



Designing Through Experience

Poetics of the House

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Table of Contents

Key words	6
Abstract	7
Introduction	8
Critical Error	12
What is Rational Design?	34
Experiencing the House	43
Prized Possessions	57
High Expectations	68
Inspiring Japanese Houses	82
The House as an Experiment	105
Zoey's House	107
Conclusion	159
Quotes by Japanese Architects	162
Bibliography	192
List of Figures	194

Key words

Architecture, Body, Emotion, Daily Living, Ergonomics, Expectation, Experience, Geometry, Habits, House, Instinct, Memory, Objects, Ownership, Personalized, Preconception, Proportion, Senses, Sensory.

Abstract

This thesis argues that a house should be designed after an owner's daily routine and bodily proportions to enhance their emotions. An overview of the historical use of geometry in architecture and its relationship to the human body offers an alternative to what the house should be. This overview also explains why designing through experience has been a neglected approach in architecture.

The house is a poignant example of a typology where human experience has been discarded and replaced by standardization of form and materials. However, between the 60s and 90s in Japan, Japanese architects have challenged the conventional house and the study of their projects provides inspiring precedents for what a house could be. Consequently, a proposal for what a house should be arises.

Zoey is introduced as a fictional client and a narrative is developed to propel an architect towards an alternate approach to designing a house. A house that allows for an ultimate emotional experience of space and improves Zoey's well-being, both physical and psychological.

Introduction

There have long been opposing views on what constitutes adequate domestic architecture, and it is the combination of these opposing ideas that create a rich environment to dwell in.

Historically, architects have used geometrical approaches to create space and design housing, and such approaches have long been theorized. Many explain that architecture and geometry are interlinked with the human body and its proportions. In other words, spatial design has a direct rapport with the human body, which has been translated into ideal proportions. However, these proportions are often translated into two-dimensional explorations of space and overlook sectional or perspectival studies.

In fact, architects have also theorized that memory and experience are ideal design drivers. Geometrical relationships could result from an experiential approach, yet it is argued that design should not solely result from compositional aspirations. In this case, form is a by-product of designing through narrative rather than the initial gesture.

The friction between opposing ideas leads to important questions about what the purpose of domestic architecture is and why housing is conventional.

The 'Critical Error' section of this thesis argues that the link between the human body and measurement in architecture has lost its relevance due to standardization. It also sheds light on the relevance of one's instinctual understanding of geometry in creating space. For instance, children display the knowledge of what a house is through geometry and the preconceptions of the house are engrained within the mind at a very young age. Therefore, this division between compositional and emotional approaches in architecture becomes blurred and it is in this gray zone that an alternative solution to housing resides.

The 'What is Rational Design?' section of the thesis focuses on compositional and emotional drivers in design. These drivers are compared based on their ability to rationalize design in the context of architectural education and the profession itself. The critique on compositional approaches in design is supplemented by the 'Emotional Experience' section, which provides a better understanding of the necessity for one to have an emotional connection with their house. It is then further argued in the 'Possessing the House' section that conventional housing does not satisfy one's most rudimentary needs: feeling, remembering, and being consciously fulfilled by the experience of daily living. This dissatisfaction is explained through the act of collecting objects and populating a house with furniture to 'personalize' it.

Essentially, this thesis centers itself on a critical question: what could a house be and what should it be? This question is addressed in the 'Inspiring Japanese Houses' section, which includes multiple case studies from a list of 250 Japanese houses. These houses were collectively studied during the 'Usual Suspects' thesis design studio led by fala atelier at the University of Toronto's Daniels' School of Architecture (Fall 2020).

Finally, the 'Experimental House' segment portrays Zoey, a client for which a fictional architect proposes a house that best fits her physical and psychological needs, and the design process is explained in the 'Zoey's House' portion of the thesis.

Through Zoey as a client, an alternate approach to designing a house is proposed. Zoey feels emotional about her house. Her house is designed through her daily routine, bodily proportions and enhances her emotions. There is no furniture in her house, only objects that become relevant through her use. The thinness of the walls suggests the temporal and siting aspects of the house: if Zoey moves, the house adapts to her. The design component of this thesis threads the link between the opposing views on domestic architecture and how they are more powerful when combined under one roof.



Interior of Zoey's House (Social Club)

Critical Error

Perhaps the most well-known example of an architect's attempt to rationalize proportion in architecture and relate it to the human body is Le Corbusier's Modulor Man (Fig. 1). His Modulor Man arose from his study of proportions, regulating lines and the golden section, which led to a standard unit of measurement: a module. He argued that this module could be applied to any building to create optimal proportions as he also considered that "the house is a machine for living in" (Le Corbusier and Etchells, 1927, p.107). With the Modulor Man came graphic representation and grids along with an object: 'a strip of metal or plastic' measuring 89 inches (2.26 metres) long. This ruler became at the centre of all his design aspirations and even extended to how he hoped to design landscape (Cohen, 2014, p.11).

However well-known Le Corbusier's Modulor Man became, many architects in France and around the world were skeptical and challenged Le Corbusier's Modulor because they understood that proportions have always been carefully considered by architects and that his solution for standardization disregarded all previous research that had been done towards creating such modules in construction. For instance, Pol Abraham, a French architect wrote to Le Corbusier to remind him that his research was quite limited and that he should have known that "at l'École des Beaux-Arts,

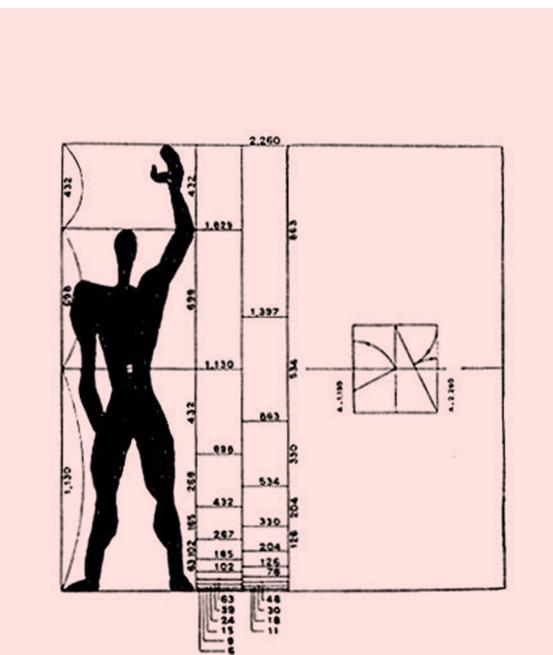


Fig. 1

there were scarcely any candidates for the Grand Prix who did not make use of some Egyptian triangles and geometric diagonals" (Cohen, 2014, p.3). Similarly, Hendrick Petrus Berlage also reacted to Le Corbusier's research since it was closely linked and potentially plagiarized from his previous writings on 'regulatory lines', which Le Corbusier referred to in his own work (Cohen, 2014, p.3).

Architects demanded new units of measurement in buildings because buildings relate directly to the human body. Unfortunately, this link between geometry and the human body has often resulted in standardization of measurements and typically those of a six-foot man. For example, the height of a typical door is 6.7 feet (2 metres). This is often justified by a need to design for the largest or most extreme scenario. However, that rationale neglects the idea that a house can be designed for its occupant, say a woman who measures five feet (1.5 metres) tall. In this case, her visitors would be the ones to adapt to her specific living conditions.

No body has the same measurements and to base a system on a six-foot-tall man such as Le Corbusier's Modulor Man would intrinsically eliminate the possibility of children, people of shorter stances, women, people with disabilities and the elderly from fully experiencing a house designed for them. The idea of standardization is of course more plausible in environments where extreme personalization is not

relevant such as in public buildings. In other words, it would not be logical to design a hospital with rooms and furniture designed specifically for young adults measuring five and a half feet (1.7 metres). What is perhaps more important is that the house should be a place where proportions prevail in their truest sense based on the unique individual that resides there.

Architects also have often resorted to mathematics to ground their proposals and justify certain ratios. For example, the golden ratio and the Fibonacci series have long been sought in architecture because it is evident in the human body and other natural occurrences. For example, the Romanesco Broccoli naturally has the Fibonacci series within it (Fig 2). This fascinating relationship between living things and mathematics has long been considered to justify measurements in buildings. In fact, ancient builders such as the Egyptians, Chaldean and Greeks used rope to standardize these measurements for construction and even named measuring tools after the human body.

The use of the human body as a module for construction dates to ancient times and even Le Corbusier was aware of this because Alexis Carrel, a surgeon, explained to him the relevance of ancient construction methods and the relationship between tools and the human body (Cohen, 2014, p.8). In fact, Le Corbusier wrote about this in a journal

'Architecture d'Époque Machiniste' and stated that "the names of these tools were: elbow (cubit), finger (digit), thumb (inch), foot, pace, and so forth. [...] Let us say it at once: they formed an integral part of the human body, and for that reason they were fit to serve as measures for the huts, the houses and the temples that had to be built." (Le Corbusier, 1926). However, the dissolution of ratios into purely mathematical and numerical values applied ominously results in a discordance between body and space.

Namely, if one were to consider proportions of a six-foot man as standards to be applied to all buildings, this becomes superfluous. Likewise, considering the golden ratio of one's hair positioning becomes useless because it does not yield any relevant experiences for the user (Fig. 3). On the other hand, if one considers the distance from fingertip to toe and relates this distance to one's sleeping patterns, perhaps a bed would not be an object but rather a room that best fits them as they sleep.

It is not the use of geometry or proportion that is erroneous but rather the tendency to standardize measurements and design elements in the house when living itself constitutes of unique and precise scenarios. In fact, a geometrical and proportional approach can also result from meaningful experiences such as using geometry in structure to create



Fig. 2



Fig. 3

a sturdy shelter. This precedes standardization and opposes the fascination of geometry for compositional means because it addresses practical needs. For example, Vitruvius' writings describe the process by which men began to build shelters by assembling twigs and mud in a pyramidal geometry and using models observed in nature such as nests. The domestic sphere is bound to physical constraints such as gravity, hence using geometry and instincts, the pyramidal form allows for a sturdy shelter.

Likewise, the shelter's materials consisted of mud and other materials to shield men from weather and provide safe and dry places for eating and sleeping. Humans looked at each other's constructions to better improve their own and therefore through sharing and a collective approach, the dwelling was increasingly improved (Pollio translated by Morgan, 1914, p.39). This highlights an important moment in history where people sought to constantly improve their house and its purpose was geared towards their well-being. Regrettably, standardization seems to have prevailed and the current construction trends in housing fail to focus on improving one's physical and emotional well-being.

At some point in history, the shelter became a house, which increasingly diverted from responding to basic physical and psychological needs but rather through the wrong kind of standardization became conventional housing. Conventional

housing is a collection of contemporary houses, which are standard in their form, spatial organization, and materiality. Such housing still meets the physical need for shelter, eating and sleeping, and one could argue that it has evolved to meet other important needs such as bathing. However, beyond these physical needs, there is a clear lack of emotive and psychological stimulation because the houses were not built for and around a specific occupant. Many considered huts to be 'primitive' and houses with foundations were built to establish permanence as a symbol of evolution (Pollio translated by Morgan, 1914, p.40). However, this idea of self-improvement and closeness to the house have been dissolved during this alleged evolution.

As the construction of the house evolved through methods and materials, builders began to consider principles of symmetry (Pollio translated by Morgan, 1914, p.41). It is common knowledge that temples were built according to such principles and proportion. It is the impact of these principles on current construction trends in housing that are most relevant. Vitruvius defines proportions as "a correspondence among the measures of the members of an entire work, and of the whole to a certain part selected as a standard" (Pollio translated by Morgan, 1914, p.72). Furthermore, symmetry arises from these proportions and according to Vitruvius, without proportions and symmetry, there could not be precise design principles for a temple,

"that is if, there is no precise relation between its members as is the case of those of a well-shaped man" (Pollio translated by Morgan, 1914, p.72). For instance, the distances and ratios between parts of the body have carefully been determined. "The face, from the chin to the top of the forehead and the lowest roots of the hair, is a tenth part of the whole height; the open hand from the wrist to the tip of the middle finger is just the same; the head from the chin to the crown is an eighth, and with the neck and shoulder from the top of the breast to the lowest roots of the hair is a sixth; from the middle of the breast to the summit of the crown is a fourth." The list of such ratios is much longer, yet one might wonder what their relevance is in the experience of the built environment or even why "painters and sculptors of antiquity attained to be great and endlessly renown" through their translation of such proportions into physical objects (Pollio translated by Morgan, 1914, p.72).

A crucial moment in history was when ancient civilizations "derived fundamental ideas of the measures which are obviously necessary in all works, as the finger, palm, foot, and cubit" (Pollio translated by Morgan, 1914, p.73). This link between geometry, measurement and the human body was perhaps a way of understanding and rationalizing space. Seeing that humankind was placed at the centre of all living things by humans themselves, it makes sense that they would use themselves as ideal models of measurement to

both understand and create space. Beauty and excellence have been based on symmetry for centuries and Leonardo da Vinci's studies are a testament to this (Fig. 4). Symmetry and proportions have greatly impacted architects' space planning and focus on two-dimensional representation of space through drawing. This use of proportions in buildings yields two types of experiences: one of compositional order and an emotional one. The latter results from a tangible experience between body and space and can include compositional beauty, yet rarely does composition yield fruitful emotional experiences by itself.

The instinct of centralizing the human figure as the model for the built environment is not necessarily problematic, yet the focus on superficial human characteristics such as symmetry has hindered internal qualities such as emotions to be translated into buildings (Fig. 5).

Le Corbusier rooted his ideas in ancient knowledge by basing his model on a six-foot (1.82 metres) man. As Vitruvius explained that "as the foot is one sixth of a man's height, the height of the body as expressed in number of feet being limited to six, they had this was the perfect number, and observed that the cubit consisted of six palms or of twenty-four fingers" (Pollio translated by Morgan, 1914, p.74). Once again, where these observations stem from the body and understanding space, they have soon become

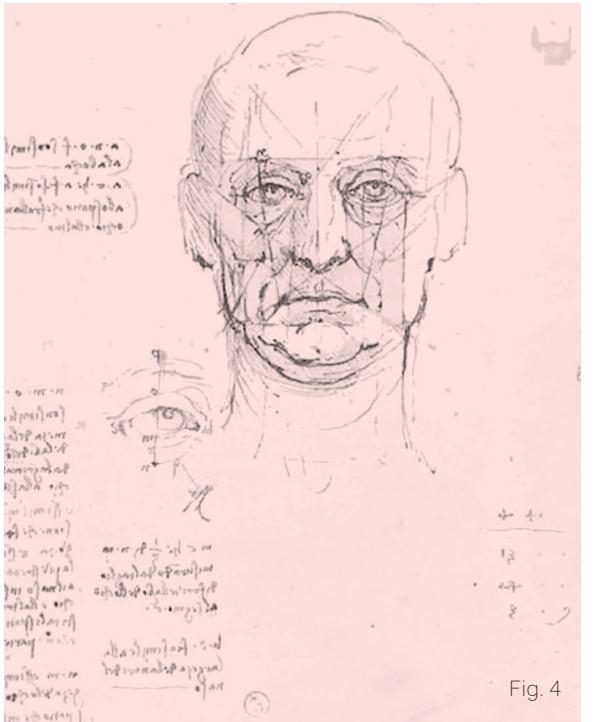


Fig. 4

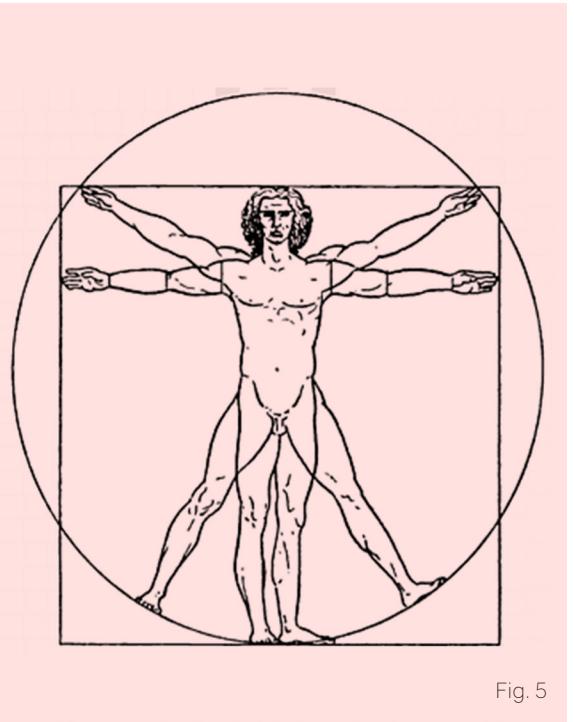


Fig. 5

"For if a man, be placed flat on his back, with his hands and feet extended, and a pair of compasses centered at his navel, the fingers and toes of his two hands and feet will touch the circumference of a circle described therefrom." – Vitruvius

diluted to mathematical operations that do not necessarily fulfill one's needs apart from providing visual satisfaction or symmetrical beauty. Vitruvius wrote about the process of designing various rooms in Greek antiquity. He describes that atriums are to be designed both in width and length according to three classes: "the first is laid out by dividing the length into five parts and giving three parts to the width; the second, by dividing it into three parts and assigning two parts to the width; the third, by using the width to describe a square figure with equal sides, drawing a diagonal line in this square, and giving the atrium the length of this diagonal line" (Pollio translated by Morgan, 1914, p.177). Moreover, Vitruvius states that dining rooms ought to be twice as long as they are wide. These rooms were carefully designed, yet there is no mention of the experiential qualities of the atrium or dining room by those who occupy them.

What does a dining room which is two times longer than it is wide achieve that another dining room fails to? The emotional and sensory effects resulting from such rules are left undefined. In contrast, the orientation of a building has both physical qualities defined by the sun but also achieves clear sensory effects. If a living room is south facing, it would have optimal sunlight, which has a direct effect on its occupants since more sunlight results in warmth and has clear psychological benefits. What this thesis questions is if the prioritizing of composition in architecture has hindered

the unlocking of psychological benefits in the house itself. Such rules and divisions of space have transpired time and have been applied by architects such as Le Corbusier who also idealized ancient theories as methods of achieving visually pleasing and rational architecture.

Architects could prioritize composition and proportion for visual beauty. Conversely, they could first consider emotional experiences resulting from building orientation and proportion to achieve meaningful beauty. In other words, design should not aim to solely allow for the viewing of beautiful architecture but rather for its experience. These opposing views about what should drive the design of a project is a contemporary issue.

In a report by Ipsos Mori, a market research company, it was concluded that "a high level of light was associated with the wellbeing of participants in the research, and an antidote to the stressful environment of the city" (Ipsos Mori, 2012, p.39). Some participants also suggested that their physical well-being was improved by sunlight yet comprised by the cold resulting from having larger sash windows during winter. (Ipsos Mori, 2012, p.40). This reveals an internal rating system of priorities for well-being in a house and it must be clear that these typically vary from person to person. Therefore, even though general rules for orientation and lighting are followed, this internal hierarchy of needs must

be addressed to attain full well-being and emotional benefits in the house. Even in Roman times, Vitruvius explained that it should be a general rule to leave space for openings such as windows since sunlight is important in the house (Pollio translated by Morgan, 1914, p.185). Natural light is clearly important because it is necessary to function and achieve daily tasks. It is also important because it has effects on one's psychological state, which proportions often fail to influence by themselves.

David Harvey, a professor of geography at the Johns Hopkins University writes that "architecture, as with all art, is fundamentally confronted with questions of human existence in space and time, it expresses and relates man's being in the world" (Pallasmaa, 2005, p.17). Ever since a built environment emerged from man's mind, it has served to construct a world where men are at the centre. In the case of architecture, this has become even more apparent when the architect became a renaissance man who excelled in multiple fields of knowledge and who should be trusted to understand and translate the ancient Greek and Roman knowledge into built form. Harvey also explains that architecture "domesticates limitless space" and is the "primary instrument in relating architectural dimensions to a [human measure]." In other words, Harvey explains that one's human experience of architecture is what allows for an understanding of space itself (Pallasmaa, 2005, p.17).

A plan is a representation of knowledge through geometry but is also associated with technology through the image of a city captured in aerial view from an airplane. Planar viewpoints produce compelling images due to the impressive nature of aerial and satellite technologies, which have further limited the possibility for other images to be as compelling. In fact, much of architecture relies on maps and site planning to convey specific arguments about orientation and contextual factors such as building height, lot depth, setbacks, proximity to parks, and relevant adjacencies. In fact, as Steven Holl explains in Juhani Pallasmaa's 'Eyes of the Skin', "while our experience of the world is formulated by a combination of five senses, much architecture is produced under consideration of only one – sight. The suppression of the other sensory realms has led to an impoverishment of our environment, causing a feeling of detachment and alienation" (Pallasmaa, 2005).

Planar studies are useful to understand the relationship between buildings and to establish optimal orientation for sunlight, shading, or wind patterns. However, these plans fail to communicate experiential qualities of a proposal. One could argue that a house's context is of less importance than the immediate conditions around and within the house because of the internalized nature of domesticity.

Architects who prioritize the human experience of a site

or building have relied on the perspective. Renaissance architects such as Brunelleschi are famous for their use of the perspective to communicate sensory aspects of a place (Fig. 6). Perspective was also theorized by Leon Battista Alberti who explained that the perspective is "the mathematical system which uses geometry to create the illusion of space and distance on a flat surface" (Motta, 2021). Once again, mathematics is used to standardize and understand the creation and depiction of space. This is not problematic per se but the tendency to place the viewing angle of perspectives at a standard height is. Standard viewing heights neglect viewpoints that could enhance the sensory experience of an image. The depiction and use of two-dimensional strategies to design architecture has resulted in "repulsively flat, sharp-edged, immaterial and unreal" architectural structures (Pallasmaa, 2005, p.31).

It can be argued that model making, both digital and analogue, has become a way to grasp the three-dimensional aspects of a building and communicate ideas that are less evocative in two-dimensional plans or perspectives. However, digital models are often still used to produce flat images and the screen acts as a barrier for a haptic experience that a physical model might better achieve. Virtual reality has offered better opportunities for an immersive experience of space, yet whether the design itself evokes the senses is another debate since the haptic

qualities of a project are not translated into virtuality.

Another point can be made about the rarity of physical or even detailed models for conventional houses because these are often dismissed due to small project size and budget. Owners are satisfied with plans and perspectives, and sometimes sections or details, which are mostly produced for the construction team. Moreover, the size of physical models rarely achieves the true emotional experience a building would.

In art, sculptures are good examples where form directly impacts space and naturally creates a relationship with the viewer's body. This is particularly well experienced by viewers of Richard Serra's sculpture, 'Lift' (Fig. 7), which "directly address the body as well as the experiences of horizontality and verticality, materiality, gravity and weight" (Pallasmaa, 2005, p. 18).

Perhaps considering the physical constraints of the residents' bodies and their daily acts of living is more important to produce meaningful models, renderings, and drawings rather than solely considering site conditions and standardized construction methods. An experiential approach does not dismiss the power of geometry in planning or the compositional aspects of perspectives, yet it includes the emotive aspects of life that are arguably more important in the house.

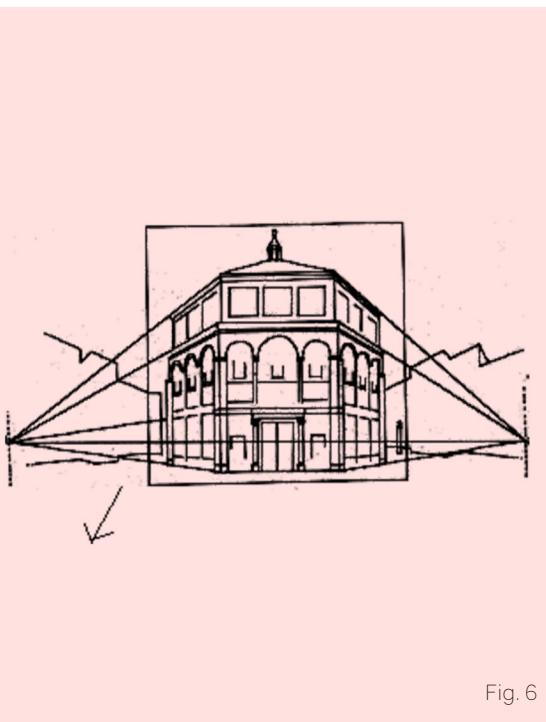


Fig. 6

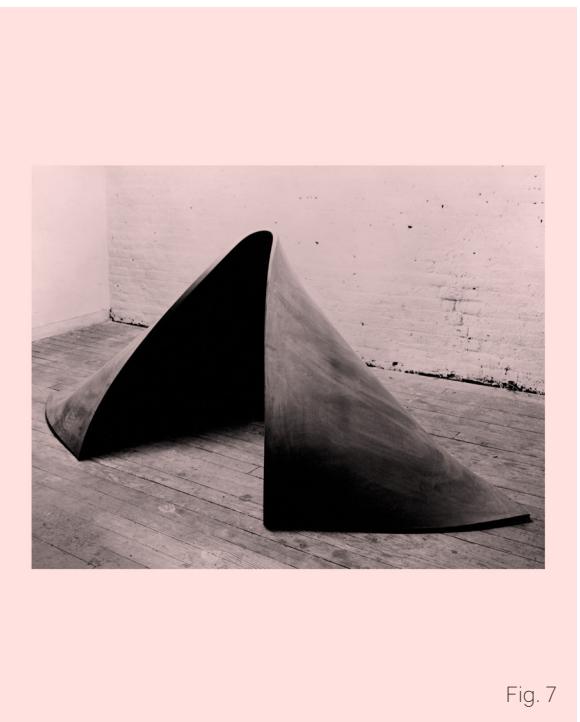


Fig. 7

As previously discussed, the use of geometry in architecture to relate the body to measurement and standardize design has prevailed through centuries. However, an instinctual understanding of geometry has also transpired time, and this is demonstrated by children's ability to both learn geometry and instinctively understand spatial composition. At the age of three and four, children can understand two dimensional shapes and solids. They are thus able to differentiate them and associate them to objects that make up their environment. A common example is the comparison between a sphere and a ball (Ginsburg and Oppenzo). However, scale is also important in these associations as a sphere could also be related to the shape of planets. Thus, this understanding of shapes and solids and their association to space is defined by proportions and their relative location to other objects.

