



Taking Care and Making Do

Finding Opportunity from Failure

Oliver Ray-Chaudhuri

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Thesis submitted in partial fulfilment of the requirements for the Master of Architecture
(Professional) degree, The University of Auckland, 2023.

“Connaissez-vous, c'est toujours la vie qui a raison, l'architecte qui a tort.”¹

(“You know, it is always life which is right, it is the architect who is wrong.”)

Le Corbusier

¹ Scott, *On Altering Architecture*, 27.

Abstract

Our lust for the new and improved risks exacerbating the impact of the building industry on climate emissions through unnecessary demolition and reconstruction. This temptation is fuelled by a misconception of architecture as static and incapable of changing to meet today's needs. Yet buildings continue to change far beyond their initial construction — architects are just one contributor among a complex network of actors who design, inhabit, damage, fix and alter buildings. This thesis asks how understanding existing ordinary buildings as perpetually unfinished assemblages could allow us to view reuse as a continuous process rather than a last-ditch transformation of an already degraded shell. Using the author's family home as a case study, an evolving process of representation considers how the practices of drawing and photography that currently reinforce a view of buildings as immutable could be reoriented to challenge this perception instead. The drawings highlight, through their gaps, defects and animation, possibilities for the inevitable maintenance and repair required of an older building to be used as opportunities for small acts of repair that do more than just return it to a perceived 'original' condition. This practice of 'more-than-maintenance' is tested in a series of interventions to the house and a public installation, which point towards the need for a broader reformulation of the role of the architect in our times of crisis.

Acknowledgements

Thank you to Mum and Dad, for making anything possible.

Thank you to my supervisor Dorita Hannah, for your continual support. The research would not be what it is without the gaps of opportunity opened up by our conversations.

Thank you to the teaching staff at the UoA School of Architecture, especially Karamia Müller and Marian Macken for your guidance and encouragement.

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Introduction

The context for this thesis (like any research in the 21st century) is a world beset by crisis. Climate scientists have warned for decades about the impact of global warming caused by human activity, but today their previously abstract predictions and graphs feel increasingly tangible. In the midst of completing this project, the world experienced its hottest week on record.² Seawater off the coast of Florida reached the temperature of a hot tub.³ Aotearoa New Zealand endured multiple bouts of catastrophic flooding.⁴ The world was literally on fire.⁵

By now, the impact of the building industry on climate change is well known. The construction and operation of buildings account for 39% of global emissions (in New Zealand, 20%).⁶ Architectural firms have acknowledged the crisis through updated website biographies, green accreditations and initiatives such as Aotearoa New Zealand Architects Declare, a “network of architectural practices committed to addressing the climate and biodiversity emergency.”⁷ Yet in most instances, recognition seems to be as far as the action goes. Signatories of Architects Declare continue to build some of New Zealand’s largest and most lavish skyscrapers, mansions, and holiday homes.

As an architectural graduate on the precipice of entering practice, it is hard not to feel a sense of helplessness about the inevitable burden of our work on an already suffocating planet. Regardless of rhetoric, intentions to ‘educate’ or embrace sustainable technologies, our discipline remains inseparable from the extravagant construction of large buildings. The premise of this research was a visceral reaction to my

² The Guardian, “UN says climate change ‘out of control’ after likely hottest week on record.”

³ Cabral, “Seawater temperatures in Florida at hot tub levels, experts warn.”

⁴ Sowden, “Cyclone Gabrielle: The New Zealand flood victims too scared to go home.”

⁵ Horowitz, “It’s Been a Hellish Summer for the Mediterranean. And It’s Not Over.”; Evershed, Ball and Morton. “How big are the fires burning in Australia’s north?”

⁶ Calder, *Architecture: From Prehistory to Climate Emergency*, 415; BRANZ, “Reducing Greenhouse Gas Emissions In The Construction Industry.”

⁷ Aotearoa New Zealand Architects Declare, “About us.”

uneasiness — how can we work with what we have instead of making new buildings?

The thesis asserts that it is only by repairing the systems and processes of the industry that we can achieve the change needed to reduce its significant impact on climate emissions. While it is essential to pursue scientific strategies to make new buildings more ‘green,’ we cannot rely on technology alone to save us. In this spirit, the research takes as its starting point the existing — the ways we view, represent, design, and live in buildings — and unfolds as an interrogation and reinterpretation of these assumptions.

My thinking developed through an intimate and ongoing engagement with the case study for the thesis: my family’s home in Tāmaki Makaurau Auckland, which serves as a sort of personal testing ground for its universal theories. The house is the subject of a practice of drawing which is used to consider how the representation of architecture reinforces an insufficient view of buildings as ‘complete’ and immutable. This practice continues throughout the project as a means to experiment with ways of better capturing buildings as perpetually unfinished networks of tangible and intangible components.

The ongoing process and the accompanying research develop into a theory of more-than-maintenance, a way of seizing the failures of the everyday as opportunities for small acts of repair that do more than perpetuate the status quo. The practice is tested in a series of interventions to the house and then exposed to the contingencies of the real world in a public installation.

This document tells the story of the research, explaining in a rough chronology how my thinking developed throughout the year alongside the evolving representation. It is structured into six chapters which each incorporate discussions of relevant making, literature, precedents, and thinkers.

Chapter 1: Working with What We Have explains the importance of developing theories for reusing ordinary buildings as well as the extraordinary buildings that are the focus of the majority of the literature. It introduces my family’s home as the case study of the thesis and recounts the first set of drawings, which are redrawn from the original documentation of the house.

Chapter 2: The Myth of Completion draws on Actor-Network Theory

and the work of other architectural scholars to establish buildings as perpetually unfinished networks composed of physical and social actors and altered by professionals and non-professionals alike. It discusses how a notion of completion is perpetuated through the representation and marketing of architecture, which reinforces a misconception of buildings as immutable and limits their capacity for appropriation. This establishes representation as the key means through which the thesis endeavours to redefine buildings as dynamic and alive and charts my early efforts to do this by introducing the messy inhabitation of the house into its plans, sections, and perspectives.

Chapter 3: Taking Care discusses the potential of maintenance and repair as tangible and deliberate commitments to the ongoing use of existing buildings. It explores how, as responses to failure, these practices tend to reinforce the status quo by restoring a building to a perceived normative (static) state. In contrast, failures (as intrusions on the fabric of everyday life) are posited as opportunities to challenge the otherwise unquestioned ways we live in buildings. This establishes the possibility of the second half of the project.

Chapter 4: Paying Attention explores how the representation of buildings using photogrammetry combines the detail of photography with some of the failure and inaccuracy present in a real building. It considers how this expanded representation could stimulate a broader scope of interventions within existing buildings by taking them outside of reality. These point cloud images serve as the basis for drawings which test this hypothesis, which are introduced here.

Chapter 5: Failure as Opportunity contains the core architectural proposal of this thesis, a series of interventions in the house developed through incremental additions to the point cloud drawings. These examples are used to establish the practice of more-than-maintenance, in which our responses to failure extend the longevity of an existing building while challenging the logic of its established socio-political condition.

Chapter 6: Making Do asserts the need to work beyond the confines of representation, borders and the systems that currently structure our neighbourhoods to realise the full potential of more-than-maintenance. It describes the design and execution of a public installation which sought to encourage the social negotiation that is essential to

the theory yet impossible to simulate through drawing. Learnings from this installation are used to articulate an expanded role for the architect characterised by a continual engagement with and retreat from the reality of buildings in the everyday. The final crit is described as a reintroduction of the theory back into the world.

As an existential threat, climate change compels action, but its vast scale is paralysing. The premise of this thesis — abstinence from the construction of new buildings — functions as a way to imagine the change that could be exerted at the scale of a single profession. It is more personal ‘thought experiment’ than pragmatic ‘solution.’ Yet it is a reaction shared by an increasing number of others as architectural thinkers grapple with the role of the building industry in the context of wider environmental collapse.

French architect and academic Charlotte Malterre-Barthes is calling for A Moratorium on New Construction. Her ongoing initiative includes a seminar at Harvard GSD and an upcoming book, which suggest that pausing new construction could create a “radical thinking framework for alternatives to the current regime of space production and its suspect growth imperative.”⁸ For Malterre Barthes, abstaining from building new is the only way to initiate the dramatic structural change needed to realise a non-extractive future.

Underlined black text on
a bright blue background
reads, “We Need a Global
Moratorium on New
Construction!”

A satellite image of a quarry
with the three emojis 🌎🏗️🚫
overlaid in the center.

Fig. 1-2. Provocations from Charlotte Malterre-Barthes’s research project A Moratorium on New Construction

⁸ Malterre-Barthes, “Stop Building? A Moratorium on New Construction.”

Similarly, academics Christopher Grafe and Tim Rieniets advocate for the unconditional use of existing buildings as the resource for all future architecture. They recall a 1967 demonstration in Berlin during which students held a banner reading “All Buildings Are Beautiful; Stop Building More” to protest against what was seen as the careless demolition of historical structures in favour of mass housing. Grafe and Rieniets argue that today (as the postwar housing opposed by the students is demolished), this slogan should be interpreted as a “specific call to action for everyone who plays a role in shaping the built world of tomorrow.”⁹

Working with the Ordinary

Any shift towards the use of existing buildings is not without precedent. The discipline of heritage conservation has been evolving for centuries to define how we preserve old buildings. However, only a small minority of buildings are deemed worthy of conservation within the heritage framework. In New Zealand, the ICOMOS New Zealand Charter establishes principles for conserving places of cultural heritage value.¹⁰ The value of a particular building is defined by its significance, which is determined by assessing its relative worth across aesthetic, scientific, social and historical criteria.¹¹ Heritage thinking has also served as the foundation for the comparatively recent practice of adaptive reuse, a process of “transforming an unused or underused building into one that serves a new use.”¹² Although the adaptive reuse field does not share the same constraints as heritage conservation, it is still characterised in the popular imagination by the soaring ceilings and crumbling brickwork of vast industrial monuments.

The bulk of our building stock is not significant but boring and unremarkable. Working with what we have in the urgent context of the climate crisis therefore requires emphasising the ordinary as much as the extraordinary. This project adopts the ‘ordinary’ as its focus, a broad label encompassing all buildings that exist outside the

⁹ Grafe and Rieniets, “All buildings are beautiful; stop building more.” 28.

¹⁰ ICOMOS NZ, ICOMOS New Zealand Charter, 1.

¹¹ Bowron and Harris, Guidelines for Preparing Conservation Plans, 5.

¹² Wong, Adaptive Reuse: Extending the Lives of Buildings, 30.

realm of significance as prescribed by the heritage field — the homes, offices and shops that form the background of our daily lives, rarely warranting a second look.



Fig. 3-4. Tree, pavements, houses and a cat in the suburbs.

Despite the unassuming ubiquity of ordinary buildings, they cannot be generalised into a homogeneous block — their immersion in the everyday means they are highly specific. This specificity is apparent on a second look, in the way a footpath veers around a tree, its roots forcing a break in the kerb, the particular way it casts its shadow on a timber fence. Everything is found to be unconventional when focusing more closely on the expected convention of the everyday. I used photography and video to record these anomalies within the fleeting moments of daily life. These images illustrate the thesis and served as a constant tool to observe the phenomena explored in the research.

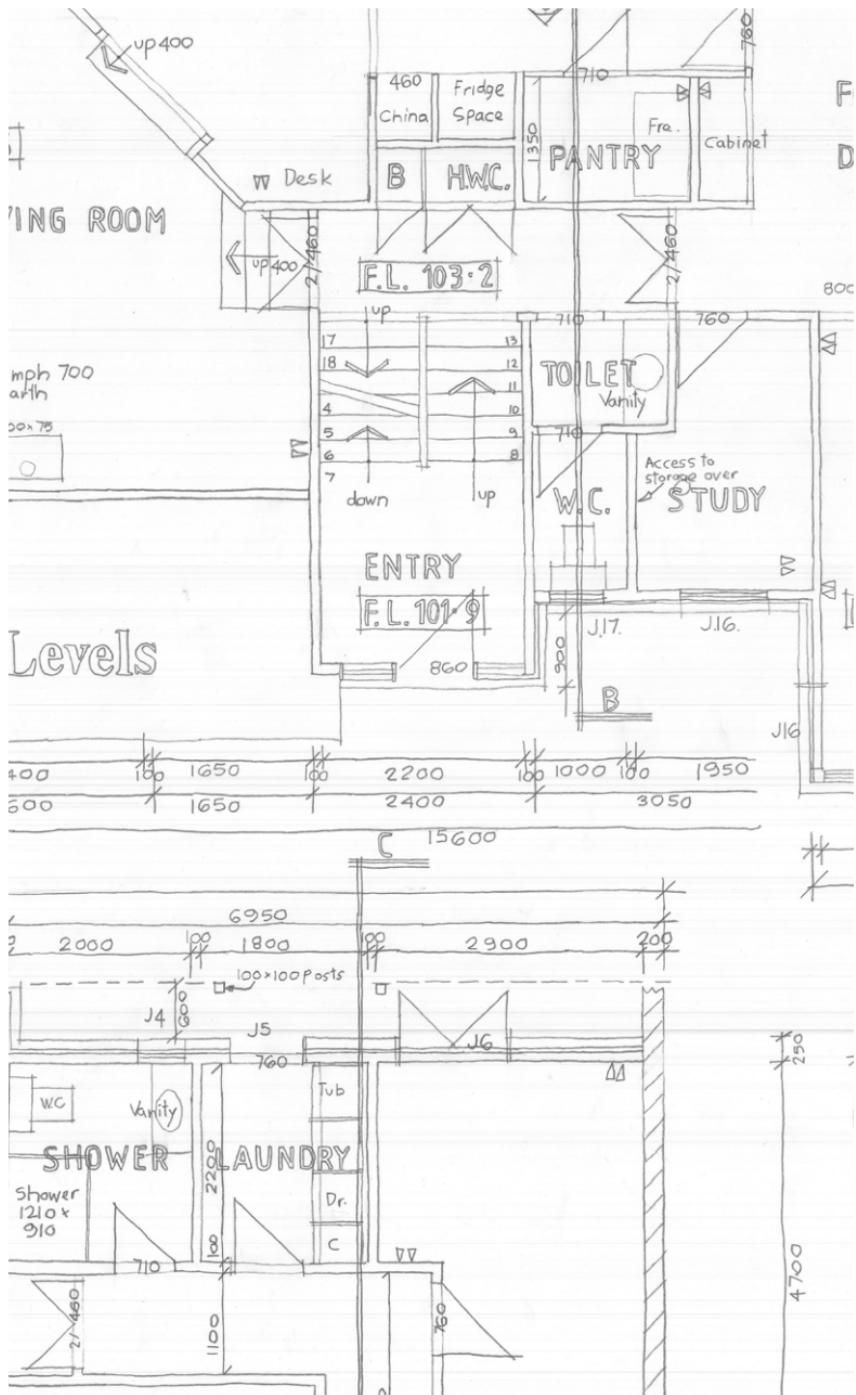
The House

I decided that to properly grasp the specificity of the everyday, I needed to pay particularly close attention to a building that would not normally be the subject of close architectural investigation. I chose my family's home in the suburbs of Tāmaki Makaurau Auckland's North Shore. The five-bedroom house is large, but quite ordinary. It was designed by architect John D'Anvers in 1984 and sits in the middle of a 130m² site lined by trees. A brick veneer base is topped with two floors clad in cedar weatherboards and an irregularly pitched roof. Inside, the rimu timber ceiling framing is left exposed.

We have lived in the house since 2007, soon after our arrival in New Zealand from the United Kingdom. It is my normal, a space I have an intimacy with like no other. Every room is saturated with memories and slight changes are obvious. My familiarity with the house meant I could investigate it with a freedom not possible with any other building. However, I did worry that I would take too much for granted — that my immersion would make it difficult to see the forest for the trees.

I turned to architectural drawing to record the specificity of my particular normal, using D'Anvers original documentation as my starting point. Since the drawings had survived only in the form of poor photocopies, I began by producing a copy of the building consent plans and sections. These were identical to the originals but omitted the messy marks and unintelligible sketches of the scanned documentation.

Fig. 5. Detail of redrawn plan (opposite).



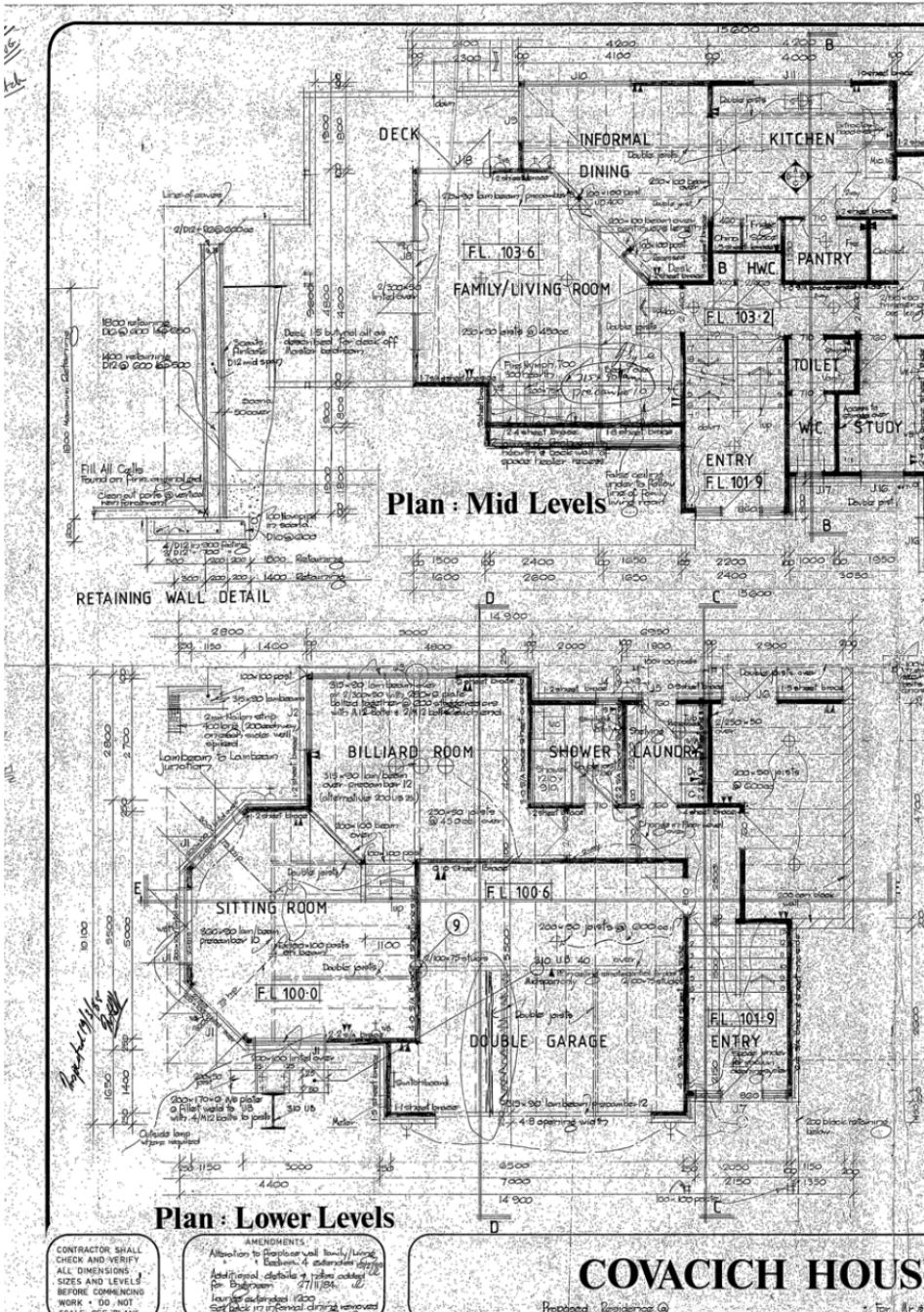
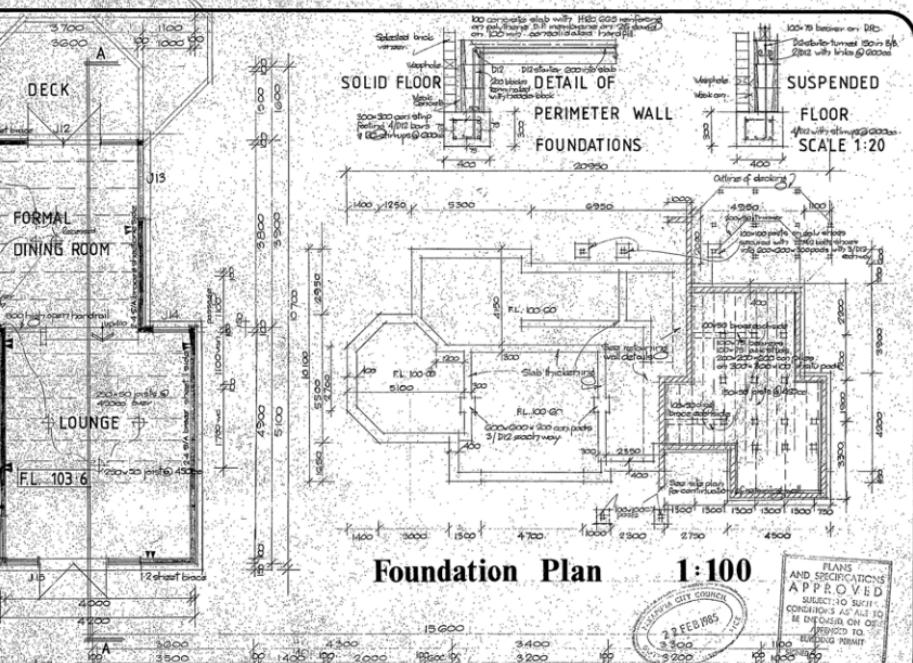


Fig. 6. The scanned original plans of the house.



Foundation Plan 1:100



PLANS
AND SPECIFICATIONS
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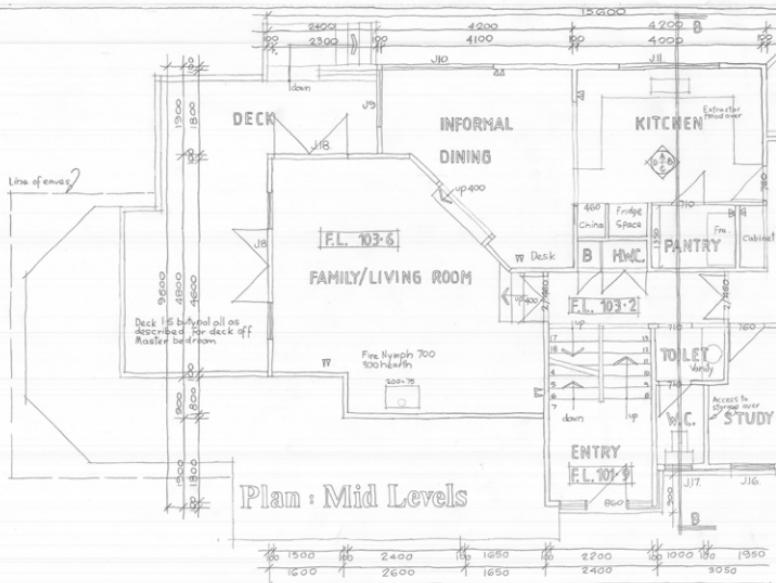
Mrs K. Covocick

J.T.R.D'ANVERS
b.arch.

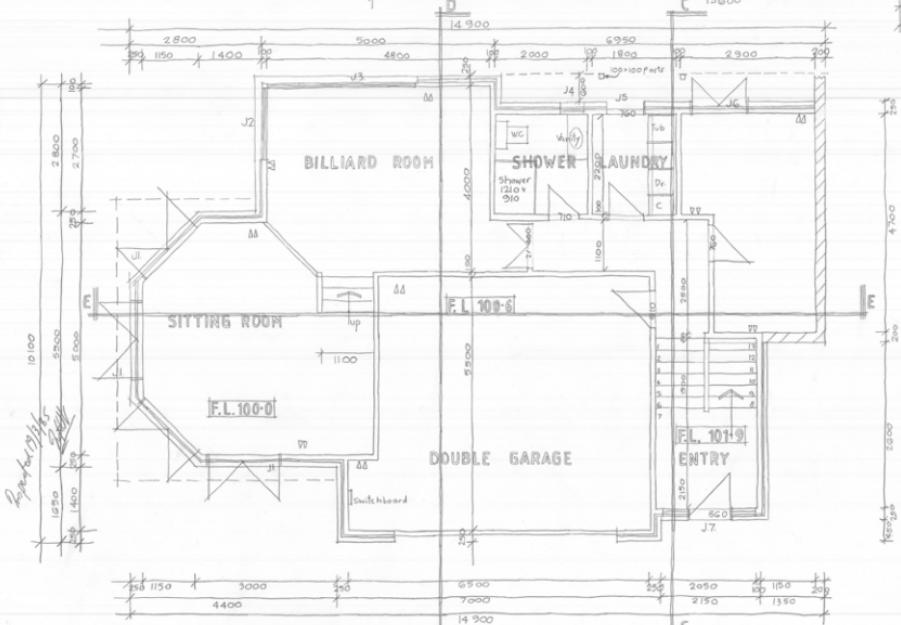
JUPITER HOUSE • P.O. BOX 31154
MILFORD • AUCKLAND • PHONE (09) 494-009

DRAWN	SCALES 1:50 & 1:100
CHECKED	DATE Nov 1984
APPROVED	DATE

SHEET
2 OF 4
FILE 412



Plan : Mid Levels



Plan : Lower Levels

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SIZES AND LEVELS
BEFORE COMMENCING
WORK. DO NOT
SCALE OFF PLANS

AMENDMENTS

Alterations to fireplace wall family/Living
Bedroom 4 extended ~~as per~~ 1/84

Additional details & notes added
for Engineer 27/1/84 JL

Lounge extended 1200
Set back in informal dining removed

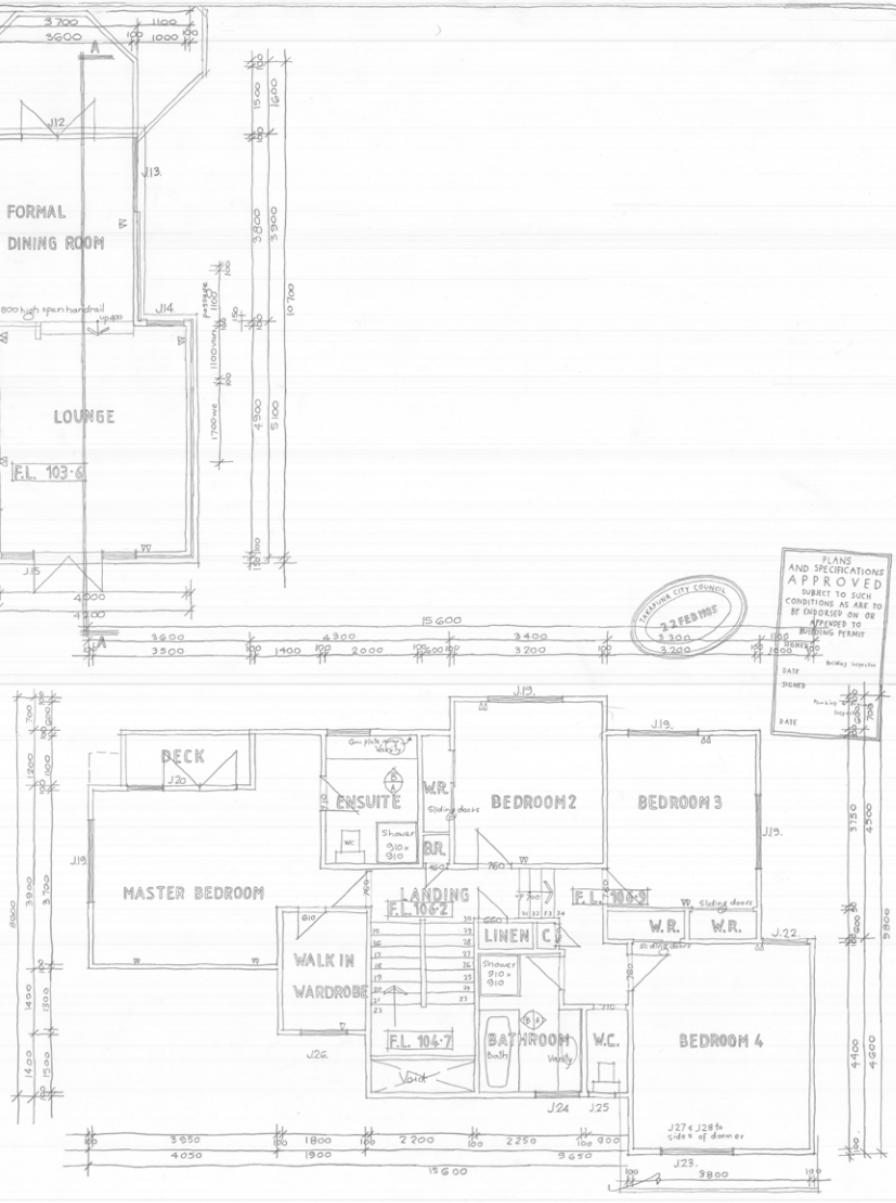
Foundation plan 30/01/89 JL

COVACICH HOUSE

Proposed Residence

* For Mr *

Fig. 7. My first redrawing of the plans, a direct copy of the original.



Plan: Upper Levels 1:50

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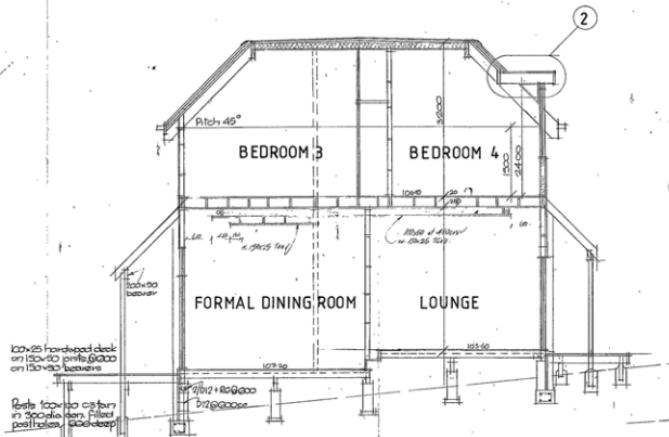
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Section AA

Roof : Flat areas

Butyl roof roofing sheet (1) fixed by special fasteners. Slope exterior @ 1:100. Guttering with brick supports on 100x100 posts @ 2000mm tapered 25mm each way to prevent fall.

Roof : Areas

Concrete interlocking roof tiles on 50x50 battens on 50x50 @ 2000mm centres with 50x50 furring strips @ 500mm centres between batten. A V joint selected earking on 200x75 rafters @ 750mm centres. 50x50 @ 2000mm tip beams. 50x50 @ 2000mm end caps. Square section cold steel earring. Pitch 45°. Eaves overhang generally 300mm.

Walls : Upper floors

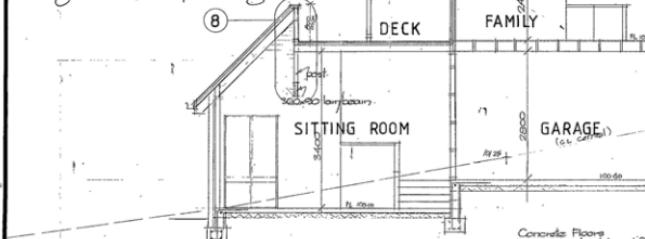
100x50 timber framing studs @ 4000mm centres. 100x50 timber weatherboards on breather type building paper secured to framing. 1@ wall batt insulation between studs. 100x50 @ 4000mm horizontal lining strips.

Walls : Lower floors

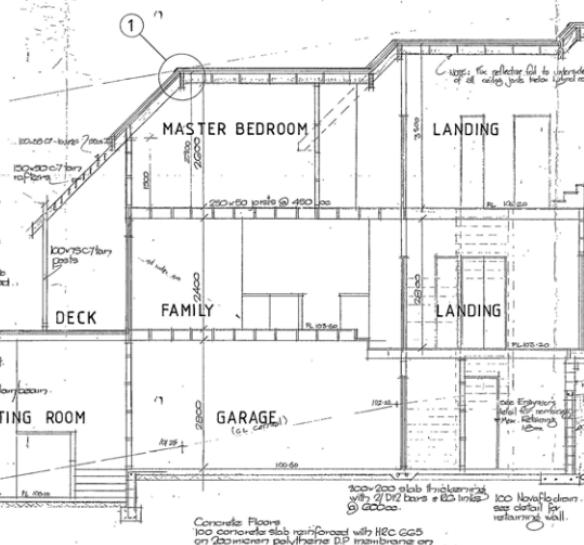
100x50 timber framing as above with selected brick veneer @ 5000mm. Building paper to external faces of frame. 100x50 vertical studs @ 4000mm centres. 100x50 horizontal limewash 200 concrete blockwork where shown with 10x12 vertical bars @ 2000 mm spaced 150 @ 25 in bond beam. Bond beam @ 1000 @ 125 horizontal & 25 links @ 2000mm.

Timber floors

20x100 particle board or selected T&G boarding on 200x50 @ 250x50 floor joists @ 4000mm centres. 100x50 @ 4000mm particle board @ 4000mm centres.



Section BB



Section EE

CONTRACTOR SHALL
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BEFORE COMMENCING
WORK • DO NOT
SCALE OFF PLANS.

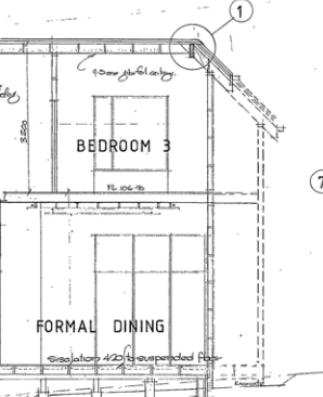
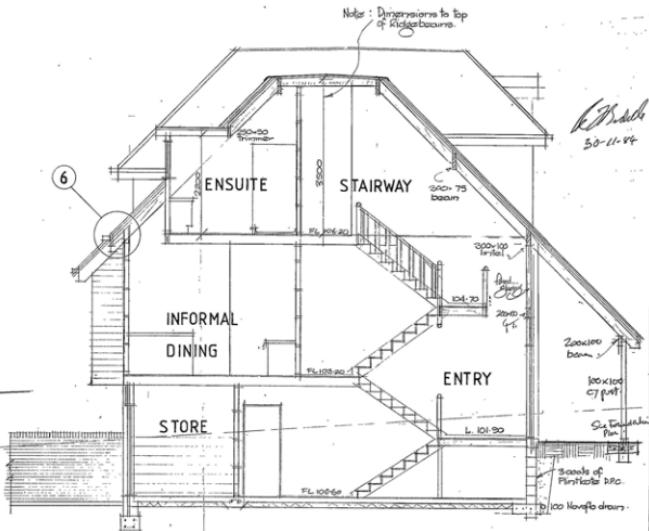
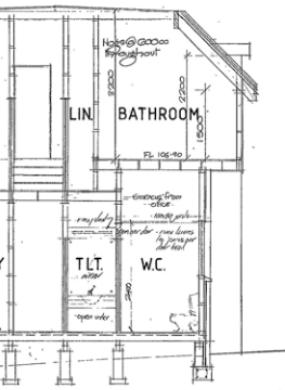
AMENDMENTS

Revised Residence @

COVACICH HOUSE

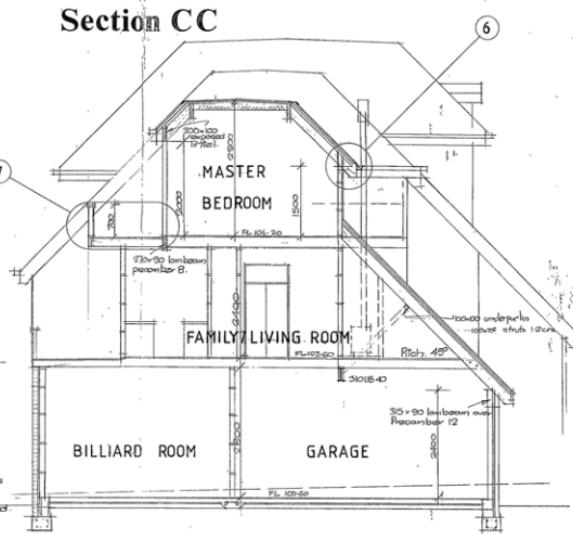
* For Mr. @

Fig. 8. The scanned original sections of the house.



Foundations (suspended ground floor)
200x200x200 prestressed concrete piles on 300x300
200x200x200 concrete piling 1000 DPC baselessly
lowest timbers. Calv wire securing timbers to core piles.

Perimeter Foundation (below ground)
400x300 deep strip concrete Foundation reinforced
with 4/t/m² bars @ 0.25 stirrups @ 600mm.



Section DD

E

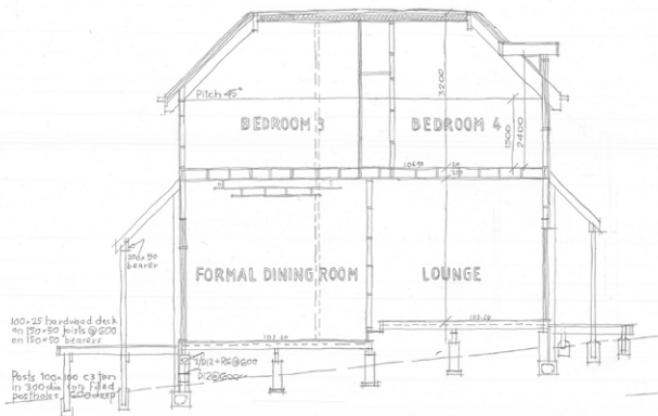
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SHEET	3 of 4
FILE	412



Section AA



Section BB

Roof : Flat areas

Bitumen roofing sheet (fixed by specialist on non load bearing areas) plywood covered with bimetal screws on 150x50 ceiling joists @ 600mm tapered 25mm each way painted pale.

Roof : Main

Concrete interlocking roof tiles on 50x50 brick piers & 100x50 joists @ 600mm. Fibreglass insulation between on 150x50 T.O. 1.5m selected roofing on 200x75 rafters. Guttering 100x50 with 100x50 down pipes. Guttering 200x75 + fascia 200x18 exposed soffit feet. Square section galv. steel spouting. Pitch 45°. Edges overhanging eaves 300mm.

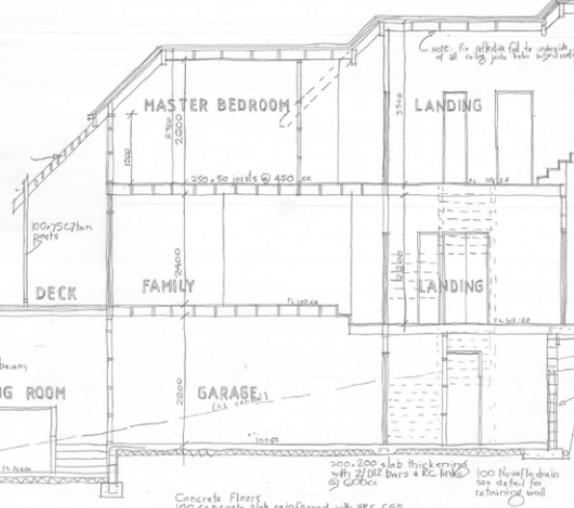
Walls: Upper floors
plywood or timber framing stud @ 600mm covered externally with selected weather boards or breather type building paper secured to framing. Guttering 100x50 with 100x50 down pipes. Guttering 200x75 (or aboved) internal lining.

Walls : Lower Levels

100x50 timber framing as above with selected brick veneer & 100x50 cavity building paper. External walls 100x50 with 100x50 down pipes. Internal walls 100x50 with 100x50 internal lining & 200 concrete blocks where shown with 100x50 vertical bars @ 100mm horizontally & 100x50 horizontal bars @ 200mm with 200x50 horizontally & 100x50 @ 600mm.

Timber Floors

20x100 recycled board or selected T&G boarding on 100x50 joists @ 450mm. 100x50 board or fibrocon plaster ceilings as selected.



Section EE

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CARRY OUT VERIFY
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BEFORE COMMENCING
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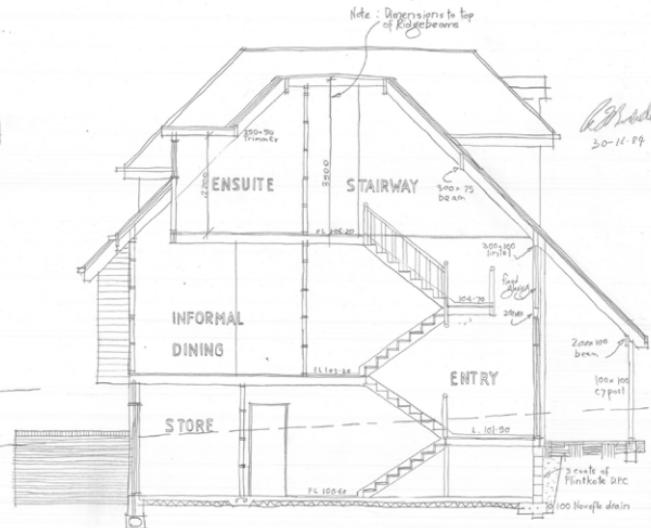
AMENDMENTS

COVACICH HOUSE

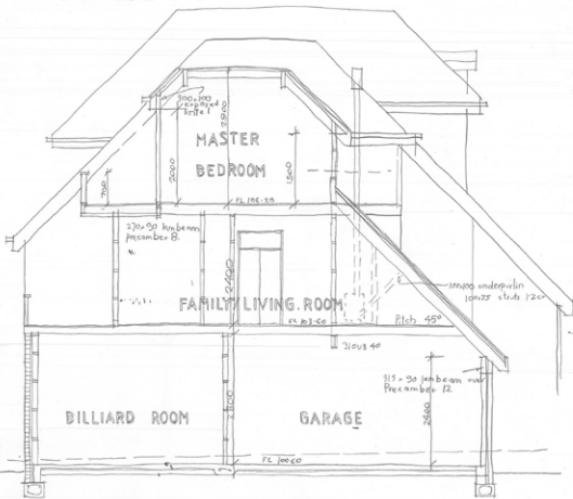
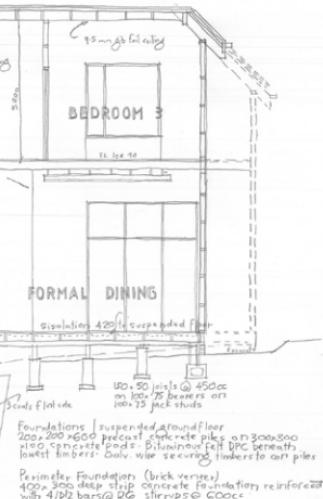
Proposed Residence No.

* For Mr. K

Fig. 9. My first redrawing of the sections, a direct copy of the original.



Section CC



Section DD

E
Mrs K Covach

J.T.R.D'ANVERS
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JUPITER HOUSE • PO BOX 31154
MILFORD • AUCKLAND • PHONE (09) 494-009

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The re-drawing was made by tracing over the original drawings using a lightbox or a window, a time-consuming process that made me engage with the building in a new way — not the close familiarity of the resident, but the holistic vision of the architect. It was as though I was impersonating the draughtsperson who originally drew the plans, a slight iteration of the drawings forty years after the previous.

It was slightly disconcerting to describe in the detached way of the architect spaces that were almost, but not quite, those I knew so well. As I drew, I noticed discrepancies between the original drawings and the house as it exists today. A few rooms were slightly larger, a window was missing here and there and some of the spaces were labelled with functions that do not match their current use. Some of the changes must have been made during construction, while others had been made later on, sometime between its completion in 1985 and today.

I produced another copy of the drawings to reflect these changes. This time, I drew within the house itself, moving from room to room, measuring each space using a tape measure and then transcribing this information onto the page. While comparing the measurements to the original drawings, I continued to notice additional changes — the residue of the numerous families who have lived in the house, decorating rooms, arranging furniture, breaking things, renovating and adapting.



Fig. 10. Redrawing the plans a second time from within the house.

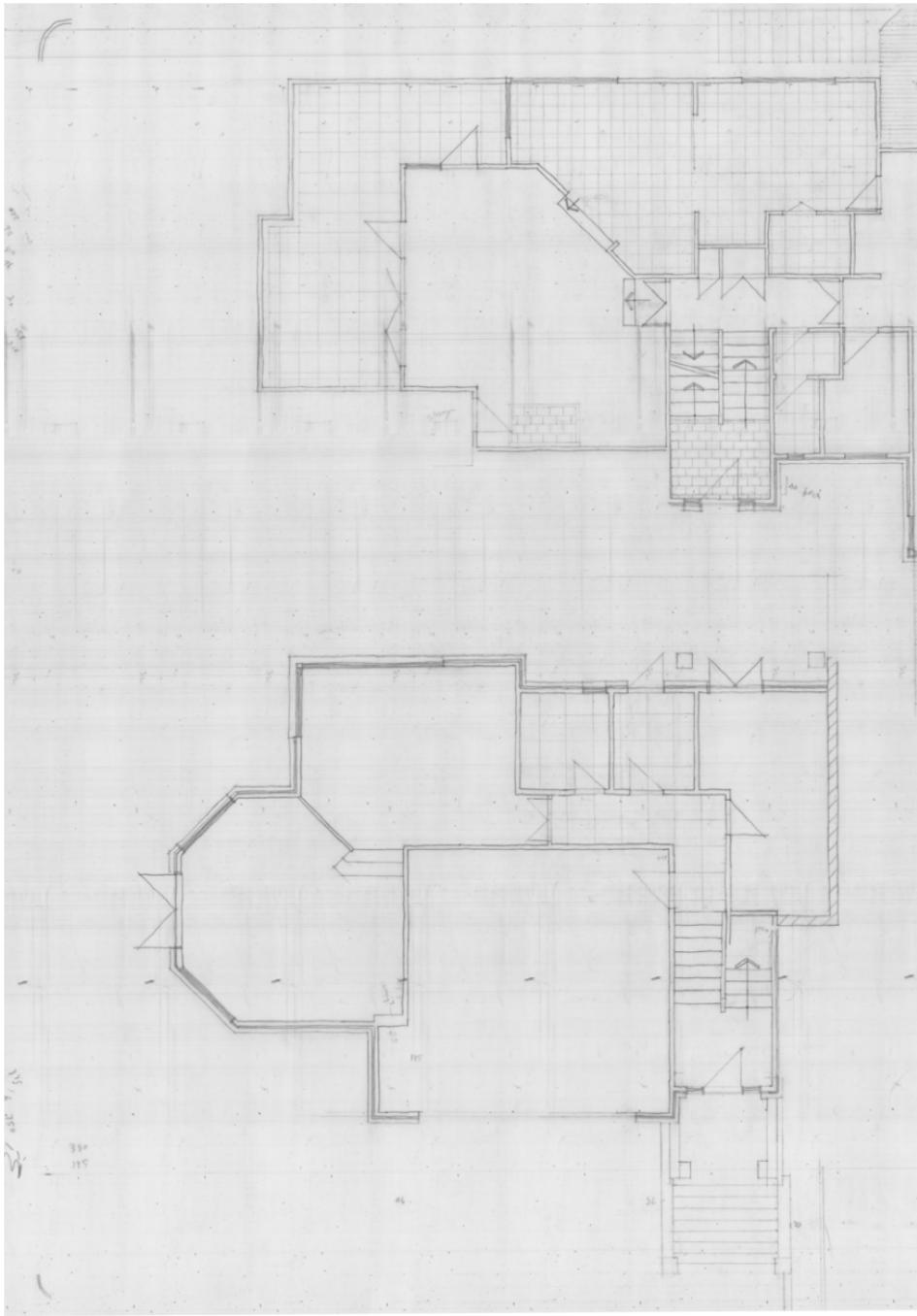
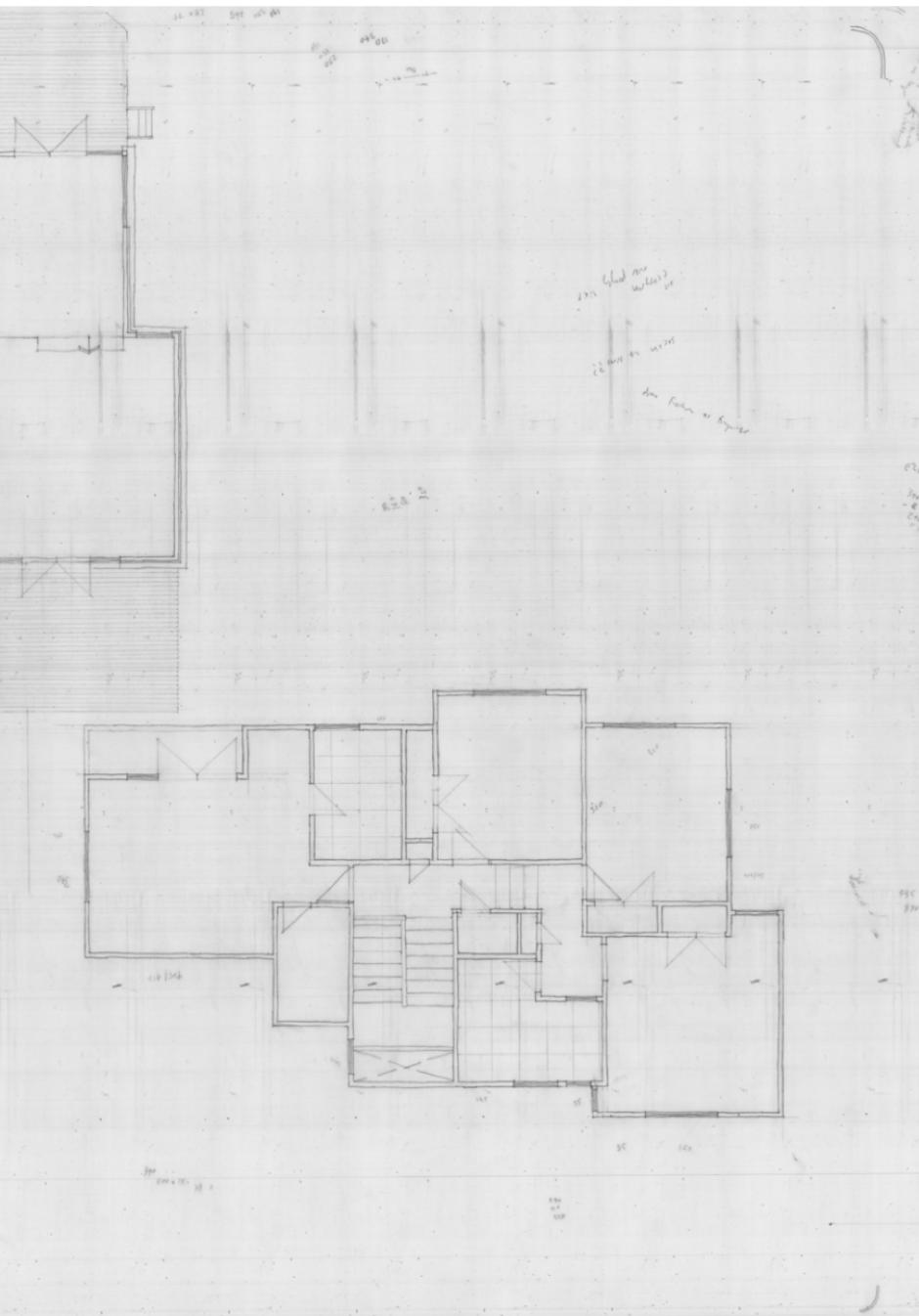


Fig. 11. My second redrawing of the plans, altering them to match the house as it exists too



lay.

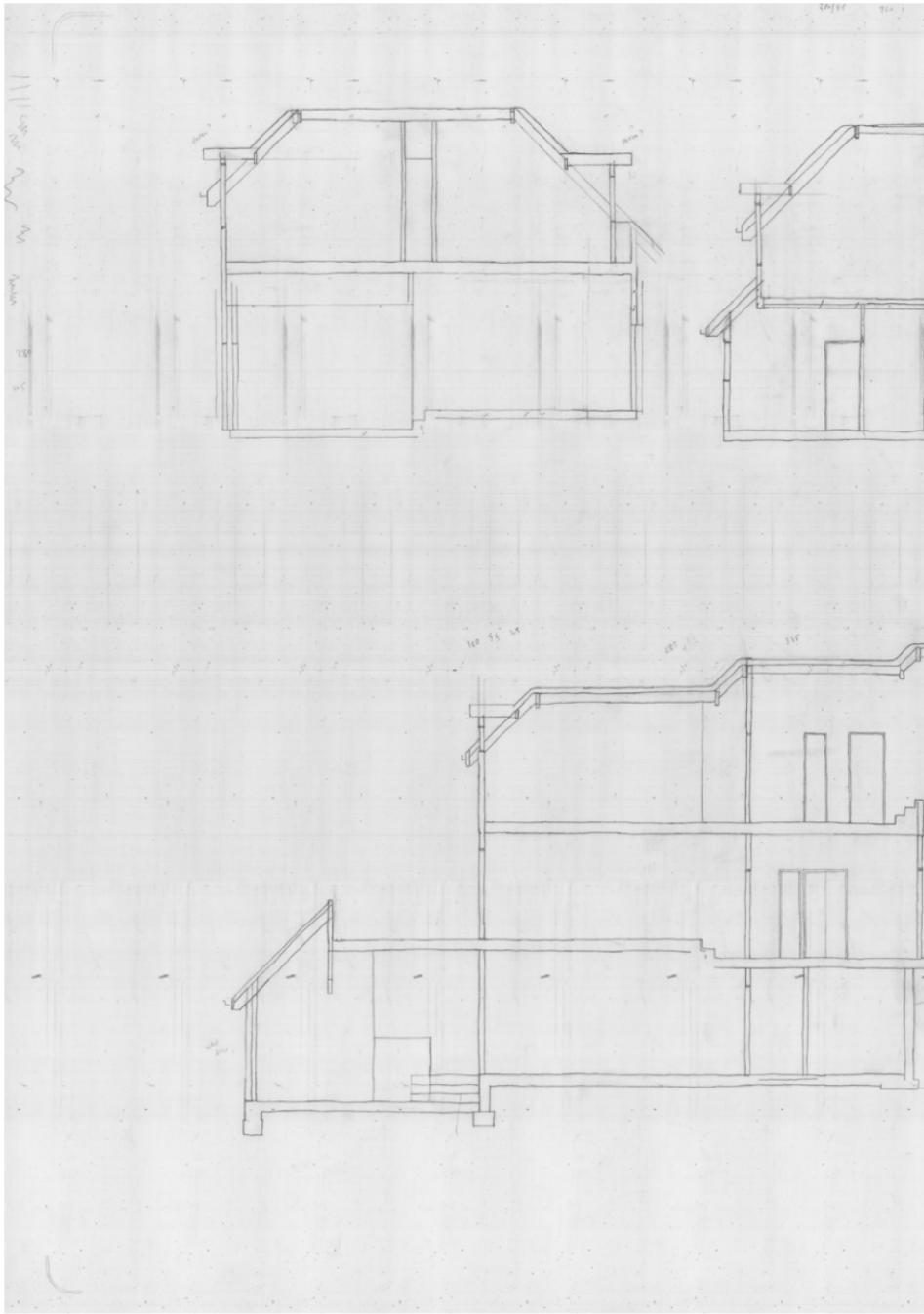
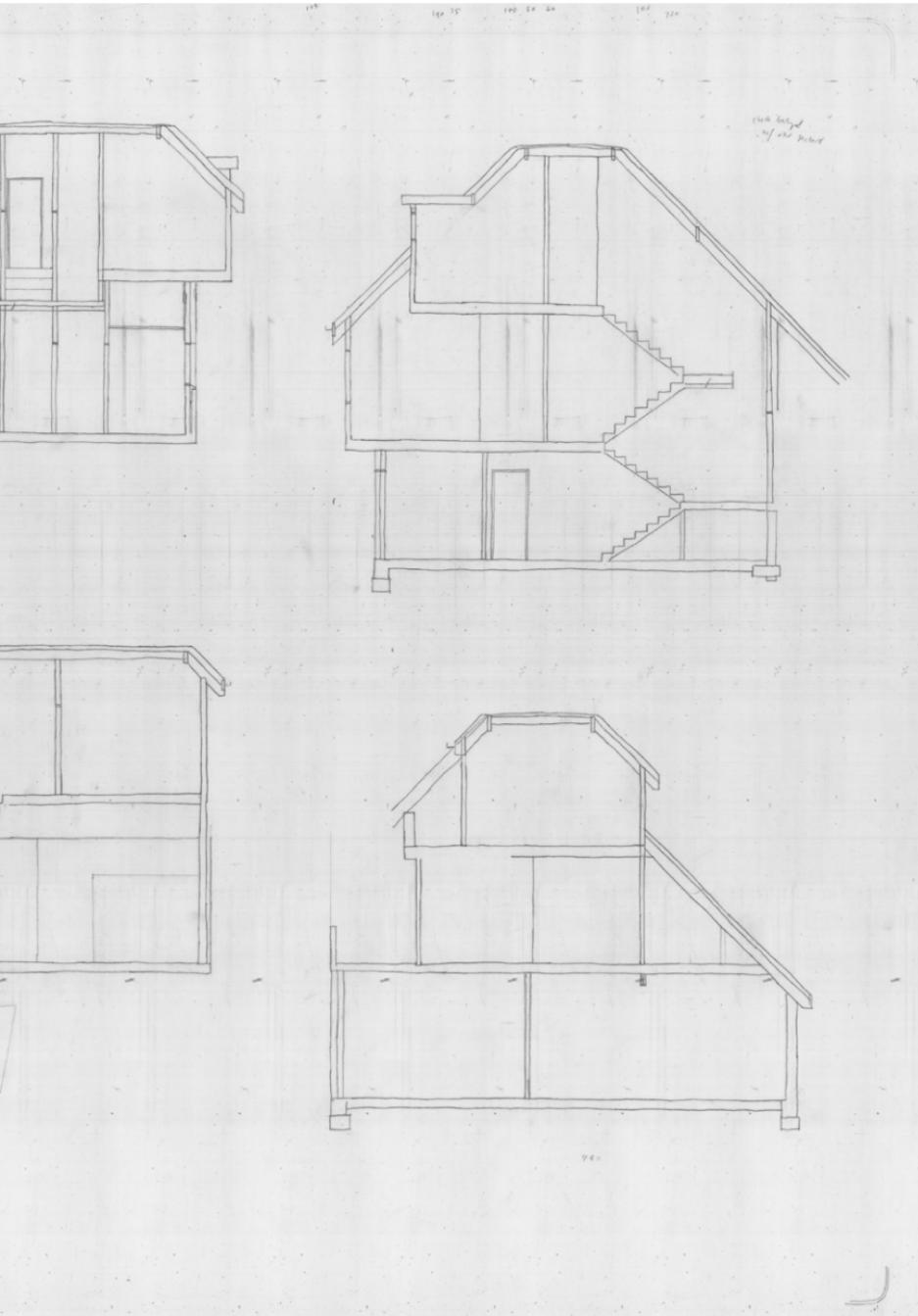


Fig. 12. My second redrawing of the sections, altering them to match the house as it exists



today.

