

SCANNING

DIGITISING

ANALYSING

STORING

MANAGING

DEPLOYING

REACTING

RUSHA CHENG
BA INTERIOR DESIGN
YEAR 3

The RE:plica

the Future of
Home and Mobility

0%

20%

40%

60%

80%

100%

120%



THE FUTURE OF
HOME AND MOBILITY

CONTENTS

CONTENTS

The | RE:plica

CHAP.
ZERO

02

INTRODUCTION

37

JESUSAS:

The Stage Where
Everything Would
Happen on

58

JESUSAS 2.0:

The Perfect Preservation

03

NEO-NOMADISM:

Dwelling, Home,
and Sense of Belonging

42

NINA:

The Persona

73

RESIDENTIAL USE:

A System That
Welcomes Everyone

25

DIGITISATION

The Future of
Neo-nomadism

53

THE RE:PLICA:

A Flexible Dwelling
System

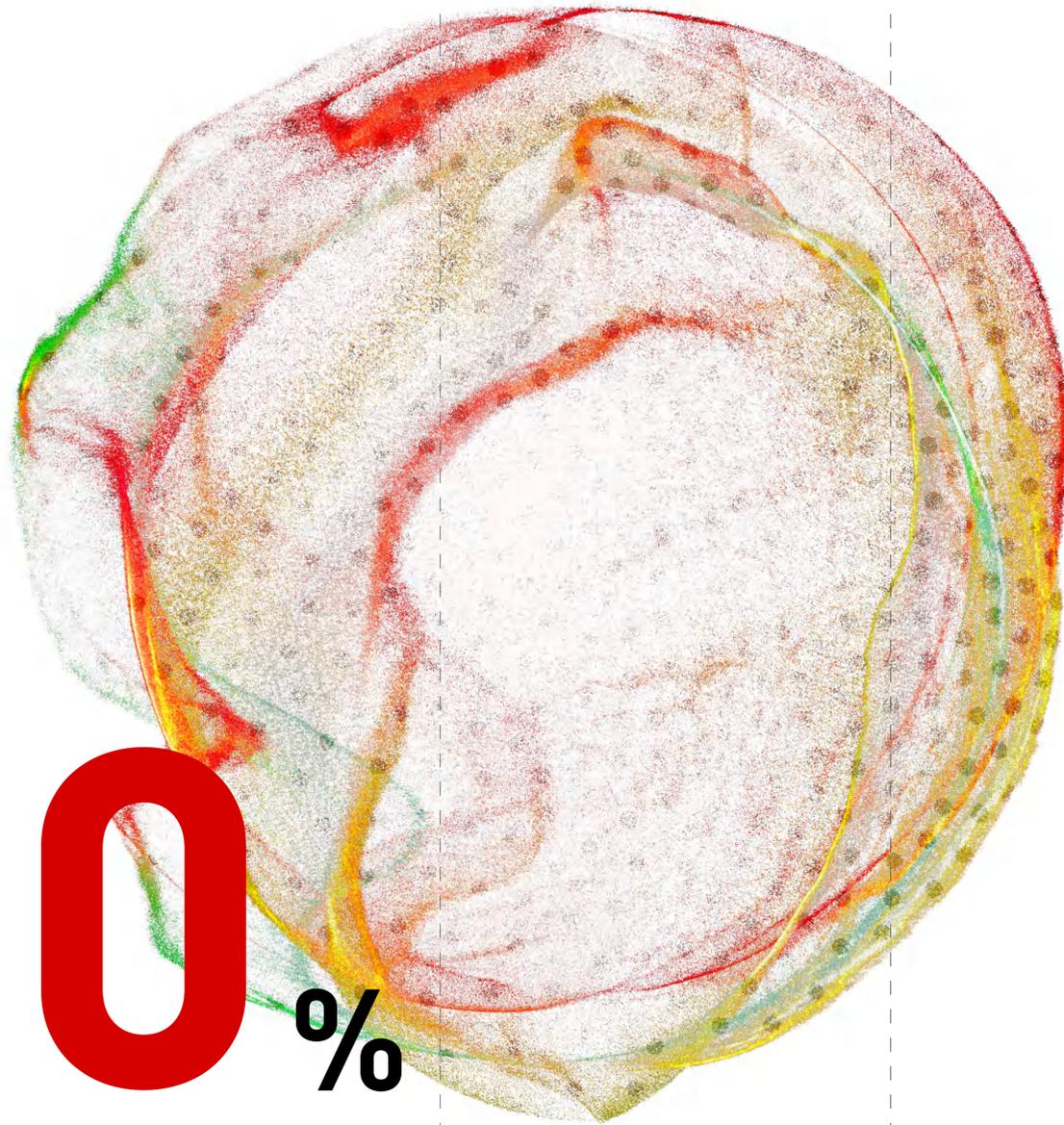
78

THE RE:PLICA VER.02:

A Dynamic Future

01
85





INTRODUCTION

My programme proposal, the RE:plica, is a prediction of a dwelling system in 2050 which presents a reformation of the home concept designed for future environments. This system is the foundation of the proposal, which aims to integrate the preservation of our past with future design parameters for home mobility, through the exploration of domesticity, the relationships between neo-nomadism and residence ideologies, and their influence on our notions of home and personal identity.

The RE:plica is a flexible modular dwelling system of high manoeuvrability, along with an application that integrates home data collecting, archiving, storing, managing, deploying, and system controlling. With the RE:plica, homes become terminals, allowing the free movement of things that once could only be stored in fixed locations, from personal belongings to intimate spaces, rituals, and memories, ultimately resulting into the broadened concept of sense of belonging. The design aims to provide programme users with an alternative choice to preserving their home in the past, whilst giving freedom to those who wish to live in a constantly shifting environment. The proposal is not an attempt to seek a balance between nomadism and fixed residence, but rather to find a new way of merging them. The RE:plica challenges dualistic thinking by analysing underlying modernism and post-modernism ideologies, and reconsidering a white-man standardised polarised approach towards decision-making.

The proposal pursues a human-centred design that allows users to make decisions on proportion, function, and how to engage within the space. Within the programme proposal, a dweller-led future is speculated through the eyes of the persona Nina. Research into neo-nomadism and residence ideologies will take the lead as we investigate and analyse the site. Through Nina's storyline, the design of the RE:plica will be clearly explained. Further residential use and other industry applications are explored to gain a macro thinking of the proposal. The design aims to answer the two questions: 1) What is home, and why? 2) How can we make our homes more flexible, adaptable and mobile to accommodate the dynamic future?



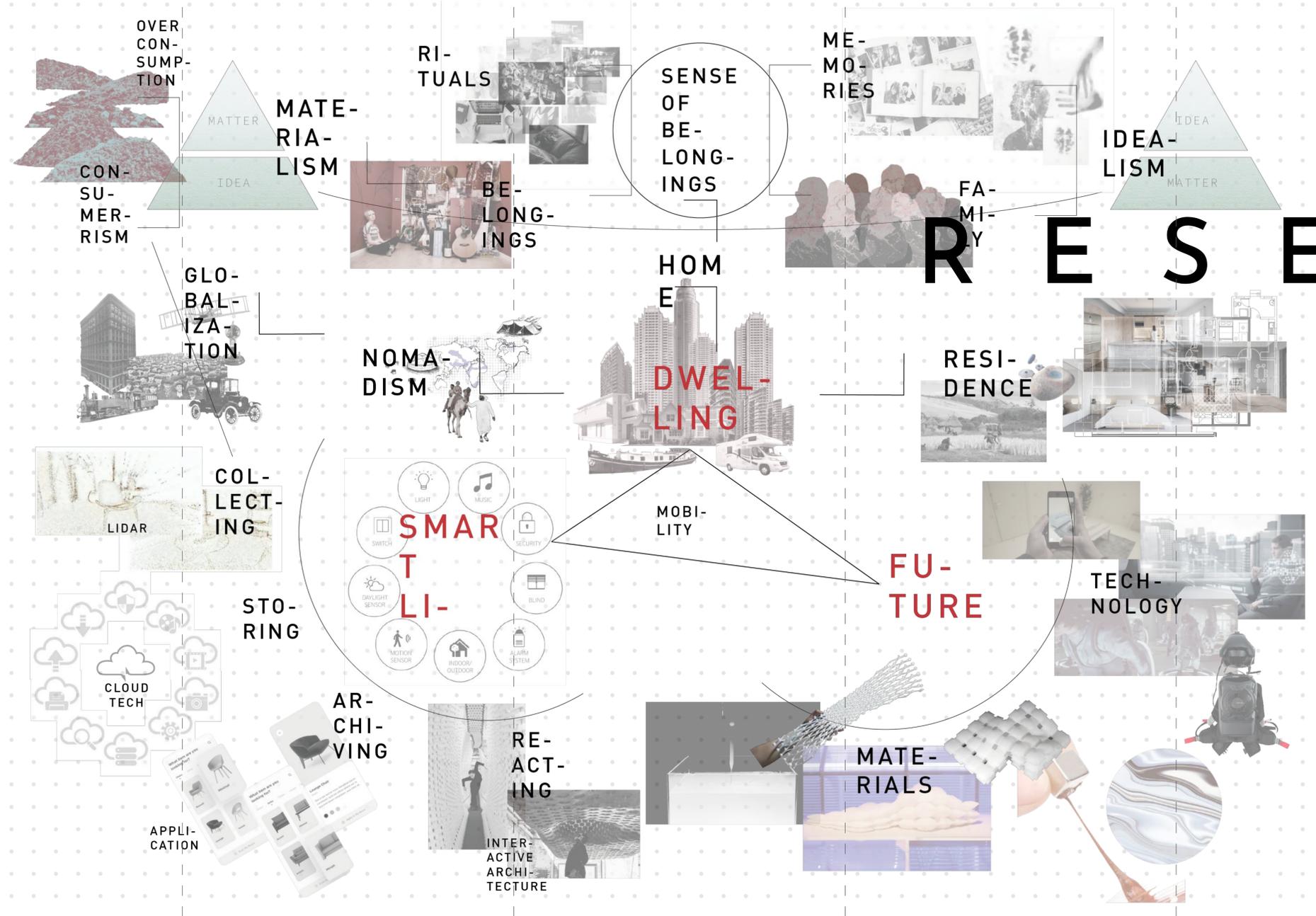
NEO-NOMADISM:



*Dwelling, Home,
and Sense of Belonging*



NEO-NOMADISM



RESEARCH

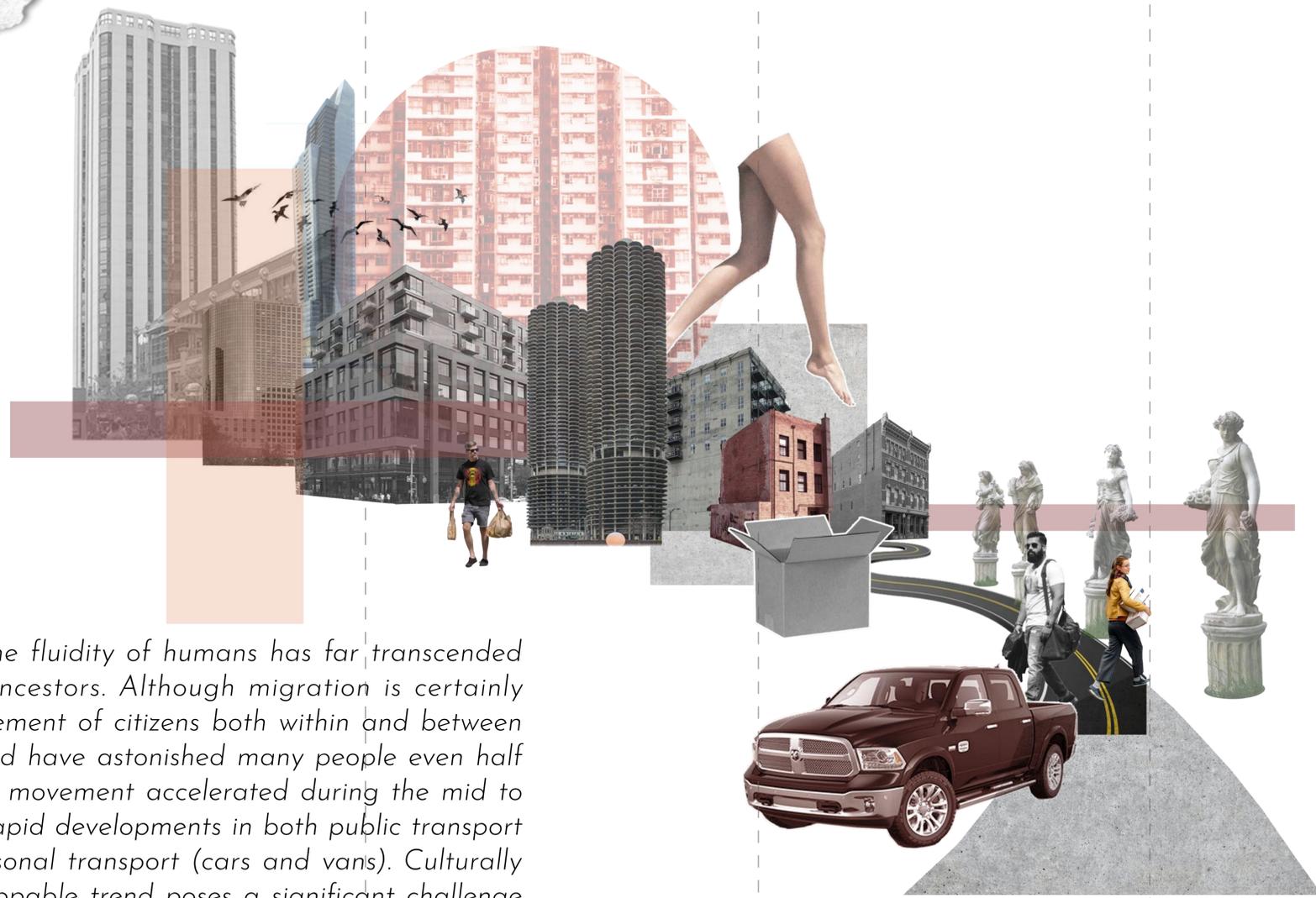
MAP



NOMADISM

Since the Industrial Revolution, the fluidity of humans has far transcended the imagination of our earlier ancestors. Although migration is certainly not a new phenomenon, the movement of citizens both within and between countries in the 21st Century would have astonished many people even half a century ago. The magnitude of movement accelerated during the mid to late 20th Century, catalyzed by rapid developments in both public transport (trains, buses, airplanes) and personal transport (cars and vans). Culturally and morally, this seemingly unstoppable trend poses a significant challenge to people's perceptions of home'. Itinerant citizens who are expected to uproot themselves repeatedly and frequently cannot establish roots in a community, will likely struggle to cultivate social and moral bonds with other citizens, and could end up being what many scholars term the 'new nomads' or the 'neo-nomads'.

According to some social scientists, nomadism' can be identified as the antithesis of residence'. Regarding the latter, the word home' can and should be defined as an asset with fixed attributes', rather than portable belongings that can be carried on the move'. Nevertheless, if there is feasibility of home to become portable, then there is no inevitability of nostalgia being the appendage of nomadism.

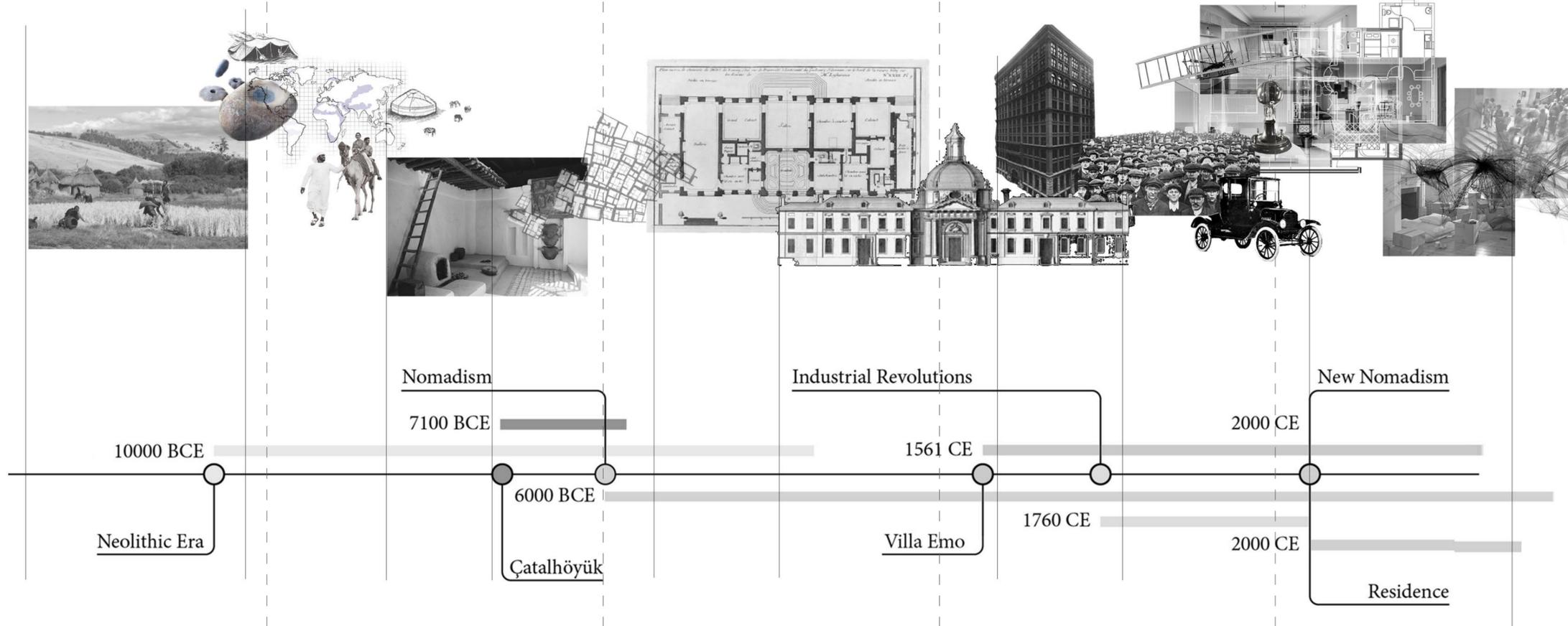


NO-NOMADISM



THE FUTURE OF HOME AND MOBILITY

NEO-NOMADISM



Nomadism and residence have always been placed in opposition, with seemingly little compatibility (Andrea, A. D. 2006). Residents embody collection within a geographically fixed location. Their solid homes are not merely shelters for their belongings, but are also concrete spaces that hold their memories and emotions (Braidotti, R. 1994). Nomads carry few belongings, flitting from place to place. The previously fixed relationship between possessions and dwellings accompany their personal identities and memories begin to drift. As Schwartz-Clauss analyses in his book *Living in Motion* (2002), the distinction between (neo-)nomadism and residence is deeply rooted in the way we think. With the growth of globalisation, 'nomadism' touches most of us who experience 'the flow of money, goods,

people, information and technology'; hence, the ideology of neo-nomadism has emerged (Featherstone, M. 1995). However, neither neo-nomadic nor residential lifestyles are mutually exclusive; being a neo-nomad does not imply there is no need for settlement; residents have to move when the environment can no longer provide sustained resources or supplies. When examining our own mobility within a space, this is observed on a micro as well as on a macro scale. When extending the agenda at home moves from a single ritual to several, our identity silently shifts into dual. In fact, the two seemingly opposite lifestyles have enriched and fed into each other over the course of time.

Residence:

refers in this article to the state that a person's dwelling is fixed to a certain place.

Neo-Nomadism:

refers in this article to the phenomenon that the forces of globalisation accelerate the relocation of people from place to place, without any political or social connotation (e.g. refugee or homeless).

The | RE:plica

M A D I S M



NEO-NOMADISM

40.7%

**The growth of London, UK Metro Area Population
has reached 40.7% from 1981 to 2021.**

Statics from Demographia (2021).

People still face predicaments when relocating. The reasons vary, from the restrictions and inconvenience of carrying possessions, to the immateriality of rituals, memories and family, preventing us from carrying the whole 'home' to the new location. People are forced to give up things they treasure, whether material or immaterial. Can interior design blaze a new trail for home moving, conceiving lighter, smaller or multifunctional furniture and products that are easier to carry, or pushing consumers to live a 'minimal' life?

The | RE:plica



1 Million

London households were occupied by private renters in 2020.

Statics from Statista (2021).

