

Chapter 5 : Trying to Fit All Usages in One Building.

(A team project for an international competition Sited in Barcelona, Spain, 2003)

A project pursues the maximum flexibility of usage.

Project Name : Housing Paragenesis

by : 葉蔭霖(project leader), 楊基辰, 蕭景文, 王乃慧

Site : Barcelona, Spain

Site:

A large triangle site near an old rail way station in Barcelona, Spain.

The competition is to turn it in to living area and also to bring up new lifestyles



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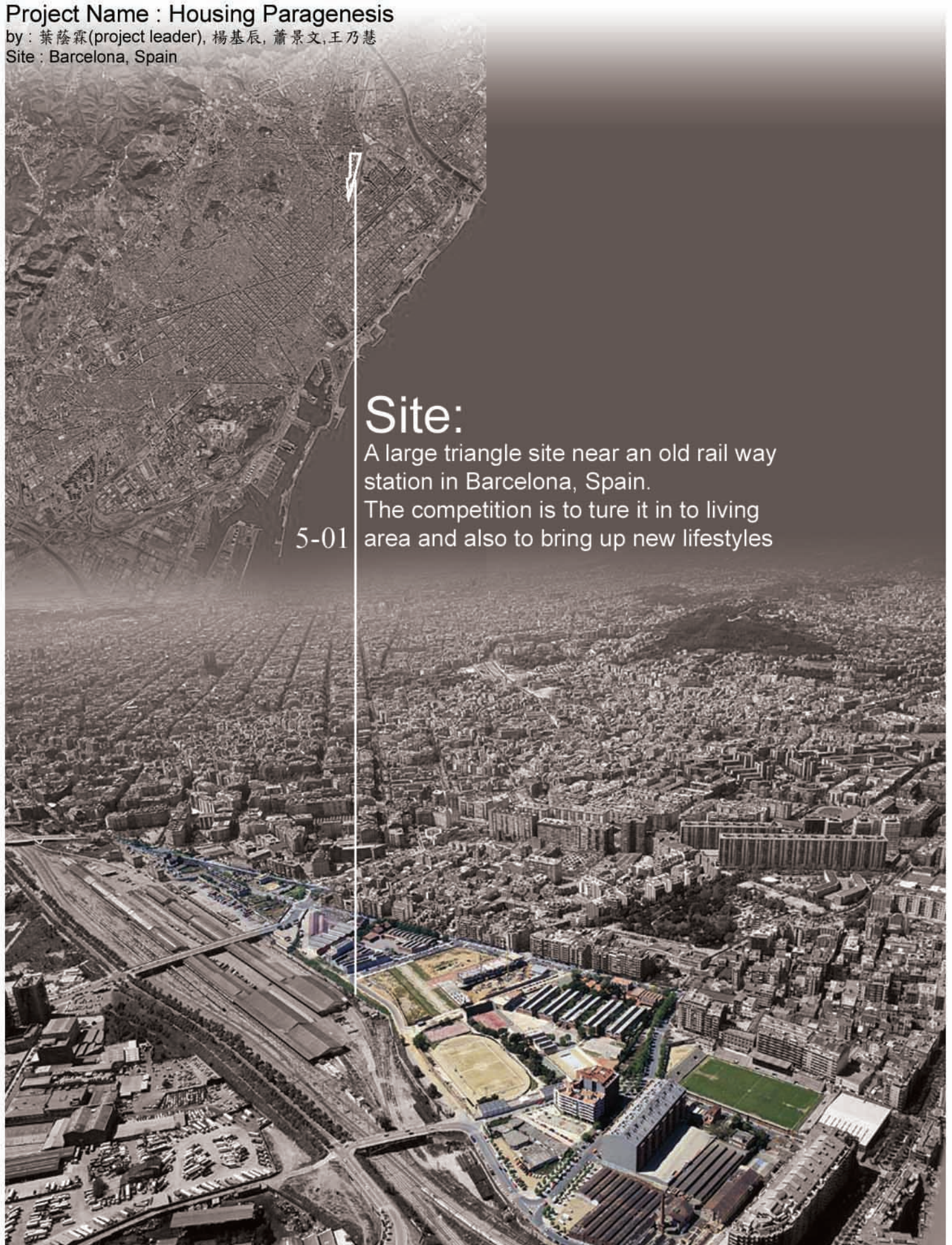
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5-01



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Concept - departure from "family?"

Traditionally, the domain of home is defined mostly according to the ownership of the residents.