As buildings are inhabited, a gap opens up between the building and the needs and desires of those using it. To close this gap (and avoid obsolescence), we alter, tweak, add and remove. These changes happen across a range of temporal and spatial scales. In his book *How Buildings Learn*, American writer Stewart Brand conceives of buildings as made up of six different layers (site, structure, services, space plan and stuff), which change at different rates. The structure and skin of a building are normally altered only during a substantial renovation, while the 'stuff' (its furniture and objects) changes almost constantly.¹³

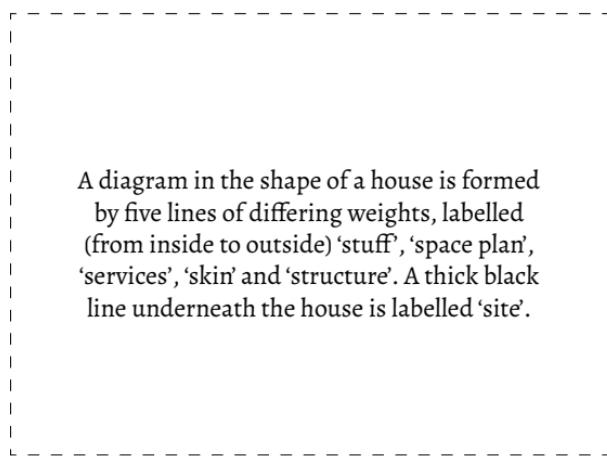


Fig. 13. Stewart Brand's shearing layers of change.

Changes in buildings over time are most evident in the duplicated homes of suburban developments. While at first these changes might be limited to a newly painted front door or an extended washing line, in a more developed neighbourhood, new conservatories, extensions and decks begin to emerge from the original whole. A particularly evident example of this change can be seen in Le Corbusier's Les Quartiers

¹³ Brand, *How Buildings Learn: What Happens After They're Built*, 12.

Modernes Frugès, a 1924 experiment in standardised low-cost housing in Bordeaux.¹⁴ Over four decades, the residents made significant changes to the houses, adding pitched roofs and decorative window boxes, painting the exteriors and enclosing roof terraces and garages.¹⁵ The open plan and flexible space had inadvertently created the conditions for easy adaptation.



Three black and white photographs show identically structured modernist houses, with varying types of alteration and weathering. The first has a dark coloured balcony, the second a large tree in front and the third a dark fence and one (rather than two) upper floor windows.

Fig. 14. Altered houses in Les Quartiers Modernes Frugès.

¹⁴ Scott, *On Altering Architecture*, 24.

¹⁵ Steadman, "Life is always right: it is the architect who is wrong."

Although the most obvious alterations to buildings are usually performed by professionals, the most frequent (and idiosyncratic) changes are made by those living in them. Where the architect gives only a generic labelled suggestion of the use of each room — ‘kitchen,’ ‘bathroom,’ ‘bedroom 4’ — the inhabitant realises it through their specific use of the home. Sam Johnson-Schlee likens the ways we arrange our living environments to dreaming, a “gathering together of bits and pieces by the unconscious to try to meet the latent desire of the occupant.”¹⁶ Occupants can be seen to inherit the role of the designer as they “re-architect” their space in the practice of daily life.¹⁷

My next iteration of the plan and section drawings sought to capture evidence of this ‘re-architecting’ within the house. Continuing to work in situ, I populated each room in the drawing with the furniture and objects that characterised its use at that time.



Fig. 15. Redrawing the plans a third time from within the house.

¹⁶ Johnson-Schlee, “Room of one’s own.” 8.

¹⁷ Johnson-Schlee, 11.



Fig. 16. My third redrawing of the plans, adding the mess of the everyday.

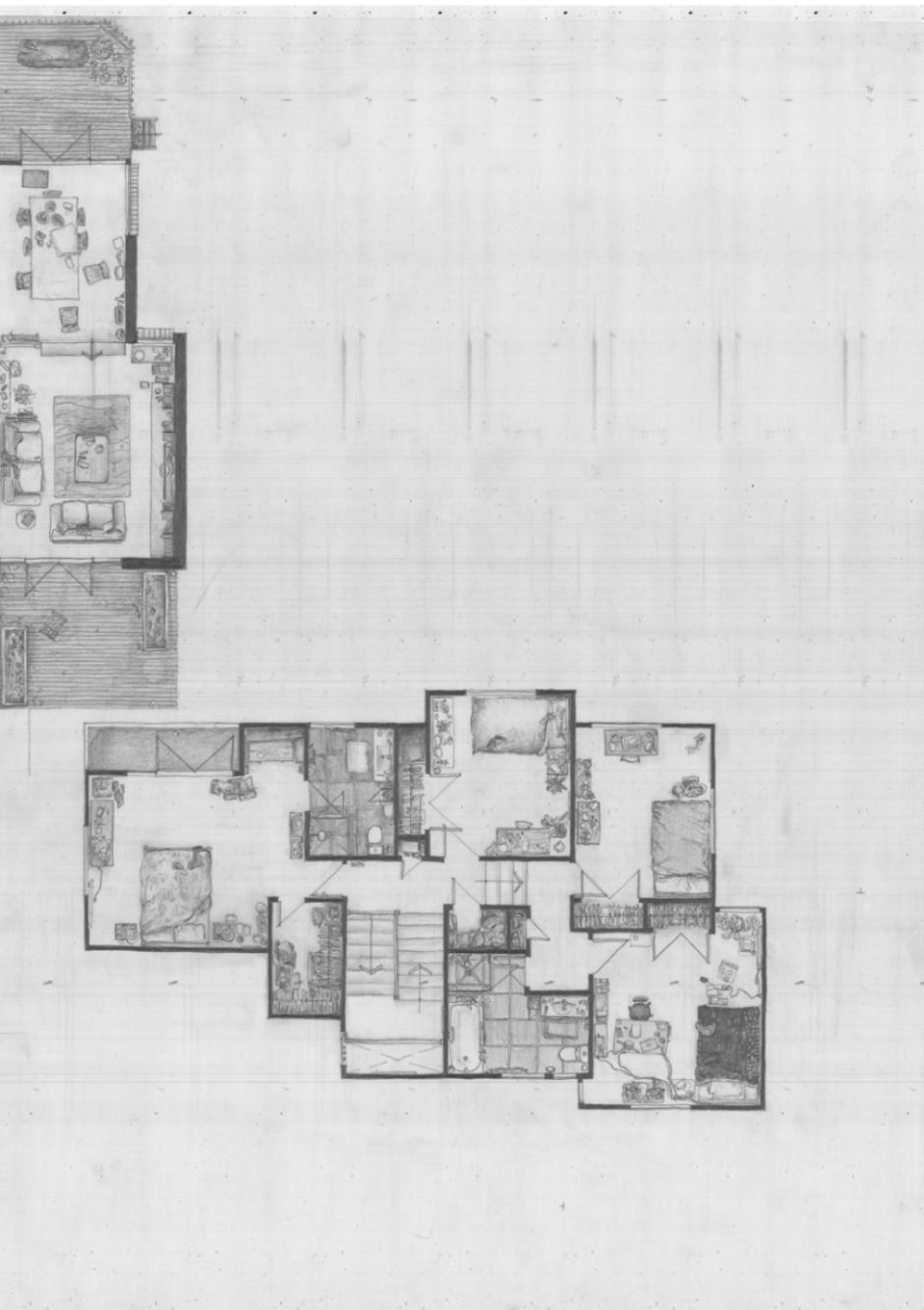




Fig. 17. My third redrawing of the sections, adding the mess of the everyday.



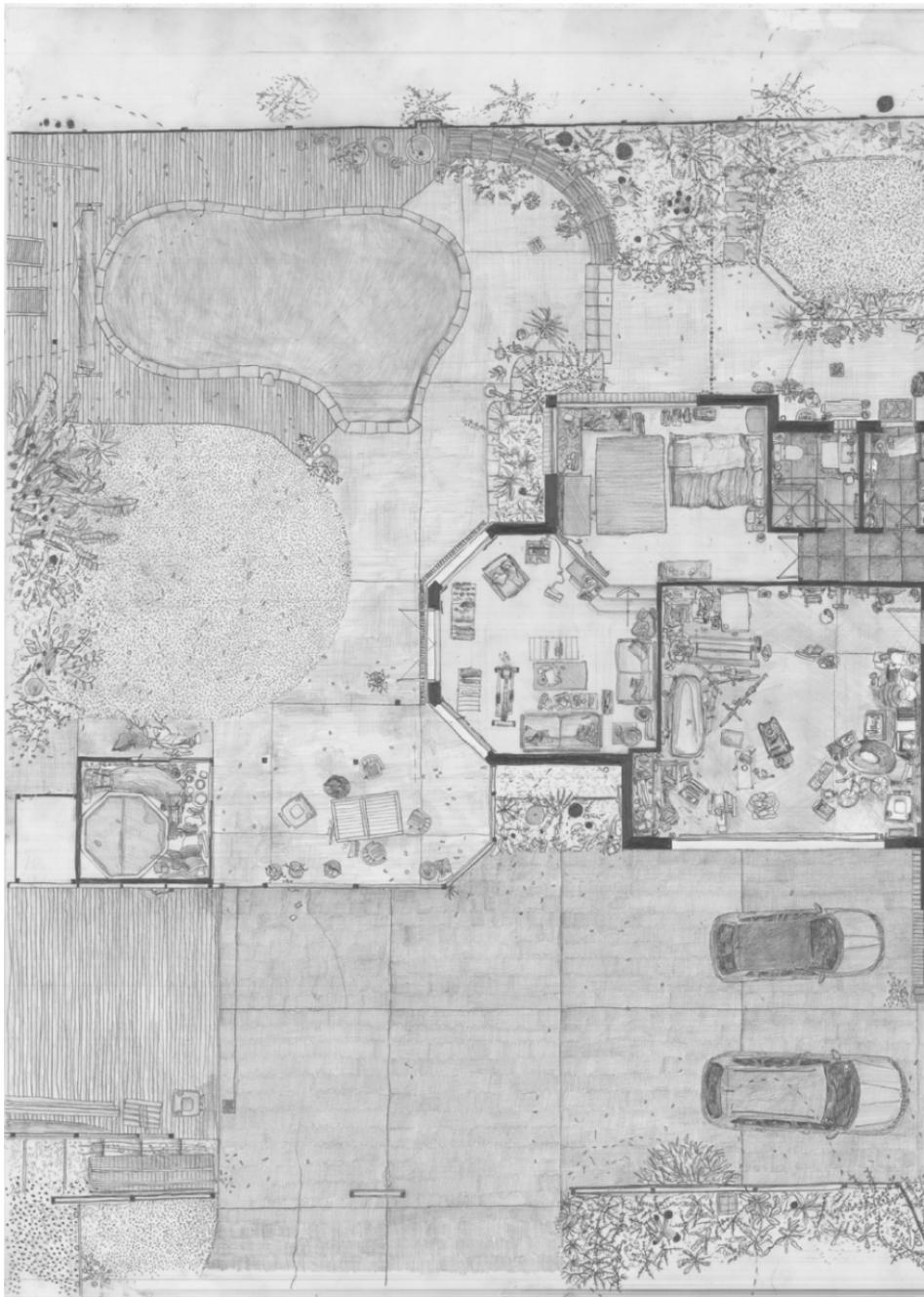


Fig. 18. The plan extended to include the site.



With a level of detail not usually included within the conventions of architectural representation, this new set of drawings became very quickly out of date. Almost as soon as I had finished drawing a room, something changed — a coffee mug moved, a door opened, or a dog toy was deposited on the floor.

These changes are not planned or rehearsed but unpredictable and elusive. They accumulate into continual and overlapping performances, with architecture the scenography against which these take place. But, as New Zealand artist and designer-academic Dorita Hannah suggests, buildings are not simply static backdrops but active participants in these performances. Hannah uses Jacques Derrida's notion of 'spacing' to describe how space is made by both the designer and the inhabitant over time, "whereby both are constantly reconstructing their perception of, and engagement with, the built environment through time-based, embodied occupation."¹⁸ In the same way that speaking can simultaneously describe and enact something (to say "I do" is to marry), the construction of space is at once a description and an action.¹⁹ The places and things within and around which a verbal commitment occurs are essential for the action to be realised, suggesting that these do not simply describe but also perform as "authentic elements inherent to the event."²⁰ In this sense, the built environment itself can be considered to perform through the act of spacing — an "*active becoming* rather than *passive being*".²¹

Completion

Buildings are perpetually unfinished, altered by and altering residents and professionals alike in a multitude of ways. Yet as soon as the turmoil of the site is cleaned up and the new inhabitants move in, a building is considered 'complete.' Our prevailing belief in completion means the life of a building after construction is largely disregarded. Brand describes this period as "the lost years—the unappreciated, undocumented, awkward-seeming time when [the building] was alive to

¹⁸ Hannah, "Event-Space: A Performance Model for Spatial Design," 303.

¹⁹ Hannah, 303.

²⁰ Hannah, 303.

²¹ Hannah, 303.

evolution.”²² Without it, we perpetuate a misconception of architecture as static and inalterable.

The completion of a building is typically celebrated by photography, which “certifies the ossification of the project and materializes the moment when the architect surrenders it to the world.”²³ These images, published in magazines or on the internet, are our primary means of referencing historical and contemporary architecture. New Zealand architect and academic Sarah Treadwell notes how Architecture New Zealand frames the house as either a “formal work of art or a creative functional triumph.”²⁴ Domesticity, “when clients move in, inhabit the interior and start to furnish the house,” is seen as threatening the pure form created by the architect.²⁵ Photographs contained in these publications and on the websites of architecture firms often omit any traces of inhabitation in favour of the “idealized moment before time enters to disturb the perfection of the scene.”²⁶ British architect, writer and educator Jeremy Till argues that in its omission of domesticity and time, architectural photography “allows us to forget what has come before (the pain of extended labour to achieve the delivery of the fully formed building) and what is to come after (the affront of time as dirt, users, change, and weather moves in).”²⁷



Fig. 19. An idealised image of architecture (weather looming).

²² Brand, *How Buildings Learn: What Happens After They're Built*, 11.

²³ Vassallo, *Seamless: Digital Collage and Dirty Realism in Contemporary Architecture*, 47.

²⁴ Treadwell, “From the Margins of Architecture: An Account of Domesticity,” 286.

²⁵ Treadwell, 286.

²⁶ Till, *Architecture Depends*, 77.

²⁷ Till, 77.

Isolated in this way far from the messy realities of life, it is unsurprising that architects continue to be “obsessed with notions of the iconic, the one-off, the monumental.”²⁸ The climax of completion, when the finished object is presented to the client, is prioritised over all others. However, this prejudice cannot be blamed on architects alone. Our conception of buildings as products consumed by their inhabitants is reinforced by the predominant role of houses to Aotearoa New Zealand’s economy, which economic journalist Bernard Hickey describes as “a housing market with bits tacked on.”²⁹ In Aotearoa 52% of wealth is held as property and the safest way to ensure a comfortable retirement is to acquire housing, which continues (almost without fail) to increase in value.³⁰ The role of buildings is first and foremost capital investment — “houses are homes for people to inhabit secondarily, after they are a financial asset.”³¹ Mortgages abstract buildings into debt, reducing “the future and its possibilities to current power relations” and resulting in what philosopher Maurizio Lazzarato describes as the “strange sensation of living in a society without time.”³² Outside of time, it is difficult to see buildings as anything more than static containers for money.

The house as commodity is traded on a flourishing real estate market and promoted with pictures of spotless rooms, perfectly staged and seemingly eternal. Like the photographs of the architectural canon, these images are sanitised to omit any traces of life, generically decorated and painted to appeal to as many consumers as possible.³³

Since photographs of buildings play such a role in objectifying architecture, I began to look for ways to alter these representations to better reflect the dynamism of buildings in use. I collaged people cut from candid and street photography into local real estate listings. In one, a group repairs a car out on the street whilst an elderly lady welcomes guests to a pool party. In another, a man hides the privacy of the interior from the intrusive gaze of the camera. Worlds intersect, and it is unclear where one timeline ends and another begins.

²⁸ Wigglesworth and Till, “The Everyday and Architecture,” 7.

²⁹ Hickey, “New Zealand’s economy is a housing market with bits tacked on.”

³⁰ Rashbrooke, *Too Much Money: How Wealth Disparities Are Unbalancing Aotearoa New Zealand*, 67; Hickey, “How hope for a generation was lost.”

³¹ Southcombe, “The city of privilege,” 33.

³² Self and Bose, *Real Estates: Life Without Debt*, 82.

³³ Young, “The Material Value of Color: The Estate Agent’s Tale,” 8.



Fig. 20-21. Life cut from candid and street photography.



s is the best site I've ever done a rise on. It has its own walkway down to the surf break and looks out all the way down Waipu

If I want an instant "pull from the architect," though, in fact, when Carolyn first contacted John, his response was "There's no way I'm doing that. I don't like you, and you like me." Judging by the holiday home that's frequented far more than the couple's modest townhouse, and the array of whiskey and glasses of wine consumed there, the meeting was a resounding success.

The site is the best site I've done down Waipu. It has its own walkway down to the surf break and looks out all the way down Waipu.

The view of town and the sea is meant for a beachside, so there are no neighbours. John's big on arrivals, and this one is no exception. The long walkway lends itself to a dramatic entry. "It's a gap between two blocks that gives you a peek at the ocean, and when you turn around to light, you are drawn to it."

From

Below: A central courtyard often features laundry being sorted, ironed, and folded.

Opposite: This infinity deck (left) provides views across the surrounding valley.

Fig. 22. Roof maintenance and courtyard laundry.

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Fig. 23. Pool party and car repair.



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Fig. 24. Garden maintenance.

Fig. 25. Life cut from candid and street photography (following page).







These pages The two abodes have been joined horizontally so as to give an equalized access to east and west conditions to both families. Built-in shelving units have been stacked across both levels to keep budgets down, and a subtle sense of difference is used downstairs to provide a point of difference from the upstairs house.



Yet this was not all about a 'good fences making good neighbours' but more about intimacy and bump spaces, about shared libraries and artworks, about meeting children and the village that raises them.

By figuring out the entry sequence, the designers began to draft a solution to the 'together but apart' conundrum.

"The way people come in through a long driveway, it is clear where you are expected to enter from. [There is] one door location, and then you come in and separate into two areas."

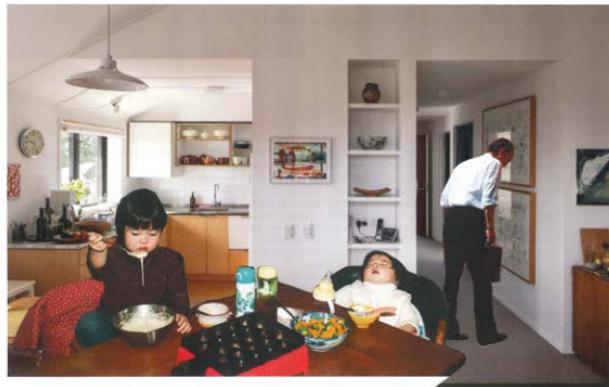
The clients and the architects decided to place all the 46m² of shared spaces directly past the front door and over two levels. A bathroom, the laundry, and a reasonably sized storage room all share a space on the lower floor. There is a side door here that allows for easy access from the garden into the utility areas and garage.

The main set of stairs connecting the two dwellings has a halfway landing that

is, in turn, presided over by a large window with an external, lattice brick screen. In the summer, both families often leave their respective doors and this large window open, the breeze passively ventilating both abodes.

"The idea came from thinking about privacy from the house next door, but also from getting some interesting light and shadow affecting the main entry. Also, in terms of patterning or having a simple form, it was about getting interest inside and outside without having to add another room," says Aaron.

Past this initial communal space, the architects were faced with the choice between starting the inner sanctums with social areas or with more private ones such as bedrooms and restrooms. The final choice was made because the owners "came from a villa and, like a lot of clients, they [told us] the things they like about their previous home. Ah, you are talking about the house that you currently live in!" jokes Aaron.



128

Fig. 26. Breakfast time stress.

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By Amy Houlihan.



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Fig. 27. Choir practice and move ins.

My own photography in and around buildings became increasingly focused on those using them. However, I found that even introducing people sometimes failed to convey the dynamism of buildings in use. To add movement into these images, I started to work with an old video camera that my family had used for many years of home videos. I kept it with me as much as possible, bringing it out to capture little moments of unusual or interesting activity.



Fig. 28. Canon Legria FS46.



Fig. 29-36. Life, animated.

Existing Buildings

In such close proximity, it was clear that buildings would not be the same without the social life within them. Rather than being simply a physical container for family life, this activity itself formed an inherent part of the house. Actor-Network Theory (ANT) has been invaluable in consolidating this way of understanding buildings as intertwined with society. Developed in the 1980s in Paris by sociologists Bruno Latour, Michael Callon and John Law, it offers the foundation for an understanding of buildings as networks of relationships between actors.³⁴ Society is traditionally understood as a homogenous entity with predetermined rules and structure that account for different types of action or behaviour.³⁵ It cannot be understood in its entirety except by those standing outside it. Latour endorses instead a performative view of society, in which it is “constructed through the many efforts to define it. It is something achieved in practice by all actors involved.”³⁶

Actors are “anything that makes a difference,” a broad category that includes humans but also encompasses non-humans such as animals or a building and its parts.³⁷ This means that rather than viewing buildings as physical objects placed into a social or environmental context, we can see them as a network (and part of a network) consisting of interactions between actors (building materials, architects, human and non-human residents, weather, money, regulations, etc.). They are what architectural theorist Albena Yaneva describes as “socio-architectural assemblage[s] made out of heterogeneous stuff,” perpetually unfinished and in a permanent state of becoming. Their making is not limited to the construction and alteration of building professionals but happens constantly by a wide range of actors.

From this perspective, the point of completion is merely an arbitrary marker within a continuously changing network of interactions. Buildings exist within the world, not in isolation, and it is this world (or ‘society’) that causes, encourages, and enables change. This suggests that the spirit of ‘working with what we have’ concerns not only alterations

³⁴ Buchanan, “Actor-Network Theory.”

³⁵ Yaneva, *Latour for Architects*, 63.

³⁶ Yaneva, 63.

³⁷ Yaneva, 67.

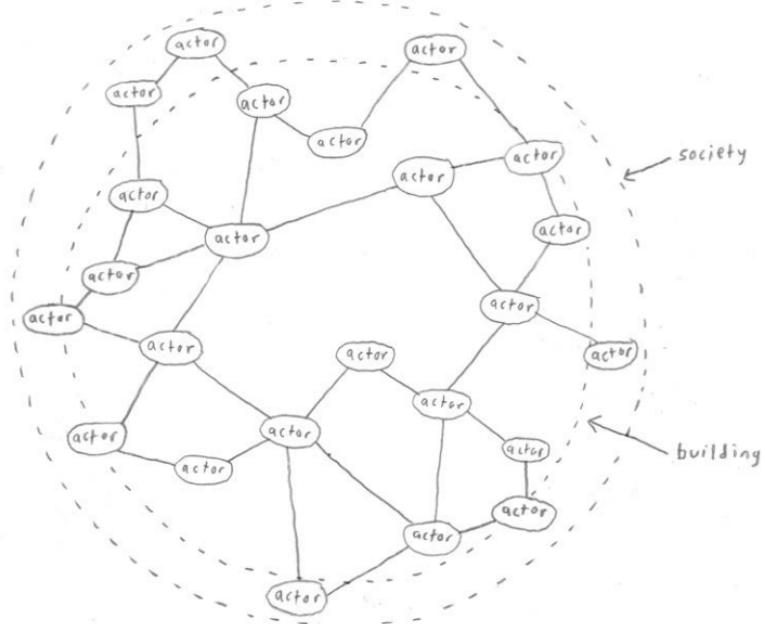


Fig. 37. The Actor-Network Theory conception of buildings as networks of actors within society.

of the physical fabric but should extend to the social, economic, and environmental context in which the building is situated.

An awareness of the need to consider both the social and physical fabric of existing buildings can be seen in Spanish architects Flores and Prats' adaptation project for the Sala Beckett theatre in Barcelona. They sought to recover "a building that was present in the collective memory of this neighbourhood, thus maintaining its spirit and the vast collection of memories lodged in its spaces."³⁸ While it had previously had a number of community uses, its connection to the neighbourhood had waned in recent decades after an extended period of abandonment.³⁹ Contrary to typical heritage conservation practice, the architects prioritised the restoration and preservation of the building's

³⁸ Flores and Prats, "Sala Beckett."

³⁹ Gómez-Moriana, "Circle of Life," 108.

social significance over its material authenticity, rearranging joinery and flooring throughout the building to enhance its sense of drama.⁴⁰

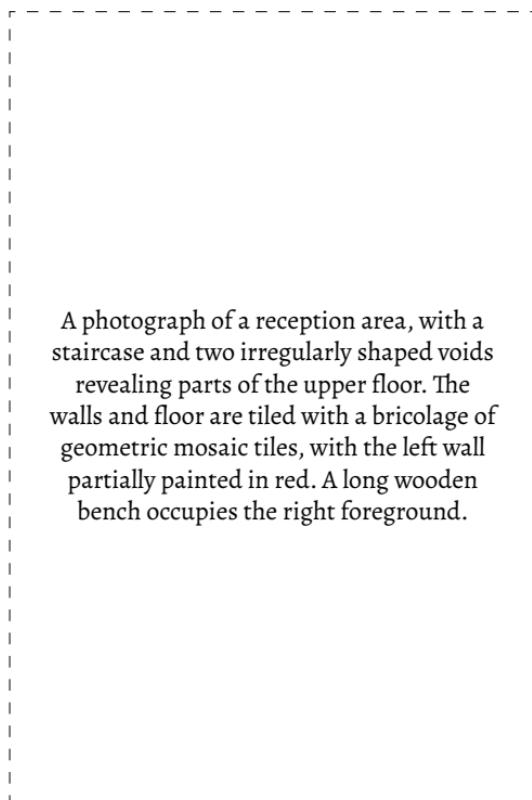


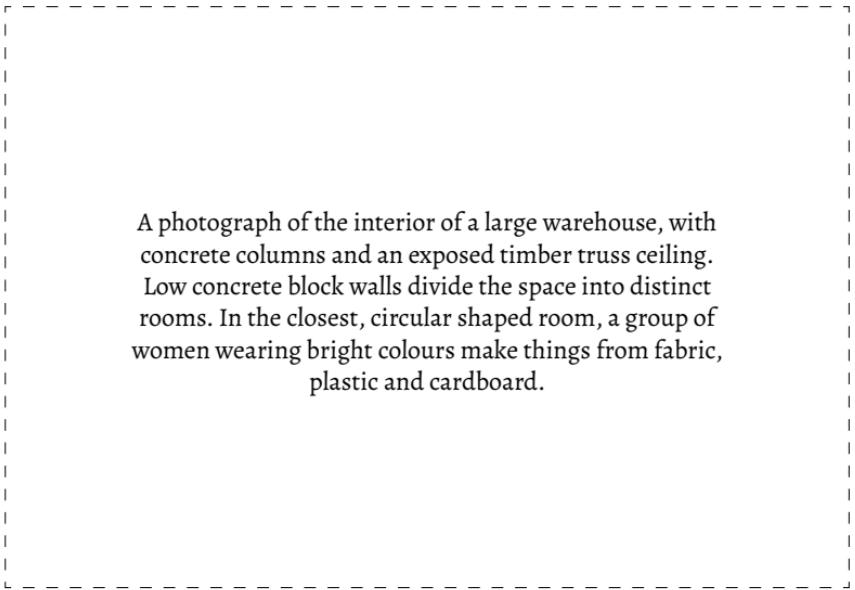
Fig. 38. Rearranged tiles and new voids in the Sala Beckett theatre.

For the SESC Pompéia in São Paulo, Italian-born Brazilian architect Lina Bo Bardi reused an old factory as a sports and cultural center for commercial workers. Similarly to Flores and Prats, Bo Bardi considered the “preservation of the city’s popular soul,” rather than its physical fabric, the driving force of her work with old architecture.⁴¹ Before the project began, she found that local people had already appropriated the unused factory for their own recreational use, so everything she added

⁴⁰ Murphy, “Ghost Storeys,” 112.

⁴¹ Awan, Schneider and Till, *Spatial Agency: Other Ways of Doing Architecture*, 110.

aimed to “maintain this energy, while expanding the existing sporting facilities and increasing the possibilities for communal activities.”⁴²



A photograph of the interior of a large warehouse, with concrete columns and an exposed timber truss ceiling. Low concrete block walls divide the space into distinct rooms. In the closest, circular shaped room, a group of women wearing bright colours make things from fabric, plastic and cardboard.

Fig. 39. Areas for craft within SESC Pompéia.

Prior to Bo Bardi’s intervention, the existing brick warehouses of the SESC Pompéia could be likened to the ‘low road’ category of buildings described by Brand. In contrast to rarefied ‘high road’ buildings, low road buildings are “low-visibility, low-rent, no-style, high-turnover” structures in which “any change is likely to be an improvement.”⁴³ It was precisely the roughness and neglect of the old industrial space that invited ordinary people to begin to reimagine its use.

Unlike heritage buildings (in which physical change is seen as an affront to the purity of the original fabric), ordinary buildings are allowed to change as far as they like. This potential for change is an asset of buildings unburdened by expectations of being ‘significant.’ In the everyday, questions of authenticity like that posed by Plutarch’s Ship of Theseus thought experiment (is a timber ship still the same ship

⁴² Oliveira, “SESC,” 205.

⁴³ Brand, *How Buildings Learn: What Happens After They’re Built*, 24.

after having each of its components replaced?) are ultimately unimportant.⁴⁴ No one is bothered about whether an ordinary building is still the same as when it was first built. This means that although 'reuse' is typically seen as an ostentatious transformation of an old building into something new, in many ordinary buildings it happens continuously, the product of an immeasurable number of small actions performed by specialists and non-professionals alike.

Representing Change

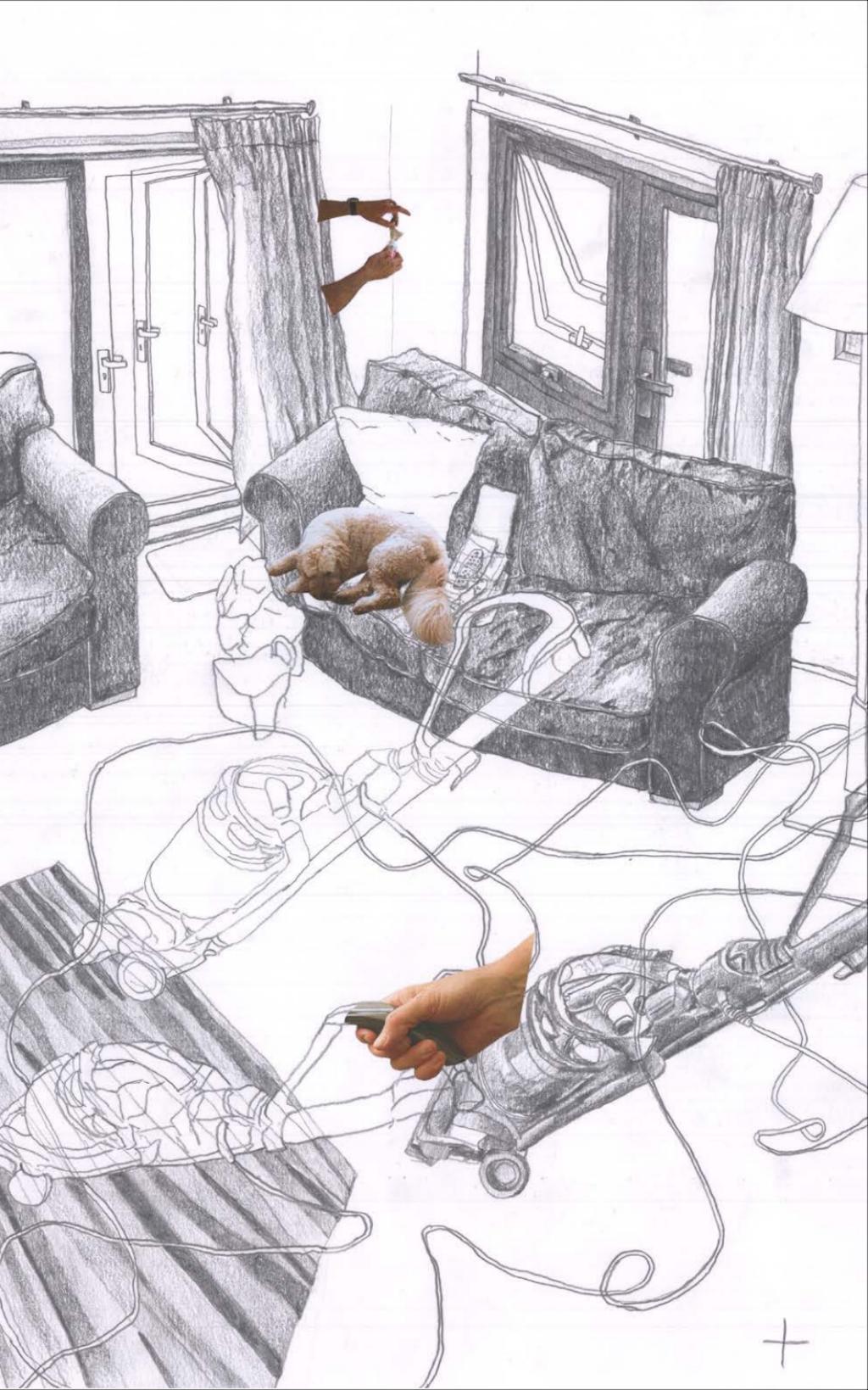
I felt that this quality of aliveness had great potential for reducing the demolition of ordinary existing buildings. It suggested a practice of reuse articulated through manageably sized interventions rather than large and costly transformations. However, our current means of representing buildings using sparse photography and static architectural drawings can curtail this possibility. We require a device like that desired by Latour and Yaneva, that could "transform the static view of a building into one among many successive freeze-frames that could at last document the continuous flow that a building always is."⁴⁵ I began to consider how I could expand my representation of the house to better reflect its constantly incremental change.

I drew two perspectives of the house that sought to illustrate some of the small, everyday change that occurs in the interaction between physical and social worlds. I spent time in the lounge and on the deck, sketching and taking photos of my parents repairing things and vacuuming, moving chairs and opening windows, and my dog Jasper rotating through his favourite spots. The fragments were then collaged together into a single composition using a combination of photoshop and redrawing.

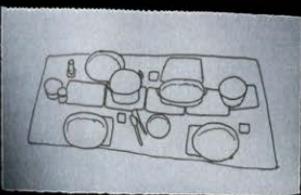
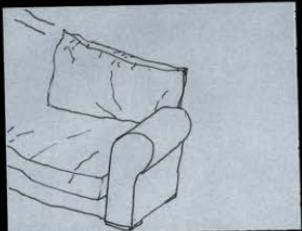
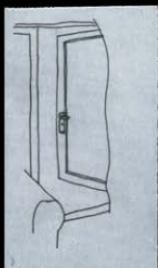
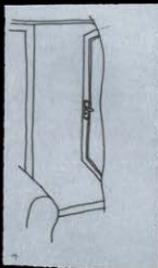
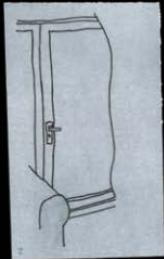
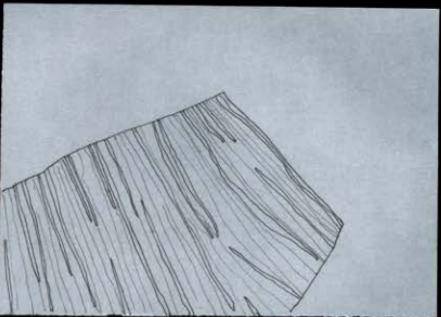
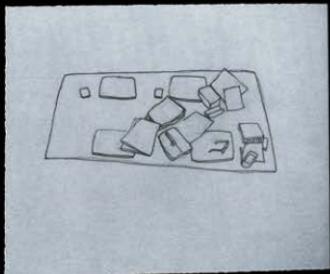
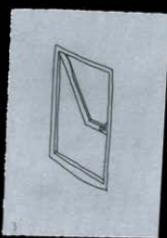
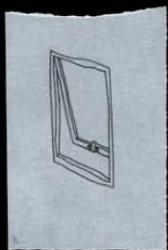
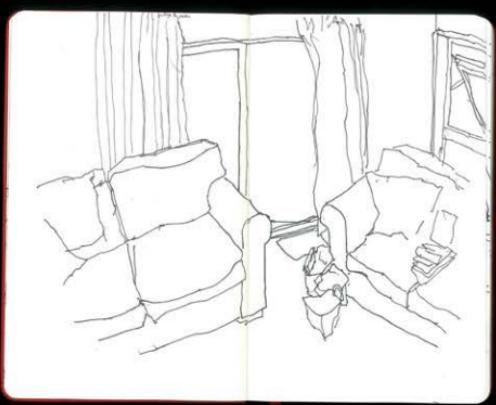
Fig. 40. Detail of Lounge Perspective (opposite).

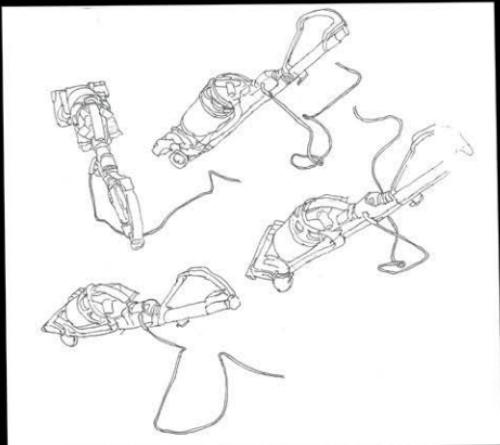
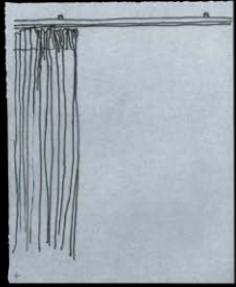
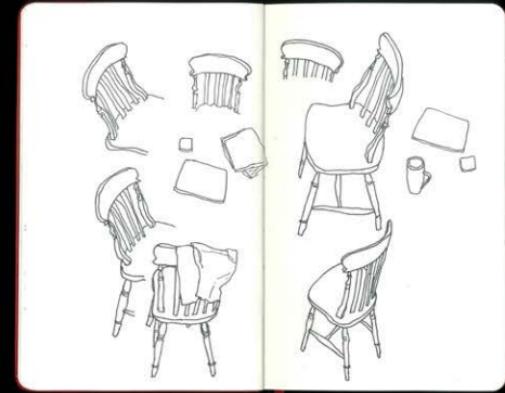
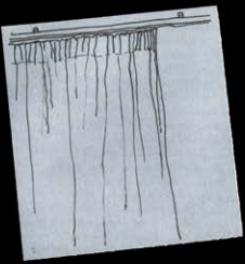
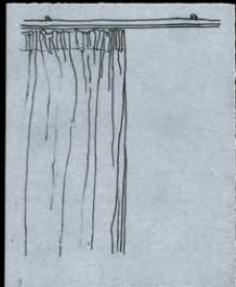
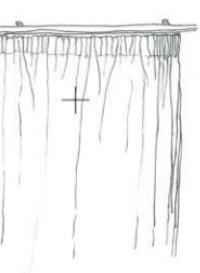
⁴⁴ Rose, "The Ship of Theseus Puzzle," 159.

⁴⁵ Latour and Yaneva, "Give me a Gun and I will Make All Buildings Move: An ANT's View of Architecture," 81.



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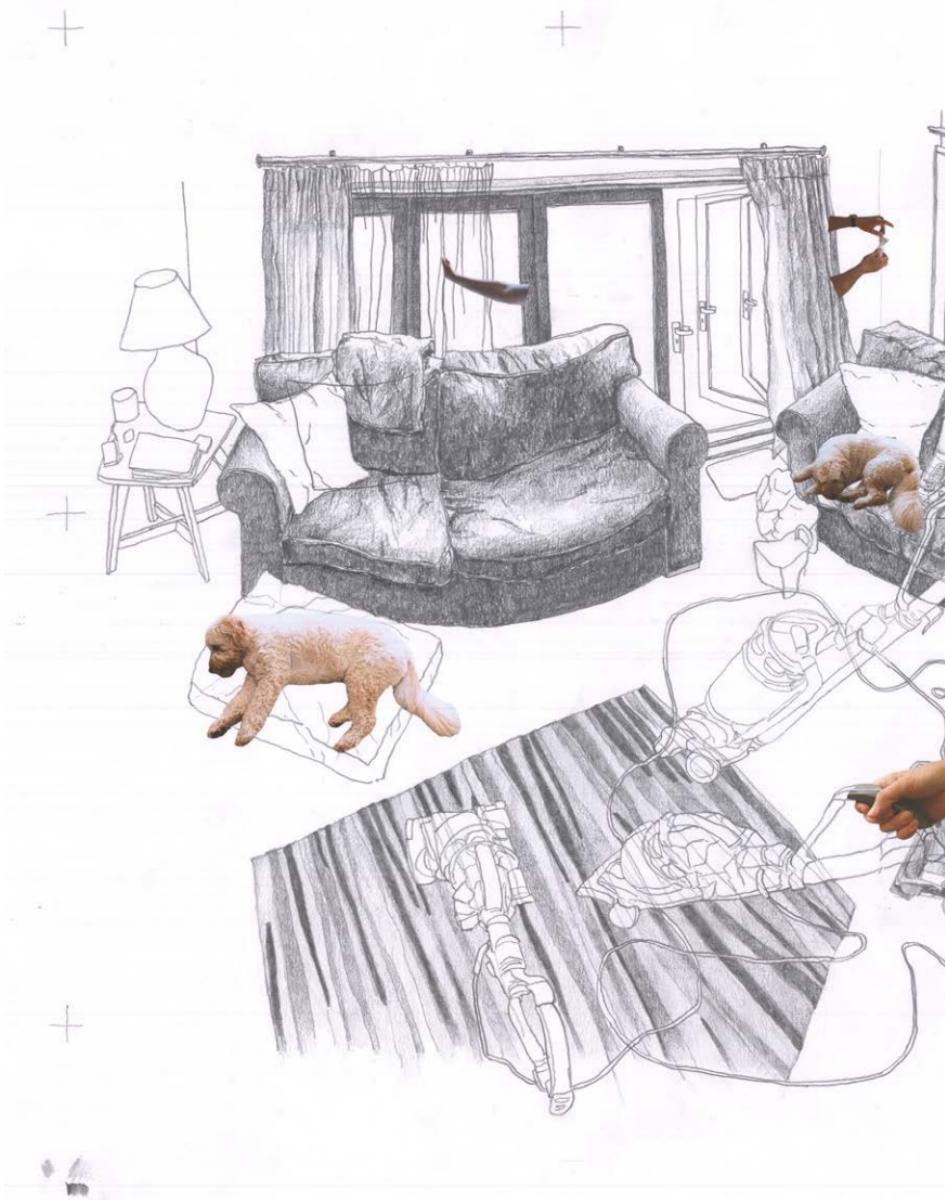
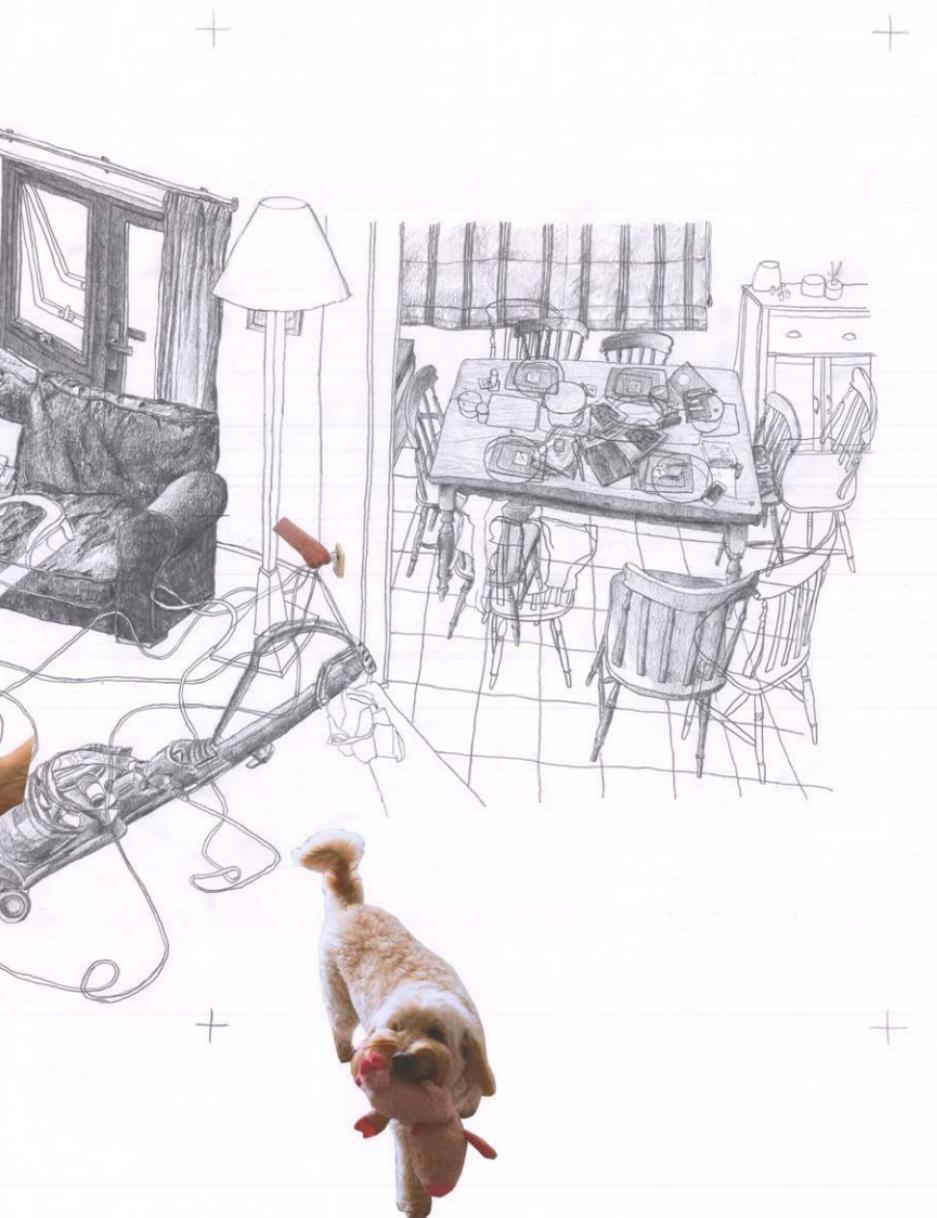
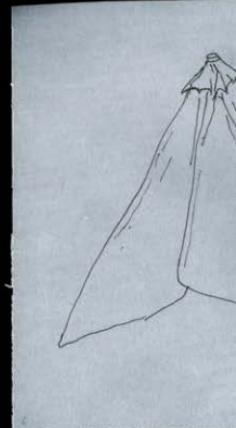
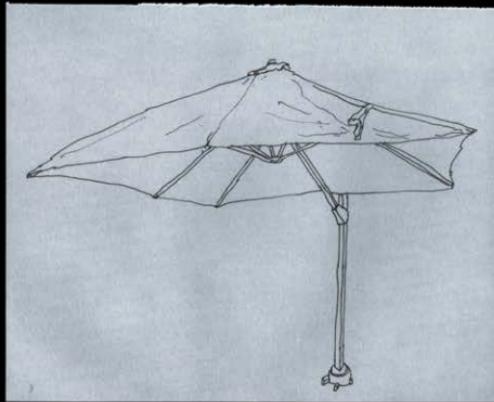
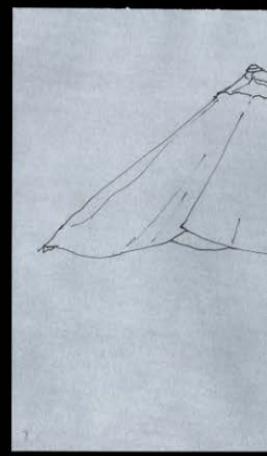
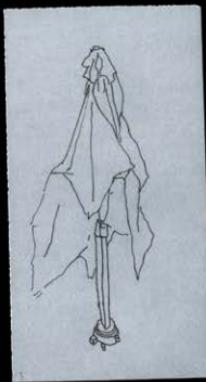
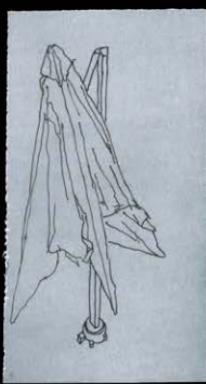
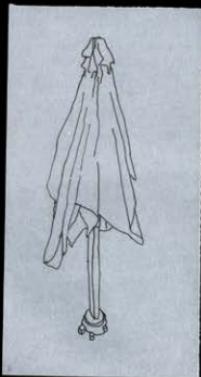
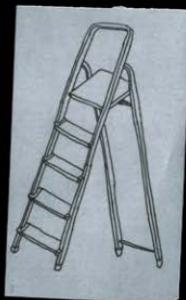
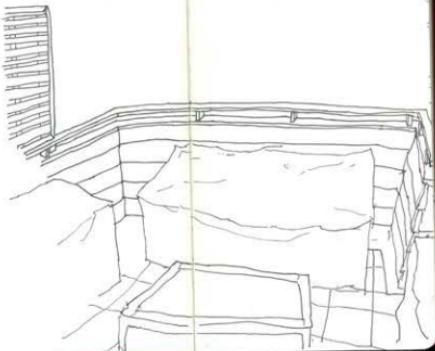
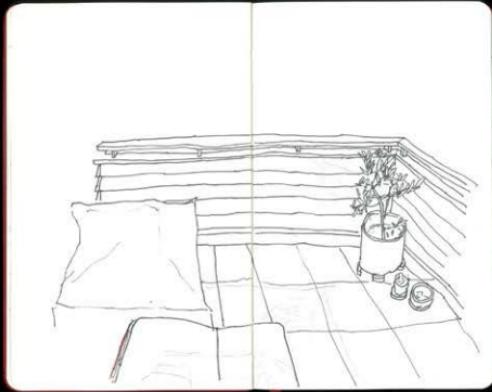
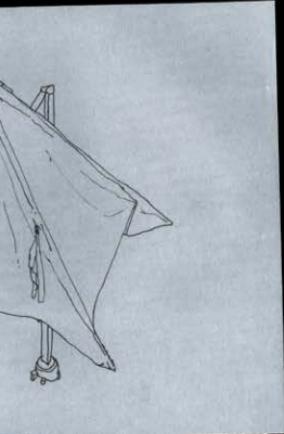
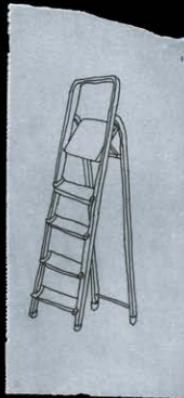
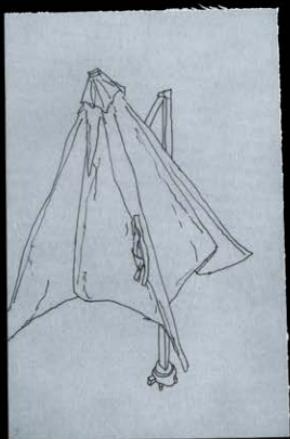
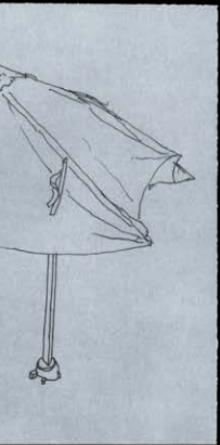
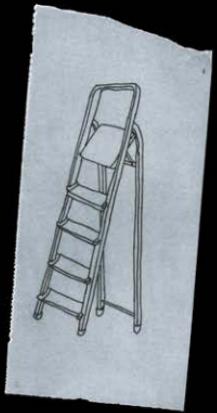
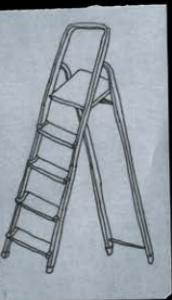


Fig. 41. Fragments of Lounge Perspective (previous page).

Fig. 42. Lounge Perspective.







