

# SHELF LIFE: A NEW DOMESTIC LANDSCAPE

by

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## AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.



## ABSTRACT

*Shelf Life* is a study of the domestic landscape, an investigation of domesticity -- a field that is universally relatable. It is the study of everyday life, in the most personal place to all of us: our homes.

Recorded here is a new domestic object -- an object that falls in the gray zone between furniture and architecture, a chameleon that performs both functions, an object for living with, and simultaneously an object for living in, an object that I needed, but did not have, and could not buy.

A catalogue of domestic objects and architecture provides a commentary for the role of design within the domestic landscape, a sample of designs for the domestic realm, selected for their characteristics of flexibility, utility, and the quality of joy they provide.

*Shelf Life* offers observations of the contemporary domestic landscape and the sociocultural climate surrounding the production of objects and architecture for living with, and living in.

*Shelf Life* outlines a manifesto illustrating the possibilities and intentions for inhabiting *Shelf Life's* new domestic landscape. Referring to the Museum of Modern Art's 1972 exhibition, *Italy: The New Domestic Landscape*, the manifesto uses design as a commentary on current and future domestic daily rituals.

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## PREFACE

I am organizing my thesis. I have gathered all of the pieces, and I am shuffling and re-arranging them, searching for a way to connect the parts.

It is a challenging task. Each piece is a different facet of the investigation, and each is in a different format, carried out in a different way. The collection is vast, and the media are many. I have explored the contemporary domestic landscape, making observations of our daily rituals and routines, and I am able to outline certain needs of domestic space. I have learned techniques in fabrication, and have produced a full-scale domestic object to live with, and live in. I have familiarized myself with prominent designers of the domestic landscape, amassing anecdotes and insightful quotations. I have diligently recorded the process, collecting fragments of research in bits and pieces.

This process was not linear. It followed a rhizomatic pattern without a clear destination. The origins may be traced back to an initial interest in the domestic landscape, coupled with a steadfast desire to produce a tangible product, something real.

There were many false starts and misguided adventures that did not make it into this book. I tinkered with several ideas,

leaving a scattered trail of evidence collected in notebooks, folders of scanned images, and pages of sketches. For months I hid in the library, escaped for long walks, and produced abstracts and project goals. As my peers continued their focused studies, I must have seemed crazy, with my various proposals. I was going to make a collection of tools for living across Canada. I was going to walk across Canada. I was going to build a raft. I was going to build a dwelling I could carry on my back. I was going to make a guide to secret spaces. I was going to make a portable chair. Whatever it was, I was going to leave my desk, go beyond the limits of my computer, and make something with my own hands. I like to think these endeavours were useful, and that the time spent making checklists of tasks, project outlines, and serious plans were warranted, if only in a trace of thought.

Through two chance occasions, this book found clear direction. I moved into an empty loft with two other roommates, and no individual rooms. I acquired a catalogue from a 1972 Museum of Modern Art exhibition concerning the production of interior, compact, modular, and portable domestic landscapes. By chance I found both a site and purpose for a project, and a precedent for the significance it could hold.

The act of design is grounded in the world that surrounds it. It is a reaction to previous endeavours similar in nature, a reaction to markets, to aspects of production, and to cultural and demographic conditions. That is to say, design is a reflection of the contemporary society at large, manifested in a tangible product.

This thesis records the process of balancing the action of design, and the reaction to the world of design that surrounds it. A small piece of architecture is realized to address a specific need for something that I did not have, and could not buy.

The book is modular in nature, composed of individual parts, grouped together as a whole. Each part can be read individually, and in any sequence. I have connected the dots as best I can, hoping to frame a story of the process.

## PART 1: THE CONTEMPORARY DOMESTIC LANDSCAPE

The following outlines current conditions of the domestic landscape, providing a context for designing objects and architecture in the domestic realm.





Personalized interiors of identical capsules in the Nagakin Capsule Tower in Tokyo, Japan. Photographs by Noritaka Minami.



Personalized interiors of identical apartments inside a typical residential tower block in Bucharest, Romania. Photographs by Bogdan Girbovan.

**Figure 1.** Context | Nagakin Capsule Tower Interior 1  
**Figure 2.** Context | Nagakin Capsule Tower Interior 2  
**Figure 3.** Context | Nagakin Capsule Tower Interior 3  
**Figure 4.** Context | Nagakin Capsule Tower Interior 4

**Figure 5.** Context | Bucharest Apartment Interior 1  
**Figure 6.** Context | Bucharest Apartment Interior 2  
**Figure 7.** Context | Bucharest Apartment Interior 3  
**Figure 8.** Context | Bucharest Apartment Interior 4

The interior is a powerful marker of who we are and what we want to be; ‘lifestyle’ in other words. Political ideology, social norms and psychology all get played out on the inside. The interior relates intimately to the society we live in, and it’s up to us to understand this dynamic, provoke it.<sup>1</sup>

*Arjen Oosterman, Editor, Volume Magazine*

The domestic landscape shares a panoply of particulars about us as individuals, and collectively as a society. It is a highly personal world, where activities of daily life take place. In its simplest form, it is the space to which we return daily for sleeping, the most basic human need. In the domestic landscape we have the highest degree of personal control over our spatial surroundings. The spatial conditions we live in, and the activities we conduct within the domestic landscape are dictated by contemporary sociocultural conditions, manifested in the objects we live with, and the architecture we live in.

*Shelf Life* addresses four sociocultural conditions influencing the contemporary domestic landscape. Demographic patterns suggest alternative household compositions, requiring adaptations to existing built structures. Technological advancements in digital communication are adjusting notions of public and private space within the domestic realm, and allow for the proliferation of space-sharing solutions. Increased capabilities of mobility recalibrate temporal conditions, demanding methods of ephemeral dwelling. Economic pressures reduce the spatial limits of dwellings, demanding intelligent, fluid, and informal modes of living.

*Shelf Life* illustrates how objects and architecture

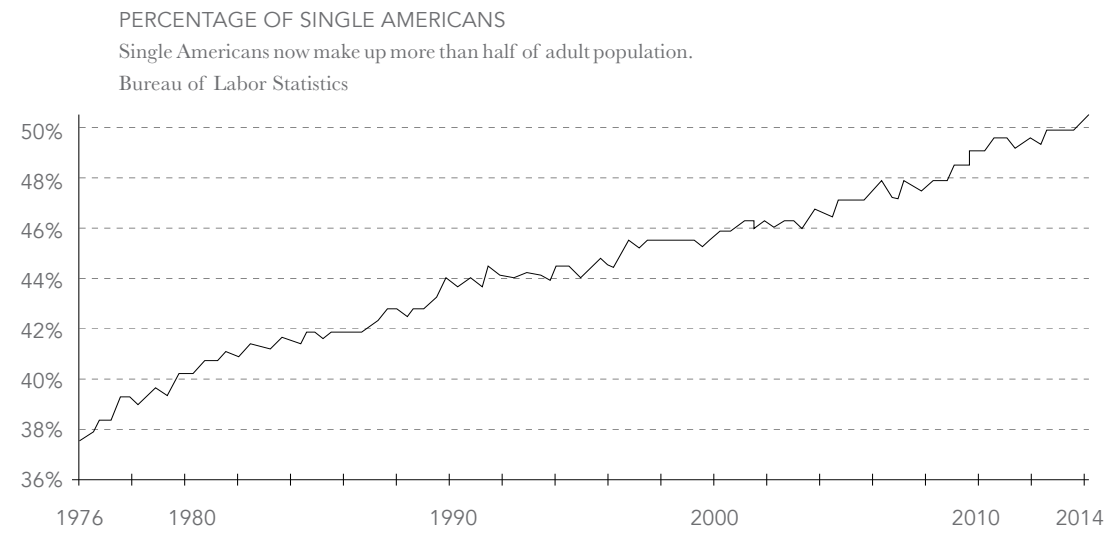
for the contemporary domestic landscape must be reduced in scale, must be autonomous from existing structures, and must be flexible in function. Mathias Schwartz-Clauss, curator of the Vitra Design Museum exhibition titled *Living in Motion, Design and Architecture for Flexible Dwelling*, supports this view with his research on the contemporary relevancy of flexible domestic landscapes:

1. Habitations offer protection and orientation[...] and give us a sense of inner stability. However, the ability of human beings to adapt to changing living conditions enables us to create a “home-like” environment wherever possible[...] Flexibility, mobility, and multi-functional usage seem to correspond to our need for stability, security, ownership and identity, converging into a holistic experience of living.

2. Flexible and mobile interiors may satisfy the desire for an unconstrained lifestyle in much the same way as our means of transportation, for they also facilitate changes in location: the movement from one place to another, or the transformation of one and the same place.

3. Habitational flexibility is a characteristic of modern society[...]The way we live is presently in a state of flux -- in motion. Designers, architects and manufacturers are responding to these changes by conceiving objects smaller, lighter in weight, mobile, or multi-functional.<sup>2</sup>

These characteristics are required for objects and architecture that are *sensible* for the contemporary



Nagakin Capsule Tower in Tokyo, Japan.  
Kisho Kurakawa, 1972.



“The capsule is intended to institute an entirely new family system centered on individuals [...] The housing unit based on a married couple will disintegrate.”<sup>3</sup>

-Kisho Kurakawa

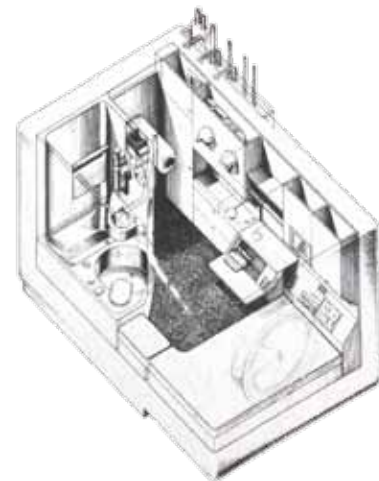


Figure 9. Context | American Singles Growth

Figure 10. Context | Nagakin Capsule Tower Exterior

Figure 11. Context | Nagakin Capsule Tower Illustration

domestic landscape, given the following sociocultural conditions.

Demographic patterns suggest alternative household compositions. The rise in single person households is occurring in major urban centres around the world. *Fortune* magazine explains this pattern,

the extraordinary rise of living alone is among the greatest social change since the baby boom. Until recently, no culture in human history has sustained large numbers of people in places of their own. Today more than 40% of households have just one occupant in cities such as Atlanta, Washington D.C., Denver, and St. Louis. In Manhattan, nearly 50% of households consist of a single occupant, a number that seems impossibly high until you discover that the rate is similar in London and Paris, and even higher - a staggering 60% - in Stockholm.<sup>4</sup>

The domestic landscape must increasingly scale to the individual, dictated by individual needs and tastes. This presents a model of dwelling occupancy that contradicts the existing bulk of physical building structures. Larger nuclear-family-style apartments, single-family dwellings, and industrial-era buildings find themselves dated. Since it is often more environmentally conscious and more economically feasible to renovate rather than re-build, existing structures are divided and subdivided into smaller spaces and units suiting the needs of individual occupants. The domestic landscape requires architecture and objects that are capable of adapting

to, or being inserted within existing structures, unfixed and flexible, with abilities to suit a variety of spatial conditions.

Advancements in digital communication are adjusting notions of public and private space within the domestic realm and allowing for the proliferation of space-sharing networks. We live in the information age, with the network society at large. We have abilities to connect to anyone, anywhere, and at any time without restriction. The domestic landscape is now a space where both public and private activities converge. Inara Nevskaya, an Amsterdam-based architect who studies the ‘soft-dimensions’ of spaces, or the dynamic qualities of space that are non-existent on architectural drawings, explains this condition:

Contemporary society is trying to break away from what is standard, in search of production forms that stand closer to the individual. With the appearance of network society, the threshold between the home, place of work, and transitory spaces is fading. The use of objects and functional units becomes ambiguous. The quest for a sustainable society requires a deeper consideration of how interiors of the city, the home or the work place can be used 24/7 and how to prepare them for reprogramming.<sup>5</sup>

We acquire domestic space in new ways. Technology allows us to connect with one another through social media applications, and purveys information and communication at the touch of our finger tips. We use it to locate our spaces of dwelling in close proximity to like-minded individuals, following

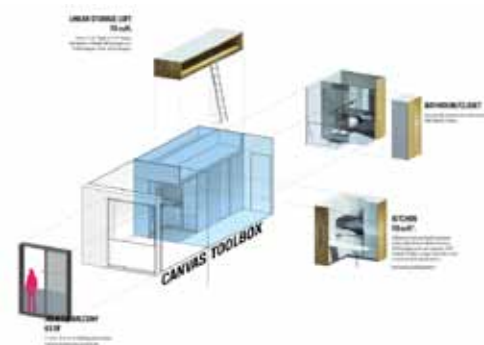




Micro-apartments in Seoul, South Korea. SsD Architecture + Urbanism, 2014.



Prefabricated micro-apartments in New York City. nArchitects, 2015.



- Figure 12. Context | Micro Apartment in Seoul Section
- Figure 13. Context | Micro Apartment in Seoul Exterior
- Figure 14. Context | Micro Apartment in New York City Exterior
- Figure 15. Context | Micro Apartment in New York City Unit

digital commentaries and visuals, and social media. Roommates can be found through digital communication and social media, and can be globally sourced. Likewise, domestic rental spaces are advertised via digital communication and social media. It no longer seems remotely strange to share private space. It is convenient. It is practical.

As such, space-sharing networks, such as Air BnB, have become increasingly prevalent.<sup>6</sup> Previously superfluous and private dwelling space may now be converted into rentable space, publicly shared, and digitally communicated. Space-sharing networks are global. They are mutually beneficial for both host and guest alike. Participants in these networks can rent, or rent out spaces for as long or as short as they wish, and can select spaces which suit their accommodation needs and preferences. Ideally a host can share space without interference in their own domestic life, and a guest may be accommodated without interference in their private affairs, analogous to what they would experience in a hotel accommodation. Domestic landscapes that provide opportunities for space-sharing with ease and comfort add value by providing capabilities to earn income on extra available space.

Increased mobility recalibrates temporal conditions, demanding methods of ephemeral living. We live in a global world. The domestic landscape is influenced by the growing numbers of people living in conditions where dwellings are not static, or are static for only short periods of time. Urban nomads move within and between cities and urban regions, relocating for convenience or for new experiences. Architecture and objects which compose domestic landscapes may address ephemeral methods of

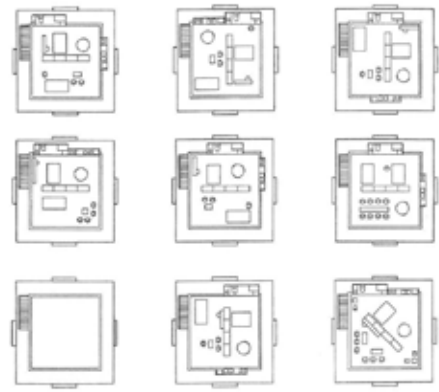
living designs suitable for quick construction, easy manipulation, and relocation.

Economic pressures increase the spatial limitations of dwellings, requiring fluid and informal modes of living. The domestic landscape is reducing in physical scale. Urban centres continue to experience growth, increasing housing demands with densification, thus reducing the footprint of available real estate. As prices for housing rise, new spatial forms provide solutions. The proliferation of ‘micro-apartments’<sup>7</sup>, and ‘student-style accommodation’<sup>8</sup> provide evidence. They refer to historical examples of micro-living within urban areas. The Nagakin Capsule Tower (1972), designed by Kisho Kurakawa, is an example where the private space for the individual is minimized within a compact living cell, outsourcing living amenities to the surrounding public city space<sup>9</sup>.

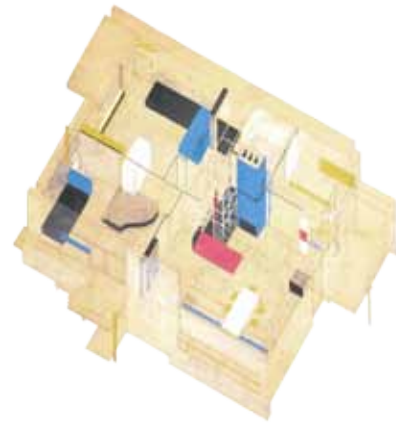
When formal options are not available, or not affordable, individuals invent informal solutions for living within expensive real estate markets. In 2016, San Francisco’s average monthly rental price for a one bedroom apartment was \$3,096.<sup>10</sup> Individuals are designing makeshift dwellings to combat the steep prices. One man is living in a self-built ‘sleeping pod’, with just enough space for a twin bed (he cannot stand in it), but with no apparent reduction in his quality of life<sup>11</sup> (except that he struggles to put on his clothing while unable to stand). He recognizes there is much surplus capacity available in many existing apartments and dwellings, but suggests that there are not attractive ways to subdivide space for inserting additional occupants<sup>12</sup>. Another individual in San Francisco has converted a 16’ truck into a mobile



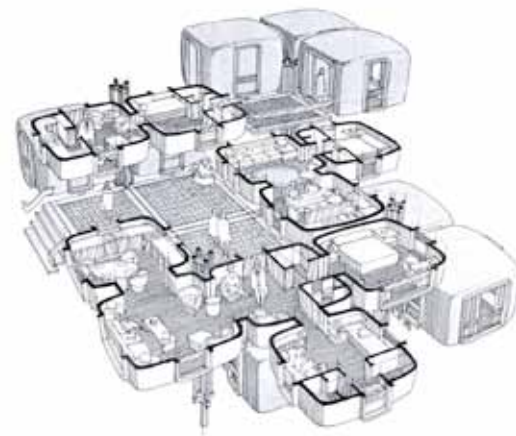
The Sky House has a neutral floor plan to accommodate a diverse range of activities.  
Kionaryi Kikutake, 1958.



The Rietveld-Schröder House uses sliding wall partitions to divide and open up spaces.  
Gerrit Rietveld and Truus Schröder, 1924.



The Tekkto System offers adaptable living space as modules are joined or separated from neighbouring units.  
Ernest J. Kump, 1970.



apartment, renting it out for \$600 a month. He calls it a 'BedEX' truck. It comes complete with a fold-out couch and a mini kitchen (running water is not provided, there is no bathroom), and is portable to allow for finding other living amenities within the city.<sup>13</sup>

Ingenious thinking for the design of domestic space can reduce the scale without reducing the quality of life inside. *Urban Living: Strategies for the Future* is a publication reporting the findings from an international ideas conference in search of creative architectural proposals for homes that suit a variety of urban situations.<sup>14</sup> *Urban Living: Strategies for the Future* outlines the research suggesting the need for adaptable domestic landscapes:

Living Spaces must be adaptable to changing needs over a long period of time. Only spaces that are flexible remain usable -- not only by way of sliding doors, but also with the modulation of spatial structures or through conversion. These are three different approaches:

1. *Neutrality*. Floor plans that can be used in many different ways or take on diverse uses.
2. *Variability*. Spatial changes to the structure of the interior spaces are pre-planned. Within the apartment, rooms can be divided or opened up.
3. *Flexibility*. The living space is increased or decreased by joining or dividing space.<sup>15</sup>

These are not new ideas. The Sky House (1958), designed by Kionaryi Kikutake, provides a good example of neutrality<sup>16</sup>. The majority of the dwelling

space is neutral. It has been adapted for a diverse range of activities and occupancies through time. The Rietveld-Schröder House (1924), designed by Gerrit Rietveld and Truus Schröder, addresses variability. With the use of sliding partitions (moveable, flexible walls) the space can be divided into individual rooms, opened up as a singular large room, or a combination of both, to suit the present activity and occupancy needs.<sup>17</sup> The Tekkto System (1970), designed by Ernest J. Kump, offers a concept of how living space may be increased or decreased by joining or dividing space. Dwelling units are assembled in modules, and can be joined to, or separated from, neighbouring units to extend or compact living spaces. Common spaces are created by surrounding clusters of joined modules.<sup>18</sup>

The architecture and objects of the domestic landscape must ensure the 'less but better' philosophy of Dieter Rams.<sup>19</sup> In doing so, space becomes increasingly more informal and fluid. No longer do we require a dining room to dine in, or a living room to lounge in. And no longer do we require that each be separate spaces. With the elimination of formal domestic spaces, we accept that space may be fluid, transitioning and adapting to various domestic activities depending on the situation at hand. Additionally, we no longer require that a dining table be used exclusively for dining, and a seating surface used only for relaxing. These must also be adaptable to the various activities conducted within the domestic landscape. IKEA, the world's largest furniture retailer<sup>20</sup> recognizes this need,

Furniture is going to have to evolve to keep pace

**Figure 16.** Context | Sky House Interior (p. 233)

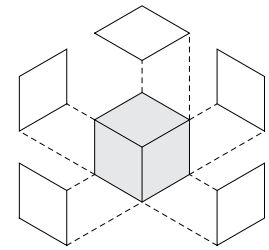
**Figure 17.** Context | Sky House Plan Configurations (p. 233)

**Figure 18.** Context | Rietveld-Schröder House Interior (p. 183)

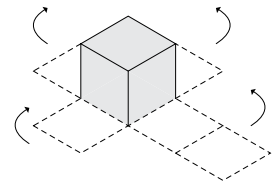
**Figure 19.** Context | Rietveld-Schröder House Illustration (p. 183)

**Figure 20.** Context | Tekkto System Model (p. 259)

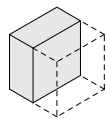
**Figure 21.** Context | Tekkto System Illustration (p. 259)



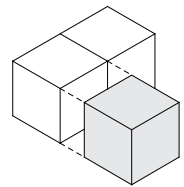
**1 ASSEMBLING + DISASSEMBLING**  
The architecture or object has a kit of parts which may be assembled or disassembled easily.



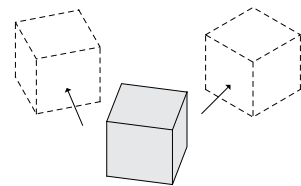
**2 FOLDING + UNFOLDING**  
Various parts, or the whole are folded out or away to reduce or expand the spatial volume.



**3 ADJUSTING**  
The architecture or object can easily be manipulated to change shape or configuration.



**4 COMBINING**  
Components or parts are attached to allow for various configurations and spatial volumes.



**5 TRANSPORTING**  
The architecture or object considers portability. It can be relocated easily.

Figure 22. Context | Modes of Flexibility

[with fluid rooms]. Take the sofa, [for example].

In the past, a sofa was the most important piece of furniture in the living room, and consequently the home. But that's already changing. The sofa isn't just for socializing anymore: people eat on their sofa, and in small apartments, they might even use it as their bed. As for pointing your sofa at a television, in a cord-cutting world, there's no need for that. We're already seeing a lot more people buying day beds instead of sofas. That's fluid home thinking.<sup>21</sup>

IKEA analyzes what individuals need, and anticipates how they will use it. They have found success by illustrating their research to consumers in full-scale show-room examples of domestic landscapes. They provide products with usages easy to understand (as shown in their catalogues and showrooms), easy to acquire (they are flat-packed and can be ordered online and delivered), and have retail outlets located across the globe. There is a growing ubiquity of IKEA products in the world. It is paramount that designers offer alternatives, as these products do not satisfy or sustain long term usage. They use cheaper materials, details, and manufacturing processes to ensure lower costs, and although designed with (relatively) easy assembly, are not easily disassembled and reassembled for relocation. They are thrown away when components break or an individual moves, rather than repaired or relocated with them. Better architecture and objects for the domestic landscape can address the needs of flexible usage and fluid modes of living with products emphasizing longevity and adaptability or relocation.

*Shelf Life* is an investigation of design within the contemporary domestic landscape. Architecture and objects for flexible dwelling offer logical solutions to address contemporary sociocultural conditions, categorized by Mathias Schwartz-Claus, according to their mode of flexibility. Such modes include assembling and disassembling, folding and unfolding, adjusting, combining, and transporting.<sup>22</sup> To achieve these characteristics of flexibility, many designs are component or module based, and are mobile in some dimension. Many combine modes for optimizing flexibility. Many find themselves as hybrids, in the grey zone between extra small architecture and extra large furniture. They are scaled to the individual, and are as flexible as furniture is to manipulate.

*Shelf Life* uses design as commentary to realize a product that is likewise hybrid in nature, with a foot in both furniture and architecture simultaneously. The design refers to the work of architects, designers, and inventors who have manifested similar positions cross-culturally and throughout history in a rich database of structures and systems for flexible domestic landscapes. This survey is collected in a catalogue. In addition, *Shelf Life* revisits the Museum of Modern Art exhibition, *Italy: The New Domestic Landscape* (1972), nearly forty-five years later, using it as a framework to posit a manifesto for a new domestic landscape for the future.



## NOTES: THE CONTEMPORARY DOMESTIC LANDSCAPE

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## PART 2: A DOMESTIC OBJECT

What follows is a record of process, tracing the action of building a room of one's own. It is illustrated with a notebook, and narrated with personal notes. Running parallel are pragmatic decisions propelling design from conception through completion, and a series of reflections, causing momentary pauses in the process.



# 1

On the last day of September, I slept in the room I built for myself, for the first time.

I had little experience in fabrication before undertaking this project. It took roughly four months from start to finish.

It is the first piece of architecture that I have realized at full scale. It is a tangible solution to something that I needed, but didn't have, and couldn't buy.

I am currently living in this room.

---

**Figure 23.** Process | Room Interior 1 (opposite)  
**Figure 24.** Process | Room Interior 2 (opposite)



It wasn't merely a question of designing and dreaming, but also of showing and experimenting. "Action, not words," as Corbu would say.<sup>1</sup>

*-Charlotte Perriand*

## 2

I did not begin this project with an understanding of the end in mind. The beginning was a blurry state of confusion.

I am lost. I do not know what I am doing. I keep 'beginning' my thesis. I start, I tinker with an idea, I question its relevance, and I quit. Rinse and repeat. I am accumulating a pile of frustrating false-starts. I am writing and re-writing abstracts, now associating decimal points to organize their various themes. At 4.3 I am frustrated. It has become a joke: my thesis will be a collection of ideas I discarded along the way.

I am, however, certain about one thing. I will build something. Beyond this, I know nothing. This makes the whole process challenging. It is difficult to explain in an intellectual discourse the purpose of this project. Each time I am questioned, I respond in a different way, trying to convince both the inquirer, and myself, that what I am doing is both worthwhile, and the basis for a meaningful thesis. I am motivated with the desire to gain construction experience, learning with a hands-on approach. I refuse to finish without a solid foundation of practical building skills.

---

**Figure 25.** Process | Bench Design-Build (opposite)

**Figure 26.** Process | Notebook Design-Build (opposite)



“We have to take pleasures `seriously,” Charles said. No one did that better than these two master practitioners of play. Their designs are unfailingly magical, precisely because they are so deeply grounded in the joy of how things work.<sup>2</sup>

*-Ralph Caplan*

### 3

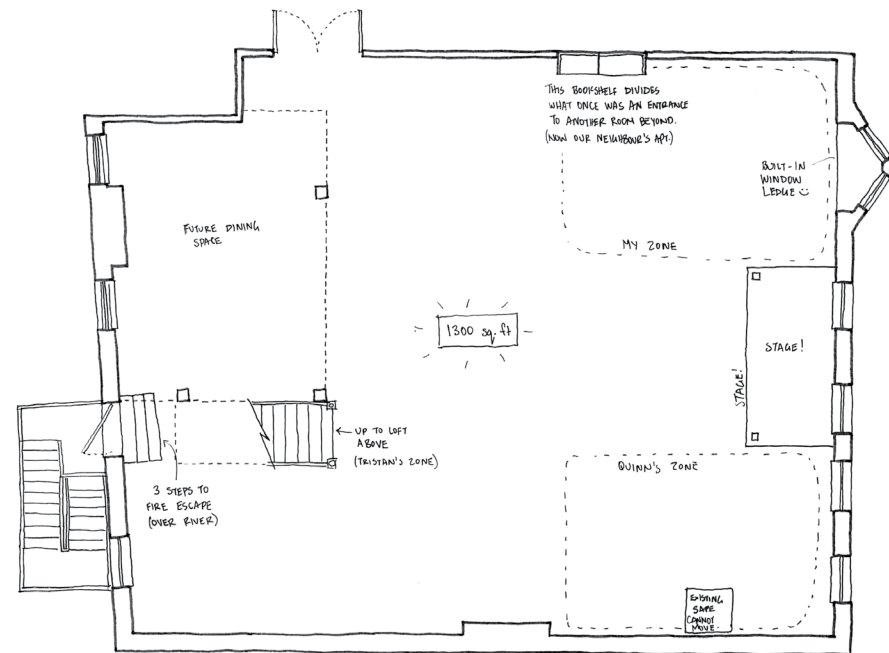
I love to tinker. I have since I was young. My father was invested in computer technology before most people had personal computers in their home. He likes gadgets. For this reason, there were lots of new things around the house that had moving parts and working functions. These are exciting things for a child. At one point my father was selling computers from our living room. There were a lot of gadgets. First I would see them in action, clicking and rolling and blinking away. Then, when newer versions came, they were replaced and no longer useful. They became my new toys. At first I would imitate their functions as seen in use with my father. When that got boring, I would invent new uses for them. Did you know that a computer keyboard makes a unique musical instrument? Or that a computer mouse roller ball certainly does not bounce?

Soon I would become curious about how these objects worked, and how they were made. I was given a set of screwdrivers and enjoyed taking them apart, as carefully as I could to keep all pieces intact. Soon I'd have a kit of parts in front of me. I would organize them into neat little piles or rows of similar pieces, and review all of the components. If it was (easily) possible to put them back together I would try. Like a jigsaw puzzle, each piece had its unique shape and correct placement, and would only fit where it was supposed to go.

---

**Figure 27.** Process | Eames Kazam Machine (opposite)





Luck is a peculiar thing. Sometimes you find yourself in the right place, at the right time.

I have two roommates. Our lease will be up shortly. In our search for a new home, we came across a unique apartment advertisement. A historic loft in downtown Galt, spitting distance from the school, and overlooking the Grand River. It has all the lofty features you might expect: fourteen-foot vaulted ceilings (with original moulding and trim), a stage framed with lamp posts (everyone needs a personal stage, don't they?), a riverside balcony (the fire escape cantilevers over the water below), and enough open space for nearly any activity imaginable (a ballroom dancing festival would fit).

The loft has everything but walls. I need a room for myself. I will design it, build it, and live in it. A room of my own, built by myself. Challenge, accepted.

**Figure 28.** Process | Existing Loft Plan (opposite)

**Figure 29.** Process | Existing Loft Interior (opposite)





## 5

I begin this project as a game. Each move must be dictated by a set of rules or guidelines. To win the game, I must solve the problem, following the rules rigorously. The goal is to arrive with a solution that is seemingly so obvious that anyone can comprehend the intention instantaneously.

The rules of the game are as follows:

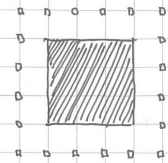
- 1.** Let this be an experiment, teaching through action.
- 2.** Let the materials be simple, cohesive, and logical.
- 3.** Let it sit comfortably, as if it has been there for years before, and will be for years to come; let it stand as a timeless piece.
- 4.** Let it be a joy to occupy as much as a joy to the eye.
- 5.** Let it perform properly and age naturally.
- 6.** Let any complexity only act towards its overall simplicity.
- 7.** Let its use be flexible so as to preserve functionality as time moves forward.
- 8.** Let it be a chameleon.

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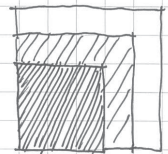
**Figure 30.** Process | Notebook: Front Cover (opposite)



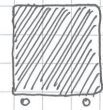
INITIAL CONCEPTS:



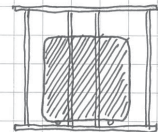
= PATIO + PAVILION



= RUSSIAN NESTING DOLLS // LAYERS



INDOOR



OUTDOOR

6

I'm thinking of this project as a personal pavilion sitting within the larger loft expanse. A room within a room. I'm hoping to design the sleeping capsule for current interior use, with the ability for it to be placed in an exterior condition in the future. I see it as the innermost layer in a set of Russian nesting dolls. If a simple weather-proofing shell was constructed around it, you would have an inner core and a porch surrounding. A porch is an incredibly interesting architectural device. It blurs the distinction between the interior and exterior world. Porches create grey zones, with one foot inside, the other outside. I would love to live in a porch.

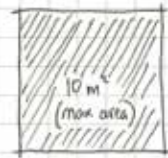
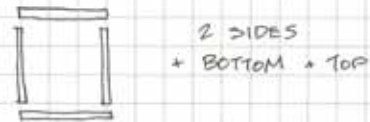


Figure 31. Catalogue | Total Furnishing Unit (p. 270)

Figure 32. Process | Notebook: Initial Concepts (opposite)

## SLEEPING CAPSULE DESIGN - BUILD

- CRITERIA:
- \$1000 BUDGET
  - Assembly by 2 people
  - Designed for disassembly + re-assembly
  - Considerations for future outdoor usage
  - Modular construction: Considerations for expansion + customization
  - Minimal noise in construction (as simple as possible)
  - 10m<sup>2</sup> Max footprint: no zoning permit



\$ 1000



7

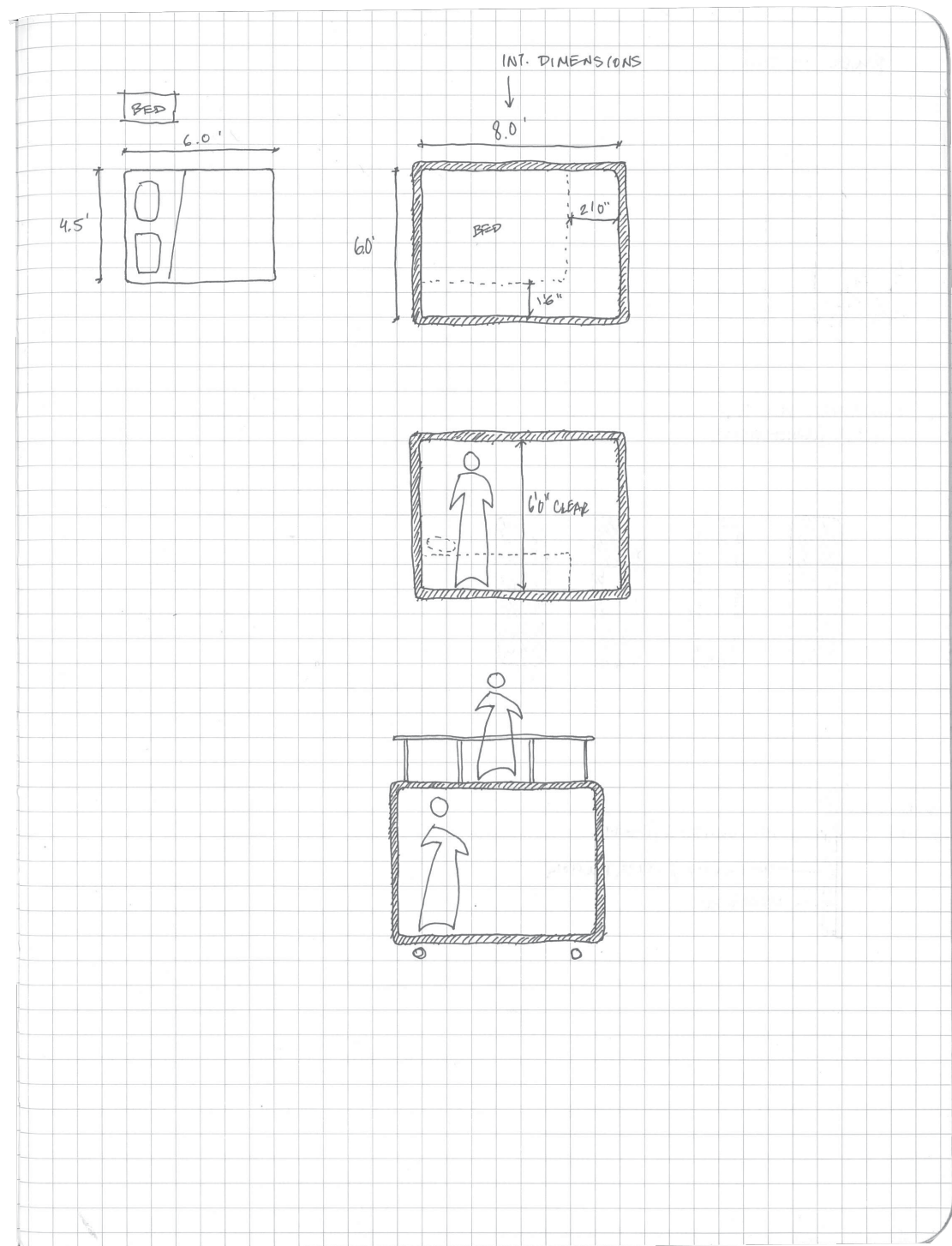
The first action is to outline a list of guidelines and restraints  
The design aims to achieve:

1. Visual Privacy.
2. Acoustic Separation.
3. Constructibility. I must build this myself, quickly.
4. Affordability. \$1000 budget.
5. Portability. It must be able to move with me, easily.



Figure 33. Catalogue | Flexible House (p. 274)

Figure 34. Process | Notebook: Design Criteria (opposite)



The functional requirements are simple. It will have enough space for a bed, and enough space for a human to occupy. Not much more than this. Perhaps the whole thing could be on casters, easily pushed aside if need be. An accessible roof could be neat.



**Figure 35.** Catalogue | Naked House (p. 292)

**Figure 36.** Process | Notebook: Sleeping Capsule Concept (opposite)



If design was not the self-expression of the designer, it was the occupant's daily life that would leave its mark on the house. Eames houses used "industrial technology to provide an 'unselfconscious' enclosure that would satisfy the essentials for comfortable living. Such a structure could then be made into a personal statement by the occupant, who could fill it with the accessories of his or her own life." All the ephemera of daily living would take over and define the space.<sup>3</sup>

*-Beatriz Colomina*

## 9

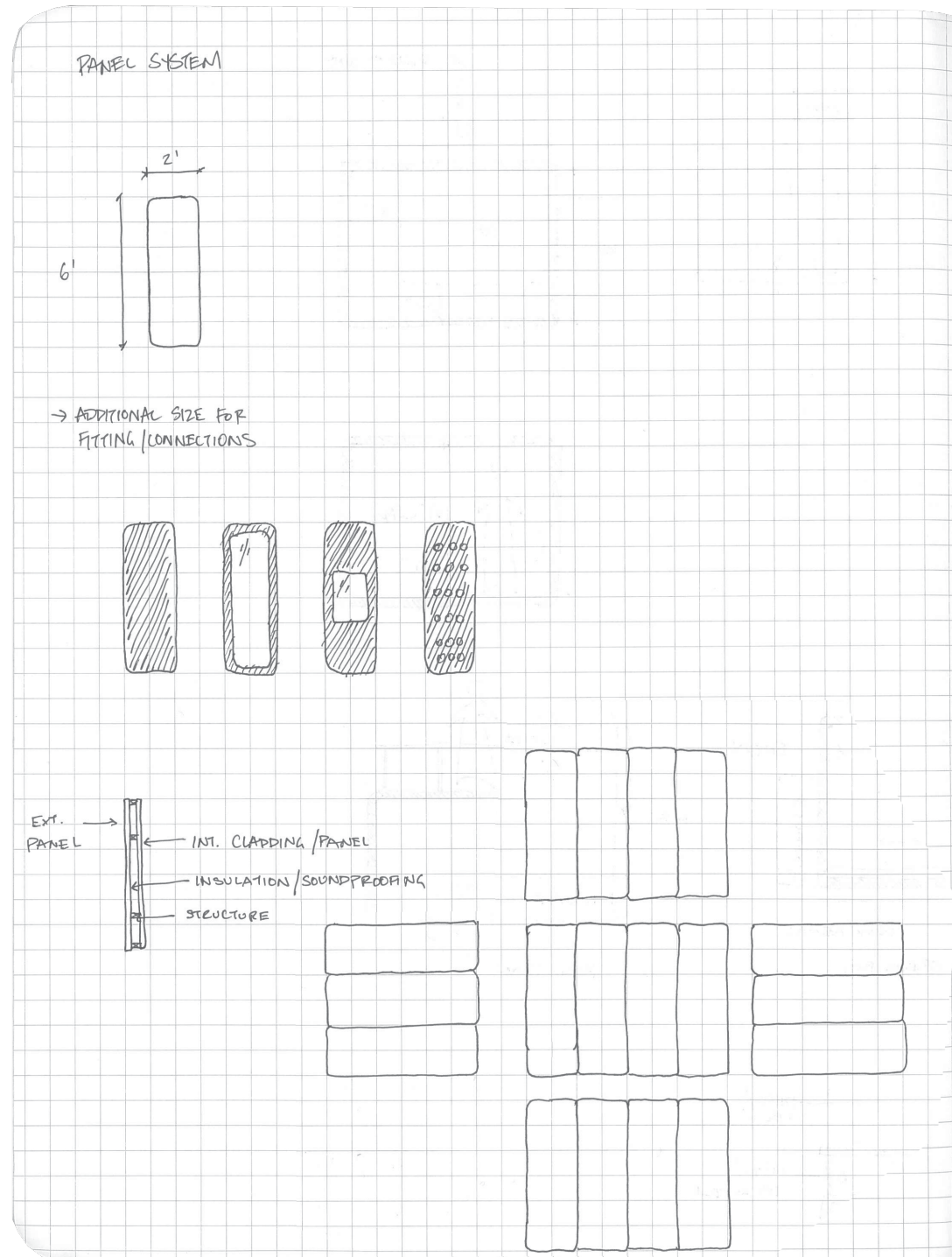
I am looking for examples while I exhaust the options for the design of my own space. I'll start with the best. The Eames. Their house is a simple, off-the-shelf container. What is unique is their added attitude of play, a heavy-handed personal touch. The house is composed of a rigid grid of modular standard steel components, divided and subdivided into smaller blocks, filled with pops of colour, dots, and a variety of materials. It is an artful composition of a kit of parts, both crisp and cheerful.

Inside is a furniture laboratory, and a museum of everyday life. It is a cabinet of curiosities of domestic and cultural artifacts. Their own furniture designs and collected objects were constantly being added, arranged, and re-arranged. They put their things on display, and were good at it. I could spend hours exploring this house with my eyes alone. I have yet to find a house that delights me more.

---

**Figure 37.** Process | Eames House Interior, 1978 (opposite)





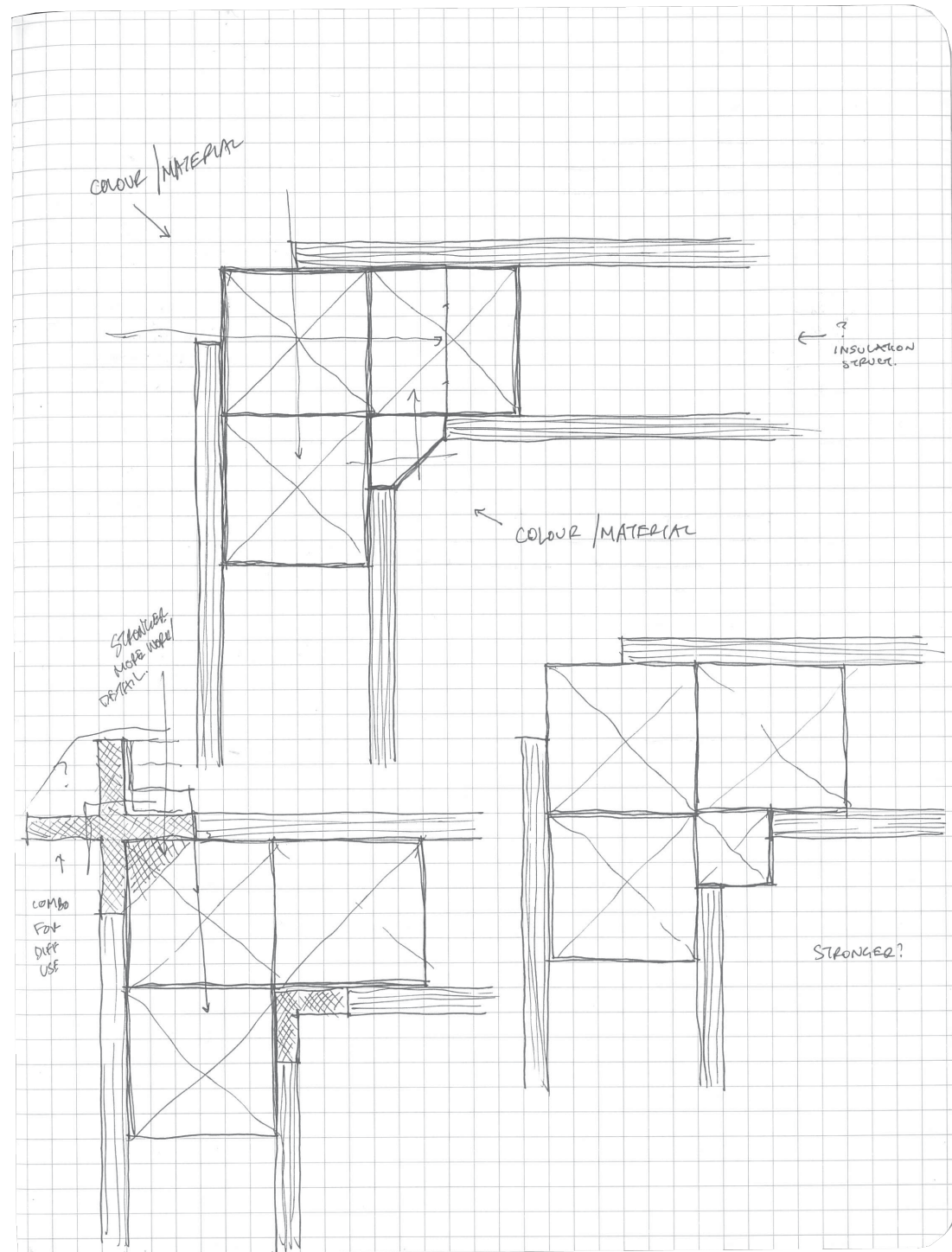
I have a modular panel system in mind. Each panel will be 2 feet across, by 6 feet in length, ensuring that each panel can be easily moved by two individuals. The system will be easily flat-packed. It will fit on a truck. I can design different panels to accommodate various functions, a door and windows. These will be structurally insulated panels (SIPS). The insulation will act as an acoustic separation for interior use, and thermal separation for exterior use.



Figure 38. Catalogue | Zip-Up House No.1 (p. 252)

Figure 39. Catalogue | 6 x 6 Demountable House (p. 206)

Figure 40. Process | Notebook: Panel System (opposite)



There is something incredibly satisfying about corners I can't explain. Two or three planes coming together in perfect perpendicularity. Crisp. This may explain my interest (obsession) with the Eames house. The house is made up entirely of corners. I am lingering on images of it, looking for hints. Its timeless quality is incredible. I can only hope to design something as admirable.

I am having difficulties conceiving how the panels will connect at the corners. Do they have an extra clip added for attachment? Will the corners provide enough strength for the system to remain intact under stress? Corners are crucial. They are moments which reveal the designer's competence and care for detail. I need to get the corners right.



**Figure 41.** Catalogue | Case Study House No. 8 (p. 216)  
**Figure 42.** Process | Notebook: Corner Design (opposite)

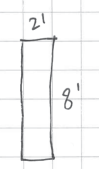


BUDGET = \$1000 (STAY UNDER!)



HOME DEPOT COSTING:

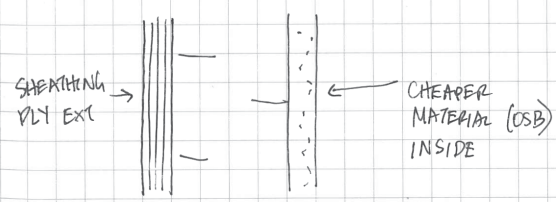
- OSB SHEETS (4' x 8') = \$24.50 (4' x 8') → (per 2 panels)
- SHEATHING PLY (4' x 8') = \$9.30 (4' x 8') → (per 2 panels)
- RIGID INSULATION = \$35.59 (24" x 96" x 2" THICK) (per panel)
- BATT INSULATION = \$66.00 / 48 sq. ft. (16 sq. ft. / panel) (per 3 panels)



\* GEN RULE OF THUMB, ALLOW FOR HARDWARE TO BE DOUBLE / SUBSTANTIAL COST.

PANEL SYSTEM COVERS AREA OF APPROX. ? sq. ft. 22 panels @ \$54.49 / panel  
 = \$1198.78 (only building material...)  
 + hardware + etc.

WAY TOO MUCH \$\$\$



INSULATION  
 - RIGID?  
 - BATT?  
 - FORM TOO MUCH BET.

\* WOULD YOU ALSO NEED AIR/VAPOR BARRIERS → \$

I've run a rough costing estimate, and the outlook is not good. Who knew insulation was so expensive? I'm understanding some of the pragmatic concerns of construction. I can't afford this design. I'll have to revise. I'm going to give up the idea of insulating the system. This means I no longer need both exterior and interior cladding, another cost saving.

I'm frustrated with the need to make a major cut-back. I won't begin building until I'm completely satisfied with the design. I have revised a list of design considerations in hopes of arriving at a more tangible solution. Soon, I hope. The design must be:

1. Modular. It must be easy to assemble and disassemble.
2. Efficient. It must consider the yield of plywood sheets.
3. Simple. It must be easily comprehensible.
4. Flexible. It must be interchangeable and customizable.

Figure 43. Process | Notebook: Cost Estimate #1 (opposite)

Rushing into action, you fail.  
Trying to grasp things, you loose them.  
Forcing a project to completion  
you ruin what was almost ripe.<sup>4</sup>

*-Tao Te Ching*

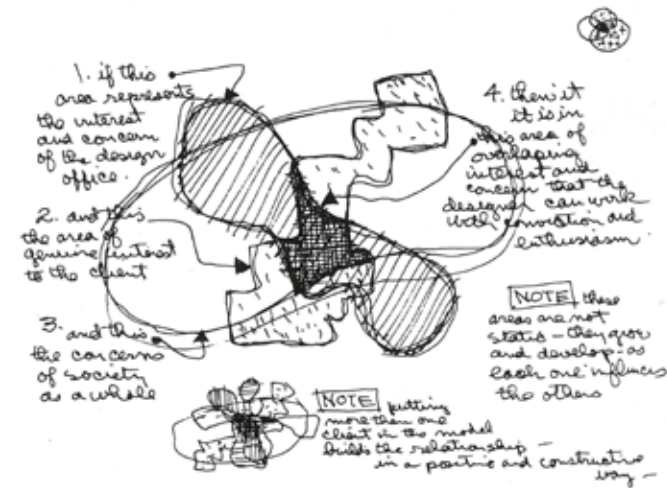
Don't let anyone buffalo you. Fly the doubts.

