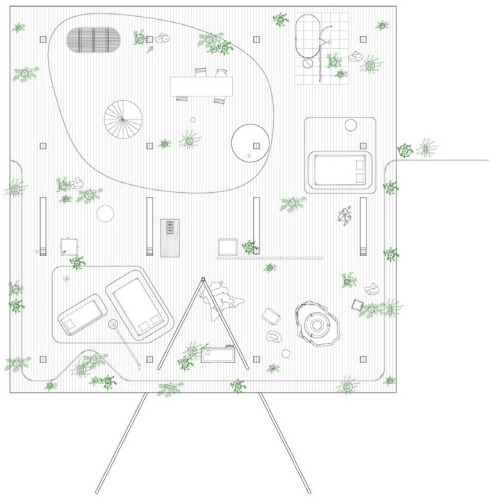
The Hut in the Bush Rooftop

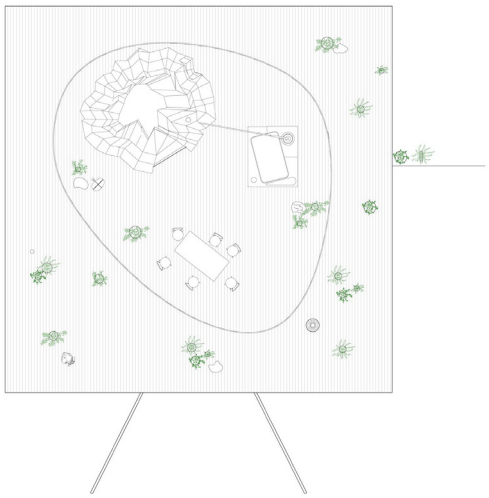
The Hut in the Bush Main Floor

The Tower in the City Morning

The Tower in the City Dinner



Ground floor plan

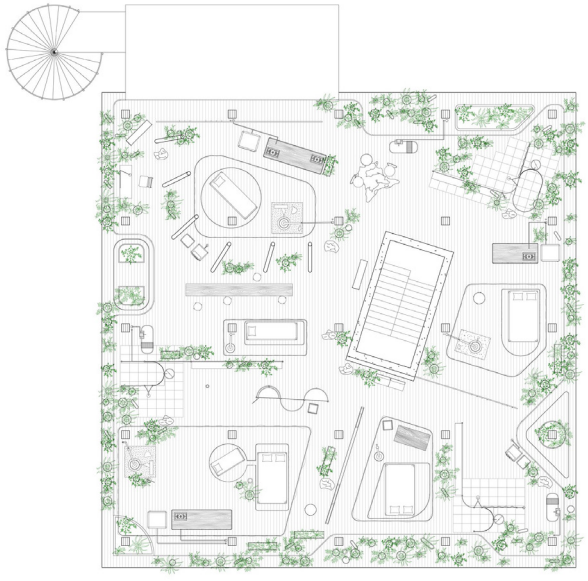


Level 1 plan



The Hut in the Bush





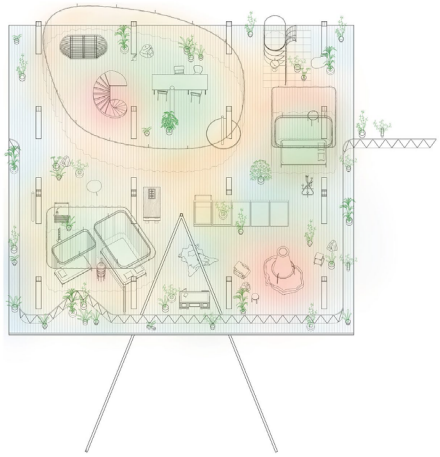
Generic plan



The Tower in the City

**1 Heating Mode**

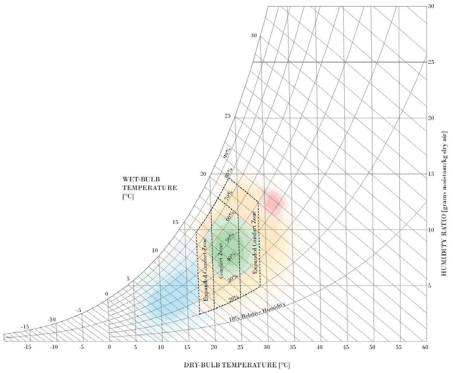
*Psychrometric Axonometric*



*Ambient Conditions:*
*Temperature: 5-17°C, Relative Humidity: 20-90%*

*Predicted Operations:*
*Radiant Modules Filled with Heated Water, Electric Blankets Turned On, Thermal Curtains Closed, Thermal Mass Moved Into Direct Solar Radiation*