The number of private renters has seen an overall growth, and has reached **1 million**, which has already outnumber the homeowners, compared to that are owner-occupied. **11%** of all London households and **27%** of private renting households have lived in their current home for less than a year. Almost **2/3** of all moves in London in the last three years were households moving from one private rented sector home into another. (Statics from GLA Housing and Land, 2020)



Map showing average London house prices by tube stations in 2020. The average house price was £496,066 in Dec. 2020 - almost double the UK average of £251,500. The high cost of property in metropolises has become one of the main reasons for people who seek for a living in them to become neo-nomads.



To understand what home is, research into hospitality industry provides certain answers to some extent.

A major corporate actor, Airbnb, offers a novel interpretation of home. In addition, the conventional hotel industry has in recent years become increasingly preoccupied with travelers' growing expectations of feeling at home'. Standardized guest rooms and cleaning services help to maintain the uniformity of hotel profiles but eliminate the trace of the occupier in a sense. It is still difficult for the public to define a hotel room as home. Notably, the process of choosing Airbnb is almost

What is home ?

an implication of hunting for shared identities and distinguishing differences by virtually going through the space of other's homes and one's own. (Suess, C., Kang, S., Dogru, T. and Mody, M., 2020)

What is interesting is that many neo-nomads attach their idea of home to immaterial side instead of a strong bond to the physical location, which cannot be observed by eyes but rather by sensations.

The study of hotel and Airbnb leads the theme into the studying of home's definition.



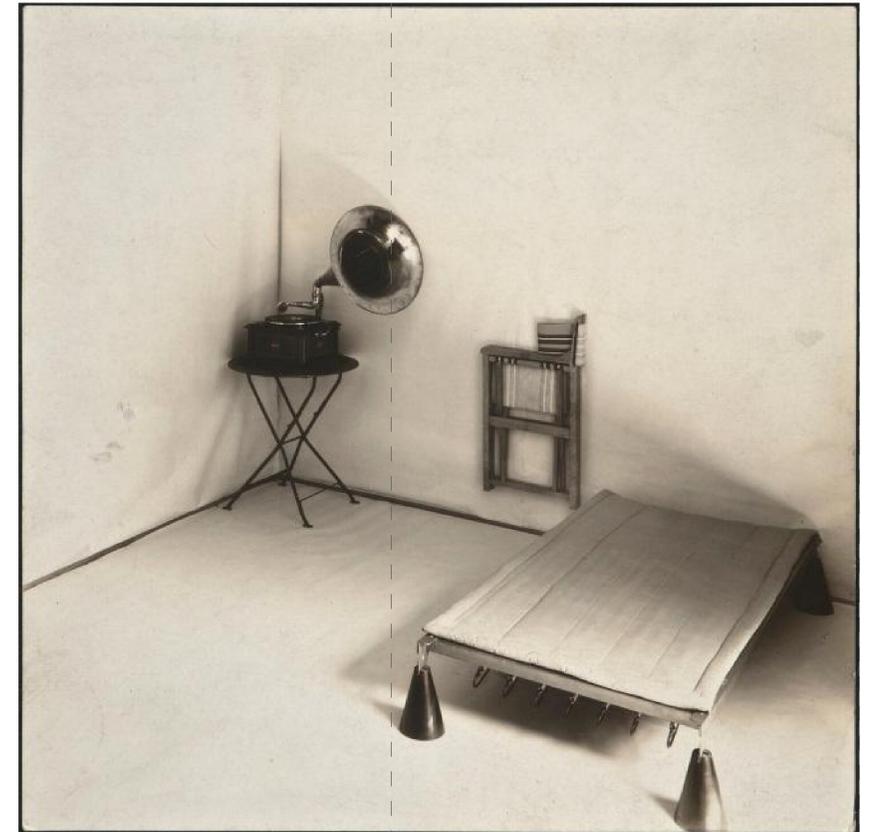
THE FUTURE OF
HOME AND MOBILITY

Idealism VS Materialism

In their efforts to alleviate the pressures of neo-nomadism on people's lives, architects and designers have turned to Modernist and Post-modernist concepts. In 1926, Hans Meyer, often referred to as the second headmaster of Bauhaus, proposed a project named 'Co-op Zimmer' in response to the rising influx of workers into Berlin. Meyer's proposal stood for the minimization of the personal trace by deliberately choosing standardized industrial products for the dwelling unit. Under the influences of the modernism and his own experiences of constant flitting among hotel rooms, the design of Co-op Zimmer became an exclusion of self-identity and the burden' of traditional household chores. (Aureli, P.V. and Tattara, M., 2018)

The | RE:plica

Figure: Co-op Zimmer proposed by Hannes Meyer in 1926.



THE FUTURE OF HOME AND MOBILITY

Figure: The visualization of Siwudi proposed by the Atelier Deshaus in 2017.



The | RE:plica

The Chinese architectural studio Atelier Deshaus, by sharp contrast, is the standard bearer of postmodernity which strives to be the very antithesis of Coop Zimmer. Their concept of Siwudi, or 'Domus of Belongings' in Chinese, is encapsulated in a composition of cabinet units and frame structure' that forms a portable, modular storage system for treasured belongings'. The cubic modules work as the division of type and space of these items, and moreover, put emphasis on the solemn and commemorative nature of the owner's identities. Furthermore, the frame structure allows the inheritance of the previous spatial distribution and rituals which preserve the intimacy and familiarity, while actively adapting to the new environment by forming the appropriate states to accommodate to the diverse spatial needs.

Hannes Meyer's projection of identity in the home is one of idealism. Co-op Zimmer is the symbolization of rationality that condenses the dwelling into a minimum of fundamental nourishment. Self-identities would be traceless, lacking attachment to the belongings or the 'home' itself. In other words, the 'home' is a spiritual state, especially in an era when the resident has to relocate frequently. The concept of Siwudi, conversely, focuses on the attachment of identities to personal belongings and rituals in the home, shifting the definition of 'home' into a material state - a portable shell. In addition, considering the variations of the storage system, the 'home' is converted into the external identity museum' of the neo-nomads. As blueprints for a future world characterized by neo-nomadism, Co-op Zimmer and Siwudi punctuate the extremes of idealism and materialism to some extent.



The Questionnaire

The questionnaire has received around 400 samples, in which most people chose the given selections rather than fill in the "other" options. People who live in a residential life are more related to their possessions and families, while the answer from people who had neo-nomadic living experiences are more related to the immaterial side (rituals and memories). Many of them consider their home(s) a mobile idea without a certain fixed geographical location.

The second step of sending out questionnaire online provided me with enough primary research to dig deeper into the answer to the question.

The | RE:plica

1. Gender *

- Male
- Female
- Other
- Prefer not to say

2. Age

- 0-10
- 10-17
- 18-23
- 24-30
- 31-40
- 41-50
- 50+

3. Occupation type *

- Full time
- Part time
- Freelance
- Self-employed
- Prefer not to say

4. How many properties you have moved in since your birth? *

- 1
- 2+3
- 4-5
- 6-7
- 7+

7. What is your first impression when reminisce bout your home? *

- Belonging(s)
- furniture(s)
- A room/space(s)
- certain ritual(s)
- Family member(s)
- A scenery
- A piece of memory not related to any of the things listed above
- Other

8. Is your home deeply possession-related (belongings, physical items, structure, materiality etc.)? *

- Yes
- No

9. Is your home deeply ritual-related (home behaviour, agenda, certain interest etc.)? *

- Yes
- No

5. Have you spend years living in rental properties? *

- Yes
- No
- Only one year

6. Which property relates to you most during your life that you consider as the true home? *

- Your first home
- One of your childhood homes (not the first one)
- One of your adulthood homes
- One of your rental properties
- Wherever your family is at
- Your mental home (immaterial)
- Other

10. Is your home deeply family-related (family members, family activities etc.)? *

- Yes
- No

11. Is your home deeply memory-related (including memories related to the above themes)? *

- Yes
- No

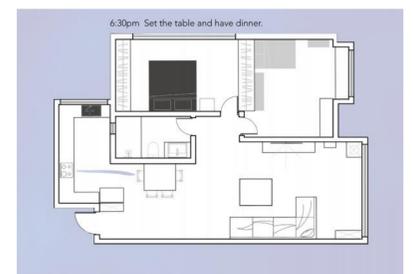
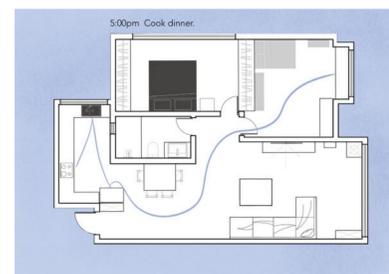
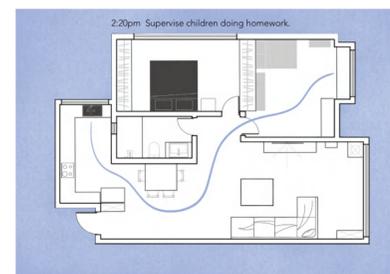
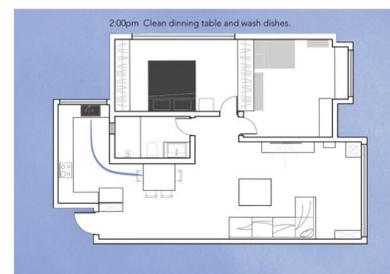
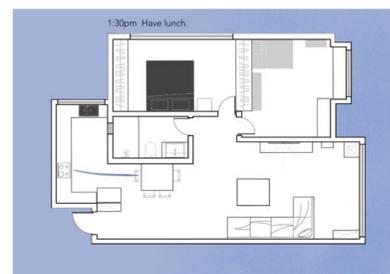
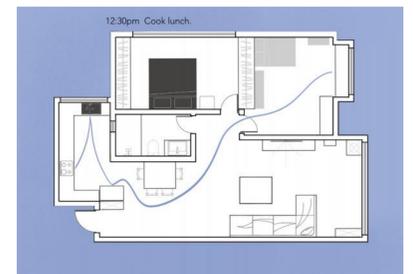
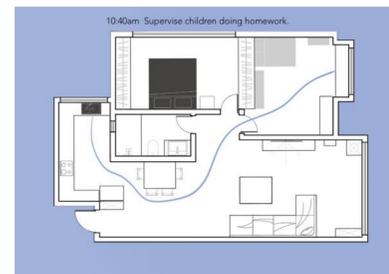
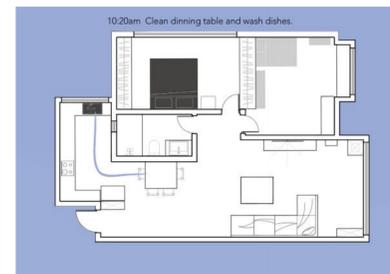
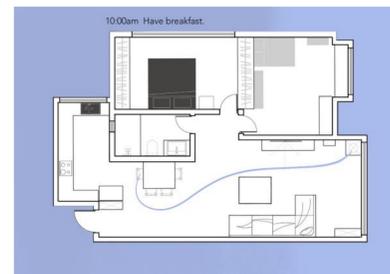
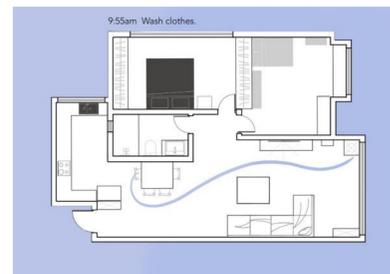
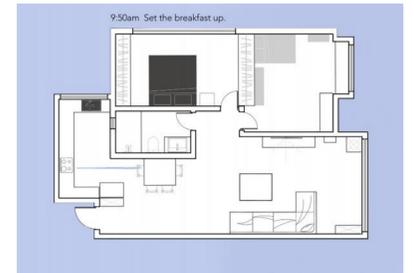
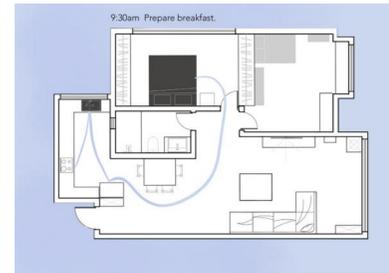
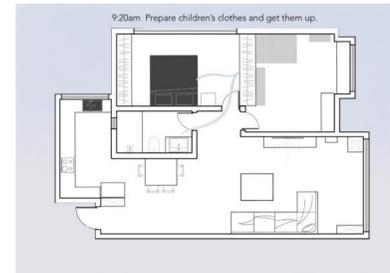
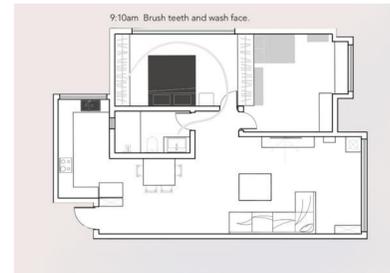
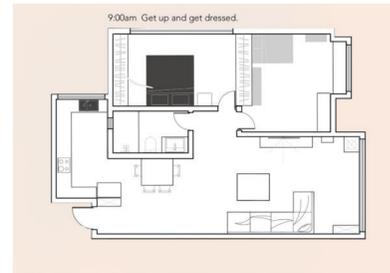
12. Do you consider your home(s) geographically fixed? *

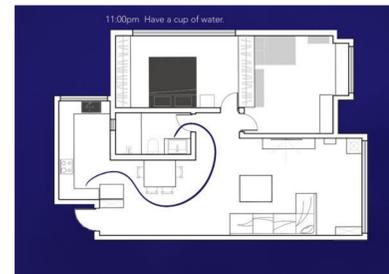
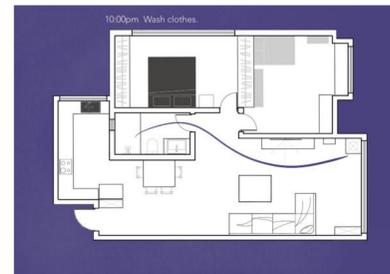
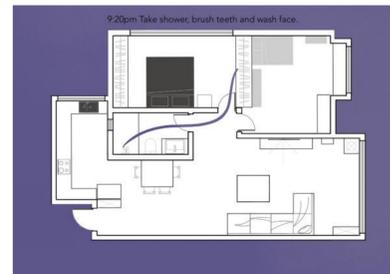
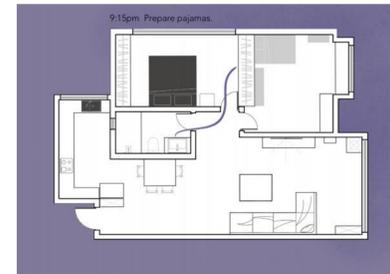
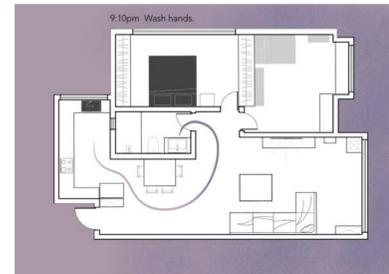
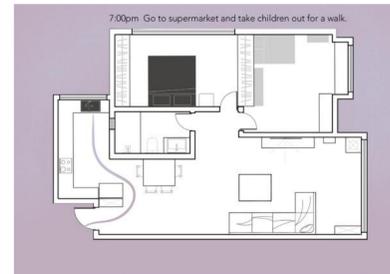
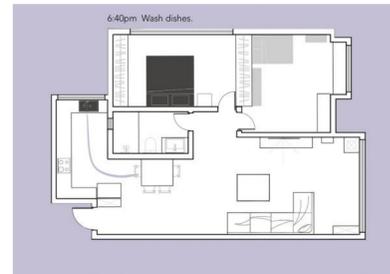
- Yes
- No

13. Share your story with us. *



Home Behaviour





I reached out to a female who runs an individual company and also is the mother of two kids after sending out questionnaires around themes of home and mobility online. This taxonomy of her weekend daily routine at home is not just a timeline of her agenda, but also inherits her inner connection to the material and immaterial world. Her timeline links to the three main area one would use most at home: bedroom, bathroom and kitchen (if one cooks). The way how she and her family members occupy the interior space is also an important lead to the conclusion of what home is. Taxonomy of the respondent's daily routine

and other home behaviours, unlisted here guided me to condense the main components of home into four sections:

1. Possessions
2. Rituals
3. Family
4. Memories

The four elements not only make up our home, but also help us in shaping the sense of belongings.



Pile Up, Break Down.

Artists hold quite different attitude on their belongings.

As a couple, Alfredo and Isabel Aquilizan's artworks often address themes of displacement, migration, memory and identity. Their work, *Project Belongings*, consists of objects that belonged to them and their children, which have been boxed up and displayed to represent the objects they could take when their family migrated from the Philippines to Australia. Michael Landy, contrastly famous for his work *Break Down* in 2001, destroyed every possessions he owned as a piece of performance art. After three years preparation, his exhaustive inventory of his possessions were placed upon a conveyor belt, destined for landfill.

Though Landy's work stands for a provocation of consumerism, the way he choose his personal possessions as the topic enhance the same importance to the physical existences connected to us, as he discribed the two weeks as 'the witness of his own death'.

Figure (up): Michael Landy's *Break Down* in an empty shop in Oxford Street.



Figure (down): Alfredo and Isabel Aquilizan's *Project Belongings*.



Possessions

Possessions are one of the most notable elements of any home. In my previous case study of 'Siwudi' - a proposal of a flexible possession storage system by Deshaus Atelier in the research report - possessions are described as everlasting signposts in new-nomads' rapidly changing lives (2016). Studio Research of the way people's possessions occupy the same hotel space is as varied as our fingerprints. One possession can own multiple implications, and the range of possessions varies considerably in accordance with their owners. 'Home' can be defined through possessions that carry human behaviours and emotions in this measure (Hua, L. 2016). A dwelling can be an exposition of its owner, exhibiting one's life and identity through their possessions. Wood and Beck argue that the most banal possessions are not merely physical entities, but are also 'routinely laden down with values and symbolic meanings' (1994). Although the form of possessions may vary, they shape part of the identities of neo-nomads and may be one of the few attachments a neo-nomad can utilise to gain a sense of belonging. Possessions contain two parts - belongings that can be taken to another place, and things that are often identified as immobile or having low mobility

The | RE:plica



Figure: Collage to reveal an interesting fact that we always put our attention on the belongings at the foreground but ignore what is in the background - the furniture, the walls, and the spare space they live in between for us to move around.



THE FUTURE OF HOME AND MOBILITY

When people leave home, most of their possessions are often being left behind, tearing the movers physical connection to their home apart.

H O M E



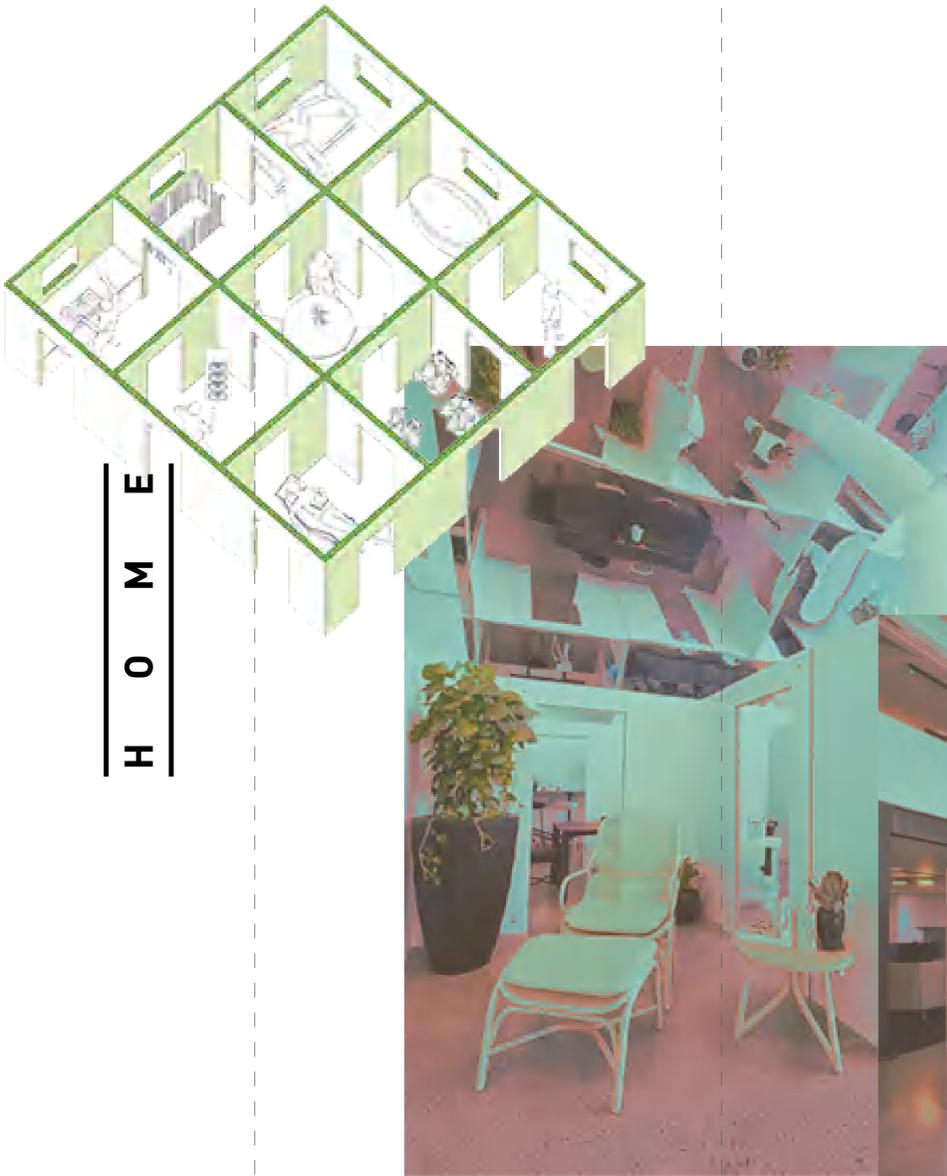


Figure (down): OTHER ARCHITECTS' *Domestic Rituals* in Sydney InDesign Exhibition.