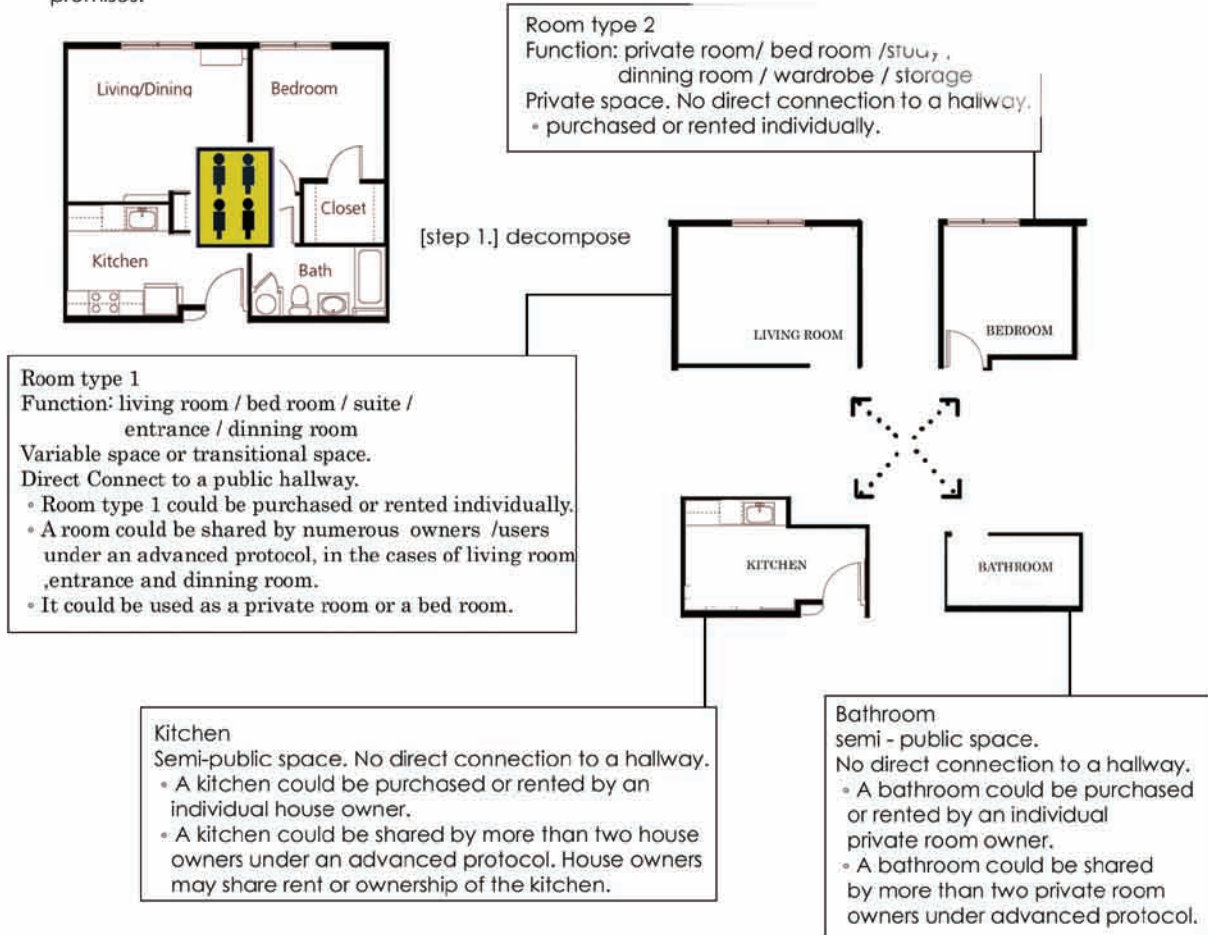
A group of people (family) live together and share rooms within their property. It becomes the most fundamental requirement for housing to equip with a kitchen, a bath, a living room, and bedrooms. However, due to the rapid shift and alteration of living style, habit, value and users, usage of housing often transcends what the architect expected to. Therefore, we must reconsider the organization of housing and take all the variables into account. This design intends to challenge the traditional spatial relations of housing as the point of departure. To go a step further, the notion of "family" will be redefined by means of spatial minglement of facilities and plan.

Nowadays, it is the architect who select/decide the functions. They prefer to create "full-functional housing." It connotes certain indispensable criteria for housing. What are considered essential to housing often turned out to be surplus to the users, such as a kitchen to those who don't cook. To avoid this, this design aims to decompose the organization of housing and transfer the power of function-selection from architects to residents. If each space (each function) is considered independently, a new type of ownership and usage mode will be established.

This design divided housing into four main categories:

1. Room type 1-- it could be public, semi-public, or private.
2. Kitchen
3. Bathroom
4. Room type 2 -- private use only.

In order to classify and decompose the organization of housing, a rule has been developed after some investigation. This design built up some guidelines on the basis of developing new spatial relationship. Certain rules had been established on the premises of the design. The following pictures illustrate the developing process on the premises.