*-Donald McKay*

## 13

I tend to question my work, quite frequently. It's an ongoing debate between confidence and criticality that caterpillars along going up and down like a slinky. It's always moving in a direction but maintains energy by the differential movements.

This ongoing debate between confidence and criticism works like this: I do something, a small parcel of work, moving forward on the upswing. I complete some piece of the whole. This continues until I pause, listening to a critical opinion about it, thus finding reason to question the work. It is here the slinky reaches its peak in rhythm. There is a flash of neutrality before the tipping point. And down it goes, crashing to the ground, where I hit rock bottom. To remedy the situation, I go back to the library and search for allies, finding confidence behind their voices. I'm on my way soon, and the slinky continues.



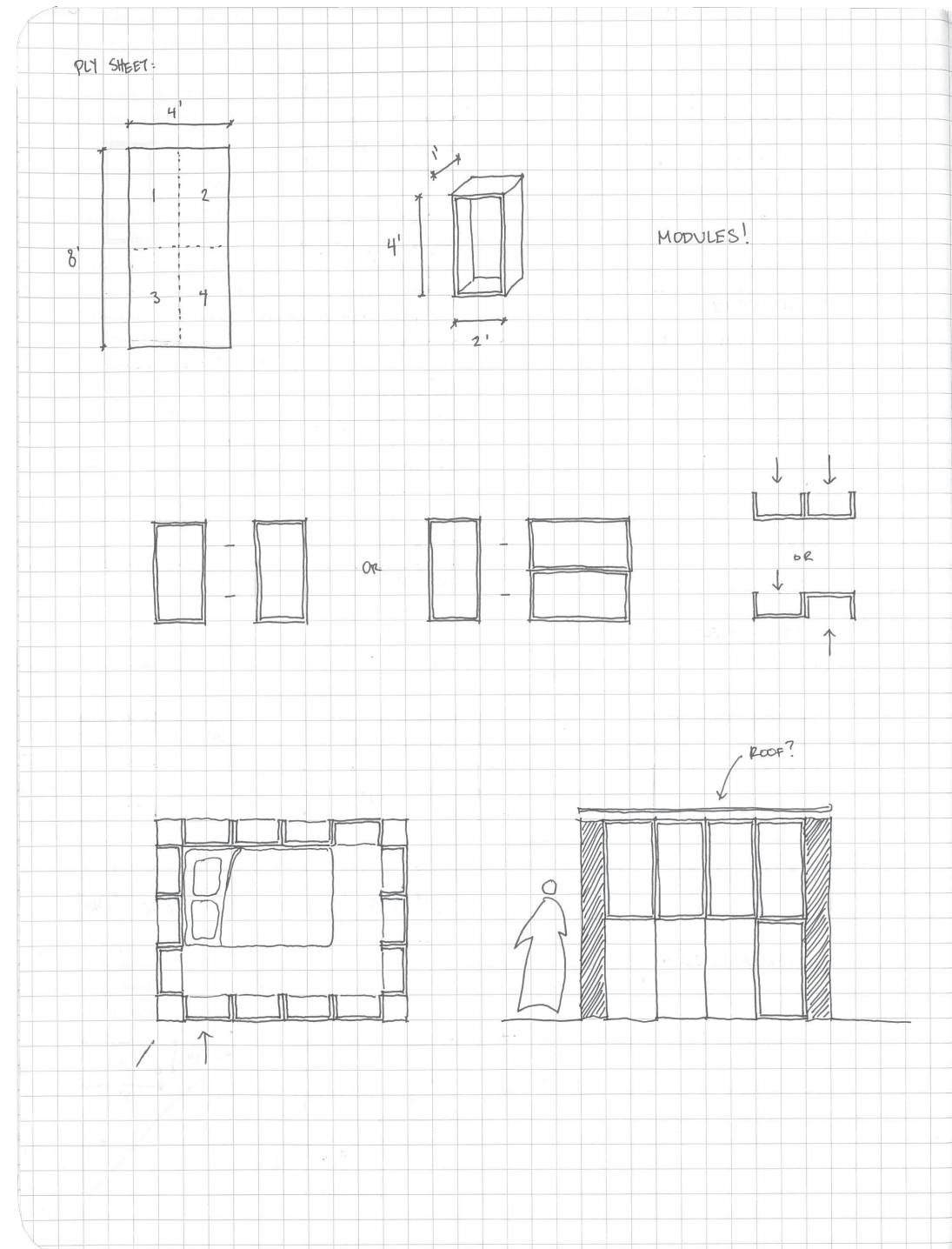
14

My ideas are like individuals hanging around a swimming pool. Some are casually floating in the shallow end, and some are diving into the deep end. Some are lounging around the pool contemplating the plunge. All are in conversation: they swim, dive, plunge, and lounge near one another.

The pool is a public place. Sometimes new ideas arrive to check out the scene. Often they join, but sometimes they test the waters and hop out - it's not for them.

The pool is a friendly place. Both shallow and deep swim together and compare notes. The deep ideas are humbled by the shallow ones, the shallow are challenged by the deep ones.

Figure 44. Process | Eames Design Process Sketch (opposite)



I've come up with a significant re-design, and tested it with a model. It is no longer a panel system, I now have a room made up of modular boxes. Pack it up, set it up, again and again. A Mary Poppins Room. A room within another room.

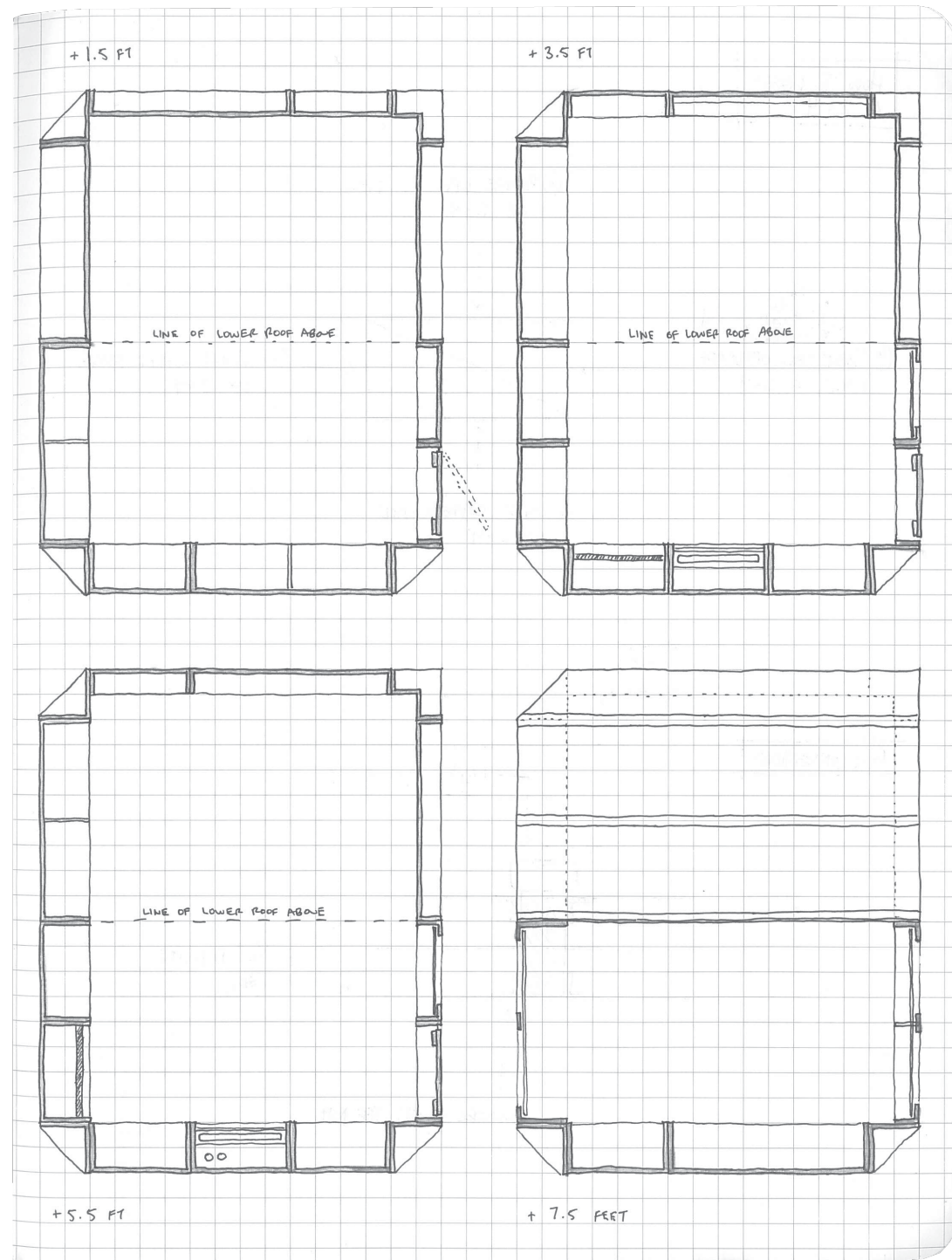
The boxes are 2 feet in width, 4 feet in height, and are 1 foot deep. The module size is based on the efficiency of a 4' x 8' plywood sheet. They can be attached in both horizontal and vertical positions, and can face towards the interior, or flipped towards the exterior. They provide the dual function of structure and cladding in a single piece, simpler than a panel system with corners and attachments.



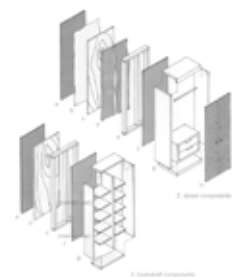
Figure 45. Process | Model Study 1

Figure 46. Catalogue | Modular Equipment for New Domestic Environments (p. 272)

Figure 47. Notebook | Room of Modular Boxes (opposite)



Working through the plans, I double checked the measurements of my bed. It won't fit in the space if all modules are one foot in depth. If I make half of the modules only six inches deep, I can gain an extra six inches of interior space in both length and width. This will also save on material supplies. Win, win.

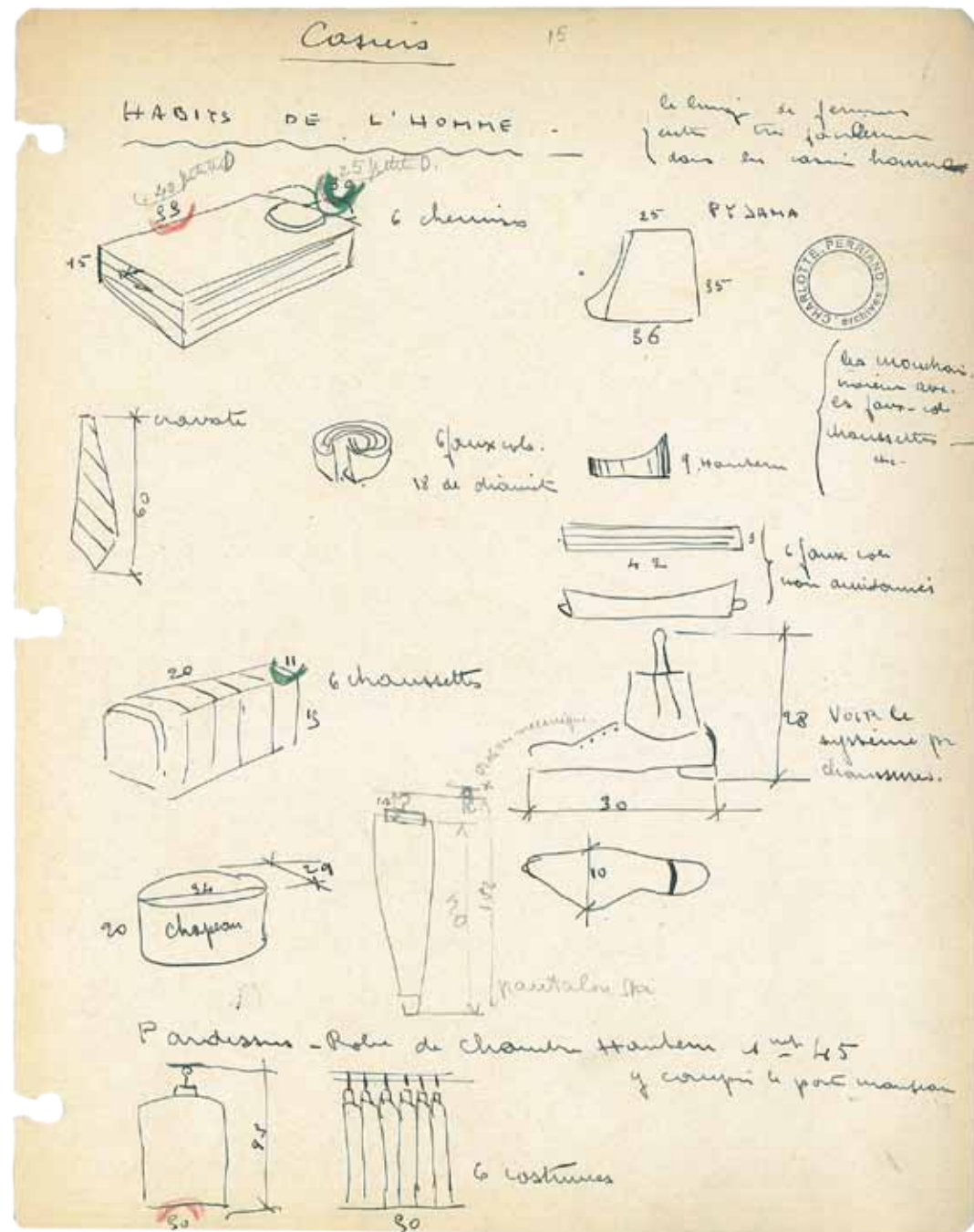


**Figure 48.** Process | Model Study 2

**Figure 49.** Catalogue | Furniture House (p. 288)

**Figure 50.** Process | Notebook: Plan of Modular Room (opposite)





While flipping through a 1911 English shirtmaker's catalog, I came across a wall storage unit that I very much admired. It was made up of small trays, standardized to the scale of its contents: men's shirts. The idea behind the unit was to let its contents determine the design.<sup>6</sup>

-Charlotte Perriand

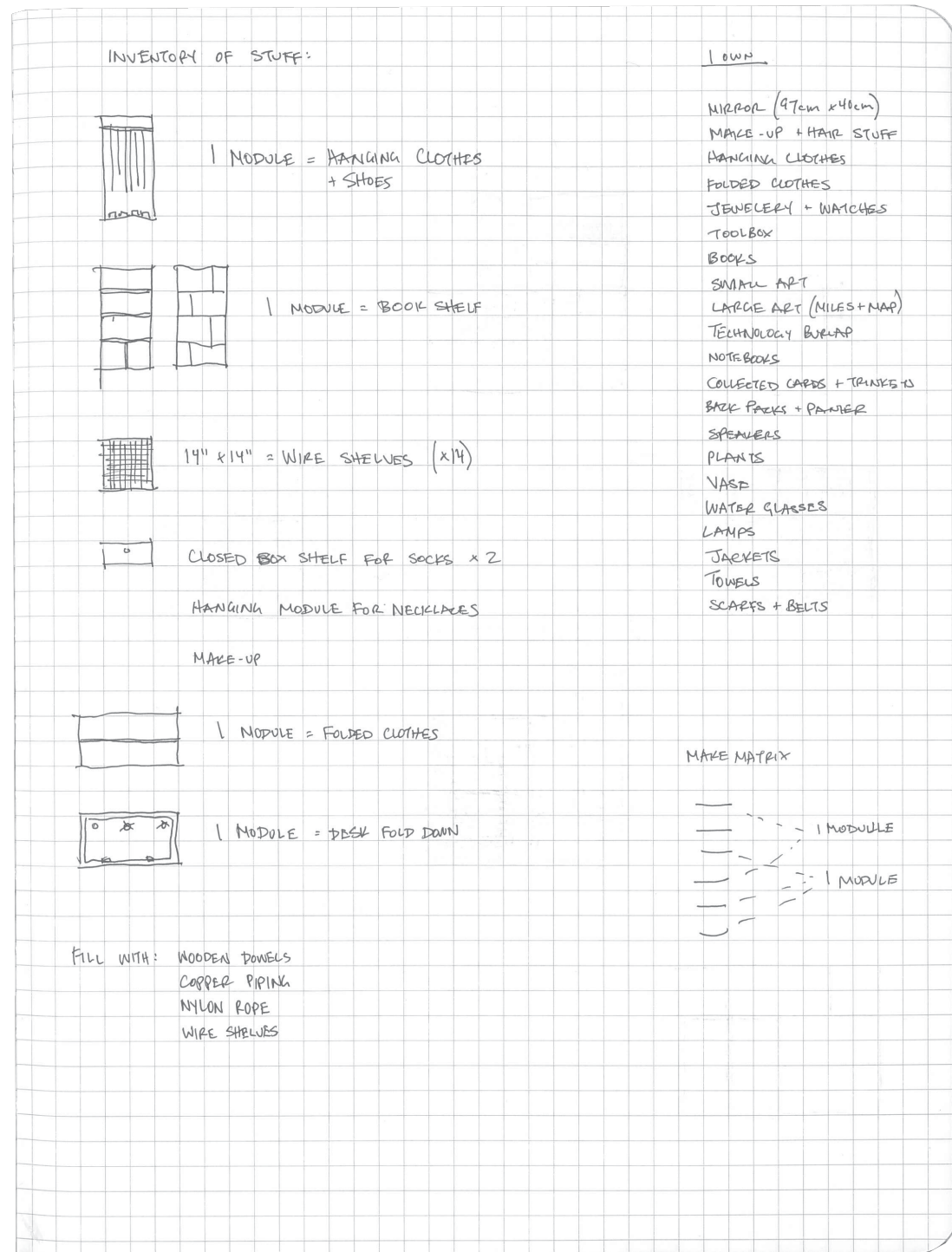
17

I am interested (fascinated) with modular, portable and compact dwellings. To me, these are extremely exciting. Functional components compose them to achieve minimal spatial footprints, be capable of relocation or recombination without sacrificing utility. I like small spaces. I like having just enough room to go about my daily tasks without excess. This sort of efficiency is appealing to me. Perhaps it is an oddity I share with only a few. The expression 'waste not, want not' was instilled in me as a child. I am a pragmatic person. I do not make arbitrary decisions in design. I need a reason for everything, a practical justification.



Figure 51. Catalogue | Casiers Standard (p. 186)

Figure 52. Process | Charlotte Perriand Design Process (opposite)



I am designing the set of modules based on the activities I wish to accommodate, and all of the objects that I own. A place for everything and everything in its place.

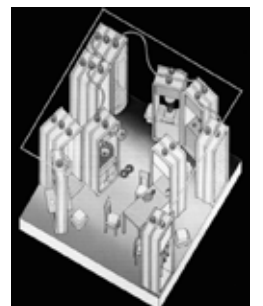
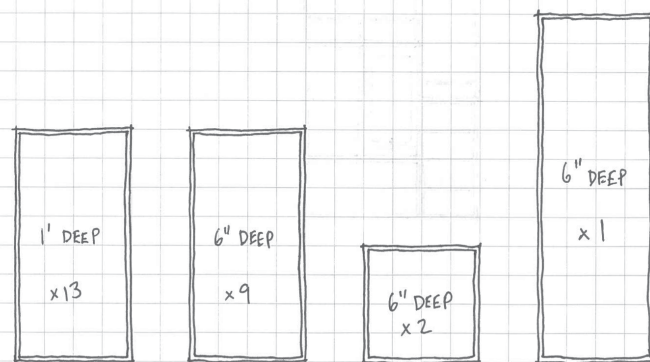
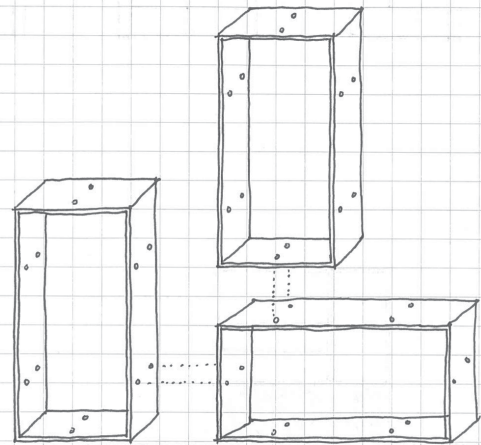


Figure 53. Catalogue | Mobile and Flexible Environment Module (p. 266)  
Figure 54. Process | Notebook: Object and Module Inventory (opposite)

BOLTED CONNECTIONS



BOX SIZE TYPES

I'll need two additional sizes of modules beyond the standard 2' x 4' size. Both remain within the standard module width, but vary in height. Two feet, in addition or subtraction.

The first unique module is the door, two feet wide by six feet tall. It's a short door, but I am not taller than six feet, and this room is for me. A six foot module will be easier to carry than the alternative, an eight foot door.

The second unique module is a two foot square box. Two of these are needed to make the wall geometry work most efficiently. They may also make great side tables as stand alone pieces.

Figure 55. Process | Notebook: Module Quantities and Size (opposite)



# PLYWOOD

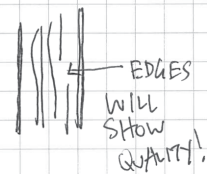
ROBERT - CRAFTSMAN LUMBER - CALL!

(1-800-378-3782)

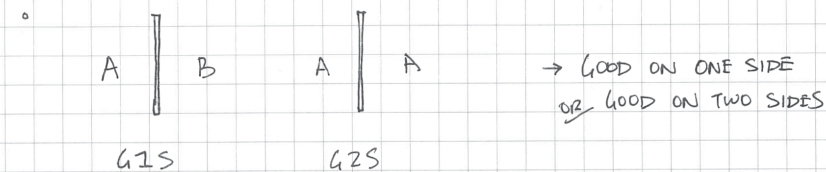
\* MENTION DAN / WATERLOO → HE DEALS COMMONLY W/ ROBERT.

DAN SUGGESTS : \$ 25 - 30 / SHEET BUDGET

## PLYWOOD NOTES RE: CALL W/ ROBERT



• DIFFERENT GRADES OF PLY → AA, BB, C, etc.



• SUGGESTED G2S (COMMON FOR CABINETRY) → WILL SEE / TOUCH BOTH SIDES

• SPECIES / COSTS:

CANADIAN / DOMESTIC = \$\$\$ WAY TOO EXPENSIVE ☹

→ CHINESE SPECIES (C QUALITY) = \$24.85 1/4" 4'x8'  
\$30.85 1/2" 4'x8'

BALTIC BIRCH = \$30.25 1/4" 4'x8'  
\$26.85 1/2" 5'x5' (DOESN'T HAVE 4x8 IN STOCK)

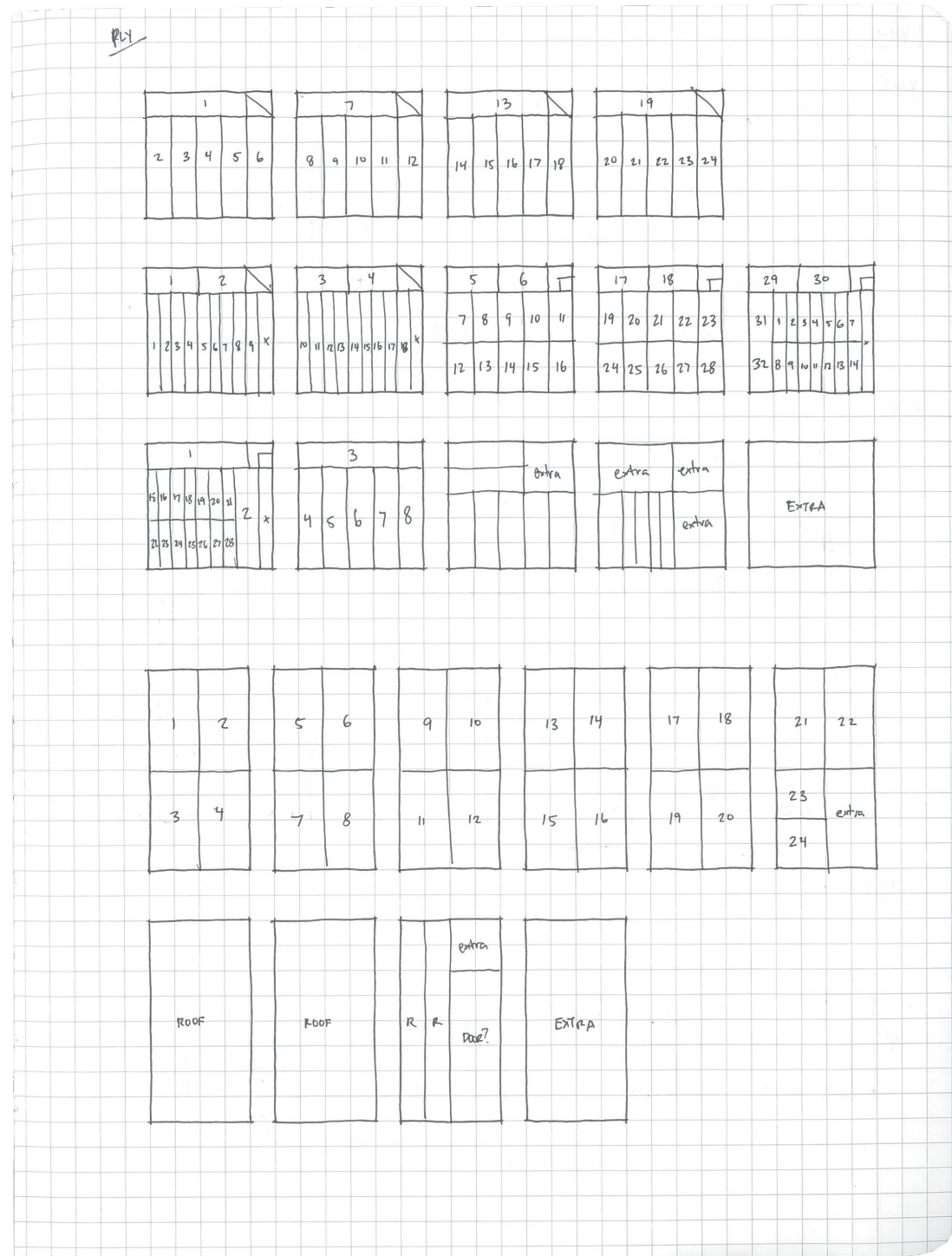
CAN'T GUARANTEE CONSISTENCY  
↳ EDGES NOT UNIFORM

\* 5% DISCOUNT FOR 10-25 SHEETS ☺  
10% DISCOUNT FOR 26-50 SHEETS

Can I afford my design? I've been given a contact to inquire about the various types of plywood locally available. There is a great range in price, which reflects the quality. In general, the quality is determined by the number of plies in a given sheet thickness, and the consistency of quality within each ply. More plies and greater consistency will be of higher quality, and higher cost. The visual quality is described with a letter grade for each face, 'A' being best, 'C' being worst. The sheets are either good on two sides (G2S), 'AA' for example, or good on one side (G1S), 'AC' for example.

A Baltic Birch plywood has been suggested. Both sides of the wood will be visible, so it is appropriate to use 'AA' (G2S). Both faces will arrive sanded, and imperfections will be filled with patches. The box frames will be 1/2" in thickness, a nine layer sheet, ensuring strength. The backs of the boxes will be 1/4" in thickness, reducing the overall weight. The Baltic birch plywood has consistent layers throughout, which will be visible on all exposed box edges. All things considered, the Baltic Birch is the highest quality plywood affordable to my budget.

Figure 56. Process | Notebook: Plywood Information and Sourcing (opposite)



21

The Baltic Birch plywood is available in two sheet sizes. The available 1/4" sheets are 4' in width and 8' in length. The available 1/2" sheets are 5' in width, and 5' in length. I know how many modules I need to make, and what dimensions they are. I must determine how many sheets of plywood to order, and make sure each sheet is used most efficiently. Thus far, I think I am within my \$1000 budget. (This is a satisfying relief.)

Figure 57. Process | Notebook: Plywood Quantity Calculation (opposite)





They were quick to distinguish between needs and wants, between good and bad, beautiful and ugly, simple and complex, restrained and free, essential and frivolous, clear and obscure, honest and pretentious, interesting and boring. These are among the conflicting notions in the dialects of Charles and Ray Eames, around which they fashioned their lives and their work.<sup>7</sup>

*-Paul Rand*

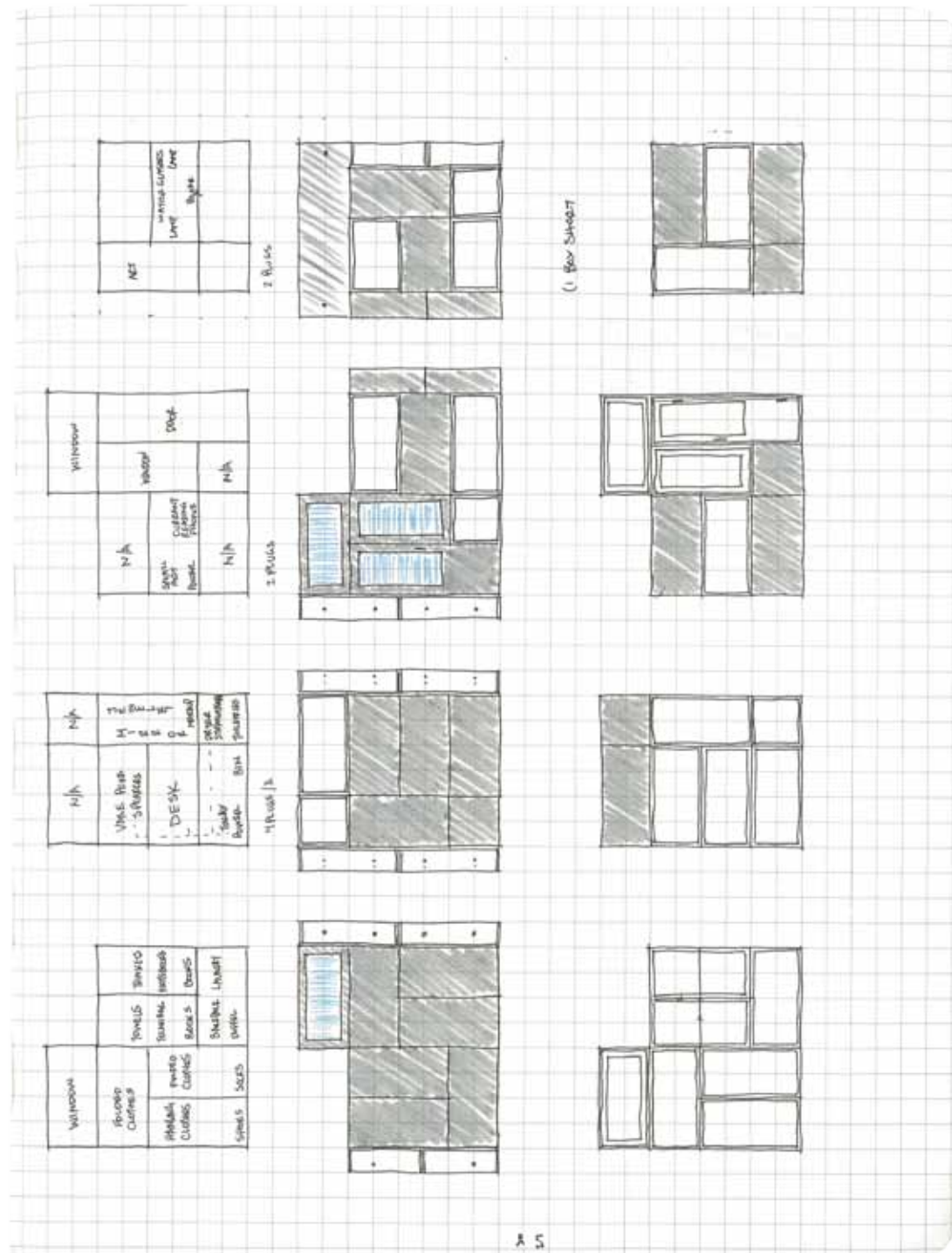
## 22

I'm interested in gray zones. These are the spaces between two opposites. Opposites are always in tension, bringing two sides of a story to light, and adding a richness of interest. The conversation between two opposites can make any project come to life. The trick is finding the balance.

---

**Figure 58.** Process | Charles Eames's Desk (opposite)

**Figure 59.** Process | Ray Eames's Desk (opposite)



23

I must confess this design unites two of my favourite things: a passion for organization, and a love for ledges. I created a room made of ledges and shelves, an organizational dream. I must also admit that the planning of where I will put my things is both exciting and exhausting. You see, organization is not simple. To get it right, I must imagine myself in all possible activities, locating or placing all possible objects, and imagine where each of them should be or would go. Objects must be found where I would naturally think to locate them, and placed where I would automatically tend to put them. I must solve this puzzle by exhausting all possibilities and alternatives.

I have split the room in two halves and can imagine the sense of enclosure. One half is for action and activity, the other for reflection and rest. They are opposite in function, but equal in plan, and equal in importance. The ceiling height reflects this functional division. It is higher and more open for activity, lower and more intimate for reflection. Lowering the ceiling also reduces the number of modules required to enclose the space, another cost reduction.

Figure 60. Process | Notebook: A Room of Ledges and Shelves (opposite)

### Baltic Birch Ply Weight Calculation



$$12 \text{ sq. ft. } \frac{1}{2}'' \text{ ply} = 20.64$$

$$8 \text{ sq. ft. } \frac{1}{4}'' \text{ ply} = 7.04 = 27.68 \text{ lbs}$$

$$\frac{1}{2}'' = 1.72 \text{ lbs/sq. ft.}$$

$$\frac{1}{4}'' = 0.88 \text{ lbs/sq. ft.}$$

MODULE:  
 $2 \times 4 \times 1 \times 12 = 332.16 \text{ lbs}$



$$6 \text{ sq. ft. } \frac{1}{2}'' \text{ ply} = 10.32 \text{ lbs}$$

$$8 \text{ sq. ft. } \frac{1}{4}'' \text{ ply} = 7.04 \text{ lbs} = 17.36 \text{ lbs}$$

MODULE:  
 $2 \times 4 \times 0.5 \times 9 = 156.24 \text{ lbs}$



MODULE:  
 $2 \times 2 \times 1$   
 $8 \text{ sq. ft. } \frac{1}{2}'' \text{ ply} = 13.76 \text{ lbs}$   
 $4 \text{ sq. ft. } \frac{1}{4}'' \text{ ply} = 3.52 \text{ lbs}$   
 $= 17.28 \text{ lbs} \times 2 = 34.56 \text{ lbs}$



MODULE:  
 $2 \times 2 \times 0.5$   
 $4 \text{ sq. ft. } \frac{1}{2}'' \text{ ply} = 10.4 \text{ lbs}$   
 $4 \text{ sq. ft. } \frac{1}{4}'' \text{ ply} = 3.52 \text{ lbs}$   
 $= 13.92 \text{ lbs} \times 2 = 27.84 \text{ lbs}$



MODULE:  
 $2 \times 6 \times 0.5$   
 $8 \text{ sq. ft. } \frac{1}{2}'' \text{ ply} = 13.76 \text{ lbs}$   
 $12 \text{ sq. ft. } \frac{1}{4}'' \text{ ply} = 10.56 \text{ lbs}$   
 $= 24.32 \text{ lbs} \times 1 = 24.32 \text{ lbs}$

$$2 \times 4 \times 1 = 332.16$$

$$2 \times 4 \times 0.5 = 156.24$$

$$2 \times 2 \times 1 = 34.56$$

$$2 \times 2 \times 0.5 = 13.92$$

$$2 \times 6 \times 0.5 = 24.32$$


---


$$561.2 \text{ lbs}$$

2 PEOPLE PER BOX LIFT  
 \* HANDLES FOR LIFTING



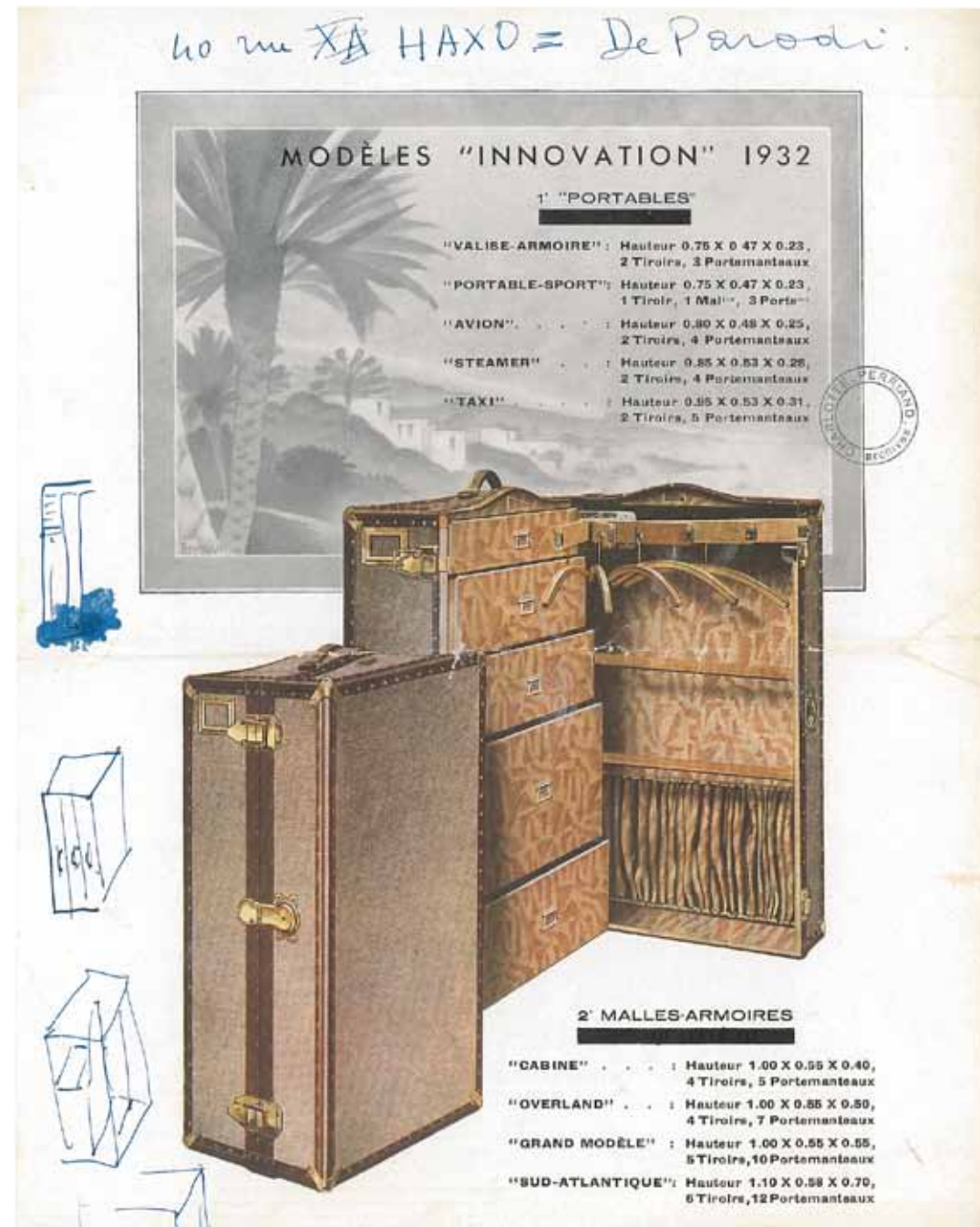
+ CORNER PIECES

24

I'm concerned about the weight of my modules. I want them to be easily moveable, not a burden. Ergonomics are important, they can make or break the joy of use in any object. The maximum weight of lifting permissible in a workplace will serve as a guideline. 51 pounds, or 23 kilograms per person. I need to calculate the weight of each module, to verify they are not more than this, and comfortable for carrying between two people. One thing I can add to make this achievable is handles. Like banker boxes, I'll make them by removing material from the lifting faces of the modules.

Figure 61. Process | Notebook: Module Weight Calculation (opposite)





We now have new, lightweight, and even intelligent materials to design the dwellings of the twenty-first century, which will probably be ephemeral structures. They will be tomorrow's new art of living and being.<sup>8</sup>

-Charlotte Perriand

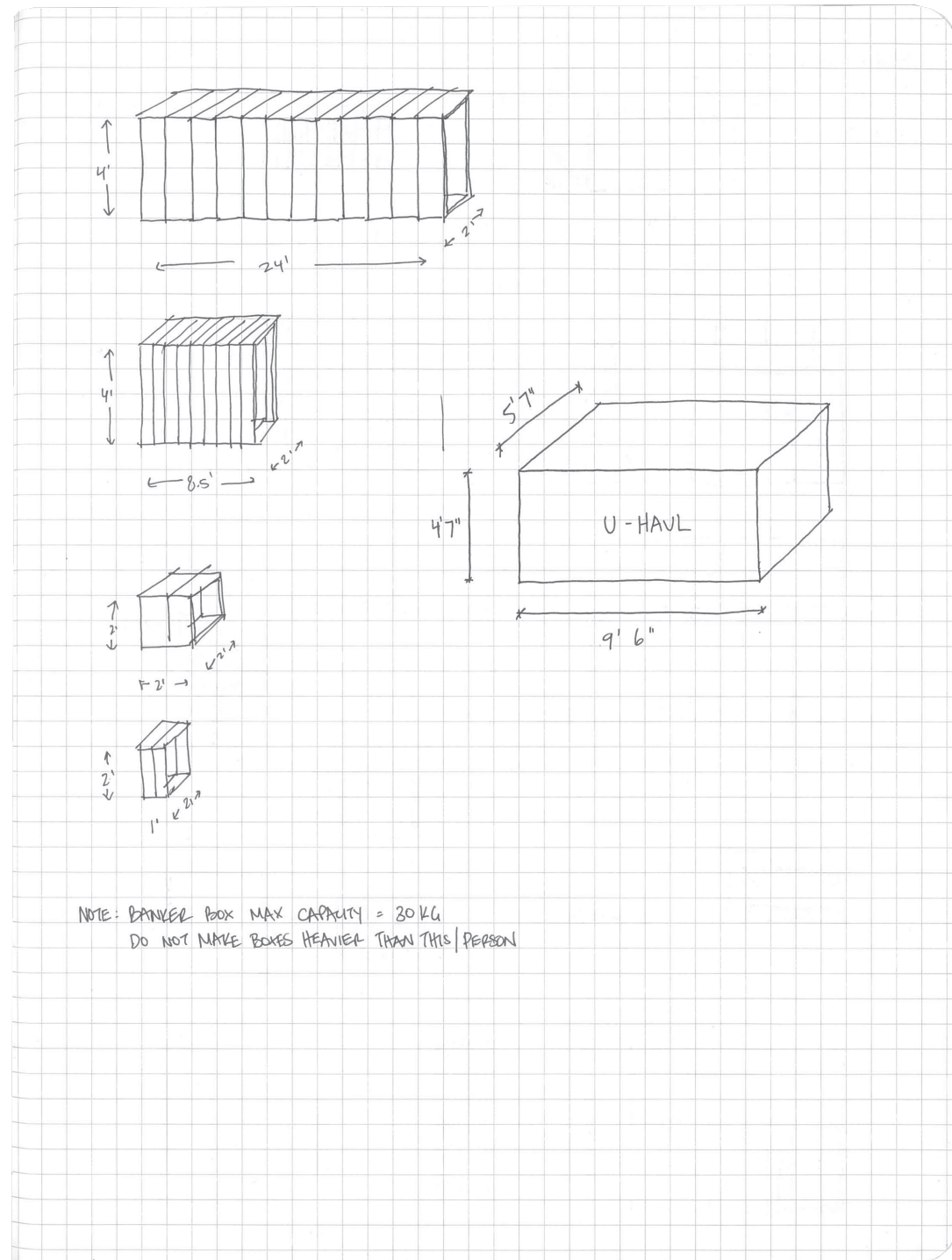
25

People are not static beings. We move about, change our minds, and our motivations, constantly. The homes we live in should reflect this. We should be able to arrange, change, and re-arrange our dwelling space. It should be dynamic. I dream of living lightly, with all the items I need capable of being packed up easily, relocated, and unpacked again. All at a moment's notice.



Figure 62. Catalogue | Personal Container (p. 240)

Figure 63. Process | Charlotte Perriand Steamer Trunk Inspiration (opposite)



The modules must be portable. If they cannot easily be transported, the system is a failure. Should they come apart into smaller pieces? Should they have flat-packing abilities? These are two concerns I have been critically contemplating.

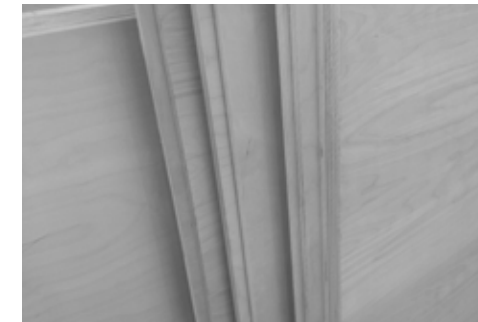
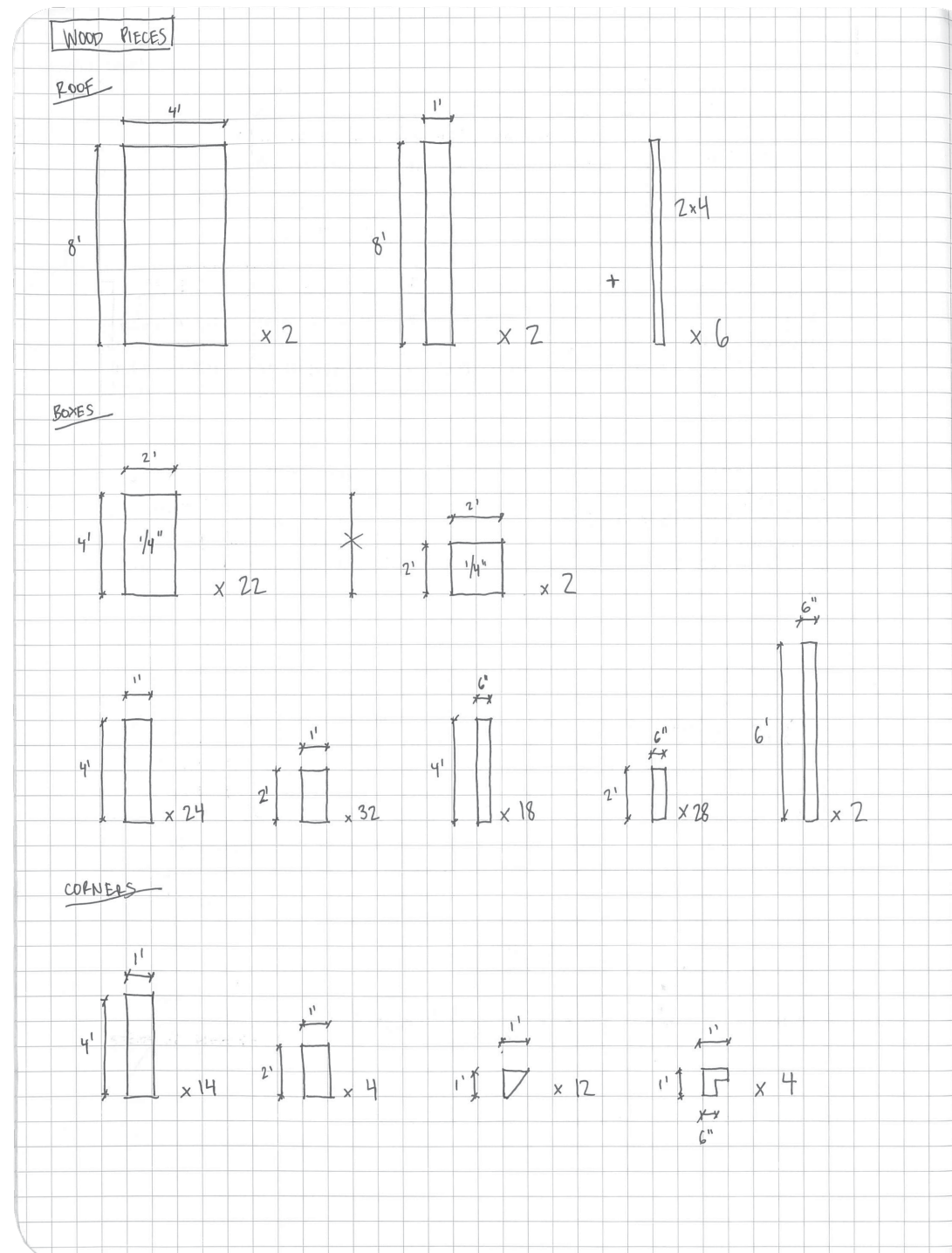
I am not convinced the required durability and quality of construction will be achieved if the modules have 'knock-down' features. I am not making IKEA furniture. The one requirement I will make sure to satisfy is that all twenty-five modules must fit in a vehicle I can drive.