*Psychrometric Chart*




*Interior Climate Zones:*

*Zone 1 [Temperate] - Temp: 18-26°C, Rel. Humidity: 30-70%, Max.Noise: 20-50 dB, Max.Wind Vel: 0.1 m/s*
*Zone 2 [Mixed] - Temp: 16-28°C, Rel. Humidity: 20-90%, Max Noise: 50-60 dB , Max. Wind Vel: 0.3 m/s*

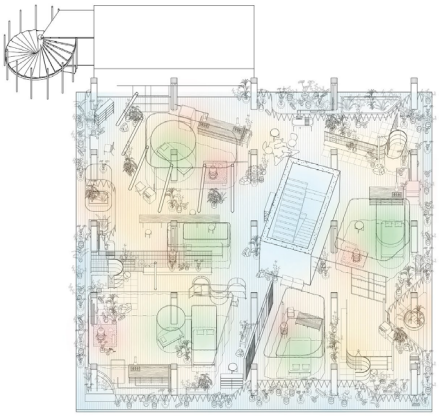


The Hut in the Bush Psychrometric Plan



**1 Heating Mode**

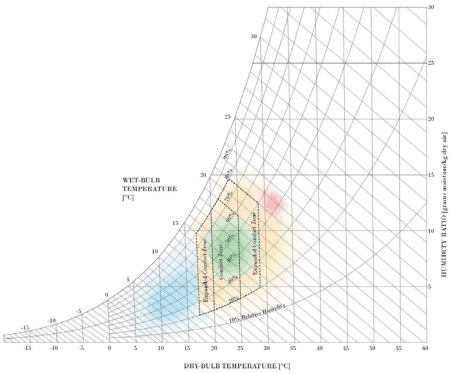
*Psychrometric Axonometric*



*Ambient Conditions:*
*Temperature: 5-17°C, Relative Humidity: 20-90%*

*Predicted Operations:*
*Radiant Modules Filled with Heated Water, Electric Blankets Turned On, Thermal Curtains Closed, Thermal Mass Moved Into Direct Solar Radiation*

*Psychrometric Chart*

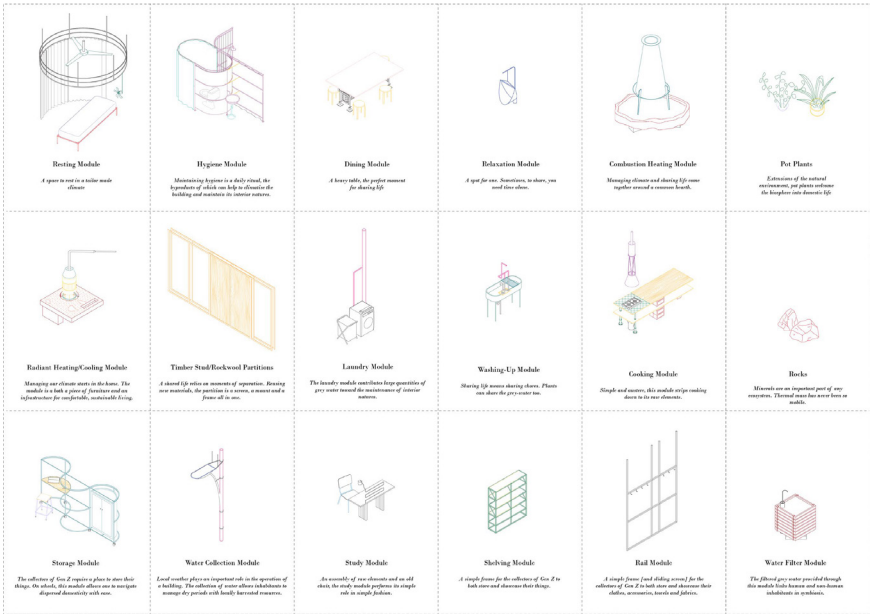



*Interior Climate Zones:*

*Zone 1 [Temperate] - Temp: 18-26°C, Rel. Humidity: 30-70%, Max.Noise: 20-50 dB, Max.Wind Vel: 0.1 m/s*
*Zone 2 [Mixed] - Temp: 16-28°C, Rel. Humidity: 20-90%, Max Noise: 50-60 dB , Max. Wind Vel: 0.3 m/s*



