

COLOUR,
Hell of a
Good Thing!

COLOUR, *Hell of a Good Thing!*

*Exploring Luis Barragan's atmospheric
Light and Colour Strategies for New Zealand
Contemporary Architectural Practice.*

BY

BELINDA MARY BURKE

With the supervision of Philippe Campays

A thesis submitted to the Victoria University
of Wellington in fulfilment of the requirements
for the degree of Master of Architecture
(Professional)

Victoria University of Wellington

2021

COLOUR, *Hell of a Good Thing!*

*Exploring Luis Barragan's
atmospheric Light and Colour
Strategies for New Zealand
Contemporary Architectural
Practice.*

BELINDA BURKE

PREFACE

This research is inspired by my passion for colour. I have my Dad to thank for this. His artwork captures the brilliant colour and light qualities of New Zealand's landscapes - I resonate with these elements because of him. I have also been greatly influenced by the incredible use of colour overseas during travels, especially whilst living in Mexico in 2019. During this I had the opportunity to visit two of Luis Barragan's houses that moved me deeply; his House & Studio and Casa Gilardi. This thesis is largely influenced by this experience.







ACKNOWLEDGEMENTS

A massive thank you to the following people that have helped me through the creation of this thesis.

Philippe.

Thanks for the giggles - both *with* me and *at* me...

Mum; Caroline, Dad; Bill, & Grandma; Marilyn.

Thanks for the generous ongoing support and a special thankyou to you Mum for your brilliant proof-reading eye!

The questionable lot; Petra, Bligh, Jessica, Amber, Emma, Kate, Becca, Hannah, Toby, Ryuki, and Anya.

I couldn't have asked for a better group of weird, like-minded people to spend this time with at uni. I am so proud of all of you.

The ladies; Tilly & Bindy

The grooviest duo! Thanks for distracting me with our hang outs, you guys are super.

Sophie.

Thanks for letting me take the ol' whip out to the Wairarapa.

Heath.

Thanks for NOT talking to me about architecture!



ABSTRACT

Although the importance of colour as a fundamental element in architecture has heightened in literature recently, there is little research that explores the potential for its use in New Zealand. This design-led research explores how Mexican Architect Luis Barragan's strategies in choreographing magical atmospheres through light and colour can influence contemporary architectural practice in New Zealand. Three predominant strategies are determined; coloured light, coloured latticework and planes of colour. Analogue design experiments engaging with the analysis of these strategies provoke further enquiries. This research investigates how the design of a residential house in South Wairarapa seeks integration with Barragan's light/colour strategies from Mexico. This is influenced by a photographic and illustrated analysis of the site's climatic characteristics and architectural context of the region, and is subsequently tested through the design processes and methodology of Barragan's including written narratives, sketching and physical modelling. Finally, exterior and interior colour schemes are visualised through drawings that interrogate relationships between the proposed architecture and its surrounding environment and atmospheres desired. This research demonstrates one approach to designing with light and colour for New Zealand architecture to generate emotional, magical atmospheres. The findings of this research suggest that the element of contrast is important in generating the mysterious or unexpected, giving impact to the extraordinary quality of coloured moments. It further acknowledges that the public concern of colour is just as crucial as its private concern, and both must be considered with respect to the project's individual context. It is hoped that this research will raise confidence in using colour in New Zealand as a powerful spatial tool and means to express individuality and identity.



CONTENTS

Part A.	Background, Aims & Methodology
Part B.	Barragan's Colour/Light Strategies
Part C.	Establishing the Brief
Part D.	Residential Project Design Process
Part E.	Conclusion

	Preface	i
	Acknowledgements	v
	Abstract	vii
	Contents	ix
A.00		1
A.01	Need for Emotive Atmospheric Spaces	3
A.02	Chromophobia & the Need to Value Colour	9
A.03	Luis Barragan as Protagonist	19
A.04	Research Question & Aims of Thesis	21
A.05	Thesis Methodology (Stage One)	23
B.00		25
B.01	Introduction	27
B.02	Strategy One: Coloured Light	31
B.03	Strategy Two: Coloured Latticework	63
B.04	Strategy Three: Planes of Colour	81
B.05	Summary Reflection	113
C.00		115
C.01	Selection of Typology	118
C.02	Analysis of Barragan's Residential Plans	119
C.03	Selection of Geographic Area, Site, & Client	127
C.04	Design Process & Methodology (Stage Two)	132
D.00		135
D.01	Site analysis	137
D.02	Architectural Context of South Wairarapa	151
D.03	Concept Design Part One	165
D.04	Concept Design Part Two	177
D.05	Developed Design	191
D.06	Final Design	215
E.00		263
E.01	Concluding Reflection	265
E.02	Works cited	271
E.03	List of Figures	275

PART A. BACKGROUND

- A.01** *Need for Emotive Atmospheric Spaces*
- A.02** *Chromophobia & The Need to Value Colour*
- A.03** *Luis Barragan as Protagonist*
- A.04** *Research Question & Aims of Thesis*
- A.05** *Thesis Methodology (Stage One)*

PART A. BACKGROUND

A.01

Need for Emotive Atmospheric Spaces

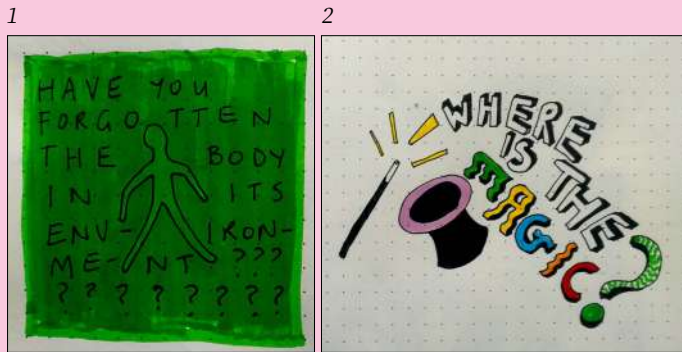


Fig.1. *Have you forgotten the body in its environment?*

Fig.2. Where is the magic?



Fig.3. Domination of technology

A Cry for Emotionally Charged Atmospheric Spaces

For Juhani Pallasmaa, an *"atmosphere is similarly an exchange between material or existent properties of place and the immaterial realm of human perception and imagination. Yet, they are not physical 'things' or facts, as they are human experiential 'creations' (Space, place and, 232)".* Discussion on the return of atmospheric qualities in architecture has been alleviated over the past few decades in both social theory and the architectural profession.(Böhme et al., 11) This is largely positioned around the debate that through its technological advancements, modernity has damaged humanity's enchantment of the world. Pallasmaa observes this closely and its impact on today's architecture, writing that *"Modernist design at large has housed the intellect and the eye, but it has left the body and the other senses, as well as our memories, imagination and dreams, homeless (The Eyes, 22)".* His examination of today's world gives scrutiny to the lack of atmospheric spaces that provide multi-sensorial experiences. One's ability to feel empathy or spiritual emotion, or to have a poetic sense of wonder in the world has diminished (Chandavarkar, 219). Pallasmaa asserts this belief, voicing that *"more often than not the atmosphere of contemporary cityscapes and dwellings lacks a sensuous and erotic air (Space, place and, 241)".* Similarly, this can be compared against Luis Barragan who wrote in an autobiographical text that *"the contemporary city . . . and humanity that built it [has] forgotten the 'magical' spirit and the effects of time as elements of beauty (Martinez, 133)".* Both Pallasmaa and Barragan cry for more emotionally charged atmospheres in our built environment.

This content is unavailable. Please consult the figure list for further details.

Fig.4. *The Weather Project*, 2003

Atmospheres as Productive Active Agents

Olafur Eliasson and James Turrell are both contemporary visual artists with art practices heavily engaging with the topic of atmospheres. Eliasson compares atmospheres to the changing character of weather, describing them not as static or frozen states, but rather as *"... productive, they are active agents* (Böhme et al., 93)". Gernot Böhme references weather when discussing the origins of atmosphere. He traces this back to when *"the term [atmosphere] was coined in meteorology to denote the upper mantle of air ...* (Böhme, 93)" of which then transitioned through the eighteenth century to a *"theory of feeling [that] is mediated in the common idea that weather conditions can induce certain states of mind, as when a looming thunderstorm brings with it an agitated mood* (Böhme, 93)". These transitions in our natural environment give evidence to the passing of time and in turn thrives humanity's interest in the world, as Pallasmaa writes, *"we evidently like to be connected to signs of life instead of being isolated in hermetic and artificial conditions* (*Space, place and*, 240)". Eliasson's work embraces these ephemeral qualities through the production of atmospheric installations. For example, Eliasson's 'The Weather Project' was an interior installation in the Tate Modern, London from 2003 to 2004 which gave spectators an enchanting experience through the portrayal of a large, burning sun.(Frichot, 32) The immense aura created by the sun and reflective mirror above stimulated unprecedented participatory responses as *"visitors were sprawled across the ground, transfixed by the looming interior sun and subtle shifts in light and humidity, as well as their own images reflected back to them* (Frichot, 32)". John E. Thornes describes this audience participation as surprising to both the artist and critics, quoting the Tate Modern; *"an astonishing number of people used the work and become part of a complex network of relations that the project generated, which went well beyond the purely theoretical. It could actually be felt* (Thornes, 576)". Eliasson's installation reminds us of the impact that can be generated from critically considering an intended atmospheric experience, of which resonates with Böhme's statement, *"I do think it is about time that architects were far more aware of the role they play in producing atmospheres* (Böhme et al., 95)".

A.01

Need for Emotive Atmospheric Spaces

This content is unavailable. Please consult the figure list for further details.

Fig.5. James Turrell's Renovated Skyspace at MoMA

Reignite Contemplation

For Turrell, colour and illumination are central elements in his work for creating sensorial atmospheric moments. Described as *"an acknowledged master and pioneer of the use of light in modern art (Kosky, 44)"*, Turrell's art generates a sense of wonder and contemplation. Jeffrey Kosky considers the beliefs of Hans Blumenberg when discussing how contemplation has deteriorated in the pace and assertion of modernity, becoming *"... repressed, marginalized, or otherwise forgotten (Kosky, 44)"*. This contrasts to the attitudes of ancient times, where the illumination of natural light was relied upon and admired greatly for its awe and beauty. Turrell is an artist who revives contemplation and the beauty of illumination in present-day. We are encouraged to slow down and relish in reflection. In his work, light is the primary subject.(Kosky, 44-48) Turrell's work provides refreshing insight as the participant is invited to *"see a light that does not reveal objects but is itself a revelation of light (Kosky, 48)"*. Turrell's Skyspaces are exemplary to this dialogue, a series of works which seem to re-focus your attention on the sky to reveal its wonder, like *"the works in New York and Los Angeles [that] seem to open up from the confinement of an urban environment, reminding the viewer that there is such a thing as the sky (Adcock, 124)"*. As Barragan would likely proclaim, a freedom in which to escape from contemporary chaos.

An Artist's Influence

Artists such as Eliasson and Turrell animate a dialogue between the arts and architecture, a coupled discourse towards the design of sensorial, atmospheric spaces. This provokes a thought: does the artist have a greater sensitivity to immerse oneself with atmospheres and emotions, compared to the architect who is swamped by rules and limitations? What could the architect learn from the artist, who is engaging with, and expressing their encounters or perceptions of the world? Could this influence the architect to have a greater poetic awareness for the world? Finally, how could this awareness be utilised to augment the design of emotive and sensorial atmospheric spaces? As Prem Chandavarkar writes in a chapter on 'Wonder, Wisdom, and Mastery in Architecture', *"to remain in the*

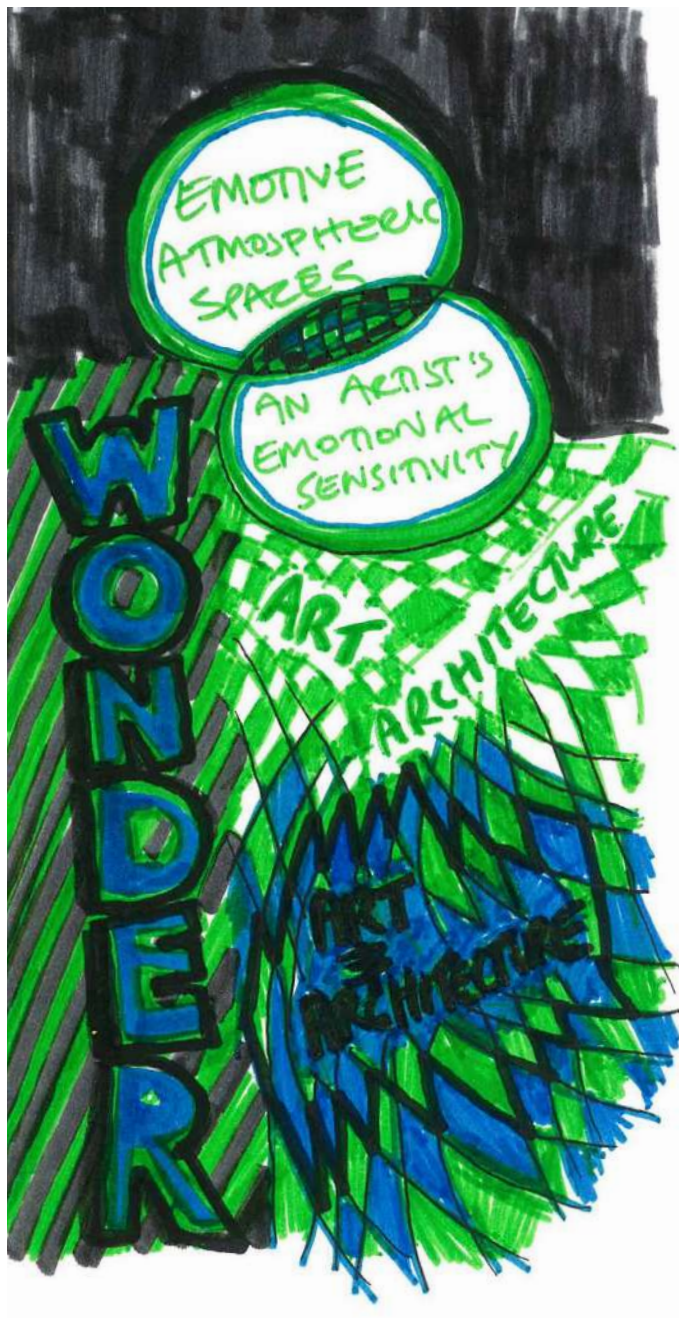


Fig.6. May bubble diagram brainstorm of research interests

state of mind of the poet, channelling the energy of the world into one's creations, we need to be continually rooted in wonder, the capacity to be amazed by anything, the means by which we resist anaesthetization by the familiar (Chandavarkar, 217)".

A.01

Need for Emotive Atmospheric Spaces

**Photographic series: engaging with
moments of fleeting atmospheres of
light and colour within the home.**



Fig.7. Bedroom



Fig.8. Kitchen



Fig.9. *Kitchen*



Fig.10. *Living Room*

PART A. BACKGROUND

A.02

Chromophobia & The Need to Value Colour



This content is unavailable. Please consult the figure list for further details.

Fig.11. Screenshots ArchiPro article

Fig.12. We're becoming sheep!

This content is unavailable. Please consult the figure list for further details.

Fig.13. Screenshots Stuff article

A.02

Chromophobia & The Need to Value Colour

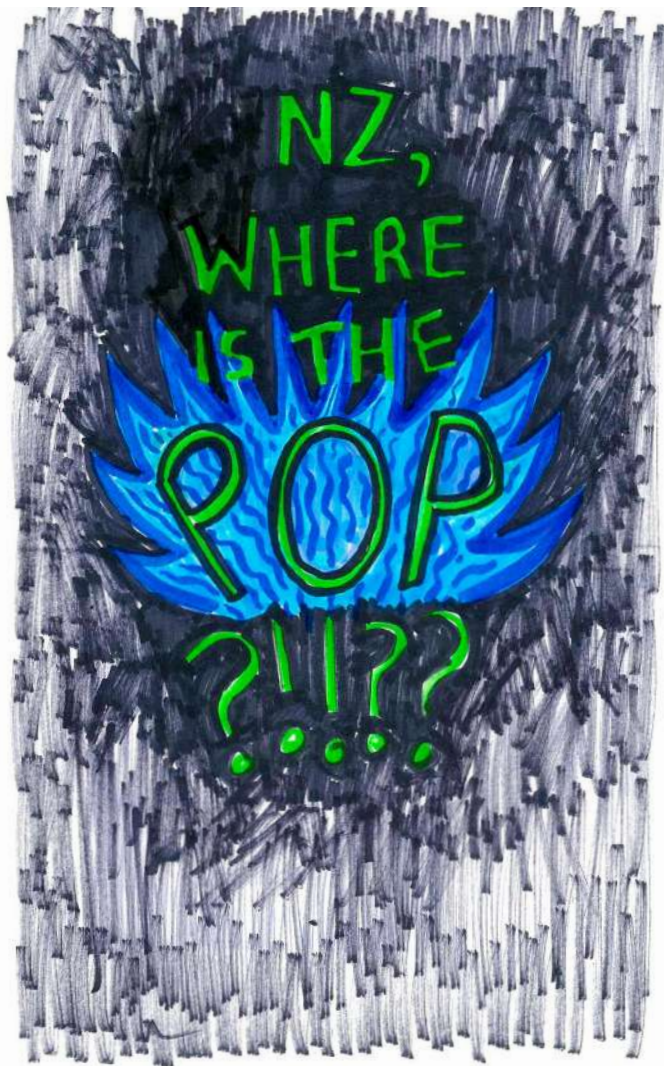


Fig.14. NZ, Where is the POP?!?!?

Timidity to use Colour in New Zealand Architecture

As the topic of atmospheric architecture is very broad, this next chapter explains how the elements of colour and light become integral to refining the scope of this research.

Secondary to the issue of our sensorially deprived built environments, is what seems to be a lack of confidence to use colour within New Zealand's architecture. It should be noted here that the term 'colour', albeit theoretically includes whites, greys, and blacks, is implemented throughout this research to denote colour of bolder, brighter, more saturated hue as the focal point. Why does New Zealand not display a rich, sensorial use of colour? It seems disappointing, considering the country is relatively young – much the same as its vernacular architecture – which should provide a great sense of freedom to experiment and be bold with colour?

Shift in Attitude Towards Colour

The following chapters are an attempt to briefly unpack the potential origins and reasons for the lack of confidence in the use of colour in New Zealand's architecture. When did the bright colours of Victorian homes and the quintessential "kiwi" bach succumb to the persistence of blanched tones of suburbia, subdued tones of cities, and a sea of repetitive black and 'natural' tones of contemporary architectural houses? It seems this can be largely accredited to the dominance and influence of the West upon New Zealand. The first inhabitants of New Zealand were Polynesian explorers in the period A.D. 800-1000, of whom evolved to become the indigenous Maori



Fig.15. Silly Sally

A.02

Chromophobia & The Need to Value Colour



Fig.16. Chromophobia

culture (Shaw et al., 10). Since the first European explorers arrived in the eighteenth century, New Zealand grew to become known as a “settler” society through the mass migration of usually white settlers (Pearson, 211). It is important to note that as a result of this New Zealand has, and continues to struggle with identity as a country heavily impacted by the colonisation of the Europeans.

Chromophobia and the Prejudice Against Colour

In order to understand New Zealand’s shifting attitude one only needs to look to the West. David Bachelor argues that “*colour has been the object of extreme prejudice in Western Culture* (Bachelor, 22)”, where “*since Antiquity, colour has been systematically marginalized, reviled, diminished and degraded* (Bachelor, 22)”. He coined the term ‘Chromophobia’ in 2000 as a means to refer to “*this loathing of colour, this fear of corruption through colour* (Bachelor, 22)”, and insists that “*since Aristotle’s time, the discrimination against colour has taken a number of forms, some technical, some moral, some racial, some sexual, some social* (Bachelor, 29)”. Mette L’Orange questions why the colour white became a popular trend, arguing that “*the cultivating of white can be traced back to Aristotle and Plato, who considered a painter’s work for the mixing of “drugs” – or PharmAkon* (L’Orange, 69)”. She further reminds us that we can thank the discovery of the ruins of Pompeii and Herculaneum for giving us a “*falsified retelling of history* (L’Orange, 69)”. A discovery which was initially thought to be white Greek monuments and architecture, “*so much idolized by western thinkers* (L’Orange, 69)” - only later to be corrected as having vivid colours that had faded with time.(L’Orange, 69) This resulted in a big debate as many became doubtful of their beliefs, a difficult moment considering that “*for much of European history, white has been seen as purity, perfection and innocence, associated with intellect and reliability,” whereas “strong hues on the other hand have been associated with sensuality, emotions, instincts and instability on the border to mendacity* (L’Orange, 69)”. Further, the notion of the foreign or the orient became associated with danger, as John Gage writes in his introduction to ‘Colour and Culture’, “*the rational traditions of western culture were under threat from insidious non-western sensuality* (Gage, 10)”.

The First Means of Which Colour is Purged: Colour as Feminine, or Foreign

Bachelor describes one of two ways colour is purged as; *"in the first colour is made out to be the property of some 'foreign' body – usually the feminine, the oriental, the primitive, the infantile, the vulgar, the queer or the pathological (Bachelor, 22-23)"*. This dismissal of colour due to its perceived emotional, feminine, and sensual characteristics resonates with the dominant masculine, 'kiwi bloke', iconography of New Zealand identity. (Bannister, 1) Jock Philipps in an autobiographical passage of his 1987 history of masculinity in New Zealand, 'A Man's Country?', describes *"... a model of courage and physical toughness (Phillips, 3)"* that epitomised to him what a man should be; a *"rugged practical bloke – fixes anything, strong and tough, keeps his emotions to himself, usually scornful of women (Phillips, book sleeve)"*. (Bannister, 1) Could this attitude be a reason why people are generally afraid to use colour in their buildings? Perhaps New Zealanders feel a cultural pressure to blend in, rather than stand out in colour to avoid appearing feminine, or sensual, queer or weak? Why do New Zealanders have this safety net desire to blend in, rather than express personal identity? Perhaps it is the easy-going, humble nature of the New Zealander that does not wish to be perceived as arrogant or obnoxious, and therefore prefers to "stick with the status quo"?

The Second Means: Colour as Cosmetic, or Inessential

For Bachelor, the second means of accomplishing scepticism is where *"colour is relegated to the realm of the superficial, the supplementary, the inessential or the cosmetic (Bachelor, 22-23)"*. This belief was strongly manifested from early Modernism through the likes of Mies van der Rohe who's ideology was that colour would tarnish architecture's *"... neutral setting for human action and expression (L'Orange, 69)"*. Maggie Toy agrees in her introduction to Harold Linton's book on 'Color in Architecture', by arguing that *"color is often considered merely as an afterthought, as the domain of the interior designer, cast out with other forms of decoration by Modernists at the beginning of the century (Linton, xv)"*. This suppression of colour as an excessive element is part of twentieth-century baggage that can be aligned to the ideology of Adolf Loos's "Ornament and Crime" or Mies van der Rohe's "less is

A.02

Chromophobia & The Need to Value Colour

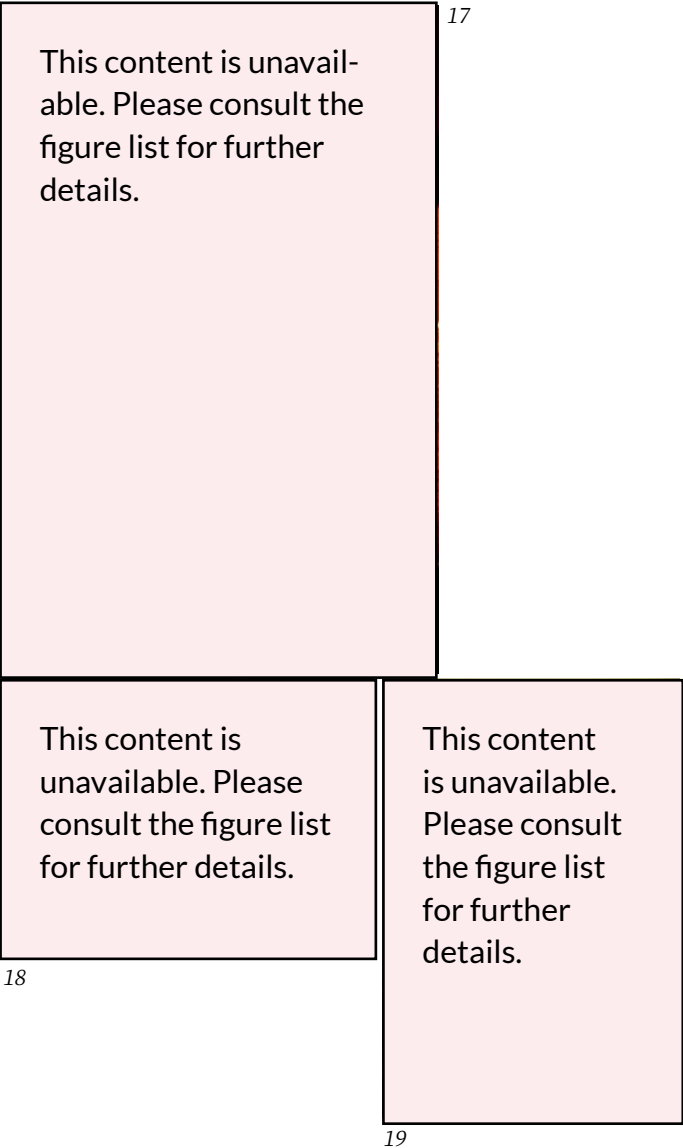


Fig.17. *Futuna Windows* by Jim Allen

Fig.18. *Ronchamp Chapel* Le Corbusier (1954)

Fig.19. *The Chapelle du Rosaire de Vence*

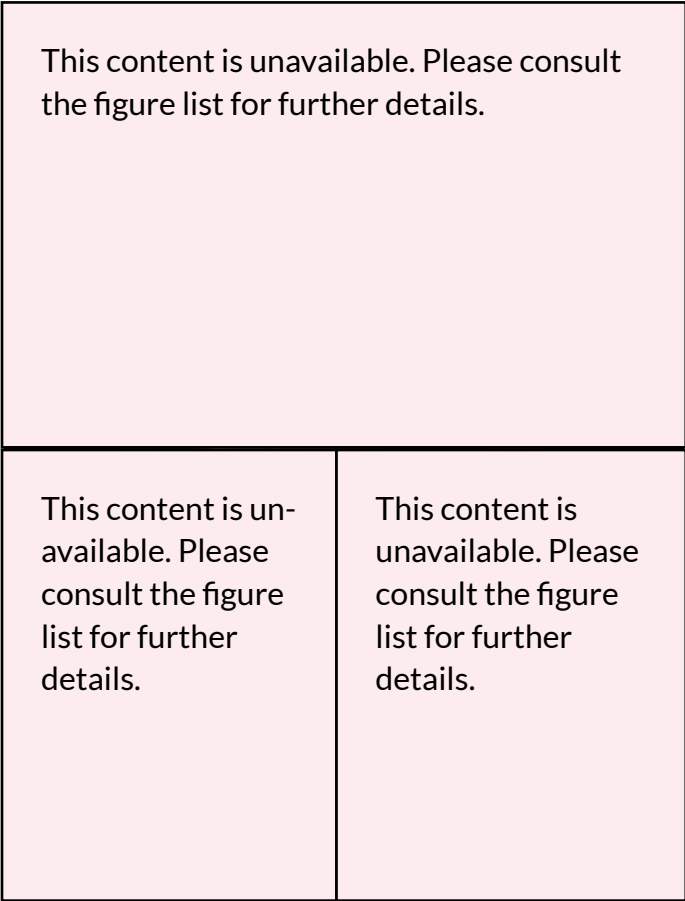
more”.(Porter and Mikellides, vii) As a development of this, Toy says “*there is a band of architects whose work tends to be termed “minimal” (Linton, xv)” upon which “the color scheme often associated with this type of design is based on variations of white ... (Linton, xv)”*. Bachelor summarises the two means of which Chromophobia is manifested; where “*colour is regarded as alien and therefore dangerous; in the other, it is perceived merely as a secondary quality of experience, and thus unworthy of serious consideration (Bachelor, 22-23)”*.

