

ABSTRACT

Title of thesis: "COURTYARD TRANSFORMATIONS": A PROJECT
FOR THREE HOUSES, HEYRI ART VALLEY, SOUTH KOREA

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Thesis directed by: Professor William Bechhoeffer
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*"There is the paradox: how to become modern and return to the sources:
how to revive an old dormant civilization and take part in universal
civilization."*¹

This project is for three houses in Heyri Art Valley, a new town in South Korea intended to showcase progressive Korean and International Architecture. In order to participate in a progressive international design culture the planners and architects of Heyri have looked to western models and overlooked Korea's traditions of architecture and urbanism. Like Gaston Bachelard's lament for the apartment dweller that has no cellar or garret,² Koreans have undergone the recent loss of their traditional housing type, and its complex cultural and spatial relationships. These houses will reintroduce elements of the traditional Korean courtyard house within the context of the new town addressing the dual requirements of a modern house program and the building limitations as stipulated in town's master plan.

¹ Paul Ricoeur, "Universal Civilization and National Cultures," (1961) *History and Truth*, trans. Chas A. Kelbly (Evanston:Northwestern University Press, 1965) pp.276-7.

² Gaston Bachelard, "The House, From Cellar to Garret, The significance of the Hut," (1958) *The Poetics of Space*, trans. Maria Jolas (The Orion Press, Inc., 1964) pp. 26-7.

“COURTYARD TRANSFORMATIONS”: A PROJECT FOR
THREE HOUSES, HEYRI ART VALLEY, SOUTH KOREA

By

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Thesis submitted to the Faculty of the Graduate School of the
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DEDICATION

To my wife, Mina

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CHAPTER I – SITE



Fig. 1: Site Model of Heyri Art Valley. The New Town for Arts and Culture combines the planning tools of Seaside with a modernist architectural vision.

DESCRIPTION OF HEYRI ART VALLEY

Heyri Art Valley is a new town for arts and culture currently being developed in South Korea. It is located along the ‘Freedom Highway,’ a road leading northeast from Seoul to the North Korean border. The region, which has been undeveloped since the 60’s, was part of a greenbelt surrounding Seoul, devised primarily to keep South Korean citizens out of harms way after the Korean War. Changing attitudes in South Korea towards the North embodied in Kim Dae Joong’s ‘Sunshine Policy’ have led to several new developments in this region, including the ‘Freedom Highway,’ Paju Book City and Heyri Art Valley.

The vision for Heyri Art Valley as presented in its promotional literature¹, is that of an incubator for arts and culture. There are three aspects to this vision, the residents, the architecture and visitors to the town.

The residents of the town are to be drawn from Korea's arts and cultural communities. In order to encourage this settlement the Heyri Development Corporation is controlling the sale individual lots at below market prices exclusively to individual artists, writers, filmmakers and such, or businesses significantly engaged in arts and culture. The gathering of members of Korea's Arts and Cultural communities in this town and provision of excellent facilities for producing, exhibiting and selling works is intended to lead to significant advances in arts and culture.

The architectural vision for the town is of a collection of excellent buildings by leading young Korean and international architects. The Development Corporation has held competitions and produced a series of publications to draw attention to the town's architecture. The competitions resulted in a short list of architects for significant projects and the design of elements of the town's infrastructure. For important sites, the Development Corporation subsidized a portion of the architect's fees to encourage the quality of the building. The overall architectural quality of the town will be maintained by a process in which all buildings including individual residences must be designed by an architect and are submitted to review by the development corporation and peer architects.

The town is intended as an attraction for Korean and international visitors. Its venues will include numerous galleries, bookstores, cafes, theaters and a theme park for children. A guest house and residency program will host international artists. It will also host large-scale annual events including a summer arts festival.



Fig. 2: Aerial Photo of Site before Development. The hilly landscape which is typical of Korea consist of closely spaced hills and a valley floor that has been terraced to create level fields suitable for growing rice.

PHYSICAL CONDITIONS OF HEYRI ART VALLEY

The landscape of the region, which is typical of Korea, consists of closely spaced hills and a valley floor that has been terraced to create level fields suitable for agriculture. A new six-lane road network has been constructed in the area and connects the site to the “Freedom Highway” nearby. The area, which is generally rural and undeveloped, has some non-agricultural settlement including occasional roadside restaurants and motels. The site is immediately surrounded on four sides by the new six-lane road network. The approach and primary entrance to the site are located along its western edge and at the low point of the valley. The developments surrounding the site include a cemetery directly to the north, a potential second phase to the Heryi Art Valley to the east, and visible in the distance, a museum for the Paekje Dynasty. The site to the south has already received an infrastructure of paving, benches, trees and lighting which will form a pedestrian connection between Heyri and the hilltop museum.

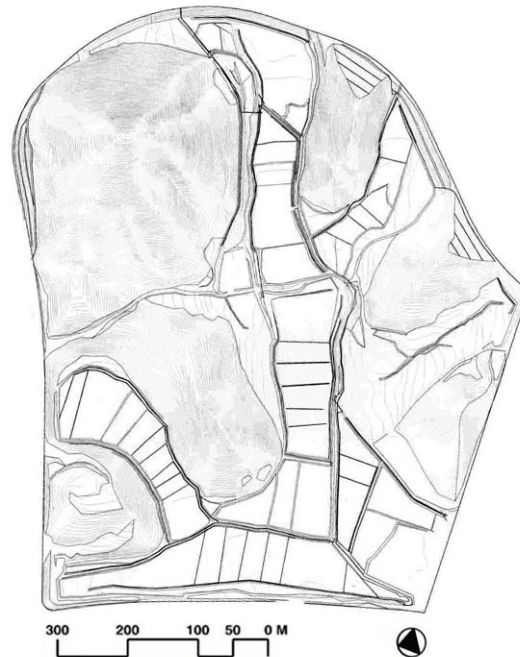


Fig. 3: Site Plan before Development – The site is defined by five hills. The network of valleys has been likened to a hand with four fingers and a thumb. The existing waterways are shown as dark lines and follow the edges of a system of terraced fields for growing rice.

ORIGINAL SITE CONDITION

The site is bounded on its perimeter by a new road network, which typically is at a higher elevation than the site. Internally the site is defined by five hills. The hills which are covered with a new growth of trees planted since the Korean War, create a network of valleys that has been likened to a hand with a thumb and four fingers. The valley consists of a system of terraced fields for growing rice, defined on their edges by waterways used during the rainy season to flood the fields.

This pattern of developing agriculture on the low ground of the topography is common to agricultural societies worldwide. What is particular to eastern cultures is a philosophic mandate that one situates their dwelling with ‘mountain behind, water in front.’ A traditional settlement of this valley over time would involve the initial

settlement of the transition zone between the hill and valley by the heads of families. Sites in this zone are most desirable because they most clearly embody the principle of ‘mountain behind, water in front’. Offspring and servants would build below the initial houses as would subsequent generations. Traditionally this pattern would be repeated and follow the existing waterways to the valley floor such that in fully developed urban settings, one can still discern the initial pattern of hills, waterways and valleys of the original site.



Fig. 4: Aerial View of Heyri Art Valley - –Development follows the overall contours of the site. The urban design consist of three basic elements, the roads, the buildings and the green spaces.

URBAN DESIGN OF HEYRI ART VALLEY

The urban design of Heyri Art Valley is comprised of three basic elements, roads, buildings and green spaces that work together to achieve a vision for the new town. The guiding principle of the urban design appears to be the reinforcement of the site's topographic hierarchy as reflected in the preexisting pattern of hills, waterways and valleys. This is evident both in the limited intervention in the sites original topography and the absence of recognizable formal systems such as a grid or major axis in the development of the urban form. Closer examination will show that that hierarchies of roads, buildings, green spaces and land use are all a reflection of the site's topographic hierarchy.



Fig. 5: Road Network – The roads typically follow the contours of the site. The visual similarity to road networks of a typical suburban American subdivision is misleading. In the example of Heyri Art Valley roads frequently connect to each other creating a network except when this is prevented by extremes of topography.

ROAD NETWORK

The road network in Heyri Art Valley generally follows the contours of the site. The decision to follow the topography rather than attempting to impose a grid or other geometric order is consistent with traditional Korean settlement patterns and ultimately supports the idea of a harmonious relation between built and natural form. The result however, bears an alarming similarity to the road network of a typical suburban American subdivision. Internally this is misleading as the plan does attempt numerous connections between its internal roads resulting in a network of possible routes of travel for pedestrians and automobiles. The *cul de sacs* and other features recognizable from the west are here primarily a result of topographic limitations. The variation of road widths within the site indicates a street hierarchy not typically found in the American suburb. When considered in relation to the larger context, however, the site does have

unfortunate similarity to the American example. The lack of other forms of transportation or obvious connections beyond the immediate site does suggest an American inspired dependency on the automobile.

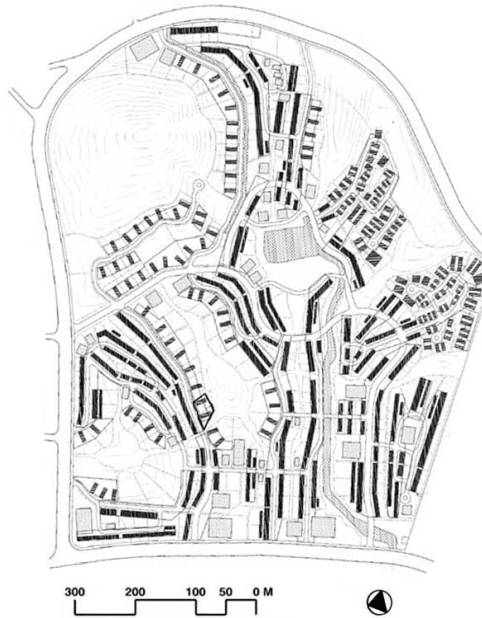


Fig. 6: Masterplan of Heyri Art Valley - –Development follows the overall contours of the site. Each site is designated to receive one of four building types. Corner sites receive ‘object’ type buildings, the streets along the valley floor are lined with ‘bar’ type, steep sites receive the ‘podium’ type buildings and the two valleys at the southeast part of the site receive the ‘gatehouse’ building type. The tools for controlling urban form which are familiar from New Urbanism examples such as Seaside, Florida are used here to achieve a modernist city in the formal tradition of the Weissenhof Siedlungen.

BUILDINGS

The urban form as defined by the buildings is of significant concern to the towns overall masterplan. In order to control the urban form the planners have employed a zoning code similar to that used by DPZ in Seaside, Florida². Individual lots within the masterplan are designated to receive one of four building types. Selections of corner sites are designated to receive ‘object’ type buildings, the streets along the valley floor are lined with ‘bar’ type buildings, steep sites receive ‘podium’ type buildings and the two valleys at the southeast part of the site receive the ‘gatehouse’ building type. Each site

comes with setback requirements as well as height and width requirement associated with the type of building allowed on the site. The significant formal response to the topography is the contrast between the bar buildings, which run parallel to the topography and 'podium' and 'gatehouse' type buildings which are oriented perpendicular to the topography. Unlike the Seaside example, in which an accompanying architectural code is used to encourage the towns well known traditional character, Heyri's planners are encouraging a high-style modernist sensibility.

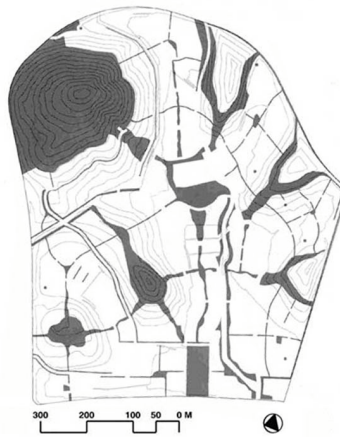


Fig. 7: Green Space Network – The Green Network consist of three basic elements, the hilltops, the lake and stream at the low part of the site and a series of connecting right of ways.

GREEN SPACE NETWORK

In support of the overall topographic development of the site, the green space network is divided into the hilltops, a lake and stream at the low point of the valley and a series of connecting right-of-ways among them. The logic of the plan is quite clear and seems successful from an environmental point of view. That is, the continuity of green space arguably provides a continuity of habitat for wildlife inhabiting the site. The hilltop parks provide residents with a recreational amenity, the lake and stream a common gathering place, and the network of connecting green spaces behind and between buildings a soft alternative to the road network. From the point of view of a model new

town in the modernist tradition, the deployment of green spaces has certain benefits. It is well placed to provide a backdrop for the architectural works on display, and unlike the anti-street polemical garden cities of le Corbusier, this town has a well-defined street network. Recognizing the need for different types of outdoor space, the plan incorporates open hardspace in three locations, the community center, the lake and the shopping area.

While the overall level of consideration and design given to the towns green and open spaces is quite remarkable, two aspects cause concern. The central feature of the town is a wetlands/lake surrounded by what amounts to a traffic circle. Contrary to the Seaside example of town planning³, the central open space is not paired with either the highest residential density or its commercial and administrative center. While this 'green' center seems appropriate as the visual focus of the town, it might suffer from the failure to concentrate other activities around this open space.

The second aspect of concern is the network of connecting green spaces that run behind the buildings. This network, which occurs on privately deeded land, is created through a restriction on outbuildings and privacy fences. Again the design guideline promises to be visually compelling through the elimination of all that 'messy stuff' that usually takes place behind houses. Two issues, however, arise from this arrangement. First, individual owners are limited in their ability to create private outdoor space. Second, the individual buildings, like the example of Radburn, NJ,⁴ are faced with idealized goal of having two fronts without any apparent attempt to reconcile the inherent difficulties⁵.

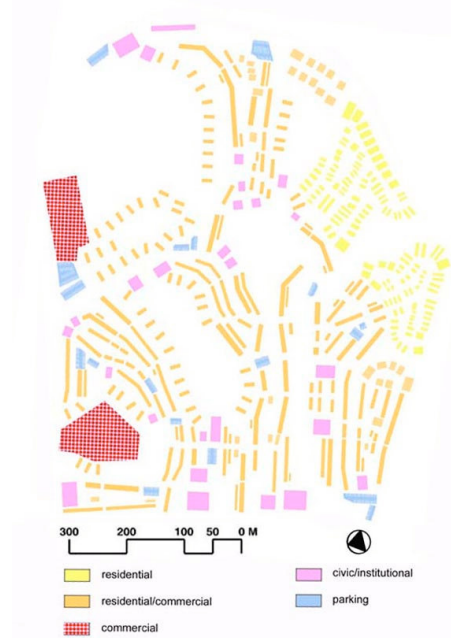


Fig. 8: Land Use – The zoning concept for Heyri is primarily vertical. Following a ‘Live/Work’ model, it is intended that most of the sites be developed with a ground floor commercial use and residence above. Corner sites have a greater allowable footprint allowing for larger civic and institutional uses. The exceptions are the two commercial developments projected for the town’s northern edge, and the two strictly residential areas along the southern edge.

LAND USE

The entire town is designated as a special zone for arts and culture. It is intended not just as a weekend or bedroom community for Seoul’s cultural community, but as a destination for cultural tourism. The targeted demography of the town is ensured through a purchase requirement that all land be sold either to individual artists or owners of arts and cultural businesses. The idea of an arts village is supported through the use of vertical zoning for most of the town. The ground floor is designated for cultural and commercial uses such as galleries, bookstores, artist studios and cafes, with residences above.⁶ Special zoning for corner sites augments the pattern of small shops with residences above. Corner sites have greater allowable footprints than mid-block sites and are viable for larger cultural venues such as theaters, museums and a film studio.

The exceptions to this general zoning pattern occur along the northern and southern edges of the town. The northern edge of the site has two areas designated to receive larger scale commercial development. The southern edge of the site has two pockets of exclusively residential development. These sites are *cul de sacs* caused by the topography and generally not viable for public uses.

There are several provisions for parking within the town. All buildings have a minimum-parking requirement based on their size and use. Numerous small surface parking lots are integrated into the plan. Three larger parking lots are located at the periphery of the site.

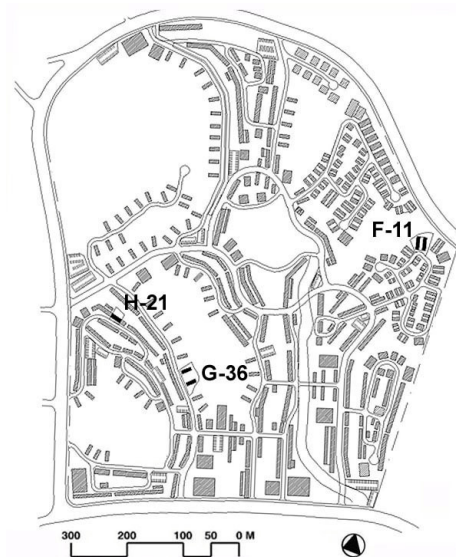


Fig. 9: Individual Sites – The three sites to be developed are designated by number and indicated in black. They include two different building types.

INDIVIDUAL SITES

The three sites to be developed are separately owned by members of the same family and are scheduled to be built at the same time. The sites vary according to their

location, topography and the building type designated by the master plan. Two of the sites, G-36 and H-21 are located in a river valley at the northwestern corner of the town and are to contain both residential and a commercial/cultural function. The third site, F-11, located at the southern edge of the town is more remote due to the topography, and is designated to receive primarily residential use. There are general requirements in the town code as well as individual setback requirements for each site.