H
O
M
E

Domestic Rituals

According to my primary research on people's attitudes towards at-home behaviours, many describe 'rituals that occur exclusively in certain home environments' as an underlying but fundamental factor that contributes to the sense of belonging. OTHER ARCHITECTS' Sydney InDesign project: *Domestic Rituals* inverted and magnified a taxonomy of rooms, in which disparate moments were gathered, harbouring our engagements with rituals in the routines and habits of home (2015). Through the tilted mirror capping on the top, one's sight unites isolated rooms of rituals, forming the ultimate concept of this project - a home. They argue that domestic rituals are our way of affirming our position in the world. Whether or not these can be demonstrated, our private rites are settled in closed, intimate spaces through rituals, which endow monumental meaning to a property with furniture and other items.





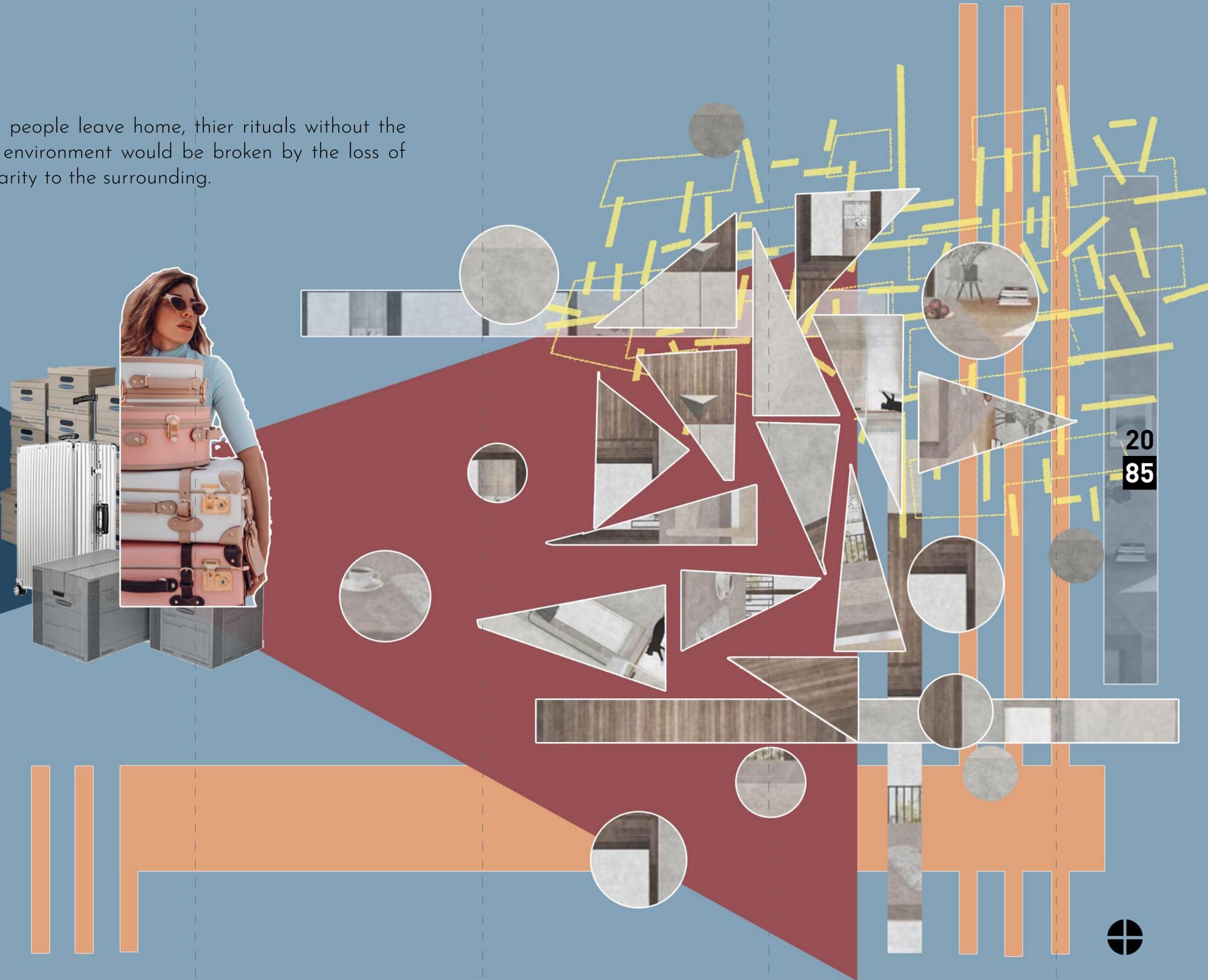
Rituals

Just like our possessions, domestic rituals varies based on who we are. Different people have different rituals. From the way we get up from bed, to the way we jump in bed for a good sleep, from cooking yourself a plate of pasta, to having a family meal celebrating someone's promotion. We all have some little hobbies different from others. Some might be painting in front of the window, some might be bathing after work with a bottle of champagne. Sometimes, even though we share the same title of the rituals, we do it differently. Some would like to work at home on coffee table, while someone prefer to do this in bed, or in front of the kitchen island.

The differentiation between domestic rituals shape who we are as a human.



When people leave home, their rituals without the same environment would be broken by the loss of familiarity to the surrounding.

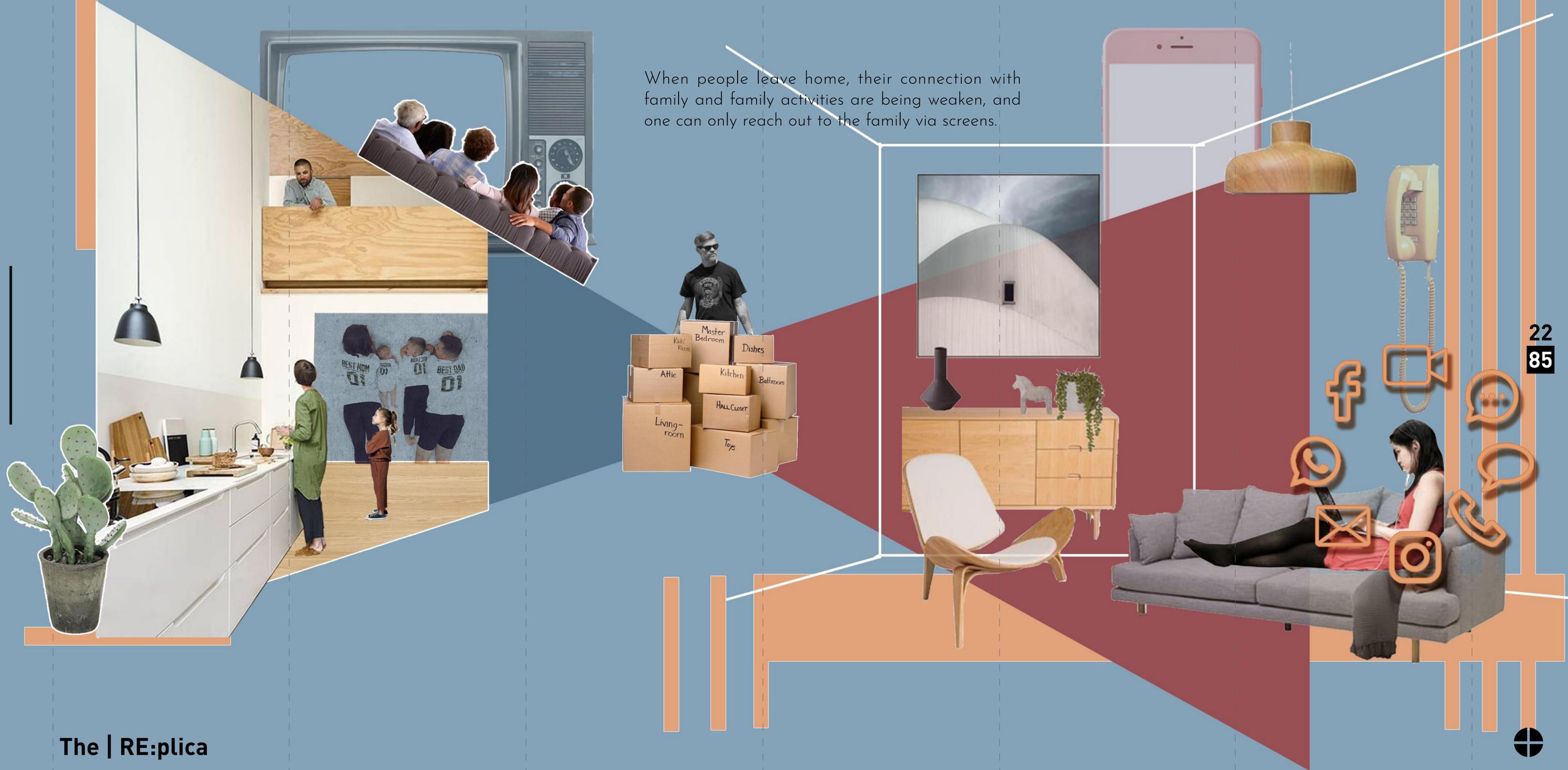


Family

Family members and family life are frequently mentioned by respondents who completed my questionnaire; the majority of subjects feel that the link with home is founded in the family. No matter being a neo-nomad or a resident, to most of them, family stands for safety, security and comfort. Family traditions showcases the value of family, and family customs are experience that households create together on a regular basis. Spending time together bonds the family and make each member feel important.



When people leave home, their connection with family and family activities are being weakened, and one can only reach out to the family via screens.

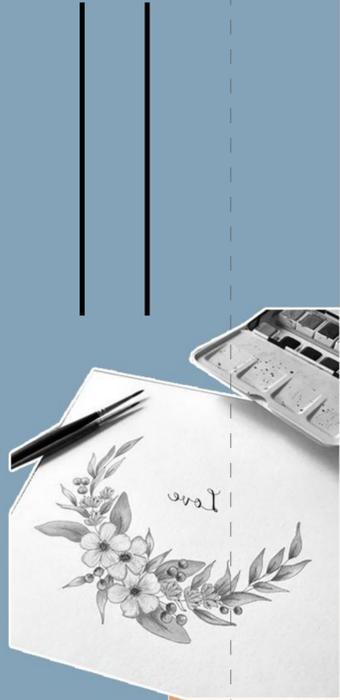




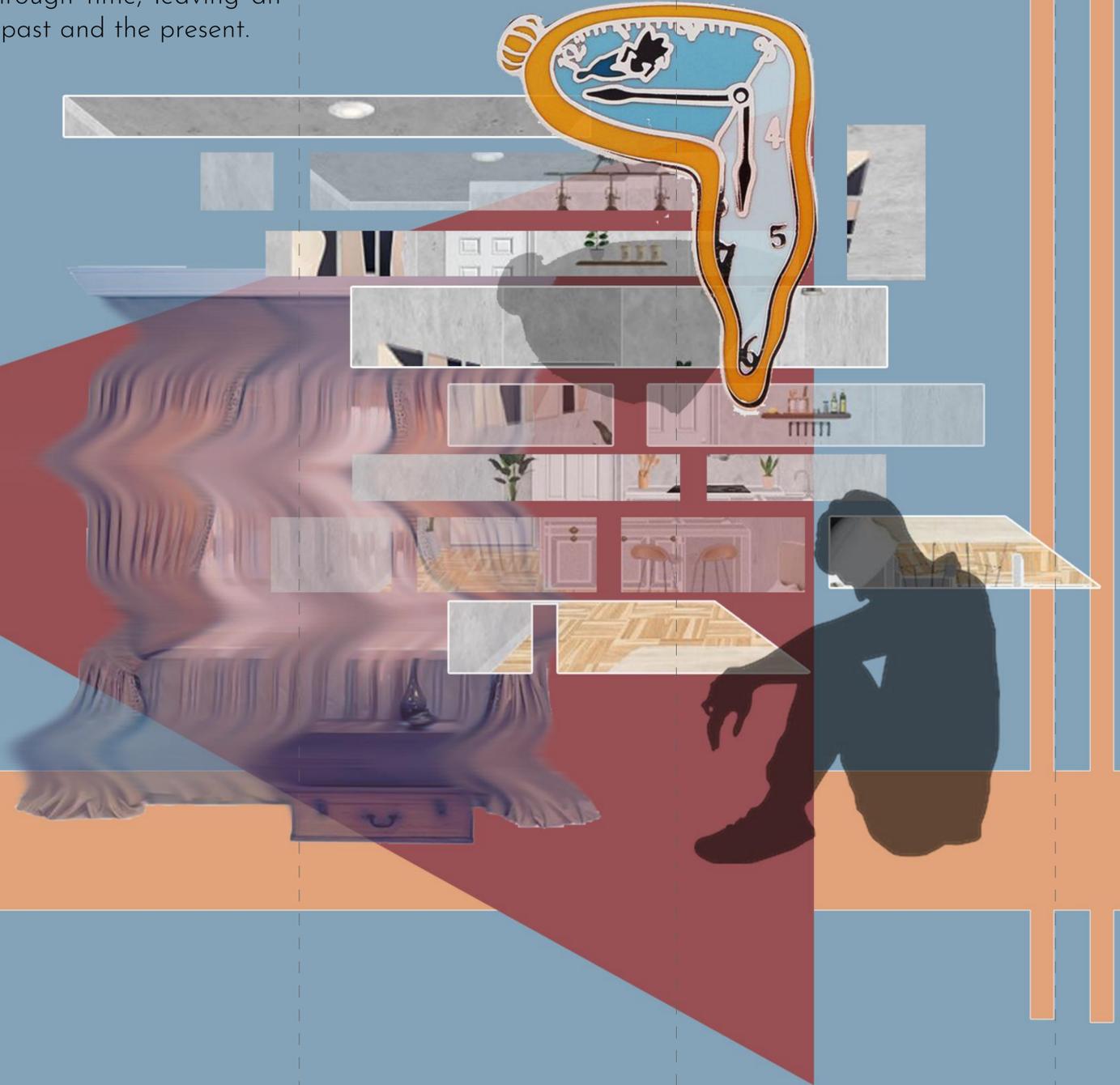
Memories

In the primary research, many argue that “home” is actually a feeling established based on memories of where they grew up. One respondent who has become a new-nomad for more than twenty years depicted her home back in childhood the unique and authentic one, though she have named every place of long-term stay as her home. Her reason provided stated the intrinsic linkage between her memories and the genuine home, interpreting home as where her memories anchor to.





When people leave home, their memories link to their home would faded through time, leaving an unfillable gap between the past and the present.



DIGITISATION:



*THE FUTURE OF
NEO-NOMADISM*



THE FUTURE OF
HOME AND MOBILITY

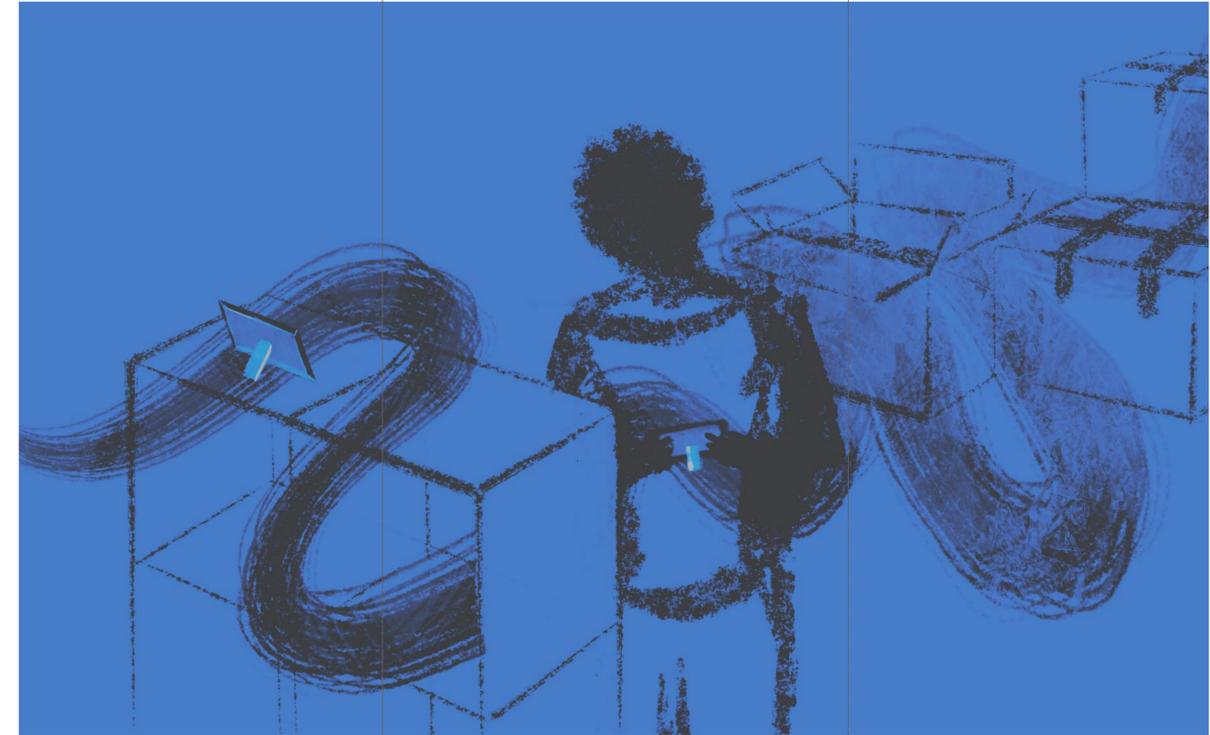
W H Y
N O T
H A V E
I T
A L L

Choices stand for sacrifices. "One cannot have both the fish and the bear's paw" is a simplified proverb of the famous debate from Mencius, the well-known Confucian philosopher. The quote is still being widely used by Chinese till today, whenever talking about choice-making. Similarly, idioms such as "you cannot have it all" in English, "one cannot dance at two weddings" in German and many in other languages unlisted here are all discussing the same predicament caused by one's desire to have two things simultaneously. However, these sentences are being overused and had become convenient excuses for looking for ways in gaining both. The

often ignored truth is, the full version of Mencius' debate started with one prerequisite - "if I cannot have them both".

People were and still are facing the same predicament when we relocate home. Multiple reasons from restrictions and inconvenience of carrying all possessions from belongings to the interior structure of the property, to the immateriality of rituals, memories and family prevent us from carrying the whole "home" with us to the new location. People are forced to give up on things they treasured, whether material or immaterial. However, why cannot we have them all?

The | RE:plica



THE FUTURE OF HOME AND MOBILITY

The modern world and its demands have been intruding on people's sense of residence for many decades. The traditional sedentary lifestyle has increasingly been replaced by the mobile working mode. Urban distribution as a matrix of centers has produced an uneven allocation of resources. The fixity of assets is being challenged by the speeding rate of the iterative of everything. Thus, more and more people are being forced into living what is essentially a neo-nomadic existence.

Often there exist few choices for these new nomads when it comes to the interior design aspect. The product range for many rental properties is limited. In addition, the appearance and quality are often sacrificed for the purposes of assemblability and portability. The interior design of such apartments often constricts residents' choices. One particular example is furniture design. For example, according to Keywordtool (2021), in 2020 the numbers of searches for storage drawers and folding tables on the Amazon website had risen to over 266,000/month and 595,000/month, respectively. These data alone are an indication of the new priorities being imposed on many residents in the globalized economy. Factors such as quality and appearance are often of secondary importance, with the main focus being on price, size, portability or basic function. Consequently, the personalities of these new-nomads are easily being suppressed and even dissolved by the imbalance of the physical and mental needs towards home and the market supply.

