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Shape shifting in contemporary Japanese residential architecture in Japan

Tadao Ando, Kengo Kuma, SANAA

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SHAPE SHIFTING IN CONTEMPORARY JAPANESE RESIDENTIAL ARCHITECTURE IN JAPAN

TADAO ANDO | KENGO KUMA | SANAA

THE INTERACTION BETWEEN INTERIOR AND EXTERIOR QUALITIES THAT DISPLAY SIMPLE INTELLIGENT FORMS THAT FOLLOW THE JAPANESE ARCHITECTURAL LANGUAGE.

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NOTE : Photos from page 3 – 11 were personally taken by colleague , Albert Chavarria during his recent trip to Tokyo, Japan. August, 2018

ABSTRACT

The paper instructs focus on the delicate balance that is present in the architectural language in Japanese Architecture. The main objective is to define the unique characteristics and compositions that are created between minimal external and internal forms. Unique compositions and characteristics that allow Japanese architecture to express a strong and distinct impression on users and observers.

These objectives can lead to the identification and illustrate the story of what engineer's Japanese aesthetic and the journey from the exterior perspective into the interior's visualization. A strong underline of religion, culture and nature adds richness to the profile of Japanese architecture, therefore uncovering each layer of architectural elements in this specific demonstration of living can provide an insight to a different but relevant era.

Three relevant and successful architects born in Japan, with distinct profiles have been selected to conduct research.

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NOTE :

Floor plans, elevations and sections have been redrawn from the original architects drawings. These drawings have personally been expressed graphically to express layers of essential information needed to complete the paper.

INTRODUCTION

Like fine art, architecture can be interpreted in multiple ways. architecture has no set of rules to produce a "successful piece". although, there are distinct forms and styles of architecture, this paper targets the study of residential Japanese architecture. this form of architecture was selected to explore its transformation and uniqueness it has displayed in the field of residential architecture through the years.

Layers and components related to achieving Japanese residential architecture will be analysed with aims of discovering the relationship between exterior and interior. understanding the history, engineering, theory and artistry behind Japanese architecture is vital to recognize what makes this form of architecture particular and distinct. an important aspect will be targeting the existing relationship between the contrast of "in' and 'out". the main focus is to define compositions and unique characteristics that allow Japanese architecture to express its distinctive impression on its user and to the world.

OBJECTIVE

IDENTIFY TYPOLOGIES OF DISTINCT ELEMENTS CREATING THE INVISIBLE

CONNECTIONS BETWEEEN INTERNAL AND EXTERNAL REALM

IN RESIDENTIAL JAPANESE ARCHITECTURE.

These blurred boundaries will be depicted from six chosen projects reflecting visible themes and design in contemporary Japanese residential architecture. These case studies have been selected with respect to its location, architect and its spatial qualities.

This paper aims to identify the blurred boundaries in detail and to present common findings among the Japanese houses. Visually and recorded, these findings will achieve the aim of extracting a pattern or sequence that allow Japanese residential architecture to be so creative and known worldwide.

BACKGROUND & CULTURE

following Japanese architecture there are specific points that create a full body. aesthetic, culture and design. These layers are carefully crafted to produce a special finished effect on this criteria of architectural design.

Japanese aesthetic, like Japanese culture is deeply rooted to its religion. which acts like a backbone to the rules and ways of achieving Japanese form and composition. shinto and zen are the two main roots in Japanese religion. shinto refers to implementing a lot of emphasis on mixing nature into the design and its print on the visual surface. Zen is about the balance of elements that are emphasized on the arrangement and movement of objects in a space.

Simplicity, naturalism and beauty are the few important elements that create the Japanese interface. the highlights in Japanese architecture can be very minimal and simple which displays the careful attention placed on the specific details in constructing a contemporary Japanese residential home.

Exploration between external forms with relations to the internal form will be the highlighted body of the paper. this relationship is specific simply because these aspects are what contributes to what makes Japanese architecture so unique and individual.

These relationships can be contrasting, balanced or a mix of the two, therefore a composition and pattern may be extracted from evaluating these layers that carefully exist within the Japanese architectural field. Extracting pieces on both opposite faces will lead to a conclusion of the growth and importance in the residential field.

ARCHITECTS

Persevering through this movement, are masters that have managed to perfect and display successful projects all around Japan. These Japanese architects have practiced and implemented strong methods to achieve recognition as some of Japans most skilful architects.

These names include the famous Tadao Ando, who has achieved many projects within Japan and worldwide, some of his famous works includes the church of light, The row house and the Pulitzer art museum. He is known for his manipulation of light, intriguing use of concrete and form following the natural landscape.

Kengo Kuma is another architect well known for many different types of projects, His innovative use of materials makes him popular among the others, while displaying respect towards the surroundings, Kengo Kuma tries to recover tradition and display it as a reinterpretation for the 21st century.

SANAA is a firm consisting of two major individuals that create various scaled projects around the world. Their aesthetic and design informants allow observers to distinguish their work from the rest. Displaying a certain direct design intention, sometimes with the intension of hidden humour in their projects, make this firm original and remembered by viewers around the world.

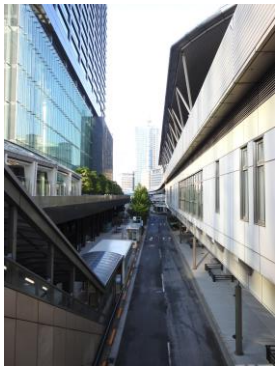
These architects have projects selected to be included in the case studies that will be part of evaluation. Case studies has been selected according to the profile of the architect and the typology of their building and will showcase various information using a uniform format and visual diagrams to express findings and information in order to accomplish the conclusion.

E M E R G E

Japanese architecture flourished during the after effects of world war ll. Japan underwent a ray of residential construction after the war. Buildings destroyed and buried, leaving a chance for a new beginning. With a mass of ruin, it left Japans architects to construct quickly and appropriately with a sensitive response to its countries history and loss.

With those conditions, a technique of form and function was born. Local architects turned to the solution of designing small, quick assembled, single family homes. Which allowed for transformation to reoccur repeatedly. Architects would build, demolish and rebuild again, as houses have a life span of almost 20 years until the next erection begins. Blossoming from the rough scores of concrete fortresses appeared and curved interior surfaces spread across Tokyo, the experimental process increased began its own staple in the architectural field.

Japans wealth of progressive architecture has structured a fine line of innovative, simplistic and unorthodox homes. This progression made Japan a hotspot for very creative, space efficient projects that demonstrate a visible connection of the use of these spaces. Some of Japans well known architects who have carried this progression intensively are architects such as Kengo Kuma, Toyo Ito and Tadao Ando. Which reinforces the desire to investigate their projects closely in hopes of discovering interesting and contrasting approaches. They have implemented a different mind-set in terms of design to create interesting collages of buildings across Japan.



HOW IS THE PERCEPTION OF A HOME APPROACHED DIFFERENTLY IN JAPAN ?

Perceiving a city as dense as Tokyo, Japan, architect and clients are faced with the issue of space. Space plays a principal factor in Japanese architecture. Usually the common constraints are that of handling small, constrained housing plots. This spatial element allows for designers to rethink the relationship between the house itself and the outside world, the city. A prominent example would be be "fortress" inspired houses that a re-designed to rather keep out the chaos of the outside from entering within.

Division between outside and inside are addressed in a peculiar way, which in fact, act as the underlining in the design process. This boundary between inside and outside in most cases is blurred making the connection subtler and light rather than within experiencing the heavy solid divisions in a conventional home. Instead, soft elements are used such as glass and interior, semi-exterior and exterior gardens.

Japanese architects analysed, developed and concluded between these two understandings of spatial qualities in a home, as it proves to be one of the strongest themes in Japanese residential architecture.

HOW DO REGULATIONS, CUSTOMS AND DIVERSE TRENDS AFFECT THE CONCEPT OF HOME IN JAPANESE RESIDENTIAL DESIGN ?

One knowledgeable factor in Japan is that new houses are being generated all the time, a house in Japan has a maximum lifespan of about 25 years. This factor is implemented due to many circumstances in Japan. The region is prone to earthquakes, therefore sometimes causing unforeseen events. Japan has humid climate in the summer due to the density of the city and its population. The concept of a temporary identity is embedded into the functional aspects of Japanese architecture.

What makes Japanese aesthetics engaging is the freedom designers have in Japan. Japanese authorities imply very little restrictions when it comes to planning the general "look" of the streets in Japan. Streets are collages of different buildings with multiple styles and preferences. The aesthetic coherence is shaped by the clients needs, interests and desires. Allowing architects, the privilege to design freely.

METHODOLOGY

Two figures will be investigated as the focal point.
The target is to define the external forms and connect it to the spatial configuration of the internal space.
The boundary between the two identities will be determined and recorded.

SHAPE–EXTERIOR	SHIFT–INTERIOR
OPENINGS	LAYOUT
OUTLINES	PRIVATE & PUBLIC SPACE
COMPOSITION	SECTION
FIGURE	LIGHT & SHADOW
	LEVEL CONDTIONS

PROCESS

Exterior and interior qualities will be addressed in a ordered format. The visual format consists of layers addressing each heading under EXTERIOR and INTERIOR.

These layers will be constructed by using technical drawings extracted from each case study. The process of layering allows for a pattern to form visually and compared to achieve an end result. Firstly the case study will be presented, analysed with visual technical drawings and then compared to one another.

Each architect has a sub-conclusion of their two projects which will then inform the final conclusion of all three architects. The conclusion should provide data that presents the architects own pattern of expressing the relationship of shape shifting in their projects.

EXTERNAL — BLURRED BOUNDARY — INTERNAL

SHAPE — SHIFTING

NOTE :

Floor plans, elevations and sections have been redrawn from the original architects drawings. These drawings have personally been expressed graphically to express layers of essential information needed to complete the paper.

SHAPE

EXTERIOR

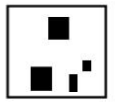
Diagrams will be used to expressed each case study in the format of the listed categories, along with a diagram to represent visual details of the case study.

FIGURE

Form addresses the mass shape of the building. This shape allows us to see the extreme limits of the design and its footprint as a mass identity. The figure presents the building as a whole and reflects is mass and physical condition. Figures are useful to detect what kind of mass the building represents.

OUTLINES

The outline highlights the visible limits of the building, marking added and subtracted space of the projects visual character. The outline is important as it draws the physical boundaries of a building. Displaying positive and negative spaces.



OPENINGS

Openings focalizes on punctures of the external façade to indicate what is visually accessible. The shapes and sizes are magnified and identified on the visible plane. Voids and transparent elements give importance as these punctures are what light, air and reflection come from.

COMPOSITION

Composition address the design as a whole scheme, where the intention and projection of the design is the highlighted. Accents are recognized and design informants are recorded. The composition represents the whole built project, and allows the observer to evaluate its physical projection.

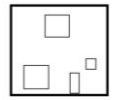


FIGURE 1 :
ELEVATION DIAGRAMS

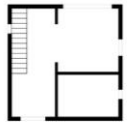
SHIFT

INTERIOR

FIGURE 2 :
PLAN & SECTION DIAGRAMS

LAYOUT

Layout speaks directly to the design and placement of objects in the space. Position and division are connected to created a certain layout to achieve a successful design in Japanese residential architecture. The essence of layout can be measured by the common characteristics in each case study.



PRIVATE

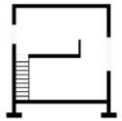
PUBLIC

PRIVATE & PUBLIC SPACE

These contrasting spaces are important factors as it informs the user the balance between free space and private space. Identifying the level of privacy that certain spaces need is an important step in achieving a successful and comfortable space. The separation and mixture of these spaces is what enriches each projects to the individual demands, thus producing numerous typologies of spatial conditions

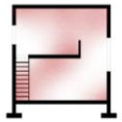
SECTION

Sectional extracts from projects are very inclusive and informative as it forms a mixture between the floor plan and the several elevations, which is important in this paper because these influences are extracted from the outside and inside connections of a complete design.



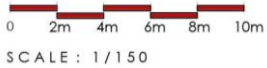
LIGHT & SHADOW

These two elements are essential in achieving a well balanced space. Where light is needed for many basis, more importantly it is needed by the user and it is needed by the building. Light creates opportunity for positive vibrations while shadows creates a different but needed sensation. These two subjects can be manipulated and projected to achieve the desired experience.



LEVEL CONDITIONS

Levels inform height and division of spaces, informing what can be seen and what cannot. The indication of levels instruct observers and users the possibilities of spaces and how this space is manipulated and positioned to achieve interesting proportions and volumes.



CASE STUDIES

SELECTION

For the paper, a series of projects were selected. These projects were determined on these important factors :

1. Architect
2. Location
3. Appearance
4. Material
5. Program

Three Architects have been selected in order to conduct a study that explores the relationship between exterior and interior in contemporary residential houses in Japan. These architects are worldly known for their many successful projects. Two projects from each Architect have been selected to evaluate and conduct a comparison and conclusion. Two projects from each architect allows for a pattern to present itself for each Japanese Architect. These patterns can determine the different approaches in contemporary residential Japanese Architect and explore how each individual has expressed their form of design in their projects.

Three bold conclusions will be recorded in conclusion to display interesting approaches to the shape shifting effect in residential Japanese Architecture. Shape, known as the exterior shell and the act of shifting, known as the interior palette will be recorded, compared and justified in order to present a series of collective information that displays unique compositions and layers that express contemporary residential Japanese Architecture under these three architects

KENGO KUMA TADAO ANDO SANAA

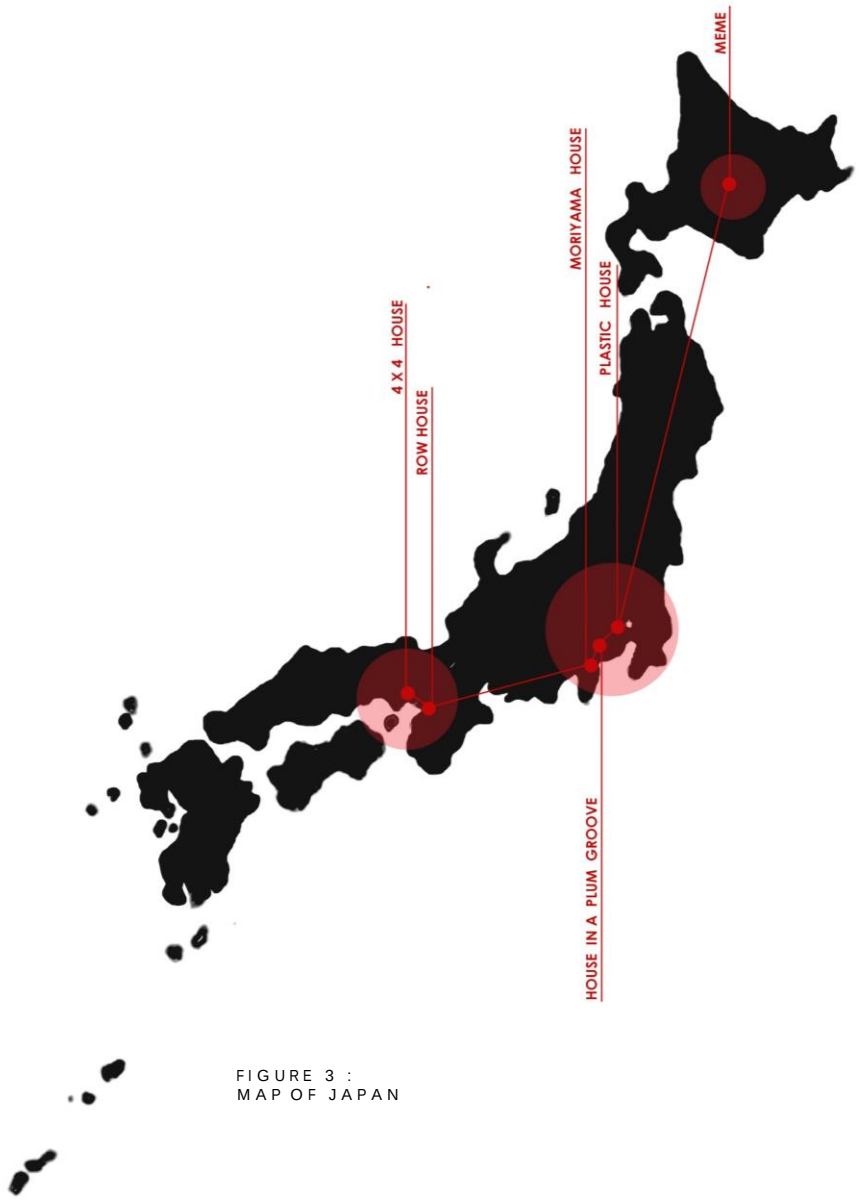


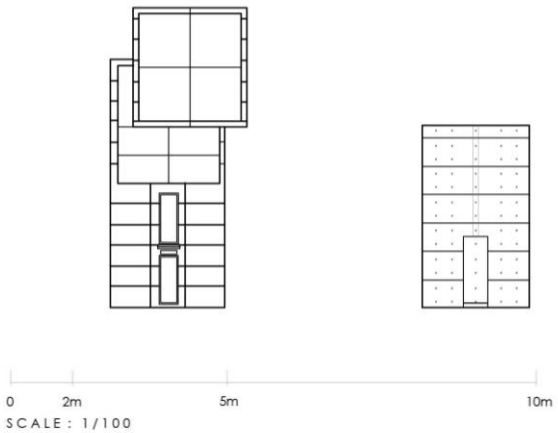
FIGURE 3 :
MAP OF JAPAN

LIST OF PROJECTS

1. ROW HOUSE
   TADAO ANDO
2. 4 X 4 HOUSE
   TADAO ANDO
3. MEME
   KENGO KUMA
4. PLASTIC HOUSE
   KENGO KUMA
5. HOUSE IN PLUM GROOVE
   SANAA
6. MORIYAMA HOUSE
   SANAA

LOCATION MAP OF CASE STUDIES IN JAPAN

ROW HOUSE	OSAKA
4 X 4 HOUSE	HYOGO
MEME	HAKKIODO
PLASTCE HOUSE	TOKYO
PLUM GROOVE	TOKYO
MORIYAMA HOUSE	TOKYO



NORTH ELEVATION

TADAO ANDO

4 X 4 HOUSE & ROW HOUSE

For the paper, a series of projects were selected. These projects were determined on these important factors :

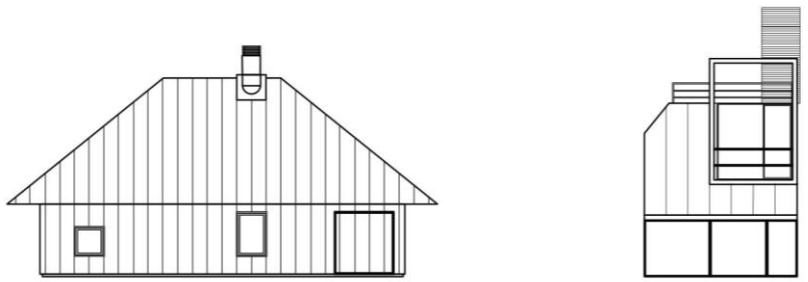
1. Architect
2. Location
3. Appearance
4. Material
5. Program

Tadao Ando is a famous Japanese Architect known world wide for his numerous successful projects. He is mostly known for his relationship with concrete in his works. He finds simplistic ways to combine the cold, raw material with clear design intentions and layouts to achieve an overall powerful presence.