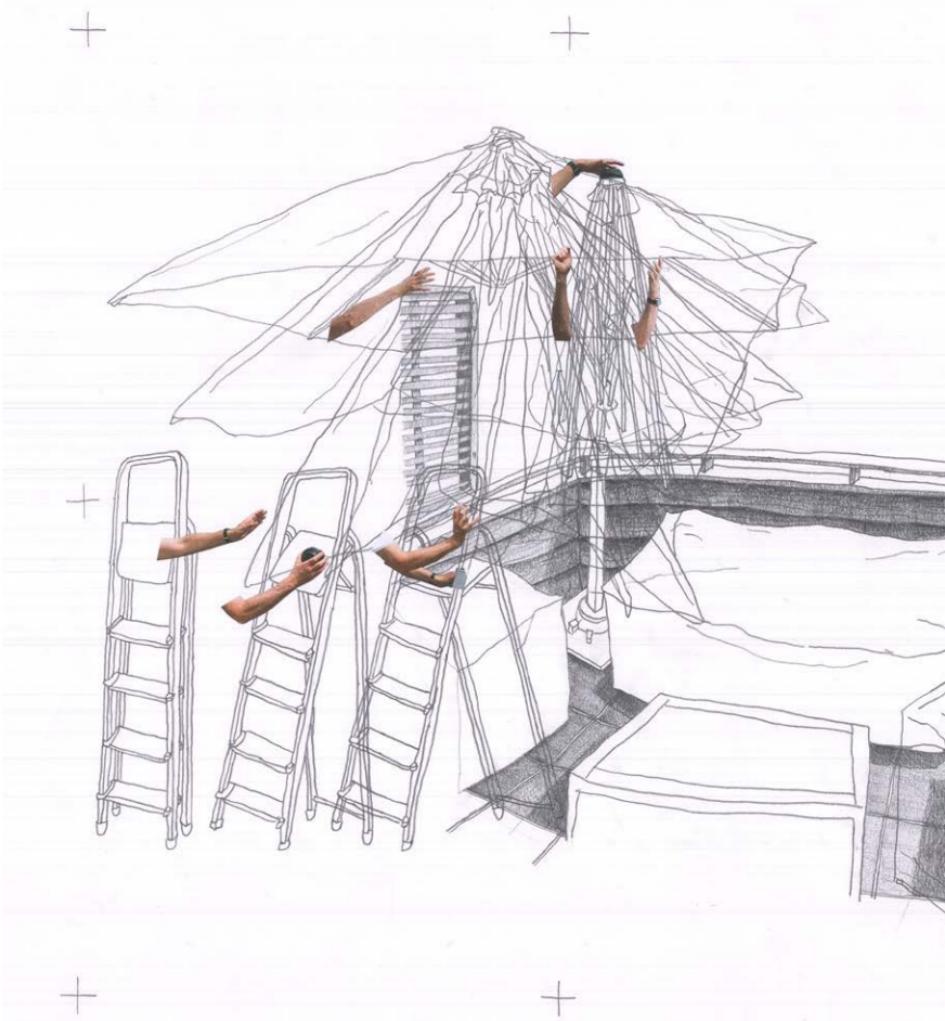
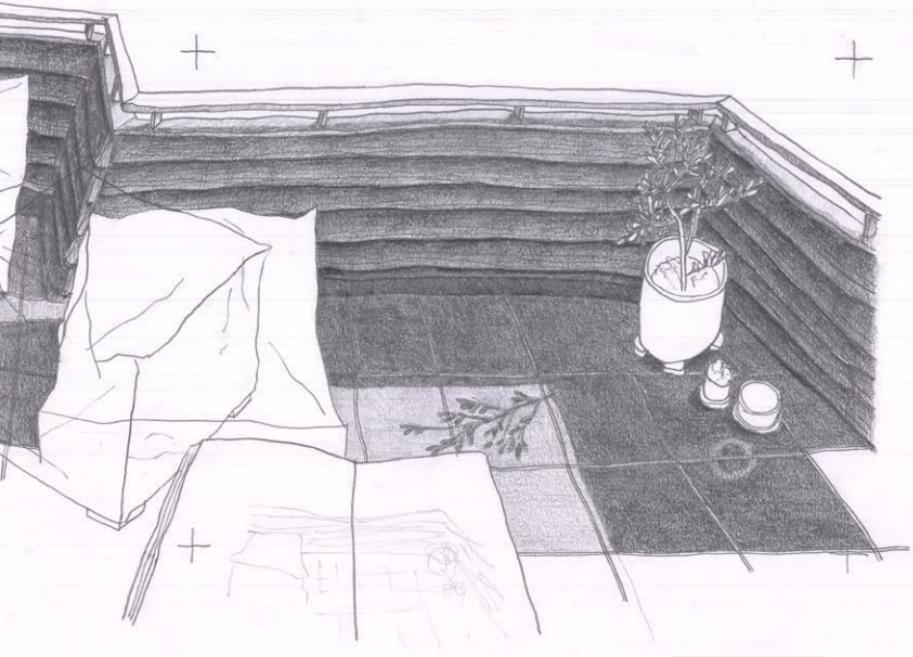


Fig. 43. Fragments of Deck Perspective (previous page).

Fig. 44. Deck Perspective.



I saw these compositions as essentially networks of actors. The method — of constructing a space from objects rather than populating a pre-drawn enclosure — privileges the agency of the actors over the strict hierarchy of Brand's layers. The absence of a border suggests that this assemblage of objects could go on forever. Instances of change, such as Mum vacuuming and Dad fixing the umbrella, are included as a series of separated moments in time, as though different frames in a video.



Fig. 45. Assembling a perspective on the studio window.

While this was an improvement on the immobile and polished photographs of architectural media, the drawings still failed to properly represent the incessant change occurring in the house. In a similar way, the inhabited plan drawings alluded to the life happening in the house, but mostly through the static traces left behind rather than the movement itself. These traces functioned more like evidence that could be forensically assembled to construct a narrative about the unseen activity of the house. Scratches, marks, and bumps describe the careless

manoeuvring of bags and boxes, and a series of marks on the edge of a door traced the growth of a set of unknown siblings.

I wondered what other evidence I could gather about the house and the change that has occurred across its lifetime. Dad had kept records of the alterations and the interventions made to the house in the period we have lived there—quotes, invoices and receipts printed out and stored in plastic sleeves. I sorted and ordered these records into a chronological change log, extracting the corresponding tradespeople and building layers so they could be read as a series of relationships between interacting actors. These paper records were supplemented with anecdotal evidence of changes we knew had occurred but whose details had been lost to time.

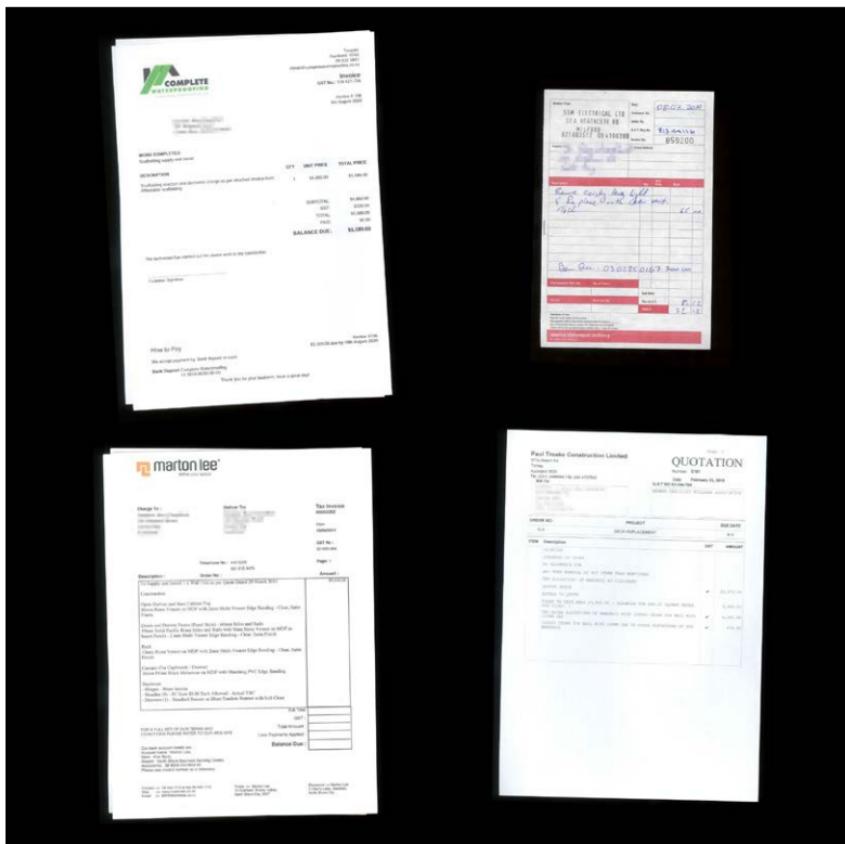


Fig. 46. Quotes, invoices and receipts from the life of the house.

	A	B	C	D	E	
1	change log					
2	date	description	interaction /classification	actors		
3				location/room	layer	people
4	??	original driveway removed, the property began to use neighbours driveway instead	remove, add	driveway, exterior	structure/site?	?
5	2007.07	air conditioner installed - srk 63 zea inverter	add	kitchen	services	Fonko
6	2007.09.30	"to repair leaking shower mixer and w.c. cistern as required"	repair	?	services	J. F. Ke
7	2008.05	repairs to roof: "rebed and pt ridges" "fix down lead flashing" "fibreglass x 2 areas of flat roof"	repair	roof	skin	Alltype
8	2009	new kitchen installed - new cabinetry, appliances, flooring, etc.	replace	kitchen	space plan	My Kit (floorin (builder (wiring)
9	2009.1	there was a beam missing from beneath the kitchen floor, discovered during renovation. engineer engaged for structural design of sub-floor beam	replace	kitchen	structure	Kibblev
10	2009.10.12	"investigate possible leak on water main" ... "there was no sign of any leak and the water in the meter box was coming into the box from the road side of the meter"	repair	driveway, exterior	services	Turner
11	2010.03	replacement of main deck, removal of all components due to "bad design, poor workmanship and rotting timber", handrail raised to meet code, ceilings of rooms below lowered by 60mm	replace	main deck, guest room	structure, space plan	Paul Tr System
12	2010.05	restoration of cedar cladding - scaffolding erected, "spray down all cedar cladding with antimould agent and clean back", "apply 2 coats of wattyl exterior stain"	clean	exterior cladding	skin	Paul Tr
13	2010.07.08	replacement of deck light with new unit	replace	main deck?	services	SSM E
14	2010.07.14	"replace wc ballvalve"	repair	?	services	Glenfie
15	2011.01.17	"locate and repair leaking pipe in ceiling"	repair	?	services	Glenfie
16	2011.11	repairs to roof: "lay down and screw new T&G plywood over the top of the existing plywood and butynol roofs, then install new lead flashings to suit", scaffolding to access roof	repair	roof	skin	Macmil
17	2011.11	installation of new windows in master bedroom, ensuite, lounge	replace	master bedroom, ensuite, lounge	space plan, stuff?	Peter A Ltd (win
18	2011.11.20	"after hours call out. inspect job. trace leak to split in pipe and repair as required"	repair	?	services	Topline
19	2011.12	new spouting, downpipes	replace	roof	skin?	Continu
20	2012.01.12	"repair leaking shower waste and adjust hw temp"	repair	?	services	Glenfie
21	2012.02	various roof repairs: "rebed ridge where needed around the house", "clean or grind out existing cement work around house where needed to prepare for flexi-point", etc.	repair	roof	skin	Apex R
22	2012.03.24	"replace section of water main as required"	repair	?	services	Precisiv
23	2012.04	new ensuite bathroom for mum and dad room - new floor, fixtures, tiling, etc.	replace	mum+dad ensuite	services, space plan, stuff	Comple
24	2012.09.07	"repair leak from shower upstairs into ceiling cavity"	repair	?	services	Abel Pl
25	2012.09.21	"investigated water leak [upstairs bathroom] and cut into ceiling to locate pipes which had split. repaired and tested all ok	repair	?	services	Laser R
	2012.10	"to seal up split in lead and nut back loose"	repair	roof	skin	Anex R

Fig. 47. Change log with events and actors.

In the sterile grid of the excel table, changes of different scales exist in the same space without hierarchy. I was interested in how these could supplement the static spaces of the earlier measured drawings. My next plan superimposed and animated selected events from the change log onto the plan drawing — the 2010 replacement of the deck, 2014 renovation of an upstairs bathroom and a 2021 leak above the dining table. I also added examples of other, unrecorded acts of change that occur far more frequently: a window being opened, bed being made, shoes being tidied up before expected guests.

A network of lines connects the physical objects of the plan to the people involved in each change. For example, the bathroom renovation involved my parents (who commissioned the work), a contractor and a network of subcontractors. But it also involved the interaction of the materials and fixtures of the bathroom itself. Using arrows and lines to directly connect these living and inanimate actors explicitly represents the physical objects within the social world. Each event is drawn as a sequence of incremental changes. The bathroom evolves from its original condition to an empty room, to its current state. The formerly static plan, in which the interiors of 2023 were transplanted into the imagined spaces of 1984, becomes animated as additional points in time are introduced into the drawing. Every frame captures a version of the house at some point in its life — snippets of the past that just as likely resemble the future.

British architect Adam Sharr discusses the tendency of the measured drawing to “acquire an immutability that seems to exceed the mutability of the built building.”⁴⁶ Even when inhabitation is introduced, the act of drawing freezes it in time. Since change happens over time, it is only by introducing multiple iterations of the space that the representation of buildings can come anywhere close to the restlessness of reality. Animating the drawing shows the building not just as it exists, but how it is existing.

⁴⁶ Sharr, “Drawing in Good Faith,” 315.

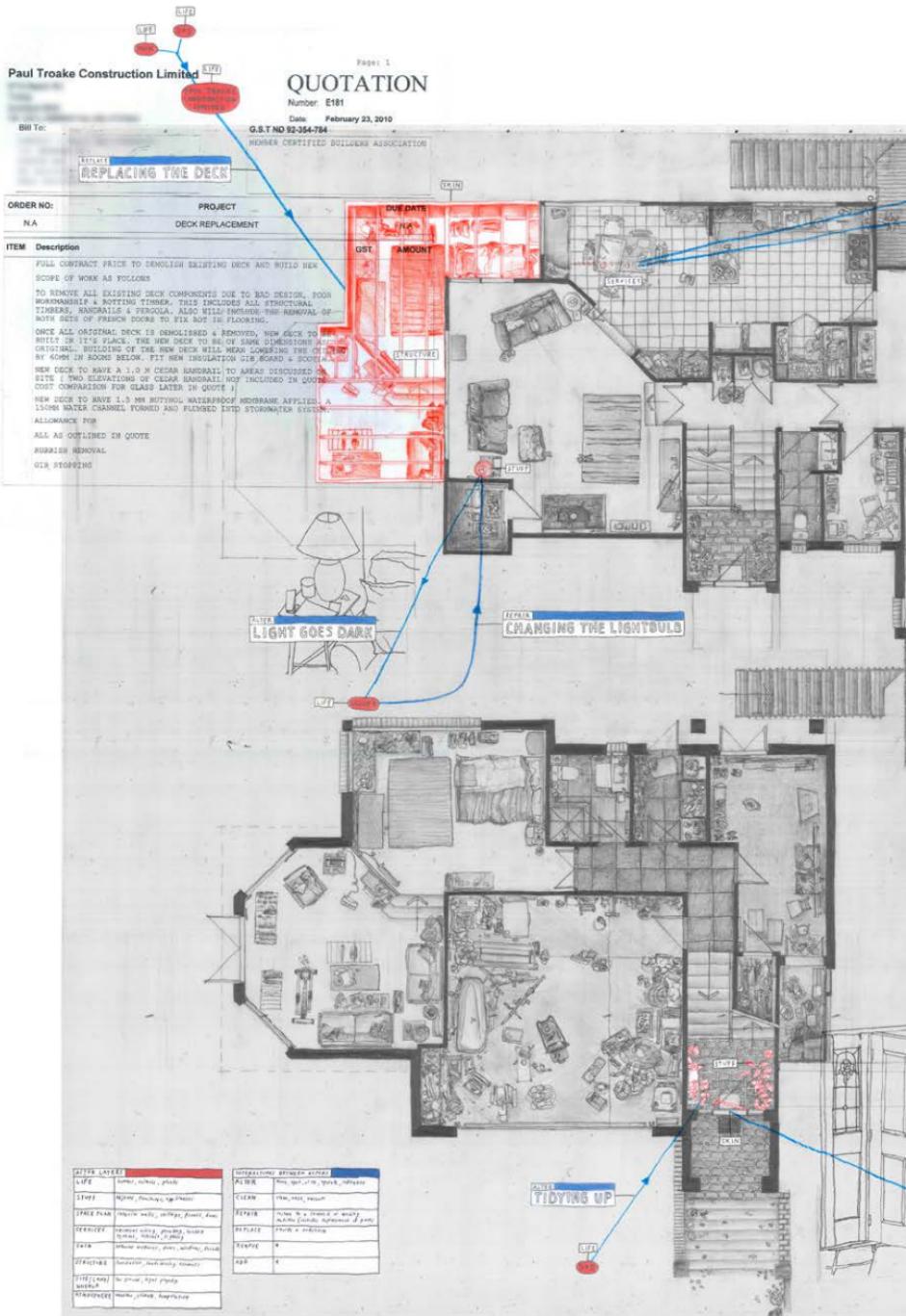


Fig. 48. The plan animated with events from its recent and distant history.

TAX INVOICE

Invoice Date
28 May 2000Invoice Number
001-4001

Reference

GST Number

Glenfield Plumbing &
Drainage Limited

Description	UoM	Quantity	Unit Price	Amount NED
20mm Secure Connector	m	2.00	8.76	17.52
m x 20mm Secure Pipe	m	0.50	5.81	2.90
10mm Waste Pipe	m	3.50	75.60	222.00
10mm Waste Trap	ea	1.00	35.76	35.76
				253.28
Subtotal				253.28
Total GST 15%				37.99
Invoice Total				291.27
Total Net Payment				0.00
Amount Due				291.27

Due Date: 04 Jun 2000

Terms strictly 7 days from date of invoice
Glenfield Plumbing & Drainage Limited
Bank Account: 03-0285 0145 382 00

Paid orbit

OPENING THE WINDOW

ATMOSPHERE
LIFE
LIFEALIVE
TOO WARM

LIFE

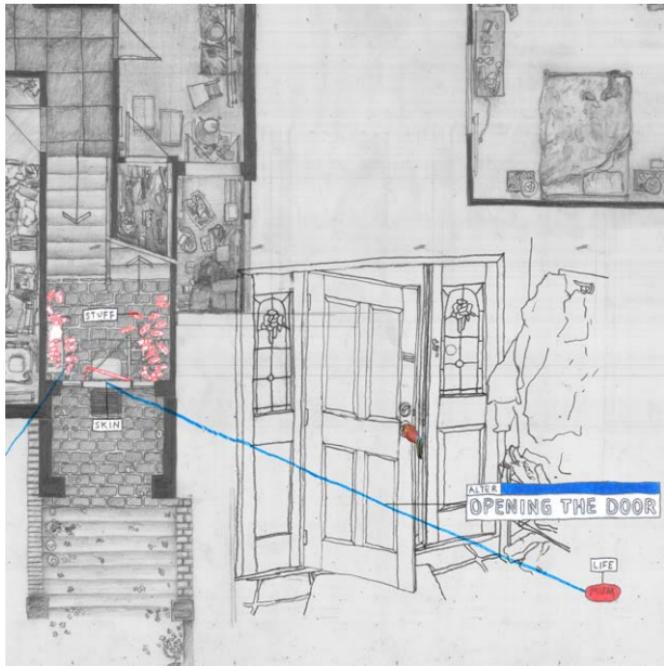
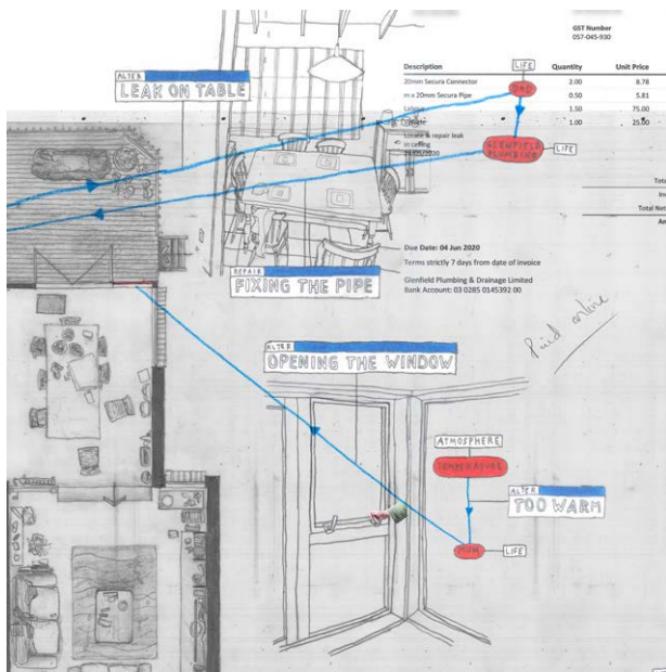
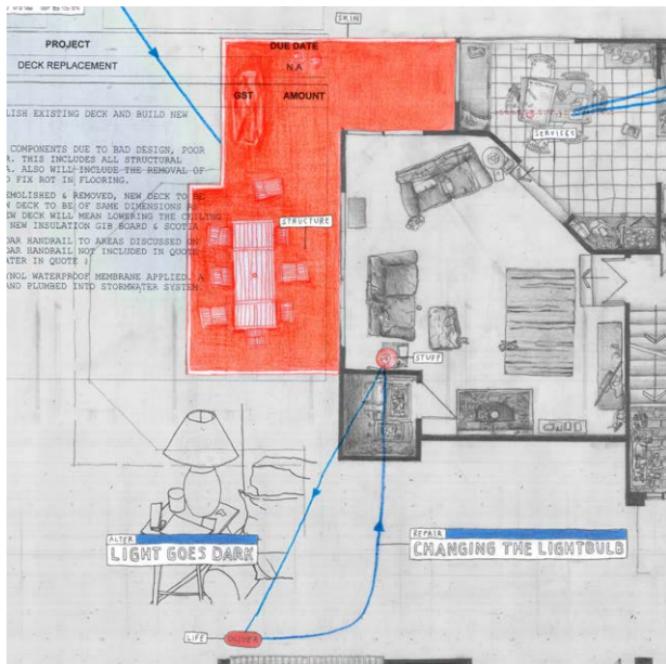


Fig. 49-52. Frames from the animated plan.



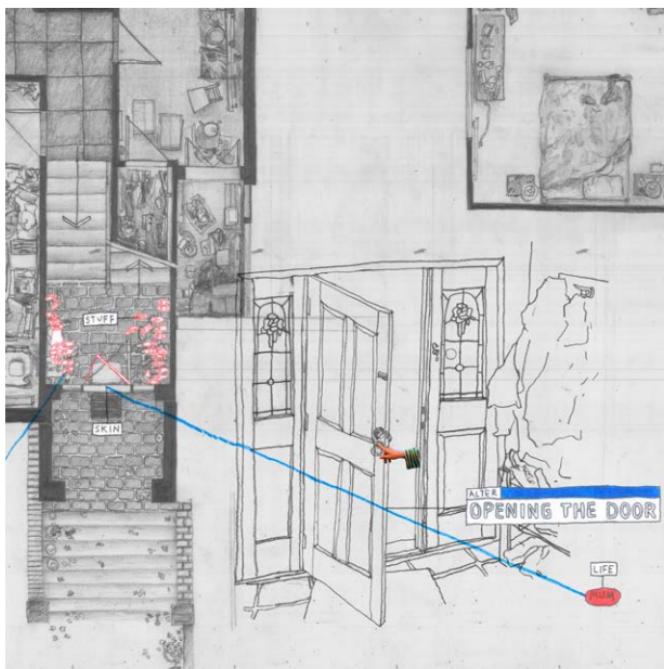
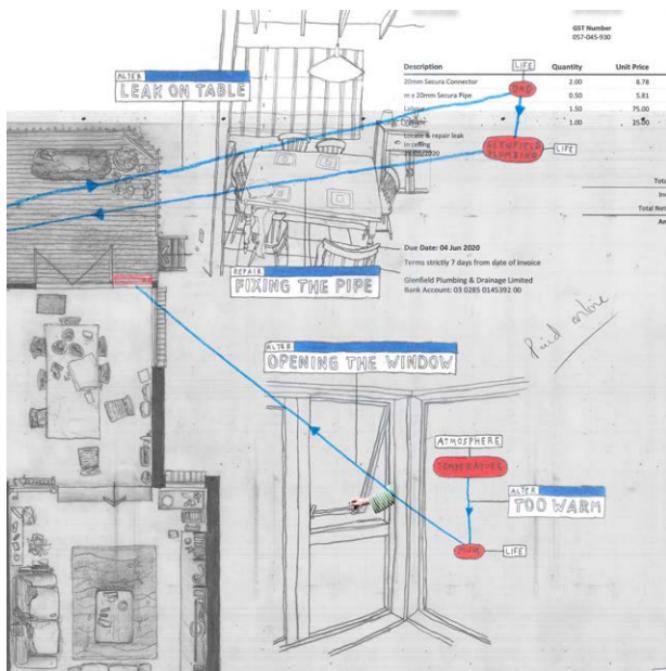
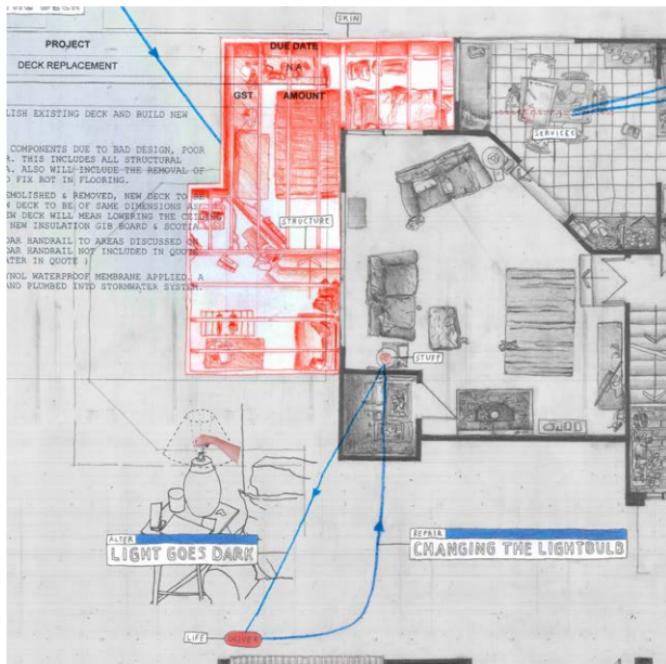


Fig. 53-56. Frames from the animated plan.



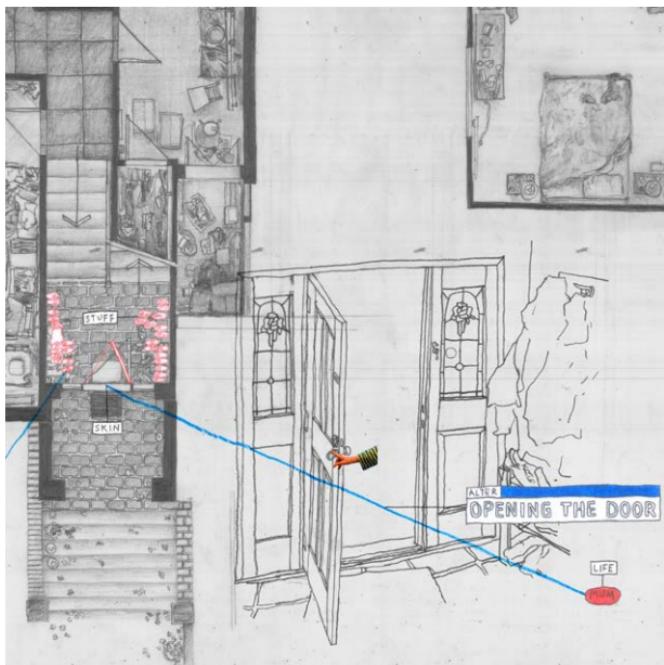
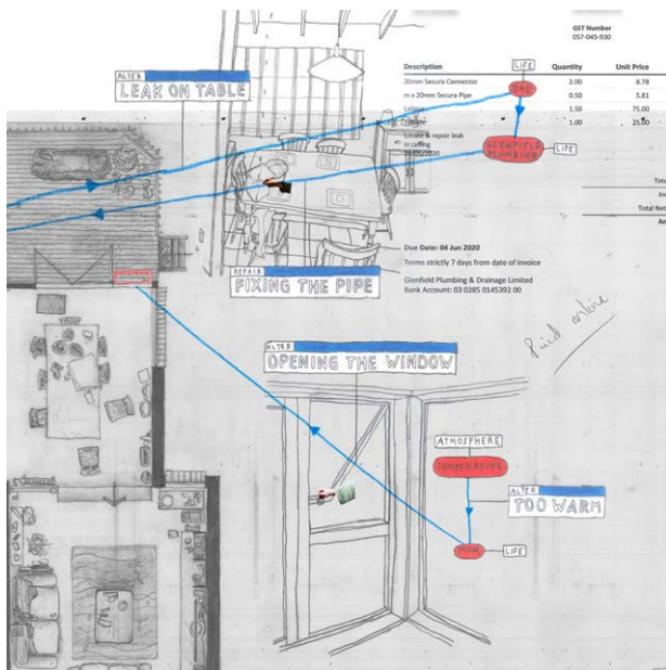
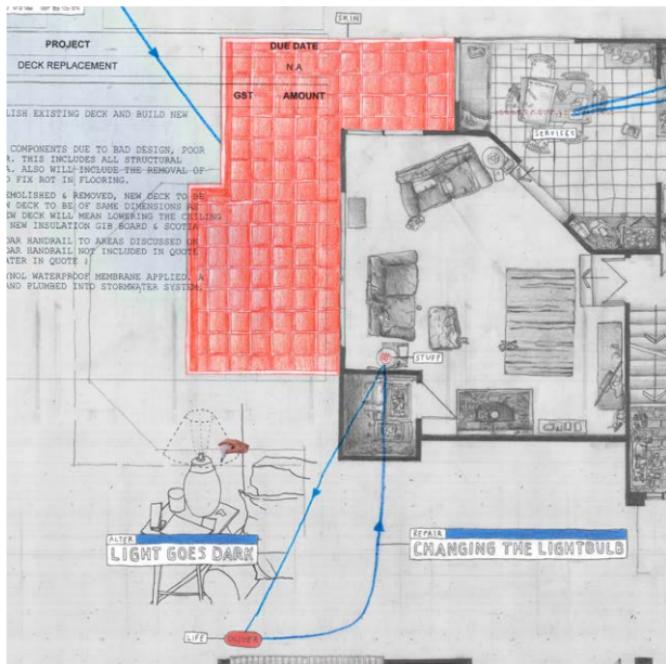


Fig. 57-60. Frames from the animated plan.



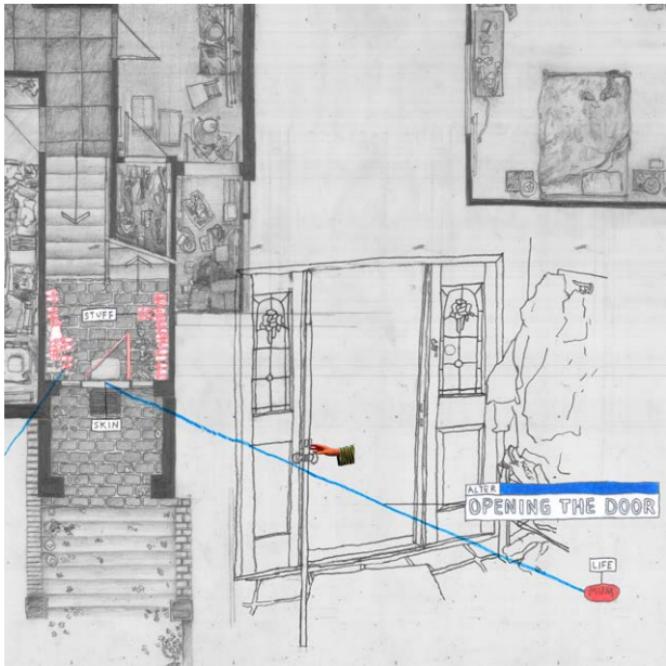
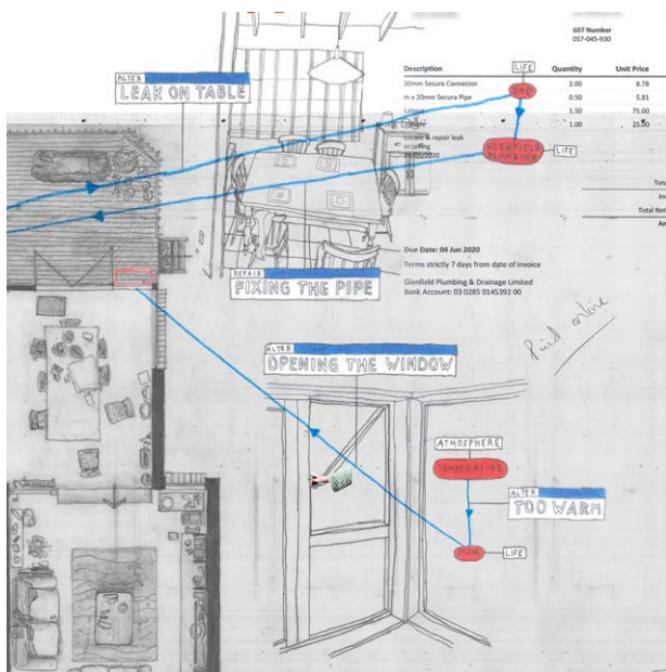
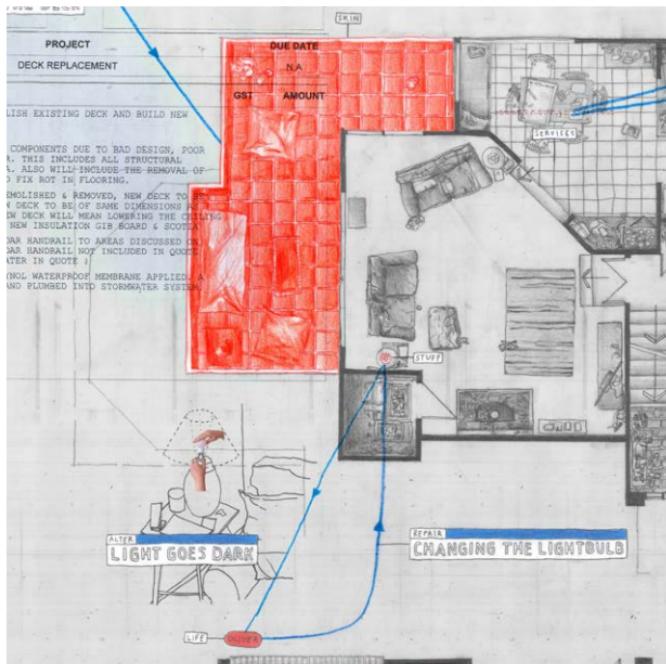


Fig. 61-64. Frames from the animated plan.



The building itself is a far more reliable record of time than its representation. As it ages and is exposed to weather and use, parts of it inevitably deteriorate. The roof begins to leak. Leaves accumulate unseen in the gutters. Walls stain, get dirty, crack and peel. Along with the rhythmic repetition of everyday life, decay and failure are “evidence of the passage of time.”⁴⁷ Maintenance and repair act in opposition to these failures, “a reaction to and a momentary covering up of time’s terror.”⁴⁸ Without it, a building risks entering a “downwards spiral of dilapidation.”⁴⁹

The change log shows that most of the incremental change recorded in the house has been acts of maintenance and repair. For my parents as owners, the house occupies their attention most consistently as an anxiety about things in need of repair. Alvaro Siza describes taking care of a house as a full-time job, the house owner

at the same time a fireman (houses are always burning down, or flooding, or gas escapes silently and usually explodes); a nurse (have you seen the splinters of wood from the bannisters getting stuck under your nails?); a lifeguard, he is in full command of all the arts and professions, he is a specialist in physics, in chemistry, he is a lawyer, or he does not survive...⁵⁰

In reality, the otherwise occupied owners of houses can make minor repairs, but more complex failures require professionals — an ever-expanding network of plumbers, electricians, roofers, arborists, handypeople and other contractors.

⁴⁷ Lynch, *What Time Is This Place?*, 65.

⁴⁸ Sample, *Maintenance Architecture*, 15.

⁴⁹ Brand, *How Buildings Learn: What Happens After They’re Built*, 112.

⁵⁰ Siza, “Living in a House,” 252.



Fig. 65-68. Maintainers and repairers.

British academic James Douglas defines maintenance as “regular ongoing work to ensure that the fabric and engineering services are retained to minimum standards,” while repair is the “restoration of an item to an acceptable condition by the renewal, replacement or mending of worn, damaged or decayed parts.”⁵¹ Although some scholars such as Hilary Sample distinguish cleaning from maintenance as being “more generally associated with the domestic, and therefore private and individual,” in this thesis I incorporate cleaning into the broad category of ‘maintenance and repair’.⁵²

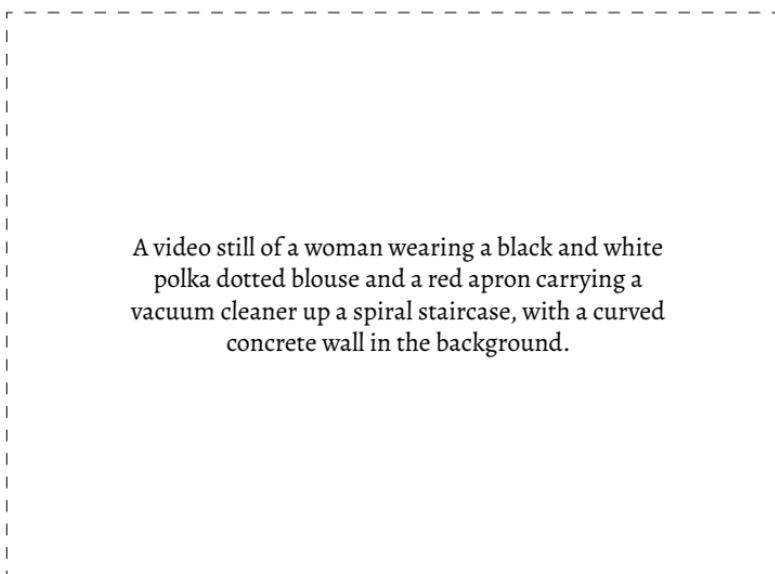
Maintenance is a Choice

These processes are essential for ensuring a building continues to be usable, yet architects typically disregard the effort required to take care

⁵¹ Douglas, *Building Adaptation*, 586.

⁵² Sample, *Maintenance Architecture*, 7.

of buildings. In the 2008 film *Koolhaas Houselife*, French filmmakers Béka and Lemoine document the routines of the housekeeper tasked with cleaning OMA's *Maison à Bordeaux*.⁵³ In response to a shot of her struggling up a spiral staircase with her equipment, architect Rem Koolhaas critiqued the “generic technique of cleaning [for] something so exceptional.”⁵⁴ It is implied that the inhabitant should adapt their habits to suit the architect’s masterpiece, not the other way around.



A video still of a woman wearing a black and white polka dotted blouse and a red apron carrying a vacuum cleaner up a spiral staircase, with a curved concrete wall in the background.

Fig. 69. The housekeeper of *Maison à Bordeaux* climbing a spiral staircase with her cleaning equipment.

Perhaps maintenance and repair are so unsettling for the architect because they involve the manipulation of the building space by ‘others,’ puncturing their fantasy of autonomy. Maybe it is because the failures and defects that precede them so brutally unravel the fallacy of the completed building. In recognising and responding to failure, maintenance and repair remind the architect that their building is not immutable or indestructible but vulnerable and only permanent with the help of others.

⁵³ Béka and Lemoine, *Koolhaas Houselife*.

⁵⁴ Sample, *Maintenance Architecture*, 99.

In his book *Rubbish Theory*, scholar Michael Thompson explains how the degradation of some buildings and the endurance of others is not purely the result of a natural physical process, but a social one as well. A building can only remain usable with a level of maintenance that responds to the rate of deterioration of its materials. Yet the actual maintenance afforded to a building is “a function of its expected lifespan,” which is itself “a function of the cultural category to which that building at any moment is assigned.”⁵⁵

The demolition or neglect of a building is not based on any intrinsic physical quality but on the social or economic value attributed to it. This value can be likened to the significance assigned to a heritage building, which in recent decades has been more widely acknowledged as “socially constructed and situational.”⁵⁶ American-Spanish architect and theorist Jorge Otero-Pailos suggests that heritage objects are ‘co-created’ by preservationists through the promotion and assertion of significance.⁵⁷ In a similar way, the attitude of ‘working with what we have’ promoted in this thesis is as much a question of social value as it is technical or creative intervention. As “material expressions of how much the existing structure is valued,” maintenance and repair can be seen as social processes that manifest this value.⁵⁸ Each act of cleaning and fixing asserts a commitment to the continued use of an existing building. Taking care is a choice, and if we are to demolish less and use more of what we already have, architects can no longer ignore the labour required for buildings to remain functional.

The work of French architects Lacaton and Vassal suggests how the architect can employ maintenance and repair to reassert the value of an existing place. In 1996, they were commissioned by the Bordeaux City Council to redesign Place Léon Aucoc, a sparse square bordered by trees and benches. After observing the space and talking to residents, the architects decided the square was “already beautiful.”⁵⁹ They proposed some basic maintenance tasks — “replacing the gravel, cleaning the

⁵⁵ Thompson, *Rubbish Theory: The Creation and Destruction of Value*, 52.

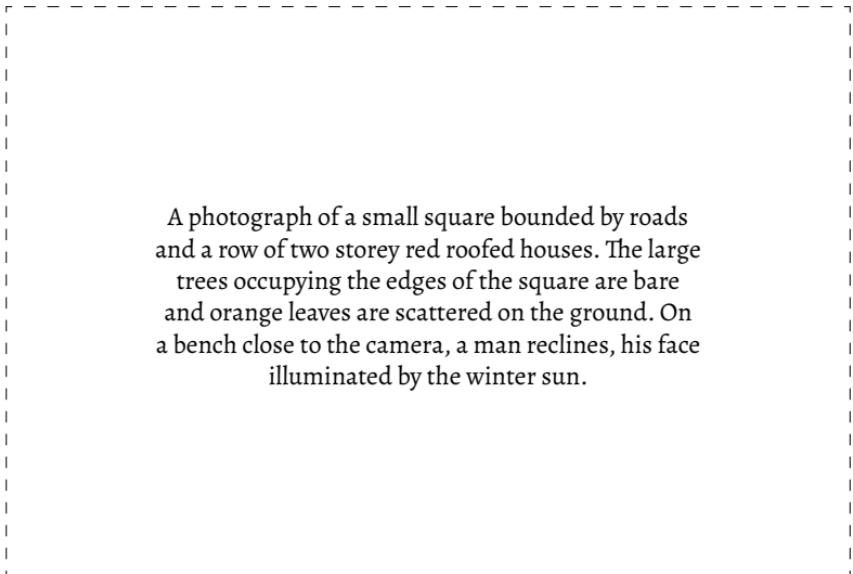
⁵⁶ Mason, “Fixing Historic Preservation: A Constructive Critique of “Significance”,” 66.

⁵⁷ Otero-Pailos, “Experimental Preservation,” 8.

⁵⁸ Petzelt and Heilmeyer, *Reduce, Reuse, Recycle: Architecture as Resource*, 50.

⁵⁹ Lacaton and Vassal, “Place Léon Aucoc, Bordeaux.”

square more often, treating the lime trees, slightly modifying the traffic"—and nothing more.⁶⁰



A photograph of a small square bounded by roads and a row of two storey red roofed houses. The large trees occupying the edges of the square are bare and orange leaves are scattered on the ground. On a bench close to the camera, a man reclines, his face illuminated by the winter sun.

Fig. 70. Place Léon Aucoc in its maintained state.

Lacaton and Vassal recognised an existing value in Place Léon Aucoc that exceeded the cultural category assigned to it by the council. Rather than using the budget to create something new, they dispersed it "across the fabric of the square (to its curb stones, the branches of its trees, the gravel of its central garden) and across time (to a rolling programme of maintenance)."⁶¹ Their investment in the continuation of the existing square imbues it with an expected lifespan longer than that implied by the council.

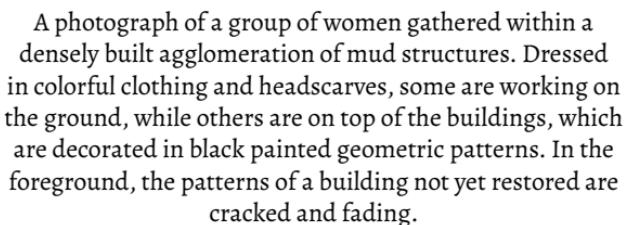
Each year in the Burkina Faso village of Tangassogo, women "collectively render the mud, wood and hay walls of the village with tools such as brushes and feathers, mattocks and stones" and paint the walls with "geometric patterns [and] recognisable images and symbols of the place."⁶² The paintings serve as embellishment while deferring the

⁶⁰ Lacaton and Vassal, "Place Léon Aucoc, Bordeaux."

⁶¹ Wilson, "Not Doing/Overdoing: 'Omission' and 'Excess' - Lacaton & Vassal's Place Léon Aucoc, Bordeaux, and Construire's Le Channel, Scène Nationale de Calais, Calais," 47.

⁶² Quintáns, "Make Do and Mend," 86.

erosion of the walls during the annual rains. Like in Bordeaux, maintenance and repair are used to declare the value of the buildings, with the added dimension of sustaining a tradition of collaborative work.



A photograph of a group of women gathered within a densely built agglomeration of mud structures. Dressed in colorful clothing and headscarves, some are working on the ground, while others are on top of the buildings, which are decorated in black painted geometric patterns. In the foreground, the patterns of a building not yet restored are cracked and fading.

Fig. 71. Women from Tangassogo reworking the walls of their village buildings.

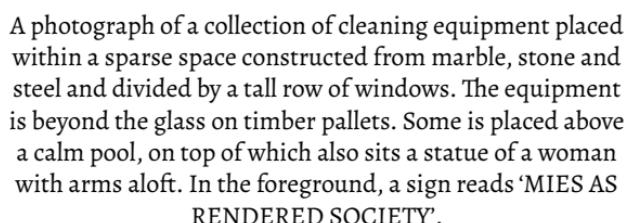
How we Maintain is a Choice

I came to see ‘working with what we have’ as a process that was already underway in the house in the form of maintenance and repair. Each act of care recorded in the change log affirms the perceived value of the building by ensuring it remains usable. As well as the sunk carbon cost of its extracted materials, for my family the house has personal significance as our home of many years and financial value as an asset that can be traded on the real estate market.

However, the value of the building becomes contested when considered at a greater distance. From afar, the house can be seen as an unquestionably privileged condition: a suburban single-family home on a large plot of land. As Auckland’s population increases and housing unaffordability persists, this model of housing will become increasingly incompatible with our need for density.

Maintaining this particular building suggests the dangers of main-

tenance. While failures expose the incompleteness of the building and transport it further away from the idealised image of the architect, maintenance and repair typically strive to erase or conceal this evidence of change. In their 2012 exhibition PHANTOM. Mies as Rendered Society, the Spanish architectural firm Office for Political Innovation revealed the labour required to maintain the immaculate image of Mies van der Rohe's Barcelona Pavilion by bringing the cleaning tools, spare materials and replaced building elements normally hidden in the pavilion's basement up into the main space.⁶³ Maintenance is exposed as an attempt to repeatedly return the building to the 'pure' and 'authentic' state recognised in the architectural canon.



A photograph of a collection of cleaning equipment placed within a sparse space constructed from marble, stone and steel and divided by a tall row of windows. The equipment is beyond the glass on timber pallets. Some is placed above a calm pool, on top of which also sits a statue of a woman with arms aloft. In the foreground, a sign reads 'MIES AS RENDERED SOCIETY'.

Fig. 72. Cleaning equipment displayed in the Barcelona Pavilion.

Despite not being burdened by the weight of architectural history, the maintenance and repair of houses and other ordinary buildings tends to operate with a similar logic — a return to some sort of imagined 'normal.' While maintaining the house avoids the environmental cost of demolishing it and building anew, it also serves to continually reinforce a privileged and unsustainable model of housing.

⁶³ Office for Political Innovation, "PHANTOM. Mies as Rendered Society."

Maintenance and repair are, as British geographer Caitlin DeSilvey notes, complicit. However, DeSilvey offers a broader definition of complicity as a “state of being complex or involved” that does not necessarily perpetuate the status quo.⁶⁴ When something breaks, we must make a choice about how (or if) to repair it. The “methods, materials [and] makers” we choose to employ are “hitched indelibly to other subjectivities and other geographies.”⁶⁵ The presence of choice suggests that there is an alternative — maintenance is a choice, but so is the way in which we choose to maintain.

Punctures in the Skin

The choices immanent in maintenance and repair can be recognised only through failure. These ruptures in everyday life expose us to the inner workings of our surroundings, the messy functional systems below the surface. Building failure at its most visceral can be seen in the ruin — the deteriorating remains or the partially demolished. The ruin represents the neglected, the uncared for, unmaintained.

Unlike the preserved building, the ruin “is something in progress, belonging to the past, present and future.”⁶⁶ No attempt is made (through maintenance, repair or restoration) to freeze it into an idealised form. Ironically, the ruin is alive to change in a way that many buildings in use are not, returned to a state comparable to the construction site in which the building is explicitly incomplete. It is easier to imagine intervening in this context of building or renovation, where change is already happening uninhibited and without self-consciousness. The potential of any number of possible futures is palpable in the half-completed walls, exposed roofs, strewn out materials and scaffolded accretions.

For designer and academic Fred Scott, “the process of ruination is intrinsic to the art of intervention,” since any adaptation, replacement or extension requires the removal of something that was there before.⁶⁷ Even a small failure pushes the building closer to that state of deteriorating potential. Our typical response to these failures is one of

⁶⁴ DeSilvey, “A Tale of Two Slates: On Collapse and Complicity,” 144.

⁶⁵ DeSilvey, 144.

⁶⁶ Scott, *On Altering Architecture*, 96.

⁶⁷ Scott 95.



Fig. 73. A house in a partial state of ruin.

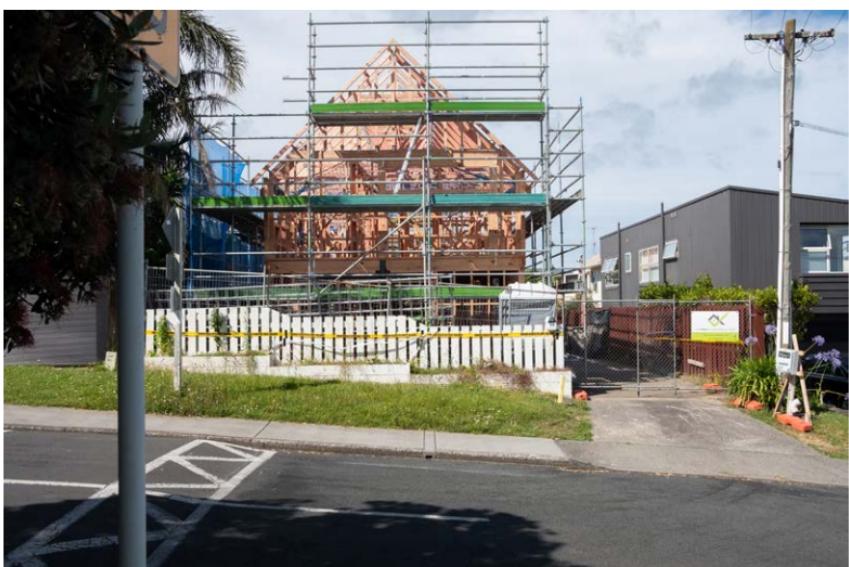


Fig. 74. The potential of construction.



Fig. 75. Between old and renovated, another building entirely.



Fig. 76. Punctures in the ceiling.

panic. Punctures in the skin remind us of the fragility of the building in which we live. In the house, a ceiling is covered in openings made to repair a series of broken pipes. Wetas dart in through a gap below the garage door. Less literal breaches occur in a malfunctioning dishwasher, or an absent family member. Sarah Treadwell likens the gaps between floors, walls and ceilings to “escape routes,” carefully guarded by skirting boards and scotias.⁶⁸ Our safe domesticity depends on the continuous completion of interior surfaces, familiar faces, functioning technology and the careful arrangement of objects.

Actor-network theory describes how this assemblage of reassurances can be analysed as a network of interconnected actors. In a similar way, German philosopher Martin Heidegger established how things disclose a world through use. In using a tool or a piece of equipment, “a referential structure comes about in which the object produced, the material out of which it is made, the future user, and the environment in which it has a place are related to each other.”⁶⁹ Our domestic routines — using a lawnmower to trim the grass, reading a book with the light of a lamp, lying comfortably in bed under an insulated roof — each create a distinct world between ourselves, the bed, the roof, the lamp.

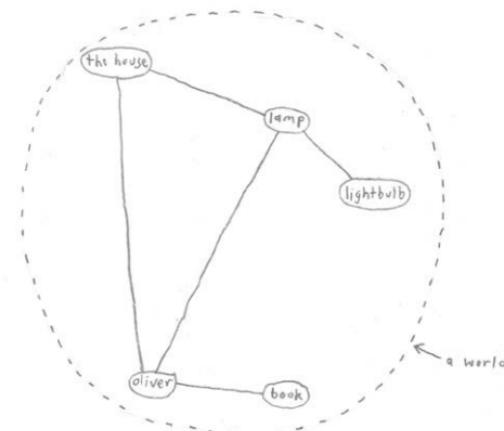


Fig. 77. Our use of objects creates a world.

⁶⁸ Treadwell, “From the Margins of Architecture: An Account of Domesticity,” 295.

⁶⁹ Verbeek, *What Things Do : Philosophical Reflections on Technology, Agency, and Design*, 79.

We pay little attention to this network or the objects involved until something goes wrong. When something breaks — when a lightbulb flickers off — it “demands attention of itself,” destroying the world that has developed around it.⁷⁰ In this moment, the tool changes from being ‘ready-to-hand’ to what Heidegger calls ‘objectively present.’⁷¹ An object becomes a thing.⁷²

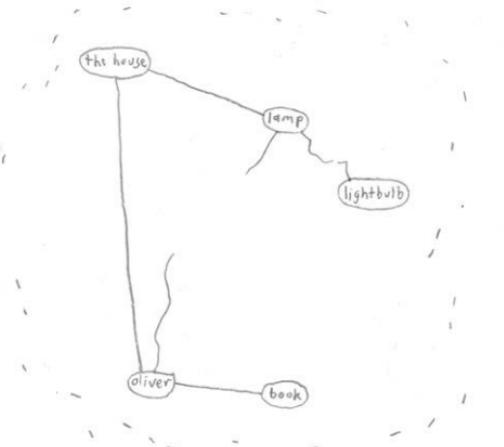
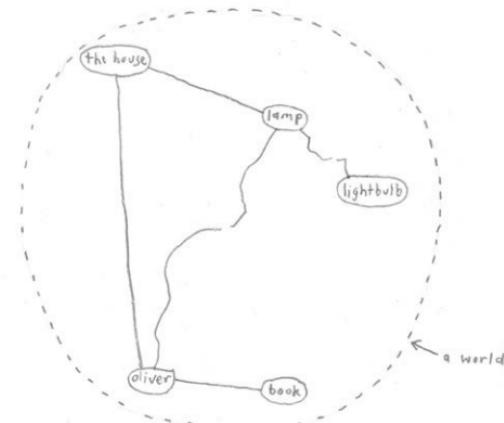


Fig. 78-79. An object breaks and a world is destroyed.

⁷⁰ Verbeek, *What Things Do : Philosophical Reflections on Technology, Agency, and Design*, 79.

⁷¹ Verbeek, 79.

⁷² Brown, “Thing Theory,” 4.

Without intervention, the tool cannot return to its ready-to-hand state and the world cannot continue to function. Its caregiver is faced with the choices of maintenance and repair. Academics Stephen Graham and Nigel Thrift argue that instead of being seen as “atypical and therefore only worth addressing if they result in catastrophe,” breakdown and failure should be seen as the “means by which societies learn and learn to re-produce.”⁷³ Although inconvenient, “when things break down, new solutions may be invented.”⁷⁴ Maintenance and repair often require improvisation that involves interrogating how and why something works at a depth not normally required. They do not necessarily reproduce the status quo.



Fig. 80-81. The improvisation of maintenance and repair.

This possibility was the spark that drove the remainder of the project. I sought to find a way to use the opportunity of maintenance and repair to balance this inevitability with the possibility of using more of what we already have.

How could the resource-intensive demolition of a suburban home be avoided without perpetuating the inequities of its current existence? How can maintenance and repair do more than just maintain something as it is? How could failure be opportunity?

⁷³ Graham and Thrift, “Out of Order: Understanding Repair and Maintenance,” 5.

⁷⁴ Graham and Thrift, 5.

Failures push the building to a state closer to that of the ruin, which enables normally impossible perspectives of the spaces in a way that Scott compares to a drawing. The empty space where there was once walls or floors allows “privileged views from previously inaccessible viewpoints,” from which “it offers a fresh explanation of itself.”⁷⁵ We are compelled to consider the building in a way we normally do not, to repair them or return them to some sort of familiar state.

‘Repair’ is etymologically rooted in the Latin word ‘reparare,’ which means “to pay attention to.”⁷⁶ I came to see the drawings, photographs and videos I had been making in the first part of the year as a practice of paying attention — of intensive observation, picking things open to reveal an otherwise impossible view of the house. In adding detail that was not necessarily unexpected but previously unrecorded, each image contributed towards an expanded understanding of the building, both on paper and in my mind.



Fig. 82. Dad removing paint from the front door.

⁷⁵ Scott, *On Altering Architecture*, 96.

⁷⁶ Berger and Irvin, “Repair: Sustainable Design Futures.”