The | RE:plica

WHAT IS HAPPENING NOW

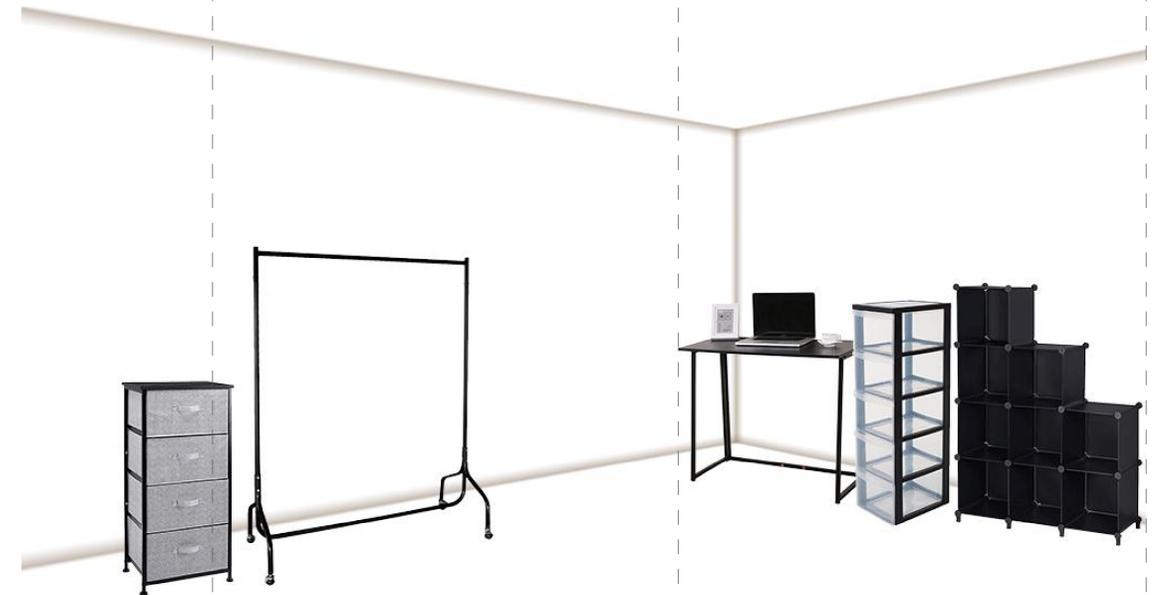


Figure: Cheap furnitures can be seen in many neo-nomads' homes.



FURNITURE RENTAL?

There are a number of architectural and interior design teams who seek to strike a balance between the two forces. For example, online furniture rental platforms Furlenco(2021) and KAMARQ(2021) offer bespoke furniture designed and manufactured by their own departments on a monthly rental subscription basis, and provide customers with furniture delivery, collecting and cleaning services. Such a tailored service does to a certain extent relieve a certain level of pressure imposed by the nomadic lifestyle. Nevertheless, compared with traditional bricks-and-mortar furniture retailers with their more solid customer base and wider range of choices, especially local sellers in the community, this modality of ordering furniture online is a socially poorer one. Acceptance of second-hand furniture is also overrated due to the fact that among many customers the furniture purchase decision is guided more by personality and identity, than practicality. Meanwhile, these online platforms lack the ability to solve the dislocations brought by the loss of all familiar external and internal parameters', which painfully rupture their world into two unbridgeable lands' (Hoffman, E., 1988).

The | RE:plica

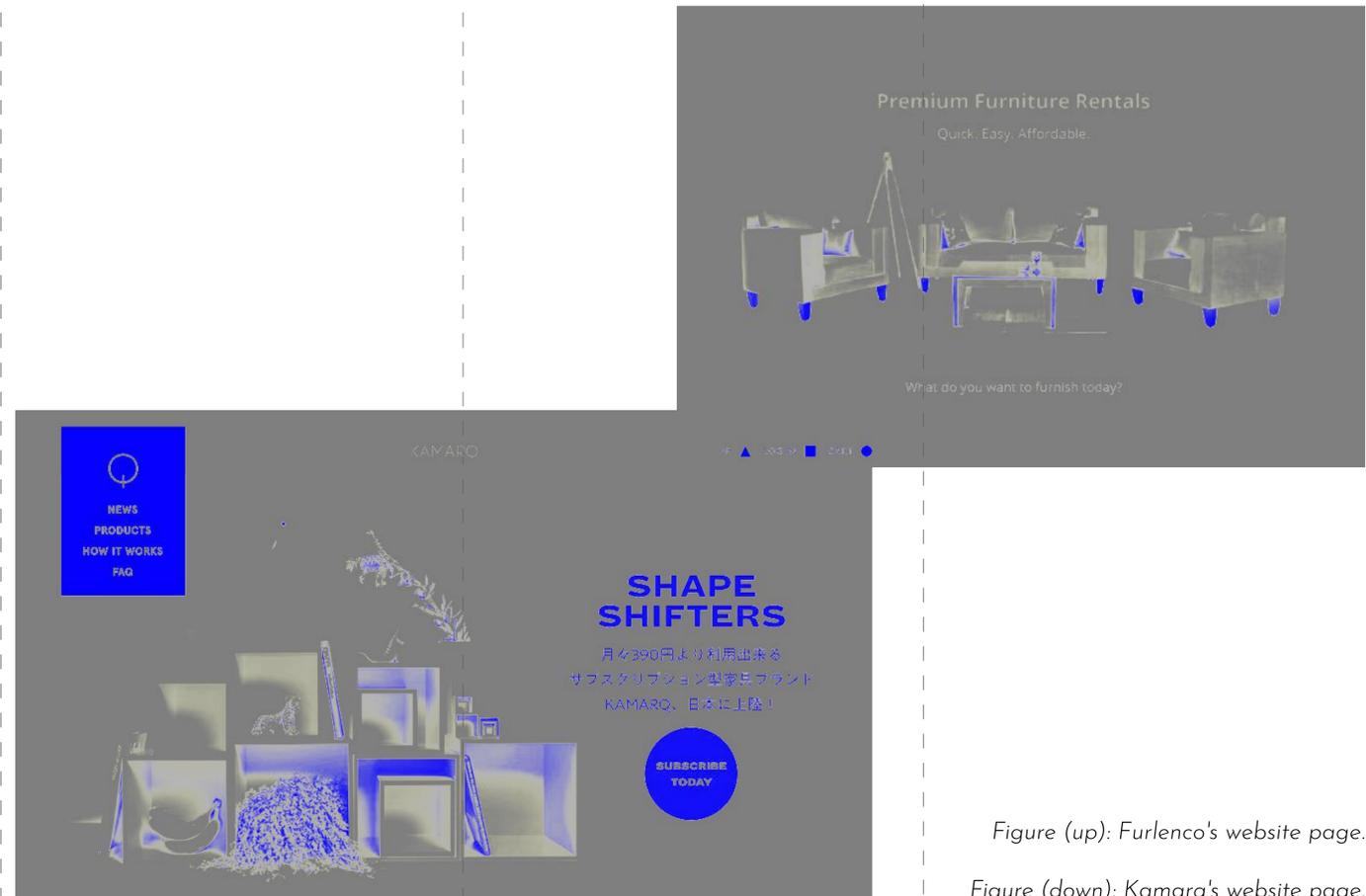


Figure (up): Furlenco's website page.

Figure (down): Kamarq's website page.



DIGITALISATION

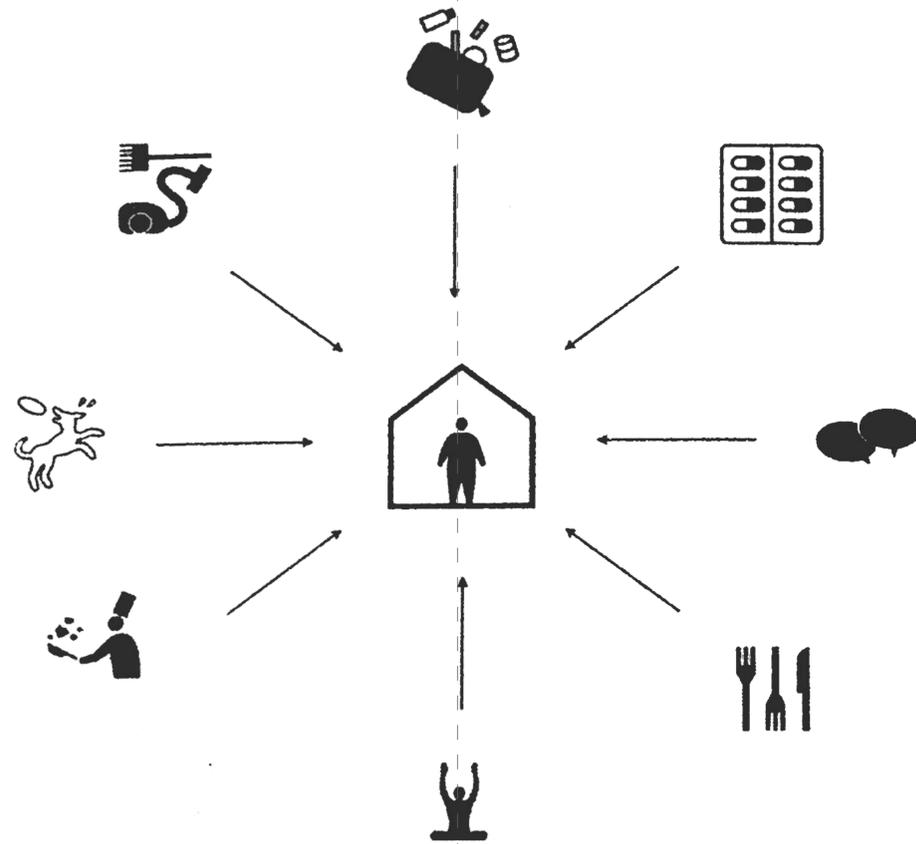
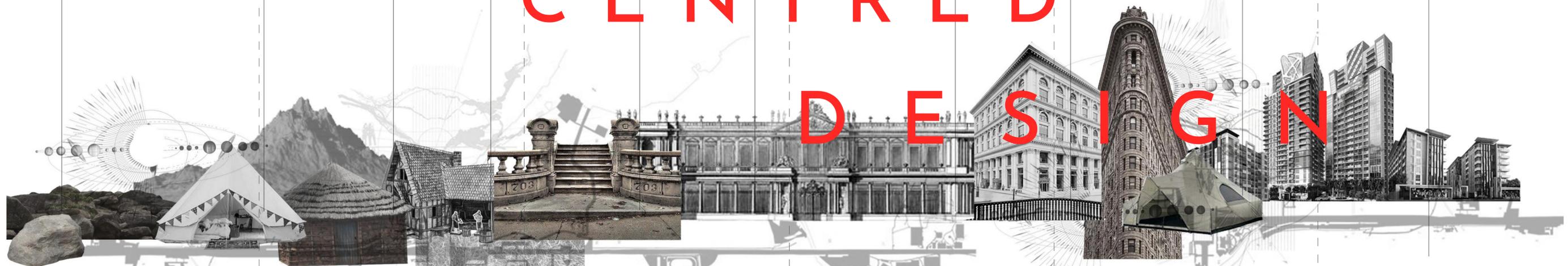


Figure: In '365 days', space-sharing online platform like Airbnb deconstruct its geographical location with stronger contents.

At first glance, the two housing experiments seem to show two opposite directions of changes in dwelling. The former represents extreme resident living, which is the strengthening of the geographical location of "home" and the deconstruction of its content, while the latter stands on the exact opposite, representing extreme nomadic living. However, if we looking at residence and nomadism in a broader context, liberating them from the geographical restriction, Yunlu's lifestyle can be also viewed as nomadic living. Though the coordinate never changed, her living environment was being constantly shifted, supported by ample internet services in "18 days" challenge. On the other hand, Chenyu's suitcase became her anchor, locating her nomadic living in a resident way.



HUMAN CENTRED DESIGN



The field of architecture and design have not make progress to comply with this development of virtual technology , the understanding of the "white western man" is often limited to the scale of this type of body, the use of functions and visual spatial perception, and the rapid development of "people" science has not effectively entered the scope of architectural knowledge. In our present time, smart technologies are becoming more and more integrated into the confines of our bodies. People begin to interact with smart devices, and also smart devices change people's thinking and actions while providing virtual space for humans. Our understanding of norms and spatiality should not be limited to this design which has been based on this limited notion of the body. At this time, should our design criteria, and construction adapt to a revised notion of the human that is already integrated with virtual devices?

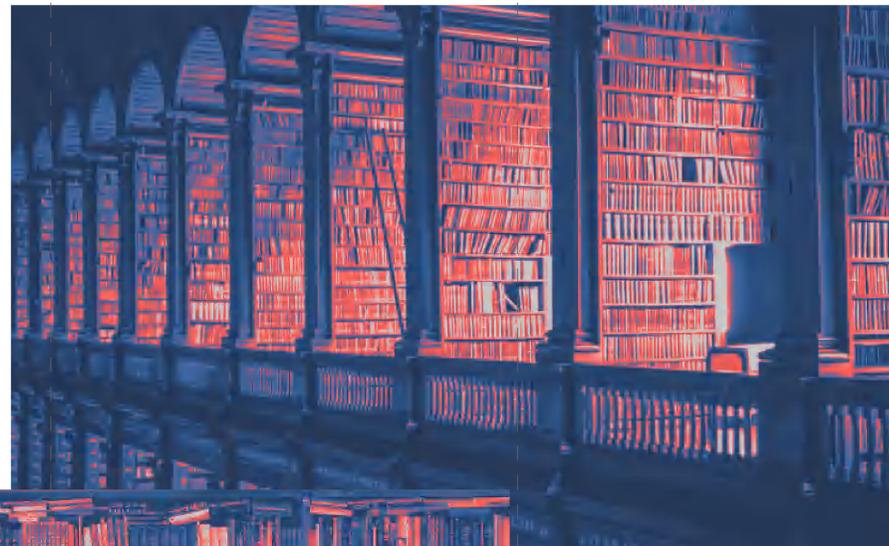
So, imagine how space design will change in the future after the Fourth Industrial Revolution with the technological innovation of construction and the exaggeration of virtual space to adapt to the people which always move their home. So I imagine the 4th industrial revolution in which body and virtual space is fully integrated into one another.

When the fourth Industrial Revolution comes, how will the relationship between people and

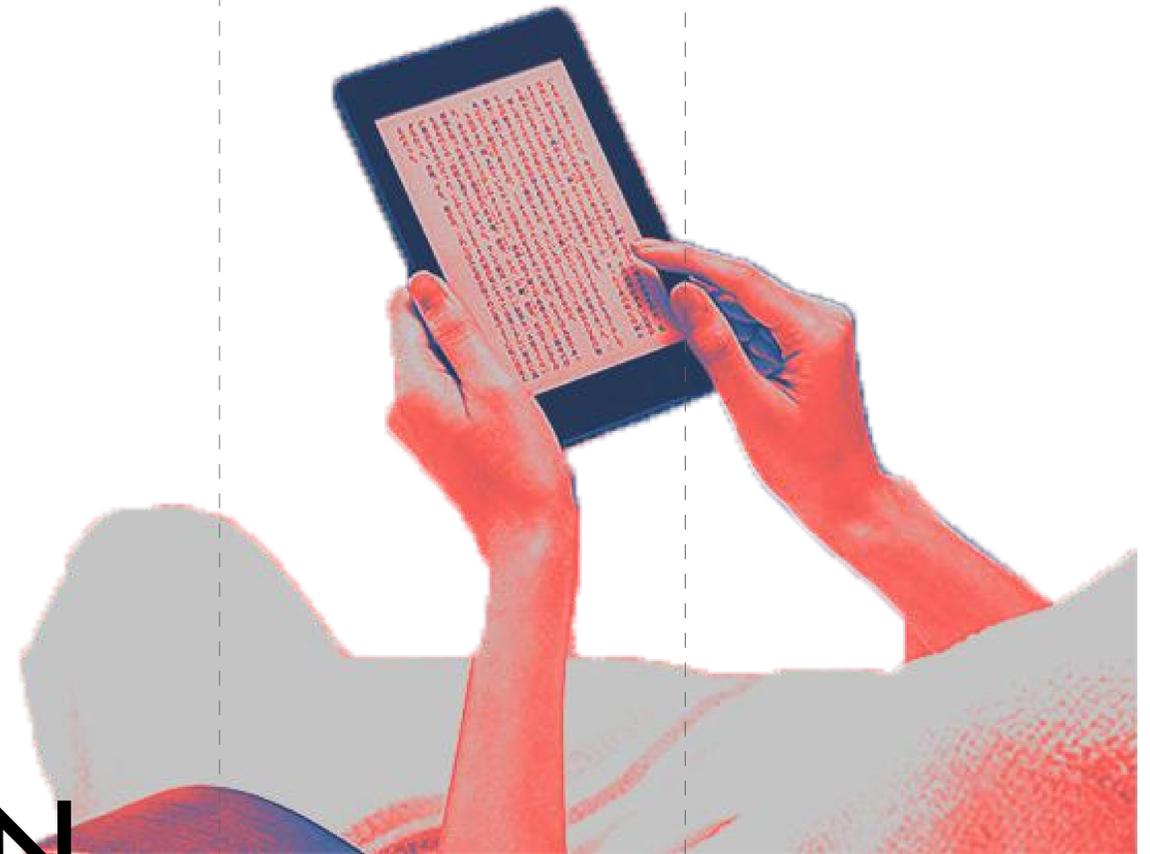
The | RE:plica

science and technology, between people and society change? At the same time, whether scientific and technological innovation can solve many current social problems? Focusing on these social aspects and fields, and search reference through research to build future images. The fourth Industrial Revolution (or Industry 4.0) The core is the depth of network, information and intelligence degree of integration, compared to the previous three industrial revolutions, more subversive, revolutionary and explosive, it will be massive Improve the productivity of human society, Intelligent manufacturing and data identification are dominant yield. In 2011, Germany officially launched its "Industry 4.0" strategy at Hannover Mesa, which USES the latest technologies such as Internet of Things, artificial intelligence and high-end manufacturing to realize highly automated and intelligent economic operation. On the other hand, humans themselves are complex systems. With the development of modern science (including the natural sciences and the humanities The social sciences), the deepening of man's understanding of himself, Medicine, biochemistry, Neuroscience, ecology, psychology science, sociology, cultural anthropology, biological politics, etc The field of science offers new insights into the overall understanding of "people" Cognitive perspective and way of thinking. Unfortunately, architecture .The understanding of "human" is often limited to the scale of human body, so ,with function and the space perception that lay particular stress on vision, rapid development .The "human" science of architecture has not effectively entered the knowledge of architecture general category





The | RE:plica



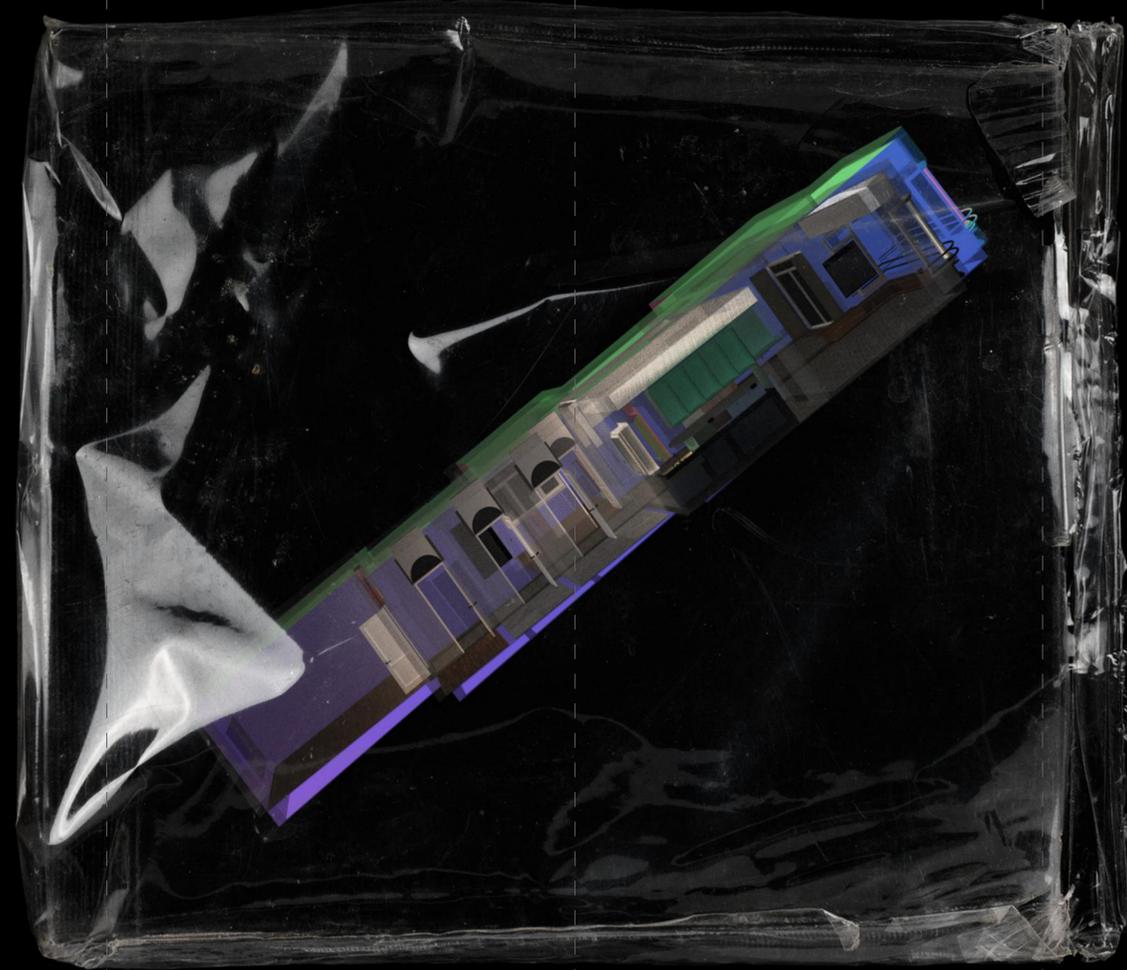
DIGITALISATION

32
85

Just a few decades ago, book lovers had to move home with their books bundled up, piled into heavy boxes. Taking shelves of books with them while moving to another place was always the worst nightmare. Some had to give up on other less-important-but-still-important things, or even their precious collections, struggled painfully. Now that e-book copyright awareness is strengthening, the scope of e-book libraries are expanding rapidly in a maturing market that is turning healthier. With a light and simple device such as a phone or a kindle, thousands of books can be easily carried to anywhere at anytime. Especially as the newly-emerged e-book libraries (such as Wechat Reading and

Kindle Unlimited) is applying the successful experience from platforms like "Netflix" and "Spotify", gradually replacing the traditional "one-book-perpurchasing" mode with "subscription" mode that allows unlimited access to the entire e-library within the term. Industries are supporting and refining the ancillary environment for electronic reading, for instance, reading applications that contain highlighting, marking, split-screen, fast page-turning and web searching functions, and note-taking applications which support both typing and handwriting. It is not hard to speculate that technology is blazing a new trail for book lovers' carrying trouble caused by their sweet but heavy "burdens".