The “*notion that the West is the natural, the elect home of Modernity (During, 759)”* is suggested by Simon During to have forced “... *other societies [to] have two choices: either they remain stuck in the ‘past’ or they Europeanise themselves (During, 759)”*. It seems New Zealand, much like the rest of the world, aligned with the ideas of Modernism to appear progressive and “on trend” with what was new and exciting at the time. The mid-20th Century marks an important revolution for New Zealand’s concern with national identity and for an architecture reflective of this, where “... *the architects of the post war era were fuelled with an enthusiasm to find an indigenous interpretation of the simplicity and functionalism of modernism (Kernohan, 74)”*.(Gatley and McKay, 612) Vernon Brown, teacher at the Auckland School of Architecture, and members of The Group Architects were leading figures in the advocacy for a specifically New Zealand architecture. Heavily influenced by Scandinavian architecture, these architects desired a more economical, simple, open-planned architecture utilising local timber and materials that would better reflect the relaxed lifestyle and unpretentious “she’ll be right” attitude synonymous with New Zealand culture.(Shaw et al., 158) Perhaps this further highlights why our built environment lacks colour; either as a superfluous element or forgotten amongst the fixation for a simple, honest, functional architecture. Perhaps it is also New Zealand’s immense pride in the beauty of our natural landscapes that causes a hesitancy to intervene with bold use of colour. This too, could be linked to the influence of modern architecture in the West and the integration of building with nature through the honesty of materials expressed in their natural state - as manifested by Frank Lloyd Wright’s infamous ‘Falling Water’.

In Positive light: Colour in New Zealand Architecture

Despite this rather cynical tone thus far, it’s not all doom and gloom. Many years now separate us from these periods of colour suppression, with the likes of Le Corbusier, Bauhaus, and De Stijl as a few exemplars whom have valued and demonstrated a great use of colour. It would also be unfaithful to this narrative not to mention a few of the architects in New Zealand who have demonstrated colour in their architecture. The stained-glass windows on John Scott’s Futuna Chapel gives a luminosity that is reminiscent of the Gothic Revival or of Henri Matisse’s Chapel of Rosary or Le Corbusier’s Chapel of Notre Dame de Haut in Ronchamp; both works of Western Modernism in France. This is an exemplar of New Zealand architecture where the emotive and sensual choreographing of colour and light combines with, as Russell Walden suggests, “... a simplicity and directedness that echoes New Zealand’s woolshed tradition (Walden, 149)”.(Walden, 149) We can see a bold use of colour too in Roger Walker’s architecture; an architect described by Walden in the preface to Gerald Melling’s 1985 book on ‘Positively Architecture! New Zealand’s Roger Walker’ to have “*design values [that] are very different from the run-of-the-mill mainstream architect (Melling, 6)*”. A bold red colour adorned the playful “fairy-tale pyramidal roof clusters (Melling, 7)” of Walker’s ‘Park Mews’; a highly provocative looking apartment building during the 1970’s in Hataitai, Wellington that is said to be “*his protest against the prevailing uniformity and anonymity of multi-unit residential buildings: who wants to identify their home as the fifth window from the left on the third floor of the second block? (NZIA, 4)*”. We are reminded to embrace more joy in our lives through his daring bursts of red, blue and pink as seen in his own house in Thorndon, Wellington or in Glen Stanley’s House in Island Bay. And more recently, we must acknowledge that there is a growing focus to value colour in New Zealand Architecture that can be reflected through Resene’s annual Colour Awards. For a glimpse into this surge of interest in colour, one could look to Pac Studio’s ‘Point Wells Cricket Club’ which was awarded the Resene Total Colour Bright Spot Award in 2020, described by the judges as “*a whimsical folly, this project makes you smile (Resene Total)*”. Or, to the Architect Gerald Parsonson who

20



21

22

Fig.20. Park Mews, Hataitai, Wellington (1973)

Fig.21. Roger Walker House, Thorndon, Wellington

Fig.22. Glen Stanley House, Island Bay, Wellington

A.02

Chromophobia & The Need to Value Colour

This content is unavailable. Please consult the figure list for further details.

Fig.23. *Point Wells Cricket Club* by Pac Studio

said in a Resene interview, "... currently, it's easy to find new suburbs full of beige, creams and greys", yet "colour expresses personality and freedom, and [so] it is refreshing when people try something different (*"Gerald Parsonson"*)". In the interview, Parsonson's Te Horo Bach is discussed for its playful use of colour amongst a subdivision of "... an agreed covenanted colour palette, which was made up of mainly soft, natural colours (*"Gerald Parsonson"*)", of which was awarded two Resene Colour Awards for interior and exterior in 2018. These few exemplars highlight New Zealand Architects' efforts to incorporate colour into their architecture, an attitude that this research aims to reinforce.

The Need to Value Colour

It remains uncertain why New Zealand has been cautious to experiment with colour, whether as a safety net to blend in and avoid being too bold and pretentious, feminine or emotional, as a timidity to express personal identity, as a desire to remain 'neutral' so as to not harm the surroundings or 'natural' to remain true to the material, or because it is deemed unnecessary or inessential to other more 'practical' elements. Despite direct reasons, it seems clear that although there is now a growing consciousness towards utilising colour in our architecture, there is a long history of Chromophobia in Western culture that, in its wake, lingers on today in New Zealand. The marginalisation of colour as an inessential element in the design of architecture can further be reflected in the lack of courses covering the topic in architectural education today (L'Orange, 68). This lack of education has, as L'Orange claims, lead to "... grave, sensorial deprivation in our surroundings (L'Orange, 68)". Maggie Toy comments on this, further acknowledging how far the pendulum swung from such a lack of colour in Modernism to the "... onslaught of Postmodernism in the 1980s, [and the] flood of bizarre colour arrangements (Linton, xvii)", concluding that "certainly a greater emphasis could be placed today on teaching the qualities of color in architectural schools (Linton, xvii)".

Whilst adding to the current literature on the importance of valuing colour in our built environment, this design-led research aims to animate the sparse academic literature on colour's great

potential for specifically New Zealand architecture. The intention for this research is to fight against the prejudice of chromophobia and raise the current lack of confidence in colour for New Zealand architecture. As Waldron Faulkner exclaims, “... *I have come to realise the importance of color to architecture, and I have become aware of how little architects (including myself) know about the subject of color* (Faulkner, ix)”. We should be well aware by now that colour “... *serves to dramatically affect perception of architectural space and form* (Linton, xv)”, and is described by Faulkner to have seven key purposes in the design of buildings; to create an atmosphere, suggest unity or diversity, express character of materials, define form, affect proportions, bring out scale, and give a sense of weight.(Faulkner, 5) Although “*it is revealing to see the evolution in the use of color down the ages, periods in which color rises and falls like the tide* (Faulkner, 3)”, it is time that colour takes its foothold as a fundamental element in architecture.

This content is unavailable. Please consult the figure list for further details.

Fig.24. *Te Horo Bach* by Parsonson Architects

PART A. BACKGROUND

A.03

Luis Barragan as Protagonist

This content is unavailable. Please consult the figure list for further details.

Fig.25. San Cristobal

Luis Barragan as Protagonist

The previous text has outlined: a) why we need sensorially atmospheric spaces, and b) why we need to raise confidence in the use of colour in New Zealand's built environment. The 'how' must now be considered - how can this research explore the design of rich, atmospheric spaces through the use of colour? There are numerous Architects who have demonstrated an atmospheric use of colour and light in their work such as Le Corbusier, Ricardo Bofill, Ricardo Legoretta, Piet Mondrian or Theo Van Doesburg to name a few. Luis Barragan, a Mexican architect becomes the protagonist of this research. Barragan was awarded the Pritzker Prize Award in 1980, and is widely recognised for his 'emotional architecture' and bold use of colour, where Daniele Pauly describes that *"in each [of Barragan's] building[s] colour is an emotive experience – an aesthetic and spiritual delight conveying both sensuality and rigorous precision (Pauly, 220)". ("Luis Barragan 1980")* Harold Linton believes that Barragan regards *"color [as] an essential dimension [in architecture] – as opposed to a mere decorative element (Linton, xvi)"*, and says that subsequently, he has *"... been the mentor for many architects keen to utilize color within their designs (Linton, xvi)"*. Barragan therefore becomes an ideal source of influence for learning how colour and light can be manipulated to create beautifully atmospheric space. Barragan's interest in the wealth of the arts, the desire to create an emotional architecture, and the potential of colour and its inseparable relationship with light, coupled with Mexico and New Zealand's similar light qualities, makes him confidently desirable as the protagonist of this research.

This content is unavailable. Please consult the figure list for further details.

Fig.26. Left to right: Anni Albers, Luis Barragan, Josef Albers, Legorreta couple, 1967

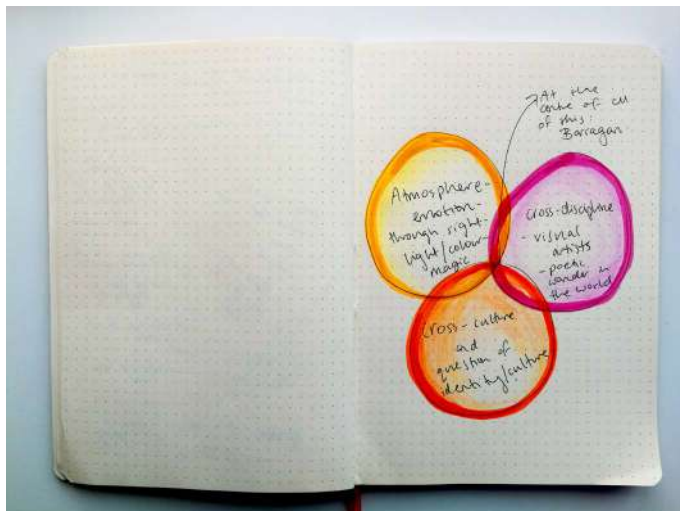


Fig.27. Brainstorm of research interests

"Space, dimension, scale, light, colour and texture are the six elements of the expression of architectural space, and the latter two elements have their origin in pre-Hispanic civilization for in Europe, people were not interested in colour and texture. Barragan found great value in them and he clarified the standing of colour and texture as expressive elements equal in importance with dimensions and light in stimulating spaces. I believe this is the fundamental reason why so many people throughout the world have found his works so fascinating (qtd. in Barragán and Saitō, 21)". – Ignacio Diaz Morales, Architect and Professor of Architecture, Guadalajara University and Barragan's close friend.

The rich, spatial atmospheric experiences of Barragan's architecture that finds harmony between traditional Mexico and modernity must also be largely accredited to the vast range of people who influenced him (Pauly, 22). Exactly how did these artists influence colour within Barragan's architecture? Is there a potential to learn from these relationships, and study local or international artists to influence the use of colour in contemporary architectural practice in New Zealand?

This concludes the background section explaining the reasons for the intended research topics. The next text will further define the scope of research through the research question, aims, and methodology.

How can Mexican Architect Luis Barragan's strategies in choreographing magical atmospheres through light and colour influence contemporary architectural practice in New Zealand?

PART A. AIMS & METHODOLOGY

A.04

Research Question & Aims of Thesis

Aims of Research

The aim of this design-led research is to highlight the great potential in giving value to the use of colour and light as important elements in the design of architecture that awakens our sensibilities. The intention from this is to educate and inspire New Zealanders, both architects and wider society, of the beauty in utilising colour and natural light to create sensorially atmospheric spaces. Thus, encouraging a confidence to use colour in our built environment and fight the prejudice of chromophobia - towards a culture that embraces emotion, wonder, enchantment, sensitivity, and sensuality. The final major objective, is to encourage engagement with other disciplines; people from various backgrounds and with differing processes and philosophies, to exchange in conversation with those outside the field of architecture in order to broaden knowledge and awaken new ideas - just as Barragan did. This research advocates for cross-disciplining, with specific focus on the realm of the visual arts to place value on the fusion of art and architecture.

PART A. AIMS & METHODOLOGY

A.05 *Thesis Methodology*

Methodology of Research (Stage One)

How does this research intend to seek possible solutions to these aims? The first stage of the thesis will examine Luis Barragan's strategies in designing with the elements of colour and light, and in learning from artists and architects, towards achieving emotive and atmospheric architecture. The strategies will be distinguished by cross examining pieces of literature to construct a narrative in understanding Barragan's use of colour and light across his architecture; its development over time, the key projects, and principal influences. These strategies are likely to be categorised into groups to give structure to the research, of which will be ordered depending on the findings. Design experiments will be undertaken alongside as a means to engage with the material written on Barragan's strategies, with the intention that this might prompt ideas for going forward into the following stages of the research.

METHODOLOGY DIAGRAM

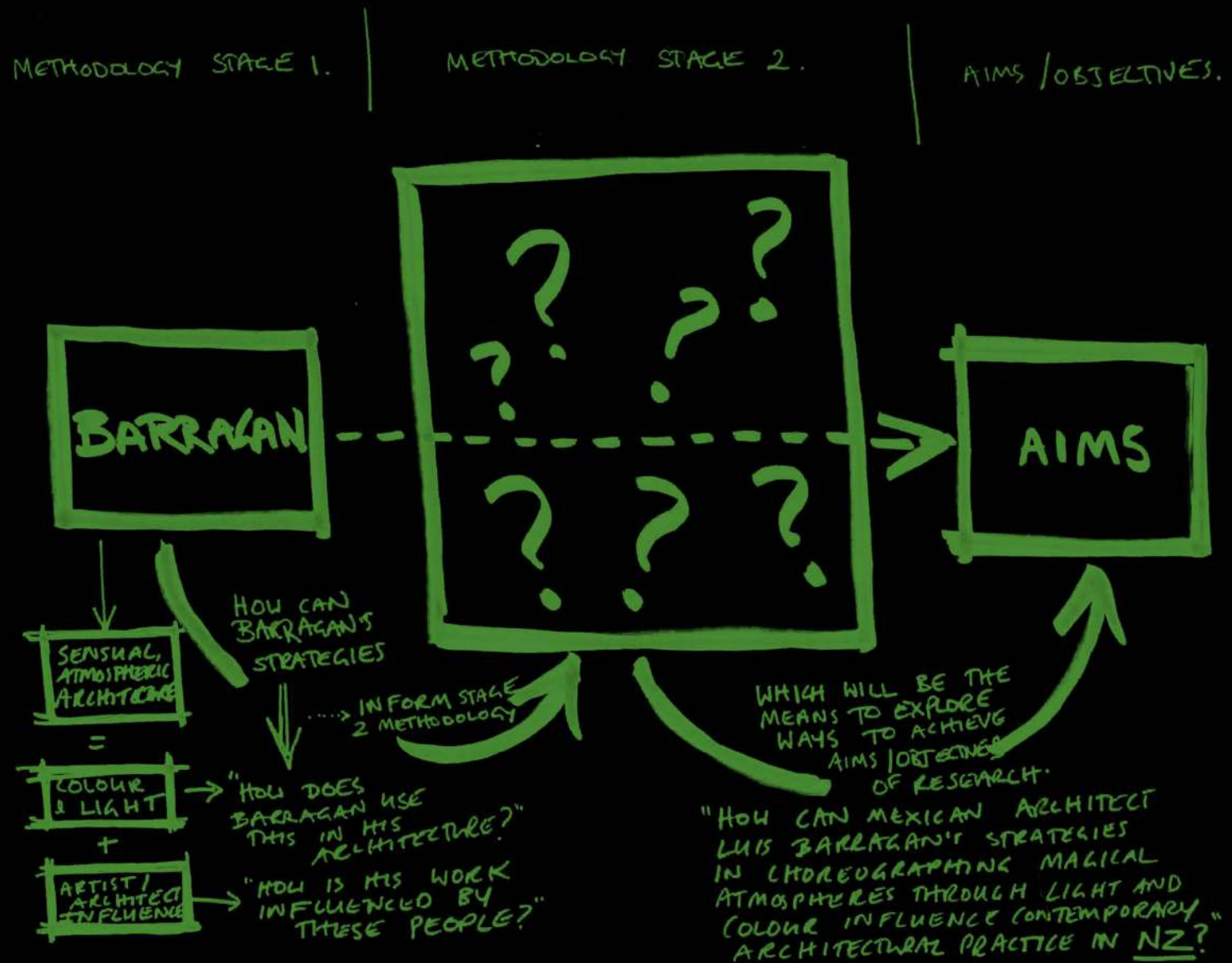


Fig.28.

PART B. BARRAGAN'S COLOUR/LIGHT STRATEGIES

- B.01*** *Introduction*
- B.02*** *Strategy One: Coloured Light*
- B.03*** *Strategy Two: Coloured Latticework*
- B.04*** *Strategy Three: Planes of Colour*
- B.05*** *Summary Reflection*

The following chapters explore the various strategies that Barragan uses to incorporate colour and light into his architecture. Three key strategies have been categorised due to their similar characteristics: coloured light, coloured latticework, and planes of colour. These are discussed in terms of their colour and light qualities, influences, intentions, locations, and how they create a sense of magical atmosphere. Adjacent to this are design experiments to enable design-led thinking in parallel with each strategy to provoke enquires for further development.

PART B. BARRAGAN'S COLOUR/LIGHT STRATEGIES

B.01 *Introduction*

Introduction – Definitions of Magical and Mystery

“**Magical**” and “**mystery**” are dominant terms used throughout this research and therefore require a definition. These words stand out amongst literature as they are repetitively used when describing the elements of light and colour within Barragan’s work.

1 – Magical (adj.)

The Collins Dictionary gives two definitions for the word “magical”, the adjective of the noun “magic”. The definition focussed on for this research is; *“you can say that a place or object is magical when it has a special mysterious quality that makes it seem wonderful and exciting (“magical”)”*.

The term “Magic” (n.), is defined as; *“you can use magic when you are referring to an event that is so wonderful, strange, or unexpected as if supernatural powers have caused it (“Magic”)”*.

When referring to “magical” in this research, it is important to remember that this thing being discussed is “as if” or “like” magic due to its mysterious quality, as opposed to something that “uses” magic. The word “magical” being used is not the supernatural phenomenon of using magic such as in sorcery or witchcraft, but it is the feeling associated with something that emits a sense of mystery and is unexplained.

2 – Mystery (n.)

The mysterious quality which makes something wonderful, exciting and enchanting must also be defined to understand the term “magical” further.

“Mystery” is synonymous with words such as ‘secrecy’, ‘uncertainty’, ‘obscurity’ and ‘mystique’. The definition of “mystery” that is appropriate to this research is; *“a person or thing that arouses curiosity or suspense because of an unknown, obscure, or enigmatic quality (“Mystery”)”*.

In this design-led research “mystery” is interrogated to understand the “magical” quality of Barragan’s light/colour strategies. This helps form the criteria for criticism of the design experiments to come.

B.01

Introduction

Introduction – Barragan's Colour and Light Strategies

"In my activity as an architect, colour and light have always been a crucially important constant. Both are basic elements in the creation of an architectural space, given that they can vary the conception of the latter (qtd. in Pauly, 153)". - Luis Barragan in an interview with Jorge Salvat, Modo, Milan, 1981

The projects selected as case studies within this analysis have been extracted from literature, focussing on those most widely acknowledged for their colour. This narrative begins with El Pedregal when Barragan's attitude towards colour was flourishing, and ends with his final house for Barbara Meyers. Pauly refers to this stage in Barragan's life as his third and final "mature phase". Beginning in the 1940s it is characterised by several constants, one being *"... the modulation and transformation of space through colour (Pauly, 153)"*. This research concentrates on the work of this period of four decades.(Pauly, 153)



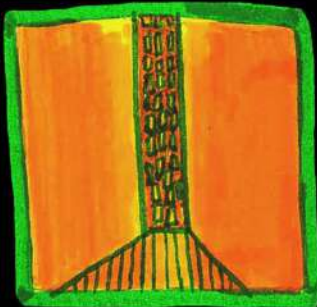
CASA
PEDEGRAL
1945-52



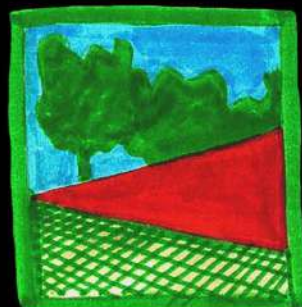
HOUSE
STUDIO
1947



GALVEZ HOUSE
1955



CAPUCHINAS
TLALPAN
CHAPEL
1955



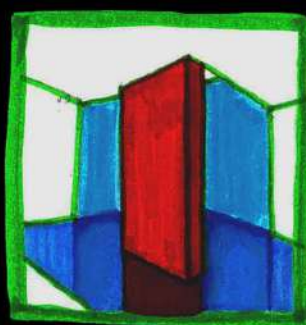
LAS
ARBOLEDAS
1958-61



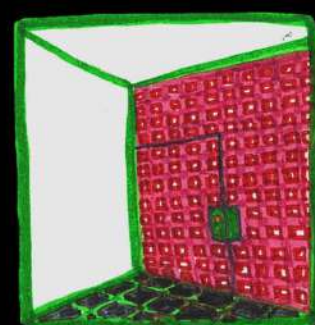
FUENTE DE
LOS CLUBES
1963-64



SAN CRISTOBAL
1967-68



CASA GILARDI
1976



BARBARA MEYERS
HOUSE 1981

Fig.29. Timeline of Barragan's architecture

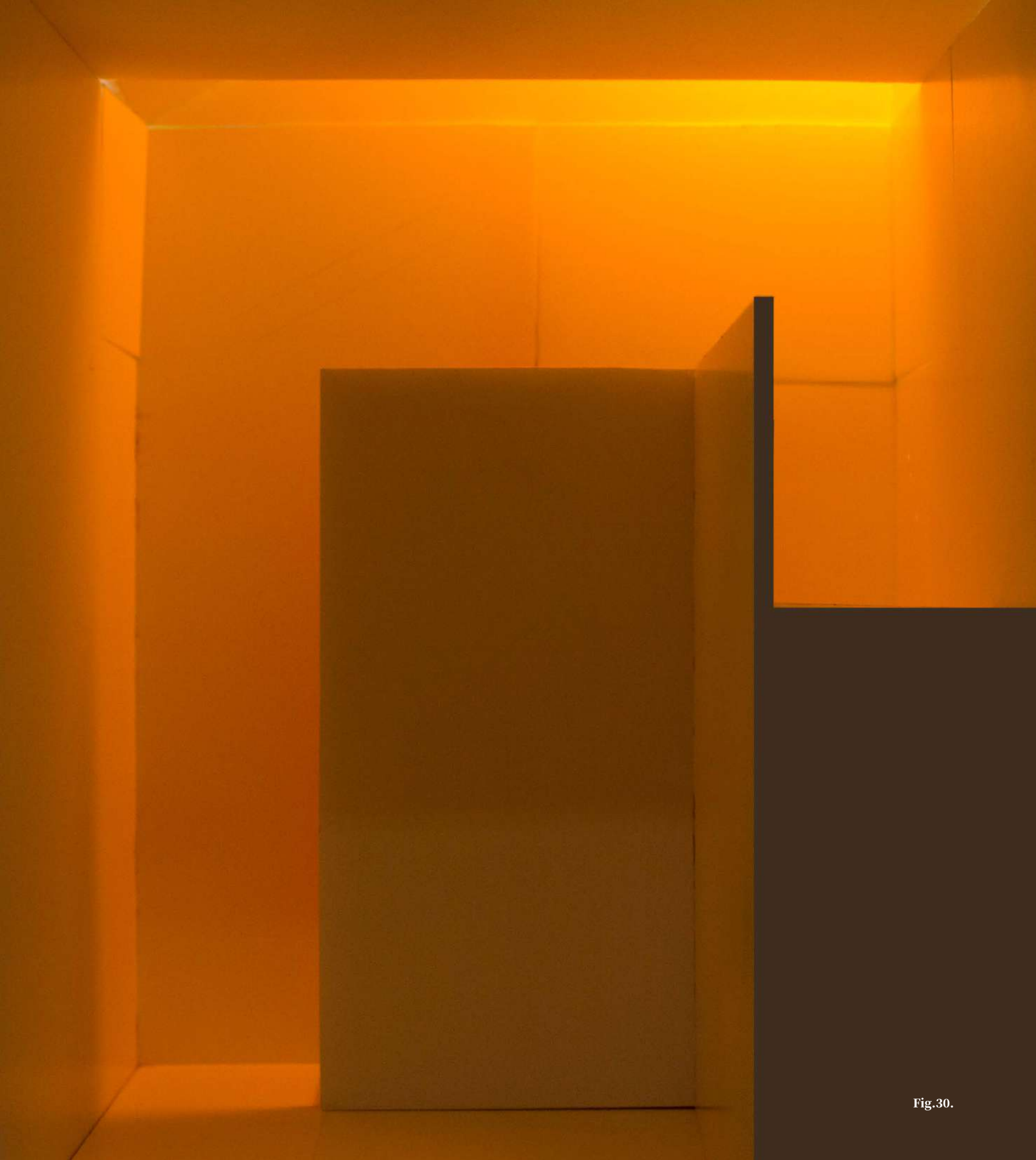


Fig.30.

