A Very Small House: Designing for Good Living
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Abstract by Yun Kyung Gal

The notion of good living when related to habitation is, particularly in the United States, often associated with houses or apartments of large square footage. This demand for large spaces leads to compromises in architectural integrity and construction quality. In an architectural sense, good living is not directly related to the quantity of space.

In this thesis, I argue that spatial quantity does not necessarily improve people’s lives. Additionally, an excess of space often leads to investments in superficial conventions and products which can be associated with a consumer driven iconic representation of good living. At closer examination, most of these goods and products are disconnected from the most essential qualities of life and contribute little to the quality of our human relations. From an environmental standpoint, large under-used spaces require a larger footprint, i.e. larger parcels of land, with a greater consumption of construction materials and increased maintenance and energy demands over the extended “life” of a house.

In this thesis work I will attempt to search for unique and substantial qualities within a house that is designed to be of a very small square footage. The design philosophy for A Very Small House has, at its core, only the most essential qualities of domestic space. For the personal life of the inhabitant: a refined place to cook, a refined place to bathe, a refined place to sleep. For the life of the inhabitant as a member of a family or a community: a refined place to gather and a refined place to extend.

I use the word refined in this context to mean: very subtle, precise, or exact. A means of ennobling an act or a space.
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A very important part of this thesis work is in the examination and discovery of distinction between the words *house*, *dwelling*, and *home*. These words are often used in architectural writings to mean one and the same thing. In my opinion these words are distinct and quite different in their meanings.

**House:**
Often used as a way of talking about a particular building with inhabitants, but not the activities associated with the building or the people in it.

**Dwelling:**
The act of remaining in a place in peace.

**Home:**
This word best describes a person’s notion of a private place, but not necessarily a building. The home is a person’s permanent comfort zone, or the place where he or she feels most at ease and flourishes. Ideally, a person is born or originates from *home*, and it is also the place where one wishes to die. In this regard, Home seems to fulfill a primordial need for a “permanent” place in our impermanent condition on earth.

With these definitions, I am working as an architect determined to make a house (a building) that is worthy of being a home. A construction that “sanctifies everyday living”, a “center for human joy and connectedness”.

Three Inspirational Small Houses from the Modern Movement

For nearly half of my thesis project, I only concentrated on designing a very small house. Based on work in the second year of my M. Arch 3 program (A House for the Dominican Republic), I had assumed that I would be working on a very small house that was prefabricated, or made from a kit-of-parts (see Appendix B). I was always thinking about Korean rooms, which are essentially transformable spaces that change according to the daily activities and needs of the inhabitants, which lead me to Le Corbusier’s *le cabanon* (Roquebrune-Cap-Martin, France, 1952). This cabin was refreshingly familiar to me based on similar Korean concepts of room. I was inspired by these particular aspects of the design:

- The cabanon (essentially one room) is focused upon a window with a particular view. Through the element of the window, a view to nature expands a very small space. The eye travels through the window, and the space becomes infinite.
- Le Corbusier’s cabin was both refined and confining. It was a place that allowed him to focus his activities (work, sleep, swim, enjoy the Mediterranean climate) based upon an architecture of limits.
- My main inspiration from the Cabin was a confidence that people could live happily in a very small space, as long as the space had an architecture that connected it to the outside environment.

I also noted that the *cabanon* does not have a kitchen. Eating and preparing food, for me, is a very essential ritual associated with the house being a home. There is no *Place to Cook* in Le Corbusier’s small cabin. I feel that this place was obviously of a more “temporary” nature, a dwelling to vacation or spend a weekend in, because it does not have this essential; a flame. Without a flame there is no activity associated with cooking, and there is no warmth with which to welcome guests.

The second example of a house that I found inspiring was Kisho Kurokawa’s *Capsule House K* (Karuizawa, Japan, 1973). This weekend house, using the same capsule unit that Kurokawa used in his *Nakagin Capsule Tower*, was designed upon the idea that it could be expanded according to the owner’s desires by simply adding more capsule units. At the time, I was designing *My Very Small House* to be a composition of modular units, each with a particular function: a bedroom unit, a kitchen unit, a bathroom unit, etc. I was inspired by this particular aspect.
By August 1952 the Cabanon had been completed & Le Corbusier & his wife moved in.

The view of surrounding landscape is nature, to feature as part of the interior.

No place for cooking! Cabanon doesn't have an essential part of dwelling.