HOW CAN WE PACK OUR HOME LIKE ONE OF OUR BELONGINGS?

34
85

Research into the digitalisation of musics and books provide me with a possible solution for bringing our home with us wherever we go - datalising the home into a 3D model, and extracting it out when arrives a new place.



THE FUTURE OF
HOME AND MOBILITY

LiDAR SCANNING

Light Detection and Ranging, is a remote sensing method for measuring distances by illuminating the target with laser light and measuring the reflection with a sensor. Differences in laser return times and wavelengths can then be used to make digital 3D representations of the target. It is commonly used to make high-resolution maps in various industries and control and navigate for autonomous cars. Interestingly, the newest iPad Pro and iPhone 12 Pro carries with LiDAR sensors reveals the new future to us. LiDAR allows the apps for the iOS system to start AR a lot more quickly than we thought, and build a fast map of a room to add more detail.



DIGITALISATION

TECHNOLOGY

RESEARCH

Virtual Reality

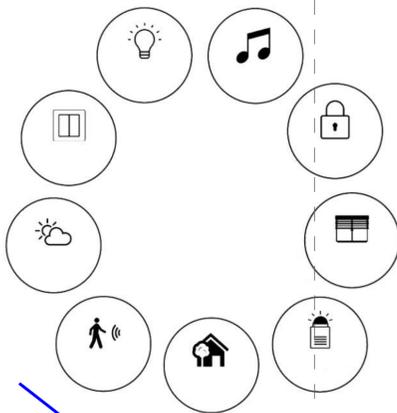
Virtual reality (VR) is a simulated experience that can be similar to or completely different from the real world. Currently, standard virtual reality systems use either virtual reality headsets or multi-projected environments to generate realistic images, sounds and other sensations that simulate a user's physical presence in a virtual environment. There has already been a couple of high-quality games such as Beat Saber and The Walking Dead series. One of the possible futures the movie Ready Player One has proposed to us is this complete VR entertainment universe called the OASIS (Ontologically Anthropocentric Sensory Immersive Simulation) which allows you to escape the real world fully.

Augmented Reality

Augmented Reality (AR) is an interactive experience of a real-world environment where the objects that reside in the real world are enhanced by computer-generated perceptual information. As a blended combination of the real and virtual world, its ability to analyze and store environment info and overlaid simulated info on the real world.

Smart Living & System Controlling

Smart living and system controlling are not unfamiliar to most of us, however, the system would need an application to control and store the information collected and react after calculation. Therefore the two themes have also been explored when doing research on technology.

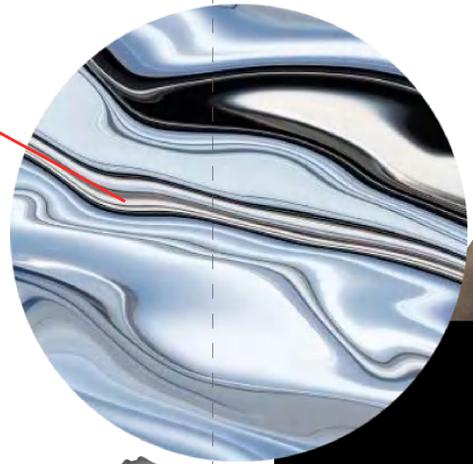


The | RE:plica



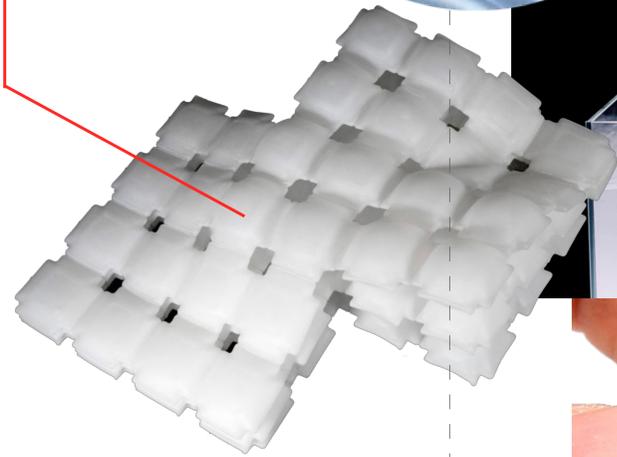
Fusible Alloy

A metal alloy capable of being easily fused (easily meltable at relatively low temperature.



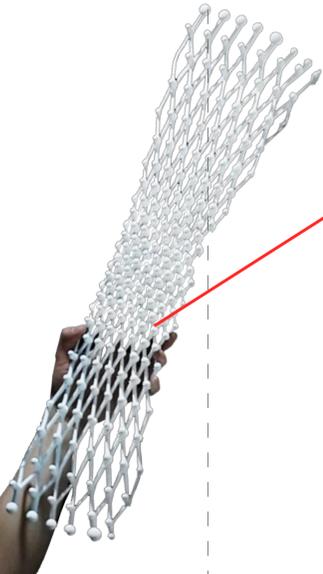
3D Printed Silicone Inflatable

3D printed inflatable that can be adjusted bubble by bubble.



Stretchable Silicone Structure

3D printed with high stretchability in 2 directions. If build in layers then can be stretched from all angles.



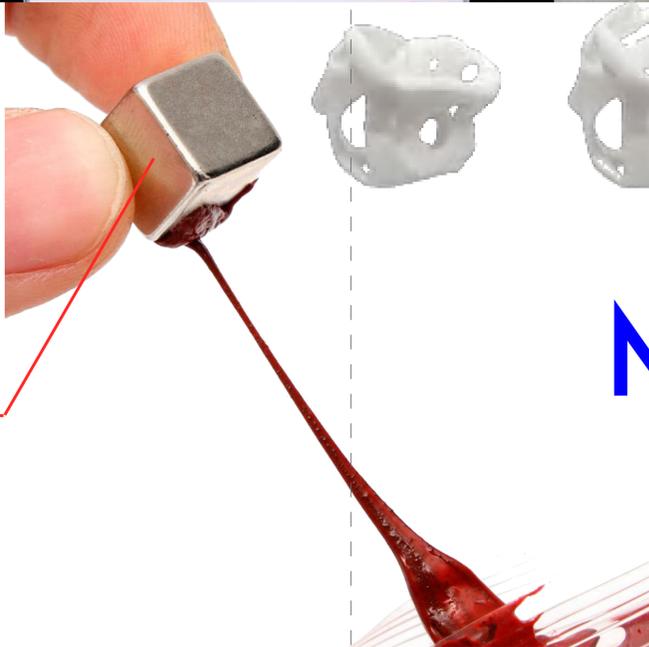
3D Printable Intellegent Foam

One of the Shape Memory Polymer that perceives external stimuli, can judge and process appropriately, and is executable by itself.



Ferrofluid

If brings a magnet close to it, when move the magnet around, the dioctyl particles follow.



MATERIAL
RESEARCH





JASUSAS :

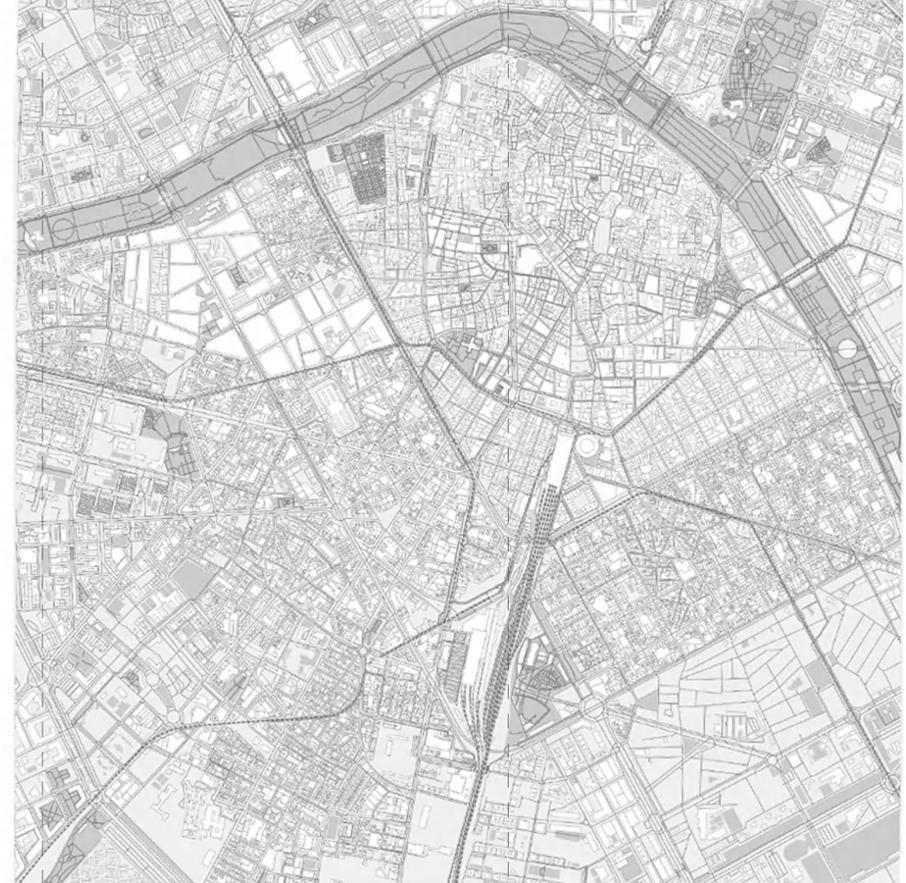
*The stage where everything
would happens on.*



S I M T E P P I N G

M A P I N G G

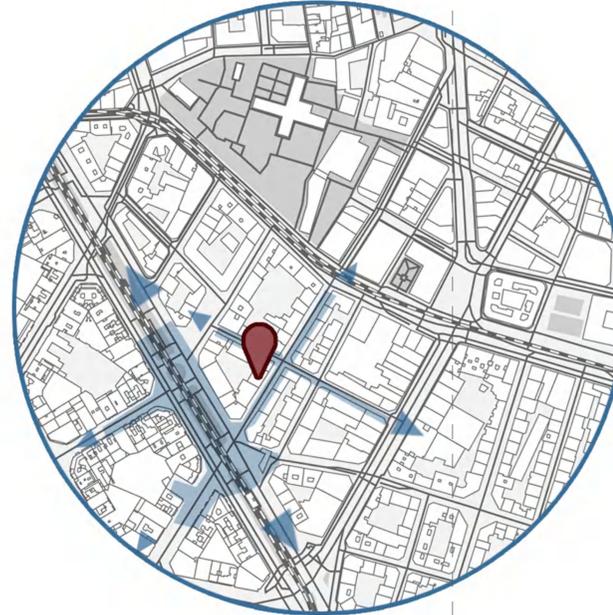




Traffic Analysis



Illumination Analysis



City Extension



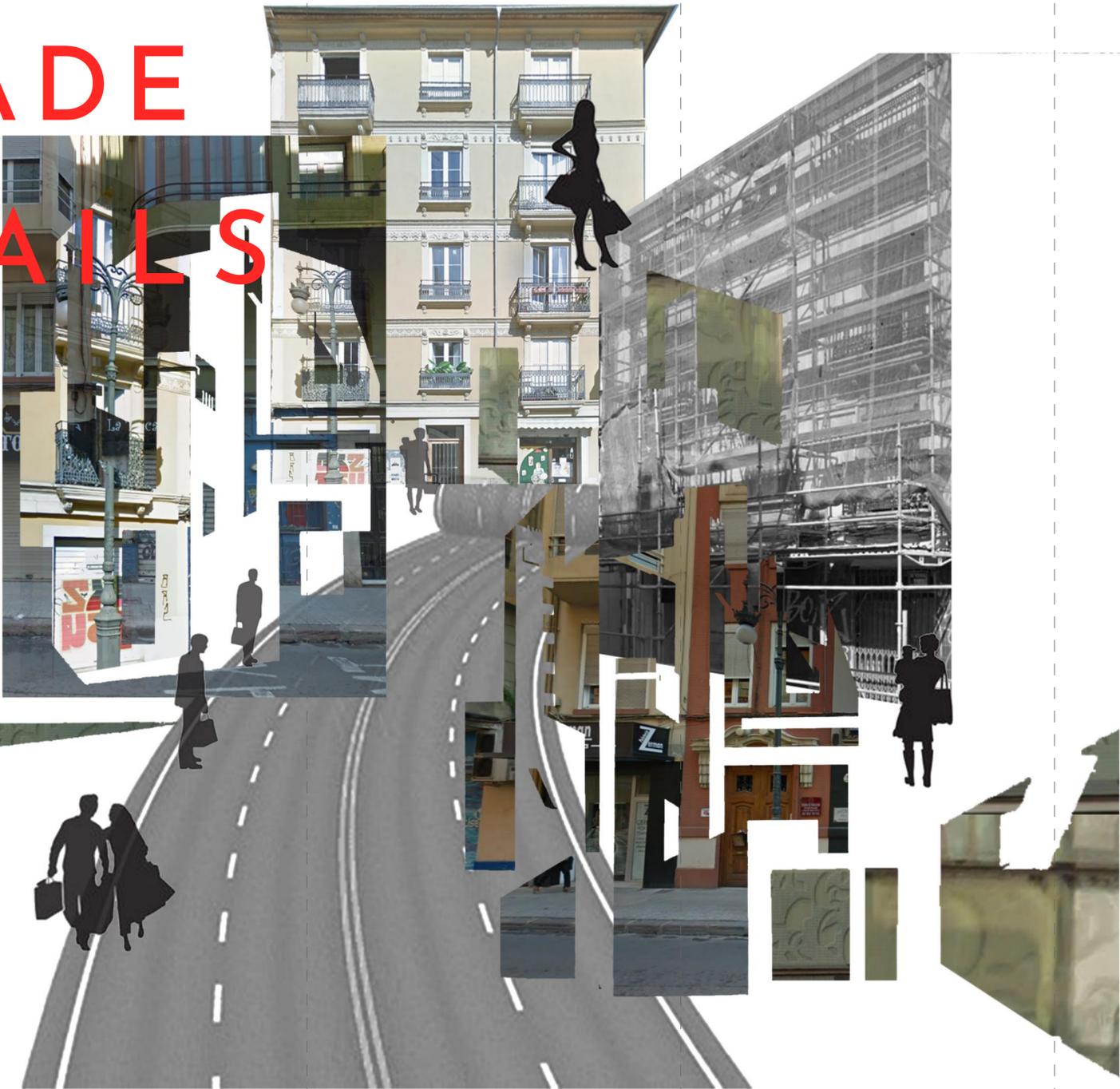
Population Density



FACADE DETAILS

PLAN

J E S U S A S



Valencia is a hotchpotch of architectural marvels, from emblematic Romanesque facades to elegant Gothic grand windows, from dignified High Renaissance structures to exuberant Baroque decorations. Ambling through downtown streets, one is likely to come across all of these complementary architectural trends, including the resplendent Modernisme, founded in Spain. (What Valencia, 2021) Jesusas, Calle de Jesus, 22, a flat located on the third floor of one historical building at the centre of Valencia in Spain, dates back to the 1930s, a time also known as the Rationalist Valencian era. Taking Italian Rationalism to a more romantic style, the building facade shares much architectural language of that epoch, from its curved bay windows to its tubular railings.



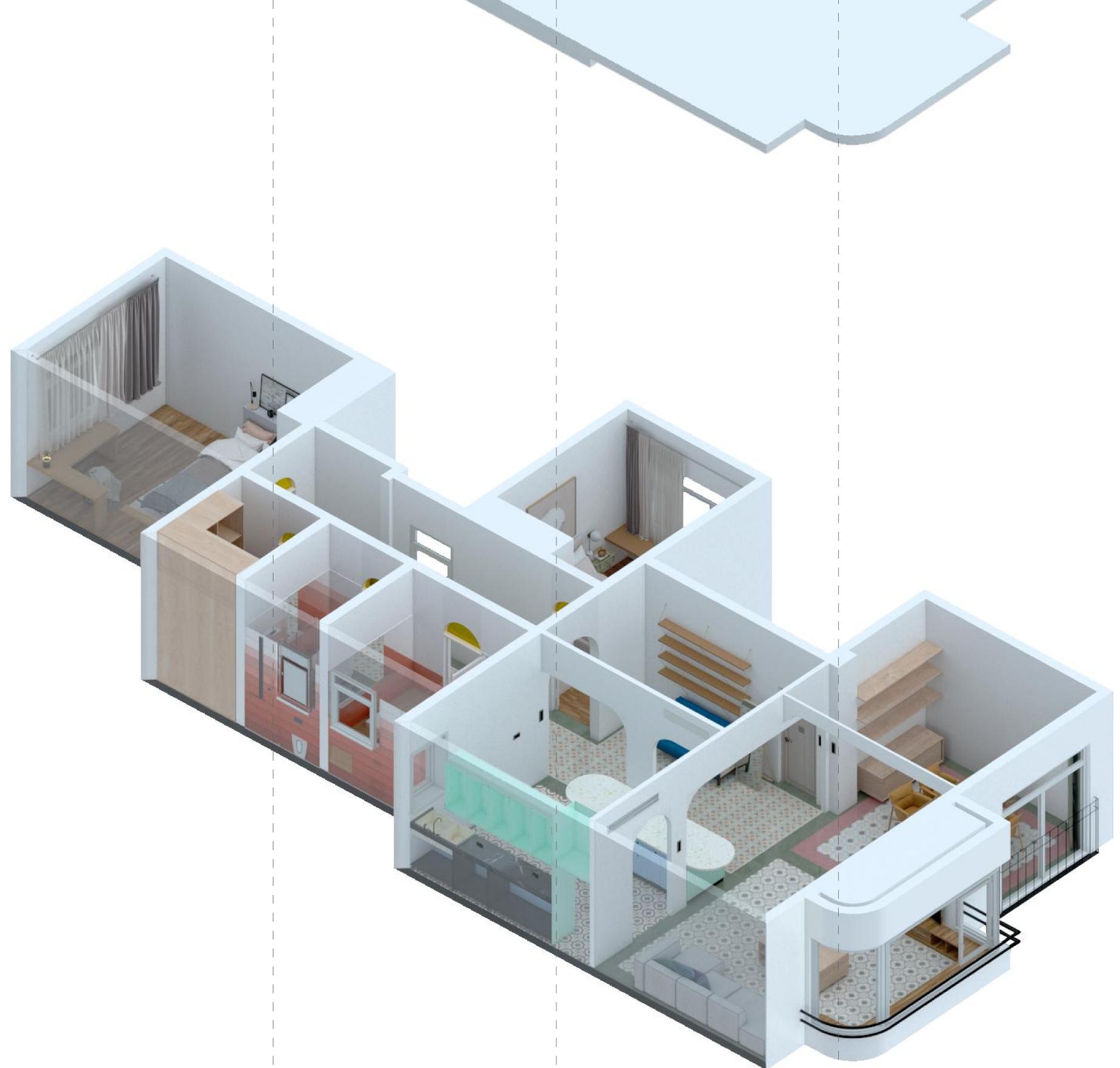
A X O

J E S U S A S

In 2020, the property interior was renovated. Because the owners wanted to retain their memories, the refurbishment preserves the character and story of the family's patrimony, while incorporating more modern Interventions. Original Spanish ceramic tiles and luxuriant plaster cornice mouldings have been rehabilitated. The design in which the colour palette is created from the owners' memories follows the structural language of the interior and exterior. The main intervention connects the kitchen with the doorway to the living and dining rooms, which creates pleasant airflow through the apartment and promotes a generous open space, absorbing warm sunlight through the balcony and bay window. The curved arches between them provide clear zoning to serve different rituals without blocking the scenery. Abundant shelves and storage spaces demonstrate the high importance of the owners' attachment to their possessions. (Bodegón Cabinet, 2020)

For my programme, I seek a home that inherits the owners' treasured possessions, rituals, memories and family, while embracing technology and a contemporary lifestyle. Jesusas integrates all these elements, which makes it the perfect site for the story of Nina, our fictitious persona.