PART B. BARRAGAN'S COLOUR/LIGHT STRATEGIES

B.02

*Strategy One
Analysis & Design Experiments (I & II)*

COLOURED LIGHT

COLOUR, Hell of a Good Thing!

COLOURED LIGHT

B.02

Strategy One Analysis

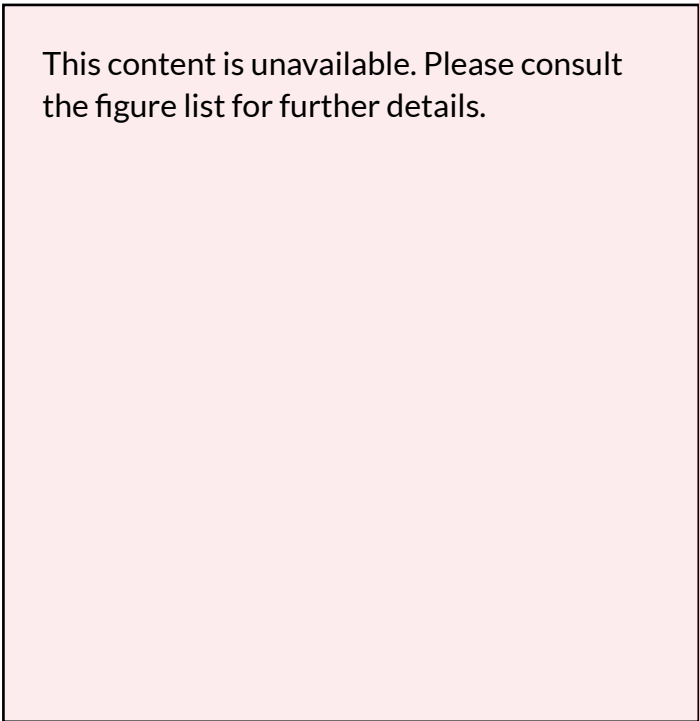


Fig.31. Luis Barragan, caricature of “Chucho” Reyes

Jesus “Chucho” Reyes: Introduction to Colour

When we think of Luis Barragan’s work we immediately think of colour, but we must first acknowledge the influence of Mexican painter Jesus Chucho Reyes who was the forerunner for this association with colour. As described by Pauly, what deeply attracted Barragan to Reyes was his “... *unusual personality and ... love of Mexico’s craft traditions* (Pauly, 26)”. He also felt that his artistic approach resonated with his own painting from his youth. Their encounters date back to Barragan’s early years where he would “... *buy antiques or craftworks from “Chucho” Reyes* (Zanco and Terragni, 241)”. Reye’s collections reflected his eccentric nature and value for the magical.(Zanco and Terragni, 224) Barragan’s appreciation for Reyes is noted in his speech for The Pritzker Architecture Prize in 1980: “*I refer to the Mexican painter Jesus (Chucho) Reyes Ferreira, for whose wise teachings I publicly acknowledge my indebtedness (“Luis Barragan 1980”)*”. Reyes taught Barragan of the ‘wealth of colour’ and its affinity with Mexican culture. It was Reyes who shone light on the richness of textures, colours and lights found in Mexico’s vernacular art that traces back to pre-Columbian and Hispanic eras. Barragan spoke of the “*splendors of magenta, solferino, blues, pinks, reds and violets that blaze in the sun ...* (Pauly, 26)”. We can see these bright colours reflected in Reye’s artwork, such as in his ‘Rooster against a sky blue background’. This can then also be found in Barragan’s own palette, for example on the rooftop walls of his own house and studio in Mexico City.(Pauly, 26)

This content is unavailable.
Please consult the figure list
for further details.



Fig.32. "Rooster against a sky blue background"

This content is unavailable.
Please consult the figure list
for further details.

Fig.33. House and Studio roof terrace

El Pedregal 1945-52: Colour Initiation

The beginning of Barragan's use of colour in his architecture was in the subdivision work of El Pedregal between 1945-52. Barragan invited Reyes to join him *"as aesthetic consultant to define the spaces of El Pedregal (Zanco and Terragni, 241)"*. It's likely that *"Barragan may well have "discovered" El Pedregal through the eye of artists (Zanco and Terragni, 240)"*, as many were attracted to painting its harsh, volcanic landscape including Muralist José Clemente Orozco and landscape painter Gerardo Murillo "Dr. Atl". It only seems fitting therefore that he chose to work with artists on the project, fostering the emergence of one of his greatest life ambitions to integrate architecture with the arts.(Zanco and Terragni, 240-241) Mexican artist Diego Rivera also offered Barragan his views on the potentials of El Pedregal, largely that it could significantly help to remedy *"... the state of the city and the problems caused by its enormous growth (Martinez, 63)"*. Barragan shared this concern for the City's chaos in which, *"there were about one million inhabitants in Mexico City in 1930; fifteen years later, in 1945, when Barragan began the subdivision of Pedregal, the population had practically doubled (Martinez, 62)"*. It is important to note here that Barragan became devoted to creating architecture that could counter this chaos. Although he adored simplicity, Barragan shared Reye's admiration for the beautifully ornate Spanish Baroque style, saying in an interview with C.B. Smith that *"our churches are a marvel of integration. In Santa Maria Tonanzintla the alterpieces, sculpture and textures form part of the atmosphere, they integrate the panes of windows. The light is integrated to give a touch of mysticism (qtd. in Pauly, 27)"*. Reyes similarly fantasised over this mystical spirit found in the light of religious spaces. In an interview by Jorge Salvat Barragan discussed how Reyes would *"paint the glazing of his windows yellow gold, so that sun could constantly stream into several rooms of his house (Pauly, 27)"*. This became a key component in the design of Barragan's architecture, wielding Reye's technique to create the illusion of brightly sun-light spaces.(Pauly, 26-27)

COLOURED LIGHT

This content is unavailable.
Please consult the figure list
for further details.



Fig.34. House and Studio coffer in ceiling

This content is unavailable.
Please consult the figure list
for further details.



Fig.35. Galvez coloured glazing in
corridor leading to the bedrooms

Strategy One: Coloured Light

Barragan's first strategy can be described as coloured light. Barragan experimented with the traditional use of coloured panes and Reye's alternative technique of painting colour on glass directly (Weber et al., 158). Reye's painting technique is said to give a more textured quality to the light because of the brush mark application process (Pauly, 190).

House and Studio 1948

We can see early use of this strategy in Barragan's own House and Studio built in Mexico City in 1948. In a narrow corridor flanked by interior walls, Barragan placed a deep coffer in the ceiling with painted glazing overhead that tunnels coloured light into the space. Powerful spatial attractions are caused as a result: dark shadow surrounds the only source of light to create a high contrast, forcing your eye to rest upon it and the sculpture beneath. Dark shadow softly caresses and blends with the coloured light, a magical gradient that changes saturation with the passing of day and intensity of natural light.(Pauly, 179)

Galvez House 1955

Another example of this can be found in 'Galvez House' built in 1955, in which the tight corridor leading to the bedrooms appears spacious and light. The coloured glazing is recessed into the wall and hidden from view as in fig.35. The impact of the reflected coloured light amongst the surrounding white walls varies as one moves through the space. For example, in fig.35 where the glazing is parallel with the hallway the intensity of coloured light seems greater than when the viewer is facing the window front on as in fig.36. The intensity of light in the first image might be a result of the viewer facing the surfaces that the coloured light can fall upon. This shift in perception depending on your location in the space creates a sense of magic and is difficult to consider the two images as the same space.(Pauly, 189-190)

This content is unavailable.
Please consult the figure list
for further details.

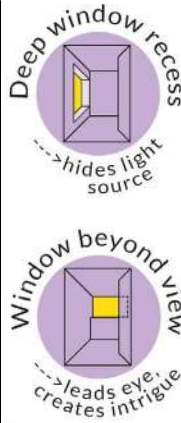


Fig.36. Galvez coloured glazing in
corridor leading to the bedrooms

This content is unavailable.
Please consult the figure list
for further details.



Fig.37. Tlalpan chapel

Capuchinas Chapel Tlalpan 1955 & Mathias Goeritz 'Emotional Architecture' Manifesto

Barragan's Capuchinas' Chapel in Tlalpan is a project which saw an extraordinary synthesis between the arts and architecture as Barragan collaborated with both Reyes and Mathias Goeritz. Between these three individuals we must recognise the amalgamation of a creative community that shared great artistic visions. (Zanco and Terragni, 222) Mathias Goeritz travelled to Mexico in 1949 and sparked interest in meeting Barragan as he was intrigued by El Pedregal, of which he would later write an article on (Martinez, 66). In the same year that the Chapel in Tlalpan began construction in 1953, Goeritz completed his El Eco Experimental Museum. (Zanco and Terragni, 222) Also accompanied by Barragan, this museum is a notable precedent that contributed largely towards the maturing of design elements in the Tlalpan Chapel. During the production of El Eco, Goeritz and Barragan simultaneously advocated great distaste for the domination of functionalist architecture that had infiltrated Mexico during Modernism. Concerned with architects neglecting the emotional impact of buildings, Goeritz coined the term "Emotional Architecture" in a manifesto produced in 1954. (Pauly, 214-215) A concept in which Goeritz criticises modern architecture: *"Twentieth-century man feels crushed by so much 'functionalism', by so much logic and utility ... The man - creator or receiver - of our time aspires to something more than a pleasant, suitable house. What he asks [...] of architecture and its modern resources and materials is spiritual upliftment: in a word, a feeling of emotion ...* (qtd. in Pauly, 214)". Barragan too advocated for this manifesto, declaring *"I believe in emotive architecture* (qtd. in Pauly, 214)". El Eco triggered the senses through its play of light and shadow, colours, material textures, and configuration of different heights and positioning of walls. (Pelletier, 6-13) The building is described to *"embody the very principle of a total artwork, by means of which Goeritz was clearly seeking to sharpen people's emotive relationship with their spatial surroundings* (Pauly, 215)". The process of creating El Eco further motivated Goeritz and Barragan to formulate and theorise the notion of emotive architecture that undoubtedly influenced their design motives in the Tlalpan Chapel. (Pauly, 215)

COLOURED LIGHT

This content is unavailable.
Please consult the figure list
for further details.

Fig.38. Mathias Goeritz, *El Eco*
Experimental Museum, Mexico City

This content is unavailable.
Please consult the figure list
for further details.

Fig.39. Le Corbusier, *Chapel of Notre Dame du Hau, Ronchamp*



Architects' Influence on Emotional Architecture: Le Corbusier and Frederick Kiesler

In the same moment that Barragan's Chapel at Tlalpan in Mexico was being built, so too was Le Corbusier's highly emotive Chapel at Ronchamp in France (Pauly, 215). Leonardo Borioli introduces in his dissertation 'Collective Autobiography: Building Luis Barragan', the idea that although we cannot make a definitive link between the similar use of emotional light qualities of both Chapels, we can appreciate their coincidental likeness. Both chapels utilise indirect light filtered by coloured glass to engage the inhabitant in a completely spiritual, emotive state.(Borioli, 61) The real importance however, for mentioning Le Corbusier in this discussion of Barragan's coloured light strategy is to give further context to his ideological development of emotional architecture. Corbusier has been of critical influence to Barragan throughout his lifetime. This impact stemmed from his exposure to Corbusier's L'Esprit Nouveau Pavilion during his first Europe trip in 1924-25, to meeting him during his second trip in 1931.(Pauly, 111) It is Corbusier's intent for architecture to have a poetic dimension and transcend beyond the utilitarian, as "... a thing of art, a phenomenon of the emotions, lying outside questions of construction and beyond them (Le Corbusier, 19)". (Pauly, 110-111) Barragan also discussed these ideas with architect and artist Frederick Kiesler. Barragan mentioned their conversation included the desire for functionalist architecture to embrace the "... function for the spirit to be able to develop and live agreeably (qtd. in Pauly, 109)".(Pauly, 109) This corresponds to Corbusier at the same time who argued in a refusal letter to be included as an author in "gli elementi dell'architettura funzionale", "I believe there is something more magical in the term architecture than rational or functional, something that dominates, that imposes (qtd. in Pauly, 109)".

Capuchinas Chapel Tlalpan 1955 – Continued

Although Barragan was creating coloured light in residential projects prior to the Tlalpan Chapel, it is only now that we are able to see this strategy used in its fullest appreciation on a larger project. The design of a church enabled this rich explorative use of coloured light, as "... Barragan believed that in art history the only cases of successful artistic

This content is unavailable.
Please consult the figure list
for further details.

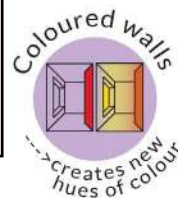


Fig.40. Tlalpan chapel crucifix and shadow

This content is unavailable.
Please consult the figure list
for further details.

Fig.41. Tlalpan chapel window
by Mathias Goeritz

*synthetic were in religious or “magical” buildings (Zanco and Terragni, 221)”. The extended collaboration with Mathias Goeritz enhanced both the project’s emotional prowess and the solidification of Barragan’s investment in creating emotional architecture. The Tlalpan chapel is described by Pauly as a “... *synthesis of the arts... a melting pot of colour, sculptural matter and light* (Pauly, 216)”, as light enters from three different directions and reflects off each wall to illuminate the spaces. In earlier instances, coloured light was always paired with white walls. In this instance however, Barragan has painted the chapel’s walls with colour which combine with coloured light from the window glazing to form changing hues and brightness depending on the time of day.(Pauly, 218) As well as his fascination for creating light filled spaces, Barragan also sought after opportunities for half-light and penumbra for those to retreat. This idea of retreat he believes is instinctive to humans and should be offered. In the chapel, penumbra forms ambiguity as walls interject coloured light to form soft shadows. Penumbra is also formed by mysterious shadows like that of the crucifix that magically lingers on the orange wall behind.(Zanco and Terragni, 225) One of the windows that is especially magical was created by Mathias Goeritz; this glazing is a magnificent piece of artwork in which the multiple uneven panes of glass shine light into the chapel in differing tones of yellow. This coloured glazing bathes the Chapel in its varying tones of yellow and gold that hint to the rich luminosity of Mexico’s Baroque churches.(Pauly, 218) The Chapel reignites light and colour to reference the past, yet its abstract and smooth forms remind us of a contemporary expression that does not aim to recreate the elaborate decorative elements of older churches. (Zanco and Terragni, 221) The chapel was initiated in the aim to “... *vindicate in contemporary terms the synthesis of the arts that had led to the great religious works of the past* (Zanco and Terragni, 221)”.*



Casa Gilardi 1976

The last project to showcase the strategy of coloured light is one of Barragan’s final major projects. Again, we return back to this strategy’s implementation in a residential setting. In a corridor space of ‘Casa Gilardi’, a house Barragan designed for Francisco Gilardo in Mexico City 1976, he painted the glazing of a series of

COLOURED LIGHT

repeated windows yellow that gives the corridor an overwhelming vibrant atmosphere. A yellow glow from this space emanates into the entrance area, creating a sense of mystery and intrigue to the inhabitant.(Pauly, 192) No matter the weather, the coloured glass enables natural light to enter the house imitating the sun’s warmth. The filtered light here in Casa Gilardi colours the corridor’s white walls and marble flooring providing contrast to the cold tones of the pool in the room beyond lit by unpainted glass.(Pauly, 191-192) Here he introduces a new vocabulary of juxtaposing colours from other spaces to create a relationship between warm light and cold light. Previously, only one colour would illuminate the space provided by the coloured light. Now, we see a new relationship between yellow, red, and blue, that helps to further distinguish thresholds. Again, the source of light is hidden as the repetitive windows in the corridor space are deeply recessed out of view. The window in the room beyond is also hidden and recessed, however is positioned high up. This adds to the mysterious ambiguity of the spaces and draws your attention to the interior atmospheres. (Weber et al., 158)

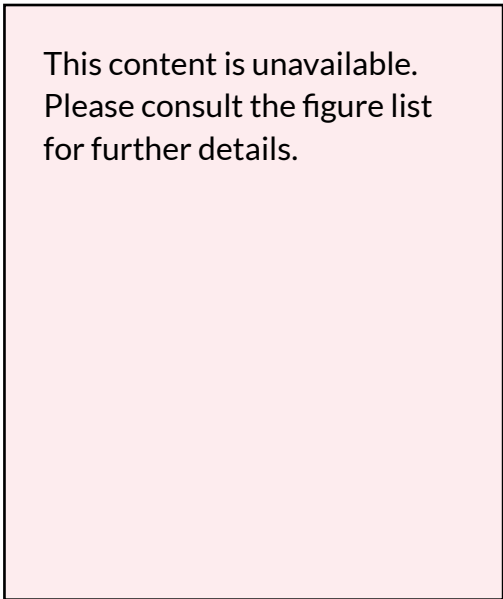


Fig.42. *Gilardi entrance hall and stairway, coloured light from corridor beyond*

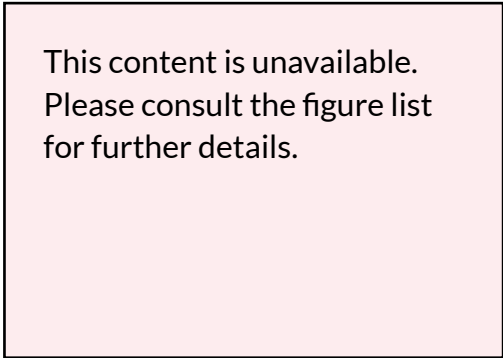


Fig.43. *Gilardi corridor to pool*

Fig.44. (Next page) *Coloured light in Tlalpan Chapel*

This content is unavailable. Please consult the figure list for further details.

COLOURED LIGHT

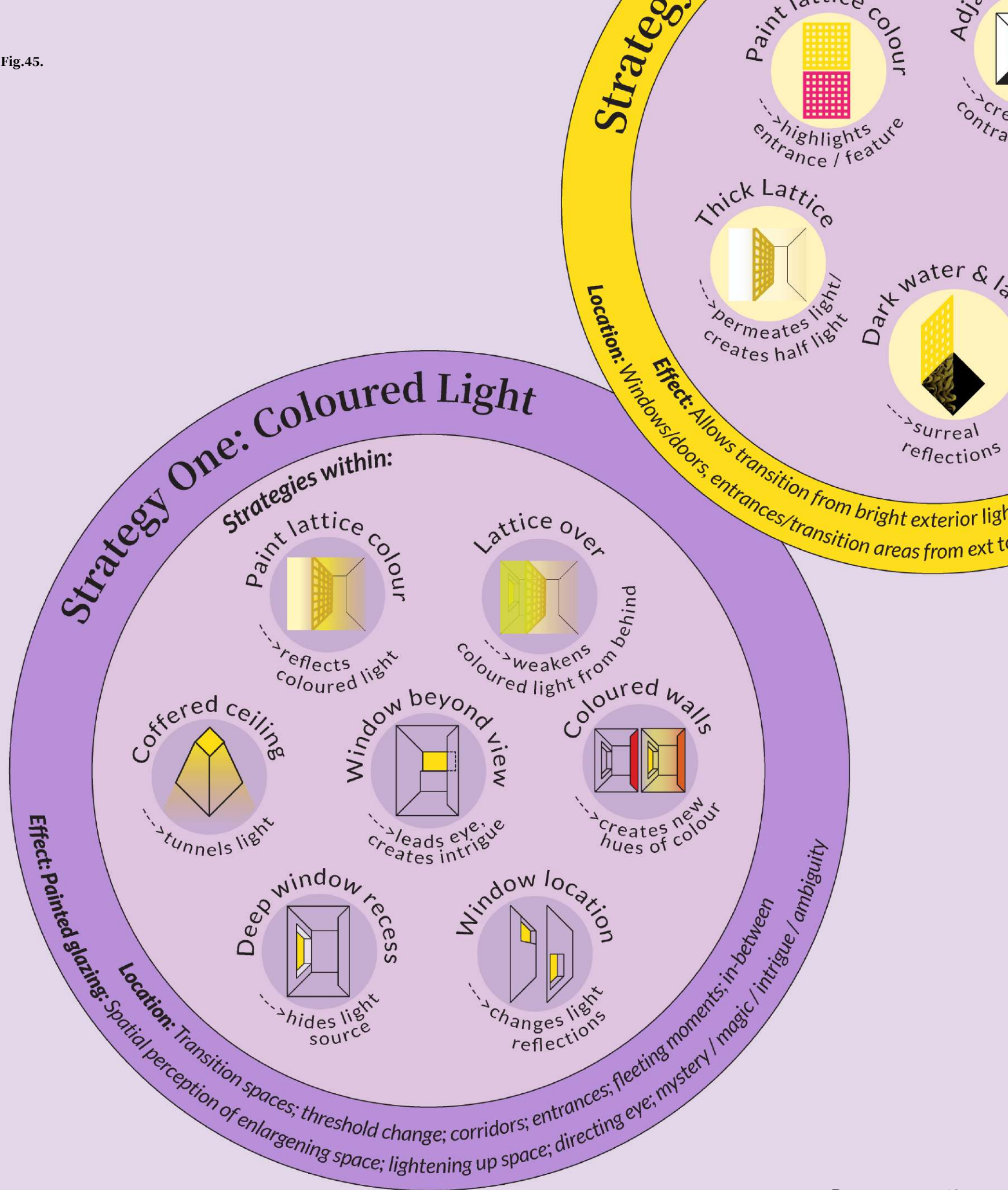
B.02

Strategy One Analysis

Strategy One: Coloured Light Summary

In summary, coloured light is predominantly used by Barragan as a spatial tool to enlarge or lighten narrow or dark spaces. Because of this, it is usually employed in transition areas such as corridors or entrances, further distinguishing a threshold or boundary between larger spaces. He avoids using colour that is too vivid or saturated in living and bedroom spaces and instead uses it to create fleeting moments in these transition spaces. Colour and light become spatial elements to direct the eye or change perception of the space whilst impacting the atmosphere and mood. This architectural strategy must also be accredited to the artists who inspired its formation and development, namely Jesus 'Chucho' Reyes and Mathias Goeritz. The development of Barragan's interest in 'emotional architecture' which drives the intent for using coloured light must also be considered in relation to Goeritz, as well as architects Corbusier and Kiesler. The resulting effect of how Barragan uses coloured light is magic. This magic is derived by the ambiguity in the presence of this light and colour which morphs with the passing of time. Illustrations have been made to summarise the strategy of Coloured Light, and will be done for each of the strategies following as a supportive visual aid.

Fig.45.



PART B. BARRAGAN'S COLOUR/LIGHT STRATEGIES

B.02

Strategy One
Design Experiments (I)

COLOURED LIGHT

These initial experiments engage with model making to explore the strategy "Coloured light".

Not only does this provide a haptic engagement with the literature thus far, its aim is to provoke enquiry for either progression in this research or beyond.

PART B. BARRAGAN'S COLOUR/LIGHT STRATEGIES

B.02

Strategy One Design Experiments (I)



Fig.46. Largest window, before coloured glazing added

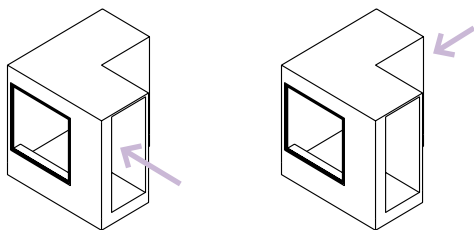


Fig.47. Photograph position with respect to the model

Enquiries Prompted:

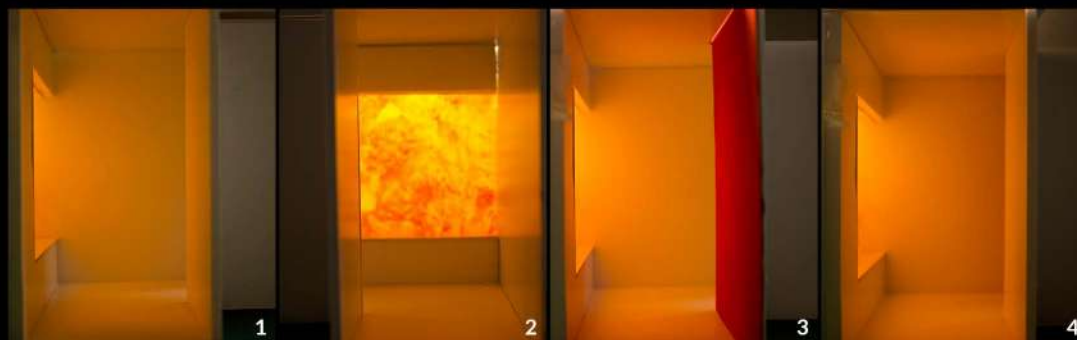
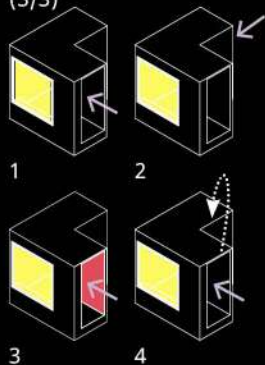
(what changes could be made, and what affect would this have on the atmosphere generated?)

- Window size
- Wall colours / materials
- Window location
- Coffered ceiling size
- Interior spatial volumes change

COLOURED LIGHT

Fig.48. Testing three different window sizes ,locations, and addition of coloured walls

Window size
(3/3)



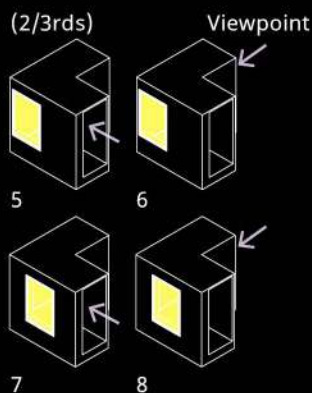
Window: Largest.
Coloured light: Yes - yellow added to light source 'glazing'.