These two projects were selected as they are both contemporary residential houses residing in Japan. The program informs the use of the building and directs how the client and the audience interacts with it. The program also determines the size of the project as plots are limited and constantly changing in Japan.

These two projects have a strong connection with respect to their appearance and material. Tadao Ando has a similar approach to both designs, where the outer shell is made out of exposed raw concrete, and the inner shell is informed by his use of rectangles and squats as his geometric composition.

The two projects are executed slightly different in terms of floor plan and layout, but carry the same side dimensions in appearance. Differing slightly in height and length, the study of the two projects by Tadao Ando targets to find the architects pattern and composition that expresses his styles in residential Japanese Architecture.



SCALE : 1/100

NORTH ELEVATION & EAST ELEVATION

KENGO KUMA

MEME & PLASTIC HOUSE

For the paper, a series of projects were selected. These projects were determined on these important factors :

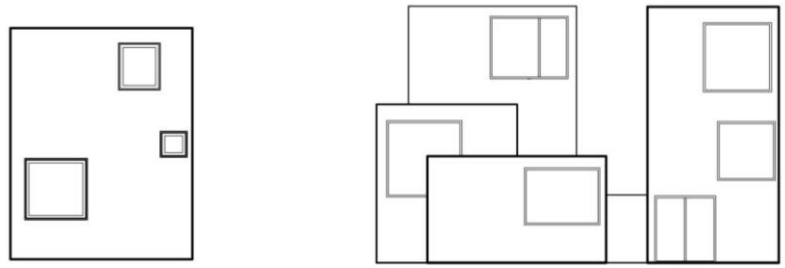
1. Architect
2. Location
3. Appearance
4. Material
5. Program

Kengo Kuma is a Japanese Architect with various kinds of projects located in different parts of the world. Kengo Kuma's projects involve a lot of care and attention to material and detail in his works.

The Plastic House and the Meme are two examples of contemporary residential Japanese architecture. One with the program of a residential house and the Meme, serving as an experimental house that addresses extreme weather conditions with the carefully selected materials by Kuma. This particular project was chosen as it differs from the rest of the five projects, where its setting its completely contrasting to the urban city landscape.

The two projects were selected as they both have a connection to the delicate use of materiality and internal layout. The two projects also have a similar appearance with vertical elements making up the outer shell, and an internal open space volume which addresses connections from inside to outside.

Differing in the level of climate and different cities located in Japan, each with its specific urban development, the houses are both executed by using innovative styles to address its surrounding and feed a positive illumanative experience for its users.



NORTH ELEVATION & EAST ELEVATION

S A N A A

HOUSE IN A PLUM GROOVE & MORIYAMA HOUSE

For the paper, a series of projects were selected. These projects were determined on these important factors :

1. Architect
2. Location
3. Appearance
4. Material
5. Program

SANAA is a Japanese Architectural firm founded by Kazuyo Sejima and Ryue Nishizawa. Known for their large scale projects, including schools, housing projects and cultural centres, SANAA is also known for their smaller scale housing projects. Some more personal than others.

The Moriyama House, slightly more popular than the House in a plum groove was chosen for its dynamic approach to residential housing program, as it acts as separate volumes which co-exsist with another. The house in a plum groove is a slightly more personal project by Kazuyo Sejima, where she introduces the same concept as Moriyama House.

The two projects were selected because of their relation to its appearance, use of material and internal layout print. Both projects possessing rich inner conditions while displaying a simple aesthetic to the public. Reflecting a simplistic outlook with a highly unexpected experience on the inside.

Both projects expressing connectivity and privacy in its scheme, which made it ideal examples to evaluate and depict its architectural layers.

IMAGE SOURCE : ARCHITRAVEL

ROW HOUSE
TADAO ANDO

LOCATION
SUMIYOSHI,
OSAKA,
JAPAN

BUILT AREA
34 m2

YEAR COMPLETED
1976

PROGRAM
RESIDENTIAL HOUSE

INTRODUCTION

One of the first successful projects by self-taught architect Tadao Ando was the Row House also known as Azuma house, in Sumiyoshi. The architect, who sees himself as a "fighter-architect", produced a series of bold proposals for particularly small sized homes.

The Row house, was considered one of Ando's proudest achievements: a bold fortress designed from an architect who developed skills through multiple "combat tests".

The house can be described as a spatial element divided in three, where the space is devoted to daily life. The form is composed of austere geometry, with the intention of introducing an abstract play dedicated to the relationship between light and wind. His objective he says, was to explore the inertia that is present in the daily lives of people.

This project is also a staple that distinguishes features of his later works that are already distinct and recognized. After completion of the Row House, Tadao Ando received an award from the Japanese Association of Architecture in 1976.

LOCATION

The house is in Sumiyoshi, a district in central Osaka, Japan. Its presence replaces and contrasts with the traditional wooden-built homes in the district. Neighboured in between three previously built terraced houses.

Azuma house sits in the lower city part of Osaka, called "shitumachi". It lies in the centre of this working-class neighbourhood, which is full of numerous noises from busy daily life. The house stands as a old, plane silent wall as you meet it at the street boundary. This area is not one of the busiest and chaotic, there is still a profound contrast between this "concrete block" and the surrounding environment.

Recognized as the "Deep South" district of Osaka, this location is where Ando began his career in Architecture. From the late period of the 1960's to the beginning of the 1970s, the architect immersed himself in the battle to create and design bold living conditions particularly in small sized plots. As japans economy was developing, Ando found himself starting in the narrow spaces, where objects could almost go unnoticed.

Ando starting out in his career as an architect, he went through a series of experiences to establish himself while struggling with the complex components such as of the union of tradition and modernism, the limited budgets and aspiration of his selective clients, the demands of the daily Japanese life and most of all the expectations of aesthetics in a city that still maintained strong Asian traditions in its culture and background.

CONCEPT

Tadao Ando presented a reinforced concrete cased box in the middle of a row of neglected wooden houses. He managed to create a social theme as well as a theme of design that followed this project. One of his goals was to create a sufficient living space within the case of this solid silent box.

This design guaranteed a balance of individual privacy; something which traditional wooden houses did not have. At the same time the design provided a residential living space which encourage for modern development of the individual. It is a form of expression that lived in Tadao Ando as he carried out the design process for the Row house, that a home is the construction and elevation which can change the living patterns of society.

Built between strong divided wall elements, the proportions of the house are separated into three equally sized sections; two spaces and an open patio space. It can be described as a concrete box which occupies the entire floor area. The house creates an atmosphere that revolves around its centre, in terms of organizational space. The uncovered patio represents the heart of the building.

Tadao Ando is known for his strong belief of the connection between the human users and nature, especially when plots are more central in the city than far away from it. This belief is another point which is distinguished in his work.

This relationship was fundamental for the latter, his intention was to ensure that the inhabitants while living in the space would gravitate towards participating in nature.

This was intentional by creating the division of three equal spaces, whereas the body of the building must be crossed from end to end in order for the inhabitant to make contact with the uncovered patio, thus in any season, rainy, sunny and warm or cold in winter, the inhabitant would have to cross the patio to access another room.

The open patio is almost like an element resembling an "oasis" within the busy fast life of the city. Where is acts as a pause moment throughout the home and as a breaker between city life and the outdoors. It allows for substantial amounts of light to penetrate both sides of the building as well as creating a central body fully exposed to natural illumination.

This central 'void' allows for light, air, rain, hot or cold air to enter at the given seasons of the year, which also creates different internal conditions, according to the weather. This uncovered patio is almost like a window that allows the user to cohabitate with nature.

The total space has been divided longitudinally in three parts: two of which are interior, they contain the more private and semi-private spaces. The third element of the divided spaces unifies these transitional boundaries by being an external space that acts as an open-air patio. It is a separator and a connector. The three-way partition is applied as a concept which imitates the long-short-long pattern of the street façade: that is, wall-entranceway-wall.

The architect introduced a complex circulatory layout that transformed the simple rectangle geometry he selected into a rich spatial experience. The progression of the three equal divided spaces acts as a journey to create transitional spaces through movement of experience. He transforms a simple geometric space into a habitable living space.

Located on the ground floor are spaces such as the living room, kitchen and bathroom, separated by the external patio, which also creates a focal point for the family's life, as this common space acts as a tie between these common used spaces. Located on the upper floor are the more private-orientated spaces such as the bedroom and the study, the uncovered patio echoes from top to bottom and is the only source of natural light in the whole house.

The patio

The presence of the patio is crucial as it makes a unique circulation route within the house. It was intentional as there was no other way too get to each side of the house within crossing at the centre point, therefore there would always be opportunities to touch nature through circulating the house from side to side. To reinforce Tadao Ando's design to those who think this floor plan would come as an inconvenience rather than a benefit, the architect defends his design with these words:

"... In the moment, I thought of residential design as the creation of a space where people could live as they desired. If they felt cold, they could put on another layer of clothing. If they felt warm, they could take clothes off. The important thing was the space, not a mechanism for temperature control, but something defined and receptive to human life... No matter how advanced society becomes, institutionally or technologically, a house in which nature can be felt represents to me the ideal environment in which to live..."

- Kengo Kuma

FACADE

The rigid, silent and bold façade is solemnly constructed out of two elements; one, the use of exposed reinforced concrete, [a detail which later in his line of projects began to be recognized as his signature] and two, the strong vigilant use of geometry in his design. The building expresses a blind façade to the street, blocking out the noise surrounding the concrete block, the façade creates almost a cold front to its observers.

The symmetrical composition in the form of two rectangles, one being the form used as elevation and the other the shape of the entrance door placed within the centre of the elevation.

The elegant form presents itself rigorous as it meets the street boundary for the public to observe. The absence of decoration and variety in the envelope encourages the observer to feel unprovoked and still. Which s why it is claimed that Tadao Ando's buildings are a pure form of Japanese architecture as it invites you to "reflect on nothingness". This sense of still beauty underlines the nature of Japanese culture.

MATERIAL

The use of material for this building is blindingly poetic.

The raw concrete was proposed to have a psychological effect on the user, simply because the subtraction of decoration invites the feeling of empathy. This deep impression is what Ando uses as an underline of expressionism in his buildings. This intention expresses the Japanese sense of beauty. A "place of nothingness" sits in the depths of Japanese culture.

The material presents itself as the only ornamental structural element in his design. Concrete used as the main material can be found externally and internally, in the central space, glass panels are fitted around the planes surrounding the patio.

The glass panels allow for direct views that fall onto the internal uncovered patio. This glass façade acts as a contrast from in to out, which basically provides a look-out over the divided spaces.

1

2

3

4

5

6

7

8

ROW HOUSE

VISUAL INTERPRETATION

1 and 2 are images of the main body of the Row House, these images depict the relation between inside and out within the body of the building, deceiving the public from its bold façade in image number 4, Tadao Ando create a fuller and rich atmosphere within the restricted space.

Image 5 proves to be clear and powerful as it shows that rain and water is able to enter the core of the building, thus forcing the user to interact with the natural climate conditions. Images 3 and 7 reflect how transparency is used n the design to highlight the core as a central element of the house. The last image shows the contracts between empty and full spaces in within the boundaries of the building.

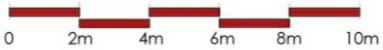
IMAGE SOURCE : WIKIARCHITECTURA

NORTH

SOUTH

EAST

WEST



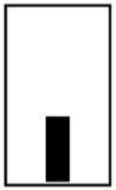
SCALE : 1/100

EXTERNAL

OPENINGS

Tadao Ando is known for his simplicity and minimalism.
In this diagram is an illustrative response to the essential openings placed and sized in Tadao Ando's design for the Row House. This pattern indicates clearly the use of symmetry and consistent form of objects placed on the visible surface. His selection of using symmetry reflects on all positions of openings on each façade.

Creating a clean and clear concept from an outsider's point of view. The minimalism in his openings are intentional as it allows for control of privacy and blocks out the chaotic vibrations of the city.



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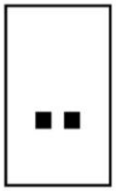

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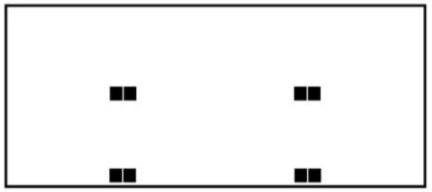

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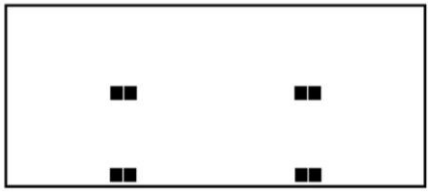

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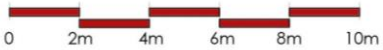


SCALE : 1/100

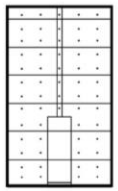
EXTERNAL

OUTLINE

The purpose of the outline of an building is to clearly highlight the limit and boundary as the building exists. Tadao Ando has designed the Row house using the most conventional shape, a rectangle.

Th outline shares a solid presence as the edge conditions are uninterrupted and sharp. He uses a simple shape to co-exsist in the small, linear plot.

Creating a functional enclosure that allows the building have an interesting internal condition.



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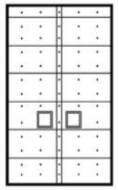

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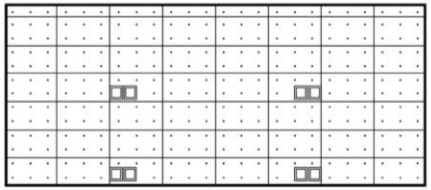

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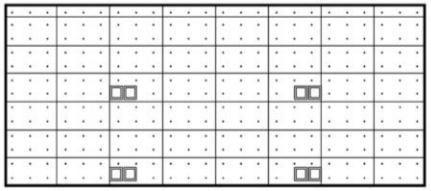

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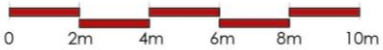

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EXTERNAL

COMPOSITION

A special feature that adds quality to the composition of the Row House, is the noticeable concrete panels containing equally spaced meta bolts securing the panels. These panels are used as cladding across the building.

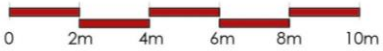
Tadao Ando is well known for his work with concrete, therefore, the panels casted for the façade adds an extra layer of character. The composition expressing geometric relationships between squares and rectangles, answers to his simple and bold designs. The building almost seems as if it has its own skin that identifies the architect and the design pattern.

NORTH

SOUTH

EAST

WEST



SCALE : 1/100

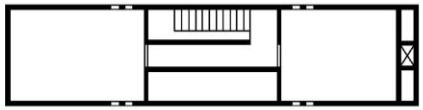
EXTERNAL

FIGURE

The figure indicates the building as a whole.
Its shape and footprint indicates its response to its surroundings. Tadao Ando has selected to build this home using the most simple figure. Thus, creating a bold symmetric built identity. The exterior shifts as a symmetric and plain form.

In this case, the mass is in its simplistic form, and its exterior has no void penetrating through the volume. With a heavy print, the building anchors itself on the plot. As a response to early landscape damage from natural disasters

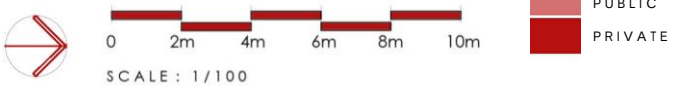
GROUND FLOOR



FIRST FLOOR

GROUND FLOOR

FIRST FLOOR



INTERNAL

LAYOUT

The layout of the Row house clearly displays a play between divisions of rectangular space. The boundary is a clear rectangle outline with miniature consistent openings.

The internal spaces are divided into three transitional spaces, where the centre is carved out and used as an empty space where circulation routes are accessible. The division of these spaces allow for multiple internal conditions as the central carved out space allows for direct sunlight penetration and a clear view of the sky.

PRIVATE & PUBLIC SPACES

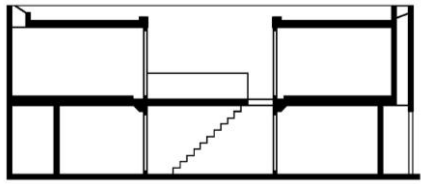
The diagram is an indication of two important spatial uses in the layout. The division of three spaces can clearly be seen along with the program of its purpose. The entrance marks as public space as it is direct access from and to the building.

The first block identifies as a private space, which then transits into a public space that opens and divides the two main private spaces, acting as an connector, allows for the house to breathe, giving exposure while still being within the boundaries of the home.

The second floor follows the same principle with a clear private connector joining the two opposing private spaces.

INTERNAL

SECTION

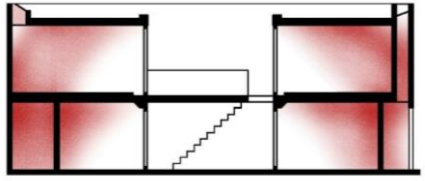


LONGITUDINAL SECTION

The section is a clear indication of he internal spaces in a longitudinal view. Where the centre is a clear public space cutting trough the rectangle. Allowing for a different condition in between the two main private blocks.

The section indicates an opposing condition that is almost a contrast to what the external experience exerts. Displaying a clear intension of organized space and volume. Tadao And achieves an interesting atmosphere by bringing the outside Into the inside using clear subtraction and addition of internal and external spaces within the boundary.