Model Making

In the second half of the year, I continued to expand my representation of the house beyond the orthographic projections I had started with. I decided to combine the plan and section drawings into a digital model. If in re-drawing the original documentation I was impersonating the actions of the original draughtsperson, using the drawings to make a model was like imitating the next part of that process, in which the drawings are interpreted to construct the building itself.

I quickly realised that the drawings did not all line up — some errors had been made in adapting the original drawings to match the existing house. I printed each of the scanned drawings, cut them out, and then in a process of trial and error pushed and pulled them until the heights and widths of rooms were consistent across the set. At a large scale, the repair of the drawings was essential to rectify errors which would have disrupted the logic of the model and allow them to align in three dimensions. But at a smaller scale, it resulted in all sorts of misalignments — extra tall doors and picture frames that do not line up, caused by the gaping chasms cut through the building. My focus on accurate details at a small scale had pushed the larger scale further from accuracy. The quirks of small failures had (without me realising) produced some noticeable change on the larger form of the house.

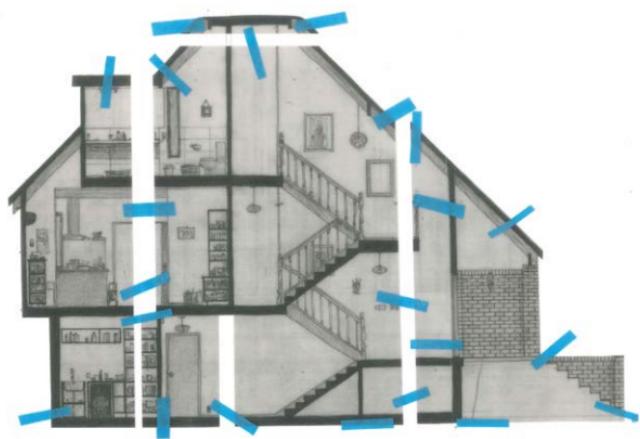


Fig. 83-84. Repaired section drawings.

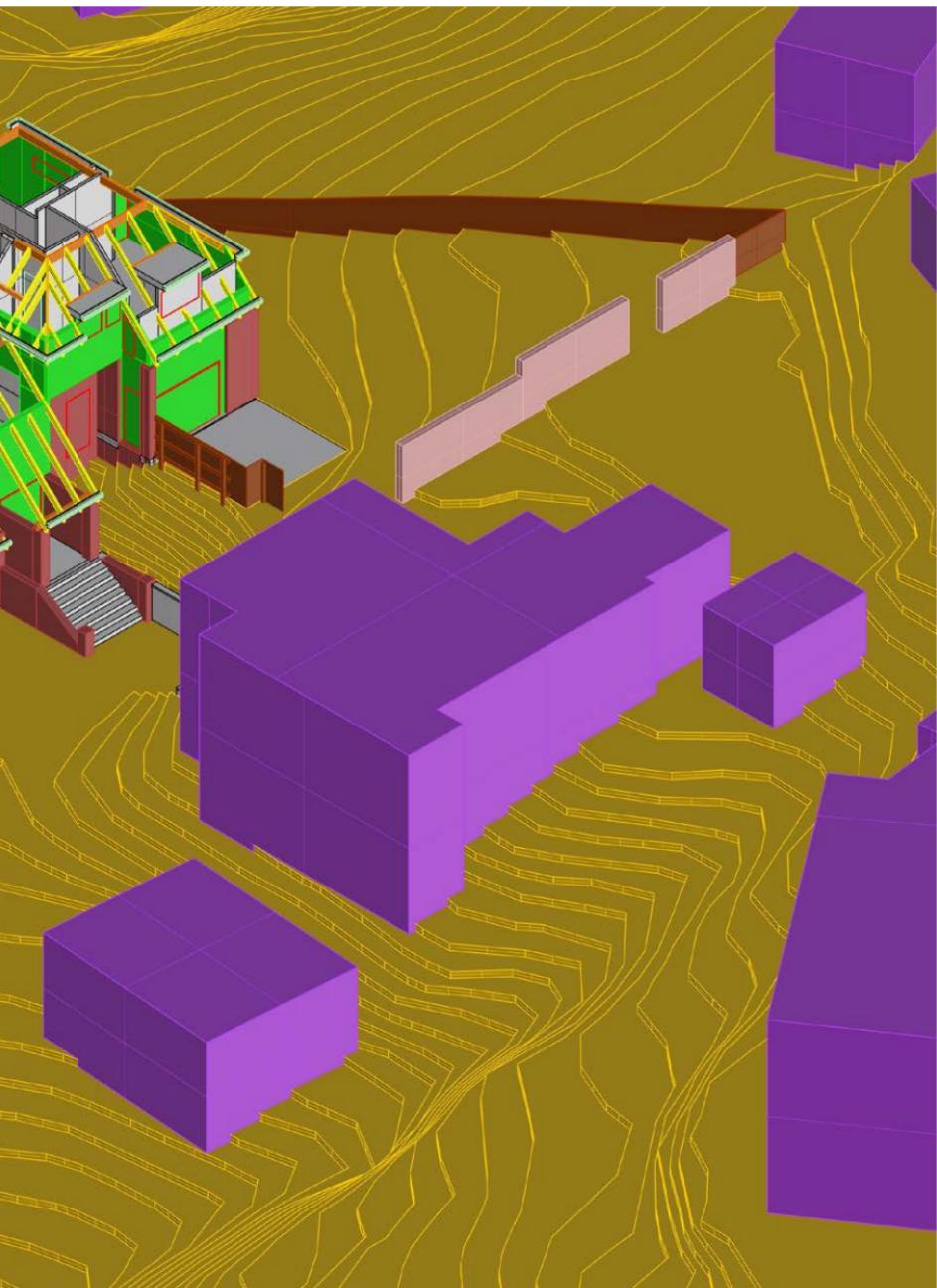


Fig. 85-86. Repaired plan drawings.

I aligned the newly repaired drawings as precisely as possible in Rhino and used them as a base to begin building up the walls, roofs and floors into a three-dimensional model. Similar to the process of making the original drawings, I worked on this within the house so I could make additional measurements to fill in gaps that were not covered by the plans and sections. Once the walls were established, I added more detail — windows, balustrades and stairs.



Fig. 87. Rhino model of the house.



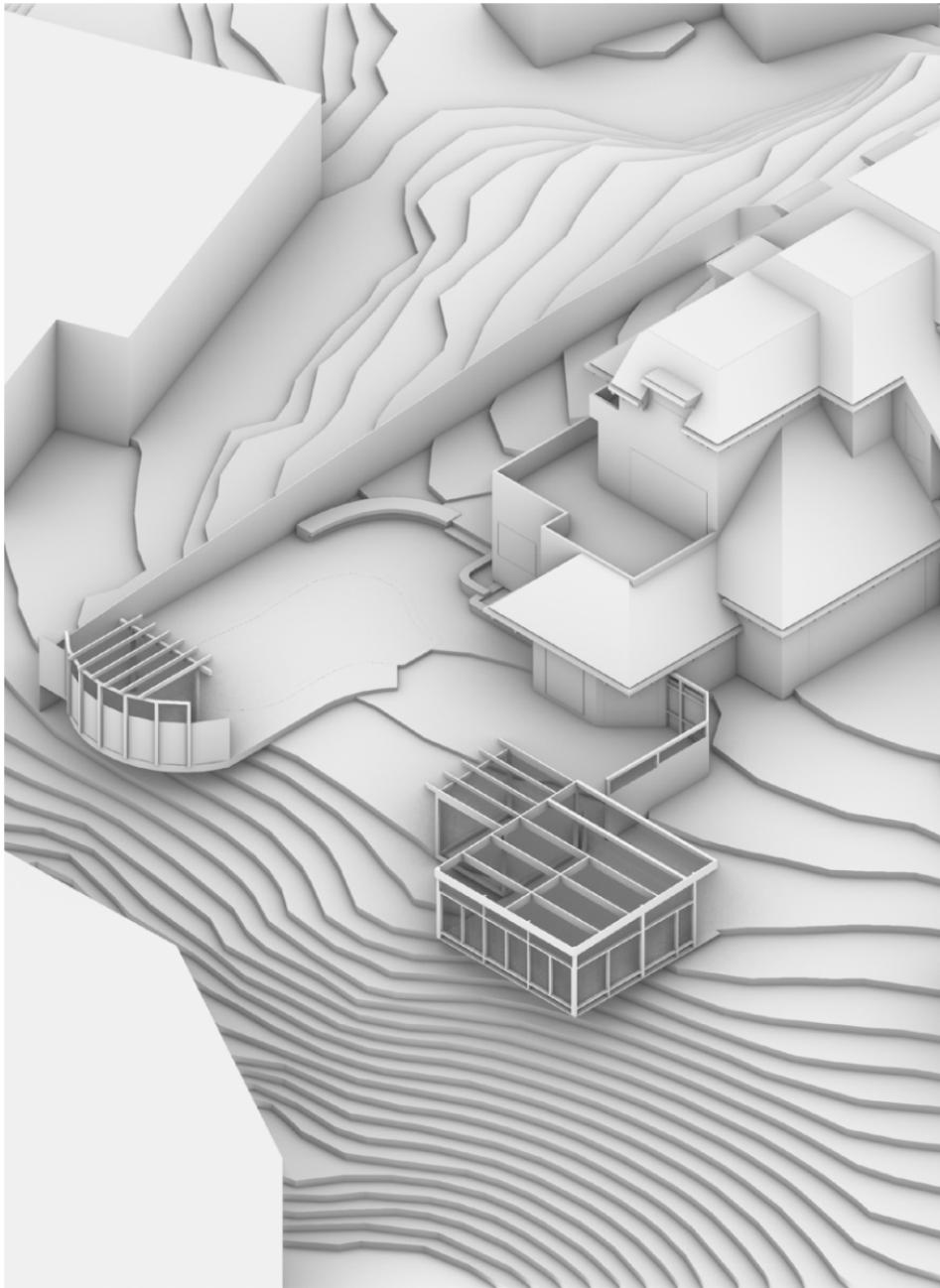
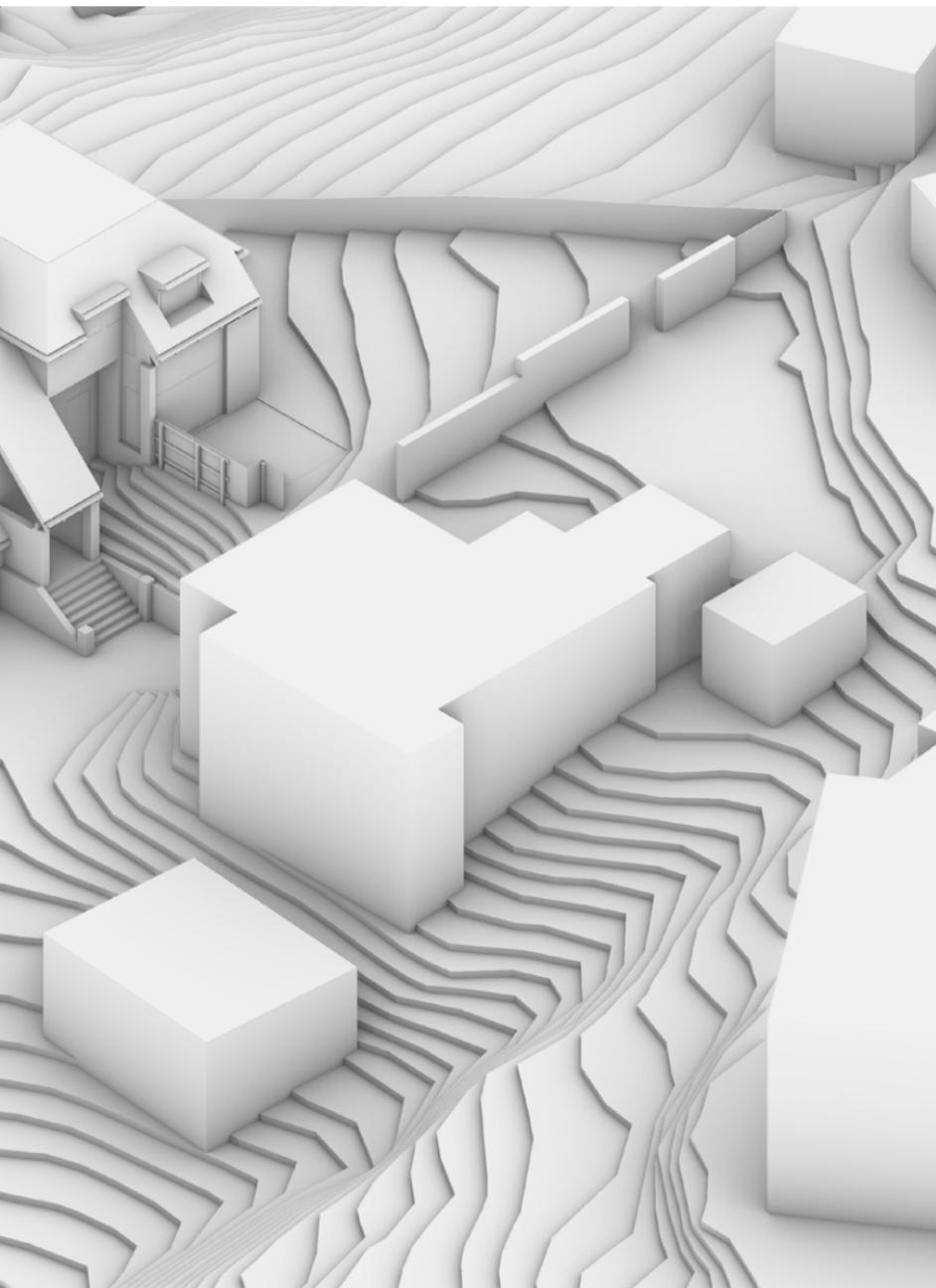


Fig. 88. Rhino model of the house, with roof.



Even once all the spaces of the house had been replicated, it remained far from the actual house. It lacked all the other parts of the network that I now understood to comprise the building — the life, activity, dirt and holes. In a way, it was too ‘complete,’ hermetically sealed and sanitised in digital space, insulated from the messiness of reality.

Somewhere Between Reality and Fiction

Throughout the year, I continued to capture bits of this reality using my camera — photos and videos of my family, my dog, the changing light across the walls of my room, a sunset through a window, a spider’s web between the house and a tree. Despite being only partial representations of a particular moment, these images captured the specificity of the spaces far better than the homogenous flatness of the digital model. Photographs freeze a moment in time but struggle to hide all the mess of the world. They are, as American photographer Lee Friedlander explains, generous:

I only wanted Uncle Vern standing by his new car (a Hudson) on a clear day. I got him and the car. I also got a bit of Aunt Mary’s laundry and Beau Jack, the dog, peeing on the fence, and a row of potted tuberous begonias on the porch and seventy-eight trees and a million pebbles in the driveway and more.⁷⁷

As established in Chapter 2, photography has perpetuated the myth of the static building. However, this can be blamed as much on the staging and timing of the photograph as the medium itself. I wondered whether the failure of photography in relation to architectural representation could be an opportunity to reconsider its application in the field. How could the generosity of the medium supplement the pure and anonymous digital forms of the computer model?

⁷⁷ Shore, *Modern Instances: The Craft of Photography*, 17.

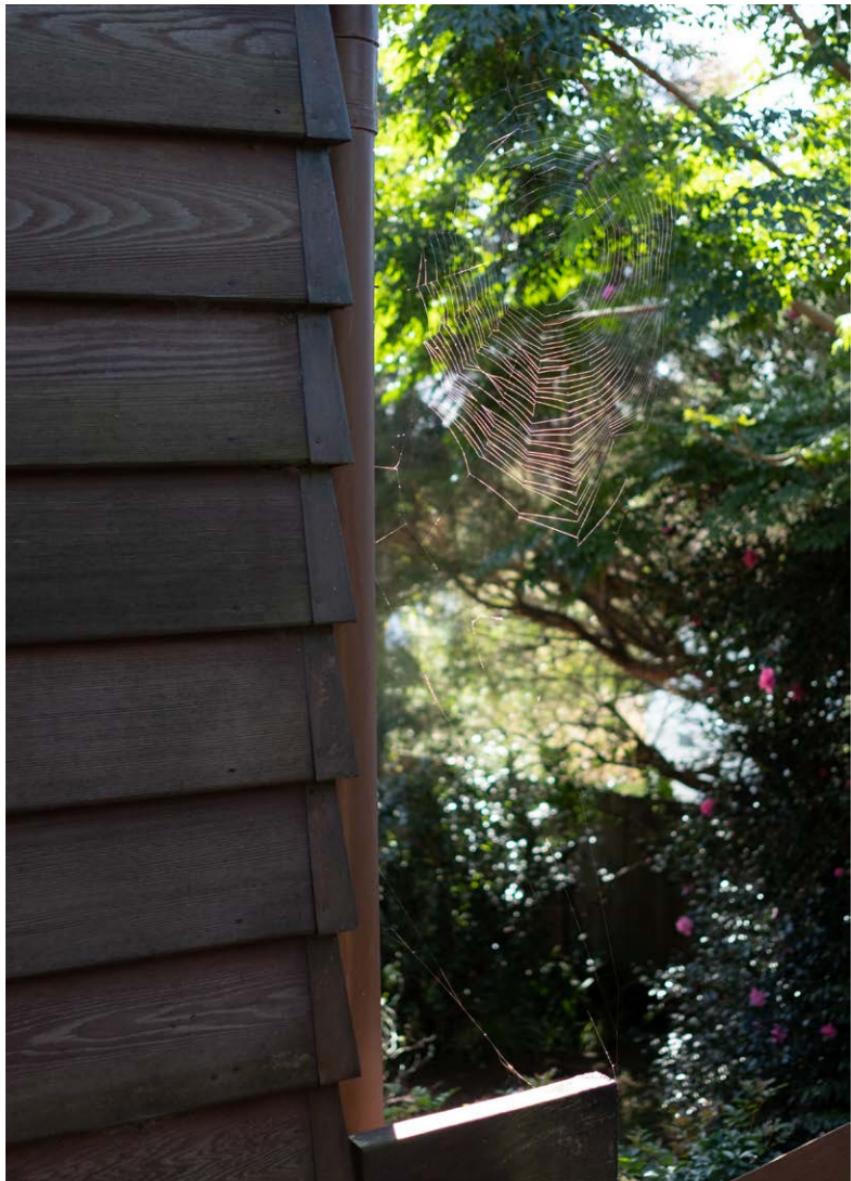


Fig. 89. Spiders web (and weatherboards, gutter, balustrade, trees, plants and a bit of the fence).

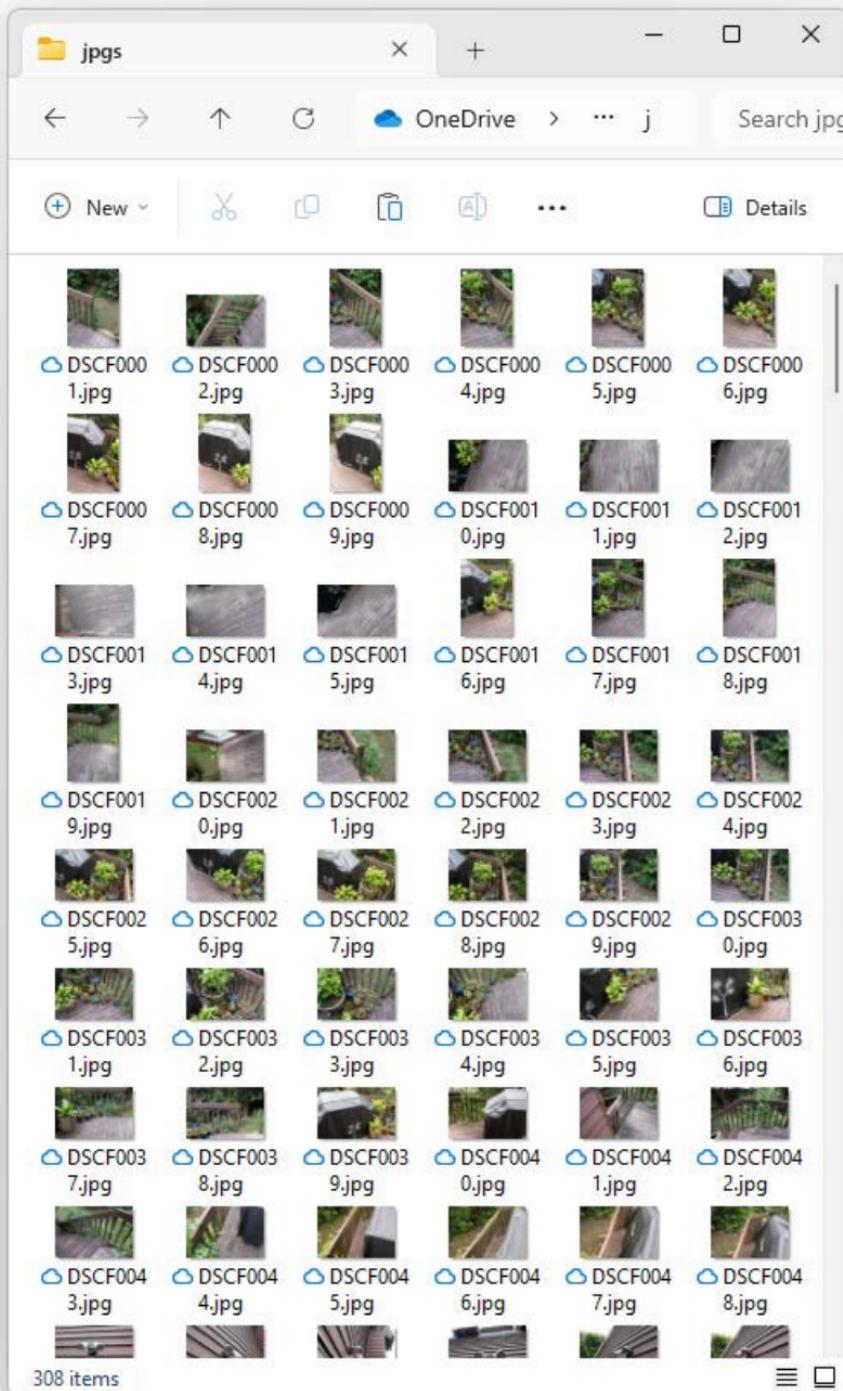
Photogrammetry became a way for me to combine the measured three-dimensionality of the digital model with the gritty detail of my photographs, plans and sections. A deck at the back of the house served as my first test subject. I took hundreds of photos of the space, trying to capture each element of the room from a range of different perspectives. These photographs were uploaded to a photogrammetry software which merged the two-dimensional images into a three-dimensional model. The method of stitching numerous images together into a continuous (yet incomplete) whole recalls my earlier perspective drawings, which were similarly constructed from multiple sketches. Each photograph, taken from a different angle and focusing on a different object, could be conceived as the perspective of a distinct actor at a particular time, combined using photogrammetry into a single image.

Due to the limitations of the software, the house had to be captured in several smaller chunks rather than in its entirety. Each part was exported as a point cloud, then imported into Rhino, scaled and transplanted onto the neutral space of the initial model.



Fig. 90. Photogrammetric model of the back deck of the house.

Fig. 91. Each model comprises hundreds of photographs (opposite).



308 items



Fig. 92. Rhino model of the house, with photogrammetry.



Photogrammetry functions by identifying mutual features between adjacent photos and using these to determine their relationship in three-dimensional space. Insufficient imagery results in holes or lower resolution patches in the space and the edges of the model become blurry and distorted as the software tries to find the last correlating traces within the photographed scene.

In their broken incompleteness, the point clouds have the effect of ‘ruinating’ the house, returning it to a state more similar to that of the building under construction. As a building is being designed and then constructed, it lives in what Toyo Ito describes as “somewhere in the space between reality and fiction.”⁷⁸ It does not yet exist in its physical totality, but has some semblance of form as thoughts, conversations and drawings — little bits of imagination that give form to a shared projection of reality. There is still a sense that any one of many possible potentials could occur.

As a collection of points situated in three-dimensional space, zooming into a point cloud has the paradoxical effect of reducing the discernible detail of the scene as it fades away into a cloud of points. While the point cloud captures a space in its visible totality, the fairytale-like quality of the reproduction might be said to return it to the blurry space of fictional reality described by Ito. The incompleteness and translucency of the images prevent them from being read as pure duplicates of reality. In the same way that a damaged or partial building becomes more hospitable to change, the point cloud transports the building outside of the everyday to make interventions more conceivable. The spaces in between the points are gaps of potential.

Fig. 93. Each image is a cloud of points (opposite).

⁷⁸ Ito, “Under Construction,” 245.



Layers of Repair

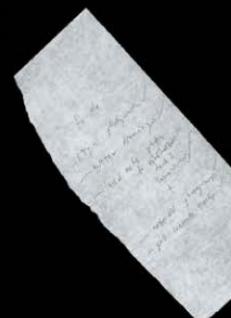
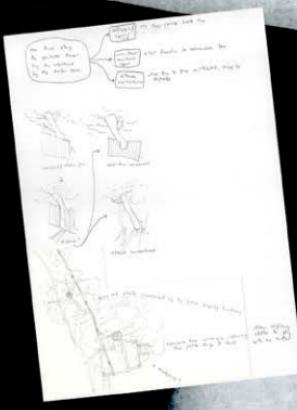
I used the damaged point clouds (printed as isometrics at a 1:30 scale) as the base for a series of interventions that tested how maintenance and repair could respond to failures without returning the house to its flawed original state. Each started with a defect, which was imagined or borrowed from the recent history of the house as recorded in the change log.

My first step was to draw the failure over the top of the point cloud on a piece of butter paper. This has the effect of bringing it ‘into play’ within the realm of drawing and allowed me to respond to it on the page. Although each intervention began as a sketch or scribbled anecdote, they were primarily designed within the act of drawing itself, which functioned as a proxy process of design through making. In the spirit of a suburban DIYer spending a weekend working out a fix to their latest domestic failure, I figured things out as I went, drawing each small change on a layer of butter paper.



Fig. 94. Drawing on the lightbox.

Fig. 95. Repairing through layers of
butter paper (following page).





Each layer was an opportunity to reflect and respond to the one that came before it. These were scanned into the computer, cut out and composed in photoshop over the top of the point cloud. I animated each intervention by staggering the individual drawn frames chronologically across time. Singular moments accumulate into movement and more significant change. Rather than a polished representation of a completed design worked out elsewhere, the animated drawings describe at once an imagined sequence of events and my actual process of repair performed through drawing.

Alongside my drawings, each intervention was described through writing. Like diary entries, these short stories connect the tangible elements of each change with the intangible elements not shown by the point clouds. Jeremy Till advocates for the use of storytelling in architectural production. As “the place where the imagination finds lines of flight,” stories allow the possibility for architecture to develop free of technical constraint, while remaining grounded in everyday experience.⁷⁹ Unlike the “self-referential world of normal architectural representation and communication,” they are easily shared and understood between professionals and non-professionals alike.⁸⁰

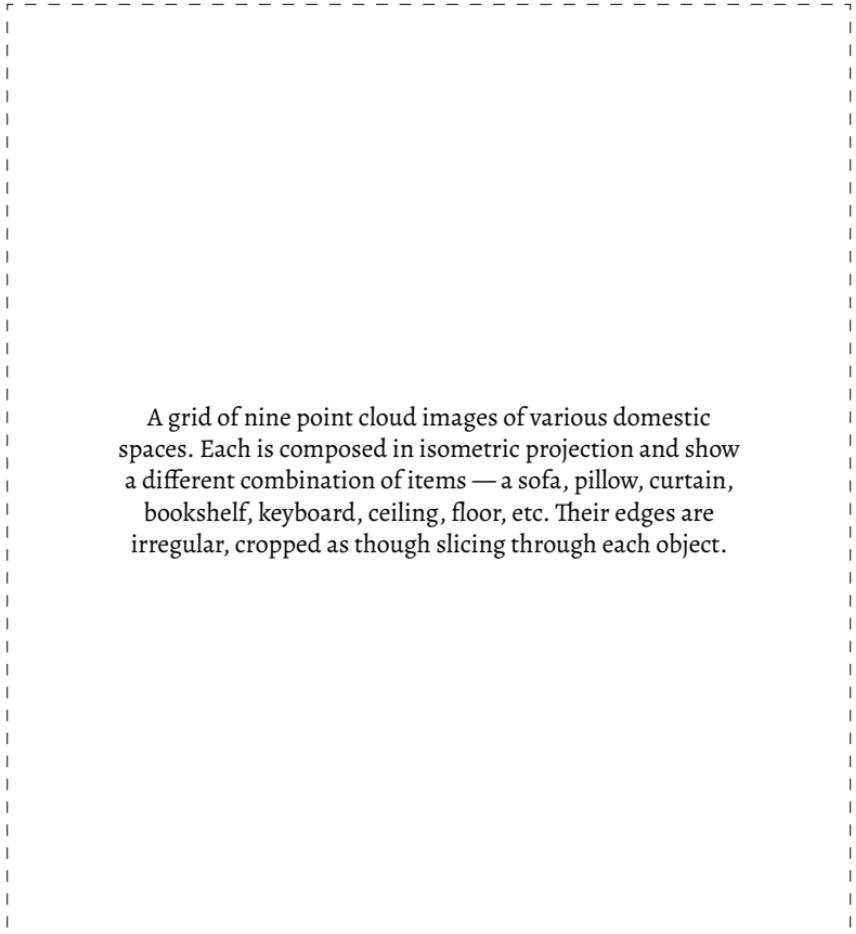
Incorporating storytelling into the representation of the house allows it to be easily engaged with as an assemblage of heterogeneous actors rather than a purely physical construction. While an architectural drawing is limited to solving problems through physical interventions, a story resolves a narrative by any means necessary, which means that the tangible and intangible components of the house can be developed alongside each other in a cohesive narrative. Similarly, the totality of the point cloud provides a broader scope for intervention than typical architectural representation. The hierarchy between building, objects and plants is completely reduced in a way that brings them all into play as relevant actors.

In their project A Live Interior, Stockholm based architects Norell/Rodhe and colleagues from the KTH Royal Institute of Technology used laser scanning to better reflect the importance of ‘stuff’ in producing interior spaces. They describe specific arrangements of furniture and

⁷⁹ Till, *Architecture Depends*, 114.

⁸⁰ Till, 114.

objects in their point cloud drawings as ‘assemblies’, which reveal “hierarchies, adjacencies and interdependencies among domestic items and habits.”⁸¹ Rendered in points, a book and the shelf it sits on can be understood as “an assembly and as a new whole, and ultimately as an architectural entity.”⁸²



A grid of nine point cloud images of various domestic spaces. Each is composed in isometric projection and show a different combination of items — a sofa, pillow, curtain, bookshelf, keyboard, ceiling, floor, etc. Their edges are irregular, cropped as though slicing through each object.

Fig. 96. Point clouds by Norell/Rodhe of an apartment in Stockholm, clipped to highlight assemblies of furniture and objects.

⁸¹ Karlsson et al., “A Live Interior: Environments, Assemblies, Materialities,” 477.

⁸² Karlsson et al., 477.

Including ‘everything’ in my representation of the house meant that even the smallest or least ephemeral elements of the building assemblage became something that could potentially be altered. Trees, washing lines and loose concrete blocks were introduced into the architectural space with equal importance (and potential for manipulation) as the walls, floors or roofs. Likewise, the point cloud has no concern for the rigidity of property boundaries or the distinction between inside and outside, meaning these borders were more effortlessly challenged.

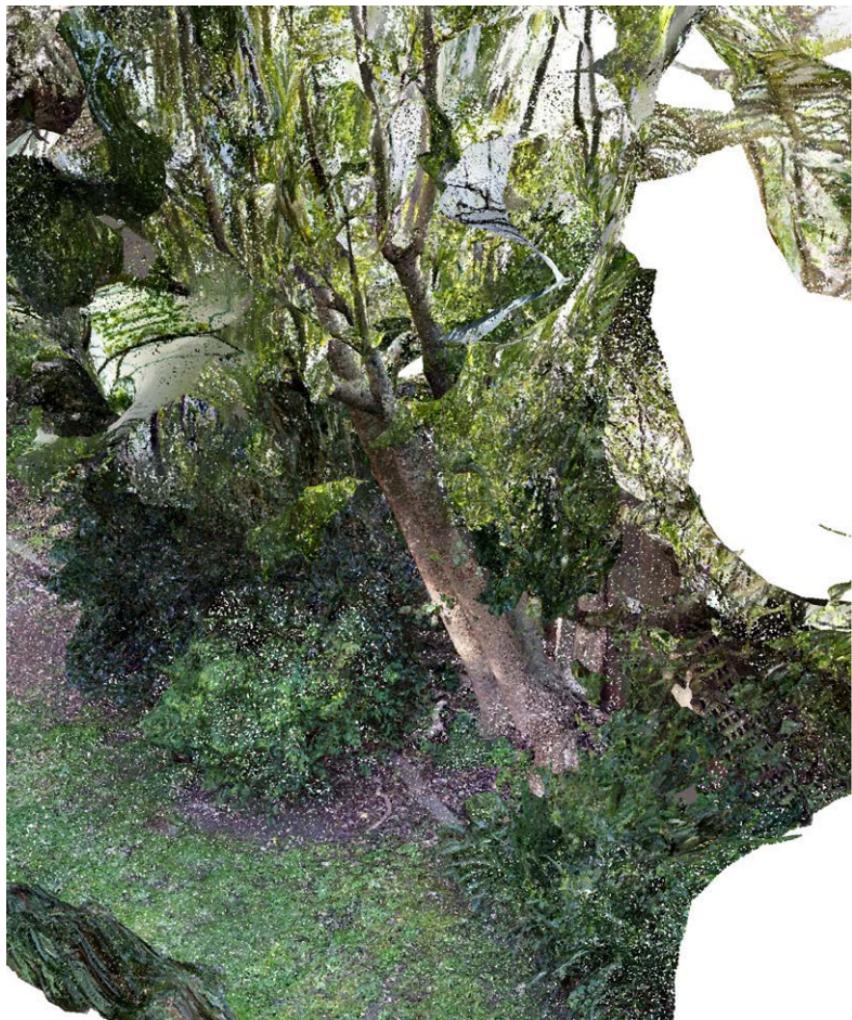


Fig. 97. The property boundary dissolves into trees and plants.

Together, the repaired drawings form a semi-fictional story of the house across a multitude of scales. The story begins in reality and then diverges, a sort of collage of actual and imagined events. Any resemblance to real persons, or actual events, may not be coincidental. Both the drawings and narrative fragments remain perpetually incomplete. They are not intended to culminate in a dramatic finale but rather describe distinct points in time within the wider life of an unfinished building. What is shown here is just one possible life of the house.

Each drawing is animated in a loop of between 10 and 30 seconds but included in this document as a selection of key frames on successive pages. The full animations can be viewed using the link in the caption of each set of frames.

Change happens constantly as the inhabitants of buildings alter things to meet their preferences.

Fig. 98-105. We let the light in, move the couch (opposite and following pages). Watch the animation using this [link](#).



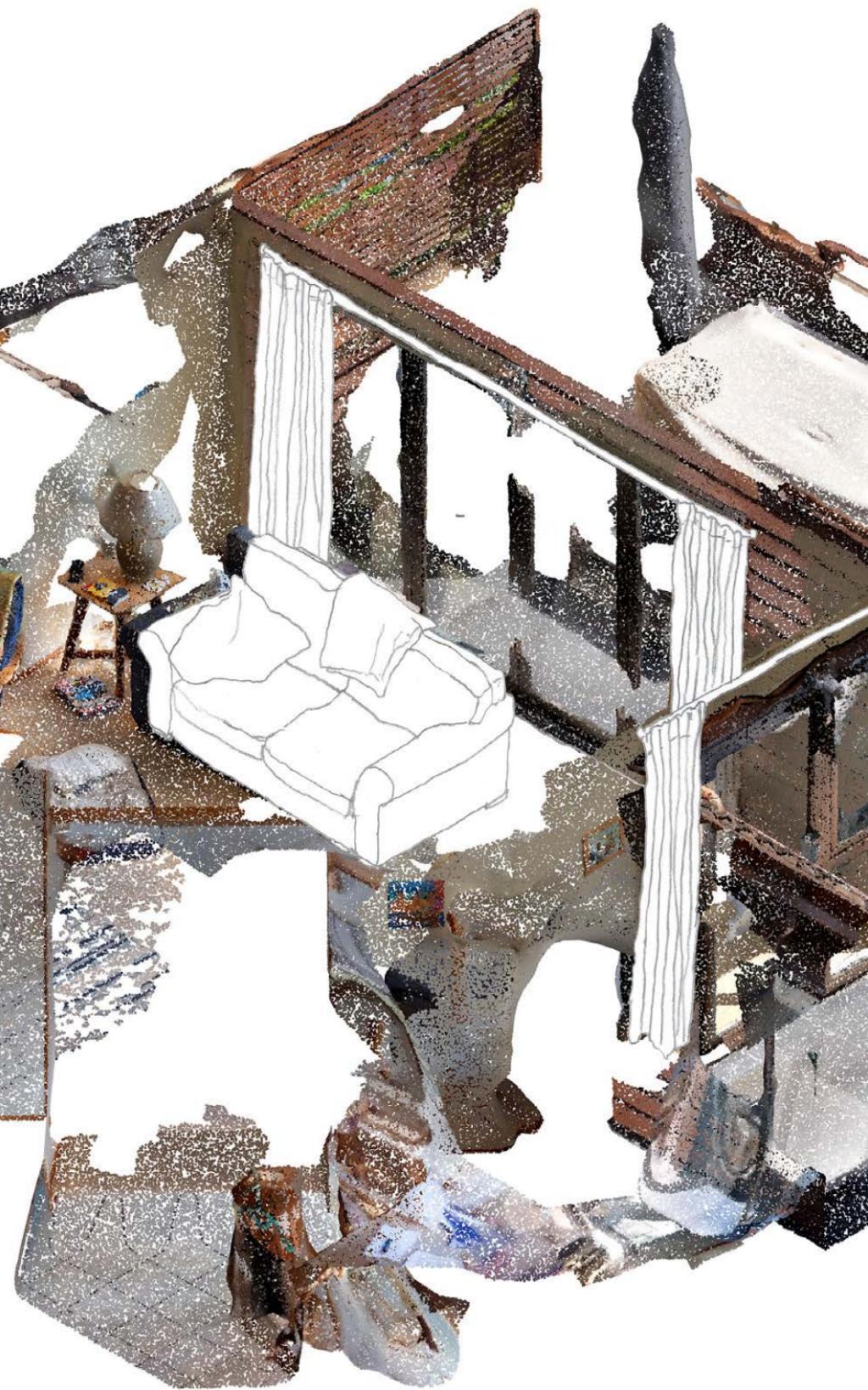
We pull the curtains to let the light in







Shift a couch to enjoy the mid-afternoon sun.









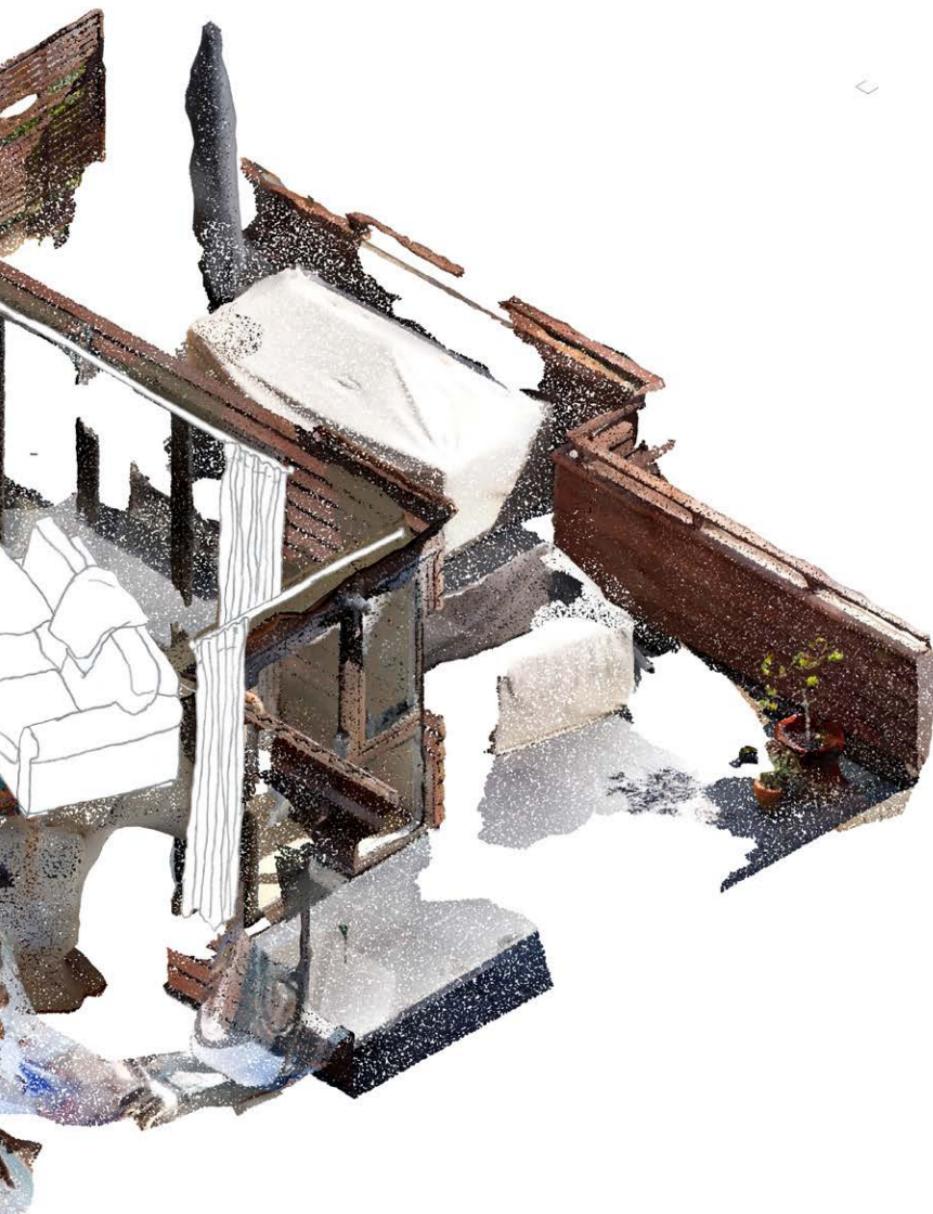


Fig. 106-112. The fence falls, flowers grow (opposite and following pages). Watch the animation using this [link](#).





After months of threatening to fall, part of the fence at the front of the property finally collapsed during a storm in 2022.



We partially disassembled the broken section and put it to one side.



The gap became an extra space for cars to drive through and park, freeing up part of the driveway for other uses.



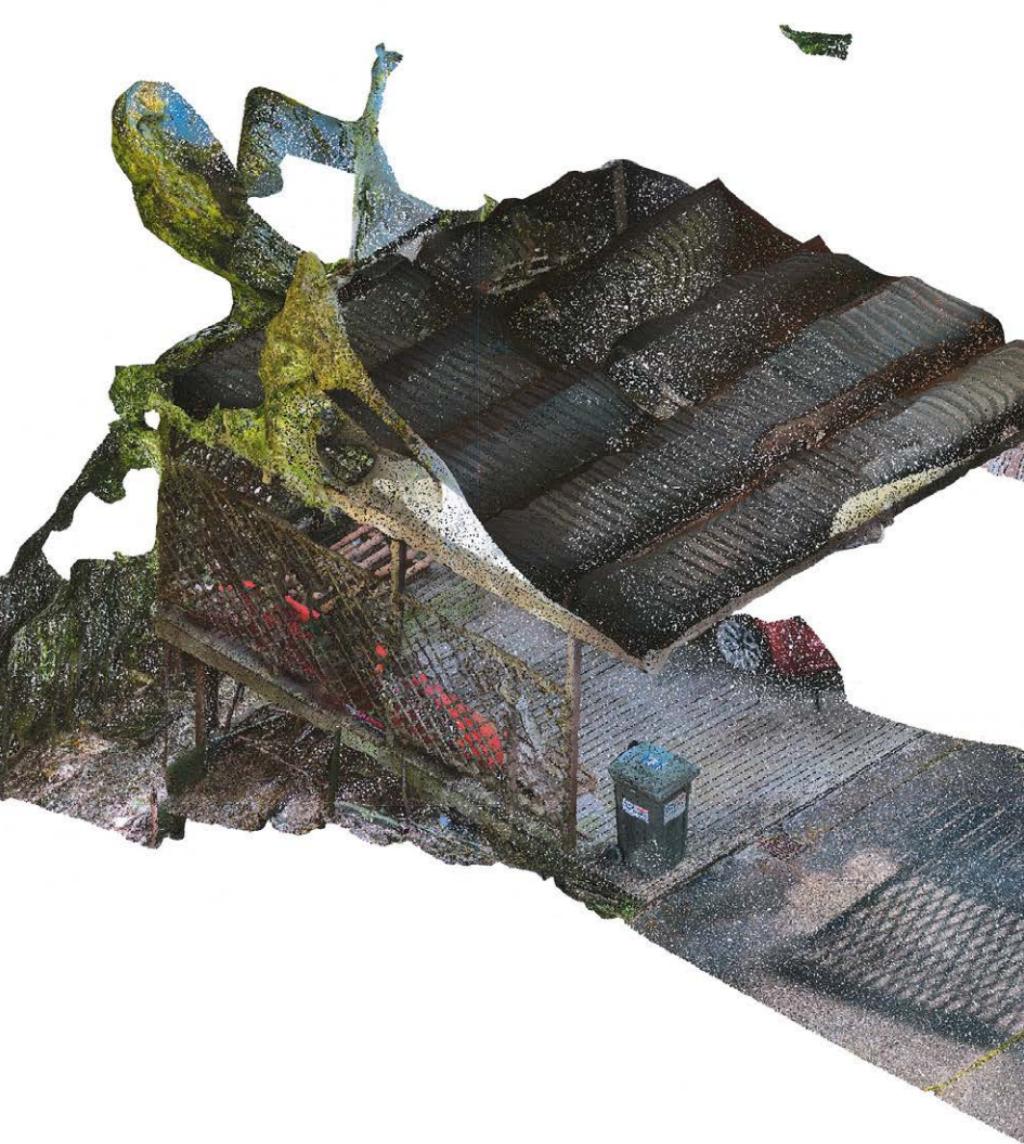
The cars driving through this space exacerbated the already cracked concrete.



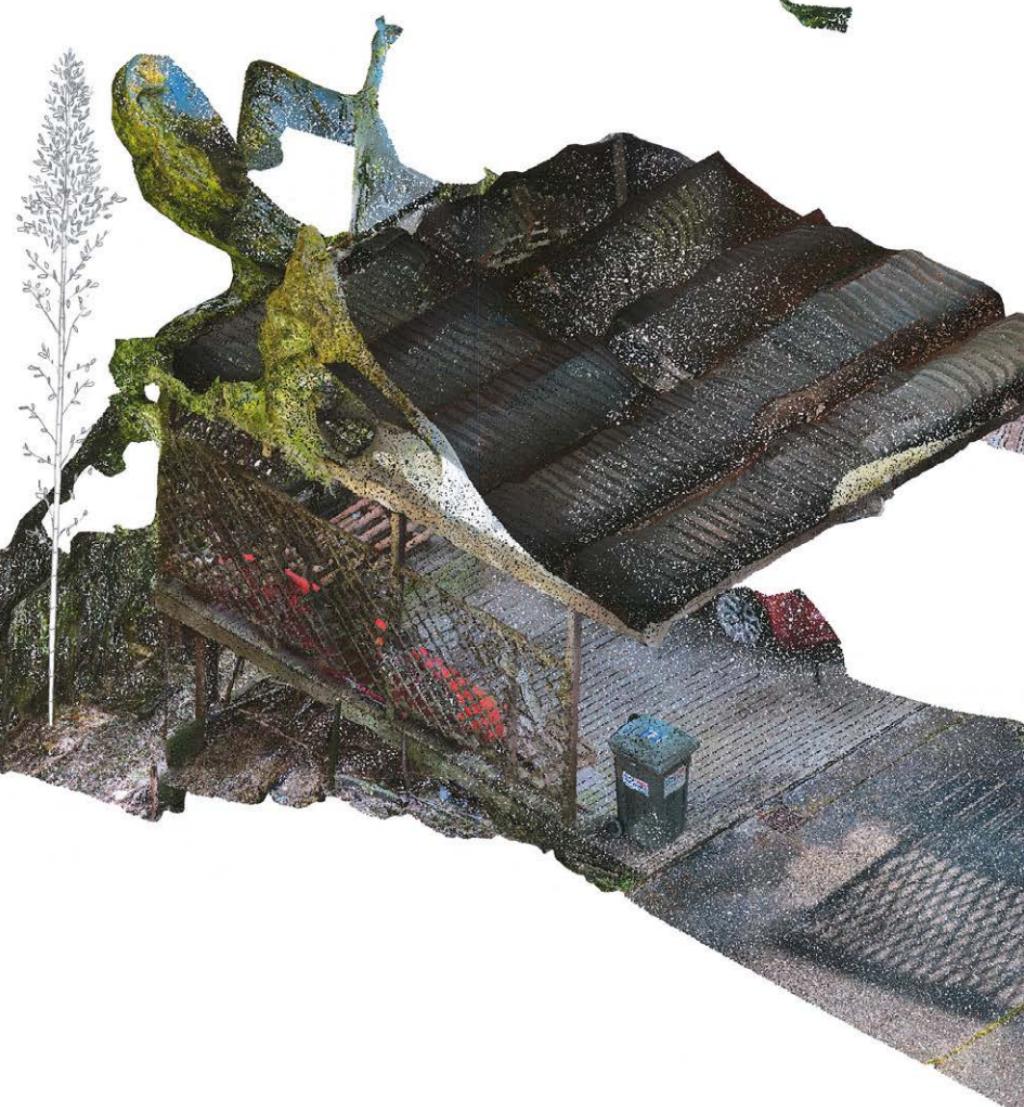
Plants and flowers began to grow up through the widening gaps.



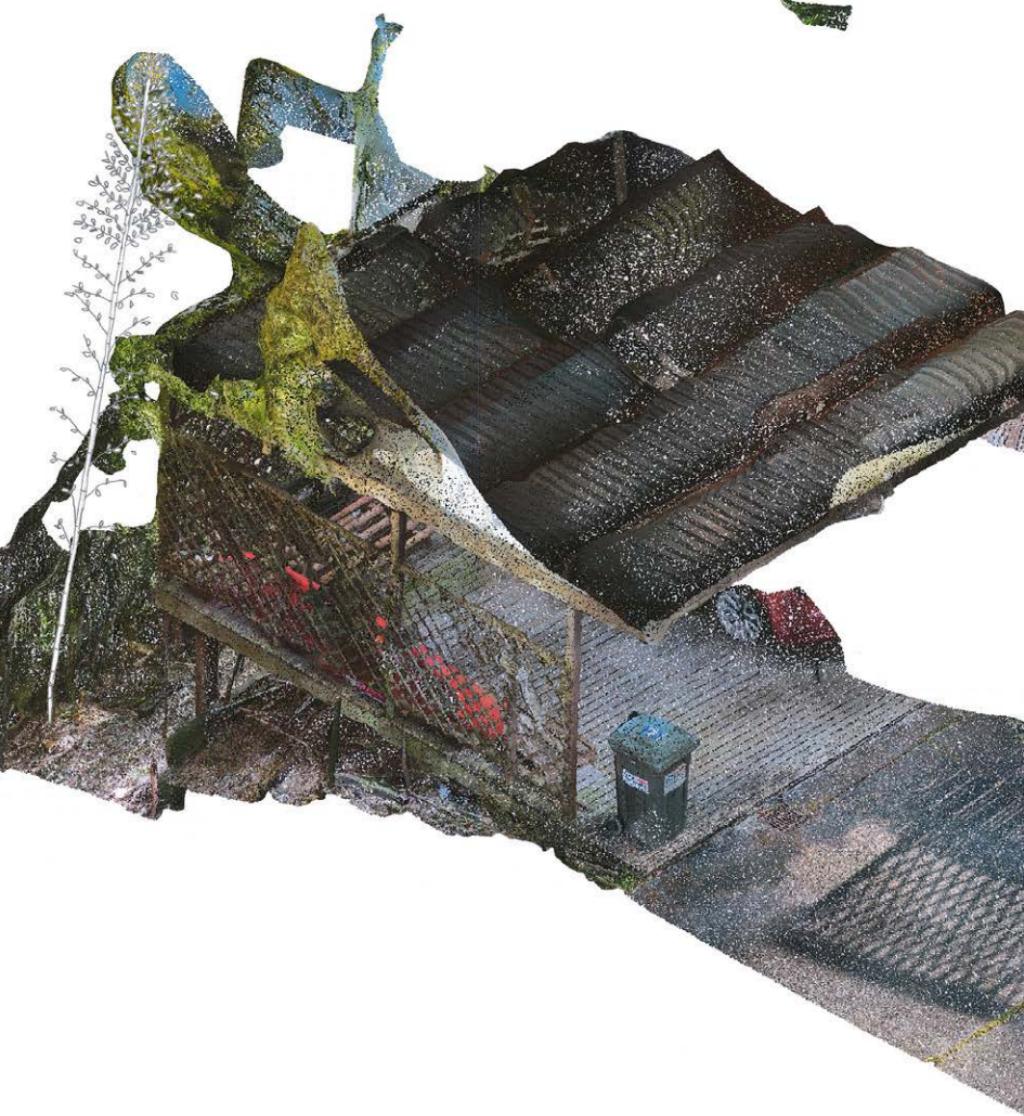
Fig. 113-117. We harvest bamboo,
discover a new spot (opposite
and following pages). Watch the
animation using this [link](#).

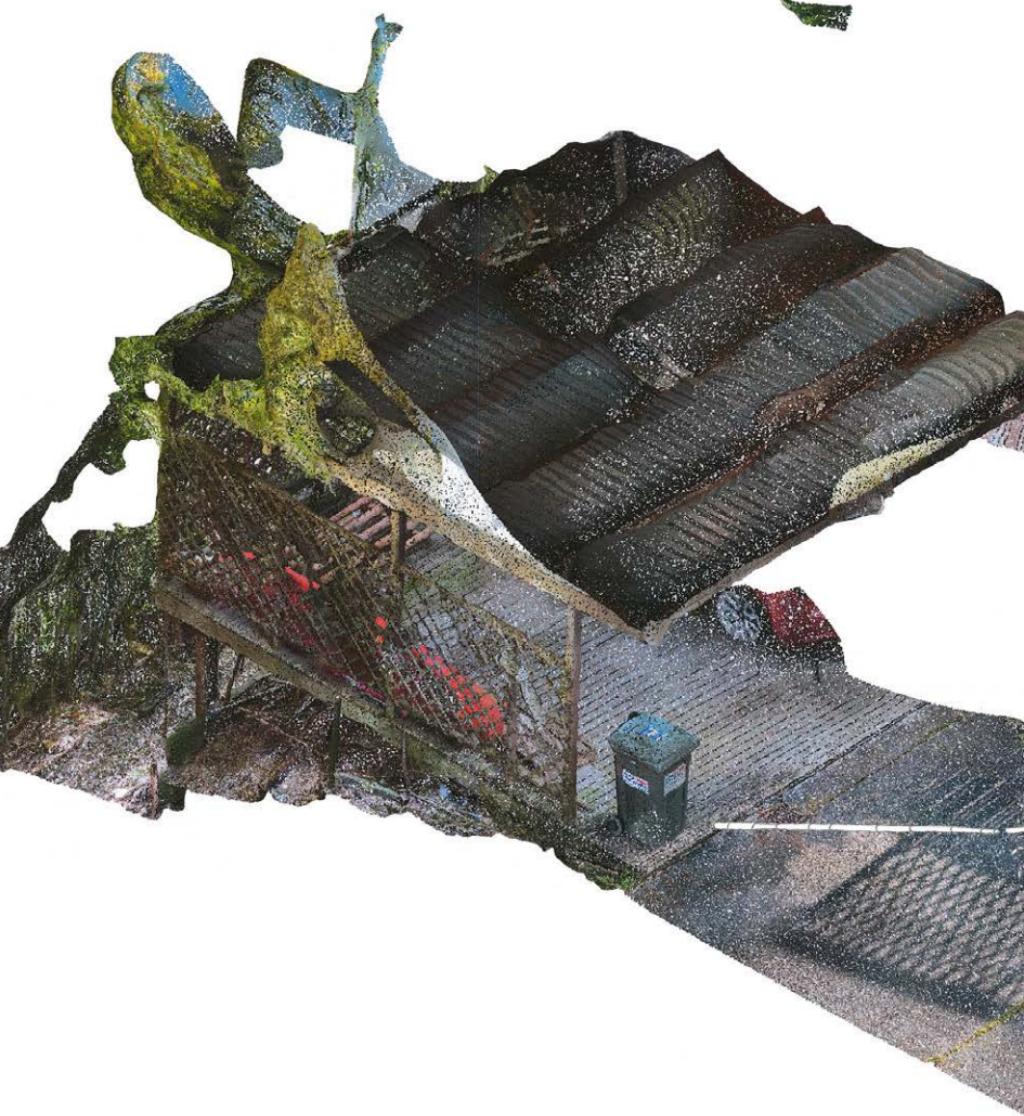


A patch of bamboo begind the carport has been growing wild for many years, despite multiple attempts to tame it.