Extension of window beyond alignment with wall opposite creates mystery, leading you around (second image).

Window: Largest.
Coloured light: Yes - yellow.
Coloured walls: Yes - x2 different locations.

Red walls tint light. Red wall (first) very abrupt, aura is less ambiguous. Red wall (second) creates alluring sense that draws your eye around the corner.

(2/3rds)



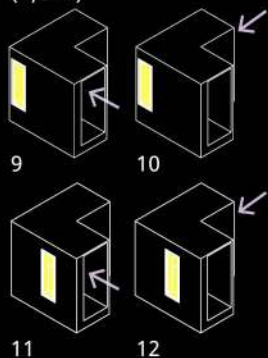
Window: 2/3rd of large, closest to back wall.
Coloured light: Yes - yellow.

Window source adjacent to back wall at 90 degrees creates soft gradient of reflected light. This seems more magical than the examples where source of light is not adjacent.

Window: 2/3rd of large, furthest from back wall
Coloured light: yellow.

Light reflects onto opposite wall, but not so much on back wall. Window extends past alignment of opposite walls, creating intrigue.

(1/3rd)



Window: 1/3rd of large, closest to back wall.
Coloured light: yellow.

Light reflection doesn't hit the opposite wall.

Window: 1/3rd of large, Furthest from back wall.
Coloured light: yellow.

Thin light creates mysterious composition - Strong gradient in light directs eye around corner.

PART B. BARRAGAN'S COLOUR/LIGHT STRATEGIES

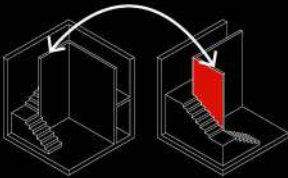
B.02

Strategy One
Design Experiments (II)

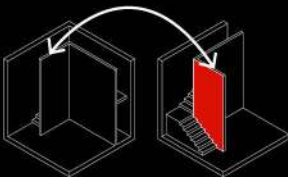
COLOURED LIGHT

This next experiment tests the coloured light qualities for four different sources of light in varying interior spatial layouts. Yellow is used to paint over the light source and remains constant, as does the formal characteristics of ground floor and perimeter walls. Spatial changes include differing height of interior walls, adding / subtracting low ceiling, rotating the stairway and adding a red coloured wall which is tested in each iteration.

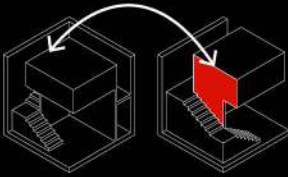
Spatial Layout



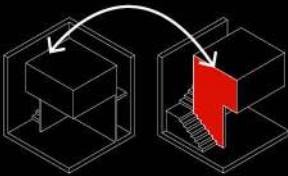
A B (red colour added to wall)



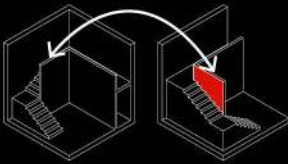
C D



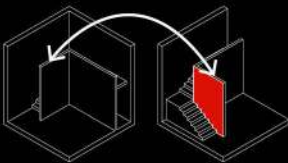
E F



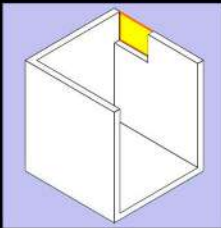
G H



I J

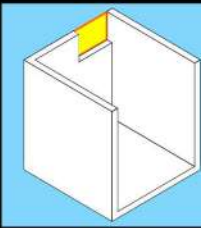


K L



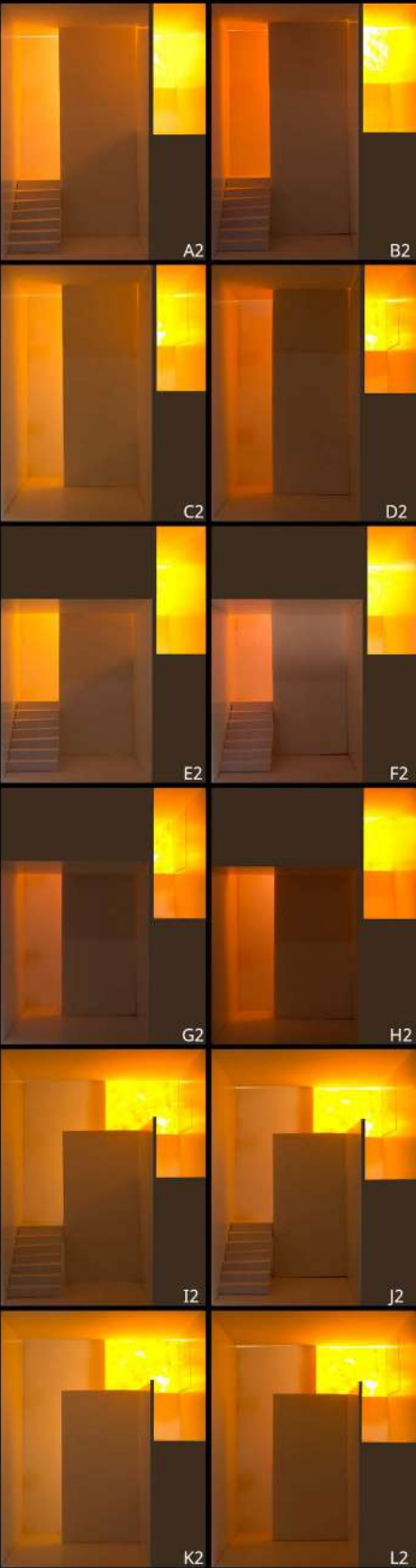
Light Source

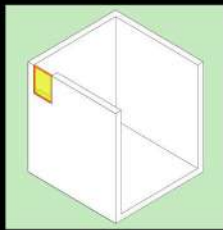
01



Light Source

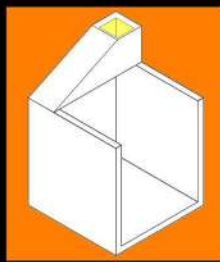
02





Light
Source

03



Light
Source

04

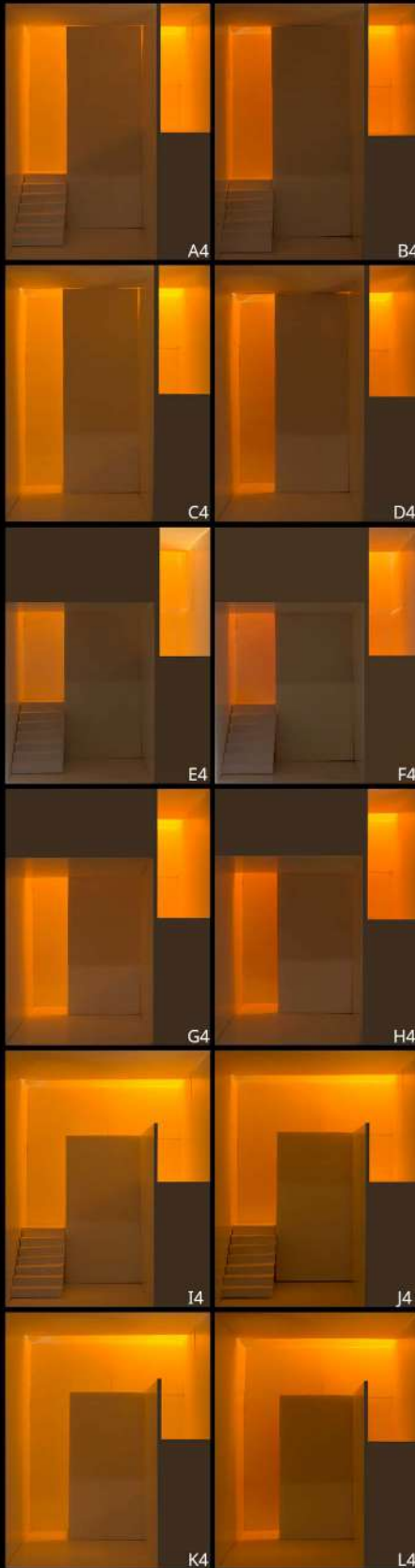
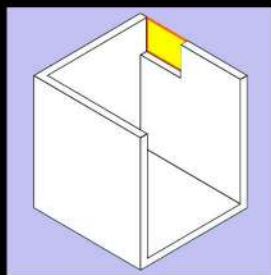
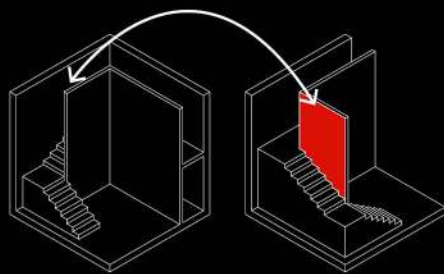


Fig.49. (double spread)



Light
Source

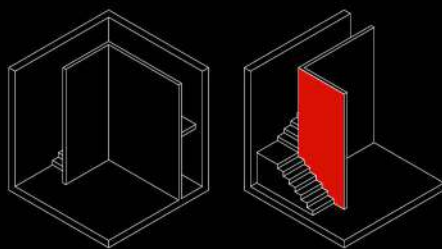
01



(red colour
added to wall)

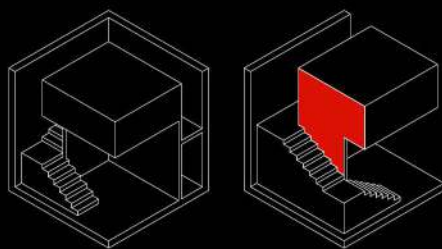
A

B



C

D



E

F



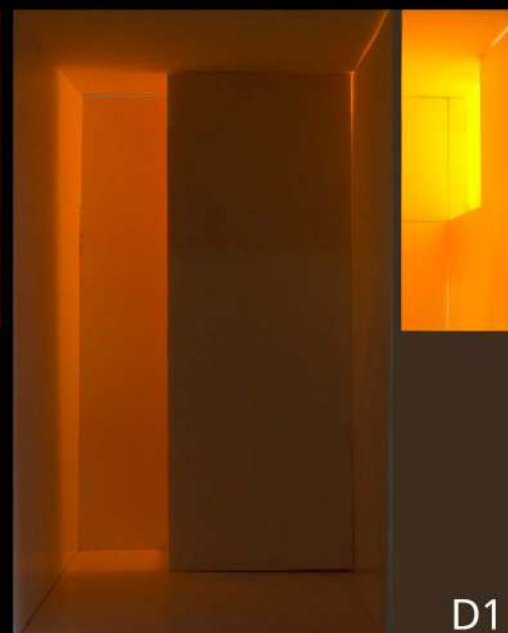
A1



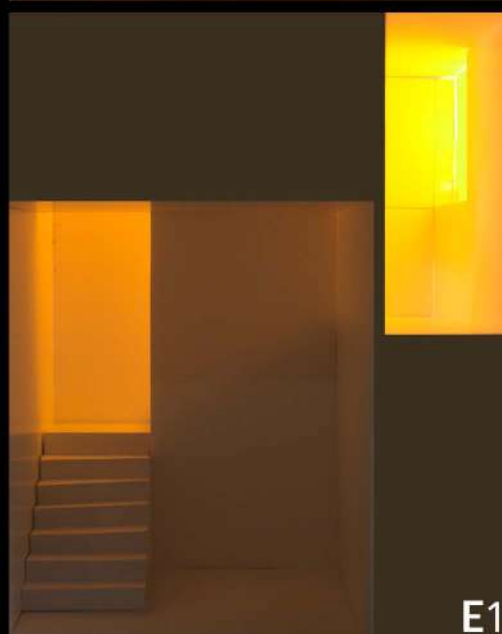
B1



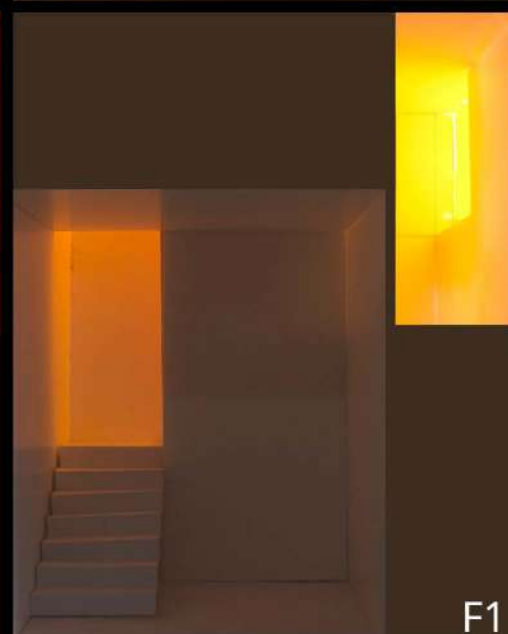
C1



D1

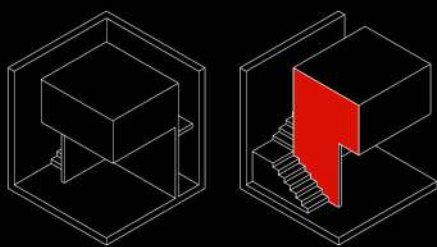


E1



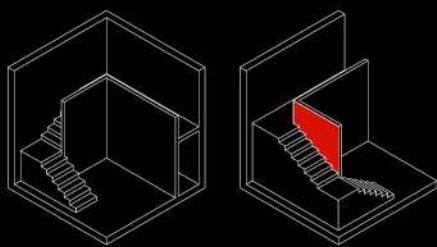
F1

Fig.50. (double spread)



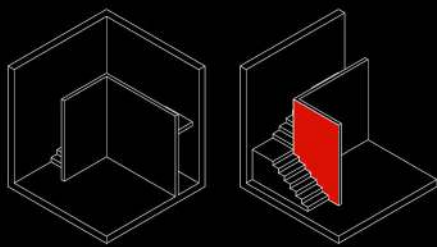
G

H



I

J



K

L



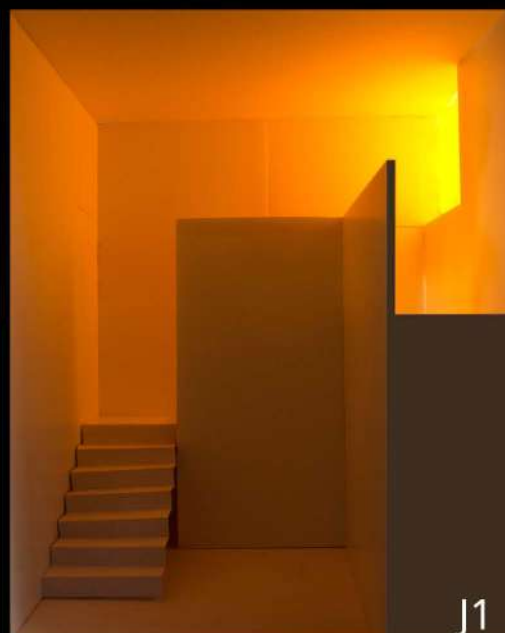
G1



H1



I1



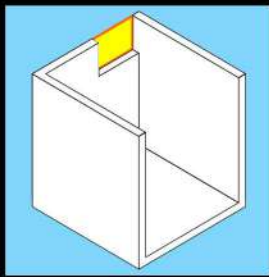
J1



K1

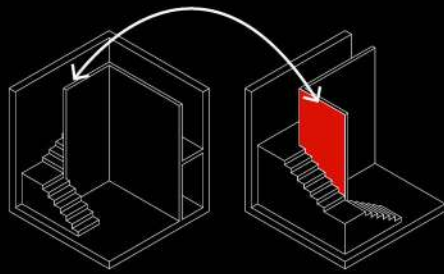


L1



Light
Source

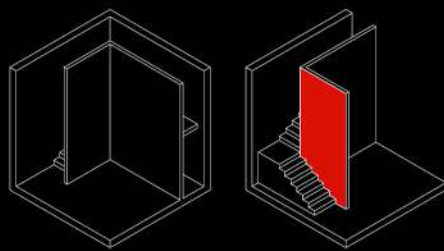
02



A

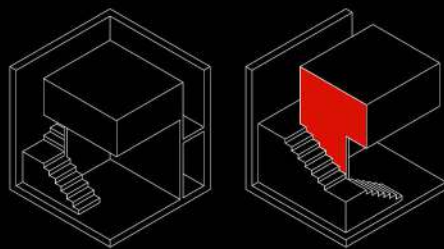
(red colour
added to wall)

B



C

D



E

F



A2



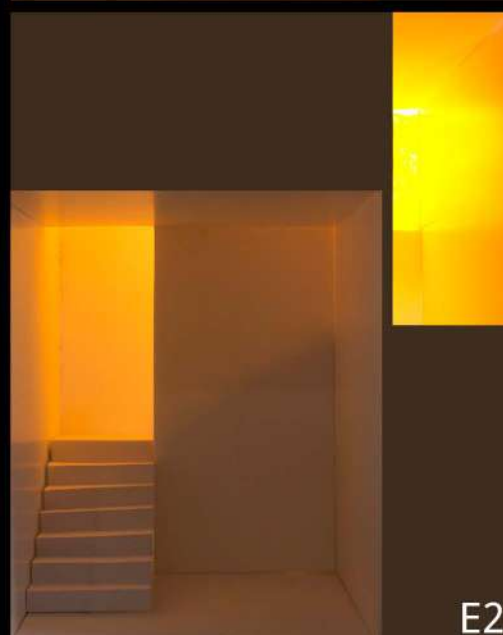
B2



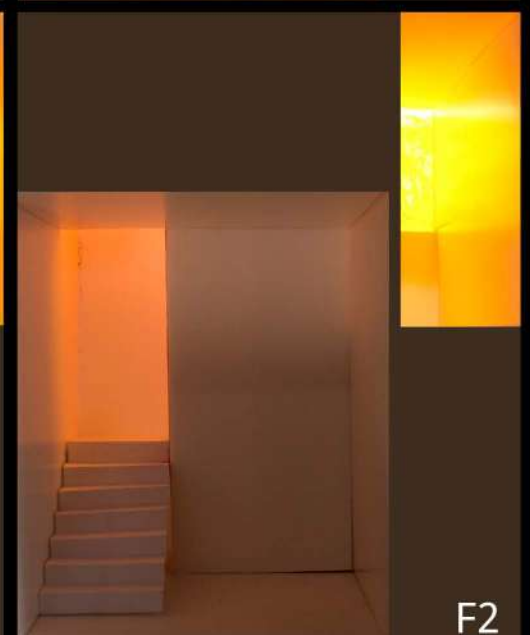
C2



D2

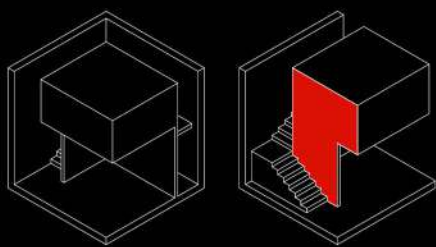


E2



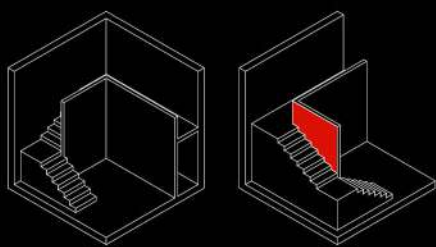
F2

Fig.51. (double spread)



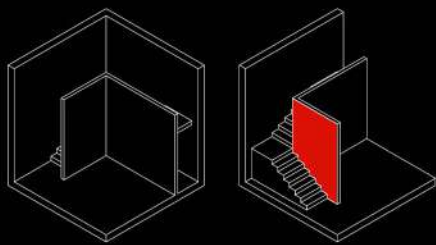
G

H



I

J



K

L



G2



H2



I2



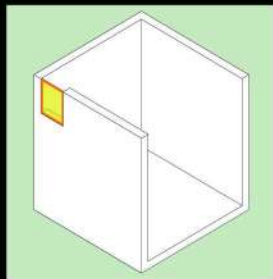
J2



K2

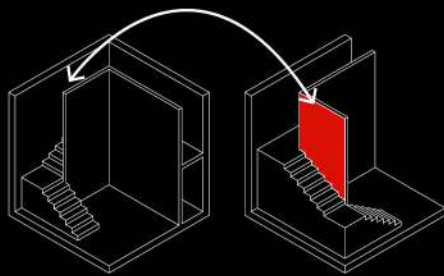


L2



Light
Source

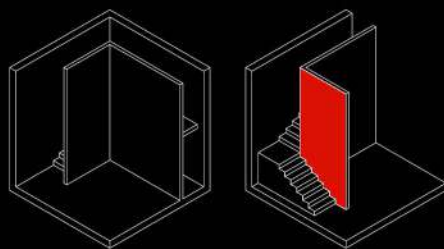
03



(red colour
added to wall)

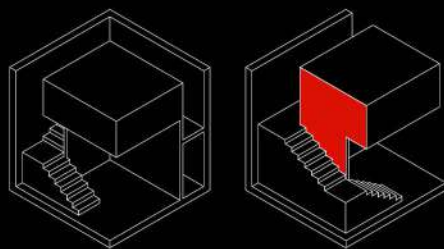
A

B



C

D



E

F

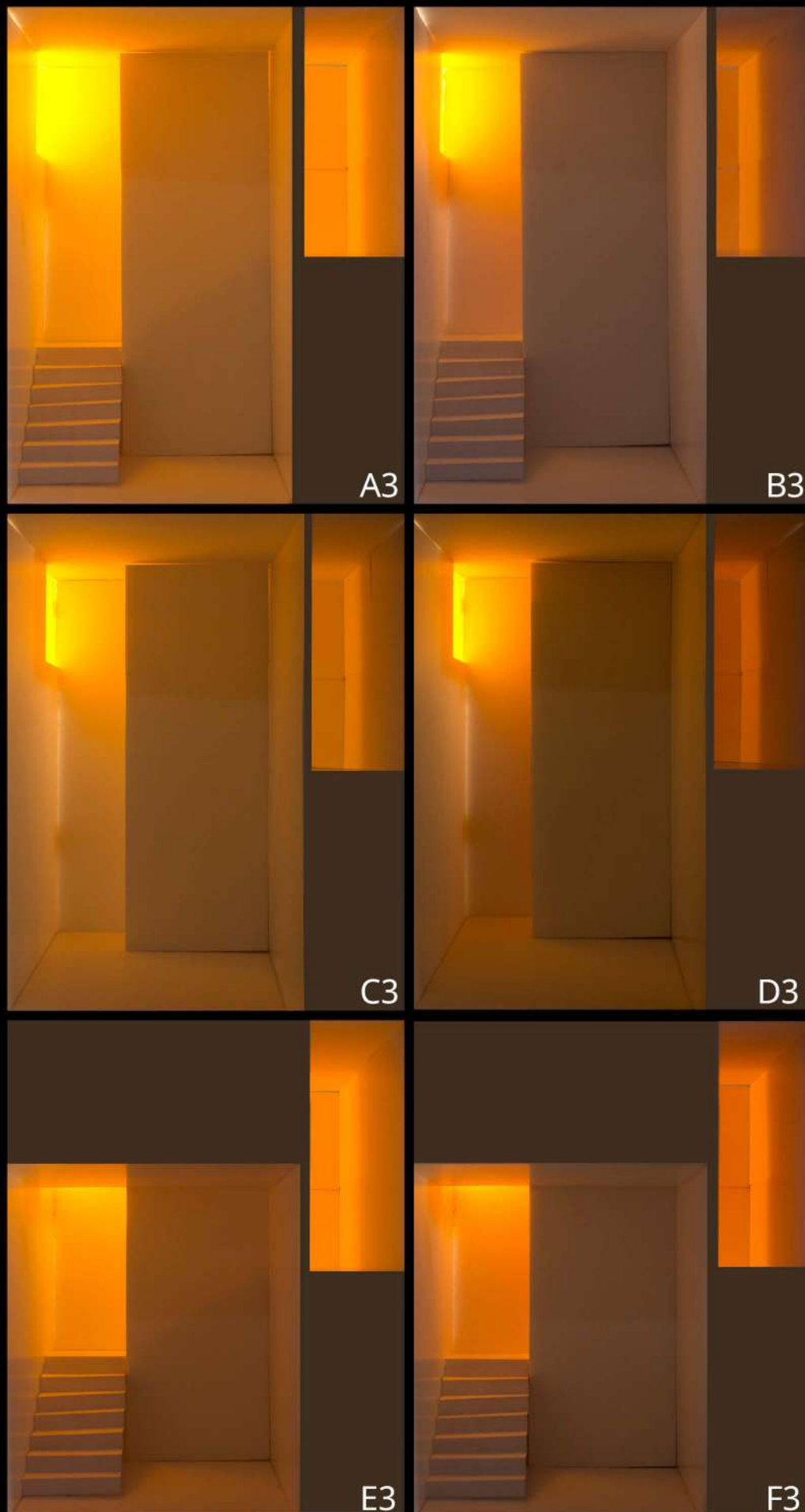
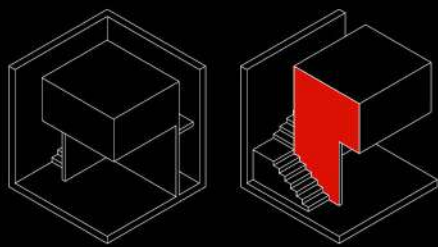
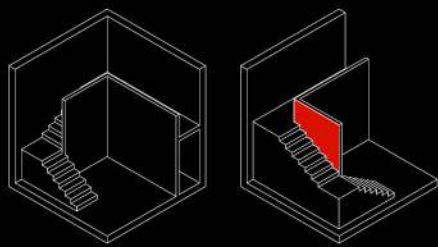


Fig.52. (double spread)