The Tower in the City Psychrometric Plan

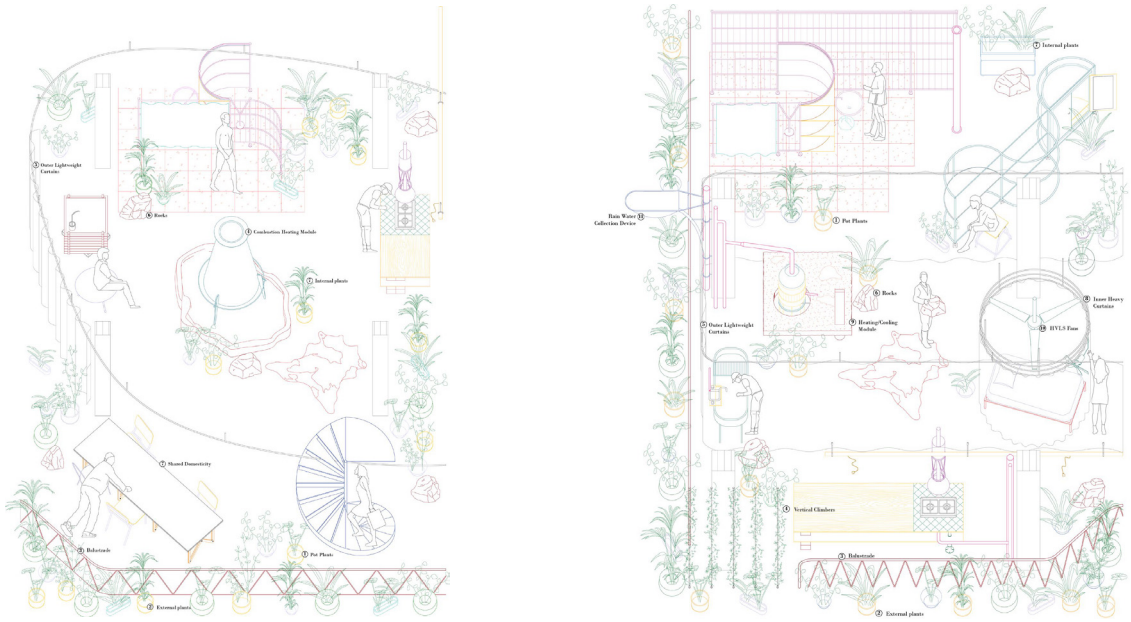



Catalogue



Catalogue of Technical Solutions



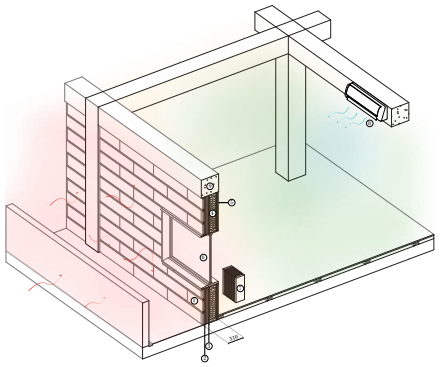



Two scenarios deployed



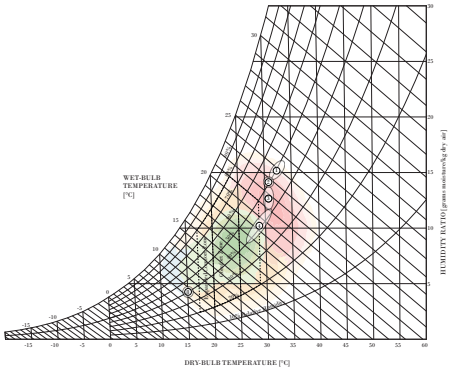
Technical Solutions on site

Hypothetical Psychrometric Axonometric
*Traditional Facade - Cooling Scenario*



1. Exterior Cladding
*Rainscreen, windbreak and shading*
2. Air Gap
*Insulation and water management*
3. Vapour Barrier
*Reduces infiltration of moisture*
4. Insulation
*Thermal and acoustic barrier*
5. Internal Finish
*Typically a plasterboard finish*
6. Glazing
*Transparent interface to allow for transmission of light between interior & exterior. Poor insulating qualities.*
7. Conventional Radiator
*Typically electrically powered heat source to manage cooler periods*
8. Conventional Air Conditioner
*Electrically powered convection device for management of temperature and humidity*
9. Concrete Beam
*Structural element that can create a thermal bridge between exterior and interior*

Hypothetical Psychrometric Chart
*Traditional Facade - Cooling Scenario*



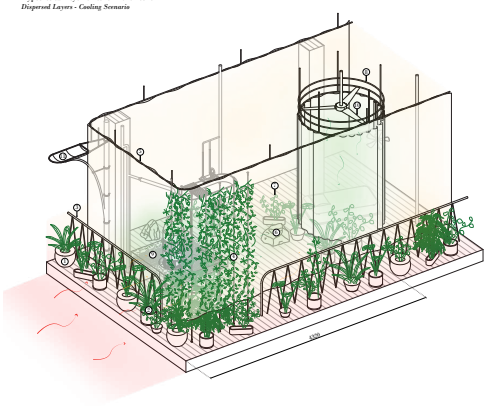

**Indicative Scenario**
*External Temperature*
**33°C**
*External Windspeed*
**5 m/s**
*External Rel. Humidity*
**50%**
*Conditioned Air Output Temperature*
**15°C**
*Conditioned Air Output Humidity*
**40%**



Traditional Facade - Cooling Scenario

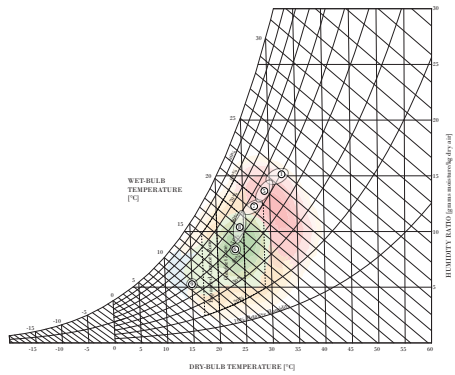


Hypothetical Psychrometric Axonometric
*Dispersed Layers - Cooling Scenario*



1. Pot Plants
*Shading, thermal mass, acoustic baffle, windbreak, evaporative cooling and rain screen*
2. External Plants