Figure 64. Catalogue | Standard of Living Package (p. 212)

Figure 65. Process | Notebook: Module Portability Requirements (opposite)



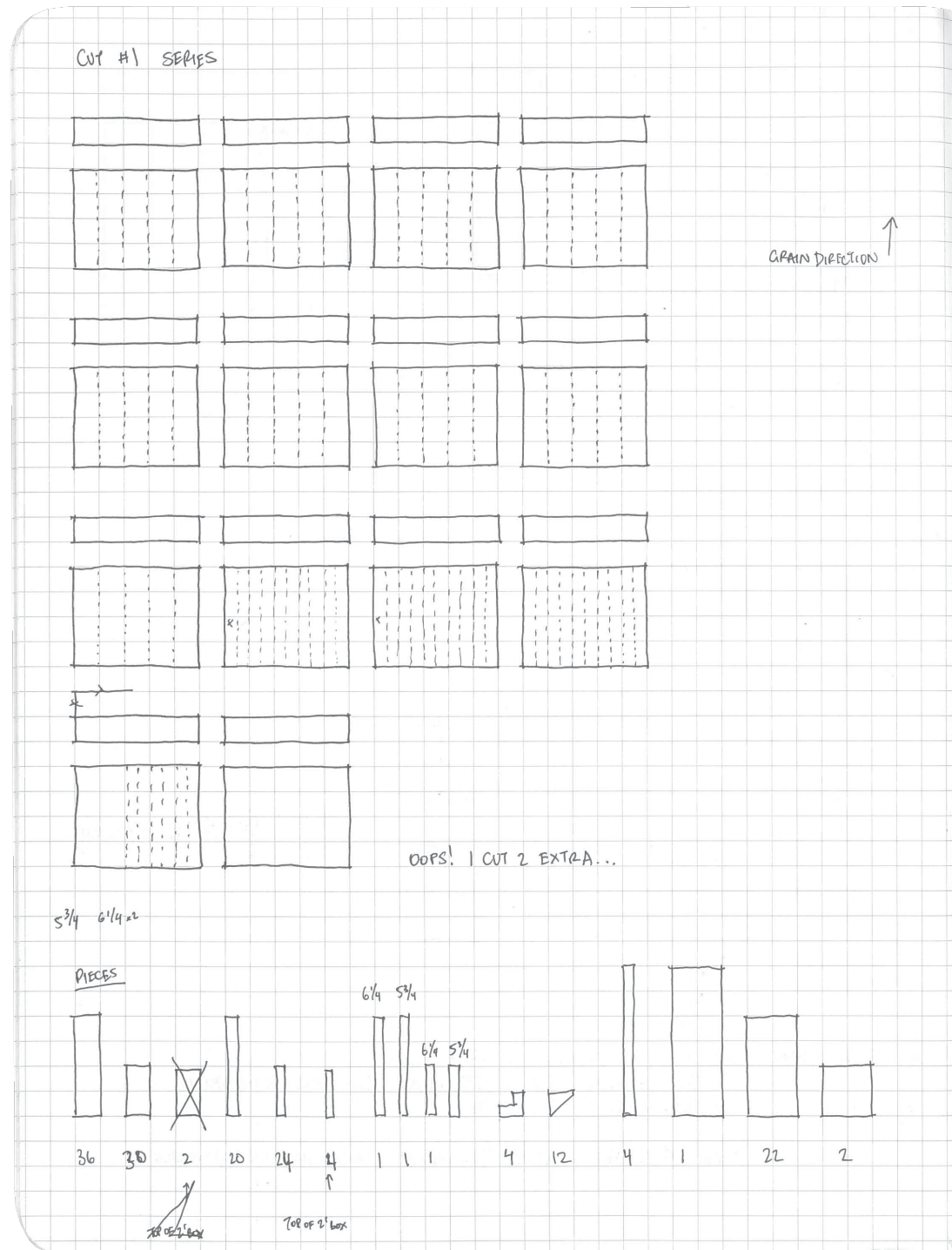


I have ordered the plywood. I am extremely anxious. While I wait for the delivery, I am contemplating the risk of this commitment and the monetary exchange I've just made. It is the largest sum of money I have invested in a design endeavour. I realize the conviction architects must have to convince their clients to go ahead with a project, and invest without seeing what they are purchasing at the moment of the exchange. It is scary. It is a risk.

Once the plywood arrives the construction will begin. There is no turning back.

**Figure 66.** Process | Plywood Delivery

**Figure 67.** Process | Notebook: Plywood Piece Cut List (opposite)



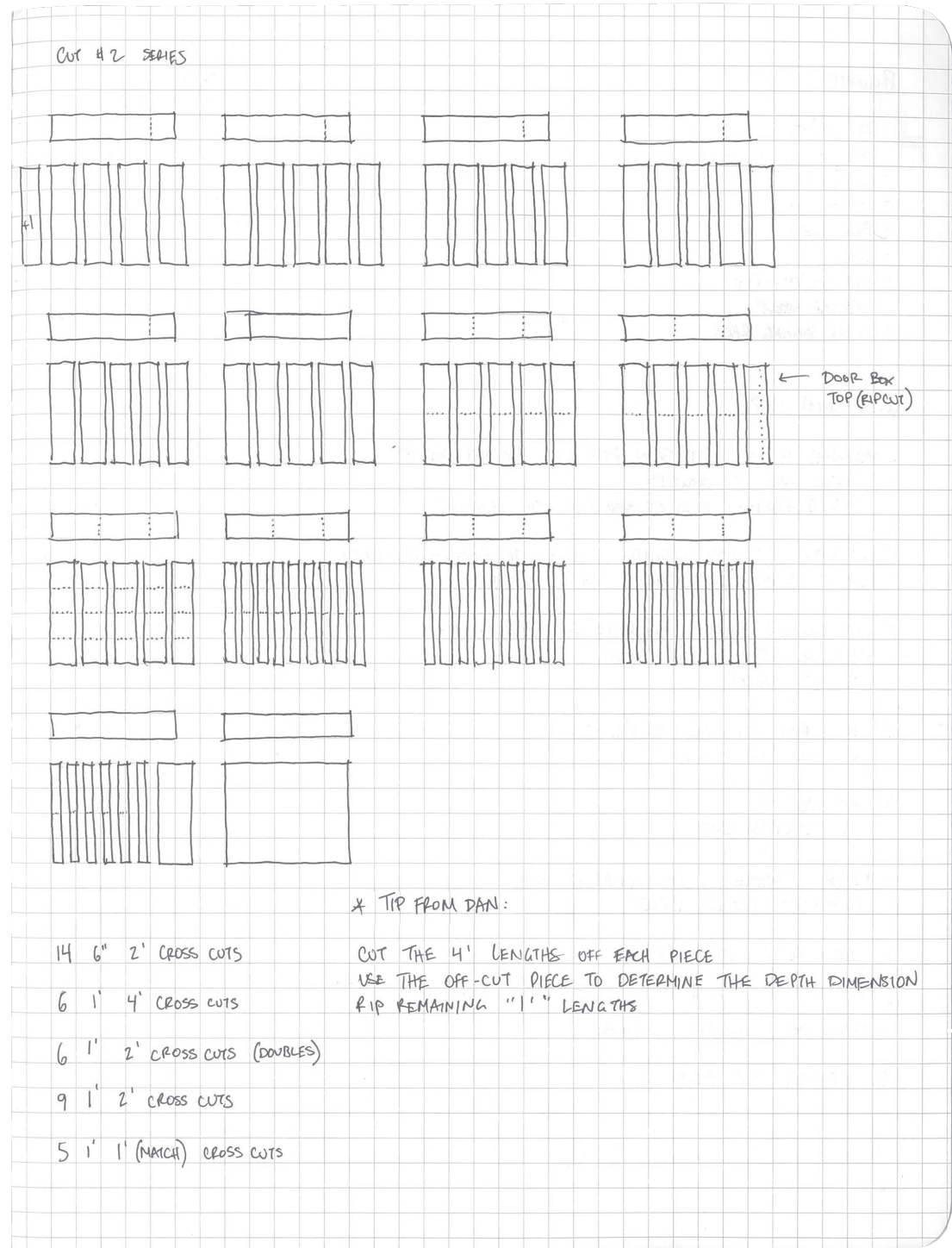
The construction has begun. I'm not sure what I'll end up with, but the act of making is certainly enjoyable. I will admit that I find the sound of a table saw entirely terrifying, as my imagination runs wild with what could potentially go wrong. (My mother is encouraging, she tells me table saw terror stories of coworkers losing fingers and stitching them back together. "You're being careful right, Carol?") If there is one thing I hope to achieve in this process, it will be the feeling of comfort using power tools. I don't expect to be a master at anything, but I do wish to be confidently competent.

Lucky for me, I found myself an incredible mentor. The progress of this project is in parallel to a continuing conversation with Dan Jessel, the workshop technician. He has been available and enthusiastic providing advice and fabrication lessons, invaluable given my limited scope of construction experience. He is an important part in this project.

*Lesson #1: Measure twice, cut once. (Oops.)*

**Figure 68.** Process | Plywood Cut Piece

**Figure 69.** Process | Notebook: Table Saw Cuts 1 (opposite)



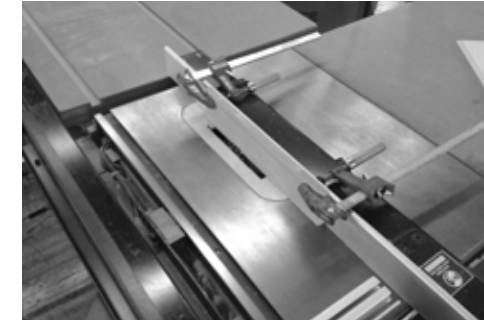
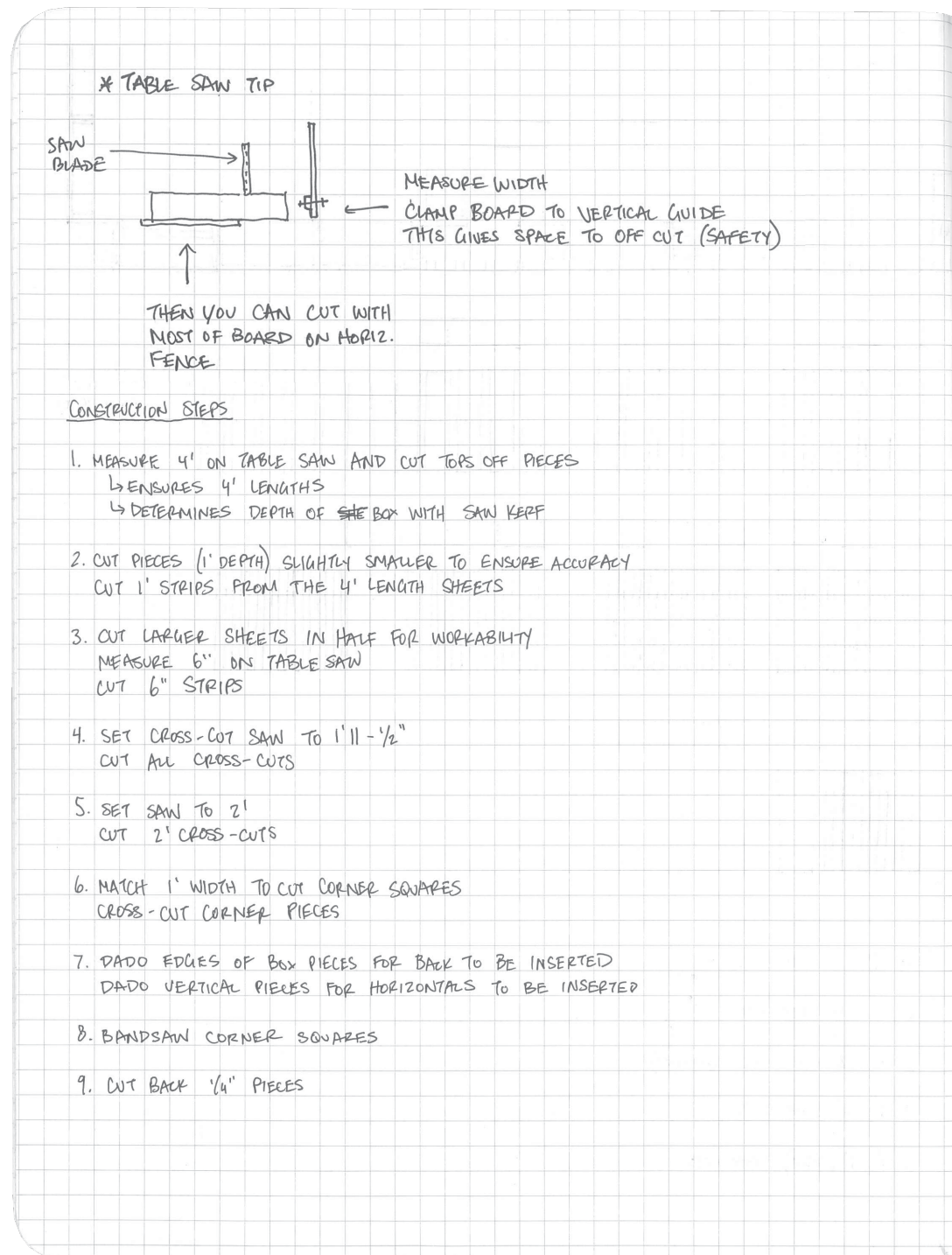
I thought the modularity of the design would make the fabrication less complex. There are many identical pieces, thus many repetitive processes. However, the system relies on accuracy. If one module is too long or too short in any direction, it will not fit properly with the others. I am worried about the accuracy of the cuts I am making. Are the lengths exactly 4 feet? Am I reading the measuring tape correctly? Did I set the table saw fence in the correct position?

*Lesson #2: Consistency is more important than accuracy.*

It doesn't matter if my boxes are all exactly two feet wide by four feet tall. What matters more is that they are all consistently the same.

Figure 70. Process | Notebook: Table Saw Cuts 2 (opposite)





30

I can be found in the workshop between the hours of 9 a.m. when it opens, until 5 p.m. when it closes, with an hour break for lunch. The work is more laborious than I imagined, and requires more focus than I assumed.

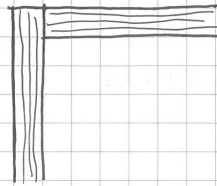
I feel as though I am engaged in an apprenticeship. Dan Jessel, an expert in woodworking and fabrication, is the unofficial master. Although not required to share his wealth of knowledge, he does so without hesitation. I count myself extremely lucky to be his apprentice, working with him step by step. With every new task, I approach Dan for a lesson, or check to make sure what I am about to do is both correct and safe. (I want all ten fingers at the end of this endeavour.)

**Figure 71.** Process | Table Saw Set-Up

**Figure 72.** Process | Notebook: Table Saw Tip (opposite)

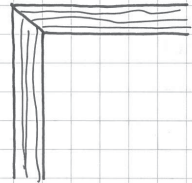
WOOD JOINTS (SIMPLE ONES...)

↳ ALLOW FOR BOXES TO BE ASSEMBLED WITH NO UGLY HARDWARE



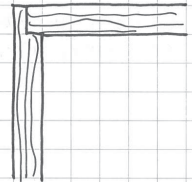
BUTT JOINT

- NOT STRONG (MINIMAL GLUE AREA)
- BETTER IF USING HARDWARE



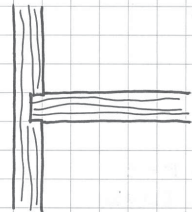
MITER JOINT

- NOT STRONG
- DIFFICULT TO GET PLIGHT/EVEN
- DIFFICULT TO ASSEMBLE



RABBET JOINT (NOT RABBIT...)

- STRONG → MORE GLUE SURFACE AREA
- EASY TO ASSEMBLE → PIECES REST AGAINST EACH OTHER



DADO

- VERY STRONG
- PIECES SLOT IN → EASY TO ASSEMBLE

31

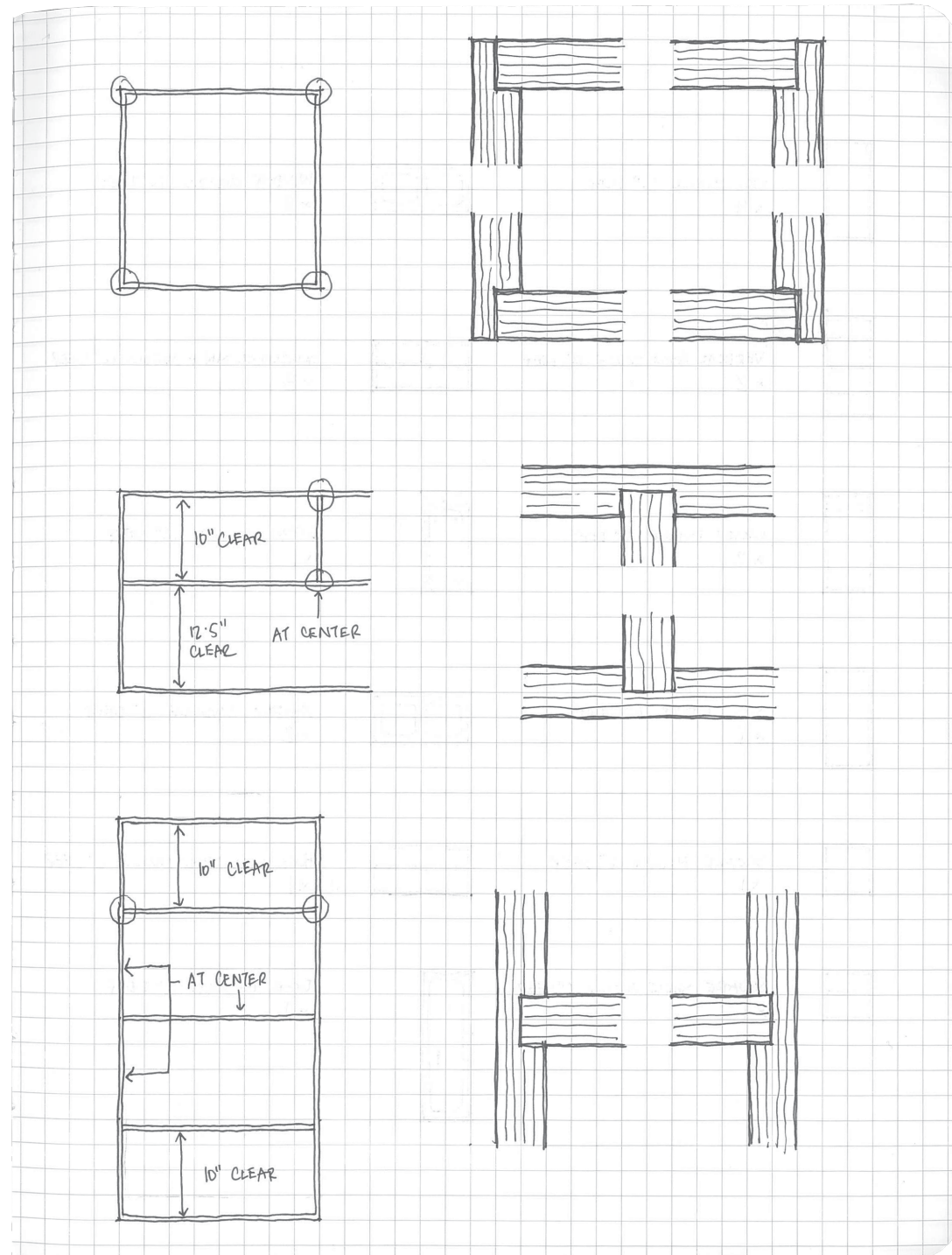
I have cut nearly all of my pieces. How do they come together? What kind of joint will be the strongest? What kind of joint will be the simplest? What kind of joint will I be able to achieve with consistency?

*Lesson #3: Woodworking joints.*

There are several possible joints I can consider using. I am not looking for anything fancy or complex. I want a joint that will be easy to manufacture, and one that will be strong enough to ensure durability.

Figure 73. Process | Notebook: Woodworking Joints (opposite)





32

I am using two types of joints in my construction. The corners will have rabet joints. This joint requires material to be removed from only one of the pieces, which is less work. The material removed creates a ledge for the incoming piece to sit on, which makes assembly less difficult. The gluing area is increased with the additional plane of material added in contact. This makes the joint sufficiently strong.

Dados will be used for the modules with shelves. A dado is a common woodworking joint, typical for cabinetry and boxes. Material is removed from one piece to allow a snug fit for the incoming piece. Three planes of material make up the gluing area. These joints are incredibly strong.

These two types of joinery are not complex. I should be capable with my level of experience.

Figure 74. Process | Machining Dados

Figure 75. Process | Notebook: Rabet and Dado Details (opposite)

## DIETER RAMS 10 PRINCIPLES OF GOOD DESIGN:

**1. Good design is innovative:** The possibilities for innovation are not, by any means, exhausted. Technological development is always offering new opportunities for innovative design. But innovative design always develops in tandem with innovative technology, and can never be an end in itself.

**2. Good design makes a product useful:** A product is bought to be used. It has to satisfy certain criteria, not only functional but also psychological and aesthetic. Good design emphasizes the usefulness of a product while disregarding anything that could possibly detract from it.

**3. Good design is aesthetic:** The aesthetic quality of a product is integral to its usefulness because products we use every day affect our person and our well-being. But only well-executed objects can be beautiful.

**4. Good design makes a product understandable:** It clarifies the product's structure. Better still, it can make the product talk. At best, it is self-explanatory.

**5. Good design is honest:** It does not make a product more innovative, powerful or valuable than it really is. It does not attempt to manipulate the consumer with promises that cannot be kept.

**6. Good design is unobtrusive:** Products fulfilling a purpose are like tools. They are neither decorative objects nor works of art. Their design should therefore be both neutral and restrained, to leave room for the user's self expression.

**7. Good design is long-lasting:** It avoids being fashionable and therefore never appears antiquated. Unlike fashionable design, it lasts for many years - even in today's throwaway society.

**8. Good design is thorough down to the last detail:** Nothing must be arbitrary or left to chance. Care and accuracy in the design process show respect towards the consumer.

**9. Good design is environmentally friendly:** Design makes an important contribution to the preservation of the environment. It conserves resources and minimizes physical and visual pollution throughout the life cycle of the product.

**10. Good design is as little design as possible:** Less, but better - because it concentrates on the essential aspects, and the products that are not burdened with non-essentials. Back to purity, back to simplicity.<sup>9</sup>

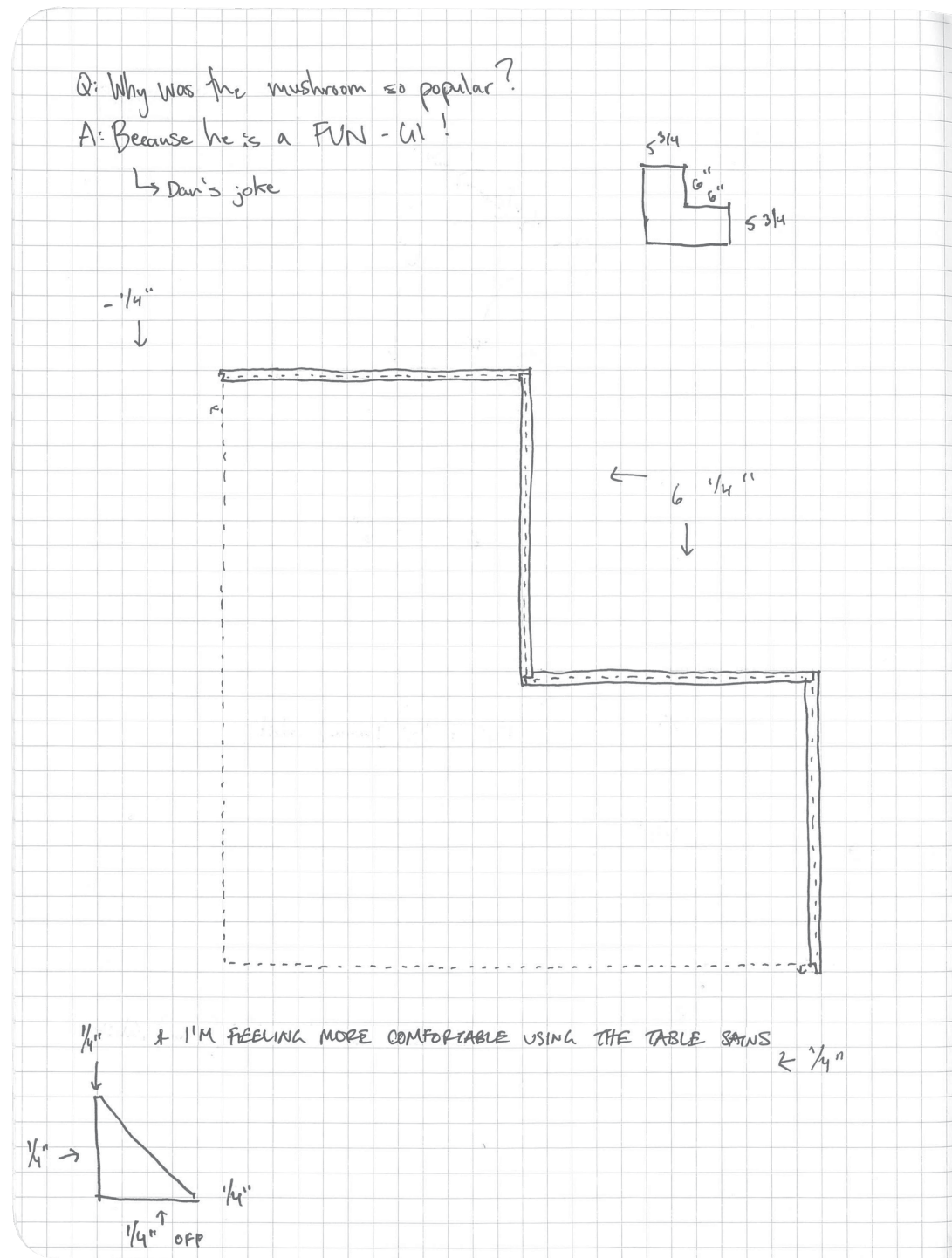
I think each person is like an atom, in orbit with other atoms, who are revolving around centres of passions or interests. Those who have interests in common find themselves in orbit with each other, around the particular interest. Sometimes they cross paths, and sometimes they hit, making contact. This is the point where ideas happen, and information is exchanged.

It is curious how casual conversations can lead to productive thoughts. I unexpectedly received advice from a skilled carpenter, and an industrial machinist, among other encouraging and friendly individuals. I like to think of these exchanges as stolen lessons, each expanding the scope of a solo endeavour towards a collective dialogue.

I have also been reading and collecting stolen lessons from designers who share similar outlooks and approaches. They are my allies, and their hints are found in the library books piling high across my desk.



**Figure 76.** Catalogue | Universal Shelving Unit (p. 234)



34

Perhaps I shouldn't admit this, but I am having a blast being in the workshop. I like working with my hands, constantly solving small puzzles, and checking off items on my list of things to do. I have not used my computer for work in several days. I am sleeping incredibly well, exhausted from the fitness of manual labour. I wake up easily and early, excited for each new day in the workshop. Today I am solving the details for the 'funny corner', the corner which allows me to gain an extra 6 inches of interior space in each dimension so the bed will fit. Although it would be ideal if all four corners were identical, this will not be possible in my current scheme.

Figure 77. Process | Plywood Piles & Dan

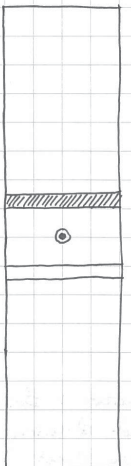
Figure 78. Process | Notebook: Designing with Dan (opposite)



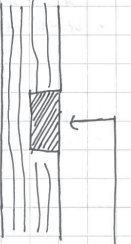
EXTRAS/OFF CUTS

11 7/8" x 23 1/2"	x 3
5 3/8" x 23 7/8"	x 1
5 5/8" x 23 7/8"	x 2
6" x 23 7/8"	x 2
6 1/4" x 23 7/8"	x 2
5 5/8" x 4'	x 1
5" x 47"	x 2
4 7/8" x 23"	x 1
1' 5/8" x 11 6/8"	x 9
1' 5/8" x 11 1/2"	x 2
5 6/8" x 5 6/8"	x 4
9 3/4" x 20 1/2"	x 1
11" x 11" (TRIANGLE)	x 12
42" x 1 1/4"	x 10
3" x 43"	x 5
4" x 4'	x 2
3 1/4" x 4'	x 1
3 3/4" x 4'	x 1
33 7/8" x 4'	x 1

INLAY FIX



NOGAL (DARK) TO CONTRAST PLY



\* IMPORTANT LESSON: \*

I BROUGHT PIECE BACK OVER THE DADO BLADE BEFORE IT HAD STOPPED RUNNING COMPLETELY → MADE A SCARY NOISE AND GRABBED MY PIECE, SENDING IT FORWARD. IT TOOK A HUGE BITE OUT OF IT, I'LL LEAVE IT.


IT'S A FROWN

☹ = DAN

↑

"LEAST FAVOURITE THING IN THE SHOP..."

TABLESAW BITE




I spoke too soon. I've had a frustrating day. I made several errors, some of which will require an additional order of plywood, a rather large dent in my budget. Rushing for a moment, I also made dados in incorrect locations. I must be more patient.

*Lesson #4: Inlays*

Being an apprentice comes in handy. I've been taught how to fix the dado errors. An inlay of another piece of wood will be added, snug and flush with the plywood, but contrasting in colour. It will look intentional, no one will know. Except for Dan.

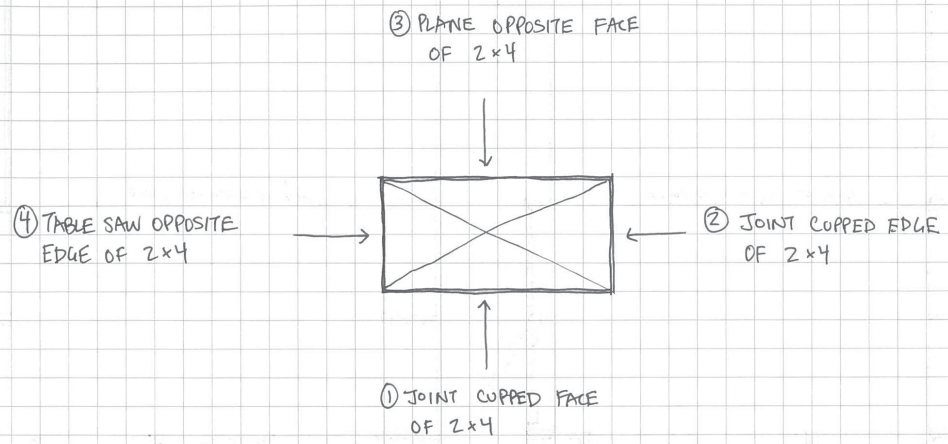
I made another mistake. I was careless for a moment, and moved a piece over the saw blade before it finished spinning. The blade completely exposed, grabbed the piece, and sent it forward with a wretched noise. This is called kickback. It is Dan's least favourite error to witness. It can be extremely dangerous. The kickback was not kind to my piece.

**Figure 79.** Process | Inlay Detail

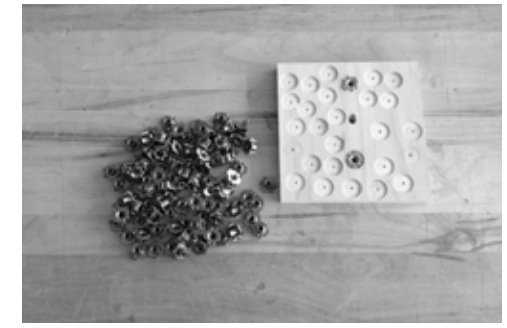
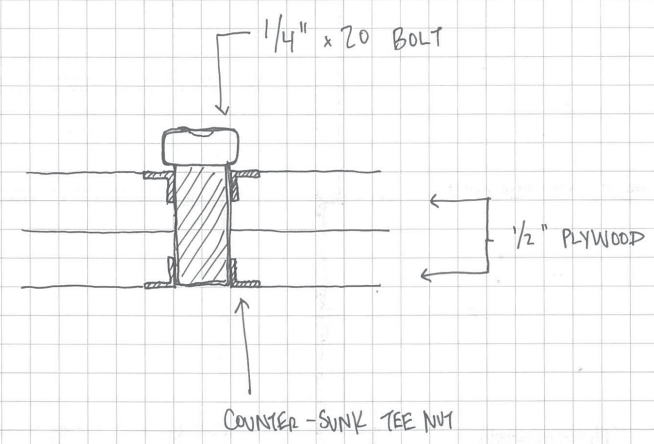
**Figure 80.** Process | Notebook: Inlays and Kickback Lessons (opposite)



How To Dress  
A 2x4



BOLT CONNECTIONS

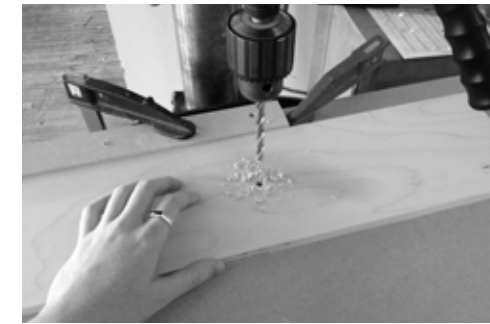
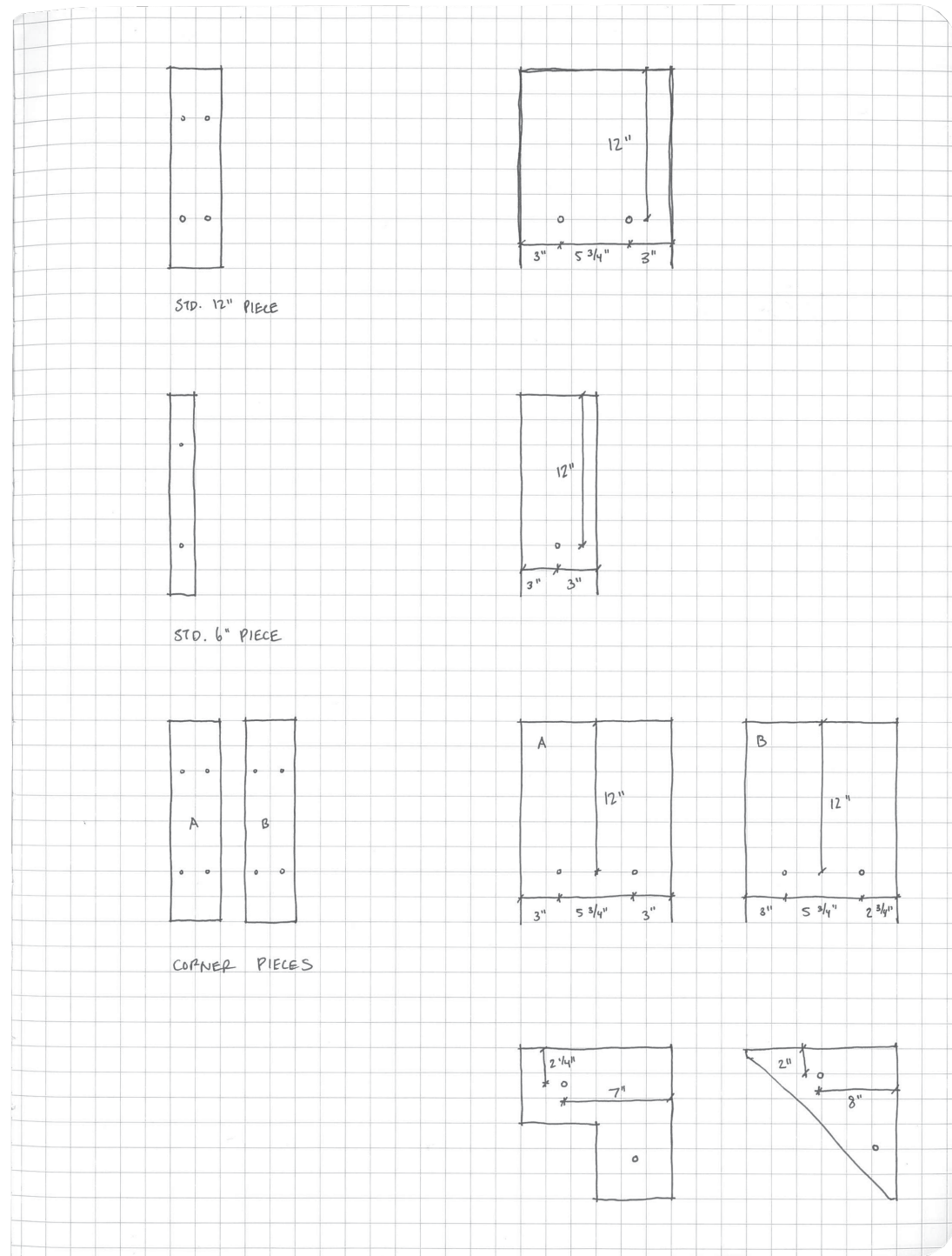


How exactly will the boxes be connected to each other? What type of hardware can I use to make assembly easy for anyone equipped with a standard screwdriver? What will look the most simple?

Lesson #5: Hardware

I have reviewed all my options, inspecting examples available in the workshop. With each I have been advised the benefits and drawbacks. I made the decision to use a two part hardware system. The boxes will have tee-nuts hammered into the plywood at each connection point. They will be inset and flush to reduce visibility, a minimal detail. To connect two boxes, standard bolts will run through the aligned tee-nuts, locking each in place. This system ensures flexibility for assembling the modules in any position, as all connection points are equipped with a tee-nut to fasten through. All hardware can be found commonly, at any construction supply store.

Figure 81. Process | Tee-Nut Countersink Depth Test  
Figure 82. Process | Notebook: Hardware Detail (opposite)



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All pieces have been cut. I have also fixed the pieces I accidentally altered incorrectly. I have all my pieces organized on a workbench, piled high.

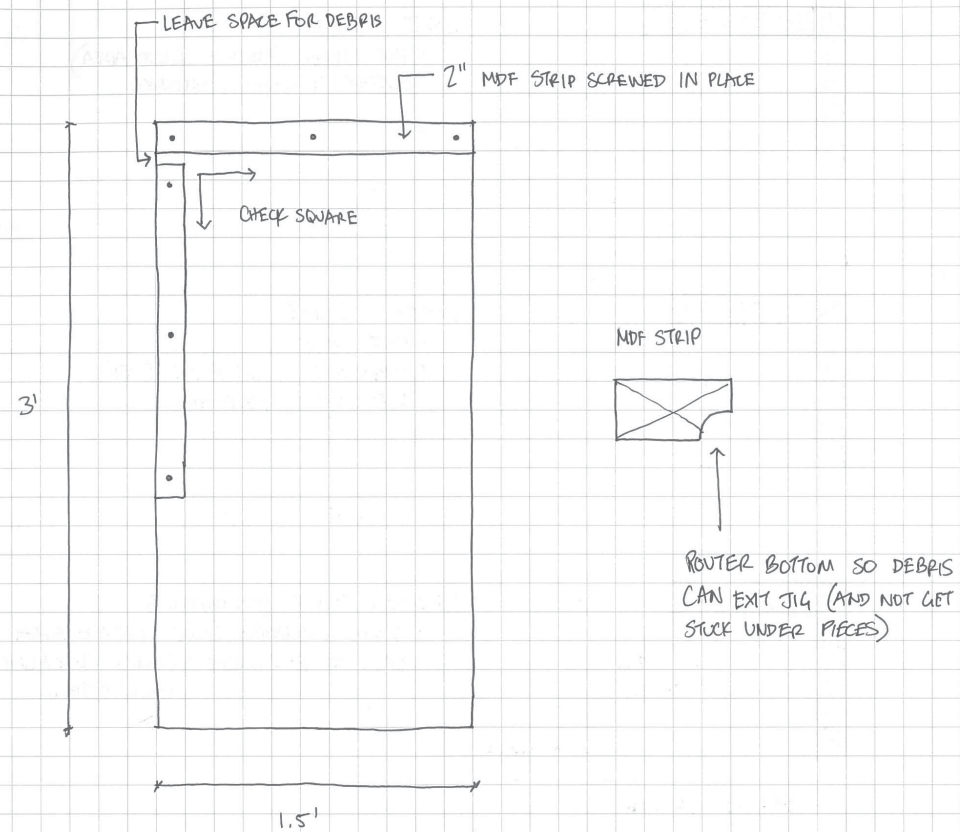
Away from the table saws and onto the next task: drilling. I have located the bolt holes in such a way that the narrow boxes can align to either the front or the back edge of the deeper boxes. This provides flexibility for the future. I need the bolt holes in identical positions on all of the pieces. If they are not so, the assembly will be off, and there will be gaps between boxes. It will be unsightly.

Figure 83. Process | Drilling Bolt Holes

Figure 84. Process | Notebook: Bolt Locations (opposite)

### DRILL JIG

- JIG WILL BE CLAMPED TO DRILL PRESS SO THAT ALL PIECES WILL BE DRILLED IN THE SAME SPOT WHEN LINED UP AGAINST CORNER OF JIG



### HOW TO MAKE

- CUT MDF BASE
- CUT 2" MDF STRIPS
- ROUTER MDF STRIPS ALONG BOTTOM EDGE
- CLAMP TOP STRIP ALONG BASE MDF TOP EDGE, SCREW IN PLACE
- CLAMP 2<sup>ND</sup> STRIP ALONG LONG EDGE, LEAVING GAP FOR DEBRIS
- CHECK SQUARE, ADJUST + RE-CLAMP IF NECESSARY
- SCREW IN PLACE



38

How can I drill with consistency for all my pieces?

### *Lesson #6: Drilling Jig*

A jig is a custom-made device that is used in conjunction with another tool to assist fabrication. There are all sorts of jigs, each you must make according to the task at hand. In this case, I will be making a drilling jig, to be used with the drill press. It will be clamped to the press bed, and will position each piece to be drilled, locating the bolt holes in identical positions.

**Figure 85.** Process | Drill Jig

**Figure 86.** Process | Notebook: Drill Jig Design (opposite)



A standardized object should not be a finished product, but on the contrary be made so that man and all the individual laws controlling him supplement its form.<sup>10</sup>

-Alvar Aalto

Although I am making this room for myself, the modules should be flexible in concept. They should be shape-shifters, fitting in any space available. I hope they are easily understood as a re-arrangeable system, inviting users to manipulate them. I hope that people can imagine their own objects within the modules, and their own version of a room they could make with them. I hope they are neutral enough in form to allow for individual expression to take over.

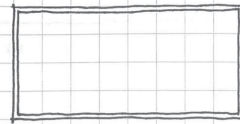


**Figure 87.** Catalogue | Eames Storage Unit (p. 220)

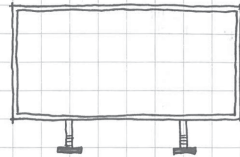
**Figure 88.** Process | Eames Customization (opposite)



① STAND-ALONE



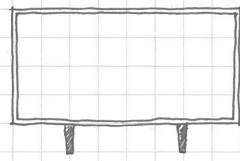
② LEVELING FEET



③ CASTORS



④ FIXED FEET



THE BOX MODULES ARE DESIGNED WITH FLEXIBLE AND INTERCHANGEABLE BASES. THESE INCLUDE [BUT ARE NOT LIMITED TO] LEVELING FEET, CASTORS, AND FIXED FEET. THIS MAKES THE SYSTEM MORE FLEXIBLE AND BETTER SUITED TO A USER'S PREFERENCE/NEEDS.

THIS DESIGN SETS OUT TO USE 13 1" DEEP STD. BOXES, 9 6" DEEP STD. BOXES, 2 6" DEEP SQUARE BOXES, AND 1 6" DEEP DOOR BOX. HOWEVER, THE BOXES ARE DESIGNED WITH BOLTS ON EVERY 1" CENTER, AND IN LINE WITH A 6" CENTER [WIDTH/DEPTHWISE]. THEREFORE, AN INFINITE NUMBER OF COMBINATIONS AND QUANTITIES, AND RESULTING FORMS OF STRUCTURES CAN BE PRODUCED. THIS IS AGAIN, TO BEST SUIT THE NEEDS OF USERS, AND TO BEST SUIT A VARIETY OF DIFFERENT USERS.

There is another benefit to the hardware system I have selected. The tee-nuts accommodate readily available bolts, and this allows the easy attachment of a wide range of fixtures and fittings. As a stand-alone furniture system, the modules can have different accessories added, increasing their flexibility.



Figure 89. Catalogue | Universal System (p. 284)

Figure 90. Process | Notebook: Customization Capabilities (opposite)

What works good is better than what looks good,  
because what works good lasts.<sup>11</sup>

*-Ray Eames*

There is only one rule that holds fast in architecture: build naturally. Don't do anything stilted, don't do anything unnecessary. Everything that is superfluous becomes ugly with time.<sup>12</sup>

*-Alvar Aalto*

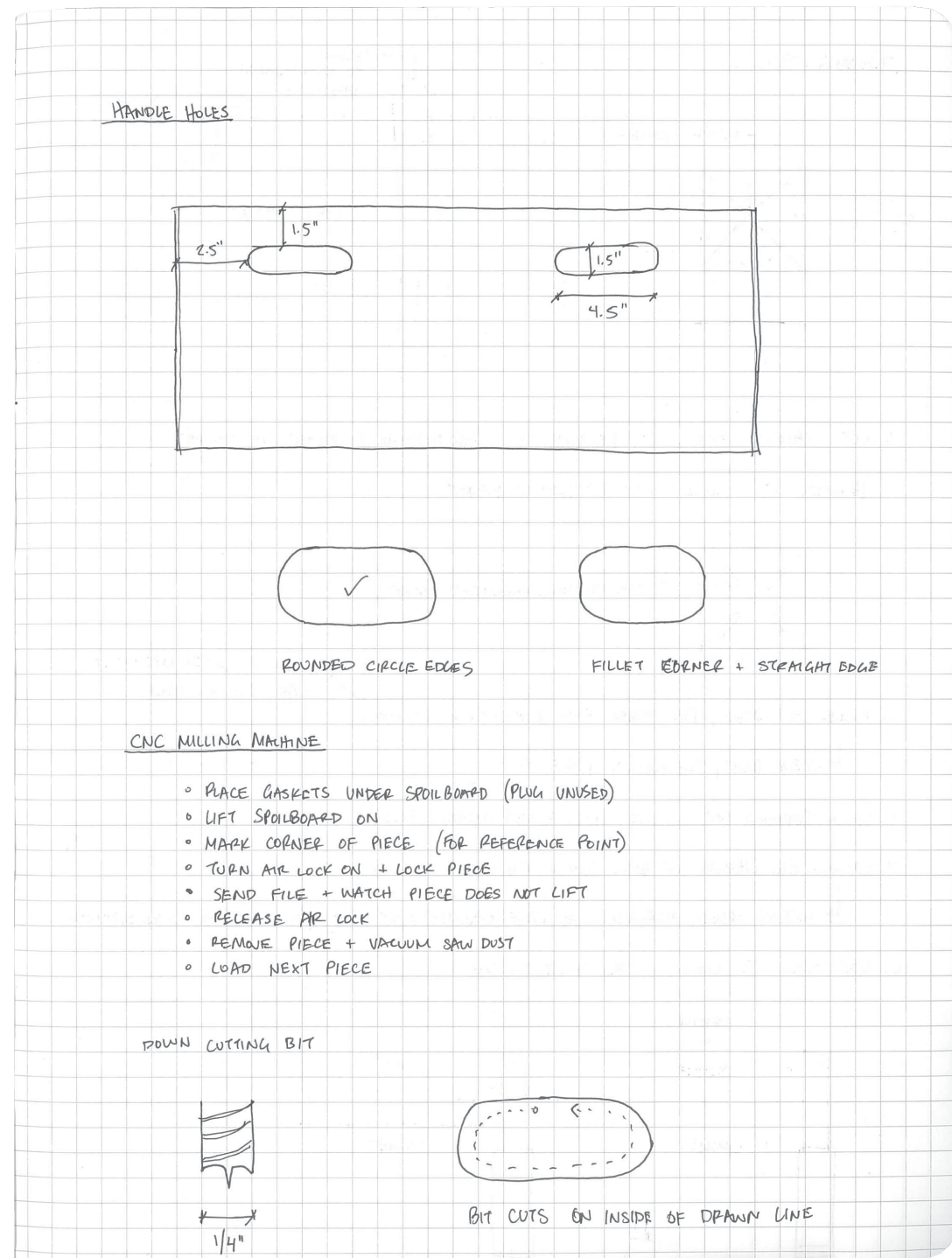
## 4 1

I feel self-conscious about the simplicity of this design. Today, with the capabilities of digital tools and fabrication methods, design has become formally limitless. It is possible to make almost anything. All I have is a set of boxes. Is it too simple?

I am wary of trends and design fashions. I opted for a basic form, uncomplicated with unnecessary aesthetic details. I value timelessness. I did not want a digitally fabricated blob.



**Figure 91.** Catalogue | L-Leg Stool (p. 196)



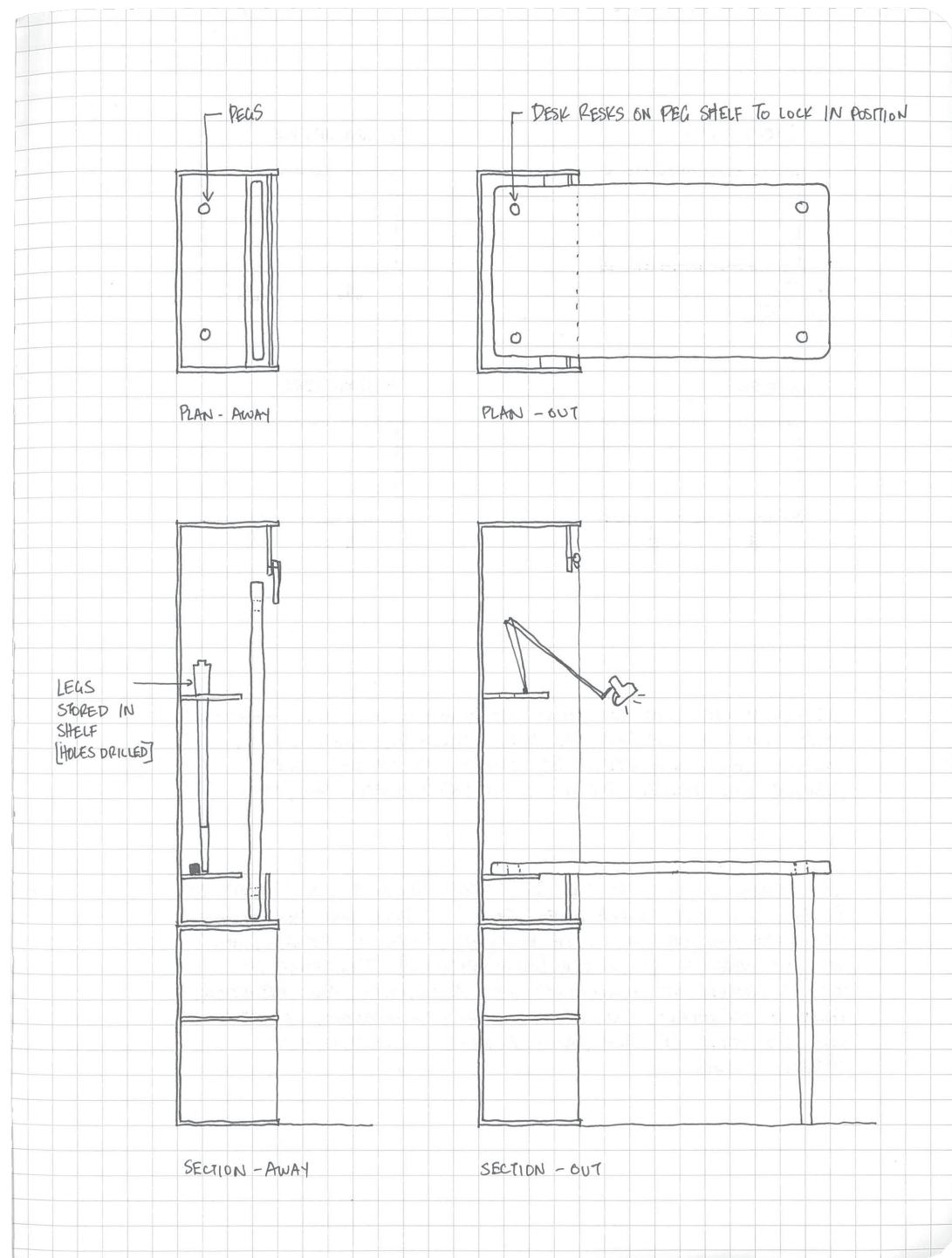
42

I am using traditional tooling (controlled by hand) for the majority of this project, with minimal reliance on digital fabrication. This is a pragmatic decision. I have several identical pieces, all rectangular in shape. Using a table saw is significantly more efficient for two reasons: it is faster, and less material is wasted. The table saw can cut each set of similar pieces in one quick pass, requiring only a single set-up. The saw kerf (material removed with each saw cut, the thickness of the blade) is slightly more than 1/8" inch on the table saw. The CNC (computer numerical control) milling machine I have access to has a minimum tool bit size of 1/4" inch, wasting more material with each cut, and requiring a set-up for each piece cut.