Recognising its potential for a future project, we harvested eight tall trees and cut them into 2.5 metre lengths.





On discovering the strange beauty of this forgotten spot, we crafted a table from the remaining stumps and leftover timber fencing and ate lunch down amongst the bamboo.

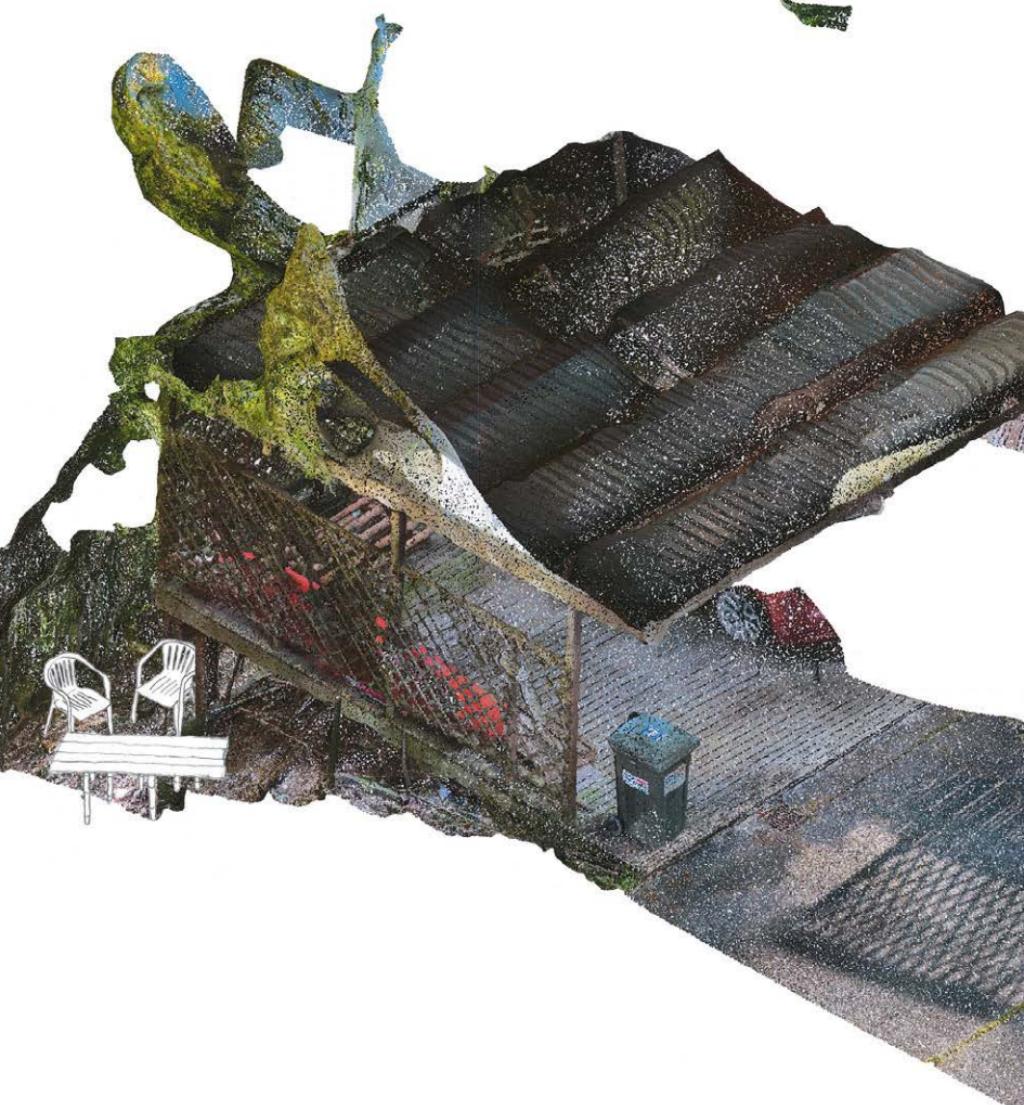
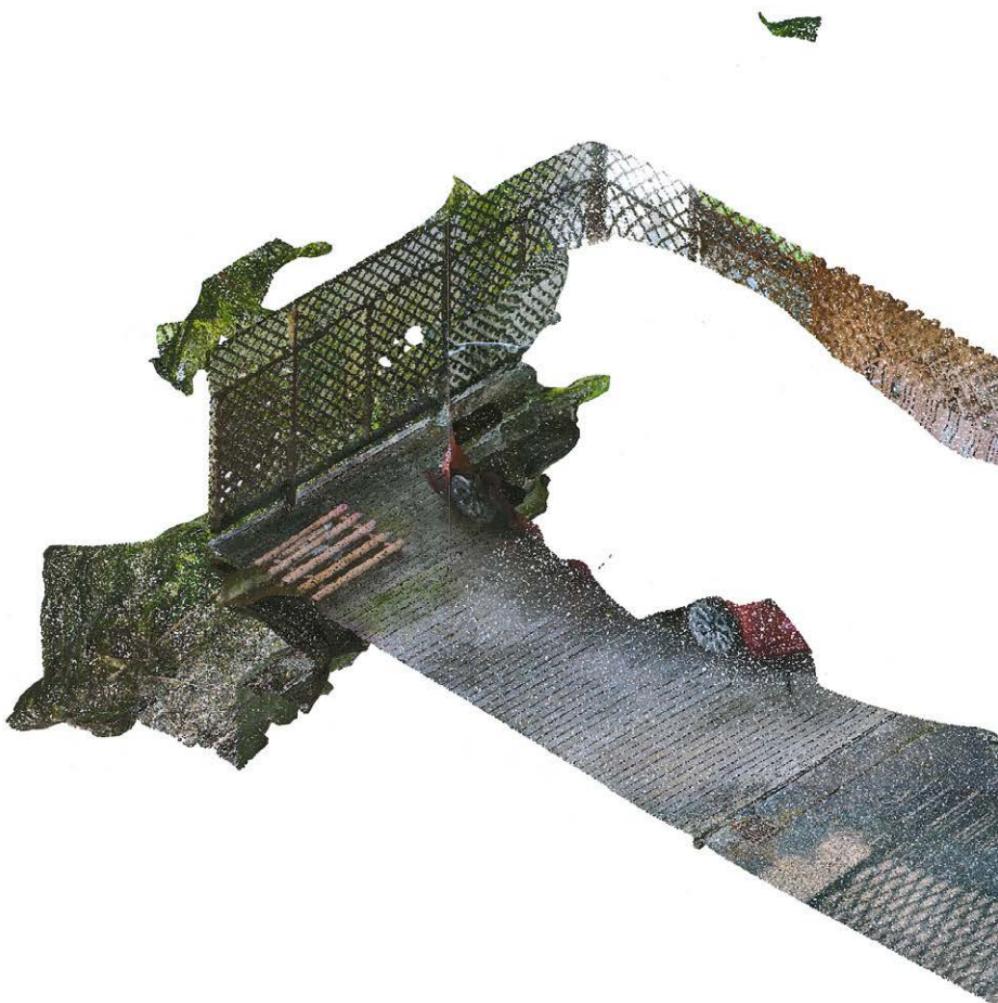
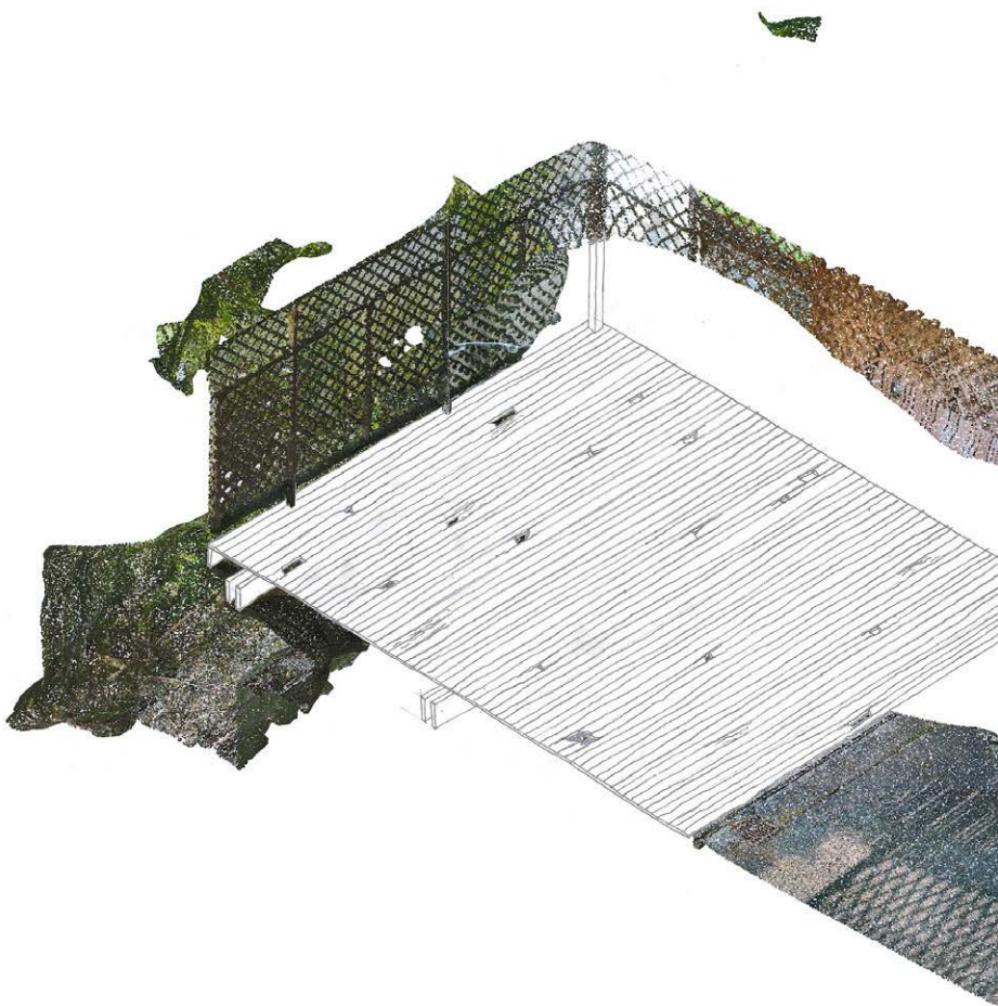


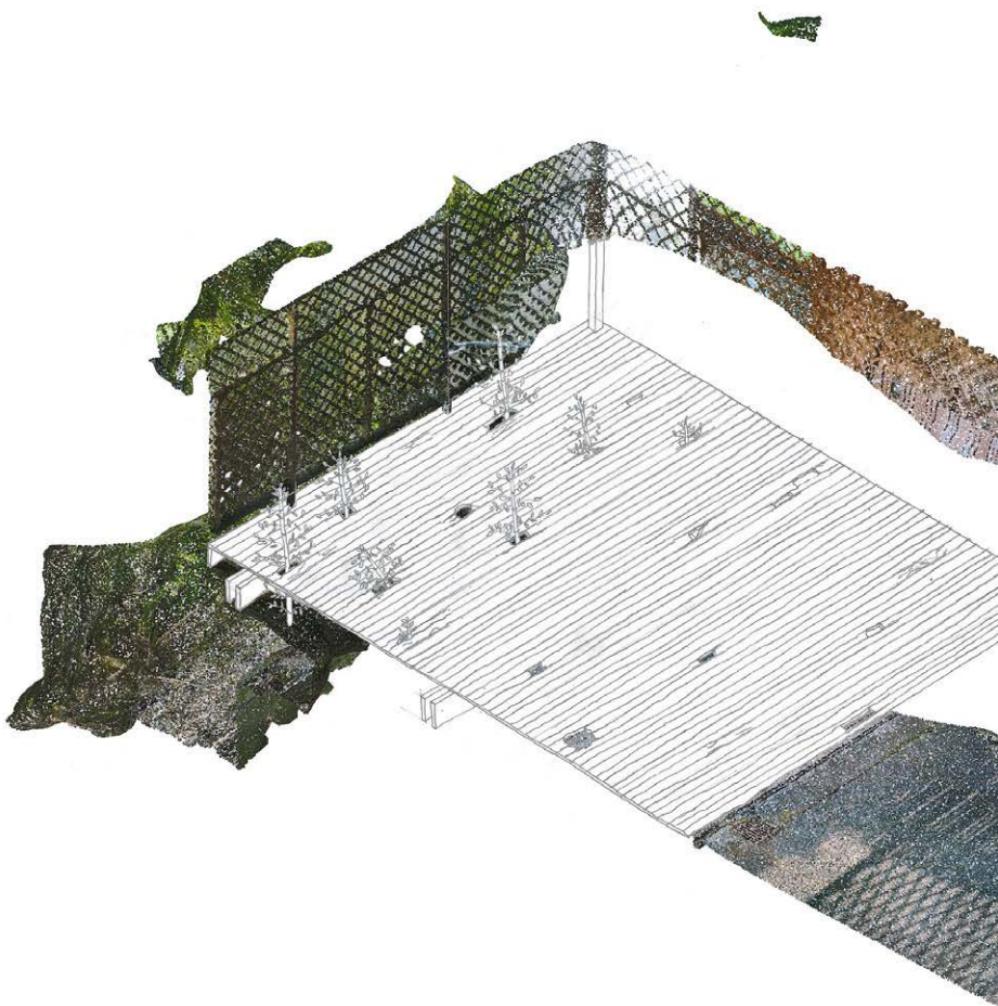
Fig. 118-126. The floor erodes, we construct a bedroom (opposite and following pages). Watch the animation using this [link](#).

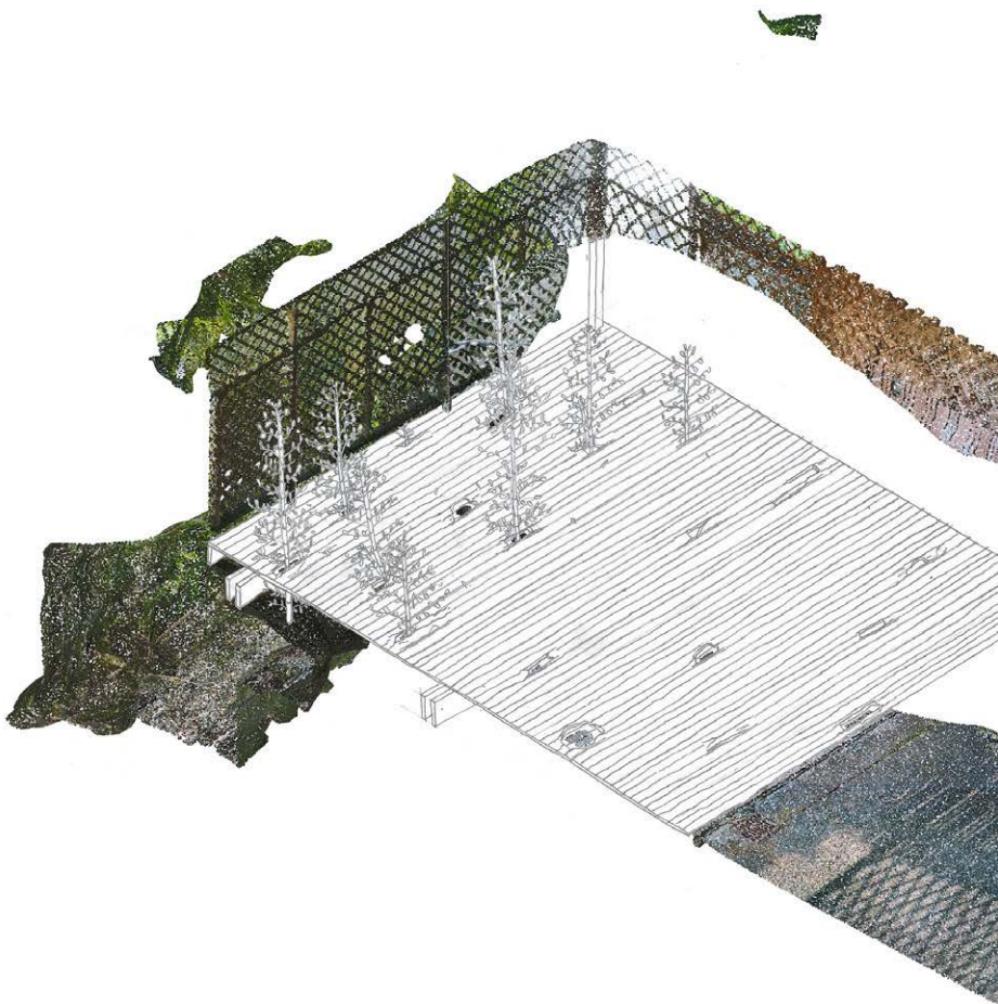


In 2028 the timber floor of the carport began to rot and break away.

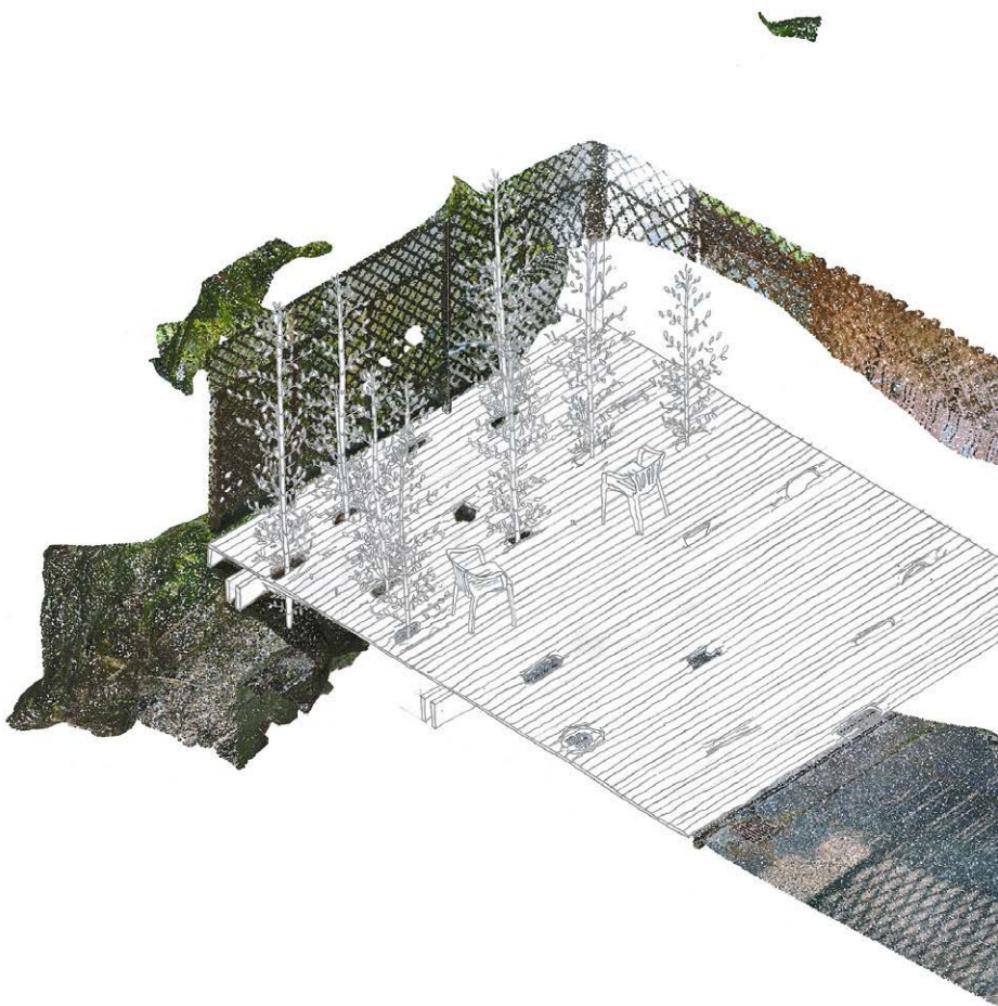


Bamboo began to grow up through the gaps.

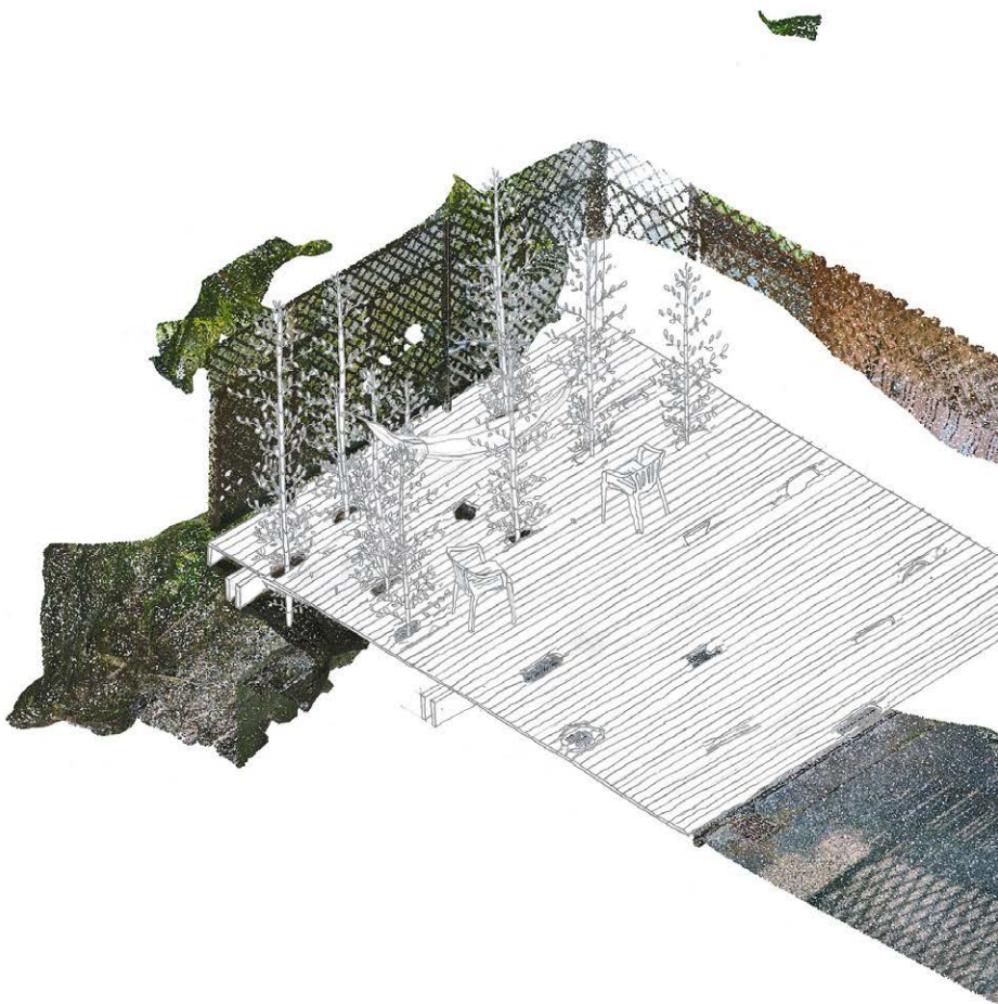




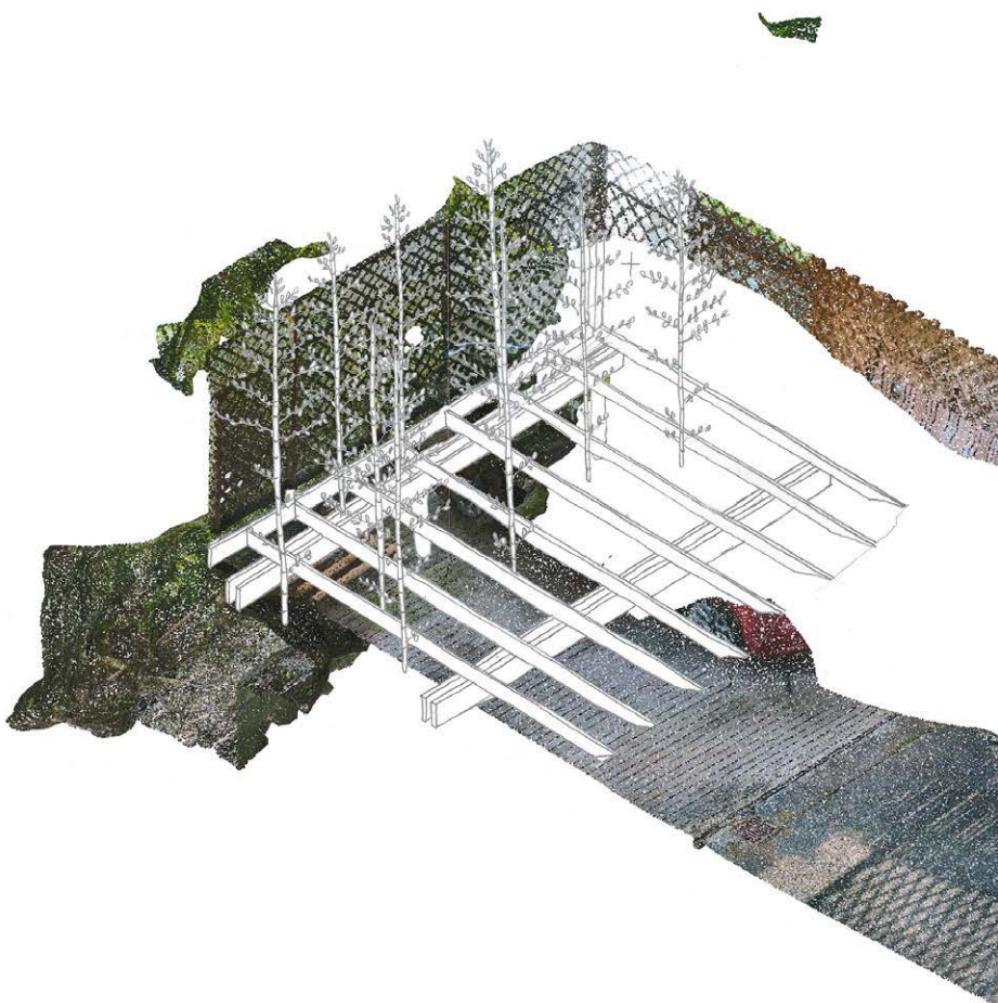
Remembering the joy of eating amongst the trees, we placed a couple of chairs on the least damaged parts.



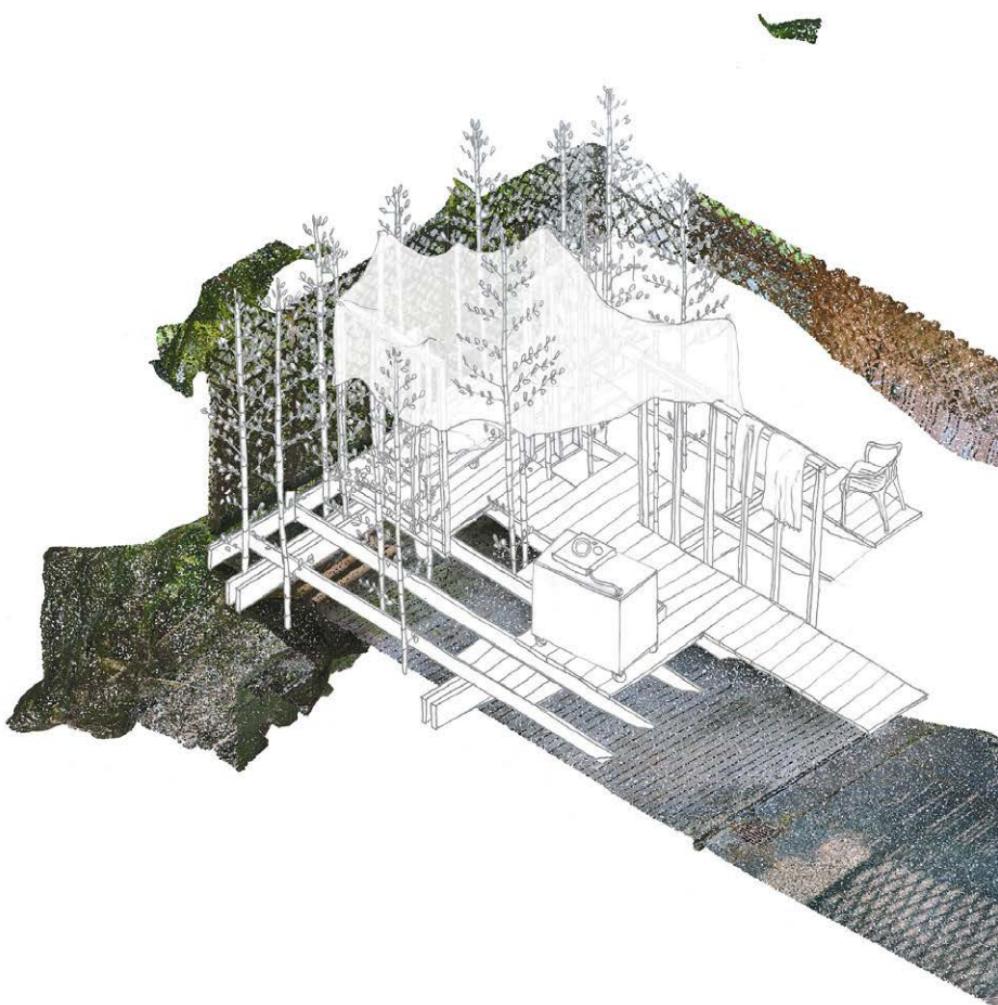
A friend strung up a hammock.



By 2031 the floor had completely rotted away.



The addition of a few partially finished walls and a light roof thrown over the trimmed bamboo made an extra summer bedroom.





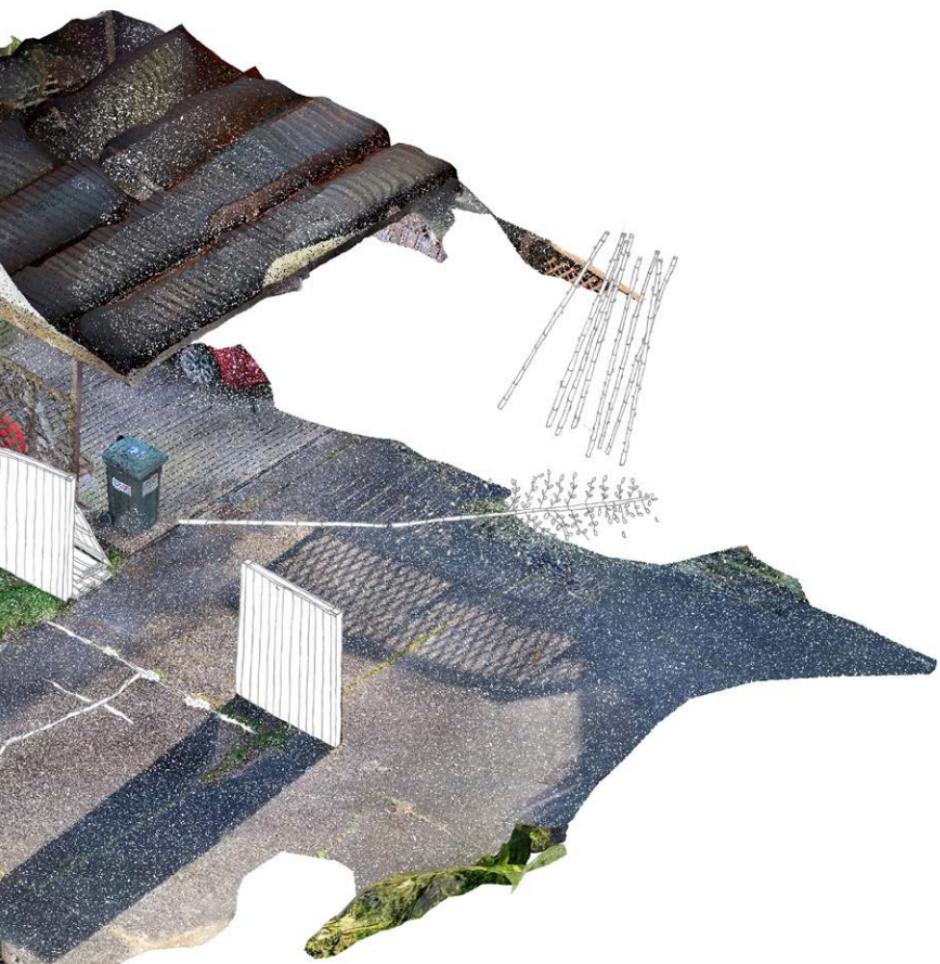
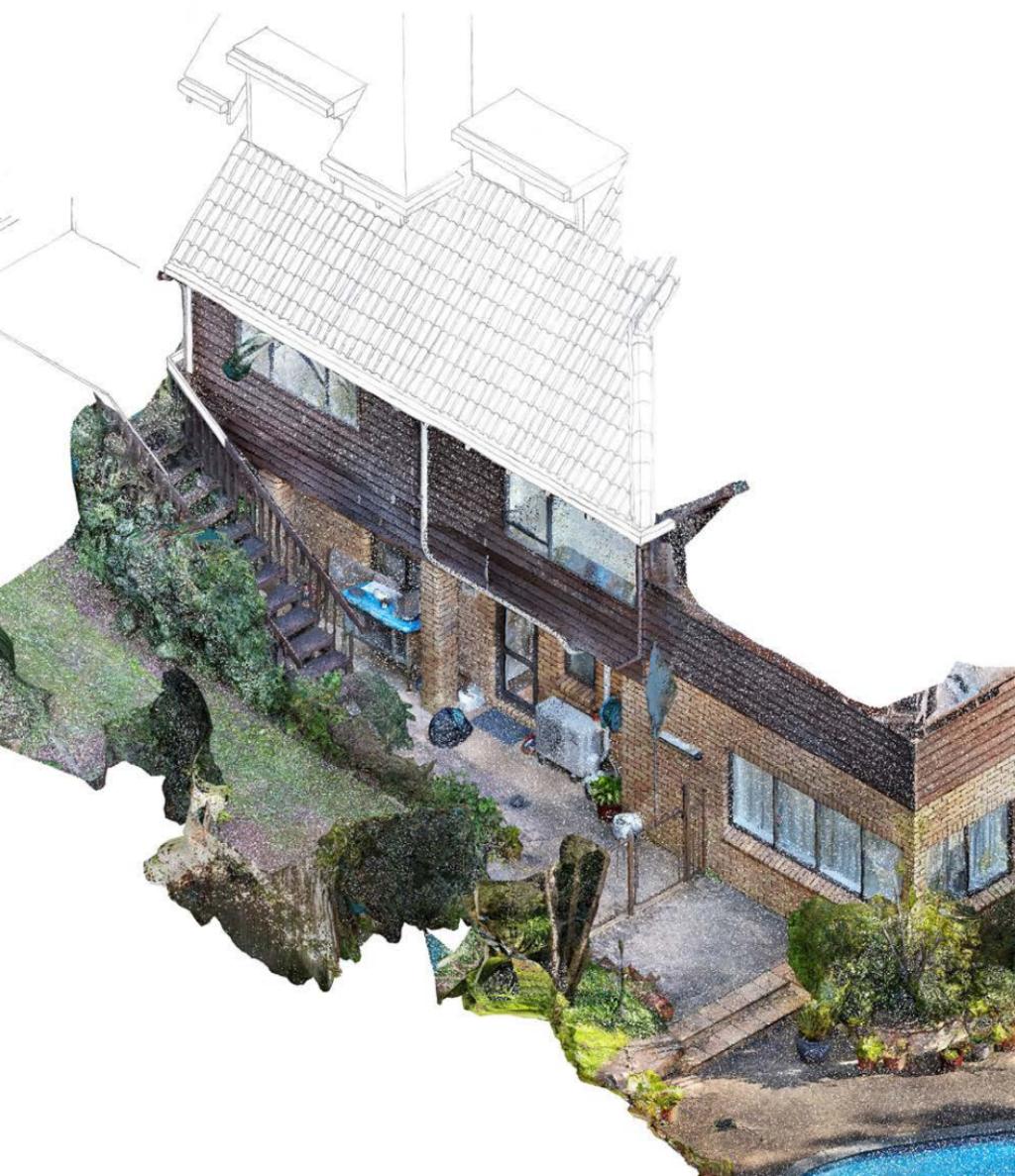
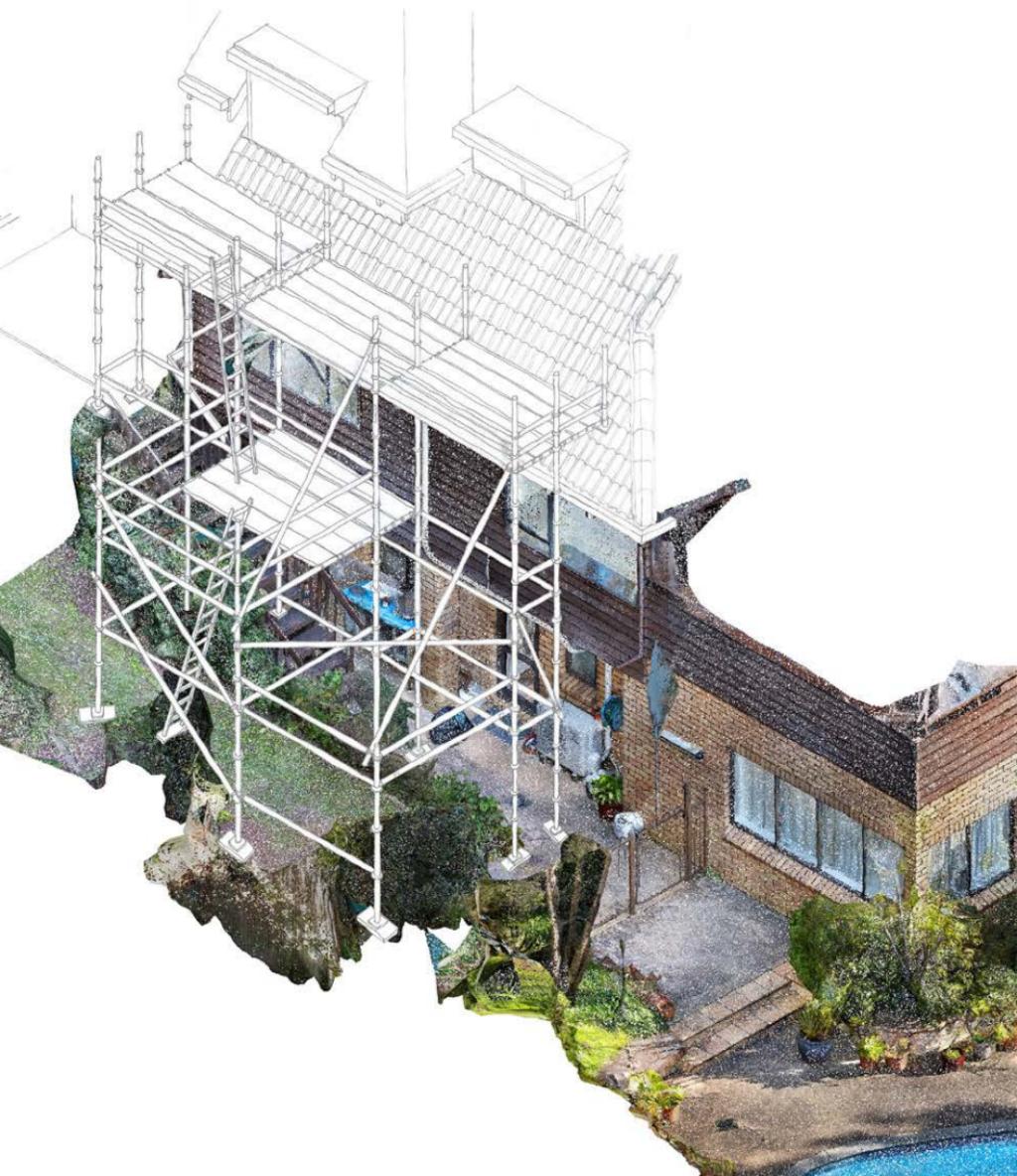


Fig. 127-134. We repair the roof, watch the sunset (opposite and following pages). Watch the animation using this [link](#).





In 2026, scaffolding was erected to repair some cracked roof tiles.



The scaffolding gave us access to flat parts of the roof that wasn't previously possible.



We climbed up to watch the sunset.



The scaffold stayed up until the following year, when we decided to install a trapdoor and new raised roof tiles to allow permanent access to this space.

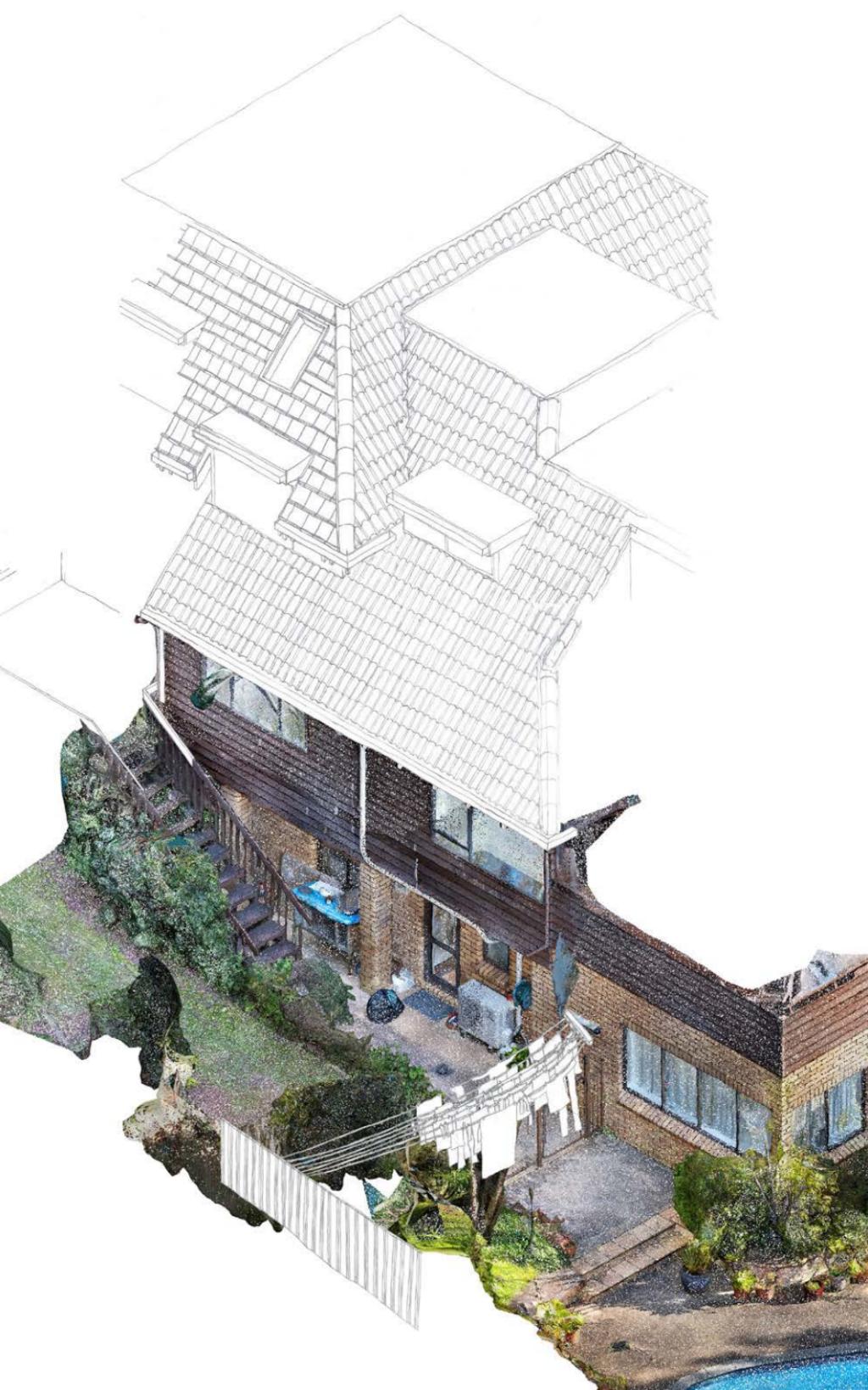




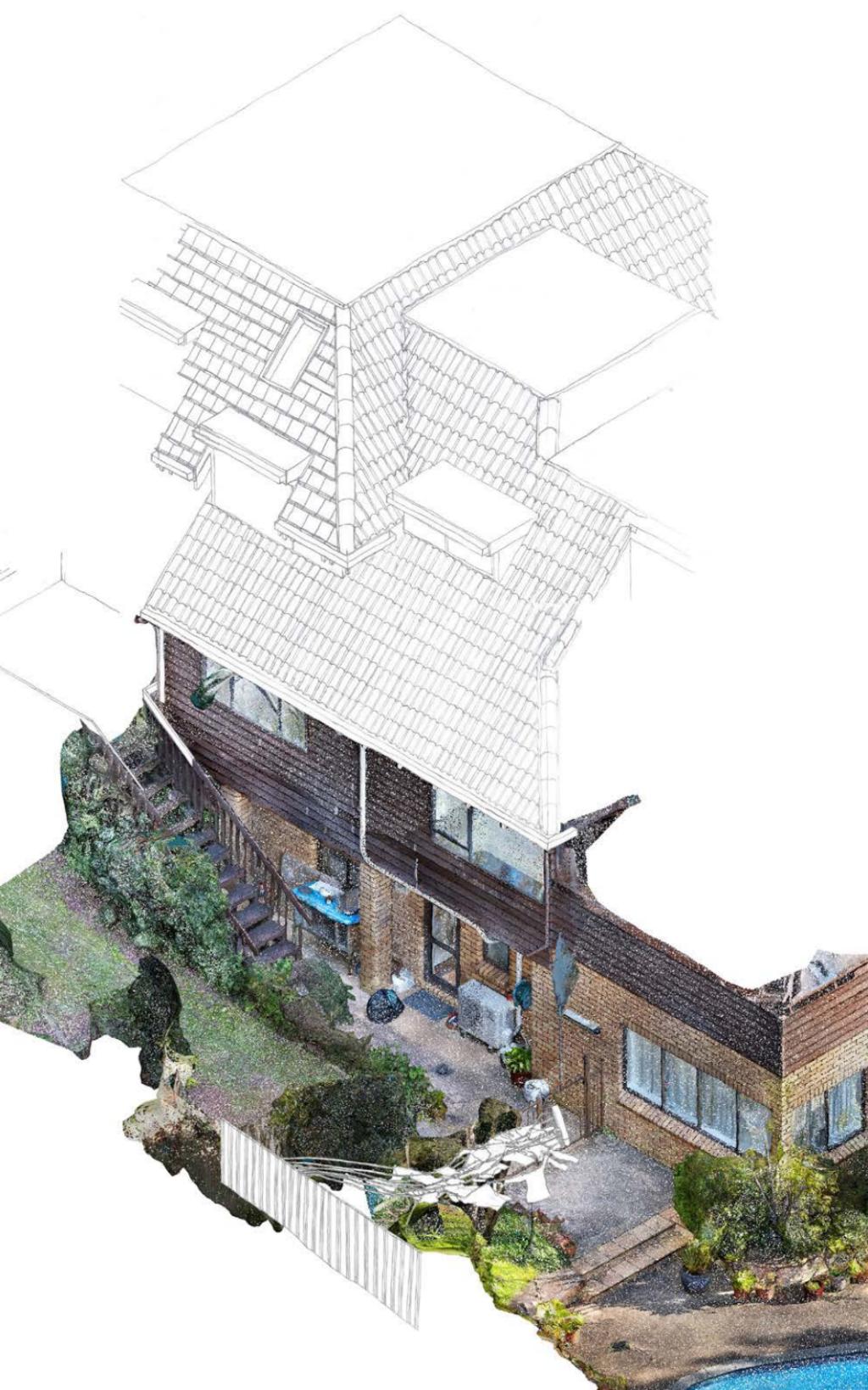


A washing line spans between the house and the fence.

Fig. 135-148. The washing line falls,
the garden expands (opposite and
following pages).



In 2029, it fell.



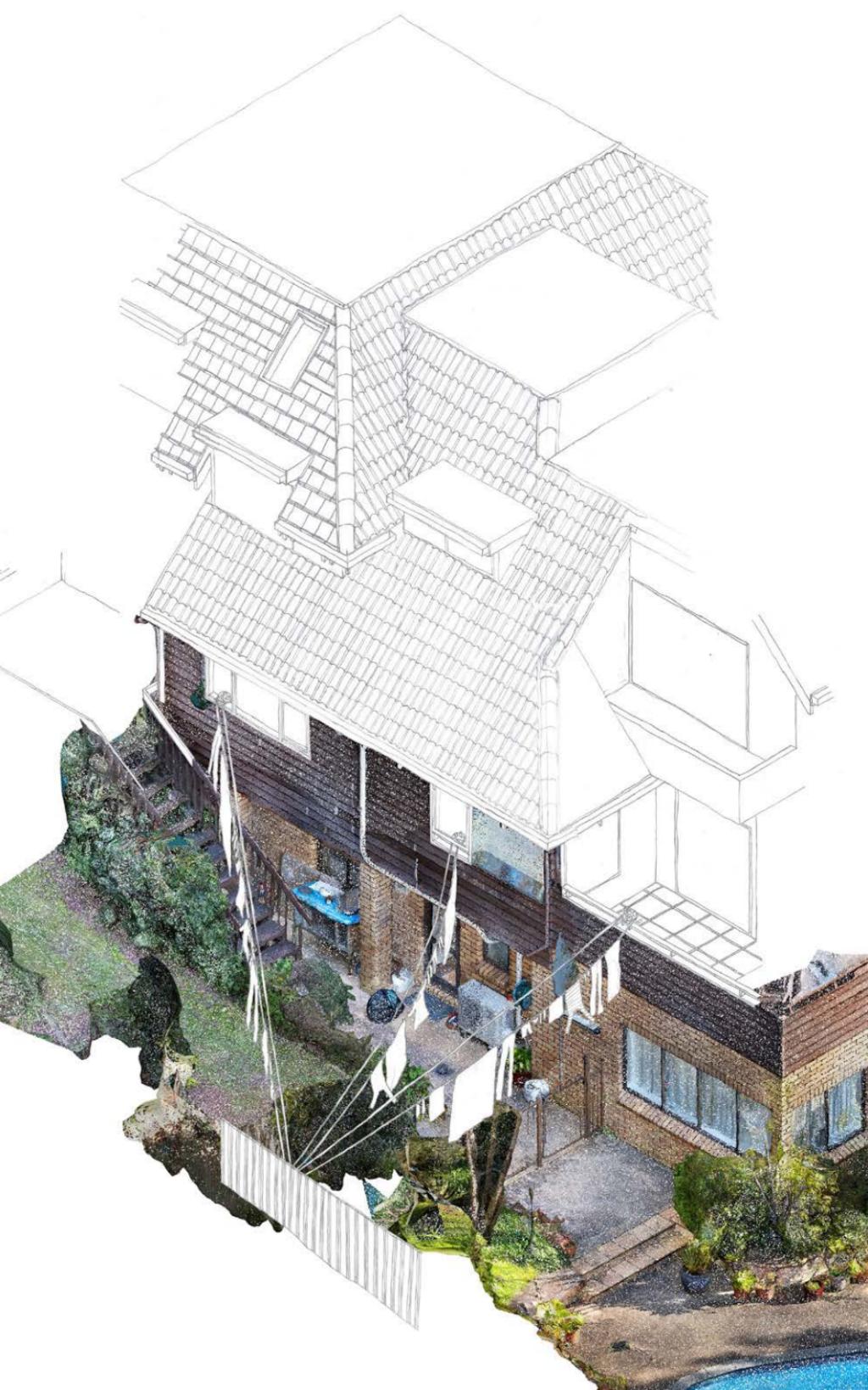
We used a rope and a couple of concrete blocks to make a temporary line.



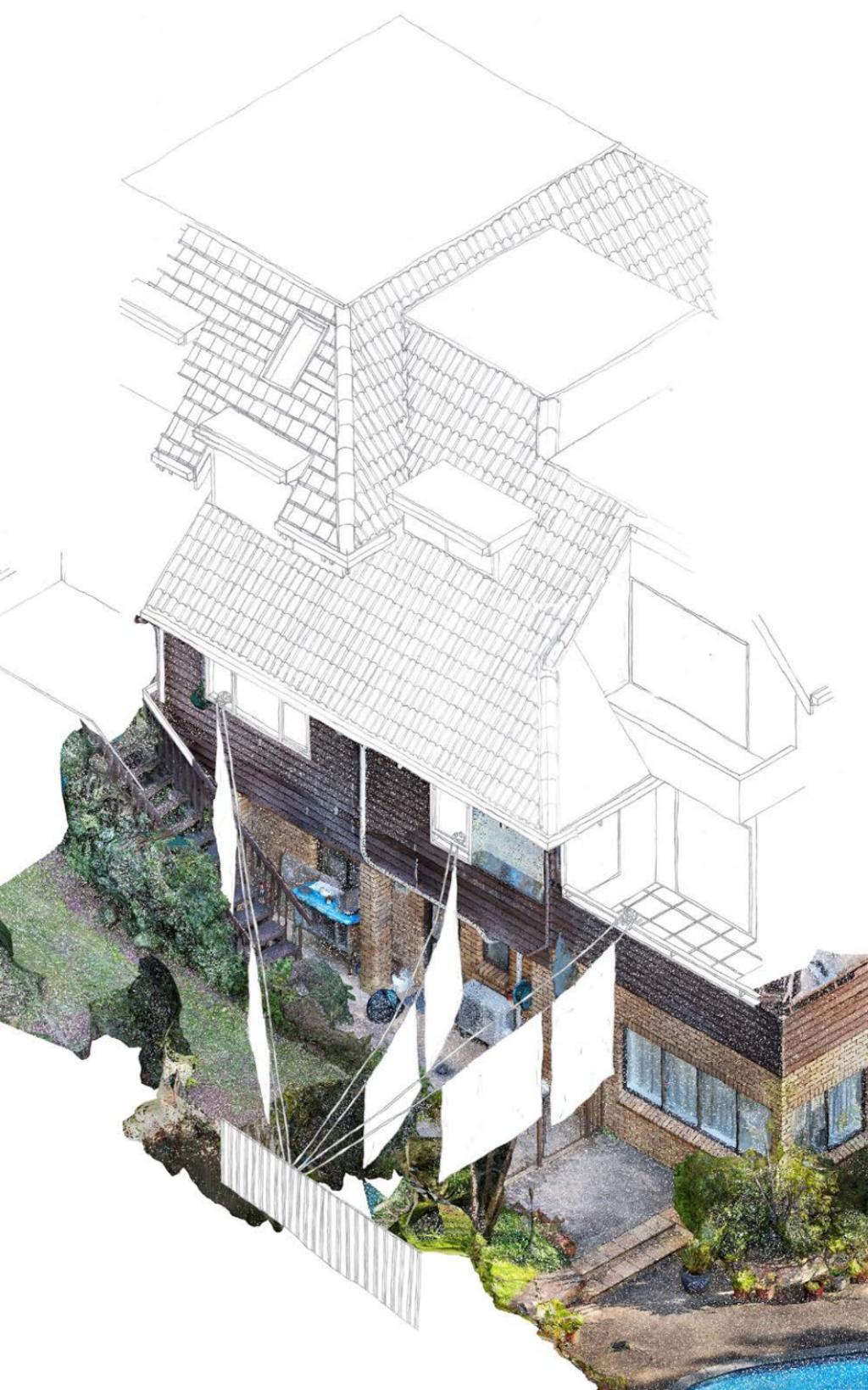
That worked well, so we formalised it the next year into a retractable line

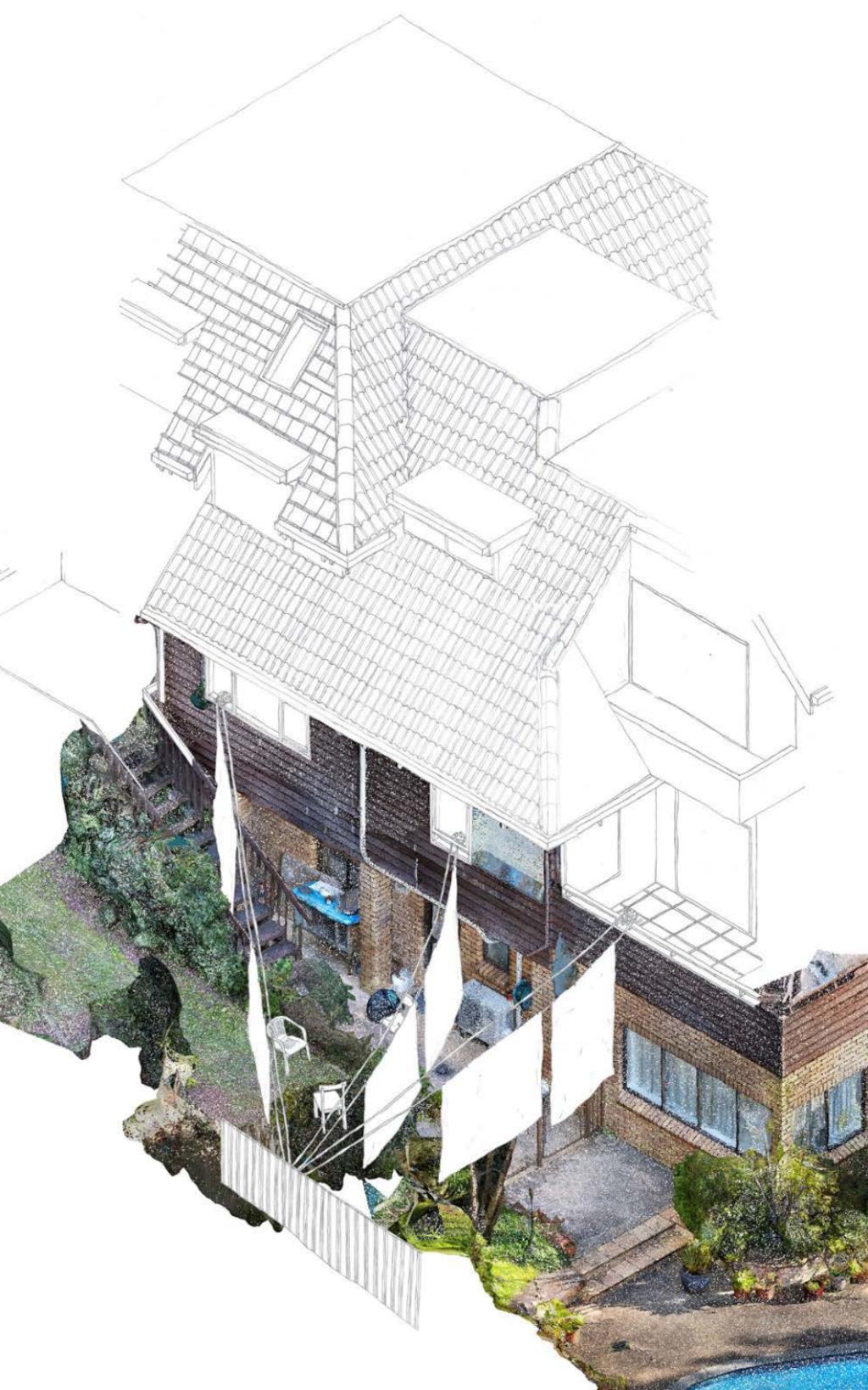


And added a couple of extras from second floor windows.