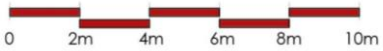
LIGHT & SHADOW



LONGITUDINAL SECTION : LIGHT

The central void allows for an engaging atmosphere between light and darkness. Tadao Ando, known for his deliberate manipulation of light in his projects.

The central void allows for both sides of the building to receive a substantial amount of light, while the light diffuses as it travels through the house, both sides are able to absorb warmth and light from the opening. While both ends still provide moderate cooler temperatures, light can be controlled by the openings on each side of blocks. As the centre serves as an outdoor atmosphere, the use is forced to experience this condition as the user passes from one end of the building to the other.



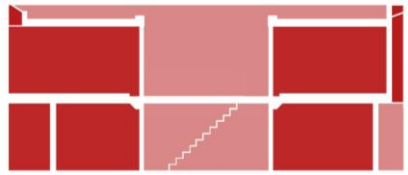
SCALE : 1/100

INTERNAL

FULL & EMPTY SPACES

This diagram is essential for identifying voids and full spaces by section, therefore, double volume spaces are illustrated giving importance to the intention of the Architect.

The central void plays an important role as the void introduces a different dynamic between inside and outside in the project. A clear interface between full enclosed spaces are balanced and placed on both ends of the rectangle volume. Creating a balance that is unforeseeable from the outside. Illustrating an illusion of a bigger and fuller space as a contrast to the concrete block viewed on the external figure.



LONGITUDINAL SECTION

LEVEL CONDITIONS

The level conditions emphasizes how many levels are present within this rectangle volume. By the separation of blocks, symmetry is expressed by having a consistent base and two opposing blocks on the first floor. Two floors exist within the rectangle block.
Expressing the longitudinal condition proves how the small plot is used sufficiently.

The levels express how movement is possible and the limit of what is built within the volume.

LONGITUDINAL SECTION

SCALE : 1/100

IMAGE SOURCE : WIKIARCHITECTURA

4 x 4 HOUSE
TADAO ANDO

LOCATION
TARUMI–KU,
KOBE,
HYOGO,
JAPAN

BUILT AREA
22.56 m2

YEAR COMPLETED
2008

PROGRAM
RESIDENTIAL HOUSE

INTRODUCTION

The 4 x 4 house is one of the first projects to emerge resulting from a competition held by a magazine. This project was then presented to the client alongside the famous architect, Tadao Ando. The main idea for the 4 x 4 house was to adapt to the requirements of the site. Before the project could take motion, an important site condition that had to be considered was the terrible after effects of the Hanshin earthquake in the area.

On April 17th, 1995, the earthquake left devastation through out the district, whereas the site left on a chaotic and narrow strip of land, was very close to the boundaries of the centre of the earthquake. Knowing this, the landowner had confidence in the architect and instructed for the commence of the project.

After completion, another client had approached Ando to built a similar home with the same intentions as with the 4 X4 house, this proposal was then built right next to the original, thus introducing a dual atmosphere on the site along the strip in Kobe.

LOCATION

The house is situated near Hyogo coast, near by the outskirts of Kobe, found on the commercial strip and surrounded by train tracks and a dual carriageway to the North and on the opposite side, known as the widest spanning bridge in Japan, the Akashi Strait.

Here you can see how the sandy beach touches the shores. One may say the sides are contrasting, adding different conditions and atmosphere to the site.

Views was very important to the Architect, one of the interesting views that attracted the architect was the views over the island of Awaji, the view points of the temple of water and the epicentre of the Hanshin earthquake.

The 4 x 4 house was built on a plot with the size of 65m². The second residential home was on the adjacent plot of 74m². As the plots are almost sitting on the beach, extra deep support was implemented to anchor the building to the shores.

CONCEPT

The site influenced the concept greatly. The relations between the light and water was very important as the building was designed to face the sea. The sunrise and sunset plays a big factor within the internal conditions. The sound of the ocean was also taken into consideration in Ando's design.

The house combined a rigorous composition of geometric shapes with the intention to construct a piece of architecture that fades into and becomes apart of the sea. He is known for his use of geometric bases in his designs, such as squares, circles, rectangles and triangles.

With these pieces together, the architects intention was to create a form representing the form of a contemporary lighthouse by the ocean. This then brings the strong relationship between building and its natural surroundings, which is also another crucial factor as Tadao Ando designs his projects. He strives to bring a natural balance between the two boundaries of hard and soft.

Each floor is constructed out of mass concrete, which acts as the strong beckon of the lighthouse, imposing a domination over the views of the sea. The strong forms of minimal dimensions in terms of floor plan spanning of 4 x 4 metres which is extracted in height, the floors span from a basement, a ground floor and three upper floors. Giving the internal space a tower-like atmosphere in elevation and section.

It is Tadao Ando's intention to create an experience of intellectuality and spirituality for the occupants of his buildings.
It is important for Ando to provide the individuals who occupy his buildings to have a spiritual and intellectual experience within the space.

The concept is represented in the displaced cube that occupies floors. This cube is shifted to ensure that views are maximized and used efficiently. This illusion of elevation disembodied from the main body of the building creates a connection between the user and the landscape.

. "...I try to use the forces in a space to restore the unity between the house and nature..."

-Tadao Ando.

SPACES

What is interesting in the design program of the 4 x 4 house is the arrangement of the functional spaces. Tadao Ando has inverted the conventional space and used the sites scenery as an important informant of what each floor is used for. Each floor has a distinct function: a storeroom occupies the basement.

The entryway and service area occupy the ground floor, the bedroom occupies the first floor, a study on the second and located on the final floor, a combination of the kitchen, dining room and living room is placed, which then forms the focal point of the house.

The final level is focalized not only because of its function, but also it is the level with the 4 x 4 dimension of a displaced cube. The displacement of the cube is compensated by the circulation located on the left side of the linear grid. This adds more emphasis on the geometric linear grid where the circulation is providing a prominent space as oppose to displacing the 4 x 4 cube.

The last floor is a 4 metre cube made out of concrete, with a floor to ceiling glass elevation on the South-East side which towers over the sea as a lighthouse would. Almost acting like a telescope lens and capturing the essence of the ocean.

Another detail Ando added was an extension to the shore from the entryway. This entry way provides a direct connection to the shore of the beach using a concrete platform. It is another subtle form of connection between the building and its natural surroundings.

FACADE

On the North façade, the entrance to the building is found. Above this is a smaller minimal square opening, this is done to allow light to enter the space of the passage way. The façade expressed in raw concrete, a signature well known from Tadao Ando, allows the observer to concentrate on its simplistic detail. Where the architect exposes the concrete panels, embedded with structural bolts, creating a sequence of deepened uniform circles to the eye. The concrete is celebrated and used as the buildings filter with respect to the devastation of the previous earthquake.

The west façade has four vertical slim windows on the edge of the plane which addresses the street. The purpose of these slim windows is to illuminate the corner staircase, which allow for interesting corner conditions externally and internally. The eastern façade has three smaller square openings, also a vertical window mimics the one found on the west façade.

Tadao Ando creates a contrast between the North and South elevation by almost closing off the façade addressing the chaotic commercial strip and exposing the opposite faced which faces the sea.

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4X4 CUBE

Tadao Ando used a linear grid as a guideline while designing the house. What makes this design unique and bold is the 4 x 4 cube offset from the linear grid line. The 4 x 4 cube, which is displaced a metre from the main vertical axis rests on the top floor, displaying one façade with a glass face. The organization of the building is like the Ken organizational framework, which is a traditional Japanese method that controls the framework and the additive sequence.

Ken is a common unit of measurement in Japanese architecture. This particular value has varied over time but generally can be less than 2 metres where the space would be divided into squares using this metric number. From these methods, the cube seems to generate a visual larger scale than what it really is, in reality embracing the visual atmosphere of a tower.

MATERIALS

Architect, Tadao Ando is known for his excessive use of concrete in his designs. For the 4x 4 house, he used reinforced concrete for the structural system and exposed concrete for the exterior planes and exterior ground surfaces. This is intentionally done with the aim of controlling privacy. Principally in all the façade facing the land-side, has minimised openings, which are framed with aluminium and steel.

In the interior, the walls are exposed concrete and the material Oak is used for the floor surface. The architect has chosen very minimal material to accompany the minimal forms of the geometric home.

Due to the sites harsh conditions, and possible earthquake patterns in the area, the Architect has made sure that the concrete structure remain firmly anchored below the ground, which increases the resistance to lateral forces. As for the 4 x 4 concrete cube with one elevation of floor to ceiling glass, Ando had chosen to use a shatter proof fil as well as reinforcing the glass with steel crossbars. This assists with any tensions in all directions of the structure.

Seeing as the house lives right across the ocean, it was important to implement a water-resistant solution to all exposed surfaces. The Architect applied waterproof sealants to all concrete surfaces of the exterior to ensure rusting and any other substance bases does not occur.

1

2

3

4

5

6

4 X 4 HOUSE

VISUAL INTERPRETATION

Tadao Ando first started the project with one building, in image 1, a building with the same footprint and appearance was later erected as neighbouring clients were fascinated with Ando's lighthouse tower-like structure.

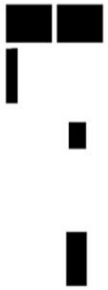
Images 2, 3 and 5 reflect internal conditions where light is received the most. With warm tones serving as elements and conserving the use of raw concrete as a way to bring the outer shell into focus on the inside.

Image 4 and 6 express the composition of the house, where the building interacts with is natural surroundings. This image displays the direct intention of Tadao Ando, where an invisible link between nature and his building is tied to one another.

IMAGE SOURCE : WIKIARCHITECTURA

EAST

SOUTH



NORTH

WEST

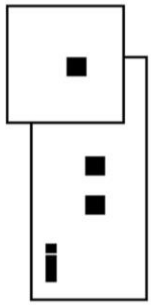
SCALE : 1/100

EXTERNAL

OPENINGS

A Focal element is introduced and highlighted in the main feature of the design. The light-house inspired feature gives importance to the shifted block which faces the sea.
A large opening is placed in this 4 x 4 block to emphasize views and connect the house to the sea. Where almost the whole façade is made out of glass and allows for a magnified experience of the ocean.

Smaller openings are chosen and placed in all facades of the house to minimize views directly into the house from the outside world of the commercial district. These small openings allow for privacy while allowing natural ventilation to occur on each level.



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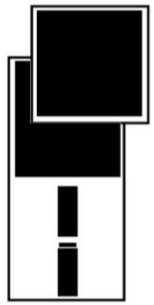

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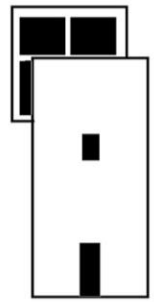

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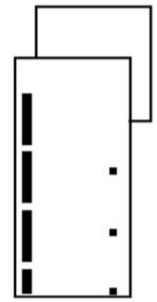

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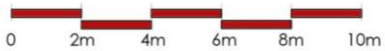
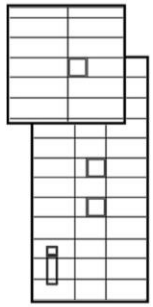


SCALE : 1/100

OUTLINE

The outline of the elevations indicate the boundaries in the design. These boundaries set the limit that exists between the building and its surroundings. The outline introduces opportunity to observe the simple geometric form done by Tadao Ando. He selects a specific dimension, and rearranges positions to take profit of the site.

The 4 x 4 block acts as its own identity as it is shifted from the formal grid he implemented to the main body of the building. Simple geometry is highlighted in Tadao Ando's composition and is expressed as a motif through the design. A strong intersection of the two figures; cube and rectangle are strongly seen in the diagram.



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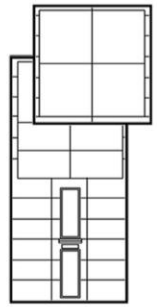

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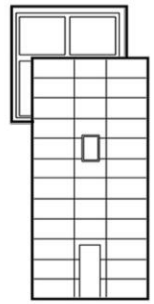

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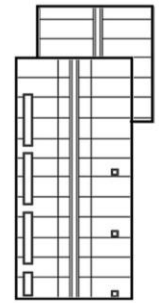

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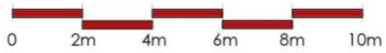

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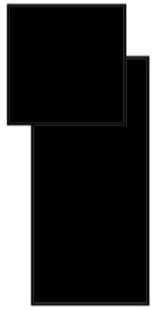
COMPOSITION

The composition of the 4 x 4 House can be clearly defined by the use of geometry. Tadao Ando uses simple forms with a symmetric pattern found using the concrete panels on the façade. The façade acting as its own material skin, characterized by the equally spaced metal bolts, repeated from top to bottom, and the equally shaped reinforced concrete panels organized in a uniform pattern.

The composition expresses Tadao Ando's urges for using basic forms. Importance is given to the 4x4 block presence by shifting one bold element and highlighting it with large glazed windows for maximum view points. The fully fitted elevation of glass gives another dimension of transparency in the design, as the building is mostly covered in concrete, a break on the building skin allows for mixture of quality in the completed design.



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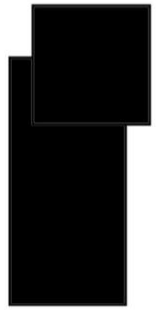

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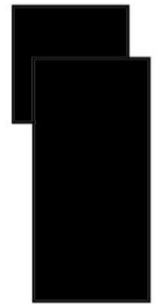
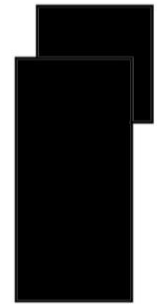
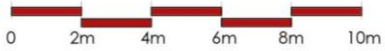


NORTH



WEST



SCALE : 1/100

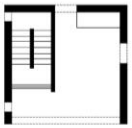
FIGURE

The mass can be described as smooth, and relates to the fact that the material of concrete was used to express this motion. Bold, simple and firm characteristics are framed within the external shape. The shifted cube is expressed strongly as the lines are filled in.

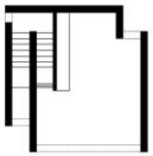
Carrying the same dimensions, the cube creates an illusion of floating and hovering above the sea. The slender body carrying the cube expresses a still character, with no subtraction from its surface, A firm core is recognized in the design.

GROUND FLOOR

FIRST FLOOR



SECOND FLOOR



THIRD FLOOR

GROUND FLOOR

FIRST FLOOR

SECOND FLOOR

THIRD FLOOR

SCALE : 1/100

INTERNAL

LAYOUT

The layout used for the 4 x 4 House by Tadao Ando is a simple square base. The shape is expressed throughout all the four floor plans, except for the fourth where a second square with the same dimensions is introduced and offset to the left to create a second base that serves as the towers geometric block.

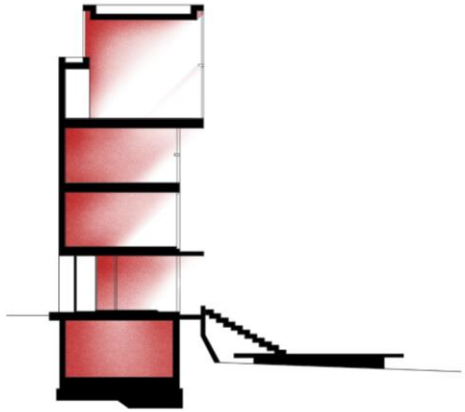
The layout indicates how minimal openings are placed around the facades and indicates a large opening on the second and third floor. Illustrating transparency is of importance on these levels. On the ground floor, a direct connection is provided from the entrance to the exit towards the sea. This provides a physical and visual connection as the user enters the house. Indicating another invisible connection to nature that Tadao Ando anxiously insists in most of his designs.

PRIVATE & PUBLIC

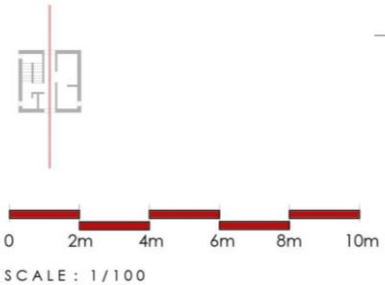
As the floor area is limited, each floor provides a specific function, leaving public space limited and restricted. Circulation acts as the public space as this is the only space that usable on the daily routine.

Each floor is designated to a specific function which restricts the user to perform certain actions on each level. The planning of the internal layout is efficient and clear. Providing essential spaces that are separated by floors. With very minimal division, each floor allows the user to maximize an action on which ever floor they are in.

SECTION A



SECTION A : LIGHT



SCALE : 1/100

INTERNAL

SECTION

The section illustrates the linear figure of the 4 x 4 House, Emphasizing importance in orientation and openings, the design indicates how the house faces the sea, almost resembling a modern lighthouse, the section showcases how openings are treated with respect to direction and views.

The thick lines acts as if the house is turning its back from the commercial streak behind it and opens up to the ocean in front of it. The thick walls allow for structure and support, with a heavy secure base implanted into the ground and an extension leading the user to the sea.

The ground floor acts as the most transparent floor as it is accessible to two sides of the site, one to the commercial district, and the opposing side towards the ocean.

LIGHT & SHADOW

As all openings are facing the sea, all light penetrates from this facade of the linear volume. The orientation with direct exposure to light provides most of the light that travels through the home.

The shifted block serves as the most volume receiving the most light, as it has one faced glazed entirely. Also, it serves as the floor with the most common spaces. Taking profit of the amount of receiving light. The minor floors have reduced opening with some light entering to control the level of privacy.

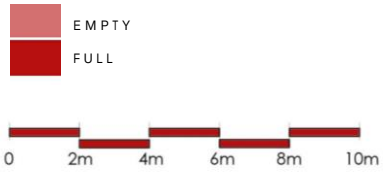
SECTION A : CONDITIONS

INTERNAL

FULL & EMPTY

The most transparent space that provides easy access through the house is the ground floor, as it is the level with the most accessible openings for multiple uses of entrance and exit points.

The full spaces that serve as functional spaces are the basement, the first, second and third floor. The full spaces are occupied separately on each floor, splitting uses and functions from top to bottom.



SCALE : 1/100

SECTION A : LEVELS

INTERNAL

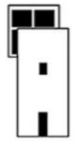
LEVEL CONDITIONS

The levels in this buildings are interesting as it shows an underground level that is not visible to the public.