*Gravillea Olivacea, Banksia Ericifolia, Casuarina Equisetifolia, Callistemon 'silver cloud'*
3. Balustrade
*Device to secure objects and occupants from falling*
4. Vertical Climbers
*Shading, acoustic baffle, windbreak and rain screen*
5. Outer Lightweight Curtains
*Initial thermal barrier, shading, acoustic baffle, privacy screen, windbreak, rain and insect screen*
6. Rocks
*Mobile elements for the management of thermal mass*
7. Internal Plants
*Cordyline stricta, Platycerium spp., Lomandra longifolia and Schefflera actinophylla*
8. Inner Heavy Curtains
*Thermal barrier, privacy screen and acoustic baffle*
9. Heating/Cooling Module
*Radiant temperature management device using circulated heated/cooled water*
10. HVLS Fan
*Electrically powered, slow moving fan for ventilation, humidity regulation and cooling*
11. Rainwater Collection Device
*Device to collect rainwater for water-using modules*

Hypothetical Psychrometric Chart
*Dispersed Layers - Cooling Scenario*




**Indicative Scenario**
*External Temperature*
**33°C**
*External Windspeed*
**5 m/s**
*External Rel. Humidity*
**50%**
*Radiant Module Water Temperature*
**15°C**



Dispersed Layers - Cooling Scenario

Introduction

The Future of Living

How do Australian Gen Z and Millenials, who are currently shaping their future life, imagine their home? What are the domestic values and hopes of two generations that had their coming of age in the Information Age, and who naturally embrace digital technology and social media? What do size, scale, material and technical innovation mean for a climate-conscious group of people that have lived through COVID-19 confinement, an endless real estate bubble and recurrent economic crises?