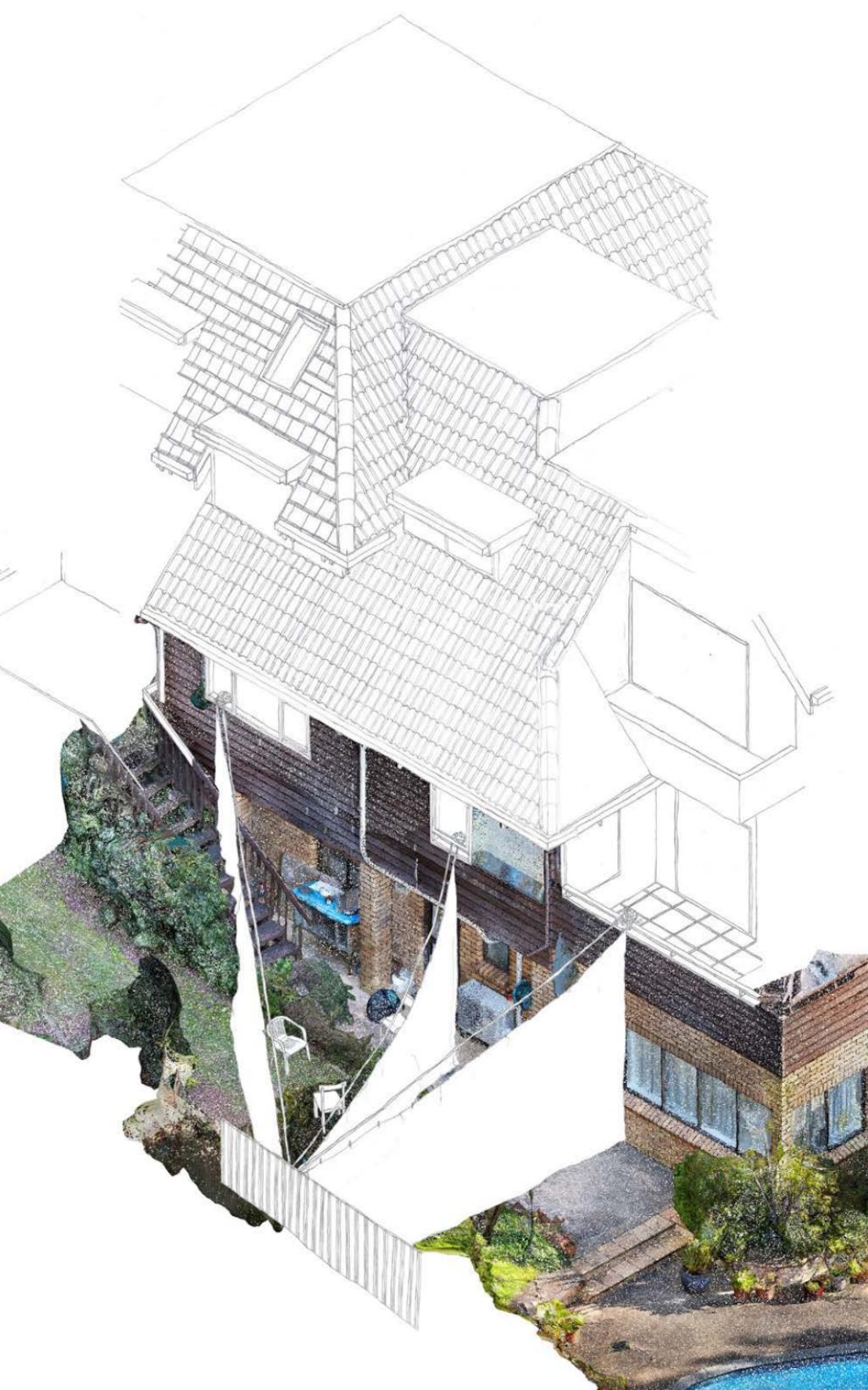


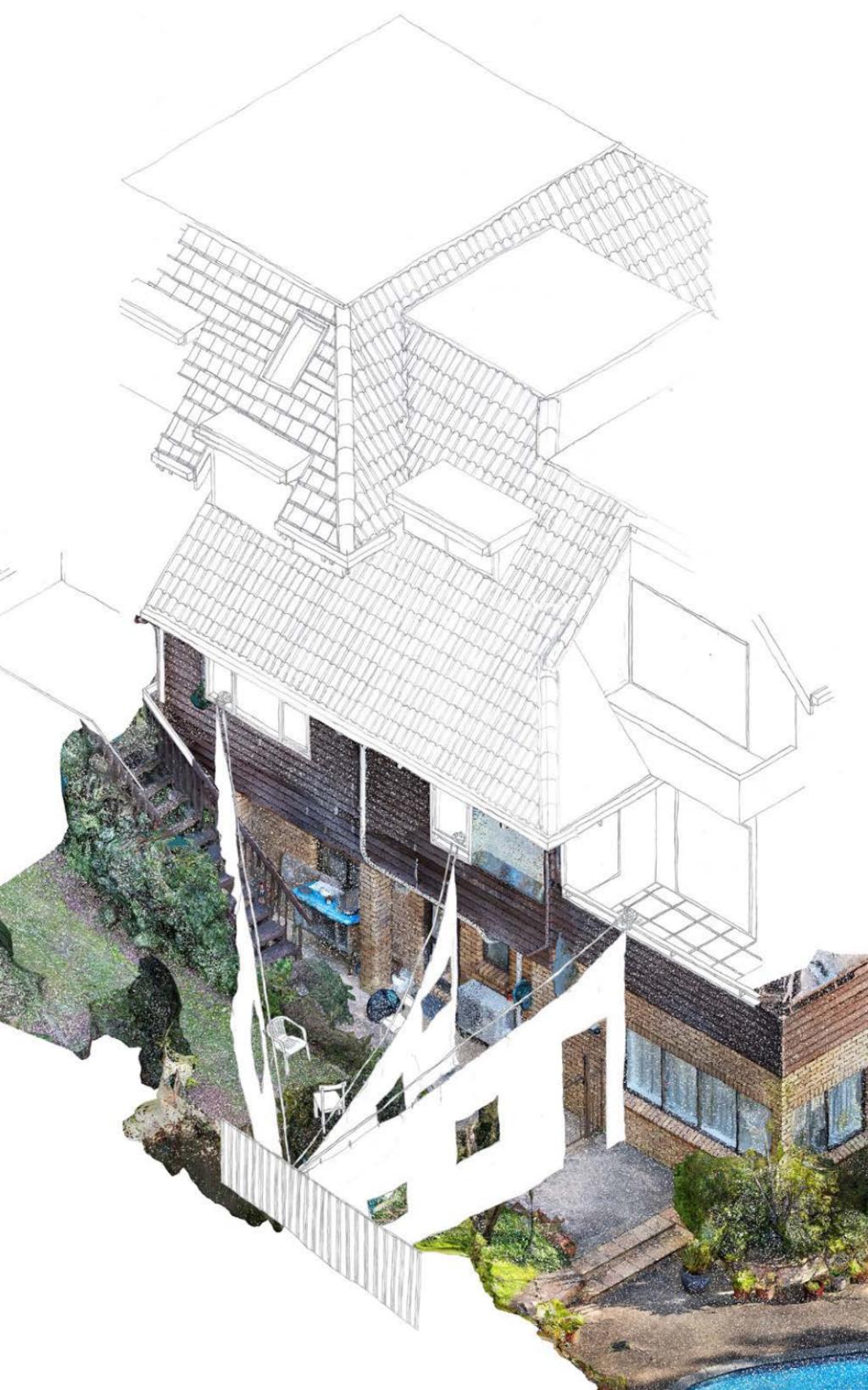
We found that drying large blankets or duvets created more intimate spaces within the larger garden.



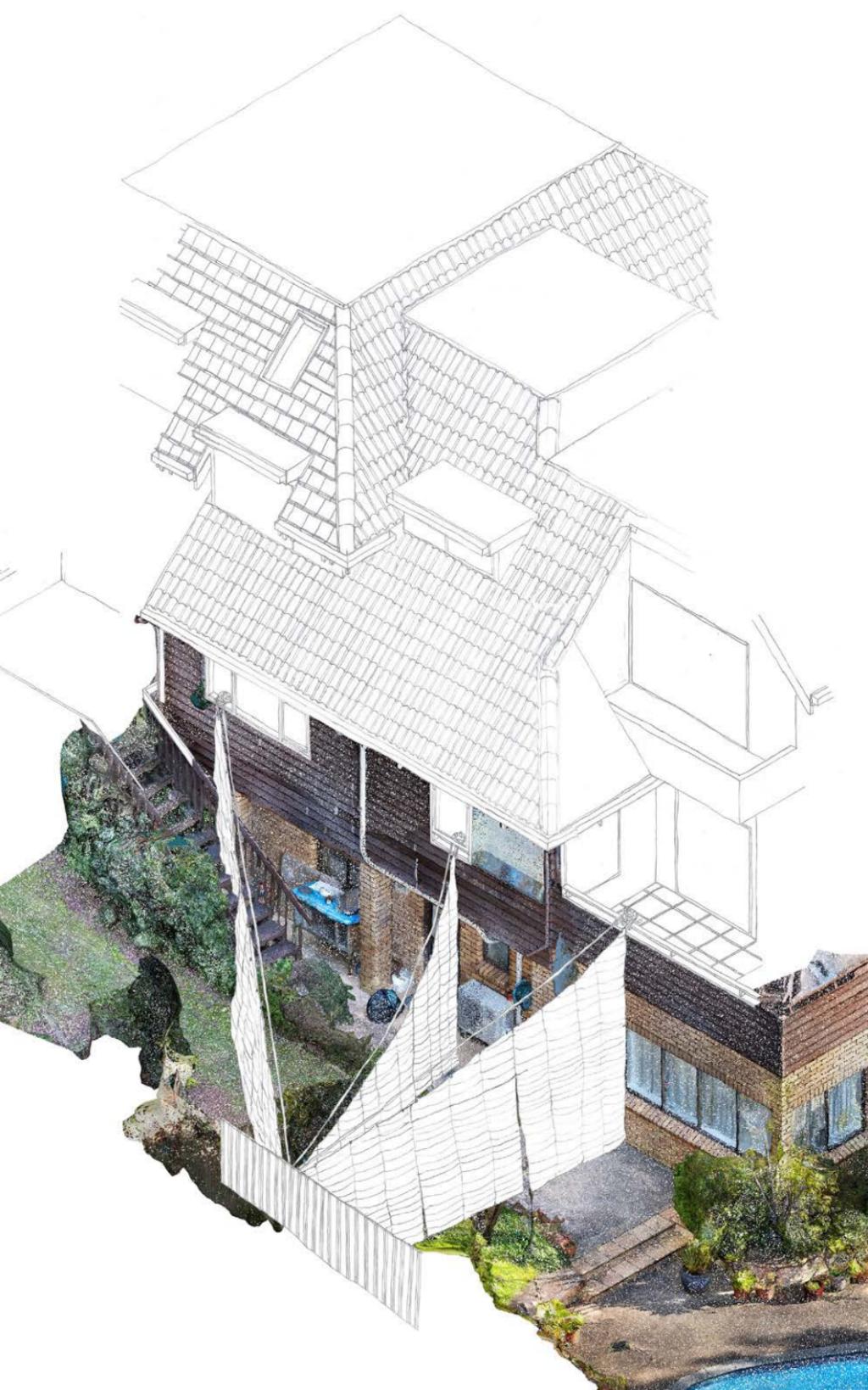


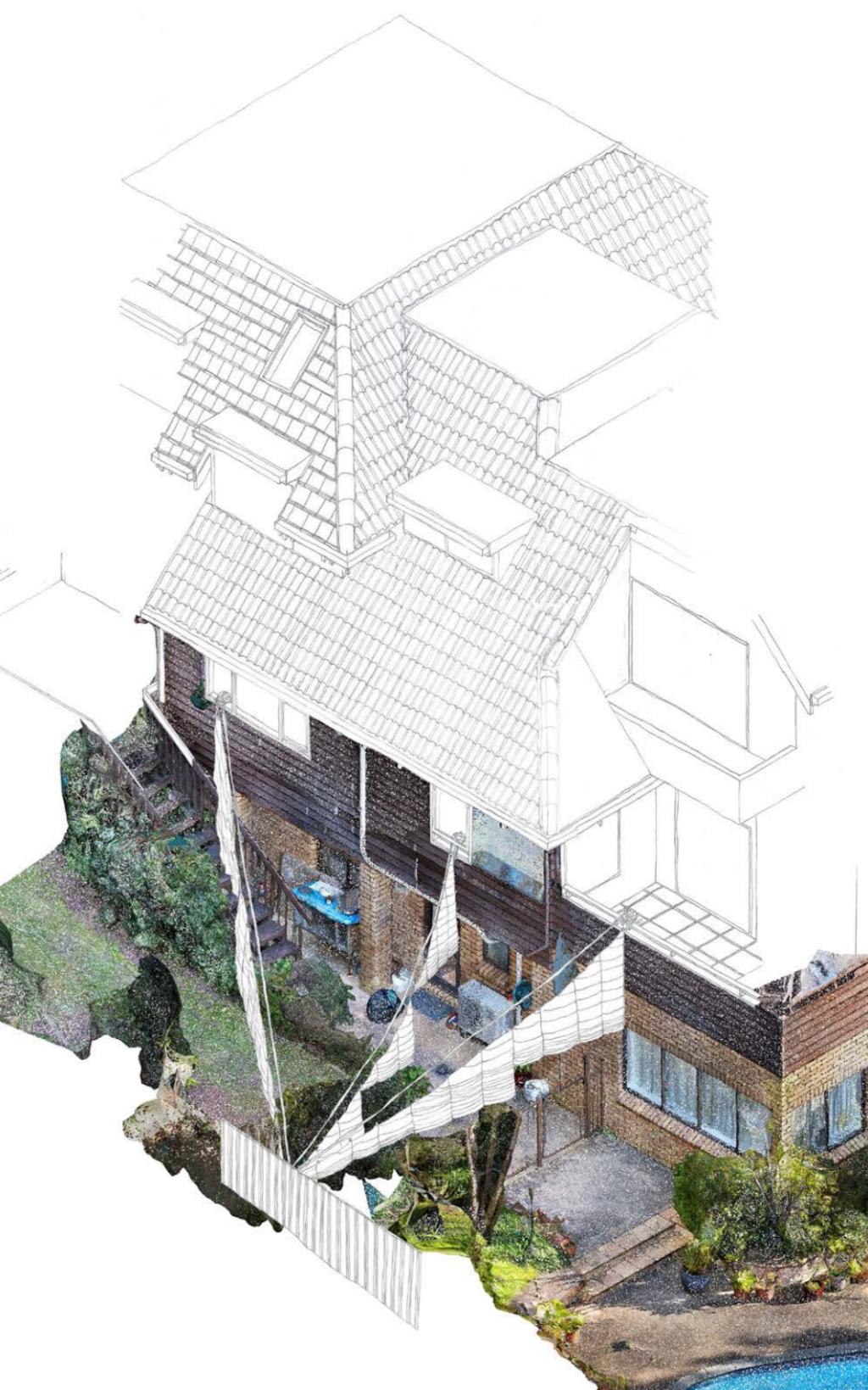
Blankets became large sheets

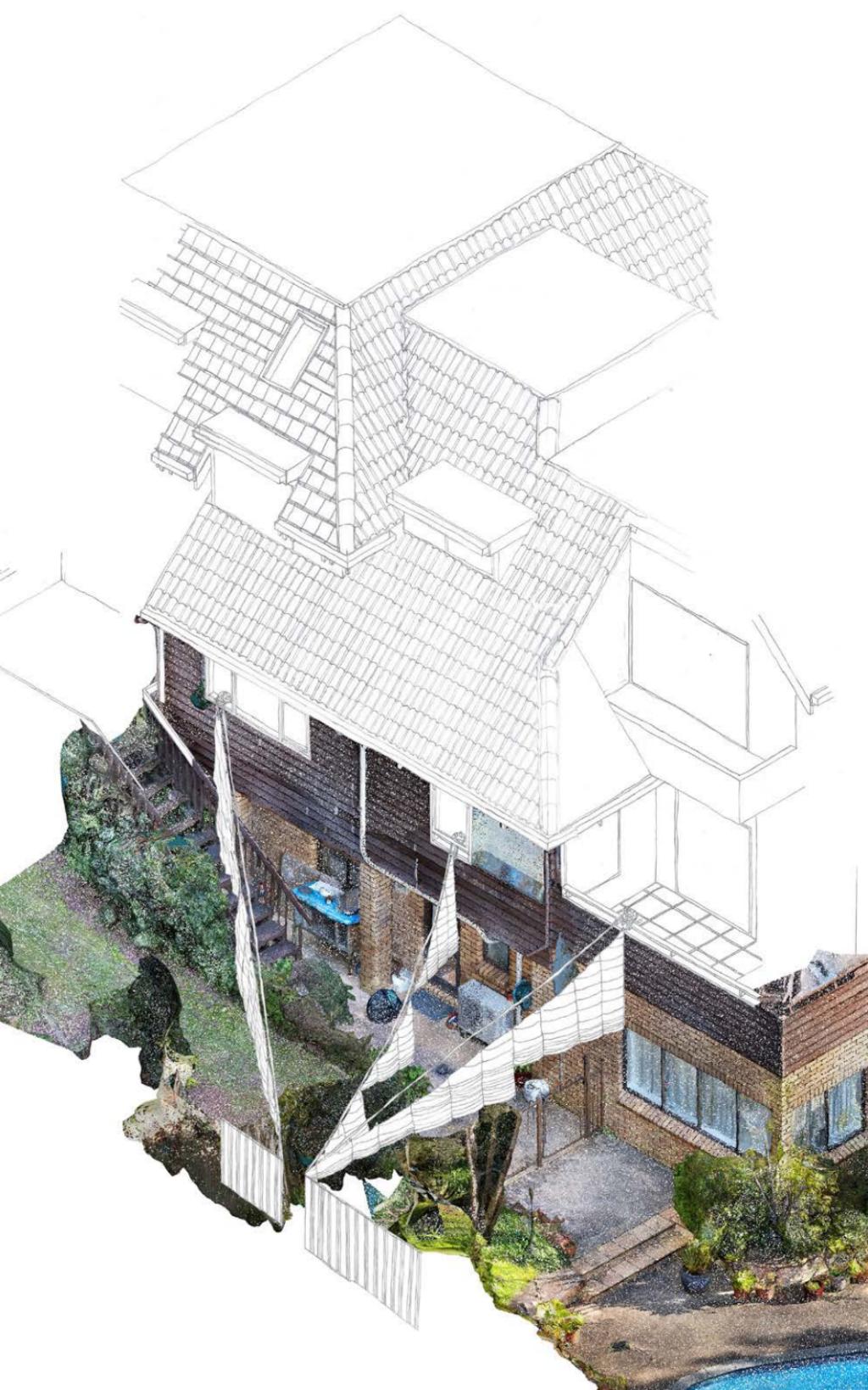




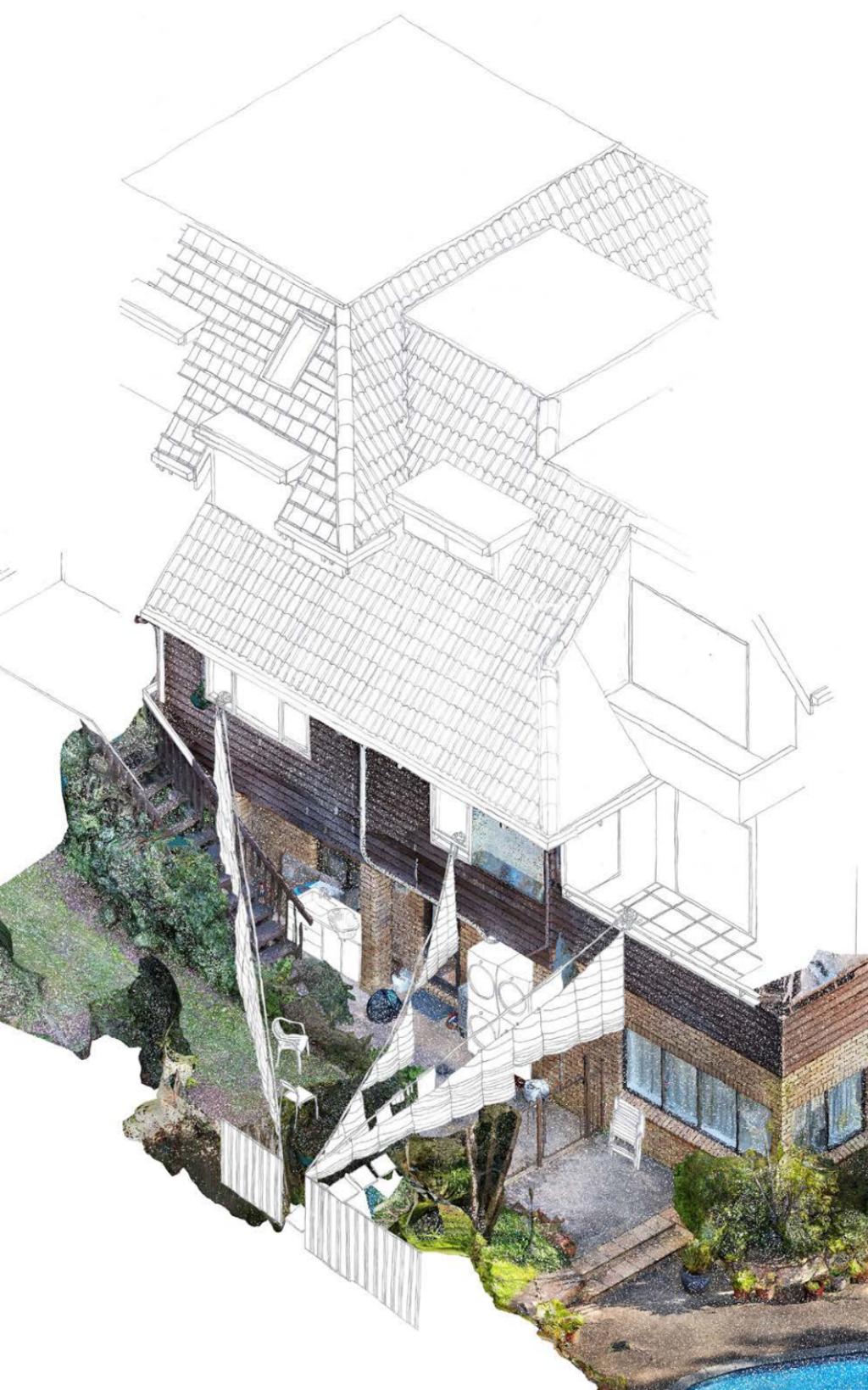
Before we installed curtains that could rise and drop depending on the occasion.

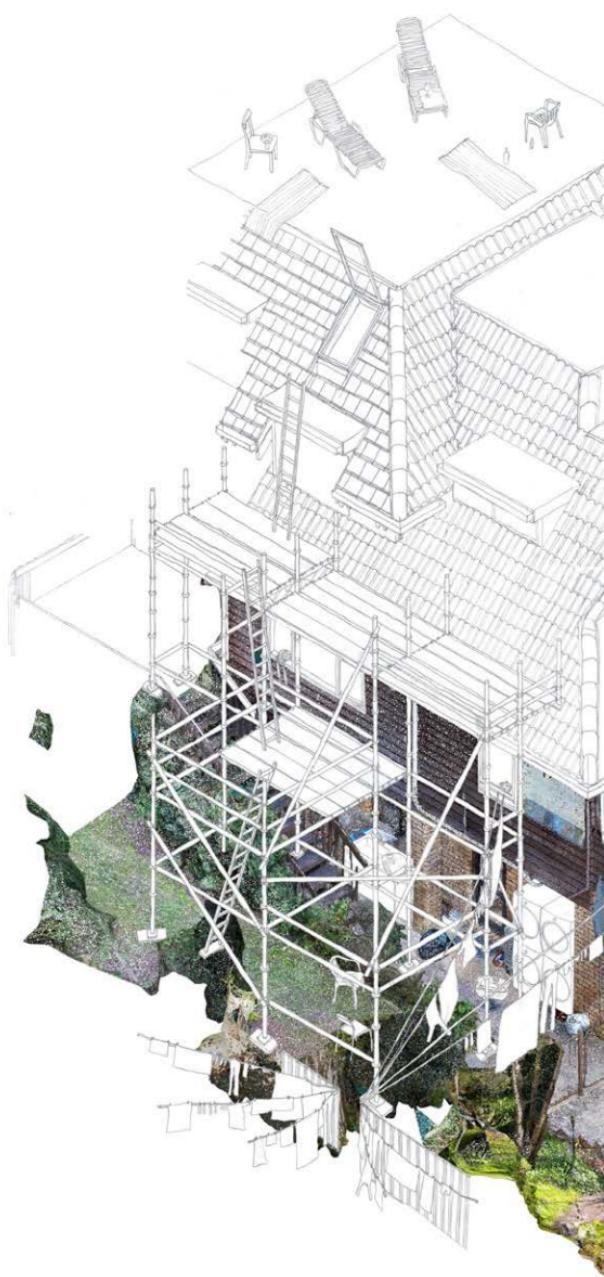






A gap in the fence and some extra washing machines made this space into a communal laundry for the newly subdivided property next door.







Sometime around 2018, the garage door broke down.

Fig. 149-154. We make chairs, create a workshop (opposite and following pages). Watch the animation using this [link](#).



It became unreliable and prone to falling under its own weight so we stopped storing cars in the garage, which became a place for the storage of things not needed in the rest of the house.



In 2022, the garage became a temporary workshop for creating chairs for a Late Night Art installation, using borrowed tools and makeshift workbenches.

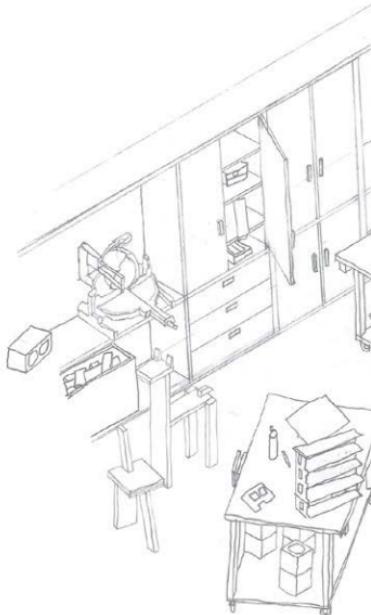


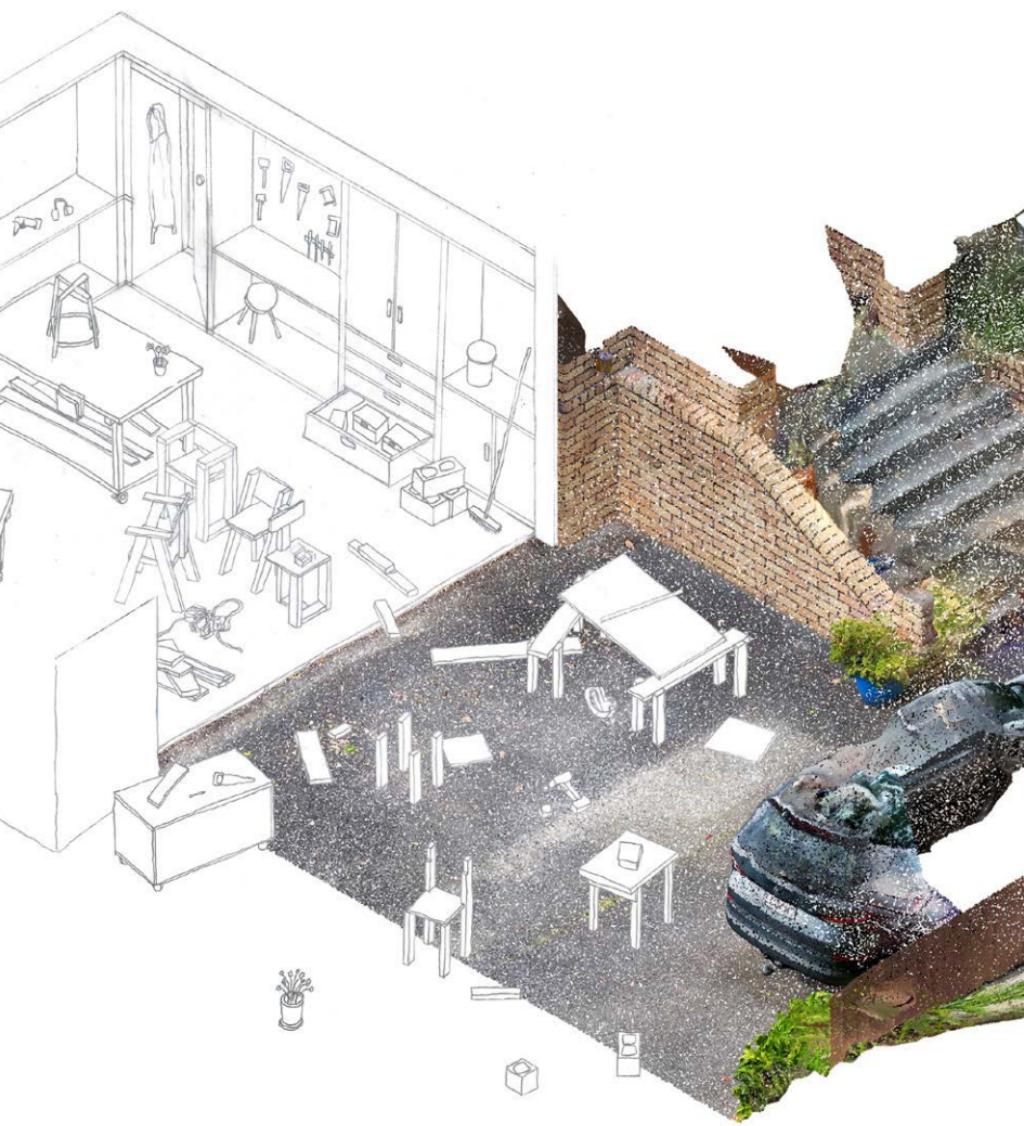
We continued to gather to make chairs in the following years.





In 2025 the walls were thickened with noise insulation and more permanent workshop amenities.





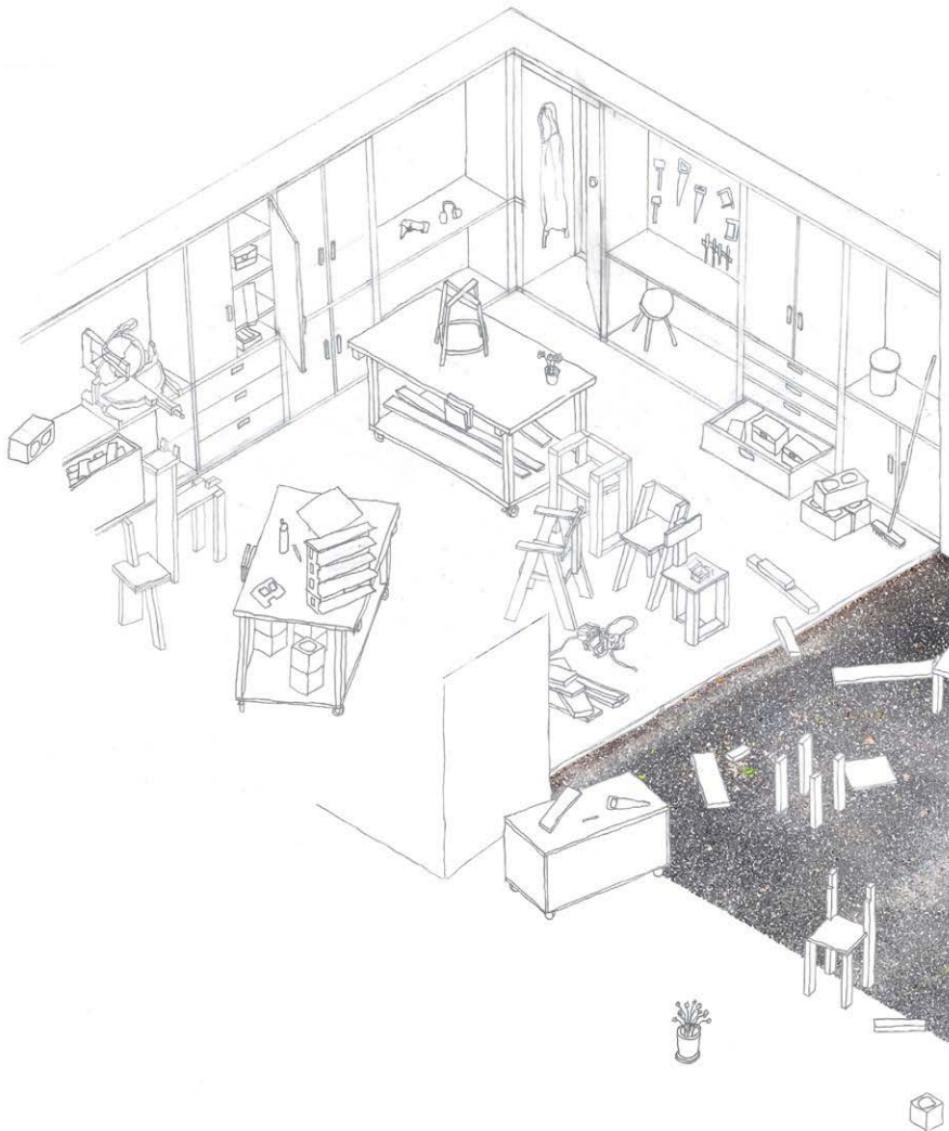
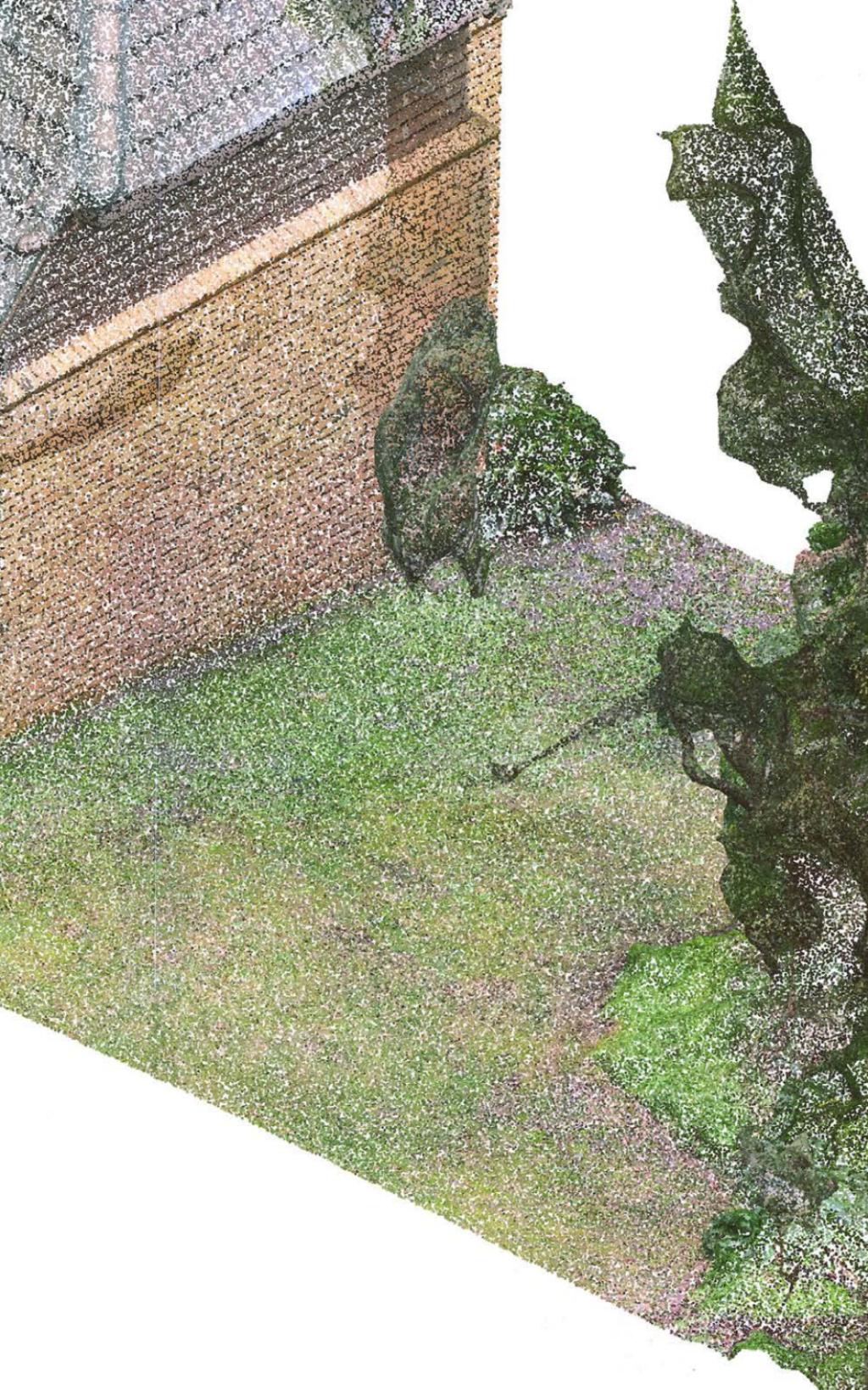




Fig. 155-165. The lawnmower stops, we have a picnic (opposite and following pages). Watch the animation using this [link](#).









In 2024, our regular grass trimming routine was interrupted by a malfunctioning lawnmower.



Unable to fix it, the lawn remained partially mown for a few months.



The grass grew tall around the mown patch and flowers and other plants began to encroach on the previously homogenous lawn.



In the following years we trimmed only small patches.



These became extra rooms within the meadow for picnics and games.



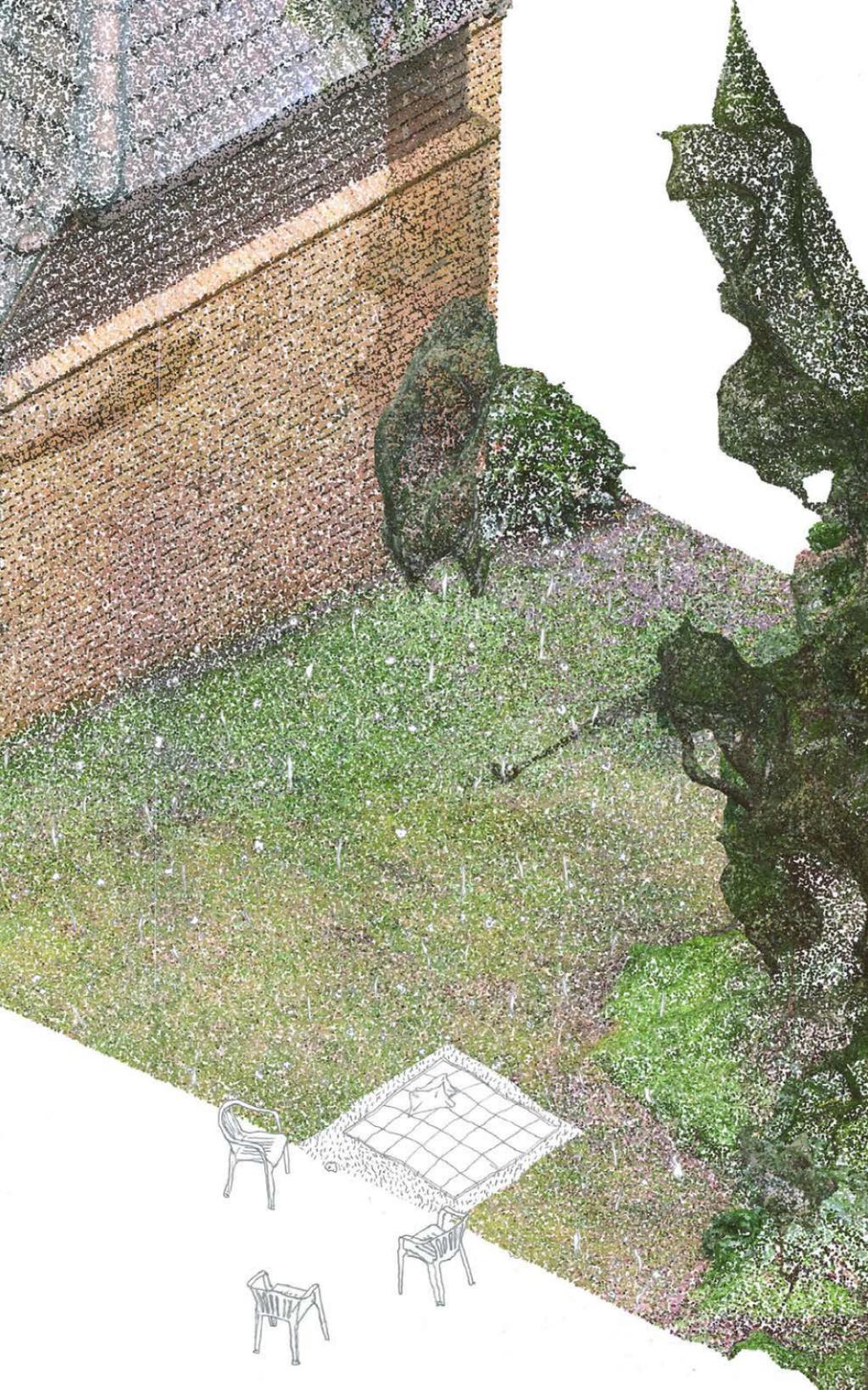






Fig. 166-170. We clean a tarp, make a roof (opposite and following pages). Watch the animation using this [link](#).



A tarp borrowed from a friend was dirty after being used to cover a boat. We threw it over the fence to clean dirt from it, and discovered the beauty of this light, semi-transparent layer between us and the sky.



We secured it using concrete blocks for an afternoon to shade us from the harsh sun.



In 2028, we replaced and extended part of the roof and finished it in a similarly light way.

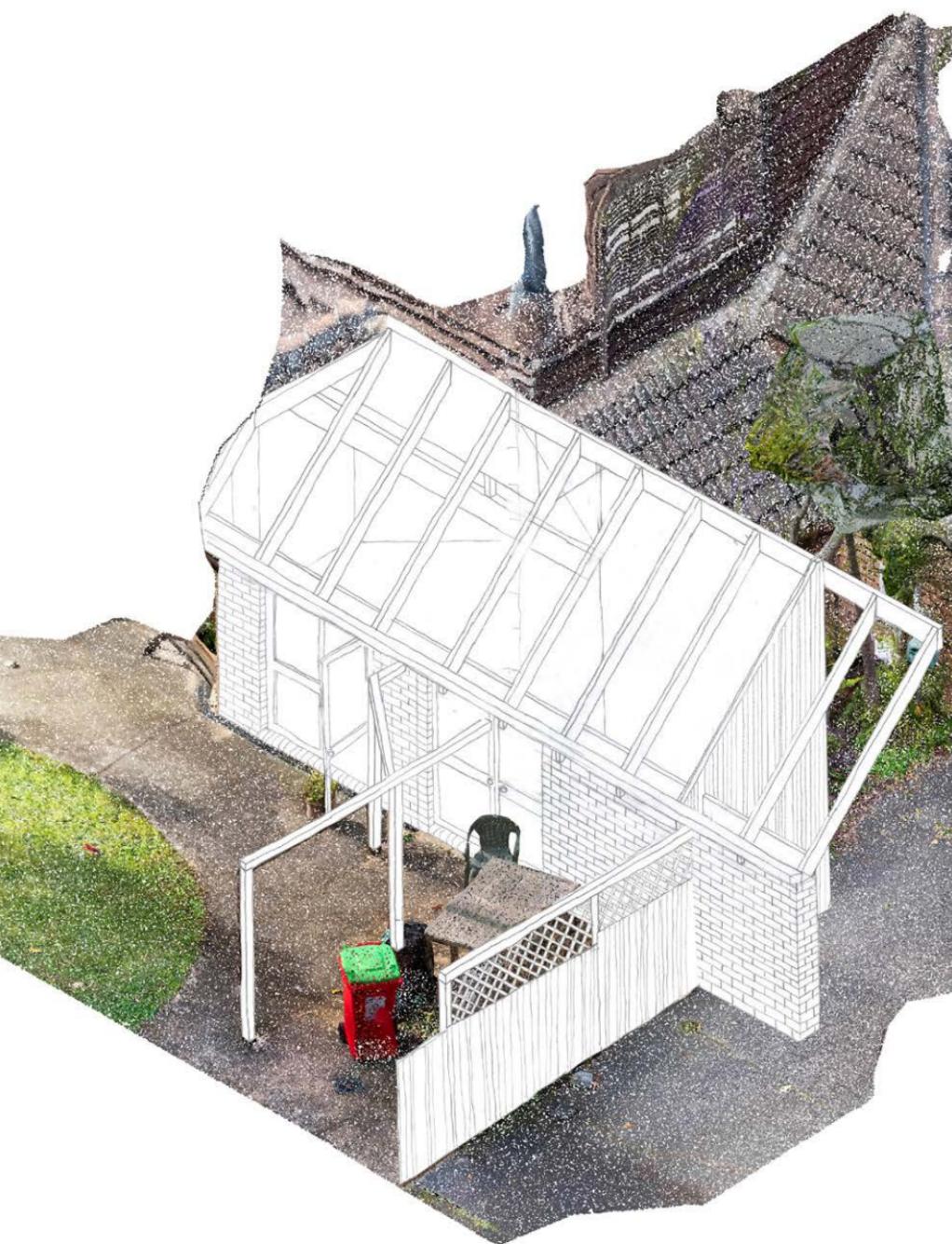






Fig. 171-178. The gutter breaks,
we water the garden (opposite
and following pages). Watch the
animation using this [link](#).





In 2028 a gutter breaks off the wall, spilling water out onto the deck.





Instead of restoring the gutter to its previous position, we let it hang and added an additional gutter that feeds into the garden.



Later, we extend this system of gutters so it feeds into a water storage tank, which we use to water the plants.









Fig. 179-187. We sneak between gardens, eat together (opposite and following pages). Watch the animation using this [link](#).



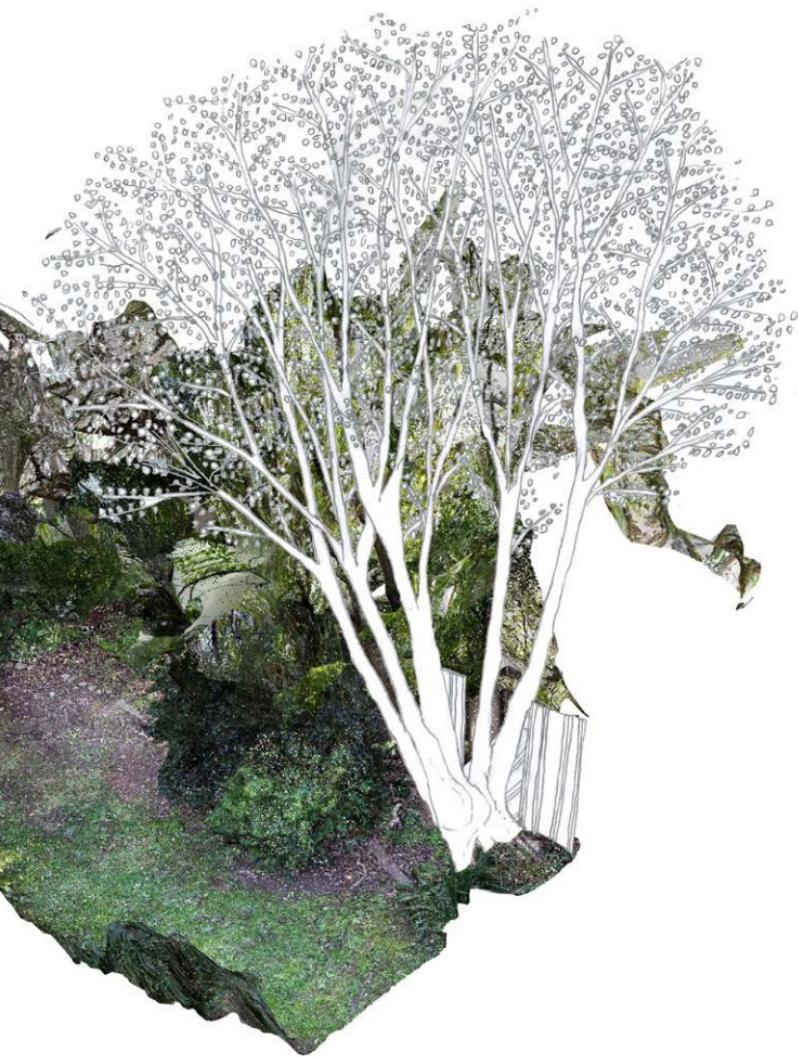
A tree grows close to the long perimeter fence in the garden.



As the tree grew larger, a section of the fence began to open up.



Children from the neighbouring garden began to sneak through —
the discovery of a whole new world.



Rather than repair the fence, we decided to allow the tree to expand unconstrained, and added a small ladder for easier access between gardens.



In 2026, after getting to know the neighbours much better, we decided to open up more of the fence.



We constructed a large table from the remaining timber — a place for meals between adjacent families.



Later, we altered it so it could be pulled up to form a gap, a neighbour from each side required to hoist the rope.







I coined the term ‘more-than-maintenance’ to describe this practice of alteration through repair. Just as a failure has an effect that surpasses the scale of the malfunctioning element, the response to a failure can do ‘more-than’ simply repair the immediate problem. More-than-maintenance welcomes the inevitable failures of ordinary buildings as an opportunity to propagate wider change. These interventions could be likened to what French scholar Michel de Certeau describes as tactics, ways of resisting the controlling forces of society “articulated in the details of everyday life.”⁸³

De Certeau argues that rather than being merely passive consumers, people who engage with the production of a society participate in a hidden and productive ‘making.’ In the same way that speaking is simultaneously “a use of language and an operation performed *on it*,” de Certeau suggests that in their “use” of the representation of society (television, newspapers, products or designed spaces), people reappropriate and transform it “in order to adapt it to their own interests and their own rules.”⁸⁴ Unlike strategies, which are the broad frameworks of the producing possessors of power, tactics are opportunistic and work from within a given situation. For example, people walk through the city in the way that suits them, taking shortcuts and allowing their emotions and senses to guide them. They are aware of but not totally dominated by the grid of streets designed by the urban planner.

Tactics ‘make do’ from within an existing condition.⁸⁵ Similarly, more-than-maintenance harnesses the ordinary and essential acts of maintenance and repair to stimulate wider change that challenges the status quo. The drawings provide examples for how a level of change that we normally associate with dramatic intervention in a building can be generated by small acts. These acts are not necessarily at the scale expected of an ‘architectural’ intervention and are sometimes barely physical at all. Fred Scott notes how introducing electricity into a pre-electric building changes the way it is perceived, altering

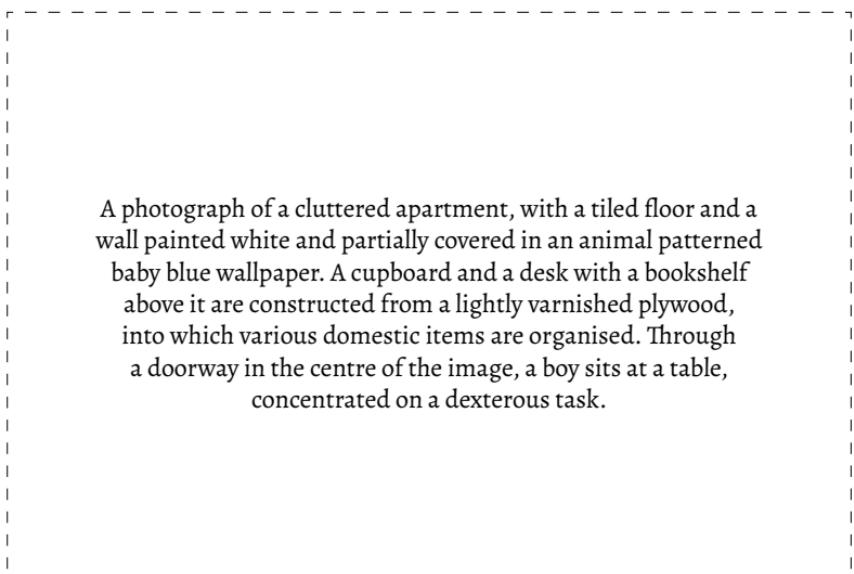
⁸³ Certeau, *The Practice of Everyday Life*, xiv.

⁸⁴ Certeau, xiii.

⁸⁵ Certeau, 34.

it “without any considerable physical intervention.”⁸⁶ These changes are already happening in the everyday lives of ordinary buildings, but (like much of the life of a building after construction) remain outside the consciousness of many architects.

However, examples can be identified within contemporary practice of architects recognising the potential of small interventions to enact wider change. Since 2013, DOMAT architects have been using their Home Modification project to improve the domestic conditions of those living in Hong Kong’s tiny subdivided apartments.⁸⁷ They designed a system of furniture that utilises the high ceilings of the apartments to create storage while providing a dedicated study space for children underneath.⁸⁸ Since renovating the apartments “would wrongly benefit the landlords by giving them a reason to raise rent,” they designed the furniture to be modular so that it could be taken with the tenants when they move.⁸⁹



A photograph of a cluttered apartment, with a tiled floor and a wall painted white and partially covered in an animal patterned baby blue wallpaper. A cupboard and a desk with a bookshelf above it are constructed from a lightly varnished plywood, into which various domestic items are organised. Through a doorway in the centre of the image, a boy sits at a table, concentrated on a dexterous task.