This understanding of geometry is one that is closely interlinked with the senses. Therefore, it instinctual and does not rely on the understanding of complex theories or proportions. Through the simple combination of shapes, such as two squares or two semi-circles, new shapes result such as the rectangle and circle. Children understand such combinations and learn to represent the house with geometry early in their education. In fact, preconceptions about the house and its spatial organization are engrained within the mind at an early age. This combination of shapes

without strict rules about mathematical proportions is not inferior to the architect's rigorous use of proportions. In fact, an instinctual approach could have a greater impact on one's senses and memory. Babies understand space through learning to crawl, when they can taste, hear, see, touch, and smell various parts of the house (Ginsburg and Oppenzo). These initial interactions with the built environment eventually become long term memories. One's senses are crucial in their initial emotional ties to the space, which transcend time.

The practices surrounding geometry as a planning tool and the production of two-dimensional images hinders the exploration of sensory experiences that could emerge through design. Furthermore, the standardization of proportions and rules about designing a house are most clearly manifested by preconceptions of what the conventional house should look like (Fig. 8). The relationship between rooms and elements of a house are instilled within the mind at a young age (Fig. 9). One learns the adjacencies between kitchen, dining room and living room or even which objects belong in these spaces, without ever questioning such organization (Fig. 10). People are expected to behave a certain way in the house and no room is left for the imagination to provide any alternative.



Fig. 8

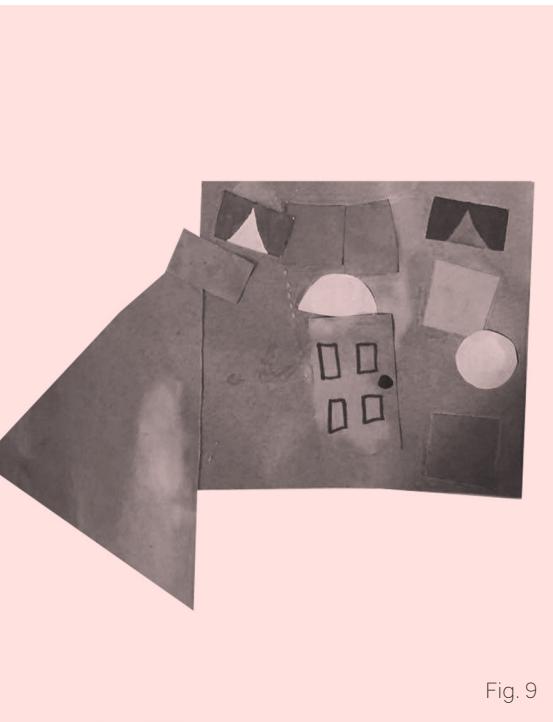


Fig. 9

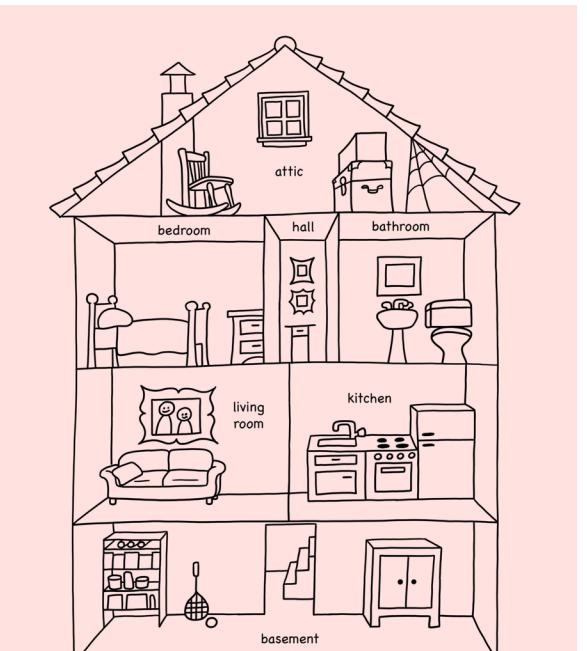


Fig. 10

"A house that has been experienced is not an inert box. Inhabited space transcends geometrical space." – Gaston Bachelard

What is Rational Design?

In architecture school, it is often discouraged to speak of space's emotive qualities because it has not been theorized and rationalized as an acceptable 'design driver'. Conversely, geometry and proportion have been heavily theorized and widely accepted as 'design drivers' that appropriately justify a concept. Perhaps combining both geometry and an emotive narrative that invokes the senses could result in the design of a house that fulfills what each approach cannot fulfill individually. In fact, some architects vouch that those emotions and feelings are elemental for 'good design', yet the actual description of feelings or experiences is rarely included.

In fact, it is accepted that spaces evoke feelings, yet how to design spaces that achieve this evocation is rarely discussed. Furthermore, honest, and candid description of those who experience space are often achieved by philosophers, artists, and poets as they are rarely admitted by architects (Fig 11). Of course, Peter Zumthor and Juhani Pallasmaa come to mind as two of few exceptions to this generalization. However, the validity of such descriptions by these architects is often questioned and challenged by others who prioritize composition. It appears geometry and 'rational' design exclude sensory aspirations. Even in architecture school, the 'technical' and 'creative' aspects

are usually considered separate processes and they are rarely integrated into a single concept. Even in choosing careers, one must decide to enter the world of science, mathematics, business, humanities, professional studies et cetera. Understandably, these disciplines must be divided because it would be impossible for one to become an expert in all disciplines, yet the point can be made that the separation and classification of occupations is governed by two main categories: natural sciences and human sciences. Considering that the world itself is a constant equilibrium between these two categories, the house should use concepts from each to create the best living conditions for its resident.

Architecture is predominantly seen as a technical profession, and many would argue that a predominantly imaginative and emotional world is not part of an architect's endeavors 'in the real world'. However, if the process of forming architectural ideas was more open to discourse on emotion and experience in design, the house would likely become more meaningful to all.

Even in the world of physics and mathematics, humans have been placed at a centre of understanding. Hence, the 'free-body' diagram is used to understand the implication of external forces on an object. The word 'body' is used because it is also understanding that the forces on such

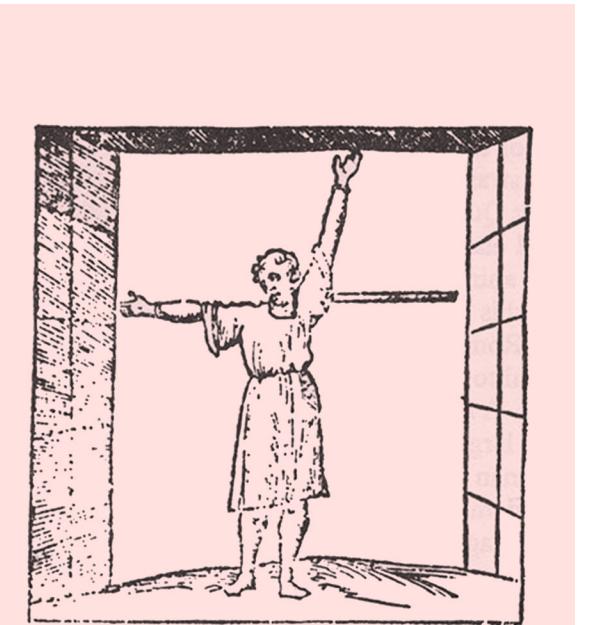


Fig. 11



Fig. 12

objects are constantly relative to the forces felt by the human body. Psychologists in the early twentieth-century were able to rationalize and provide models for 'precise experimental methods' to show that perception has direct impacts on the understanding of a subject. For instance, the human mind tends to organize information and understand space through geometry and symmetry rather than fragmenting the space. The square "was shown to be the most memorable and neutral form because of its orientation and regularity" (Bloomer, Moore and Yudell, 1978, p.31-32). Consequently, it is not surprising that one naturally shifts towards rationalizing space through geometry and symmetry, yet challenging such instinct is what causes a new level of awareness in design.

In fact, the study of the senses is most readily understood at an early age and categorized into five categories: sight, touch, smell, hearing, and taste. All are understood with daily experiences where the body interacts with its environment both natural, built and in all scales. For example, most can relate to the smell of lavender fields (Fig. 12) or the feel of an ice cube on their palate because these instances recall specific sensory experiences. Foucault explains that sight is often considered to be more palpable than touch because descriptions relating to the sense of touch are limited to degrees of 'smoothness', 'roughness' or one could add even temperature. (Foucault, 1971, p. 144). It should rather be

argued that in the world of architecture, all senses should be treated as equally as possible, and that Foucault's prioritizing of sight is not accurate. Taste, smell, and hearing are often linked with temporal or specific instances, which become inseparable from memories such as the taste of specific meals shared in the house, the smell of the fire burning in the fireplace, or the sound of the cracking wood floors. On the other hand, the sense of sight and touch guide one through the house. It is when all senses are invoked in a house that the ultimate experience of living is achieved. Haptics are to be redefined and 'the haptic sense' should include one's entire body and use sight to conceive sounds heard at a distance or use of a cane to extend the physical feeling of an object (Bloomer, Moore and Yudell, 1978, p.35). The house itself takes on qualities of a living being because it acts as an extension of one's living. The house breathes through its windows, and it expands, contracts, and contains all activities that facilitate life just as does the body. This thrilling description of a house is short-circuited in conventional houses since these do not appropriately fit one's unique being and needs. (Fig. 13)

It is instinctual to understand physical space defined by boundaries such as walls, fences, ceilings and even signs. It is also natural to understand space abstractly and place our bodies in 'three-dimensional boundaries', often called a 'personal bubble' (Bloomer, Moore and Yudell, 1978, p.37).



Fig. 13



Fig. 14

This differentiates personal space from shared space. A 'personal bubble' (Fig. 14) can be modified by clothing and badges. For example, some people have the ability or permission to invade someone else's personal space such as a police officer would while arresting someone. The house replaces one's personal boundary because it protects its inhabitant. In the house, there is no boundary between what is personal because all is personal. One's relationship to the house is supplemented by sensory experience and daily routine but stems from the house being a place of security and fulfillment: "the house protects from feeling unprotected" (Wurm, 2003).

Professor Kent C. Bloomer and architect Charles W. Moore also explain that one constantly questions and relates oneself to boundaries to locate themselves in space. For example, "children experience [this] when they first gaze up at the stars and wonder where the edge of the universe is" (Bloomer, Moore and Yudell, 1978, p.39). The space that surrounds a body and the boundaries that contain it have direct physical and psychological impacts on it. For example, while looking at a vista, the body is expanded in space and feels large but when looking at a wall, it is confronted with a proximate boundary and the body is compressed (Bloomer, Moore and Yudell, 1978, p.43). This tension between compression and expansion of space has become a common topic in conversations about architecture

and it is one that should be explored in the house. The mind needs spaces for feelings of expansion, and other spaces for compression. For instance, a consoling space would be a compressive one where the body is embraced whereas a space in expansion is one that could feed the imagination.

Shifting architectural thinking towards the instinctual understanding of emotions, senses, daily routine, and the body's relationship in space is important. One's tendency to purely rely on mathematics, geometry and proportion excludes a rich array of possibilities of what a house could be (Fig. 15).

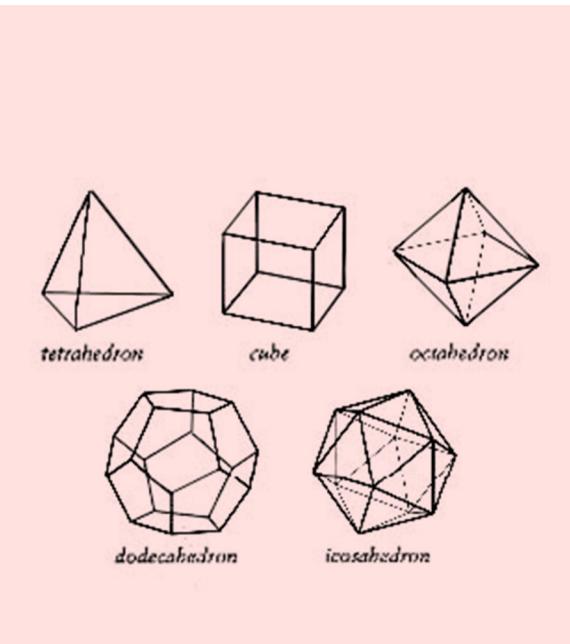


Fig. 15

"The word 'enlightenment' itself echoes the platonic metaphor of vision, which connects sight with light and truth." – Plato

Experiencing the House

Discourse on the role of emotion in design is often followed by a reference to Juhani Pallasmaa's writings on phenomenology in architecture. In his book 'Eyes of the Skin', Pallasmaa discusses ideas by other architects, artists, and philosophers on the relevance of considering all five senses, thus challenging one's instinct to prioritize sight over other senses.

One of the explanations provided by Lucien Febvre is that the dominance of sight in architecture dates to when people became "engaged in geometry, focusing attention of the world of forms with Kepler (1571-1630) and Desargues of Lyon (1593-1662)" (Pallasmaa, 2005, p. 25). Since this geometrical approach prevailed, it needed to be represented, hence the plan. This could explain the reluctance to think three dimensionally in architecture and why plans have long been considered the most important drawings.

However, as one now understands, planning and designing in two-dimensions limits design because space is truly only experienced in three-dimensions. In other words, solely focusing on geometry or proportions in plan does not yield fruitful emotional experiences in built form because other senses have been neglected during the design phase.

Geometry is a useful tool to achieve emotional experiences by first determining moments where the body benefits from proportionally designed space. For example, if one requires comforting, geometry becomes a tool in inscribing the body within walls, thus embracing, and comforting the body.

Once again, returning to well-known architects such as Le Corbusier, it is interesting to observe the impact of ancient knowledge on his approach to design and in contemporary debates in architecture. Le Corbusier also believed that the eye was central to understanding space and said that "man looks at the creation of architecture with his eyes, which are 5 feet 6 inches (1.67 metres) from the ground" (Pallasmaa, 2005, p. 25). This once again prioritizes sight but also the standardization of the height of a six-foot man (1.83metres), as this were the universal and optimal module for design. Walter Gropius, another modernist architect, believed that a designer must "adapt knowledge of the scientific facts of optics" and that theorizing such visual references "guide the hand giving shape and create an objective basis" (Pallasmaa, 2005, p. 27). Once again, visual and theoretical constructs have been explained with two-dimensional representations and rarely involve complete sensory experiences.

Pallasmaa also writes that materiality is one of the possible considerations to enhance the senses in the built environment. Through time, material qualities change and

this phenomenon is called patina. In other words, patina translates time into the wear of materials, which tends to resonate with people emotionally because the wear of material is associated with specific memories. Unfortunately, patina is rarely desired in the design of a house and especially in conventional housing. Like dimensions, construction materials have been standardized to ensure durability over time. This limiting of materials in the domestic environment and their repetitive use to simplify and rationalize building methods has limited domestic environments. Materiality has the potential to respond to one's body through tactile responses. However, limiting most of our built environment to 'hard surfaces' such as gypsum has resulted in the requirement for soft furniture such as settees or mattresses to achieve human comfort (Fig. 16).

One of the sensory experiences that has been retained in conventional housing is the experience of warmth and socializing around a fireplace. This is explained by the fireplace's physical role and emotional impact, which is readily felt by residents.

As Vitruvius explains, it is fire that has allowed men "to the deliberative assembly and social intercourse" because they feel comfortable around the warmth of the fire and encouraged to keep it alive with logs (Pollio translated by Morgan, 1914). Though fire itself was not necessarily

contained in a room, its light and warmth created space (Fig. 17). Consequently, this created an experience for those who gathered around it.

Gathering and social interactions are supplemented by a physical experience of warmth but also by an emotional experience due to the conversations held. Furthermore, there was a desire to bring fire into the house as a response to the need for physical warmth and the emotional warmth felt through socializing. This desire has prevailed through centuries and still is a central element in conventional houses in the form of a fireplace.

By the same token, Pallasmaa uses the example of Antonio Gaudí as an architect who understands the implication of sensation in design. Gaudí is an architect who also understood the role of the fireplace in a house and his Casa Batlló (Fig. 18) showcases how a fireplace can create an "intimate and personal space of warmth" (Pallasmaa, 2005, p. 53).

The fireplace has been a symbol of warmth, socialization and light but also a symbol of intimacy in a domestic setting. Marcel Proust's poetic definition of the fireplace translates what Gaudí's fireplace achieves: "it is like an immaterial alcove, a warm cave carved into the room itself, a zone of hot weather with floating boundaries" (Pallasmaa, 2005, p. 53).



Fig. 16



Fig. 17

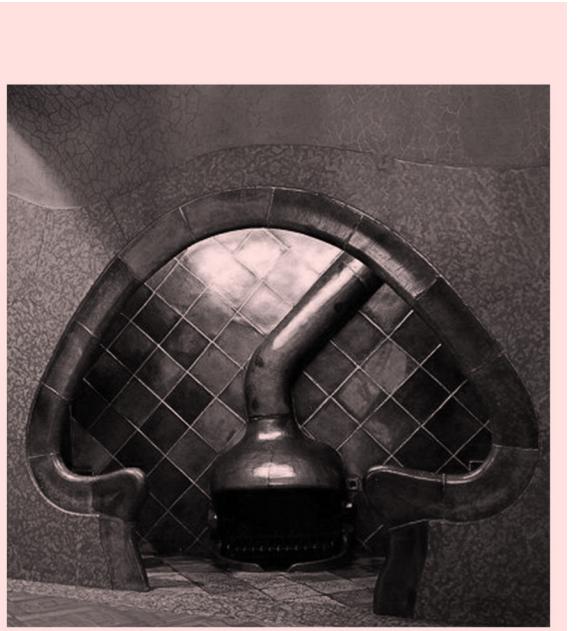


Fig. 18

The importance of invoking the senses through bodily proportion and materiality is also supplemented by the human impulse for habits. Especially in a domestic setting, daily routine plays a crucial role in the experience of the house. This relationship between habit and architecture dates to ancient times.

According to Vitruvius, a house should meet the needs of the occupant in terms of their occupation. For example, "for capitalists and farmers of the revenue, somewhat comfortable and showy apartments must be constructed, secure against robbery; and for advocates and public speakers, handsomer and more roomy, to accommodate meetings [...]" (Pollio translated by Morgan, 1914, p. 182). He then continues to explain that a farmhouse's dimensions are dependent on the size of the farm and the amount of produce, or courtyards by the number of cattle.

This understanding of occupation and lifestyle translated into built form is not new and is more recently referred to as 'building program'. There are standard dimensions for types of spaces and often, these are translated into square footage requirements to meet the intended uses of rooms in the house.

The conventional house is consumed by square footage requirements and its materiality is rarely considered to positively impact one's acts of daily living.

According to Pallasmaa, "[the skin] is the oldest and the most sensitive of our organs, our first medium of communication, and our most efficient protector" yet in most architectural designs, sight overshadows the possibility for our skin to experience the space without visual preconceptions (Pallasmaa, 2005, p. 11). He also explains that the body should function "as the locus of perfection, thought and consciousness, and of the significance of the senses in articulating, storing and processing sensory responses and thoughts" (Pallasmaa, 2005, p. 10). Such statement holds true only in a house where memories are formed through sensory experiences.

The smell, feel, appearance, taste and sound of a house have unique descriptions for each inhabitant. In fact, these senses are experienced differently based on one's personality and cannot be fully experienced in standardized and generic spaces. During the Renaissance, a system of senses was related with the image of the 'cosmic body'; where vision corresponded to fire and light, hearing to air, smell to vapour, taste to water and touch to the earth. This association between senses and elements can become a powerful concept for design. Which elements in architecture could entice the senses?

Moreover, it is not about creating sensory overload but rather carefully considering the emotional effects a design

can have to create sensory experiences that both elevate and mute various feelings. Specific emotions cannot be designed for but the space itself can be designed to allow for them to occur naturally or to be enhanced. As Pallasmaa explains, "modern design at large has housed the intellect and the eye, but it has left the body and the other senses, as well as our memories, imaginations, and dreams, homeless" (Pallasmaa, 2005, p. 19).

Moreover, Bloomer and Moore believe that "what is missing from our dwellings today are the potential transactions between body, imagination, and environment." One remembers a place for the effect it has on their body and mind. These effects have touched them profoundly enough to "hold it in [their] personal [world]" (Bloomer, Moore and Yudell, 1978, p. 52). The art world has been much more pliable in assuming its role as an emotional experience. Conversely, as previously explained, architecture often prides itself in a more technical discipline that should reject emotion or sensory experience and rely on form or composition.

Art challenges the argument that images or two-dimensional representations cannot successfully communicate experience, yet it must be clarified that artistic two-dimensional representations are different than architectural ones due to the subject they portray. For example, one

could feel "the warmth of the water in the bathtub in Pierre Bonnard's paintings of bathing nudes" (Fig. 19) but an architect would not typically communicate to a client the experience of bathing through such imagery (Pallasmaa, 2005, p. 44).

Another example is such as sunlight in Turner's paintings communicate heat. In fact, light is often captured in architectural designs as an emotional driver and a symbol of well-being in the space. However, beyond light and material depictions, the sense of smell, hearing or taste are less readily evoked (Pallasmaa, 2005, p.44). Rarely are conventional houses depicted without furniture. In fact, the comparison between two images of a living room, one unfurnished and the other furnished, creates very different understandings and feelings about the space (Pallasmaa, 2005, p.50). Furthermore, many contemporary house designs are highly generic due to budgetary constraints, but also to normative expectations as to what a house should be.

A common expression is "smells like home" and it is often agreed on that smell allows for "the most persistent memory of any space" since every house has its own smell (Pallasmaa, 2005, 54). The memory of smell is difficult to depict in two-dimensions but alongside a narrative, it can come to life. The smell of the house is often not smelled by



Fig. 19

How would the painter or poet express anything other than his encounter with the world?" – Maurice Merleau-Ponty

its resident unless one leaves their house and returns after a certain time. However, the smell of a childhood friends' house or family members is often engrained within the mind and associated with clear memories of the space and moments that were shared there.

Another discipline that captures emotions through narrative and language is philosophy. Philosopher Gaston Bachelard, especially known in the fields of poetics, writes that the house is a place with "nooks and corners in which we like to curl up comfortably. To curl up belongs to the phenomenology of the verb to inhabit, and only those who have learned to do so can inhabit with intensity" (Pallasmaa, 2005, 58).

This idea of nooks and corners in the house as possible places for the body and mind to relate to architecture are unfortunately replaced by furniture. For example, many could relate to getting home after a long day of work and slouching into a sofa with their feet on an ottoman. The house's priority is to offer a comfortable space for its owner and it is unlikely that the house fulfills this itself. The house has become reliant on furniture and decor to offer moments of comfort with soft surfaces such as plush cushions. Reconsidering the senses and thinking of specific moments of interaction between the resident and the house offers enticing alternatives to what a house could be.

Prized Possessions

To possess can mean to have or to own (Oxford, 2021). In the context of conventional housing, most are proud to own a house, yet this pride is rarely translated into the house's architecture. However, the ownership of decorative elements within a house are a clear symbol of this pride. The conventional house has become a container for one's material possessions rather than a vessel for immaterial possessions such as experiences and memories.

Conceivably, the antithesis of the conventional house would be one where the boundaries between owner and house are blurred. If a house reflects its owner, both can coexist in unison. Erwin Wurm's film for his work 'Am I a House?' is a clear example of the blurred boundaries between the body and the house (Fig. 20).

Wurm wrote a poem about the house in the context of an art exhibition. He questions whether a house is a work of art, just a house or if it could be both. This highlights the multitude of roles that a house can have. Wurm also questions the relationship between the house as a work of art and its possibility to have cross-disciplinary meanings, which encourages one to reconsider the implications of designing a house. He also questions the relevance of who designs the house and whether it is important for architects

to design houses. In fact, often does an architect design a house based on their own interests and architectural agendas removes the possibility for a design that meets the owner's true desires.

