor is no longer a stranger in this tower, like the movie "Rear Window." You can chat with your neighbor after Sunday church meeting.
About building spatial frameworks, this building deals with void space (perforation vs. solid space. First I start with structural system study, and based on a structural grid, I stack one box (18 x 40 x 12) on one another. After that I voided boxes and rearranged them. So boxes in the structural grid are allowed to stack together or void one another.
The vertical network is geared to parking, work, recreation and living. Combining green space and recreation space, also hinged to connect nature and the artificial, stimulates void space. I was attempting to create space for a private or a communal greenery space. And typology of various housing units also makes it possible to have that space.
At night, there is a void condition in high-rise buildings, especially housing towers. Office towers turn on lights on almost the whole building or whole couple of floors. They are not individual and have no character at all. Not like an office tower, the housing tower depicts a dark space for inactive space or a vacant space. The housing building never turns on the whole building's lights. I took that condition and transformed it to my concept of ordinary vs. extra-ordinary. The dark unit is a void space in my tower. The light unit is a solid in my tower.
At night, I came back to my place, 'Habitat '02' and I felt like I am a dweller. Now I am living in a 23rd floor 'Unit LUL' and having my own green space. A couple of floors down there is playground for my two lovely sons. Yesterday after dinner, I went upstairs to meet my neighbor who recently moved in to the 25th floor. We have several clubhouses in this tower.
There is a practice cliff on the 17th floor. My son loves that place a lot and I do too. I feel like I am in a mountain villa. Everyone can have an extra-ordinary life within ordinary life even my dog, pull!
This will always be an extra-ordinary place for me. I think I might never see an apple grown on my 24th floor tree, but I will never miss it.
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Thank you!

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