[step 2.]
Analyze behavior of
"Family" members

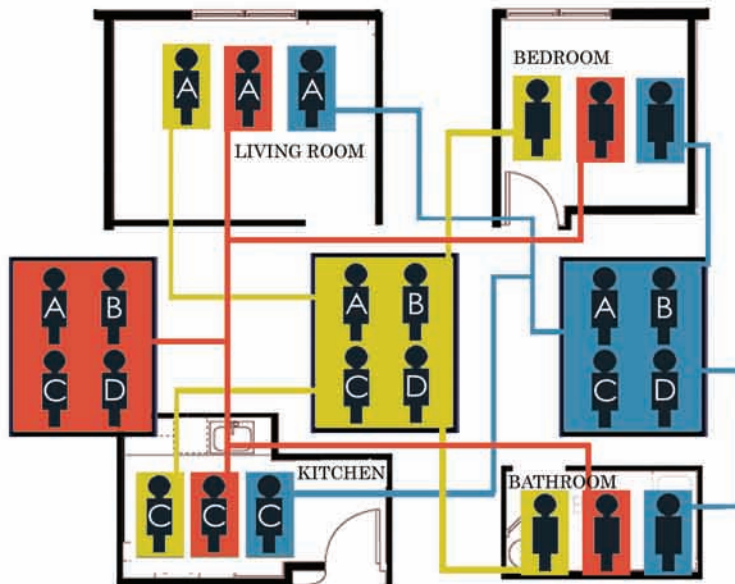


- A** Type A loves watching TV, reading, and spending time in the living room after work.
Ranking of the utility rate of the space:
Living room > bedroom > bathroom > kitchen
- B** Type B spends most of time in her bedroom sleeping and watching TV. She seldom cooks.
Ranking of the utility rate of the space:
Bedroom > bathroom > living room > kitchen
- C** Type C cooks three meals, and often spends her time in the living room reading newspapers.
Ranking of the utility rate of the space:
Kitchen > living room > bedroom > bathroom
- D** Type D uses all the room now and then.
Ranking of the utility rate of the space:
living = kitchen = bedroom = bathroom

[step 3.] Apply the result of behavior pattern to the space

A living room provides openings to other rooms and the outside world. Each resident shares at least one living room.

Each resident owns at least one individual bedroom.



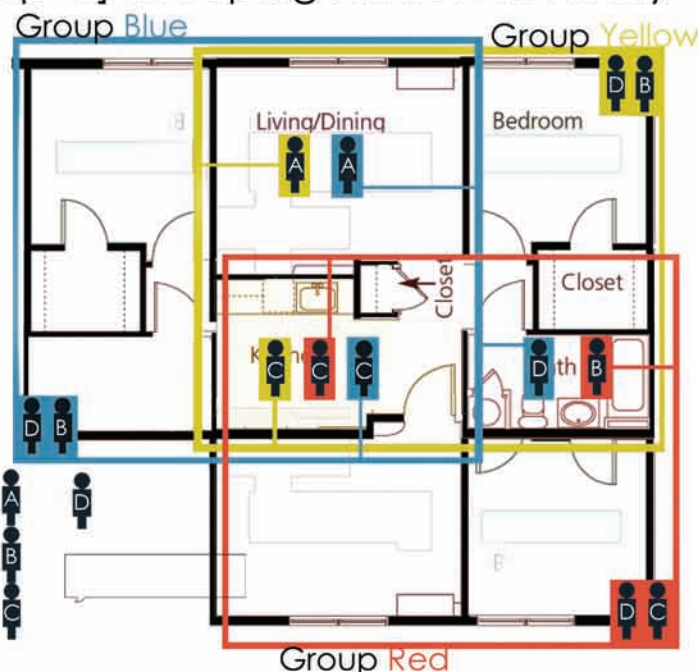
Residents may choose to own/share a kitchen or not. Kitchen users are marked as Resident type C.

Each resident owns or shares a bathroom.

[Conclusion]

step 4. developed a basic prototype for the design. Each family members will be regarded as an independent individual. Therefore, the usage and behavior pattern becomes the key point of the relationship between function and the users. If user changes, the required function and space will alter as well. In order to face the rapidly changing of requirements, "variability" seems to be the possible answer. Thus, this design will emphasize on the issue of variability.

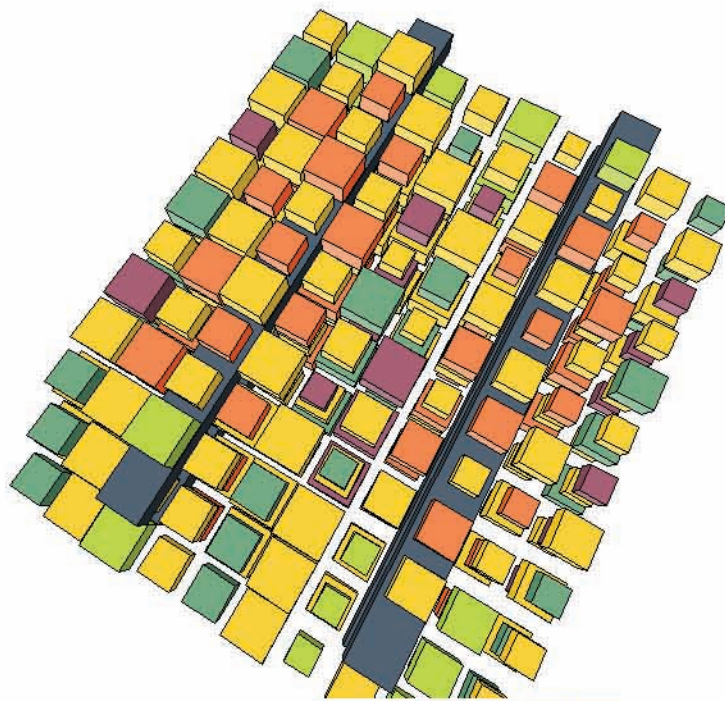
[step 4.] Grouping numerous family



[Solution]

To discuss about "variability," first we brought the idea of modular function. A room is a function container that can be assembled with other rooms to "form" a house. If we standardize these function containers, and build passages to connect them, the users may operate this system easier. As a result, we proposed a special structural system. Rooms are connected by removable iron bridge. Openings, doors, walls of a room can be taken apart to modify its linkage with other space.