Temporary house / use next door restaurant

Couch / cock / cat / bath
of Kurokawa’s design:

- The idea of individual prefab units that could be used to grow or shrink the house. I felt that this idea put an interesting manufacturing twist on my original inspiration of the Korean room. Families could transform their homes over time to accommodate children, adding bathrooms and bedrooms as needed.

Where the Capsule House K fails however, is in its lack of control and its uniformity. One of my committee members pointed out that a manufactured means of enlarging a building without the need for, or involvement of the architect, was essentially an industrial design solution; not architecture. Additionally, Kurokawa’s capsules were all identical in their making. There was no way to accommodate an individual’s desires in the making of this type of home. I do not agree with the notion that everyone might have the same house. Both the house in its construction, and the home as a permanent place for an individual, must address the unique character of its inhabitants.

The third and perhaps most significant house example that I studied is another construction by Le Corbusier. In his La Petite Maison (Vevey, Switzerland, 1923-24), a house for his parents built on the shore of Lake Leman, Le Corbusier was able to accommodate all of the needs and daily habits of the two people he cared for the most. The words of Le Corbusier’s biographer, Nicholas Fox Weber, best describe my attraction to the house:

“He sanctified everyday living while making it easy and practical. To the father who had shown him the sky and the earth, and to the mother who opened his soul to the rhythms and harmonies of music, he returned these qualities in a new form.”

Le Corbusier’s “Small House” is a synthesis of the physical needs of its inhabitants, the physical qualities of a home of reduced square footage, and the physicality of the site:

“Le Corbusier renders it (the house), for all the smallness of scale, grand and sublime. The little house is neatly subdivided into rooms that provided everything Georges and Marie needed.”

What these houses provided for me, in terms of their architectural example, was the realization that the architect uses specific elements in the design of the house in order to describe a way of life that is suitable and exemplary for its inhabitants. The architecture of a room that is focused on one essential aspect of living, rather than a “house part” that can be altered or changed, gives both the construction and the inhabitant a clear purpose. A room designed for sleeping (quiet location in the house, filled with soft light in the morning, with small windows to the night sky, and a toilet nearby) provides everything that the inhabitant needs and allows the architect to concentrate her efforts on specifics rather than on making generalities and their multiple compromises.

Opposite Top: Section and Plan View sketches of Kisho Kurokawa’s Capsule House K.

Opposite Bottom: Plan view sketch of the interior of Le Corbusier’s La Petite Maison. This is the second house designed by Le Corbusier for his parents; the total living area is only 576 sq/ft.

A Very Small House

The initial concept behind at the core of my very small house was to design a very small but flexible space, partitioned so that it could be changed and expanded for one’s living activities and needs throughout the course of the day and the various seasons. This concept has its origins in the rooms of a traditional Korean house, called ‘pang’. Essential to the pang is the idea of enclosed individual rooms that can be opened up and enlarged to adapt to multiple purposes and a variety of activities, including sleeping and eating. The use and size of the spaces within the pang are determined by the immediate needs of the inhabitant, and may change accordingly. For example, a room that serves as a place for eating the family meal can expand to accommodate a special meal served to quests. One room in this scenario is the equivalent of several rooms within a house of Western design.

In Western culture, typically a house is a construction with clearly defined rooms and permanently assigned functions. The naming is evidence: dining room, living room, bathroom, or bedroom. Flexibility and adaptability of a constructed space is more common in Western commercial buildings and or cultural institutions such as the Centre Pompidou where the architecture is of a much larger scale. Permanence in the Western house has its origins in the Greco-European tradition upon which the West bases many of its universal truths. In the description of the house in The Ancient City, the house is considered the root of the family. Rooms and lands represent the family and were considered permanent.

In this thesis I attempt to reconcile very different origins. The basic question of whether to merge or integrate Asian and Western ideas in a domestic setting take a primary position.

Ideas derived from the pang, combined with Western technologies promised flexibility, openness, and adaptability. I initially explored prefab units and modularity (technologies) as a means of growing and shrinking the house, but encountered problems when addressing the question of what is architecturally essential regarding home and permanence. In answering this question, I ultimately returned to older technologies (brick construction), and a more primordial understanding of the house as home. Home and flexibility/changeability may have a limited relationship, as Home implies permanence. The issue of origins can be resolved by going beyond Western or Asian building traditions. Home universally begins and ends as a place for the life of an individual, the place they originate from, the place where they thrive, the place where they wish to die.
Opposite: East corner showing the main entrance with concrete canopy.
**Opposite:** West elevation. On the left tower-like volume, windows are arrayed on the stairwell, on the lower-level volume on the right, windows are placed so as to allow views to the outside from the kitchen.