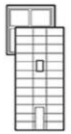
Creating the same spatial floor plate, levels are expressed linearly within the limits. Almost resembling blocks, the levels express how much space is used even within a limited casement. Tadao Ando uses space that incorporates symmetry and undisrupted limits.

EXTERNAL COMPARISON

Tadao Ando expresses minimal openings in both his works to control privacy. He controls surface conditions by minimizing punctures on the façade and increasing these openings in selective faces of the building where views, light and access take profit.



The outline of the two designs express a similarity in geometric outline,
Where the main body is enclosed within a rectangle mass. Resembling stability and solidarity.



The compositions speak to each other as the architect celebrates his main choice of materiality. Where the concrete displays smooth craftmanship in the final product. Metal bolts provide extra stability and are an addition to the enclosures language.

The figure proves both anchored and solid in response to the earlier devastation of natural disasters. Tadao Ando creates forms which act as a unified object that maintains a physical expression within its site.

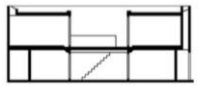
Row House

4 x 4 House

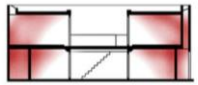
INTERNAL COMPARISON

Formalizing on a simple layout between the common geometric shapes of rectangle and square. Tadao Ando chooses appropriate footprints according to the site.

Tadao Ando introduces division in his designs, which creates contrasting scenes as the user circulates from one point to the next.



Despite the difference in physical sectional design, a clear notation of separation and allowance for exposure to the external condition is implied in both sections.



The need for light is expressed within the sections, the architect displays this access through either a break within the enclosure or designating one façade to capture the essence of light penetration.

With difference in height, Tadao Ando expresses clear separations between height and level. Creating importance in a simple enclosure, but adding character with the addition and subtraction of space.

Row House

4 x 4 House

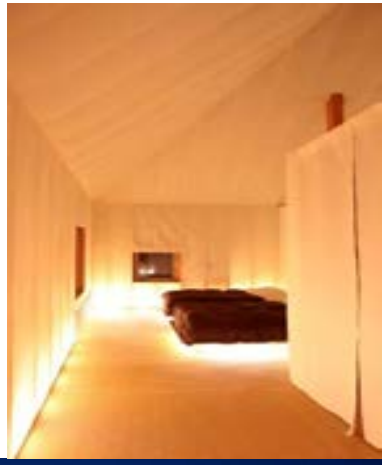


IMAGE SOURCE : KENGO KUMA AND ASSOCIATES

MÊME
KENGO KUMA

LOCATION
158-1 MEMU
TAIKICHO
HIROGUN
HOKKAIDO
JAPAN

BUILT AREA
79,50 m2

YEAR COMPLETED
2011

PROGRAM
RESIDENCE

INTRODUCTION

["Même" is the name of the district where the house is located. It means "the same" in French and "place where springs well up" in Ainu.]

In a farmland setting, very different from Kengo Kuma's usual project style, lies the experimental house called "Meme". Surrounded by beautiful natural scenery and extreme weather conditions, the architect modelled the design with relations to the traditional Ainu dwellings or "earth houses".

These earth houses use natural material as insulation and maintain heat by installing an indoor fireplace that could maintain comfortable temperatures throughout the severe winters.

Located in Hokkaido, the climate differs dramatically compared to the city climate. Having dry summers and ice cold winters. The severe climate conditions of Northern Japan is what cultivated the Ainu ways, making the Ainu, the islands first traditional inhabitants.

The main design informant that was used as an underline in the design is referred to as "Chise". Chise is the traditional house style of Ainu. Therefore, Kuma's dwelling typology directly respects the natural surroundings and ways of the Ainu.

The construction style can be compared to that of barn technology, but with a radial approach to material use. One principal factor that drove the design was how the architecture would cope with constant climate change.

Creating intimate connections with contemporary technology but also pursuing the practice ancient knowledge of the Ainu traditions in Hokkaido.

LOCATION

Located in Hokkaido, Founded by LIXIL JS Foundation, lies a village that hosts the Meme Meadow Centre for Research of Environmental Technologies.

The target of this organization is about improving peoples level of comfort and lifestyle occurring in long span projects of fundamental ecological concepts. Kengo Kuma's experimental house is the first of its kind in the Meadow series on progressive and innovative residential housing solutions in relation to enduring extreme weather conditions.

Meme is said to echo the experimental houses designed a century ago by Frank Lloyd Wright in American prairies, where the location of the fireplace informed the design decisions of the space. Meme Meadows began a new streak as the facility became a relevant monitoring platform for ecological projects in northern Japan.

CONCEPT

Meme is located in the meadows near Hokkaido. The concept takes many forms from the traditional Ainu home called chise. The Ainu are Hokkaido's indigenous people. "Chise" can be referred to as "grass houses" because it consists entirely of kaya [grass used for thatching] and sasa [bamboo grass] for insulation.

The Ainu houses resemble earth houses too, as the way of living in these special homes require a lot of contact with the ground. Residents would lay mats directly on the earth, which is kept warm by a fire that is constantly burning in the hearth. The absorption of heat transferred by the ground is the basic principle of Chise.

The architect states that the grass house effect is mimicked by using the membrane material in the walls and ceiling as the soft element, resembling to the idea of a stuffed animal. The structure lays directly on the earth, and as night falls, the warmth is portrayed by the orange tone lighting installed within the walls that fill Meme with vibrant colours of fire.

"I wanted to design a light environment that felt similar to being outside on an open field bathed in sunlight." - Kengo Kuma

SPACES

Meme is identified as a experimental house, therefore it required specific attention and detail to make it functionable and appropriate to respond to its natural surroundings.

The idea was to use specific material according to their properties to allow for desirable performance in the space. Therefore, the first informant was the weather, traditional Chise are closed off and dark to trap heat internally,

Kengo Kuma's first decision was to create a bright lit interior by selecting a translucent material for the walls and ceiling. This allows light to create a diffused lit glow in the day which captures the soft essence of the meadow and surrounding field. Externally, the translucent material allows for a warmer glow at night, exposing the structure and life within the space.

The sensation of the experimental home revolves around illumination and material. With an open plan, the internal space offers a reflection of minimal spaces with only essential living equipment. The spaces are divided with white curtains that can be opened or closed off depending the time of day. The interior space is divided into three parts; edge-middle-edge.

One the end of the house is the entrance and bathroom, the middle of the house is the connecting space which is the central living and dining area with a central fireplace and on the opposite end of the plan is the study alongside the bedroom.

Maintaining different temperatures according to the climate, the house is illuminated throughout the times of the day. The house becomes apart of its surroundings, changing constantly with the seasons and responding to different conditions inside and out.

The house's skeleton is elaborated in the design, whether in the day or night. Following this, the membranes of the experimental house allow for the residents to synchronize their daily schedules with the natural rhythms. By using the light to rise and awaken and going to sleep as it gets very dark.

Light is a very crucial element in Kengo Kuma's design. Said to resemble Isamu Noguchi's light sculptures, the house incorporates special light fixtures to bring life intended in the design. The house is fixed with subtlety and modest illumination through fluorescent tubes placed gently along the perimeters of the building.

These fixtures act as the primary artificial lighting elements as other conventional light fixtures are subtracted to avoid unwanted shadow lines in the delicate light atmosphere.

STRUCTURE

Extremely cold weather conditions usually demand thick, well insulated embracing walls. The idea for Meme Meadow was a translucent illuminated habitation, which proved to be rather difficult to achieve in such harsh climates.

To achieve the vision and goals of Meme, a collaborative research was done with the Tomonari Yashiro Laboratory at the University of Tokyo's Institute of Industrial Science.

The construction and performative qualities of Meme experiential house is based on the layering of qualitative materials. The main structure is made from locally produced Japanese Larch wood, this wood is primarily used as the structure of the house. The wooden frame is then cladded with fluorocarbon coated polyester fabric membrane externally.

On the inside on the house is removable glass fibre membrane, both membranes translucent in appearance. The insulation plays a significant role in the design, as it should be able to withstand the cold winters and snowy nights in Hokkaido.

The insulation consists of a layer of thermal polyester fibre, which is produced from recycled PET bottles and inserted in-between the larch wooden structure.

Having these elements together almost like a sandwich, achieves the special light atmosphere that was intended for the design by the Architects.

The mechanism of the home targeted the use of heat transmission, as part of the traditional ways of Ainu, it was vital to incorporate heat transmission from the ground.

This was executed by having a floor heating system installed, which can be monitored according to the climate, making it easy to have heat and little to no heat in the summer.

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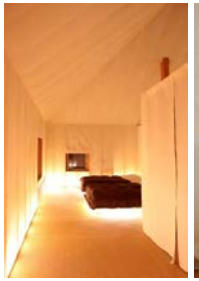
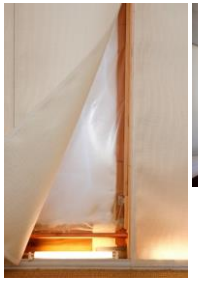
6 

7 

8 

MEME EXPERIMENTAL HOUSE

VISUAL INTERPRETATION

Image 1 displays the Meme house in its natural element where it displays an internal luminous glow. One of the houses most distinct and delicate feature is how it deals with the harsh climates and how the façade reflects and attracts against its natural surroundings.

Images 2, 7 and 8 display the house in a different way, where natural light enters the house and highlights its internal features. The high ceiling is elaborated by the ribs of the materials used. A natural palette is expressed in the entire house, where the colour white is the dominant and implies clarity and openness in the space.

Image 3 and 6 express the warm tones expressed in the house as night falls, the outline of artificial lights are used at night to light the house and contain warmth during the cold climate. A warm atmosphere is created where tones of fire almost enrich the internal atmosphere.

IMAGE SOURCE : ARCHDAILY

EAST

SOUTH

NORTH

SCALE : 1/150

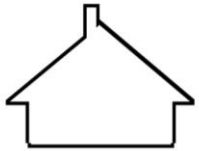
EXTERNAL

OPENINGS

Kengo Kuma expresses openings in the Meme as light and dainty. These openings are minimal and showcase a series of various rectangles.

The openings and shapes are not heavy and allow adequate light and ventilation into the house. Controlled openings are essential as the severe weather conditions control the surroundings. Kengo Kuma has fitted the right proportions to withstand the various exposures to the climate.

EAST



WEST

SOUTH

NORTH

SCALE : 1/150

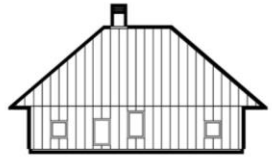
OUTLINE

Placed in an open settings, surrounded by nature. The outline displays limits as that of a conventional Ainu house. An angled roof with a square base strays away from the current modem contemporary forms but more cabin-like features.

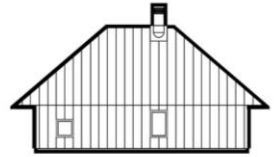
Almost resembling a barn shape, Kengo Kuma proves a suitable shape for the content and the use of this building. Blending the original form and shifting it to a interesting experience internally. He combines traditional roots with modern techniques.

EAST

WEST



SOUTH



NORTH

SCALE : 1/150

COMPOSITION

Known for his experimental designs with respect to material, The Meme experimental house expresses its material through its natural façade. The house is a clear and strong representative of the motif of the traditional homes of Hokkaido, but incorporates advanced concepts from both Kuma and the Tomonari Yashiro Laboratory

The composition allows for the modern presence within the structure. The frame of the structure is enhanced during different times of the day. Where its raw and naked during the day, and exposed dramatically during the night with the use of artificial light. The composition holds a various character that shifts from day to night.

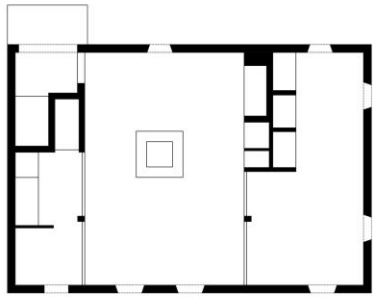
EAST WEST SOUTH NORTH

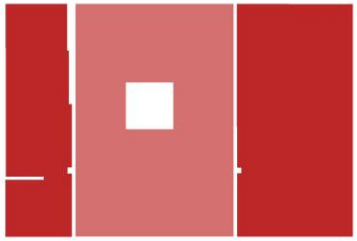
SCALE : 1/150

FIGURE

Differentiating between the built boundary, the figure shows a basic face. The house is a clear form reproduced from the traditional homes of Hokkaido. Displaying the common footprint found in this certain Part of Japan.

The chimney is strongly highlighted and gives a traditional outlook on what occurs on the inside of the experimental home. The roofs are thoroughly expressed as it would be seen if it were a traditional Ainu home. The figure expresses an indigenous shape that can be recognizable in its context.





GROUND FLOOR

SCALE : 1/100

INTERNAL

LAYOUT

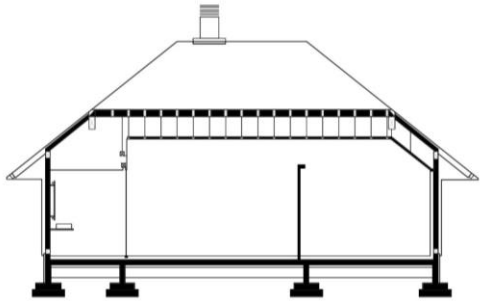
The layout shows the limits of a rectangle with punctures all around the faced. The rectangle floor plan is divided into three spaces, using a light partition element. Using light partition elements allows for the warm air to circulate throughout the house during the winter, and cool air to disperse during the summer. The spaces are easily controlled to introduce privacy.

With essentials located on edges of the floor plan, the centre provides a spacious atmospheres as you enter the experimental house. With limited storage, and flexible partition, the layout suits its atmosphere of multiple visitors that use the space for experimental research.

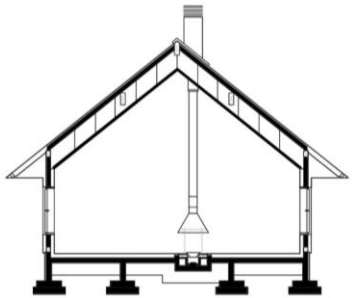
PRIVATE & PUBLIC SPACES

The most public space that is easily accessible by the user is the central body of the floor plan. With a central fireplace to warm the building in the long cold winters. The functional spaces are located on the edges of the block, creating a clear concept of the spatial arrangement.

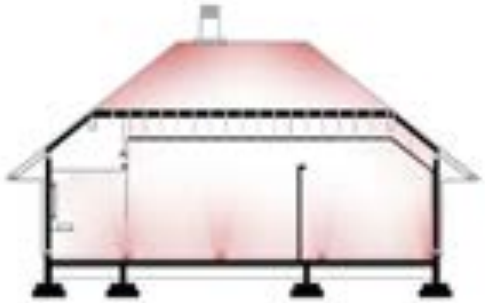
The private spaces are separate and lightly detached according to its uses. Separated by the use of curtains, allowing a light flow throughout the house. Introducing light elements as dividers also allows air to circulate adequately.

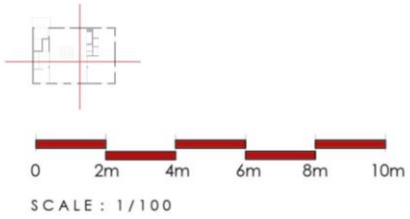


SECTION A



SECTION B





SCALE : 1/100

INTERNAL

SECTION

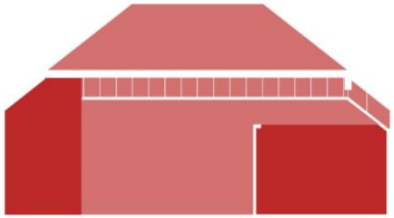
The section illustrates an interesting condition between the structure of the house. Kengo Kuma is well known for his use of materials, the roof depicts the relation to the indigenous design of homes in the location. Where Kengo Kuma forms a union between traditional and modern design to function as one.

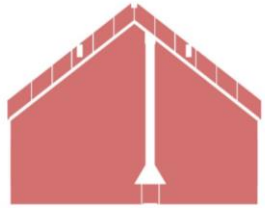
The layout is simple and uncluttered, with flexible partition walls and thick external limits to encase the modern indigenous home with appropriate thermal insulation makes the home durable, efficient and bold.

LIGHT & SHADOW

With multiple openings on three sides of the faced, light enters the home at various focal points, the openings moderately sized, allows for all around access to ventilation and light.

As the house is located in a location with drastic climate, the Meme house is equipped with artificial lighting to create an illumination during the night. Producing light during the very dark night and producing heat during the winters, the house is fully equipped with advance techniques that were controlled by Kengo Kuma. The Meme house is a interesting combination of natural and artificial lighting.





INTERNAL

FULL & EMPTY SPACES

Full spaces are clearly defined by the edge conditions of the dwelling. Where divided Kengo Kuma still allows for high ceilings to highlight the internal space.

The void follows the roof structure, capturing the essence of the indigenous roof shape. Appearing to enlarge the space and highlight its features as the light shines through the central void.

FIGURE

The figure is related to the mass of the building as one element. With this indication, it is clear to identify the shape that the building exists in along with its footprint it leaves.

The mass can be described as smooth, and relates to the fact that the material of concrete was used to express this motion. Bold, simple and firm characteristics are framed within the external shape shift relationship.

SECTION A

SCALE : 1/100

IMAGE SOURCE : KENGO KUMA AND ASSOCIATES

PLASTIC HOUSE
KENGO KUMA

LOCATION
MEGURO
TOKYO
JAPAN

BUILT AREA
172.75 M2

YEAR COMPLETED
2005

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PROGRAM
RESIDENTIAL

INTRODUCTION

The plastic house was built in the centre of Tokyo, Japan. The clients are two artists, a mother, the writer and her son, the photographer. Kengo Kuma had a specific target to express in this project. He wanted to emphasize how language followed by chaotic dimensions of the contemporary city cannot be solved with an imitation of mechanical reproduction of conventional construction, but through the process of an ordered principle that results from the past of Architecture through its history.

The architect wanted to highlight and encourage the interaction between inside and outside in this residential design. Therefore, the selected main material is plastic. As the dwelling stands in the centre of the city, there are various designed spaces open to the urban conditions.

The room belonging to the mother of the house is shaped as a small antique museum, where a constant flow movement is present in and out the studio. The house is divided into two sections, the below section almost transparent, serving as a tea room, and the first floor more private holding spaces such as the bedrooms and bathrooms.