Fig. 188. Modular furniture designed by DOMAT in a Hong Kong subdivided apartment.

⁸⁶ Scott, *On Altering Architecture*, 92.

⁸⁷ DOMAT, “Home Modification for Sub-Divided Units.”

⁸⁸ DOMAT.

⁸⁹ Lam, “Modular furniture for subdivided units,” 69.

During the COVID-19 pandemic, Stephanie Davidson of the Canadian architecture practice Davidson Rafailidis built a ladder over the fence that divides her property from her neighbours. While the fence was essential to contain dogs on one side, children from the adjoining backyards frequently crossed it to play together. The ladder “extends the agency of the property owners on both sides of the fence” by providing children with a safe and easy way to traverse the boundary.⁹⁰ Although the ladder was not built by the children, Davidson describes it as a “concretization of the children’s actions, made based on the observation of the kids climbing the fence.”⁹¹ Design is used to enhance a social pattern, which then had broader social consequences as the ladder became a meeting spot for parents and a place to leave gifts during stints of quarantine.⁹²

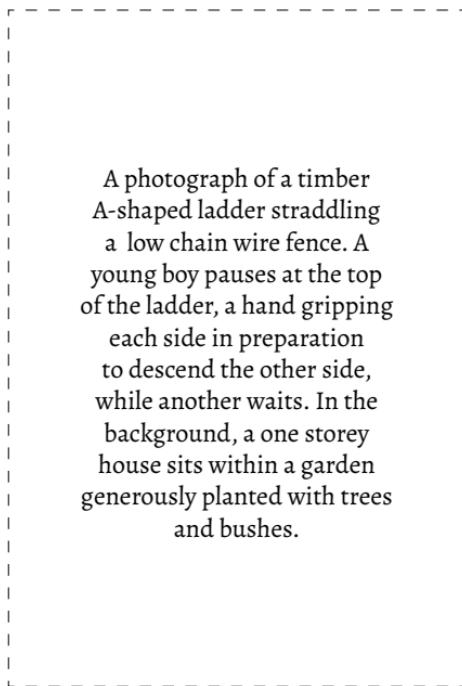


Fig. 189. Children traversing backyards using Stephanie Davidson’s ladder.

⁹⁰ Davidson, “A Fence and a Ladder: Subversive Acts of Everyday Urbanism at Home,” 8.

⁹¹ Davidson, 12.

⁹² Davidson, 11.

Davidson's ladder demonstrates how recognising the building as a network of heterogeneous actors means that cause and effect can transcend physical and social boundaries. Small interventions can trigger a succession of events that accumulate into a change that can greatly surpass the scale of the initial intervention. A physical phenomenon (a fallen washing line) can prompt a physical response (construction of new lines), which can trigger social possibilities (new uses for the garden space), which can be enhanced by further physical intervention (installation of curtains and a laundry).

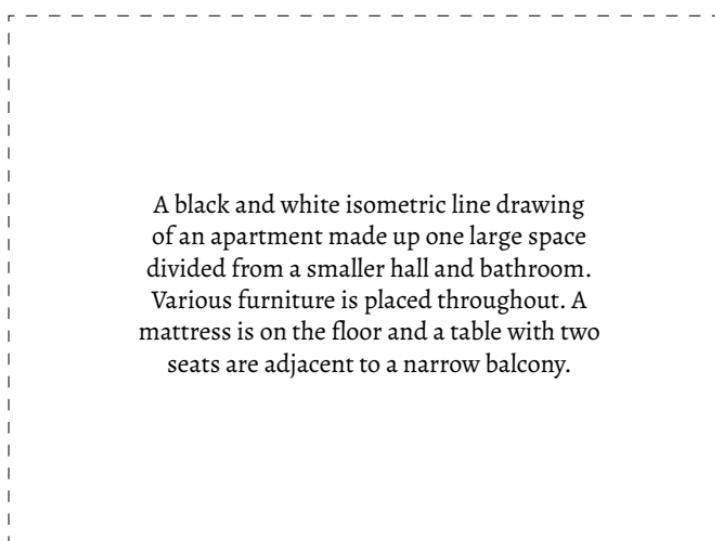


Fig. 190. An isometric from the [in]visible project.

In her article *Drawing as Advocacy*, Davidson describes the isometric and perspective drawings she created with academic Mary Vaccaro for the [in]visible project, which researches women experiencing homelessness in Ontario, Canada.⁹³ Closely cropped and rendered in grayscale, the drawings show the “highly specific, modest things that the homeless women describe explicitly in their interviews as important attributes of their ideal home” incorporated into a range of existing spaces.⁹⁴ In these representations, the needs of the women

⁹³ Davidson and Vaccaro, “Drawing as Advocacy.”

⁹⁴ Davidson and Vaccaro.

are satisfied not through complex or dramatic formal invention but through a particular combination of simple elements — “dishwashing liquid sitting beside a sink, the jimmy-proof lock on the inside of the entry door, a telephone beside a bed, and a hotplate plugged-in on a counter.”⁹⁵ Transposed into the existing architecture, even the most minor item is seen to have the agency to create a future living situation for the women characterised by safety, cleanliness and comfort.

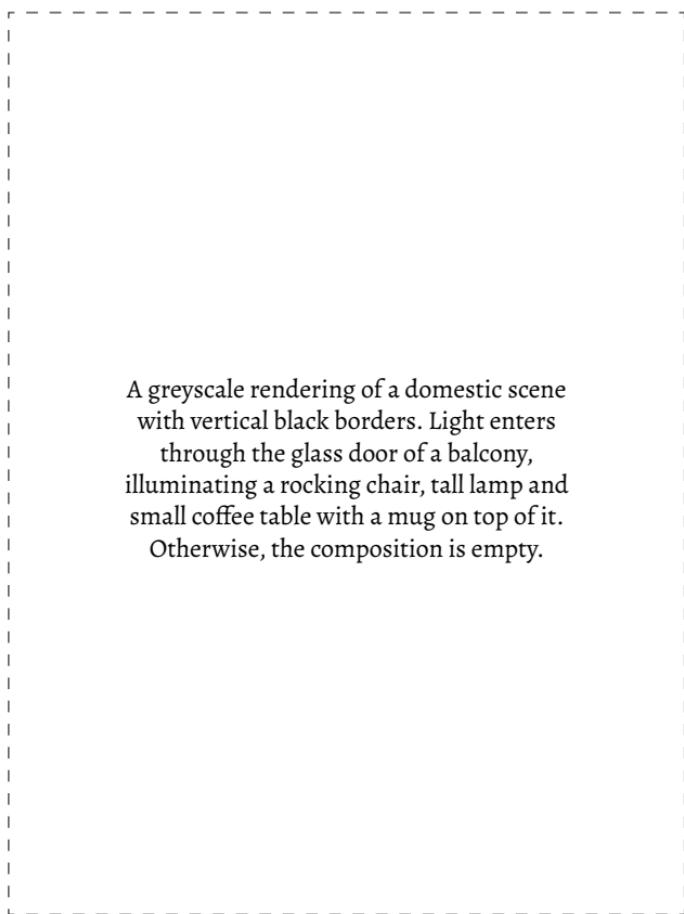


Fig. 191. A perspective drawing from the [in]visible project: “I’d like a big window, a neat kitchen, a little bit of space, it doesn’t have to be really big.”

⁹⁵ Davidson and Vaccaro, “Drawing as Advocacy.”

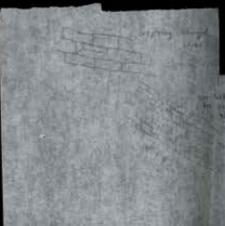
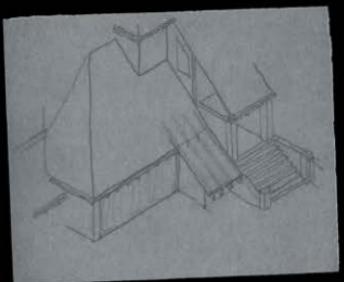
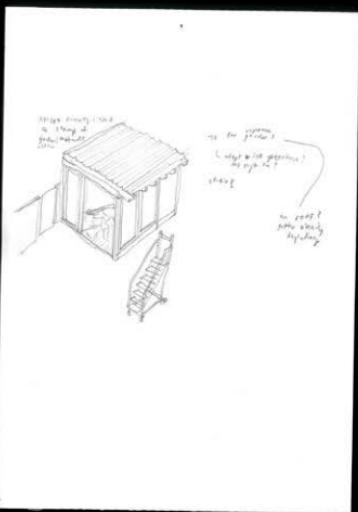
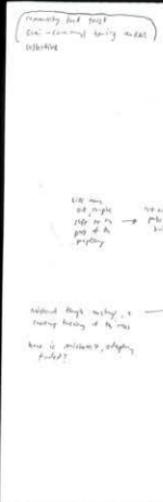
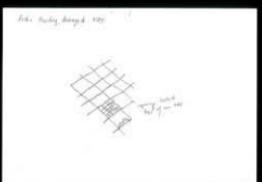
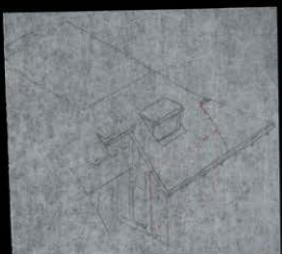
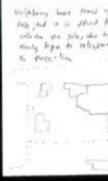
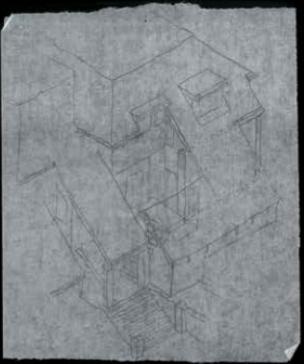
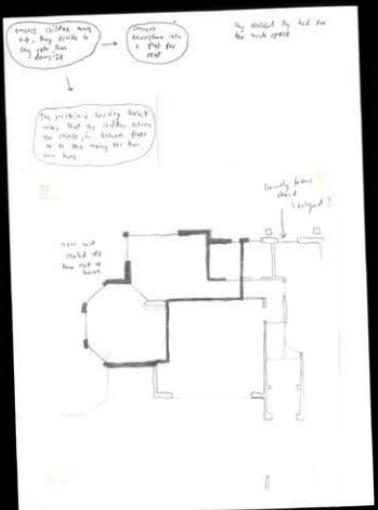
Moving Out

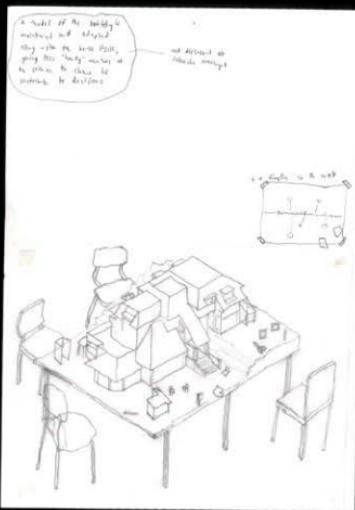
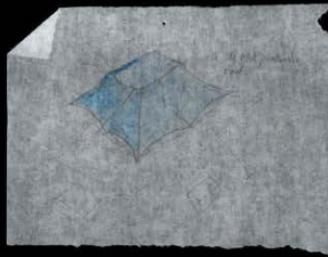
In the [in]visible project, the power of architectural representation can be seen in the specific arrangement of discrete elements into an assemblage. Like my drawings, people are omitted, allowing each narrative to retain an element of ambiguity. In a similar way, the stories accompanying my animations use the plural first-person pronoun ‘we,’ which implies a collective effort without specifying exactly who is involved. These are suggestions of a possible reality, not a prescription. Between drawing and narrative, space is left for the unpredictability of the social world.

As I drew, my imagination was constantly tempted to fill in the gaps, to imagine a next step to the interventions I was describing. Like dominoes, every addition sparked new ideas for possible defects, additions and stories, which accumulated in my notes app and on scraps of butter paper. They describe a house that remained in a neighbourhood of demolition and replacement, that extends through slight extensions of roofs and reappropriation of space.

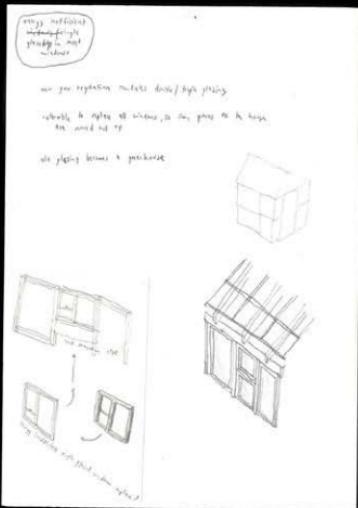
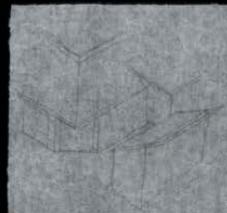
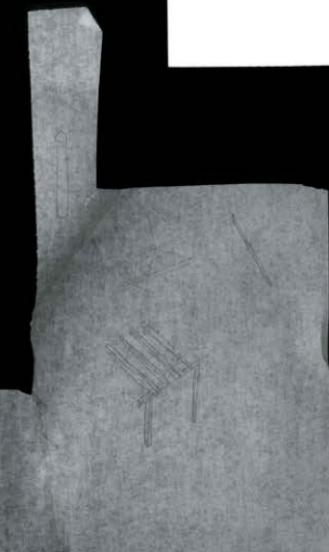
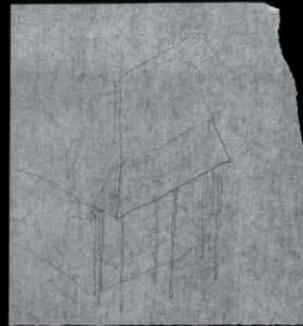
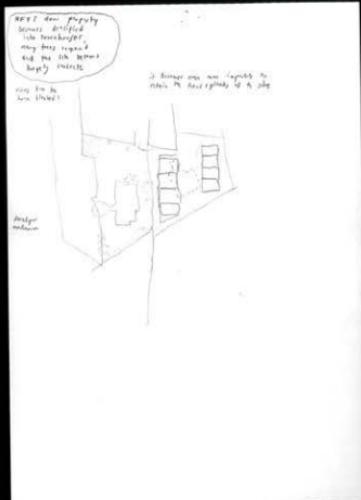
Perhaps a single family becomes multiple. Maybe handypeople become friends, and then residents. Taking care of the house becomes a habitual and collective act, organised with a maintenance schedule. Maintenance is always seen as a chance for improvement. A community land trust is created to ensure this spirit of careful and incremental change continues. The house becomes an oasis within a damaged suburb. Bonds with neighbours who are dissatisfied with their restrictive living conditions are strengthened over the shared table-fence. These social connections become physical as the house extends to meet the neighbouring buildings, weaving around the existing trees and piercing through the remaining timber fences.

Fig. 192. Fragments of possible futures for the house. (following page).





• Has reflection - mainly
and popping into them
is of the art



As I imagined ways to challenge the existing conditions of the house, I was drawn repeatedly towards the boundaries. In their vulnerability, failures in the borders of the domestic seemed to hold the most potential for change. Burst pipes and broken windows open up holes in the walls. A thriving tree forces a gap in the fence. The introduction of new people challenges the social confines of the home. The self-contained object of the single-family home exists as a symbol of privileged suburbia, so breaking it goes some way towards disturbing this otherwise stable condition. However, I felt that to properly challenge the unequal and untenable lack of density, my interventions had to transcend the scale of a single room or house to see the property and neighbourhood as fair game as well.



Fig. 193. Gaps in the borders of the domestic.

The ease with which existing practices of maintenance and repair make additions and subtractions to the exterior walls of the house does not extend to the legal boundary of the site, which remains fixed and unchallenged. The fences and vegetation circumscribing the property became an important site to suggest a neighbourhood becoming more dense through gradual change and cooperation.

Probing property boundaries in this way challenges the siloed, single-family existence experienced by the majority of New Zealand families. As previously private space becomes contested, social organisation becomes as important as physical intervention. While my stories benefit from the idealistic harmony possible in the realm of the (semi-) fictional, in reality the practice would conflict with many of the systems governing how we own and live in buildings. Many of the interventions presuppose a power over the house that is only bestowed through ownership, a privilege held by a falling number of New Zealand families.⁹⁶ Those renting are highly limited in the changes that they can make to their homes — only those who already *have* can work with what they have. These inconsistencies suggest the need to explore new forms of living and owning. At a tangible scale, the new shared edge condition requires negotiation at the scale of the neighbourhood, not just the family. How can we live together in such close proximity?

Making Site

In the Tāmaki Makaurau Auckland CBD, a dense urban condition like that anticipated by my suburban narrative already exists. Boundaries between private dwellings are shrunk to the width of a wall and the space separating buildings becomes even more vital as a shared space for residents of the entire city. Public space operates as a sort of negotiated boundary between the privatised interiors.

Despite its density, the city and its public spaces possess much of the same staticity of the suburbs. In the same way that we cannot assume that pulling down fences will create a community, labelling a space ‘public’ is not enough to create a thriving collective condition. Public space is ultimately made by people, through use, and requires main-

⁹⁶ Stats NZ, “Homeownership Rate Lowest in Almost 70 Years.”

tenance — not just of the physical surfaces, but of the social networks that comprise the ‘public’ too. I was interested in how the principles of more-than-maintenance that I had employed in my drawings could operate in the existing density of the city. Could its lack of dynamism be repaired through collective incremental activity? How could we negotiate ways of existing closely together in existing space?

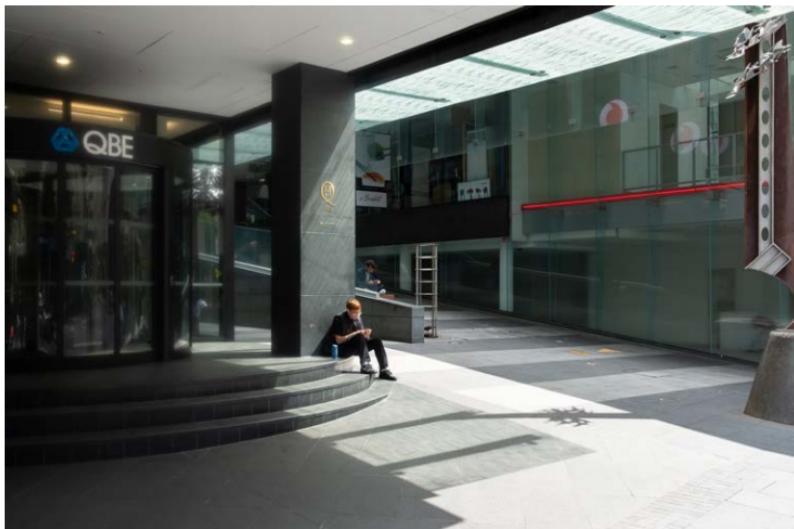


Fig. 194-195. Life meets the rigidity of the Auckland CBD.

To test these questions, I designed an installation for Tāmaki Makaurau Auckland's 2023 Late Night Art event with my friend and recent architectural graduate Philip Lee. Philip and I had been working together on a series of drawings that captured how people 'make' public spaces by appropriating them in unexpected ways. It was based on examples we had observed throughout Auckland such as the Mission Bay fountain, which transforms during the summer into a public swimming pool for children visiting the beach. These vibrant public events do not necessarily involve any physical intervention. They occur as a result of negotiation between people that happens far outside the realm of planners and architects. It is the sort of social process that is fundamental for my theory of more-than-maintenance, but which is impossible to properly test within the self-contained space of the drawing.

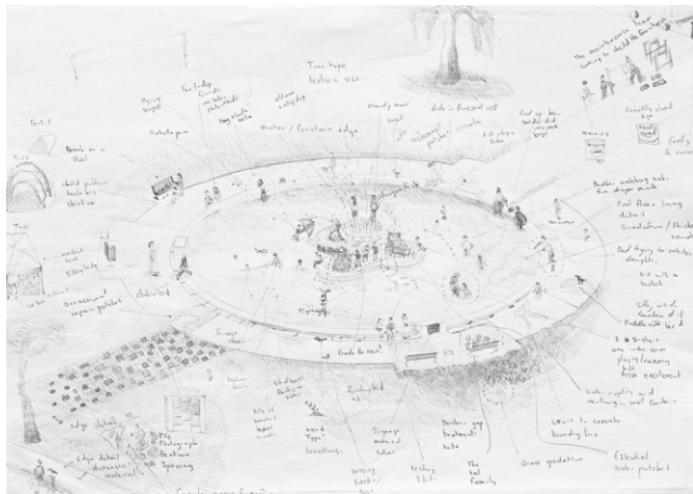


Fig. 196. A drawing by Philip of the Mission Bay fountain.

For Late Night Art (an annual public art event in Auckland's city centre organised by Heart of the City), we wanted to see if the spirit of using public space described in our drawings was something we could stimulate. We designed a workshop called Making Site that invited visitors to consider the potential of the O'Connell Street and Vulcan Lane site as a space for community. Participants would be asked to make changes to the space, which would be replicated as a 1:20 model.

In the spirit of ‘working with what we have’, the material for their interventions would be scale models of elements of the site, such as its seating, pavers and bins, plus whatever previous visitors had added on. The collaborative model would remain perpetually unfinished, a manifestation of the community being maintained around it.

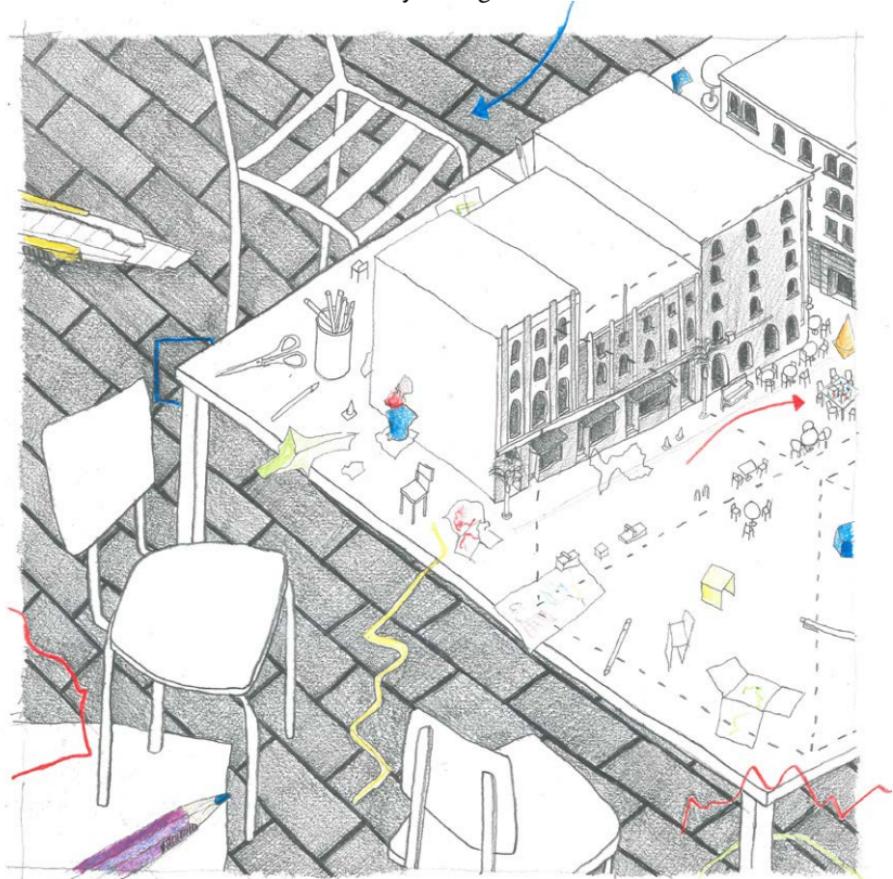


Fig. 197. Working at scale and within the street.

Our hope was that considering the site at scale and in its totality (as the architect does) would allow visitors to reflect on their own engagement with public space. Whilst working at a small scale, participants would be simultaneously performing use of the same public space at a 1:1 scale, as they negotiate amongst each other and self-organise their bodies and the furniture of the installation.

Working at Scale

We felt that the ‘meta’ experience of working at scale and within the 1:1 space at the same time could help bridge the gap between the realms of easily-altered representation and the more stubborn reality. To test this, we employed a similar method in our own process of designing the workshop. We made a rough 1:20 model of the site and used it to work out how the installation would be set up and run. As we collected materials, we modelled them at the same scale and worked collaboratively to find ways to combine them together.

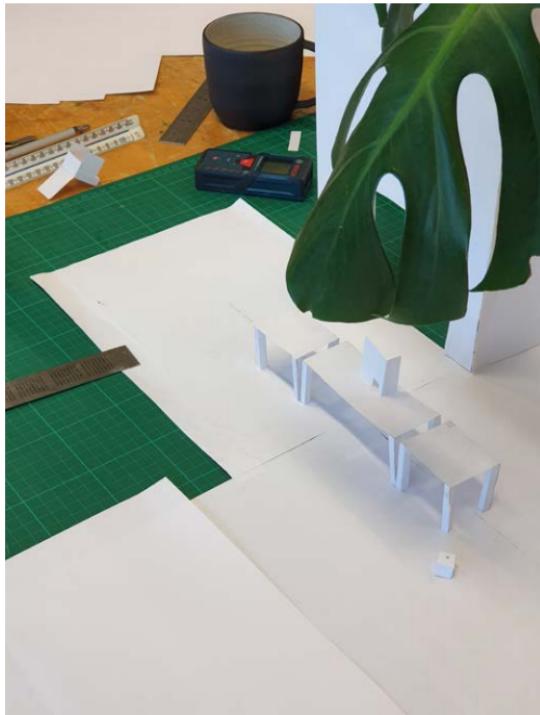
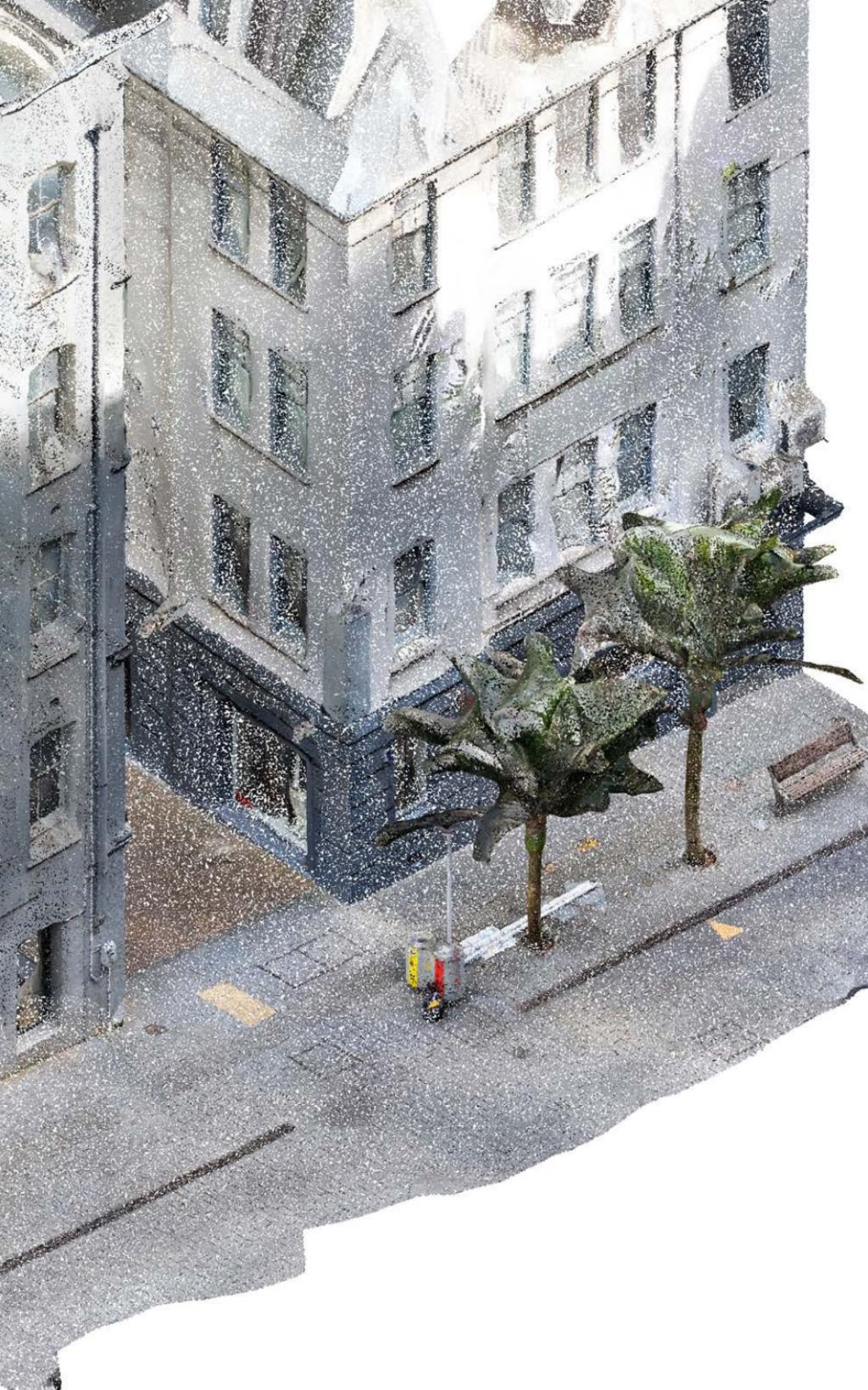


Fig. 198. Testing ideas at 1:20.

During the four-day event our workshop would run on two different sites: the intersection of Vulcan Lane and O’Connell Street and in Freyberg Square next to the Ellen Melville Centre.

Fig. 199. Vulcan Lane (opposite).
Watch the animation using this [link](#).



We made partial models of both sites, which were split into three separate groups. The models were lasercut using 3mm and 6mm MDF and assembled onto thicker MDF bases. Due to their size, the models had to be section cut to fit them onto the bases, which resulted in a reversal of the typical logic of the architectural model. People viewed the models from their 'interiors', meaning that what they were looking 'into' was actually the exterior public space.

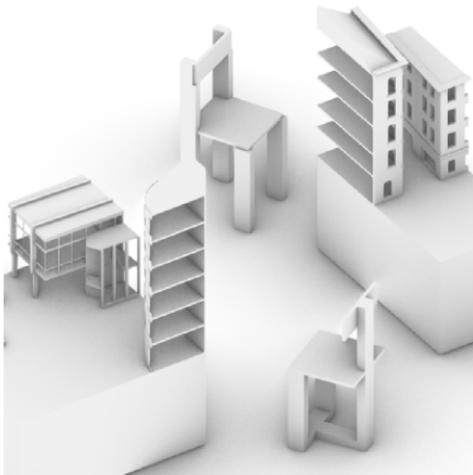


Fig. 200. Planning the models.



Fig. 201. A model within the life of the site.

Fig. 202. Models on the street (opposite).



Each of the bases sat on a 1200 x 600mm plywood cart. The relatively small size ensured that we could transport the models and other materials inside them for the event while using as little plywood as possible.

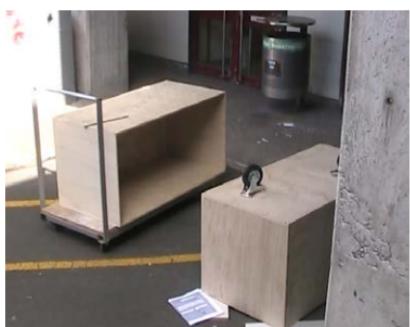
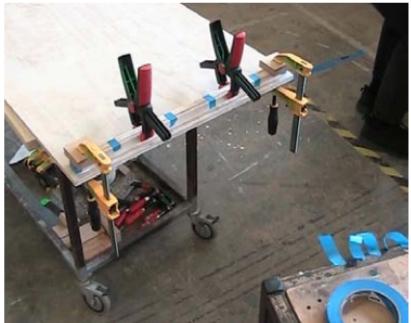
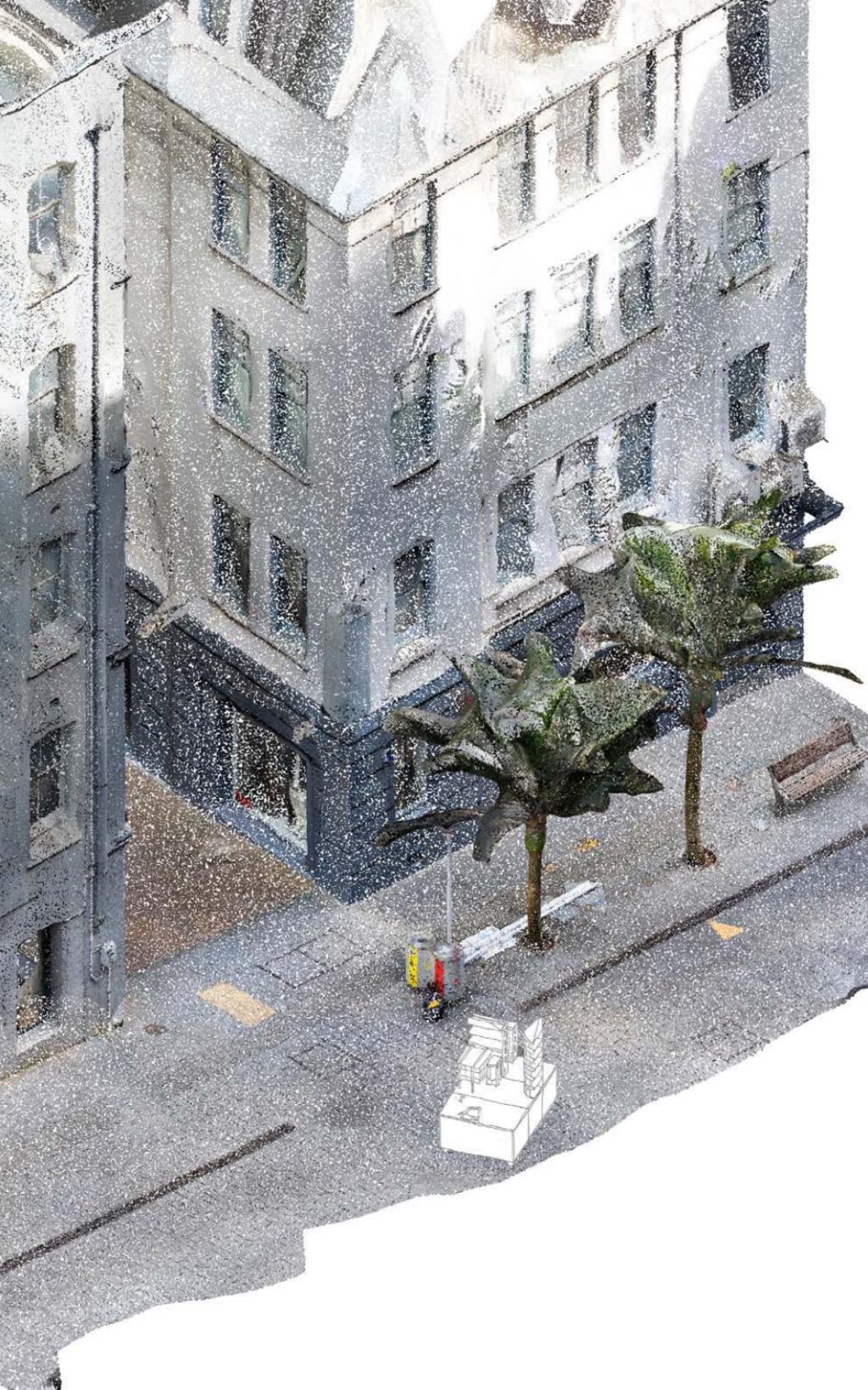


Fig. 203-208 Making the carts.

Fig. 209. The models combined (opposite).

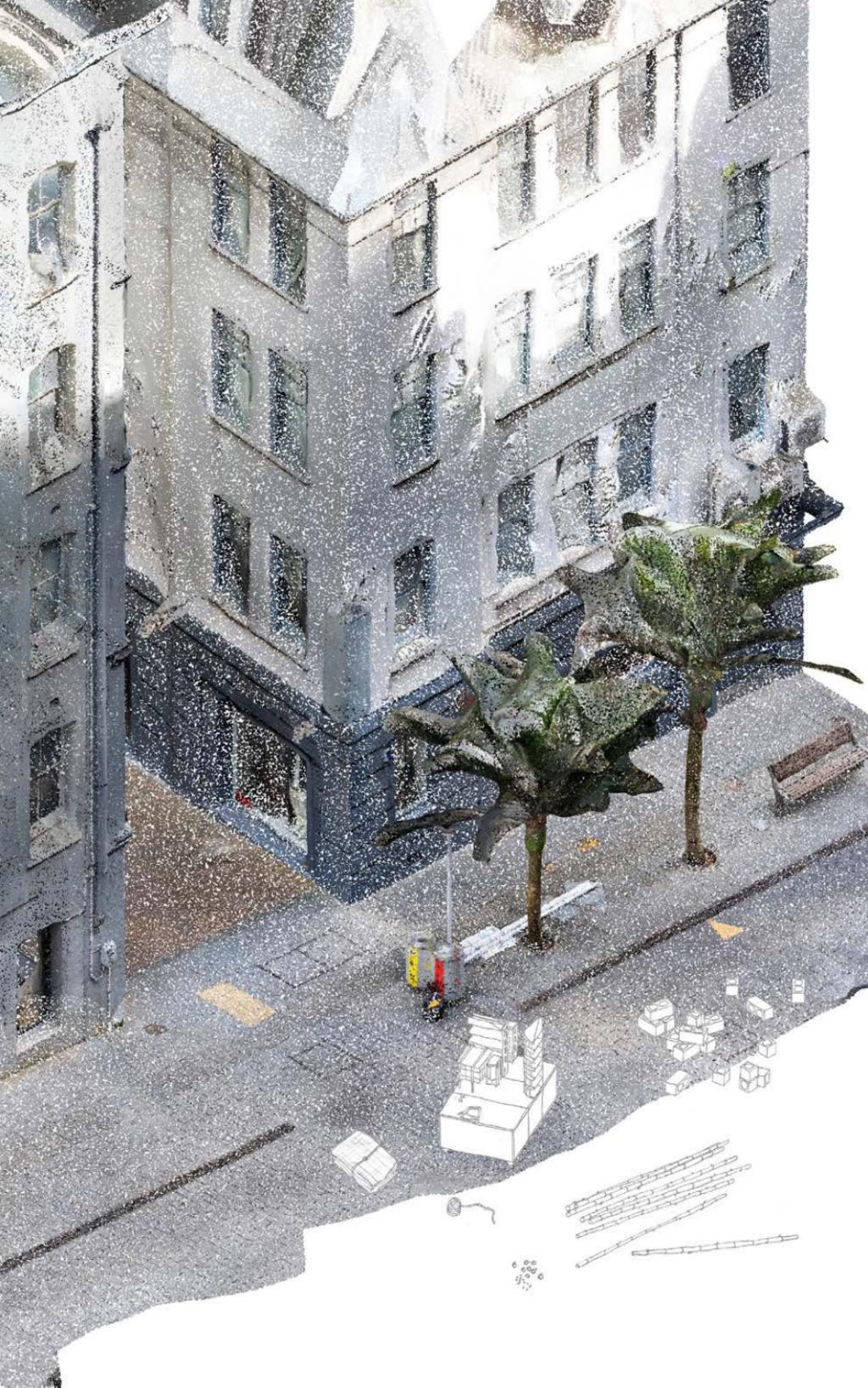


Due to the risk of rain during the event, we were also required by the organisers to have some sort of roof structure. We had inherited a large 5500 x 3600mm tarpaulin from the 2022 event, so decided to find a way to use this to make a roof. We harvested bamboo from the house's garden (see page 148) and purchased some concrete blocks and rope.



Fig. 210-215. Harvesting bamboo, cleaning the tarpaulin and concrete blocks.

Fig. 216. Collected materials for roof (opposite).



We designed the roof structure using a combination of sketching, 1:20 model making and 1:1 prototyping. We planned to suspend the tarpaulin using a grid of eight bamboo columns, which would be secured to the ground at each base using welded steel feet, concrete blocks and sandbags.



Fig. 217. Testing the roof.

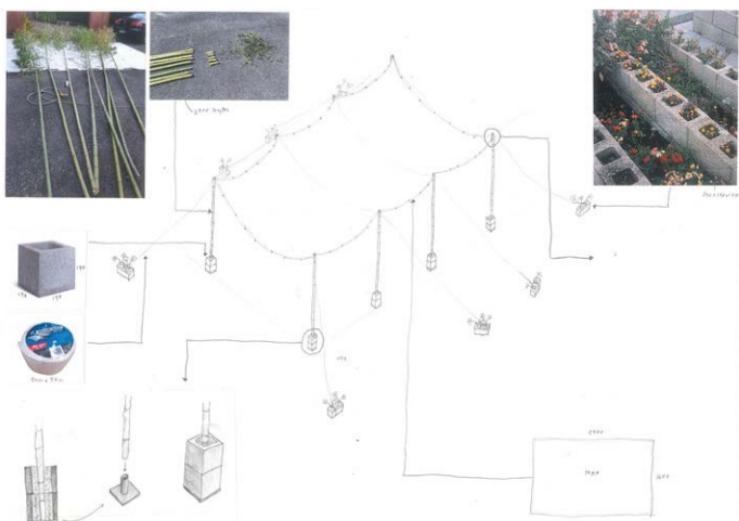


Fig. 218. Roof sketch.

Fig. 219. Bamboo columns (opposite).



Automotive hose clamps proved to be ideal for creating a connection between the irregularly sized bamboo and pieces of rope.



Fig. 220-222. Automotive hose clamps used to attach the rope to the bamboo.

Fig. 223. Our initial roof idea (opposite).



Since most of the cart's surface would be taken up by the models, we planned to supplement these with a couple of tables for the most intensive model-making. We salvaged chairs from wherever we could find them — around the university, the house, the side of the road and from a 2022 Late Night Art project. However, as we tested the design, we quickly found that the columns were not strongly secured enough to resist strong gusts of wind.



Fig. 224-227. Roof wind tests.

Fig. 228. Tables and chairs for model making (opposite).



We increased the number of concrete blocks and then reduced the size of the openings using concrete, but the structure remained vulnerable to tipping.

Fig. 229. Adapting the design to try and deal with the wind (opposite).



Before the event, the roof remained unresolved. We resorted to cutting holes in the tarpaulin in the hopes that it could still function as some sort of partition despite not working as a roof.



Fig. 230-231. More roof tests.

Fig. 232. Cutting holes in the tarpaulin, a final attempt (opposite).



Late Night Art

The days leading up to the Late Night Art event were frantic. We were trying to assemble the scale models, finish the carts and troubleshoot the roof all at the same time. I hadn't been feeling great during this process, and on the day before the event I started to feel very sick. I managed to finish assembling most of the models but unfortunately, my illness meant that I ended up missing the entire event. I spent the next four days in bed instead.

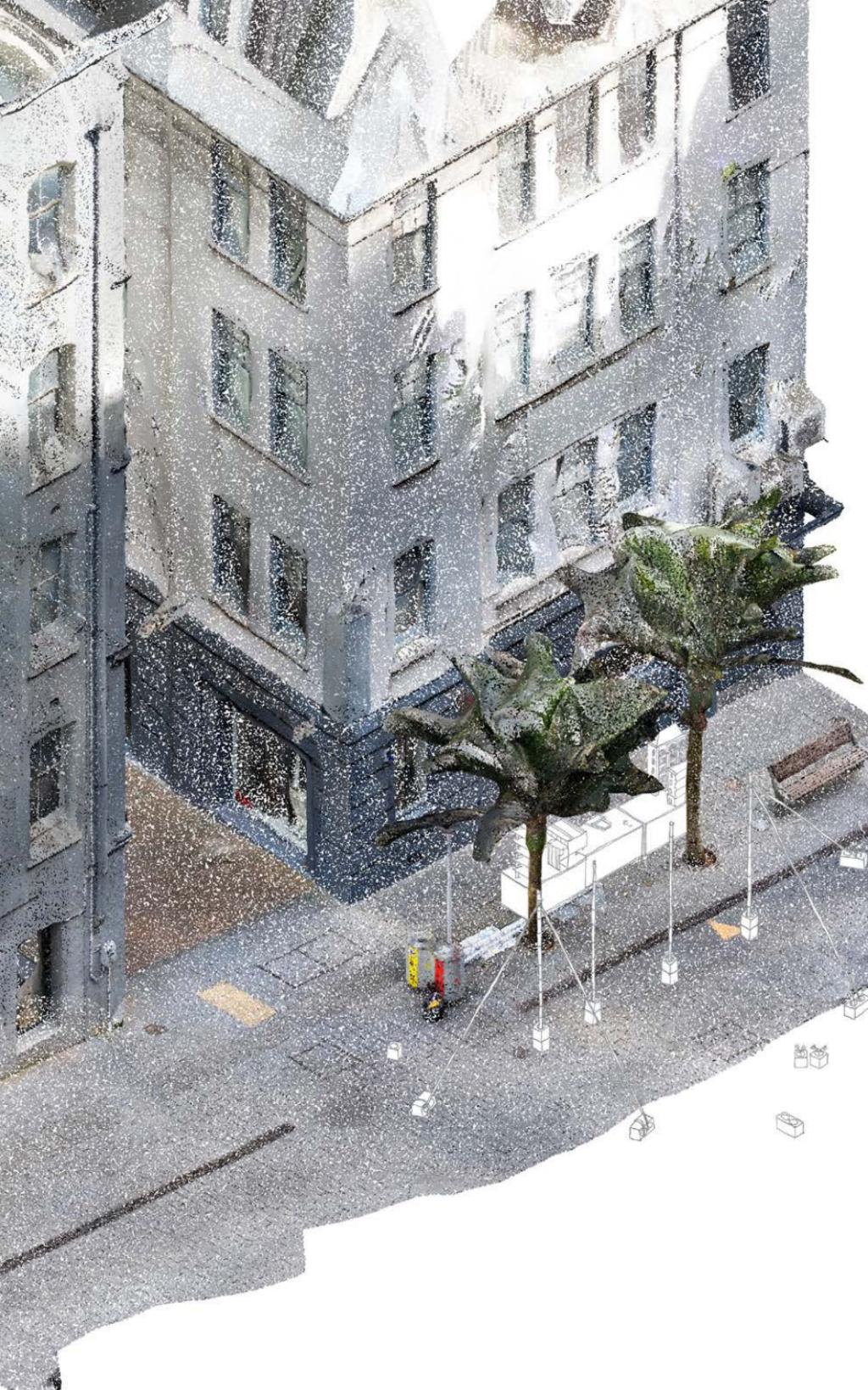
Thankfully, the workshop was able to run without me, thanks to the immense and generous efforts of Philip and many friends.⁹⁷ The installation was reduced to its essential elements, with the carts placed between two palm trees surrounded by chairs.



Fig. 233. The carts set up between two palm trees.

Fig. 234. The eventual set up, with row of bamboo columns (opposite).

⁹⁷ Thanks to Jack Wu, Calvin Feng, Pat Diswat, Angela Wong, Regan Aldrin, Ethan Chung, Gujin Chung, Daniel Ho, Yeri Lee and Dian Wang, who helped to make models, set up, move and repair things.



Lights staged the scene, lending the arrangement an increased drama as the sun went down, and concrete blocks were arranged with flowers across the site.



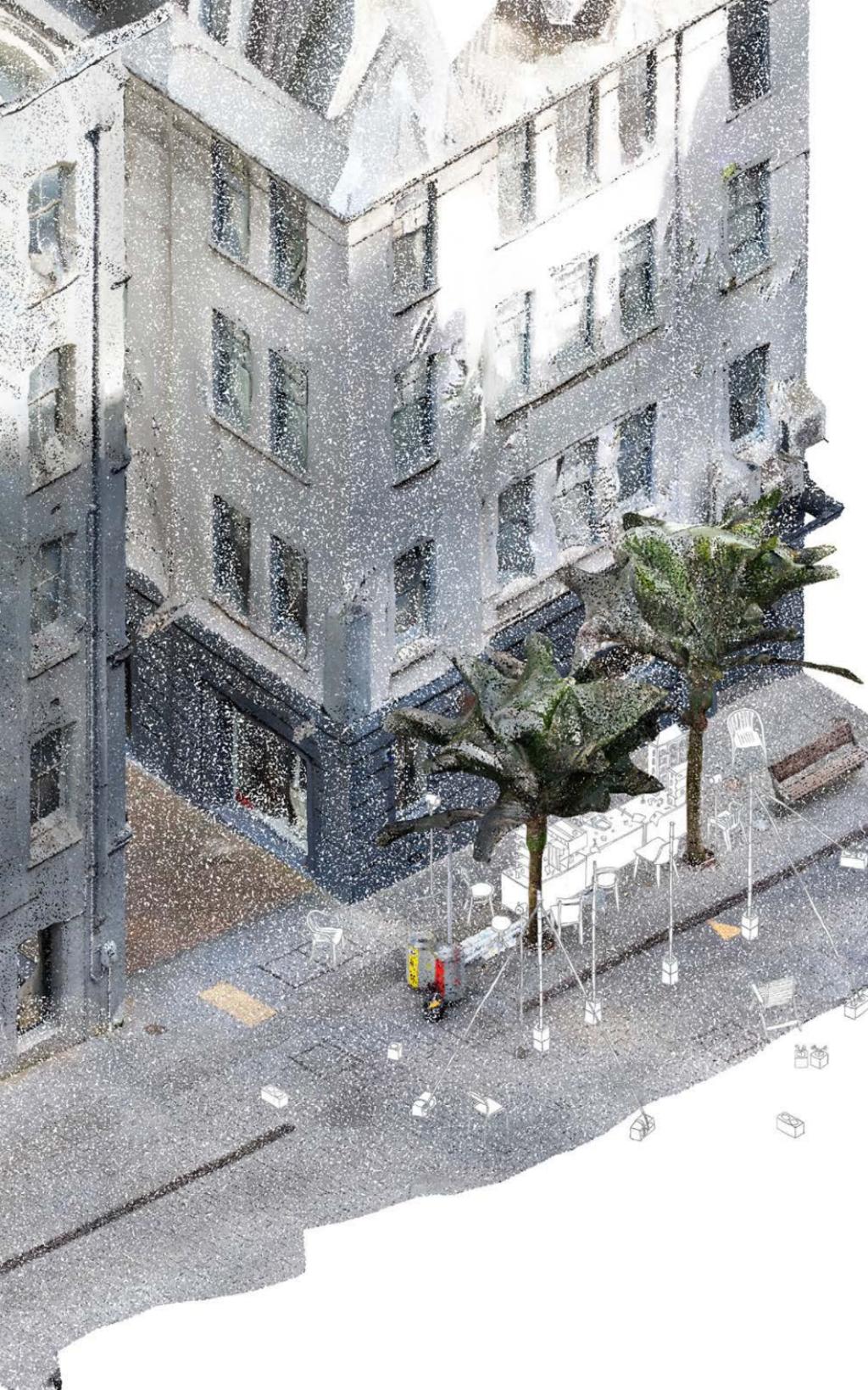
Fig. 235. Lights illuminating the models after dark.

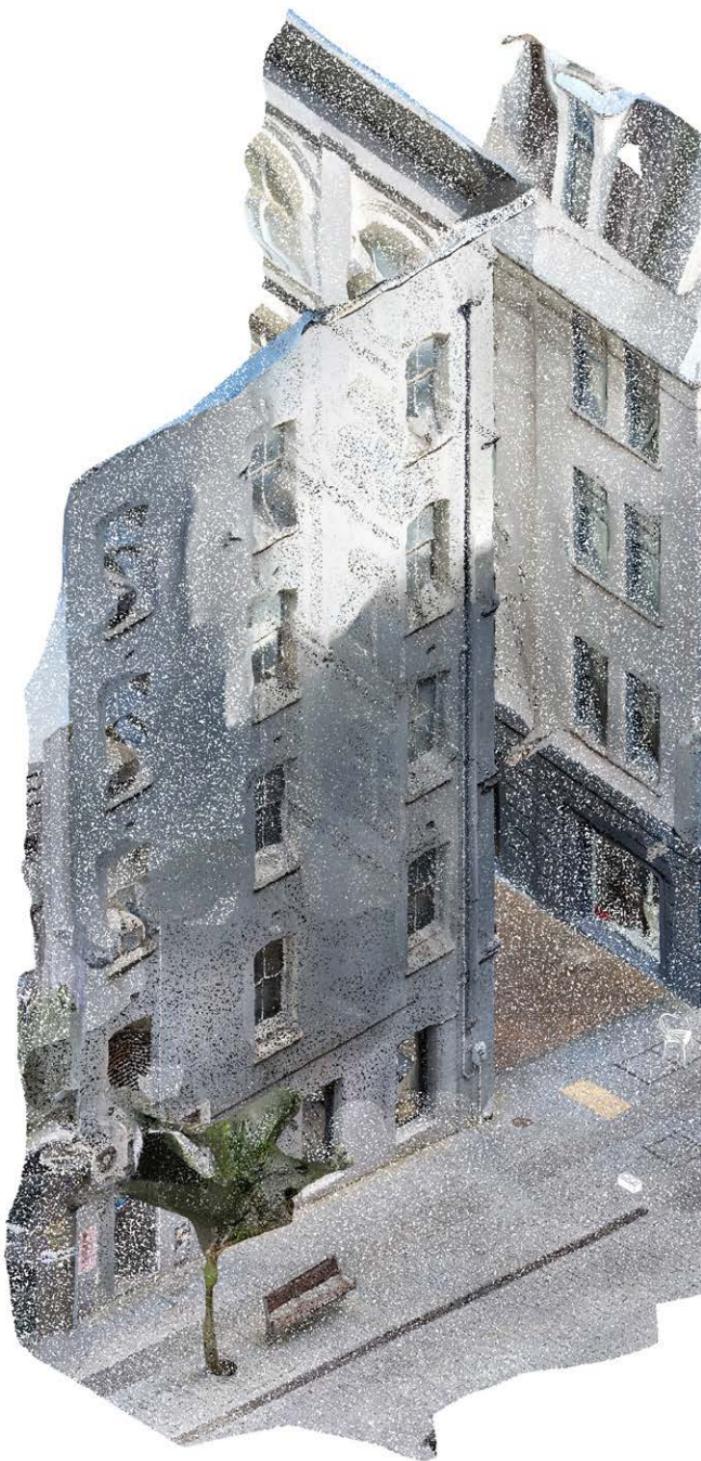
The roof structure remained unresolved. A row of bamboo columns stood on the street side of the carts, which completed a distinct space for the workshop that was also defined by the facade of the building and the carts beneath the two palm trees. The tarpaulin lay along the bottom of the columns as though waiting to be erected in the event of rain. We knew that in reality it would not function, but as part of the wider workshop it functioned like what Philip described as “an incomplete drawing.”⁹⁸ The bamboo columns and tarpaulin suggested a possible future action — an element of illusion that imbued the installation with a semblance of the fictional potential present in my drawings and our model making exercise.

Fig. 236. The workshop spreading out (opposite).

Fig. 237. Late Night Art set up (following page).

⁹⁸ Philip Lee, in discussion with the author, February 18, 2024.









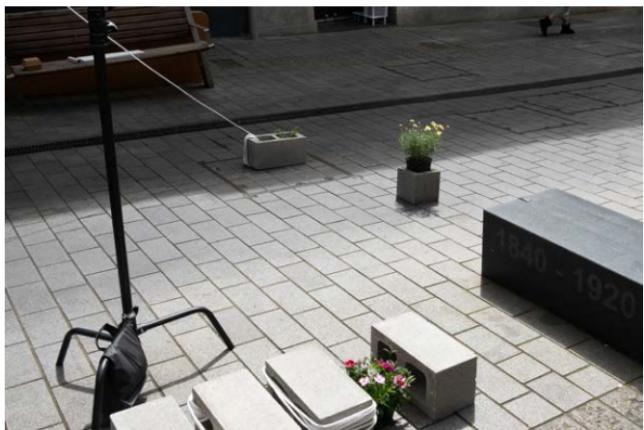


Fig. 238-243. Installation set up on O'Connell Street.





Fig. 244-250. Scaled edits to the streetscape.

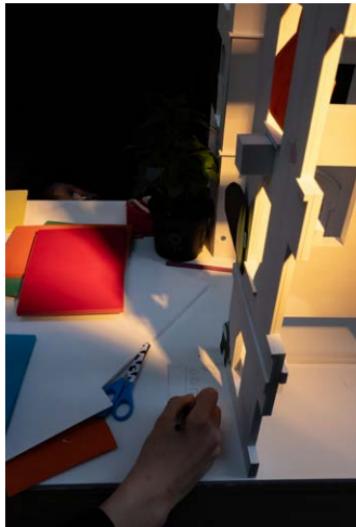




Fig. 251-257. Late night model making and collaboration.