5-03



So it comes to an idea that if we put different type of rooms properly together, and they'll together offer variable uses by linking the room in different ways.

Also when the building changes its owners, the rooms should change their linkings to satisfy its new master.

So that we can manage a large building with hundreds of rooms according to each and everyone's need without

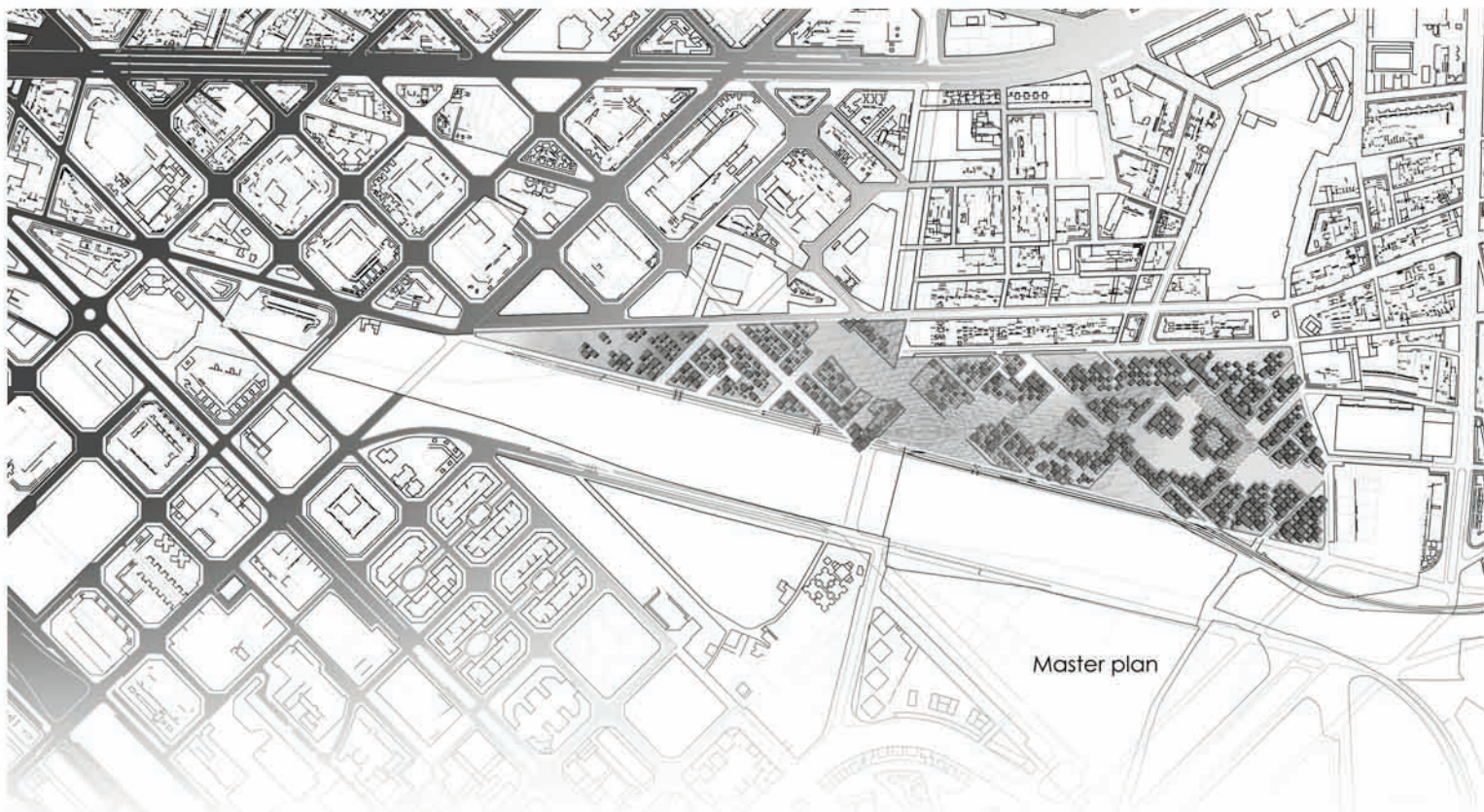
wasting many unused or unnecessary spaces for **all** the rooms are not to be rented or bought as units, but as the room itself separately.

Concept



balcony / yard
public / corridor
kitchen
bath / shower / toilet
room type 2
room type 1

5-04



Zoning

The site has been divided into three zones.