The CNC machine is, however, more efficient as I approach the task of removing material for the module handles. It would be possible by hand, but is faster using the CNC machine. It eliminates the need for producing another jig. All that is required is to set up each piece, press 'GO', and switch the pieces as the production line moves along.

**Figure 92.** Process | CNC Milling Module Handles

**Figure 93.** Process | Notebook: Handle Holes and CNC Information (opposite)



It is time to design the desk module. I am trying to keep the hardware at minimum, none if possible. Everything must be made from wood, I do not want to add another material into the mix. I need the desk to fold away when not in use. It should be simple to do so, not an arduous task.

It is a Murphy desk without hardware. The desktop can be set in two positions. Put away, the table top is slotted between interior shelves and a vertical front piece to stand it straight. A toggle secures it in place. Folded down, the desktop is secured by two pegs on the lower shelf, and is supported by two legs on the opposite end. I am not sure how to make the desk legs yet, I have no experience with turning wood.

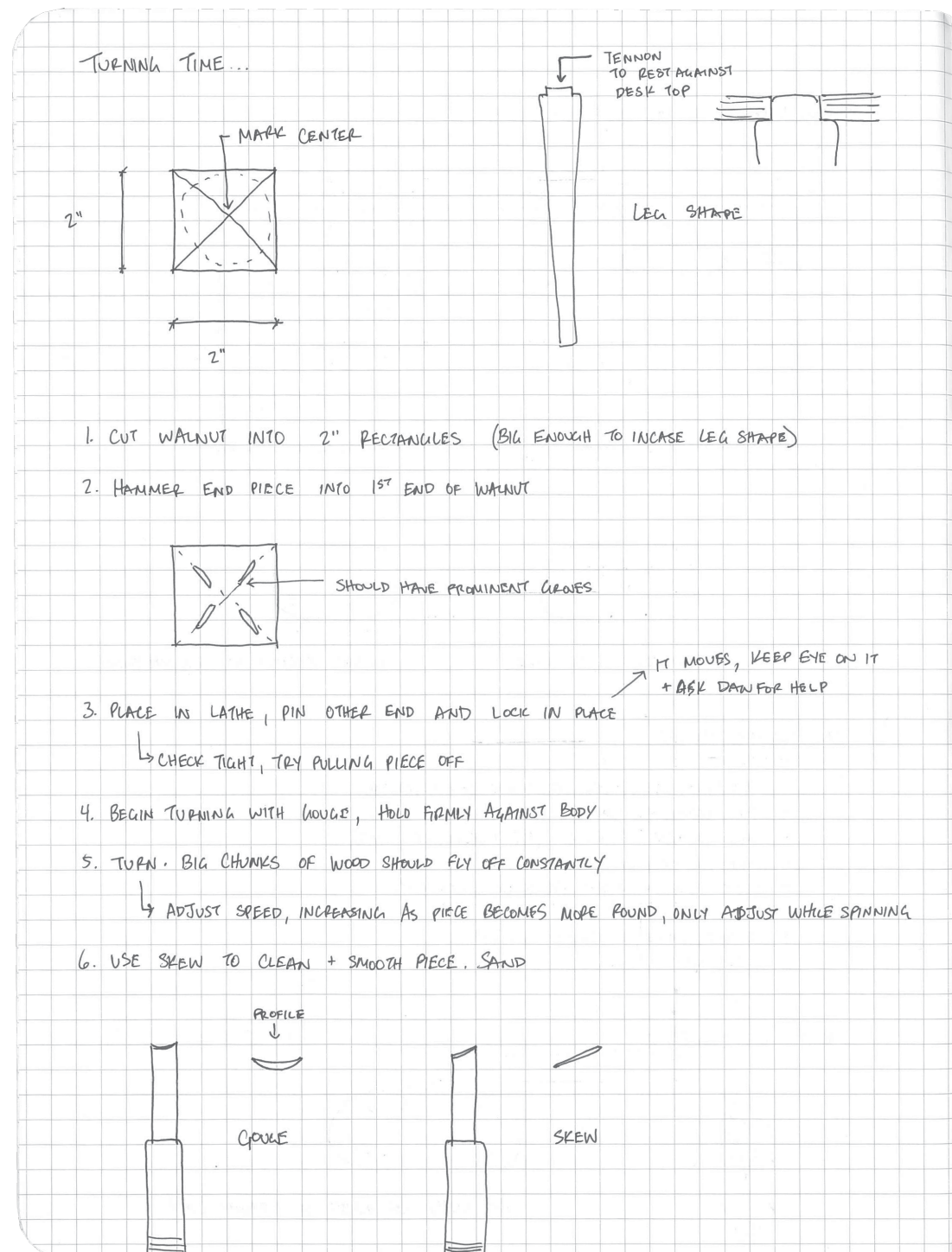


**Figure 94.** Process | Desk Design Test

**Figure 95.** Catalogue | Wardrobe-Bed (p. 246)

**Figure 96.** Process | Notebook: Desk Design (opposite)





Lesson #7: Wood Turning

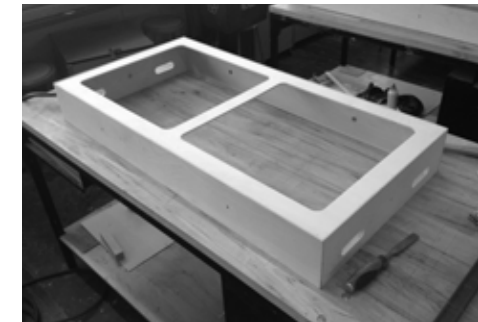
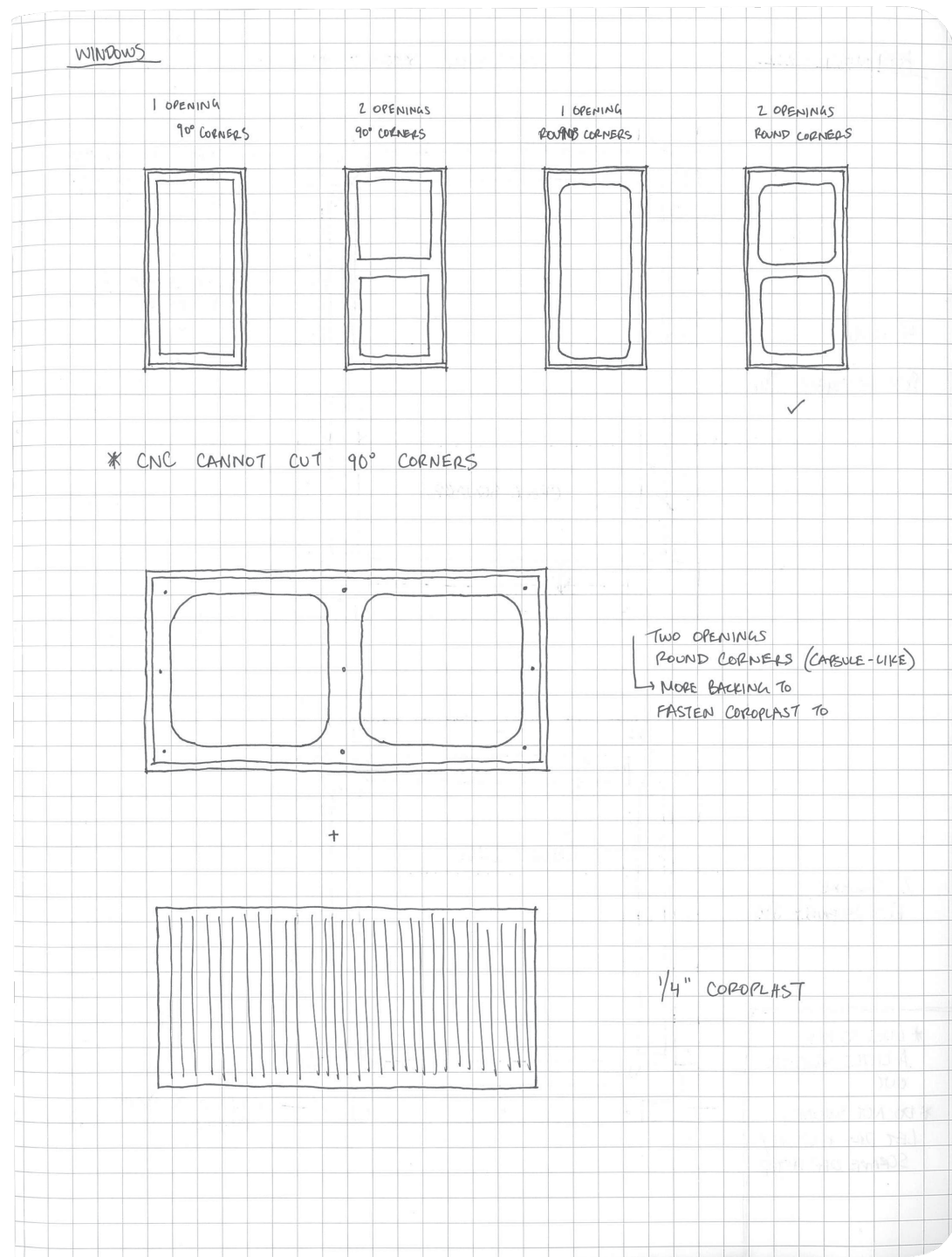
The lathe is an intimidating tool. The piece turning is pinned at both ends simply by pressure. If it becomes loose, it could fly away with force, damaging anything in its path. I am proceeding with caution. For safety I wear a special helmet, shielding my whole face from the flying wood chips and potential debris. Until the piece has rounded corners, it puts up a good fight against the tool. It is important to stand with the handle against my body to resist the possibility of losing grip and sending the sharp blade in flight.

I first use a gouge, a turning tool for removing the bulk of material and shaping my piece. It does not take long to become comfortable on the lathe. The piece is now spinning quickly, while I use a second tool, a skew, to finish the job, smoothing the surface.

Turning might be the most satisfying skill I have learned thus far.

Figure 97. Process | Turning Desk Leg

Figure 98. Process | Notebook: Turning Lesson (opposite)

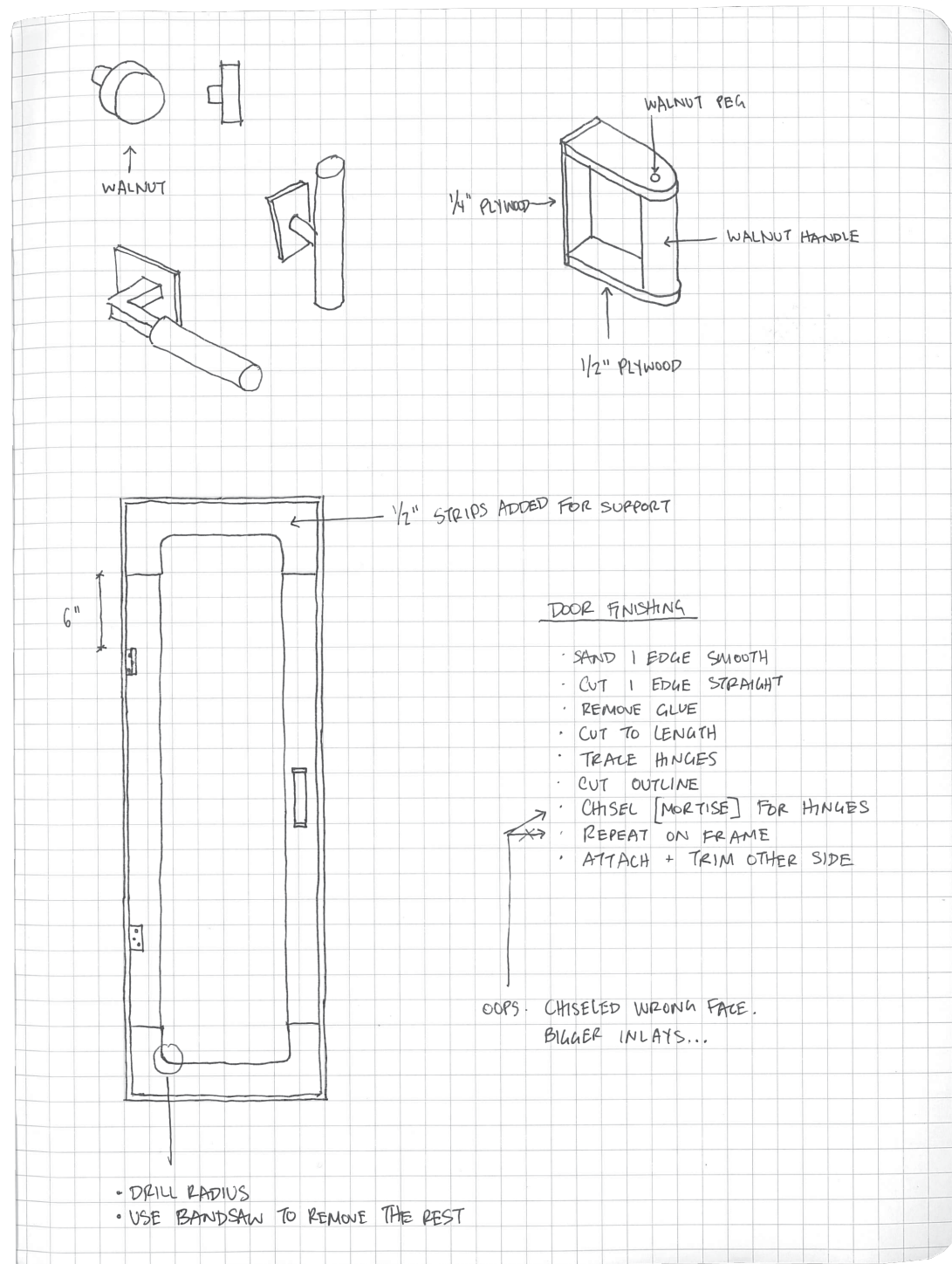


I have decided the window modules will have two openings, with rounded corners. The openings will be covered with translucent coroplast, a corrugated plastic. There are practical reasons for these decisions.

The CNC machine cannot cut 90 degree corners, so the rounded edges will be possible to fabricate. The two openings will allow easy attachment of the coroplast to the plywood. The coroplast is lightweight, and can be cut to size easily with a knife. The translucency should help reflect light and brighten the interior space.

Figure 99. Process | Window Modules

Figure 100. Process | Notebook: Window Module Design (opposite)



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I want the door to match the windows, like a sibling with noticeable similarities.

A single layer of plywood will not suffice in strength to hold the hinges, and I do not want a flimsy door. I will need an extra layer of support around the edges. The corners can be rounded, the same as the windows. The handles are the last detail to resolve, and are important. The handle is the first point of physical contact for a person approaching the room. It needs to have a respectable handshake.

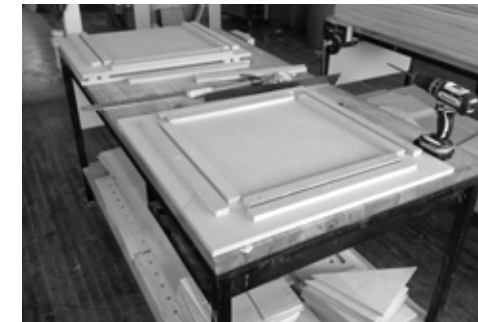
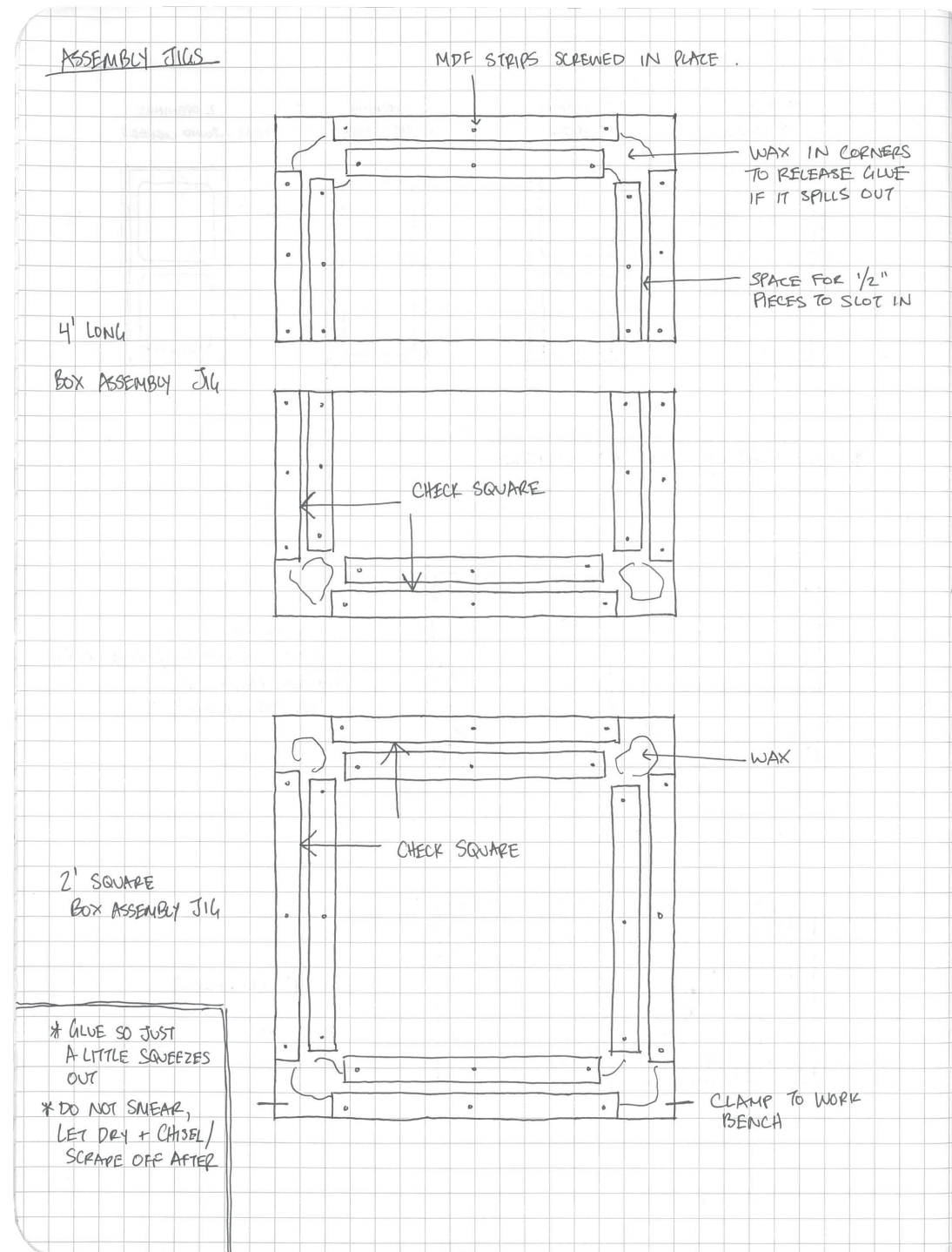
Hinges are slightly more complex than I thought. I am studying the doors around me, figuring out where to make notches for the hinges.

This is embarrassing. I've managed to notch the door in the wrong place. The hinges I chose must be attached to the depth of the door, not the front face. I have two rather large gouges in the wrong place. Oops. More practice with inlays for me.

Figure 101. Process | Door Module Testing

Figure 102. Process | Notebook: Door and Handle Design (opposite)





It is time to assemble my boxes. The boxes must be square, the corners must be crisp. How do I do this?

*Lesson #8 + 9: Assembly Jig + Air Nail Gun*

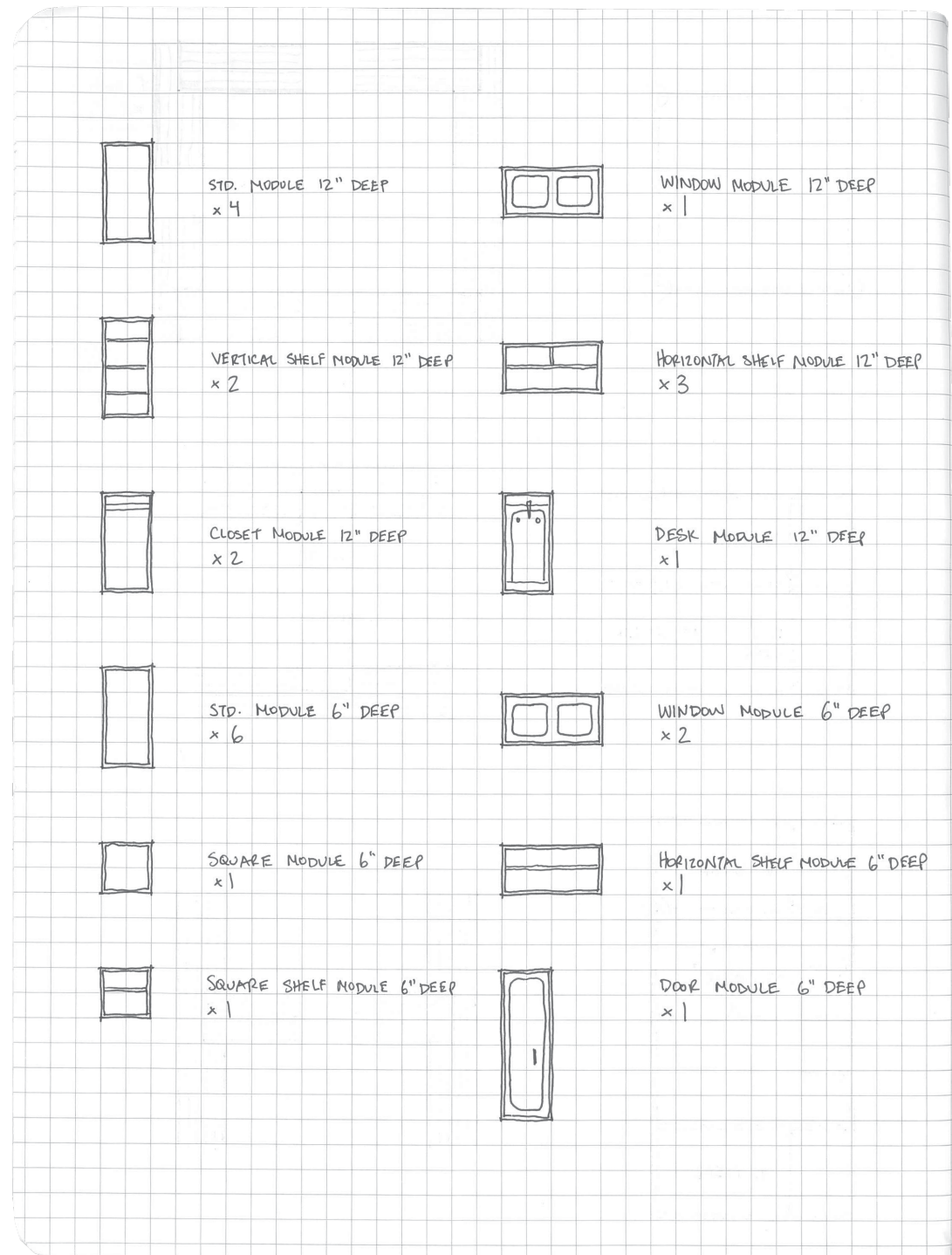
I need to make another jig. This one will hold the pieces in place while I apply glue, and set their permanent position. If the jig is square, the boxes cannot be anything *but* square.

I will use brad nails to speed up the assembly. The thought of waiting forty-five minutes per box for the glue to set is unappealing. At this point, I am impatient. Also, it turns out the nail gun is ridiculously fun to use. Tffftp-tffftp, tffftp-tffftp. The sound is satisfying as the nail locks each piece in place.

**Figure 103.** Process | Assembly Jig

**Figure 104.** Process | Notebook: Assembly Jig Design (opposite)





All twenty-five of my modules have been assembled. They are real. I'm receiving questions and comments now, from curious on-lookers.

"What are you building?"

"A room of modular boxes." (This sounds painfully mundane.)

"Is this your thesis?"

"Yes." (Is this okay?)

"I wish my thesis was as simple as yours."

(Am I doing something too simple?)

"So, you are finished?"

"Oh, not quite yet." (I don't even know if these boxes will fit together.)



**Figure 105.** Process | Module Assembly

**Figure 106.** Catalogue | Casiers Standards (p. 186)

**Figure 107.** Process | Notebook: Module Matrix (opposite)



Almost done! I told Dan that I would be finished by the end of the week. He laughed. I mentioned that I only had to sand and finish the boxes. "Finishing will take you at least double the amount of time that you are thinking," was his response.

*Lesson #10: Sanding and Finishing*

First I must sand all the boxes, progressing through three different grits. If they are not sanded well enough, the finish will be rough to touch. I have twenty-five boxes to sand. It is a wretched task, exhausting and strenuous. I am sorry for those who were near enough to hear my complaints.

I am using a polyurethane clear-coat finish, to retain the original colour and look of the plywood. My boxes cover almost every available workbench, and I am now working around the clock. Each box needs two coats of finish. Between coats the boxes must be sanded again, a wonderful opportunity to perfect my sanding skills, reluctantly. When will I be finished?

**Figure 108.** Process | Sanding

**Figure 109.** Process | Notebook: Sanding Schedule (opposite)



Anything I can do, Ray can do better.<sup>13</sup>

-Charles Eames

## 50

I have always found it easier to see things in other people's work than my own. When I was younger I played a variety of team sports. I was never the goal-scorer, always the one to set-up the play, the assistant. I wish I had a partner equally invested in this process, someone to assist. There would be a dialogue of constant critique, an opportunity for opposite ideas to work in complement.

**Figure 110.** Process | Le Corbusier and Charlotte Perriand (opposite)

**Figure 111.** Process | Aino Aalto and Alvar Aalto (opposite)

**Figure 112.** Process | Charles and Ray Eames (opposite)

**Figure 113.** Process | Peter Smithson and Alison Smithson (opposite)

COSTING BREAKDOWN

BUDGET = \$1000

EXPENSES:		766.42
BUILDING MATERIALS	PLYWOOD ORDER #1	141.25
	PLYWOOD ORDER #2 (+MDF)	20.57
	2 x 4'S (ROOF)	70.47
	COROPLAST (WINDOWS)	14.74
	WALNUT DOWEL (CLOSET MODULE)	48.25
	WALNUT WOOD (DESK LEGS)	18.08
	NOGAL WOOD (INLAYS)	
HARDWARE	1/4" x 20 TPI TEE NUTS	31.93
	1/4" x 20 TPI BOLTS	17.56
	BRAD NAILS	23.66
	SCREWS (FOR JIGS)	5.64
	DOOR HINGES	3.45
	DOOR LATCH	3.49
CONSTRUCTION MATERIALS	CARPENTER'S GLUE	19.74
	DOUBLE-SIDED TAPE (WINDOWS)	12.38
FINISHING SUPPLIES	WATER-BASED POLYURETHANE	238.40
	PAINT BRUSH	14.41
	SANDING SPONGES	13.49
	CNC MILLING MACHINE CUTTING TIME	40.00
		<u>1503.93</u>

\* I WENT \$500 OVER BUDGET, NOT TOO BAD.

\* SOLD SOME SCRAP PLYWOOD, \$40 RECOVERED 😊

51

Construction is complete. How much exactly, did the whole thing cost?

All expenses totalled \$1503.93. Not bad. I would assume this cost could be reduced further if carried out again. I would already have the manufacturing jigs set up. I wonder how much faster I could make it, the second time around? Or the third?

Figure 114. Process | Notebook: Costing Analysis (opposite)





It is time for a test set up. Will they fit together? Will it work?

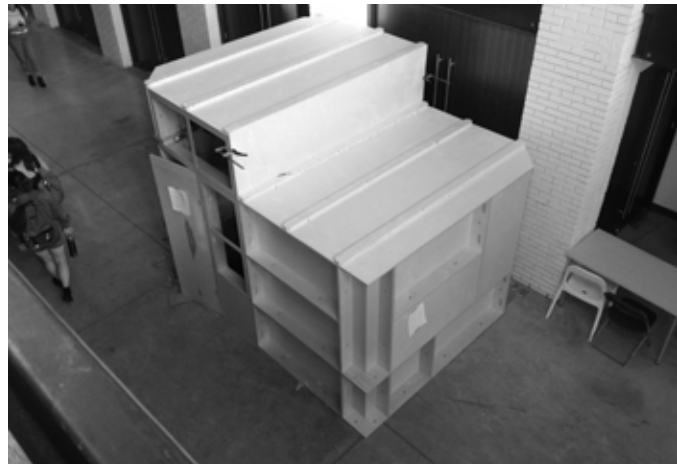
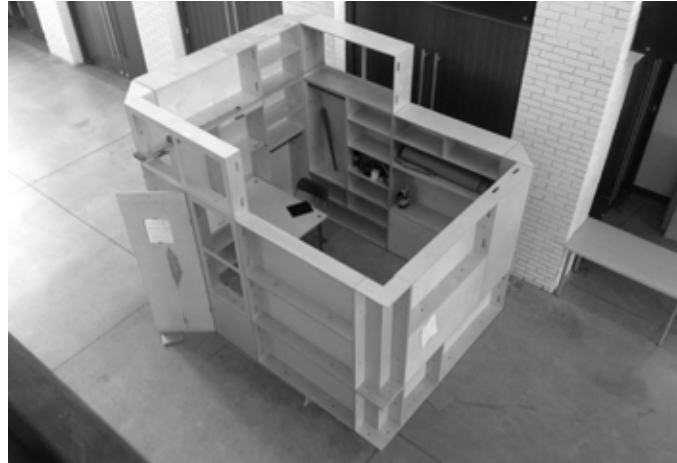
*Lesson #11: Tolerance*

Working through the first test set-up, I realize I have designed a system with zero tolerance for real world conditions. This is not good. There are tee-nuts on both sides of each connection point, meaning that there are threads on both sides. The tee-nuts must align perfectly to allow the bolt to thread its way through both. If they are off by the slightest amount, the bolt will not thread itself into the second tee-nut. Instead, it pushes the second tee-nut away, pushing the box with it. Because the floor is not perfectly level (and in any given situation, will not be), the tee-nuts are slightly misaligned. I need clamps to hold the boxes in place while I bolt them together. It is difficult, and more so as I continue to add each box, increasing the degree of misalignment. A hardware system allowing some tolerance for error would have been wise.

---

**Figure 115.** Process | Test Set-Up #1 Progress 1 (opposite)

**Figure 116.** Process | Test Set-Up #1 Progress 2 (opposite)



I am self-conscious discussing my own design endeavours. I dislike design critiques and presentations. I like listening to what people say about my work, but I despise explaining it. This becomes hard to avoid when you build something in the atrium of an architecture school. People look at it, touch it, and tell you what they think. It is extremely exposing, and can make one quite nervous. I've diligently recorded the reactions I received so that I may learn how others see my design, beyond my own two eyes.

While doing a test set-up in the school, I heard this:

“Can you make me one?”

“You thought of everything!”

“I don't know why IKEA doesn't already have this.”

I was happy to have seemingly made something that many could understand, despite the difficulty in assembly, and no matter how much I despaired being comparable to IKEA.

---

**Figure 117.** Process | Test Set-Up #1 Atrium 1 (opposite)

**Figure 118.** Process | Test Set-Up #1 Atrium 2 (opposite)



I am going to do another test set-up. At Dan's suggestion, this time I will lay all of the boxes flat on the floor and assemble them in walls. The walls can then be tilted up into place as a whole. This should reduce the issue of floor-levelling and tee-nut tolerance.

It worked. Set-up was significantly less difficult this time.

---

**Figure 119.** Process | Test Set-Up #2 Wall Assembly (opposite)  
**Figure 120.** Process | Test Set-Up #2 Wall Lifting (opposite)  
**Figure 121.** Process | Test Set-Up #2 Corner Assembly (opposite)

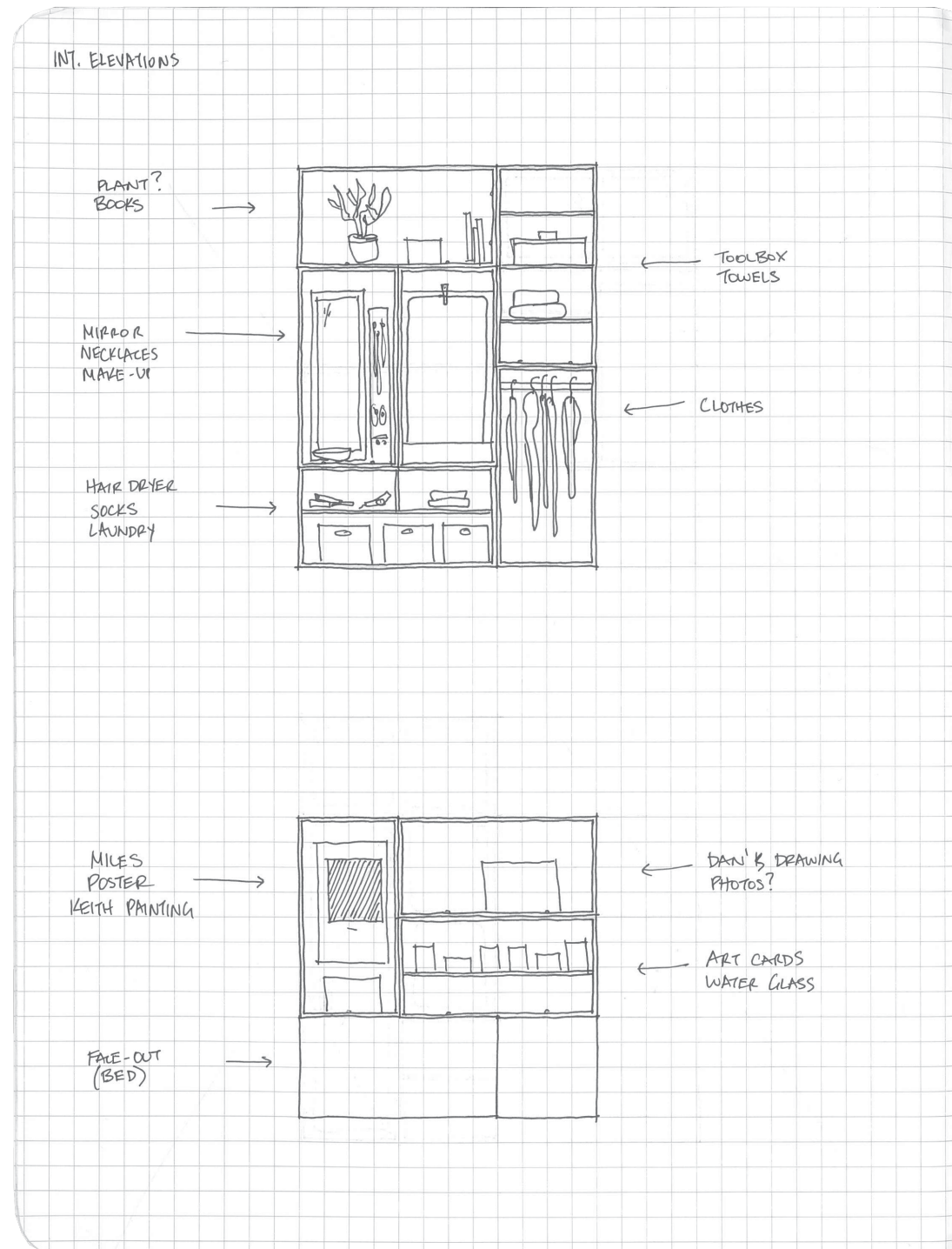


Ray Eames was a collector in every sense. Fascinated by the world around her, and seemingly more so with the things she could touch and hold in her hand, she gave special meaning to the term “pocketing.” She had custom suits made with pockets sewn in to the hem, so that she could collect bits and pieces of the world, whenever the opportunity arose.

I’d assume the pockets were emptied in her small office within the large warehouse studio at 901 Washington Boulevard, in Los Angeles. Filled to the brim with trinkets, toys, and other fascinating objects, it seems likely this might have been a depository bank. It was her personal museum. Constantly adding to the collection, she was always arranging and re-arranging the objects, driven by passionate perfectionism.

I like to collect objects, cards, and little trinkets from wherever I go. They end up on a shelf for display, accumulating new friends over time. I have always done this, it is natural. Sometimes I have to curate the collection, or re-arrange the display. It is an on-going process. I look forward to placing my own collected objects on the shelves of my new room.



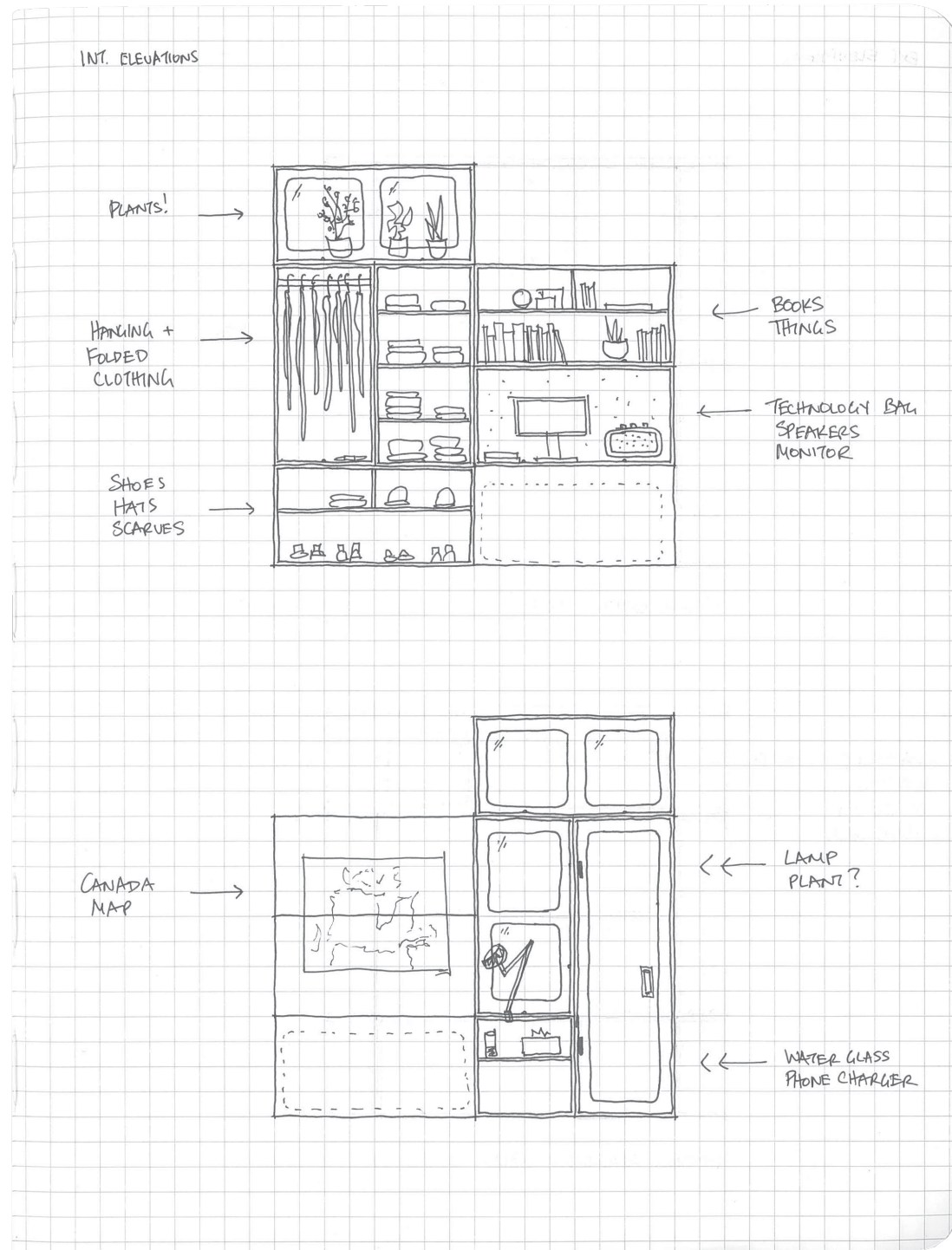


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I am standing in my new room for the first time, having completed a successful, second test set-up. The room is an empty container. As I look around, I am finalizing where all of my objects will go. It is fun.

Figure 124. Process | Test Set-Up #2 Interior 1

Figure 123. Process | Notebook: Interior Elevations 1 (opposite)

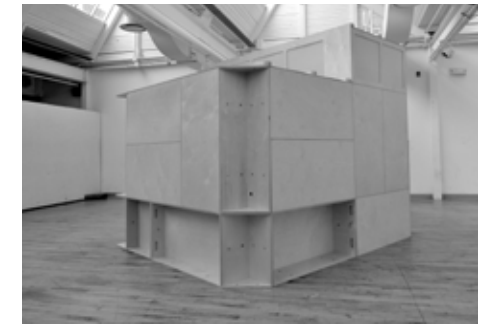
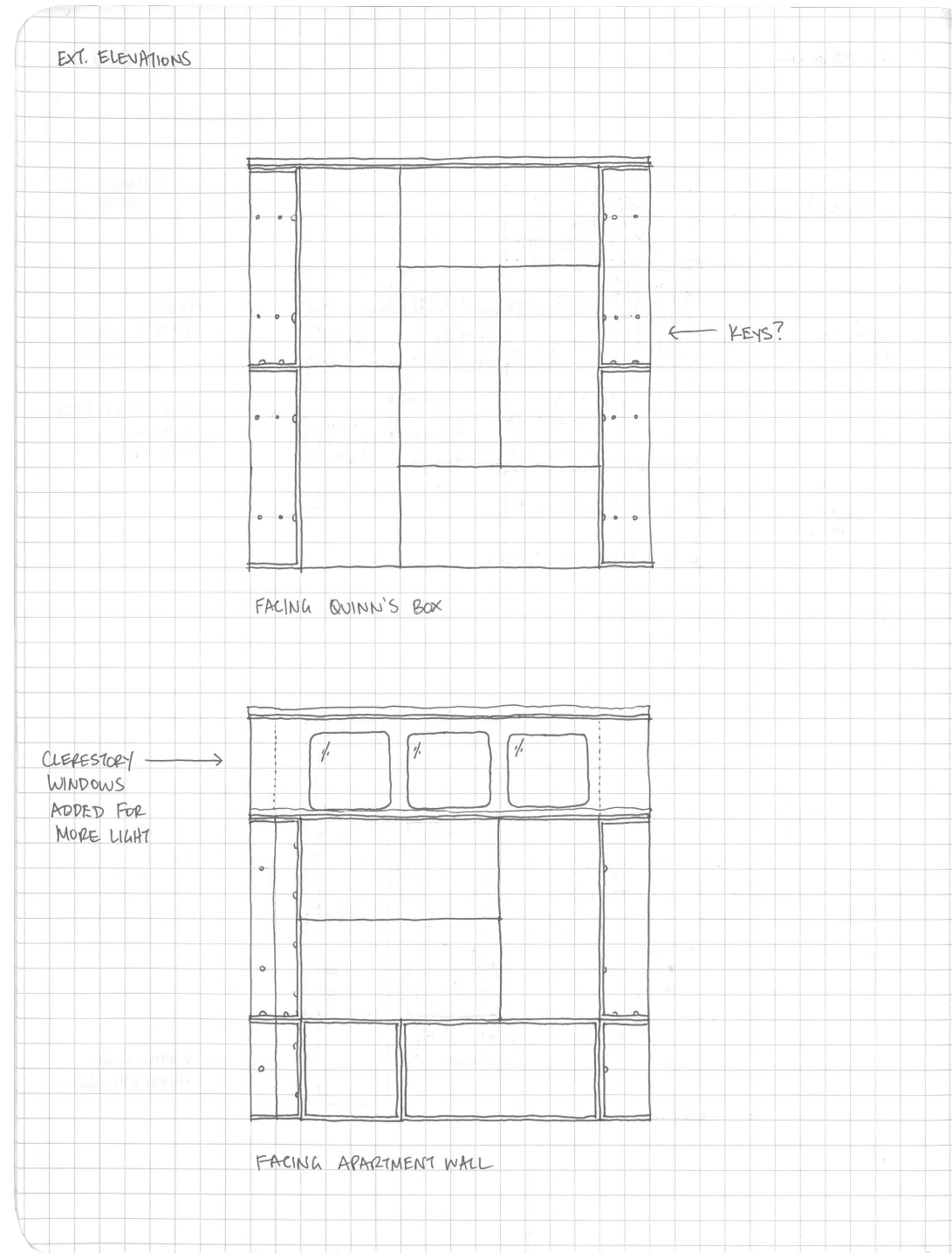


57

I will have a place for everything.  
I will have everything in place.

Figure 125. Process | Test Set-Up #2 Interior 2

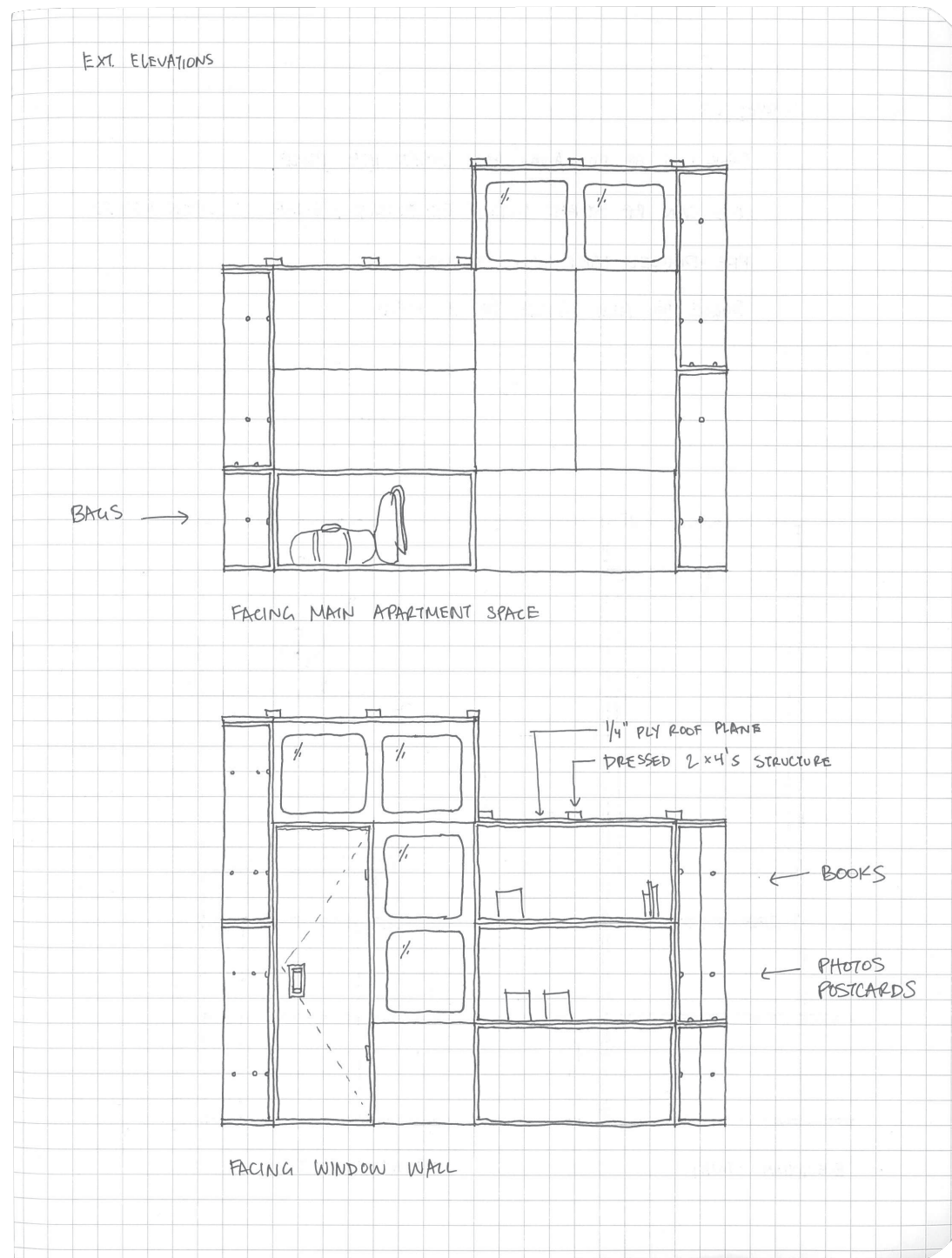
Figure 126. Process | Notebook: Interior Elevations 2 (opposite)



Today I can see for the first time what the exterior of my room will look like. I admit that the image of the exterior is not of primary concern, and has not been throughout the progress of this project. I sketched it a few times, to check that it was not an unsightly blight of material. Beyond this, it is what is on the inside that counts. The project has been designed from the inside out, not vice versa. The exterior is a product of the interior.