The | RE:plica





N I N A :

The Persona.



NINA'S STORY

N
I
N
A

With full respect for the original site and design of Jesusas, the created persona effectively references the information collected from the real site, from Valencia's architecture and history to the original property owners' backgrounds and esteem to their family history and inheritance. The programme is built on the site named 'Jesusas', with additional revisions for an improved proposal narrative and original visual realisations that are independent of José Hevia's photos for Bodegón Cabinet's renovation³. Through Nina's experiences, the storyline offers a coherent explanation of how the proposal will solve problems related to being a neo-nomad, broaden the circumscription of spatial mobility, and redefine the concept of belongings.

Nina would be born in 2020 and grow up in Jesusas, which her parents would inherit from her grandmother. During her childhood, she and her family would make great memories at home.





Nina's possessions are divided into two parts, from belongings that can be carried with them while moving, to larger communal furnitures, constructional structure and materials that are not as portable as the formers. As a former pilot, Nina's grandfather had travelled world-widely, bringing back mementoes from foreign lands. Deeply influenced by him, the aircraft series and exotic antiques overseas indicate Nina's father's enthusiasm for history and culture is exhibited right under the bespoke kitchen island, which can be easily noticed once someone enters from Jesusas's front door. Organized by Nina's mother, the resplendent porcelain plate collection interspersed with family photos and exquisite ornaments are elegantly curated on shelves woven by brushed brass bars. Being hanged directly opposite the kitchen island, its romantic and expressive arrangement echos with the father's archive, attracting attention at all times. Inherited from her parents' great taste, Nina would be a huge fan of vinyl records and reading. Her vinyl archive shelves accompanied by book piles would be set beside the dining table, allowing music from the turntable set on the cherrywood cabinet below to add an alluring flavor to the superb meal.



THE FUTURE OF HOME AND MOBILITY



The | RE:plica



In addition to the massive amount of belongings, there are certainly things that cannot physically move to a new home. The floor covered by Spanish ceramic tiles, the replicated arch pattern in transitions between spaces which constantly echos with the exterior curved facade, the vibrant color palette that runs through Jesusas’s design, the ornamental cornices and mouldings that crown the interior walls, the communal furnitures that situate in the exact positions - none of these can be treated as one of the belongings, yet all of them compose Nina’s home. The missing of one single piece would make Jesusas incomplete.



THE FUTURE OF HOME AND MOBILITY

N
I
N
A

R

Derived from my previous research, Nina's rituals would come with their own satisfactions, constituting an significant part of Nina's home. Three are picked out from Nina's list of rituals, and will work as typical exemplars of the whole.

Ever since Nina's childhood, Jesusas in her memories would always be embellished with aromatic flowers and inflorescences. Taught by both precept and practice, she would experience her first touch with flower arrangement at the early stage, learning and enjoying the beauty of organic harmony and rhythm. As a bibliophile, Nina would possess a large collection of books. Though many of them are electrical editions which can be easily carried to other locations thanks to the technology, she would never refuse to printed ones. During her adolescence, she would always pick one from her book piles under the wooden bay window seat, immerse



The | RE:plica





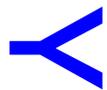
L
S

herself in the absorbing lines free from noise and distraction, being washed out in Valencian sunset's fiery radiance by the bay window. Being raised in a home full of beauty and love, Nina would always cherish life and be passionate about future. The board hanging on her bedroom wall would be the exact portrayal of her enthusiasm and appreciation for wonderful things that appears in her life. Her mornings would always start with a glance at the board for new events - picnic at the park with friends; a new release from her favorite band; dropping by the florist's to get some fresh flowers on the way back, etc. Meanwhile, her nights would always end with the board being clipped and pinned with new photographs, paintings and magazine clippings. While personal and intimate, Nina's rituals would affirm the existence of her unique home in the world.





Family members and family life are frequently mentioned by respondents who completed my questionnaire; the majority of subjects feel that the link with home is founded in the family. Spanish people are often family-centred, which would make Nina's family life in Spain interesting. Her family would love to spend nights having quality time together, while extended family members would be invited to Jesusas for the weekend. Family events would occur throughout Nina's life in Jesusas, building a solid foundation for Nina's attachment to her family.



M

THE FUTURE OF HOME AND MOBILITY

O

R

I

E

S

The | RE:plica



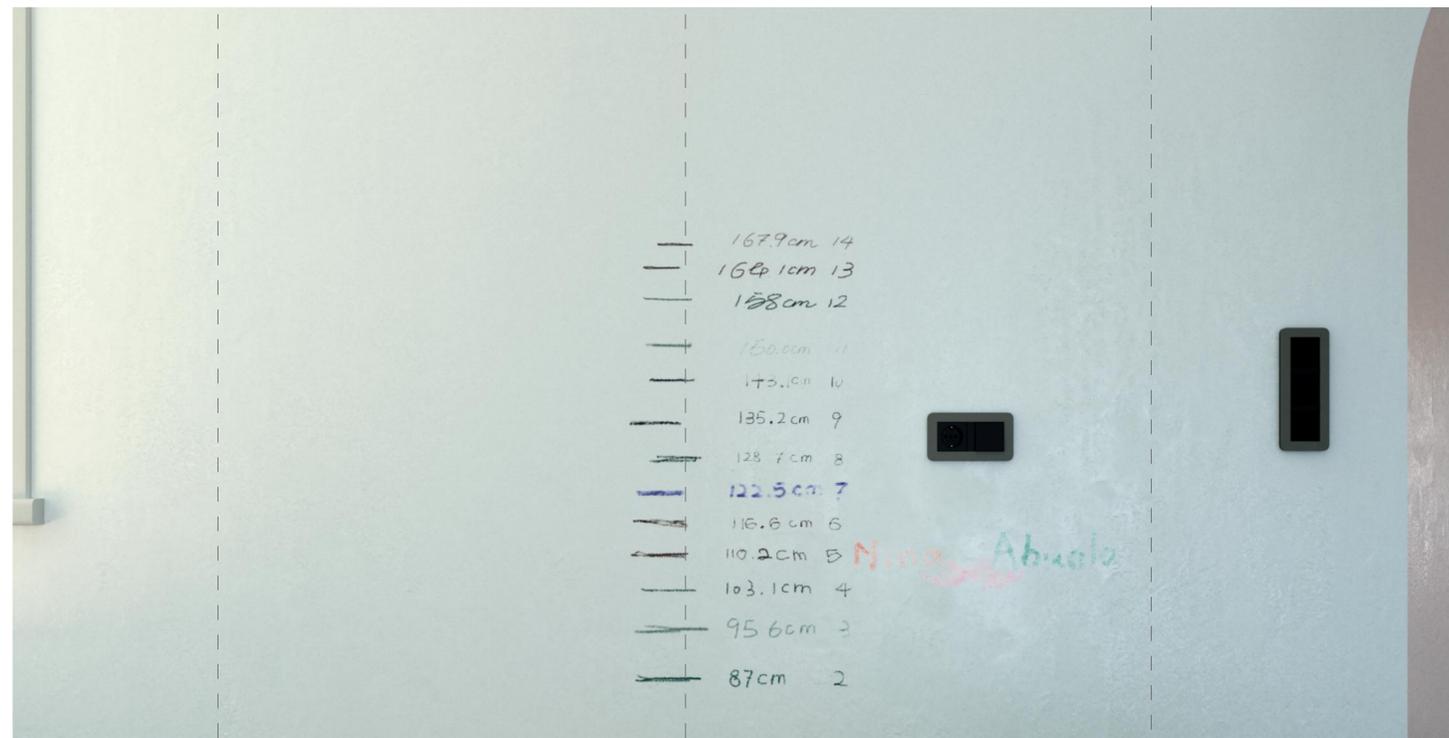
Nina would remember the ebullient floral patterns interweaved with pale red and green tiles illuminated by bright daylight. She would recall the additions each year to the kitchen wall, which ultimately developed into the most precious ornament. She would never forget the warmth of Valencia's spectacular sunrises through her bedroom window, nor the golden ethereal semicircle with scattered lemon-colour edges that projected onto the rough wall when her eyes met the light in the corridor.



THE FUTURE OF
HOME AND MOBILITY



The | RE:plica





THE FUTURE OF
HOME AND MOBILITY

CHAP.
FIVE

THE RE:PLICA

THE RE:PLICA:

A Flexible Dwelling System

53
85

The | RE:plica



Like many young people, she would not stay in Jesusas forever. For Nina, 2038 would be the year she first left home for Higher Education. During the following decade, her life would restart multiple times. She would travel as a neo-nomad, hard to be anchored to one fixed area following her graduation. Nina would feel the 'upheaval in the deep material of the self' described in Hoffman's *The New Nomads*, which occurs 'because they[homes] are not only passed onto us but are us' (1998). To many neo-nomads, the cause of the pain associated with being uprooted from one's original home is that the sudden loss of structure and force leads to a dearth of all familiar external and internal parameters. Nina's frequent moving would lead to the rupture of her personal world. On one side would stand her pursuit of a better future; on the other, the inevitable dislocation from her treasured past. In 2050, Nina would secure a job in a city where everything would be new and fresh. Flitting from one city to another over the years, her new career would not slow down as she would continue a neo-nomadic life. Only this time, she would meet a new friend, who would feverishly suggest Nina to try out some new technology - the RE:plica.

The | RE:plica

HOW THE STORY WOULD CONTINUE

• • •

The RE:plica would be a new dwelling system that can generate an original home at any new location in 2050. According to the Oxford Dictionary, a replica is defined as an exact duplicate of an original ³ Bodegón Cabinet is the design studio responsible for Jesusas's renovation in 2020. Photos of the final presentation were taken by the photographer, José Hevia. (Stevenson, A. 2010) Named after the term 'replica', the RE:plica inherits the concept of copying, while adding various possibilities of 'RE': 'revisit' our anchor points; the 'regard' for our past; a 'reformation' of our definition of home, and a 'refreshing' highly-mobile future.

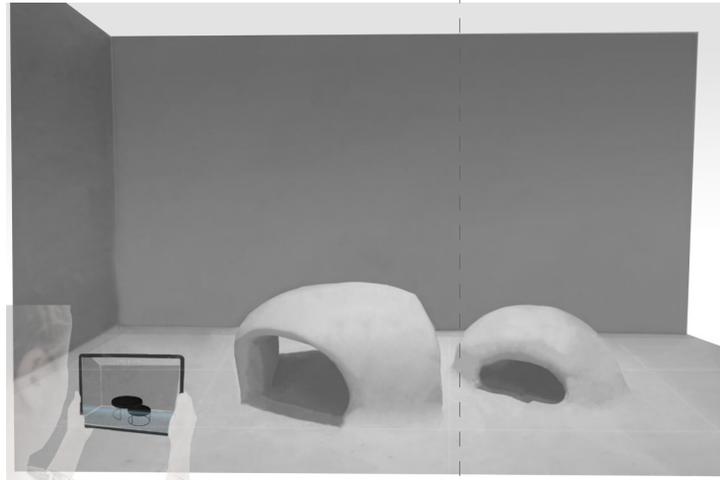


THE FUTURE OF
HOME AND MOBILITY

THE RE:PLICA

MODEL TESTING

The | RE:plica



CHAP.
FIVE

55
85

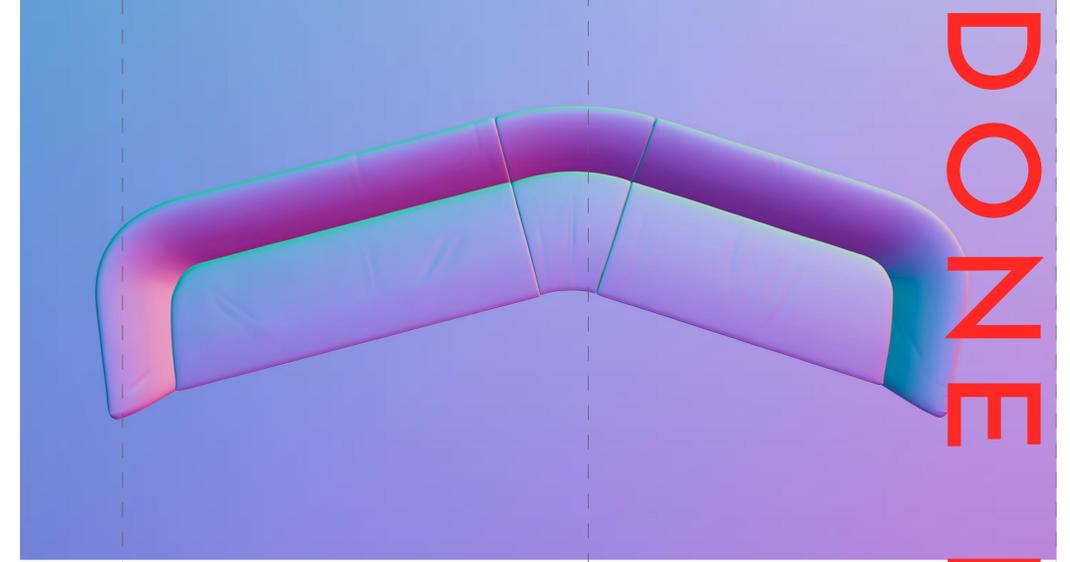


THE FUTURE OF HOME AND MOBILITY

The RE:plica would be comprised of two essential parts, the first component being an application on a device used by people in 2050. Connected to the data server, the application would work as a multifunctional program. Equipped with accurate LiDAR technology and advanced AI recognition, it would scan a user's original home environment. During this stage, the spatial structure and scale would be recorded in extenso with detailed material and texture analysis to enable further creation of texture and irradiance map. The program would detect and identify each item within the space and automatically categorise them into the online archive of the user's home, viewable later via the application. At this stage, everything within the space would have been documented, digitised and stored on the cloud server. Unlike VR or AR spaces, contact with the home would have to be achieved via physical mediums. The solution is found within the second component of the system: block modules of free deformability. The upper part of the block would be made of a stimulus-response smart material⁶, with the lower section hiding its controlling system. Modules would be installed with gaps between the original surfaces of the room and themselves, forming an inner insertion within the property's structure. Once the user arrives at a space with a full installation of the modules, triggered by signals from the controlling system, they would extract the 3D models of their original home and shift the upper flat smart material layer into their familiar environment. In the meantime, the space between the walls and modules would leave enough room for transfer and storage of belongings and equipment that require energy (electricity, water and heating).

The | RE:plica

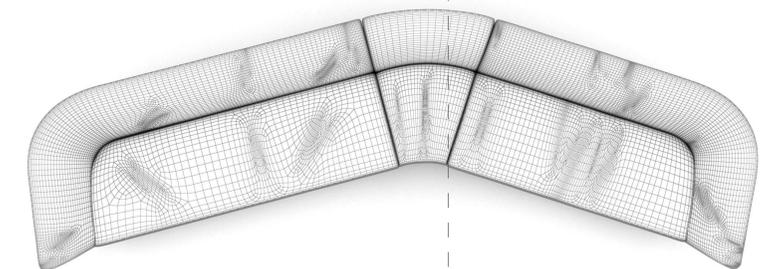
SCANNING



BUILDING DIGITAL MAPS



STORING DIGITAL MODEL

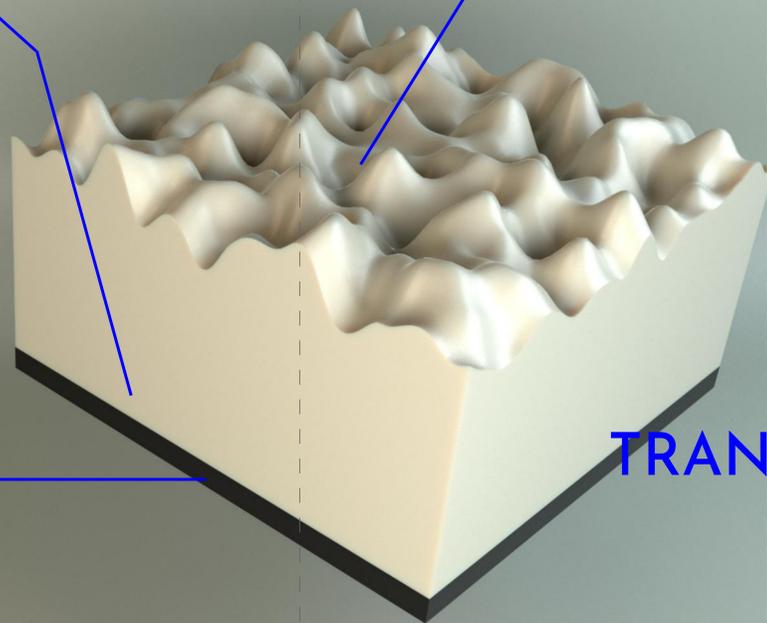


THE BOARD

The main material of this board would be made from a new intelligent material. Controlled by the bottom panel, the material will be soften to shift shape when received the electromagnetic signal. When no signal is received, it would be strong and solid, holding the shape till the next instruction.

The surface layer of the board would be applied a thin synthetic coating on low resistance, which would provide sufficient electromagnetic shielding from the controlling pannel.