Furthermore, there is an idea transpired in some artworks of an inhabitant becoming one with their house. For example, artists such as Louise Bourgeois and Birgit Jurgenssen have depicted the feminine figure and the house as one being.

Men have long been the standard of measurement in architecture, especially domestic architecture, where it was women who spent most of their time in the house. A woman's duty was to clean, cook and occupy themselves in the house by crafting. As Bourgeois' work 'Femme Maison' (Fig. 21) shows, the woman becomes the house, and their beings are interlinked. Although this thesis is not centered around issues of gender in the domestic sphere, this is an example of how one's physical being becomes linked to the activities in the house. This relationship between a woman and the house is problematic because it purely relying on her completion of mundane tasks, rather than personal fulfillment. Similarly, Jurgenssen's work (Fig. 22) represents the woman as the oven because she must cook due to her gender, therefore she bears the weight of such activity. Daily acts of living should be supplemented by the house to create personalized routine.



Fig. 20

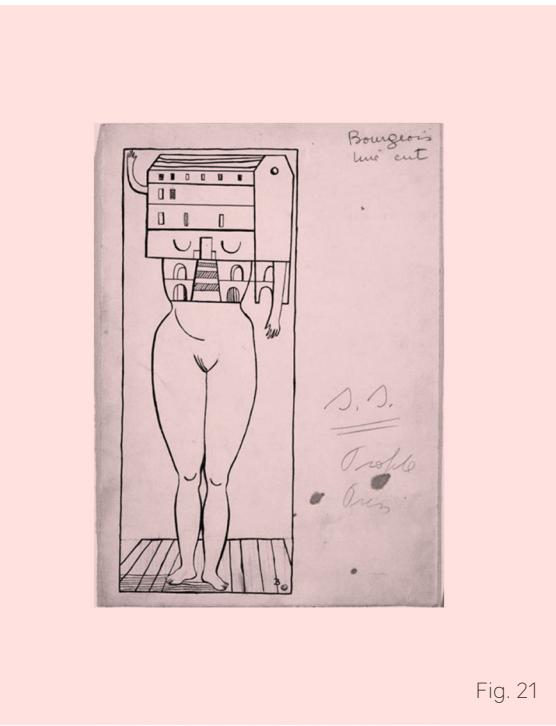


Fig. 21



Fig. 22

Objects could be designed with sensory qualities that enhance the experience of interacting with them. For instance, a chair should not be constructed with materials that are excessively good conductors of heat. Objects should also be differentiated based on their role. For example, vases are for display and other objects such as a chair enhance moments of daily living in the house.

The house is a translation of oneself through possessions, but it should also become part of the body through emotional involvement with architecture (Pallasmaa, 2005, p.71-72).

One's relationship with possessed objects in the house is one of mirroring. As Elaine Scarry explains, objects are also projection of the human body (Scarry, 1985, p.281). The chair is also an example of an object that has 'sentience', the ability of feeling things such as pain. According to Scarry, the chair is put in pain as it relieves humans from their own pain from bearing their body's weight. In other words, objects have active roles in their interactions with the body in the domestic sphere (Scarry, 1985, p. 288).

Furthermore, one tends to blame objects or space for pain or discomfort rather than blaming oneself. For example, one who stubs their toe on the corner of a wall, holds the wall accountable for their pain. This is often expressed verbally to cope by projecting blame (Scarry, 1985, p.294-295).

Not all objects are possessed for such necessary interactions and these 'unnecessary' objects or rather consumptions become a barrier to true experience of the house. In fact, the fulfilment of one's well-being is hindered by the hypnotizing pleasures of consumption and possession.

Objects should not be mere spectators waiting for a visitor to be impressed by them but could also help make one aware of their body in space. Even more concerning is one's attachment to objects that feel personal yet are indeed generic. For example, IKEA has successfully achieved a world of customization and the possibility for someone to create their personal style all while offering universal and generic design objects (Fig. 23).

An individual might be compelled to call their house as a place that represents their personal taste, or even their personality. However, most possessions and elements of decor are often mass-produced and found in neighboring houses. Does the juxtaposition of generic objects into a 'personal' collection negate their generic identity? Most seem to agree it does, yet it can also be argued that these generic objects only become what they are when one projects their emotions onto them.

In all, it would be more valuable for one to project their emotions onto the design of space itself rather than objects.



Fig. 23

One of the possible solutions is to reconsider the role of furniture in the house and focus on ergonomics. Ergonomics, also known as "human factors," are defined as "the scientific discipline concerned with the understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data and methods to design to optimize human well-being and overall system performance" (Middlesworth, 2019). Ergonomic studies are rarely applied to a house's design and are usually centered around its furniture. For instance, one with a physical disability requiring handlebars in a washroom would benefit from a washroom carefully designed to fit their needs without the addition of handlebars. This constant need to make generic spaces adaptable is an issue of well-being in the house. If instead of handlebars, the walls and floors responded to the need for physical support, the individual would not be constantly reminded of their physical limitations (Fig. 24). Moreover, counters, chairs, tables, and desks are pieces of furniture for which ergonomics are considered carefully, but ergonomics are rarely applied to space itself.

Conversely, one of the disciplines of ergonomics are cognitive ergonomics, which are "concerned with mental processes, such as perception, memory, reasoning, and motor response, as they affect interactions among humans and other elements of a system" (Middlesworth, 2019). Therefore, if space is tailored to one's daily routine and their

activities in the house, it results in 'ergonomic architecture'. 'Ergonomic architecture' has the potential to optimize one's well-being and their mental processes such as perception, memory, reasoning, and motor response.

Notably, Eileen Gray, a renown Anglo-Irish architect, focused her designs on the occupant and the "minute situations of daily life". She also believed that most houses are problematic as they "[are] to be conceived for the pleasure of the eye rather than for the wellbeing of the inhabitants" (Pallasmaa, 2005, p. 62).

These 'minute situations of daily life' are often categorized into activities of cooking, eating, socializing, reading, storing, sleeping and intimate acts rather than visual elements. (Pallasmaa, 2005, p.63). One lives through emotion and their senses, which fuels thoughts, opinions and memories. Sight is only one of the senses that contribute to fueling these and therefore a house should not solely be compositional or planar in its design.

Gray is also well known for her customization of furniture to better fit the human need for comfort. She has equally integrated these solutions for human comfort in her house designs. One of her most acclaimed designs is the 'Transat' chair with a customizable headrest, backrest and seat to achieve ultimate support (Fig. 25). Gray explains that "nowhere did [they] attempt to create a line or a form for its

own sake. Everywhere [they] thought of the human being, [their] sensibility, [their] needs" (Ganne, 2018). By using creative solutions for storing, seating, and partitioning space, she offered residents the possibility of customizing their space. For example, in the E0127 House, she designed a 'siesta corner' with storage for pillows and movable tables that permitted the owner to have the most comfortable napping area. Gray was also pivotal as a woman figure who challenged the conventional modules that relied on a man's stature (Ganne, 2018). She used the woman figure in her sketches and design to tailor the space carefully (Fig. 26).

The pride of owning a house is has become synonymous to the ownership of prized possessions within it. This makes the house easily replaceable because only the objects within it have sentimental value. If the ownership of the house meant customized architecture, sensory experiences would render most objects irrelevant.



Fig. 24



Fig. 25

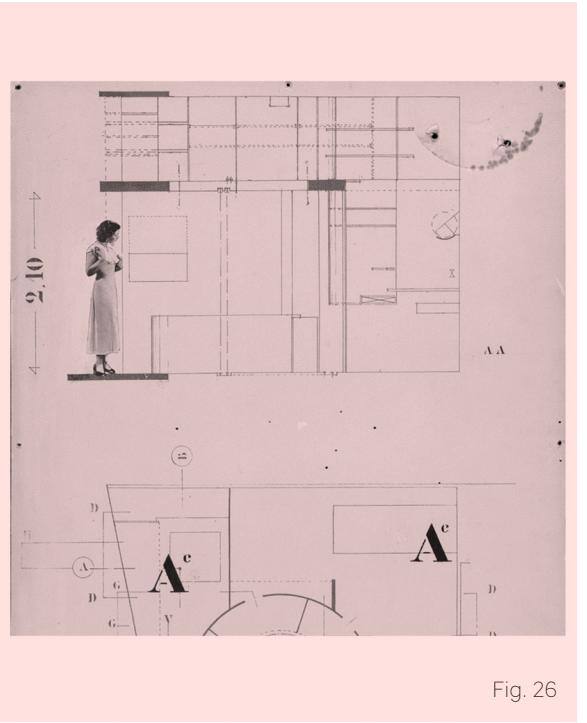


Fig. 26

High Expectations

One's preconceptions about the house result from learning the house's parts and adjacencies during childhood.

These preconceptions also lead to the creation of expectations towards the house. The elation of furnishing and 'personalizing' a house is a result of the house's failure to meet emotional expectations. This section of the thesis considers objects in the house and their relationship to the human body in space.

Architecture tends to generalize needs and adhere to strict measurements. It acts as barrier, which hinders one's sense of belonging in their house. Of course, generic design is encouraged due to budgetary constraints. However, even though architects are aware of the drawbacks that come with normative living solutions, they default to them.

This poses several questions of what a house is and what could it be. Can the house be reduced to an enclosed space where one lives private life and routinely fulfills physical needs such as eating, sleeping, and bathing? Or is the house multiple spaces that collectively fulfill physical needs all while individually fulfilling psychological ones? How could one's needs in the house be met without defaulting to collecting objects? Does one truly need a bed or is the room the bed? Does one need a free-standing bathtub or is

the room itself for bathing? These questions have also been addressed in surveys through a practical lens. In fact, this reveals that much of the critiques towards the house are still contemporary issues.

The Royal Institute of British Architects (RIBA) alongside Ipsos Mori has conducted a survey-based research on what Brits expect from their house. This report is relevant because it critiques the conventional house. The report sheds light on residents' common needs and provides an understanding of what a contemporary house is. However, it also highlights that one's expectations towards their house are based on their early understanding of the house during childhood. Expectations towards the house hinder its potential to fulfill emotional needs and this becomes evident in the RIBA report.

The survey overwhelmingly confirms that people want multiple windows with high ceilings and are "keen to have a sense of space in their houses, which they typically felt was important for wellbeing" (Ipsos Mori, 2012, p.4). Most people also shared that their main living space is the most important because it has the potential to be a space for resting or socializing. The understanding that the living room is the main living space and that it is usually near the kitchen is shared. The need for windows and large and versatile spaces is explained by the fact that each house

is not tailored to individual needs and contexts. Therefore, having rooms that are too big preferred over having rooms that are too small: the open floor plan (Fig 27). The report also elaborates on the obsession to possess objects in the house and a recurring complaint is that houses have too little storage. There must also be a differentiation between short-term and long-term storage. Short-term storage is for day-to-day access of items such as food, cleaning products or clothing and long-term storage is for nostalgic objects or seasonal items. (Ipsos Mori, 2012, p.4).

Storage reveals a need to hide and reveal objects based on various situations because the house is synonymous with one's personality and social status. Some things such as garbage bins or laundry baskets tend to be hidden from visitors whereas fine china is to be stored and simultaneously displayed to convey social class. In truth, it has even become widely accepted that the house is synonymous to one's social class. Freeing residents from this social construct would be beneficial because it hinders the restorative qualities of the house (Ipsos Mori, 2012, p.34-35). This is especially apparent when precious objects overtake the living space of the house (Fig. 28).

When choosing a house, most agree that emotional considerations, which are often described as the 'feel' of the house can overrule practical considerations. People also

have difficulty estimating how much space they need in their house but know every detail of their daily routine. In fact, one does not tend to think about how much space is truly required for a task or activity within the domestic space.

Square footage has become a given and arbitrary determined by industry standards (Ipsos Mori, 2012, p. 5). Furthermore, interviewees also agree that a house's size is typically marketed by an overall square footage, and the number of bedrooms and bathrooms. Floor plans rarely include all dimensions because they have become standardized, thus making them meaningless in the housing market.

Participants in the study explain that they want a house where they could feel "comfortable and happy", and this was more important than a house that met "practical considerations." (Fig. 29) This reveals that conventional houses rarely satisfy both emotional and practical considerations. Which type of house could meet both emotional and practical considerations?

A house with 'character' is described as desirable. Perhaps if the architecture resonates with one's personality, this could override location or practical aspects that might not be met (Ipsos Mori, 2012, p. 12). Therefore, the solution is to design houses that reflect the residents' personality but also meet their practical needs.



Fig. 27



Fig. 28



Fig. 29

The thoughtful planning of rooms based on the residents' routine should determine all spatial requirements. One participant even suggested that there be change in "the trend [to talk] about square footage rather than [saying a house has] three bathrooms and three bedrooms... [to know that you are] getting value for money" (Ipsos Mori, 2012, p. 55). Moreover, one first-time house buyer stated that "it is not until you move somewhere that you really start to realise if you have limited space." (Ipsos Mori, 2012, p. 13). This negative connotation of small spaces in a house is explained by rooms being arbitrarily sized. They are not purposely designed as small spaces for one to feel intimate connection with their house.

Residents also see the house as an investment and a direct translation of their success. Most are excited to own their first house whether it be a condominium unit, townhouse, semi-detached or detached house because it is associated with a celebrated milestone: becoming a homeowner (Fig. 30). Seeing the house as an investment is indirectly objectifying it into something that has monetary value, and this might hinder its emotional value. If a house's monetary value exceeds its emotional value, one easily sells it and moves onto another house. On the other hand, if the house's emotional value is superior, one might be more profoundly fulfilled and resist the instant and temporary gratification of buying or selling a home.



Fig. 30

"Maybe it is a good thing for us to keep a few dreams of a house that we shall live in later, always later, so much later, in fact, that we shall not have time to achieve it." – Gaston Bachelard

Architects often fetishize thresholds as a moment of connection between the body and space or a conscious transition from one space to another. Most people do not think of their accolades with architecture in this way because such moments reside in the minds of those who designed them. Nevertheless, people interviewed in the Ipsos Mori report support that the desire for a feeling of 'familiarity' in a house. Many specify that they largely enjoy 'period pieces' such as "large sash windows, fireplaces, large living rooms and high ceilings" (Ipsos Mori, 2012, p.13). They also state that these are elements they would like to preserve and look for in their next house.

One man who was interviewed said that his mother has a 'massive' living room and therefore the comfort he feels in similar spaces could be explained by 'reminiscing' or this 'homely' feeling from being there as a child (Ipsos Mori, 2012, p.13). Such a living room could be reproduced and easily found in other houses but the feelings this man remembers from his childhood living room cannot be recreated. Accordingly, this man might fill his living room with objects and furniture, yet he has no real attachment to the four walls that bound the living room, especially when a similar one could be found in a neighbouring house. Another case is that of a woman who stated that she has "a huge living room and a big settee at the moment", which she does not want to compromise on and therefore all furniture she

owns must fit into her new house (Ipsos Mori, 2012, p.14).

This reveals that one's expectations towards their house are rarely met and therefore the attachment to things and objects inside a house is sometimes greater than the attachment to the house itself. There is no true emotional connection to the architecture and only to memories, which are objectified into furniture and decor.

Within one's daily routine, their physical being revolves around living, working and unwinding. The minute gestures pertaining to someone's routine result from their adaptation to space. For instance, two interviewees describe their choreography of moving around each other in their small apartment: one puts on their coat and shoes outside the apartment while the other does so in the entrance because the space is too small.

This further highlights that behaviour is dictated by living spaces in the house. Participants tend to prefer a multi-use rooms rather than flexible partitions, yet the recurring idea is that houses must be kept generic to support multiple types of owners. An analogy to better understand the conventional house is one of a hermit crab.

People have become hermit crabs who constantly find a new shell to call home, yet these shells are all similar and simply vary in size to achieve basic needs. As a shell no

longer protects the hermit crab from its environment, the crab simply forgets about the shell and moves onto another one that fits its current needs.

The design of a house should be motivated by the desire to enhance one's emotional experience. This can be achieved by creating spaces that lend themselves to specific memories and allow for one's awareness of their body in space. The design of a 'good' house should always put the residents at the forefront.

This thesis is supplemented by the research of 250 Japanese houses that date between the 60s and the 90s. This research was led by fala atelier during the 'Usual Suspects' studio (Fall 2020) at the University of Toronto's Daniels School of Architecture. It was conducted collectively with students from the studio. These houses are used as case studies to exemplify how architects can create evocative experience in a house. In many cases, the architects vocalize the importance of the house's residents and set clear design intentions to define 'good' domestic architecture.

While researching these 250 Japanese houses, the concept of emotional architecture and the design of a house for its owner's specific needs and behaviours became of growing interest. Through images, drawings and texts, these Japanese houses painted a clearer picture of what a house could be, and perhaps what it should be.



Fig. 31

"The space, shape and significance of this path are bound to remain silent, invisible, and inaccessible until the visitor embarks on the journey of experience and contemplation and, by so doing, partakes in their evocation." - Takefumi Aida

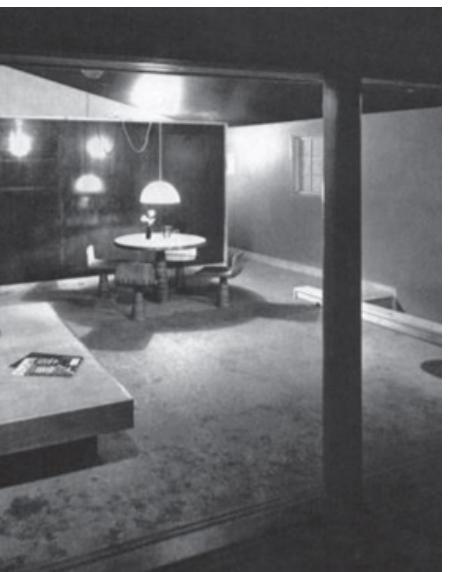


Own House, Kijo Rokkaku, 1967

Inspiring Japanese Houses

As Pallasmaa states, "significant architecture makes us experience ourselves as complete embodied and spiritual beings" (Pallasmaa, 2005, p.11). He also explains that as one experiences art, "a peculiar exchange takes place [where one lends their] emotions and associations to the space and the space lends [them] its aura, which entices and emancipates [their] perceptions and thoughts" (Pallasmaa, 2005, p. 12). Moreover, Pallasmaa uses Japanese thinking to exemplify an alternative way of understanding space where it "is founded on a relational understanding of the concept of space" and consequently uses 'gerunds' or 'verb-nouns' to describe architecture. For example, instead of using a notion of 'space', Japanese architects would think of 'spacing'. This is relevant in the quest for architecture that relates to the human experience.

By researching 250 Japanese houses built between the 60s and 90s by Japanese architects, the 'Usual Suspects' studio led by fala atelier has analyzed architectural drawings, photographs and texts. It must be clarified that these houses were studied through a compilation of this material. They were not analyzed in person and therefore the discourse on their experience relies on the architect's intent and the depiction of the houses in publications. These publications have the aim of conveying the ideas of



House in Uehara, Kazuo Shinohara, 1976 (top left and right), House of Earth, Kazuo Shinohara, 1966 (bottom left and right)

the house and its evocative qualities to a wide audience. As Tadao Ando describes, even the most powerful images will not give justice to the true experience of the house that these architects have created (The Japan Architect 7806, p.77).

The following case studies discuss the ideas explored by architects explored to create memorable and meaningful space for residents. The architecture of the houses is curated to create specific experiences for both body and mind. Through several categories such as sound, food, light, materiality, form, and childhood experiences, these Japanese architects have built projects that testify to the importance of creating meaningful experiences in the house.

A first idea explored by architects to achieve meaning is that of silence. Silence is defined as space without an inhabitant. In fact, many Japanese architects believed that the house was only pertinent once lived in. Conversely, some of the houses studied were quite literally designed for sound since their clients are artists such as musicians who required specific spaces to fulfill their musical talent.

Architects had the choice of treating the instruments as objects in space or as objects that can shape space. In these case studies, instruments such as the piano have direct design implications that enhance the owner's experience of playing music. The space and the instrument work together.

Perhaps an even more powerful example of shaping space through the experience of hearing is one where the house itself becomes the instrument. By using materials and the echoing properties of space, the resident becomes aware of the sounds within the house and its surroundings. For instance, the sound of rain hitting a glass roof differs from the sound of rain dripping down a glass wall. This is an example of how a sense such as hearing can be aroused to create a spatial experience in the house. The differentiation of sounds results from the spatial qualities of the space. Such experiences are important because they bring one closer to their environment and more mindful of their presence in the house. Being mindful about the presence of one's body in space allows for the formalizing of more meaningful memories, which therefore enhance their emotional connection to the house.



Ueda House, Tadao Ando, 1979 (left) and house at Ichikawaohno, Kunihiko Hayakawa, 1985 (right)



Takeo Kimura & Shuntaro Noda, Jack in a Box, 1989 (left) and Shoei Yoh, Stainless Steel House with a Light Lattice, 1980 (right)



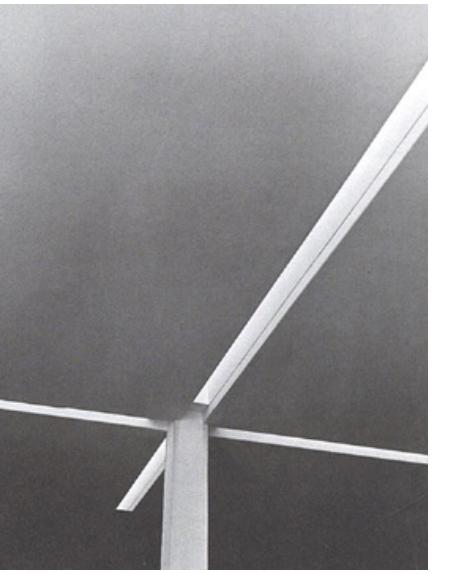
Another important experience of the house is one revolving around food. Is the table shaped for the room or is the room shaped for the table? The dining experience in the studied houses shows a clear link between the acts of cooking, eating, and socializing. The table is a symbol of hospitality where meals are shared, and more importantly, where memories are made. For example, in the Tsukada House by Kijo Rokkaku (1980), there is a large tree trunk over the dining table which creates a specific experience around eating. On the other hand, sometimes, the experience of dining is subtle, and a table is integrated in the space, waiting to be used. Such examples challenge expectations around the experience of dining in the house and create unique memories to be shared.

The use of natural light by the architects shows the intentional curation of meaningful moments in the house. In the White U by Toyo Ito (1976), Ito explains that a slit of light has the potential to cleanse the soul and heal the owner, his sister, after the loss of her husband. Ito designed this house for his widowed sister and Koji Taki, the project's architectural photographer explains that Ito's sister "was reading an art history book and felt herself strongly attracted by a spot of light in the darkness on a painting by Georges de la Tour, this light cleansed the soul" (Taki, 38). The use of natural light in the White U is one for mental repose and restoration following the devastation of loss.

Unlike the White U, the House in Hayama by Yutaka Saito (1987) uses natural light to paint the space in various hues, which changes the atmosphere. According to Saito, "the afternoon sun touches the second floor first, extending little by little until it reaches the entrance hall ceiling. As dusk falls, the white entrance hall is painted scarlet" (Yutaka Saito Architect, TOTO 1998, p.186).

In other cases, light is a portal to connect the inhabitant to the outdoors and make you experience it from the house. For example, architect Shoei Yoh describes using a cross of light in his 'Hybrid House with a Cross of Light' (1980) where "one is able to see the flowing clouds in the blue sky, the heavy raindrops falling, and the rays of a golden sunset, allowing [them] to appreciate the beauty of nature at all times" (Japan Architect 8608, p. 41). The removal of views from such windows distills their presence as an atmospheric device that alters the space based on the light received, not the view perceived.

With the control of light, comes darkness. Light can also guide someone in the house and allow them to discover it in a specific way, which could generate a unique experience of space and enhance one's emotions. Light also touches places that seem forgotten to allow one to rediscover them and be closely related to the space they inhabit as depicted in Takefumi Aida's 'Stepped-Platform House' (1975) or



White U, Toyo Ito, 1976 (top left), Hybrid house with a cross of light, Shoei Yoh, 1985 (top right), House at Kanazawa Bunko, Itsuko Hasegawa, 1984 and House in Hayama, Yutaka Saito, 1987 (bottom right)

Kazuo Shinohara's 'House Under High-Voltage Lines' (1981).

The house is also an undeniable protector during winter as its role as a shelter from the outside world is strengthened. These architects designed numerous mountain lodges that speak of both closing off from nature and opening to it. They become beautiful objects in the landscape from afar, and within them often lies a fireplace: the core of the house. These architects carefully designed fireplaces to connect inhabitants to the house through warmth. These fireplaces are sometimes the most designed elements in the room and have a strong presence. In fact, these examples show that the fireplaces were designed elements that drew people around them to experience the house and experience warmth in a specific way. Fireplaces can also be a symbol of warmth in a cold and hard space such as in Kazunari Sakamoto's Kumono-Nagareyama House (1973). The feeling of warmth in these houses elevates the relationship between the physical body and the house.