**Figure 127.** Process | Test Set-Up #2 Exterior 1

**Figure 128.** Process | Notebook: Exterior Elevations 1 (opposite)

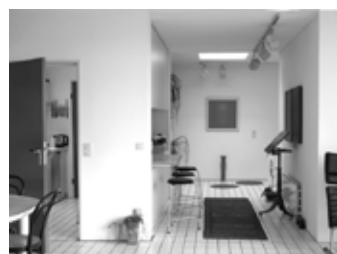
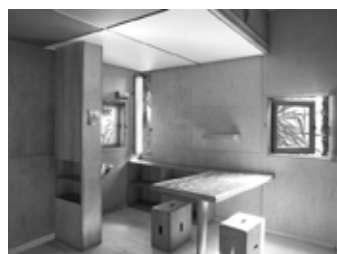


Although the exterior is a function of the interior, there is a dual capability in the system which is contrary. There is something to say about the ability of the modules to be assembled in two facing directions. They may face inwards, or outwards. This means that the exterior is not simply a product of the interior; both, in fact, are in flux. Because of this, the exterior may actually be an extension of the interior space, as the modules face outwards, providing function to the surrounding area, external to the room.

**Figure 129.** Process | Test Set-Up #2 Exterior 2

**Figure 130.** Process | Notebook: Exterior Elevations 2 (opposite)





**Whitewall Magazine:** You've said you live with a lot of the products you design...Can you describe the atmosphere you've created in your home?

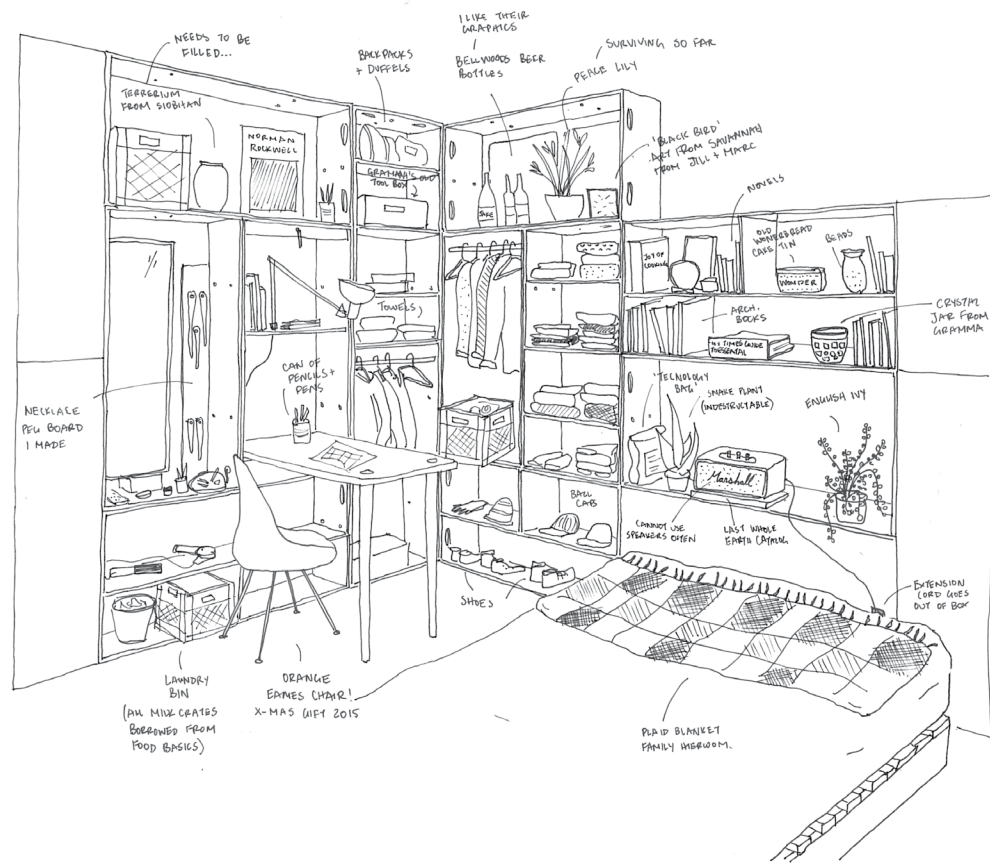
**Jasper Morrison:** It's a laboratory of atmospheric testing. Every new design passes through the lab, and the good ones get to stay. It's the most important system I employ to evaluate what we do, how well it works, how close the character of the design and the influence it has on the atmosphere is to the intended one.<sup>14</sup>

*-Whitewall Magazine interviews Jasper Morrison*

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I want to make objects and spaces that work. I use myself as the testing dummy in all spaces I inhabit. My room is the first full-scale design I will have the opportunity to test. I will keep notes about what works well, what doesn't, and how it can be improved. I am obsessed with recording these details. I assume many designers have carried out a similar task, with the creation of their own interior experiments.

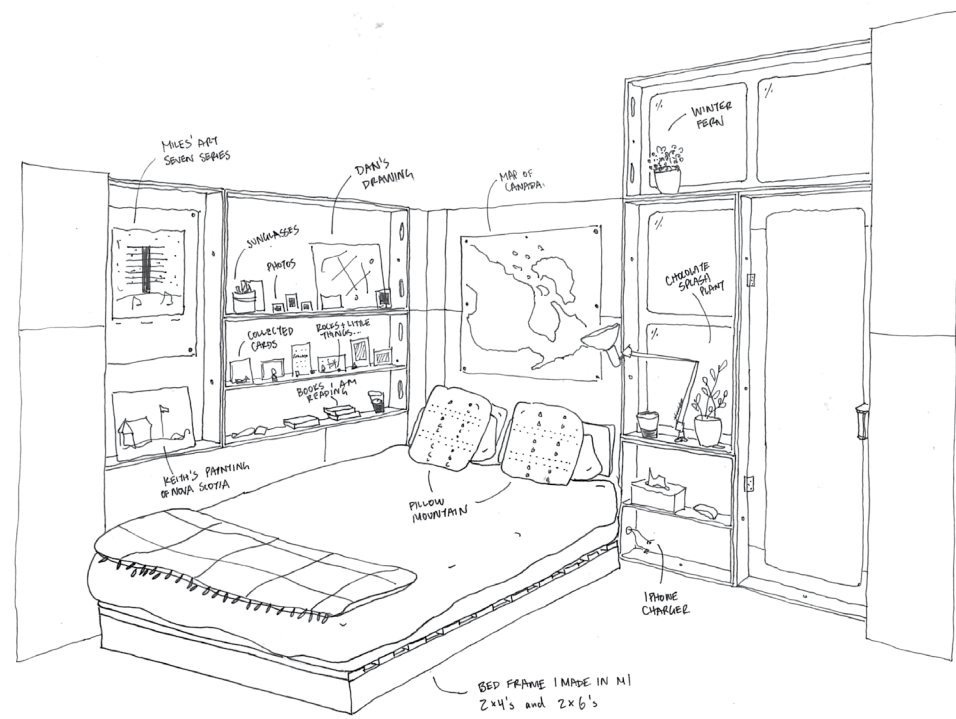
- 
- Figure 131.** Process | Eileen Gray's Residence (opposite)
  - Figure 132.** Process | Alvar Aalto's Residence (opposite)
  - Figure 133.** Process | Ray and Charles Eames's Residence (opposite)
  - Figure 134.** Process | Le Corbusier's Summer Residence (opposite)
  - Figure 135.** Process | Jean Prouvé's Residence (opposite)
  - Figure 136.** Process | Kinoariy Kikutake's Residence (opposite)
  - Figure 137.** Process | Alison and Peter Smithson's Residence (opposite)
  - Figure 138.** Process | Charlotte Perriand's Chalet Residence (opposite)
  - Figure 139.** Process | Dieter Rams's Residence (opposite)
  - Figure 140.** Process | Jasper Morrison's Residence (opposite)



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I am now living in the room that I built for myself, inhabiting my very own piece of architecture.

Figure 141. Process | Inhabited Room Living Area (opposite)



62

I have filled it with personal accessories, and collected objects.

Figure 142. Process | Inhabited Room Sleeping Area (opposite)



When friends and colleagues visit, I listen and record what they think:

“There is something about this that reminds me of a tree house. It’s capsule like, with the rounded windows and small door.”

“This is my dream room, I love it.”

“I could live in this. Wow, it actually feels really comfortable.”

“It’s like a compressed room, but you have everything you need.”

“This is more homey than my room, and mine is much larger.”

“Oh...I love it. Can I live here?”

I have tricked many into enjoying the room as much as I do.

---

**Figure 143.** Process | Room Interior 1 (opposite)

**Figure 144.** Process | Room Interior 2 (opposite)



THE DIRECTION OF THE BOLT IS IMPORTANT.  
THE HEAD PROTRUDES → IT GETS IN THE WAY  
WHEN ON TOP OF HORIZONTAL SHELVES (SPILLED  
WATER GLASSES, TILTED LAPTOPS...)



WING NUT FASTENERS  
WITH TOLERANCE  
(NO TOOLS!)



When people admire the room I have built, I feel compelled to explain that there are problems with it. I've recorded a series of discovered flaws in the design.

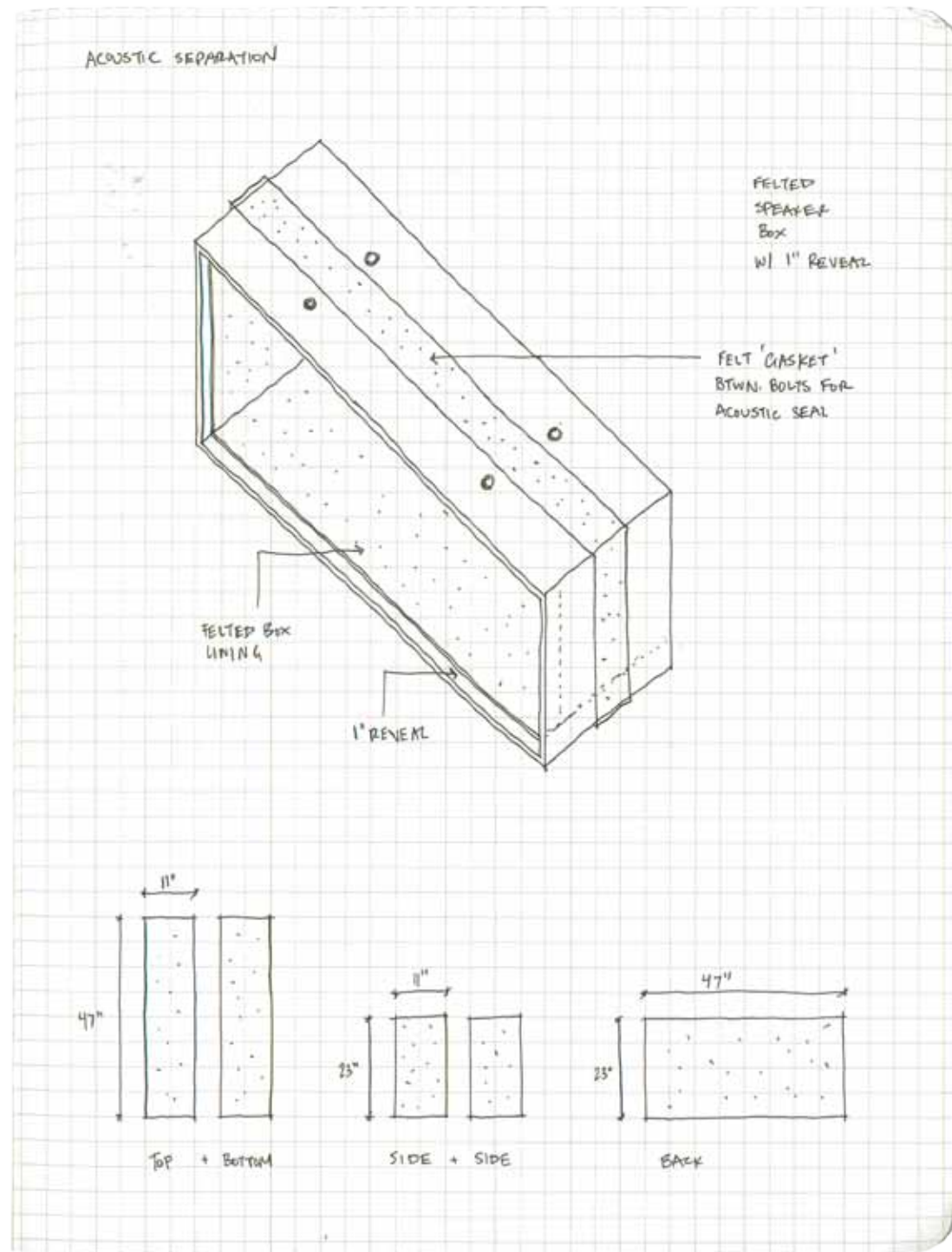
*Flaw #1: Module Connections*

The system is not easy to put together. It is an arduous task. It is laborious, challenging, and frustrating. "Who designed this?", voiced in an angry tone, pops into mind while connecting the modules together. I have only myself to blame.

A solution: a connection system with tolerance. I could use a system with pins and nuts instead. The pins would run through un-threaded holes with a degree of tolerance for misalignment. A nut on one side of the connection could hold it in place. Perhaps a wing nut, negating the need for any tools at all. It would be easier and less intimidating to those without tool experience. More like a toy, less like a mechanical puzzle. Ideally it should be easy to shuffle the modules and create new spatial conditions, perhaps even fun.

**Figure 145.** Process | Tee-nut Note (opposite)

**Figure 146.** Notebook | Connection Detail Note (opposite)



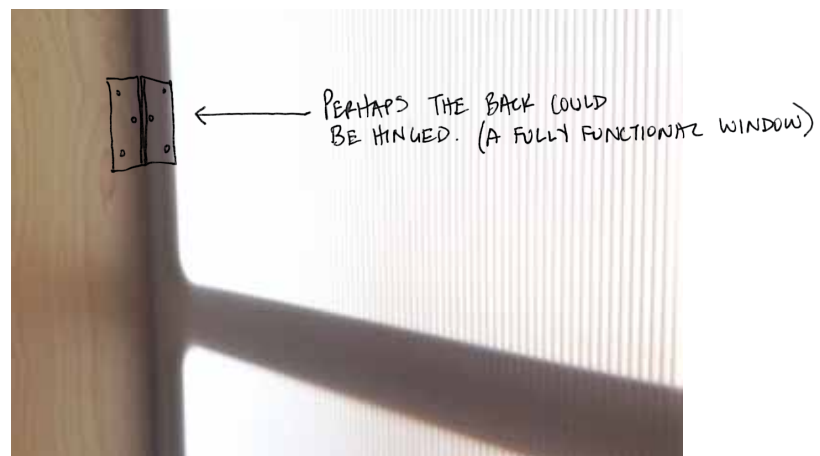
*Flaw #2: Acoustic Separation*

The system is not remotely successful in providing an acoustically separated enclosed space. I like to stay up late, and I like to listen to music with proper speakers while doing so. Without acoustic separation, I cannot. Additionally, the psychological feeling of enclosure cannot be achieved successfully without acoustic separation of some degree.

This failure happened for two reasons. For one, the tolerance issue created several gaps between modules, acoustical highways. Secondly, the plywood amplifies sound as it is an acoustically reflective material. (I knew this, but I optimistically hoped the soft materials I introduced in furnishing the room would serve as dampeners.)

A solution: an acoustic gasket of some sort could be wrapped around the modules, between the areas for bolts. A flexible, sound absorbing material (maybe it is felt) would be compressed as the modules are connected, providing a perfectly sealed enclosure. There could also be acoustically absorbing materials applied to some of the module interiors, perhaps the module which contains my speakers.

**Figure 147.** Notebook | Acoustic Absorption Module Design (opposite)



*Flaw #3: Ventilation*

This one seems obvious. I assumed it may be an issue, but did not expect to what degree. I must keep the door open to prevent a noticeable stuffiness, a lack of air exchange.

A solution: There could be perforations within the coroplast window panes, simple air vents. Or, perhaps a module could have an operable opening, a proper window.

**Figure 148.** Process | Ventilation Notes (opposite)

**Figure 149.** Process | Window Notes (opposite)

TOO HEAVY

PANEL IS  
BECOMING LOOSE  
WITH WEAR



PEGS FIT TOO  
TIGHT. THEY MAKE  
IT DIFFICULT TO  
SLID DESKTOP ONTO.



67

*Flaw #4: The Desk Module*

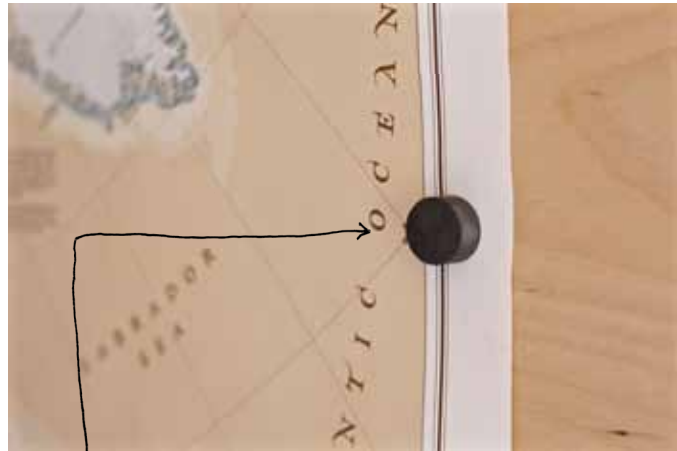
The desk is rather annoying to use. I do not use it. It is a fail. I wanted the desktop to be easily shifted between its storage and utility positions. I thought this would be simpler with no additional hardware. I was wrong. It is an awkward shuffle to manage lifting the heavy desktop out of its resting position, while grabbing the two desk legs resting behind, and locating all components in place.

A solution: A simple hinge system would make the awkward maneuver an easy motion. The table would be supported at all times, easily lifted down from storage to utility. I wish I had done this.

**Figure 150.** Process | Test Set-Up #2 Desk In Storage Notes (opposite)

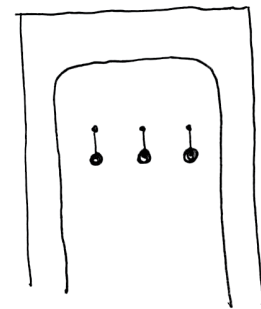
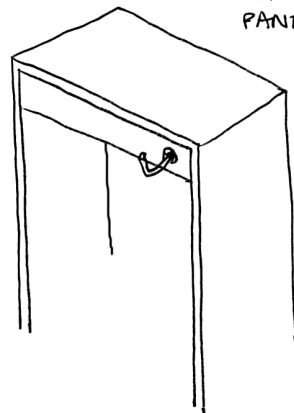
**Figure 151.** Process | Test Set-Up #2 Desk In Utility Notes (opposite)





MAGNETS WORK WELL.

COAT HOOKS IN CORNER ON  
PANEL AT TOP OF A MODULE?



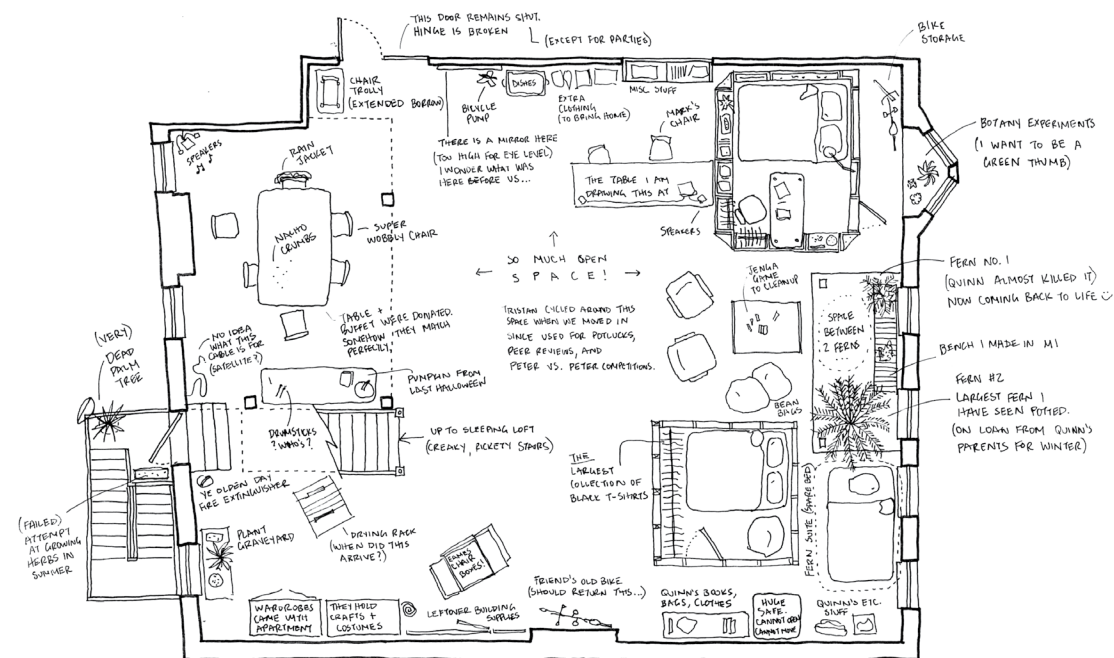
OR COAT HOOKS ON DOOR PANEL

*Flaw #5: No Place to Hang a Hat*

I missed a practical domestic tool. I have no coat-hooks. I have no place to hang a hat. I also have no method of hanging pieces of art and photographs I have collected. I do not want to screw into the modules. Standard picture-hanging hooks will not suffice.

A solution: I could install a pair of coat-hooks on the door panel. It would not interfere with the functional door swing, and would be an appropriate location for outerwear accessories. Next time. As for hanging images or art, I have discovered that magnets will work. They have enough holding strength to attach themselves to a second magnet on the outside of the 1/4" back panel. One problem solved.

**Figure 152.** Process | Magnet and Coat Hook Notes (opposite)

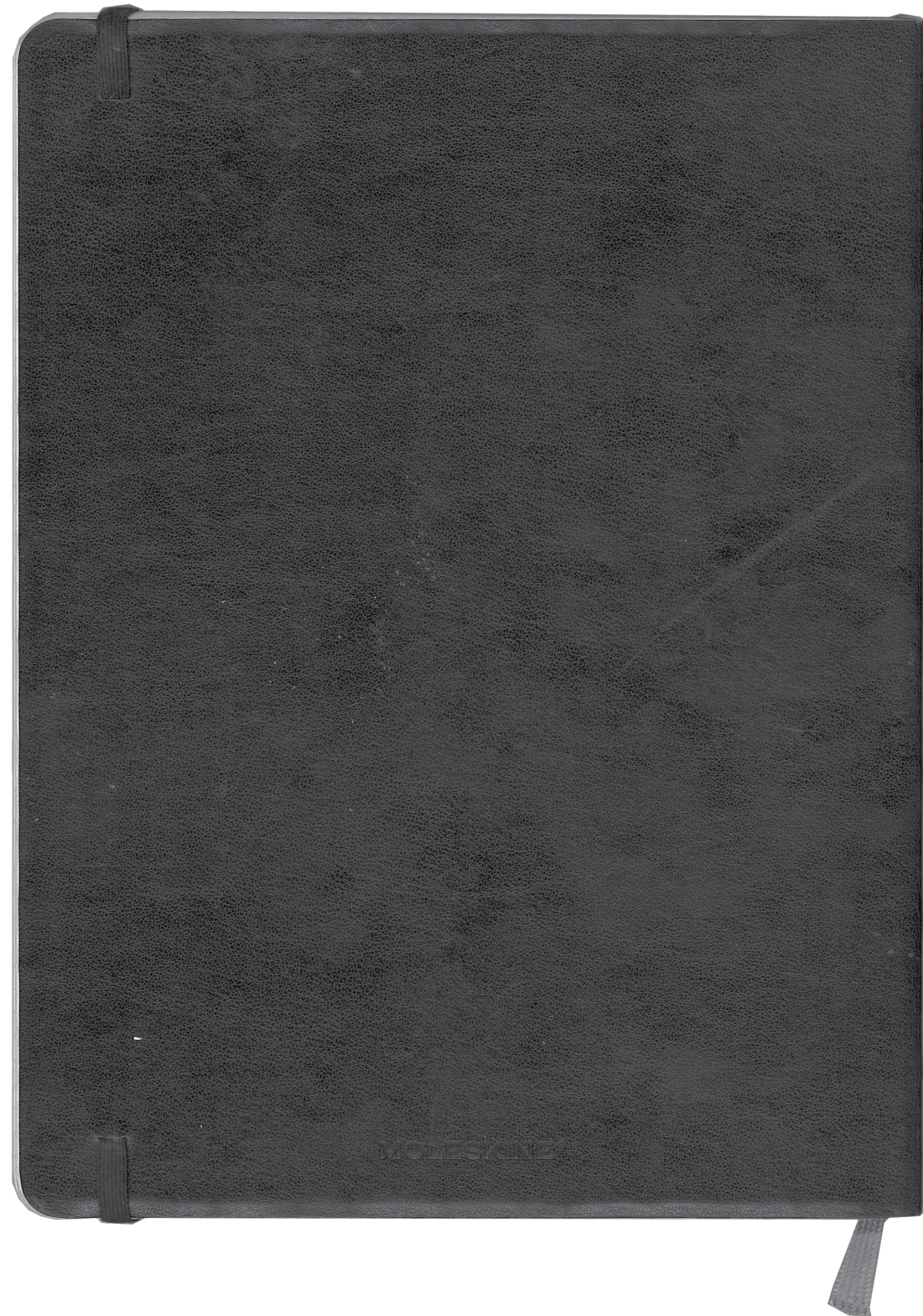


I am living in my new room. I constantly move objects and furniture, adjusting the space surrounding the space I enclosed. The apartment encapsulates a fluid space. Nothing is permanent or fixed. I intend to disassemble my room and create a variety of spatial enclosures and 'micro environments' in the near future. I have purchased a new type of hardware to connect the boxes, hoping to manipulate them like large LEGO blocks. I like to think of the system as a toy for adults, enjoyable and easy to arrange and re-arrange, flexible for the dramas of everyday life.

Figure 154. Process | Modular Room In Situ

Figure 153. Process | Plan of Inhabited Loft (opposite)





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I have gradually become more comfortable showing my design to others. I continue to listen to their reactions:

“I love the photos of your room. It doesn’t look constructed. It looks like a real room.”

“Doesn’t it look like something Muji would sell?”

I feel successful in my attempt to create an enclosure for dwelling, and a product of architecture people understand, and as something real, and perhaps marketable. But do I actually think this system works? I am not sure. I have inhabited it, tested it, and taken notes. I think it’s more of a proposition or prototype. The flaws I found are too many to make me believe it is practical. People have asked if I would sell it. Certainly not in its present state. I wouldn’t be comfortable expecting others to struggle with the flaws I have noted myself. I would like to give it another try. If I had more time, I would.

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**Figure 155.** Process | Notebook: Back Cover

## NOTES: A DOMESTIC OBJECT

1. Charlotte Perriand, *Charlotte Perriand: A Life of Creation*, (East Rutherford, NJ: Manacelli Press, 2000), 29.
2. Ralph Caplan, "Appreciations," in Albrecht, Donald, *The Work of Charles and Ray Eames: A Legacy of Invention*, (New York: Harry N. Abrams in Association with the Library of Congress and the Vitra Design Museum, 1997), 178.
3. Beatriz Colomina, "Reflections on the Eameses House," in *The Work of Charles and Ray Eames: A Legacy of Invention*, 129.
4. Laozi, *Tao Te Ching: A New English Version*, (New York, NY: Harper Perennial, 1992) 64.
5. Charles Eames, in *Eames: The Architect and the Painter*, directed by Jason Cohn and Bill Jersey, (New York City: First Run Features, 2011), 14:20.
6. Charlotte Perriand, *Charlotte Perriand: A Life of Creation*, 234.
7. Paul Rand, "Appreciations," in *The Work of Charles and Ray Eames: A Legacy of Invention*, 182.
8. Charlotte Perriand, *Charlotte Perriand: A Life of Creation*, 150.
9. Dieter Rams, "10 Principles of Design," in Lovell, Sophie, *Dieter Rams: As Little Design as Possible*, (London: Phaidon, 2011), 354-355.
10. Alvar Aalto, in Muga, Patricia De., Sandra Dachs, and Laura García. Hintze, eds. *Alvar Aalto*, (Barcelona: Polígrafa, 2007), 9.
11. Ray Eames in Demetrios, Eames, *Eames: Beautiful Details*, Edited by Gloria Fowler and Steve Crist, (Los Angeles: AMMO Books, 2012), 106.
12. Alvar Aalto, in Tuukkanen, Pirkko, ed. *Alvar Aalto, Designer*, (Helsinki: Alvar Aalto Foundation, 2002), 29.
13. Charles Eames in Eames, *Eames: Beautiful Details*, 57.
14. "Whitewall: Jasper Morrison: The Minimalist," Jasper Morrison. February 2010, (<http://www.jaspermorrison.com/html/03024445.html>).



### PART 3: A DOMESTIC CATALOGUE

The following catalogue is a survey of the domestic landscape. It explores the theme of domesticity, defined by Webster's Dictionary as "life inside a home,"<sup>1</sup> and illustrates a short history of the designer's role *inside* the "life inside a home." The catalogue is a collection of objects, habitats, and inhabitable objects for living with, and living in. It is a sample of designs for the domestic realm, selected for their characteristics of flexibility, utility, and the quality of joy they provide.

Flexible design in the domestic landscape is paramount to the utility and quality of the design itself. Flexible objects of design are hard to define. They sit in the middle zone between two extremes. Are they this? Are they that? Are they both? Flexible objects mediate a zone of ambiguity, providing more than a singular function.

Utility is the second selection criterion. This catalogue is comprised of objects and architecture for the domestic landscape that address usage *needs*, and stand up to *extremes* of use. In short, the objects and architecture have an inherent usefulness to them. Of course there are gradients for the success of each object of design. Some are slightly more fetish,

gadgets of sorts. And some are so ordinary one might wonder why they are not more commonplace or accessible in our everyday lives.

The third selection criterion for this catalogue is the degree to which the object, habitat, or inhabitable object is something that makes dwelling with it, or in it, enjoyable.

Take the Ulmer Hocker Stool (Ulm Stool for short) for example. The Ulm Stool was designed by Max Bill while he was establishing his school of design in Ulm, Germany.<sup>2</sup> The curriculum was in place, the building was available. They needed seats for the students. And so the Ulm Stool was conceived. It was a product of the resources and production methods available, considering robustness invaluable, for extreme usage by students. The stools were rapidly manufactured and put in use immediately. At one point, nearly all of the students at the school would have been sitting on one of the Ulm Stools.<sup>3</sup> The stools addressed the needs of the students with utmost attention to the anticipation of how they would be used. In fact, they offered flexibility for a variety of different uses. The Ulm stool can be rotated and positioned to be a step stool, seat, and a table. Not only did the school now have seats to sit on, they also had tables to display work on, and stools to stand on. The stools were modular as well. Combined in a row, they create a bench, or long table. The Ulm Stool is an elemental object of design. It is an archetype that cannot be reduced or refined for more enjoyable usage. It is a successful object of design.

This catalogue poses the question of what *sensible* design for the domestic landscape is. For the design of a new object to be sensible, it must address the *needs* first. As Charles Eames, explains, “design addresses itself to the need.”<sup>4</sup> This way, the new object improves upon what exists already in the world.

Ray and Charles Eames’ ECU (Eames Contract Unit) addresses a *need* first. The ECU provides a furniture system



**Figure 156.** Catalogue | Ulmer Hocker Stool (p. 214)

for elementary domestic functions, those that are relevant to a college student. But the Eames didn’t believe in creating an object for just one particular use, or one particular demographic. They worked under their own slogan to provide “the best, for the most, for the least.”<sup>6</sup> They attempted to balance the trifecta of quality, economy, and accessibility, for every object they conceived. This means that the Eames Contract Unit was not only relevant for college students. It was designed to withstand the *extreme* usage by college students, but would also be just as suitable for the rest of the population as well.<sup>7</sup>

The college student needs a piece of furniture that will enable them to sleep, study, dress, and store their collected objects. So do most people. College students do not live in the same location for very long. The furniture had to be flexible for relocation in any place the student may end up living in. This means that it had to be able to adapt to the constraints of each location. The Eames Contract Unit is capable of this. The unit is modular, constructed with a kit of parts. It can be arranged into different configurations according to preference or given physical constraints. It does so with ease. This ability is not only appealing to college students, it is appealing to everyone with practicality in mind. College students are rough on their furniture, even if only from the fact that the furniture is transported from location to location (moving is generally not kind to most furniture). So the Eames Contract Unit is designed to be robust for the *extreme* usage by college students. With economy in mind, the Eames ensured that the product was affordable, using the resources available and designing efficient manufacturing processes and tooling. This balance of utility, availability, and economy makes the Eames Contract Unit appealing to the masses. Who wants a piece of furniture that is easily damaged or broken? And who wants furniture that cannot withstand the stress of moving it around, or



**Figure 157.** Catalogue | Eames Contract Unit (p. 236)

relocating it? And who wants furniture that is not adaptable, customizable, or re-arrangeable?

Unfortunately, many consumers forget about all of this. The trend is to rush to the cheapest and most accessible furniture available. Cost or status seemingly drives the market more than quality, flexibility, and usefulness. The consequences of this mentality is a furniture market driven on one hand by cost, with the commercial enterprise IKEA, and on the other hand by status, with designer labelled custom goods.

With retail stores in twenty-eight countries, IKEA is the world's leading furniture distributor.<sup>8</sup> Founded in Älmhult, Sweden, by Ingvar Kamprad, in 1951, IKEA originated as a general store, selling a full range of consumer products from clothing to teapots and furniture.<sup>9</sup> Kamprad founded the company in the post-war era with democratic ideologies, a time when a massive amount of government housing projects were underway and in need of accessible furnishings. He intended to bring quality design to consumers at an affordable price. When distributors became unhappy with his cost reduction ideals, they refused to produce objects and furniture at such low costs. The company was forced to design and manufacture their own low-cost products, and focused on furniture.<sup>10</sup> The first IKEA catalogue and furniture exhibition launched in 1953.<sup>11</sup> Since then, IKEA has grown into a multi-national corporation with an annual revenue of 32.7 billion euros.<sup>12</sup> It is uncommon to enter a dwelling without seeing at least one IKEA product. The growth is a reflection of IKEA's consumer appeal. It is cheap furniture that is easily accessible, designed with contemporary aesthetics, and seemingly functional. IKEA explains this to consumers point blank. They build full-scale scenarios of domestic landscapes and issue a free annual catalogue to illustrate the use of their furniture.

There is something for everyone at IKEA, whether a



**Figure 158.** Catalogue | Ikea Warehouse Store

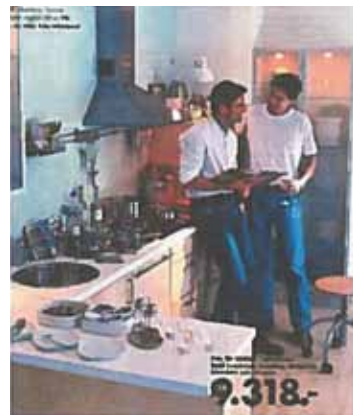
child, young adult, or professional. Upon entering the stores, there are activity rooms for children, and a restaurant offering cheap food. The retail stores are set up as labyrinths of staged displays. Customers must look at every piece of furniture, and every domestic accessory available before they can exit the store. Of course there are shortcuts (if one looks closely at the walls in the centre of the showroom they can find small signs with direction to places farther along the track, or to the exit) but they are not obvious. It is unlikely consumers leave the store empty handed.

Behind only the Bible, and Mao's Red Book, IKEA catalogues are the most widely distributed literature in the world.<sup>13</sup> The catalogues (which are free) are issued annually with glossy images showing IKEA furniture with real people using it. The catalogues are published carefully, with precision directed towards the minute details of domestic life. The photographs are produced in IKEA's massive warehouse space which contains every IKEA product in production.<sup>14</sup> The warehouse also contains other things found in real homes. They have real plants, and real food, and real people (the models used in all of the photographs are IKEA employees, or 'co-workers' as they title them).<sup>15</sup> Designers are given a staging space to create the 'room sets' that go along with their objects.<sup>16</sup> It is commercial set design. Designers stage the room using plastic food until they are ready to shoot the photo. At this point every detail is manipulated to be just so. Water is splashed on the sink. Fresh bread is sliced, leaving the crumbs sprinkled around the cutting board that is well used.<sup>17</sup> Consumers do not have to imagine how they would use the products themselves, the picture of their life is staring right at them.

IKEA is always at the forefront of contemporary sociocultural concerns, illustrating a commitment to the inclusion of wider populations, the many, not the few. This



**Figure 159.** Catalogue | IKEA Showroom Layout



has been paramount to their success, as the image of domestic life outlined by IKEA, has reflected the concerns and ideals of contemporary societies. For example, the catalogues in the 1970s represented the counter-culture movement, showing ‘status-free’ furniture and anti-corporate slogans.<sup>18</sup> In the early 2000s the catalogues depicted gay couples (at a time many governments were opposing gay marriage),<sup>19</sup> and in recent years have shown collective dwellings and space sharing solutions for urban dwelling.<sup>20</sup> The corporation pursues and amasses a great deal of consumer research annually. They send employees inside the homes of consumers (in exchange for a store credit) to get primary source information about what works and what doesn’t.<sup>21</sup> The corporation has good intentions.

What IKEA does not illustrate in their staged showrooms (which are thoroughly cleaned and re-staged daily)<sup>22</sup> and glossy catalogue spreads, is what it looks like to actually live with their products. Or what it is like to actually set up these domestic tableaux. The reality is not so tidy, and not so idyllic. IKEA takes a major shortcut in the design integrity of their products. They do not deem the quality of their products nearly as important as the economy and accessibility of them. IKEA products are arguably good quality for the low-cost price that they are. However, this means that the quality is *in spite* of their cost, and not an integral part of their design. They do not balance the trifecta of quality, accessibility, and economy. IKEA products do not last. They are consumable goods in every sense.

Although there are some exceptions, IKEA products are generally not examples of good design. They do not share characteristics found in the Eames Contract Unit. They cannot be dismantled and re-assembled with ease, or without damaging wear on the product in doing so. They are not even always easy to assemble in the first place. With extended use

**Figure 160.** Catalogue | IKEA 1972 Catalogue Cover

**Figure 161.** Catalogue | IKEA 2008 Polish Catalogue Advertisement

**Figure 162.** Catalogue | IKEA 2012 Catalogue Cover

of the products, IKEA furniture shows wear, and not in a good way. Most do not acquire a patina of any sort, except, perhaps, a patina of decay. They do not perform for the extremes of use. When it is time to move, it is commonplace to leave the furniture behind, and purchase new furniture at the new location. Movers have been noted to advise not to transport IKEA furniture, pointing out that it is more worthwhile to buy new, than it is to pay for the effort of moving it, and risk to the integrity of the product.<sup>23</sup> It is disposable. So why is it so popular? Why is there a failure to see the loss in value by purchasing an object that must inevitably be replaced? Why is there a desire to live with objects that not only do not stand up to the extremes of use but do not even stand up to ordinary wear and tear?

As consumers mature, or come into greater financial means, their tastes for domestic design shifts away from IKEA. No longer do they want cheap products, and no longer do they want to assemble them. They want designer products, labelled with a name. Just as with fashion, so too furniture acquires status. And likewise to fashion, the name and label does not necessarily mean that the product is of higher quality, or more useful, or more joyful to use. Driven by marketing and commercial success, designer products aim to provide ‘specialness’, an added characteristic beyond their utility and quality. British designer, Jasper Morrison, explains the flaw in this mentality with his design philosophy of ‘super normal’ where design is intended to be useful, not special, perceived with a certain essence of normality:

Design, which used to be almost unknown as a profession, has become a major source of pollution. Encouraged by glossy lifestyle magazines, and marketing departments, it’s become a competition to make things as noticeable as



**Figure 163.** Catalogue | IKEA Assembly Service Advertisements





possible by means of colour, shape and surprise. It's historic and idealistic purpose, to serve industry and the happy consuming masses at the same time, of conceiving things easier to make and better to live with, seems to have been side-tracked. The virus has already infected the everyday environment. The need for businesses to attract attention provides the perfect carrier for the disease. Design makes things seem special, and who wants normal if they can have special? And that's the problem... There are better ways to design than putting a big effort into making something look special. Special is generally less useful than normal, and less rewarding in the long term. Special things demand attention for the wrong reasons, interrupting potentially good atmosphere with their awkward presence.<sup>24</sup>

The catalogue I have assembled aims to illustrate a variety of alternatives to the IKEA mentality of the quick and cheap solutions that do not place value on quality and longevity, and the status driven 'special' designer objects. Instead, the catalogue illustrates design that successfully balances economy and accessibility with quality and longevity. Collected within the catalogue are objects, inhabitable objects, and habitats which represent *sensible* design for the domestic landscape. This sensibility is explained in Jasper Morrison's essay titled 'Utilism vs. Uselessness':

I started to notice that successful objects, that is, objects which are good to live with, seemed to share certain characteristics. They were never the result of aesthetic decisions alone, nor were they purely functional. They always balanced these two extremes with the additional consideration of the appropriateness of materials and their combination, of the human experience of using and living with the object, of the object's effect on its surroundings and

**Figure 164.** Catalogue | Universal System (p. 284)

of the communication of its purpose. I realized that certain less noticeable objects could over time become the object of daily choice by virtue of charm, stealth and efficiency. In the long term they just had more character for the job than others of the same class. Most of these objects were not 'designed' in the marketing sense, probably because of marketing's simultaneous demands of uniqueness and sameness, which seems to prohibit practicality and any genuinely well meant problem solving. It's a sad fact that marketing is often the motor of unnecessary change, replacing satisfactory products with products which may be less efficient but which are easier to sell. I doubt a comparison of everyday objects of previous decades, even previous centuries, with those available today would show an improvement in overall quality. Technologies and new materials may improve performance and design; they may bring things up to date and occasionally innovate, but the experience of living with an object seems to have cheapened. Furthermore, it appears that the more 'developed' a society becomes the more value is placed on useless objects and the less appreciation there is for something useful. We need to keep this appreciation alive or we may lose touch with reality.<sup>5</sup>

Ultimately, the catalogue that follows is a search for design that brings with it what Charlotte Perriand describes as a "joie de vivre" or joy of living.<sup>25</sup> This is the production of objects, habitats, and inhabitable objects that enhance the quality of life for those who live with them, and live in them. This kind of design creates an atmosphere that is enjoyable to inhabit, and produces objects and architecture that last. This is the objective of the designer when designing *inside* the "life inside a home", or the domestic landscape. For better or for worse, the designer is responsible for shaping how we dwell.



**Figure 165.** Catalogue | A 'Super Normal' Object: Jasper Morrison The Crate

## NOTES:

1. "Domesticity," Merriam-Webster, (<http://www.merriam-webster.com/dictionary/domesticity>).
2. "Max Bill Ulm Stool," Ulm Stool: Bauhaus Ulmer Hocker by Max Bill, (<http://www.stardust.com/maxbillulmstool.html>).
3. Ibid.
4. Demetrios, Eames, *An Eames Primer*, (New York: Universe Pub., 2001), 168.
5. "Jasper Morrison," Utilism vs. Uselessness, (<http://www.jaspermorrison.com/html/5093490.html>).
6. Demetrios, Eames, Gloria Fowler, and Steve Crist, *Eames: Beautiful Details*, (Los Angeles: AMMO Books LLC, 62).
7. "An Eames Solution to College Students' Storage Problems," Eames Office, May 17, 2016, (<http://www.eamesoffice.com/blog/an-eames-solution-to-college-students-storage-problems/>).
8. Collins, Lauren, "House Perfect," *The New Yorker*, October 26, 2011, (<http://www.newyorker.com/magazine/2011/10/03/house-perfect>).
9. Bengtsson, Staffan, *Ikea the Book: Designers, Products and Other Stuff*, (Stockholm: Arvinius, 2010), 10.
- 10-11. Ibid, 15.
12. "Company Information," IKEA, ([http://www.ikea.com/ms/en\\_CA/this-is-ikea/about-the-ikea-group/index.html](http://www.ikea.com/ms/en_CA/this-is-ikea/about-the-ikea-group/index.html)).
13. Bengtsson, Staffan, *Ikea the Book: Designers, Products and Other Stuff*, 393.
14. Collins, Lauren, "House Perfect".
- 15-17. Ibid.
18. Bengtsson, Staffan, *Ikea the Book: Designers, Products and Other Stuff*, 215-216.
19. Ibid, 198-199.
20. IKEA Small Spaces, IKEA Small Spaces - Small Ideas, YouTube, June 27, 2011, (<https://www.youtube.com/watch?v=BQjBrt9LriY>).
21. Collins, Lauren, "House Perfect".
- 22-23. Ibid.
24. Morrison, Jasper, and Naoto Fukasawa, *Super Normal*, (Germany: Lars Müller Publishers, 2006), 28-29.
25. Perriand, Charlotte, *Charlotte Perriand: A Life of Creation*, (East Rutherford, NJ: Monacelli Press, 2000), 69.

# OVERVIEW

## A DOMESTIC DESIGN TIMELINE

### 1900 - 2016

The catalogue is presented in chronological order from the date each domestic design was first manufactured, exhibited, or published. Key events and design movements in history are pointed out to provide context.

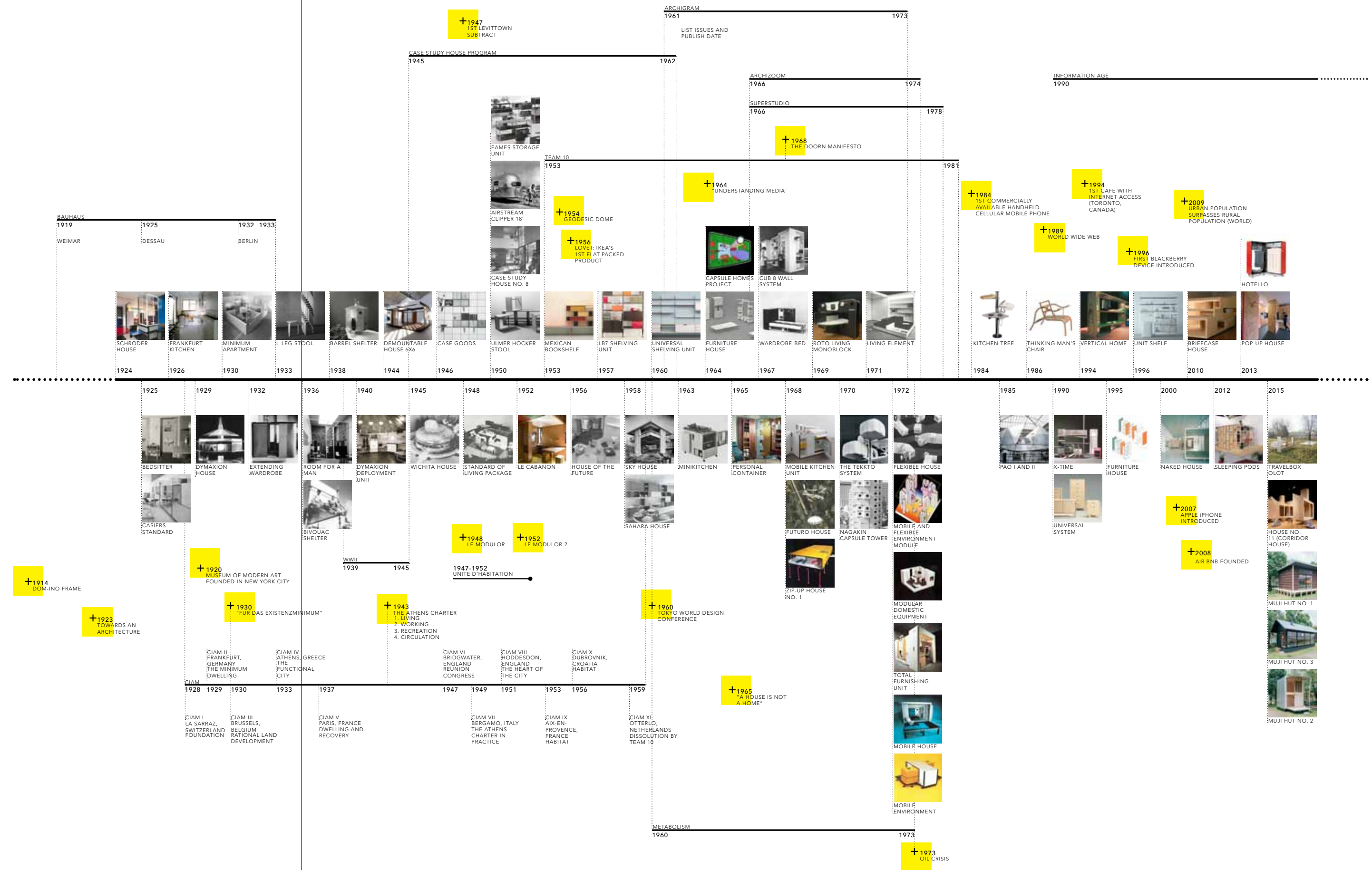


Figure 166. Catalogue | A Domestic Design Timeline



# OVERVIEW DOMESTIC DESIGN PERSONALITIES

This diagram illustrates the social connections and collaborations between the designers exhibited in the catalogue. Individuals are identified with the design discourse groups they belonged to, the institutions they were associated with, the events or exhibitions which displayed their work, and the publications and production companies that supported them.