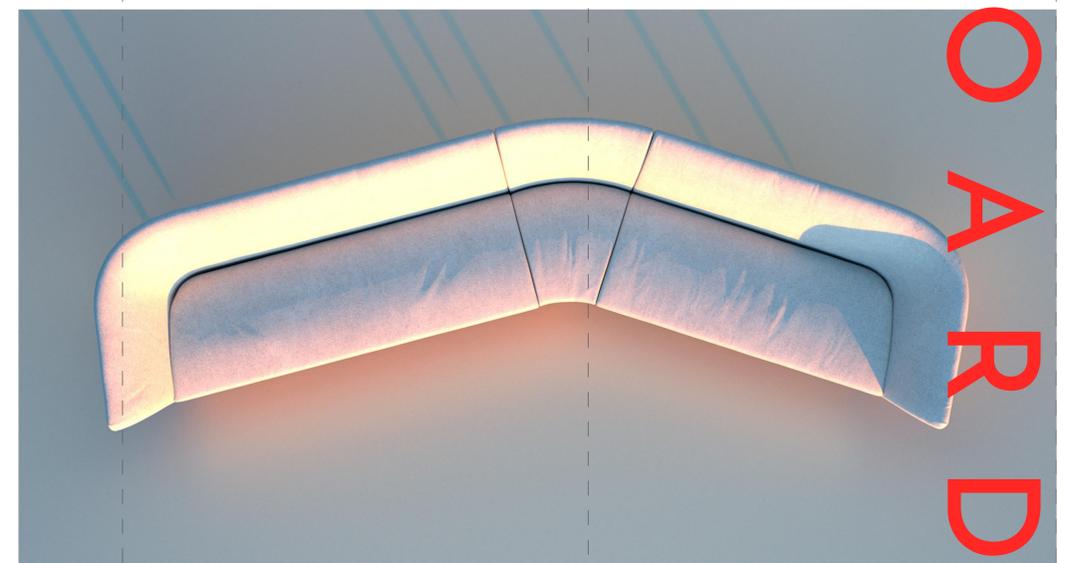
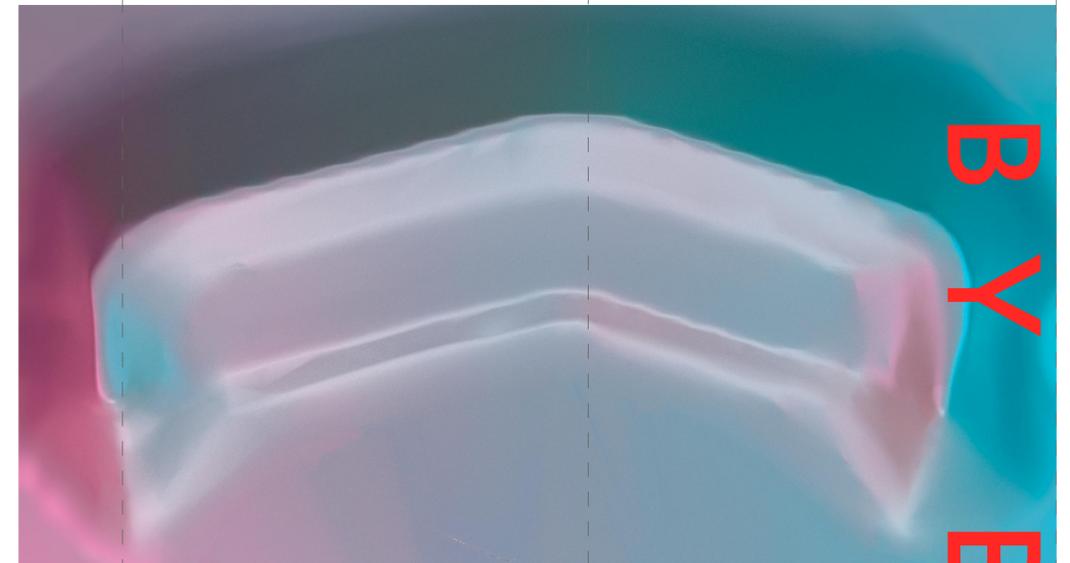
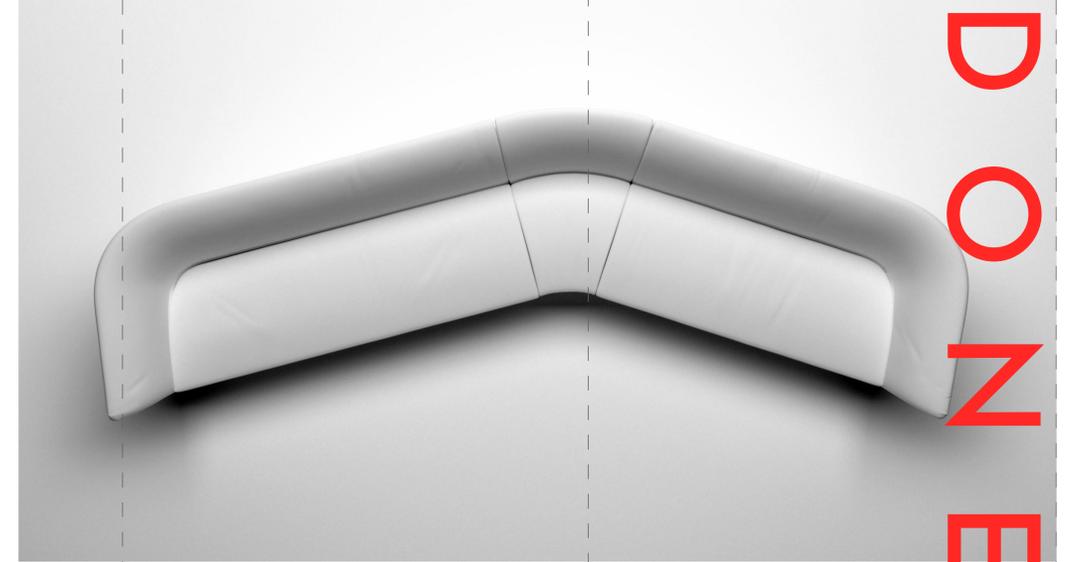
The controlling panel receives signal from the application and surrounding environments. Its inner structure would broadcast electromagnetic signals to the upper materials.



ANALYSING
RADIANCE
VIRTUALLY

REACTING
TO
SIGNALS

TRANSFORMING
TO
ORIGINAL
SHAPES
AND
TEXTURES



D
O
N
E

B
Y
B

O
A
R
D

THE RE:PLICA



THE FUTURE OF
HOME AND MOBILITY

CHAP.
SIX

JESUSAS 2.0

JESUSAS 2.0:

THE PERFECT PRESERVATION

58
85

The | RE:plica



SCANNING JESUSAS

JESUSAS 2.0

After Nina's order from The RE:plica's website, the scanning device would be delivered to her parents, who would still live in Jesusas during her neo-nomadic life. Nina's parents would be glad to try this new technology.

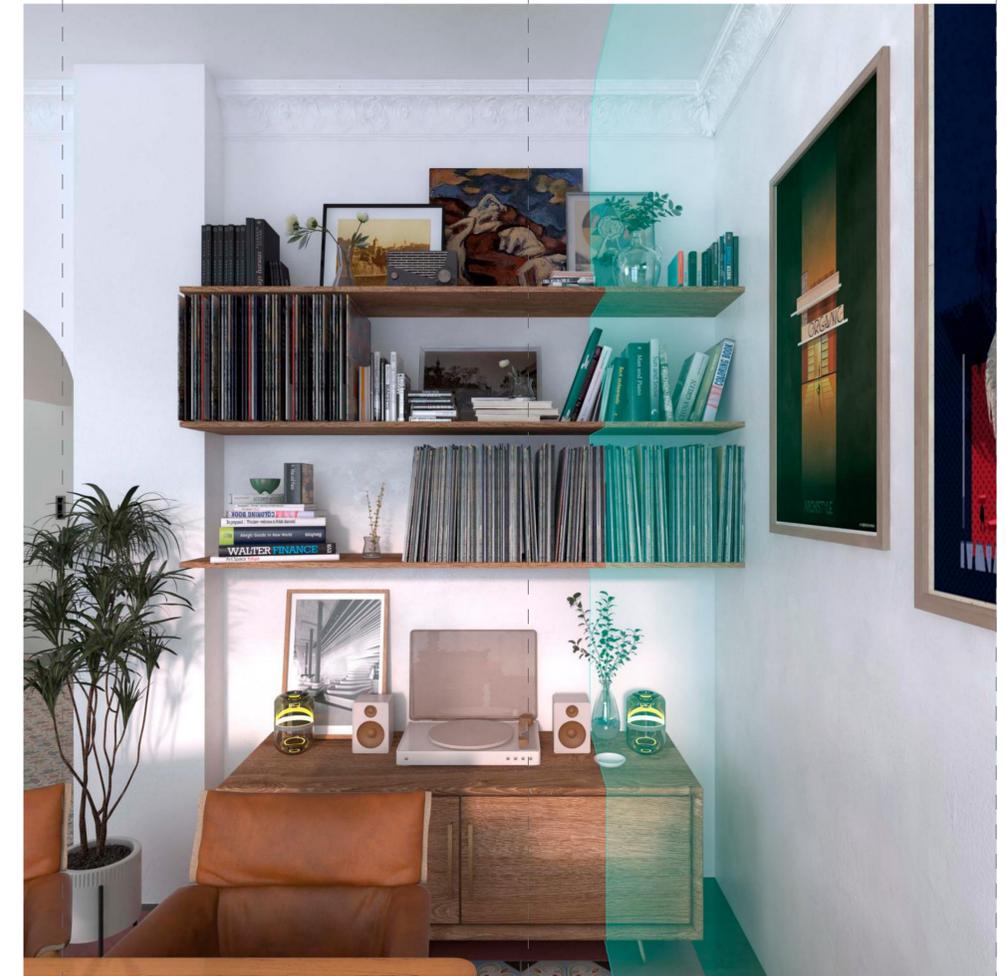
The | RE:plica



THE FUTURE OF
HOME AND MOBILITY

JESUSAS2.0

The | RE:plica



CHAP.
SIX

60
85



THE PREVIEW

JESUSAS2.0

After the scanning, the model would be send to Nina's server through cloud servers. Living in the property fully installed with RE:plica boards, which looks exactly like an plain white room, Nina would be excited to try the system.

The | RE:plica

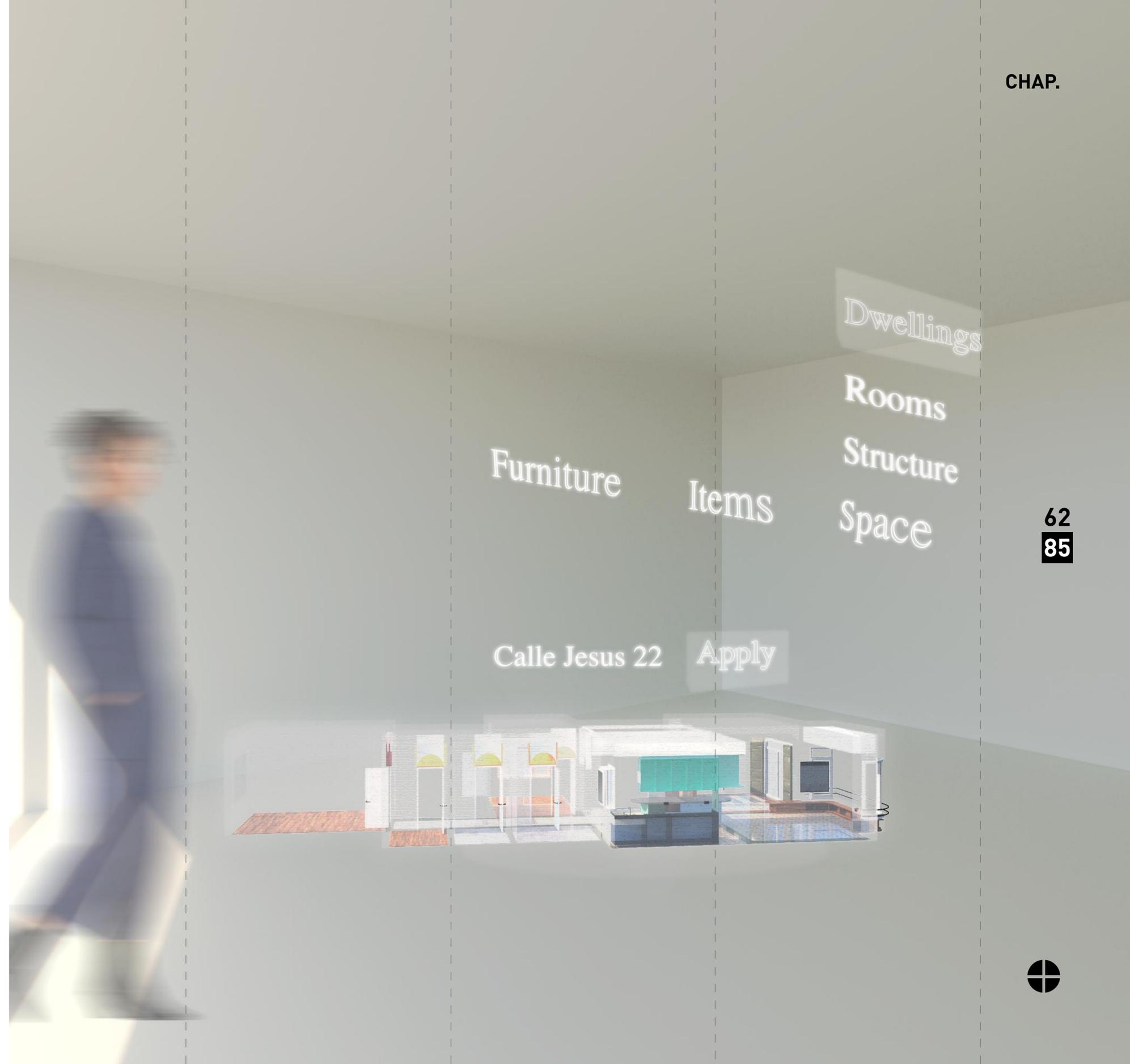


THE FUTURE OF
HOME AND MOBILITY

The system would give her previews of the scanning result, in which the furniture and items have already been organized and archived into different sections.

In the preview mode, Nina can view all models in 3D. With a wave of hand, the item would spin according to her motions.

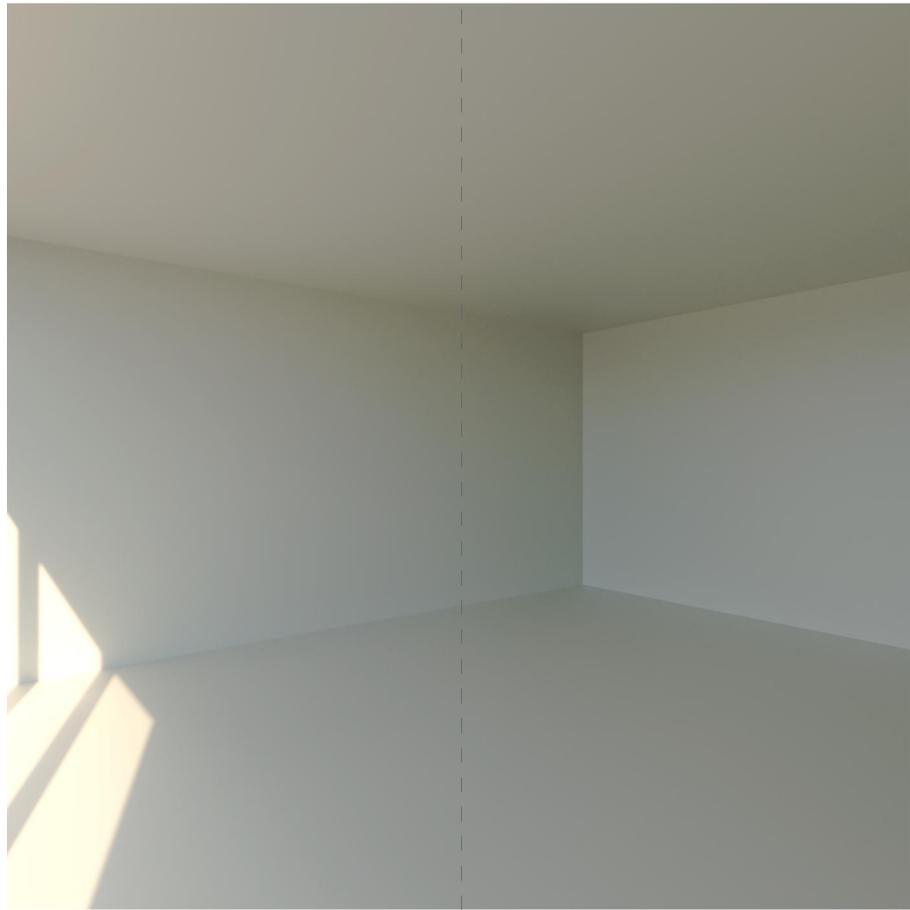
The | RE:plica



THE FUTURE OF HOME AND MOBILITY

Nina would try to extract spaces in Jesusas. With one click to the site model, the system would locate and match the physical space with the digitized space's coordinate, bring Nina's original home to her side.

JESUSAS 2.0



The | RE:plica

CHAP.
SIX

63
85

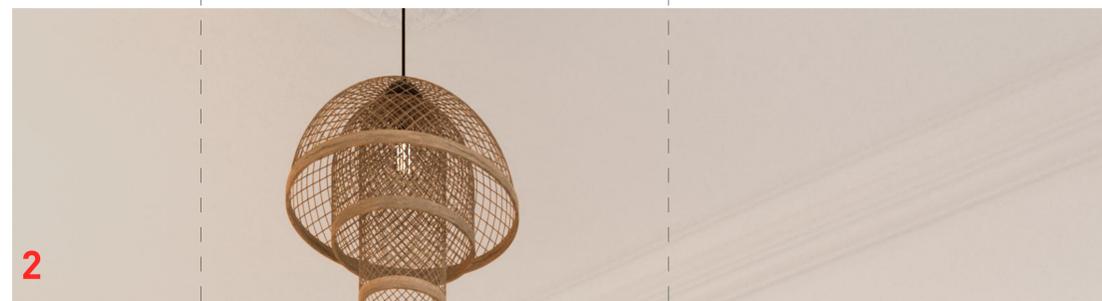
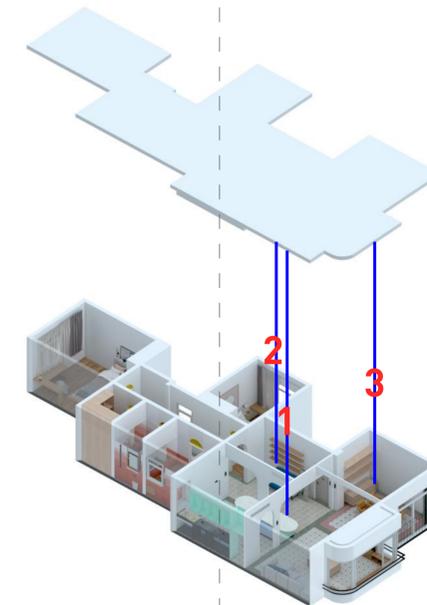


THE FUTURE OF HOME AND MOBILITY



The | RE:plica

A significant goal of the RE:plica is to preserve the idea of comprehensiveness. Fragmented pieces that seem isolated are brushstrokes on the owner's portrait. The vinyl records and turntable could be taken, but the larger possessions are tied to Jesusas. The RE:plica would enable a reproduction of Jesusas in Nina's new rental property. Using extractions from the original home, missing possessions would be retrieved, from the familiar structure to materiality. Nina's belongings could also return to their original positions, while new items collected through nomadic living meet the old. Hence, the RE:plica surmounts physical restrictions and broadens the concept of belonging.



P O S S E



THE FUTURE OF
HOME AND MOBILITY

JESUSAS2.0



The | RE:plica



CHAP.
SIX

S
S
I
O
N
S

65
85





As repetitive behaviours, rituals are founded in certain contexts. Without these contexts, rituals easily fade away in time. That is to say, rituals that are instilled in a particular domestic environment are likely to dissolve when the setting becomes unfamiliar. In my primary research, many respondents with overseas backgrounds complained that a rental property filled with crudely made cheap furniture would drain their enthusiasm and energy to sustain rituals, but that they would still choose them because they are inexpensive and easy to assemble and carry. The RE:plica can recreate not only the physical reality of the original home, but also the potential for resuming treasured rituals. With the system shifting the space to the correct illumination and environment, it is not difficult to imagine how Nina would sit by the bay window watching the sunset while the breeze wafts the fresh scent of flowers and dry ink to her nose.