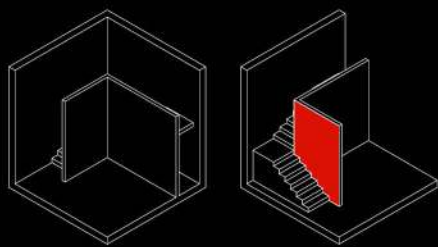
G

H



I

J



K

L



G3



H3



I3



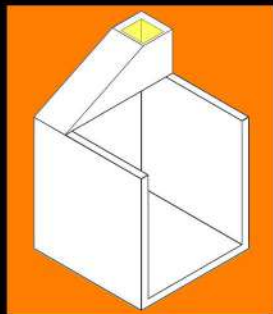
J3



K3

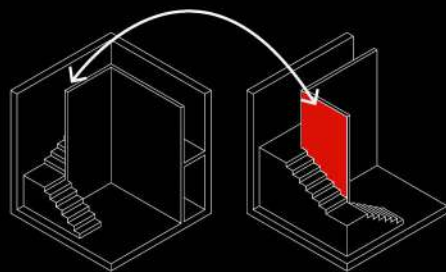


L3



Light
Source

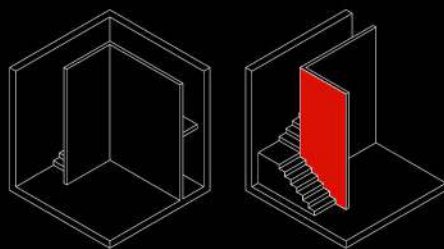
04



(red colour
added to wall)

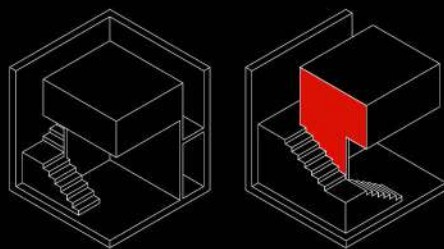
A

B



C

D



E

F

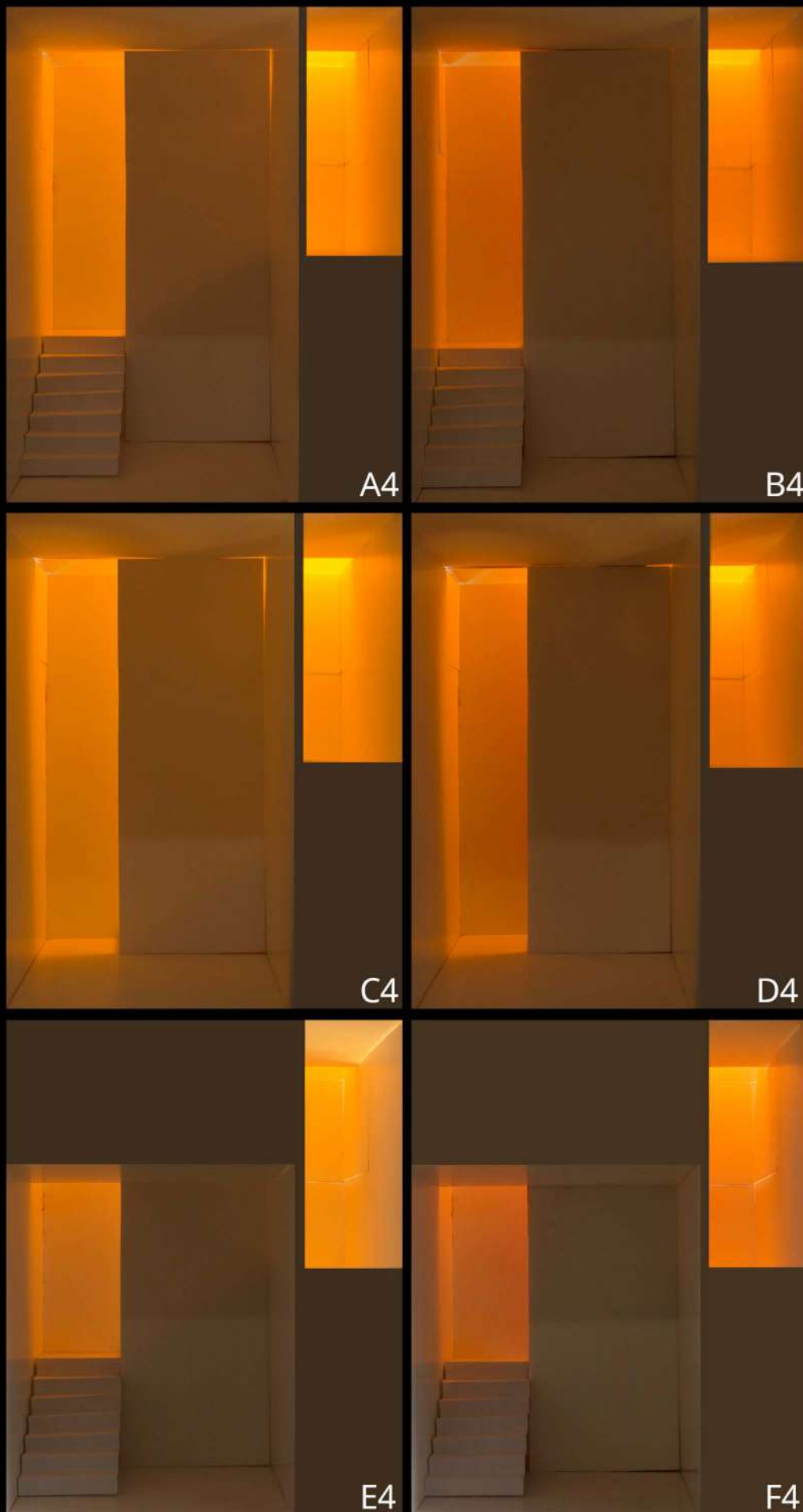
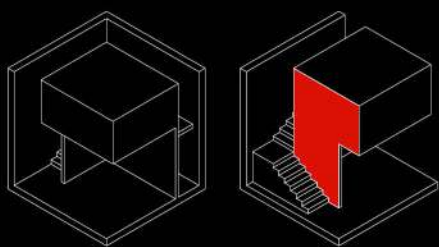
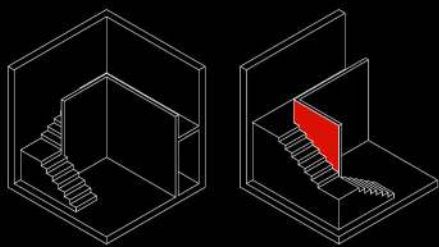


Fig.53. (double spread)



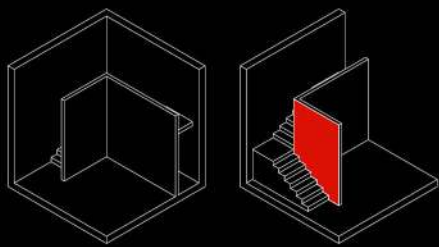
G

H



I

J



K

L



G4



H4



I4



J4

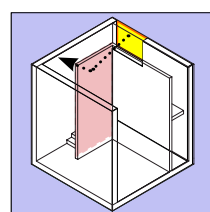
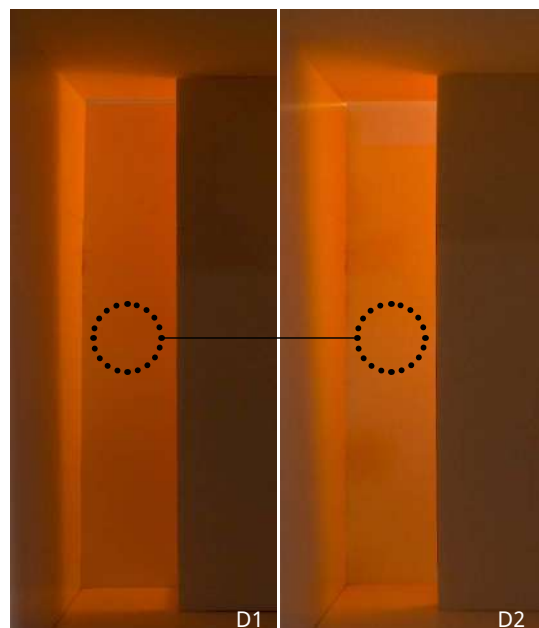
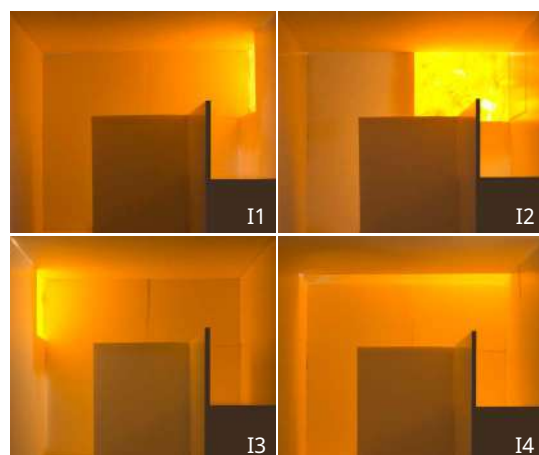


K4

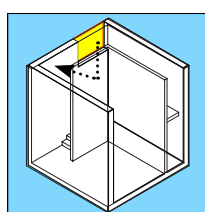


L4

STRATEGY ONE COLOURED LIGHT



Light source 1



Light source 2

Observations / Surprising Moments

- 01 When the source of light is completely out of view, such as with light source 4 (I4), there is a great sense of wonder and mystery. This exists as the mysterious light pulls you around the corner of the stairs and directs your eye up towards the light, trying to discover where the light and colour originates. This wonder occurs both at the bottom and top of the stairs when entering the space, as the source of light is hidden in both sequences. On the contrary, the source of light is usually always visible with the other three sources of light tested (I1, I2 & I3). Source 2 (I2) is the most intense, with the source of light front-on when either entering the stair from the bottom or the top. This intensity detracts from the mystery of light. When the light is side-on or from above, the source of light is less dominant and generates a softer atmosphere.
- 02 When adding the red wall, new orangey-red hues were created from the mixing of yellow and red as the light reflected off the wall. The mystery here, is imagining that as you turn the corner of the stairs you would expect to see an orange surface but only to discover there is none. What was surprising from the tests was that when the light source was at 90 degrees to the surface of colour (light source 1, D1), the reflected light was generally a stronger hue of red than when the source was parallel and opposite to the wall (light source 2, D2).
- 03 When the low ceiling was added to light source 3 (E3, F3) this removed the visibility of the light source, creating an ambiguous vertical gradient from a yellow hue to a more orange hue.

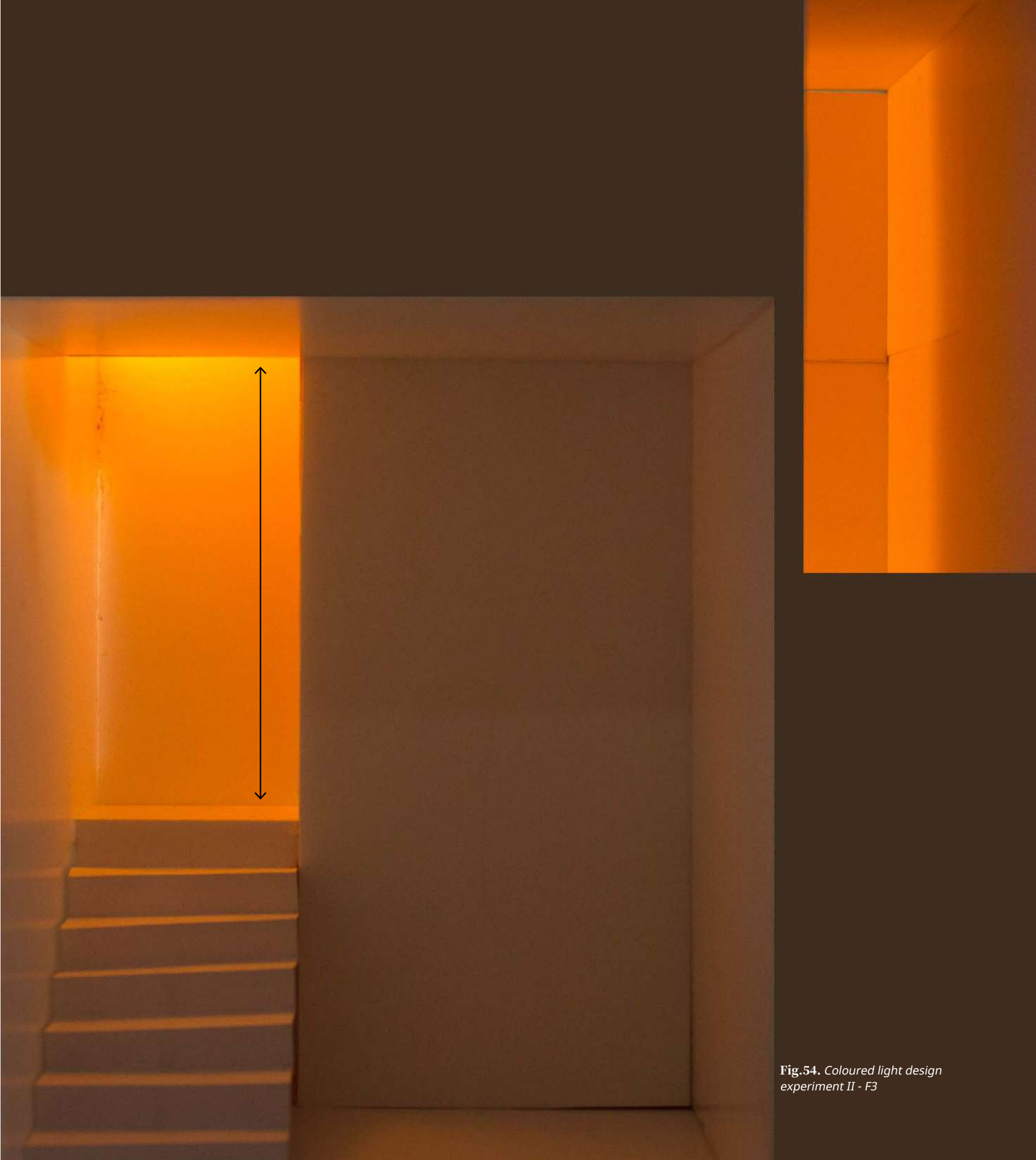


Fig.54. *Coloured light design
experiment II - F3*

STRATEGY ONE COLOURED LIGHT

B.02

*Strategy One
Design Experiments
(II)*

Enquiries Prompted:

Primary

- Wall colours and materials
- Walls with differing colours and materials
- Multiple light sources
- Response to physical site and light angles throughout year

Secondary

- Depth of window recess
- Colour of glazing
- Impact of varying levels of lux



Fig.55. *Coloured light design
experiment II - H4*

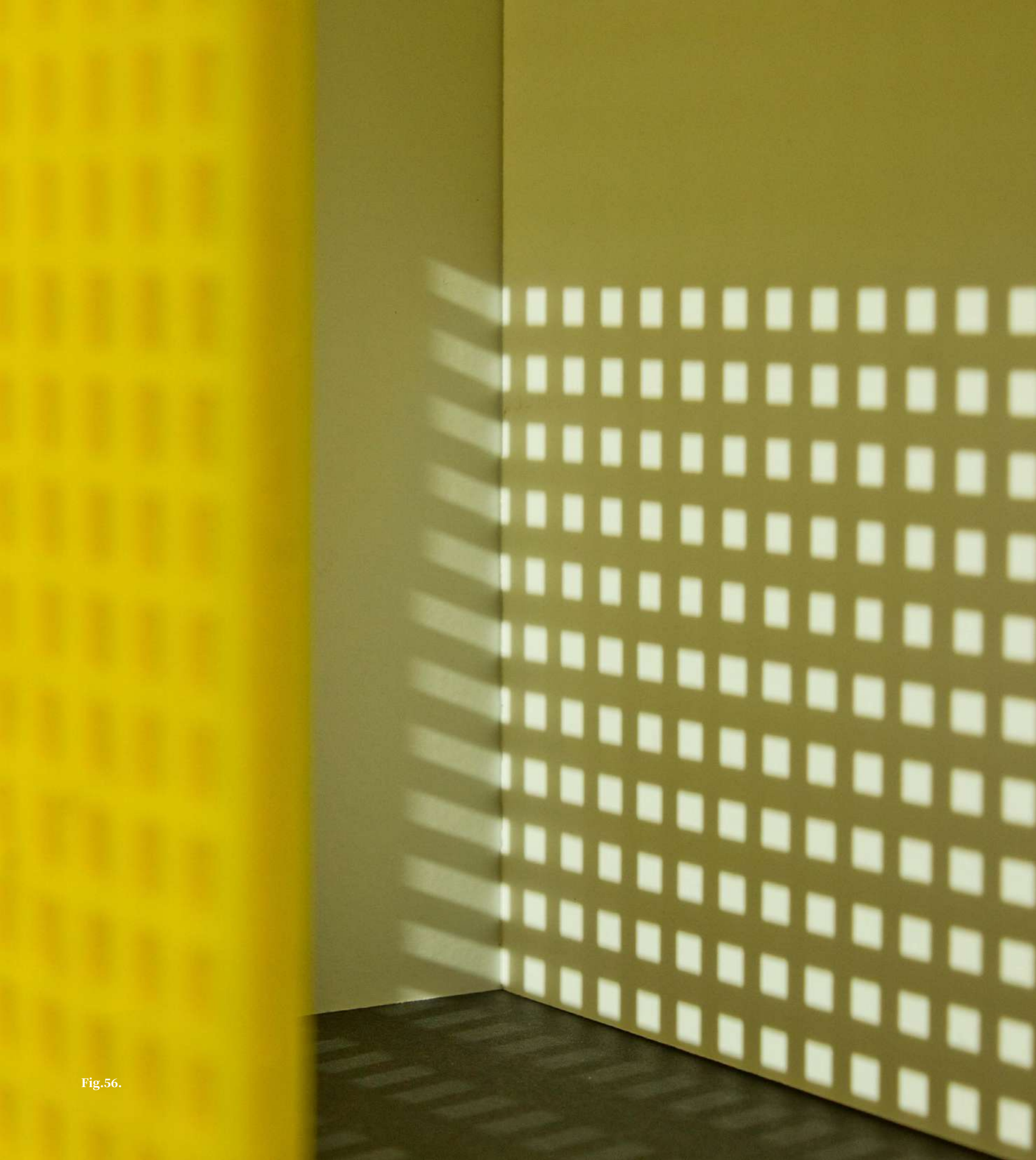


Fig.56.

PART B. BARRAGAN'S COLOUR/LIGHT STRATEGIES

B.03

Strategy Two

Analysis & Design Experiments (I & II)

COLOURED LATTICEWORK

COLOUR, Hell of a Good Thing!

COLOURED LATTICE- WORK

B.03

Strategy Two Analysis

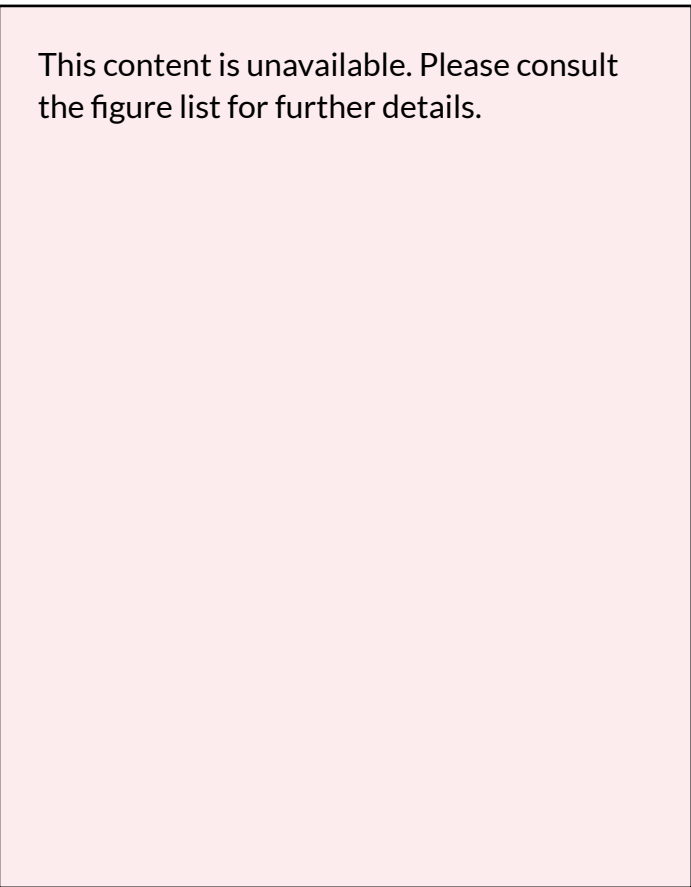


Fig.57. Tlalpan chapel exterior, latticework at entrance

Strategy Two: Coloured Latticework

The use of coloured latticework as window and door elements is Barragan’s second strategy. The timber or concrete latticework is usually placed in entrance areas to provide half-light that allows a smoother transition from the harsh bright light outside to the less intense interior light. This can be linked to Barragan’s search for solitude and his admiration for monastic architecture. The soft shadows of cloisters and religious spaces resonated with Barragan, a Catholic himself, as he sought after the same calming ambience in his own architecture.(Pauly, 39) The half-light created by his lattice manifests this atmosphere, with the pattern itself deriving from grating which separates the sacred from the secular parts of the church. We can identify this relationship as Barragan bookmarked an image of this grating in a book from his extensive personal library.(Pauly, 140) Barragan paints this lattice bright colours that are deeply rooted in Mexico’s rich culture in crafts and art. These splashes of colour often highlight an entrance area and contrast to adjacent monochromatic colours. The darkness behind the lattice voids gives great depth, of which changes as you turn the corner around the window and enter softly lit space.(Barragán and Saitō, 141) The magic here again, is in the coloured light which bounces off the coloured lattice and softly illuminates the space.(Barragán and Saitō, 80)

Capuchinas Chapel Tlalpan 1955

In the case where direct light can enter the lattice window, such as in the Tlalpan chapel, the lattice generates dynamic light patterns cast

This content is unavailable.
Please consult the figure list
for further details.



Fig.58. Chapel interior, magical
linger of coloured light

This content is unavailable.
Please consult the figure list
for further details.



Fig.59. Tlalpan chapel latticework, reflects
coloured light, strong contrast of colour



This content is unavailable.
Please consult the figure list
for further details.

Fig.60. Giorgio de Chirico, Mystery
and Melancholy of a street

on the ground and walls. Barragan has also incorporated lattice-work into the interior of the chapel, where *"the light diffused by the lattice illuminates the main chapel with a corona of gold"* (Barragán and Saitō, 80)", as the coloured glazing behind filters coloured light through the lattice. The rectangular glow of glazing that emits light from behind the lattice creates a peculiar perception of space as it appears to linger magically.(Ambasz, 45) Emilio Ambasz describes that *"the light filtering through the lattice into the main chapel illuminates it with a halo"* (Ambasz, 45)".

Artist / Architect Influence on Theatrical Austerity

This contrast of light and colour to dark shadow can be seen in the work of Italian proto-surrealist Giorgio de Chirico; an artist whom Barragan heavily admired, *"the magic I always sought I found in him"* (qtd. in Zanco and Terragni, 188)". Although there is no evidence that de Chirico directly influenced his lattice windows and contrast of light and colour, we can acknowledge Barragan's appreciation for de Chirico's work that echoes his own. De Chirico's metaphysical artwork grasped Barragan's attention for its mysterious aura, with familiar use of contrast and saturated colours.(Zanco and Terragni, 188) As Keith L. Eggner suggests, *"de Chirico's sharp contrasts of light and shadow and his exaggerated perspectives would have also appealed to Barragan ..."* (Zanco and Terragni, 188)" where *"ultimately, there is in both de Chirico's paintings and the photos Barragan had made of his work a dreamy, nostalgic atmosphere ..."* (Zanco and Terragni, 188)". We could also mention Kiesler and Goeritz here too for being influential of theatrics in shadow and light. Whilst Barragan was in New York discussing the topic of poetic architecture with Kiesler, it is very likely the two also would have talked about Kiesler's interest in theatre and surrealism.(Pauly, 100) As surrealism too, largely surged Barragan's creativity, *"I am a devotee of surrealism (I have always taken the side of people with imagination)"* (qtd. in Zanco and Terragni, 243)". Or we could again consider Goeritz's work on the El Eco Museum where he played with the dramatising emotional experience of spaces that would reflect and engage with the art performed in the building.(Zanco and Terragni, 223) The colour added to Barragan's lattice gives them a sense of mystery similar to Chirico's paintings as it appears to float as a grid of yellow in

COLOURED LATTICE- WORK

space, and its half-light hovers between states of transparency and opacity. A black stone plinth in front of the Tlalpan Chapel entrance creates a surreal composition with its contrasting dark colour that has glossy reflections of the lattice.(Martinez, 111)

Barbara Meyer’s House 1981

In the design for Barbara Meyer’s house, Barragan uses latticework as the entrance door. The lattice that encompasses the design of the entrance door is painted a ‘bougainvillea’ colour, with the door handle standing out in green.(Barragán and Saitō, 140) Bougainvillea is a bright, saturated magenta-hued flower that can be seen throughout Mexico. Again, the colour of the lattice stands out amongst surrounding non-coloured surfaces and creates patterned reflections upon the white ceiling and darker toned flooring. The shadowy reflections are exaggerated through the “glossy coating [that] has been carefully applied on the lattice, and the flooring [that] also consists of glossy tiles (Barragán and Saitō, 140)”. The overall door composition reads as one continuous element, with the extent of the hinged door hidden as it blends in. The 'lattice-work blurs between a door and window, providing security o the home yet allowing the filtering of light to enter. It becomes a rominent feature of the house.