GENERAL SITE REQUIREMENTS

Building Coverage	50% max.
Building Area	1 F.A.R.
Height Limit	12 meters
Front Setback – 1 st Floor	1 meter
Front Setback – Upper Floors	as drawn
Parking	1 space/ 300 m ²

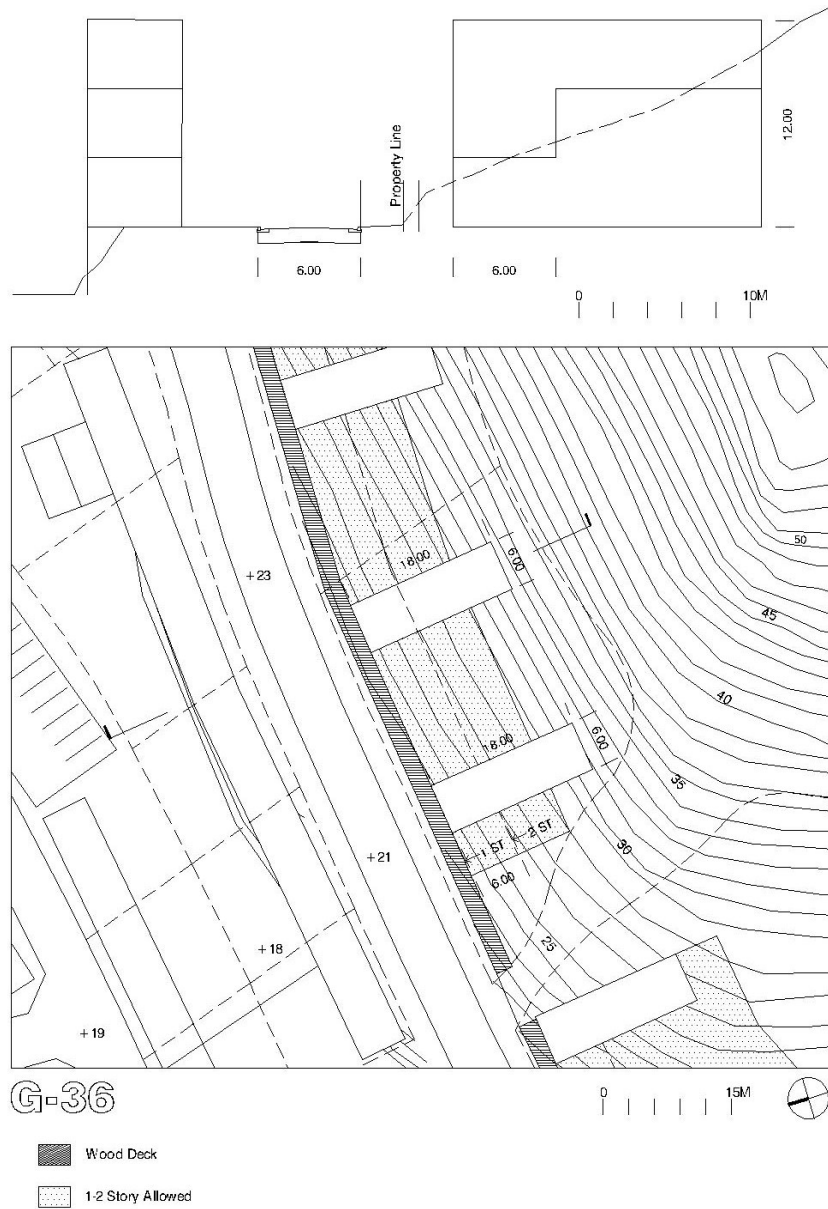


Fig. 10: Site G-36. This site allows two 3-story 'podium' type buildings on a 1-2 story platform.

G-36

Site Data:	m ²	s.f.	pyung(1pyung=3.3m ²)
Site Area	1156	12,210	350
Allowable Coverage	578	6,105	175
Basement	no limit		
1 st Floor	560	5,880	170
2 nd Floor	330	3,465	100
3 rd Floor	216	2,268	65
Total Building Area	1156	12,210	350

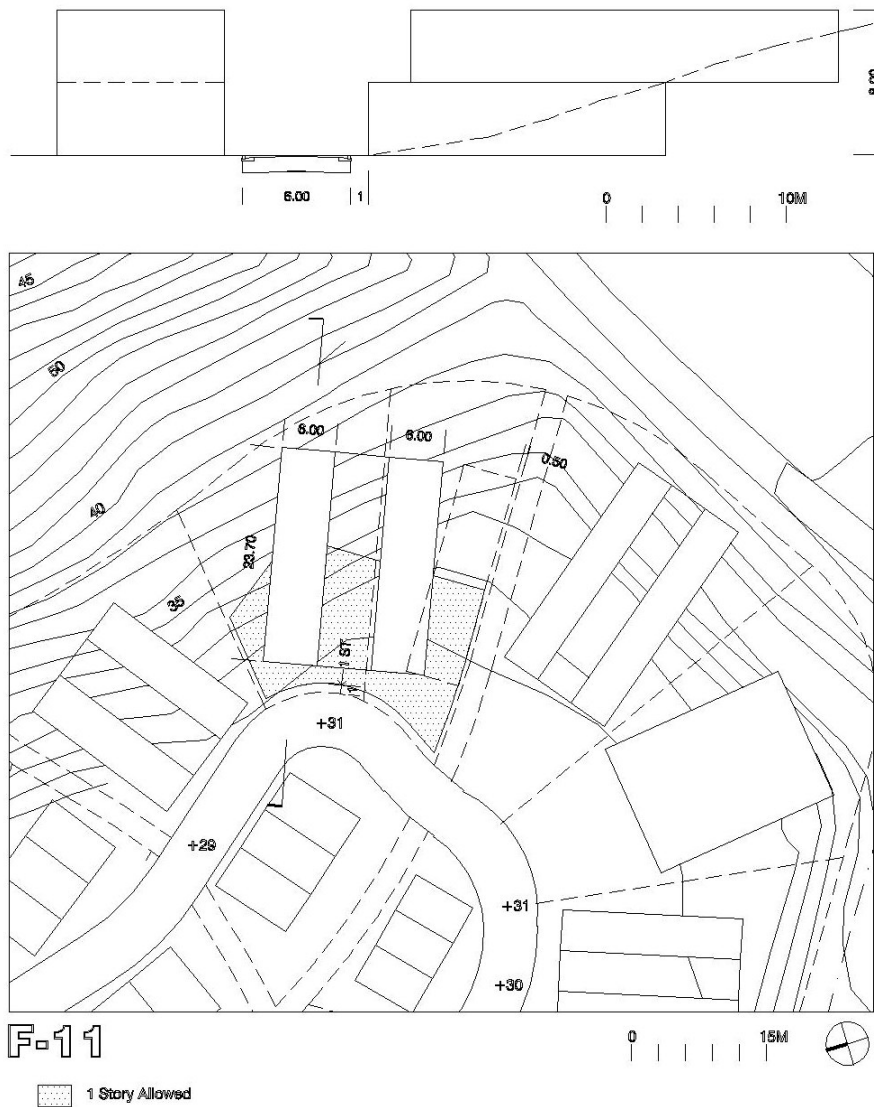


Fig. 11: Site F-11. This site allows two 2-story 'podium' type buildings on a 1-story platform.

F-11

Site Data:	m ²	s.f.	pyung(1pyung=3.3m ²)
Site Area	1057	11,098	320
Allowable Coverage	528	5,549	160
Basement	no limit		
1 st Floor	585	6,143	177
2 nd Floor	330	3,465	100
Total Building Area(Allowed)	1057	11,098	320

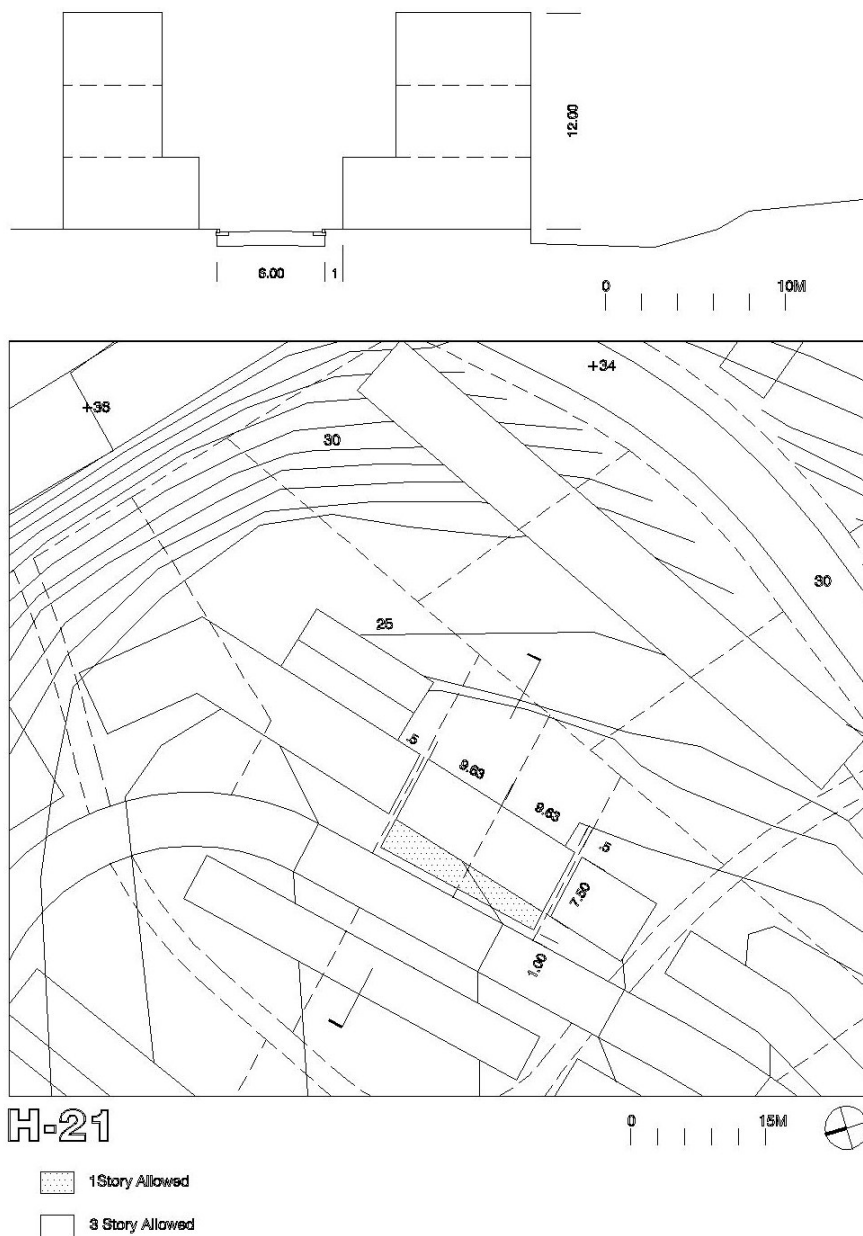


Fig. 12: Site H-21. This site allows two 3-story bar type buildings.

H-21

Site Data:	m ²	s.f.	pyung(1pyung=3.3m ²)
Site Area	463	4,861	140
Allowable Coverage	231	2,425	70
Basement	no limit		
1 st Floor	201	2,110	61
2 nd Floor	145	1,522	44
3 rd Floor	145	1,522	44
Total Building Area(Allowed)	463	4,861	140

CHAPTER II – THEORY



Fig. 14: Site H-14, Architect Suh Hailim. The architectural goal of the town as evidenced by initial design images such as this, is to produce buildings that are exemplary of a progressive international design culture.

THE PROBLEM WITH HEYRI ART VALLEY

The paradox put forward by Paul Riccoeur, ‘how to become modern, and return to the sources,’ is the essential problem raised by the project for Heyri Art Valley. One could raise specific concerns regarding aspects of the town’s plan such as its land use strategy or ultimate reliance on the automobile. These however could arguably be compensated for by the town’s progressive interest in urban form and the attitude of responsibility towards the sites pre-existing ecosystems. The cultural issue of why this town in this place at this time is really of primary concern. Why does this town, conceived as an architectural showcase, in Korea and at the beginning of a new century, have so little that could be identified as ‘Korean.’ ‘In order to get on the road toward modernization, is it necessary to jettison the old cultural past which has been the *raison d’être* of a nation?’⁷

It is important to have an historic perspective on Korea. This is a country known until the beginning of the twentieth century as the ‘Hermit Kingdom.’ Korea experienced

thirteen centuries of continuous social order under the Shilla and then Choson Dynasties until invaded and occupied by the Japanese in 1910. Following liberation from the Japanese in 1945, the country was physically devastated by the subsequent civil war. Modern Korea's remarkable transformation from an essentially medieval agrarian society into one of the world's leading industrial and technological societies occurred largely in the short period from 1960 to the present. The building culture in Korea during this period has been driven by the large shifts of population from the countryside to urban centers and is characterized by seemingly endless concrete high-rise housing developments and a massive freeway system. The success of this transformation has relied largely on the adoption of western style construction methods and has resulted in an impressive if not inspired architectural landscape.

Korea has arrived. Its goods and services are competitive worldwide and its citizens enjoy one of the highest standards of living in the region. There is a concerted effort across disciplines to achieve a comparable shift from quantity of new development to quality of new development. Heyri Art Vally epitomizes this change in attitude. It is intended to show Korea and the world Korea's ability to produce architecture of the highest quality. It is how this shift to quality is envisioned that is problematic.

The Korean example displays an essential problem of post-colonialism put forward by Edward Said in his classic text on the subject, *Orientalism*⁸. For Said, the non-western world has come to see itself through western eyes. Not only is there a pattern of cultural domination between *Occident* and *Orient* in which the *Occident* maintains the upper hand, but non-western subjects have internalized the discourse of *Orientalism* and thus participate in their own domination. Korea sees and accepts

western culture as superior and envisions its path to both technological and cultural progress in western terms.

Not only is the urban plan for Heyri Art Valley conceived according to the western style automobile suburb, but the architecture promises to be of a largely western pedigree. The initial selection of architects for this town, with few notable exceptions⁹, represents an elite cross-section of Korea's young architectural talent. Their resumes boast educations from leading western universities including Harvard, Columbia and the Architectural Association in London, and work experiences with international stars such as Rem Koolhaas, Steven Holl and Alvaro Siza. This is a generation for which the architecture culture of the west has far greater allure than the architecture and urbanism of their own soil.

THEORETICAL STEPS TOWARDS A SOLUTION

This project is for three houses within Heyri Art Valley. It accepts the point of view of the individual resident/homeowner whose contribution to the town will be limited to the boundaries and restrictions of their individual site. It also accepts the condition that the houses will be built using conventional contractors and standard methods of construction. It is within these limitations that this project will propose to challenge the dominant western model and propose an architecture that is specific to this place and this culture. The individual house, while taking advantage of western innovations in technology, provides the opportunity to achieve a significant transformation of a traditional cultural model. For Korean domestic architecture, the model is the courtyard house, which not only provided shelter for thousands of years, but also was intimately linked to a cosmic understanding of the world.

CRITICAL REGIONALISM

Kenneth Frampton's, 'Towards a Critical Regionalism: Six Points for an Architecture of Resistance,'¹⁰ not only points out the dilemma of sustaining a local culture in the face of an onslaught of universal culture and technologies, but has put forward strategies for a regionally specific architectural practice.

The first strategy outlined under the heading, 'The Resistance of Place-Form', begins with reference to Martin Heidegger's opposition of the modern concept of space, a theoretically endless and divisible medium with the German word *raum*, or place, which implies the presence of a clear boundary. Heidegger argues that 'dwelling and hence ultimately being can only take place in a domain that is clearly bounded.' Based on Heidegger's distinction between space and place, Frampton posits 'the absolute precondition of a bounded domain in order to create an architecture of resistance.' He coins the term 'Place-Form' and lists examples of introspective building types such as the perimeter block, the atrium and the galleria which exhibit the potential to resist 'endless processional flux of the Megalopolis.' His interest ends there and little importance is placed on the specifics of introspective building types. In particular, it is the presence of the boundary and not the potentially meaningful link between specific cultures and their traditional building types, such as Korea and the courtyard house, for which Frampton has argued.

The next strategy, outlined under the heading 'Culture Versus Nature: Topography, Context, Climate, Light and Tectonic Form,' really has two aspects. In the first aspect, context, which topography, climate and light play a part, he advocates a site-specific approach to building. He argues against the bulldozer, artificial light and the air conditioner, which have an equalizing effect wherever they are used, in favor of natural light and ventilation and the terracing of irregular sites. The second aspect, the tectonic

refers ‘not just to the activity of making the materially requisite construction...but rather to the activity that raises this construction to an art form.’ Again Frampton avoids mention of local traditions of building in a specific physical context or the tectonic implications of a traditional building culture. One might assume that this omission is in order to prevent a merely scenographic understanding of local precedents. As Tzonis and LeFaivre¹¹ point out, the ‘critical’ aspect of ‘critical regionalism’ depends in part on the defamiliarization of indigenous approaches to building, and the transformation rather than literal copying of traditional elements for modern application. Ultimately Frampton’s generalized versus culturally specific interest in tectonics is an effort to increase the specific physical presence of a building as an assertion of the *real*¹² over the symbolic.

This theme of the assertion of the *real* is continued in Frampton’s last point, ‘The Visual versus the Tactile.’ He cites ‘the ability of the body to read the environment in terms other than sight alone,’ and points out that the tactile aspects of the building are understood primarily through experience. It is the physical presence of the building, the *real*, that is specific and can only be in one place at one time. Conversely it is the visual aspects of the building that can be reproduced and ‘reduced to information... simulacrum substituting for absent presences.’¹³

The strategies for critical regionalism outlined by Frampton, emphasize the importance of a building’s specific physical presence, and in doing so strengthen the link to a specific place. They, however, avoid certain cultural specifics such as building type and building culture, which would contribute to the goal of this project.

TYPOLOGICAL TRANSFORMATIONS

Quatremere de Quincy defines type as ‘not so much an image of something to be copied or imitated exactly, as the idea of an element which should itself serve as a rule for the model.’¹⁴ It is the root idea ‘in relation to which different people may conceive works having no obvious resemblance to each other.’ There are two notions here that are useful for this project. First, is that ‘nothing is invented out of nothing,’ but rather that a building takes an existing building or type as its starting point. Second, the finished product needn’t bear a visual resemblance to its type. For Quatremere de Quincy, however, the basic building type was Laugier’s primitive hut and its purpose was to argue for the stylistic supremacy of western classicism.

The word type has been successively reinterpreted by different architectural ideologies. A more familiar usage is from J.N.L. Durand¹⁵ who used the notion of type to organize buildings of disparate styles and construction methods according to underlying formal similarities. This enabled him to develop a systematic method of teaching architectural composition based on the combination of existent types. For the purpose of this project, Durand’s understanding of type is appropriate in so far as each house will possess an identifiable relation between building/solid and courtyard/void. The limitation occurs in the translation of the original one-story type and its transformation in the two-three story buildings to be developed in this project.

A more recent definition of type by Thomas Maldonado, “that creation is a process of adapting forms derived either from past needs or from past aesthetic ideologies to the needs of the present,”¹⁶ seems more appropriate to the problem at hand. It addresses the specific concerns of maintaining cultural continuity in the face of changing technologies.