Materiality in the house is carefully considered by these architects who prioritized haptic interactions with the house. Yutaka Saito was interested in creating a house like a picture scroll, relating art and architecture to create a unique world within the house. He achieved that experience by using many materials and volumes to create different atmospheres

throughout the house. Each space in this house has a different character and impact on the resident because the various rooms have different haptic qualities and respond to various needs the owner might have in each room. This curation of material to create experience is a fruitful exercise because it challenges the notions of uniformity of materials in the house, thinking beyond concrete, gypsum, wooden floors, or tiling.

If it is not about the materials or even form, it could be about space and the body's relationship to it. As Keichii Irie describes, some spaces will clearly be for sleeping and the space and furniture should be in a dialogue long before the owner inhabits the space by climbing up the stairs. In some houses, this is quite true, climbing is required. The architects practically ask the resident to physically engage and feel the concrete walls with traces of formwork. In other houses, it is the traditional earthen floor, which allows for one to engage with the space physically. Tadao Ando says that concrete floors can achieve earthen floor comfort and connect one to the space through the warmth of the sun (The Japan Architect 8004, p. 44).

Researching these case studies clearly demonstrates the overarching importance of creating a connection between body, mind, and space. However, the research also yields interesting differences between the approaches that



Tsukada House, Kijo Rokkaku, 1980 (top left and top right), House in Imajuku Asahi, Kazunari Sakamoto, 1978 (bottom left) and House in Kamiwada, Toyo Ito, 1976 (bottom right)



Tanikawa House, Kazuo Shinohara, 1974 (top left), Matsuno Mountain Lodge, Rikuo Kitamura, 1974 (top right), Cottage in Sengataki, Toyo Ito, 1974 (bottom left) and Kumono-Nagareyama House, Kazunari Sakamoto, 1973 (bottom right)

Kojitsu-Kyo House, Yutaka Saito, 1990



Tower House, Takamitsu Azuma, 1966 (left) and Mochizuki House, Hiroyuki Asai, 1971 (right)



architects chose in creating meaningful spaces in the house. For example, In the 'Mochizuki House' by Hiroyuki Asai (1971), Asai was not interested in designing space for specific emotions but rather a conscious transition in space such as walking through an opening, he ensures that one is conscious of this through the slanted wall and natural light illuminating this geometry. Slanting a wall is a simple gesture that has a significant impact on one's perception of space and experience of it. The slanting and illumination of a wall creates a more meaningful interpretation of the threshold since thresholds tend to be fetishized even as a simple opening.

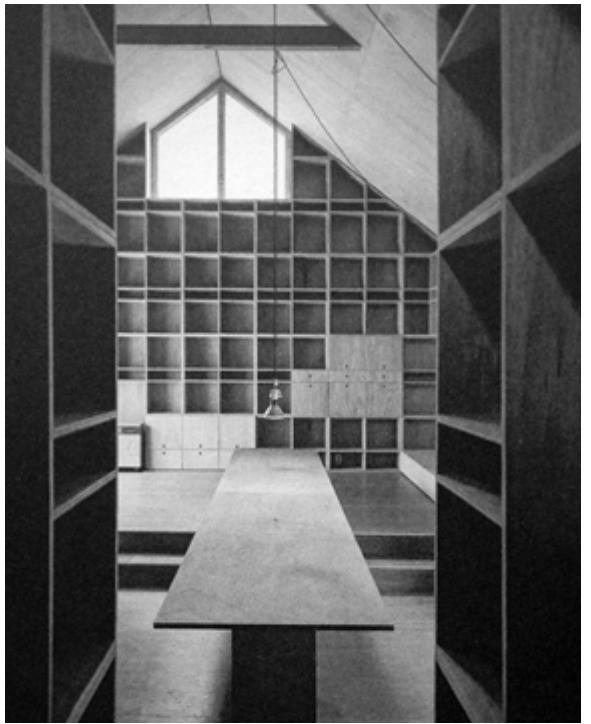
In some houses by Kazuo Shinohara, structure invades the space and shapes the residents' daily experience of living in the house. In Shinohara's 'House of Earth' (1966), the bedroom is a small room located underground, with a mattress on an earthen floor. Such gestures by architects enhance the resident's experience of the house and challenge conventions and expectations pertaining to this experience. Shinohara was interested in using architectural elements such as structure or blank walls to achieve emotionally charged spaces yet has himself admitted that this interest was lost due to his preference in designing 'ascetic' spaces (*The Japan Architect*, 1967). Nonetheless, his theories on residential architecture helped shape the projects on his time and created much debate as to what



Stepped-Platform House, Takefumi Aida, 1975 (left) and House Under High Voltage Lines, Kazuo Shinohara, 1981 (right)



Fujimi Sanso House, Kazuhiko Namba, 1986 (left) and House in Nago, Kazunari Sakamoto, 1978 (right)

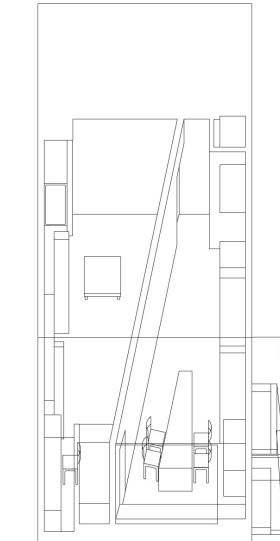
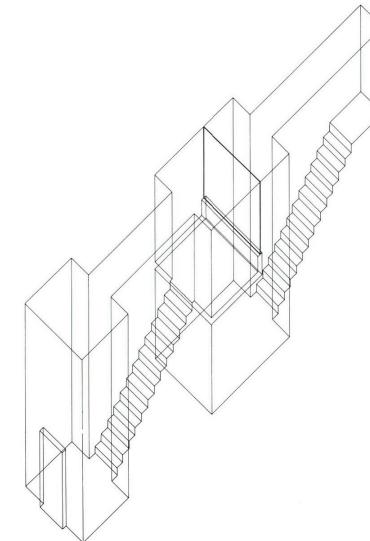
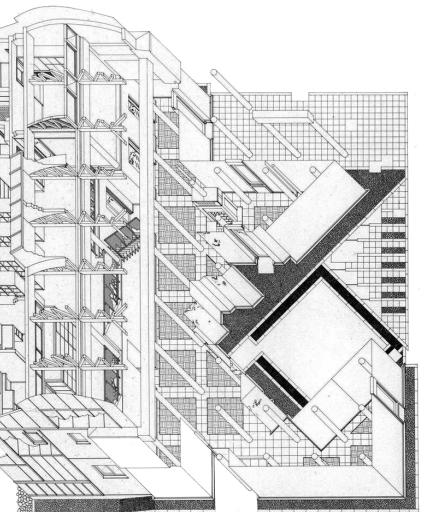
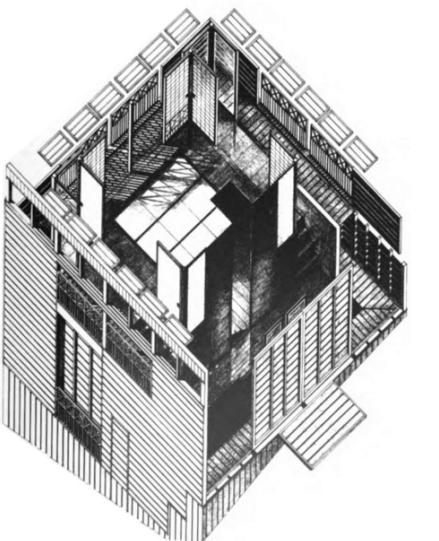
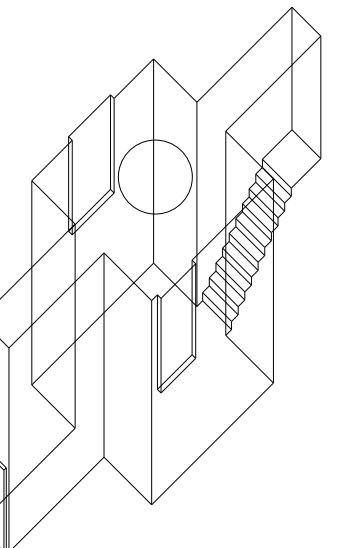
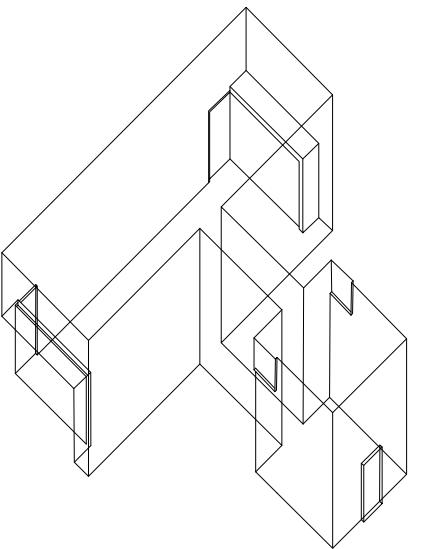




Stepped-Platform House, Takefumi Aida, 1975 (top left), Kenju Park Forest House, Hiroshi Hara, 1987 (top right), Spinning House, Kazuhiro Ishii, 1985 (bottom left), White U, Toyo Ito, 1976 (bottom right)

a house should be. Shinohara rejected domestic comfort and saw the house as a work of art, which created much debate. (*Schinkenchiku no. 5, 1962, 77-78*). Architects who once learned from him such as Itsuko Hasegawa shifted their attitudes to address and prioritize the occupants' well-being and prioritized experience over composition.

In fact, opposing the Shinohara School and its ideas of composition and 'fissure space' is the Hara School. The Hara School of architects followed Hiroshi Hara's persuasion that humans were at the centre of the house and that phenomenology must be at the forefront. Itsuko Hasegawa shared similar concerns later in her career and consistently wrote that she had an interest in creating meaningful experiences of daily living, especially for children. In fact, the most readily understood experience is one of growing up in a house. As William Goyen writes, "people could come into the world in a place they could not at first even name and had never known before; and that out of a nameless and unknown place they could grow and move around in it until its name they knew and called with love and call it HOME (...)" (Bachelard, 2014, p. 58). These architects depicted numerous children and adults in the space using it differently. Sometimes in the same house, sometimes in different houses by different architects but this idea of a child versus an adult having different experiences of the space is clearly intentional. The scale of the body in the



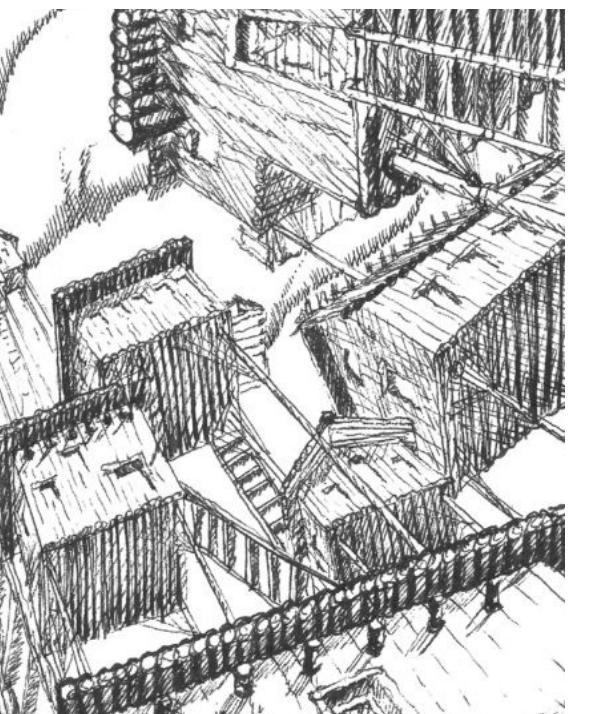
Cubic Forest, Kazuo Shinohara, 1971 (top left), Uncompleted House, Kazuo Shinohara, 1970 (top right), Kudo House, Hiroshi Hara, 1975 (bottom left), Kenjupark Forest House, Hiroshi Hara, 1987 (bottom right)

Repeating Crevice, Kazuo Shinohara, 1971 (top left, bottom left), House at Midorigaoka, Itsuko Hasegawa, 1975 (top right, bottom right)

The House as an Experiment

One of the books that has fascinated architects is Italo Calvino's 'Invisible Cities'. His book demonstrates that the mind can create, feel, and understand a place without physically visiting it. Calvino describes a multitude of cities through spatial qualities that invoke the reader's senses. This book is celebrated as an alternative approach to design, one that uses the imagination to create meaningful experiences for the reader without providing visual support, something that architects routinely rely on. From Calvino's book, designers have drawn the various cities, all in drastically different ways. This mosaic of drawings shows the power of using narrative in design that is free of preconceptions.

Designing through dialogue, or narrative becomes a possible solution to avoid the expected, omnipresent, and conventional house. The mind has the power of imagining a world and to attach itself to it without even physically visiting it. This shows that where sight has predominated architectural production, focusing on other senses to stimulate imagination could yield far more exciting results (Pallasmaa, 2005, p.21). For example, Olivier Sacks, who uses narrative to describe an object without naming it describes a glove as "a continuous surface" that is "infolded upon itself" with "five outpouchings" (Sacks, 1985, p.15). How would one describe a house with such logic? The



Sketch by Mark Young, Invisible Cities

answer could conceivably allow for an alternative house that extracts the essential and elemental purpose of what a house should be. Narrative can grant an exciting sensory world where the resident feels fulfilled by their acts of daily living, but also by their memories they hold onto dearly.

Accepting emotion and experience has design drivers allows for the possibility of the conventional house to be rethought. Why should entrance, living room, kitchen and bathroom find themselves in enfilade? Why should all compliant doors be at least six feet and seven inches (two metres) tall? Using these explorations by Japanese architects coupled with the historical use of the body as a module to design space, how can a house address architecture's failure to create meaningful emotional experiences in the house? The following section, 'Zoey's House' offers an alternative approach to designing the house.

Zoey's House

Zoey is a thirty-year-old female sculptor who recently moved to Nerima, Tokyo. She long has dreamed of living in Japan because one of her friends, Joey has been deeply fascinated with the works of Kazuo Shinohara and the generation of architects that followed him. She traveled to Japan in the early 2000s to visit the houses designed by Shinohara, Hasegawa, Ito, Aida and Sejima. Since then, Joey has begged her to visit and discover the wonders of other lesser-known architects such as Miyawaki, Yoshimura, Kijima, Tominaga and many more. This year, her world has shifted drastically due to a global pandemic and has impacted her work as a sculptor. She is inspired to question if her current life enhances her well-being and feels as though she her creativity and happiness are limited by the walls that surround her. Being locked into her Toronto townhouse has led her to question why she found herself in such an uninspiring space. Her daily rotation from bedroom to living room is interrupted by trips to the kitchenette to either eat or boil another kettle of water. Her studio has been inaccessible due to the fear of contagion and working from house has led her to downsize the scale of her work. The only advantage of working from her house is that her laminate floors are much easier to clean than the rough concrete in her studio. Being 'home' has made her conscious

"Just as Marcel Duchamp explored consciousness in his artworks, I wished to investigate the function of consciousness in architecture. Architecture should retreat from classical aesthetics; it should not only address efficacy but also human existence." - Hiroshi Hara, *Floating World*: 89



Kenju Park Forest House, Hiroshi Hara, 1987

of every corner of the space her body occupies. She realizes that the beige walls meet the 'popcorn ceiling' perfectly and that her glass windows are defenseless against the cold. She is conscious of her dependence on furniture to achieve comfort and questions why she is attached to soft and plush materials to console her at the end of a long day. Zoey wishes she could simply walk out her front door and meet nature at her doorstep. Her queen bed and a drawer fit in her bedroom, but she has no place for a night table. Her washing machine is in her closet, and she must remember to turn it on prior to going to sleep. She hears the neighbors flush their toilets and this hinders her creativity when she details her sculptures. She must bend her knees when she bathes and dislikes to shower because the shower head is fixed to the ceiling with terrible water pressure. Her television acts as her fireplace on channel 175 and a blanket achieves the warmth she yearns to feel.

Zoey dreams of living in a house that would make her happy, a house made just for her. A house that consoles her when she is sad and celebrates her by echoing champagne bubbles. She wants the sunlight to warm her and wake her up. She wants space to stretch and rest her body as it aches from sculpting. She now appreciates sculpting at a smaller scale but dreams of a double height space to sculpt her visions. What if she could have both? She aspires to own a rabbit but has not dared since she refuses to constrain a pet



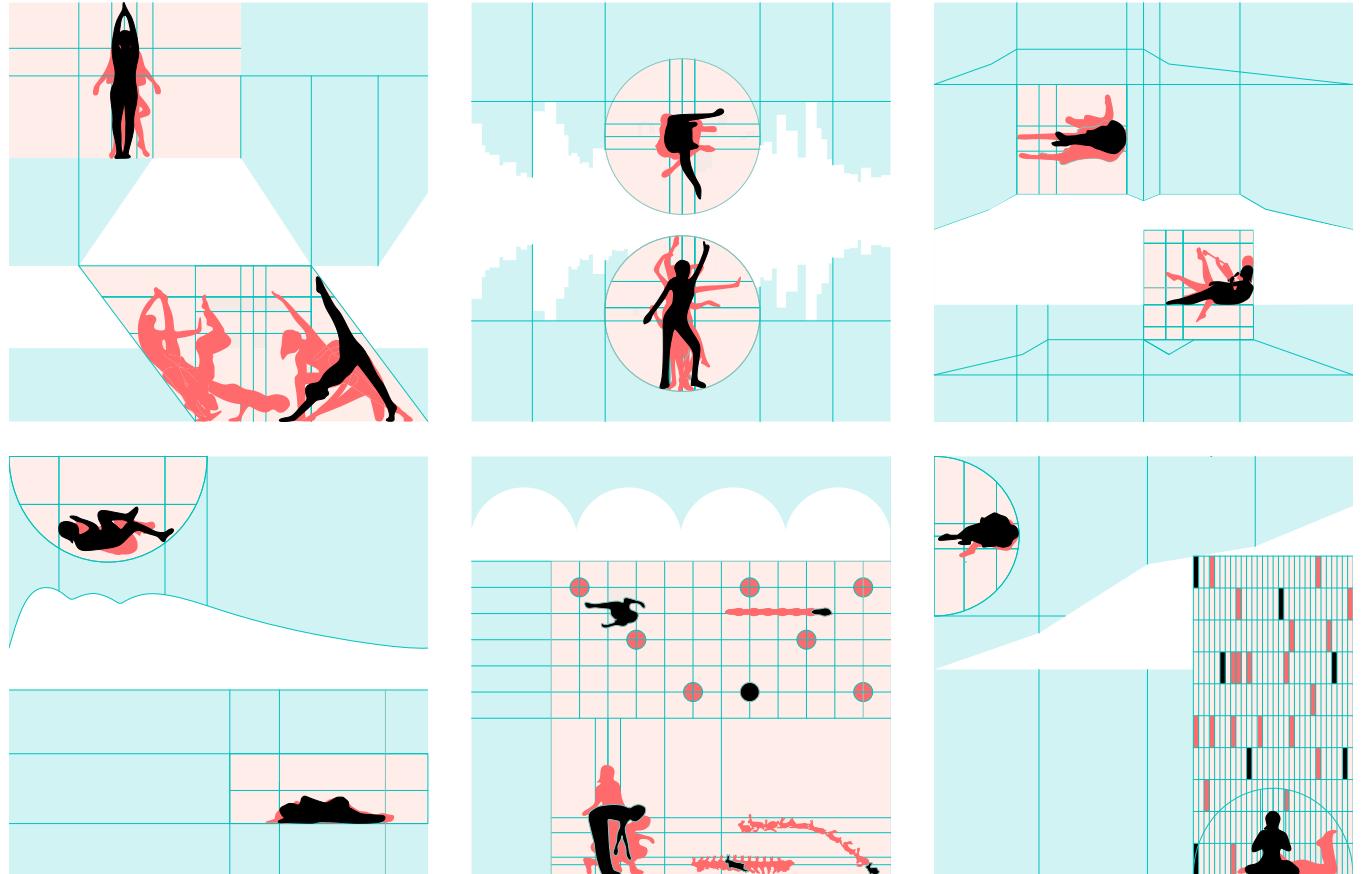
Matsuno Mountain Lodge, Rikuo Kitamura, 1974 (top left), House at Kichijoji, Jiro Murofushi, 1983 (top right), Villa M, Kouchi Sone, 1975 (bottom left and right)

to a cage when it should roam freely. She promises herself to get a rabbit when he has space to hop and follow her throughout the day. She has even chosen the perfect name for him: Peter. She misses her friends most and realizes that having them at her house is never quite the right social setting. She fantasizes of having a fireplace where she and her friends can talk until dawn.

These realizations have inspired her to move to Tokyo and surprise her friend Joey with hopes for a new beginning. She plans to surprise him and books a flight with no return ticket. She packs her clothes, toiletries, and sculpting tools, and off she goes. Joey is elated to have his friend move and finds her at the airport where he brings her to a hotel for her to complete her two-week quarantine period. During this two-week period, Zoey searches the web for a new dwelling. She looks tirelessly for a house that resembles that of Japan's most celebrated architects and stumbles on an ad for the House of Earth by Kazuo Shinohara. There was a deficiency in the underground bedroom with water leaks due to shifting ground and the house must be demolished. This brings tears to her eyes because she has always been fascinated by this house and is saddened that it would disappear. She calls Joey and he reminds her that Japanese houses are not meant to last forever and have a timeline, which is dictated by civic life. This consoles her and she impulsively places an offer on the site.



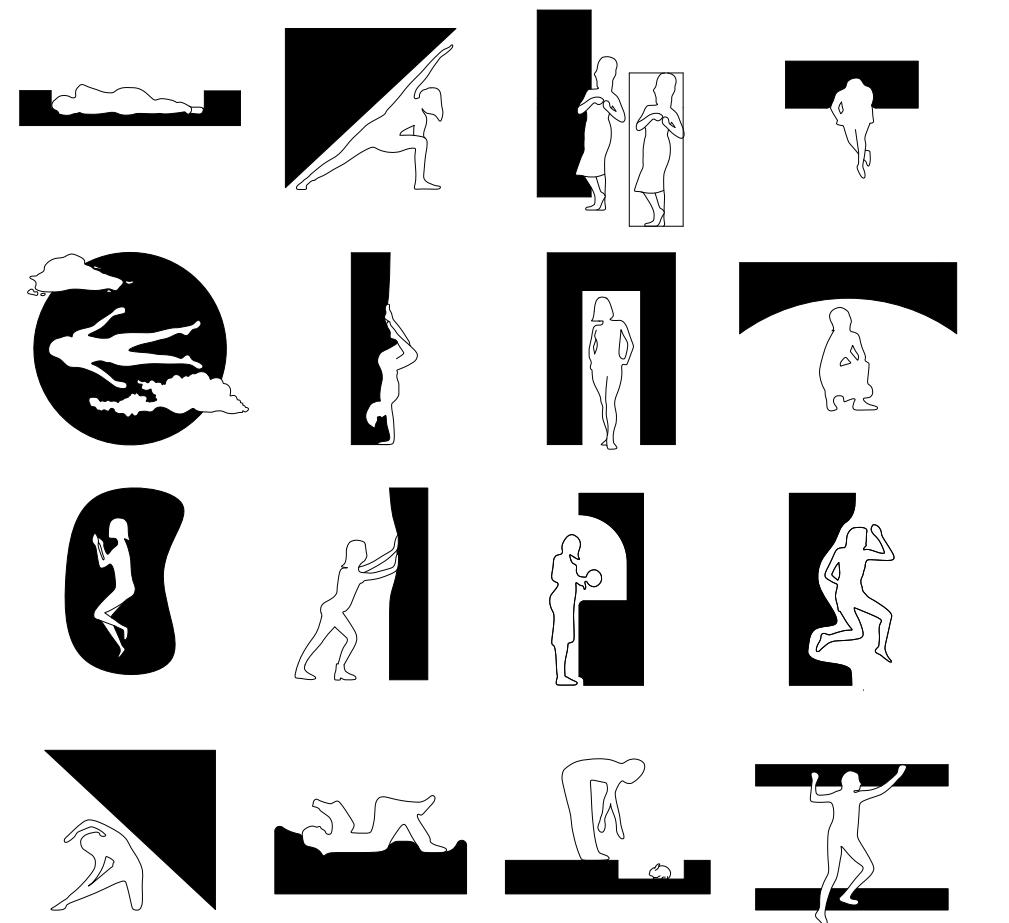
House of Earth, Kazuo Shinohara, 1966



A few days later, Zoey receives an email confirming that she placed the highest offer and that the house is slated to be demolished but if she wishes to preserve any of its artefacts, she may do so. She reflects on this and decides to donate it for exhibition and documentation purposes. She tests negative for the virus and finally has the chance to visit the site. Joey recommended an architect to meet them at the site.