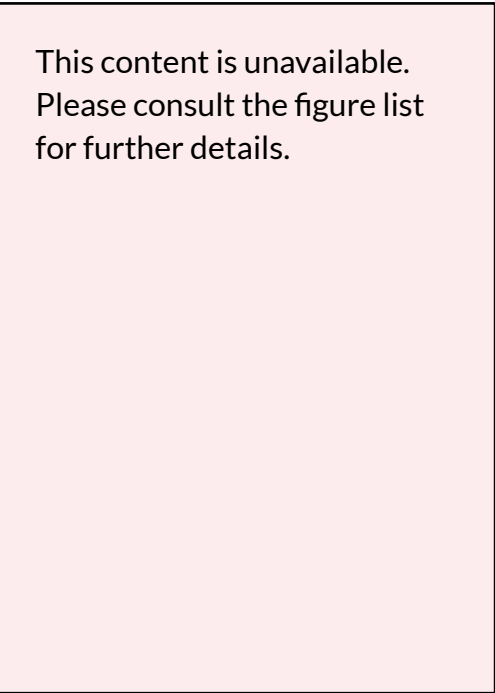


Fig.61. Tlalpan chapel, reflections of
latticework in black stone plinth

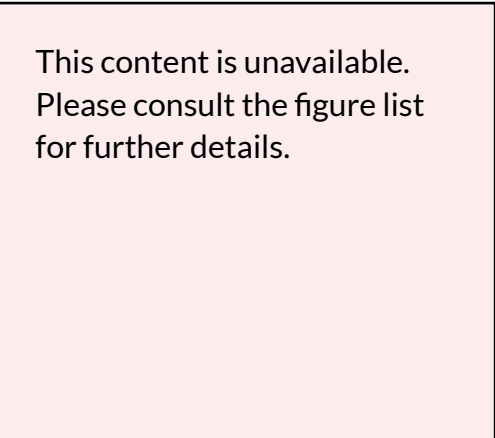


Fig.62. Bougainvillea flower colour

Fig.63. (next page) Barbara Meyer’s
House, latticework entry door

This content is unavailable. Please consult the figure list for further details.

PART B. BARRAGAN'S COLOUR/LIGHT STRATEGIES

B.03

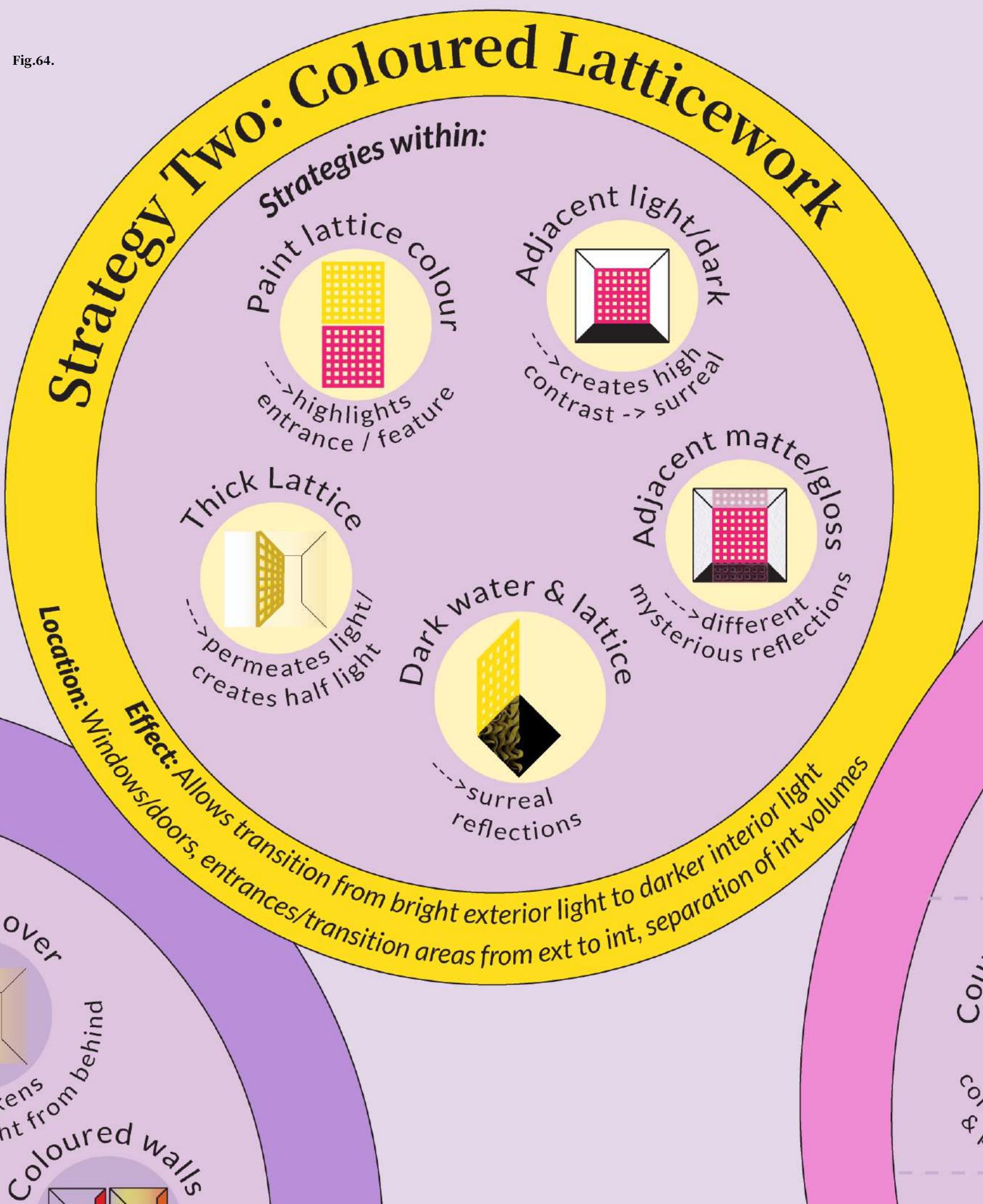
Strategy Two Analysis

Strategy Two: Coloured Latticework Summary

To summarise, Barragan employs this second strategy of coloured latticework in his architecture to create surreal compositions that allow a smoother transition from harsh exterior to interior light. This latticework is usually used in entrance areas where this transition is most dominant, as either a window or door element that becomes a prominent feature of the facade. Barragan has also utilised the latticework to separate interior volumes and diffuse coloured light. The colour painted over this timber latticework is bright and generally in hues of pink and yellow that reflect parts of Mexican culture. These windows and doors become surreal pieces of art as they appear suspended amongst adjacent non-coloured planes. Shadowy reflections are cast upon these surfaces in mysterious ways, corresponding to the contrasting finishes in matte and gloss, light and dark, rough and smooth.

COLOURED LATTICEWORK

Fig.64.



PART B. BARRAGAN'S COLOUR/LIGHT STRATEGIES

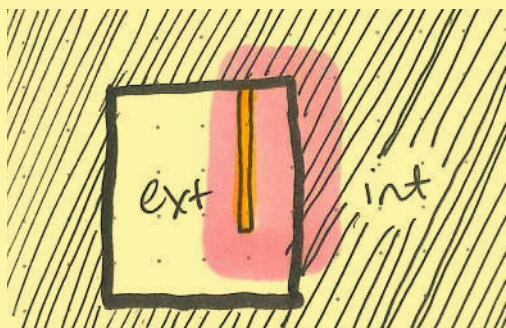
B.03

Strategy Two
Design Experiments (I & II)

COLOURED LATTICEWORK

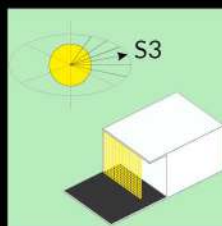
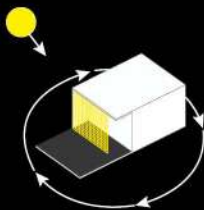
This next experiment (I) tests the light/colour qualities for three different thicknesses of latticework in a space that is rotated incrementally by ten degrees with the same light source angle/location.

For each scenario, II tests a wider distance between the exterior solid wall parallel to the latticework. These experiments mimic the use of lattice to separate exterior from exterior space such as in the Tlalpan Chapel where Barragan used lattice in a courtyard separating a corridor at the perimeter edge.



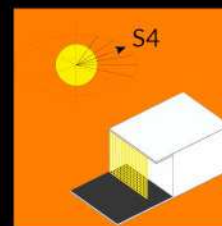
COLOUR, Hell of a Good Thing!

S2
Design
Experiment I
Wall parallel to
latticework distance
1.2m



Angle of
rotation to
sun angle

01

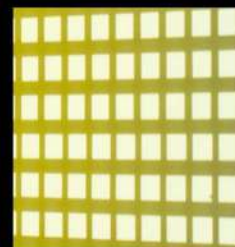
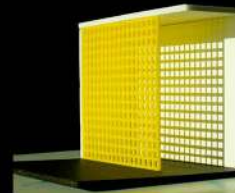
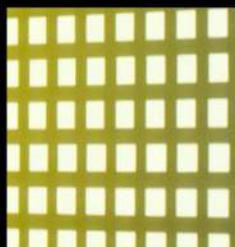
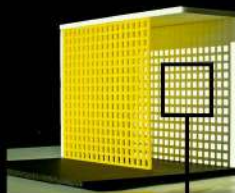


Angle of
rotation to
sun angle

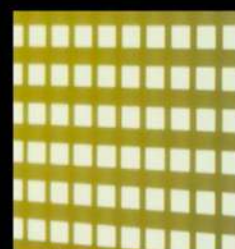
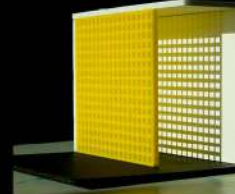
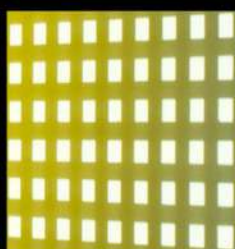
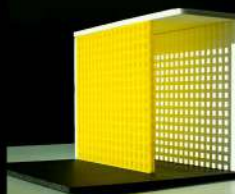
02

Lattice
Thickness

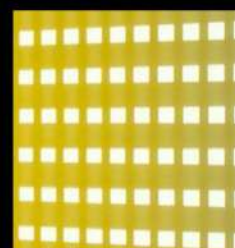
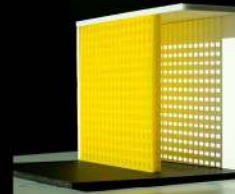
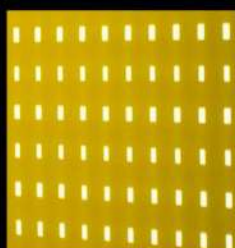
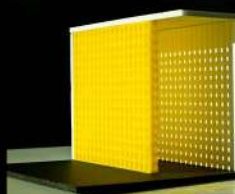
T1



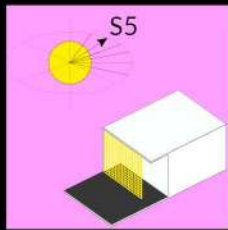
T2



T3

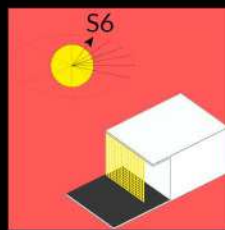


Coloured Latticework



Angle of rotation to sun angle

03



Angle of rotation to sun angle

04

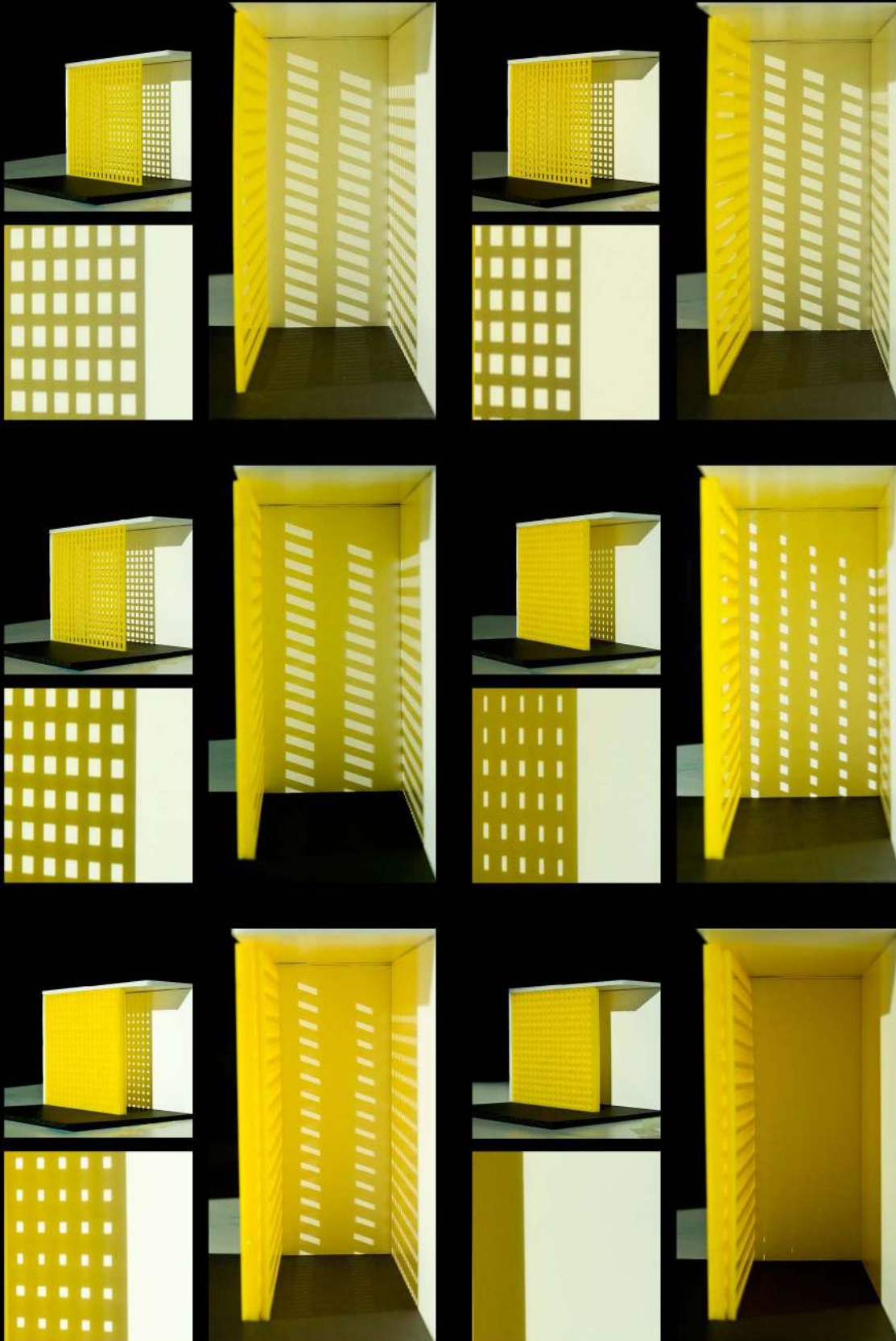
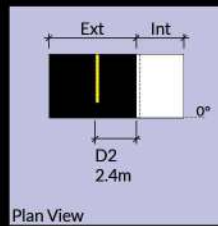
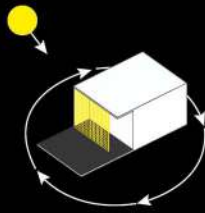


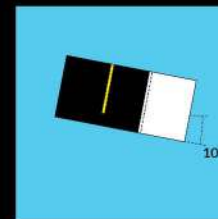
Fig.65. (double spread)

S2
Design
Experiment II
Wall parallel to
latticework distance
2.4m (D2)



Angle of
rotation to
sun angle

01



Angle of
rotation to
sun angle

02

Lattice
Thickness

T1



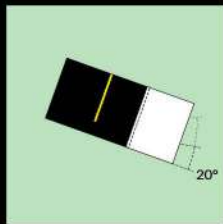
T2



T3

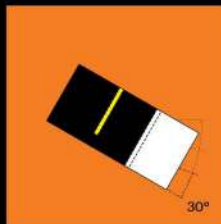


Coloured Latticework



Angle of
rotation to
sun angle

03



Angle of
rotation to
sun angle

04

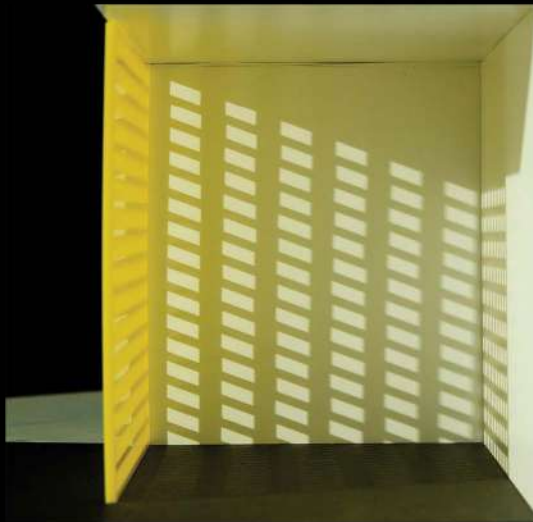
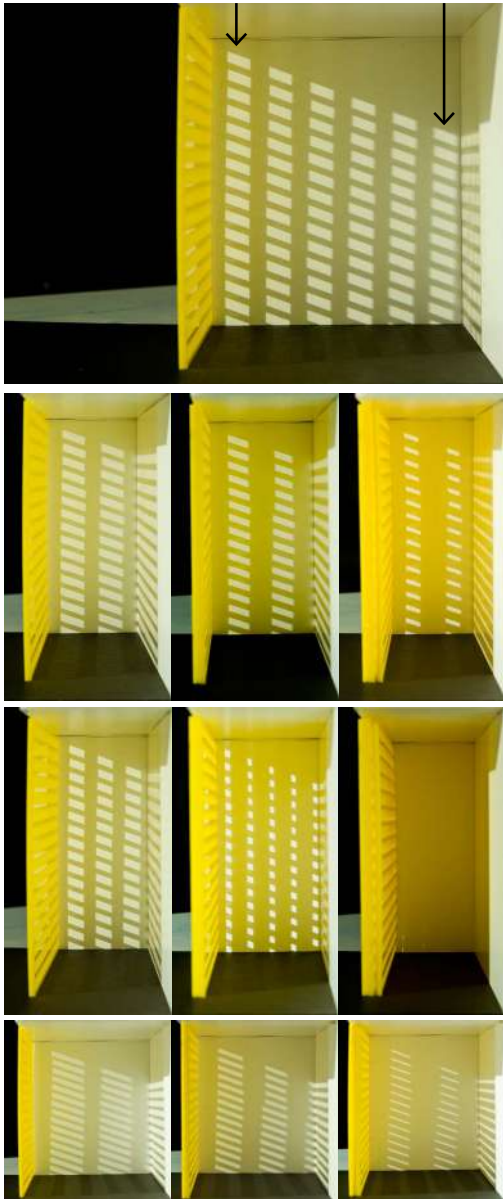


Fig.66. (double spread)

STRATEGY TWO

COLOURED

LATTICEWORK



Observations / Surprising Moments

- 01 In part b of the coloured latticework experiments where the distance between the latticework and opposite white wall was increased, the shadowy reflections nearer this solid wall became softer. This gradual change of the void's crisp shadows getting softer and softer, best seen on the wall perpendicular, creates the sense of a muted, slowed-down atmosphere.
- 02 Unexpectedly, the difference of thickness of the latticework greatly impacted on the intensity of the reflected coloured light. As the thickness increased, the intensity of the reflected yellow light bouncing off the latticework also increased. The greater thickness of the latticework enabled this due to the increased surface area of all four faces of the voids. Further, when the opposite white wall was closer as in part i of the experiment, the intensity of this reflected yellow light was stronger than when the wall is further away as in part ii. In the latter experiment, the coloured light's gradient from strong to weak is more notable as the perpendicular wall gives a wider expanse for the light to diminish. This again, similar to 01, creates a soft transition across the space. The thickness of the wall also impacts the shadow's shape. As the latticework's thickness increased, so too did the shaded area, making the shadow's voids either decrease in height and/or width depending on the location of the sun. As the shadowy voids differ from the reality of the latticework, mystery is generated.



Fig.67.

STRATEGY TWO

COLOURED

LATTICEWORK

B.03

Strategy Two
Design Experiments
(I & II)

- 03 In certain combinations dependent on thickness, angle of sun and positioning within the space, light reflections can be seen on the ground surface. These coloured reflections of the latticework appear mysteriously as fleeting moments. The reflected solid parts of the lattice appear thinner and the void spaces larger. The edges curve, contrasting to the sharpness of the latticework and its shadow on the opposite side. There is an active, dynamic play between these continually transforming shapes of shadows and reflections.

Enquiries Prompted:

Primary

- Size of Latticework
- Scale in relation to other building elements
- Adjacent surface materials – impact on reflections

Secondary

- Orientation i.e. horizontal vs vertical
- Dimensions and proportions of lattice members i.e. void size vs lattice
- Lattice pattern i.e. grid pattern vs criss-cross vs slats
- Materials
- Colours
- Tectonics

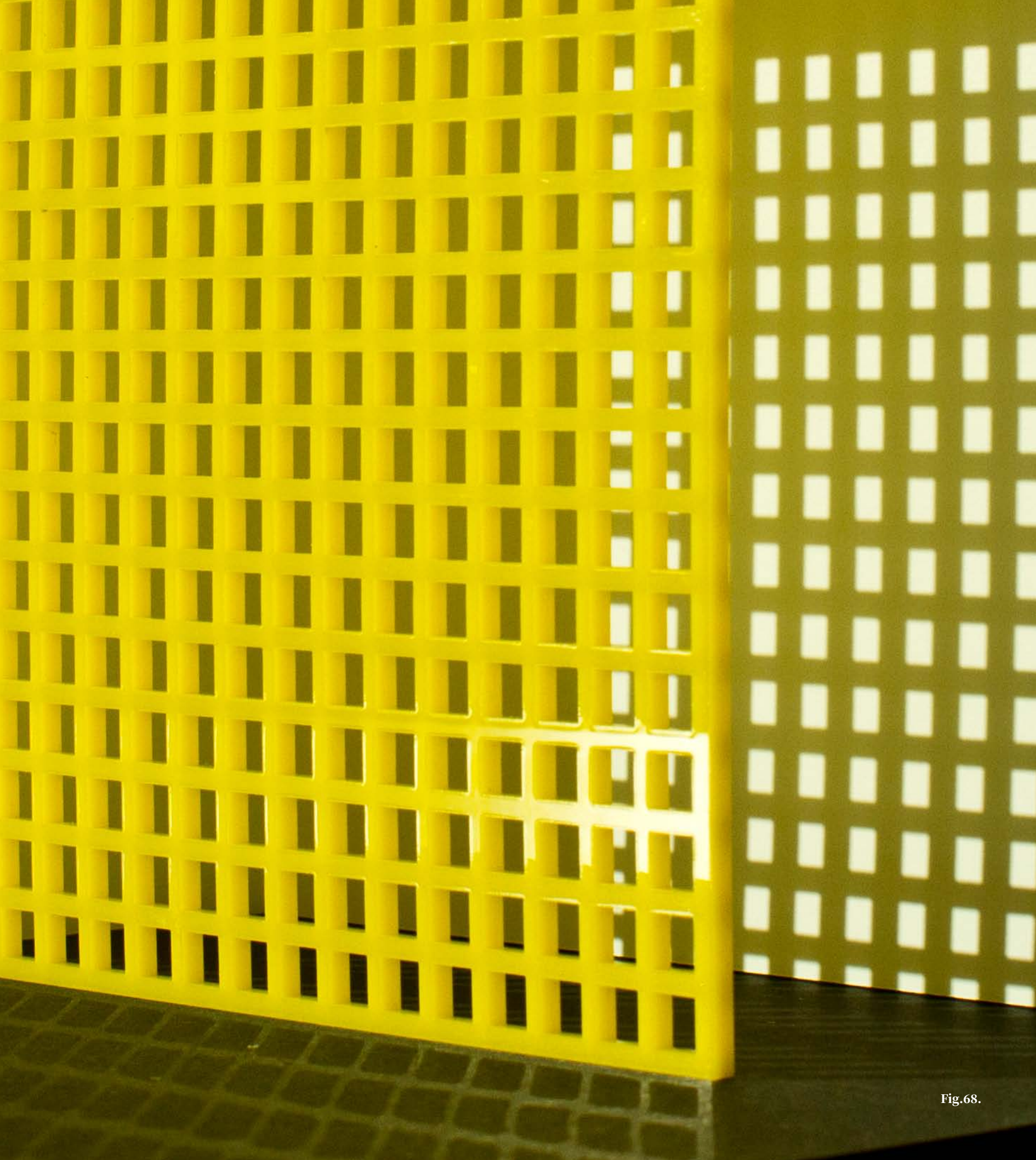


Fig.68.



Fig.69.

PART B. BARRAGAN'S COLOUR/LIGHT STRATEGIES

B.04

*Strategy Three
Analysis & Design Experiments (I & II)*

PLANES OF COLOUR

COLOUR, Hell of a Good Thing!

PLANES OF COLOUR

B.04

Strategy Three Analysis

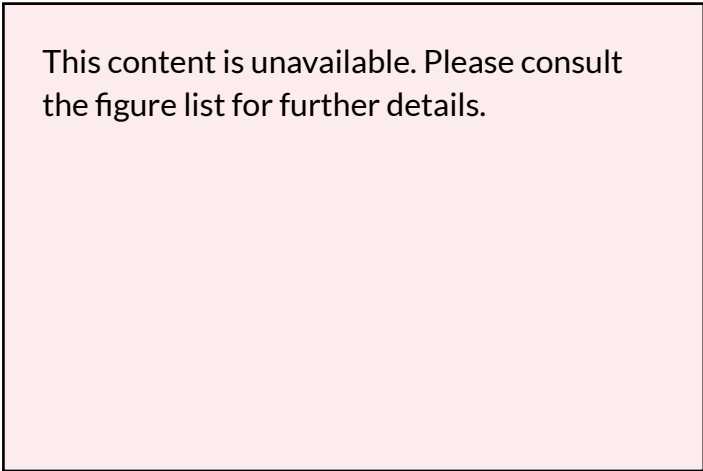


Fig.70. House and studio roof terrace



Strategy Three: Planes of Colour

Planes of colour are Barragan’s third strategy in which *“walls are an essential tectonic feature of Barraganian architecture and are clearly distinguishable by their materials and colours (Pauly, 182)”*. Barragan’s coloured walls are described by Jose Antonio Aldrete-Haas to be of greater scale and volume to the flat and pure wall of Modernism. (Zanco and Terragni, 279) As Barragan considers *“an essential condition of architecture [to be] the creation of emotions ... (Zanco and Terragni, 279)”*, he added this colour to *“give [space] a touch of magic(Zanco and Terragni, 279)”*. Water and light also have key relationships with his planes of colour, as Martinez exclaims; it is *“not possible to speak about the planes of Barragan without discussing two of his favourite “materials”: water and light (Martinez, 134)”*.