‘‘I intended to form such a relationship to the city through the use of plastic. ‘‘
- Kengo Kuma

LOCATION

The Plastic House is occupied in a densely built residential area, its simple geometric form was a result from statutory regulations and maximum building limits. The house sits on a middle plot of 83 sqm, wedged in between conventional neighbouring houses.

The height rises to 5.6m above ground. The house is surrounded by comparable homes with relation to height, although the plastic house greets the street more differently than the rest.

Its façade treated differently from the others, is made from plastic translucent material. Therefore, the house creates different street conditions throughout the day. Its urban conditions allow for visual transitional stages throughout the day, where light plays an essential role through the hours. Visually the front faced is mainly what connects the house to the public, with an interesting geometric form, the house draws attention to itself as pedestrians walk by.

Surrounding the house are diverse types of greenery, where a bridge adjacent to the front facade is built, almost as if its intension was to draw pedestrians towards the plastic house. An imaginary line, making the plastic house the focal point resting in front of the road and pedestrian intersection.

CONCEPT

The focus for Kengo Kuma was to emphasize a relationship between the city centre and the domestic object. Kuma is known for his careful and adequate attention to detail, therefore he selected plastic as the main material for the Plastic House.

Fibre reinforced plastic (FRP) is 4mm thick and is available in various shapes. The architect was able to create different conditions externally and internally by combining these various shapes together. Creating a relationship to the city through plastic, a uncommon material proposed for residential homes, the architect challenged himself to create a new form of identity.

It was intended to imply a unique approach to attempt to break away from the massiveness of the properties that comes with using the conventical concrete material in a residential home. Lightness and softness were elements that Kengo Kuma wanted to achieve, to express a different type of enclosure for the clients.

"If materials are thoroughly partialized, they are transient, like rainbows."
- Kengo Kuma

S P A C E

A small private residence sits in central Tokyo, built mostly out of glass fibre-reinforced plastic. Kuma expressed this material is two main ways, in the form of thin sheets and in long slats. With attention to its genetic translucent qualities.

The body of the volume is divided into three parts, where a photography studio exists in the basement, an open tea room in the ground floor, bedrooms and private spaces on the first floor and an open studio on the on the flat roof. The home provides different conditions for each spatial program, the program is also expressed through each layer of transparency and translucency of the design.

Various focal points of the house are open to the public. The ground floor is exposed to the public as translucent windows sheets are used to frame the front façade to allow direct visual access to the open plan floor. The back of the house serves an open outdoor space that hosts a tearoom.

The deck used for this space is constructed out of plastic bars that is placed above an opening into the basement, which allows for direct light to penetrate the space below ground. This floor is seen as the most public space, where the front and back of the home is exposed and filtered using plastic bars.

From the outside of the building, a clear division of public and private is clearly marked by the use of the fibre reinforced plastic, where the top half of the building is almost wrapped in the plastic to ensure a illuminated box floating above a clear surface.

The bedrooms are linked to the outside world without tampering with the integrity of privacy, Intentionally the plastic bars used in the balcony, veranda and fence introduce a filter between inside and outside, where exposure is indicated but enough to control the private quarters.

FACADE

The Japanese architect, Kengo Kuma was attracted to the diverse opportunities of exploring different outcomes wit the use of plastic. It was prominent for him to produce new details and substitute conventional forms with a lighter approach made out of plastic.

The first-floor walls facing the street and garden are finished with plastic panels on the inside and outside, with an intermediate layer of translucent thermal insulation. The result proves to be a translucent opaque white box floating on a steel structure. Whereas the ground floor is fitted with large glazing which reinforces the elevated plastic box. Creating a lightness to the composition of the finished design. The approach to the Plastic House can be interpreted as his unique determination to stray away from the conventional use of the concrete box.

"If I were to describe the architecture of the 20th century with one word, it would be "concrete." Its freedom and universality fit the 20th century so well that other local methods of construction were abandoned. Moreover, the strength of the solid mass achieved in transformation from thick liquid substance suited an era that desired monumentality and security of privacy. Therefore, to seek for a substitute [material] is not a mere formal proposal but an attempt to suggest a principle of living that replaces the fundamentals of the 20th century — freedom (of course, in the sense of the era), strength, and security.“ -
Kengo Kuma

His approach to materials allowed for the sensation of binging it to life while increasing the tangible surface. His spaces allow for a further experience as he explores the specific quality that the material possesses.

The front façade is designed with an extra element. This feature speaks about geometrical composition, where the opening of the balcony is suited with a rectangle open frame that shelters the balconies open space. This frame mimic's the plastic slats found in the fence and veranda. A odd proportion makes the faced interesting and noticeable.

His intentional use of slats in the design are nostalgic to wooden latticework and bamboo mesh, which are familiar traditional Japanese devices that are used to mediate between outside spaces and inside spaces while implying appropriate order of privacy.

MATERIAL

Fibre reinforced plastic is a unique material that looks like rice paper and sometimes almost like bamboo due to the condition of the fibres it contains. These features are a distinct presence in the Japanese architectural language.

Using this component, Kengo Kuma paid extra attention to changing the visual quality of this type of plastic; plastic screws and butyl rubber were chosen for the construction details to conserve the translucent aesthetic that the architect was trying to achieve.

For the external body of the building, urethane panels were used to clad all around the top half of the design. It was selected for its performance in flexibility and its visual quality.

In this design Kuma incorporates the plastic sheets with Japanese paper called washi, while it is encased from damaged by a more durable plastic, washi gives a fine texture and a balanced transparency that is reflected on the surface. These sheets are lit from behind and allow for illumination to grow within the entire building to showcase a glowing volume of light within the neighbourhood.

As a result of the partnership between material and artificial lighting, Kengo Kuma illustrates a story of light through different hours of the day. Creating multiple internal and external conditions for both the outside and inside world to perceive.

"The materiality of plastic that appears like a living creature would stand by using these details then the material starts to communicate to our body. In this project I thought of 'living' not through the plan, but through the material."
- Kengo Kuma


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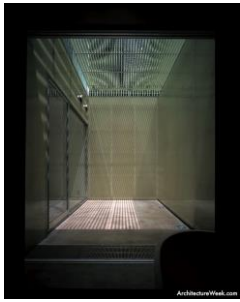
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PLASTIC HOUSE

VISUAL INTERPRETATION

With a facade made from plastic, the plastic house also allows for illumination on the boundaries of its elevations. Image 1 and 3 display the house conditions at night, where ribs are highlighted by the attention of lighting. Almost expressing rice paper grain, the materials produce qualitative conditions.

With almost the same white aesthetics as the Meme, image 4,5 and 6 express its internal and external condition. Where plastic is used is many forms and contrasts with the usual housing material. The street façade shows a different composition put together by using one material.

Image 2 displays the open air studio, where the residents are free to enjoy the view over their neighbourhood.

Image 7 shows the underground light well, where light from the rear of the house feeds into the underground studio for light and warmth. The light well its protected by a plastic deck which is multi-functional and allows people to sit or stand on top of it. Another filtered element in disguise, Kengo Kuma displays importance in light and how it is experienced by the design of the residential house.

IMAGE SOURCE : KENGO KUMA AND ASSOCIATES

WEST EAST SOUTH

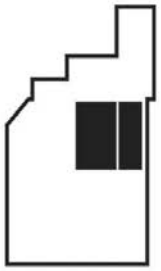
SCALE : 1/100

EXTERNAL

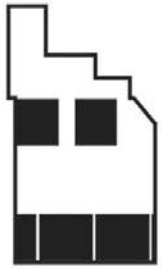
OPENINGS

Placed in a residential setting, the Plastic house allows opportunity for openings on restricted faces. The front façade allows for more exposure as there are no obstructions, the openings allow for visual connections from the street into the home.

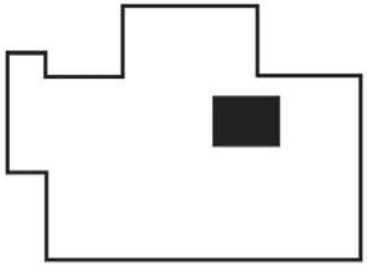
The large singular openings are limited and placed in elevations where views are easily accessed. Encased between two other neighbouring homes, light penetration is limited, thus decisions are made for bigger openings on selected facades. There are hardly any openings on the longitudinal elevations as these conditions are almost covered by boundary walls and neighbouring houses.



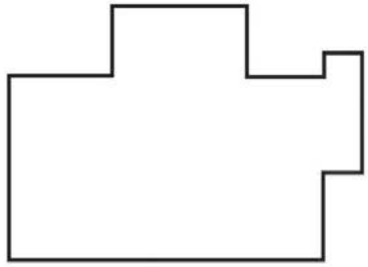
WEST



EAST



SOUTH



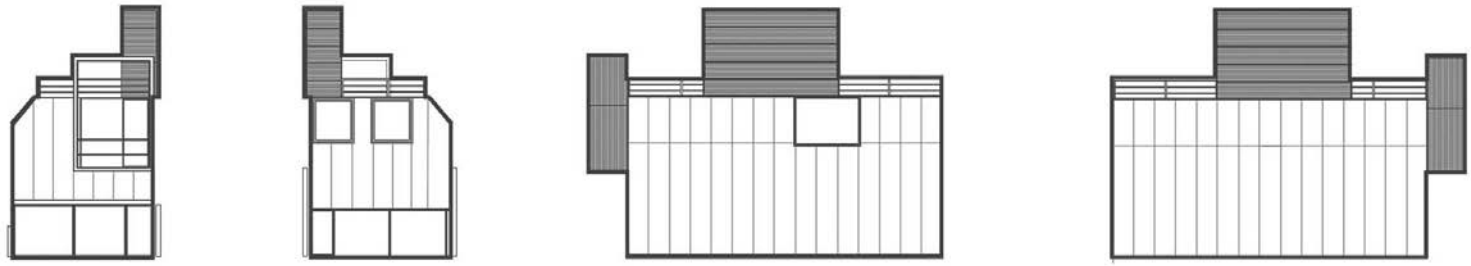
NORTH

SCALE : 1/100

OUTLINE

The outline of the building displays quirkiness and odd features. An almost perfect rectangle serves as the body, while open plastic frames are used as accents on the house. One as a shielding element encasing he balcony and the other as a sprouting rectangle object to allow access to the roof.

Overall, the form is unique and comprises of different elements to create the boarders and limits of the project.



WEST EAST SOUTH NORTH

SCALE : 1/100

COMPOSITION

Kengo Kuma expresses his attention to materiality by selecting a unconventional material as an expression for the Plastic House. The material is highlighted with the use of light and separates what is public and private.

The composition allows for the viewer to pay attention to the different forms of plastic that has been designed for this project. The pieces are easily distinguished and identified by its character and placement. The composition displays functionality and a clean expression of material.

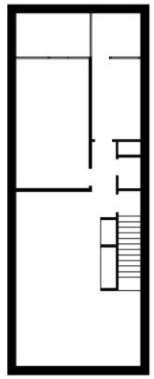
WEST EAST SOUTH NORTH

SCALE : 1/100

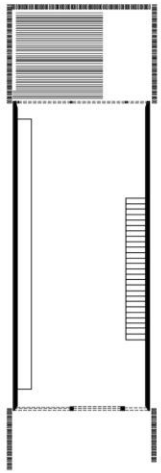
FIGURE

The figure and relationship displaying what is built proves a intentional grouping of geometric elements. Strict and forward, the limits of the building allow for attention towards the use of each element and the purpose of placement.

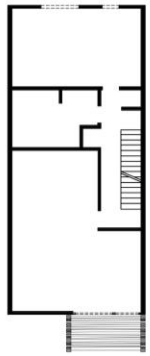
Therefore making it clear what the architect intended to serve by implementing the certain objects that shift in terms of use and materiality. Each element encasing a certain action in the house and also expressing versatile approaches to regular housing spaces.



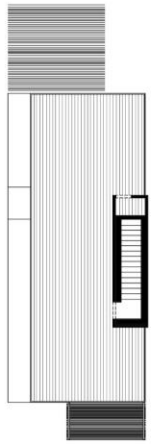
BASEMENT FLOOR



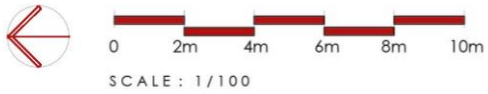
GROUND FLOOR



FIRST FLOOR



ROOF PLAN

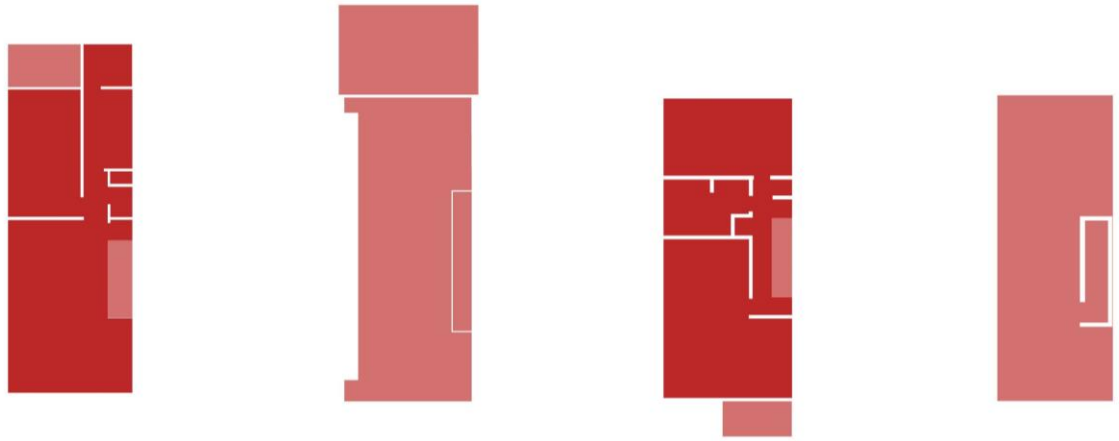


INTERNAL

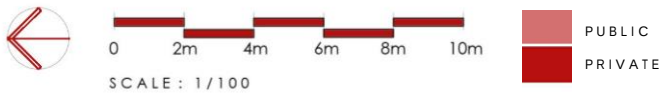
LAYOUT

The layout introduces a linear shape, short in width and long in length. The plastic House by Kengo Kuma represents elongated spaces that provide visual connections from the beginning of the house towards the end. With almost a completely open ground plan, visual connections are made internally and externally. As the ground floor is the most visible it is also the most open space of the house.

Spaces start to slightly changes as privacy is introduced to the intermediate spaces. More enclosed spaces are introduced while providing privacy behind the choice of material Kengo Kuma has selected to wrap the exterior.



BASEMENT FLOOR GROUND FLOOR FIRST FLOOR ROOF PLAN

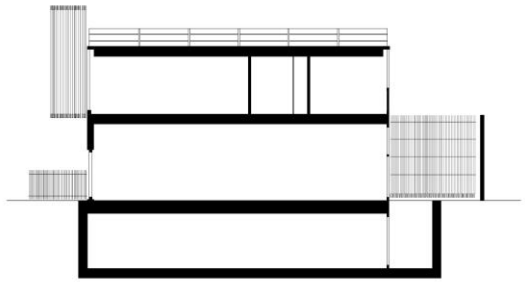


PRIVATE & PUBLIC SPACES

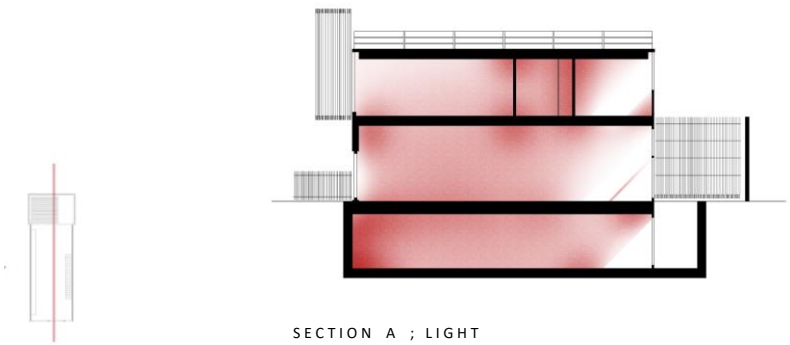
A series of opposing layers are recognised in the diagrams which depict the relationship
and division between public and private layers within the Plastic House.

Displaying that on each floor, a dominant of mostly private spaces is placed or a dominant of public space is given. The basement levels proves to be more private as it lies beneath the Plastic house with little public entry in terms of light and human presence, but allows for the constant flow of visitors to the studio.

The ground floor showcases the most public space as elements are undisruptive and transparent. The first floor gives more privacy as bedrooms and more intimate spaces are added. The last roof top level proves to be literally public as it serves as an outdoor space where guests and the habitants have access to it.



SECTION A



SECTION A ; LIGHT

SCALE : 1/100

SECTION

The section of the Plastic House displays its rectangular form, divided into three main levels. The section expresses elongated lines with openings acting as "caps" on each ends of the house. From this, a distinct expression of open space is observed as the Architect targeted to introduce minimal divisional elements in the house. A relationship between open and closed is expressed on the specific openings around the house and between the relationship between underground and above. Kengo Kuma introduces both conditions in the design.

Not only does the space express division, the facade and material underlines the separation between materials in the section too. Plastic is used in various forms and placed strategically as functional elements to help the Plastic House perform to its given name.

LIGHT & SHADOW

Given the elongated shape of the plastic house. What can be noticed is that light can only enter from two facades of the building. Light feeds into the house from both sides creating a balanced exposure. While the basement receives light through a light well that is positioned in the rear of house, which is filtered by a plastic deck that also serves as a multi-functional space for guests while still feeding light into the studio underground.

Visual connections are introduced from outside the house to inside the house. Making light conditions interesting as there are only two façades that offer access into the internal atmosphere. The open air studio on the flat roof provides multiple conditions for light interaction, as the level has a view over the whole neighbourhood and introduces nature into the daily intake of sunlight.

EMPTY

FULL

SECTION A

SCALE : 1/100

FULL & EMPTY SPACES

The full and empty spaces in the Plastic House display a mixture between the two, where the most closed private spaces are sandwiches between the most empty, open spaces.

The combination between the two spaces in layers add division and order in the internal space. Contrasting between the underground studio level with the open air studio roof above, the house serves a connection between inside and out by introducing different actions through the house. In the diagram, it shows that the most open and inviting level of the house is the ground floor, where the level is increased by height and enriched with both transparent facades on opposing sides.