**Note:** The counter top on the back porch is an extension of the kitchen counter and serves as a food preparation area outdoors.
Opposite: Roof plan
A - Roof Garden adjacent to the Place for Bathing (Floor 2)
B - Skylight over the Place to Extend (Roof)
C - A Place for Bathing (Floor 2)
D - Roof Garden over the Place for Sleeping (Floor 2)
E - Back porch attached to the Place for Cooking (Floor 1)
Below: South-east corner of the house.
Opposite: South-west corner of the house.
Right: North-west corner of the house.
Opposite: North-east corner of the house.
Right: South-east corner of the house.
Opposite: Bird’s eye view of the house showing roof gardens and sky lights.
Below: Bird’s eye view of the house from the North-west.
Opposite: Bird’s eye view of the house from the South-east.
Architectural Elements Essential in a Dwelling
Part One:

Spaces Directly Related to an Individual:
The Place to Sleep
The Place to Cook
The Place to Bathe
Opposite: Floor Plan of the second floor showing the place to sleep adjacent to the toilet and bath.

Below: North-East corner showing the location of the place to sleep over the primary entrance to the house.
The Place to Sleep:

A place to sleep is one of the most significant spaces in a house. This is a room for rejuvenating the body through rest. It is also the place for dreaming. Throughout the house I have used natural lighting as a means of making small spaces feel larger. In this room however, I have place the windows strategically in the East-facing wall above clothing cabinets, so that the inhabitant is gently woken by the morning sun. As part of my architectural philosophy in bringing nature into the small house through the placement of windows, I have put skylights above the head of the bed so that a person can fall asleep (and dream) under the stars.

The materials of the space (the floor specifically) were determined so that the inhabitant would feel warm and comfortable in a very small room. The inhabitant will get out of bed in order to use the toilet, and her feet will touch the smooth, warm floor, rather than a cold terrazzo.
Below: Section showing the placement of the place to sleep on the second floor, above the primary entrance. The roof space is accessible and can be used as a potted-plant garden.

Opposite: Section through the place to sleep, hinting at the materials and construction of the roof and floor structure
Opposite: Floor Plan of the first floor showing the place to cook adjacent to the guest toilet and the stair library, the place to extend.

Below: South-West corner showing the location of the place to cook.

Following Pages
Page 33: Section/Plan through the place to cook showing the large glass pocket door and terrazzo floor finish. There is a small laundry room adjacent to the place to cook. Wet laundry can be taken out to dry in the sun by way of the door that opens onto the back porch.

Page 34: Preliminary notions of the design of the place to cook included stow-away furniture. An early influence in terms of the transformation of single space into one that could be used for multiple purposes through the use of special furniture includes the work of Allan Wexler.
http://www.allanwexierstudio.com/

The Place to Cook
The Place to Cook:

A place to cook is a very significant and essential space in a house. In my opinion, this is space is the center of the family activity. It is also the space where the flame of the house is used in preparation of food. This is the place where the body is sustained and nourished through the ritual of cooking and eating.

In this room I have designed the South-facing wall as a large glass door. The smallness of the room is altered by the view through this “glass wall” into the garden at the back of the house. Likewise, the floor of the place to cook extends beyond the room, onto a back porch. Smaller windows are placed under the cabinets/above the sink, so that a person preparing food or cleaning after the meal can see outside.

The counter top for food preparation extends through the South-facing wall onto the back porch. Food can be passed through the wall by way of a window at the level of the counter.

The materials of the space are bright and durable. The terrazzo flooring is easy to maintain and resistant to water. The interior walls are plaster with a wax finish. This gives the space a brightness and clean look.
Above: Preliminary Section exposing the interior space of The Place to Cook. A person sitting at the kitchen table is at eye-level with someone standing outside in the gardens. Note: This drawing shows the placement of windows in relation a person on the stair, someone sitting at the table, and somebody outside.

Opposite: White model rendering of The Place to Cook.
Opposite: Plan of the second floor showing the place to bathe with its adjacent roof garden. The garden can be accessed by way of stepping through the large window (A). This space also serves as the means of entering the Library (above the place to extend).