These formal understandings of type from Quatremere de Quincy and J.N.L. Durand do not however, begin to suggest why a typological transformation would be important in addressing the cultural problem of creating new buildings in this context. It is really the structuralist understanding of type that was put forward by theorist such as Roland Barthes and architects such as Aldo Rossi that suggest the meaning associated with the use and transformation of a traditional type. The structuralist understanding is based on a linguistic analogy. The linguistic model holds that language consist of signs, which refer to primary meanings or significations, but are capable of taking on other meanings. The classic example is the rose, which refers to the plant of that name but also signifies meanings such as love and passion.¹⁷ For architecture, distinguishable spatial types are the basic signifiers. In the case of Rossi, the importance of the monument was not based on the specific event that caused the monument to be erected but rather on its role as a spatial landmark around which an individual's experience could be organized.¹⁸

Gaston Bachelard, in discussing the phenomenology of the house, speaks of the importance of the cellar and the attic as distinct spatial types around which completely separate sets of emotional experience are organized.¹⁹ He placed fundamental importance on the vertical extremes of the typical western house and laments on the apartment dweller that no longer has these spaces. In the Korean context, it is the courtyard house with its clearly demarcated gate to the outside world and the openness of its inner courtyard, which is of fundamental importance. These are the spatial types around which generations of Koreans have organized their emotional experiences and formed their understanding of the world. In transforming the elements of the courtyard type to the current context, this project aims to continue the possibility of a specifically Korean understanding of the world.

TECTONIC TRANSFORMATIONS

*To rob a people of tradition is to rob it of its inborn strength and identity. To rob a people of opportunity to grow through intervention or through acquisition of values from other races is to rob it of its future.*²⁰

Much of discussion thus far has surrounded the cultural problems created through the introduction of new modes of construction. Frampton is not alone in pointing out the ubiquitous nature of concrete, steel and glass as applied in regional context. What we recognize as traditional architecture, generally owes much of its architectural character to the locally available materials and traditional building techniques. In the Korean context, these have been replaced by the modern methods and materials, and as the quote above suggests, to deny their use would be to rob Korea of its future.

Frampton offers the suggestion of a “tectonic structure derived from a peculiar structural mode,”²¹ and goes on to argue the general importance of tectonic expression. It is worth considering the traditional clay tile roof and the post and beam structure that supports it as distinguishing features of Korean architecture and possible subjects for a tectonic transformation. The primary problem with the roof is its iconic form, which might render any transformation primarily scenographic. The issue with the post and beam structural system is that to achieve a similar structural density in spite of the increased spanning capacities of modern structural systems might be structurally redundant. These possibilities will not be ruled out, however there is another aspect to the traditional building system, the internal relation between heated and unheated spaces that will be explored. Heated spaces known as ondul or heated floor employ radiant floor heating systems and are surfaced wall, floor and ceiling with paper creating spaces of abstract geometric simplicity. Unheated spaces known as maru or wood floor

feature cross-ventilation and have a rich materiality resulting from exposed structural systems. The virtue of this distinction is not only that the heated and unheated spaces are constructed differently, but that their difference is understood programmatically. A transformation of this spatial pair promises to have primary impact on the experience rather than the image of the house.

The Korean building culture rather than a given set of materials and forms might also be useful in responding to the ubiquitous nature of modern materials. Unlike the American example where trades and craftsman are increasingly replaced by products and technicians, Korea possesses a remarkably skilled construction force. The western model has been to diminish the amount of skilled labor required on-site during construction and look for ways to automate the difficult parts of construction. Distribution has focused on the provision of products such as 'siding' available in limited number of profiles and colors, and with a prescribed set of details as opposed to the provision of raw materials from which a builder might explore wide variety of construction possibilities. Much of the construction industry in Korea, on the other hand, is still centered in the same district that is occupied for centuries which resembles the medieval city with block after block of small shops organized by trade. It is possible to obtain all manners of materials and custom fabrication through direct communication with these merchant craftsmen. This existence of the small shops and individualized construction capacity as opposed to the large scale and standardized western model defies the absolute logic of standardization and provides a unique opportunity for varied types of construction. It is possible to use the modern materials without accepting a globally predetermined outcome.

CHAPTER III – PRECEDENTS

The precedents for this project are organized under two basic categories. The first of course is the traditional Korean courtyard house, which must be understood not just for its courtyard that is a globally recurrent type, but rather for the specific elements of the Korean courtyard and their philosophic basis. The other group of precedents is examples of modern courtyard transformations, which display an increasing level of departure from the traditional courtyard house.

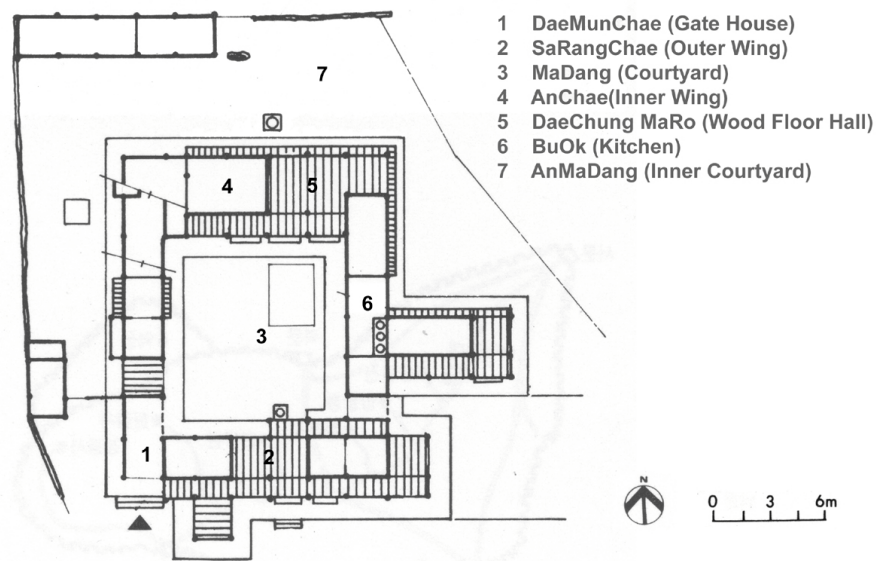


Fig. 15: Typical Korean Courtyard House. The elements of the ideal house are configured according to the specifics of each site and family.

TRADITIONAL KOREAN HOUSING

The traditional Korean courtyard house has been in production for millennia and has evolved a rich set of relations not only in between all parts of the building but with generally held view of the cosmos. The fundamental principle of the Korean house has to do with the separation between the home and the world. Freestanding walls and the relatively solid external walls of the house define this boundary. This separation becomes particularly focused on the street side, which is the location of not only the *DaeMun Chae* (gate house) but also the *SaRang Chae* (husband house). The definition between

home and the world is characterized both by the programmatic placement of the “man” towards the street and society, and also through the ritual of removing off one’s shoes and donning of slippers so not to tract the residue of the world too far into the house.

The *DaeMun Chae* leads to the *MaDang* (courtyard) around which the rest of the house is organized. This space is again understood in “male” and semi-public terms. The *SaRang Chae* and *MaDang* combined, form the protective layers between the *An Chae* (wife’s house) and the street. The connection between the *SaRaeng Chae* and *An Chae* typically has two important spaces, which are the *DaeChung MaRu* (wood floor hall), the shared indoor space of the house, and the *BooUk* (kitchen). Outside of the main courtyard and convenient to the *An Chae* is the *An MaDang* (inner courtyard), which serves the role of both maintaining programmatic male/female separation and providing a space for outdoor preparation of food. The significant element in the *An MaDang* is the *HangA Ri Pan* (Jar Stand) where fermented foods are stored above and below ground. The elements of this house had been replicated for millennia in houses ranging in size from twelve *Pyung* (420 square feet) to very large palaces. The increase in size involves the wings for storage and servants but does not change the fundamental structure of the house.



Fig. 16: The Korean Flag depicts the concept of O-Haeng, five directions. The trigrams refer to the cardinal directions and the yin-yang refers to center.

PHILOSOPHIC BASIS

The house is based on traditional Chinese housing and has its philosophic basis in traditions dating back to Confucius and I-Ching. Traditional Korean society until recently was a Confucian society and received much of its culture and philosophy from China. In Korea, the philosophy is called *O-Haeng* (five directions) and is depicted on the Korean flag which bears the symbol of the Yin-Yang indicating the center, surrounded by four trigrams from the I-Ching indicating the cardinal directions. The five directions are associated with colors, materials, seasons, vital organs, and mythical animals.

SOUTH	WEST	NORTH	EAST	CENTER
FIRE	METAL	WATER	WOOD	EARTH
SUMMER	FALL	WINTER	SPRING	TRANSITION
RED	WHITE	BLUE/BLACK	GREEN	YELLOW
HEART	LUNG	KIDNEY	LIVER	STOMACH
PHEONIX	TIGER	TORTOISE	DRAGON	SNAKE

Fig. 17: O-Haeng (The Five Directions), Table of Associations

These cardinal associations have a universal logic to them, however their full implications are generally limited to trained specialist. For a layman understanding with

regards to the house, they have been simplified to govern the placement of gate, kitchen, bathroom, and the courtyard which constitute the *SaJu* (the four pillars). Koreans generally use the concept of *SaJu* as a way of predicting one's future and fortune. In this case however, we are primarily speaking about the *SaJu* of the house and not of personal fortune. The following diagram indicates a good set of relation between these elements. The location of the "husband" in the northwest quadrant has been added to point out the generally preferred location of the living space.

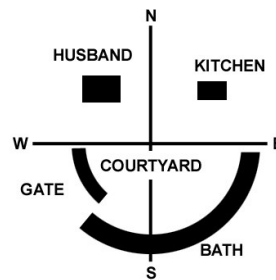


Fig. 18: Diagram of Ideal Orientations for Domestic Program.

The *O-Haeng* and its cardinal associations is a set of universal principles that are applied to different sites and modified based on actual conditions. The design merit of the houses is based on the extent to which they achieve this ideal. The other factors to be considered in the design of the house are the specific conditions of its individual site. The principle adhered to is that of mountain behind / water in front. This basic paradigm has both an agricultural and defensive logic. Agriculturally, in a country dominated by steep slopes, this keeps settlement off the flat lands, which are indispensable for rice production. Defensively, this provides good views of common approaches. This paradigm is the model for thinking about one's relation to tall buildings, roads, and other elements that function in an analogous manner.

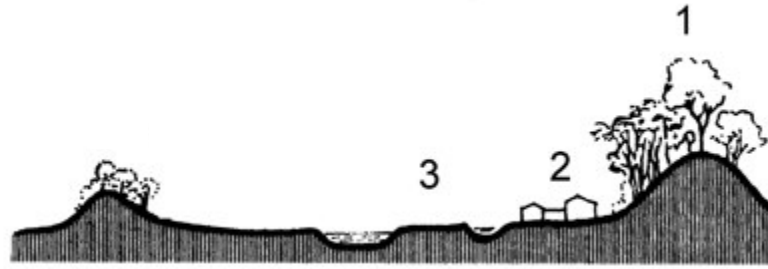


Fig. 19: The Typical Section of the Settlement Site in Korea 1. Mountain 2. Housing site, 3. Fields and river

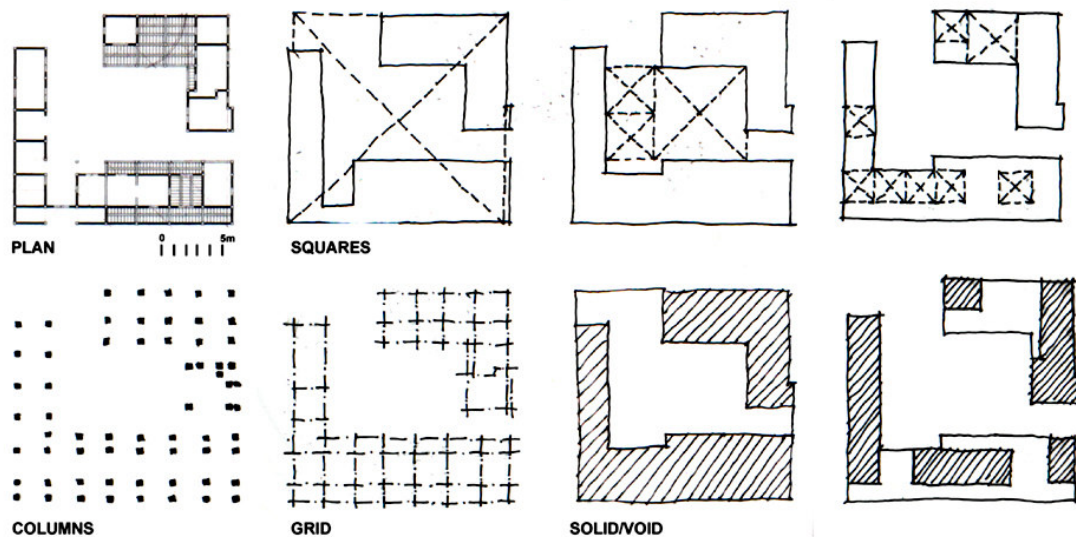


Fig. 20: Central Korea Farmer's House - Korean Folk Village.

PRECEDENT ANALYSIS

The Korean house has certain formal characteristics that should be considered:

1. The house is a complex of buildings covered by separate roofs.
2. The individual buildings are orthogonal.
3. Buildings within the complex are orthogonal when possible. Buildings are often shifted based on site boundaries or topographic conditions.
4. Buildings are not organized axially, with the exceptions of certain parts of palaces. To align the entry and a series of spaces would be considered bad fortune.
5. Certain dimension, 1, 1.6, 2, 2.6 occur frequently which is presumably related to the commonly available beam size.
6. The frequency of these dimensions results in a frequency of square rooms and places, and surprisingly spaces that have a 1:1.6 ratio, better known as the golden section.
7. The recurrent dimensions lend a visual consistency to the elevations, however they are rarely organized with the rhythmic rigor found in western examples.
8. Rarely are four sides of the courtyard are explicitly defined. Typically at least one corner or side is treated as a garden space.

MODERN TRANSFORMATIONS

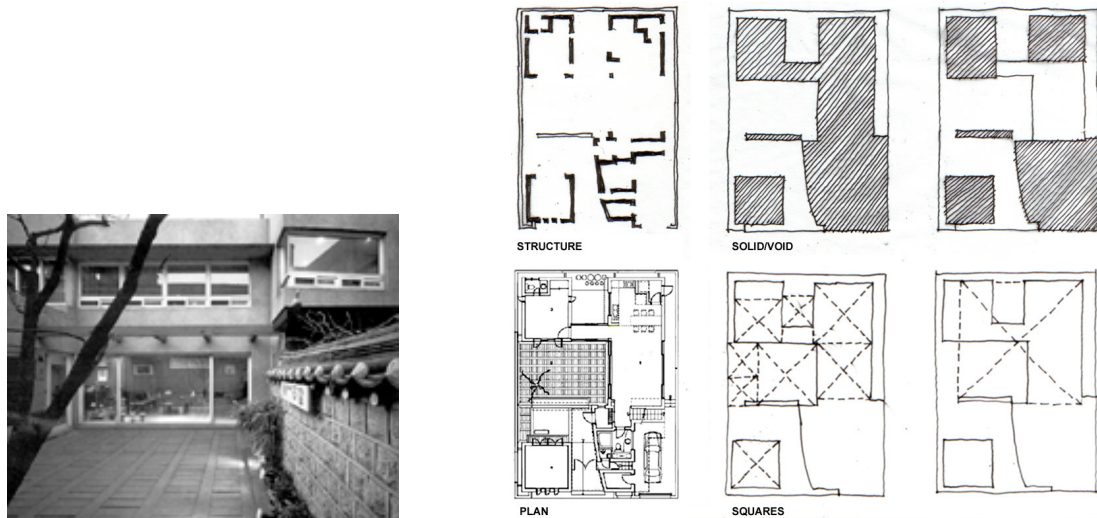


Fig. 21, 22: SuJol Dang - Courtyard View & Analysis. The house has the relation to solid to void and a geometric order similar to the traditional house.

SUJOL DANG BY SEUNG H. SANG

The project *SuJol Dang* by architect Seung H. Sang²² is interesting for its transformation of the one-story traditional Korean house type to a modern two-story structure. The project reestablishes certain cardinal orientations informing the internal distribution of program. The innovations include a modern concept of indoor living areas and discrete location of bedroom and private areas on the second floor. Beyond the courtyard, the house maintains traditional features such as the redirection of the path of entry, the *An MaDang* for outdoor food storage, and even a grandparent suite, referring to the typical multi-generational lifestyle of the traditional house. The material treatment of the house ranges from a modern rendering of stucco wall surfaces to modern interpretation of the typical wood deck, to the literal reproduction of a traditional stone wall. The analysis drawings show that a load bearing masonry structure has replaced the frame structure of the traditional house. The composition of the house has solid/void relations and a frequency of squares as one would find in a traditional house.

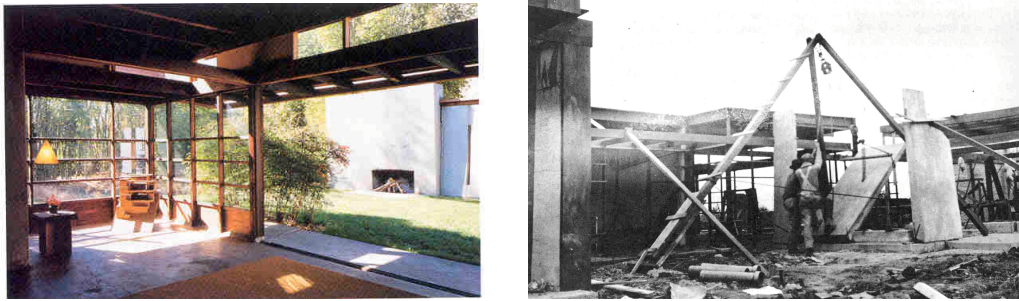


Fig. 23: Case / Schindler Residence by Rudolph Schindler. Schindler, who would have known of the eastern house through Wright transforms the precedent according to a vision of an emergent 'Californian' lifestyle.