The Future of Living report outlines research conducted by UTS supported by Allianz Australia. The report explores five transversal values that Gen Z and Millenials share.

1 Unaffordable real estate markets and the dissolution of the nuclear family have reorganised the traditional Australian home. New forms of sharing life, based on alternative ownership models, question who might cohabitate and how they could arrange a life together.

2 Sustainability, recycling, environmental awareness, and carbon footprints are now everyday concerns. Australian Gen Z and Millenials fight climate change from the interiors of their homes.

3 Gen Z and Millenials welcome nature in. Challenging traditional divisions between the garden and house, between interior and exterior, and between nature and artifice, they imagine their domestic spaces as part of Australian landscape and the biosphere at large.

4 The phenomena that has flooded our lives with hipster bread and barber razors has reached the home. Natural materials that combine nostalgia with contemporary models of consumption define Gen Z and Millenial's preferred material palette.

5 Gen Z and Millenials possess an aesthetic sensibility capable of combining the desire for a bygone authenticity with the perpetual cycle of consumer emergencies that define their lives. Known as *Austerity Chic*, this sensibility melds moments of exquisite design with ad-hoc furniture sourced from IKEA and Gumtree.

*The Future of Living* is a proposal for a home that responds to these needs, hopes, and aspirations. Designed around five main areas of research: sharing life, managing climate, naturalised interiors, reusing new materials and Austerity Chic, the project aims to construct the Australian house of the future for Gen Z and Millennials. The project is an excuse for a theoretical discussion about the immediate future as much as it is a prototype ready for mass production.

The first section of this dossier is an atlas of precedents that explores how architects have dealt with similar challenges over the last ten years. Spanning between Australian examples and international sites, the list of projects outlines the state-of-the-art in contemporary domestic architecture. The second section of the dossier includes the blueprints and images of *the Future of Living*. Initially conceived as an isolated unit, this system of living has also been deployed as part of a tower. The domestic desires of Gen Z and Millennials are complex. The childhood memories of their parents' single family house compete with the seductive powers of urban life.





Notion 2

Sharing life

In Sydney, hundreds of thousands of people live in shared apartments. Many students, workers, and young professionals can only afford a house by sharing costs, life and space. Sharing a home is more common among Gen Z and Millennials. Friendship, new family models, informal agreements, and collective dinners outline models of ownership yet to be translated to the marketplace. According to our research, two models of shared ownership have emerged in the last few years.

1 The service provider model substitutes traditional ownership for a membership model in which users pay a weekly fee for the amount of domestic space they use. Membership contracts define levels of access, facilities and personal space. Co-working experiments in recent years have laid the foundations for the emergence of this model in the domestic realm.

2 Collective ownership eliminates the sole owner and distributes initial investment, risk and decision making among a group of members. Cooperatives like the Commons in Melbourne or La Borda in Barcelona lead the way in exploring how architecture can facilitate negotiations between the members of a cooperative. These successful projects also prove that participatory processes not only help to customise the homes of each member; they also develop community bonds and define — and often increase — the amount of space that members agree to share.

The architecture of *The Future of Living* makes it suitable for both ownership models. Thermal curtains, translucent enclosures, transparent veils, recycled fabrics, stone partitions, timber studs, and metal sheets divide its open plan and allow for a wide range of spaces, with various levels privacy and publicness. These temporary partitions facilitate everyday activities and adapt to its changes. Their effortless flexibility suits the demands of ordinary, contemporary life.

Nicole Eisenman, "Another Green World" (2015)





Notion 2

Managing Our Climate

In less than four months Gen Z and Young Millennials have endured the Australian bushfire crisis and the COVID-19 global pandemic; they are well aware of Climate Change. They rightfully, and finally, are beginning to question humanity's relationship with Earth, predominantly our consumption of energy and dependence on carbon.