House and Studio 1948

This discussion begins with Barragan’s own House and Studio, in which Ambasz praises *“Barragan’s masterful control of planes [that] is superbly evidenced in the strong walls of the highly abstract roof terrace (Ambasz, 34)”*. Pauly also highlights the sculptural qualities of this outdoor space, where bright hues of *“... the roof terrace in the Studio House, girded by different-height walls and topped by lofty parallelepiped structures, evoke the solid shapes of ancient towers (Pauly, 196)”* and generates a monumental aura. As in this roof terrace, and courtyards within his other house designs, the coloured planes enclose empty spaces that direct your gaze up to the sky and create privacy and seclusion.(Pauly, 196, 199)The spaces very much align to the private and inverted enclosures of Mexican lifestyle.

This content is unavailable.
Please consult the figure list
for further details.

Fig.71. Gilardi courtyard

This content is unavailable.
Please consult the figure list
for further details.

Fig.72. Tlalpan chapel

This content is
unavailable. Please
consult the figure
list for further
details.

Fig.73. Galvez patio



(Pauly, 156) They are airy geometric compositions that trap light and shadow, and are enhanced by contrasting colour schemes where vivid colours meet stark whiteness. As bright hues of orange and pink intersect with white in Barragan's own House and Studio, so too does pink and purple in the courtyard of Casa Gilardi.(Pauly, 196)

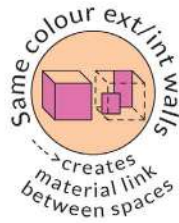
Capuchinas Chapel Tlalpan 1955

The Tlalpan Chapel previously discussed has *"walls roughly textured, painted in a luminous lemon colour; the floors, of large wooden planks, release a honey-colored glow (Ambasz, 45)"*, yet is how these surfaces respond and change with the sun's light that gives the space such wealth.(Ambasz, 45) It is interesting to note that although the space is described to have such an immense atmosphere of coloured light, in the main chapel only two of the walls are in fact painted, resulting in varied colour throughout the space at different times of day. It is the *"unforgettably vibrant orange light in the main chapel [that] makes more prominent the rough texture of the chapel's walls ... (Barragán and Saitō, 80)"*, highlighting their depth and imperfections.(Barragán and Saitō, 80)

Galvez House 1955

In the Galvez house, colour is used to create a cohesion between exterior and interior.(Pauly, 183) Colour binds interior and exterior environments by opening large windows onto walls of coloured patios, courtyards and terraces. Not only does this channel soft light inside, allowing interior spaces to feel brighter and larger, the colour from the wall is also reflected onto interior surfaces. In the Galvez House, one of the bedrooms is illuminated with a yellow glow from a terraced wall. On the ground floor, one of the living areas experiences different hues of coloured light that changes as the day progresses, reflected from high pink walls that surround an adjacent patio pool. The space becomes *"... slotted between interior and exterior ... (Pauly, 164)"* as *"the interplay of light alters one's very perception of the patio; it's corners seem to melt away when the walls are illuminated by the sun and its depths are accentuated when the area is plunged into dimness (Pauly, 164)"*. The coloured patio walls exceed being primarily for exterior enjoyment, as its role extends to

PLANES OF COLOUR



This content is unavailable. Please consult the figure list for further details.

Fig.74. Galvez interior

This content is unavailable. Please consult the figure list for further details.



LAS ARBOLEDAS 1958-61



Fig.75. Las Arboledas Muro Rojo

serve the interior space.(Pauly, 163-164) The emotive effect of these spaces depends on the staging of these coloured planar surfaces and how they foster play between light and shadow. Barragan also painted the same bright pink colour on exterior and interior surfaces, further creating a material link between the architecture's interior and exterior.

Equestrian Trilogy 1/3 Las Arboledas 1958-61

Luis Barragan and some of his colleagues bought land in Mexico's Las Arboledas subdivision (Ambasz, 63). Barragan had a great affinity for horses and developed the residences specifically for horse lovers (Barragán and Saitō, 52). The work of Barragan's to be discussed here for his walls of colour encapsulate what Emilio Ambasz describes as his "*equestrian trilogy* (Ambasz, 91)". In chronological order, this trilogy comprises the entrance and trough of Las Arboledas, the fountain Fuente de los Clubes, and the stable, horse pool, swimming pool and house for Mr. and Mrs. Folke Egerstrom. In each example, Barragan employs colour to evoke magical sensations with walls of which scale is exaggerated to suit a horse. The unusual play with these proportions gives their presence a sense of monumentality and mystery that is often discussed in parallel with the painting of Surrealism.(Ambasz, 91) We are immediately exposed to this mystery within Las Arboledas at the subdivision entrance in which a long Muro Rojo (red wall) protrudes. The element of mystery lies within two key aspects: a uniform bold colour that divides the wide blue sky from tall green trees, and a deliberate fold in the middle of the wall that creates a sense of elongated continuity that disappears over the horizon. Further along is the Plaza del Compa (Plaza and Fountain of the Trough) in which a 30m long cistern echoes the dramatic length of the Muro Rojo, slicing through the avenue's long axis.(Barragán and Saitō, 62) At the end of the cistern, designed as a trough for horses, a coloured wall recedes into the darkness as a white wall of great scale advances. Saito describes that, "*when the sun is very bright, the silhouettes of the eucalyptus trees are projected on the white wall like shadowy pictures* (Barragán and Saitō, 62)". Although white, the wall becomes coloured as it mixes with the sun. The essence of theatre arises again. Barragan plays with the dramatising effect

This content is unavailable.
Please consult the figure list
for further details.



Fig.76. Las Arboledas Plaza del Compa

This content is unavailable.
Please consult the figure list
for further details.



Fig.77. Fuente de Los Clubes

of scale, the changing hue of the sun's warmth and the tracing of time as it comes and goes. This, mixed with the trough's dark water reflections and presence of wandering horses creates very magical qualities. This tranquil, yet strange ensemble has caused Emilio Ambasz to consider how *"Magritte would have appreciated its Surrealist qualities ..."* (Ambasz, 63)". These white and red walls exaggerate different proportions, yet similarly emit a sense of wonder as one reaches to the sky and the other, to the horizon. Both set the stage for shadows to cast upon and mystery to be perceived.(Ambasz, 63)

Equestrian Trilogy 2/3 Fuente De Los Clubes / Fuente De Los Amantes 1963-64

Embasz again references surrealism when discussing Barragan's fountain for horses, Fuente de Los Clubes, or Fuente de los Amantes, *"De Chirico, Delvaux and Magritte must always have known that this fountain existed"* (Ambasz, 73)". We again find block coloured walls upon which shadow falls, of trees, and of horses, creating an enchanted space for the latter to canter and cool off in the fountain's pool. The juxtaposition of red-earth and pink walls reminds us of Barragan's curiosity to play with the pairing of different coloured walls, like those on the rooftop of his house and studio.(Barragán and Saitō, 52) Ambasz makes a comparison between Barragan's and Mies Van der Rohe's architecture, whereby saying *"like Mies's Barcelona Pavilion, this [fountain] composition achieves a superior sense of balance by dynamically counterpoising visual elements, rather than by resorting to formal symmetries"* (Ambasz, 73)". Although Barragan never liked to compare himself to Van Der Rohe's work as he was frustrated by his excessive use of glass that provided little privacy, it is difficult to deny the influence that European Modernists had upon him.(Zanco and Terragni, 219) As exemplified in his Equestrian Trilogy, Barragan's compositions transform into abstract spatial geometries as walls differ in height and become dominant planes slicing through space. These compositions mimic that of the De Stijl Group, as Pauly refers to the walls in Las Aboledas, Los Amantes and San Cristobal in which *"their profiles (sometimes split in two) become lines, and their surfaces are shifted in 3 dimensions, resembling a compositional process theorised about by De Stijl"* (Pauly, 210)". As in

PLANES OF COLOUR

this case, the pink wall appears as a horizontal line behind the walls in red. The red walls then drape over one another and a thinner line is formed where the top of one wall extends past its point of intersection, shooting out water into the pool below.(Barragán and Saitō, 52)

Equestrian Trilogy 3/3 San Cristobal 1967-68

Textures are incredibly important in all of Barragan’s architecture, where “the surfaces of the walls are never smooth; rather, they are coated in thick plaster, giving rise to the solid, palpable texture (Pauly, 183)” that is rough and alive. Martinez discusses Barragan’s attraction towards the beauty inherent in the way materials age with time and react differently to the weather. He describes how this ability to capture the essence of time gives materials a magical spirit, where “reacting proves their vitality, which modern materials, though gifted, do not possess; glass and steel, with an elusive structure, are deprived of reality and of weight, and structure and mass of things are conditions for the manifestation of the spiritual essence of matter (Martinez, 134)”.(Martinez, 133-134) As in San Cristobal, the coloured walls that surround the Egerstrom house and stables plunge into the pool, contrasting rough plaster with the smooth, glossy water. The sun casts small shadows from the bumps in the plaster, rendering a rough and dynamic texture. The thickness of these walls is revealed as they stand confidently on their own, stopping short of intersecting with another wall to form vertical planes erecting out of the ground or water. The first wall that directs your attention upon arrival is a red-rust coloured wall in which water is gushing out, similar to that of the Fuente de Los Clubes. At first glance it appears thick and solid with a spout poking out that looks as if it is cast into the wall. Yet around the wall, it is revealed to split in two, expressing a “liquid core” which is the water running in between. (Ambasz, 91) The transformation of one thing into another, the distortion of perception and the morphing of solid to liquid recalls that of “a surrealist painting, [where] Barragan’s walls have two sides (Ambasz, 107)”, which Ambasz describes to have “... one, open and direct, which the viewer faces. The other, shrouded in shadows, suggests past presences (Ambasz, 107)”. This forces the individual into a state of ambivalence. Barragan was attracted to this, and enjoyed the

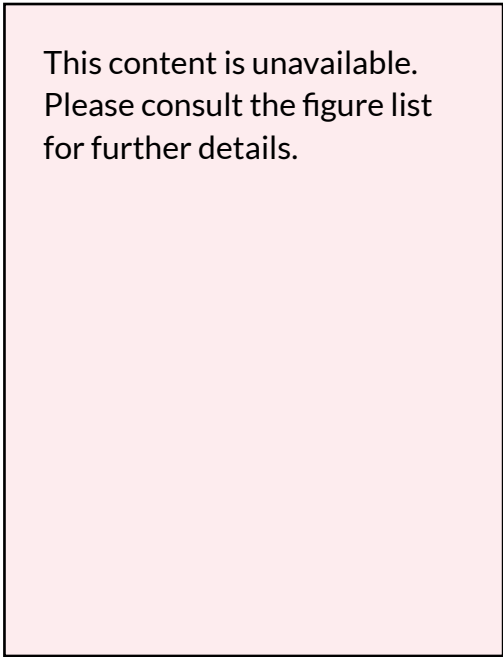


Fig.78. Contrasting surface textures of San Cristobal

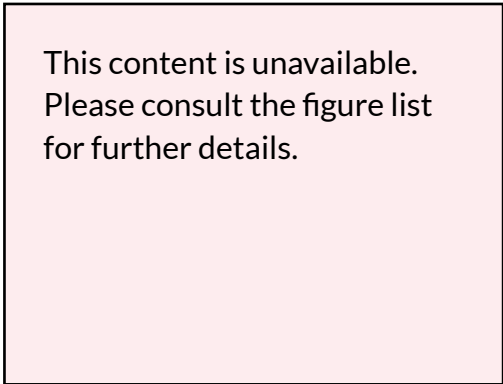
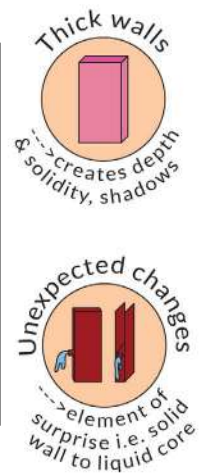


Fig.79. San Cristobal entrance



This content is unavailable.
Please consult the figure list
for further details.



Fig.80. Liquid core revealed

This content is unavailable.
Please consult the figure list
for further details.

Fig.81. Planes of colour within San Cristobal

This content is unavailable.
Please consult the figure list
for further details.

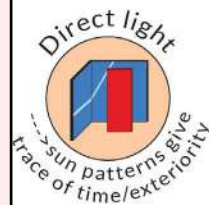


Fig.82. Gilardi pool

suggestive nature of walls: *"I think there's mystery when you see the top of a tree behind a wall (Pauly, 200)"*. His manifestation to *"see in a way that did not superimpose purely rational analysis (Martinez, 186)"* can be partly credited to his fascination for surrealism, and in particular the work of De Chirico already mentioned, of whom was amongst the books in his personal library (Barragán and Saitō, 15).

Casa Gilardi 1976

Casa Gilardi is described by Pauly to be *"a culmination of tried-and-tested processes, whereby colour features as the essential component of the architectural experience (Pauly, 190)*. His confidence in using colour seems to be at its pinnacle with this house, in which he *"... was able to show the pure sensual power of color (Barragán and Saitō, 106)"*. After walking past the yellow-lit corridor described in strategy one, a room containing a pool with walls that are rough with mortar containing pea gravel.(Barragán and Saitō, 106) The sculptural ensemble of this room creates a pulsating and surreal sensation as the red hot pillar plunging into the water contrasts against the cold blue walls behind. Light traces diagonally over the surfaces from a high window hidden out of view, *"... expressing the texture and sensuality of colour, just as it sometimes distorts the corner of the room and amplifies the abstract nature of the interior volumes (Pauly, 192)"*.(Pauly, 192) Although the bright pink and purple colours seen on the exterior of Casa Gilardi and in his other works are considered to be from a Mexican Palette, the colour scheme of the pool has been referenced to the Bauhaus masters, specifically Josef Albers and Johannes Itten. This shows Barragan's influences are clearly not limited to Mexico alone. He had a fascination with Albers' research into the relationships between juxtaposed colours that would appear to be constantly interacting.(Pauly, 151) This lead Barragan to experiment with the spatial relationships between two planar surfaces, and as such the cold and blue composition of the Gilardi pool is said to reflect Itten's assertion that *"among cold and warm tones of equal brilliance, the warm will advance and the cold retreat (Itten, 122)"*.(Pauly, 152) Is it not a coincidence that Barragan had bookmarked one of Alber's illustrations in which two rectangular planes of cobalt blue stand against two cadmium red planar surfaces?(Pauly, 151-152) The vivid colour palette Barragan

PLANES OF COLOUR

uses in his architecture is further linked by Pauly to have psycho-physiological qualities that are discussed by Wassily Kandinsky in 'Concerning the Spiritual in Art'. Kandinsky refers to the great attention that bright, warm colours attract, where "... *the visual emotion sparked by these dazzling tones subsequently engenders "psychic vibration" - a physical effect that "touches the soul"* (Kandinsky, 87)".(Pauly, 183)

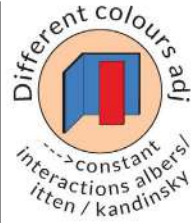
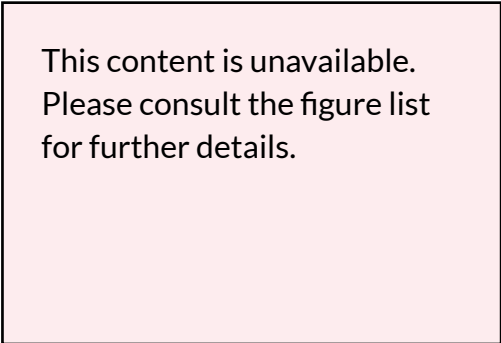


Fig.83. Josef Albers, Variation, 1955 | page bookmarked by Barragan

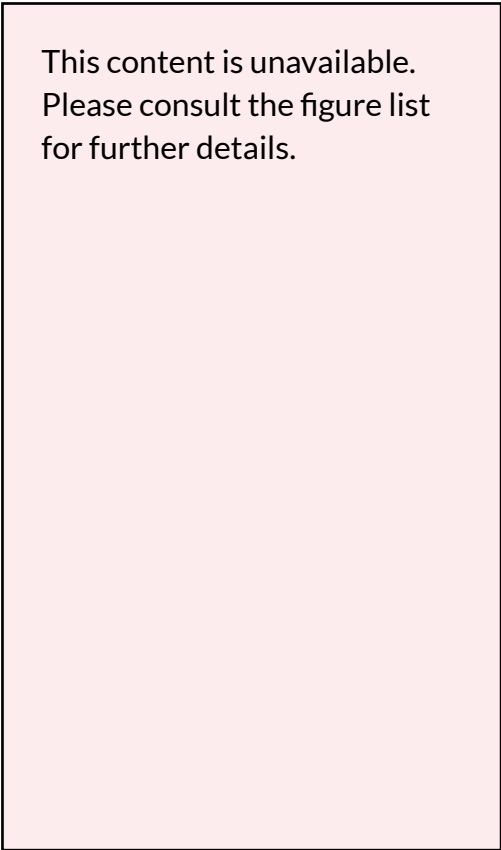


Fig.84. Gilardi pool direct light

Fig.85. (next page) Gilardi pool

This content is unavailable. Please consult the figure list for further details.

This content is unavailable. Please consult the figure list for further details.

Fig.86. *San Cristobal*

This content is unavailable. Please consult the figure list for further details.

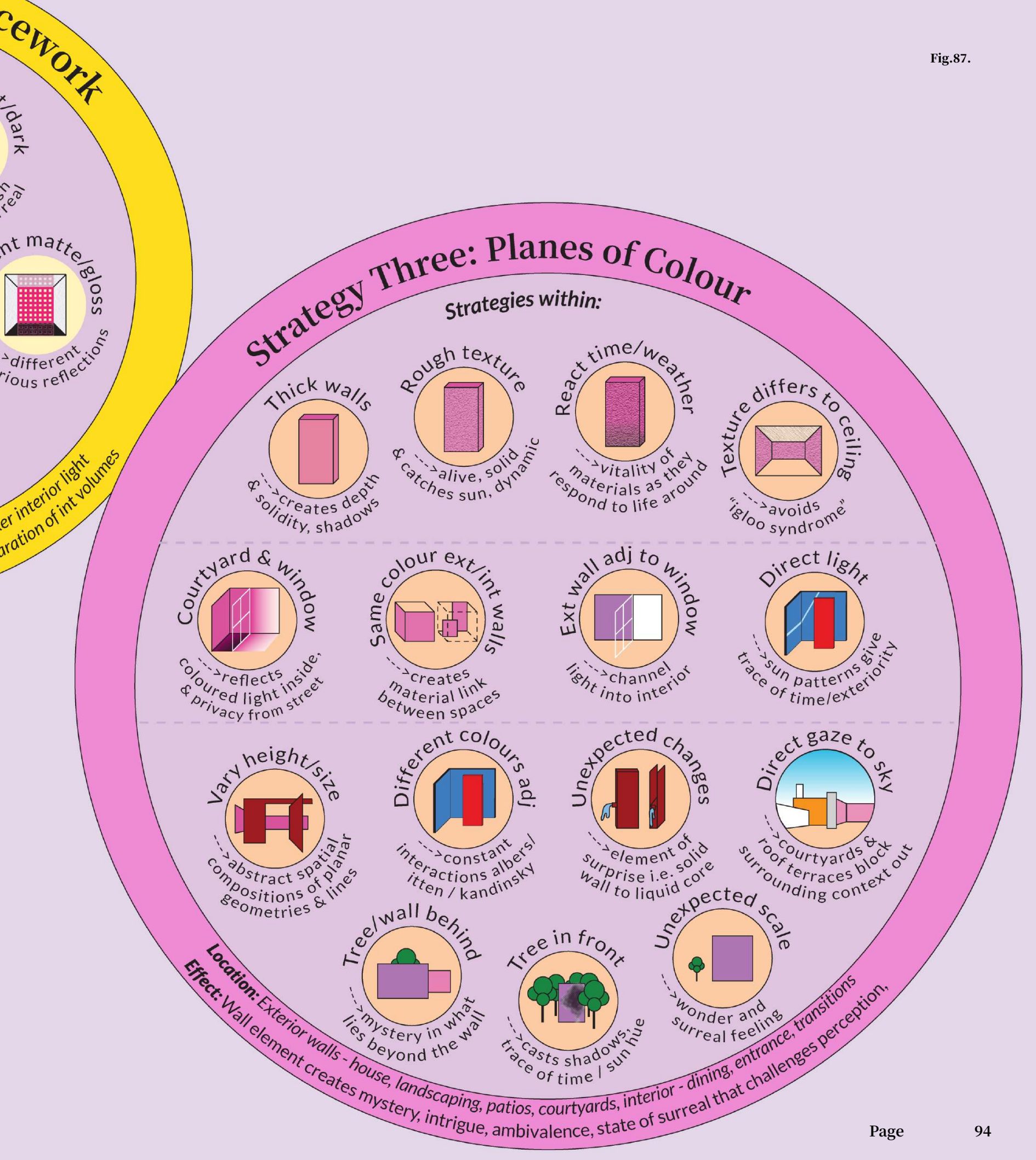
PLANES OF COLOUR

B.04

Strategy Three Analysis

Strategy Three: Planes of Colour Summary

In summary, Barragan's strategy of planes of colour create surreal atmospheres. These are reinforced by abstract geometric compositions, interactions between different coloured surfaces, changing reflections and hues that morph with the glaze of water, and the tracing of sun patterns that are distorted amongst such compositions. Whether the tip of the tree above, or the drape of a shadow around, these planes of colour create mystery into what lies beyond. If not colours of Mexico, they are derived from influences abroad. These planes channel light inside, whilst creating private outdoor spaces for shadows to cast upon. This presence of nature outside as a changing, ephemeral force is connected with the interior experience to avoid a static atmosphere. The change in scale and thickness gives the walls monumentality, roughness and vitality. They are surprising as bursts of vivid colour that touches the soul and provokes an emotive response.



PART B. BARRAGAN'S COLOUR/LIGHT STRATEGIES

B.04

Strategy Three
Design Experiments (I & II)

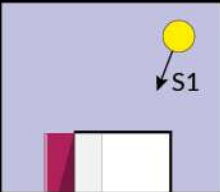
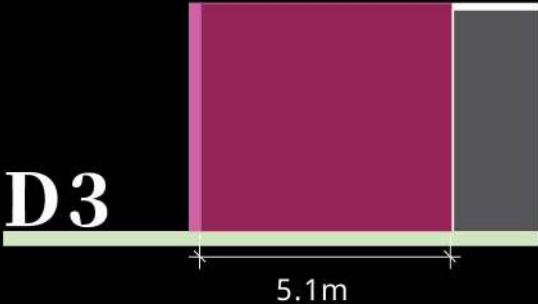
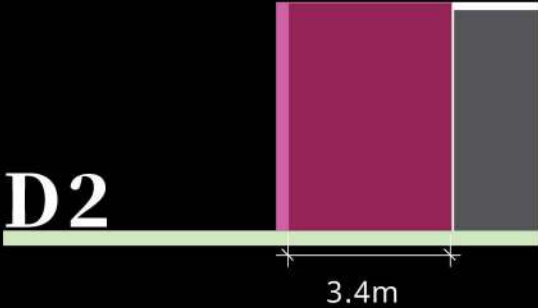
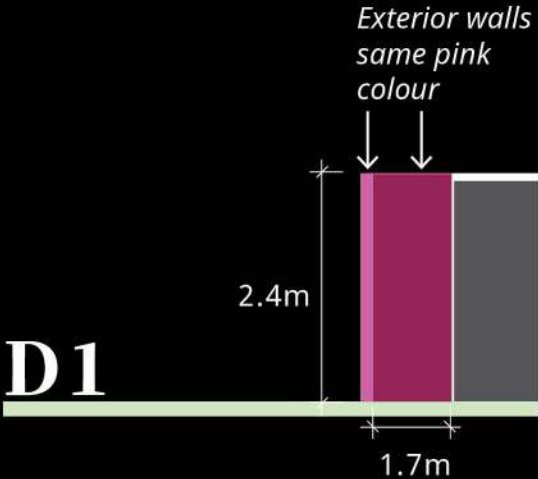
PLANES OF COLOUR

This next experiment (I) tests the light/colour qualities within an interior setting adjacent to an exterior courtyard of coloured walls.

There are three different light source angles imitating morning, mid-day, and afternoon sun. For each light angle, three distances of the coloured wall parallel to the room is tested. This set of experiments is then repeated to test two more taller heights of the exterior courtyard/patio coloured walls.

Experiment II was prompted by these tests, in which another coloured wall above is added to the tallest wall series.