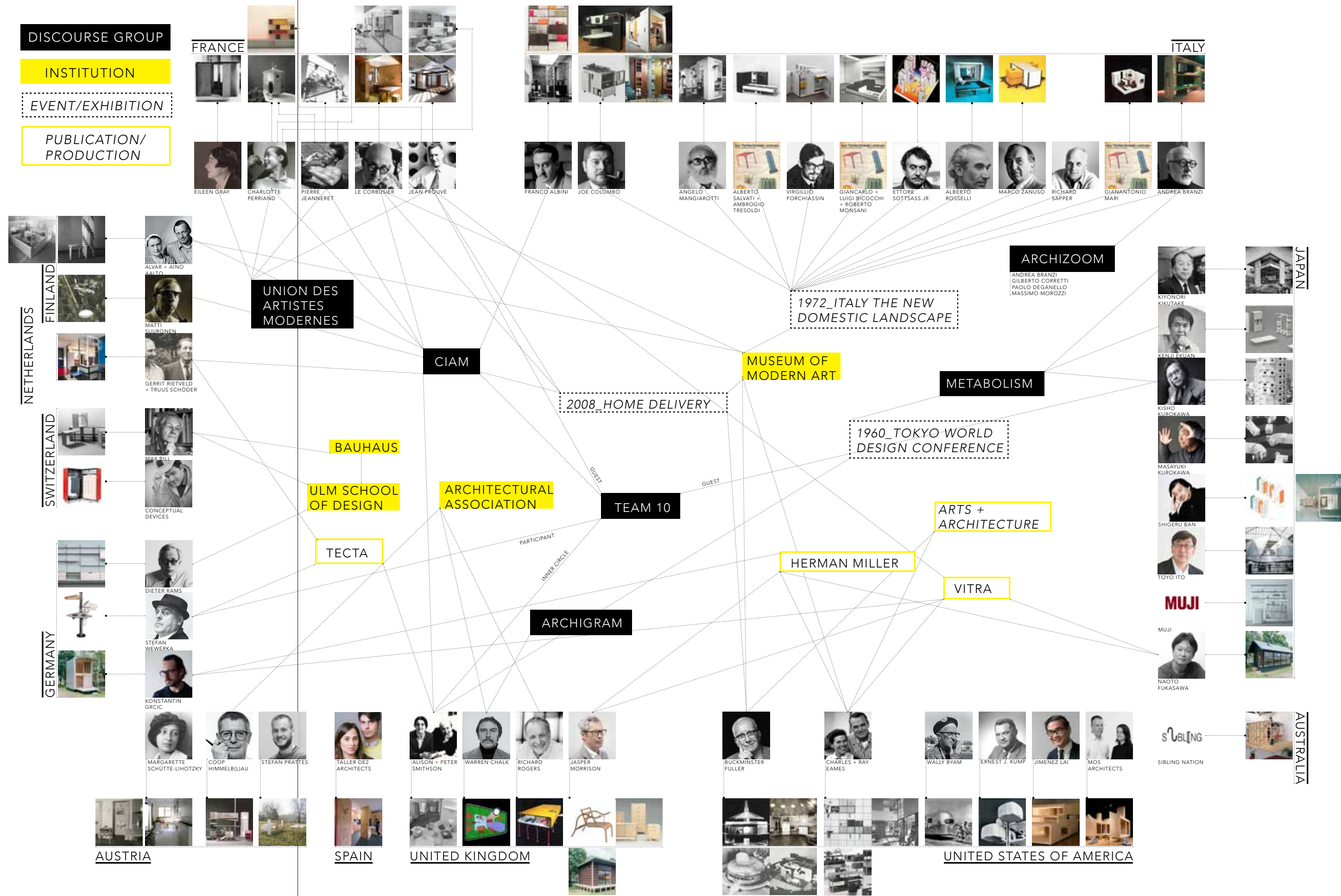


Figure 167. Catalogue | Domestic Design Personalities



## OVERVIEW

### A DOMESTIC DESIGN LOCATION GUIDE

The countries where the designers were from, or where their designs were conceived, is illustrated by this diagram. The catalogue reflects a global sample of domestic design.

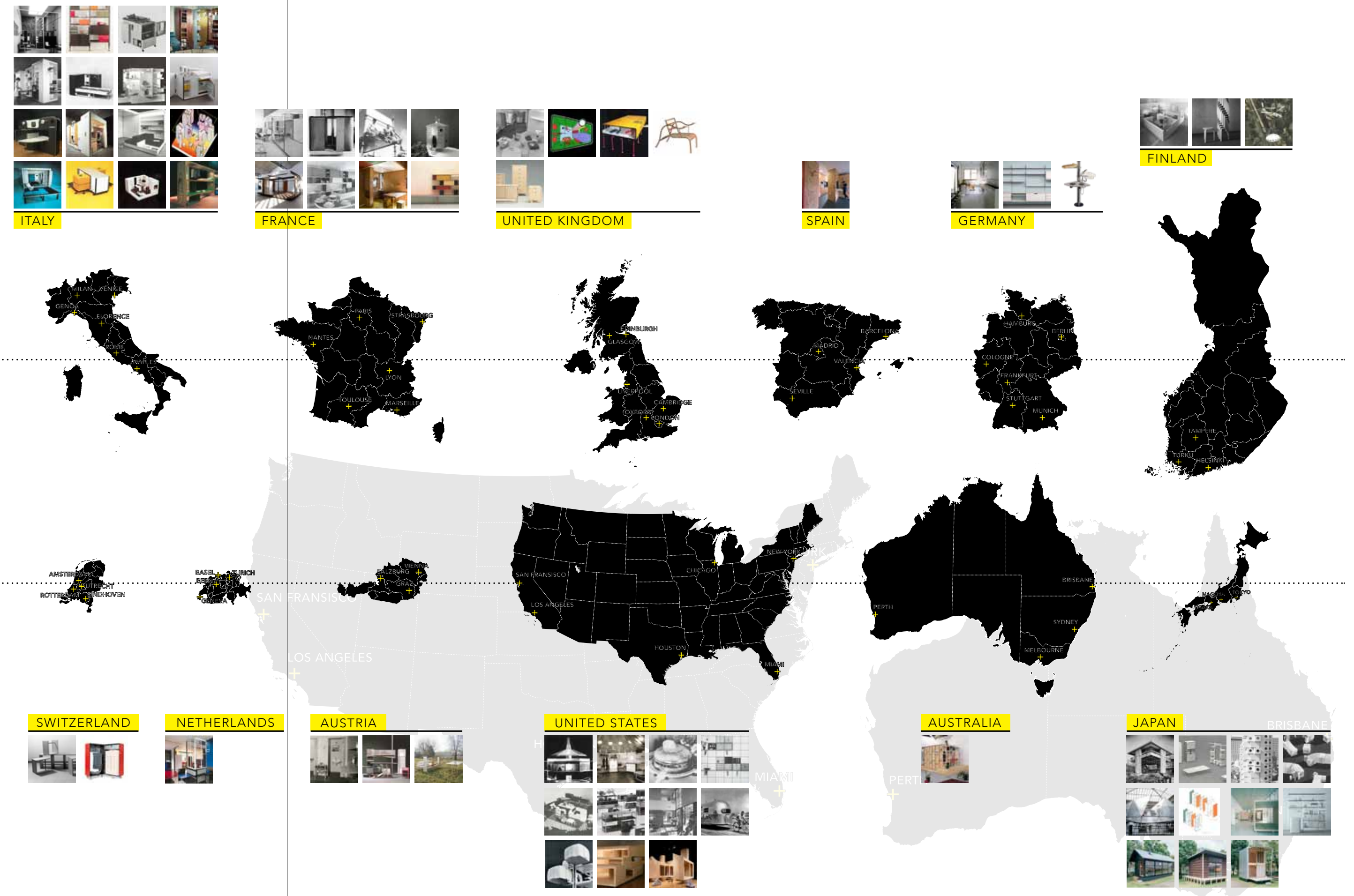


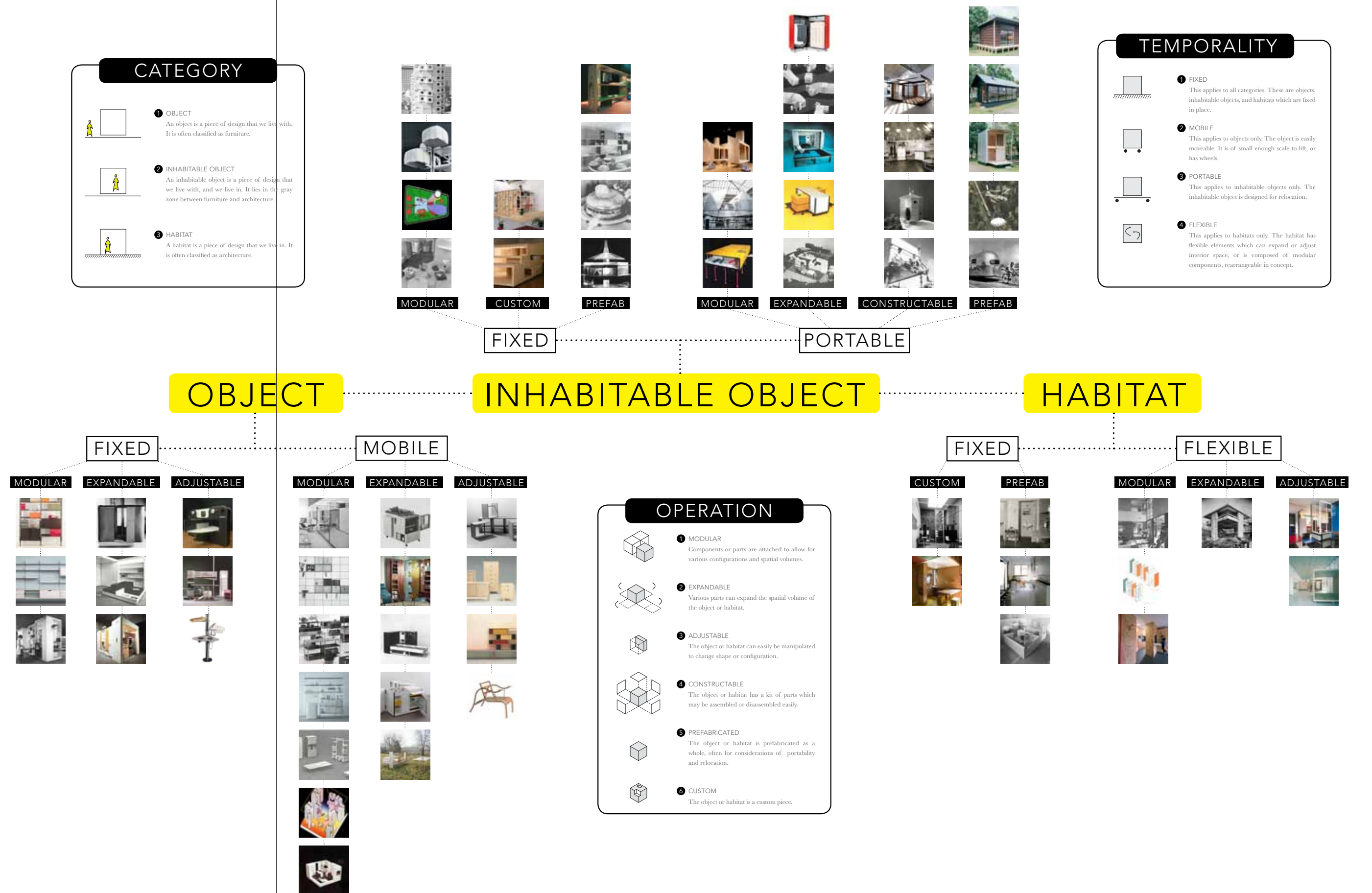
Figure 168. Catalogue | A Domestic Design Location Guide

## OVERVIEW

### DOMESTIC DESIGN CLASSIFICATION

The designs in this catalogue are classified by three criteria: their category (object, habitat, or inhabitable object), their temporality (fixed, mobile, portable, or flexible), and by the operations which make them flexible or useful (modular, expandable, adjustable, constructible, prefabricated, or custom).

Figure 169. Catalogue | Domestic Design Classification





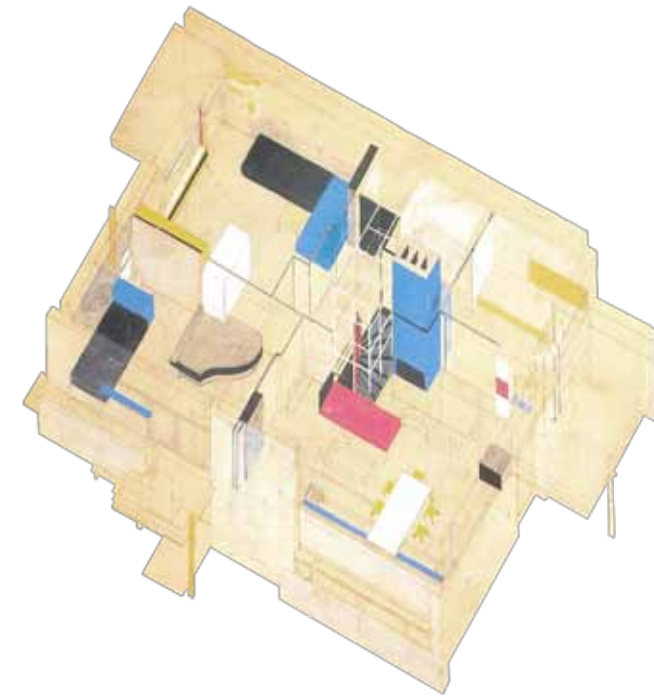
## SCHRÖDER HOUSE

GERRIT RIETVELD AND TRUUS SCHRÖDER  
 UTRECHT, NETHERLANDS  
 1924

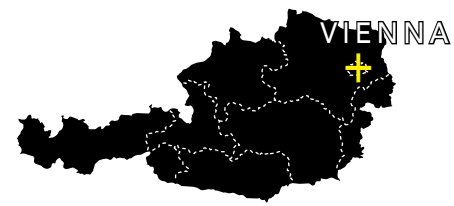
Private commission and collaboration between Truus Schröder and Gerrit Rietveld. The Schröder house was the first open plan house<sup>1</sup>, and the first complete piece of architecture designed by Gerrit Rietveld (previously a furniture maker). Truus Schröder had recently become widowed and needed a house to raise her three children in. “She didn’t want a house that imposed a specific lifestyle on her, but rather a space in which she could develop her craving for freedom and independence”<sup>2</sup>. Commissioning Gerrit Rietveld, the house was required to be flexible for various daily rituals (living, entertaining, working) and changes to the family as her children grew up. Rietveld worked closely with Schröder, establishing a collaborative dialogue which would remain for much of his later architectural career (Schröder collaborated on many of his interiors and furniture projects)<sup>3</sup>. Applying his experience in furniture making, the Schröder house is essentially a large piece of furniture. Spaces are manipulated with sliding partitions, and built-in furniture is adaptable for various domestic functions.

**Figure 170.** Catalogue | Schröder House Diagram (opposite)

**Figure 171.** Catalogue | Schröder House Interior (opposite)







## BEDSITTER

MARGARETE SCHÜTTE-LIHOTZKY  
 VIENNA, AUSTRIA  
 1925

Private commission for Karoline Neubacher (the wife of Viennese politician Hermann Neubacher) for a room in which a modern woman could read, work, relax, and chat with friends.<sup>4</sup> As a precursor to the Frankfurt Kitchen (p. 178) this room employs many similar principles. It combines values of spatial economy, efficiency, and simplicity. The furniture is flexible for a variety of functions. For example, the bed doubles as a sofa and storage unit, and a wall panel drops down to provide a desk.<sup>5</sup>

**Figure 172.** Catalogue | Bedsitter Interior 1 (opposite)

**Figure 173.** Catalogue | Bedsitter Interior 2 (opposite)







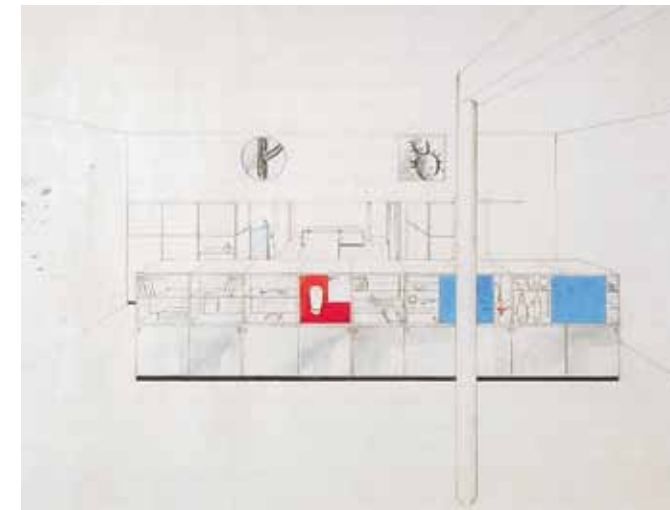
## CASIERS STANDARD

LE CORBUSIER, CHARLOTTE PERRIAND,  
PIERRE JEANNERET  
PARIS, FRANCE  
1925

Modular and stackable containers for various domestic functions. The original 'Casier Standard' modules were presented at the Pavillon de l'Esprit Nouveau in 1925 by Le Corbusier and Pierre Jeanneret.<sup>6</sup> Subsequently, Charlotte Perriand collaborated on the development of the modules, systematically examining the measurements of domestic objects and personal accessories to define the measurements of what would become 'Casiers Metalliques,' exhibited at the 1929 Salon d'Automne, an annual art exhibition in Paris.<sup>7</sup> The modular system was to provide a domestic infrastructure illustrating Le Corbusier's intent of designing 'equipment for living'.

**Figure 174.** Catalogue | Casiers Standard Illustration (opposite)

**Figure 175.** Catalogue | Casiers Standard (opposite)

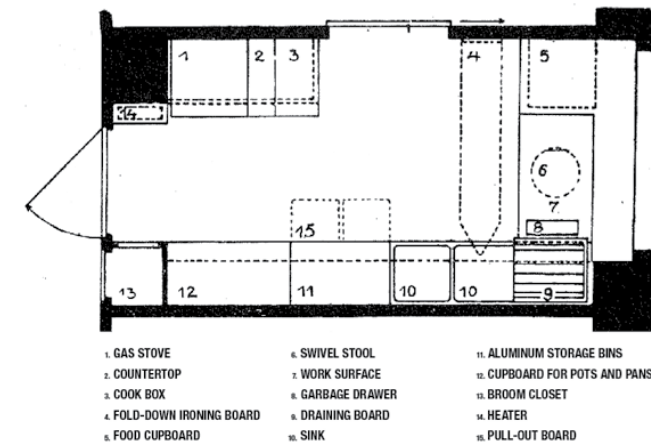




**FRANKFURT KITCHEN**  
 MARGARETE SCHÜTTE-LIHOTZKY  
 FRANKFURT, GERMANY  
 1926

Designed for the New Frankfurt program for affordable public housing and modern amenities in Germany. Margarete Schütte-Lihotzky was employed in the Municipal Building Department, where all construction was controlled by modernist architects. Thus the Frankfurt Kitchen was designed with rational ideals: spatial efficiency, time-saving efficiency, and hygiene.<sup>8</sup> It followed principles of F.W. Taylor's 'Scientific Management', which outlined the most efficient ways of carrying out domestic tasks.<sup>9</sup> Schütte-Lihotzky also conducted research through time-motion studies and interviews with women to gain functional insight (she had never cooked herself, and designed the kitchen from an architectural standpoint, not from experience as a housewife).<sup>10</sup> The Frankfurt Kitchen was a laboratory of modern domestic living. Three different sizes were made for various sizes of flats. The counters were easy to clean, and storage for highly used commodities was provided in easily reachable locations.<sup>11</sup>

**Figure 176.** Catalogue | Frankfurt Kitchen Plan (opposite)  
**Figure 177.** Catalogue | Frankfurt Kitchen Interior (opposite)

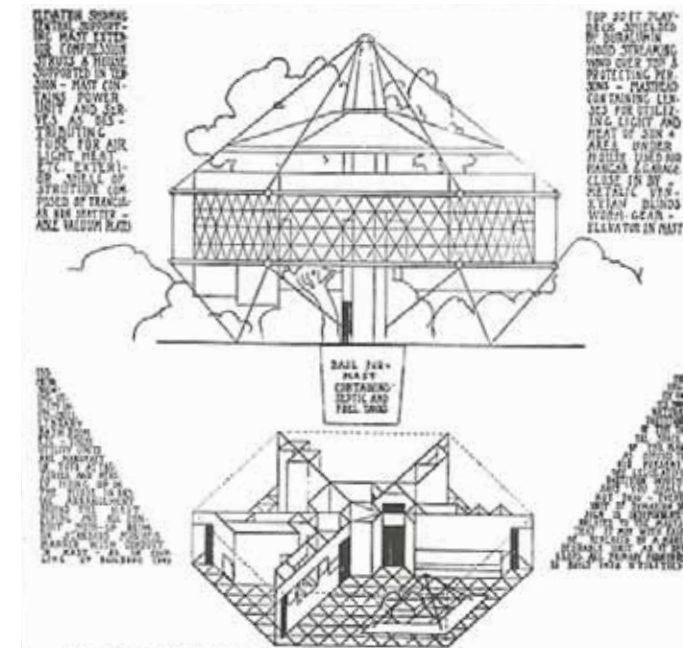


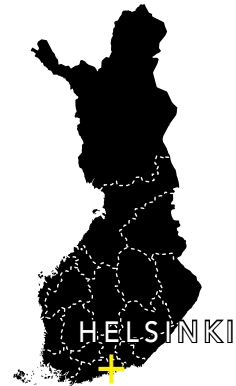


**DYMAXION HOUSE**  
 BUCKMINSTER FULLER  
 CHICAGO, U.S.A.  
 1929

The Dymaxion House was an invention of a new system for dwelling, unrealized in production. Buckminster Fuller (inventor, not architect) “believed that a good house could be produced as systematically as a good car”<sup>12</sup>, and began research in providing mass-produced, factory-made housing which could transform the way people across the globe lived.<sup>13</sup> The Dymaxion House aims to reduce the required resources needed to mechanically equip the dwelling. He designed prefabricated building components and interior units to address domestic functions. For various reasons, such as the inability of the house to adapt to variable household sizes, the design never succeeded in mass production.<sup>14</sup>

**Figure 178.** Catalogue | Dymaxion House Diagram (opposite)  
**Figure 179.** Catalogue | Dymaxion House Model (opposite)





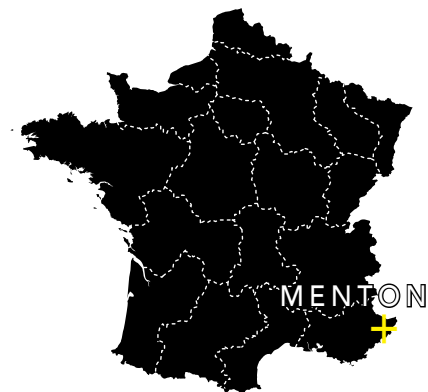
**MINIMUM APARTMENT**  
 ALVAR AALTO + AINO AALTO  
 HELSINKI, FINLAND  
 1930

The design of a complete apartment (bedroom, living room, kitchen) as an exhibition piece at the 1930 Minimum Apartment Exhibition in Helsinki, organized by the Finnish Society of Crafts and Design. The design was a collaboration between Alvar Aalto and Aino Aalto as an illustration of social housing, based on principles from the Congrès Internationaux d'Architecture Moderne (CIAM) conference in Frankfurt ("The Minimum Dwelling")<sup>15</sup> to provide maximum spatial efficiency and utility. Furniture pieces incorporated flexibility, such as the set of drawers on wheels, a 'trash trolley', and a cupboard on casters which could be easily shifted within the space. The kitchen cupboards could be opened from two sides, allowing access from both the kitchen and living room.<sup>16</sup>

**Figure 180.** Catalogue | Minimum Apartment Kitchen Illustration (opposite)  
**Figure 181.** Catalogue | Minimum Apartment Exhibition (opposite)



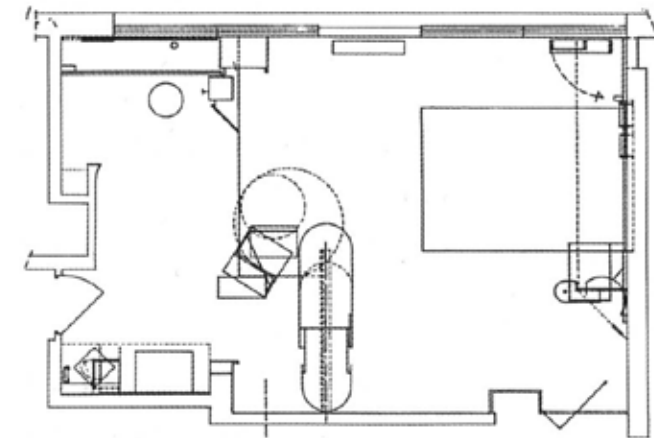




## EXTENDING WARDROBE

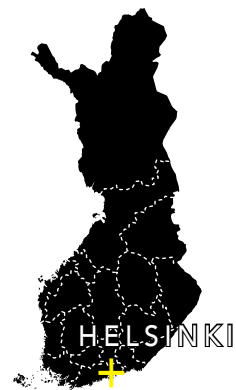
EILEEN GRAY  
 MENTON, FRANCE  
 1932

A piece of custom furniture designed for the interior of Eileen Gray's own dwelling, Tempe À Pailla. In her dwelling, Eileen Gray set out to design her "perfect dwelling machine",<sup>17</sup> not unlike the similar concepts of her contemporary, Le Corbusier. The extending wardrobe is among several of Gray's furniture designs illustrating maximum functionality. The wardrobe is expandable and can be used to divide the bedroom space.



**Figure 182.** Catalogue | Tempe À Pailla Bedroom Plan (opposite)

**Figure 183.** Catalogue | Extending Wardrobe (opposite)



## L-LEG STOOL

ALVAR AALTO  
HELSINKI, FINLAND  
1933

Alvar Aalto began researching the bending properties and applications of laminated wood (plywood) before the realization of the L-Leg stool in 1933. The stool is currently in production, nearly eighty-five years after its initial conception.<sup>18</sup> The Aalto L-Leg Stool is the most simple plywood stool available. It is impossible to further simplify the seating device. It is a timeless piece.

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**Figure 184.** Catalogue | L-Leg Stool (opposite)





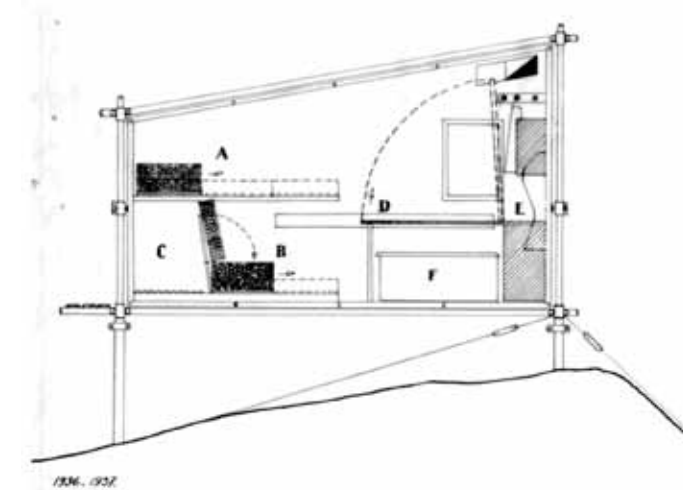
## BIVOUAC SHELTER

CHARLOTTE PERRIAND + PIERRE JEANNERET  
PARIS, FRANCE  
1936

Charlotte Perriand and Pierre Jeanneret conceived this shelter in collaboration with André Tournon (an engineer at Aluminium Français). The Bivouac Shelter is an experiment in prefabrication for a portable shelter. It was exhibited at the International Exposition dedicated to Art and Technology in Modern Life, in Paris, 1937. The design emphasizes the utility of lightweight components, capable of transportation in difficult conditions by a person or by a mule.<sup>19</sup> The shelter weighs 750 kilograms in total (including furniture), and each component does not exceed 40 kilograms in weight, or 2.5 meters in length.<sup>20</sup> It is an object of architecture, conceived as a kit of parts, formally asymmetrical to eliminate confusion during assembly,<sup>21</sup> and capable of adapting to any location.

**Figure 185.** Catalogue | Bivouac Shelter Section (opposite)

**Figure 186.** Catalogue | Bivouac Shelter (opposite)





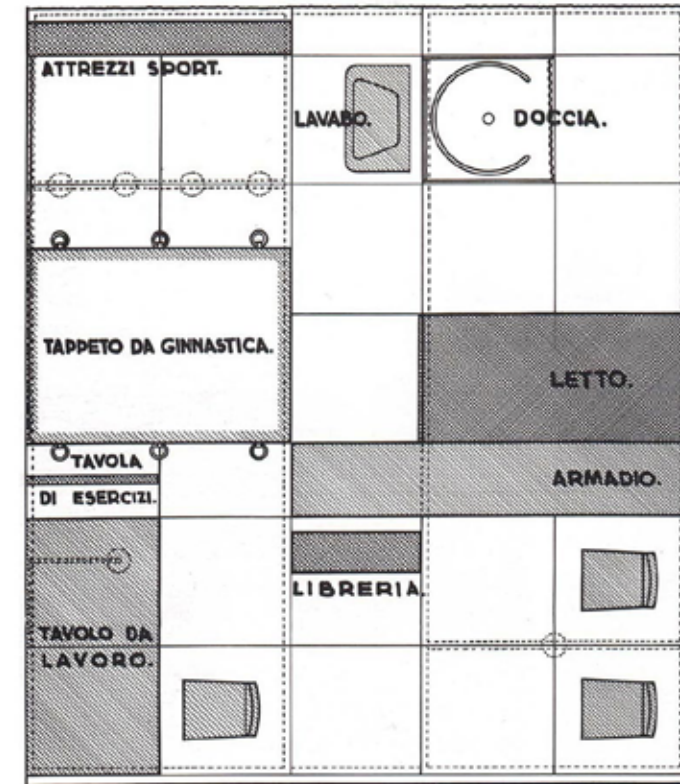
ROOM FOR A MAN

FRANCO ALBINI  
MILAN, ITALY  
1936

Franco Albini's 'Room for a Man' was designed as an allegorical space to accommodate the daily domestic activities of the modern man. It was exhibited in the 1936 Milan Triennale. The room emphasized the ideal to compact spatial requirements while providing maximum efficiency (the modern man was concerned with a new 'high speed' way of life, demanding all of the conveniences brought by industrial technology), hygiene, and mental well-being.<sup>22</sup> The room is fitted with built-in furniture often accommodating more than a single function. The ladder leading to the sleeping loft functions also as a clothing rack, the bed provides a spatial screen, and the bookshelf transitions into a table.<sup>23</sup>

Figure 187. Catalogue | Room for a Man Plan (opposite)

Figure 188. Catalogue | Room for a Man Interior (opposite)







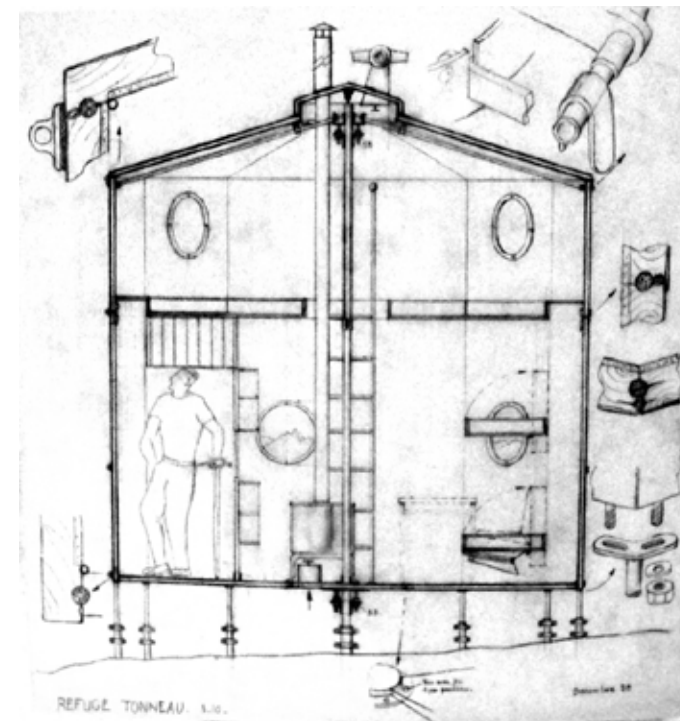
## BARREL SHELTER

CHARLOTTE PERRIAND + PIERRE JEANNERET  
MILAN, ITALY  
1938

Prototype for a mountain shelter, exhibited in the Milan Furniture Fair, 1938. Charlotte Perriand considered every minute detail in regards to the efficiency of the furniture within the shelter. The beds can be folded away while not in use (saving space in the limited floor plan) and can also be maneuvered into daytime seating. The kitchen provides storage for staple foods and a basin for melting snow to provide water for cooking.<sup>24</sup>

**Figure 189.** Catalogue | Barrel Shelter Section (opposite)

**Figure 190.** Catalogue | Barrel Shelter Model (opposite)



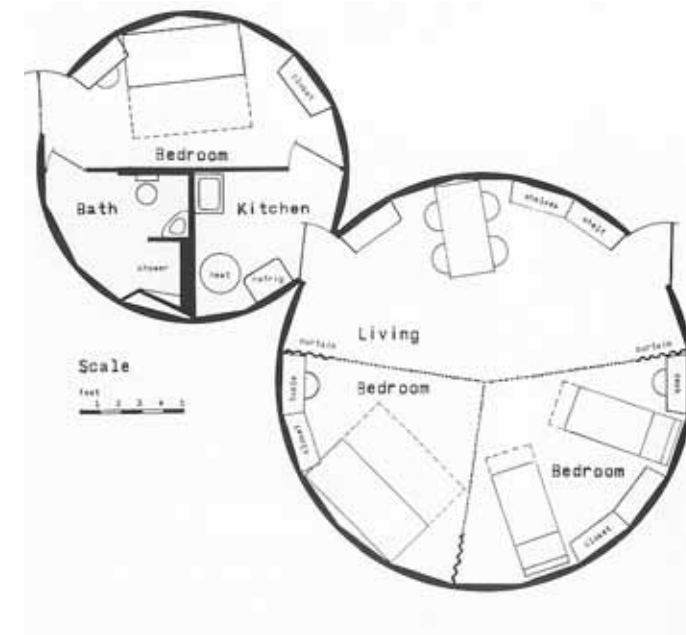


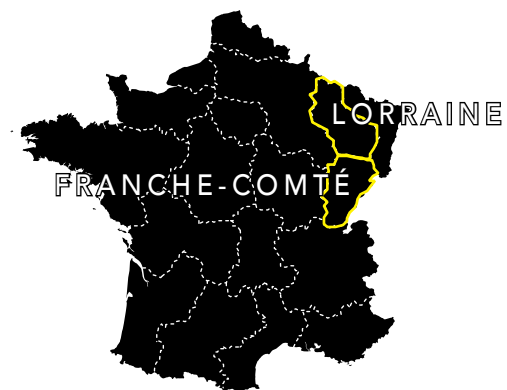
**DYMAXION DEPLOYMENT UNIT**  
 BUCKMINSTER FULLER  
 KANSAS CITY, U.S.A.  
 1940

Inspired by industrial grain silos, Buckminster Fuller worked with the Butler Manufacturing Company of Kansas City to develop a low-cost housing solution in the face of wartime shortages.<sup>25</sup> The deployment units were comprised of two circular planned units (one larger, one smaller), and organized in sections like a citrus fruit. The larger unit contained the main dwelling space, using curtains to divide or unite bedroom and living spaces into separate areas, or a singular living space. The smaller unit contained a prefabricated washroom and kitchen, and another bedroom. The dwelling units came equipped with built-in furniture, lighting equipment, plumbing, and a ventilating cylinder in the center of the roof. The deployment units were designed at a low-cost, with lightweight construction considerations, could be demounted and shipped, and could be assembled with minimally skilled labourers.<sup>26</sup>

**Figure 191.** Catalogue | Dymaxion Deployment Unit Plan (opposite)

**Figure 192.** Catalogue | Dymaxion Deployment Unit Interior (opposite)





## DEMOUNTABLE HOUSE 6X6

JEAN PROUVÉ

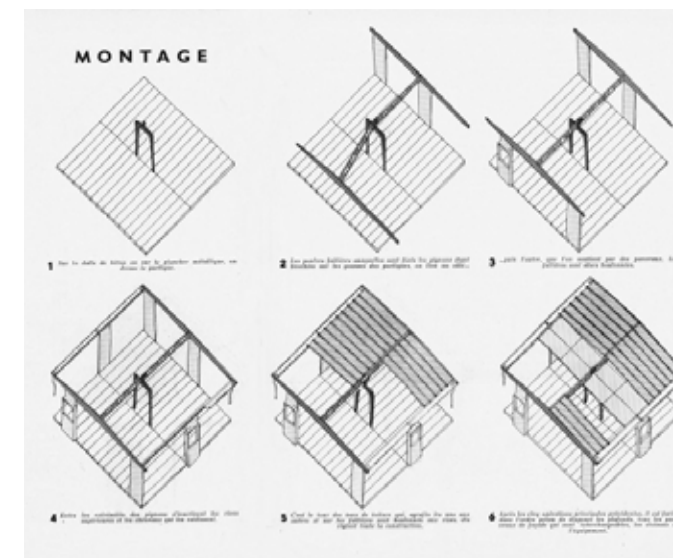
LORRAINE + FRANCHE-COMTÉ, FRANCE

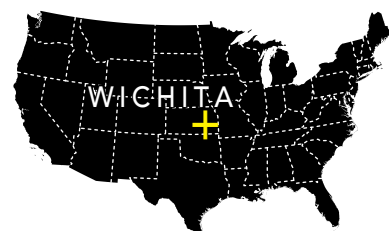
1944

Temporary houses for the homeless in post-war France, designed in response to an order from the French state department of the Ministry of Reconstruction and Town Planning.<sup>27</sup> Jean Prouvé applied his patented axial portal frame to support a prefabricated modular panel system dwelling that would enclose 36 square meters (6m x 6m) of living space.<sup>28</sup> The houses could be rapidly constructed, demounted, and transported for urgent relief to the families who had lost their homes in the casualties of war. Each house was assembled by a team of four specialists who would transport all components required to construct the house from a factory at the beginning of a day, and would return by the end of the day, with the house complete.<sup>29</sup>

**Figure 193.** Catalogue | Demountable House Diagram (opposite)

**Figure 194.** Catalogue | Demountable House Construction (opposite)





**WICHITA HOUSE**  
 BUCKMINSTER FULLER  
 WICHITA, U.S.A.  
 1945

Designed as a model for mass production, unrealized beyond prototype. In 1944, Buckminster Fuller moved into the Beech Aircraft Factory in Wichita Kansas, where he was able to develop concepts from his previous Dymaxion House.<sup>30</sup> The house employed surplus aluminum (no longer needed to manufacture airplanes post-war) as the primary construction material. It refined the hexagonal shape used in the Dymaxion House to a circular plan (not unlike Buckminster Fuller's Dymaxion Deployment Units) which would contain Fuller's patented Dymaxion Bathroom. Unlike other existing constructions using prefabrication, the Wichita House was to be delivered as a whole, with no assembly required.<sup>31</sup> Fuller's goal of delivering a house as one would deliver a new car was realized in this concept.<sup>32</sup> Unfortunately, the design was not realized for mass production, as Beech Company believed the public was not yet ready to live in 'machine-like' dwellings, forecasting unprofitable sales.<sup>33</sup>

**Figure 195.** Catalogue | Wichita House Interior Model (opposite)

**Figure 196.** Catalogue | Wichita House Model (opposite)



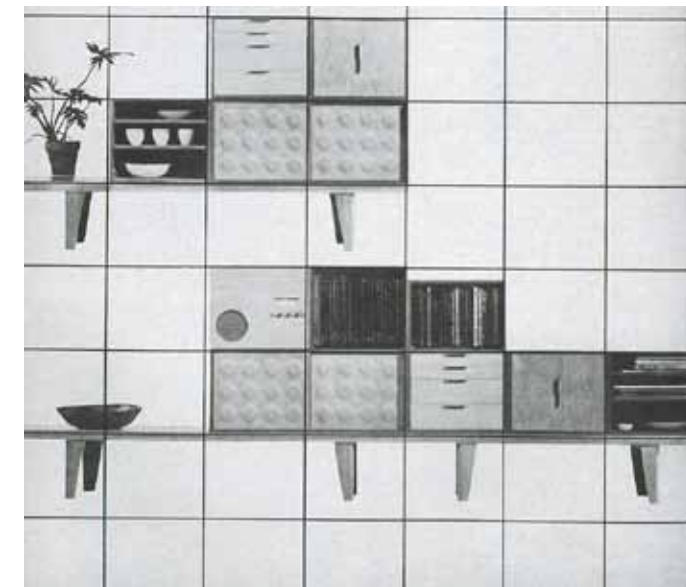
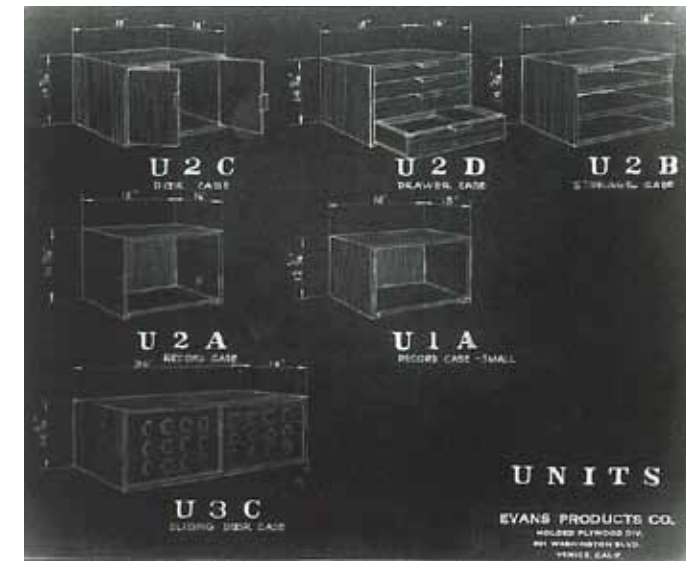




**CASE GOODS**  
 CHARLES AND RAY EAMES  
 LOS ANGELES, U.S.A.  
 1946

Based on units Eero Saarinen and Charles Eames had entered in the 1940 *Organic Design in Home Furnishings* competition, the Case Goods were a modular storage system, designed for applications in both dwellings and offices.<sup>33</sup> The system is comprised of wooden storage cabinets supported by benches of various heights and lengths. The cabinets were available in standardized sizes, and re-configurable to create numerous storage configurations. Within each Case Goods cabinet, the wooden box was fitted with different storage functions. Some had drawers, some sliding panels, and some were divided into shelves. Although exhibited for the Architectural League, and at the Museum of Modern Art's 1946 exhibition, *New Furniture Designed by Charles Eames*, the Case Goods storage system was never mass produced.<sup>34</sup>

**Figure 197.** Catalogue | Case Goods Illustration (opposite)  
**Figure 198.** Catalogue | Case Goods (opposite)





## STANDARD OF LIVING PACKAGE

BUCKMINSTER FULLER

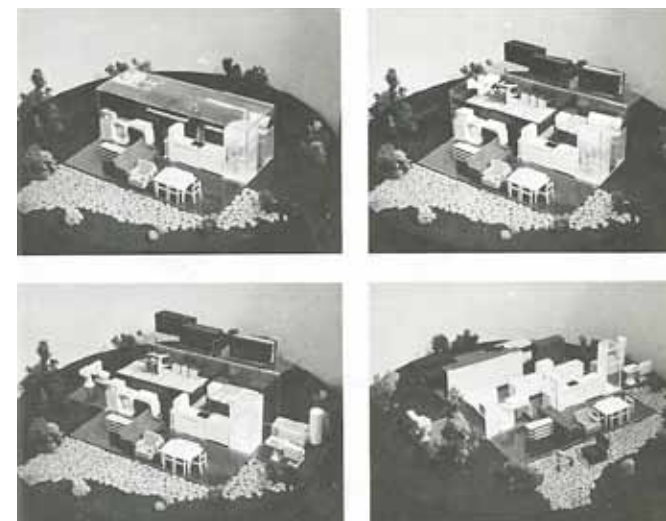
CHICAGO, U.S.A.

1948

A collaboration between Buckminster Fuller and students from the Institute of Design in Chicago, for a system of mobile dwelling. All furnishings required for the domestic needs of a family of six could be packed into a trailer for shipping, and expanded for dwelling. The Standard of Living Package was a container with sides that folded down to create a floor, upon which the furnishing components could be arranged. It was to function in parallel with Fuller's geodesic dome. The dome would act as the exterior enclosure, while the Standard of Living Package would include all interior fittings.<sup>34</sup>

**Figure 199.** Catalogue | Standard of Living Package Set-Up (opposite)

**Figure 200.** Catalogue | Standard of Living Package Installed (opposite)





## ULMER HOCKER STOOL

MAX BILL  
ULM, GERMANY  
1950

A piece of post-war rational furniture designed while Max Bill held tenure at the Ulm School of Design, the West German design school Bill cofounded on the principles of Bauhaus teachings.<sup>35</sup> The stool remains in production today, sixty-six years from the date of its conception. This object is a chair, step stool, side table, and tray, all in one. It can be combined in a series to create bench seating too.

**Figure 201.** Catalogue | Ulmer Hocker Stool (opposite)

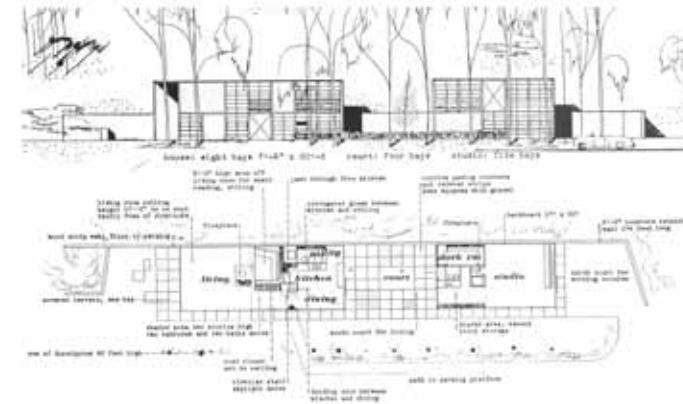




**CASE STUDY HOUSE NO. 8**  
 RAY EAMES + CHARLES EAMES  
 LOS ANGELES, U.S.A.  
 1950

Designed for the *Arts + Architecture 'Case Study House Program'*, this was Ray and Charles Eames's own home. The Case Study House Program aimed to illustrate new forms of housing for post-war America. With the selection of off-the-shelf, industrially produced standard components, the Case Study House No. 8 is an American model of prefabrication. The house consists of two rectangular structures (one for living, the other a studio space) which enclose a courtyard between. The structures are divided into uniform bays, defined by the steel components.<sup>36</sup> Each bay is subdivided into smaller sections of windows or solid panels, painted a variety of bright colours. All structural materials are exposed within the dwelling. Although the house is a simple structural container, it is personified by the domestic accessories and the drama of everyday life.<sup>37</sup>

**Figure 202.** Catalogue | Case Study House No. 8 Elevation, Plan (opposite)  
**Figure 203.** Catalogue | Case Study House No. 8 Interior (opposite)



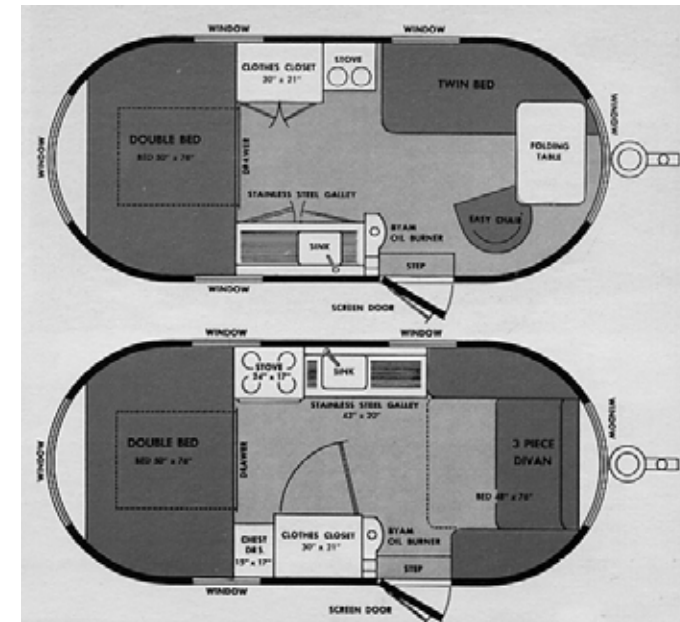




**AIRSTREAM CLIPPER 18'**  
 WALLY BYAM  
 JACKSON CENTRE, U.S.A.  
 1950

In 1931 Wally Byam founded his company, Airstream, with his first factory in Culver City, California, to realize his dreams for a portable home that “would move like a stream of air, be light enough to be towed by a car (or bicycle), and create first-class accommodations anywhere.”<sup>38</sup> The company began with great success, but was temporarily shut down during the war-time recession period. During this time, Wally Byam found employment in various airplane factories in California, expanding his scope of expertise with lightweight constructions.<sup>39</sup> In post-war America, the caravan market exploded with popularity, and the Airstream Company moved its manufacturing operations to Jackson Center, Ohio.<sup>40</sup> The Airstream Clipper 18' is one of his original post-war trailers, extremely light-weight, and compact in size. A variety of interior fittings could be selected by the owner to reflect their travelling preferences.