1 Energy consumption and comfort levels are closely linked. Temperature, light intensity, relative humidity, noise levels and air velocity define climatic comfort. These conditions vary throughout the year. Inside a house, how much we control our climate defines how much energy we consume. To reduce energy consumption, instead of acclimatizing an entire house, we can attain comfort by ensuring that only selected areas of a house enjoy a stable climate.

2 The rest of the house can use a combination of passive and natural means to adapt to changing climate conditions. For example, Sydney's summer period requires an architecture that reduces heat (by increasing shading), decreases humidity (with absorbent materials and sheltering from rain) and ameliorates polluted air (by adding plants that filter the air and reduce environmental noise).

As a result, *The Future of Living* does not have a unified facade (typically, the facade represents up to 30 per cent of the overall construction cost). Rather, it has multiple layers that protect small, acclimatised spaces. Each layer plays an active role: Plants, thermal curtains, polycarbonate, stone, wood, air, heating, and cooling appliances adjust to maintain the comfort of the home. They require the dwellers to actively participate in the control of the house's internal climate and by extension in the management of energy consumption.

Sauna (2016) Meyer-Grohbrügge & Chermayeff with Arno Brandlhuber





Notion 3

Naturalised Interiors

Gen Z and Young Millennials recognise their home as an extension of the natural environment. They welcome birds, plants, rocks, micro-organisms and inorganic matter in. This empathic relation with the biosphere is evident in their domestic life, as the house becomes the site to connect with multiple species. Caring for plants and working the soil are activities that mediate between the world of insects and birds, the scale of the human body and the territory. The care is reciprocal. The plants and the soil are essential for the house's climatic performance. They are a diffuse barrier that reduces wind velocity, blocks direct sun, screens excessive noise and filters pollutants. Local species benefit from local environmental conditions and perform essential roles in controlling interior climates. Specifically, species endemic to the ubiquitous heathland that fringes Sydney's coastline are well adapted to the climate and perform similar roles within their native ecosystem.

1 Well adapted to periods of drought and long summers, species such as *Grevillea Oleoides, Banksia Ericifolia, Casuarina Equisetifolia, Callistemon* 'silver cloud' will tolerate the pressures of a warming climate.

2 A move away from the facade demands species that thrive in lower light levels and the increased humidity induced by domestic programs such as bathing, cooking and washing. This microclimate, akin to the Sydney region's temperate rainforests, could host such species as *Cordyline stricta, Platycerium spp., Lomandra longifolia* and *Schefflera actinophylla*.

*The Future of Living* acknowledges the appeal of plants for Gen Z and Young Millennials. Flowering plants bring seasonal cycles, blooming and dormancy into the domestic realm along with a diverse ecosystem of pollinators and microorganisms. It also introduces thermal mass through a palette of local rocks, minerals and organic materials. The house becomes a complex ecosystem that includes the architecture, its users, organic and inorganic matter. Native plants, rocks and fauna replace traditional insulation and reaffirm a connection with local ecologies.

Photography by Tanya and Zhenya Posternak





Notion 4

Reusing New Materials

The predicted growth of the Australian population in the coming decades will accelerate housing construction and increase its carbon footprint. Gen Z and Millennials' growing environmental awareness calls for a shift toward more sustainable standards in the building industry. As a starting point, we need to change the way we build by shifting towards new construction systems and new forms of material reuse.

1 Mass timber embodies this generation's new paradigm of construction, much like steel and concrete did in the rise of modernity. Timber has a litany of benefits including carbon sequestration, lower embodied energy than steel and concrete, psychological benefits for inhabitants and more streamlined on-site construction.

2 Recycled or reused materials reduce carbon footprint by stimulating a circular economy. Through a practice of material reuse, the city itself is considered as a repository, not just of materials but also of vintage furniture, second-hand appliances and as-found objects.

*The Future of Living* uses a standard CLT timber grid, locally produced in Tasmania, as the main structural component. The skeleton, designed to last a 100 years, is balanced with other structural elements that add horizontal stability. CLT is a relatively new technology that has emerged most prevalently in Europe and North America. In recent years, the market for CLT in Australia has grown considerably and Australian-based manufacturers are currently making the shift toward local production of the material using the native species *Eucalyptus Nitens*. With the ability to bypass the economic and environmental impacts of global importation, a move to local production positions CLT as a sustainable option for the next generation of buildings in Australia.