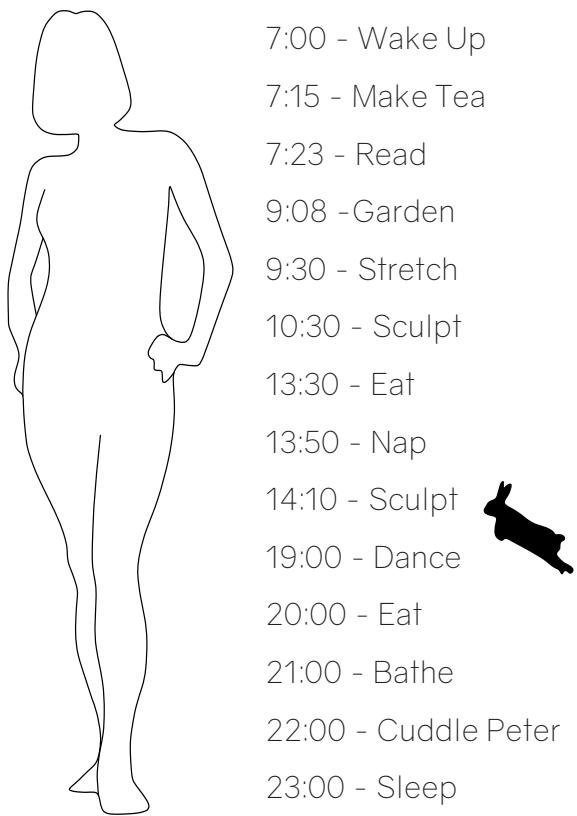
Zoey, Joey and the architect meet, and Zoey naturally states what she does not want in a house. She inertly describes her Toronto townhouse as an example of what she despises. The architect then asks her what her daily routine is. Zoey is slightly caught off guard by this question due to its personal nature. The architect sees that she is uncomfortable and reminds her that he is asking because routine is indispensable to designing a house that best fits her needs. Zoey is struck by this concept and asks to write down her routine to the closest detail.

The architect sketches these series of drawings that encapsulate her daily routine: stretching, dancing, bathing, napping, playing with Peter, reading, and the list continues. He captures her body's dimensions in various poses and couples her body with diagrams of facts he must consider in her house. For example, the length of a breathing cycle while stretching, the beat of Zoey's favorite ABBA song, the



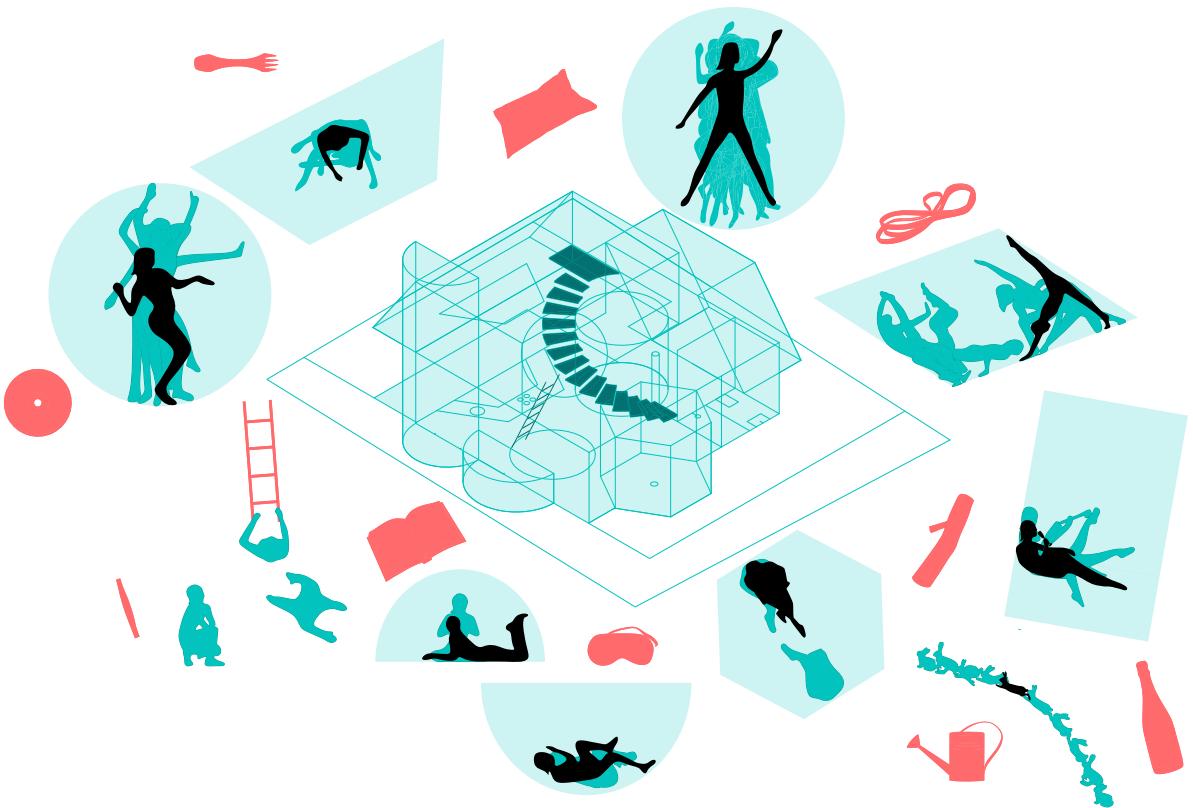
Zoey's Typical Day

- 7:00 - Wake Up
7:15 - Make Tea
7:23 - Read
9:08 - Garden
9:30 - Stretch
10:30 - Sculpt
13:30 - Eat
13:50 - Nap
14:10 - Sculpt
19:00 - Dance
20:00 - Eat
21:00 - Bathe
22:00 - Cuddle Peter
23:00 - Sleep



water levels during her bath time, her levels of grogginess after a nap, Peter's ability to jump in height and distance, the speed at which she reads books et cetera. Peter is to move freely in the house and accompany Zoey throughout the day. His favorite time of the day is when Zoey cuddles him by the hearth before bed.

Zoey delves into a description of the Japanese houses she studied intensively during quarantine. They constituted the best nighttime reading because they offered an alternate reality to what she considered and knew as a house. She explains to the architect that she was inspired by architect Hiroyuki Asai's slanted wall in the Mochizuki House (1971) as a place where her body could stretch and use the slant as a guide. She wonders what it would sound like to hear the rain from within Takeo Kimura and Shuntaro Noda's Jack in the Box House (1989). Or to live in a with no furniture where her needs are met by the surfaces that constitute the architecture of her house. She longs to sit near a fireplace with her friends like the one in Rikuo Kitamura's Matsuno Mountain Lodge (1974). She wishes to bathe in Jiro Murofushi's House at Kichijoji (1983) in a universe of tiles. She could only hope for beams of light to transverse the space such as in Yutaka Saito's House in Hayama (1987) or even for stairs that keep her on her toes such as Takamitsu Azuma's stairs in the Tower House (1966). Another request is for a space that provides a nook for her afternoon naps



and another for her morning such as the intimate spaces in Kazuo Shinohara's House Under High Voltage (1981), Takefumi Aida's Stepped-Platform House (1975) or even Kouchi Sone's Villa M (1975) resting area where rooms become areas for resting or sleeping.

The architect takes a deep breath and feels pressured to design a house that combines such ideas and recognizes that his main goal is propose a house that improves Zoey's well-being. They part ways and the architect heads to the drawing board. The architect then thinks of moments where Zoey directly interacts with the architecture of the house, through movement and how such interactions could create meaningful experiences. Each geometry becomes a room with height, depth and widths that meet her body comfortably. His first sketches show 'organic' forms that caress Zoey's body and explains that she can both create and displace space. For instance, he draws her body displacing the floor as she sleeps, or the wall meeting her back as she sits to read, or even the thresholds meeting her height perfectly. He explains that each activity and instance can be calibrated to her body and that this house will be 'perfect' just for her and Peter. Joey looks at the architect and asks what happens when he decides to visit? And the architect has a realization that perhaps casting Zoey's body and designing curves that meet her body 'perfectly' is not the solution.

The architect then explains that the house will not fit her body like a glove but rather allow her body to fit the house like a glove. The geometries that make up the plan are extruded to heights for each activity of her routine: the cylinder, trapezoidal prism, half cylinders, hexagonal prism, parallelepiped, triangular prism, and the sphere. He understands that Zoey is not a six-foot (1.83 metres) man and has unique needs and bodily characteristics that must be met for the house to enhance her experience of life. These geometries are generic in their type, yet their sizes are tailored to each activity and Zoey's body. Visitors and friends of Zoey can still feel at ease in her house and partake in her acts of daily living, however they must also adapt to her living environment. For example, Zoey's bath is designed for her length and width to be comfortably seated, nonetheless another body might have to bend their knees and have different water levels in the bath to achieve comfort. Zoey is pleasantly surprised by her architect's ideas for her house.

The architect translates the notes on Zoey's daily routine: she stretches, reads, naps, dances to ABBA, bathes with champagne and loves to cook and entertain around the fireplace. Her routine and psychological needs are to be translated into space. The architect develops a drawing that comprehensively combines all ideas into the proposal of her house where routine, room and selected objects create the ultimate playground for Zoey's life to unfold. The

plans achieved through the choreography of her routine and space required for each activity. The house is designed on two levels, where the entrance is on the lower level. The architect opts for specific names for each volume rather than calling them living room, kitchen, et cetera. This new language around the various spaces that make up Zoey's house allow the architect to detach themselves from generic ideas one has of each room. Therefore, the main floor is composed of a cookery (trapezoidal prism), stretching room (parallelepiped), sleeping capsule (cylinder), personal bubble (prism), hearth (hexagonal prism), nook and reading room (half cylinders) and social club (voided space). The second level is accessed by a staircase, which wraps around the sleeping capsule and lands onto a platform. This platform is Zoey's studio where she sculpts (triangular prism). She can access her discotheque (sphere) with a ladder, one of the objects she owns in the house.

The removal of furniture is possible because each of these volumes meets her body's needs and together, they fulfill the role that a couch, bed, table, or desk would. Moreover, the materiality is dependent on the type of activity. The flooring throughout the house is cork because this material is soft and absorbent. The only hard flooring surface is tile in the bathroom because Zoey dreamt of a tiled universe where floor, walls and ceiling become one to create a 'bathing room' or 'personal bubble' where she can enjoy

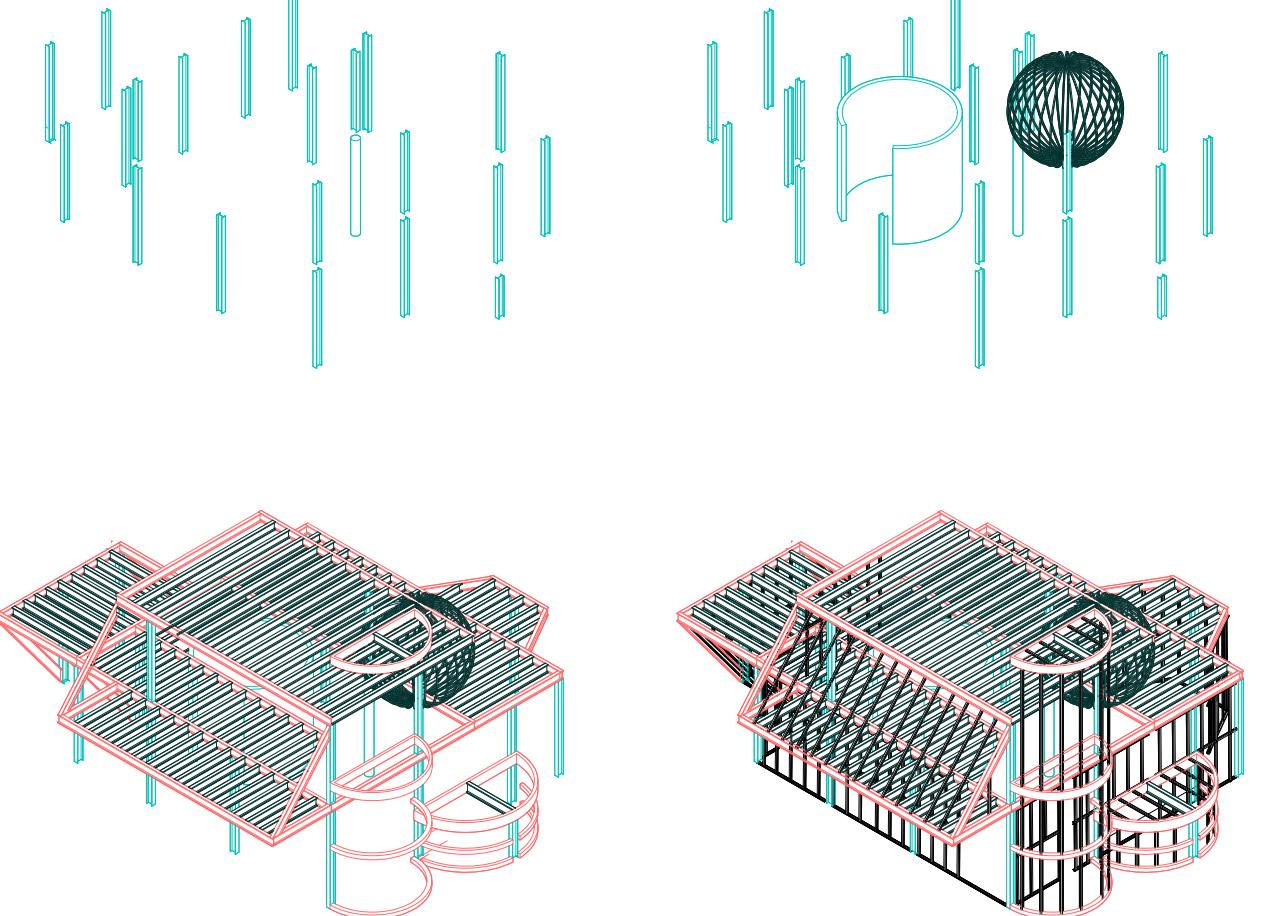
champagne. The walls are cladded in white, teal, and corrugated metal. Instances where Zoey finds comfort in her sleeping capsule, reading room, nook or hearth, the walls are cladded in teal. In other instances where the walls define her movement and suggest activity within the house, they are cladded in aluminum corrugated panels such as the stretching room's slanted surfaces, her studio's slanted wall and the exterior surface of her sleeping capsule. Other walls are muted, finished with white paint, and create a canvas for the activities of daily living.

The objects in each room are her only necessary possessions, Zoey is not motivated by consumption because her needs are fulfilled by these objects: fork-spoon, sculpting tools, champagne bottle, ladder, logs, stretching elastic, eye mask, pillow, book, compact disk, and watering can. Zoey is empathetic towards these objects and has a much more meaningful relationship with them because they are essential to her. As described by philosopher Robert Vischer, Zoey forms an "emotional union with an external object" (Bloomer, Moore and Yudell, 1978, p. 27). There are also intangible or 'abstract objects' that become much more relevant in her house such as "storms or sunsets" that amplify her emotional connection with the house. As also explained by Vischer, artists project their emotions on a work of art and therefore the resulting artifact is a culmination of these feelings. Similarly, the house is a culmination of Zoey's

emotional being. Beauty if often associated to objects or things towards which one feels empathy and ugliness is rather defined by repulsion towards a thing (Bloomer, Moore and Yudell, 1978, p. 27).

This purification of space through the removal of furniture is not to be compared with Superstudio's approach to promise "the total freedom of living on an infinite gridded platform", a utopic world where clothes or shelters are no longer required and instant travel to anywhere in the world is made possible (Bloomer, Moore and Yudell, 1978, p. 74). As argued by Bloomer and Moore, such approach rejects the need for an interaction between body and architecture (Bloomer, Moore and Yudell, 1978, p. 74). Therefore, the minimalist approach of removing furniture and focusing on elementary geometries and objects is rather a comment on the need to possess in a house or the role fulfilled by furniture that architecture fails to satisfy. Zoey' house and its objects could maybe be loosely compared to Archigram's 'Manzak' or 'Electronic Tomato', the use of technology to create objects that achieve and fulfill bodily functions and well-being. It can only be compared loosely because such proposals instill the body into passivity by making it rely on these objects to experience the world rather than experiencing it actively (Bloomer, Moore and Yudell, 1978, p. 75).

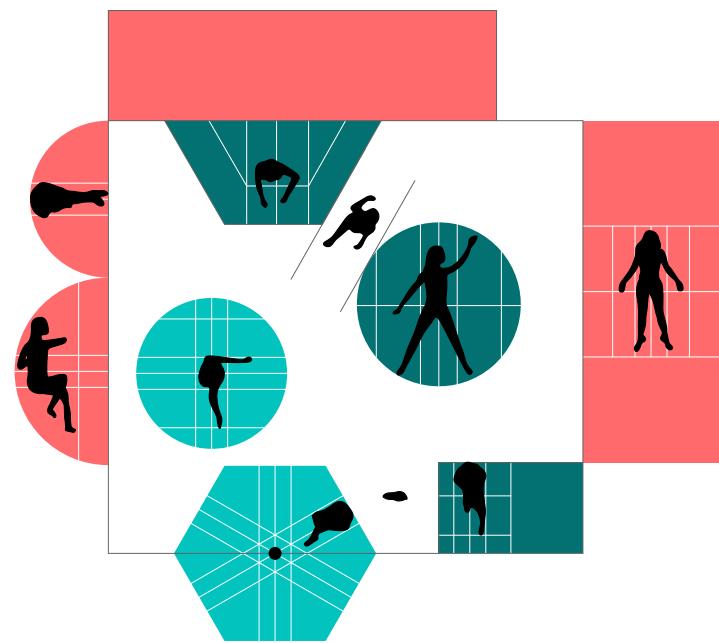
The exterior of the volumes is cladded in various materials based on their function but also their geometry like the expression of the volumes within their house. The axonometric views of the house show the relationship between each instance of Zoey's day and the form that best fits this function. Together, these volumes become the house, which are a translation of Zoey's acts of daily living into architecture. Their placement is dependent on her choreography and the materials depict the various types of rooms. The architect decides to paint the exterior of the stucco curved surfaces of the reading, napping and discotheque rooms in Zoey's favorite color: teal. Black corrugated metal is for flat surfaces and the gray aluminum finished panels are for slanted ones. This differentiation in materiality heightens Zoey's conscious movement from one act to another and marks various moments where she interacts with her house. These moments typically occur in the teal and gray aluminum areas of the house where her body meets either the curve or the slant. Hence why most of the house surfaces are cladded by the black corrugated metal and these instances of color represent instances of movement. Furthermore, the structure is articulated by a brightly colored pink to announce the combination of these volumes and further articulate the house as a curated combination of moments, rather than a whole which appears to be fragmented. The hearth's chimney is cladded



in a brushed gold metal, which is appropriate for the warmth felt by Zoey in this room, which is communicated from the exterior view of the chimney.

The architect explained to Zoey that even though the vision for the house was one where imagination, experience and dreams are at the forefront, it is important to rationalize these through structure. In fact, the tension between explorative approaches and technical or physical constraints is what yields the richest projects. Therefore, the architect works closely with a local engineer to establish seismic conditions and all applicable loads. Together, they develop a structural system which confirms that Zoey's dream house can be built.

Zoey is excited to see the developments on her house and is thrilled with the outcome. She asks Joey to photograph her in the house and sends these pictures to the architect and thanks them for their willingness to challenge the 'conventional house'. The architect thanks Zoey in return for her trust and the revitalizing experience of designing her house. They now meet here and there, with Joey to plan their pilgrimage to visit hidden gems; the houses of Miyawaki, Yoshimura, Kijima, Tominaga.

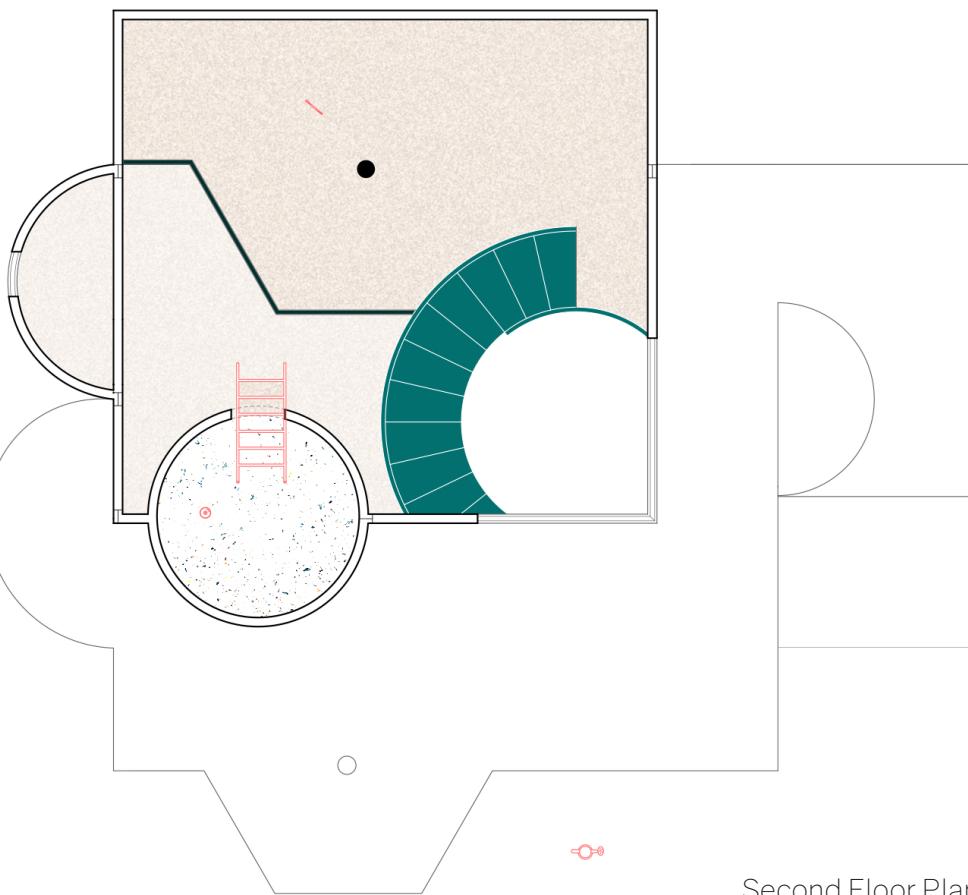
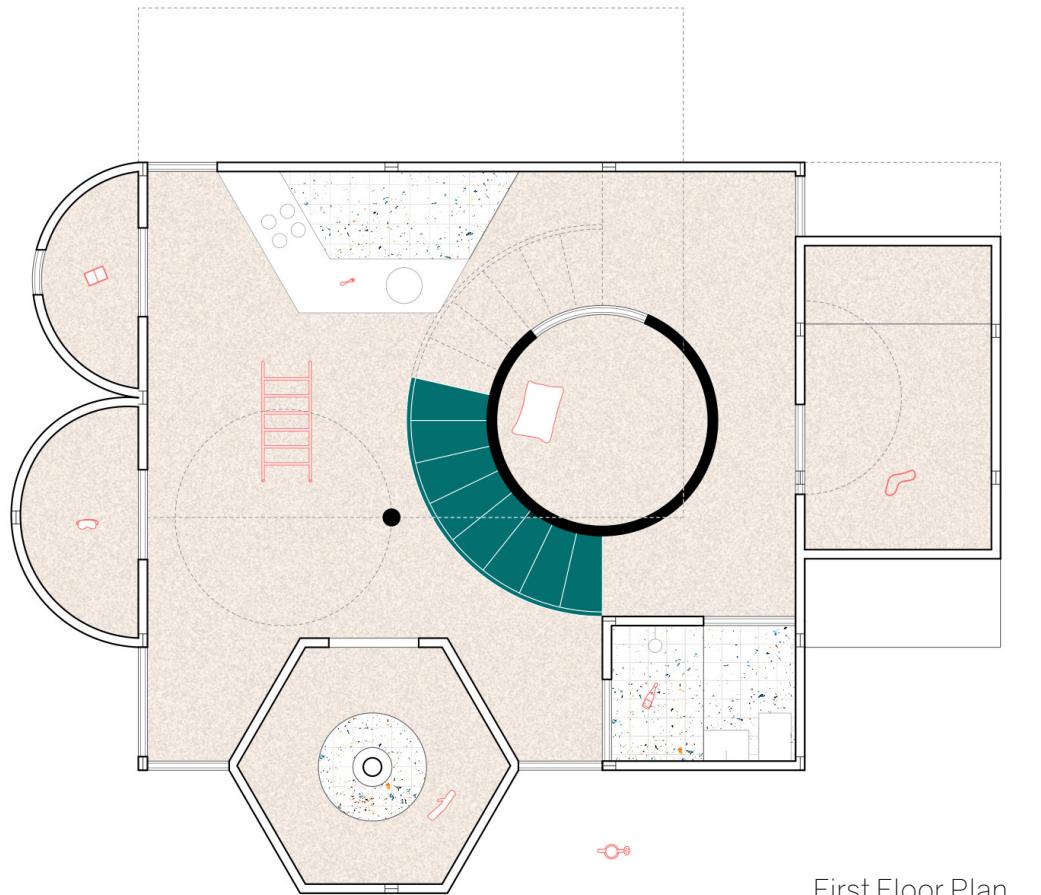