**Figure 204.** Catalogue | Airstream Clipper 18' Interior Options (opposite)  
**Figure 205.** Catalogue | Airstream Clipper 18' (opposite)



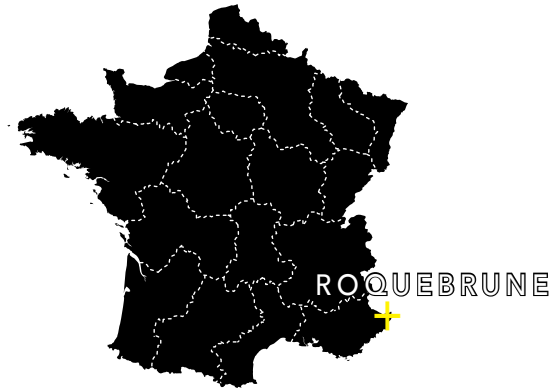


**EAMES STORAGE UNIT**  
 RAY EAMES + CHARLES EAMES  
 LOS ANGELES, U.S.A.  
 1950

The Eames Storage Unit (ESU), is a modular furniture system with different components varying in height and width to address various functional requirements, and for interchangeable usage within offices, living rooms, dining rooms, and bedrooms. They were manufactured commercially by Herman Miller from 1950-1955.<sup>41</sup> According to Donald Albricht, a long time contributor to the Eames Office, “the great commercial success of the Eames’s furniture [such as the ESU] was in large part due to the pieces’ adaptability to myriad markets - domestic, office, and institutional - as well as their multiple uses within different rooms of the home...This adaptability was possible because much of the Eames’s furniture was made of standardized parts that could be combined into different arrangements, offering customers the flexibility to mix and match different pieces to suit their needs...The buyer actively engaged in the process of assembling, arranging, and disassembling the Eameses’ furniture, customizing the products for his or her own use.”<sup>42</sup>

**Figure 206.** Catalogue | Eames Storage Unit Options (opposite)  
**Figure 207.** Catalogue | Eames Storage Unit (opposite)

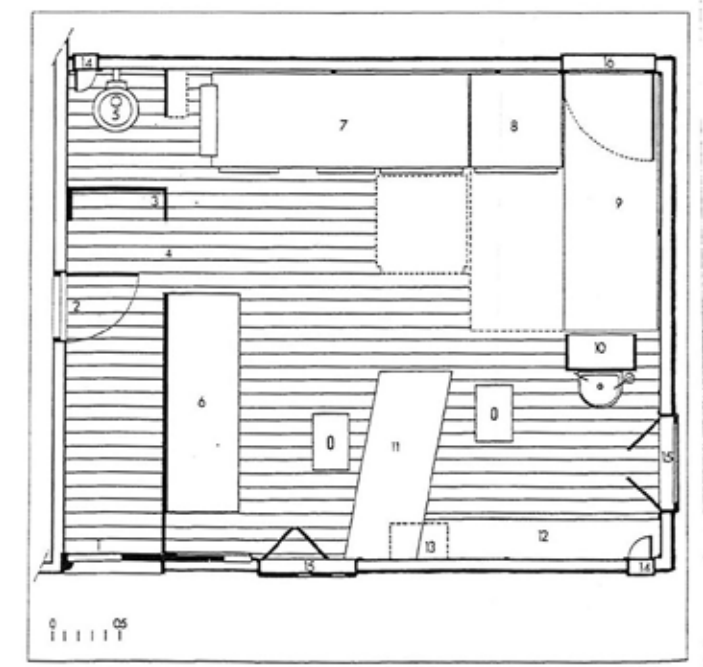




**LE CABANON**  
LE CORBUSIER  
ROQUEBRUNE, FRANCE  
1952

Designed for himself, this was Le Corbusier's vacation dwelling space in Roquebrune, on the Mediterranean sea in the south of France. The interior of the cabin was an illustration of Le Corbusier's domestic ideals of extreme simplicity and rationality.<sup>43</sup>

**Figure 208.** Catalogue | Le Cabanon Plan (opposite)  
**Figure 209.** Catalogue | Le Cabanon Interior (opposite)





MEXICAN BOOKSHELF  
CHARLOTTE PERRIAND AND JEAN PROUVÉ  
NANCY, FRANCE  
1953

The Mexican Bookshelf is a domestic object realized from a collaboration between French masters Charlotte Perriand and Jean Prouvé, while working together at Ateliers Jean Prouvé. It is was a low-cost, efficient furniture piece with abilities for both storage and spatial division. It was produced by Ateliers Jean Prouvé (1953-1956) and Galerie Steph Simon (1956-1965).<sup>44</sup>

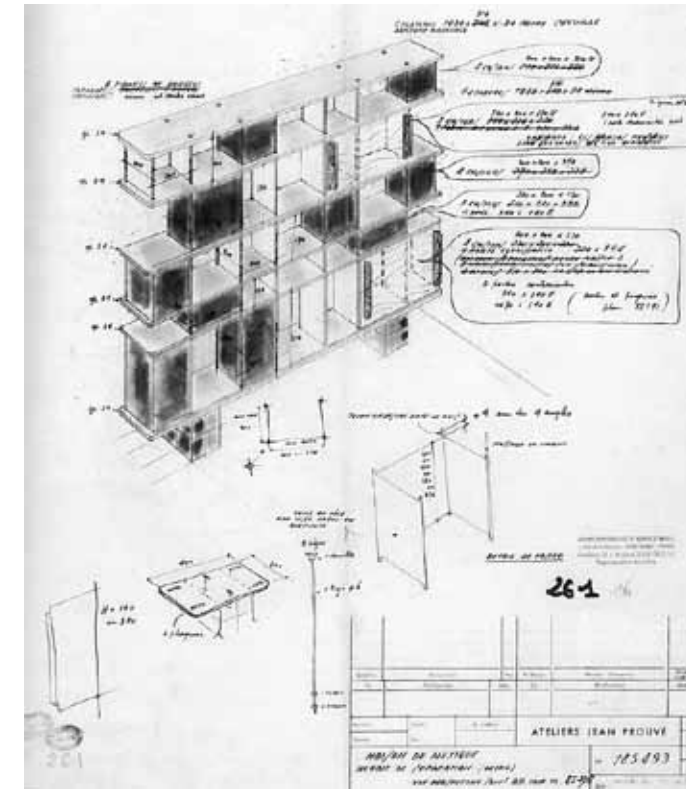


Figure 210. Catalogue | Mexican Bookshelf Sketch (opposite)  
Figure 211. Catalogue | Mexican Bookshelf (opposite)





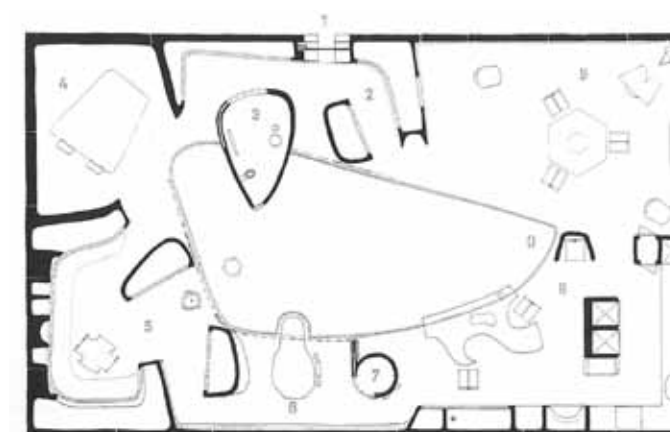
## HOUSE OF THE FUTURE

ALISON SMITHSON AND PETER SMITHSON  
LONDON, UNITED KINGDOM  
1956

Alison and Peter Smithson's concept for what a suburban house would be like in 1980, 25 years into the future, designed for the 1956 *Daily Mail Ideal Home Exhibition* in West London. The house was intended for a childless couple, thought to be part of a compact, high density urban setting.<sup>45</sup> The house is rectangular in plan, with openings only into the centrally placed courtyard. There are no fixed rooms. Interior divisions are temporary and flexible, adjustable with sliding partitions and built-in features, and mobile components.<sup>46</sup>

**Figure 212.** Catalogue | House of The Future Plan (opposite)

**Figure 213.** Catalogue | House of The Future Interior (opposite)



Diagrammatic plan at middle level, with loose furniture shown.  
1, Entrance  
2, Cloaks  
3, Toilet  
4, Bedroom  
5, Dressing room  
6, Bathroom  
7, Shower  
8, Kitchen  
9, Living room  
0, Patio  
AS, 1956; LW, 1992.





## LB7 SHELVING UNIT

FRANCO ALBINI  
MILAN, ITALY  
1957

Flexible, modular shelving system extendable in height and width, designed for Italian manufacturing firm, Poggi. The shelving system was a result of Franco Albini's research to make maximum use of minimal spaces. The LB7 Shelving Unit could be configured to fit within any existing space with its adjustable feet compressed between the floor and ceiling. The horizontal shelves could be slotted in numerous configurations to address the user's needs and preferences.

Figure 214. Catalogue | LB7 Shelving Unit (opposite)





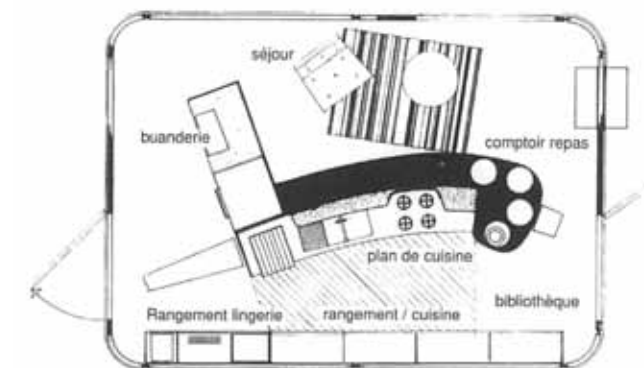
## SAHARA HOUSE

CHARLOTTE PERRIAND + JEAN PROUVÉ  
PARIS, FRANCE  
1958

A collaboration between Charlotte Perriand and Jean Prouvé for a prefabricated dwelling intended for use in the Sahara Desert. It was first presented at the 1958 Salon des Arts Ménagers (Household Arts Show) in Paris. The house is comprised of a shell of standardized panels made of heat-insulating aluminum (designed by Jean Prouvé), and a compact interior of standardized furnishings (designed by Charlotte Perriand). The furniture was completely autonomous from the exterior walls, as the thin membrane could not be punctured with a single nail or hardware component. Charlotte Perriand applied her research techniques studying the motions of domestic activities to design the most efficient and enjoyable use of the compact enclosure.<sup>48</sup>

**Figure 215.** Catalogue | Sahara House Plan (opposite)

**Figure 216.** Catalogue | Sahara House Interior (opposite)

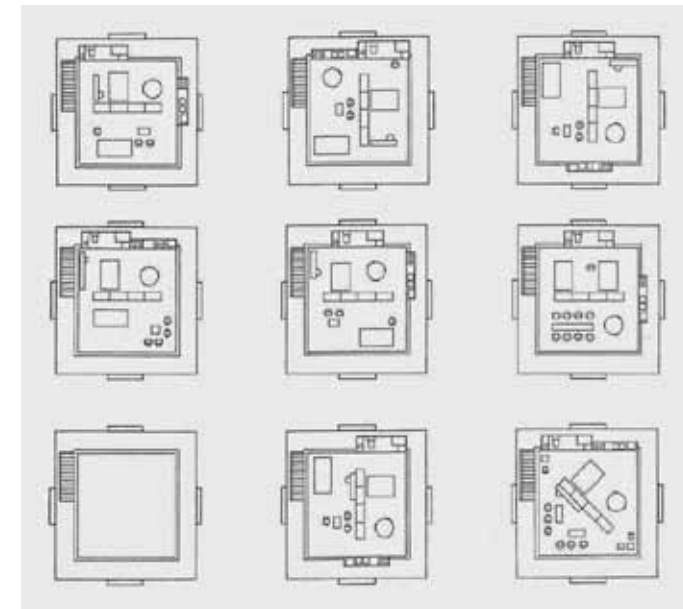




**SKY HOUSE**  
 KIYONARI KIKUTAKE  
 TOKYO, JAPAN  
 1958

The Sky House was designed for Kiyonari Kikutake as his own home to illustrate the principles of the Japanese Metabolism movement.<sup>49</sup> It is one of the few realized projects to do so. The house contains a neutral floor plan, raised from the ground on concrete structural pillars. As the family composition changed organically (children were raised, and subsequently moved away), so did the house. Modules were added under the main floor structure, and removed when no longer needed. The neutral floor-plan could be adjusted and arranged in any number of spatial organizations, illustrating the flexibility of the design.

**Figure 217.** Catalogue | Sky House Flexibility (opposite)  
**Figure 218.** Catalogue | Sky House Exterior (opposite)



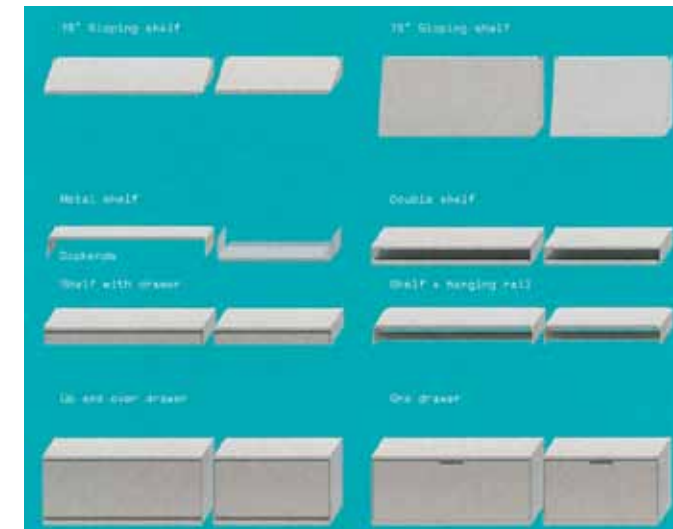




## UNIVERSAL SHELVING UNIT

DIETER RAMS  
LONDON, UNITED KINGDOM  
1960

A shelving unit designed for infinite recombination and reconfiguration for production by Vitsoe, a manufacturing company established in 1959 in London, United Kingdom, to realize the furniture designs of Dieter Rams.<sup>50</sup> The Universal Shelving Unit exemplifies Rams' furnishing ideals outlined in his "10 Principles of Good Design". (see page 84)



**Figure 219.** Catalogue | Universal Shelving Unit Options (opposite)

**Figure 220.** Catalogue | Universal Shelving Unit (opposite)



**EAMES CONTRACT UNIT (ECU)**

RAY EAMES + CHARLES EAMES

LOS ANGELES, U.S.A.

1961

The Eames Contract Unit was a modular furniture system developed for the growing number of college students in the U.S.A. The furniture was intended to perform for the extreme usage of college students, which would make it especially durable for the rest of the population's regular use.<sup>51</sup> The unit is constructed as a kit of parts, and can be adapted to fit the constraints of different rooms, or for the user's preference. It is equipped with clothing storage and dressing functions, a desk, and a fold-out bed.<sup>52</sup>



**Figure 221.** Catalogue | Eames Contract Unit Illustration (opposite)

**Figure 222.** Catalogue | Eames Contract Unit (opposite)



## MINIKITCHEN

JOE COLOMBO  
MILAN, ITALY  
1963

The Minikitchen was designed for Italian manufacturer, Boffi, and presented at the Museum of Modern Art exhibition, *Italy: The New Domestic Landscape*, in 1972. It was re-issued for current production by Boffi, realized now in Corian.<sup>53</sup> The kitchen includes “two burners, a refrigerator, a cutting board, electrical outlets for small appliances, and multipurpose storage compartments.”<sup>54</sup> According to Joe Colombo, “things have to be flexible. My kitchen can be moved around or out of a room and when you are finished with it, it closes up like a box.”<sup>55</sup> Colombo was a visionary for flexible domestic objects that could furnish dwellings autonomously from fixed structural elements, allowing for interchangeability and adaptability to various spatial requirements.<sup>56</sup>

**Figure 223.** Catalogue | Minikitchen Top View (opposite)

**Figure 224.** Catalogue | Minikitchen (opposite)





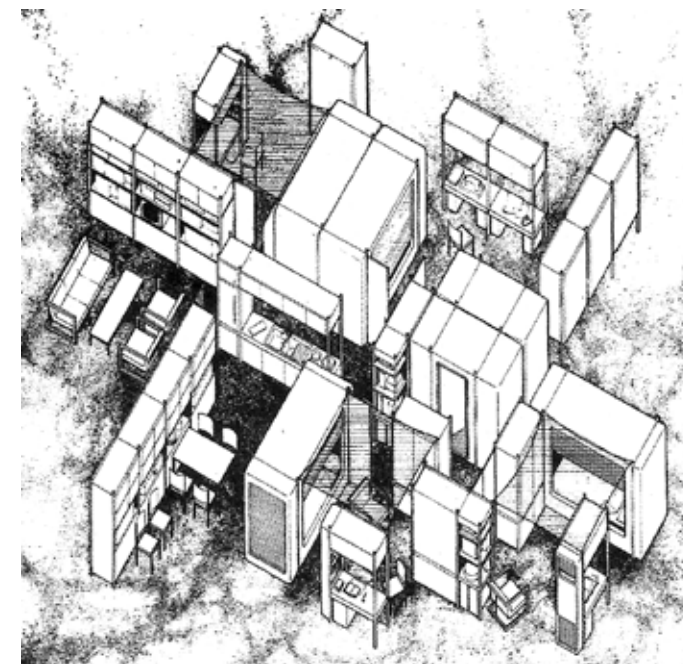
## FURNITURE HOUSE

KENJI EKUAN  
TOKYO, JAPAN  
1964

The Furniture House was a concept created for autonomous interior furnishings in the unrealized second book of Metabolism, illustrating fluidity between object, architecture, and urbanism. The design received a Kaufmann International Design Award for concept design.<sup>57</sup> The Furniture House details the “creation of domestic space through moveable - Metabolist furniture - each one equipped with a structure of ‘skeleton’, ‘organs’ and ‘skin’.”<sup>58</sup> The dwelling is defined by the composition of furniture, not by walls or predetermined and fixed structures.

**Figure 225.** Catalogue | Furniture House Axonometric (opposite)

**Figure 226.** Catalogue | Furniture House Components (opposite)







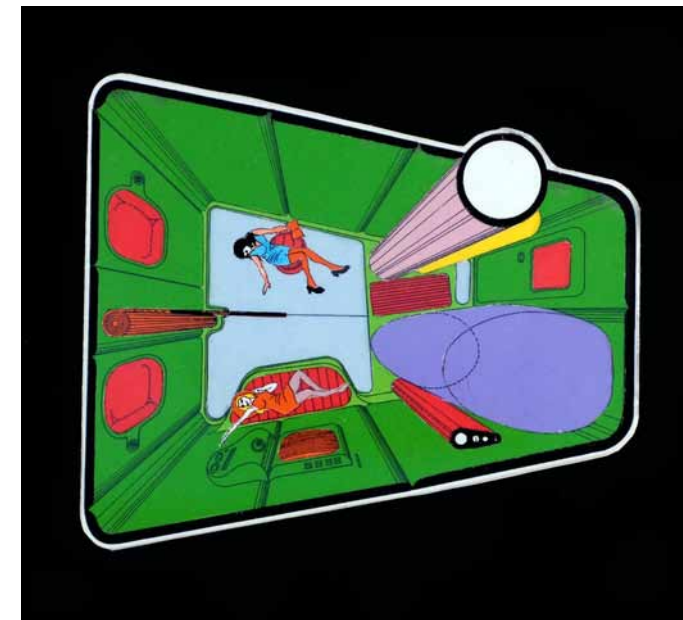
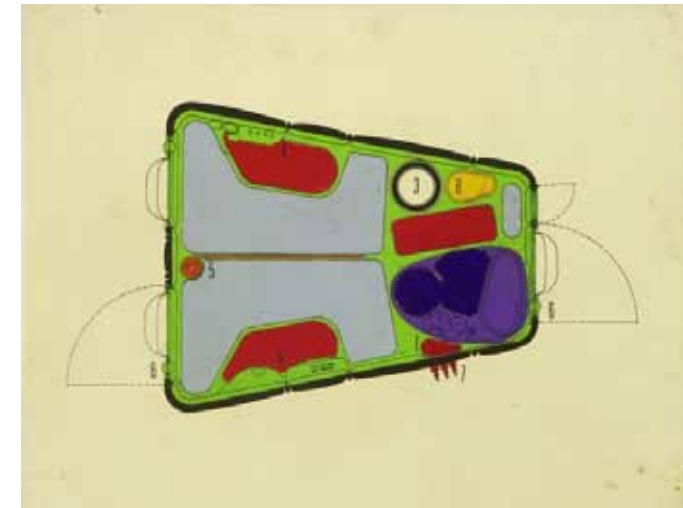
## CAPSULE HOMES PROJECT

WARREN CHALK (ARCHIGRAM)  
LONDON, UNITED KINGDOM  
1964

The Capsule Homes Project, commissioned by Taylor Woodrow, was an unrealized concept for a prefabricated dwelling system. It was published in *Archigram*, 1972.<sup>59</sup> The system was comprised of a set of customizable components, interchangeable for future use and developments in manufacturing technologies. The prefabricated capsular units would be fixed to a structural frame. Each could be updated as technology progressed.<sup>60</sup>

**Figure 227.** Catalogue | Capsule Homes Project Plan (opposite)

**Figure 228.** Catalogue | Capsule Homes Project Perspective (opposite)

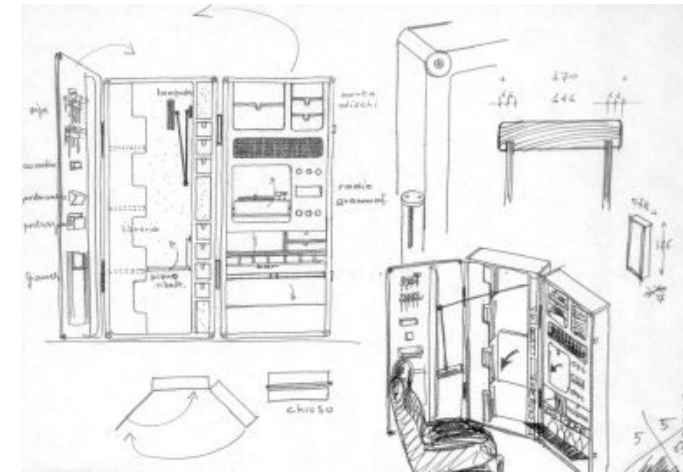




PERSONAL CONTAINER

JOE COLOMBO  
MILAN, ITALY  
1965

Designed as a prototype for Italian manufacturing company, Bernini, the 'Personal Container' is one of four units within a modular furnishing system. The optimized system as devised by Joe Colombo would consist of a 'For Man' container, a 'For Woman' container, the 'Personal' container, and a 'Study' container. The units could each be expanded or closed, and connected together to create dwelling zones. The 'Personal Container' is fitted with drawers, a pipe rack, record storage shelves, a record turntable, a magazine rack, an adjustable lamp, and a radio.<sup>61</sup>



**Figure 229.** Catalogue | Personal Container Sketches (opposite)  
**Figure 230.** Catalogue | Personal Container (opposite)

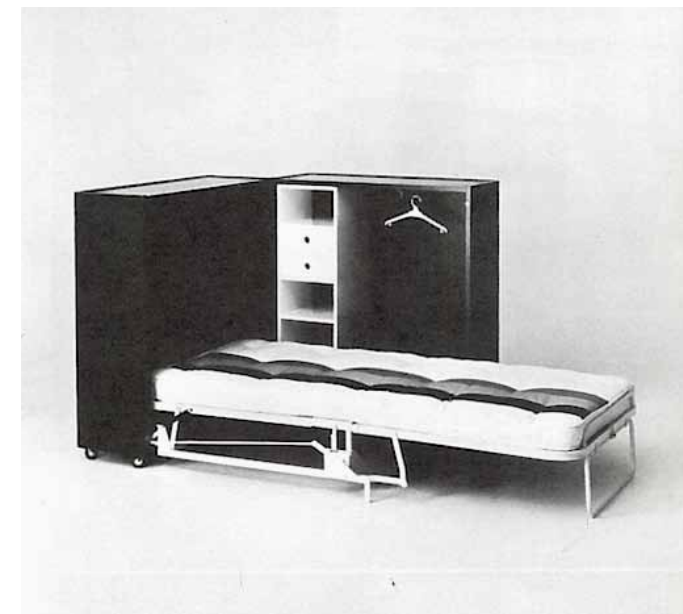


**WARDROBE-BED**

ALBERTO SALVATI AND AMBROGIO TRESOLDI  
MILAN, ITALY  
1967

Designed for Italian manufacturer, Campeggi (one of the first furniture manufacturers to produce multifunctional and convertible furniture).<sup>62</sup> The 'Wardrobe-Bed' was presented at the Museum of Modern Art exhibition, *Italy: The New Domestic Landscape*, in 1972.<sup>63</sup> It is expandable and mobile. Hinges open and close the unit to unfold or store a bed, and casters fixed on the base provide means of mobility.

**Figure 231.** Catalogue | Wardrobe-Bed Closed (opposite)  
**Figure 232.** Catalogue | Wardrobe-Bed Open (opposite)



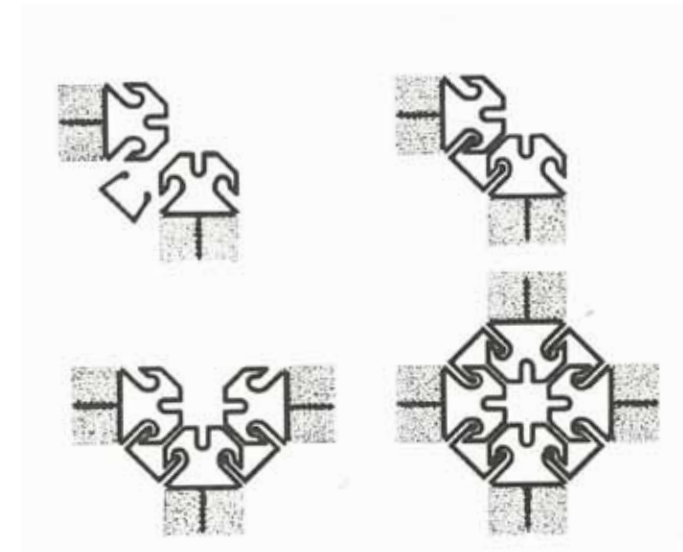


**CUB 8 WALL SYSTEM**

ANGELO MANGIAROTTI  
 MONTALE, ITALY  
 1967

Designed for Italian manufacturer, Poltronova (then directed by Ettore Sottsass Jr.). The ‘CUB 8 Wall System’ was presented at the Museum of Modern Art exhibition, *Italy: The New Domestic Landscape*, in 1972.<sup>64</sup> The system is composed of panels joined together with clips to create modular storage and functional units. It includes closets, doors, shelves, drawers, a bed, a folding desk, and a bar. The name of the system derives from “the maximum number of cubes that can be composed by using elements of the system meeting simultaneously at one point”.<sup>65</sup>

**Figure 233.** Catalogue | CUB 8 Wall System Detail (opposite)  
**Figure 234.** Catalogue | CUB 8 Wall System (opposite)







**MOBILE KITCHEN UNIT**

VIRGILIO FORCHIASSIN

VENICE, ITALY

1968

Designed for Italian manufacturer, Snaidero (with origins in cabinetry, the company is currently a high-end kitchen manufacturer).<sup>66</sup> The 'Mobile Kitchen Unit' was presented at the Museum of Modern Art exhibition, *Italy: The New Domestic Landscape*, in 1972.<sup>67</sup> The unit is set on casters, and is hinged to expand and contract for a variety of usages and spatial compositions.



**Figure 235.** Catalogue | Mobile Kitchen Unit Closed (opposite)

**Figure 236.** Catalogue | Mobile Kitchen Unit Open (opposite)

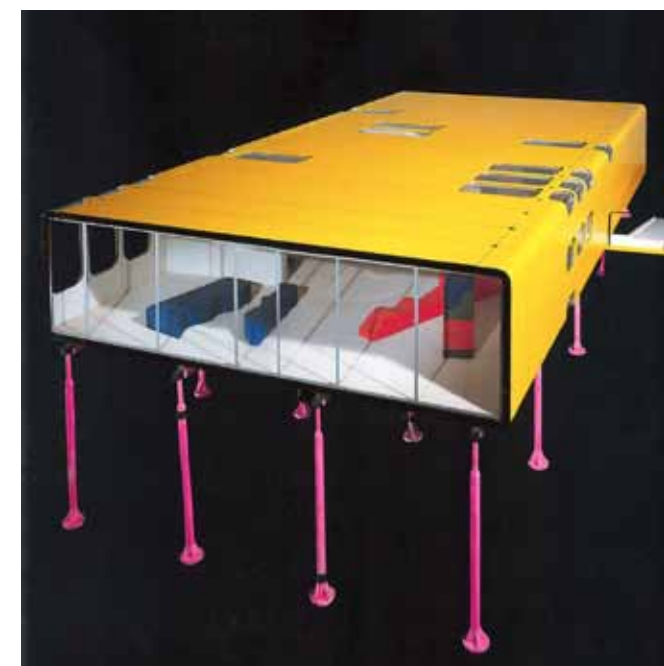
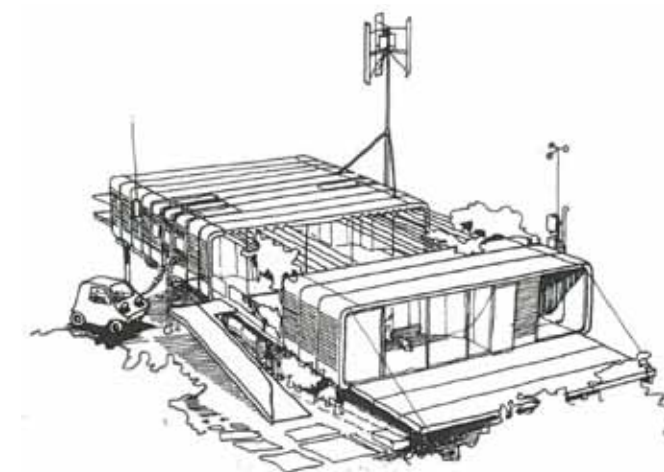


## ZIP-UP HOUSE NO.1

RICHARD ROGERS  
 LONDON, UNITED KINGDOM  
 1968

Sponsored by the DuPont company for 'The House for Today', exhibited at the 1969 *Ideal Home Exhibition* in London, United Kingdom. The house is comprised of modular wall, floor and roof components which are joined to form a structural ring. The structural rings can then be combined with any number of additional structural rings to enclose an interior space of infinite length. The interior is divided with flexible wall panels which can be adjusted or shifted as desired.<sup>68</sup>

**Figure 237.** Catalogue | Zip-Up House No.1 Sketch (opposite)  
**Figure 238.** Catalogue | Zip-Up House No. 1 Model (opposite)





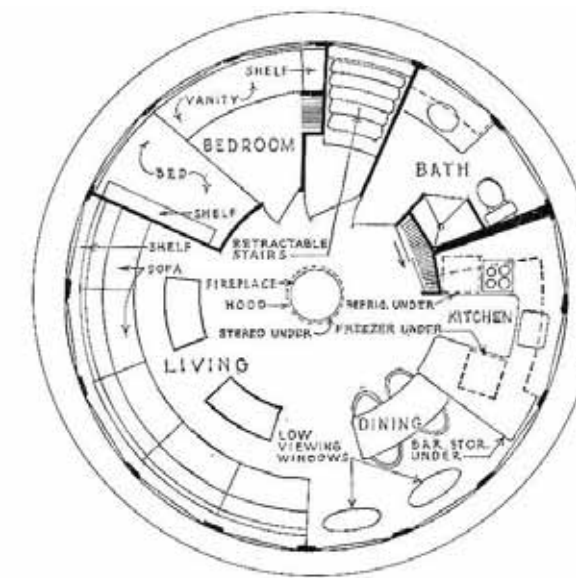
## FUTURO HOUSE

MATTI SUURONEN  
ESPOO, FINLAND  
1968

The 'Futuro House' was designed as a ski cabin which would be "quick to heat and easy to construct in rough terrain."<sup>69</sup> It was commissioned by Dr. Jaakko Hiidenkari to be located in Janakkala (central Finland) with the possibility of being relocated. Matti Suuronen devised a modular component system that could be easily fabricated on site (there are only 16 pieces that form the exterior shell), or transported as a prefabricated whole. The initial manufacturing was done by Oy Polykem Ab in Vantaa, Finland. Although initially popular in Europe and the U.S.A. (400 inquiries were made for production licenses), the oil crisis of 1973 halted the intentions of mass-production. Approximately 60 modules were manufactured.<sup>70</sup>

**Figure 239.** Catalogue | Futuro House Plan (opposite)

**Figure 240.** Catalogue | Futuro House in Transport (opposite)



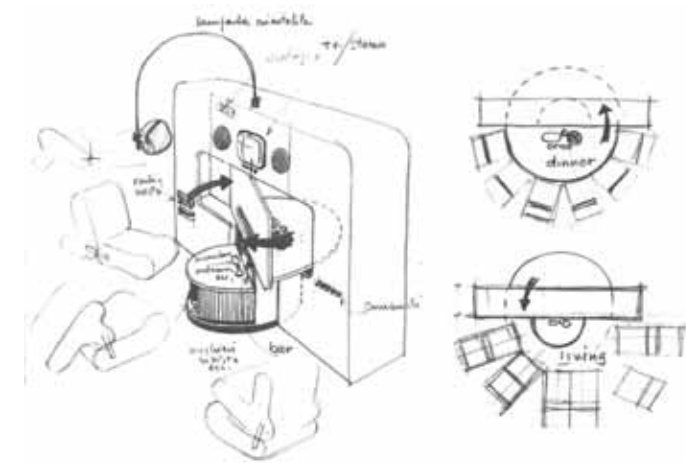


**ROTO LIVING MONOBLOCK**

JOE COLOMBO  
MILAN, ITALY  
1969

The 'Roto Living Monoblock' was a furniture design for Joe Colombo's own apartment. In his own dwelling space, Colombo experimented with various prototypes for flexible and transformable domestic objects. The 'Roto Living Monoblock' has a table which revolves to transform a living space to a dining space.<sup>71</sup>

**Figure 241.** Catalogue | Roto Living Monoblock Sketch (opposite)  
**Figure 242.** Catalogue | Joe Colombo's Apartment Interior (opposite)







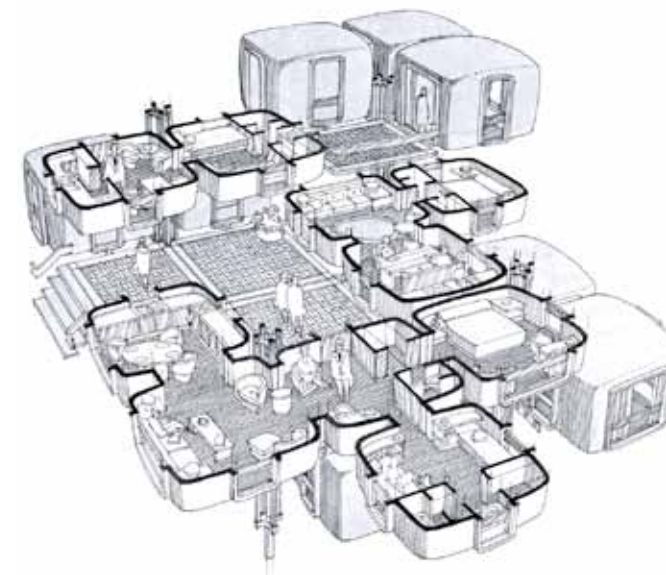
## THE TEKKTO SYSTEM

ERNEST J. KUMP  
SAN FRANCISCO, U.S.A.  
1970

Concept design for 'A New Architecture for Man,' marketed as a solution to the early 1970s U.S. housing shortage, and subsequently for housing in developing countries with the United Nations Industrial Development Organization.<sup>72</sup> The 'Tekkto System' consisted of modular fiberglass pods outfitted for residential, educational, and commercial functions. The pods could be attached and demounted on an expandable space frame. The pods could be combined with adjacent units to enclose larger interior arrangements. As a kit of parts, the components for the roof and floor of the pods could form a shipping container for delivery to the construction site, and could be assembled rapidly.<sup>73</sup>

**Figure 243.** Catalogue | The Tekkto System Sketch (opposite)

**Figure 244.** Catalogue | The Tekkto System Model (opposite)





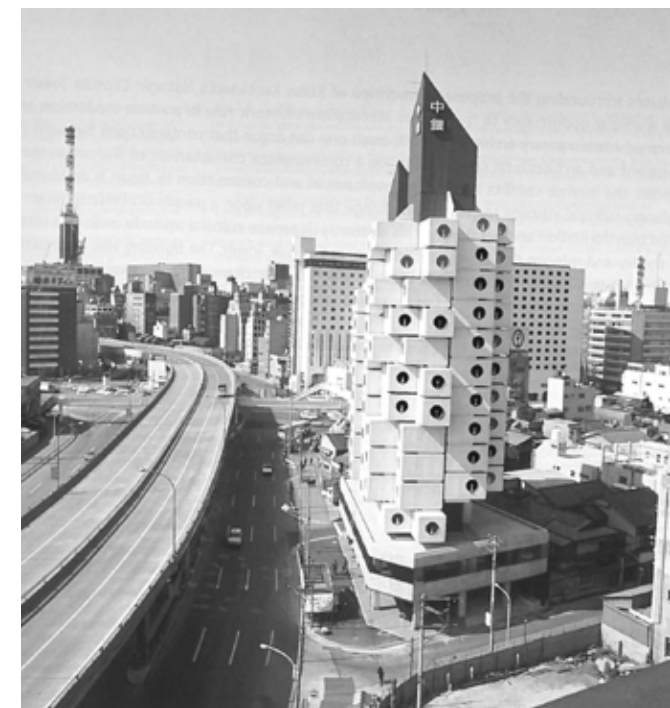
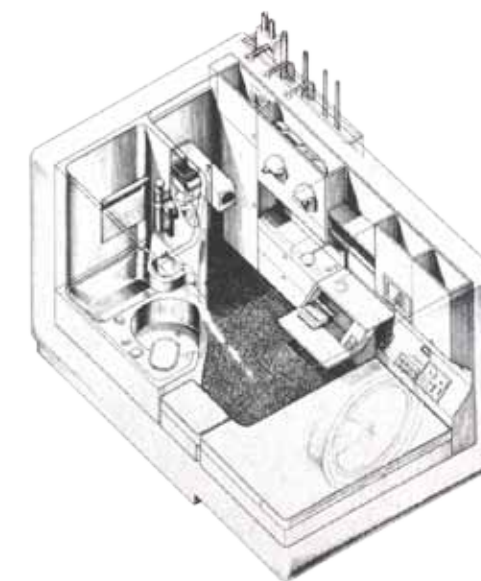
## NAGAKIN CAPSULE TOWER

KISHO KURAKAWA

TOKYO, JAPAN

1970

An apartment building designed with Japanese Metabolism principles, consisting of 140 concrete ‘capsules’, dwelling spaces for an individual salary worker. The capsules were intended to be removed and updated every 25 years, future-proofing the system. They never were. Outdated and in need of repair, the tower’s fate is currently in question, either for demolition or historical preservation.<sup>74</sup>



**Figure 245.** Catalogue | Nagakin Capsule Tower Sketch (opposite)

**Figure 246.** Catalogue | Nagakin Capsule Tower (opposite)

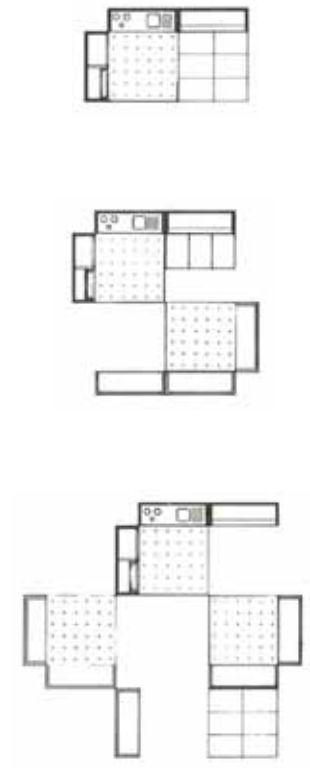


**LIVING ELEMENT**

GIANCARLO BIOCCHI, LUIGI BIOCCHI,  
ROBERTO MONSANI  
MILAN, ITALY  
1971

Designed for Italian manufacturer, ICF De Padova (the first company in Italy to acquire a license to manufacture Herman Miller products designed by Charles and Ray Eames).<sup>75</sup> The 'Living Element' was presented at the Museum of Modern Art exhibition, *Italy: The New Domestic Landscape*, in 1972. The component wall and ceiling system is expandable, and contains a kitchen, convertible bed, cupboard, bookshelves, ceiling lighting, and a loudspeaker.<sup>76</sup>

**Figure 247.** Catalogue | Living Unit Configuration Plans (opposite)  
**Figure 248.** Catalogue | Living Unit (opposite)



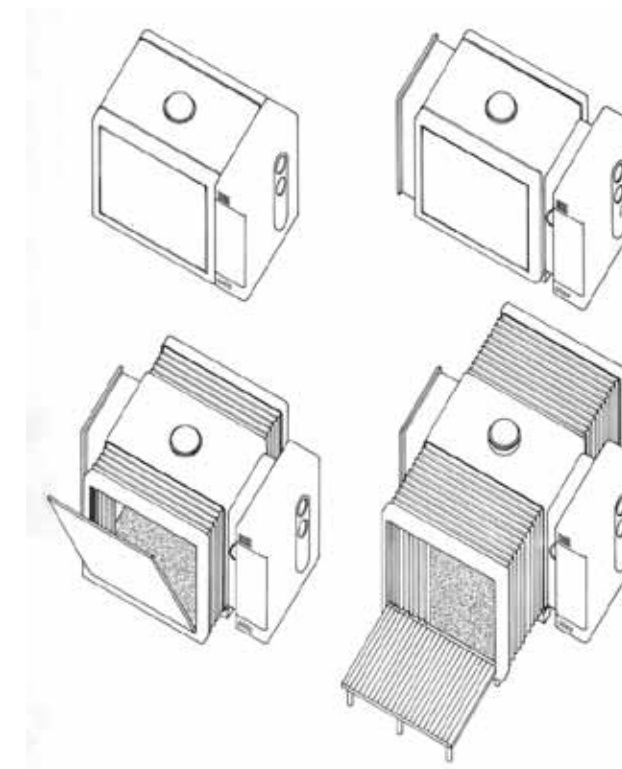


## MOBILE HOUSE

ALBERTO ROSSELLI  
MILAN, ITALY  
1972

The 'Mobile House' was designed and commissioned for the Museum of Modern Art exhibition, *Italy: The New Domestic Landscape*, in 1972, as one of the 'micro environments' for the exhibition. The mobile environment can be telescopically expanded on all four sides during occupation, and subsequently compacted for transportation. Two people can easily manipulate the spatial enclosure without any special tools.<sup>77</sup>

**Figure 249.** Catalogue | Mobile House Installation Sequence (opposite)  
**Figure 250.** Catalogue | Mobile House (opposite)





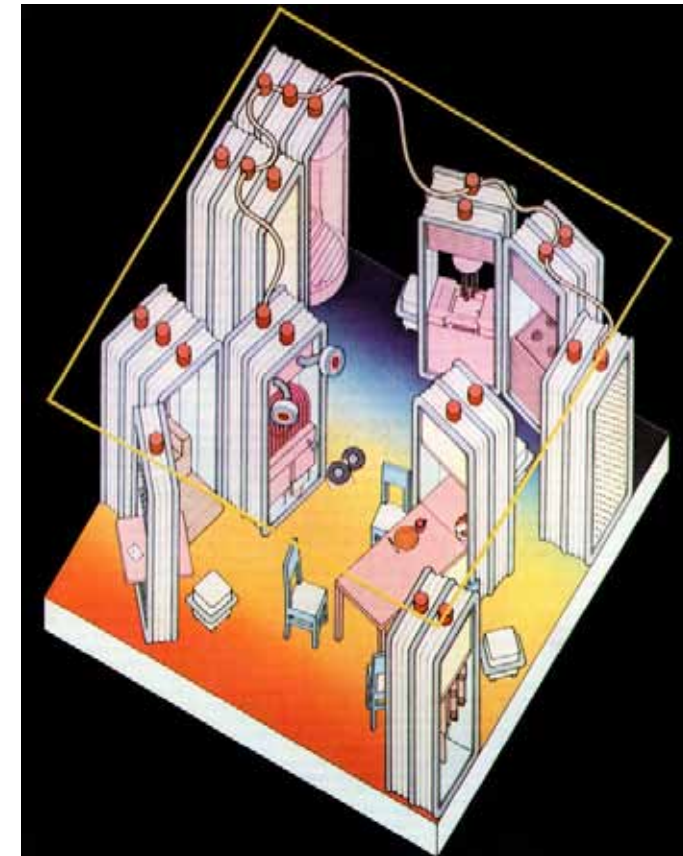


**MOBILE AND FLEXIBLE ENVIRONMENT MODULE**

ETTORE SOTTASS JR.  
MILAN, ITALY  
1972

The 'Mobile and Flexible Environment Module' was designed and commissioned for the Museum of Modern Art exhibition, *Italy: The New Domestic Landscape*, in 1972, as one of the 'micro environments' for the exhibition. Ettore Sottsass Jr. did not conceive this design as an object for manufacture, but instead as a system to provoke an idea, a rhetorical concept.<sup>78</sup> The system is comprised of a set of large plastic modules on casters, each filled with the components and appliances for domestic activities. Each module was purposefully left plain and clumsy so as to detach its presence and allow it to fade into the background, hidden behind the dramas of daily domestic rituals. The modular system could be adapted in any organizational arrangement to create any spatial composition required for the activity at hand.

**Figure 251.** Catalogue | Mobile and Flexible Environment Module Axonometric (opposite)  
**Figure 252.** Catalogue | Mobile and Flexible Environment Module (opposite)





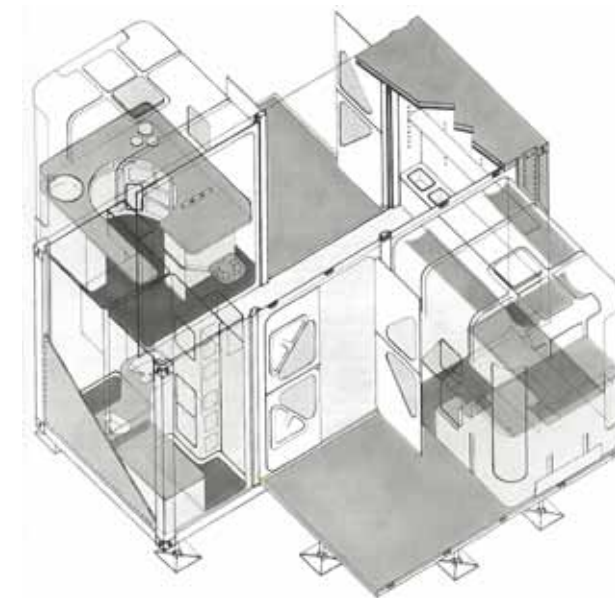
## MOBILE ENVIRONMENT

STUDIO ZANUSO, MARCO ZANUSO AND  
RICHARD SAPPER  
MILAN, ITALY  
1972

The 'Mobile Environment' was designed and commissioned for the Museum of Modern Art exhibition, *Italy: The New Domestic Landscape*, in 1972, as one of the 'micro environments' for the exhibition. The concept of the 'Mobile Environment' was a "complete and fully equipped habitation, easily transportable, and ready for immediate use."<sup>79</sup> The modular units were intended to be transportable to address dwelling requirements for "working communities engaged in large-scale public works...for which quarters of provisional and highly mobile character are needed, communities of rescue workers carrying out first-aid operations in areas struck by catastrophe...[and] tourist colonies, where it is necessary to respect the natural surroundings, and where living quarters must be strictly temporary without permanent structures."<sup>80</sup> The units were equipped with mechanical, electrical, and plumbing services, and completely furnished. They could be combined or grouped to accommodate larger family compositions.<sup>81</sup>

**Figure 253.** Catalogue | Mobile Environment Axonometric (opposite)

**Figure 254.** Catalogue | Mobile Environment (opposite)



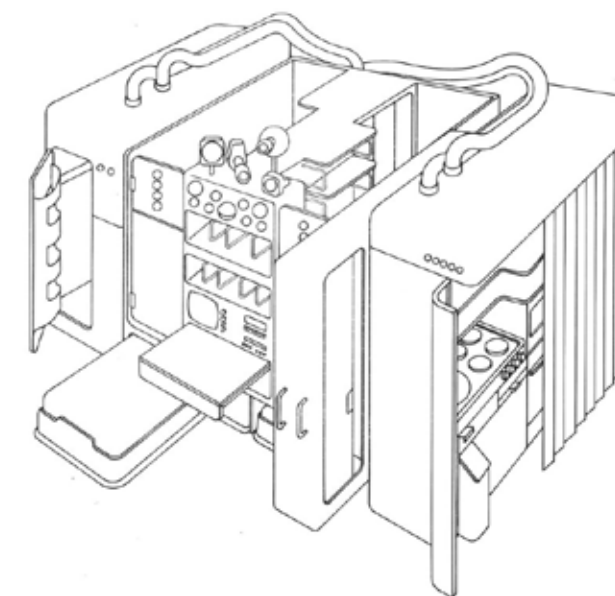


## TOTAL FURNISHING UNIT

JOE COLOMBO  
MILAN, ITALY  
1972

The 'Total Furnishing Unit' was designed and commissioned for the Museum of Modern Art exhibition, *Italy: The New Domestic Landscape*, in 1972, as one of the 'micro environments' for the exhibition. The design was comprised of four different kinds of units (kitchen, cupboard, bed and privacy, bathroom) which could be attached or separated to adapt to the domestic activities in play. The 'Total Furnishing Unit' was dynamic in every way: the unit modules could be arranged and rearranged and components within the modules could be pulled out or put away, open or closed, or folded and unfolded.<sup>82</sup>

**Figure 255.** Catalogue | Total Furnishing Unit Perspective (opposite)  
**Figure 256.** Catalogue | Total Furnishing Unit (opposite)



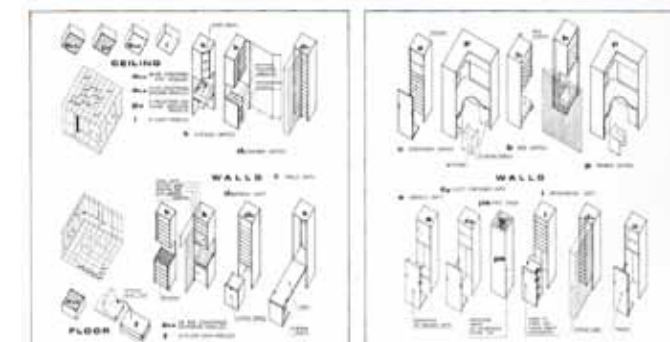


**MODULAR EQUIPMENT FOR  
NEW DOMESTIC ENVIRONMENTS**

GIANANTONIO MARI  
MILAN, ITALY  
1972

The 'Modular Equipment for New Domestic Environments' was the winning design of the competition for young designers for the Museum of Modern Art exhibition, *Italy: The New Domestic Landscape*, in 1972. The modular system is composed of standardized modules (each containing different functions) and can be combined infinitely in any number of configurations. The modules were designed to transform according to whether in use or not. Each has positions or configurations for storage and utility.<sup>83</sup>

**Figure 257.** Catalogue | Modular Equipment Model (opposite)  
**Figure 258.** Catalogue | Modular Equipment Modules (opposite)

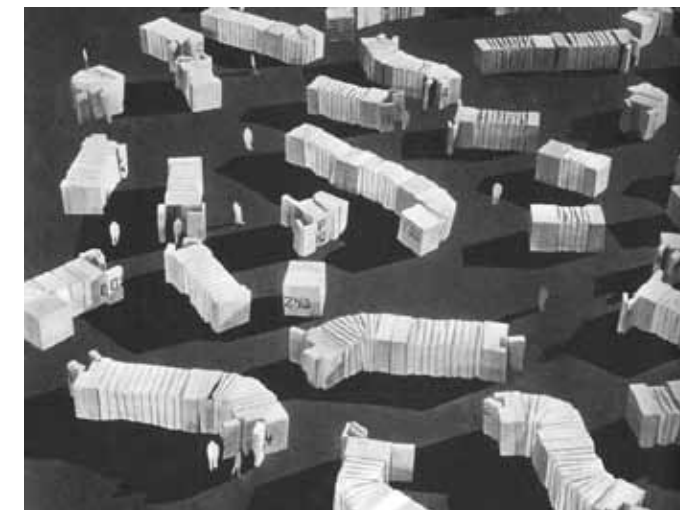
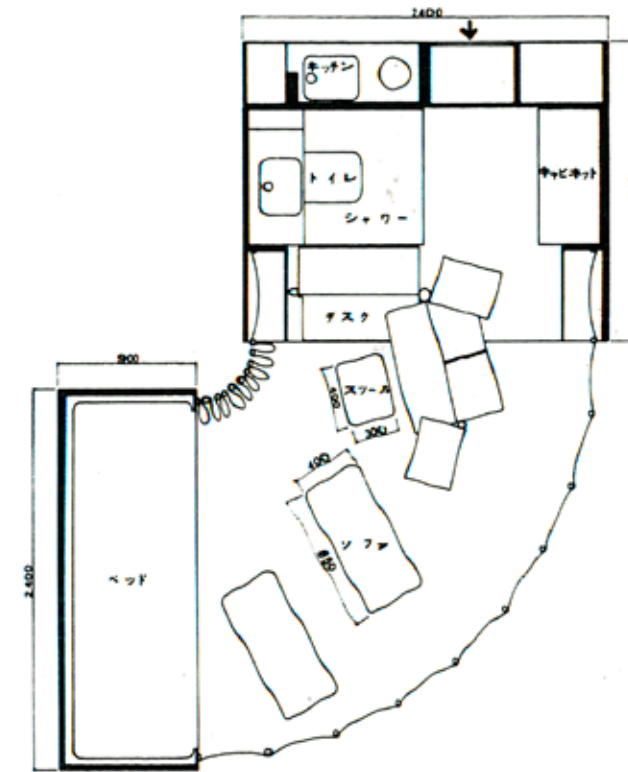






**FLEXIBLE HOUSE**  
 MASAYUKI KUROKAWA  
 TOKYO, JAPAN  
 1972

The 'Flexible House' is an unrealized dwelling concept, modular, portable, and flexible for combination in various configurations. Each unit is composed of two rigid structural boxes, and an accordion-like connection component. Inside the modules are the basic equipment for dwelling. The modules can be opened up or connected to additional modules. The modules are easily transportable in their closed position.<sup>84</sup>



**Figure 259.** Catalogue | Flexible House Plan (opposite)

**Figure 260.** Catalogue | Flexible House Community (opposite)



## KITCHEN TREE

STEFAN WEWERKA  
LAUENFÖRDE, GERMANY  
1984

The 'Kitchen Tree' was designed for the German manufacturer, Tecta. The object offers all of the surfaces and appliances for kitchen activities composed along a singular vertical structure: preparation, cooking, consumption of food, and dish washing.<sup>85</sup>

Figure 261. Catalogue | Kitchen Tree (opposite)

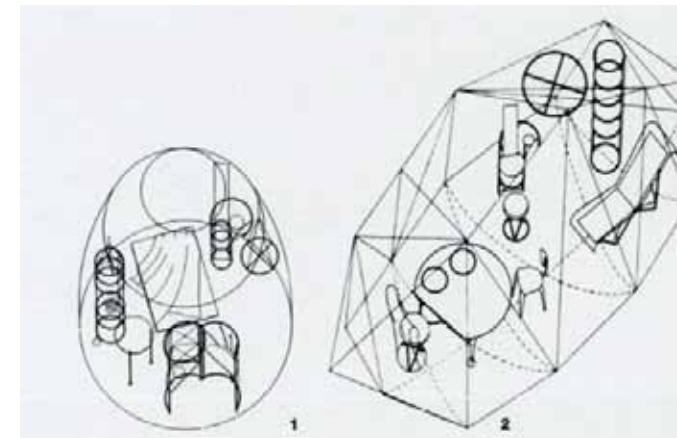




## PAO I AND II

TOYO ITO  
TOKYO, JAPAN  
1985 AND 1989

The Pao I and II were conceptual dwelling ideas for urban nomads living in Tokyo, in the 1980s. With the development of the global informational network, these minimal dwellings were to provide only basic shelter, but full connection to the network.<sup>86</sup> The structures were lightweight, intended for ephemeral utility, much like a tent for camping. The urban nomad would find all other necessary resources for dwelling within the surrounding urban area.