LEVELS

The levels clearer mark the boundaries and division that is present within the space.
The ground floor displays the most important as its ceiling height is expressed much more that the basement level and the first floor level.

A clean, uninterrupted outline is expressed in a simple geometric rectangle geometric form. Kengo Kuma intended to break-away from the conventional concrete box, therefore he instructed for a simple shape and introduced various elements made from plastic to highlight the building and create a different condition.

KENGO KUMA

EXTERNAL COMPARISON

Kengo Kuma expresses his sensitivity with respect to the buildings surroundings, Small openings in the Meme are intentional and made to be flexible. While the Plastic house expresses bigger openings as the building addresses the street.

Keeping a traditional approach to his designs, Kengo Kuma incorporates traditional forms in his designs. The Meme expresses its traditional form, while the Plastic house implements slats that mimic traditional wooden work.

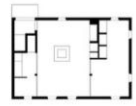
His sense of materiality is expressed in both compositions as both homes posses illuminated qualities, these qualities are expressed in the structural elements and expressed internally and externally.

The figures express Kengo Kuma's craftmanship, where he choose particular profiles to suit its environment. The Meme possessing a domestic figure, while his Plastic House expresses his exploration in the material he selected.

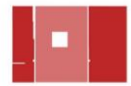
Meme

Plastic House

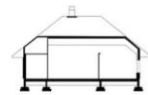
INTERNAL COMPARISON



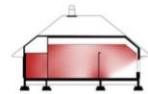
The ground floor of both buildings are simple and delicate. Where the central space is unobstructed and open. The resembling the environmental conditions, the Meme house more large in width dimension and the Plastic House, a linear footprint to accommodate tight spaces in the city.

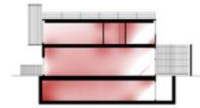


Differentiating in plan. It is clear Kengo Kuma gives importance to the central space which is used more throughout daily routine. The central space is highlighted and its essence proves to be open and fluid.



The sectional condition vary completely as the environment of the projects are completely contrasting, Although, the division of space is clearer marked and accents of each design are expressed with response to the material Kengo Kuma had chosen.





Light is the essential source for both projects, where Kengo Kuma controls the conditions artificially and naturally. Similar materials have been used to diffuse and emit light within the spaces.

Elongated profiles are expressed to create continuous spaces within the buildings. Where the Meme consists of only one floor which is highlighted by its indigenous roof shape and the Plastic House which consists of a basement and roof top quality.

Meme

Plastic House

IMAGE SOURCE :ARCHISCAPES

HOUSE IN A PLUM GROOVE
SANAA

LOCATION
TOKYO
JAPAN

BUILT AREA
37.20m2

YEAR COMPLETED
2003

PROGRAM
RESIDENTIAL HOUSE

INTRODUCTION

The clients, a couple from a creative background; the wife, a copy writer and her husband an advertising film producer accompanied by their two children and grandmother, for a period wanted to construct and design their ideal living space. They owned a site in a neighbourhood situated near Tokyo, with the size of 92.30 m2 surrounded by blossoming plum trees and wild flowers made the location a desirable plot to work with. The landscaping and present greenery is what gave the house its distinct name, "a house in a plum groove".

The couple had a clear vision of what they wanted to build, a neutral based home representing a blank canvas. Having this simple body could inform the way of life within the building, implying less distractions through their daily routine and instructing a simple atmosphere for raising children.

The house had to embody spirituality the clients said, where a soothing presence of balance and relaxation pampered the inhabitants. The dialogue became much more interesting between architect and client as soon as the clients mentioned they were aiming for 'Something like a temporary perch'. Where it would cradle the concept of a space that would help them prepare their children for the outside world.

Their thought process was directed in a way where it would be clear that the children would have to "leave the nest", therefore they wanted a space where nostalgia was something detached from the house.

LOCATION

The house is located in a residential neighbourhood very close to Tokyo. It takes form as a closed white cube sitting on the corner of the site. The front door is positioned to blend in with the front façade, with a small cantilever above the door mat, implying the entrances presence.

The site is special as specific greenery grows on the plot. A particular fruit tree that produces plums are planted all around the site. Giving the site a scent of sweetness along with the wildflowers emerging from the ground.

The cube is surrounded by the sites vegetation at all corners. Crating an image where building meets greenery.

The house is in a residential area where opposing homes are the same height, with more conventical appearances, the house in a plum groove proves its simplicity by its generic form and composition.

CONCEPT

Kazuyo Sejima, the leading architect on the project from the SANAA office immediately was drawn to this project as she completed her studies at the Japan University for women, which was created after WW2 as a response to the laws that had prevented women from having the accessibility to public universities. Therefore, her vision on the conventional living space was questioned and almost warped as she focused on constant change in a rapid, fast-changing society.

The house in a plum groove is linked to Sejima's previous research focusing on the built contemporary house in the limits of Japans information society. She stated that in her view, information society was all about not being able to see. Thus, gradually implying that the definition between spaces are rather highlighted and informed, rather than clearly marking the strict limits of each space. Her research informed the practice of generating transparencies in a dwelling by using non-transparent materials.

The clients had chosen Kazuyo Sejima for her known qualities, as she was also known for her works with architecture that brought light, illustrated clean compositions and basic colour palettes to drive her intentions. With these basic principles, the architect designed the house in a plum grove.

SPACES

As the oriental aesthetic requires; living habits over rule the living space. Therefore, when capturing the essence of this approach, most of the time when space is limited, the interior should allow for layers of controlled privacy that filters into public space. The space should allow for the inhabitant to have access to his or her own private space with provisional options to have privacy.

The architect creates an interesting space by introducing a trapezoidal plan layout which houses three luminous floors connected by an (almost) central staircase.

Portraying the concept of a "one room studio", Kazuyo Sejima proposed to connect all the individual rooms, she allowed for punctured openings in the internal walls of the adjoining rooms, leaving them with no infill of glass. Doing this, the space offered more possibilities, while some rooms allow for visual connections to the outside from the point of another rooms window. Natural ventilation is made easier to flow from room to room from these openings. It was intentional to have no space completely shut off.

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Substantially, with providing this choice of multiple action, the idea of privacy turns elastic, giving the members of the family the choice according on their mood, to control their privacy or shift into a more public visible space.

With the shape of an obscured square, consisting of a ground, first and second floor, the spaces inside are decided differently. The architect refuses to create conventional rooms with a collation of basic furniture, she then proposed to reduce each room to its function or use of furniture. An example can be a look at the children's bedrooms, where it is composed for only a single bed and a room for a table.

Setting order in this fashion, allows for separated uses and still orchestrating a clever order of each purpose of space. With this concept, the architect managed to achieve 17 different spaces offering a function and a relation to the next.

With these rooms separated, there was an opportunity to create open voids within the cube to create full and empty spaces that could balance the atmosphere. The voids create interesting dimensions where openings lead into another space while still creating privacy.

FACADE

From afar, the home portrays a white cube, sitting in the centre of a vibrant garden that sprouts plums and is coloured by the surrounding wildflowers. The simple form allows for less distraction to the building, while the architect inverts her idea of public and private and illustrating the two identities internally, she has placed conventional windows that are square cut in random order on all elevations of the house.

Openings play a big role within the house; therefore, these random openings can be seen as different opportunities for transitional spaces from the external to the internal. The house with a white blank external canvas, allows for the multiple window openings to create different interpretations of the internal space and the external focal points.

The architect creates soft forms between the compositional shapes of one main shape, the square. Creating a simple appearance with a functional program and intention. Having a small surface as the foundation, it was vital to use the available space at its maximum capacity.

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The structure of the house was decided based on space, therefore steel sheets were selected because of their physical characteristic, these steel sheets reduced thickness compared to the conventional wall to 50mm, and then allowing for the interior walls to be 16mm.

With these dimensions, when assembling the structure, the walls and floors merge together at each intersectional and merge point, the weight of these materials appears to be the same.

MATERIAL

The plum groove house takes form of a imperfect cube with different dimensions, the structure is constructed using lightweight materials such as steel sheet panels, making construction easy and efficient on site. The materials used for this home is quite basic and resembles the simple form it demonstrates on its exterior.

Different textures can be experienced on the inside. Where timber is used for flooring, and it the double volume spaces such as the study is cladded with a deeper timber-brown material. Traditional Japanese matts are used in certain areas of the house.

The white canvas concept is also designed in most of the spaces in the house. Where simplicity overrules the internal condition.

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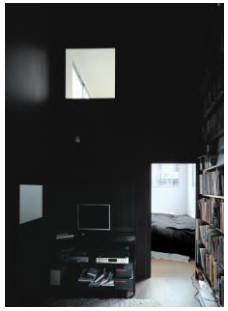

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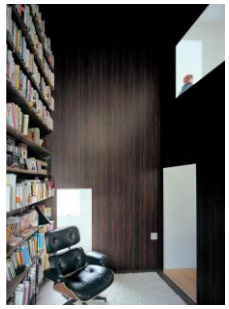

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SANAA

HOUSE IN A PLUM GROOVE

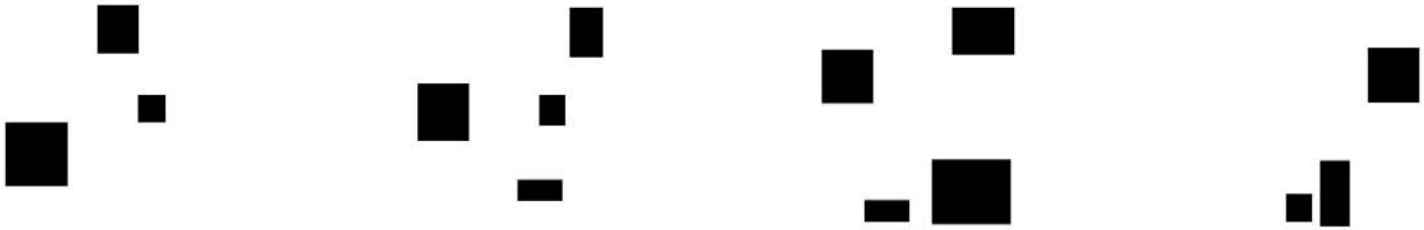
VISUAL INTERPRETATION

This residential project by SANAA reflects simplicity and complexity as the same time, with contrasting elements, SANAA has managed to design a building with a simplistic exterior, but a complex interior that promotes connectivity. Images 1 and 2 are an example of contrasting faces within the face, where double volume heights are elongated by the shadows and bedrooms are clean with a white finish.

Images 3 and 7 paint the picture of where the project received its name from, surrounded by vegetation and plum trees, the white block blends in with its surroundings as a calm, subtle element amongst the rest of the houses.

Images 4, 5 and 6 display the play between light and height, the house containing 17 rooms are connected by internal cut outs and allow visual connections from the giant square shaped windows.

IMAGE SOURCE : SUBTILITAS



NORTH EAST SOUTH WEST

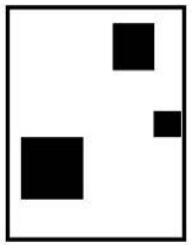
SCALE : 1/100

EXTERNAL

OPENINGS

SANAA's design for the House in a plum groove is an example of their simplistic approach to residential design. SANAA displays their implementation of various sized windows. Seemingly ordered in a random form, but with placed in spaces that benefit from these openings.

The small to large sized windows create an interesting condition one the generic façade. Adding a layer of an enhanced story on each façade. Capturing and displaying life on the inside and projecting it in scattered pieces to the outside world.



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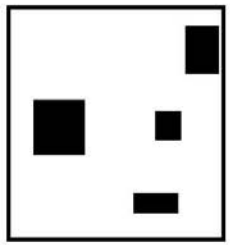
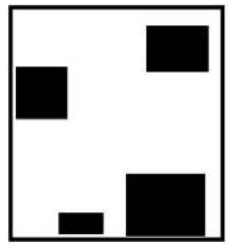
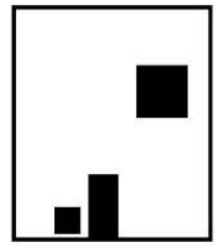


EAST



SOUTH



WEST

NORTH

EAST

SOUTH

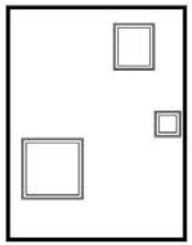
WEST

SCALE : 1/100

OUTLINE

The limit and boundary in this projects are identified to the simplest form. Described as cubes, SANAA has portrayed a simple play between geometric forms.

The outline represents no disruption or voids, displaying a continuous face. Mimicking the growth in size of the openings to forming a resembling frame.



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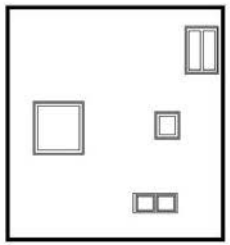

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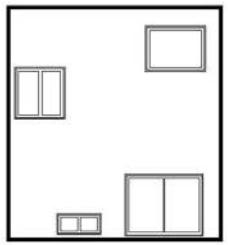

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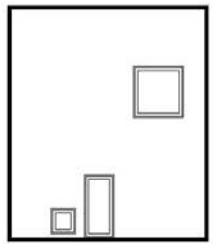


WEST

SCALE : 1/100

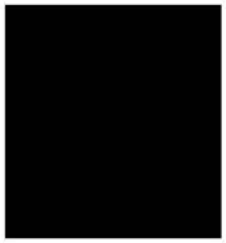
COMPOSITION

A series of squares are painted over the four façade of the building. Some shapes placed as a random order and the shifted into a bigger volume as its enclosed shape.

The composition of the various squares creates interesting qualities as no façade is the same. Each placement creates opportunity for different internal conditions as light filtered trough these various squares fills the spaces at different focal points. The composition of the building creates character to the external face while being subtle.

NORTH

EAST



SOUTH

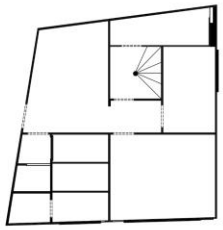
WEST

SCALE : 1/100

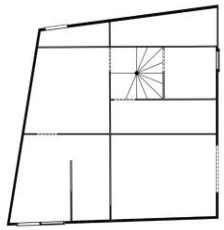
FIGURE

The mass of the volume of House in a plum groove is ordinary. With no cuts, voids or extra features, the volume proves as a single identity, enriched by its surroundings.

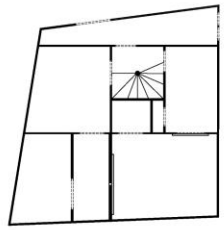
Leaving a simple mass, with a clear solid body. The house displays solidity and simplicity in its form. Deceiving outsiders from its external shape and shifting into a complex setting on the inside. Its mask and figure acts as a contrasting element in its setting.



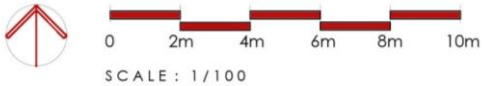
GROUND FLOOR



FIRST FLOOR



SECOND FLOOR



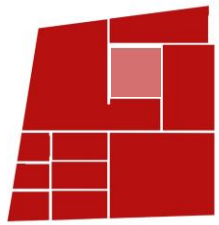
INTERNAL

LAYOUT

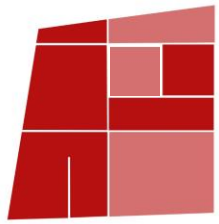
The layout shows an interesting internal condition that contrasts with the external appearance of the house. As the House appears only as a white block from an outsiders point of view, the internal layout introduces a more rich and fluid condition.

The layout shows that the house has not a square footprint, but a square with unequal sides. The geometric shape allows for multiple conditions as SANAA has demonstrated in the different layout plans for each floor.

Voids are introduced, creating a favourable internal experience. Some spaces introduce double height ceilings, and some with lower. The spaces are instructed around the spiral staircase which is shifted from the centre. The floor clearly shows different quality of spaces along with the quantity of spaces divided in each floor.



GROUND FLOOR



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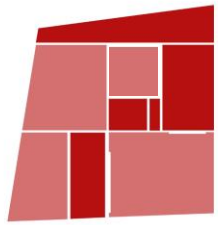

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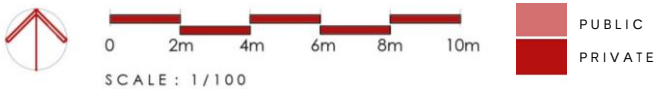

PRIVATE & PUBLIC SPACES

In this particular project, private and public have a different meaning. The public spaces represent the rooms where voids are introduced that create double volume spaces. Along with spaces that serve as an outdoor space such as a terrace, because the house contains numerous spaces, the architect strives to make a connection between inside and out by mixing different spatial qualities and adding and subtracting elements to create an intriguing and rich internal quality.

The spiral staircase acting as the firm vertical element surrounded by full and empty spaces allows for the user to experience a different type of living within the deceiving simple house. The architects intention was to reduce each room to either furniture or an action, therefore introducing many rooms and spaces that possess a collective quality and purpose.
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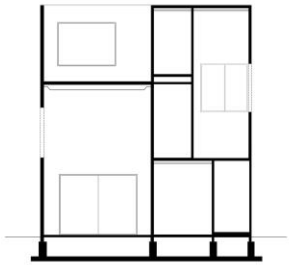
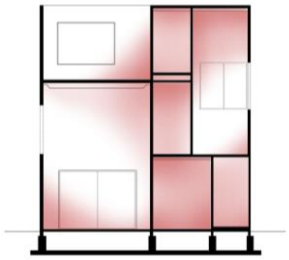


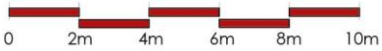
SECTION

The section of the House in a Plum Groove proves to be exceptional as the architect, Kazyuo Sejima, from SANAA plays with numerous factors such as voids, outdoor spaces and intricate smaller sized spaces. As a result, she was determined to create a living space far from the stereotypical housing condition.

Double volumes are introduced in random order to create a fuller and interesting experience. While having various sized windows to allow light seep into the different volumes of space. She demonstrates a particular condition by still having a conventional outer shell that capsulate the internal sense.