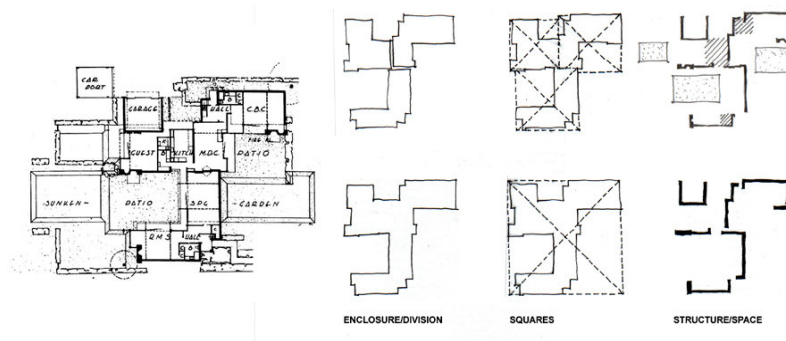


Fig. 24: Analysis – Case / Schindler Residence

CASE / SCHINDLER RESIDENCE BY RUDOLPH SCHINDLER

The *Case-Schindler Residence* by Rudolf Schindler²³ learns from and transforms the Japanese house. The rooms are arranged to create courtyards protected from the street. The innovations in planning involve the design for two separate families and a guest who are accommodated by three L-shaped studios facing separate courtyards. The courtyards and the outdoor fireplace promote the popular Californian ideal of outdoor living. The separate spaces come together in a communal kitchen. The construction is interesting as Schindler used a tilt-up slab for the walls. This construction method is interesting for its low-tech on-site approach to building and the size limitation imposed by the use of individual panels. These panels create a scale similar to that of the traditional Korean frame.



Fig. 25: Gifu Prefecture Apartments by Kasuyo Sejima. This project transforms the courtyard house and its structural rhythm for mass housing.

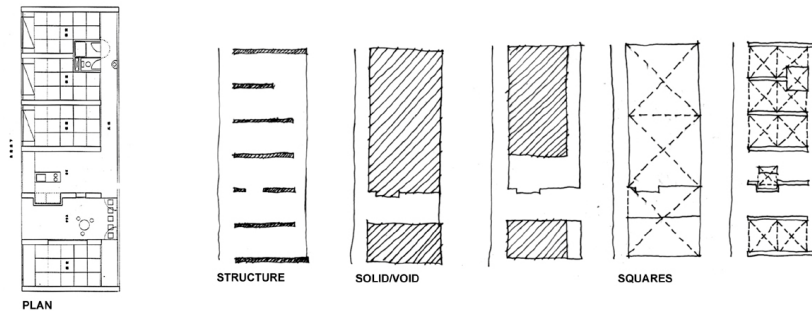


Fig. 26: Analysis – Gifu Prefecture Architecture Type

GIFU PREFECTURE APARTMENTS BY KASUYO SEJIMA

Kasuyo Sejima's building at the *Gifu Prefecture Apartments* in Japan²⁴ is interesting in the transformation of the traditional courtyard house to the concrete high rise apartment. This project, which grew out of standardized housing production, balances the “mass standardization” of dimensions and components with the “mass customization” achieved through the introduction of courtyards, which penetrate the apartment block, and double height spaces, which provide variety of unit type. The courtyard and the continuous balcony on the private side of the apartment reinterpret the traditional *MaDang* and *An MaDang*. The use of a structural module and the cellular nature of rooms provide a spatial rhythm similar to the traditional house.

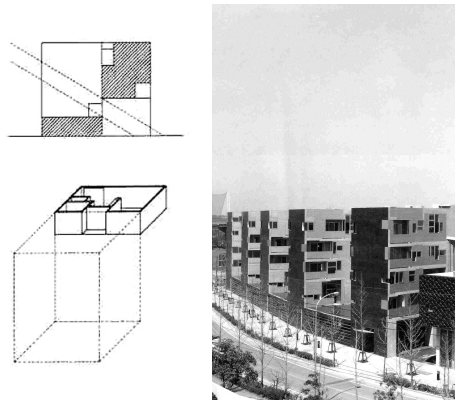


Fig. 27: Fukuoka Housing by Steven Holl. The voids or courtyards which traditionally organized the rooms of a house, are here used to organize the apartments within the housing complex.



Fig. 28: Interior – Fukuoka Housing. The tradition of sliding and folding screens are applied to the apartment interior to provide spatial flexibility.

FUKUOKA HOUSING BY STEVEN HOLL

This project, titled “Void Space / Hinged Space” by Holl,²⁵ transforms two aspects of the traditional courtyard house. Void space refers to the formal and conceptual pairing of open space between and below the buildings. Like *Gifu Prefecture*, the house has been transformed in relation to the context of multi-family housing, here however, the courtyards or “voids” are no longer individualized but shared by the collective. Hinged space refers to the use of interior partitions to accommodate daily and episodic changes. The way walls and doors within the apartment hinge and change the nature of the space borrow from the sliding and folding partitions that animated the traditional house.

CHAPTER IV: PROGRAM

PRAGMATIC DESIGN GOALS AND APPROACH

The project is for individual houses on separate lots constructed by separate owners. The design goal of the project is to develop these contemporary multi-story dwellings based on the architectural and philosophic precedent of the traditional Korean courtyard house. The project will adhere to the financial, structural, and the mechanical models for contemporary house constructions in Korea. The reference to traditional precedent is intended to provide an alternative to the model of the modernist glass box, which has informed much of the house production in Heyri Art Valley.

As the title of the thesis suggests, the central feature of the transformation will be the use of a courtyard. The projects will also endeavor to produce a contemporary equivalent for other elements of the traditional house including the gatehouse, outer wing, and inner wing. In addition, the project will attempt to reproduce the interiority of the precedent. The modular nature of the traditional house will be considered as the structural and materials systems are developed and the general philosophic concepts of the precedent will guide the decision making during the design process.

PROGRAM CONSIDERATIONS

Heyri Art Valley is a new town for art and culture. The master plan calls for this site to be developed as mixed residential and commercial use anticipating that individual residents will either build artist's studio space or include arts related businesses in the development of the sites. The design of each of the houses will include commercial or studio space depending on the particular interest of their owners.

The master plan designates each site to receive either one of four types of buildings, which include the bar, podium, object, and gatehouse type. Each type has requirements regarding size, setback, height, and general massing of buildings. The sites for this project include two types, the bar and the podium. The bar is generally a three-story type oriented parallel to the street with a dedicated green space behind. The podium is a two to three-story type oriented perpendicular to the street and typically designated for steep slopes. The houses will follow the general guidelines of the master plan and specific requirements of their type.

This project for the transformation of the courtyard house recognizes the change in program brought about by modern life style. Some of the specific changes include a diminished distinction between women's and men's roles within the house. The desire for interior circulation between parts of the house as well as year round climate control changes in fashion as well as collections of books, artworks, music and other things require greater amounts of storage space. Despite the modern tendency for individual generations to live separately, these houses will be designed to accommodate several generations of their families.

PROGRAM TABULATION

SITE F-11

The site is zoned for two 2-story podium type buildings. The client is a couple with two adult children and one grandchild so far. They operate a business in Seoul and will not work here. The design will look at 2-bedroom and 3-bedroom versions of a main house. The second building is a studio that may be built as a second phase and will provide growing room for the family. It is possible that all three generations will live here at the same time. The family has expressed the desire that their house be externally modest and internally provide the feeling of being in nature.

		<u>Pyung</u>	<u>m²</u>	<u>Square Feet</u>
<u>Ground Floor</u>	Parking	9	30	300
	Entry	3	10	105
	Utility	7.3	24	252
<u>Second Floor</u>	Living Room	10.1	33.3	350
	Powder Room	.7	2	21
	Kitchen	3.6	12	125
	Pantry	2.3	7.6	80
	Dining Room	7.2	24	250
	Courtyard	7.2	24	250
	Master	7.2	24	250
	Master Closet	2.3	7.6	80
	Master Bath	2.3	7.6	80
	Hall & Stair	7	22.8	240
	Hall Bath	1.2	4	42
	Bedroom	4.6	15.3	160
	Total	66	218.2	2285
<u>Studio</u>	Studio	11.5	38	400
	Bath	1.7	5.7	60
	Storage	3.5	11.4	120
	Office	3.5	11.4	120
Total		20.2	66.5	700

SITE G-36

The site is zoned for two 3-story podium type buildings. The client is a couple with two adult children and three grandchildren. The design will look at a 2-bedroom house with detached studio that will double as a third living space. The parents will live here full-time and their children will visit on weekend and for extended stays. The second building is a studio planned for a future phase that will provide growing room for art collection and family. The parents are both professionally active usually working several hours a day from their bedroom office. The program will include housing an art collection, library, and wine cellar and dedicate space for a garden reminiscent of the father's childhood home.

		<u>Pyung</u>	<u>m²</u>	<u>Square Feet</u>
<u>Ground Floor</u>	2 Parking Spaces			
	Entry/Garden	3.6	12	126
	Utility	6	20	210
<u>Second Floor</u>	Living Room	9.1	30	315
	Powder Room	.7	2	21
	Kitchen	3.5	11.4	120
	Pantry	2.3	7.6	80
	Dining Room	8.7	28.5	300
	Hall & Stair	3.5	11.4	120
	Courtyard	10.9	36	378
	Studio	3.6	12	126
	Wine Cellar	1.8	6	63
	Loft w/Bath	5.5	18	189
<u>Third Floor</u>	Bedroom/Office	9.1	30	315
	Master	4.6	15.3	160
	Hall & Stair	3.5	11.4	120
	Hall Bath	1.2	4	42
	Bedroom	4.6	15.3	160
<u>Total</u>		83.4	274.8	2887
<u>Studio</u>	Studio	11.5	38	400
	Bath	1.2	4	42
	Storage	3.5	11.4	120
	Loft	6	20	210
<u>Total</u>		22.2	73.4	772

SITE H-21

The site is legally divided into two sites, only one of which will be developed at this time. The site is zoned for a 3-story bar type building. The owners of this site are a couple with two adult children. They intend to operate a café on the ground level and a keraoke establishment in the basement. 3-bedroom living quarters will be designed for the second and third floor. The parents and at least one child will live here full time. The clients like concrete and want their house to be 'tough and pretty.' They want the building to be unique on the outside and ordinary on the inside.

		<u>Pyung</u>	<u>m²</u>	<u>Square Feet</u>
<u>Basement</u>	Utility	3	10	105
	Keraoke	27	89.1	936
<u>Ground Floor</u>	1 Parking Space	5.5	18	189
	Entry / Stair	3.6	12	126
	cafe	20	66	693
Total		59.1	195.1	2049
<u>Second Floor</u>	Living /Dining	11.5	38	400
	Powder Room	.7	2	21
	Kitchen	3.5	11.4	120
	Pantry	1.4	4.6	48
	Hall & Stair	3.5	11.4	120
	Courtyard	2.7	9	95
	Closet	.5	1.7	18
<u>Third Floor</u>	Master Bedroom	5.8	19	200
	Master Closet	2.3	7.6	80
	Master Bath	2.3	7.6	80
	Hall & Stair	3.5	11.4	120
	Hall Bath	1.2	4	42
	Bedroom 2	3.5	11.6	121
	Bedroom 3	3.5	11.6	121
Total		45.9	150.9	1586

STRUCTURAL & MATERIAL ISSUES

The most economic mode of construction in Korea is cast in place concrete using a system of modular steel formwork. Typically the concrete is faced with brick tile or stone, however this “artificial” cladding is discouraged by the Heyri guidelines. Also, commonly used is steel frame construction. Wood and its contemporary counterpart, light gage steel framing are used less in Korea. Glass curtain wall systems are economical even for residential use. Another interesting material is the “byuksan base panel,” an extruded concrete composite material which has limited structural capacity and can be used horizontally and vertically, indoors and out. As labor is relatively inexpensive and there is large construction industry capable of specialized projects, it is reasonable that houses will combine one or more structural systems. It is also reasonable that the projects will propose specialized construction and finishes.

There are two design considerations that will effect the choice of the structural systems and materials. First, is the interest in the small-scaled repetitive structure of the traditional house and its transformation for these houses. Second, is a concern for the context of Heyri Art Valley, which is considered remote from the metropolitan Seoul and a “natural” setting. The clients anticipate that they are building a house in nature and would avoid overtly urban connotations.

MECHANICAL SYSTEMS ISSUES

Climate control in Korean housing is generally close to its traditional roots. It is mostly achieved through a combination of radiant in-floor heating and a double layer of exterior glazing and screens. Contemporary systems use gas or electric rather than wood fuel. Air-conditioning has been introduced in the last two decades, and is commonly

achieved through a split system, which includes a wall or floor mounted blower and a remote condenser unit. Only in the last decade have central forced air and VAV system been introduced to private residencies. As commonly observed, the radiant floor heating provides comfortable heat and has the architectural advantage of being low profile. The infrastructure for the town provides for gas, electric, water, and sanitary hook ups at the street side of each lot.

The climate is generally similar to that of northeastern United States. Seoul has four seasons and reaches similar extremes of temperature. The differences are relatively little snow accumulations during the winter and a one-week rainy season at the end of July. In addition, there is a common winter pattern of four warm days followed by three cold days.

SUSTAINABILITY ISSUES

As indicated earlier, the new town is based on a concept of environmental sustainability and endeavors not only to maintain open green space, but also to connect these through a network of green paths. The central feature of the town is wetlands and stream, which work in conjunction with the towns storm drainage system. Most of the town is planned for a mixed residential commercial building type, which offers the promises of creating a live-work community. This feature which would arguably reduce its reliance on its automobile is contrasted by the town's remoteness, from amenities, employment, and public transportation and arguably make it a commuter suburb.

The traditional house model offers the examples of a sustainable approach to environmental control. The southern orientation of the courtyard suggests the passive

solar heating approach to the arrangement of the program on the site. The use of overhangs screens and cross-ventilation were also common in the traditional house.

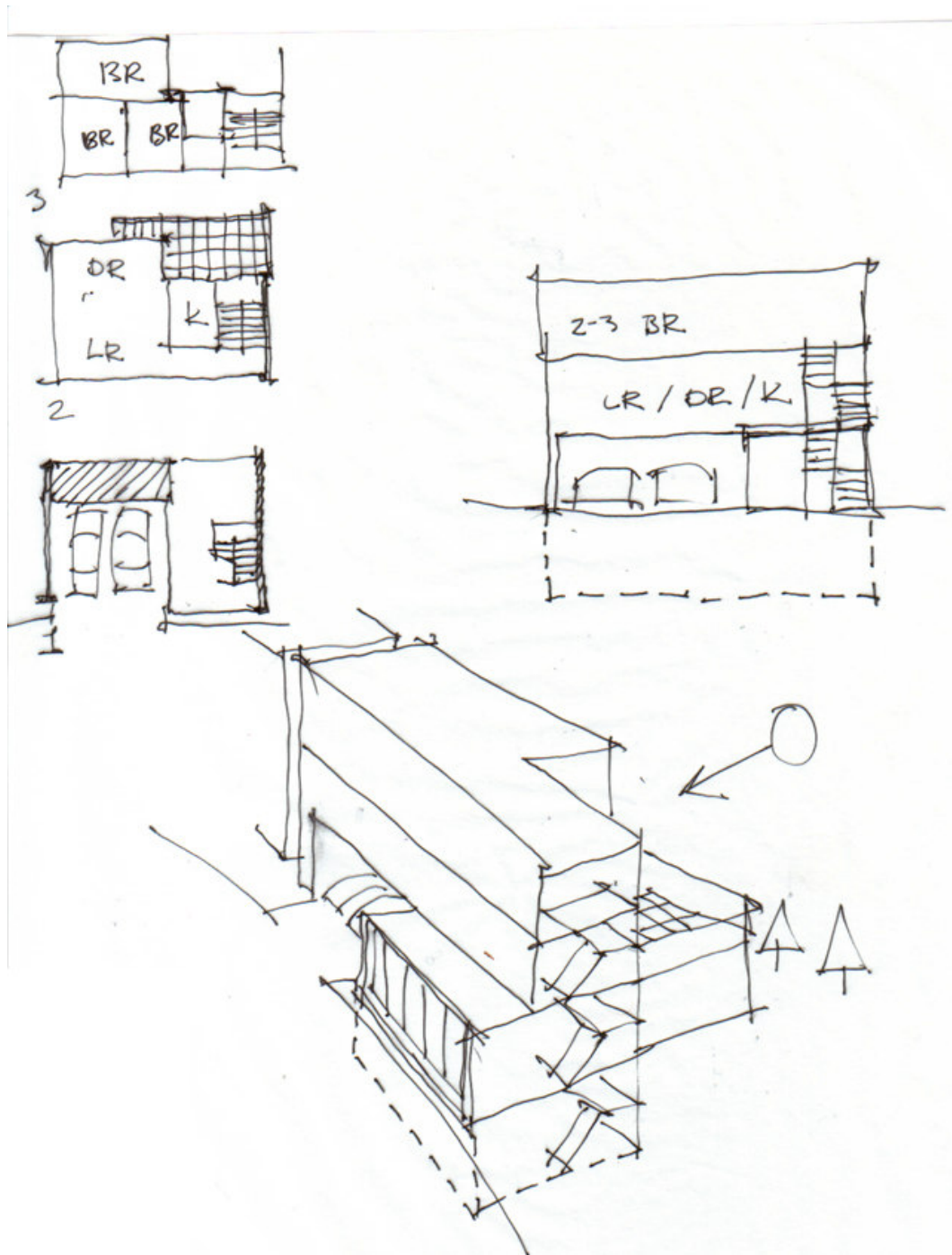
The materials of the traditional house offer a sustainable example. Typically the materials are obtained locally. Except for the painting of stuccoed surfaces, most materials were used in their natural state. The materials were used in relation to durability such as exposed surfaces like the roof were made of durable ceramic tiles and wood and paper were limited to protected areas.