**Figure 262.** Catalogue | Pao I and II Sketch (opposite)

**Figure 263.** Catalogue | Pao II (opposite)



## THINKING MAN'S CHAIR

JASPER MORRISON

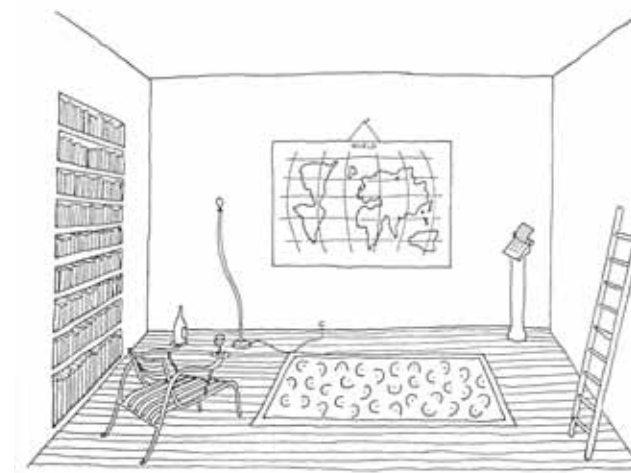
LONDON, UNITED KINGDOM

1986

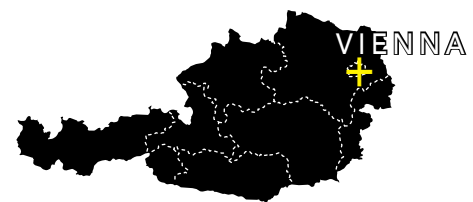
The 'Thinking Man's Chair' is one of Jasper Morrison's first furniture designs, conceived as a prototype for a furniture show in Japan, and exhibited by Zeev Aram in his London showroom. The chair was seen by Giulio Cappellini, who was interested in manufacturing the prototype commercially. The chair is currently in production.<sup>87</sup> The design for the chair is rooted in Morrison's desire to do a chair consisting of only structural elements to combine a comfortable sitting chair with two small tables. The title 'Thinking Man's Chair' was originally 'Drinking Man's Chair', as the two tables would hold a wine bottle, and wine glass respectively. However, after seeing a slogan on a pipe cleaner packet (Morrison used tobacco pipe cleaners to construct a model of the chair) reading 'The Thinking Man's Smoke,' he decided to change the name of the chair for a slightly more sophisticated title.<sup>88</sup>

**Figure 264.** Catalogue | Thinking Man's Chair Sketch (opposite)

**Figure 265.** Catalogue | Thinking Man's Chair (opposite)







## X-TIME

COOP-HIMMELB(L)AU  
VIENNA, AUSTRIA  
1990

The 'X-Time' kitchen was a compact kitchen unit, designed for Austrian manufacturing company, EWE Kitchen. The kitchen unit was devised following the deconstructivist idiom, breaking apart what would be a simple rectangular block into an organized chaotic unit of elemental components. The 'X-Time' kitchen includes "a sink, three burners, counter space, drawers, and cabinets with twisted planes and doors: a pivoting axis generates alternative positions."<sup>89</sup>

Figure 266. Catalogue | X - Time (opposite)





## UNIVERSAL SYSTEM

JASPER MORRISON  
LONDON, UNITED KINGDOM  
1990

The 'Universal System' is a storage system of utmost simplicity. It is produced commercially by Italian manufacturer, Cappellini.<sup>90</sup> The system comes in four different unit sizes, each with interchangeable feet (they can have casters, or fixed feet). It is hard to imagine simplifying the design. Jasper Morrison explains that the origins of the 'Universal System' can be traced to the time he began working on his first Apple computer: "I'd never been very organized with paperwork, and the Mac made a big difference, it helped me to be organized and I had less trouble finding documents. I was inspired and wrote a project description called 'Putting things away so we can find them again'. The 'Universal System' was meant to do for small things what the computer does for documents."<sup>91</sup>

**Figure 267.** Catalogue | Universal System (opposite)





## VERTICAL HOME

ANDREA BRANZI  
MILAN, ITALY  
1994

The 'Vertical Home' is Andrea Branzi's concept for an inhabitable cupboard. Andrea Branzi was one of the founding members of Archizoom Associati (founded in 1966), a key figure in the Italian Radical Architecture movement. His work with Archizoom Associati was exhibited at the Museum of Modern Art exhibition, *Italy: The New Domestic Landscape*, in 1972. The 'Vertical Home' cupboard reassembles domestic functions into a compact unit to create greater flexibility in the surrounding undesigned space.<sup>92</sup>

**Figure 268.** Catalogue | Vertical Home (opposite)





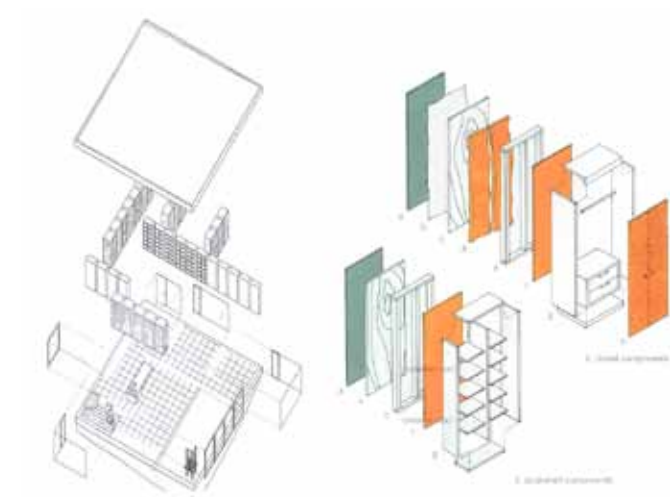
## FURNITURE HOUSE

SHIGERU BAN  
YAMANASHI, JAPAN  
1995

The 'Furniture House' is one of Shigeru Ban's research projects on prefabrication. Beginning with his 'Library of a Poet' structure which used bookcases as the structure of the building, he introduced the idea of having furniture provide the entire structural system for a dwelling.<sup>93</sup> The 'Furniture House' uses prefabricated storage units to replace the load carrying capacity of walls and columns. The modules are fitted with various shelving and cupboard components. They are self-supporting units of uniform height and width, and come in two different depths according to their function. The prefabricated units can be handled by only one worker, greatly increasing the speed of on-site construction.<sup>94</sup>

**Figure 269.** Catalogue | Furniture House Diagram (opposite)

**Figure 270.** Catalogue | Furniture House Interior (opposite)







## UNIT SHELF

MUJI  
TOKYO, JAPAN  
1996

The 'Unit Shelf' was the Japanese retailer, MUJI's, first furniture item. The modular steel shelving unit has been in production since 1996.<sup>95</sup> MUJI has been a world leader in the provision of rational, minimalist household goods, apparel, and food. The Japanese term 'Mujirushi Ryohin' (where the name MUJI stems from), translates to "no-brand quality goods".<sup>96</sup> The 'Unit Shelf' is a kit of parts, and can be infinitely combined and adjusted to suit storage needs. In 2015, Tokyo based architect, Fumhiko Sana, created an installation made from the 'Unit Shelf' modules. He constructed the components to enclose an interior space, conceptualizing a dwelling within the storage space. Units were combined to form a staircase, dining table, and seating area.<sup>97</sup>

**Figure 271.** Catalogue | Muji Unit Shelf (opposite)

**Figure 272.** Catalogue | Fumhiko Sana's Muji Unit Shelf Installation (opposite)

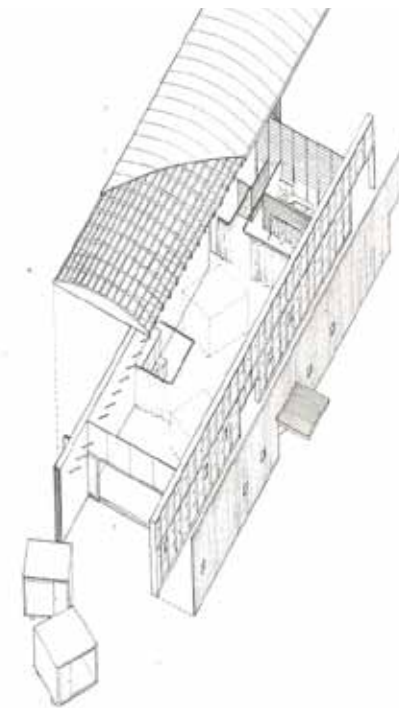




**NAKED HOUSE**  
 SHIGERU BAN  
 SAITAMA, JAPAN  
 2000

The Naked House was a private commission for a multi-generational dwelling. The client articulated specific wishes to have a warehouse-like structure which “provides the least privacy so that the family members are not secluded from one another, a house that gives everyone the freedom to have individual activities in a shared atmosphere, in the middle of a unified family.”<sup>98</sup> The dwelling that Shigeru Ban conceived is exactly this. A rectangular, monolithic, two-storey, open volume creates the enclosure of the dwelling, much like an airplane hanger. Inside this volume, four inhabitable wooden box structures set on castors provide individual spaces for each family member. The boxes can be moved around within the interior, and moved outside into the garden through the large opening in the hanger-like structure.<sup>99</sup>

**Figure 273.** Catalogue | Naked House Isometric (opposite)  
**Figure 274.** Catalogue | Naked House Interior (opposite)





## BRIEFCASE HOUSE

JIMENEZ LAI (BUREAU SPECTACULAR)  
 CHICAGO, U.S.A.  
 2010

The Briefcase House is an inhabitable domestic object, conceived for dwelling within an empty warehouse loft. The structure provides space for sleeping, relaxation, working, and storage. It is a house within a house, lying in the grey zone between XL furniture and XS architecture.<sup>100</sup>



**Figure 275.** Catalogue | Briefcase House Exterior (opposite)  
**Figure 276.** Catalogue | Briefcase House Interior (opposite)



## SLEEPING PODS

SIBLING NATION  
MELBOURNE, AUSTRALIA  
2012

The Sleeping Pods are dwelling units designed for transient dwelling spaces within vacant warehouse spaces in Australia. They incorporate systems for disassembly and portability, using standardized building materials and simple construction methods.<sup>101</sup>

**Figure 277.** Catalogue | Sleeping Pod 1 (opposite)

**Figure 278.** Catalogue | Sleeping Pod 2 (opposite)







## HOTELLO

ANTONIO SCARPONI  
MILAN, ITALY  
2013

The Hotello is another domestic object designed for dwelling within post-industrial urban centres, within available and empty factories, warehouses, and military barracks. The portable room was designed in collaboration with visual artist Roberto de Luca, for Swiss firm Daskonzept, and presented at Fuori Salone (a design event in conjunction with the Milan Furniture Fair), in 2013.<sup>102</sup> The Hotello packs all the necessary furniture and spatial components required for sleeping and working into a suitcase with casters. It is a live-in steamer trunk.

**Figure 279.** Catalogue | Hotello Packed (opposite)

**Figure 280.** Catalogue | Hotello Assembled (opposite)

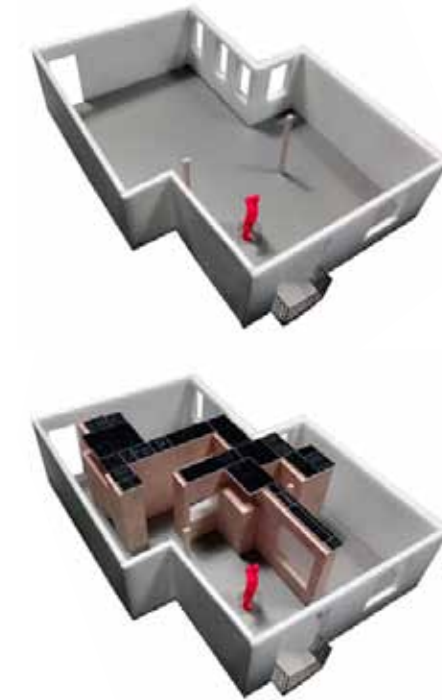




**POP-UP HOUSE**  
 TALLER DE2 ARCHITECTS  
 MADRID, SPAIN  
 2013

The Pop-Up House is an interior infill project for a metropolitan single person, in a mid-20th century residential building in Madrid’s city center. According to the designers, “the Pop-Up House is an experiment which deals with two crossed interests: on one hand, it tests the infiltration of a thin and gathering domestic infrastructure; on the other hand, it explores the sociological reality linked to the increased number of one person homes in the metropolis - known as ‘single phenomenon’.”<sup>103</sup> The domestic functions of the apartment are incorporated in a series of modular units of various shapes and sizes. The layout of the apartment was then tested and diagrammed to explore different spatial organizations and preferences of the client. In concept, the house could be organized in a multitude of arrangements, and the modules could be inserted into any existing residential shell.<sup>104</sup>

**Figure 281.** Catalogue | Pop-Up House Model (opposite)  
**Figure 282.** Catalogue | Pop-Up House Interior (opposite)





## MUJI HUT NO. 1

JASPER MORRISON  
TOKYO, JAPAN  
2015

One of three of MUJI's recently launched prefabricated micro-homes, designed by Jasper Morrison. The dwellings were exhibited at the annual Tokyo Design Touch event. Morrison's Muji Hut has a tatami-style flooring system, a wood-burning stove, a small kitchenette, and bathroom. It is clad in cork.<sup>105</sup> The dwelling is designed to be delivered as a prefabricated unit, ready for immediate inhabitation.

**Figure 283.** Catalogue | Jasper Morrison Muji Hut Exterior (opposite)

**Figure 284.** Catalogue | Jasper Morrison Muji Hut Interior (opposite)





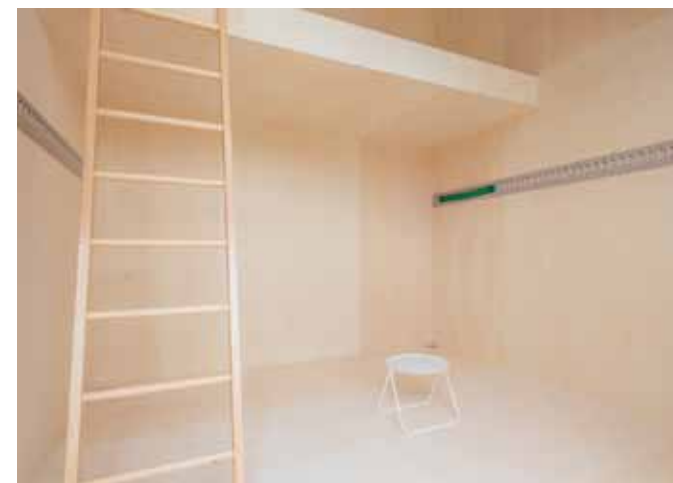
## MUJI HUT NO. 2

KONSTANTIN GRICIC  
TOKYO, JAPAN  
2015

One of three of MUJI's recently launched prefabricated micro-homes, by German designer Konstantin Grcic. The dwellings were exhibited at the annual Tokyo Design Touch event. Grcic's Muji Hut is a vertical living system, with a footprint of just 106 square feet.<sup>106</sup> The unit has an exterior cladding of aluminum, with an operable roof panel to provide shelter for the adjacent exterior space. The interior is clad in wood, and features a sleeping loft and empty floor plan. It is a simple shelter for retreat.<sup>107</sup> The dwelling is designed to be delivered as a prefabricated unit, ready for immediate dwelling occupation.

**Figure 285.** Catalogue | Konstantin Grcic Muji Hut Exterior (opposite)

**Figure 286.** Catalogue | Konstantin Grcic Muji Hut Interior (opposite)







### MUJI HUT NO. 3

NAOTO FUKASAWA  
TOKYO, JAPAN  
2015

One of three of MUJI's recently launched prefabricated micro-homes, designed by Naoto Fukasawa (MUJI's head design consultant).<sup>108</sup> The dwellings were exhibited at the annual Tokyo Design Touch event. Fukasawa's Muji Hut is designed as a simple rural retreat. It is rectangular with a pitched roof, an archetypical form of a shelter. Inside there is a wood-burning stove, sleeping area, bathroom, and kitchenette. The dwelling is designed to be delivered as a prefabricated unit, ready for immediate inhabitation.



**Figure 287.** Catalogue | Naoto Fukasawa Muji Hut Exterior (opposite)

**Figure 288.** Catalogue | Naoto Fukasawa Muji Hut Interior (opposite)



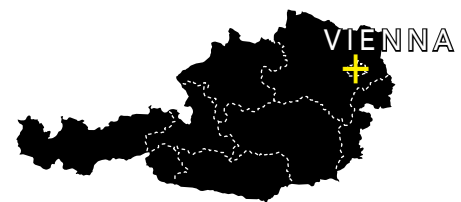
HOUSE NO. 11 (CORRIDOR HOUSE)

MOS ARCHITECTS  
CHICAGO, U.S.A.  
2015

MOS Architects House No. 11 (Corridor House) is a 500 square foot house, in reference to the space dedicated to corridors in a typical suburban single family dwelling. The prototype was designed for the inaugural Chicago Architecture Biennial, in 2015. The Corridor House is a modular system, based on the dimensions of a 5' x 10' sheet of plywood. Each module contains enough space for a domestic activity (a bed, a desk, a chair, etc.) and can be positioned orthogonally with any number of additional modules. The organization results in a variety of exterior spatial pockets. The entire house can be shipped on a truck, and assembled with ease.<sup>109</sup>

**Figure 289.** Catalogue | House No. 11 Corridor House Isometric (opposite)  
**Figure 290.** Catalogue | House No. 11 Corridor House (opposite)





## TRAVELBOX OLOT

STEFAN PRATTES  
VIENNA, AUSTRIA  
2015

The Travelbox OLOT is a domestic object that contains the basic necessities for dwelling, within a 60kg compact container. Stefan Prattes won an International Design Award for the product design in 2015. The furniture unit contains a bed, table, and chair which can be unpacked for use. The unit itself provides a storage system when in its unpacked position.<sup>110</sup>

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**Figure 291.** Catalogue | Travelbox Olot Packed (opposite)

**Figure 292.** Catalogue | Travelbox Olot Unpacked (opposite)



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## PART 4: A DOMESTIC MANIFESTO

This is a manifesto concerning the inhabitation of the domestic landscape *Shelf Life*. It refers to each of the previous sections of this book: the investigation of the contemporary domestic landscape, the production of a new domestic object, and the catalogue of objects and architecture designed for living with, and living in, putting them together as a whole. This is a proposal for the possibilities for inhabiting *Shelf Life*'s new domestic landscape.

Nearly 45 years later, this manifesto references the 1972 Museum of Modern Art's exhibition, *Italy: The New Domestic Landscape*. The exhibition collected 'Objects' and 'Environments', using design to provide a critical commentary on current and future domestic daily rituals, in the context of the contemporary sociocultural climate of Italy in 1972.

By 1972, Italian design had a powerful position in the production of consumer products. Amilio Ambasz, curator of the *Italy: The New Domestic Landscape* exhibition,

recognized three attitudes towards design, and applied them in the selection of objects curated for the show. The first, a conformist attitude, produced objects selected for their formal and technical qualities, largely traditional domestic objects. The second, a reformist attitude, produced objects selected for their sociocultural implications, often using rhetoric and irony to signify their position. The third attitude was one of contestation, with objects selected for their implications of more flexible patterns of use and arrangement, in an attempt to question both the role of design within society, and to take action with a tangible solution.<sup>1</sup>

The 'Environments' section of the exhibition showing 'micro-environments' was the result of an invitational competition to propose a new domestic landscape, again as a reaction to the contemporary sociocultural conditions. A design program set out a framework of guidelines.<sup>2</sup> Addressed were programmatic requirements of daily domestic activities, a requirement for the design to be easily manufactured for mass production, and to be economically available to the average-income Italian family. In short, the winning designs had to balance utility, accessibility, and economy to be selected. Additionally, the environments had to be manufactured in Italy, and shipped within a standard shipping container to the U.S.A. for the exhibition.<sup>3</sup> Moreover, designers were asked to produce a manifesto, and a film to illustrate life in the domestic landscape they imagined, to be viewed in conjunction with their realized 'micro-environment' at the exhibition.<sup>4</sup>

The results were radical. Architecture transformed

in scope, turning inwards as an autonomous interior environment, unfixed to exterior structures. It was reduced in scale. The traditional architectural building scale became closer to that of an object scale. It was modular, mobile, and most importantly, flexible.

In a manner similar to the manifestos presented in the 1972 exhibition, this manifesto aims to illustrate the daily rituals and domestic activities made possible in the new domestic landscape *Shelf Life*.

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## SHELF LIFE: A NEW DOMESTIC LANDSCAPE

SHELF LIFE is a domestic landscape, where few things remain fixed. The landscape is alive, growing and constantly adapting, surrounded by an environment unfixed and infinite. The domestic landscape is a system for living, in the context of given physical surroundings and social scenarios.

SHELF LIFE is a chameleon, lying in a gray zone between XL furniture and XS architecture. It transforms in response to its temporal context. It is an operative infrastructure that addresses contemporary domestic conditions.

SHELF LIFE lies at the intersection of three phenomena: the proliferation of space-sharing networks, ephemeral living infrastructures, and lifestyles of the contemporary urban nomad.

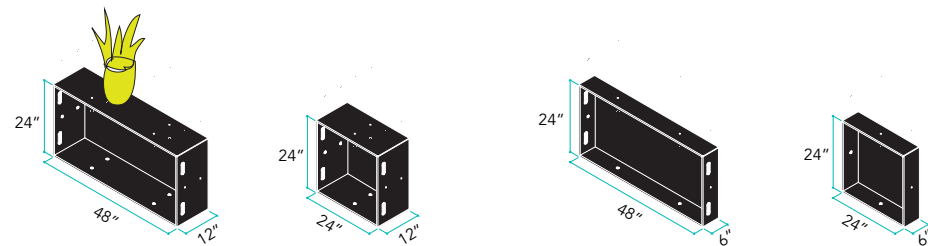


**Figure 293.** Manifesto | Shelf Life Modules (opposite)

**Figure 294.** Manifesto | Shelf Life Assembled (opposite)

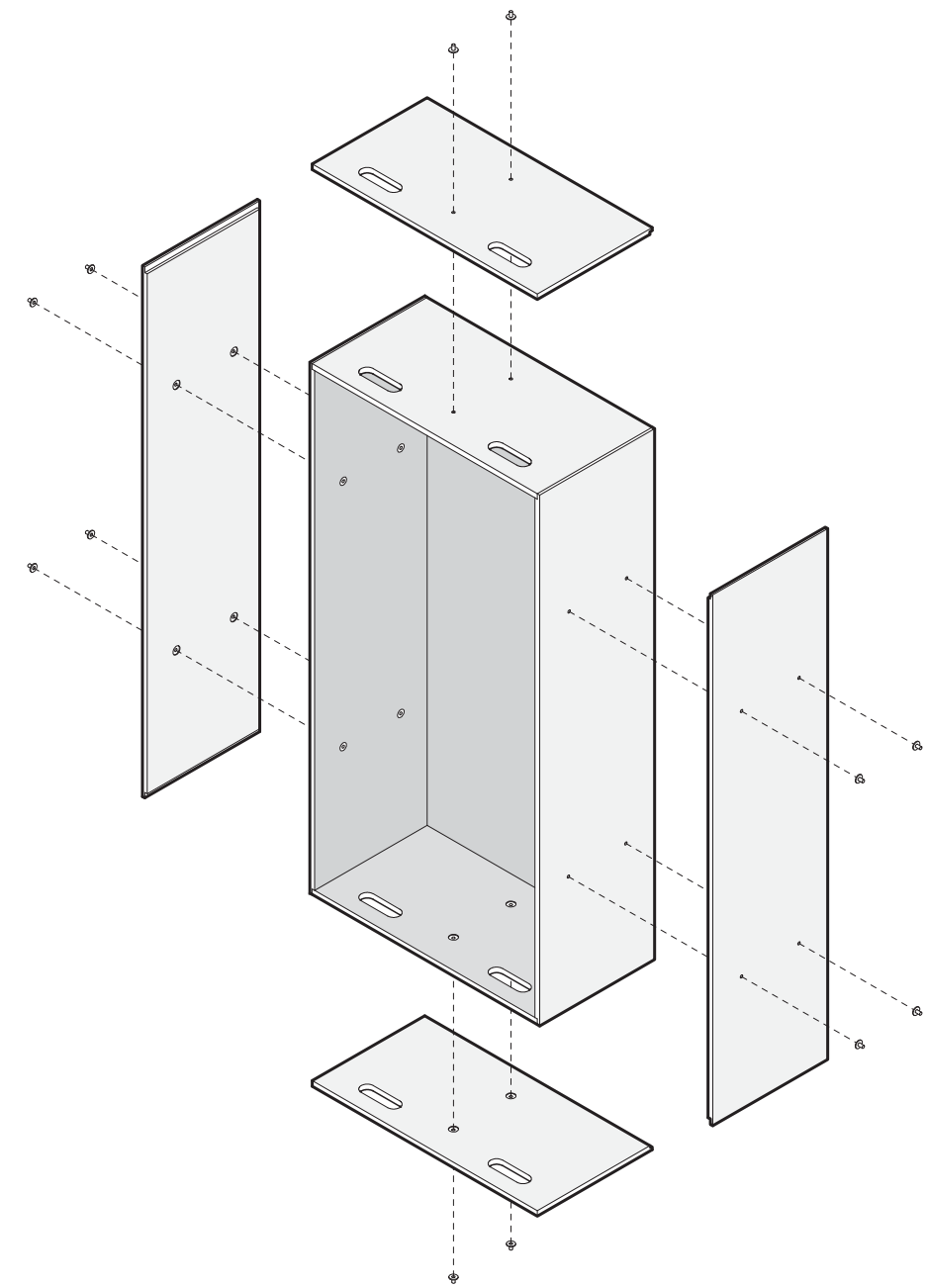
## MODULE CONSTRUCTION

The modules are constructed with baltic birch plywood. There are four standard module sizes (height and width), based on the dimensions of everyday domestic objects: clothing hangers, shelves, bookcases, etc. There are two standard module depths.



**Figure 295.** Manifesto | Shelf Life Standard Module Dimensions

**Figure 296.** Manifesto | Shelf Life Construction Diagram (opposite)



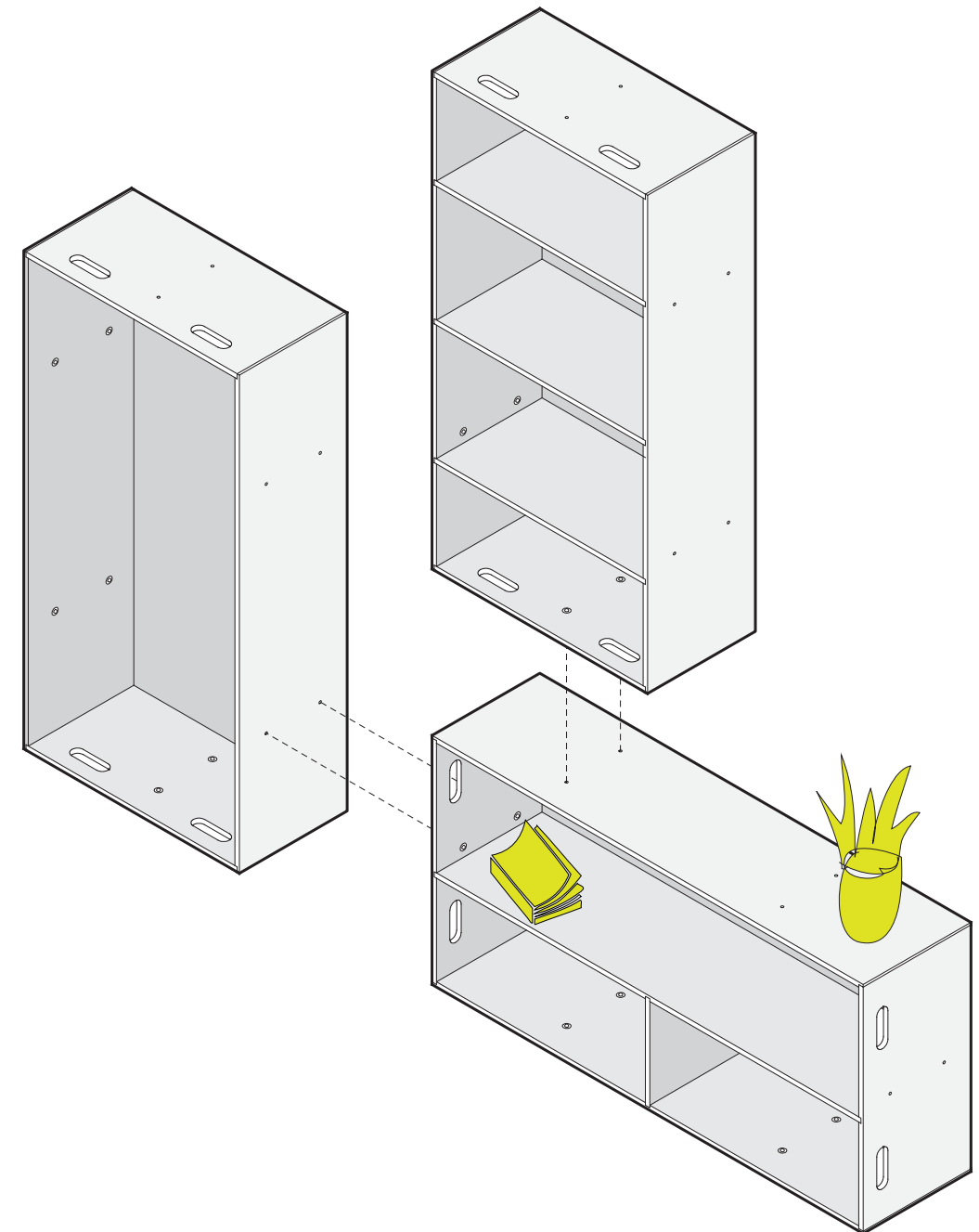
## MODULE CONNECTION

The modules are bolted together with strategic spacing between bolts to allow for both horizontal and vertical combinations. The modules may face inwards or outwards, depending on the spatial and usage constraints.



**Figure 297.** Manifesto | Shelf Life Connection Options

**Figure 298.** Manifesto | Shelf Life Connection Diagram (opposite)



## MODULE MATRIX

SHELF LIFE is comprised of a variety of modules designed to respond to daily domestic activities: dressing, working, relaxing, and the organization of personal objects.

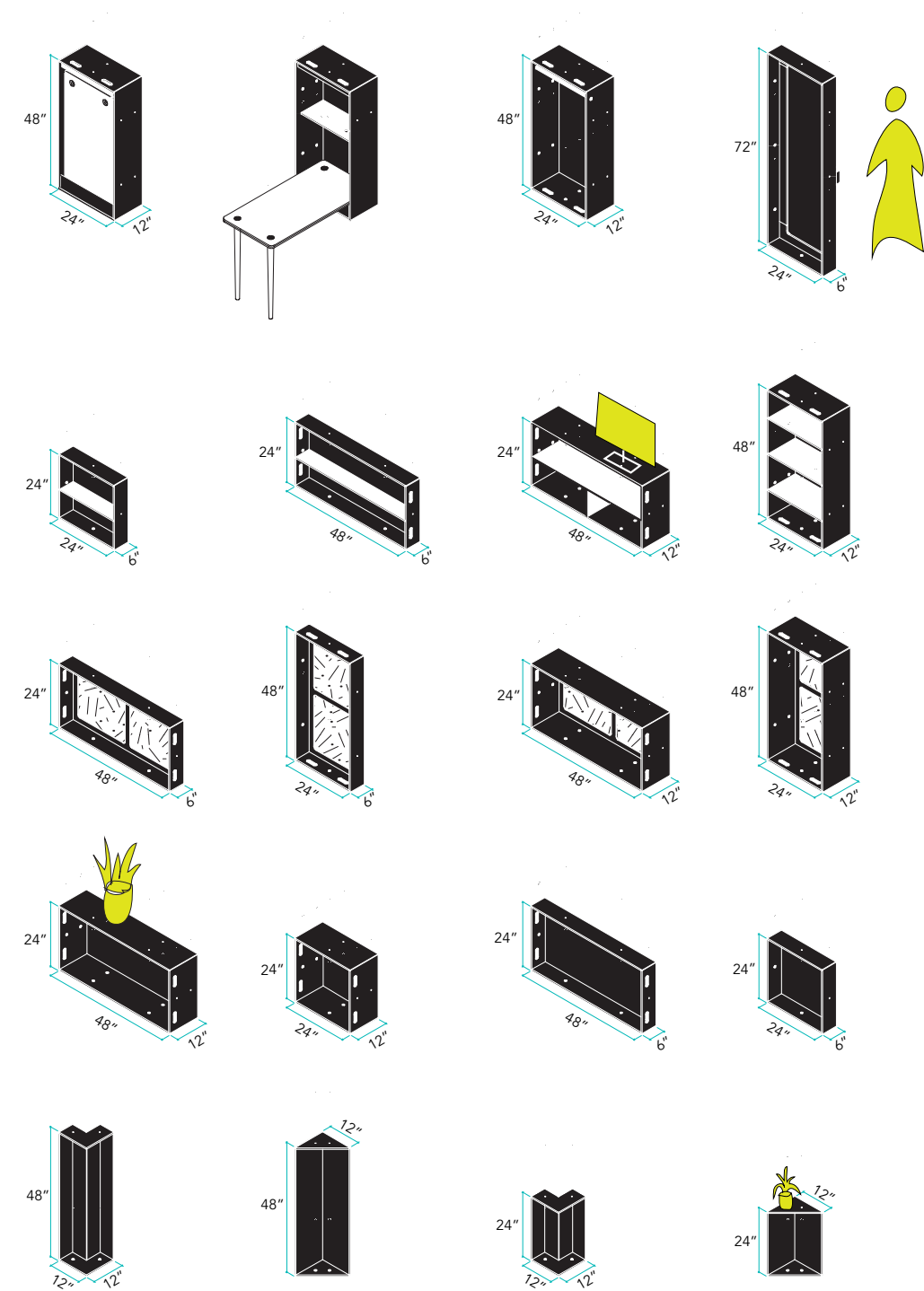


Figure 299. Manifesto | Shelf Life Module Matrix (opposite)

## XL FURNITURE VS. XS ARCHITECTURE

The modules form an autonomous living infrastructure, free and unfixed to existing structures. They respond to the needs of the contemporary urban dweller, an individual with a lifestyle on the go. The system may be furniture one day, and composed into an enclosed room the next, in the interest of space sharing networks, or increased occupancy situations.

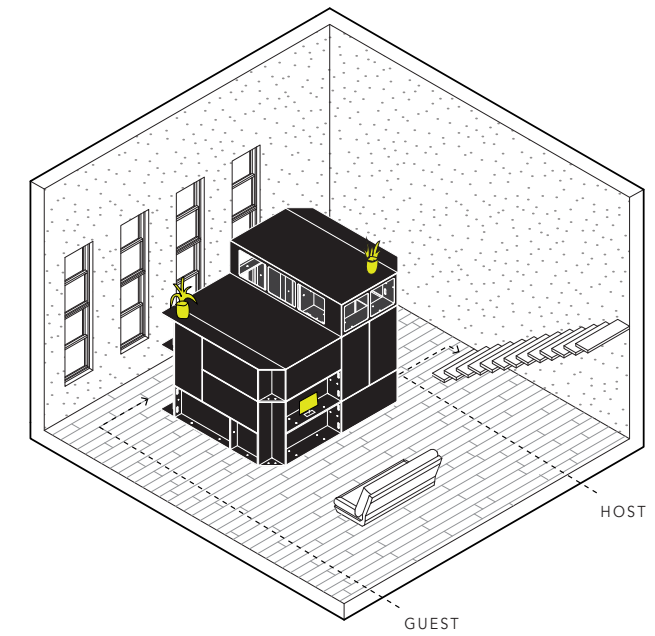
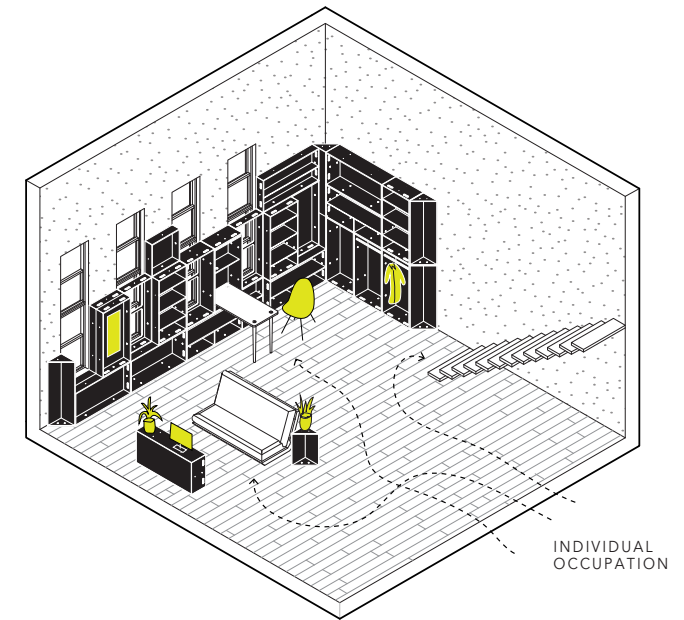


Figure 300. Manifesto | Shelf Life XL Furniture vs. XS Architecture (opposite)



## SPATIAL TRANSFORMER

In the interest of individuals with ephemeral dwelling lifestyles, the modules may be combined, shifted, and recombined infinitely, and may transform and enclose additional spaces. They are equipped with handles and accessories for mobility.

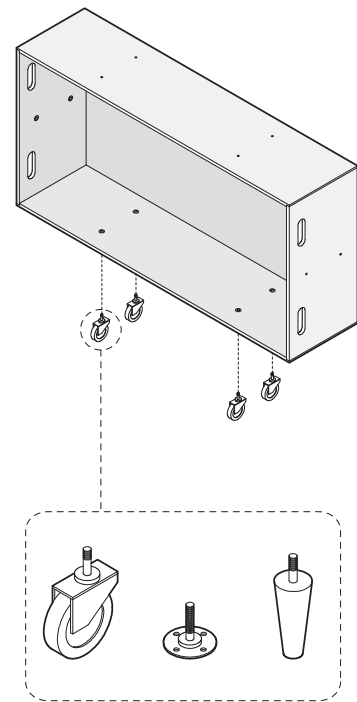
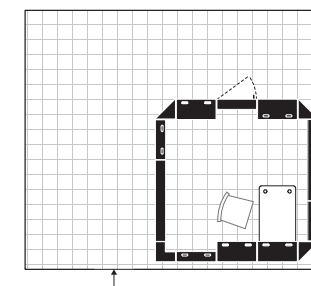
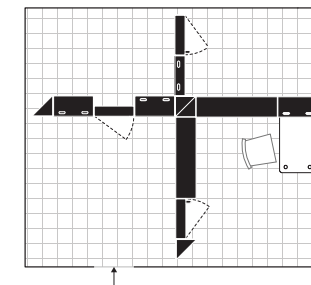
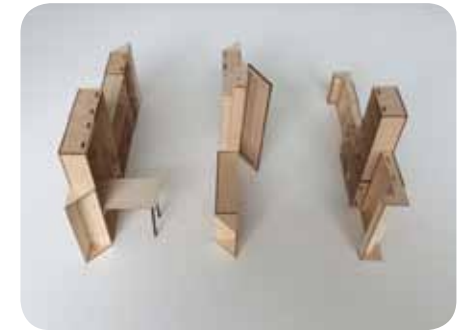
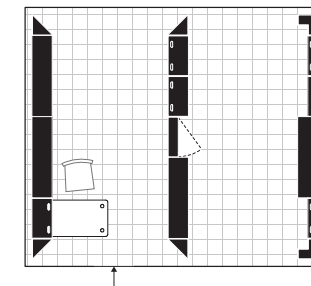
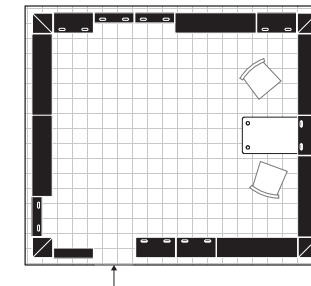


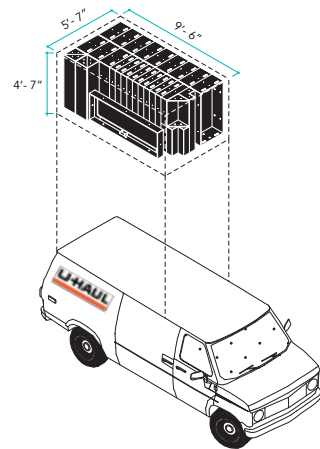
Figure 301. Manifesto | Shelf Life Customization

Figure 302. Manifesto | Shelf Life Spatial Transformer (opposite)



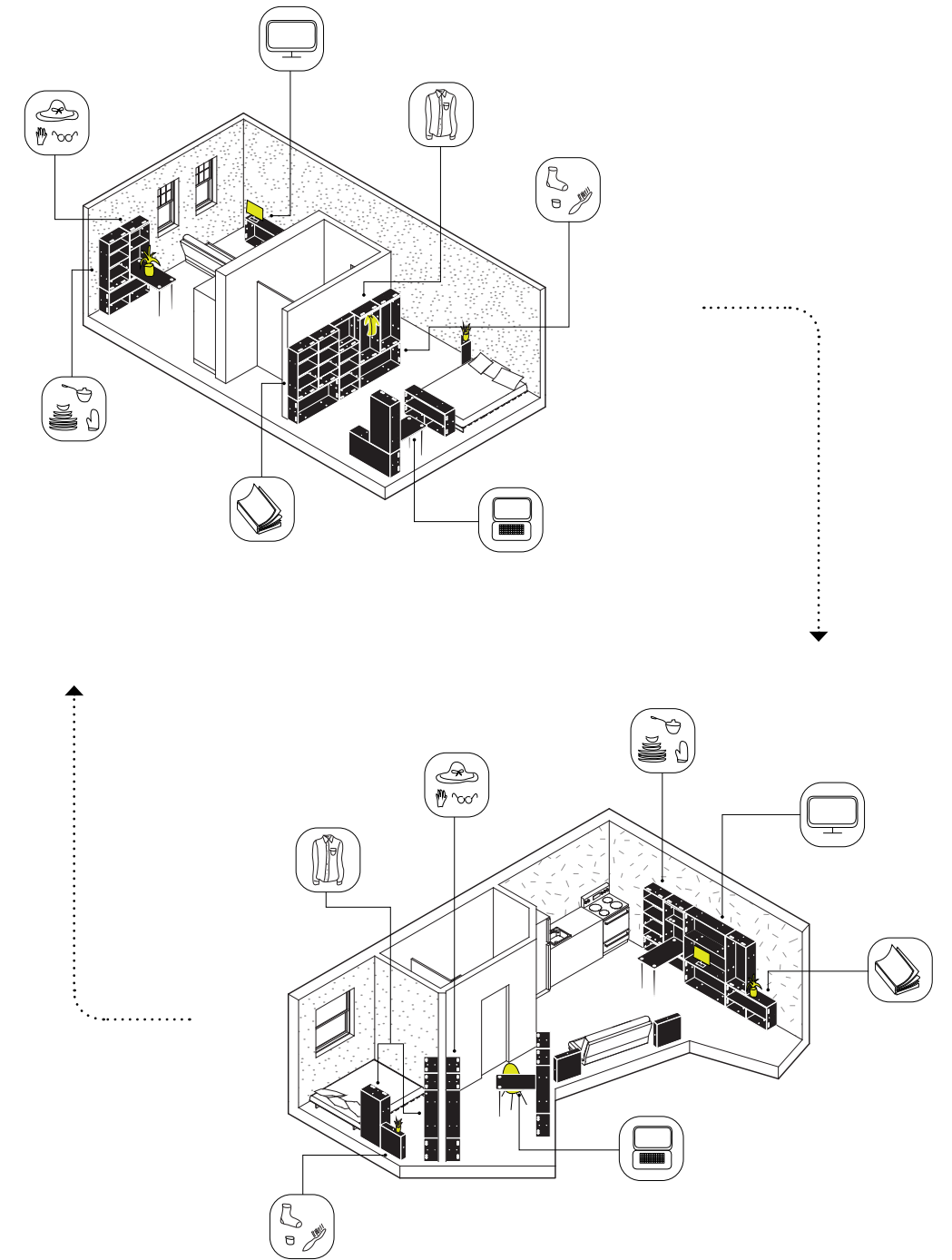
## PORTABLE DOMESTIC OBJECTS

The system is designed for maximum adaptability to any existing structure. Urban nomads can pack all personal objects within the modules, and transport the total unit within the smallest size of a typical rental moving van.



**Figure 303.** Manifesto | Shelf Life Portability Constraints

**Figure 304.** Manifesto | Shelf Life Portable Domestic Objects (opposite)



## INHABITABLE OBJECTS

The system reflects the user's style. The user's habits will be reflected in the composition of modules, defining the enclosure. The character of the space will be defined by their collection of domestic accessories.



**Figure 305.** Manifesto | Shelf Life Inhabitation 1 (opposite)

**Figure 306.** Manifesto | Shelf Life Inhabitation 2 (opposite)

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