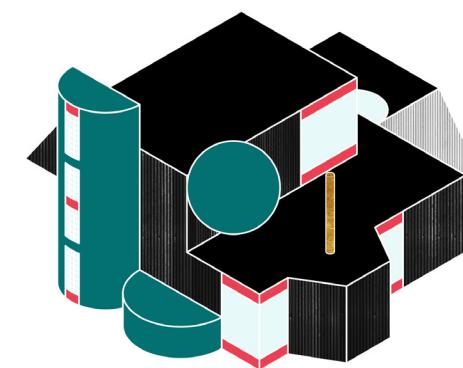
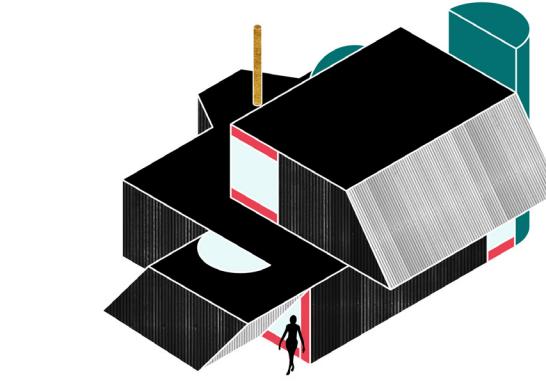
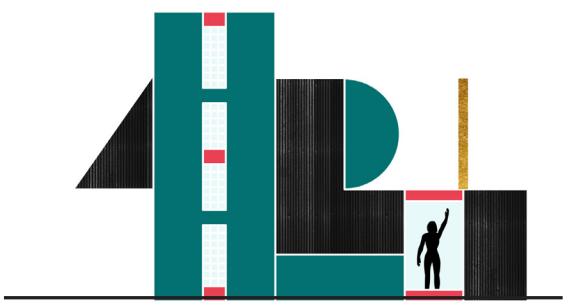
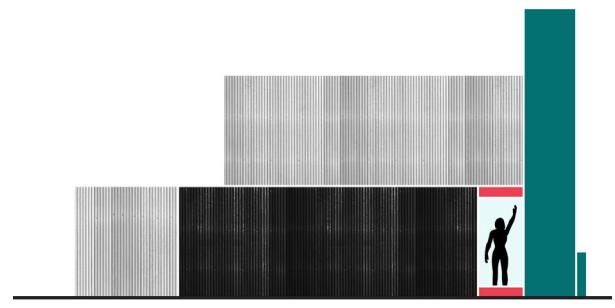
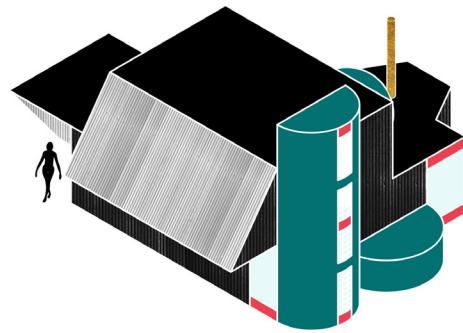
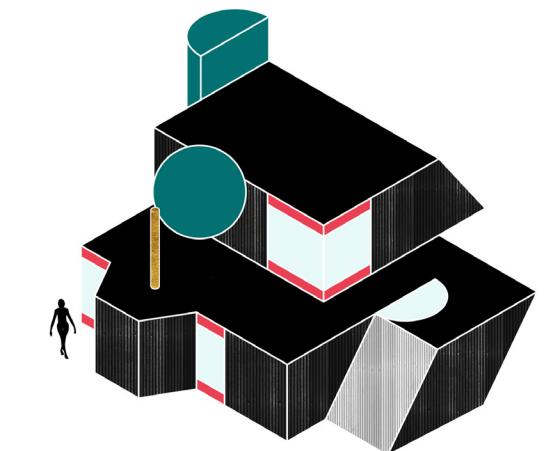
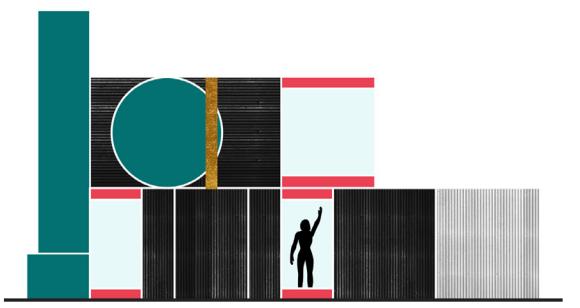
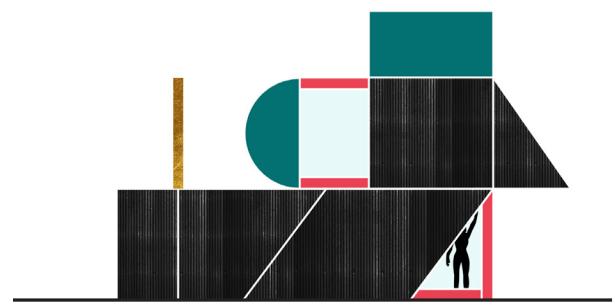
pillow
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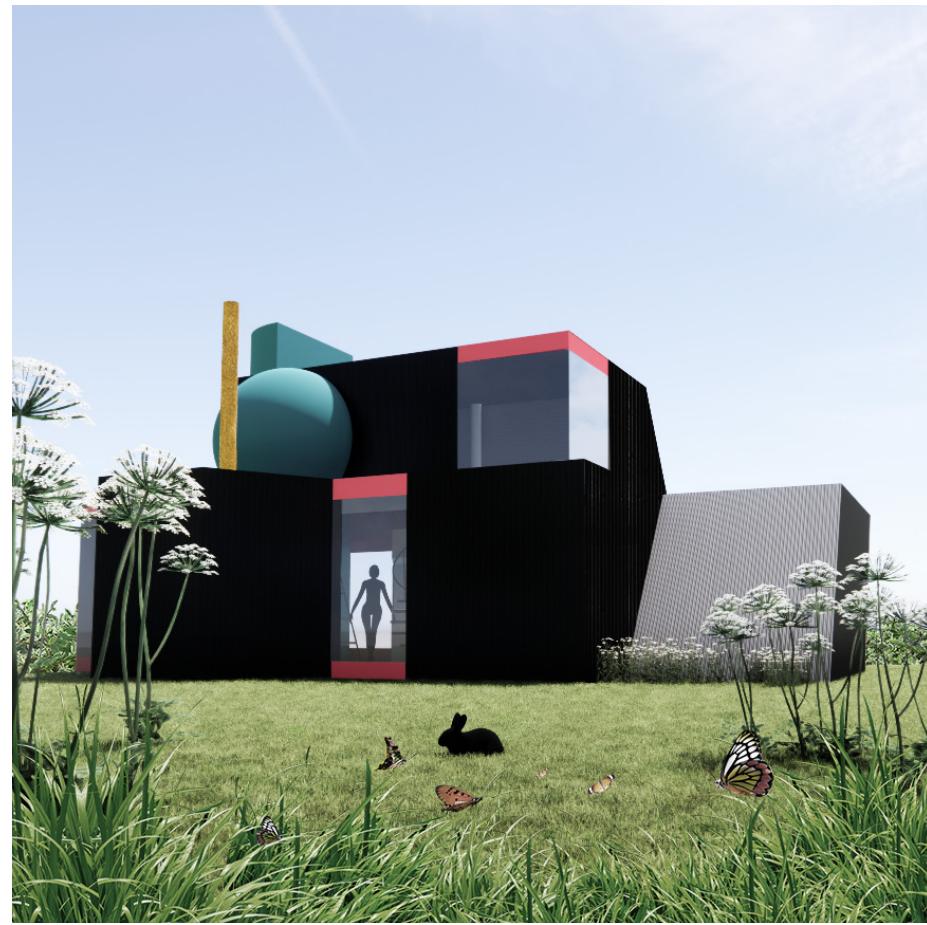
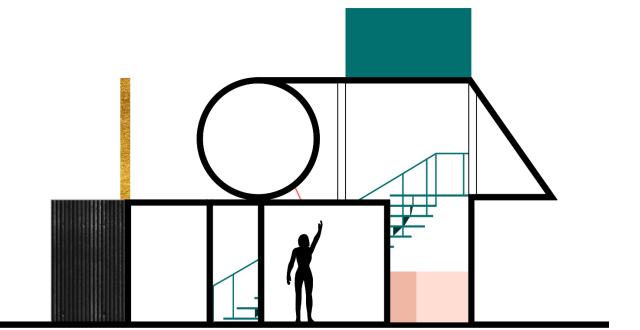
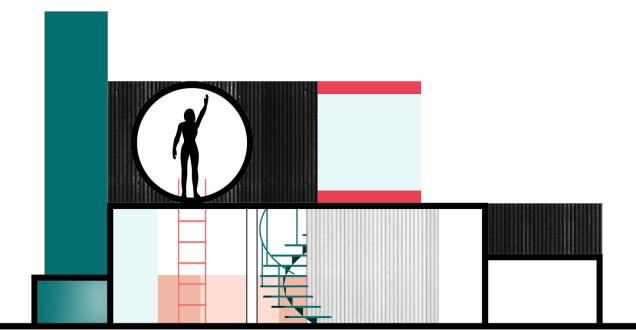


watering can
champagne
fork-spoon
ladder
tools
books
eye mask
music
log









Zoey's sleep capsule is designed as a cylinder, where the diameter is equal to her height and arm span. This allows her to feel comforted and embraced by the space, which is important to ease her mind as she rests after long and active days. The walls are painted in teal, her favorite color, which is beneficial to rest her eyes and create a darker space. In fact, the only light that penetrates this space is natural light from a window above. By morning, Zoey is awakened by the sunlight, which shines through the window above her sleep capsule. She enjoys the morning sun for several minutes before she struts to her kitchen to boil water for her tea.

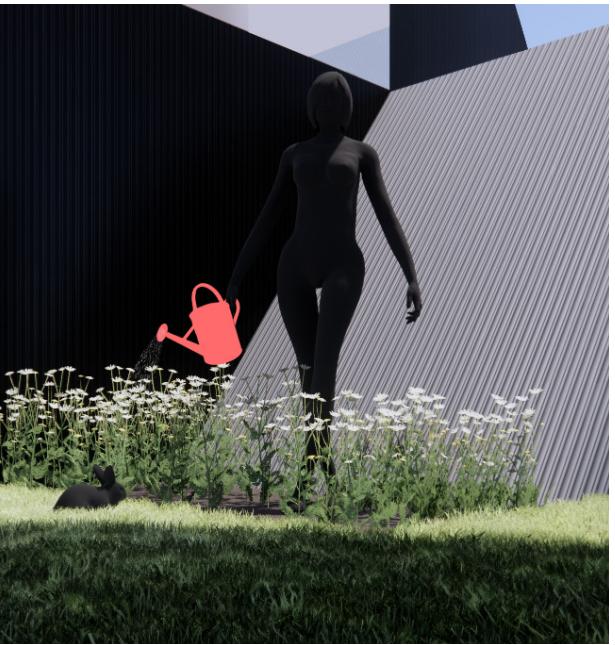
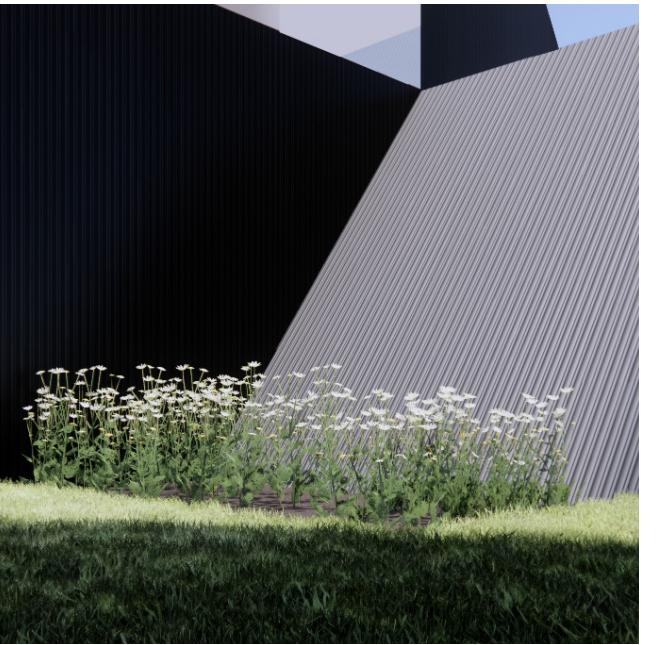




The corrugated metal door slides within the cylinder's walls. Zoey's body is relaxed on the cork floor and her head rests heavily on her pillow. By nighttime, Zoey gazes up towards the stars and reflects on her day. She feels fulfilled and excited to complete her sculpture the next day. She breathes heavily as the breeze rattles the windows and comforts her soul. She falls asleep and dreams of dancing at an ABBA concert.

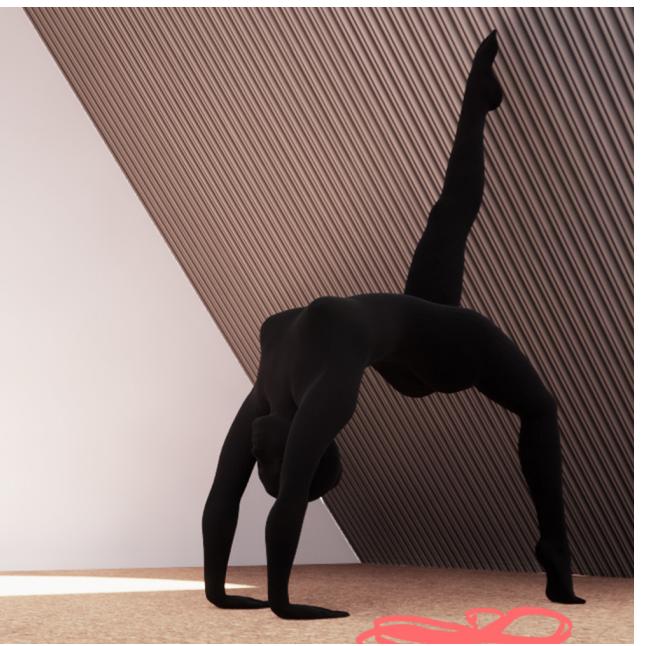
Zoey's reading room is a half cylinder, which allows her to rest her back against the wall or sprawl in the space and read on her back or stomach. She enjoys stacking her books and magazines along the perimeter of the room. She mostly reads issues of 'The Japan Architect' or fiction novels. The sun shines into her reading room by 7:30 am, which allows her to read without artificial lighting. Zoey finds inspiration for her sculptures by reading magazines and the fictional novels nourish her creative mind. She sips her green tea and snacks on a clementine before gardening.

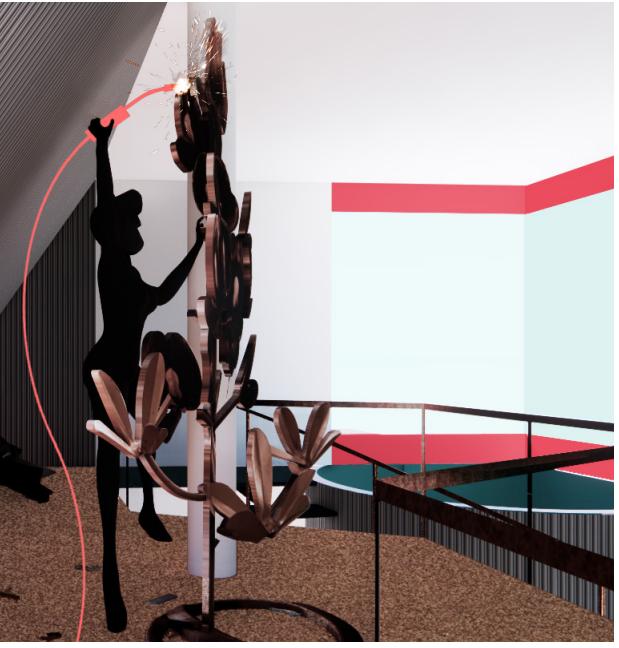
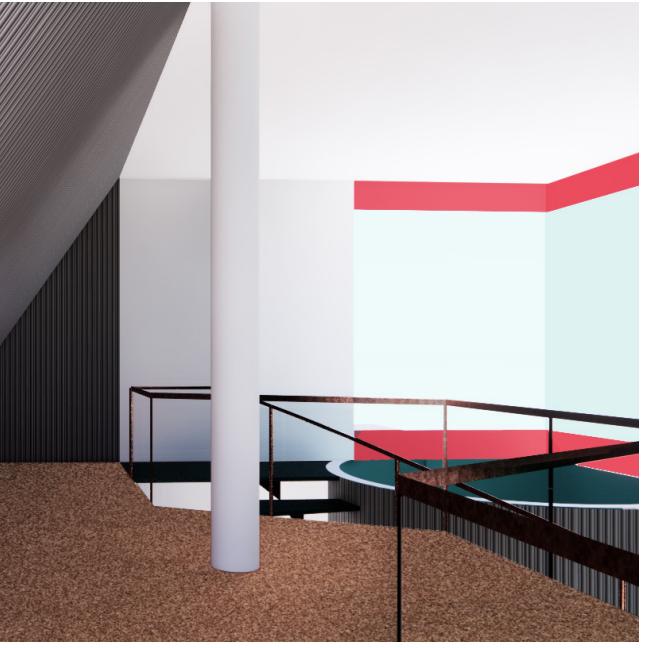




Zoey and her rabbit Peter enjoy gardening during the warm summer months. The types of flowers change every planting season, yet daisies are by far her favorite. Peter enjoys hiding between the stems and finding shade. The gardens is placed strategically to receive the required sunlight. The shiny aluminum which clads her stretching room helps reflect sunlight towards the flowers. Zoey waters her flowers every morning with her watering can while Peter eats grass and hops around the yard.

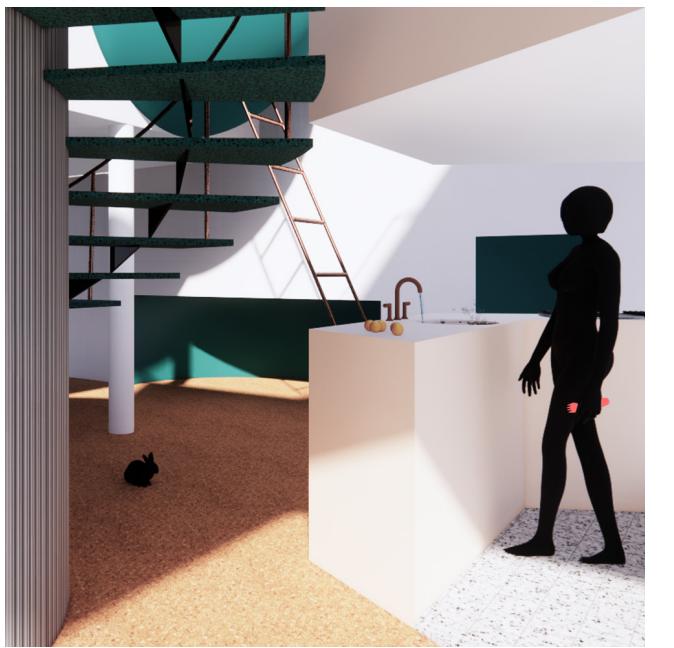
The stretching room is designed as a parallelepiped because the slanted surfaces help Zoey achieve certain yoga poses. The cork flooring absorbs her sweat and the corrugated metal allows her to grip onto the surface and deepen her stretches. The skylight illuminates the space from above. Zoey must stretch every morning because her body aches from long hours of sculpting. She uses an elastic to achieve her poses and hold them longer. She holds each position for an entire breath cycle, and this also helps slow her heart rate and improve her concentration.

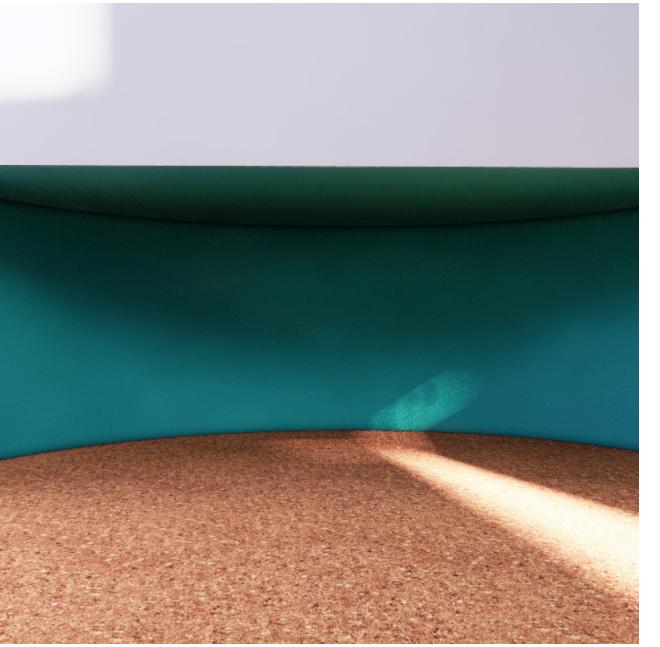




Zoey's sculpting studio is on the second level of her house. She mostly works on this mezzanine but sometimes reaches over the railing to sculpt double height pieces. The column and slanted wall are useful as an anchor points because some of her sculpting positions are difficult to hold. Zoey's preferred sculpting medium is copper. She has designed and welded elements in her house such as the handrails and the ladder to access her discotheque. She uses recycled metal for her sculptures and celebrates patina.

When entering the house, the first space encountered is the cookery, which overlooks the main living space (social club). The staircase has been calculated to allow Zoey to walk underneath it. She always leaves a clementine or two on the counter as a snack. During lunch time, Zoey calls Peter to come eat some Kale and she pours herself a large glass of water. It is important for her to stay hydrated because her work as a sculptor involves strenuous physical efforts. She enjoys eating standing up and sometimes sits on the counter to rest her legs.

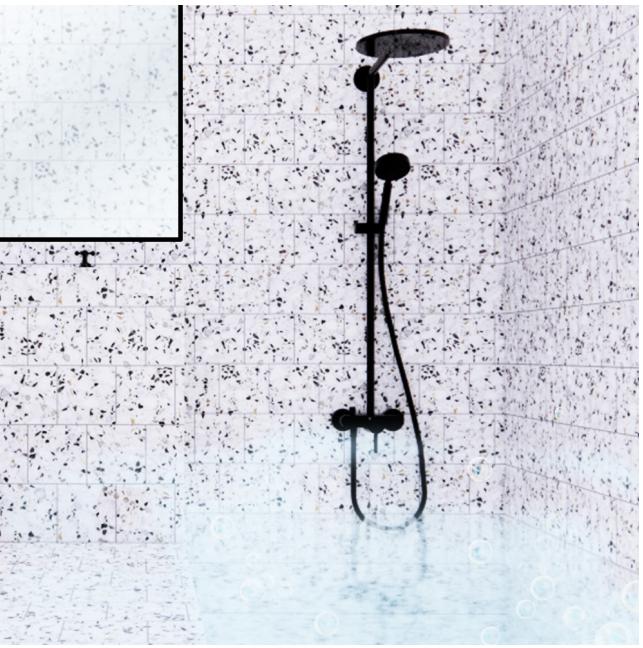




After eating lunch, Zoey enjoys a short nap to recharge both her mind and body before returning to her studio. The nook provides her with a darker space in the house and the cork flooring provides a comfortable surface for body. Zoey uses an eye mask to further block sunlight if she needs a longer nap. The nook is a shallow space with a curved wall, which embraces her body when she curls into a fetal position. Sometimes Peter joins for a short nap as well.

The disco ball hangs in the spherical discotheque. The walls are painted white and change color based on Zoey's choice of lighting. She prefers white lights when she listens to ABBA's 'Dancing Queen' and alternates between hues of purple and pink for 'Mama Mia'. She knows all of ABBA's songs by heart and appreciates that she can sing as loud as she wants. The light reflects on the sphere and creates an exhilarating atmosphere.