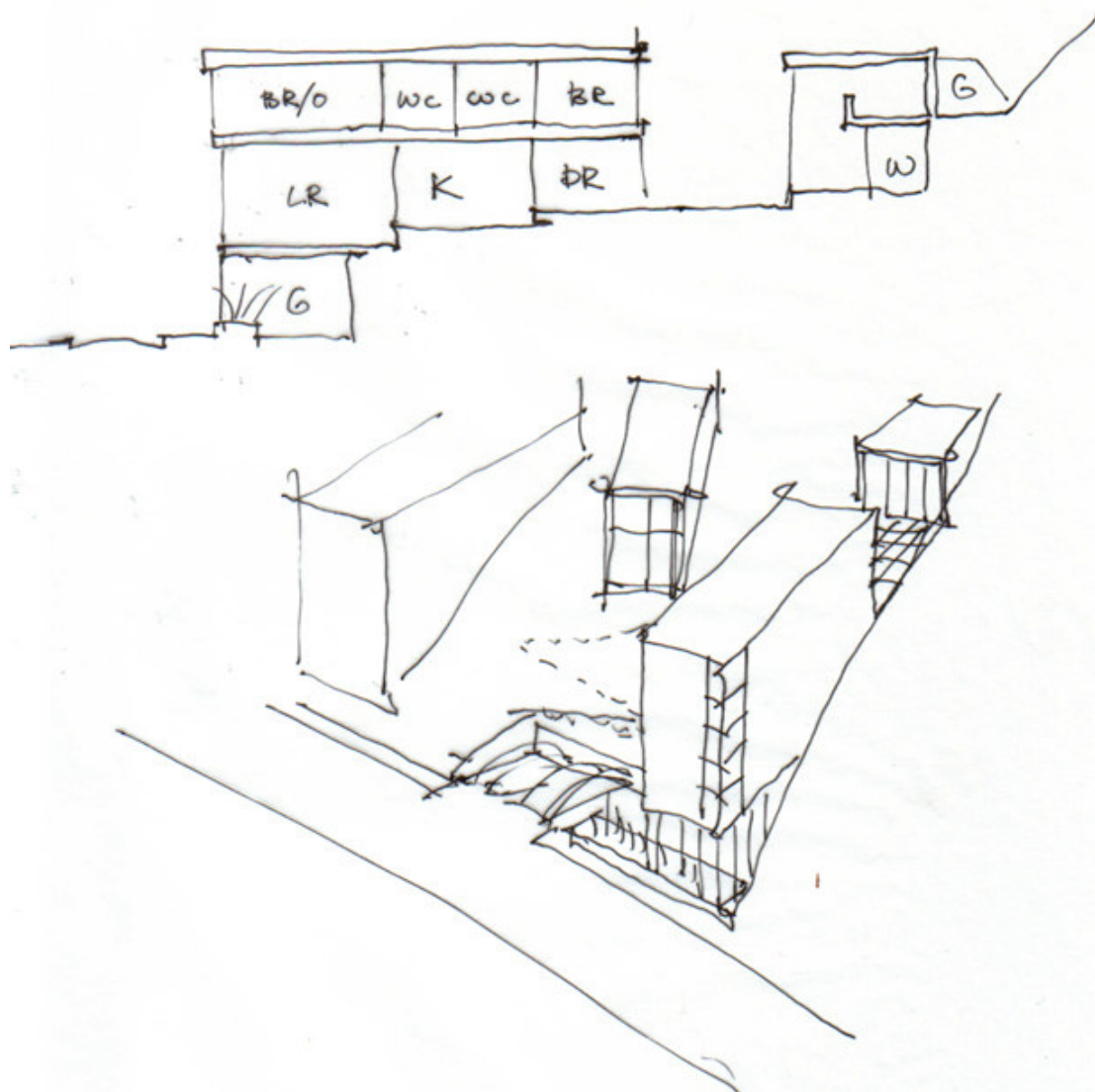
BUILDING CODE AND LIFE SAFETY ISSUES

The projects for Heyri Art Valley will be reviewed by both the agent of the town's development corporation for compliance with the town code, and by the building department of the local municipality. The project will follow the general guidelines of the International Building Code.

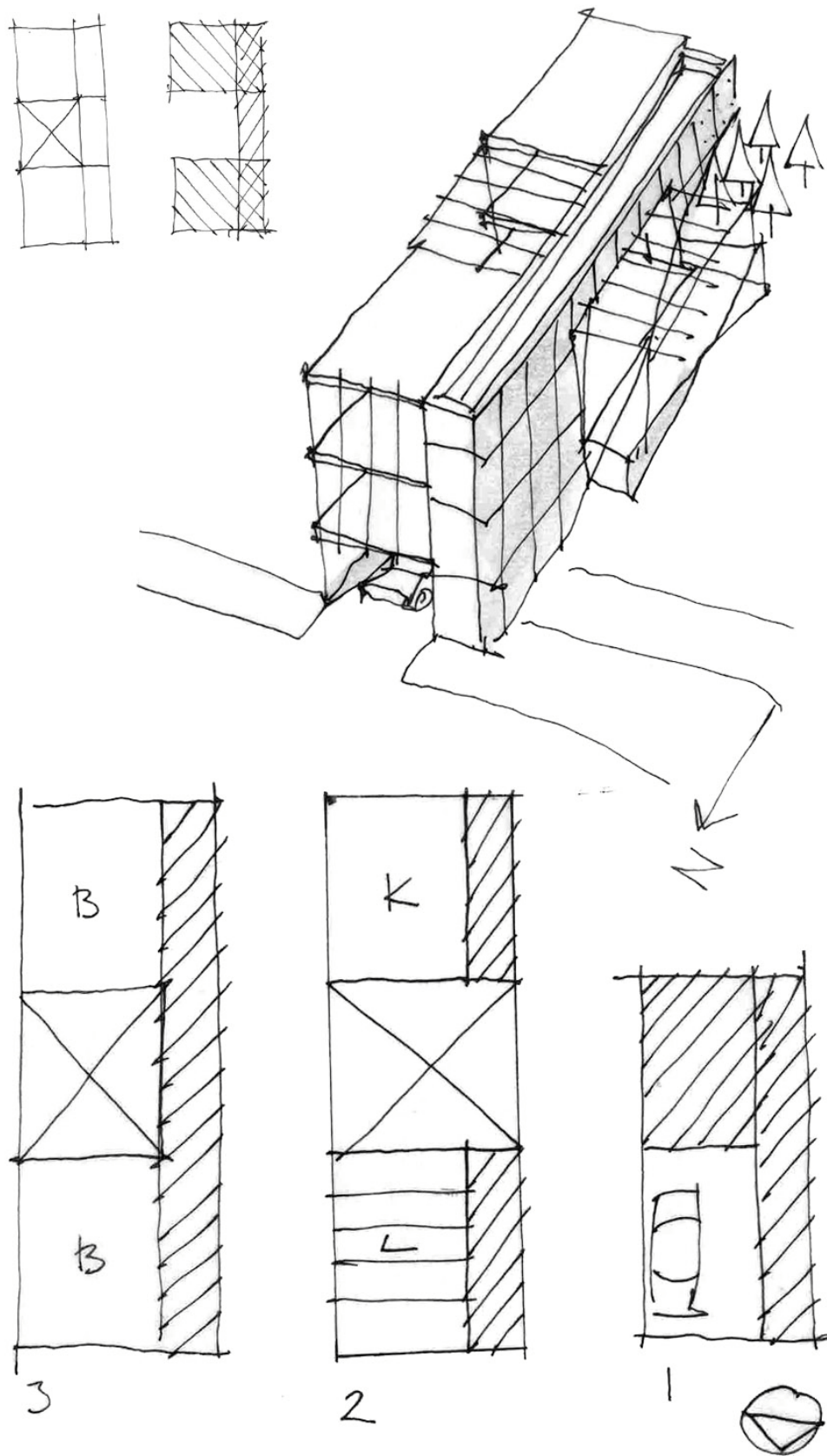
CHAPTER V – DESIGN STRATEGIES

SITE H-21

*Fig. 29: Design Strategies Site H-21*



SITE G-36



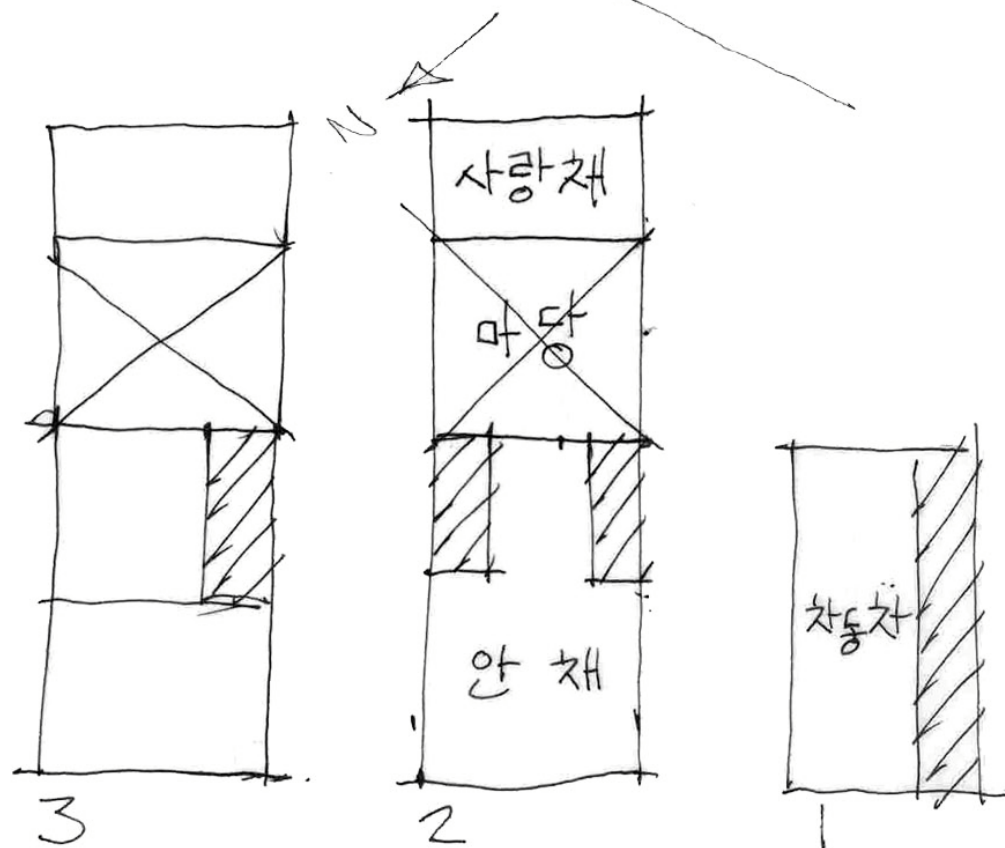
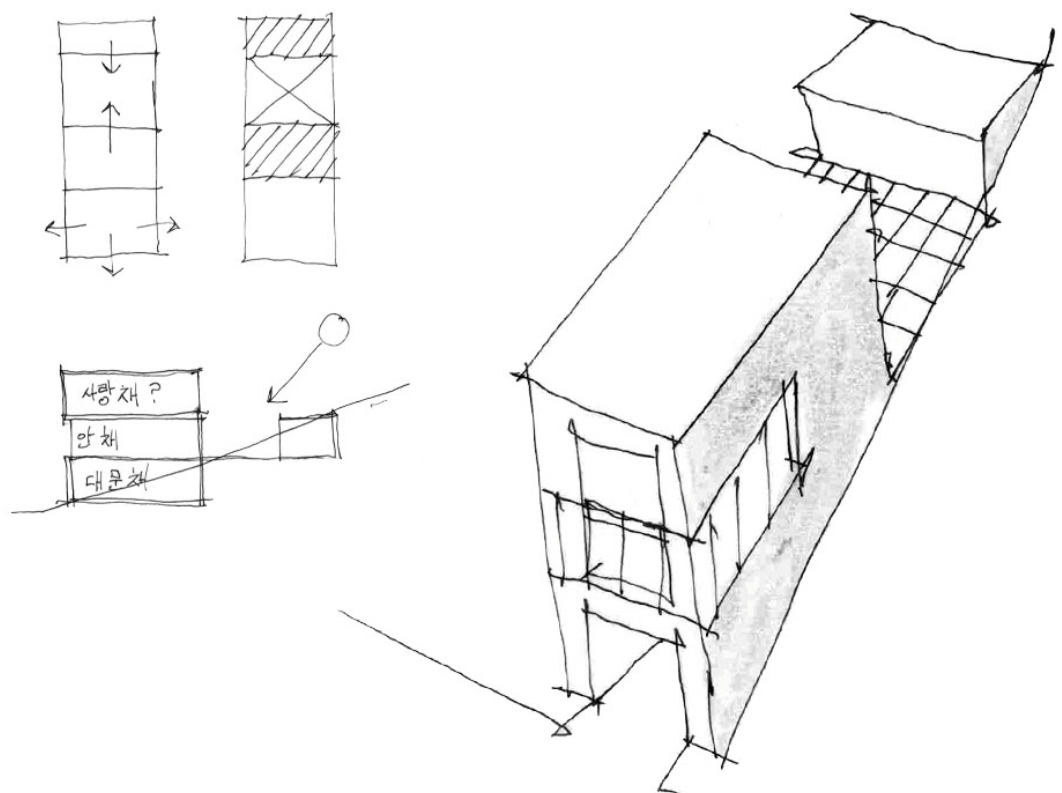
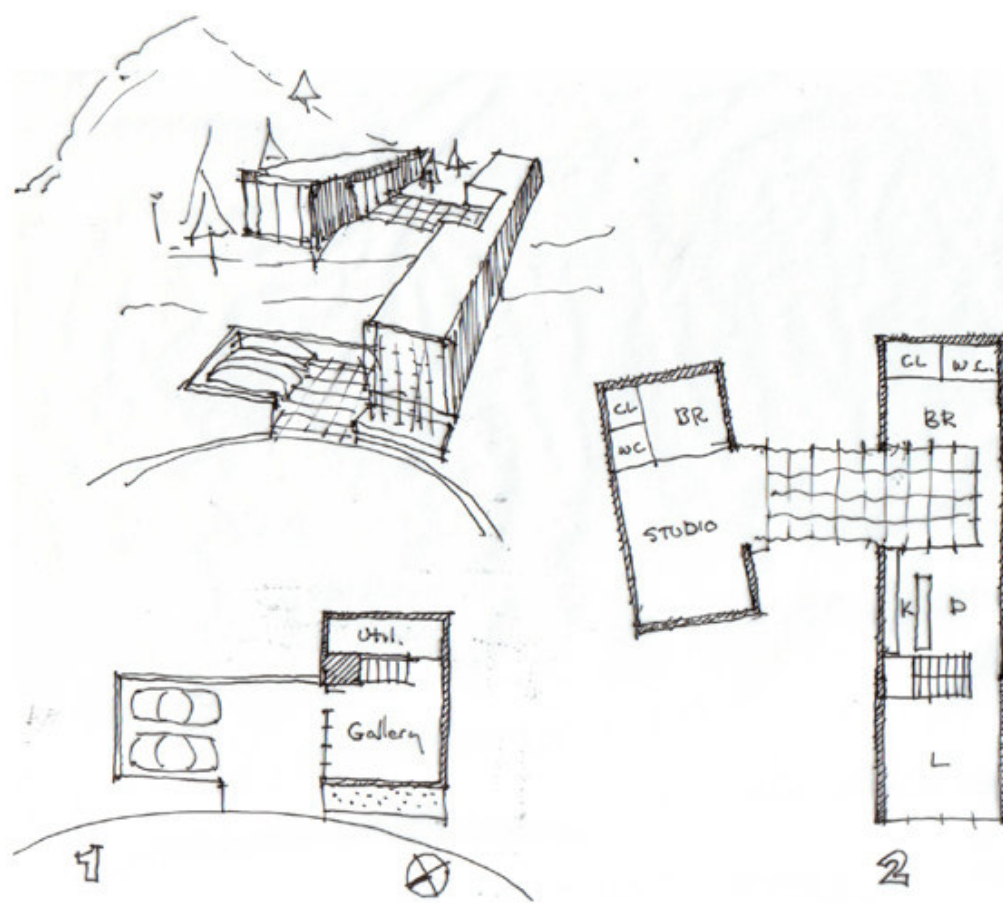
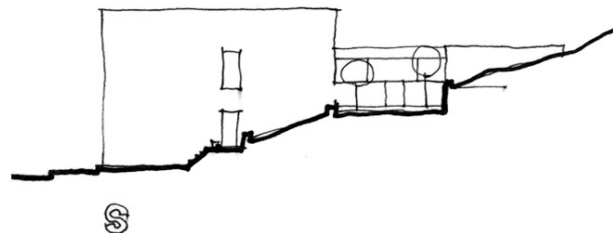
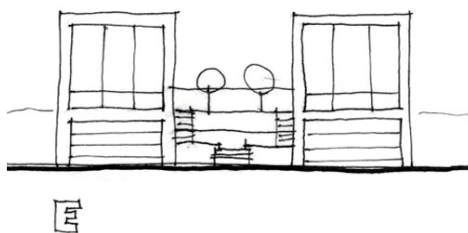
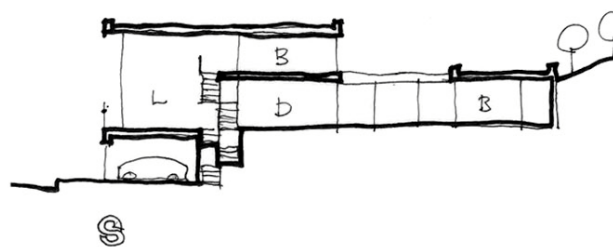
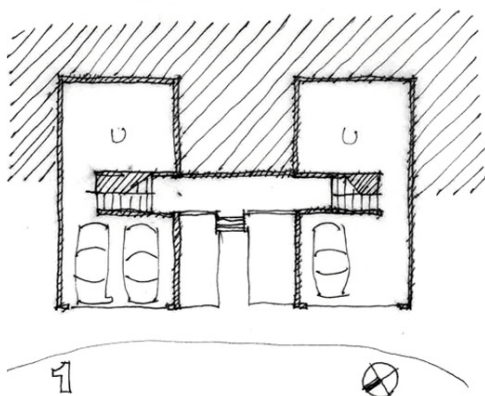
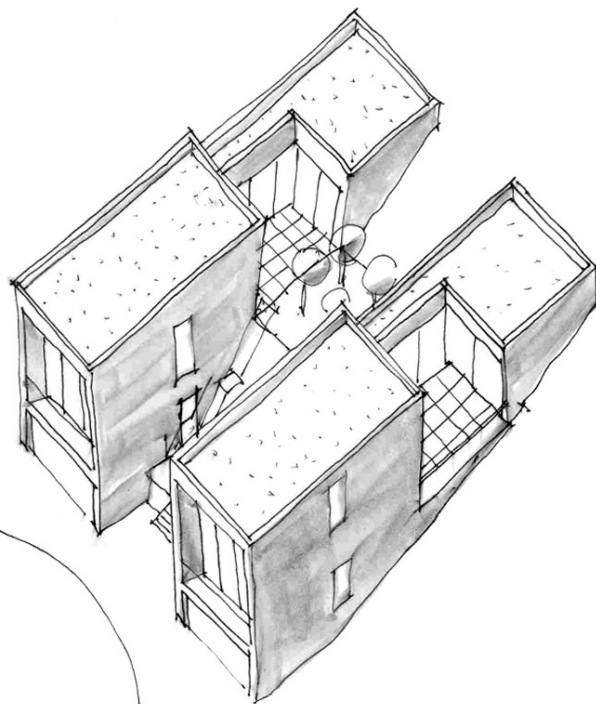
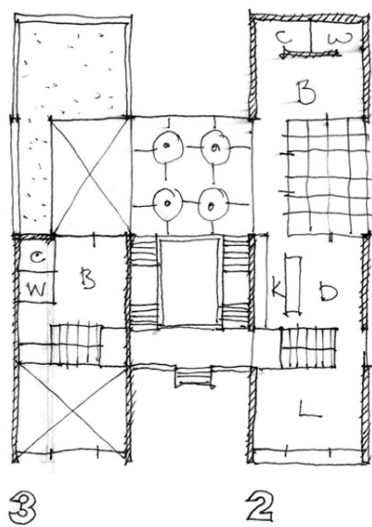
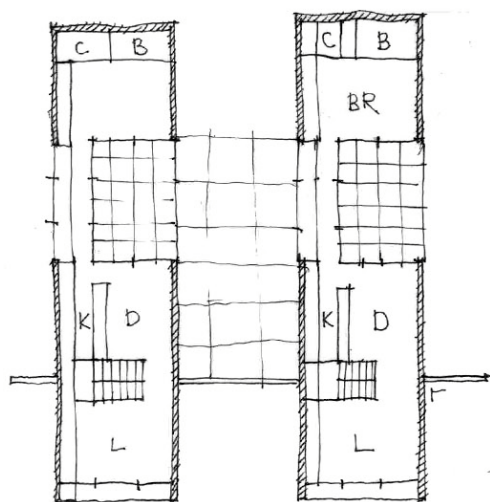