*The Future of Living* also embraces material reuse. Apart from collecting and recycling construction materials and obsolete objects, the proposal imagines reuse them as part of new assemblages–constructions that combine unlikely elements and assign them new purposes. This approach addresses urgent questions of sustainability. It also recognises Gen Z and millennials' different view of history and technology as a resource for future innovation in the domestic realm.

Max Lamb and Gemma Holt's live-work space





Notion 5

Austerity Chic

Austerity Chic has been defined as the contemporary aesthetic sensibility that best captures Gen Z and Millennials' ambivalent relationship to the conflict between eternal growth inherent to capitalism and the Earth's limited resources. It is explicit in the architecture of their homes, which dissolve in multiple material ecologies. Rather than an iconic design of pristine finishes, Austerity Chic deploys a sort of assemblage aesthetics. Its constitutive elements are deliberately kept raw with the objective of preserving the connection between the home and larger material and cultural cosmologies.

*The Future of Living* is a dispersed collection of domestic environments, assembled in a deliberately crude fashion. It connects with ecological and economical systems. It suddenly makes them explicit through curtains, water management, plants, enclosures, stones, appliances, heating devices, as found objects, pieces of furniture. Each element becomes an ad-hoc piece of a larger assemblage, a mode of operation that resists any attempt to make a consistent whole. The deliberate aesthetics of the unfinished pervades throughout the house by mixing bare material qualities with fashionable collector objects.

Muller van Severen's home and studio in Ghent





A Hut in the Bush or a Tower in the City

*The Future of Living* unit is the result of bringing together new ways of sharing life, energy management protocols, relationships with nature, new materialities and austerity chic. Appliances, plants, furniture, structure, materials, and objects join in visible and unfinished assemblages. They are scattered around the house and provide a variety of spatial conditions. They perform climatically, they provide privacy, they include plants and rocks, they allow us to gather. This collection of objects defines an ambivalent living environment. It is neither an interior nor an exterior, but it is certainly a part of the Australian landscape. A great deal of care and maintenance is required for this new domestic Australian dream. Whether in isolation or as part of a tower, this dispersed domesticity proposes a new type of relationship between the user, the environment and the raw architecture for the future. A relationship that many Gen Z and Millennials are already experiencing.

This section opens with the blueprints for the hut and the tower, that includes an analysis of energy performance in several future climatic scenarios and digital images of both proposals. An appendix of technical solutions describing in detail the performance of the facade and domestic assemblages follows. Two videos of *The Future of Living* and a conclusion complete the report.

1909 theorem the Skyscraper as utopian device for the production of unlimited number of virgin sites on a single metropolitan location. Published in Life magazine's "Real Estate Number" of March, 1909, the full-page cartoon by A.B. Walker shows conventional houses stacked on an open skyscraper frame. Architect: Architect of Artwork, New York, NY, United States. 1881 Architect James Rhines.





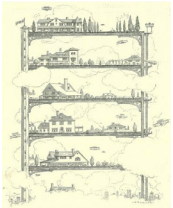
Proposed case study
B

The Tower in the City

*The Future of Living* tower increases its density to respond to the Gen Z and Millennials' increasing demand for urban dwellings. Yet it preserves the qualities of hut and translates them to the city by developing outdoor spaces that extend the indoor rooms. Staggered interior spaces, neither inside nor outside, redefine how we typically understand those terms, widening the possibilities for usage, increasing the diversity of spaces and allowing for multiple climatic conditions.

Materialised as a flexible and generous open plan. The CLT structure is designed as a wood skeleton, rigidised by a series of concrete cores and diagonal cross bracing. The twenty five square telescopic columns in a square grid, wooden slabs and three concrete elevator shafts are almost identical in each floor. The diagonal cross-bracing and a tilted fire stair make each level unique and specific.

Proposed tower

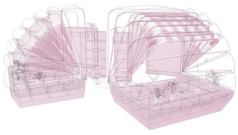


Published in Life magazine's "Real Estate Number" of March, 1909, the full-page cartoon by A.B. Walker shows conventional houses stacked on an open skyscraper frame.