[Zone I]

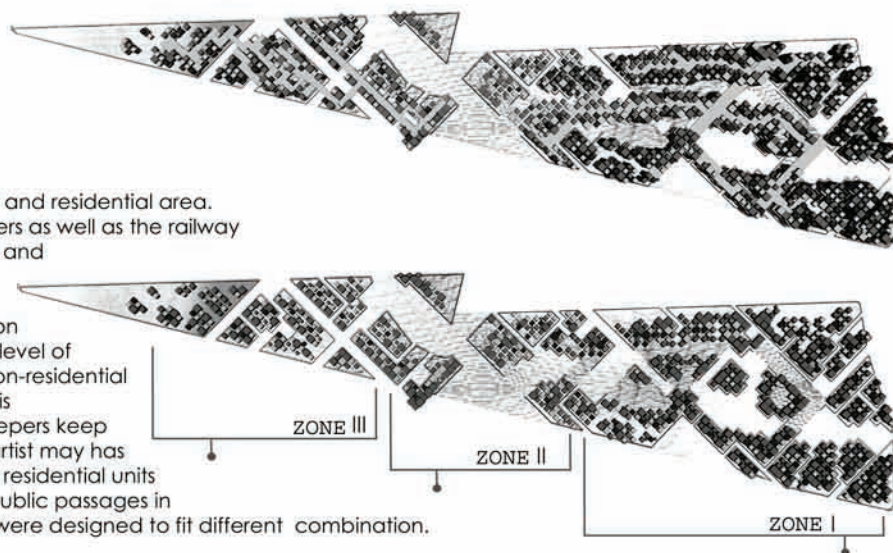
This zone plays the role of both shopping district and residential area. This area provides services for community members as well as the railway passengers. The design concept here is "hybrid" and "variability." By modifying variable passages to link various rooms, house owners/renters can modify and expand the space to suit new function and new program. The ground level and second level of most buildings in [zone I] is mainly designed for non-residential purpose. Nevertheless the mixed use of property is demonstrated in the plan. In some cases, shopkeepers keep their residences at the upstairs of the shop. An artist may have the workshop downstairs of the showroom. Some residential units were designed to create a new layout of semi-public passages in order to create variability. The size of the rooms were designed to fit different combination.

[Zone II]

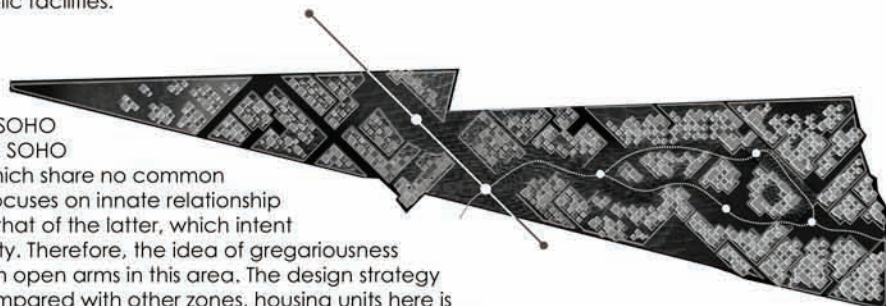
Zone II is an important interface of connection. There are big plaza and wide roads. Buildings here are mainly pensions, shops, and public facilities.

[Zone III]

Zone III aims at reforming the dialogue between two different types of housing, nuclear family and SOHO (or Bachelor flat). Residence of Nuclear family and SOHO (Small office or home office) are two categories which share no common ground. The intrinsic quality of the former, which focuses on innate relationship and value within the family members, collide with that of the latter, which intent to express laissez faire, individualism, and personality. Therefore, the idea of gregariousness and collective use of facilities is not welcomed with open arms in this area. The design strategy here focus on the geography of flats and units. Compared with other zones, housing units here is relatively larger, more "full-functional", and more comfortable with better views. However, variability remains the crucial issue in this zone.