Fig. 30: Design Strategies Site G-36

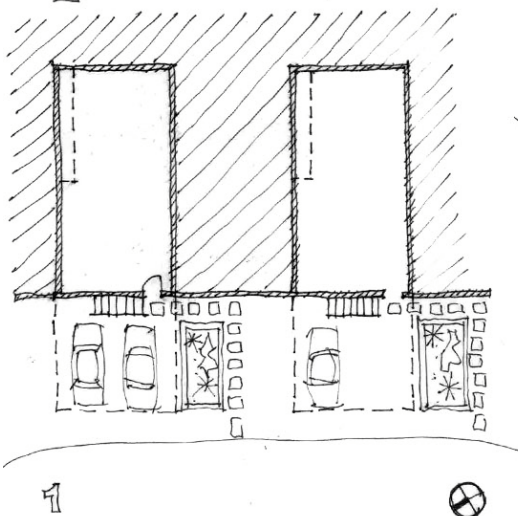
SITE F-11



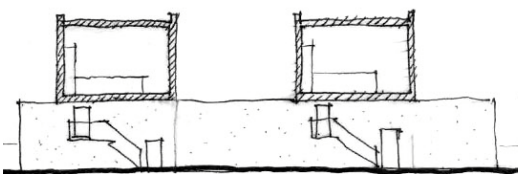




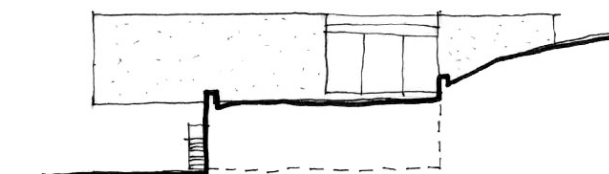
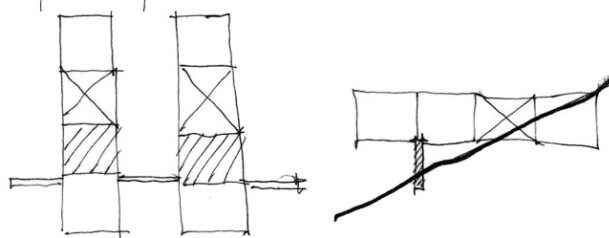
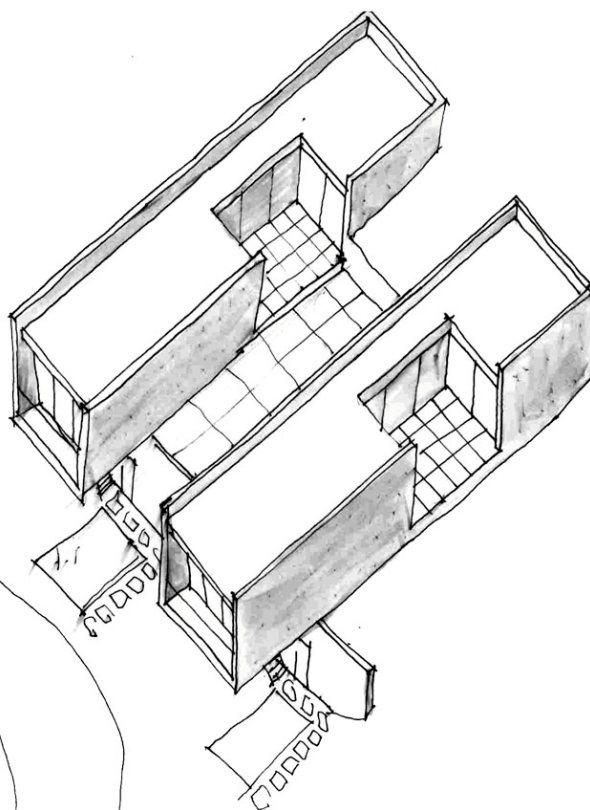
2



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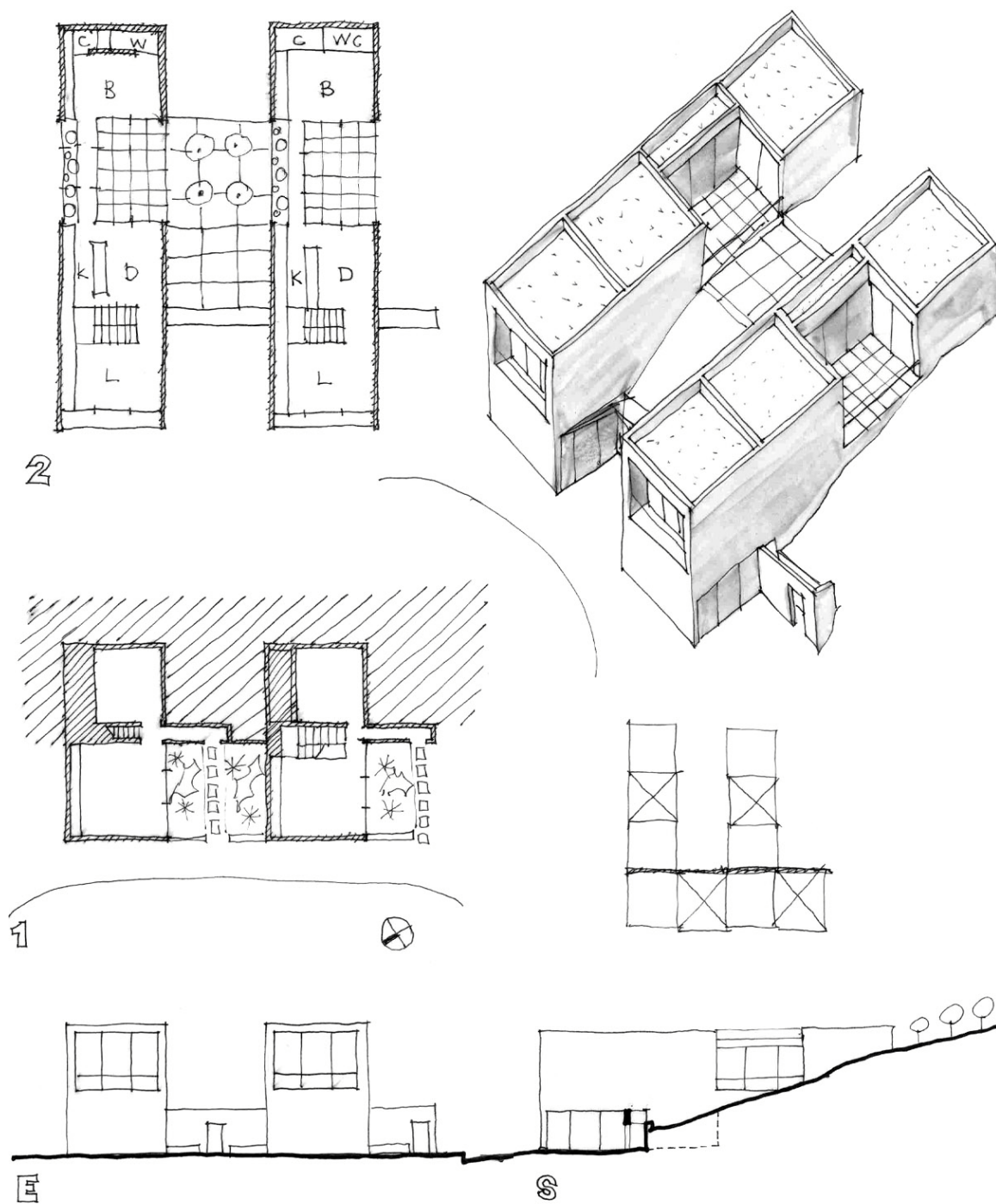


Fig. 31: Design Strategies Site F-11

CHAPTER VI – CONCLUSION

The underlying premise of the thesis was that there is an important connection between a people and culture, and their traditional spaces and architecture culture. It was pointed out that for Korea, half a century of western style development and a vast migration of people to cities and western style apartments have largely severed this connection. This project for three modern houses attempted to reestablish a connection to the traditional houses both through the tools of ‘Critical Regionalism’ espoused by Kenneth Frampton, and through the transformation of the traditional house precedent. The critical regionalist approach involved careful analysis of the site including study of the topography, solar orientation and site hierarchies. The transformation of the precedent involved the analysis of the philosophic basis, typological elements and constructional systems of the traditional house. These two areas of analysis were then used to inform decision during the design of the individual houses.

Largely the thesis is about a process for informing design decisions. There are several questions that we might ask of this process. Does it work? That is do the designs reflect the lessons of the analysis? Did the analysis lead to a connection between the buildings and their sites and the culture of their inhabitants? Is this regionalism or just the application of universally applicable design principles? Does this method allow for different sites, programs and expressive goals, and would it be applicable to other sites and projects?

Do the designs reflect the lessons of the analysis?

This question raises the issue of the obvious physical differences between the three houses. The buildings are different in their placements relative to their sites, construction systems and materials, and attitudes towards fenestration and planning to name a few. Through the analysis diagrams of the designs however, one can see that they really are using a variety of methods to achieve similar goals. For example, the houses establish similar degrees of protection from the street, and give spatial and structural

expression to the difference between heated and unheated spaces found in the precedent. The analysis by helping to get beyond a surface understanding of the precedent has enabled the designs to repeat lessons of the precedent without imitating the traditional style.

Did the analysis lead to a connection between the buildings and their sites and the culture of their inhabitants?

One only has to look at the difference between the two elevations of the designs for site H-21 or to the carefully developed relation between the other two house and their sloped sites to see the connection between the buildings and their sites. The connection to the culture of their inhabitants is a more difficult claim as the multistory living space of two of the houses, and the inclusion of indoor plumbing, central heating and a dining room for all the houses represents departures from the precedent. It is really the presence of the elements of the traditional house such as the gatehouse, courtyard and their placement relative to each other, and the previously mentioned degrees of protection from the street that reflects the traditional culture. It should be pointed out that the analysis was in no way intended to lead to a template for making houses or to stand in for the creative expression of the designer. It was intended to steer the design decisions so that the resultant designs would have a stronger connection to the site and the culture of their inhabitants than one might expect from other design starting points such as a strictly formal approach to the design.

Is this regionalism or just the application of universally applicable design principles?

Certain discoveries about the traditional precedent such as the desire to have the mountain behind and to the north of the house and the courtyard in the south could easily be seen as good design anywhere in the northern hemisphere. What one finds in studying a precedent such as this, a highly integrated approach to building that evolved over many centuries, is that many of its lessons are just good design sense. The Korean example is especially fruitful in this regard because the long history of indigenous scholarly reflection that has already been devoted to the subject of its design makes its lessons fairly apparent. What should be pointed out is that in addition to the centuries of experience responding to issues of site and climate which provide universally applicable lessons, the house also portrays attitudes specific to this culture. The highly codified relations between family and state and within a single family that were characteristic of Korea's Confucian society are embedded in the design of the house.

It is the incorporation of these characteristics in the individual designs, such as the specific locations assigned to husband and wife spaces that address the specifics of this culture.

Does this method allow for different sites, programs and expressive goals, and would it be applicable to other sites and projects?

The mere existence of three projects on different sites with their variety of materials and idiosyncrasies of program seems to provide an affirmative answer to this question. To a large extent, the marked physical difference between sites, and the largely site driven initial design studies ensured the variety of the projects. The inverse of this question is perhaps worth considering. Could the three building deploy similar structural systems and material palettes and strive towards the creation of a coherent 'architectural system'²⁶ such as one finds in the precedent, or as William Curtis points out in the early works by Corbusier and Wright. The 'architectural system' is the idea of a consistent kit of parts that one might use for a variety of sites, programs and expressive goals. These projects do not reflect an architectural system but rather a common set of design principles or typological basis. This question of creating a common architectural system or at least common elements within the system will be considered as the project moves beyond this thesis and initial design phase into the design development and construction document phases.

The dual premise of the thesis, that there is a connection between a people and their traditional architecture and that a process of analysis and synthesis in which the lessons of the traditional architecture are extracted from the precedent and incorporated in modern buildings; seems to have been borne out. The designs for three houses reflect the lessons of the precedent as illustrated by the analysis diagrams for each house. The further test of the thesis will have to wait until the houses are built and occupied.