Notion 1 | Sharing Life | TFoL

Case Study
1A

Office for Political Innovation
Rolling House for the Rolling Society
(2009)



The Rolling House for the Rolling Society explores how shared apartments challenge traditional notions of hedonism, definitions of gender, ideas of privacy and family models. Focusing on the life of its inhabitants, it illustrates the implications of this model of ownership.

For Gen Z and Millennials, shared apartments are typically their first home away from the family home. This experience shapes their domestic aspirations.

7

Notion 1 | Sharing Life | TFoL

Case Study
1B

La Col
Cooperativa d'habitatge La Borda
(Barcelona, Spain, 2018)

The Cooperative d'habitatge La Borda proves how participatory design is an essential part of a housing cooperative. Design workshops are the means to adapt each unit to the needs of its users but they also define the amount of space the community is willing to share.

The architecture of a cooperative is a system, not a finished design. It welcomes the user's feedback during the design process and is responsive to future changes.

8

Notion 2 | Managing Our Climate | TFoL

Case Study
2A

Lacaton Vassal
96 logements, Chalon-sur-Saône
(Chalon-sur-Saône, France, 2016)


96 logements, Chalon-sur-Saône uses industrial materials like corrugated polycarbonate and exposed concrete to optimise the climatic performance of the housing unit. The concrete collects heat during the day and releases during the night. The polycarbonate facade opens during the hot season and closes to become a greenhouse during the cold months.

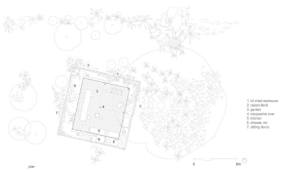
The combination of passive climatic systems and traditional active solutions are essential to improve the house's energy performance.

12

Notion 2 | Managing Our Climate | TFoL

Case Study
2C

Barraco Wright
Garden House
(Westernport, Victoria, 2014)



The Garden House illustrates how the climatic solutions tested by Lacaton Vassal in France or Brandlhuber in Germany can be successfully translated to the Australian Context.

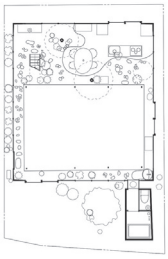
The mild climate of our context allows for even more radical solutions than these European experiments.

14

Notion 3 | Naturalised Interiors | TFoL

Case Study
3A

Junya Ishigami
House Designed for a Young Couple in Tokyo
(Tokyo, Japan, 2013)



House Designed for a Young Couple in Tokyo welcomes the garden into its living room, literally. On the interior a miniature forest grows in the corner, becoming an organic playground for its inhabitants.

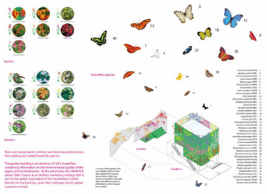
A house designed as an extension of the biosphere inserts a microcosm of nature into the deeply artificial environment of the urban dwelling.

17

Notion 3 | Naturalised Interiors | TFoL

Case Study
3B

Edificio Jardín Hospedero y Nectarífero
HUSOS
(Cali, Colombia, 2012)



The Edificio Jardín Hospedero y Nectarífero uses local vegetation and an open facade to ensure that the endemic butterflies of Cali use the building as much as its human inhabitants.

Buildings do not need to displace local nature but rather construct a symbiotic relationship with it.

18

Notion 5 | Austerity Chic | TFoL

Case Study
5A

De Vylder Vinck Taillieu
House Rot Ellen Berg
(Braives, Belgium, 2013)

House Rot Ellen Berg is an intervention in an existing house that uses materials typical of construction sites to enclose the areas of the house that require climatic control. The sources of heat, on the other hand are exquisite design objects that combine traditional ceramic stoves with contemporary industrial design.

In this context, "unfinished" is not a pejorative qualifier but a natural condition of the contemporary home.

29

Notion 5 | Austerity Chic | TFoL

Case Study
5C

Andrew Power
House with a Guest Room
(Taree, NSW, 2018)

House with a Guest Room is an Australian house self-built by the architect and his father. It combines the precariousness of self construction, a deep knowledge of the history of architecture and a collection of furniture that includes found objects and collector pieces.

The natural cohabitation of different objects, formal decisions and architectural values do not result in a fragmentary collage but rather in a difficult whole negotiated through design decisions.

31

Case Studies