Learning from Failure

For me, lying at home in bed, the drawings that I made of the installation remain (like the other drawings) a sort of fiction, constructed through photographs and stories rather than first-hand experience. The workshop stayed in the projected and protected space between the model and reality. It was really disappointing to not be there, especially since so much of its significance lay in the social interactions it was intended to facilitate.

My sickness was an example of my difficulty throughout the year to fulfil the goals of the research while maintaining a healthy and sustainable working routine. The pressure of trying to fulfil a perpetually unsustainable perfectionism is familiar to anyone studying at architecture school, but my failure to take care of myself felt especially ironic while researching topics of maintenance and care. However, the experience did help to highlight some of the difficulties of applying an attitude of 'working with what we have' in practice, too, which is in many ways at odds with our current systems of doing things.

The installation would not have been possible without the help of many of our friends, who collaborated with Philip to set up the workshop and figure out solutions to our numerous unresolved problems. In a sense, my absence meant that the event functioned even more closely to the practice of cooperation, improvisation and making do suggested in my interventions. The individual artist-architect/s usually facilitating this sort of event dissolved into an assemblage of many contributors, like the anonymous 'we' used in the stories of the interventions.

Some form of more-than-maintenance played out in the space of that inner city street and its model. Visitors used coloured paper and pencils to make additions to the models, adding bridges between windows, new street signs, graffiti and flowers. Many added characters to the site — from real life and imagined fantasy creatures peering from windows and inhabiting the street. Others wrote notes to each other, or to me.



Fig. 258. Scan of the Freyberg Place cart post-event.



Fig. 259. Crafted additions to the Elen Melville Centre model.

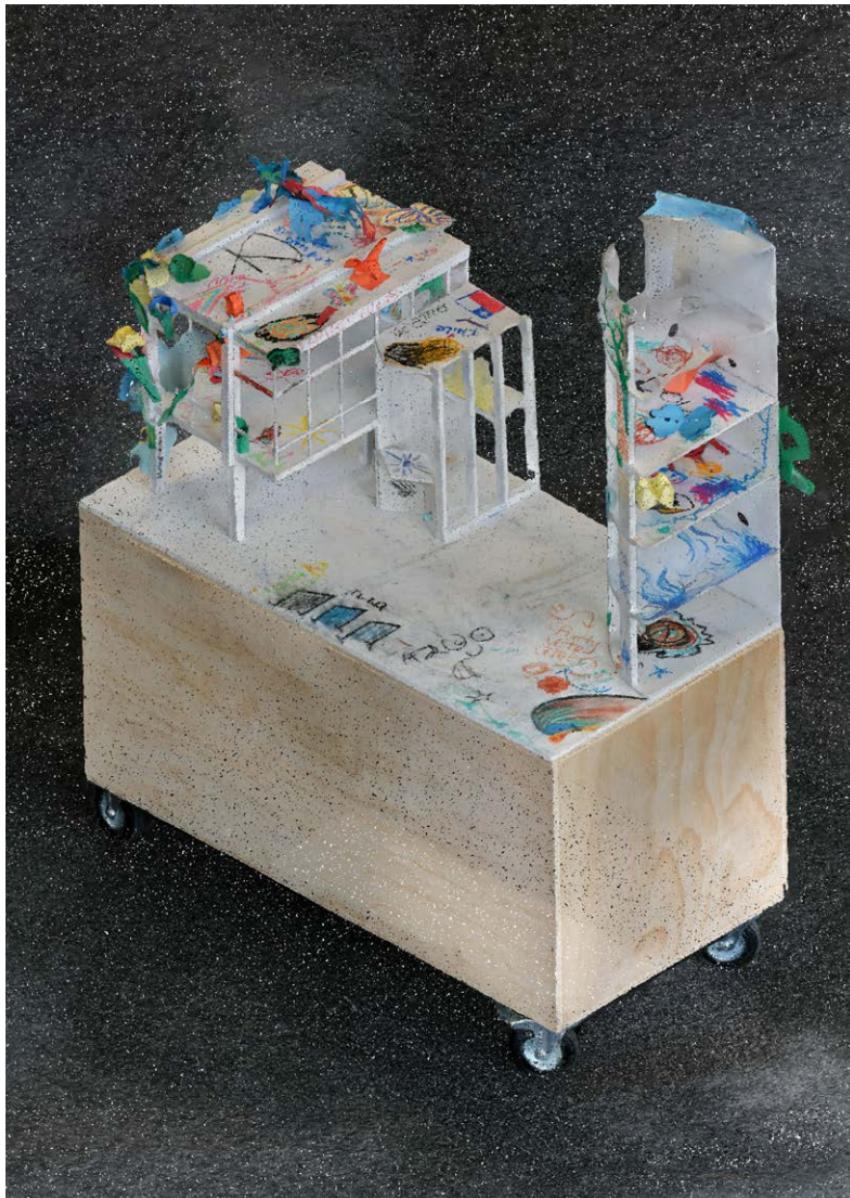


Fig. 260. Scan of the Ellen Melville Centre cart post-event.



Fig. 261. Crafted additions to a Vulcan Lane model.

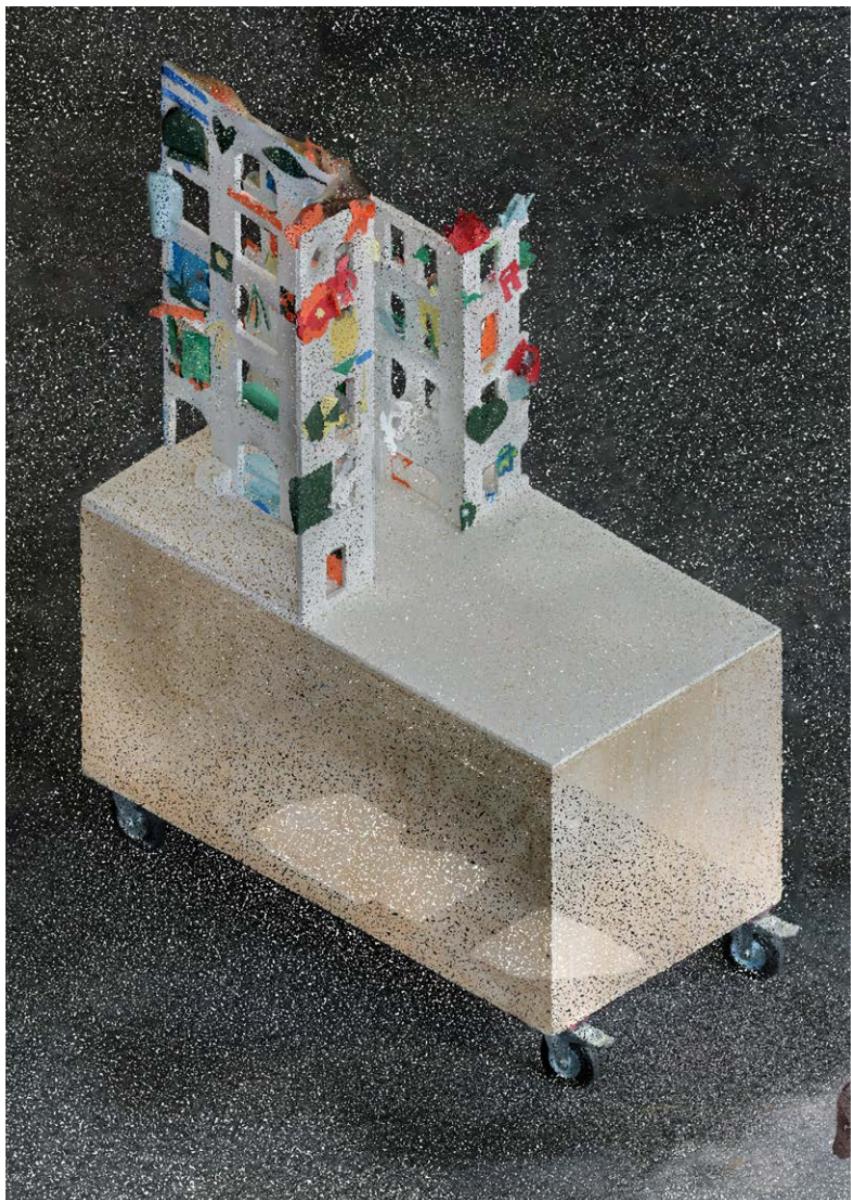


Fig. 262. Scan of the Vulcan Lane and O'Connell Street cart post-event.

Fig. 263. Fragments of the contributions of visitors to the workshop (following page).







Fig. 264. Crafted additions to a Vulcan Lane model.



Fig. 265. Crafted additions to a Vulcan Lane model.



Fig. 266. Crafted additions to the Elen Melville Centre model.

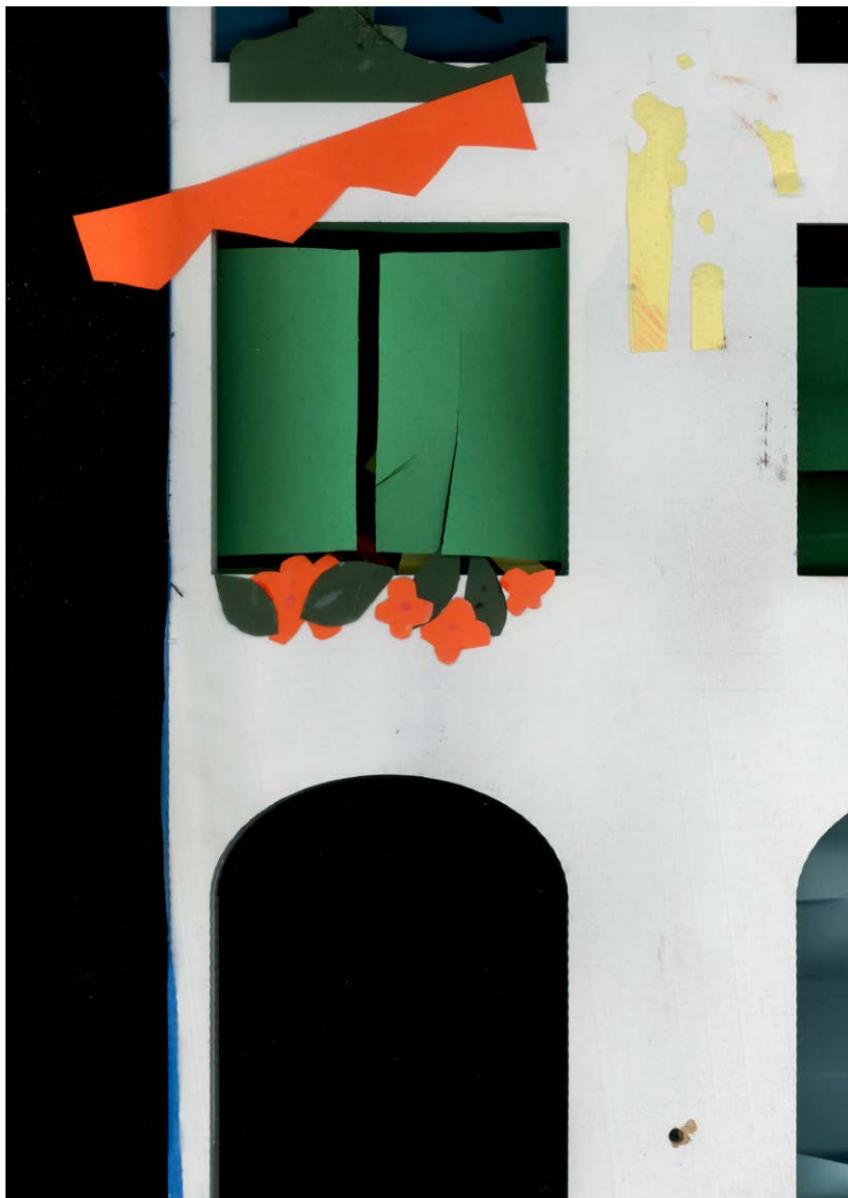


Fig. 267. Crafted additions to a Vulcan Lane model.



Fig. 268. Crafted additions to the Elen Melville Centre model.



Fig. 269. Crafted additions to a Vulcan Lane model.



Fig. 270. Crafted additions to a Vulcan Lane model, with line showing an internet connection.

Although the caricatures and decorations added to the model were not quite the highly spatial constructions we had envisioned, they succeeded in stimulating an engagement with the site and with each other. Philip described conversations with parents who, despite being reluctant at first, became even more consumed by the model making than their children. A man shared his recollections of one of the buildings, describing the installation of an internet cable in the 1990s and traced its path up the facade in pencil. For a mother and her daughters, it was their first time associating the models they loved to make at home with the work of architects.⁹⁹

The additions describe an architecture constructed between the physical and social worlds, facilitated by a community of collaborating actors. But if this is the future of architecture, where is the architect in this commotion of coloured paper, crayons and chatter? There is a dissonance between the activity suggested by more-than-maintenance and the systems that structure the contemporary architectural profession. Despite its economy of material resources, the labour and time required to take care are significant. This pace is at odds with an industry that incentivises the flashy new and charges fees calculated as a percentage of construction costs.¹⁰⁰ It lacks the ostentatious expansion evident in the cycle of demolition and starting again that is so important for economies that rely on perpetual growth.

More-than-maintenance does not necessarily look like ‘architecture’. It occurs as much through acts of repair, improvisation and conversation as it does new construction. Burdened by the prevailing notion of architecture as static, most architects are likely to be either threatened by or indifferent to this way of working articulated through small acts of repair.

⁹⁹ Philip Lee, in discussion with the author, February 18, 2024.

¹⁰⁰ Haydon, “It’s time to change the way we charge for architecture.”

I believe that rather than sterilising the architect, working with what we have can be an opportunity to re-conceptualise our role in a way that better reflects buildings as dynamic networks of physical and social actors. There is still a place for the expertise of the architect, but not without changing the attitude with which it is employed. The discipline itself needs repairing.

Increasingly prominent voices are calling for the ethos of maintenance and repair to be applied as much to the systems of architecture as the minutiae. In her article *Maintenance and Care*, academic Shannon Mattern proposes that studying maintenance “is itself an act of maintenance” and calls for a renewed focus on “how the world gets put back together.”¹⁰¹ Similarly, in their recent publication *The Great Repair*, German architectural magazine ARCH+ promote the idea of a repair society, “seeking to surpass the pragmatic level and point to the geopolitical, socio-economic, and ecological dependencies behind the material assemblages, infrastructures, and social interactions of our societies.”¹⁰² Our attention needs to be directed as much at these systemic scales as it does everyday maintenance and repair.

One way to start could be to discard ‘architecture’ altogether. For British architectural theorists Nishat Awan, Tatjana Schneider and Jeremy Till, this label is too closely associated with a conception of the building as a static commodity, which binds the success of the architect’s work to exchange values determined by the marketplace and leaves little room for the other actors who effect change on the built environment.¹⁰³ Instead, they advocate for spatial agency as another way of practising architecture. Their use of ‘spatial’ rather than ‘architectural’ draws on Actor-Network Theory and French philosopher Henri Lefebvre’s concept of social space, which shifts the production of space from the rarefied world of specialists to something made collectively over time by a wide spectrum of people.¹⁰⁴

As discussed in Chapter 2, buildings are altered by many actors other

¹⁰¹ Mattern, “Maintenance and Care.”

¹⁰² Hertweck et al., “Editorial,” 2.

¹⁰³ Awan, Schneider and Till, *Spatial Agency: Other Ways of Doing Architecture*, 28.

¹⁰⁴ Awan, Schneider and Till, 30.

than the architect — the maintainers and repairers, object rearrangers and weekend DIYers who add bits on and take care of what is already there. Nishat, Schneider and Till argue that it is only by stepping “over the self-defined boundaries of the profession” into this world that architects can enact wider social change.¹⁰⁵ Here, the architect is freed from being purely a producer of ‘architecture’ and can realise change in whatever way is most effective, which could be “either physical — a building, an installation, an exhibition — or [...] something that is less tangible — a map, a network, a set of instructions” ... maintenance or repair.¹⁰⁶

This is not to say that the discipline becomes dissolved into these other fields. We do not need to discard our technical knowledge or aesthetic sensibilities in favour of becoming glorified handypeople. Rather than abandoning architectural intelligence, the intent of spatial agency is to consider how this intelligence can be “exercised in a much broader spatial field, one that acknowledges the social, global and ecological networks.”¹⁰⁷

Our suburbs will inevitably become denser (despite the best effort of NIMBYs) due to the easing of planning regulations induced by an increasing population. The spatial intelligence of the architect could be essential to densify in a way that demolishes less and uses more of what we already have. Spatial agency provides a guide for how everyday acts of maintenance and repair can be employed with an architectural sensibility — as more-than-maintenance.

In Between Worlds

For British architecture firm Caruso St John, the everyday and the vernacular are important references, yet this influence is based not on appearance or even tectonic but on process — “the ad hoc manner in which forms are built up [...] through agglomeration and adding, the slow and steady way in which technologies are taken up into a tradition.”¹⁰⁸ It is in a similar way that the contemporary vernacular

¹⁰⁵ Awan, Schneider and Till, *Spatial Agency: Other Ways of Doing Architecture*, 30.

¹⁰⁶ Awan, Schneider and Till, 55.

¹⁰⁷ Awan, Schneider and Till, 30.

¹⁰⁸ Caruso, “The Feeling of Things,” 49.

of DIY and repair are significant to the practice of more-than-maintenance. These sorts of everyday acts are, as Adam Caruso notes, not self-conscious, developing as a result of a “continuously evolving social and technological situation” rather than “through formal abstractions independent of their construction.”¹⁰⁹ They are processes not prejudiced by formal practices of building or the preservation of a pure and completed whole, but are unashamedly events in the life of an unfinished building.

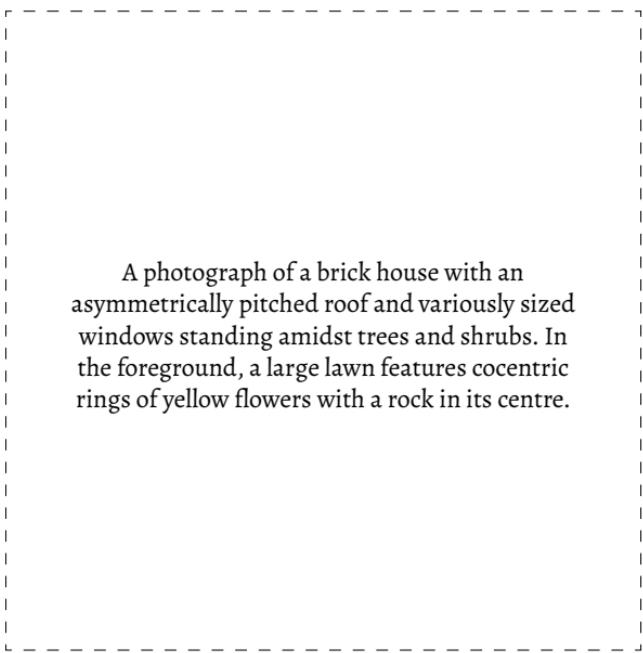


Fig. 271. Caruso St John's House in Lincolnshire with wildflower meadow.

If the interventions of the vernacular are not self-conscious, it is the consciousness of the architect that allows them to be employed with broader goals in mind — an awareness that a fence could be a table, a tarpaulin a roof, and that these have social implications. This awareness can manifest itself in a wide range of physical and social constructions. At times the influence of the everyday on the work of Caruso St John

¹⁰⁹ Caruso, “The Feeling of Things,” 49.

is scarcely discernible in their highly refined details. They contribute their own technical expertise to a common spirit.

The unconventional playgrounds of New Zealand artist Mike Hewson do, on the other hand, often look like the work of an amateur. However, Hewson's engineering background means that his ad-hoc arrangements of rocks, buckets, wheels, trees and repurposed bits can take on a permanency not otherwise possible.¹¹⁰ He applies his technical and legislative knowledge to the informal with the intention of proving that "we can, in fact, do things that are considered untenable in a public setting."¹¹¹

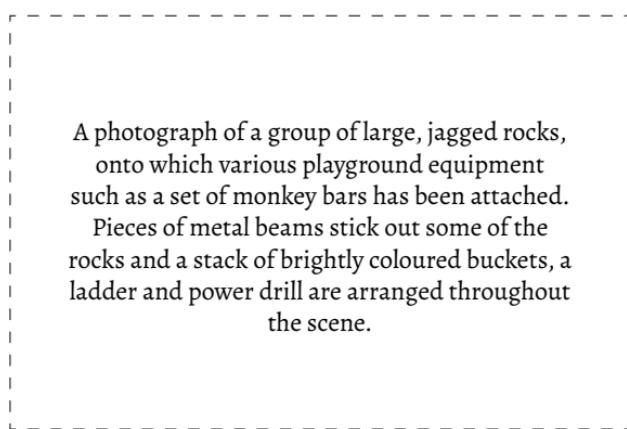


Fig. 272. A Mike Hewson playground.

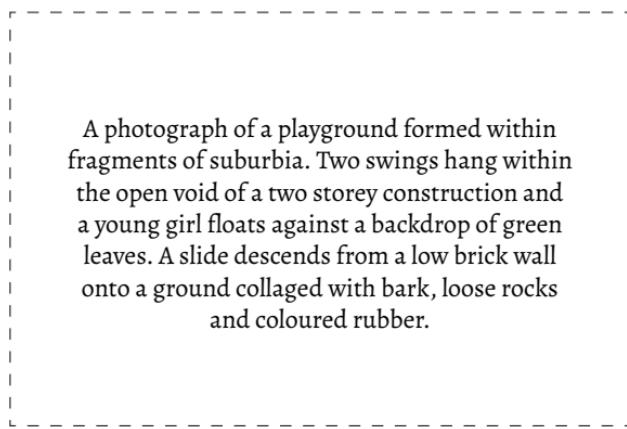


Fig. 273. Hewson's St Peters Fences playground.

¹¹⁰ Seidler, "The Sublime Structures of Mike Hewson."

¹¹¹ Hewson, "Artist Bio."

Many of my interventions resemble in their tectonic simplicity the work of a suburban DIY enthusiast. However, understanding these small acts in relation to broader physical and social elements provides the possibility of them becoming opportunities for wider change — a possibility enabled by surpassing the technical focus of the general handyperson in favour of the holistic view of the architect. In this way, more-than-maintenance describes the application of architectural intelligence through the mediums of maintenance and repair.

Working with what we have requires the architect to engage with the messy dependencies of the everyday, but this does not mean that their reconceptualised role requires total immersion within this ‘real’ world. Sarah Wigglesworth and Jeremy Till suggest that a continual engagement with and retreat from the ordinary is most productive for the architect — engaging as social and political users of space, then retreating to “find an unburdened space in which to understand, to dream, to speculate.”¹¹² It is perhaps only the potential of detachment that allows maintenance and repair to be ‘more-than-’ simply acts of preservation or restoration. While the failures that trigger change in this thesis are only noticeable at proximity, some distance is needed for their full potential to be realised.

In this thesis, that distance is found in its practices of representation. Throughout the research I recorded my immersion in the everyday in a continual process of photography, video making and drawing, observing the small ways that people alter and live amongst buildings. The act of observing the house is itself an act of care, a way of making sense of it in all its complexity. However, it was only by combining my photographs of the house into point clouds that I was able to find a way to contribute ‘architecturally’ to these networks of activity. The point clouds retained the detail of reality, yet in their pointiness and humanly impossible isometric view they were taken outside the everyday and toward the realm of architectural practice. The scraps of butter paper provided me with the unburdened space to imagine the wider possibilities of small instances of failure.

Despite the detachment from the world provided by drawing, my experience developing the Late Night Art installation had a direct influ-

¹¹² Wigglesworth and Till, “The Everyday and Architecture,” 7.

ence on the tectonic of my interventions. I found myself drawn to the sorts of materials—concrete blocks, rope, bamboo and fabrics—that Philip and I had hands-on experience working with during our experimentation. The workshop itself functioned in a similarly oscillating way, with the architectural model giving visitors the space to speculate on alternative futures for the site. Within but slightly distanced from the streets themselves, their experiences of the site could be directly reinterpreted and expanded onto its representation.

The logical next step in this cycle would see some of those ideas manifested at 1:1 on the streets themselves. Although the interventions develop most freely in the protected space of drawing and model-making, it is only by bringing them back into the world that their full opportunities and constraints can be realised.

Final Crit

The final crit was an opportunity to reintroduce into the world the ideas and experiments I had been working on throughout the year. Wary of our tendency as students to create unnecessary pressure by hyperbolising the “final” crit, I tried to frame the presentation as simply a ‘point in time’: an opportunity to share the work with academics, friends and peers and discuss its ongoing possibilities.

I held the presentation in the first bay of the Level 5 architecture studio. Along with the house itself, the studio occupies a place of central importance for the research as somewhere I had spent an increasing majority of my time as the year progressed. For my friends and I, this confined space has been a place where our social and academic lives have blurred, and as our discussions meandered from the theoretical to the quotidian, our workplace took on an almost domestic comfort. We constantly altered the bay with the means available to us, using the tall crit boards to partition space and arranging chairs, lights, plants and bikes.

With its exposed ceiling and services, the studio has a sense of incompleteness that is conducive to this sort of adaptation. Holding the crit here was a way to emphasise the project as a continuous practice rather than a polished final ‘design’. Just as we had appropriated the space throughout the year, I treated the set up of the crit as an additional intervention of sorts — an opportunity to find further ways of ‘making do’ with the existing space. The arrangement took the form of a curated clutter as I sought to display the work in a way that suggested its ongoingness.

Fig. 274. My desk in the Level 5 studio (opposite).





Fig. 275. The studio space.



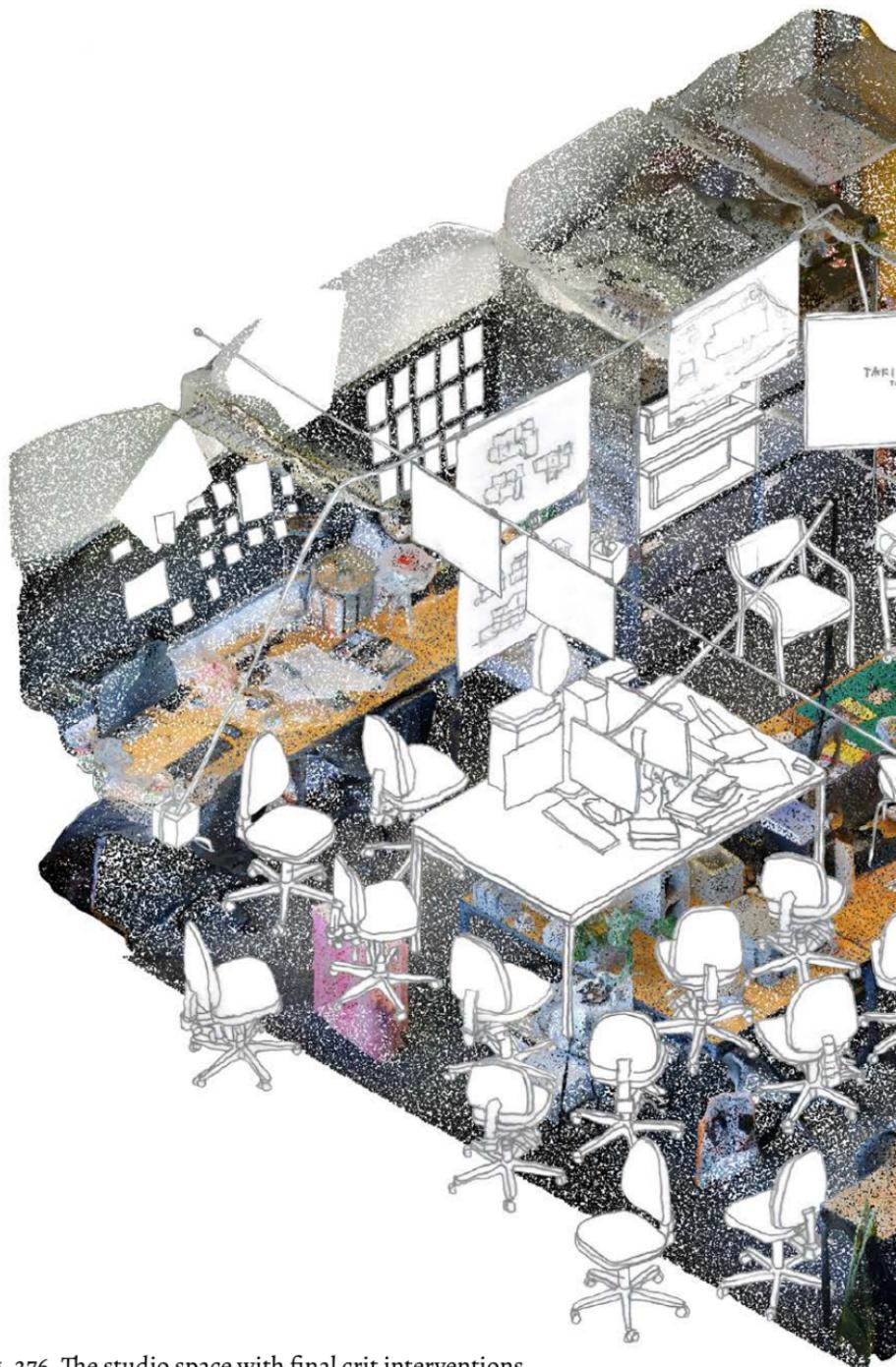


Fig. 276. The studio space with final crit interventions.



Despite my best efforts to treat the presentation as inconsequential, the crit period proved as contagiously stressful as ever. This lent the curation an additional authenticity as I set up the space in the chaotic 24 hours leading up to the presentation. One of the central tables was moved out of the bay, but the other was secured by an electrical umbilical cord to the ceiling so could only be rotated and shifted to one side. This became an opportunity to highlight my own working area as part of the arrangement, which I left in its incomplete, pre-final crit state of mess.

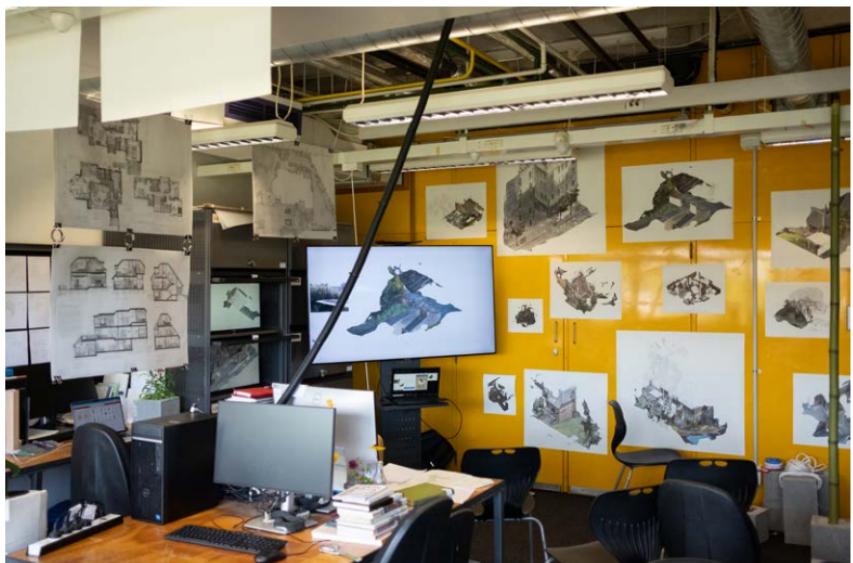


Fig. 277. Final crit with drawings on the wall and hanging from the ceiling.

The audience was oriented towards one corner of the bay, where a large screen showed the presentation slides and animations. On the adjacent wall of the yellow circulation core I arranged scaled composites of each final animation. I placed computer monitors in two of the lockers, which I opened part way through the presentation to reveal the animations playing on a continual loop. The two early perspective drawings hung facing the yellow wall on a wire that spans the length of the studio. I used the rope from the Late Night art roof structure to string up another line perpendicular to this one, running over the top of the cable trays and secured on each end with a concrete block. From this I hung the measured drawings, using the automotive hose clamps

from the installation to attach them together. Sketches of unfinished interventions were arranged in a grid on the black pinboard behind these drawings. A length of bamboo sitting in a concrete base marked an opening for the audience to enter through.



Fig. 278-279. The final crit.

Visitors sat in the cleared half of the room, where I had arranged as many chairs as I could fit. In the studio, the normally insulated space of the critique was exposed to the messy unpredictability of life. As I spoke, the door of the studio opened and closed as more people arrived or passed through on their way to other places. Confronted by an already unconventional use of the space, people were inspired to make do in their own way as well. When the crit began and the seating became inaccessible, some watched from the next bay, standing on the desks and peering over the partition.

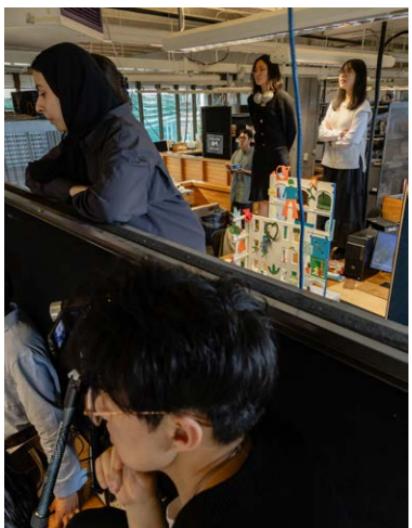


Fig. 280-281. The crit set up encouraging an unconventional use of the studio.

The composition of the crit was itself a model demonstrating the practice suggested in my presentation. Elements of the crit that are traditionally so clearly divided — the drawings, models, critics, audience, exhibition space and student-architect — blurred into one another. With drawings in the lockers and on doors, critics sitting ‘behind the scenes’ and materials from past interventions arranged throughout, the boundaries between the representation of space and its object actors became obscured. For a moment, fiction and reality were one and the same.

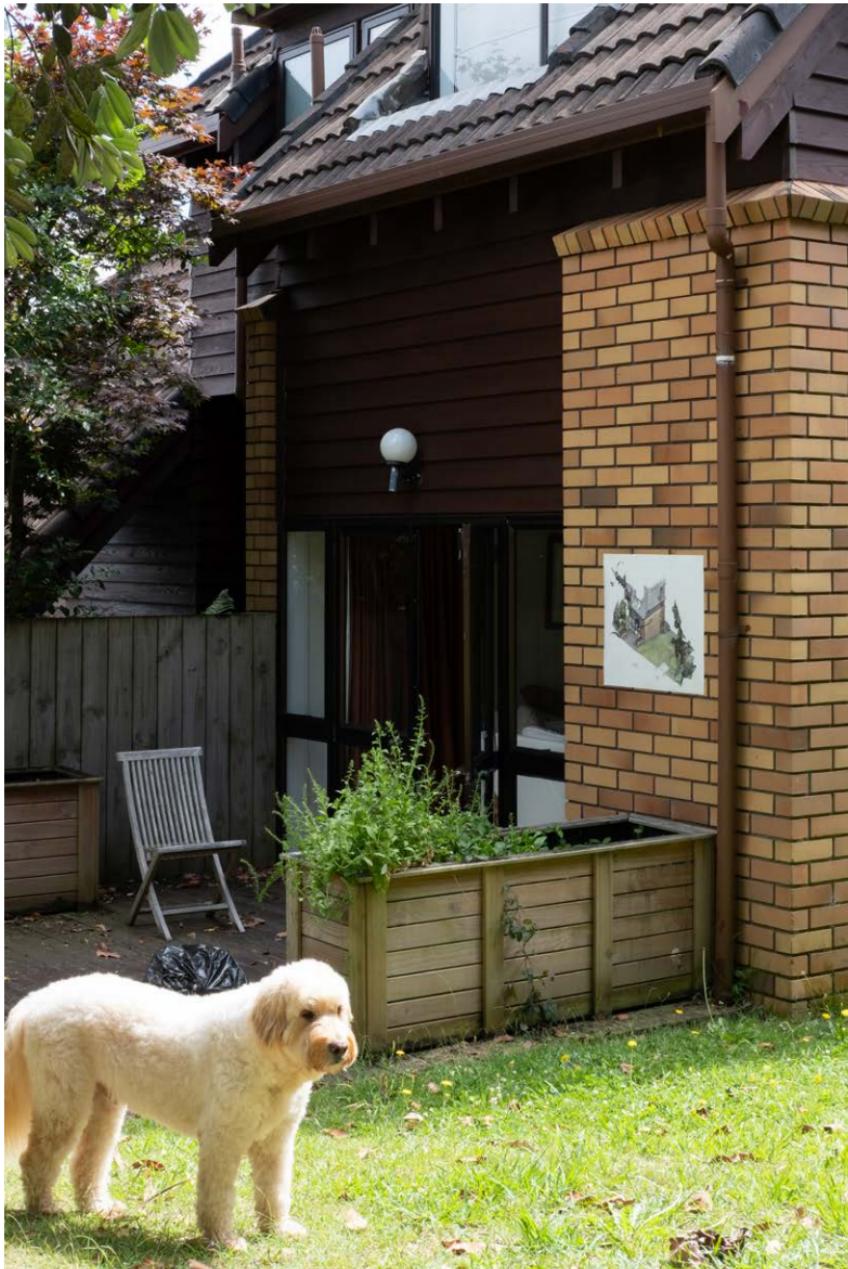


Fig. 282. Fiction meets reality: Jasper and the unmown lawn.

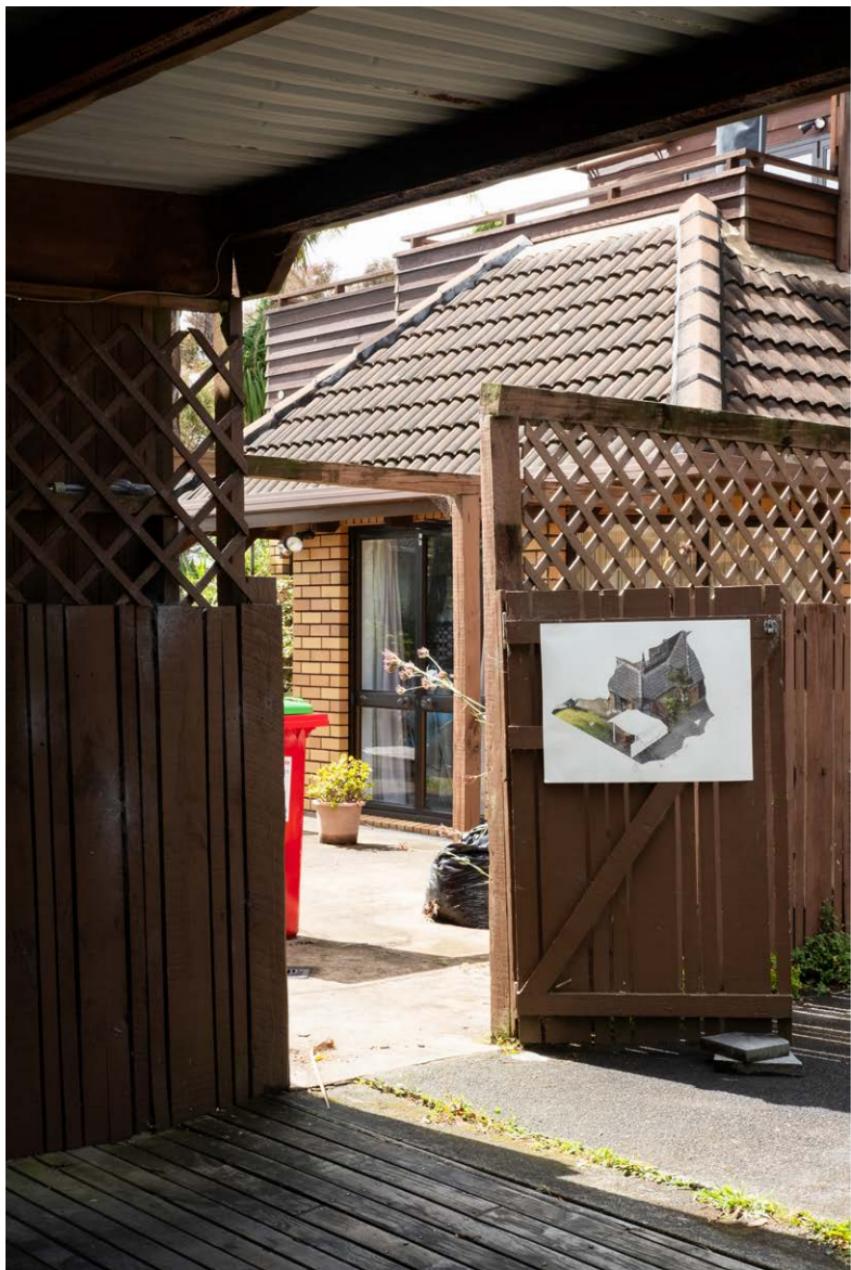


Fig. 283. Fiction meets reality: a fence and a roof.

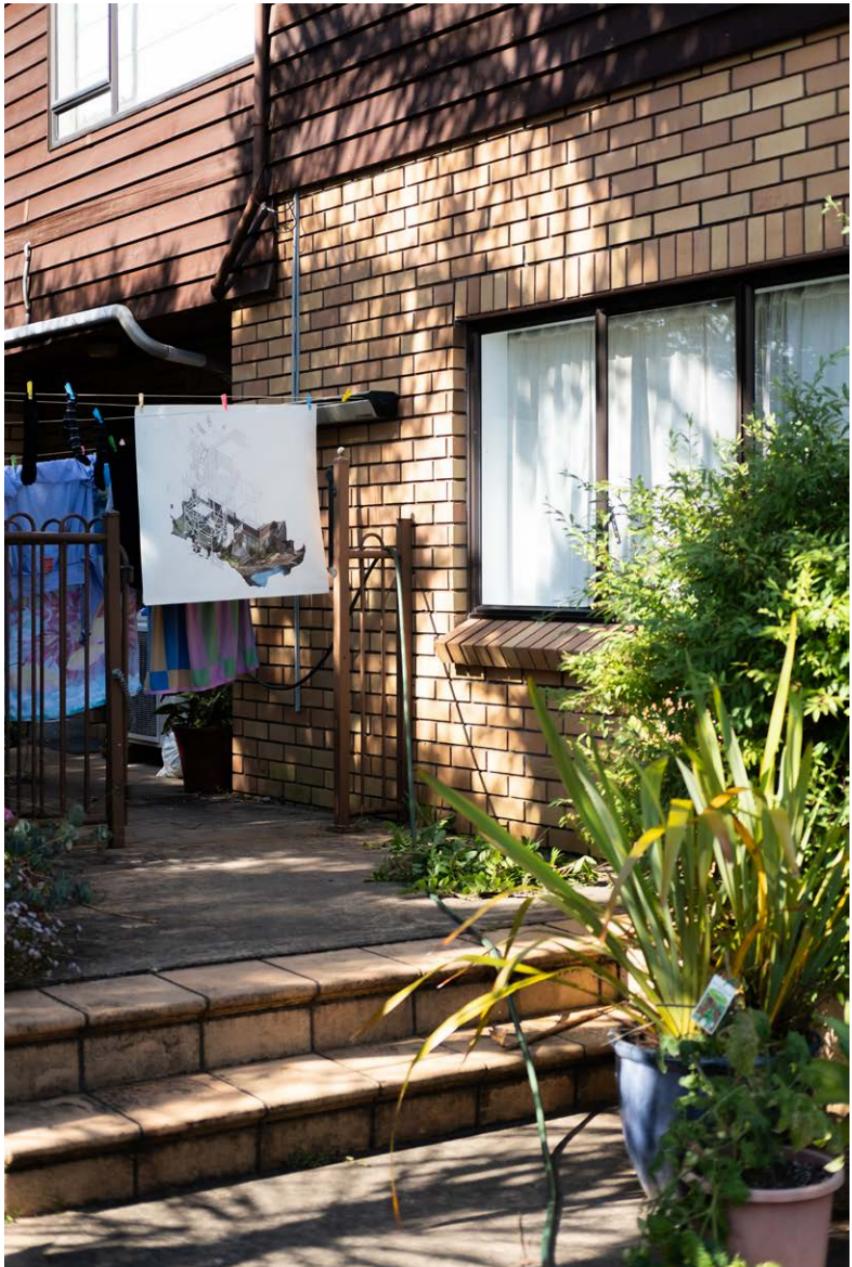


Fig. 284. Fiction meets reality: washing line and scaffolding.

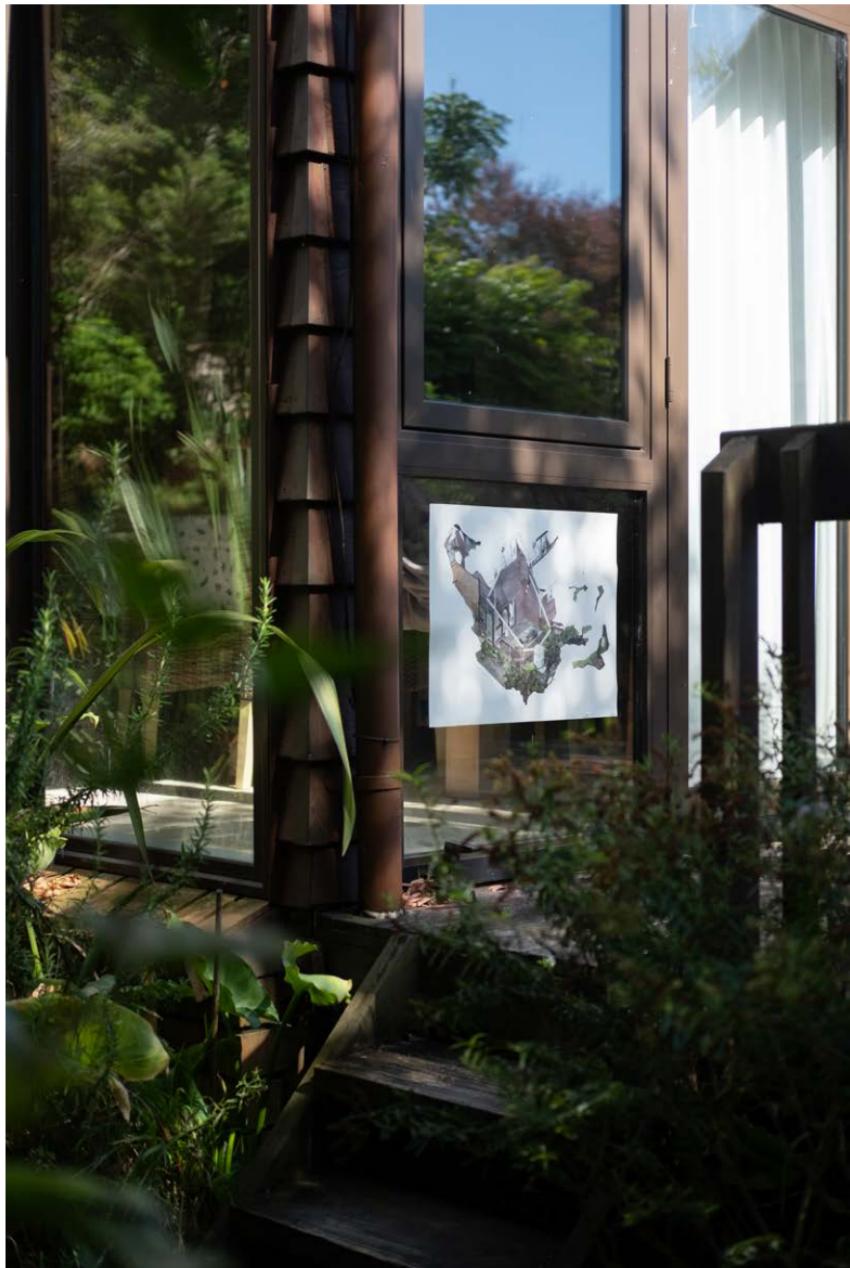


Fig. 286. Fiction meets reality: gutter and garden.

Conclusion

The burden of the building industry on the planet means that we cannot continue to practise as we currently are. Unless we impose limits on our endlessly wasteful cycle of demolition and extraction, the planet will continue to subject us to increasingly extreme climatic conditions. This thesis considers how imposing such a limit — working with what we have — could be an opportunity to develop new ways of working that are less wasteful and less complicit in an unequal status quo.

Through an intimate observation of existing ordinary buildings (most notably my family's home) the project develops an understanding of architecture as a perpetually unfinished network of social and physical actors. It considers how the practices of drawing, photography and model making that perpetuate a myth of buildings as static and complete could be recalibrated in a process of representation defined instead by animation and movement. These experiments serve as the basis for the proposed practice of more-than-maintenance, which harnesses the momentum of ongoing changes in buildings to exert wider transformational improvement. Reuse is reconceptualised as a continuous process executed through small acts of repair.

The investigations suggest how a spirit of taking care and making do could offer a balance between the need to temper our extractive tendencies while challenging the other inequities and deficiencies present in our built environment. The approach articulated here through a highly particular practice of drawing and intervention is just one example of how this ethos could be applied. My experiments highlighted the incompatibility of this spirit with many of the systems that govern how we design, build, own and live in buildings, suggesting a need to repair the discipline of architecture itself. The thesis imagines an architect who engages constantly in the context in which they work, who pays attention, takes care, and is able to apply their knowledge over a wide breadth of physical and social scales.

Thankfully, I am not alone in proposing a re-orientation of the profession in favour of the logic of maintenance and repair. In fact,

these themes seem to be materialising as something close to an emerging paradigm of our time. During the year across which this thesis unfolded, numerous major publications dedicated entire issues to maintenance and repair.

As well as ‘The Great Repair,’ ARCH+ published ‘Open for Maintenance,’ which accompanied a homonymous exhibition in the 2023 Venice Biennale. The exhibition (a collaboration with architectural practices Summacumfemmer and Büro Juliane Greb) used materials from the 2022 Biennale to build a series of minor architectural interventions that encourage architects to engage more closely with practices of maintenance.¹¹³ In line with their goal to make the pavilion “useful infrastructure, rather than a place of national representation,” a series of workshops taught methods of repair which were then deployed to care for social infrastructure across Venice.¹¹⁴

In January 2024, Places Journal published the first article in their ‘Repair Manual’ series, which seeks to investigate how design professions can “adapt to an overburdened world in which the maintenance of existing structures and landscapes will be more valuable, environmentally and socially, than the creation of new ones.”¹¹⁵ The Architectural Review dedicated their February 2024 issue to the themes of repair and restoration. They grapple directly with the difficulties of dealing with “the economic imperatives working against repair” and its vulnerability “to co-optation by the very [capitalist] forces it hopes to contour.”¹¹⁶ In practice, architectural firms such as 8000agency, 51N4E, BAST, Assemble and Summacumfemmer and collectives like ZAS* are exploring new methods of engaging with existing buildings otherwise destined for demolition.¹¹⁷

This other work was a reassuring and encouraging presence throughout my research process and will no doubt ensure that these attitudes continue to gather momentum. It is clear that any meaningful repair

¹¹³ Frearson, “German pavilion becomes material bank for Venice repair projects.”

¹¹⁴ Femmer et al., “Editorial,” 2.

¹¹⁵ Places Journal, “Repair Manual.”

¹¹⁶ Molland, Beaumont and Rapacki, “Repair,” 3.

¹¹⁷ Burch, Junghanss and Ryffel, *afterFORM – 8000.agency*; Persyn and Anrys, *51N4E: How to Not Demolish a Building*; BAST, “BAST”; Assemble, “Granby Four Streets”; Femmer, *Non-finito with Anne Femmer, Studio Summacumfemmer*.

of the industry cannot be made in isolation but must happen collaboratively, both within and beyond the confines of the profession.

My own research felt most meaningful when shared with others, in passing conversation, at crits, or on the streets of Tāmaki Makaurau. Through conversation, the various drawings and ideas began to materialise into some sort of practice — a way of doing. In action, the sense of powerlessness that stimulated this research eased, and questions about the boundaries of the profession and my place within those (do I want to become an architect?) seem less important.

The practice sketched out in this thesis remains fragmentary and incomplete. It still exists mostly within the idealised and unencumbered space of representation and theory rather than contingent reality. Any collision with the professional systems of the ‘real’ world will no doubt be messy. But as this thesis attests, in failure and incompleteness lie opportunity.



Fig. 286. The lawn becomes a wildflower meadow, January 2024

Appendix

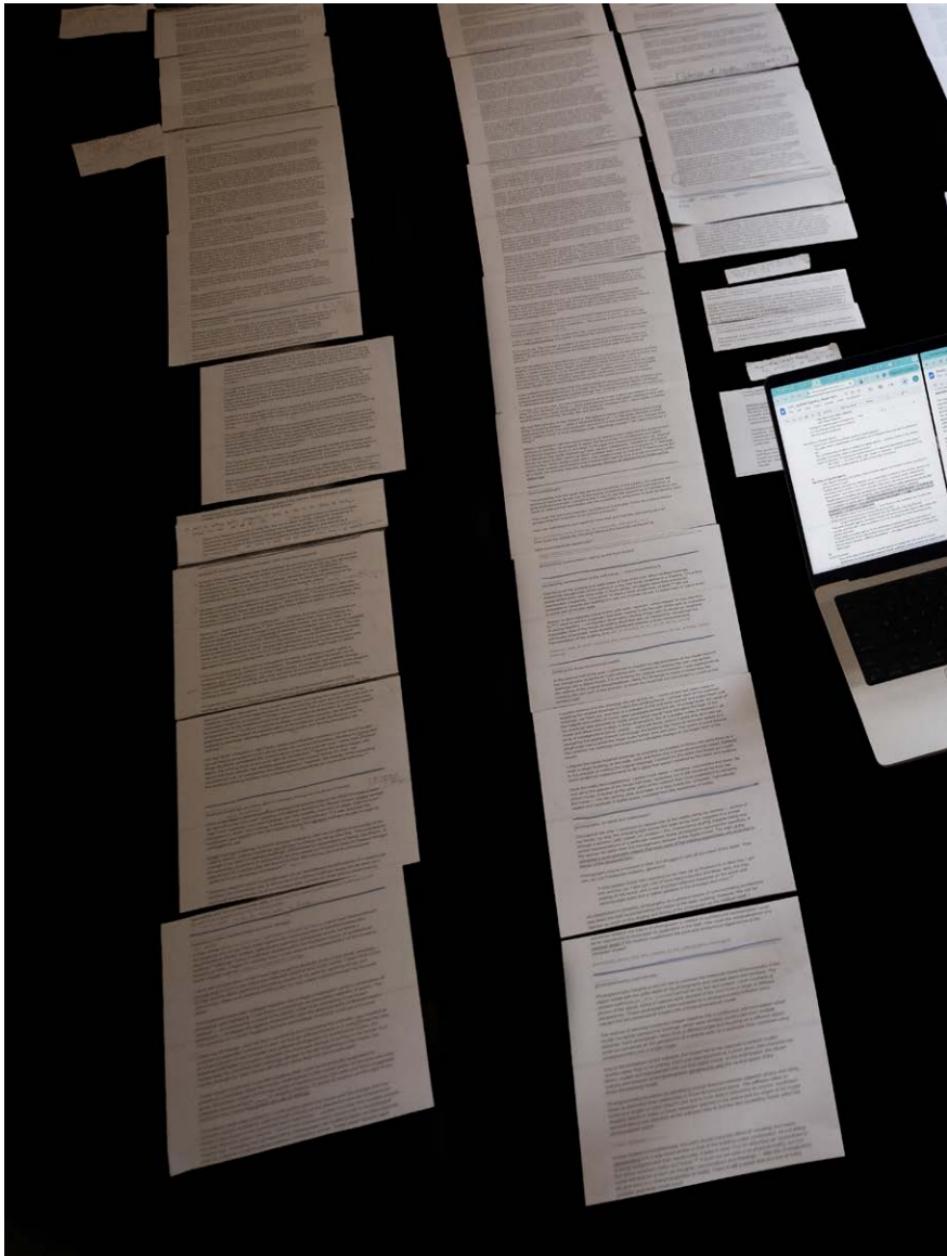


Fig. 287. This thesis document being assembled from fragments.





Fig. 288-303. Making / doing.



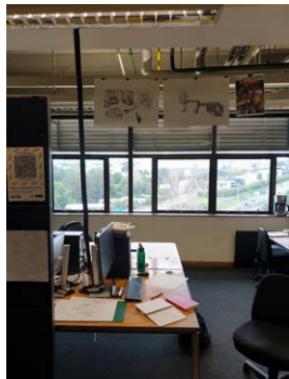


Fig. 304-310. Making / doing.





Fig. 311. Taking care.



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