FINAL DESIGNS

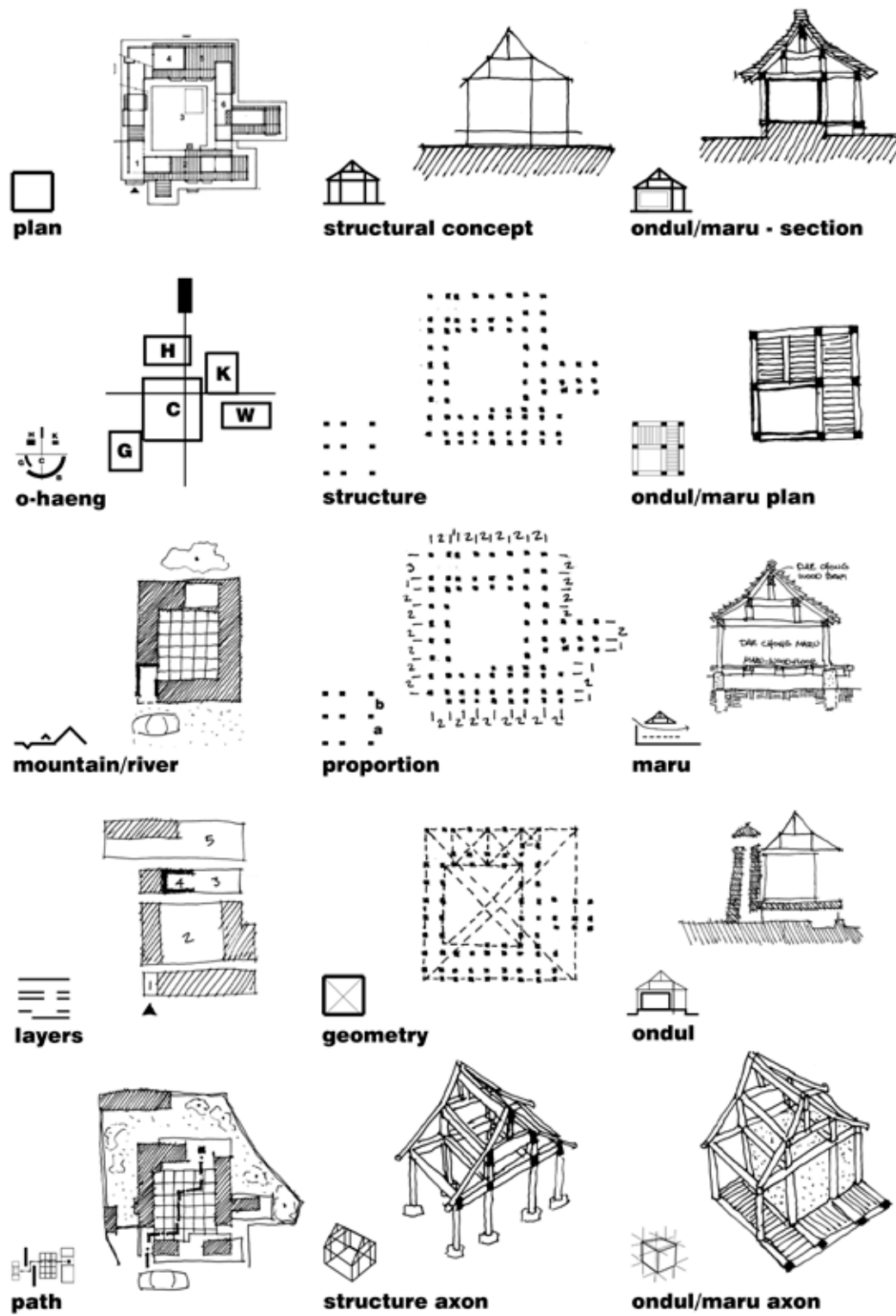


Fig. 32: Analysis of traditional Precedent

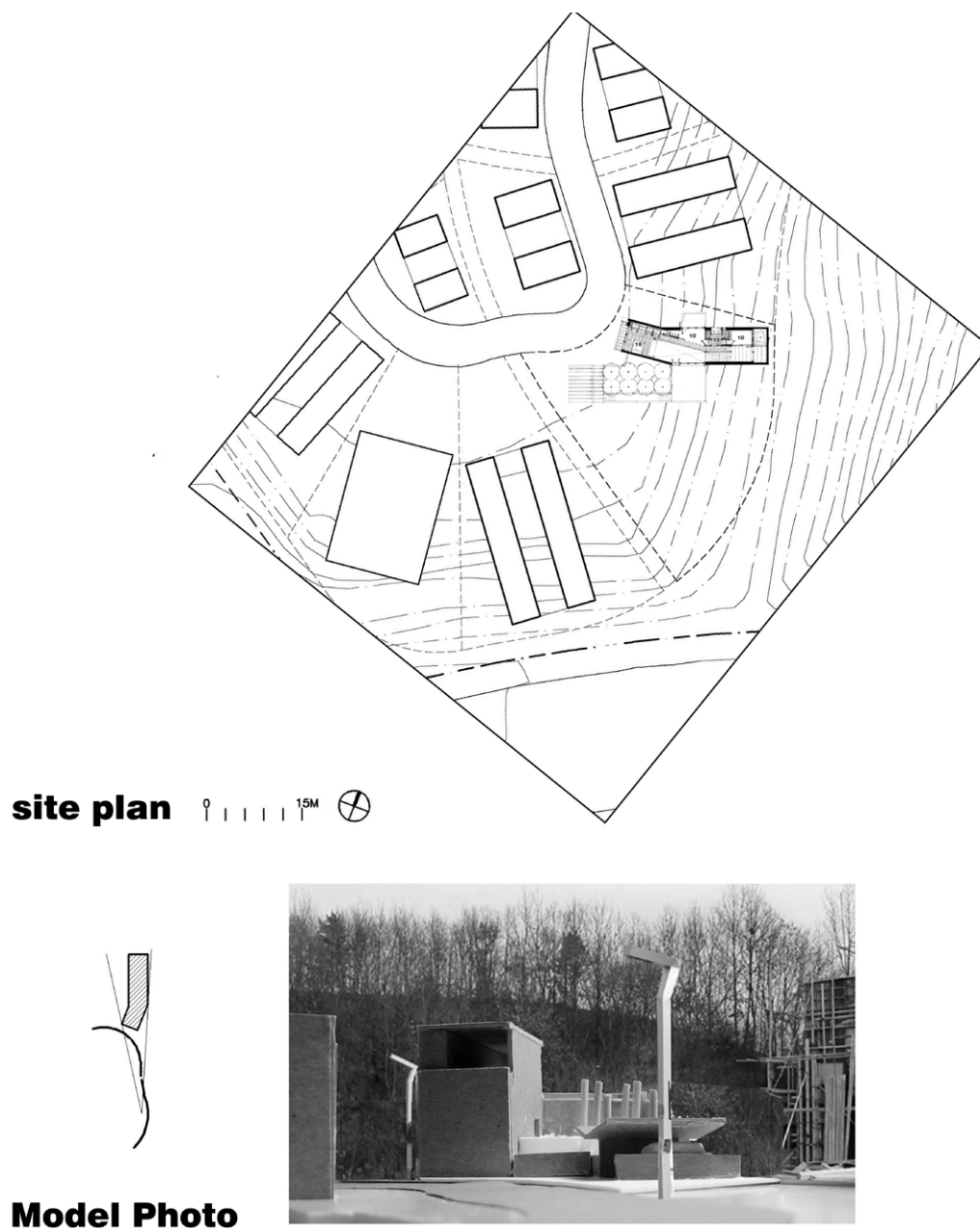


Fig. 33: Site Plan and Model Photo - Site F-11

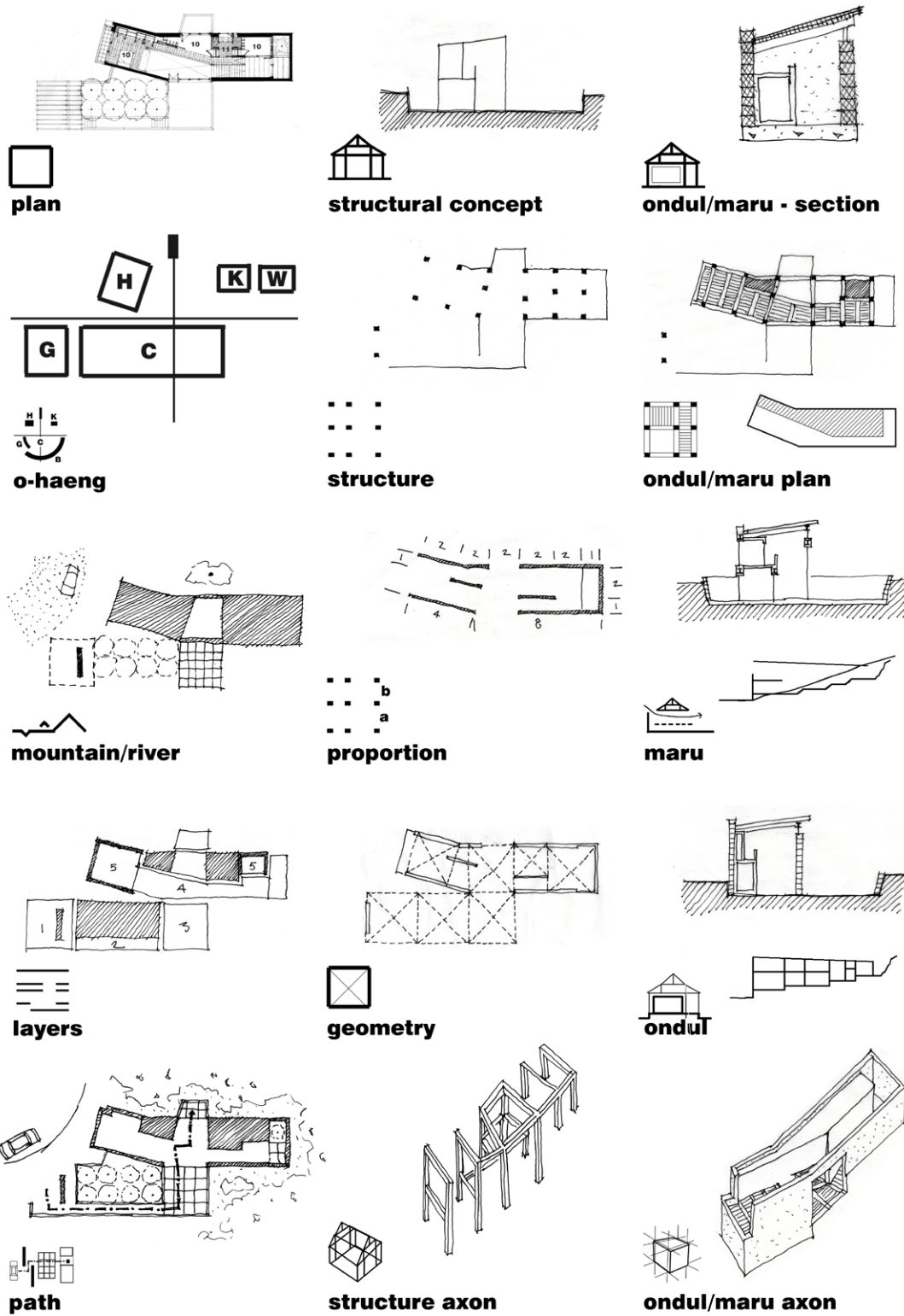


Fig. 34: Analysis - Site F-11

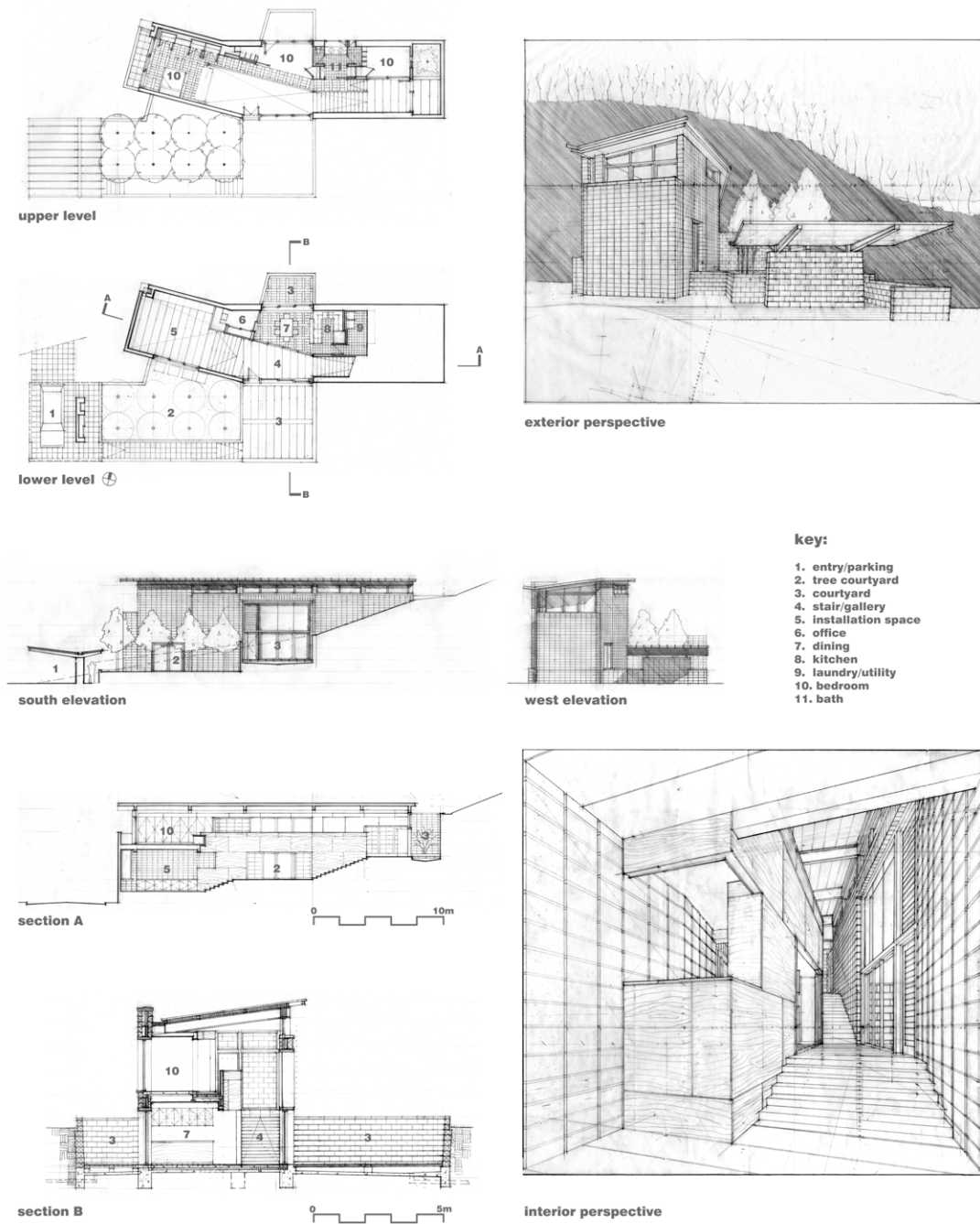
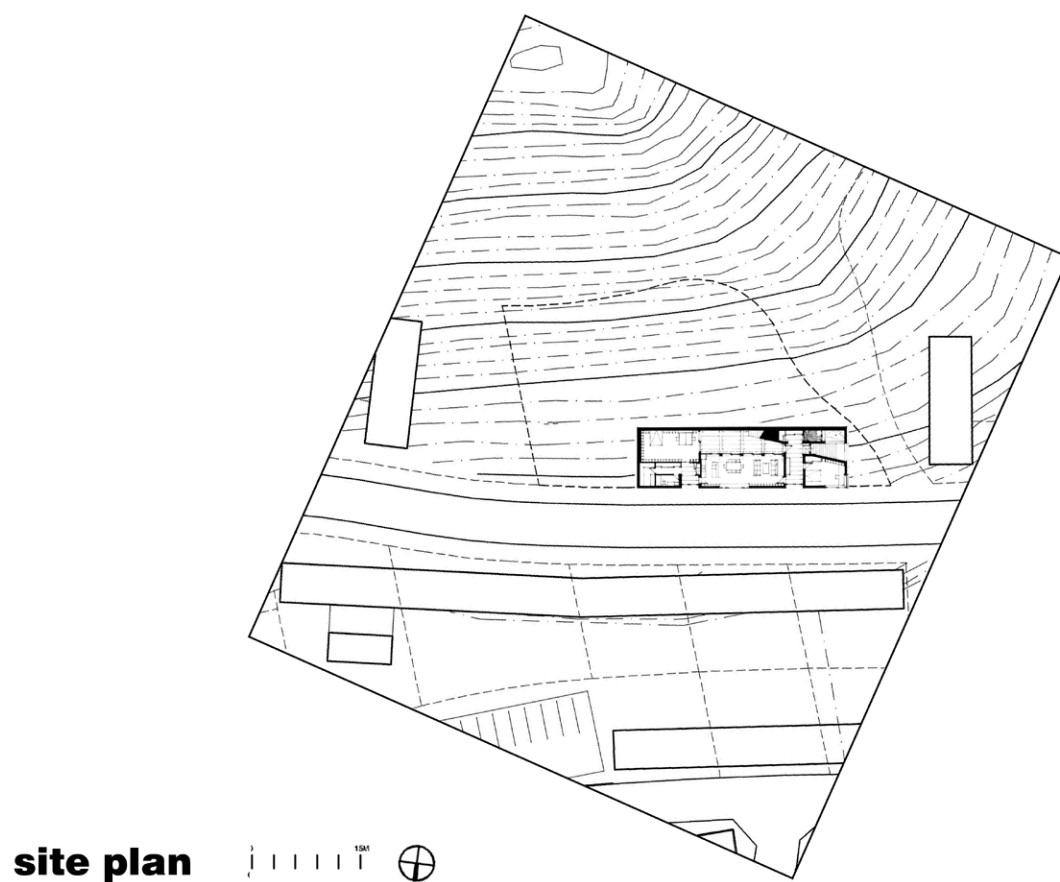


Fig. 35: Design - Site F-11



Model Photo



Fig. 36: Site Plan and Model Photo – Site G-36

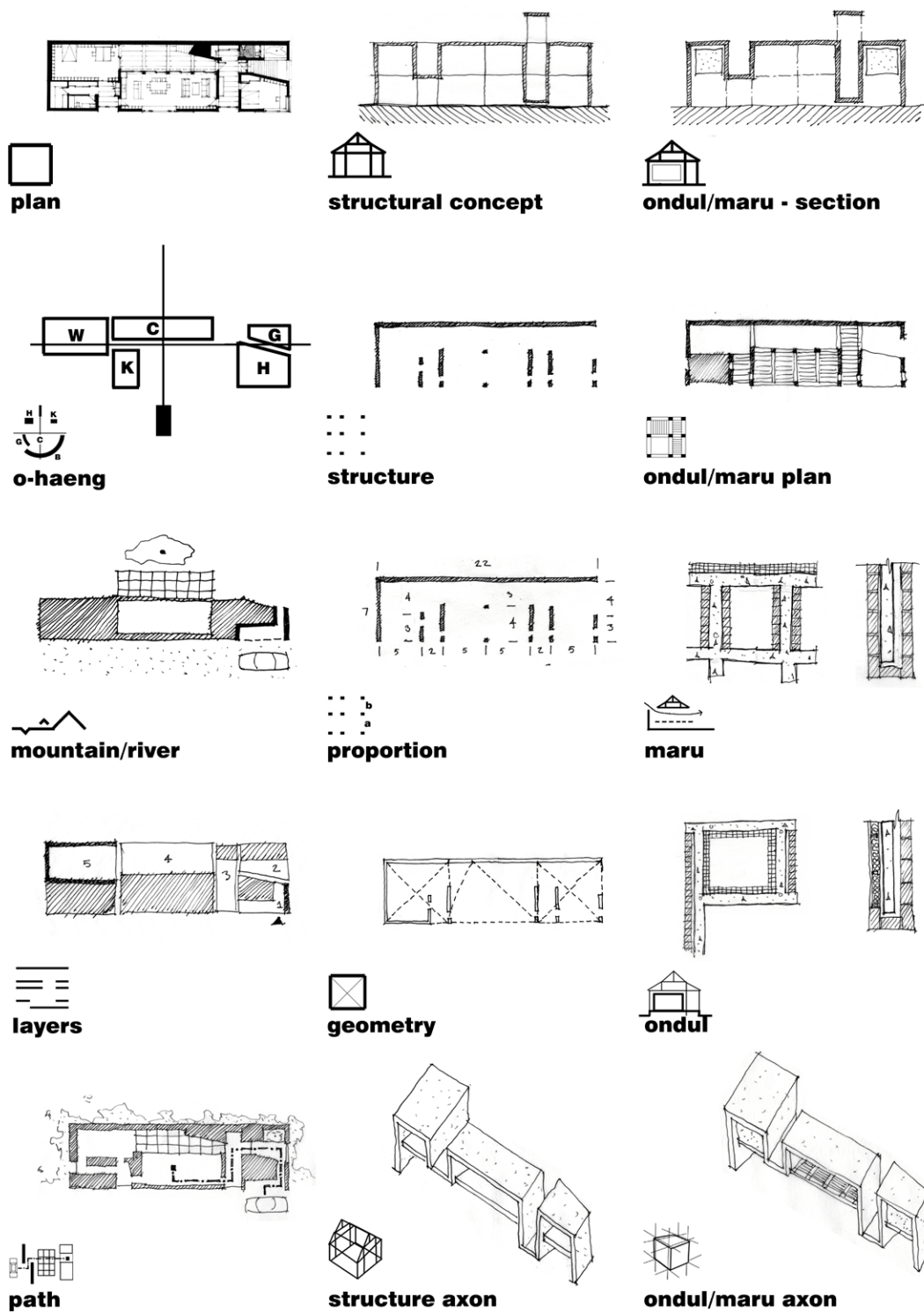
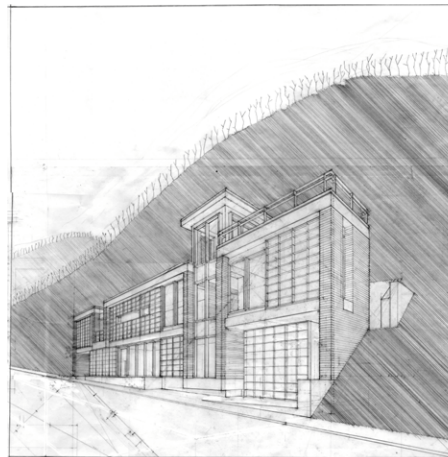
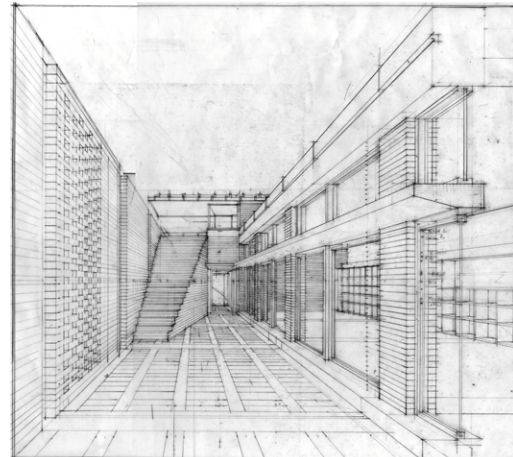