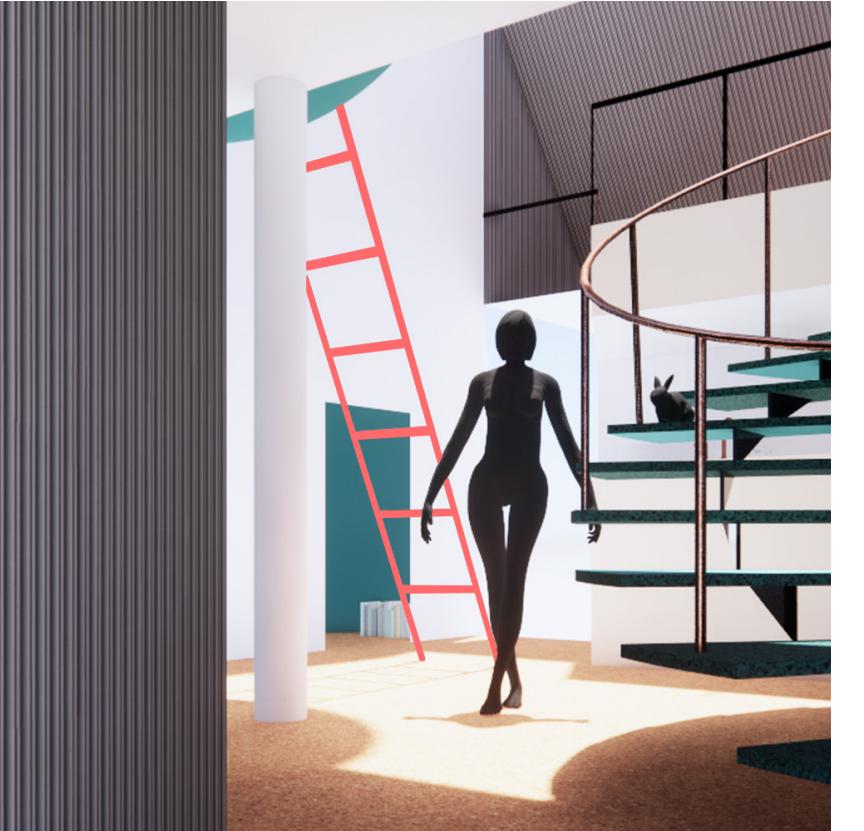
Zoey's personal bubble is cube tiled in terrazzo, which creates a homogeneous space and puts her mind at ease. The bath is recessed into the floor and the toilet and sink are built into the space. Only the shower head, mirror and tap have a proud presence in black chrome. Zoey enjoys a warm bath at the end of the day. She enjoys feeling her pores open with the steam as she sips a cold glass of champagne. Zoey believes treating herself to personal time is rewarding in cleansing her mind from external pressures she feels in the city. Her house is a refuge.

The hearth is a hexagonal prism where Zoey can cuddle her rabbit Peter each evening before bed. The various facets of the prism also allow each visitor to occupy a wall. There is no need for furniture since the cork flooring and walls are comfortable surfaces to lean into. After bathing, Zoey feeds the fire with logs and is charmed by the flames as her wet hair dries with the heat in the room. Peter makes himself comfortable by her side. Sometimes Zoey roasts smores with friends and they talk until dawn. She feels content in this space.

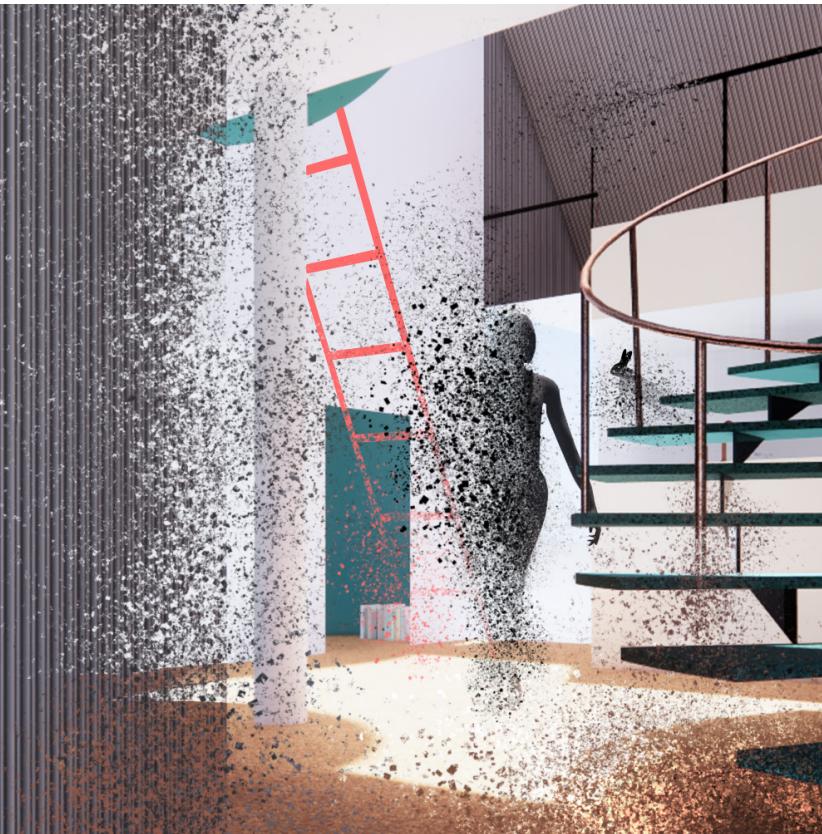
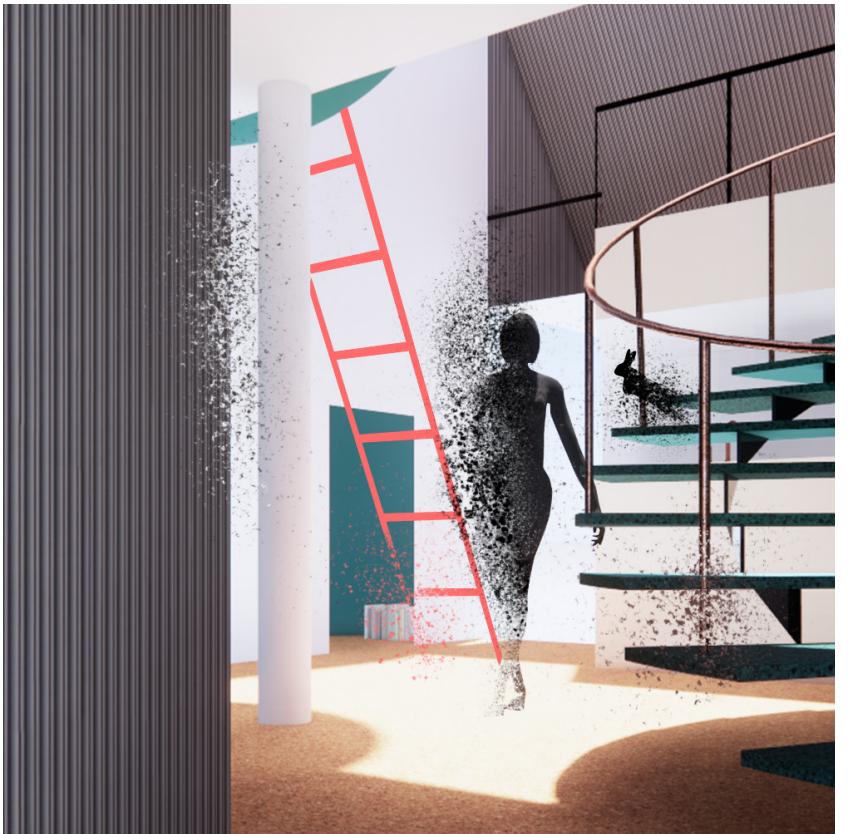


Conclusion

The conventional house obstructs one from having meaningful emotional experiences within it. The historical interlinking of geometry, proportions, and the human body in architecture has unfortunately morphed into standardization. Have we become hermit crabs carelessly moving from one shell to another? Why does one have an instinct to furnish domestic space? How can a house entice the senses? To answer such questions, an alternative approach to designing a house is explored: Zoey's House. Zoey feels emotional about her house, which is designed around her daily routine and bodily proportions. Her experiences of daily living are enhanced, and she feels fulfilled. There are no 'perfect' solutions in architecture that can achieve this yet experiments that can bring us closer to this ideal and Zoey's house is amongst these. After all, like humans, houses are not meant to last forever.



"There is never a perfect answer in this messy, emotional world. Perfection is beyond the world of humankind, beyond the reach of magic." - Albus Dumbledore



"Houses live and die." – Koji Taki

Quotes by Japanese Architects

"I also used strong colors for the first time. The ceiling, painted black, meets red walls, which in turn meet a red carpet that leads down to the underground bedroom with its black walls. I attempted to express the process of descent underground with strength." – Kazuo Shinohara, 2G N.58/59: 88

"My intention of expressing various emotions in spatial form - feelings often suppressed, such as anxiety, anger and alienation - is unlikely to chance in the future. Even when deciding to introduce more technical motifs into the design for a house, I may, all of a sudden, make use of emotional elements." – Kazuo Shinohara, 2G N.58/59: 88

"A sort of emotional 'pre-tensioning' that derives from the blackened patina that age as occasionally given to some of the more celebrated teahouses of several hundred years ago." – Kazuo Shinohara, 2G N.58/59: 89

"The theme of the house is 'earth'. Sometimes I have the impulse to create a space deeply involved with the irrational part of man's spirit. I have not made such progress in the work of expressing such dark passions, partly because it is difficult to guarantee the overall standard of dwelling functions in such a house and partly because my work has been fundamentally concerned with designing more aesthetic spaces." – Kazuo Shinohara, 2G N.58/59: 89

"Houses cannot exist entirely outside the context of the most insatiable desires of man." – Kazuo Shinohara 2G N.58/59: 88

"In this project, toward the end of the first style, the theme has moved from the abstraction of Japanese space in terms of 'symbol' to a more aggressively emotional intuition - from the themes of the earthen floor (achronic as an architectural element to the notion of earth itself as achronic motif."

– Kazuo Shinohara, 2G N.58/59: 89

"It is important to note that this post-and-braces system had already been used in house in white but was kept from vision by a ceiling, as if it were the suppressed 'unconscious' of the livable space, necessary to support its existence but impossible to deal with it directly. In many ways, this 'hidden' or 'unconscious' space is akin to the dark, psychological centre of the Japanese traditional house, the *oku*." – Kazuo Shinohara, 2G N.58/59: 17

"The contrast between the House in White and the House of Earth is not so much one of light or darkness but rather, I believe one of poses, gestures and elicited behavior' the space of house in white imposes a formality on the dweller, certain movements that are more paused, controlled or elaborated, house of earth, on the other hand, provide only for the behavior aside from or outside conventionality. Or, more precisely, it imposes a non-codified gesturality on the occupant, something that would be fully explored in the Tanikawa house." - Kazuo Shinohara, 2G N.58/59: 16

"He added a set of pictures very uncharacteristic of his usual publications. Not only did they show people (the first and only time that he did so in the main hall of the house, but the people were behaving very freely, climbing stairs and pillars, or running across the slanted floor). Of course, this hall, with its earthen floor following the hill's slope, is all but conventional, being more and interiorized exterior than a living room. But given its prescribed use as a "meditation space" those pictures were a statement in favor of alternative behavior, what Shinohara calls illogical functions." – Enrich Massip-Bosch on Kazuo Shinohara 2G N.58/59: 16

"Tanikawa house's hall is purportedly a 'sacred space' in which the client, a prominent Japanese poet, could find his inspiration. In this sense it is a sort of Noh stage, which are also quasi sacred spaces very often related to Shinto practices, in which meaning is generated by the actors' movement across its codified floor." - Kazuo Shinohara, 2G N.58/59: 19

"Rejecting domestic comfort, he insisted on difficult living." – Thomas Daniell on Kazuo Shinohara, An Anatomy of Influence: 40

"I designed the interiors of the units to be open like garando (voids) so that residents could create their own lifestyles. My goal as to propose a communal form that would make people feel comfortable living in cities for sustained periods of time and help them better enjoy their lives." – Itsuko Hasegawa, Houses & Housing 1972-2014: 96

"Buildings are for people to live in." – Itsuko Hasegawa, An Anatomy of Influence: 124

"We need to free spaces for human interactions at every scale. (...) Of course, I also design in response to the opinions and desires of the end users. But I don't simply follow their opinions, I also think about the region and its future. My approach has been heavily criticized in Japan, but regarded highly in France, America and especially England. Peter Cook and Rem Koolhaas were very supportive." - Itsuko Hasegawa, An Anatomy of Influence: 136

"I am very fond of landscape where the sea or sand dunes seem to stretch out endlessly and monotonously, where the only things that seem to move are the light and the wind. When I encounter this kind of landscape, I feel no urge to confront it or create something in it. Instead, my instinct is to eliminate everything artificial so that I might attain a state of non-existence (selflessness). I hope to continue exploring these themes in future projects." - Itsuko Hasegawa, Houses & Housing 1972-2014: 66

"A curator from a museum in Paris told me, upon visiting the house that she felt I had used architecture as means of transmitting poetry to children. For me, nothing could be more gratifying than creating work as of architecture that expand the horizons of the children inhabiting them." - Itsuko Hasegawa, Houses & Housing 1972:56

"I designed this house with the assumption that a circular open-air courtyard will enable people to circulate freely and engage in various activities." - Itsuko Hasegawa, Houses & Housing 1972-2014: 84

"On the house's interiors, I combined perforated aluminum panels with a variety of other membrane-like metal elements, including fine, stainless-steel meshes. By doing so, I created what one might refer to as 'pliable' spaces - spaces that are strong, soft, and delicate, like silk." - Itsuko Hasegawa, Houses & Housing 1972-2014: 40

"When designing this house, I first used the spacious site to experiment with uninhabited forms but gradually found myself leaning toward primitive shelters. (...) This provided a flexible space that I was free to divide with wooden partition wall to suite the lifestyle of my clients." - Itsuko Hasegawa, Architecture as A Second Nature Section 3: 248

"My goal in this designing was to create a sense of length and a sense that the entire house is connected while simultaneously providing spaces that are comfortable and livable." - Itsuko Hasegawa, Houses & Housing 1972-2014: 20

"The central theme I've elaborated throughout my career, in designs for houses and public buildings alike, is that of the lively and inclusive garando. My efforts to create architecture that reestablishes connections with the environment, reinvigorates local art and culture, and sustains inhabitants' bodies and sensibilities is an extension of this theme." - Itsuko Hasegawa, Houses & Housing 1972-2014: 15

"My objective was to design houses and other buildings that would be more "real" than the large projects I had designed at Kitukake's office - projects intimate in scale and tailored to the daily lives of their inhabitants." - Itsuko Hasegawa, Houses & Housing 1972-2014: 11

"However, even if her architecture may sometimes be eccentric, exciting the senses with a fresh, pop art experience, it should not be viewed merely as simulating design. Her architecture stirs people's emotions more than it relaxes them." - Koji Taki on Itsuko Hasegawa, Architectural Monographs N31: 13

"But today the difference between the human body and the world of simulation increases as technology develops; this may provoke the isolation of human beings from the environment. In order to break out of this dilemma, it is necessary to combine physical human vigor with the multiplicity of the media-created information environments." - Itsuko Hasegawa, Architectural Monographs N31: 7

"I designed this house by connecting series of independent zones, each with a strong, distinct sense of space. The clients recognize how important it is for children to experience a variety of spaces and are excited to see the outcome of raising their children in this house." - Itsuko Hasegawa, Houses & Housing 1972-2014: 52

"This B.Y. house is a residential house in Yushima, Bunkyo district. It is based on my recognition that architecture starts to exist as an animate entity only after people start to live in it." - Itsuko Hasegawa, SD8504: 7

"While the house 2 at Yaizu resulted in a simple equilateral triangular shape through the process of trying to lower the cost, this house adopted the style of a traditional farmhouse (huge shelter), which is considered by Japanese to be one of the residential prototypes, through the process of trying to give importance to the sensation of daily life felt by the dwellers." - Itsuko Hasegawa, SD8504: 11

"There is no structural pillar inside the house and has a set up in which you can partition the space according to your needs using a wooden partition wall." - Itsuko Hasegawa, SD8504: 11

"I was thinking about making a small village-like place by scattering rooms throughout this spacious site. But I gradually changed my plan as I became aware of its unfavorable aspects through some experience such as lack of sensation in daily life caused by excessive physical distance inside the house." - Itsuko Hasegawa, SD 8504: 11

"By 'second nature', I mean that the involvement of people overtime can enhance natural beauty and produce a pleasant environment, like 'Satoyama' - the environment around traditional Japanese villages that is created by generations of subtle human intervention." - Itsuko Hasegawa, An Anatomy of Influence: 137

"Creating a mystical mood in what is fundamentally a piece of residential architecture is an old tradition in Japan. As early as the Heian period (794-1185), when Buddhism, an imported religion, has been assimilated thoroughly into Japanese culture, residential elements began to appear in some kinds of temple buildings. The benigara color house achieves something of the sense of submissiveness to the surroundings in the placement and nature of the forms and produces a mystical mood because of the uniform red ochre used on the external walls." - Yutaka Izue, JA7022: 22

"Hara's schools, which I saw in my first six months in Japan and have remained with me for the rest of my stay, are linear celebrations of the child's environment, the built envelope being exaggerated now this way, now that as ceremonial acknowledge of the child's diverse and energetic impulses."

- On Hiroshi Hara, GA Houses 4: 2

"Inside the ethereal and solemn space, one senses, on the one hand, a stage for nature's fairytales, and, on the other, memories of urban sceneries." - Hiroshi Hara, Floating World: 20

"The sadistic architect aims at making architecture appear abruptly and by compulsion. Man becomes in instrument subject to his every whim... the intention of this type of architect is to have man become architecture... and at the end, he wants manifest proof of this ensnarement of man - he will aim at making the other beg for pardon, apologize, the other will be forced to humiliate himself, to deny what he holds is most dear (...) Hiroshi Hara takes up an opposite position and goes for an architecture of live possibilities that have a multidimensional being. He is searching out what man and architecture, or more particularly man and house, must be in order to establish the most dazzling correspondence between them." - On Hiroshi Hara, GA Houses. 4 1970: 49

"We approach a building - in it we are searching for ourselves" - Hiroshi Hara, GA Houses 4: 49

"I have always been interested in the movement of people experiencing and observing architecture. Among the fields, that of light is the most important in architecture. The design of a field can be symbolically dubbed the design of air"

- Hiroshi Hara, Floating World: 86

"Space appears only when someone experiences it. the phenomenological philosophers were right to say, though there were many aspects yet to be discussed, that space and experience should be considered as one and the same." - Hiroshi Hara, Floating World: 202

"Simply put, in terms of architectural design, people move along a predetermined route. I call this movement 'predictable traversing'. Streets and corridors are designed with this traversing in mind. The second type of movement is the random movement observed in plazas and rooms. this is called 'unpredictable traversing'. It has almost the same meaning as floating." - Hiroshi Hara, Floating World: 202

"Steven Holl shares many of your interests in the phenomenological experience of material, light, sound, and so on [...] - Thomas Daniell on Hara, Anatomy of Influence: 82

"He uses pebbles, tiles, polished and matte stones, water and grass-covered zone for the delight of both body and mind. The works aspire to be a true phenomenology of the ground." - Hiroshi Hara, Floating World: 27

"Throughout the years, hara has explored many strategies to transcend the tangible attributes of architecture and evoke its realm of intangibles. Layering has been one such strategy, along with the choreography of elements for movement through and around them, and the exploitation of the tactile as well as visual qualities of surfaces." - Hiroshi Hara, Floating World: 26

"Today, the act of dwelling in the woods itself not theatrical. The pleasant space under a tree is one of the archetypes of architecture. In winter, the glass-defined living area becomes almost as cold as the outdoor. Then in that season the living room retreats into the forest, becoming an extension of that archetypal space under a tree." - Hiroshi Hara, Floating World: 102

"Just as Marcel Duchamp explored consciousness in his artworks, I wished to investigate the function of consciousness in architecture. Architecture should retreat from classical aesthetics; it should not only address efficacy but also human existence." - Hiroshi Hara, Floating World: 89

Transparency, translucency, overlaying, permeability and reflection have been means actively to involve both body and mind." – Hiroshi Hara, Floating World: 26

"Reflected on the light-colored glassy surfaces of the sculpted interior, the space comes alive, gradually changing from the brightness of an inhalation to the dimness of dusk, but always luminous and glowing. – Hiroshi Hara, Floating World: 20

"The building should be easy for everybody to understand. To achieve this, I used formal and utilitarian symbols that are common to all. Targeting the details of the newly introduced device, even at children, prevents complacency in the designer." – Hiroshi Hara, Floating World: 89

"It is clear that with this new mode of design, Hara aims at bringing together in an inseparable unity both the ambiguity of nature and the ambiguity of perception or human consciousness." – Hiroshi Hara, Floating World: 23

"The house designs are as much a representation of the next step in Hara's unfolding architecture, increasingly guided by the tenets of phenomenology, as they are his responses to developments taking place within the deteriorating urban conditions of Japan." – On Hiroshi Hara, Floating World: 17

"It can be observed that the spatial formation of the Ito house, and especially the curving prismatic space of the common living area, has been designed so as to allow for the best airflow (...) but Hara also employs the flow of air as a metaphor for the movement of people and events, which cannot be precisely decided in advance." – Hiroshi Hara, Floating World: 16

"Outside, it has an ordinary clapboard finish; inside, plywood paneling is fixed in place with an unusual system of thin battens. Both are suggestive of indigenous structures, yet as soon as one identifies them as such, one recognizes that every possible detail is, more or less, peculiar or 'distorted', and a strange feeling of uncertainty seeps into one's awareness." – Hiroshi Hara, Floating World: 16

"It is important to recognize Hara's longstanding scholarship and unremitting commitment to developing various design strategies in the field of architectural phenomenology in order to 'map' the causalities and workings of human perception or consciousness." – Hiroshi Hara, Floating World: 12

"The house is just this; a possibility, something that is only animated by contact with the user." – Hiromi Fujii, GA Houses 4: 146

"Although areas and spatial forms can be predetermined in a house, it is impossible to predict the ways human beings will use those areas and spatial forms. People, like cats, are prone to select a place and a position for activity according to the whim of the moment. It is desirable, therefore, to provide them with places in which it is perfectly natural to sit in a chair, kneel on the floor, or sprawl out comfortable wherever they wish." – Hiromi Fujii, Japan Architect 1976: 54

"In my opinion, meaning arises between an object and the human being perceiving it only in connection with the relation between the object and the perceiver. In other words, meaning is the relation and not the nature of the perceived object itself. For instance, a thing may be good for me and bad for another person." – Hiromi Fujii, GA Houses 4: 138

"The house especially gives us access to the architectural experiences. The house is a possibility open to all men." – Hiromi Fujii, GA Houses 4: 146

"Relations between the self and objects are the form of meaning. And, then this happens, the self and the object exist together." – Hiromi Fujii, The Japan Architect 8011/12: 25

"According to Eisenman, if two planar elements are lined up facing each other, a person passing between them experiences subconscious psychological oppression and tension." – Hiromi Fujii, The Japan Architect 8011/12: 18

"Column spacings and the general constitution of horizontal and vertical lines are the emblems of our temporality – the column spacings of a Japanese temple correspond to the beating of our heart." – Hiromi Fujii, GA Houses. 4 1970: 148

"Anger, enthusiasm, frustration, love, everything that takes us out of ourselves has the same liberating virtue as architecture. Architecture is a man and something more. Man is architecture and something more. – Hiromi Fujii, GA Houses 4: 147

"The reality of architecture consists in being something indivisible, inseparable from man, that is you and me. The new Japanese architecture is indicative, emotive, and representative. – Hiromi Fujii, GA Houses 4: 147

"I am convinced that mental repose and spiritual qualities are uppermost in the nature of a home. The presence of spaces that generate such repose is of the greatest important." - Tadao Ando, The Japan Architect 8400: 43

"Zones for mental and spiritual peace should be placed centrally in a house (...) The light courts, or gardens become mental supports for the dwellers since the daily activities that take place in them cannot be widely dispersed" - Tadao Ando, The Japan Architect 8400: 43

"My image of the concrete floor derives from the pounded-earth floors of traditional Japanese dwellings and townhouses, which always inspire a lively awareness of all the living that takes place in the spaces." - Tadao Ando, The Japan Architect 8400: 44

"People who actually live in the kind of spaces I produce come to understand that it is actually much less uncomfortable. Manipulation of inflowing light in relation to spatial volume simultaneously creates warmth and provides support from the physical standpoint."

- Tadao Ando, The Japan Architect 8400: 44

"Ludwig Wittgenstein, who rejected ornamental architecture, influenced me in this field; Adolf Loos influenced me in relation to the emotions; and finally, Gustav Klimt a painter who stood at the very peak at the beginning of this century, exerted an influence on me."