R

I

The | RE:plica
T



U
THE FUTURE OF
HOME AND MOBILITY

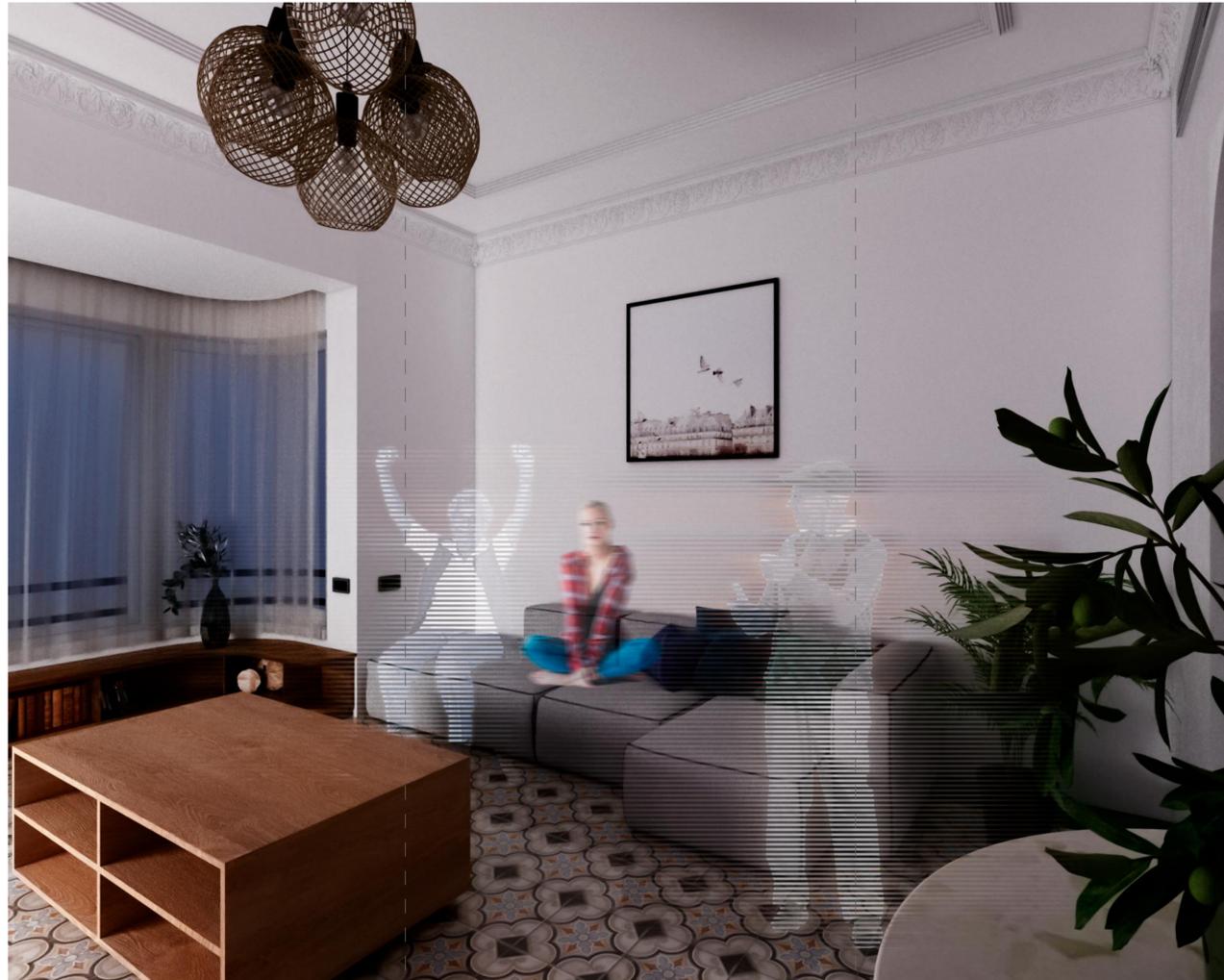
A

L



The | RE:plica





The | RE:plica

Although phones can bring our family's faces and voices to us, there is still no way of bringing people together in a physical communal space. However, it is possible to use virtual reality to meet online. As stated in my RR, Facebook is building an online socialising platform called Horizon, which will allow people to build complex interactions with friends within the evolving virtual world. The RE:plica can be seen as an alternative reality applied to a physical reality. The overlapping of these two realities can be perceived as the bending of a 3D space, such as a wormhole, by adding a new dimension and connecting two physical spaces - unthinkable before now. Using holographic technology, Nina would physically sit on the same sofa as her family, who would be projected into her 'Jesusas', laughing and cheering at the same football match.





THE FUTURE OF
HOME AND MOBILITY

M O R I E S

The | RE:plica



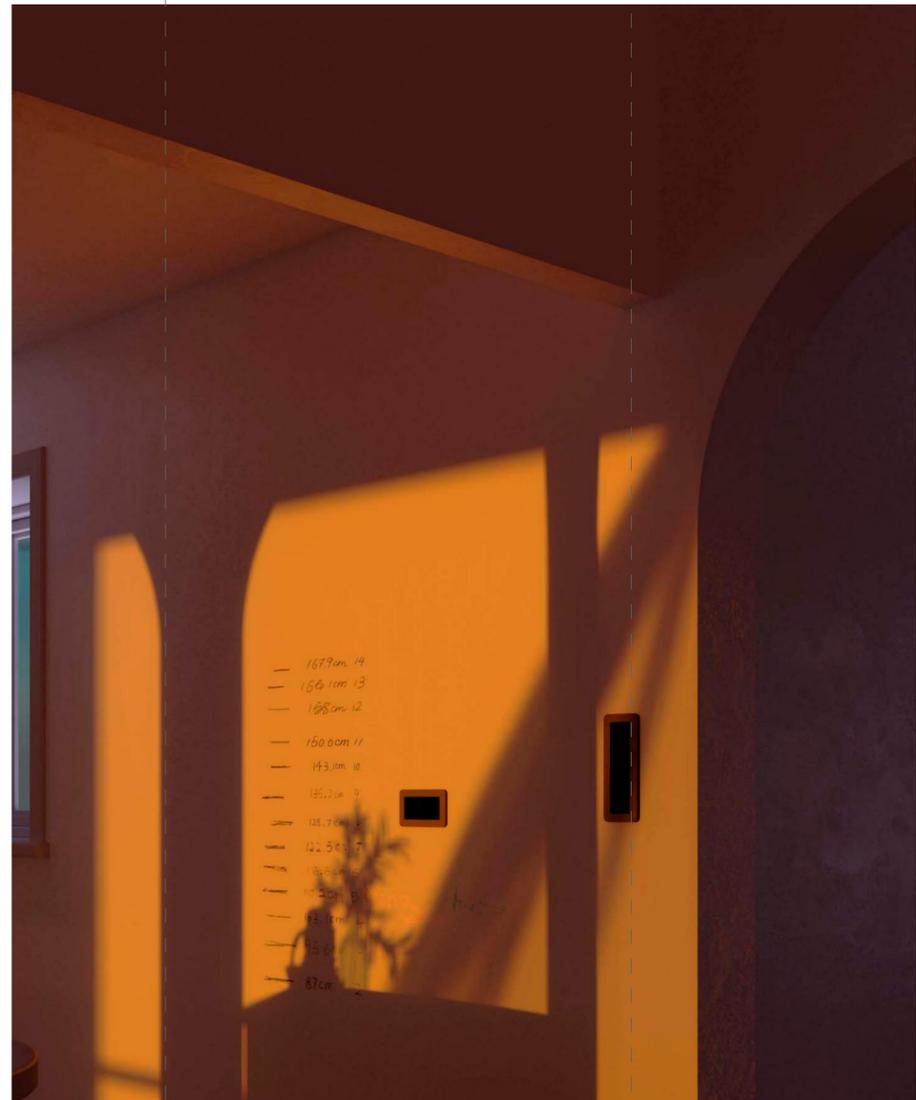
The design of the RE:plica would not just bring Nina's memories back to her. Although things that happened before Nina's first encounter with the dwelling system would be irretrievable, the RE:plica would offer an opportunity to record and archive her amazing home moments in 3D and upload them to her personal encrypted server. In the future, she may be able to browse her life in the same way we browse our photo albums; only this time, she could physically walk into the memory.

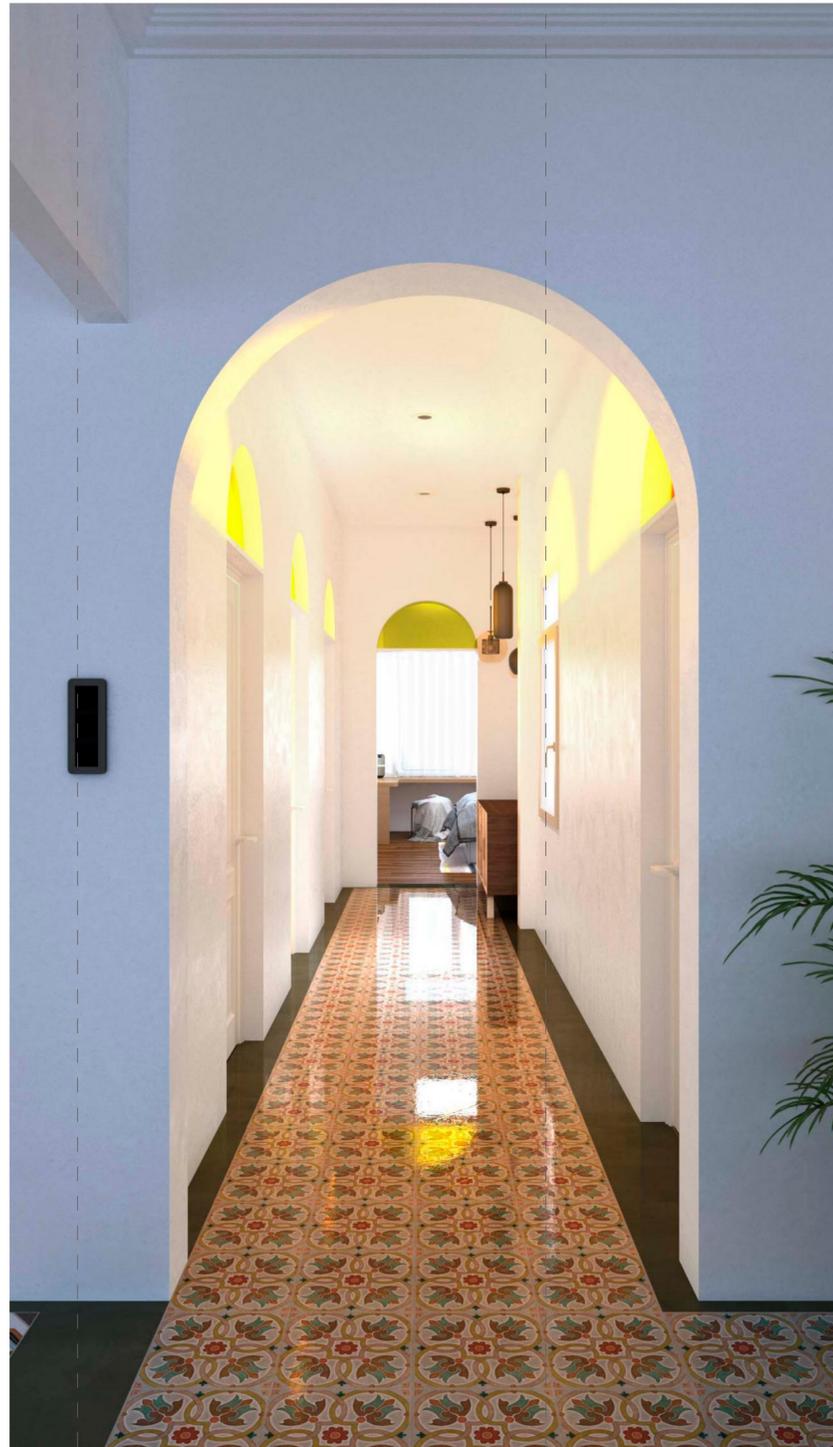


THE FUTURE OF
HOME AND MOBILITY



The | RE:plica

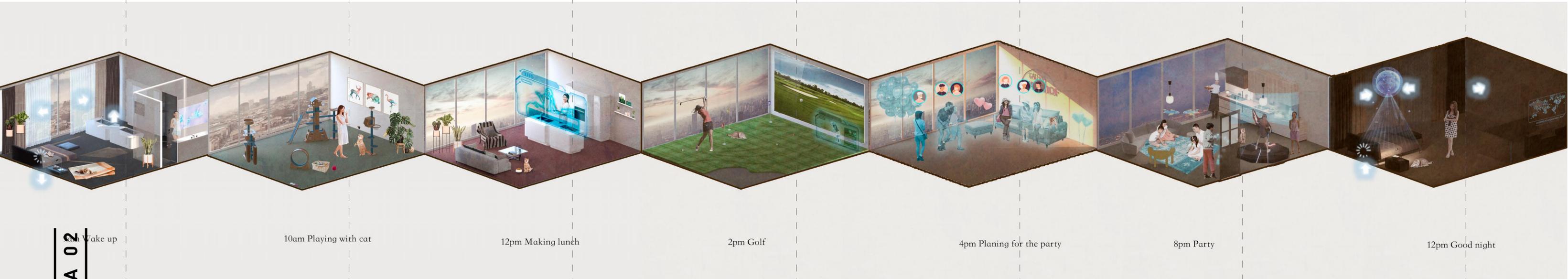




RESIDENTIAL USE:

*A System That
Welcomes Everyone*





RE:PLICA 02

7am Wake up

10am Playing with cat

12pm Making lunch

2pm Golf

4pm Planning for the party

8pm Party

12pm Good night

74
85

Figure: the timeline of a girl's one casual weekend living showing how can the programme be used to suit various demands. The design of the RE:plica is a human-centred proposal, putting focus on the majority's need rather than gazing at the underprivileged with the white-man-standardised condescending empathy.

Within the residential industry, the RE:plica will open up a whole new vista for designers. Homes will be digitised, so products and furniture purchased in the future would become no more than data flows. With one simple click, the bedroom could transform into a living room, a golf park, or even the surface of the moon. With one simple gesture, the desk surface rises to match your standing position, or shifts into a ring shape, providing improved reach in every direction. People might organise their physical homes in the same way they play decorating games. Meanwhile, textures and materials can go beyond the limitations of physical materiality.





Figure: How can two-occupier property be used.
A couple shaping their desks into a interactive environment.



Figure: How can three-occupier property be used.

Three kids are shifting their home into a playground. The
mav

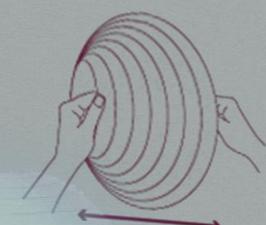
76
85



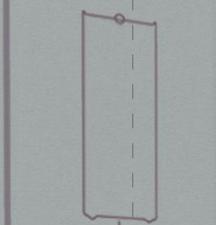
RE:PLICA 02

Lantern Assembly Instructions

1. Open the lantern by holding the wire at the top and the bottom and pulling gently.



2. Insert the wire frame into the lantern. Pull up gently and secure the lantern open with the wire tabs.



3. Attach a string (not included) to the wire loop in the center of the wire frame.

Hang where desired.

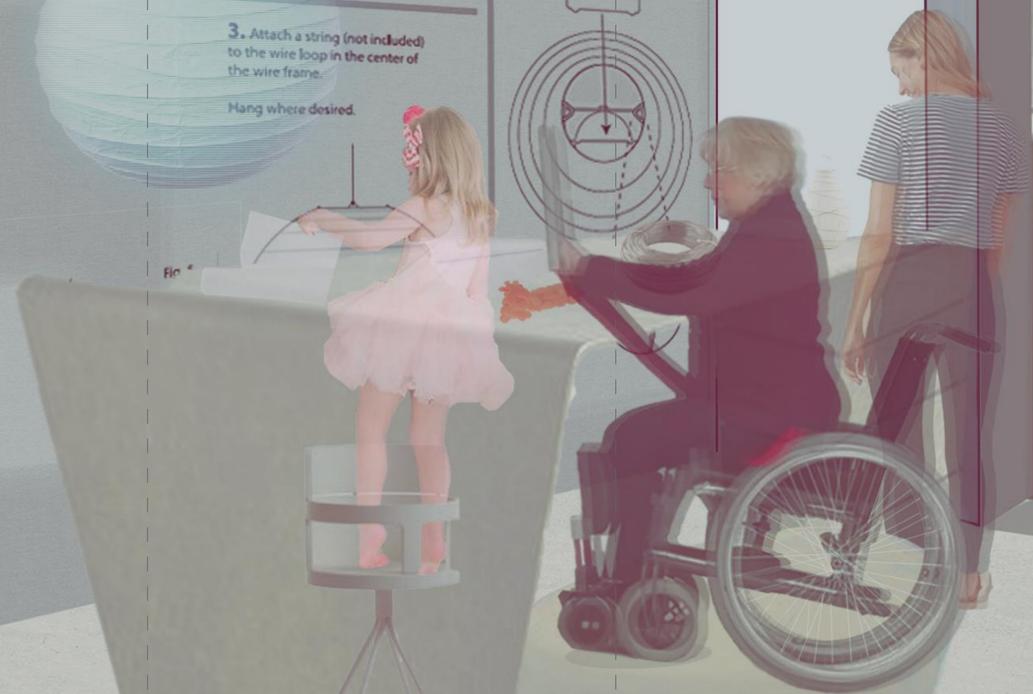
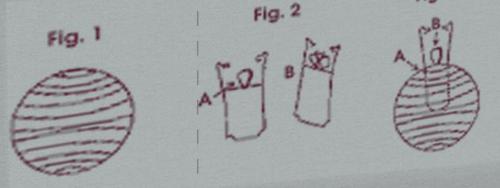
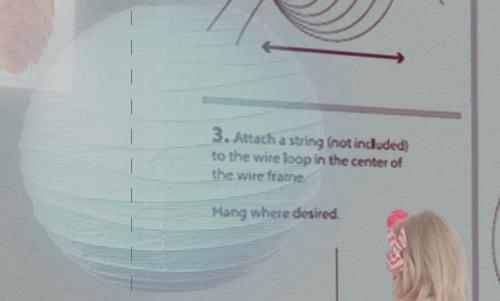


Figure: the figure showing how a 5 people family can use the system. The grandma in wheel chair would be lifted to the same height to the table. The grandpa with senile dementia would be bring back to his familiar environment to help him do the memory training.



THE RE:PLICA VER. 02:

RE:PLICA 02

A Dynamic Future

The hospitality industry would need to find new ways of attracting customers' attention, providing high-end services and unique, varied designs. The system could also be installed in hospitals, generating a familiar environment for patients to help relieve their stress. It might help people who suffer from senile dementia by extracting and reconstructing records of their past memories. The RE:plica also shows prospects in the retail, theatre and gaming industries. Outdoors, a system with stronger waterproofing or other qualities might be applied to exterior and public spaces, or facilitate the creation of popup spaces.



HOSPITALITY

Customize your stay.

Jolie de Vivre

RE:PLICA 02

79
85

The | RE:plica

Click to view in 3D.



THE FUTURE OF
HOME AND MOBILITY

CHAP.
EIGHT

RE:PLICA 02

HOSPITAL

The | RE:plica

80
85



R E T A I L

RE:PLICA 02

81
85

The | RE:plica



O F F I C E

RE:PLICA 02



82
85



Architect Bernard Cache once stated in his essay *Le Pli: Leibniz et le baroque* that, in contemporary conditions, no law is always effective. The norms are always changing, and objects constantly fix their positions within those changes (Deleuze, G. 1988). This means that objects are no longer moulded from space with fixed identities, but are being redefined based on a system that constantly produces differences. Information received from the user and their environment would be analysed by The RE:plica's AI, and the system would self-regulate to a better form and materiality in line with ergonomics and smarter functioning. Although the module is of standardised production, appearing simple from the outside, the technologies behind it maximise the fluidity of space, goods and even our future.



During my study at Chelsea, I have always been interested in themes around preservation, identity, and multi-disciplinary design. In this globalised, interactive and highly mobile world, 'home' is much more than a by-product of the industrialisation of architecture and its products. It is both the intersection of various industries and the foundation of cultural life that vary from a minimum space to a vast open space, along with the collection of traditional crafts, industrialised products and new technologies (Hannerz, U. 1996). Meanwhile, new connections and integrations between people have emerged. Lifestyles involving shared services or the construction of interpersonal networks beyond physical space are constantly being developed. It is conceivable that the definition of 'home' will unavoidably require major change.

Modernists fail to fit all the requirements of dwellers into modular buildings and design (Smock, W. 2004). Even though they have pursued the concepts of the simplicity of geometric shapes, functionality and speed, many of their designs have developed into an incessant chasing of pseudoscience, meaningless curves and lines without internal functionality, and the utopian dream that billions of people would act in the same way as one perfect person (Epstein, D. G. 1973). The improvement and adaptation of design before modern times relied on individual judgement. 'Universal design' later removed the possibility of deviating from it (Sinclair, L. 2018). To regain control of personal power, post-modernists tried to deny every single principle and design of Modernism. Current critical practice focuses on the process and not the result. Professionals no longer comment on designs based on rational concepts and real functional issues (Gompertz, W. 2012). The simplicity seen by the naked eye does not reveal the complexity behind objects. Mobile phones are widely used, but most of us know very little about their structure. The perplexity of the unknown made post-modern designers vigilant geometric shapes and exposed structures (Smock, W. 2004). Less is not necessarily better, but more is not really practical. Whether modernism, post-modernism, or the dualism that continues to this day, it is a fact that people tend to habitually classify things, especially into two opposite aspects. When Le Corbusier referred to a house as a 'machine for living in' (1927), all other definitions of home were rejected, such as a 'tent', a 'nest', and 'family stories'. Post-modernism chooses to accept everything else, while excluding the concept of the 'machine'. But why can a home not be both? The insight of modernists' pragmatism and the freedom of post-modern designs are not opposites, just like the relationship between neo-nomadism and residence. Phones are functional, yet no one would deny the freedom they give. My proposal, the RE:plica, aims to break the seemingly unbreakable boundaries that lie between. A neo-nomad could live in a settled home, while a resident's life could be as mobile and fluid as a neo-nomad. This design returns the right of decision-making to the users from the control of a designer's subjective perception.