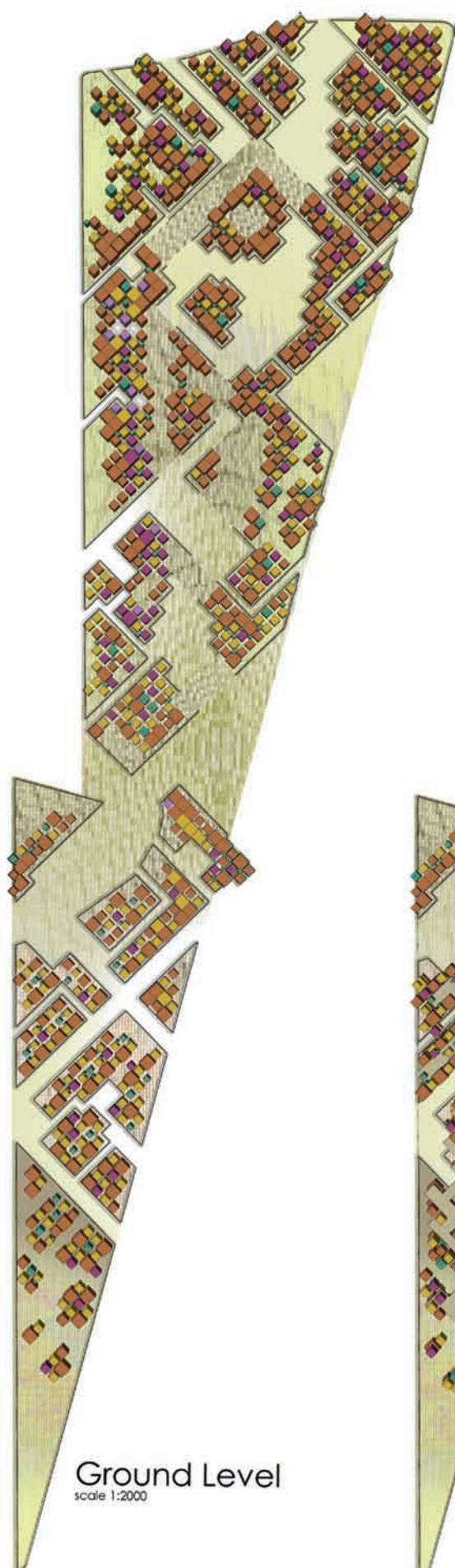


Zoning



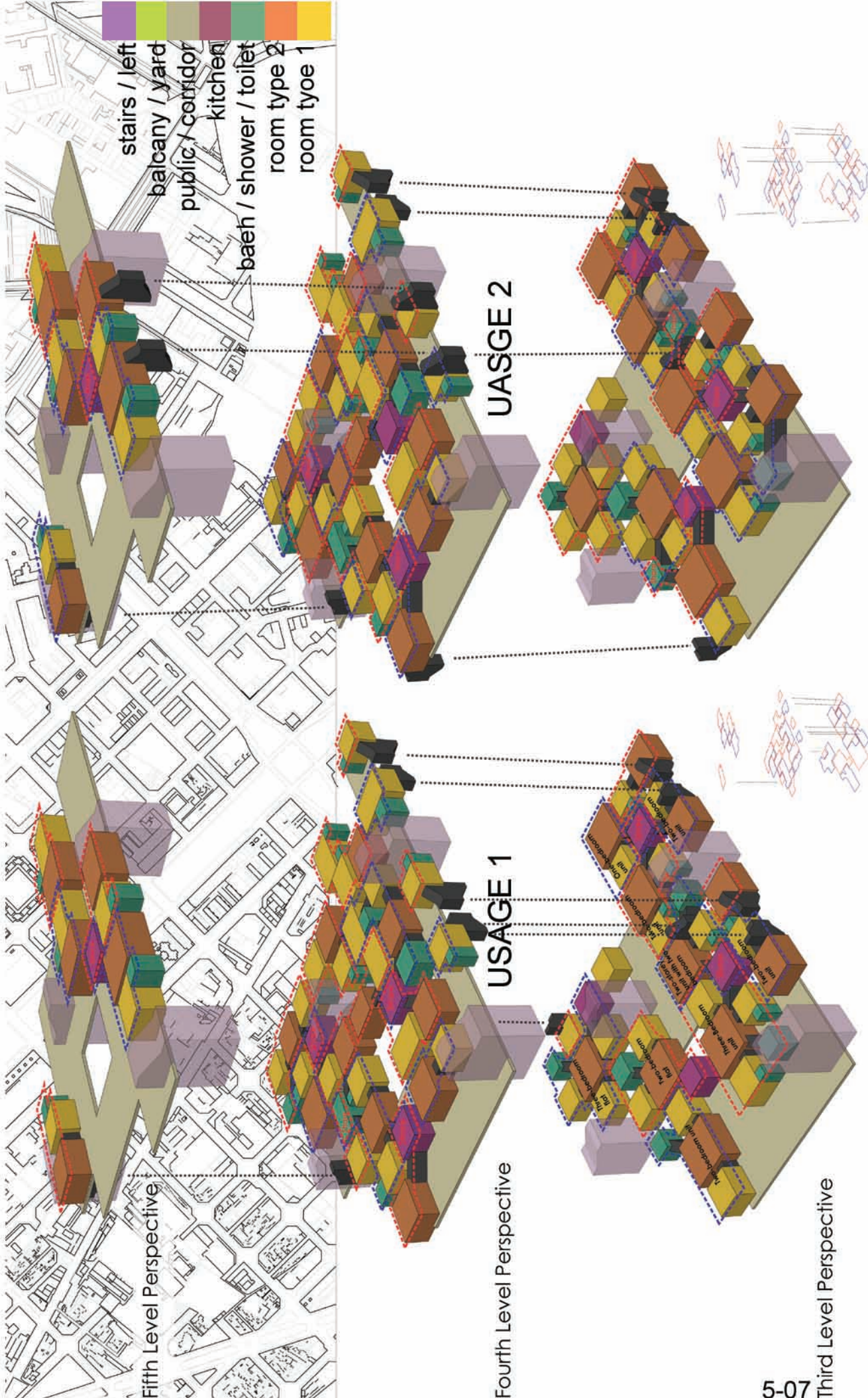
Access system

5-05



- 5-06
- stairs / left
- balcany / yard
- public / corridor
- kitchen
- baeh / shower / toilet
- room type 2
- room tyoe 1

An Example of changesble usages located in Zone III, designed expecially for nuclear families, SOHO or Bachelor flats. Usage 1 and Usage 2 are totally the same rooms, just for different ways they're linked.