Below: Rendering of the exterior of the roof showing the relationship between the place to bathe above the place to cook.

The Place to Bathe
The Place to Bathe:

A place to bathe is one of the most essential spaces in a home. Bathing is a human ritual that refreshes the body and maintains good health. In Korean culture, the bath is used as a way of preparing oneself for the public in the morning, and as a way of removing the effects of work and public life in the evening.

This space has one very important function in the life of the inhabitant, which is signified by the placement of the tub in the space. At the foot of the tub is a large window that allows natural light (and fresh air) to come into the space. There is also a door onto the small roof garden just outside of this room.

The materials are chosen to be durable and water-friendly. The tub and some pieces of bath related hardware, towel racks and clothing hooks are the only things in the room besides the tub.
Architectural Elements Essential in a Dwelling
Part Two:

Spaces of a Public Nature:
The Place to Gather
The Place to Extend

Opposite: A view from the outdoor garden
towards The Place to Gather.
**Opposite:** Plan showing the place to gather adjacent to the main entrance to the house and the outdoor garden. The most essential architectural element in this room, is the hearth as the focal point of gathering.

**Below:** South-East corner showing the location of the place to gather.

**Following Pages**

**Page 45:** Detail Plan of the place to gather showing notions of materials.
- **A** - Bamboo flooring adds visual warmth and physical comfort. The bamboo flooring gathers the rooms inhabitants in front of the hearth.
- **B** - Terrazzo flooring.
- **C** - White Stucco on brick masonry.
- **D** - Exposed brick inlaid in front of the hearth.

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**The Place to Gather**
**Opposite:** Schematic cartoon section. The cartoon drawings became an important way for me to measure my work as a designer against the expectations I had as a person who would make a life in the house. In some ways, the cartoons became a tool of clarifying intentions. Particularly the section was a quick way to test my current assumptions of space and place in a small house scenario.
The Place to Extend
Right: Axonometric Section showing the staircase in relationship to the windows and the main entrance to the house.

Opposite: Section through the staircase and the wall. (see Appendix A for rise/tread studies).

Following Pages:
Page 53: Staircase studies. Illuminated tread, stair with handrail, etc.

Page 54: Rendering of the stair with window placement and electric lighting.
Below and Opposite: Stair Library with window placement and lighting.
Conclusion

A small house can provide for good living.

There are several pragmatic advantages that a small house has over a house of large square footage: particularly less maintenance demands, less energy consumption, (hence less environmental impact), and smaller initial construction cost. All of these qualities have the potential to translate into a small construction of higher quality materials and better standards of craftsmanship.

In otherwords, small does not have to mean reduction in quality or minimum standards. A small house comprised of distinct and differentiated architectural places can offer an environment for a dignified modern living. In a small, well-designed house, architectural generosities (such as vertical spaces and large window walls) can overcome the perception that small spaces are not comfortable for good living.

My thesis attempts to define good spaces for an individual who might live alone, but enjoys acting as a host to family and friends. My architectural strategies for making the spaces within a small house feel larger employ specific size and placement of windows, directed views, and natural light. Even though the house itself is small (approximately 750 sq.ft.), a vertical space is regarded as important to offer at least one room that is free of claustrophobic horizontality. Bright colors, reflective surfaces, and transparent materials amplify the natural light in a small space and de-emphasize visual corners and boundaries.
Bibliography

Books


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Magazines and Periodicals


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Appendix A:
Full Scale Mock-ups and Material Tests

During the course of my thesis work I sometimes wanted to have a better understanding of the project; its spaces and materials. The following pages show how full-scale mock-ups and material prototypes were used from time to time.

Included in this section of the book are photographs of floor plan studies using tape at RDF, and wall test using brick and concrete.
Appendix B:
Preliminary Drawings

During the course of my Thesis work I actually developed three different ideas for the small house based on three very different ways of constructing or fabricating the project. This section of the book contains early drawings from the small house project that reflect ideas of the house as an expandable pre-fab house, a module unit “kit of parts” house, and a fiber-glass shell construction.

*Opposite:* Floor plan for the original pre-fab small house showing the influence of the *pang*. This pre-fab unit had the quality of being able to be extended/expanded by the inhabitant in order to meet spatial needs.
Previous Page & Opposite: The small house as a manufactured unit comprised of a one-piece molded fiberglass shell with integral furnishings.
Appendix C:
Preliminary Study Models