SECTION A

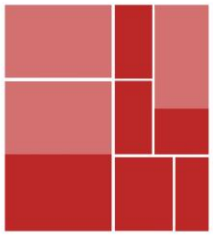


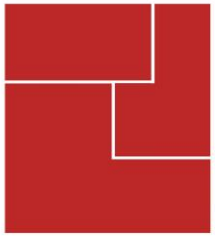
SCALE : 1/100

LIGHT & SHADOW

Light accesses the house by the various sized windows placed on each façade of the house. Depending on the size and placement, the architect plays with light specially in double volume spaces, where this introduces more depth to the internal space. As there are many rooms, some without windows and some with, the Architect has made sure to break up the house internally in order to create softer conditions inside the house.

Cuts from joining walls allow light and shadow to display differently during different times of the day. Using the same cut-out logic as the external windows, The architect carefully cuts out through adjoining walls in order to add connectivity throughout the house.





EMPTY

FULL

SECTION A

SCALE : 1/100

FULL & EMPTY SPACES

The diagram shows the simple composition between full an empty spaces within the house. In this particular cut, what can be noticed is a random placement of voids to create a unexpected positive condition in a simple geometric shell.

Some spaces are high in height, while some lower. Some spaces share a mixture between full and empty spaces, giving a richer atmosphere for the user. The use of open and full spaces allow users to experience a condition that reinforces connectivity and continuity within the scheme. Creating almost a ball of variety based in a simple white shell.

LEVELS

The levels depicted in this project proves to be different from the others. Marking clearly that there are three floors, these levels differ from its position and spatial program.

Depending on the cut of the section, perceiving levels, the architect has managed to create bigger and wider spaces by adding double volume spaces to the restricted small sized plot. The composition presents an unconventional arrangement. Where addition and subtraction is used to introduce the connection between inside and out. As she creates transparencies without using transparent materials.

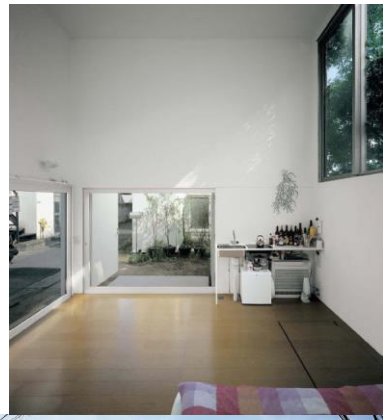


IMAGE SOURCE : MOREWITHLESS MAGAZINE ARCHITECTURE

MORIYAMA HOUSE
SANAA

LOCATION
OHTA–KU,
TOKYO
JAPAN

BUILT AREA
130.06m2

YEAR COMPLETED
2011

PROGRAM
RESIDENTIAL

INTRODUCTION

Japanese architect Ryue Nishizawa, one of he founders of SANAA, anticipated on a new interpretation of creating a private community style of living. The Moriyama House is a living identity that reflects flexibility in its program and diversity in its format. It is a minimalist steel prefab house for the client, Yasuo Moriyama, and example of an overall home designed with community-like features that connects the inside and the out.

Moriyama house consists of 10 volumes where each identity accommodates a certain program. Although the volumes are separated and connected with intermediate series of garden spaces in between, each body still depends on one another while appearing to function on its own. These scattered boxes allow detachment and are open to all parts of its surroundings.

All the series of boxes are owned by Mr. Moriyama, where he decides which volumes are open for rental services and which are privately owned for him and his family. With different identities and people using the space, a community is created among the site and different conditions are displayed. The program and function of the individually proportioned white boxes are diverse and very depending on the occupant.

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LOCATION

Moriyama House is situated in a quiet traditional part of Tokyo, where the daily routines of people are carried out in a typical urban structure. There are 10 volumes occupying the site, creating a composition of scattered dense boxes. Almost randomly positioned in the landscape, the site offers diversity in terms of shapes and sizes, some boxes higher than others, some smaller and differ in width. Creating a contrast to its surroundings, these apartment blocks stand out from its conventional neighbouring houses.

Connecting these volumes are a series of gardens and pathways, that act as the informant of where to go, almost acting as an outdoor circulation route, where freedom is given to the user depending on the program of the volume.

These paths create more interaction even with a scattered ground floor layout. The site is planted with small trees and vegetation. Having this against the white backdrop of the blocks allow for a fresh characteristic to the plot.

The site provides numerous views of the neighbourhood, creating various focal point conditions depending of where the user is standing from. The difference in height and dimension create the diversity of experience within this private community living space.

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CONCEPT

“The vision of “house as city”—the formation of urbanity on the inside of a building—usually calls for spacious dimensions. “ - Ryue Nishizawa

Having sub-volumes instead of one conventional volumes allow for many outcomes, building a house as a city almost warps the vision of having urbanity on the inside of a building instead of having it only operating outside the homes boundaries as a daily way of life. The Moriyama house relates to the Japanese concept of minimal living, with attention to this detail, the architect has rethought the way of living that can provide more depth in a larger scale for the client. Where Mr.

Moriyama has the freedom to control these occupational boxes to invite a more enriched and flexible way of living. The boxes harbour compact spaces which can be rotatable depending on its function. This creates a flexible program through the small community.

Flexibility is a principal factor for this design. Capturing basic elements, placing these identities in an order and then allowing inhabitants to decide how to use the space while contributing to its neighbouring blocks.

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MATERIALS

The materiality expressed in this scheme projects simplicity and diffusion. To achieve maximum use of interior space, the internal walls of the houses have a thickness of only six centimetres, which is considered extremely thin by Japanese standards and load bearing walls are used for the external enclosure.

These load bearing walls are reinforced with steel plates, making the large scattered windows successful as these steel plates provide enough stability for the box.

Steel frames are also used for each opening through out the residence. Providing a durable and stable finish to these white series of volumes. The steel blends easily with the white backdrops, almost giving the façade a simple domestic skin.

The landscaping in this project is crucial as it acts as a tangible material. The residence is designed with vegetation, pathways, courts and niches that unfold in various directions within the complex.

Creating a green façade on some blocks, while leaving others empty and bare. Depending on the seasons, the facades may differ in terms of coverage and palettes of green. Landscape, house and city become blurred and indistinguishable.

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SPACES

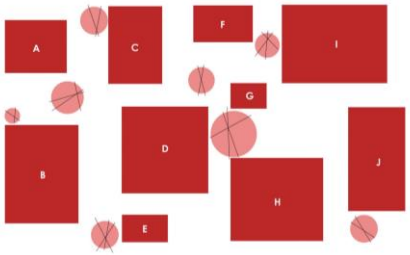
Designed for Yasuo Moriyama, hence the name of the project, is a house comprised of 10 white square volumes. They differentiate in size and range between one to three stories, some with basement levels and some without. These configurations are dispersed throughout a vibrant garden.

Boxes a,b,c and d are occupied by the client himself. Box A serves as a bedroom, bedroom and dining room with a kitchen. Making this box functionable on its own. Box B serves as a living room, a bedroom and a sunroom on the top floor, offering a flexible living space with outdoor opportunities. Box C serves as an annex, which adds additional complementary space that is flexible for use. Lastly, box D functions as a living room space which allows for communal meetings as it is a large volume.

Box E is one of the smallest volumes in the group, where it serves as a bathroom that can be directly accessed from Box D, the living room. Box F is a slightly smaller volume than the first boxes, where it only has two programs, one, as a dining room and the second, a bathroom. Box G is as the smallest volume with only one program that is a bedroom.

Box H is regarded as one of the largest volume on site where it provides a generous space for a kitchen, living room and a bedroom, with the option of a terrace on the roof. There is direct access as an opening is placed in line with Box E, the bathroom.

FIGURE 4:
Moriyama House - ground floor diagram



Box I, another multi-functional volume consists of an audio room, a living room, a bathroom, a master bedroom and place for storage. Making this volume one of the biggest spaces that the Moriyama House offers. Lastly, Box J, with a more linear rectangle form, houses space for a living room, a single bed and a bathroom.

In this private community home, the client has the freedom to select blocks of the cluster that can perform as rental spaces or be used as permanent residence blocks. Mr. Moriyama has the option to switch among the series of boxes and flip programs to his own preferences. He may use several rooms all at once according to the seasonal circumstances. The domain of the residence changes and adapts to the clients needs.

Between these blocks, are exterior spaces that highlight the connectivity among the series of boxes, enhanced with vegetation and plants, constructs not only a reciprocal space outdoors, but also blurring the boundaries between what is perceived as private and public property.

Internally, the finishes of each spaces are similar tied with the same features. Light and airy, the spaces are simplified and amplified by the life inhabiting the space. Large opening drawn on the facades allow for large amounts of light to penetrate the boxes. Highlighting life inside as it is perceived from the outside.

FACADE

The Moriyama House is comprised of a concentration of cuboids. This concept of placement, size and character is displayed through the openings on each block. Giant windows are placed almost in random order from size too width. These looking points allow exposure of the life within the space. This exposure of the residents allow for a diverse experience as the programs are shuffled and different scenes are constantly happening.

What is interesting about these giant openings are that they are necessarily covered with the conventional curtain or blinds. In Moriyama's House, the pods are positioned in a strategic way so that windows opposite are offset. Therefore, it means that even if the neighbouring blocks have their windows exposed, they will not catch eye of each other. Making daily life functionable with these windows uncovered. The garden also provides filters through these various spaces, making the garden and its surrounding permanent elements in the individuals lifestyle.

The relation between the garden and the blocks have been designed specifically. As the gardens becomes a living changing element of the façade externally and internally, the user will notice no real fence or element acting as a forced boundary. The complex touches the street on two sides of the plot.

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The plot itself is not encircled with a fence, making it easy for interested guests to access the residence. Therefore, displaying the way of life among these cluttered boxes as nothing is permanently concealed.

From the street view, the façade becomes an interesting composition of geometric forms, hidden behind one another or standing in the front for the public to see. The motif of shapes interlock as different perceptions of the residence can be interpreted from many views and allow certain openings to dictate what happens within the spaces.

As the white blocks make an interesting atmosphere as the sun goes down, the façade lights up through the giant windows that are scattered along the buildings, informing presence or absence among the boxes

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SANAA

M O R I Y A M A H O U S E

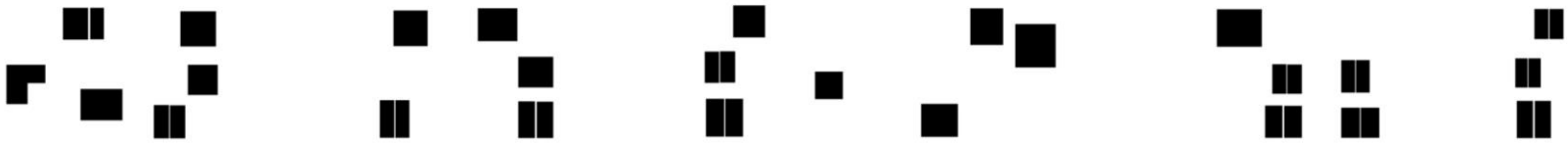
VISUAL INTERPRETATION

A concentration of white volumes by SANAA introduces a different approach to housing. Image 1, 2 and 4 display the interaction of the connective garden paths with vegetation.

Image 3 showcases the most admirable feature of the houses, the giant uninterrupted windows that scatter across the blocks. These windows allow visual connections and easy light access into various spaces.

Image 5 displays the composition of the volumes, almost as if it represents a clean mountain of blocks on the corner plot. Images 6 and 7 tell the observers about the certain quality of life among the blocks, where roofs are open to sit on and higher volumes are illuminated and framed by the light. Life within just like the giant windows are framed in random positions to add diversity and character in the buildings scheme.

IMAGE SOURCE : AMASSING DESIGN



NORTH SOUTH EAST WEST

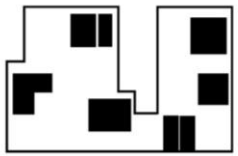
SCALE : 1/150

EXTERNAL

OPENINGS

Similar concept to the 'House in a plum groove", the openings are increased, with various sizes. As the Moriyama House serves almost like a complex, the condition of the many square shape openings create almost a scattered sequence of square patterns.

The shapes almost seem as they shift from one to the other, creating various internal and external conditions. The openings of different sizes allow for natural light to penetrate the space at different points and time of the day. As a complex, these openings display different life conditions within the spaces.



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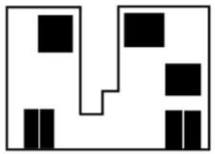
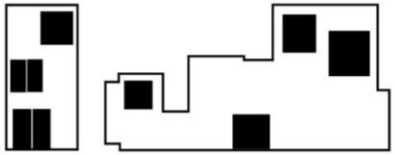


SOUTH



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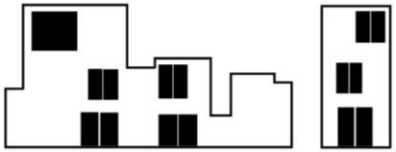

WEST

SCALE : 1/150

OUTLINE

The outline of the project is approached slightly differently. Using geometric forms and the act of stacking, extruding and separation, this creates a particular condition, as the buildings have various looking points and focal areas, the shift from one line to the next is portrayed differently depending of the stand point.

Some lines are continuous, and some are completely separate, instructing that the volume is functionable on its own, while other volumes are grouped closer together to provide a function or additional space.

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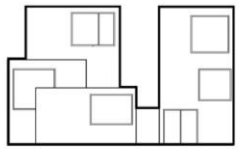
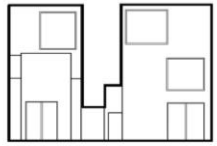
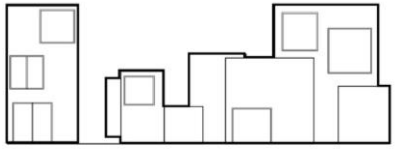


NORTH



SOUTH



EAST

WEST

SCALE : 1/150

COMPOSITION

An interesting composition of a series of box volumes, the shapes are almost shifting from the openings, to the form and then to the composition. This repetitiveness in shape adds presence and statement to the project by SANAA.

The various shapes are highlighted by the white lean background, where clean square shapes fill spaces on all facades. The geometric composition of the use of squares and rectangles in SANAA's design informs simplicity and originality.

The cluster of volumes placed in almost random positions add dimension and assortment to the design, where view points differ depending on the position of the observer. Some blocks acting as the boundary line, some acting as an internal accent. The composition of these blocks display a humble and rich lifestyle within the plot.

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NORTH

SOUTH

EAST

WEST

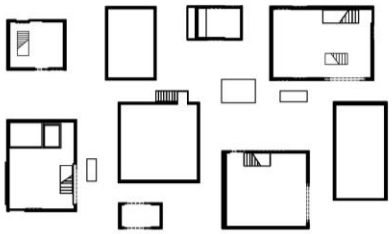
SCALE : 1/150

FIGURE

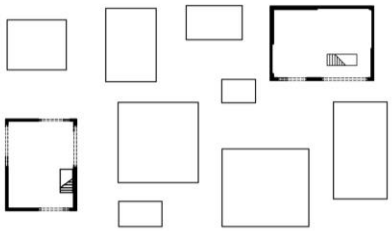
A Focal element is introduced and highlighted in the diverse use of heights. The blocks element create interesting skylines where blocks seem to be added and subtracted.

Almost creating its own urban identity within the residential space. The concentration of volumes create its own character within the neighbourhood by introducing voids where outsiders may observe through the cut out pieces of life within.

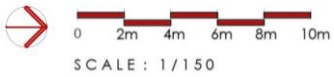
GROUND FLOOR



FIRST FLOOR



SECOND FLOOR



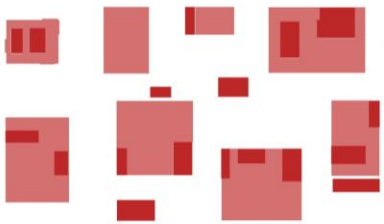
SCALE : 1/150

INTERNAL

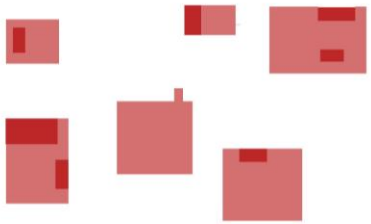
LAYOUT

The layout of the Moriyama House displays a different approach to housing compared to the standard residential plan, The Moriyama House consists of clusters of volumes that co-exist as one bigger unit. The concept allows the client to arrangement function and program to his preference.

The geometric composition as a whole implements square or rectangle blocks that can either speak to each other or act on its own.. Where the overall scheme can be perceived, some paths wider than others, and some quite narrow. The group of blocks allow for a wholesome projection of a miniature expression of a city within the plot.

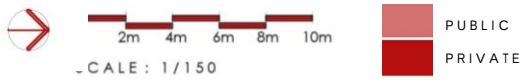


GROUND FLOOR



FIRST FLOOR

SECOND FLOOR

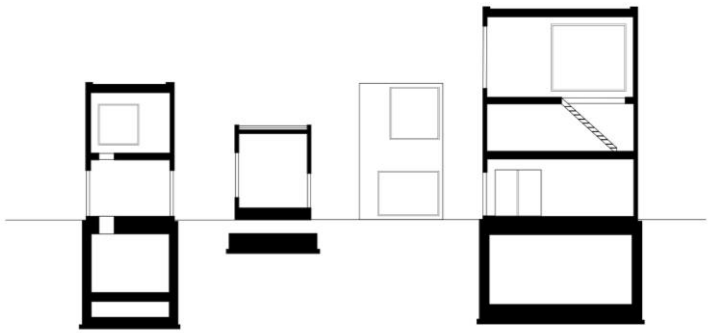


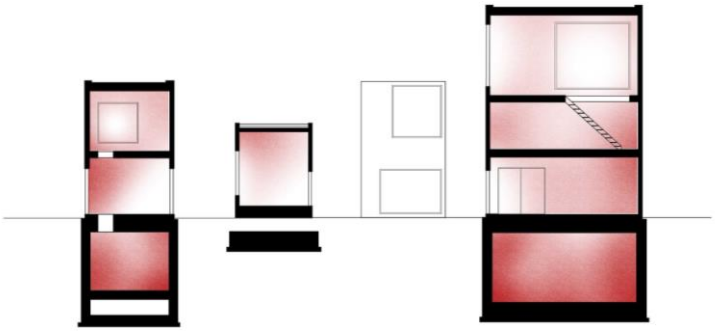
PRIVATE & PUBLIC SPACES

The group of volumes are able to function independently or as a whole, as a result of this flexibility, functions, programs and uses differ and scatter around the plot.