[ZONE I]

By modifying variable passages to link various rooms, house owners/renters can quickly expand the space to suit new needs and new programs. The ground level and second level of most buildings in Zone II is mainly designed for non-residential purpose. Nevertheless the mixed use of property is demonstrated in the plan. In some cases, shopkeepers locate their residences at the upstairs of the shop. An artist may have the workshop downstairs of the showroom. Some residential units were designed to create a new layout of semi-public passages in order to create variability. The size of the rooms were designed to fit different combination.

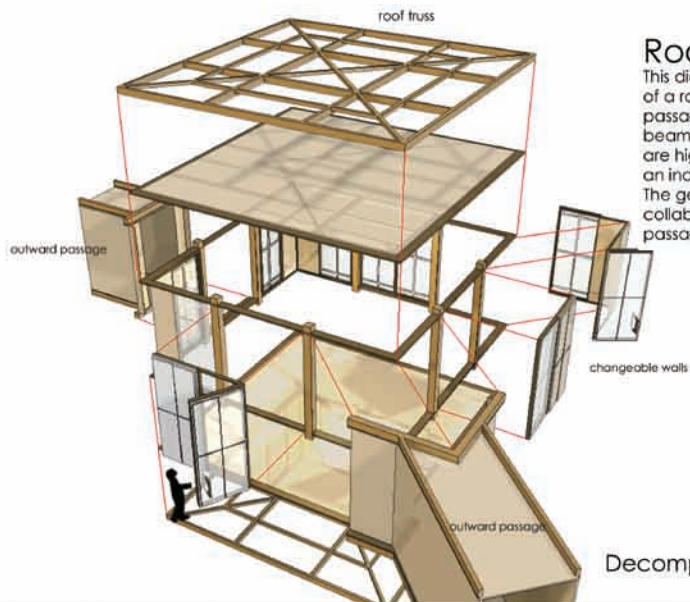
Kitchens, entrances, bathrooms and living rooms are shared by some residents and their neighbors. These semi-public spaces form an interactive interface. Through this translucent layout, residents will actually "live with" other members within the community and become part of the "family." This arrangement intends to transcend the traditional of greater privacy and privacy as a means to confront with aloneness, separation, and indifference brought by traditional social-spatial individualism. In addition, variability in this design provides an experimental framework to explore the possibility of program.

USAGE 2

Second Level Plan
scale 1 : 500

Ground Level Plan
scale 1 : 5 00

To examine and experiment on the feasibility of the plan, two programs are developed. The design basically build on



Room unit and its structure

This diagram illustrates the tectonic organization of a room. In this room, walls, openings, doors, windows, outward passages are variable to fit users' requirements. Columns, beams, and roof truss are invariable, while other components are highly changeable. Rooms are suspended/supported by an independent structural system. The geography of the columns were especially designed to collaborate with the modification of the openings and outward passages.