- Tadao Ando, The Japan Architect 7806: 82

"Wittgenstein's relation with architecture, as is well known, had a therapeutic effect on the psychological disturbance from which he suffered. It cannot, therefore, be called a normal design operation." - Tadao Ando on Ludwig Wittgenstein, The Japan Architect 7806: 82

"Our work is not the monumental, sculpturesque kind to be set on a high hill. We are attempting to produce architecture related to actual, fluid human life with its whirlpool of desires and emotions." - Tadao Ando, The Japan Architect 7806: 74

"These things are beautiful because they are part of an architecture deeply related to human life, from which they have developed inevitably. All architects must remember the importance of this kind of thing." - Tadao Ando, The Japan Architect 7806: 75

"Nonetheless, stripping architecture of decoration and allowing it to speak for itself against a philosophical background indicates an accurate representation of the universe." - Tadao Ando, The Japan Architect 7806: 82

"Over a fairly long period of such endeavors, I came to be able to hear the call of wood; that is, the voice of the strength latent in the very material. This in turn enabled me to perceive the abundant life in such other architectural materials as stone and concrete and to hear the breathing of the very earth itself." - Tadao Ando, The Japan Architect 7806: 74

"Though he greatly simplified materials, he produces a human scale, by means of symbolization of the way of life of the inhabitants." - Mayumi Miyawaki on Tadao Ando, The Japan Architect 7806: 75

"Inevitably there must be direct connections between the inner lives of the human beings and the space that is the basis of the concrete acts of their everyday lives." - Tadao Ando, The Japan Architect 7806: 76

"Since the scale of the house is limited to one in which the human hand can reach all things, residential architecture and all of the things composing it come in contact with human skin." - Tadao Ando, The Japan Architect 7806: 76

"Since the house is an internalization of the multiplicity of human activities it includes problems crossing all aspects of the architectural field. Study of the residence is therefore indispensable to a study of human activities and their loci." - Tadao Ando, The Japan Architect 7806: 76

"I hope that spaces of this kind will root themselves deeply in the fundamental base of human life and will envelope humanity in all of its multifariousness. I further hope that such spaces will be sublimated into something that has a dramatically simulating effect on the people who live in them. The true merits of these spaces will be impossible to reflect accurately in photographs." - Tadao Ando, The Japan Architect 7806: 77

"They make inhabitants aware of the changes of the seasons by reflecting variations in natural lighting and ventilation. And, in these ways, they directly stir the minds of all people who come into contact with them." - Tadao Ando, The Japan Architect 7806: 77

"My primary reason for using a slanting wall was not to produce emotional effect, but to establish a relationship between the spaces on the front and back of that wall. Human beings perceive this relationship when they pass through the doors in the slanting wall or when they see light falling on the wall from above. I intend to pay greater attention to this kind of relationship among things in my future work." - Hiroyuki Asai, The Japan Architect, 1972: 103

"The amount of light is so controlled that at no time the entirety of the space is revealed. It is a completely different world from the upper two floors. Each of three floors represents different kinds of spatial qualities dictated by natural light coming from above, and this is what makes the interior of this house complex and interesting." - Jiro Murofushi, GA Houses 8: 66

"The structure and the occupants appear quite autonomous in this house." - Jiro Murofushi, GA Houses 8: 66

"The triangles, large in scale and layered through space, lend a complexity and surprising degree of fantasy to this structure built for housing the ordinary activities of daily life." - Jiro Murofushi, GA Houses 14: 136

"It is only high enough for a human being to stand upright." - Jiro Murofushi, The Japan Architect 8211/12: 31

"A dramatic variety of views is made evident as one passes from the entrance to the interior and images suddenly appear and disappear in characteristic Japanese fashion." - Atsushi Kitagawara, GA Houses 14: 294

"The architect sees this field as free space capable of being returned to the condition of nothing but scattered posts - a clean slate for inhabitants to develop as they choose." (...) And isn't the home the best place to express one's freedom of choice?" - Shoei Yoh, GA Houses 14: 30

"The most dramatic silent performance we can see in a space enclosed by this skin is the daily transition of light. Through the cross of light, one is able to see the flowing clouds in the blue sky, heavy raindrops falling, and the rays of a golden sunset, allowing us to appreciate the beauty of nature at all times." - Shoei Yoh, The Japan Architect 8608: 41

"Japanese culture, of course, includes formal and artistic traditions that are visible to the eye, but it places even more emphasis on ones that are intangible. These include aesthetic consciousness, lifestyle, and philosophy." - Shoei Yoh, In Response to Natural Phenomena: 10

"The framework and its equipment system provide neutral system for the dwelling, whose walls seem to breathe and to open and close their eyes to relate to the natural setting. The space is universal and homogeneous and is functionally determined by the kind of furniture to put in it. A table makes it a dining room; a bed makes it a bedroom." - Shoei Yoh, The Japan Architect 8310: 59.

"I take architecture as being a third skin enclosing an individual's body confronting the elements of nature. sensing the external temperature, we automatically control our body temperature by opening and closing the pores of our skin. In the case of extreme climatic conditions, we put on or take off clothing, which can be thought of as a second skin." - Shoei Yoh, The Japan Architect 8608: 41

"We control the interior climate such as temperature, humidity, and light through this third skin of enclosure with devices used for ventilation, insulation and lighting control. These functions are to be fulfilled by the enclosure. the most dramatic silent performance we can see in a space enclosed by this skin is the daily transition of light." - Shoei Yoh, The Japan Architect 8608: 41

"An invisible space is one that does not become visible until an observer consciously thinks about it. The creation of space is left to those who experience it." - Takefumi Aida, Buildings and Projects: 76

"The more perfected the piece of architecture, the more profound the changes in its materials and forms from morning to evening." - Takefumi Aida, Buildings and Projects: 46

"A fireplace stands in the middle of the house. Just as the tokonoma alcove is the symbol of a tea-ceremony room, the fireplace is the symbol of the daily activity spaces. It is the external symbol of the center of this house." - Takefumi Aida, Buildings and Projects: 34

"Aida blocks are intended to be an aid to understanding and composing architectural spaces. They can be used seriously or playfully. Considering the shapes, one might wonder what sort of forms could be created with them; one experiences feelings of both anticipation and uncertainty - as if opening pandora's box." - Takefumi Aida, Buildings and Projects: 2

"The space, shape and significance of this path are bound to remain silent, invisible, and inaccessible until the visitor embarks on the journey of experience and contemplation and, by so doing, partakes in their evocation." - Takefumi Aida, Buildings and Projects, xviii

"Aida became involved in the definition of entities or elements wherein the "uncertainty" of spatial and formal expression could prompt the viewer to be more actively engaged with architecture." - Takefumi Aida, Buildings and Projects: ix

"An artist's house in Kunitachi, and to some extent the nirvana house and annihilation house (1972), are representatives of what aida calls the 'space of encounters' (...) "the very space I have been seeking is one born of a meeting between varying threads, one that produces an exalted tension as a result of that meeting. one may say that Aida's "spaces of encounters" are spaces without their ordinary or normal credentials spaces that necessitate repeated interpretation. by doing so, they acquire a phenomenological rather than objective dimension."

- Takefumi Aida, Buildings and Projects: ix

"Silent spaces are not seen with the eye' they are felt with the heart." - Takefumi Aida, Buildings and Projects: ix

"The answer seems to point in the direction of a paradoxically "negative" or in-between realm that curiously not only divides but, perhaps more so, connects opposite phenomena. It goes without saying that at its core, such a realm very closely approximates the notions of void (mu) and absence (ma), the central theses of traditional Japanese thought and culture." - Takefumi Aida, Buildings and Projects: vii

"An invisible space does not become visible unless it is consciously experienced and contemplated. The creation of space [thus should be], in a sense, entrusted to others; [the users and observers]." - Takefumi Aida , Buildings and Projects: v

"The intention was to make concrete a human, weightless material by reducing the sections of the columns and beams as much as possible." - Toru Murakami, The Japan Architect 8705: 59

"(...) This is perhaps because my sensitivity has been dulled by ten years of designing, or perhaps I have collapsed into the frigid listlessness of the contemporary architectural world." – Toyo Ito, An Anatomy of Influence: 97

"On one hand, he has the highest respect for principles of traditional Japanese architecture; on the other; he seeks new ways to create an appropriate architectural environment for contemporary people." - Toyo Ito, Blurring Architecture: 21

"The visitor is received with the warmth of Japanese hospitality in spite of the calculated use of cool technical materials. This hospitality could well be understood as the most fundamental feature of Ito's architecture." - Toyo Ito, Blurring Architecture: 2

"Lacking a visual end point, the space suggests movement: it is not a living room, but a living corridor." – Olivier Thill on Toyo Ito's White U, San Rocco Magazine 'Innocence': 8

"Our homes are the only places in which we can breathe safely away from the tensions of a city like Tokyo. but the panting and body heat of the people of the city lower like a dark cloud over our homes and sometimes manage to seep inside." – Toyo Ito, The Japan Architect 1976: 68

"The following are the two most important reasons for my deciding to dismantle a space that has already been built. the first reason has to do with spatial images on the part of the person experiencing them. As I have said, the image we get of a city is a collage of fragmented experiences. this suggests that the meaning space of a piece of architecture too should allow the viewer to create a similar collage of experiences." – Toyo Ito, The Japan Architect 7712: 36

"In both cases, the smooth simple furnishings eliminate a sense of human warmth and daily living. But in the apparently chilly objects there are what might be termed abstract fissures that symbolize the warm blood." – Toyo Ito, The Japan Architect 1976: 68

"The owner of the house related some of his experiences with the staircase and its black walls. While the house was still in construction, he climbed to the top of the freshly painted stairwell and experienced an illusion giving him the sensation of having his body thrust into the outside world (the city)." – Toyo Ito, The Japan Architect 1976: 68

"The human being stands at the centre of Toyo Ito's architecture. Form and function of his buildings strive to serve the individual person, family or group." – Toyo Ito, Blurring Architecture: 6

"A second significant shift in Ito's interests, from the contemporary urban environment to the embodied experience of its inhabitants" – Thomas Daniell on Toyo Ito, Anatomy of Influence: 114

"I have expressed a dual personality in a house that must be one thing for society on the outside and another for the inhabitants on the inside." - Toyokazu Watanabe, The Japan Architect 8211/12: 66

"Probably, the house cannot come to life in the truest sense without the owner" - Yasufumi Kijima, The Japan Architect 1972: 108

"The character of the 'return house' derives from the architect's notion that a house should not merely function as a vessel for the daily routine of living but should also contain certain superfluous elements that are devoted to formalizing memories." - Yasufumi Kijima, GA Houses 14: 94

"I believe that we architects, who are expected to be keenly aware of the condition of human life, should never neglect this fact." - Yasumitsu Matsunaga, The Japan Guide by Botond Bognard: 169

"(...) Steiner's experience in Herzog's movie about the solitude and ecstasy of jumping, that I have been longing to fly architecture in the sky." - Yasumitsu Matsunaga, The New Japanese Architecture, 1990: 169

"The outer skin- or shell- of a residence is the boundary between the forces of the interior. Establishing that boundary, one of the basic conditions of architecture, reveals the architect's interpretation of the land on which the building stands." - Yuzuru Tominaga, Japan Architect 208: 88

"The stairwell and hall in the centre separate the spaces on either side, introduce natural illumination by means of a glass-block skylight, and add an element of the extraordinary to the spatial composition." - Kunihiko Hayakawa, The Japan Architect 7904: 66

"Subtle deformations of parts in assemblies of fixed forms evoke emotional reactions. In other words, in the architectural vocabulary, gaps between the inevitable and the accidental give birth to emotional elements." - Kunihiko Hayakawa, The Japan Architect 7904: 66

"The unresidential scale of the deformed wall and the irregular curves of the bridge are accidental elements working subtle changes in the everyday spaces on both sides of the hall." - Kunihiko Hayakawa, The Japan Architect 7904: 66

"The curved glass-block wall around the small study too is a subtle irregularity that may stimulate the inhabitants of the house to new thoughts and experiences." – Kunihiko Hayakawa, The Japan Architect 7904: 66

"The atrium gives a rhythm to the space and amplifies a sense of family-like solidarity. It joins the downstairs and upstairs, flows into the upper room on the south and provides harmony to the entire composition. In the space held tenderly by the vaulted roof, one feels familial warmth." – Ichiyo Uta, *The Japan Architect* 8905: 43

"The architects wanted to create a relaxed, warm, and friendly place for the unspecified numbers and kinds of people who will use the lodges. In short, their hope can be stated a desire for a fluid form and for a mood approaching that of a rural village." – Kazuhiro Ishii, *The Japan Architect* 7803: 78

"The demand for a serene and comfortable environment made us reflect on the quality of space such as in a passage, where people's movement can halt like at a railway station platform." – Kazuyo Sejima, *El Croquis N. 77* Kazuyo Sejima: 30

"The afternoon sun touches the second floor first, extending little by little until it reaches the entrance hall ceiling. As dusk falls and lights must be turned on, the white entrance is painted scarlet." – Yutaka Saito, *Yutaka Saito Architect*: 186

"This is the world of fantastic voyage." – Yutaka Saito, *SD III* 9208: 175

"In this house, each time you move from one space to another there is a contrast: between closed and open, dark, and light, low, and high ceilings, sense of embrace and release, black and white. Rhythms in space generated by these contrasts unfold along the long wall (...)" – Yutaka Saito, *SD III* 9208: 175

"One feels as if he were looking up at the bottom of a capsized ship like a hero in the 'Poseidon adventure' but at a greater magnification and feeling very small. The atmosphere here implies affinity rather than threats." – Yutaka Saito, *SD III* 9208: 175

"The feeling is intensified as one climbs up the spiral stairs encased in a cylindrical wall. One feels as if he had been metamorphosed into a drop of water sucked through a trachea of a magnoliophyta plant." – Yutaka Saito, *SD III* 9208: 175

"One may feel as if he were an insect crawling on the veins of a leaf when one springs up into the room upstairs where distortion is intensified the texture of the space is expanded to reveal cells (this may be attributable to the fact that the wall and ceiling are finished in wooden lath)." – Yutaka Saito, *SD III* 9208: 175

"It is a house like a picture scroll, where there is a continuity throughout the various spaces, yet with each one unfolding in a smooth flow drawing you from your memory and are women into a story. To express this quality, I used a number of different materials, modules, and colors, and combined them in such a manner as to enhance the depth of expression (...) in a picture scroll, views of clouds, mist, and hills in the distance are inserted to mark the transition from one scene to another. In this house, the u-shaped staircase, with its gentle curve, provides delicate shifts in the high-density space." – Yutaka Saito, SD III 9208:175

"The space in the house is completely encased in a single cone and a cylinder. Resisting the temptation to carry the shape throughout the house, the architect intentionally inserted independently formed corners and alcoves. the efforts to achieve an effect that no matter where one goes, one always feels as if one were resting in a great comfortable chair. The architect is fortunate s the attitude of the owner toward life is congenial to his own philosophy. the fact that they brought into the house only two pieces of furniture demonstrates it." – Yutaka Saito, SD III 9208: 164

"You feel as if you are in a maze, swimming inside a complex of variously shaped bags sewn together, and the labyrinthian quality intensifies as one moves up and down the cylinder-encased spiral staircase." – Yutaka Saito, SD III 9208: 175

"The sense of the body in urban life retreats deep into the inner layers of the nervous system, leaving one feeling as small but as free as a squirrel in the midst of nature." – Yutaka Saito, SD III 9208: 175

"After all, the scale and propositions are invariably adjusted to human dimensions. Abstract form and tangible reality - Ogawa's works are jointly inhabited by these two antagonistic elements. The resulting impression is miraculous; the senses, at first restricted by their formal stringency, are suddenly released, when one settles down in the interior. This incongruity of physical sensation and consciousness probably constitutes Ogawa's very own rhetoric." – On Shinichi Ogawa, Lotus 81: 29

"The clients, an Osaka photographer and his wife, a sculptor who concentrates exclusively on the human face, are the kind of people who are always able to create around themselves a lively atmosphere of hospitality and friendship." – Takamitsu Azuma, The Japan Architect: 169

"The use of varied floor levels, high ceilings, bridge, and arches softens the spatial mood and contributes to the creation of areas where flexible human relations are possible." – Takamitsu Azuma, The Japan Architect: 169

"Walls protect our vulnerable lives from evil forces. walls should express the utmost indifference. Such indifferent walls are more gentle to the inhabitants' lives." – Makoto Nozawa, The Japan Architect 8808: 54

"The parts laid out in such configurations are given their own rights and means of expression through their unique forms and the characteristics of their materials. The interplay of such independent parts produces noise in a metaphorically mixed balance. The produced noise is bound to echo human life." – Makoto Nozawa, The Japan Architect 8808: 54

"The indeterminate factors which recur through the house are 'noise', the resonance of the city." – Keiichi Irie, The Japan Architect 8608: 84

"The shape has no special meaning. inside the house there are rooms evoking cave-like, bubble-like, primitive spaces, and very intimate rooms just to sleep in. The walls having lost their thickness seem to be floating around the spaces. The furniture appears to belong to the different places they inhabit. The monologue of the first moment becomes a dialogue between the pieces of furniture even before the owner climbs up the stairs to inhabit this house." – Keiichi Irie, The Japan Architect 8408: 46

"The same person changes according to conditions and time: sometimes he will want darkness and sometimes light; sometimes he will wish to be active in a spacious room and sometimes will want to sit in quiet thought in a small zone. In other words, the requirements to be made of a house are multifarious. I never attempt to bring order to them on the basis of alternatives or arithmetical means but always allow them all to coexist." – Tsutomu Abe, The Japan Architect 8511/12: 88

"Concrete surrounding walls connecting with the basement and a wooden roof structure connected with the attic spaces inspire a sense of psychological security." – Tsutomu Abe, The Japan Architect 8511/12: 88

"One of the requirements by the client, a doctor, who is a good American country Western music player and loves country life was to design the house with an American barn style as a symbol of his simple life. Obviously, the site is not large enough to enjoy country life but big enough to express his philosophy and to enjoy urban life in Tokyo." – Noriyuki Yasuyama, The Japan Architect 8608: 34

"Surrounded by a forest which continuously changes its character, from a springtime of fresh green leaves to an autumn of many hues, to a start patterning of winter branches" –Norihiko Dan, The Japan Architect 8607: 43

"It is such dualities that give play to the elements of the Morii house, the juxtaposition of structure and opening, structure and movement, enclosure and exposure (...) the house both quietly frames and actively draws in the vibrant scenery."
–Norihiko Dan, The Japan Architect 8607: 43

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List of Figures

Fig. 1: Le Corbusier's Modulor Man, adapted from "Anthropomorphism Towards a Social History of Proportion in Architecture", Frank Zöllner, University of Leipzig

Fig. 2: Romanesco Broccoli, adapted from OpenCloset. "Romanesco Broccoli Transparent Png - Exotic Vegetable, Free Transparent Clipart - ClipartKey." [clipartkey.com](https://www.clipartkey.com/view/ihiiRi_romanesco-broccoli-transparent-png-exotic-vegetable/). Accessed March 21, 2021. https://www.clipartkey.com/view/ihiiRi_romanesco-broccoli-transparent-png-exotic-vegetable/.

Fig. 3: Golden Ratio Hair, adapted from Tayag, Yasmin. "'Stranger Things' Steve's Hair Can Be Explained with Ancient Math." Inverse. Inverse, December 1, 2017. <https://www.inverse.com/article/38936-stranger-things-steve-joe-keery-hair-fibonacci>.

Fig. 4: Da Vinci Study of Head and Eyes, adapted from "Study On The Proportions Of Head And Eyes by Leonardo Da Vinci: Oil Painting." by Leonardo Da Vinci | Oil Painting. Accessed March 21, 2021. <https://www.leonardoda-vinci.org/Study-On-The-Proportions-Of-Head-And-Eyes.html>.

Fig. 5: Vitruvius Man, adapted from FAVPNG.com. "Vitruvian Man Architecture Sacred Geometry Art - PNG - Download Free." FAVPNG.com. Accessed March 21, 2021. https://favpng.com/png_view/design-vitruvian-man-architecture-sacred-geometry-art-png/wn53DJHE.

Fig. 6: Perspective of Il Duomo in Florence, adapted from "Brunelleschi's Perspective." Accessed March 21, 2021. http://cs.brown.edu/stc/summer/viewing_history/viewing_history_7.html.

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Fig. 7: Richard Serra Sculpture, adapted from 'Lift' by Richard Serra, Serra, Richard. "Richard Serra. To Lift. 1967: MoMA." The Museum of Modern Art. Accessed March 21, 2021. <https://www.moma.org/collection/works/101902?clas>

Fig. 8: House as a teapot, adapted from a photograph taken by Alexia Harvey

Fig. 9: Alexia's House, adapted from "Alexia Jade Harvey. Alexia'sHouse", collage, 2001(personalwork).

Fig. 10: Parts of the House, adapted from "Discover All Coloring Page," discover all coloring page, accessed April 10, 2021, <https://hiddendoor.org/>.

Fig. 11: Human Image on Memory Locus, adapted from "Abracadabra: Language, Memory, Representation." Anthropology 375: Abracadabra. Accessed April 16, 2021. <https://kelty.org/or/classes/375/lectures/renmemory0205.html>.

Fig. 12: Sketch of Lavender fields, adapted from " Adobe Stock. Accessed April 10, 2021. <https://stock.adobe.com/ca/search?k=lavender%2Bfield%2Bvector>.

Fig. 13: Alice in a Wonderland, adapted from "Stuck in White Rabbit's House Finished Painting (Alice in Wonderland)." whiterabbitart.net, January 1, 1970. <http://whiterabbitart.blogspot.com/2010/03/stuck-in-white-rabbits-house-finished.html>.

Fig. 14: Personal Bubble Sketch, adapted from "Bubble Shield' Is an Inflatable Personal Environment Imagined by Designlibero." designboom, May 24, 2020. <https://www.designboom.com/design/bubble-shield-is-an-inflatable-personal-environment-imagined-by-designlibero/>.

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Fig. 15: Platonic Volumes, adapted from Garant, C.G. Design Metaphysics: The Platonic Solids, January 1, 1970. <https://designconsciousness.blogspot.com/2012/05/design-metaphysics-platonic-solids.html>.

Fig. 16: Sculpture by Erwin Wurm, Snow (chaise longue), adapted from "Erwin Wurm and the Profanity of the Object in Paris." CFile, February 24, 2016. <https://cfileonline.org/exhibitions-erwin-wurm-contemporary-ceramic-art/>.

Fig. 17: Fire, adapted from "Lohri Png - Flame Png Transparent - Happy Lohri Png, Hd Wallpapers ..." PNGio. Accessed March 21, 2021. <https://pngio.com/images/png-a1547576.html>.

Fig. 18: Casa Battló, Fireplace designed by Gaudí, adapted from "A Casa Batlló: 30 Fatos Curiosos Da Sua Construção." arteref, May 13, 2020. <https://arteref.com/arte-no-mundo/a-casa-batllo-30-fatos-curiosos-da-sua-construcao/>.

Fig. 19: Painting by Pierre Bonnard, Bath, adapted from Tate. "The Bath", Pierre Bonnard, 1925." Tate, January 1, 1970. <https://www.tate.org.uk/art/artworks/bonnard-the-bath-n04495>.

Fig. 20: Sculpture by Erwin Wurm, Fat House, adapted from "Obese House à Vienne, Une Oeuvre Du Sculpteur Autrichien Erwin Wurm." Journal du Design, August 10, 2017. <http://www.journal-du-design.fr/art/obese-house-vienne-une-oeuvre-du-sculpteur-autrichien-erwin-wurm-94305/>.

Fig. 21: Artwork by Louise Bourgeois, Femme Maison,

adapted from Bourgeois, Louise. "Louise Bourgeois. Femme Maison. 1984: MoMA." The Museum of Modern Art. Accessed March 21, 2021. <https://www.moma.org/collection/works/69626>.

Fig. 22: Artwork by Birgit Jürgenssen, Women's House, Birgit Jürgenssen, Hausfrauen – Küchenschürze (Housewives' Kitchen) Apron, 1975/2003 Tirage argentique noir & blanc 45,5 x 72 cm © Estate Birgit Jürgenssen / Bildrecht, Vienna Courtesy of Galerie Hubert Winter, Vienna

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Fig. 25: Transat Chair by Eileen Gray, adapted from "Eileen Gray Transat Chair in Black Leather Black Lacquer by Ecart, circa 2000." at 1stdibs. Accessed March 21, 2021. https://www.1stdibs.com/furniture/seating/lounge-chairs/eileen-gray-transat-chair-black-leather-black-lacquer-ecart-circa-2000/id-f_17777752/.

Fig. 26: Sketch by Eileen Gray, adapted from "Eileen Gray: The Private Painter." ArchDaily, July 29, 2015. <https://www.archdaily.com/770895/eileen-gray-the-private-painter>.

Fig. 27: Open Floor Plan Cartoon, adapted from "Cartoons." Apartments i Like blog. Accessed March 21, 2021. <https://apartmentsilike.wordpress.com/tag/cartoons/>.

Fig. 28: Furnished Apartment Cartoon, adapted from "At Last We Own Our Own Apartment. I Feel like a King." - New Yorker Cartoon' Premium Giclee Print - Robert Weber." art.com. Accessed March 21, 2021. <https://www.art.com/products/p15064540078-sa-i6867143/robert-weber-at-last-we-own-our-own-apartment-i-feel-like-a-king-new-yorker-cartoon.htm>.

Fig. 29: Man with a House Shaped Hat, adapted from Milliyet.com.tr. "İnternetten Seçkiler - 156." Milliyet. Milliyet, April 1, 2010. <https://www.milliyet.com.tr/galeri/internetten-seckiler-156-37386/3>.

Fig. 30: People with Heads as Houses, adapted from "Growing Up." girl in the hat. Accessed April 16, 2021. <https://thegirlinthehat.wordpress.com/tag/growing-up/>.

Fig. 31: Hermit Crab, adapted from Imgur. "Artist Aki Inomata Creates Small 3D Printed Homes." Imgur. Accessed March 21, 2021. <https://imgur.com/a/EGiEo>.