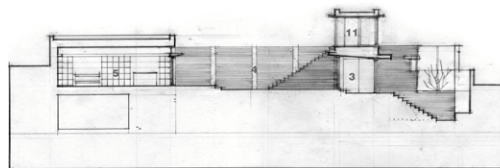
Fig. 37: Analysis - Site G-36



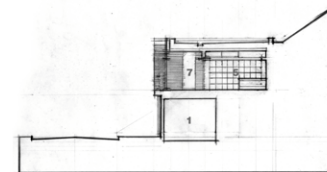
street perspective
lower level



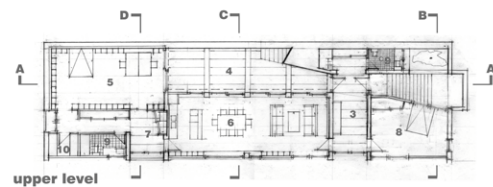
courtyard perspective



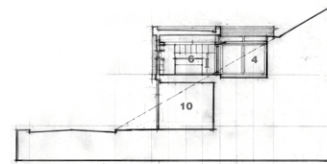
section A



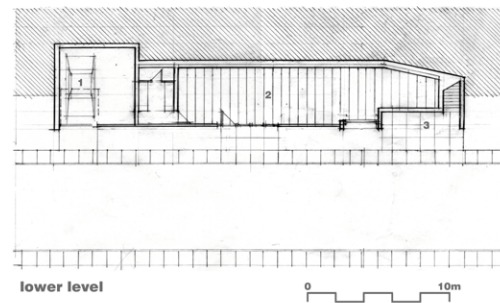
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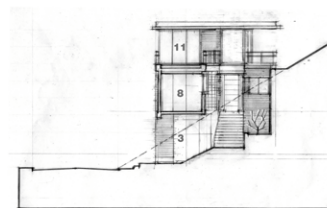
upper level



section C



lower level



section B

- key:**
- | | |
|--------------------------|--------------------|
| 1. parking | 7. laundry |
| 2. gallery | 8. bedroom |
| 3. entry | 9. bath |
| 4. courtyard | 10. closet |
| 5. master bedroom | 11. lookout w/deck |
| 6. living/dining/kitchen | |

Fig. 38: Design - Site G-36

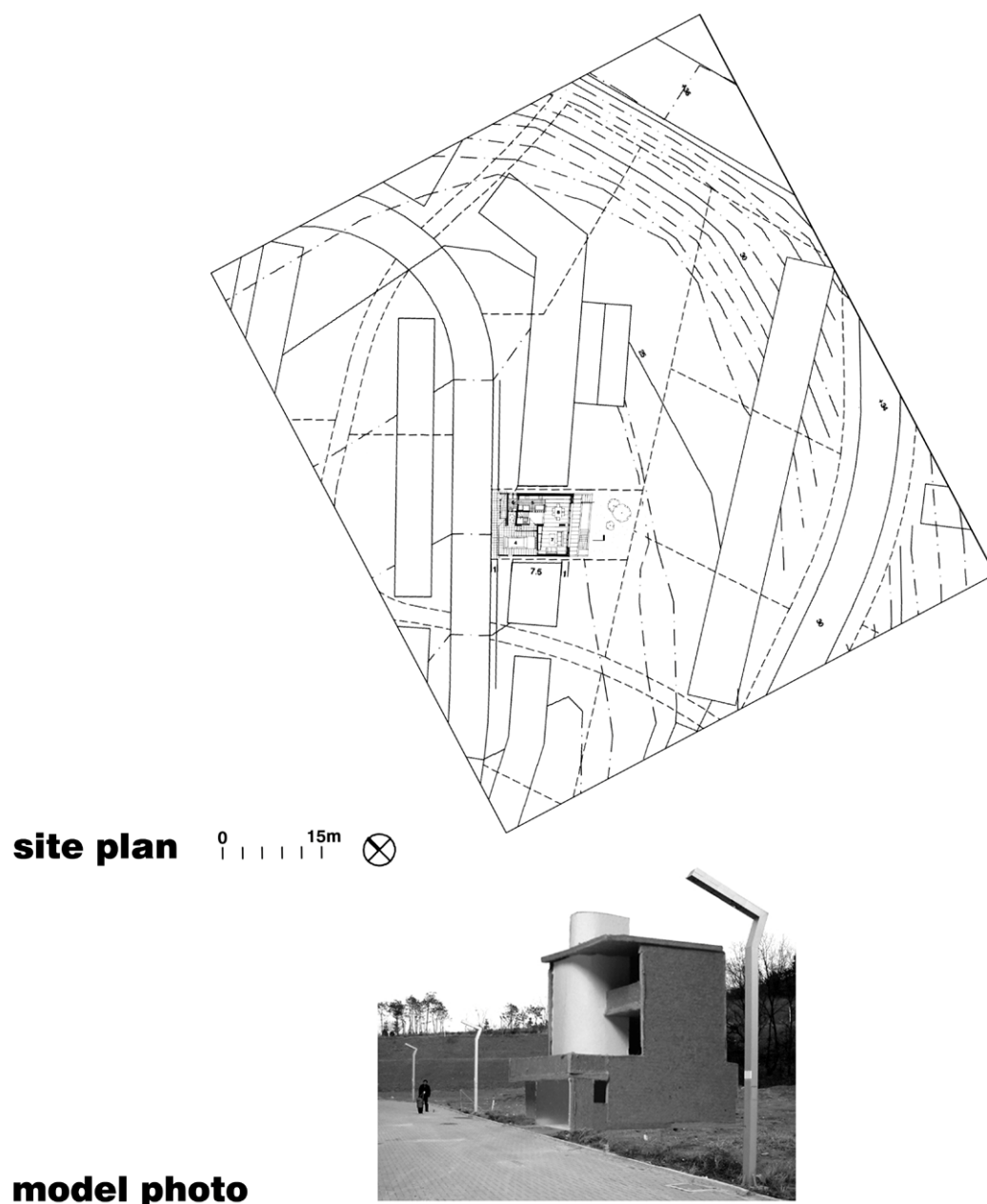


Fig. 39: Site Plan and Model Photo - Site H-21

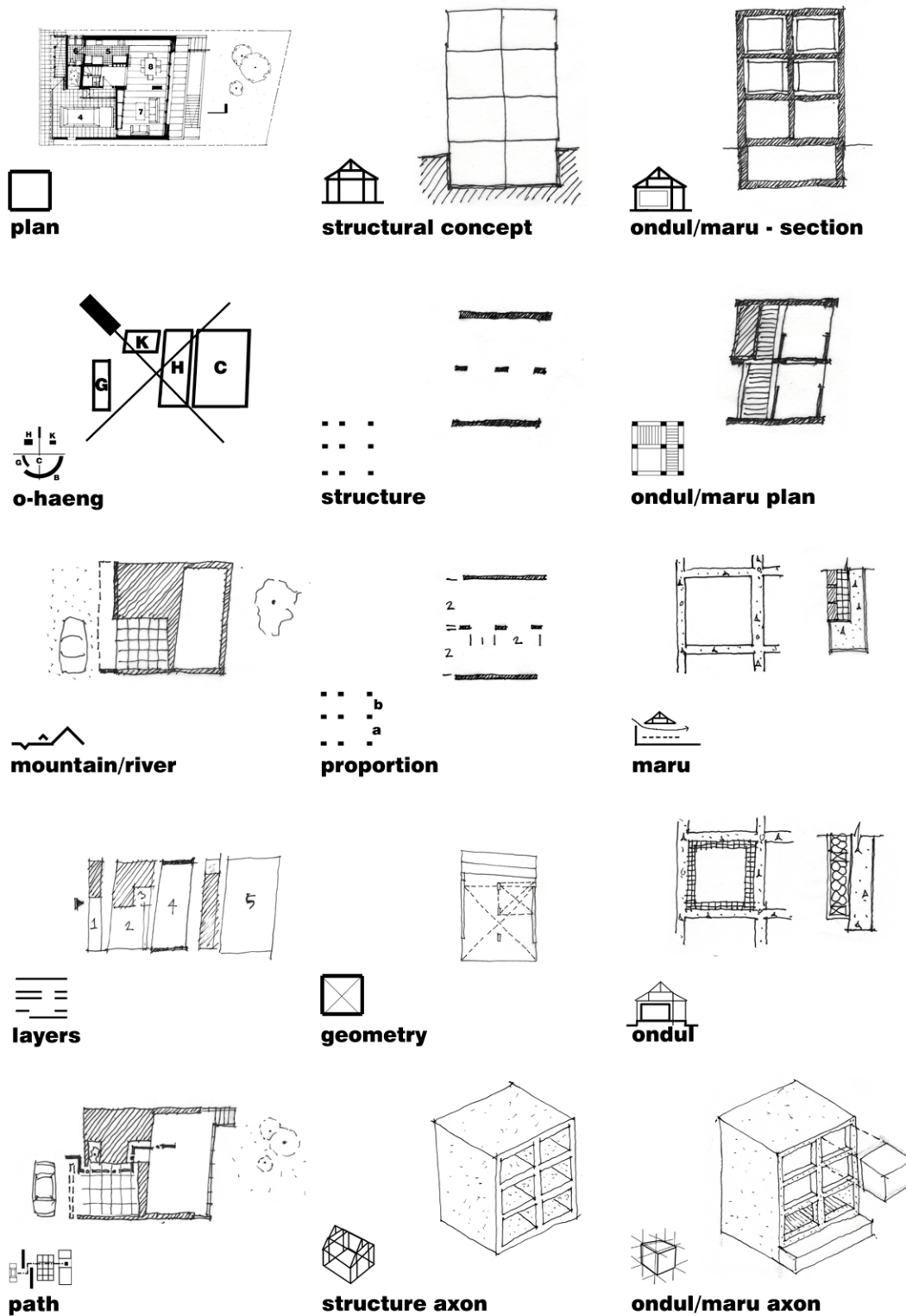


Fig. 40: Analysis - Site H-21

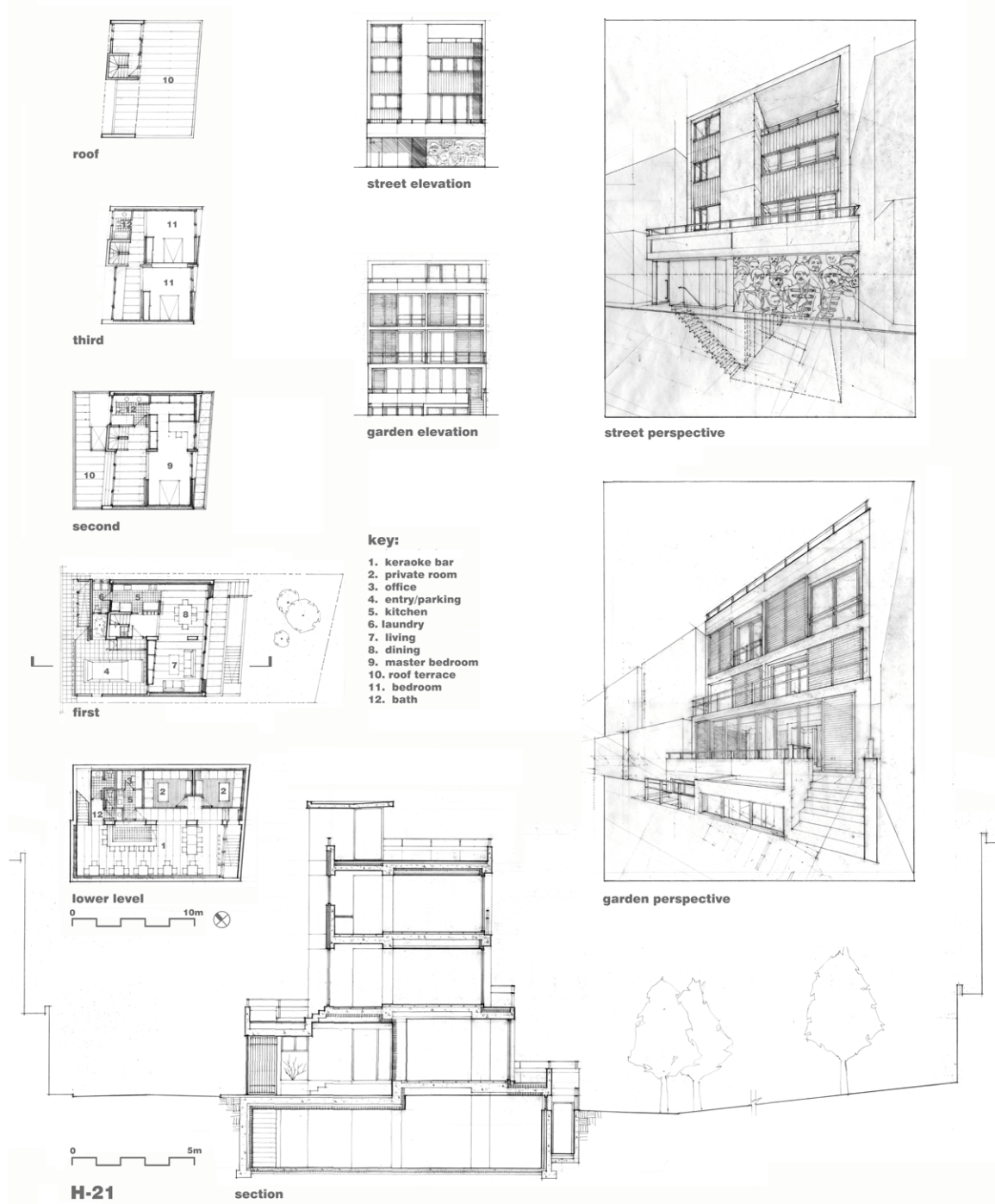


Fig. 41: Design – Site H-21

END NOTES

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- ¹ www.heyri.net/english.htm
 - ² Andres Duany and Elizabeth Plater-Zyberk, "A Town Plan for Seaside," *Seaside: Making a Town in America*, ed. David Mahoney and Keller Easterling (Princeton: Architectural Press, 1991) 98-103.
 - ³ Andres Duany and Elizabeth Plater-Zyberk, *ibid.*, 86-107.
 - ⁴ Clarence Stein, "Radburn," *Towards New Towns for America*, (Cambridge, The MIT Press, 1996) 219-251.
 - ⁵ This could be compared to a positive example such as Hugh Newell Jacobson's "Bolton Commons." The rear elevation of the house and the rear fence are made of the same brick and arguably constitute a layered garden façade which through the provision of a concealed private yard, incorporates the 'messy stuff' that typically proliferates behind houses.
 - ⁶ This is similar to live/work designation used in American redevelopment projects such as Downtown Providence Arts District or the South of Market Arts District (SOMA) in San Francisco.
 - ⁷ Kenneth Frampton, "Towards a Critical Regionalism: Six Points for an Architecture of Resistance," *The Anti-Aesthetic: Essays on Postmodern Culture*, ed. Hal Foster (Seattle, Washington: Bay Press, 1983) 16.
 - ⁸ Edward Said, *Orientalism* (New York: Vintage Books, A Division of Random House, 1978) 2-22.
 - ⁹ The list does include Seung H. Sang, Korea's leading modern architect and protégé' of the late Kim Swoo Geun. Kenneth Frampton has arguably overlooked the work of both architects as exemplary of Critical Regionalists practices.
 - ¹⁰ Kenneth Frampton, *Ibid.*, 16.
 - ¹¹ Alexander Tzonis and Liane Lefaivre, 'Critical Regionalism,
 - ¹² Michael Benedikt. *For An Architecture of Reality*, (New York, Lumen Books, 1987)
 - ¹³ Kenneth Frampton, *Ibid.*, 28.
 - ¹⁴ Quatremere de Quincy, "Type," *OPPOSITIONS READER*, ed. K. Michael Hays (New York, Princeton Architectural Press, 1988) 618.
 - ¹⁵ J.N.L. Durand, *Recueil et parallele des edifices en tout genre*, (Paris, 1801)
 - ¹⁶ Thomas Maldonado, *Theorizing A New Agenda for Architecture: An Anthology of Architectural Theory 1965-1995*, ed. Kate Nesbitt (Princeton: Architecture Press, 1996) 248.
 - ¹⁷ Roland Barthes, *Mythologies* (New York: Hill and Wang, A division of Farrar, Straus & Giroux, 1957) 113-117.
 - ¹⁸ Rafael Moneo, Aldo Rossi: 'The Idea of Architecture and the Modena Cemetery,' *OPPOSITIONS READER*, 110.
 - ¹⁹ Gaston Bachelard, 'the house, from cellar to garret. The significance of the hut,' *the Poetics of Space*, (Boston, Beacon Press, 1964) *Ibid.*, 26.
 - ²⁰ Frederick Couglas and Rene d'Harnoncourt, curators of the 1941 "Indian Art in the United States" exhibit at the Museum of Modern Art, New York.
 - ²¹ Kenneth Frampton. *Ibid.*, 21.
 - ²² The project *SuJoldang* by Seung H. Sang was built in 1993 at Seoul, Korea.
 - ²³ The Project *Case / Schindler Residence* by Rudolf Schindler was built in 1921-2 at West Hollywood, California.
 - ²⁴ The building by Kasuyo Semima in the *Gifu Prefecture Apartments* was built in 1998 at Gifu Prefecture, Japan.
 - ²⁵ The project *Fukuoka Housing* by Steven Holl was built in 1989-91 in Fukuoka Japan.
 - ²⁶ William Curtis, "The Architectural System of Frank Lloyd Wright," *Modern Architecture: since 1900*, (New Jersey, Prentice-Hall, Inc., 1987) 75.

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