Decomposition Diagram of a unit



Rooms and units
scale 1:200



Rooms and units
scale 1:200

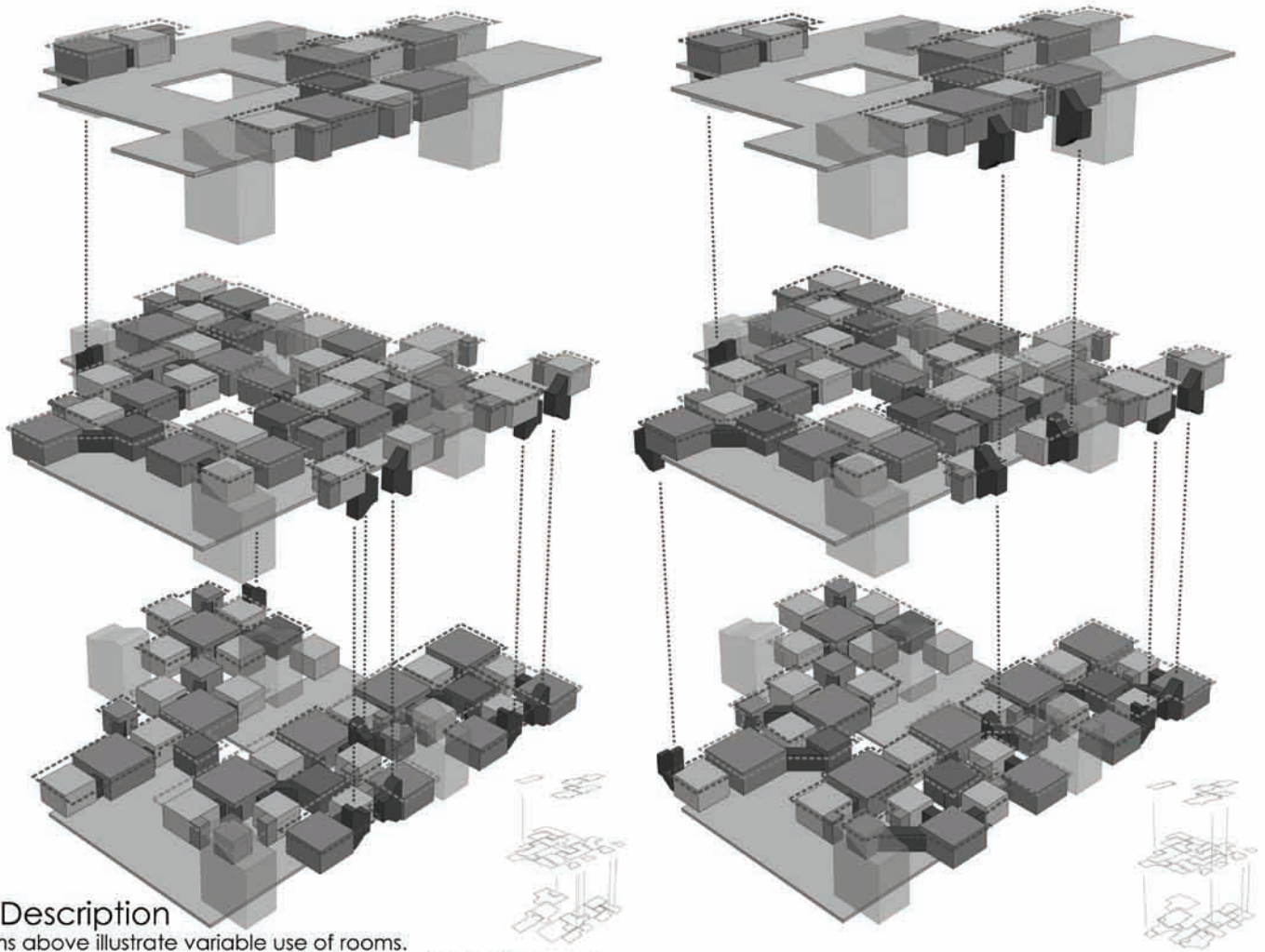
Illustration of two programs

Diagrams on this page show how two different programs are applied to the same buildings. Under the framework of this design, a house owner could purchase or rent spaces as his /her own will. A room could be used as a living room or as a study. The function of space becomes momentary and versatile. However, there are some subtle restraints. For example, facilities such as bathroom which requires apparatus, pipelines and electric installations cannot be as variable as others. Therefore the function of a kitchen or a bathroom is not changeable.



Rooms and units





Design Description

The diagrams above illustrate variable use of rooms. Frames of dotted line shown pointed out the territory of individual residences. Compare the diagram on the left and right, you'll find that it's the same building under two different program and usage.

Question

What is the new strategy of housing when facing the problem of the rapid growth of population and diversity of needs?

New aspect of housing

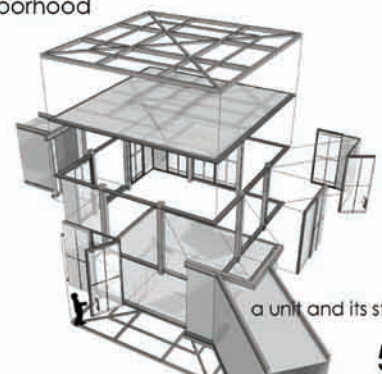
Before we answer this question, we should investigate the traditional organization of the "user-spatial" relationship of housing. Housing used to fulfill the living requirements for a small family. Typically, a house has at least a living room, a kitchen, a bedroom (sometimes more bedrooms), and a bathroom. A house is a complete integral as the minimal unit of a community. Obviously, this framework is suitable only when the needs, quantity, and organization of house users are stable. In conclusion, the house is a fixed container of human beings. But, today we are facing the problem of diversity and constant variation. Therefore a house should be able to interactive with needs and users.

Interactive and variable

The idea of this design is to narrow down the scope of housing. The point of departure of this design is to consider the need of an individual as a unit. And units can form a gregarious organization, which could be a family, a dormitory, a small community...etc. A unit can either assemble with other units or be independent. In this design, a "bedroom" is considered as a necessity for a unit. Moreover, a house owner can alter the position of the openings and passages. Living room, kitchen, and bathroom are considered as alternative merchandise for choice. Rooms are selective for assemble. The restraint of wall, openings, and ownership is dissolved, and turned out to be selective conditions. A house owner can choose if he/she wants a door or not. If units unite together, living rooms, kitchens, and bathrooms could be shared. In this case, a plan will be similar to a traditional residence or dormitory. But this design provide more possibility and variation. It brought new kinds of community and neighborhood relationship. In order to classify rooms and facilities, we established a rule for this design:

1. Room type 1-- it could be public, semi-public, or private.
2. Kitchen
3. Bathroom
4. Room type 2 -- private use only.

Housing turns out to a mutative aggregate. Residents are actually living with others. We called this result "housing paragenesis."



a unit and its structure.

Simulation of assembly of units.