Private spaces are limited to the essential spaces in each volume, where public space is usually open for people to use and circulate through from one block to the next, some volumes offer much more public space for users and some offer a mix between the two.

What can be noticed is that the Moriyama House offers more sharing spaces than the conventional housing unit, thus introducing more interaction inside the cluster of blocks.





SECTION A

SCALE : 1/100

SECTION

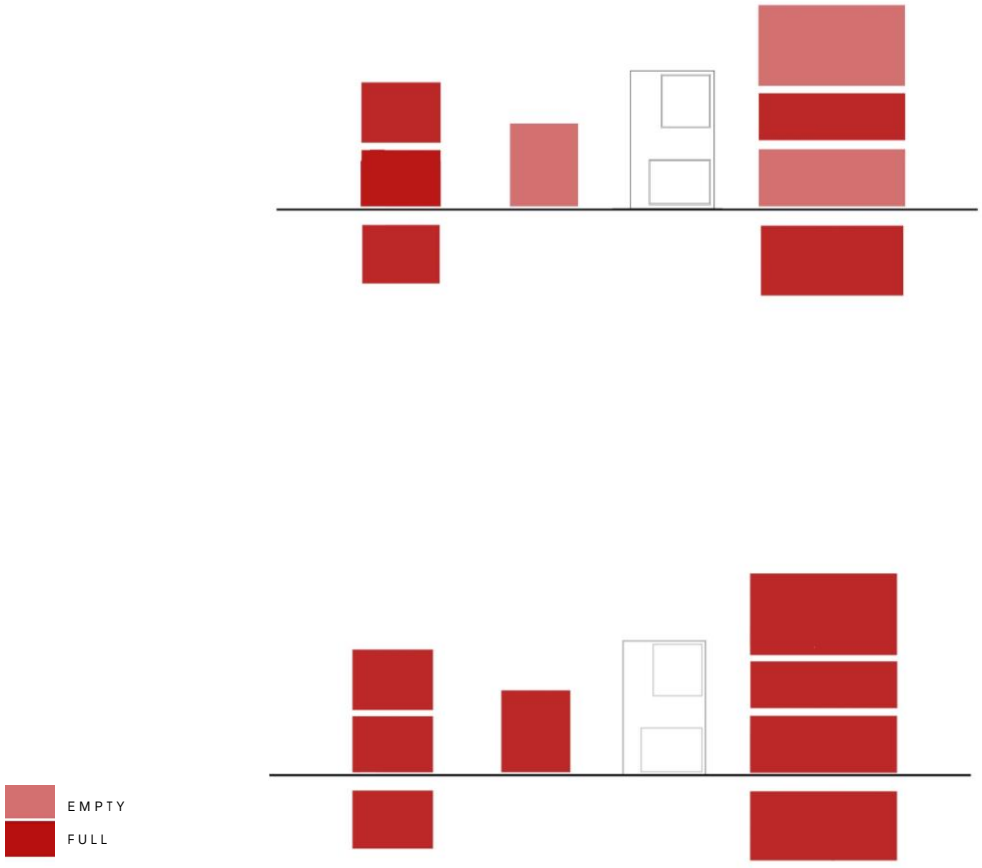
A section through the Moriyama House depending on the cut may display different internal conditions. On this section, three volumes are displayed showing different conditions.

The volumes show a single height building, a volume with two stories and one with three. The multiple various heights create stimulating connections within the cluster. The domain of the residence changes after the orders of the client. The section offers façade which demonstrate the condition of the giant openings, and some show how private spaces are enclosed. The many possibilities allow different sensations throughout the complex.

LIGHT & SHADOW

Light conditions are various simply because of the giant and tiny almost random placed windows that cover the facades of the cuboids. Large undisruptive windows are placed on certain facades to display and highlight life within the concentration of blocks.

The purposely big openings are designed in such a way where neighbouring blocks may not have direct access into the internal rooms as the windows are offset from one another, making windows uncovered and still enjoy some indirect "privacy". Although seemed to be positioned randomly, the Architect instructs these windows in appropriate places with respect to the internal habitants and to the outside viewers. Therefore life takes place with uncovered windows, ensuring light travels through the core of the houses in sections and from different positions.



EMPTY & FULL SPACES

Empty and full spaces apply differently in the Moriyama House, as the rooms serve as a single action, spaces are rather spilt or shared. The shared spaces are spaces that are unfurnished and used solemnly as a group or easily accessed to from the public, counting them as full spaces. As these spaces are more public, the amount of space is most likely the bigger spaces which hold for more occupants

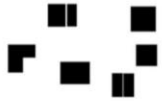
Empty spaces refer to spaces that are used for one action, such as a bedroom for sleeping,. These "empty" areas are usually more occupied more by private users. Making empty spaces not exactly empty, but less dense and more controlled. SANAA combines these programs to add contrast and flexibility through the cluster. Various experiences take over when spaces are shared and where spaces are specifically limited.

LEVELS

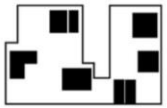
Layers of levels are interesting to uncover in this project as levels seem to vary in height and number. Some volumes carry single high ceiling spaces, where other volumes house shorter floor to ceiling conditions but with more floors added to it. Some conditions take place underground and some appear to have none. The diversity within the conditions of the levels inform the weight of the building and how many occupants are able to live comfortably.

Creating diversity in situations of the buildings allow for different clients and user to inhabit each volume in a unique way. Character is increased by offering multiple uses and spaces and still having the same outer identity to co-exist side by side in the cluster of blocks.

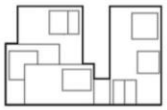
EXTERNAL COMPARISON



The comparison between the two openings project very similar conditions. SANAA's intension to create these various openings introduce a fresh and playful element to their usually blank and crisp facades.



The outline in both projects distinguishes between the use of geometric squares and rectangles, where a continuous shape is echoed from windows into the backdrop of the composition of the buildings.



Composition speaks the same language in both projects, where SANAA expresses their language through simplicity and accented with particular features. Both displaying the use of various sized windows with almost random instructed positions on each façade.

The figure and mass of the two buildings expresses clean firm lines, where the mass of the building is bold and uncomplicated. The plum house acting as a single identity while the Moriyama house uses repetition to create a larger influence.

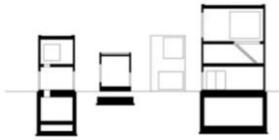
House in a Plum Groove

Moriyama House

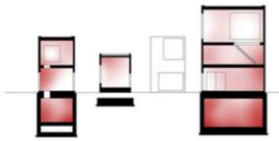
INTERNAL COMPARISON

Although the projects differ highly in quantity, complexity in the plans are a common instructed from the firm SANAA, In one project, actions are separated within the whole plot, and the other where separation takes place in a much bigger scale.

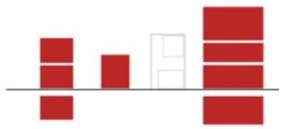
The public and privates spaces are designated and ordered in both schemes, where some spaces are central and some act as a secondary element in the space.



SANAA incorporates a certain complexity that forces the user to experience on a daily basis. The spaces vary in height and are designed to leave an impression of continuity in their schemes. The architects designed delicate geometric rectangle shells to encase the diverse spaces within.



Light is an essential element that SANAA is well known for incorporating in their designs. The windows and various placements allow for light to enter spaces to create depth and diffusion within the internal space.



Height and the play between double volume conditions are depict in SANAA's residential designs, The connections between various volumes creates spatial ambiguity and intensity between internal zones.

House in a Plum Groove

Moriyama House

CONCLUSION

A comparative conclusion between all three architects. Schemes will be identified and compared to one another in order to find a common elements between the six projects.

SHAPE

Tadao Ando has designed these two residential buildings with similar patterns and external shells. What makes these two projects eligible for the idea of "shape shifting" in his work is the noticeable shell he implies to both of the buildings. The concept of "shape" implies to the external condition. In the comparative diagram, a strong solid presence is noted in his enclosures. The presence of his external qualities express stability and promote bare expression.

EXTERNAL

An external hard raw shell is distinguished in the appearance of both projects, where the architect expresses the material in its natural form. Ando highlights the material by exposing the concrete in both projects. A symmetrical composition is implied in both facades, almost represent a bold gate-way character as you address the two houses.

Kengo Kuma created two unique projects that differentiates himself from the other two selected Architects. The Plastic House and the Meme experimental house are two strong examples of how Kengo Kuma took a unique approach to designing an innovative habitable living space. In the two projects, Kengo Kuma expresses translucent materials as a response to its natural surroundings. The external shapes expresses both intension and sensitivity.

The illuminating exterior shell of the two selected housing projects expresses the use and balance between natural and artificial light emission. Creating a similar impression in both presences. The shape of the external shells display similarity in terms of what is highlighted and exposed. Both structures are visible and seen as a focal point, where structural ribs are defined, and materiality allows for change of scenery depending on the hours of the day.

The shape of the Meme proves to draw initiation from its indigenous surroundings, expressing a local and simple character, while the Plastic House displays a conventional outer shape with accents recycled from its main material selection.

Sanaa designed two homes which opposed the idea of attracting attention by producing a neutral envelope. These houses have similar intentions and enclosed settings. SANAA's architecture embraces complexities within deceptively simple appearances. The team produced many elements that are difficult to understand unless experienced. The white, ethereal architecture of SANAA has become correspondent in contemporary Japanese Architecture. The two projects expresses a uniform language that promote their subtle approach to a habitable environment.

The architects have created blank canvas's which are enriched with numerous window openings of diverse sizes and positions. The outer shell for both housing projects emits clarity and simplicity.

A pronounced detail that both housing projects are indented with, are the characteristic giant scattered windows. These elements are bold and allow for visual connection from inside to outside and vice versa. The giant windows highlight life inside in cut out frames displaying scenes of internal movement and routine. These windows allow the blank canvas to come alive by its constant changeable viewpoints.

There are three schemes that are visible in the external conditions amongst all six projects. 1. Expression of materiality, 2. Light conditions and 3. Responsive character. The expression of materiality in all projects are chosen skins to express the identity to observers. Concrete, for expression of solidarity and empathy. Translucent materials to allow for illuminative diffusion and sincerity. A bare façade to highlight ambiguity and importance to the echoing elements placed on the blank canvas.

The light conditions are a powerful element in the schemes, where it is captured and distributed in various ways. The light conditions in each project are solved in numerous ways, as the architects use it as an informant of the design and as a natural element that presents itself everyday through out the daily routine of the inhabitants.

A responsive character of each project displays elements in the design that are used as a visual connection from the outside into the inside. The characters come in the form of physical elements seen on the exterior, such as the delicate expression of the wooden structure in the Meme, or the exposed concrete finishes from the Row house. These characters provide a visual response to the outside conditions.

These schemes can be seen as tools that allow for perceptions to introduce what the eye meets. With relations to the shape of the external conditions, the schemes in materiality, light and character act as the first filter of perception and space.

SHIFTING

The internal condition described as the "shifting" element in the paper emits a relative pattern in the architects design decisions. The act of shifting describes change and transition. Therefore, as the external shape shifts into the interior, a inverted reaction is absorbed. The internal condition in the six projects differ and apply certain schemes extracted from its exterior projection.

INTERNAL

The Row House implying a linear rectangle layout and the 4 x 4 house a vertical square layout, with the same geometric outline, Tadao Ando enforces simple use of geometric composition in his floor plans. The interior keeps its skin by imitating the raw exposed concrete condition on the inside, and having an intermediate connection between private and public, full and empty spaces.

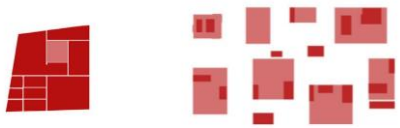
Kengo Kuma's intention is clear through his demonstration of light emission in both projects. The internal formation of the Meme revolves around the use of light to reflect open, clear spaces within the building. The plastic house uses the light as a diffusion element to space out the busy noise of the city. With central focal points such as a open emphasized living space that welcomes people into the space.

Both homes infusing the art of transparency and privacy simultaneously. The fine texture of the luminous panels modulates transparency through the body of the house, initiating a stage of internal frames of light. With Kengo Kuma's implementation of an open layout, this concept echoes from out to in.

The intentions of the Japanese architect are to critically engage with materials that express the architectural language in a simple but confident way.

He displays courage of attempting to challenge the usual meaning of materiality, Kengo Kuma proves determined to dissolve the materials that he selects and thoroughly explores its strengths and weaknesses and explores them I a way to create a unique identity of an architectural object.

Expressing strong simplistic concepts in the external shells of their projects, SANAA inverts this action by creating complex and intriguing internal spaces that express elegance and refinement. SANAA introduces strong concepts within their residential spaces that allow for spatial connection and fluidity.



With relation to the two projects, despite quantity of volumes, the spatial relationship between spaces are almost recognizable. House in a plum groove stands as its own single unit, but produces 17 different spatial zones, where function is designated to a single action. This concept grows within the Moriyama house in scale.

As there are more volumes, the concept of serving spaces in specific and direct order is what shapes the larger project. The architects display a trait of designing atmosphere or landscape for the people, where not only focus is placed on the external white faces their buildings carry, but also on creating spaces that allow people to receive a certain essence of transcendence.

There are also three schemes present in the internal conditions of all six projects. 1. Complexity & simplicity, 2. Addition & subtraction and 3. Blurred boundaries.

The layout and interior characteristics of each projects demonstrates a contrasting mixture between complexity and simplicity. Where the two concepts are to express the architects design decisions, such as the simplicity of the division in the Meme floor plan, that allows for easy movement of air and light, but still introducing the complexity in the walls that capture the illuminative essence.

Addition and subtraction are opposing actions that allow the architects to control the internal atmosphere and exposure. Addition may apply to quantity of an element, such as the scattered windows in the Moriyama house and subtraction as a negative concept to allow less taken space, like in the Row house where Ando subtracts the central mass of the buildings body to allow light penetration to travel more deep into the buildings core.

Lastly, the most important scheme that demonstrates an internal condition but also an opposing factor that connects to the external components. Each project captures a certain fluidity that allows the external and internal factors to combine to produce a specific quality that expresses individuality in Japanese residential architecture. This fine detail implies the hidden core discovered within the six projects.

BLURRED BOUNDARIES

The abstraction of the idea of blurring the boundary is the element that presents itself between the two compositions, ‘‘external’ and ‘‘internal’’. Where the fine line between the two identities are blurred in a hidden and ambiguous way. It is the invisible filters that boarders ‘‘in-between’’.

The relationship between external and internal in contemporary Japanese residential architecture involved uncluttered and clear intensions in the lifestyle, where balance, order, customs and a connection with nature are present in the habitable spaces. Blurring the boundaries in precise ways presents these factors in a subtle but influential way. Although opposing concepts, external and internal qualities are tied together to express the Japanese aesthetic illustrated by Tadao Ando, Kengo Kuma and SANAA. Each architect portrayed this conceptual element in all six of their projects.

The two projects both blur the boundary between the conventional lifestyle and habitation. The two projects by Tadao Ando both express a special intention which can contribute to blurring the boundaries within the living space.

Tripartition is echoed within the building in terms of long-short-long. Having this division has allowed Tadao Ando to create a central open core which exposes the house to the interaction between nature and the enclosed living space. The core gives importance to the overall design as it forces the inhabitants to circulate through and across the two solid concrete enclosures. Making an interaction with nature as a daily lifestyle.

The 4 x 4 House has a similar concept implied to its design. As the house is located right by the ocean, it is said to resemble a ‘‘lighthouse’’, The offset cube gives importance to the design as Tadao Ando wanted to frame and highlight a connection with the view of the sea. Nature is an important element, therefore designing the offset cube with a completely transparent façade to maximize visual connection from within the building.

Both projects capture the essence of inviting the external limits inside, which is filtered through carefully designed elements to encourage the presence of the external envelope.

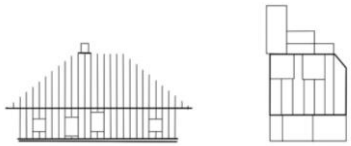
The work of Kengo Kuma excels in his techniques of combining traditional Japanese methods with advanced material manipulation and experimentation.

The intension was to create a relationship between light and the visual surroundings of the house. Where Kengo Kuma's purpose was to create a relationship between inside and outside by introducing a light interior that felt like being outdoors in an open field.

The plastic house offers a similar approach as it has a contrasting context and location, Kengo Kuma selects the concept of creating a relationship to the city by selecting an echoing material to assist this connection.

He selected the use of a translucent material called fluorocarbon polyester fabric. This material acted as the main focal element to dissolve the chaotic vibrations of the contemporary city of Tokyo, Japan. Therefore, introducing a balance between the outside conditions and the inside.

Kengo Kuma blurs the boundary by extending the purpose of his materials to accommodate a daily infusion of interaction between the external life and the internal life.



Despite their attraction to using white as their main palette, SANAA regularly incorporates elements such as ambiguity and doubt in their designs. Their extensive use of glass contributes to what they would do to "blur the lines" in their works. Where the glass usually acts as the agent where their intentions are to create layers of spaces and reflections that cover the conventional boundary.

SANAA is said to design projects in the "fourth dimension", where usually their ideas, elements and layouts cannot be directly translated by only understood once experienced. Their delicate touch of humour, use of reflection and spatial ambiguity demand observers to investigate and understand more thoroughly.

In both projects; Moriyama House and the House in a Plum Groove, both emit the intention of deceptive external conditions with an unexpected curiosity of the internal formation.

Japanese Architecture illustrates variation but holds a strong aesthetic unity and expresses ingenious functionality as some of its common themes.

Japanese architecture has displayed a nurtured approach to simplicity and authenticity. Through exploration of the six selected projects, allowed for a window into various approaches and techniques that express most of the Japanese language in residential architecture. With respect to customs, surroundings and nature, all size projects have allowed for themes to uncover and evaluate in order to provide a common pattern within the relationship between the external face to the internal core. Japanese residential architecture has evolved and has been elevated. The strong works of the selected architects proved to encapsulate prominent features that make Japanese residential architecture distinct and connective.

The building possess a rich quality and adopt innovative solutions to respond to site constraints, conditions and surroundings. In conclusion, Japanese architecture highlights what goes beyond the eye and filters unique moments to enrich the users experience and lifestyle. The Japanese aesthetic – the cultured essence recognisable in the outlook of liveable art.

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