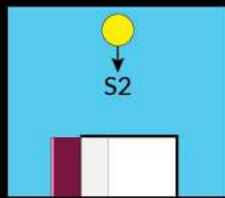
Wall Distance
from Window



Light source
angle -
“Morning”

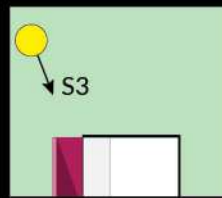
01





Light source
angle -
"Mid-day"

02



Light source
angle -
"Afternoon"

03

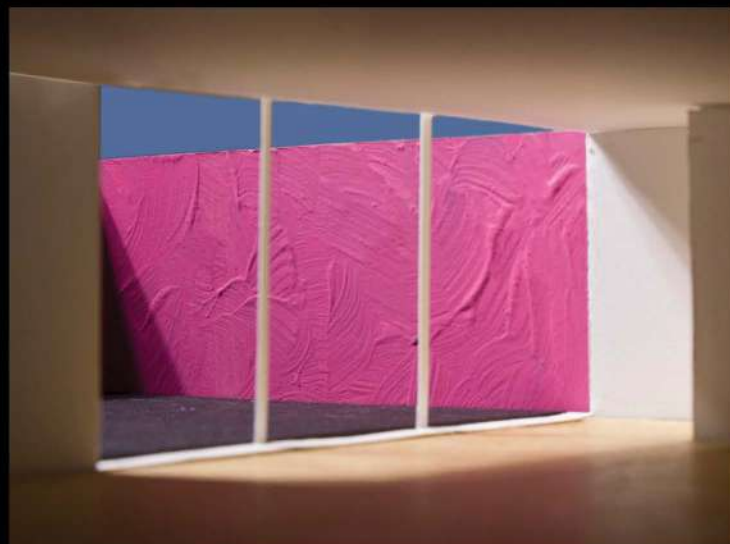
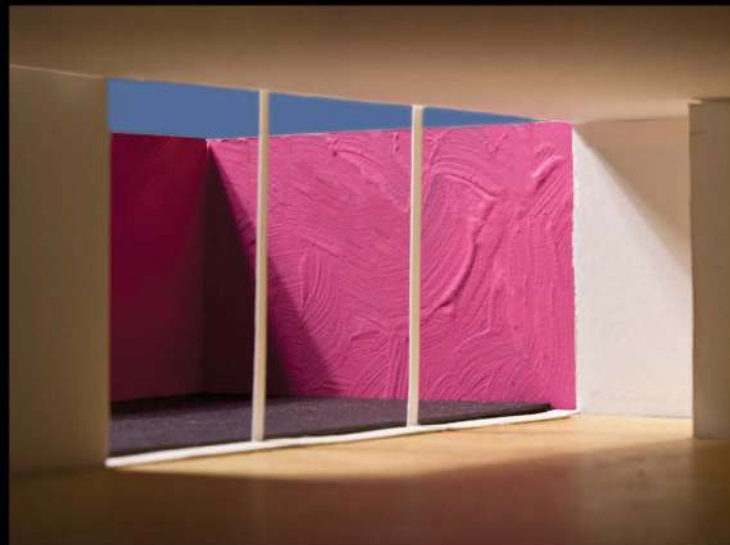
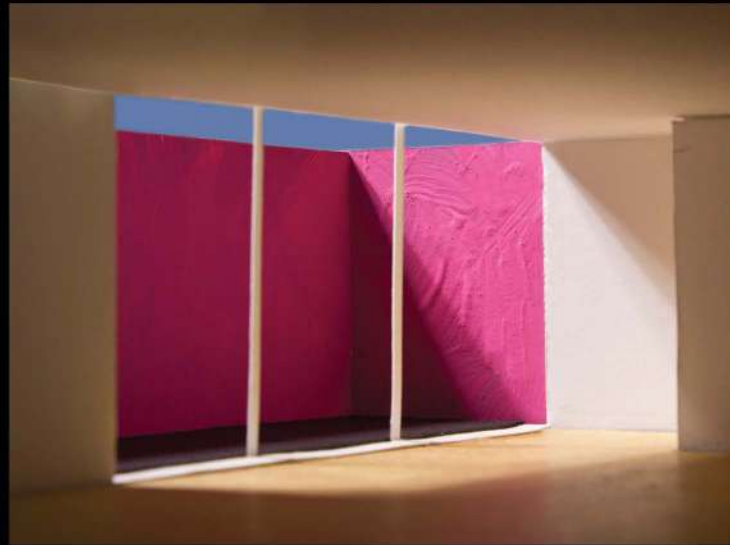
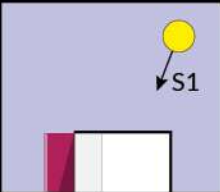


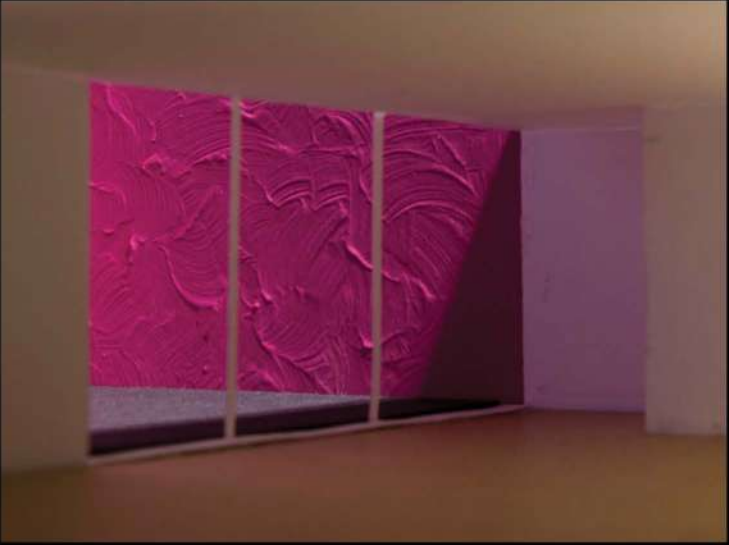
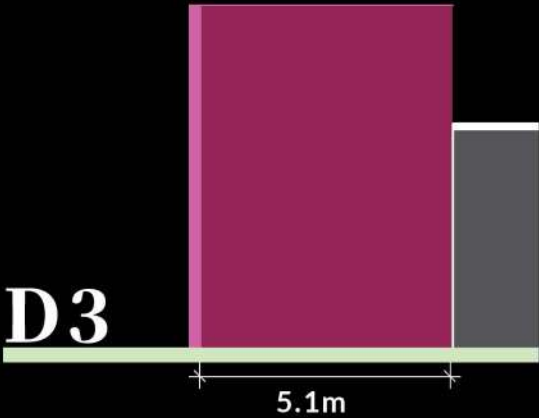
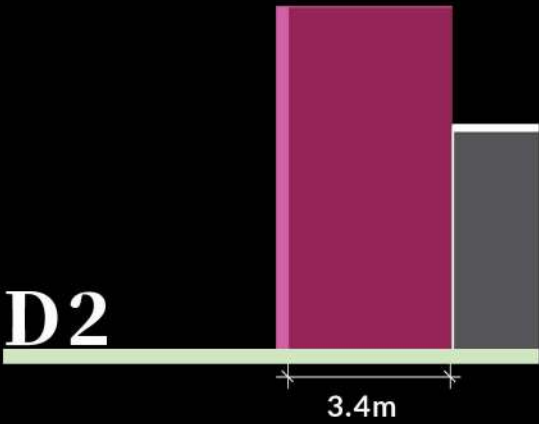
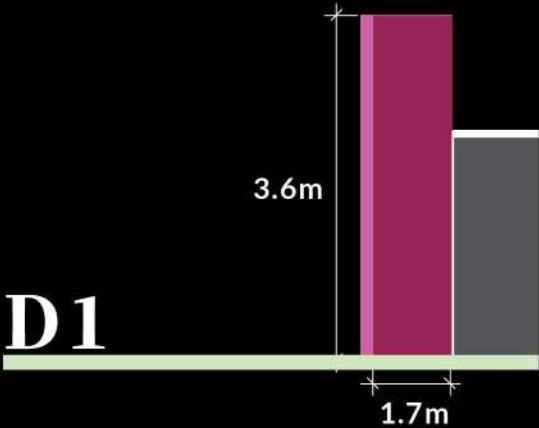
Fig.88. (double
spread)



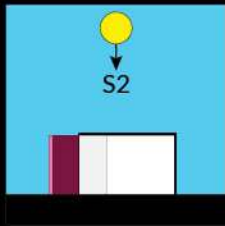
Light source
angle -
“Morning”

01

Wall Distance
from Window

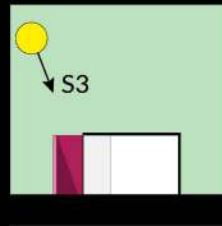


Planes of Colour



Light source
angle -
"Mid-day"

02



Light source
angle -
"Afternoon"

03

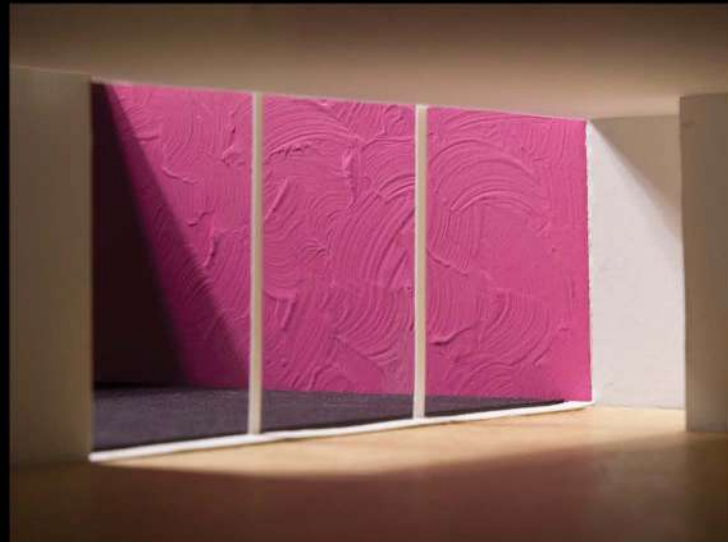
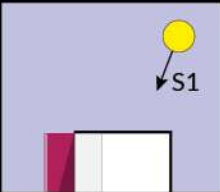


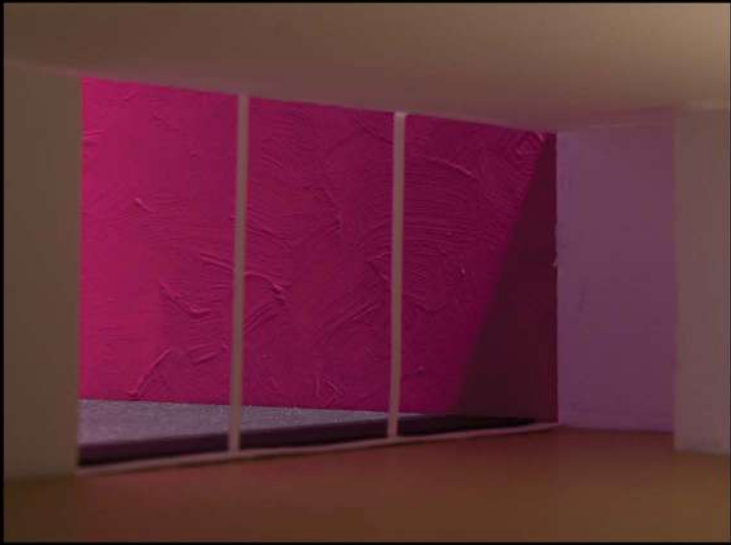
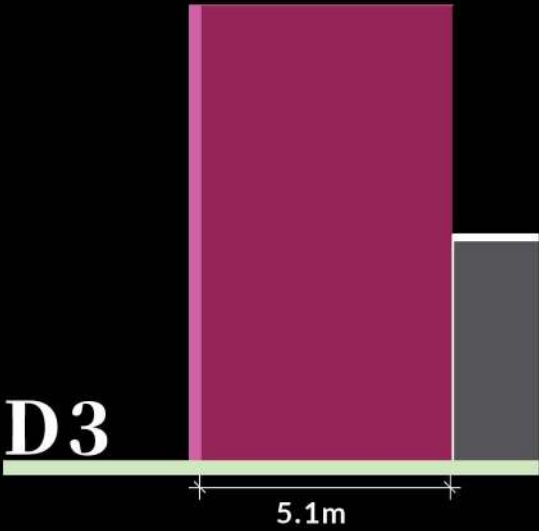
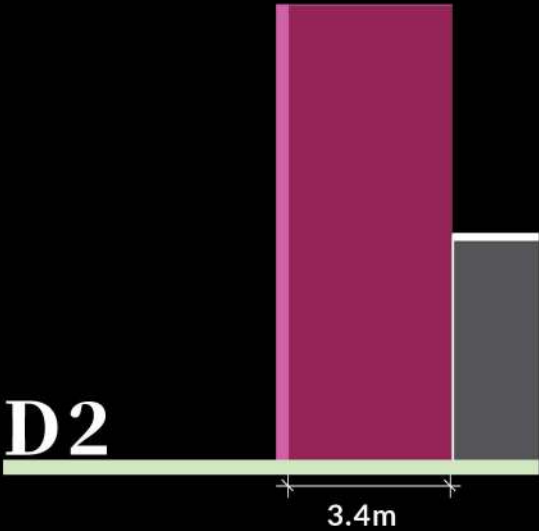
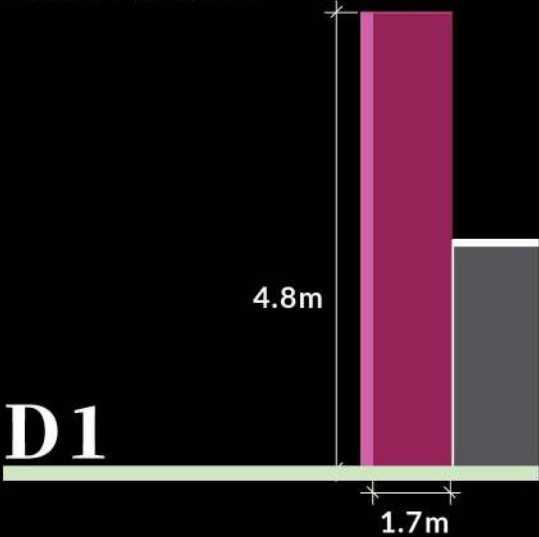
Fig.89. (double
spread)



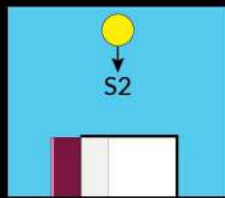
Light source
angle -
“Morning”

01

Wall Distance
from Window

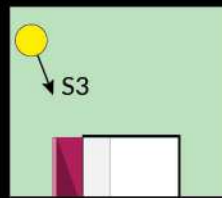


Planes of Colour



Light source
angle -
"Mid-day"

02



Light source
angle -
"Afternoon"

03

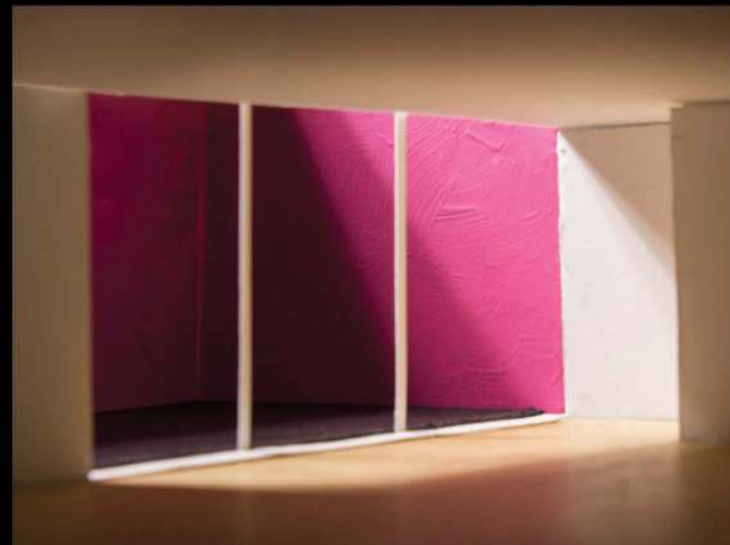


Fig.90. (double
spread)

S3
Design Experiment II
High coloured
wall above with wall
height 3

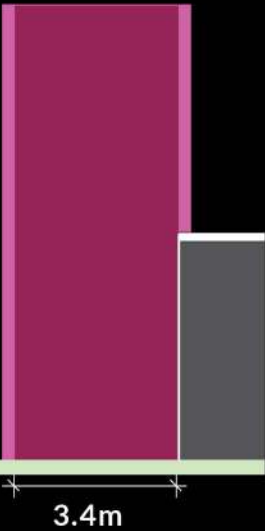
Wall Distance
from Window

D1

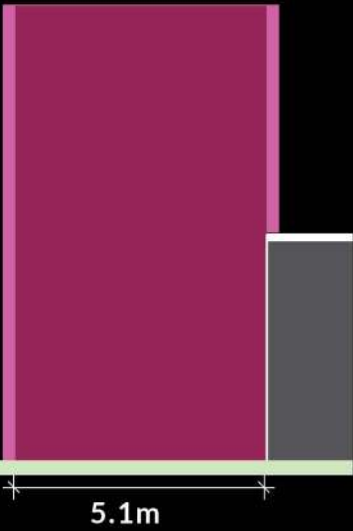


Pink wall
above
added

D2



D3



From test
1a - high
wall (no wall
above) →



Planes of Colour

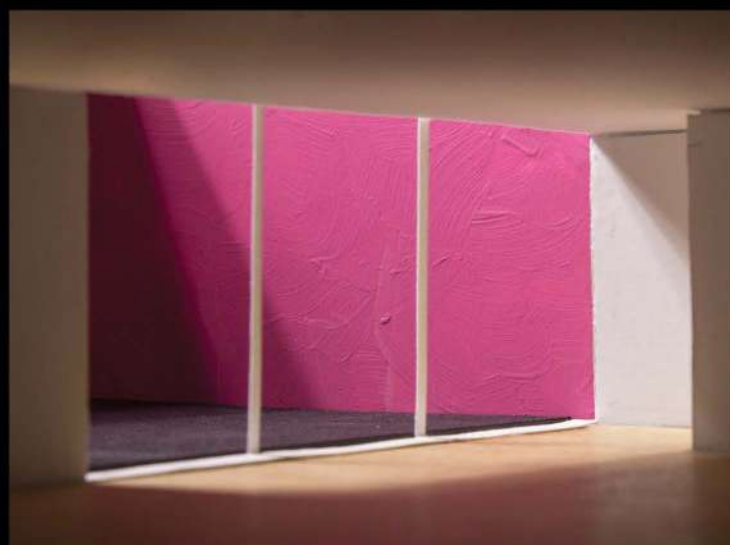
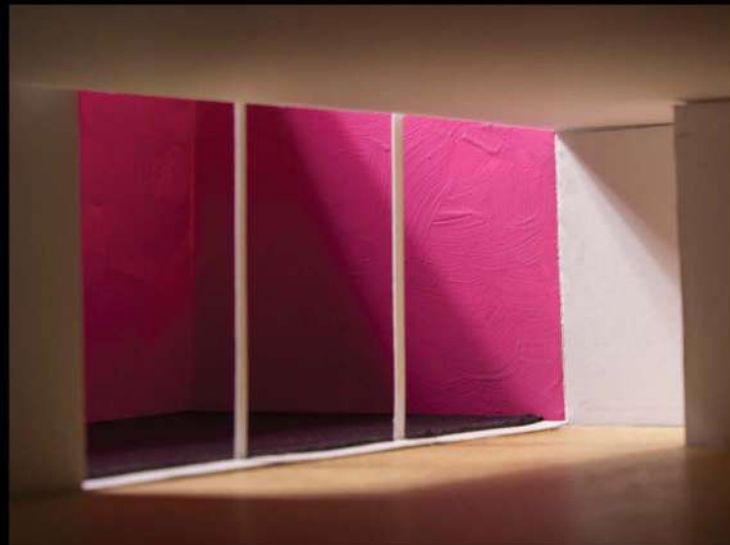
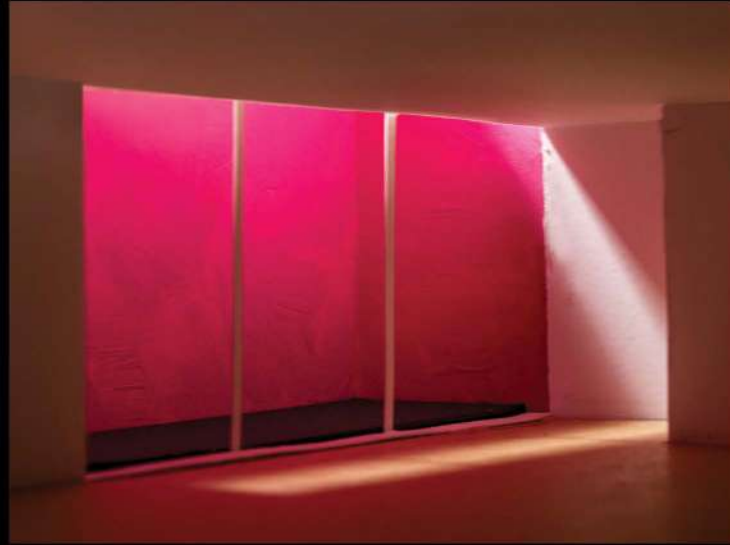
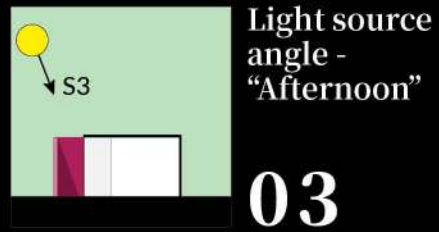
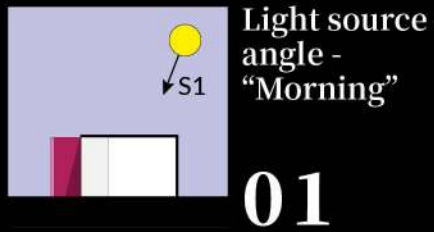
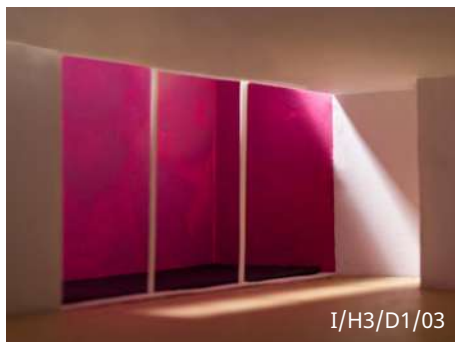


Fig.91. (double spread)

STRATEGY THREE PLANES OF COLOUR



Observations / Surprising Moments

- 01 Surprisingly the taller the patio walls were, the more intense the reflected colour was in the interior space. For example, when comparing the image from H1-D1-01 (Height 1, distance 1, Light source 01) with H3-D1-01 (same distance and light source, higher walls), the coloured pink hue inside is more powerful in the latter.
- 02 Although these remain imagined spaces as they are models limited in scale, predictions can be made as to how they might feel. For example, when the sky disappears out of view as the walls get taller, the interior space becomes more intimate and surreal as the walls disappear out of view. This moment of wonder, as discussed with Barragan's planes of colour, lies in the mystery of wondering what lies beyond. When the walls are shorter like in Height 1 spaces, it seems there would be less wondrous feeling as the compositions do not allude so much to the unknown. However, in this series when the wall parallel to the window is furthest away (D3), and if standing at the position of the camera, there is mystery in wanting to know where the wall ends as it appears to continue out of view. A soft gradient of light to shadow along this wall differs from the harsh contrast and shadows created when the walls are closer to the window.
- 03 Just like the patio of Barragan's Galvez house, the hue of pink on the walls changes with each light source, sometimes appearing to even disappear into darkness whilst a ray of light becomes the focus (H3,D1,03).



Fig.92. *Planes of Colour I/H3/D1/01*

STRATEGY THREE PLANES OF COLOUR

B.04

Strategy Three Design Experiments (I & II)

- 04 The final series, experiment two, arose as an idea from the previous series. It was a total surprise that when another coloured wall was placed above the window, a more intense, vibrant pink hue washed down from above. With light source 03, and walls at D1, the light that hit this new wall was able to reflect onto the wall opposite, and reflect again back into the space. Hence, the coloured light reflected became more intense as a result, creating a fleeting moment of magic.

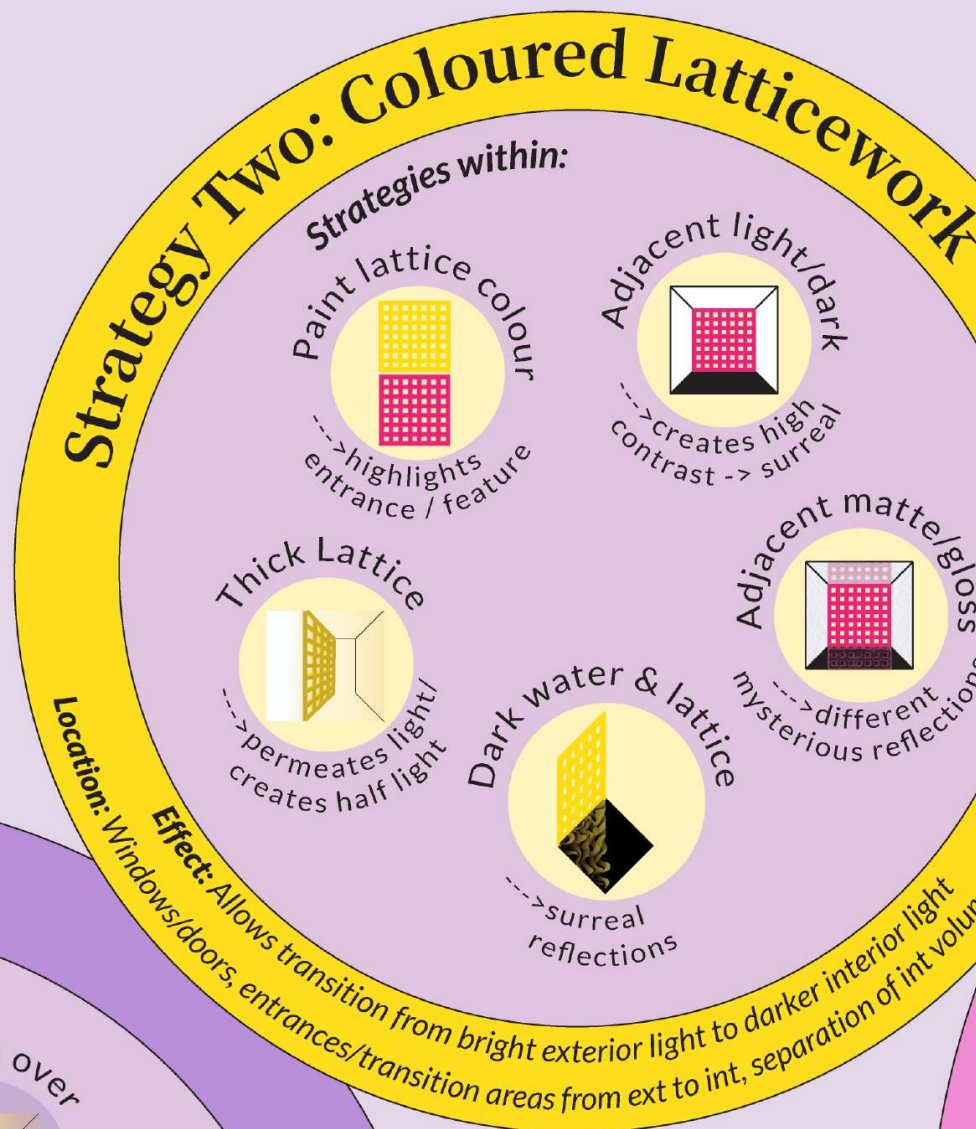
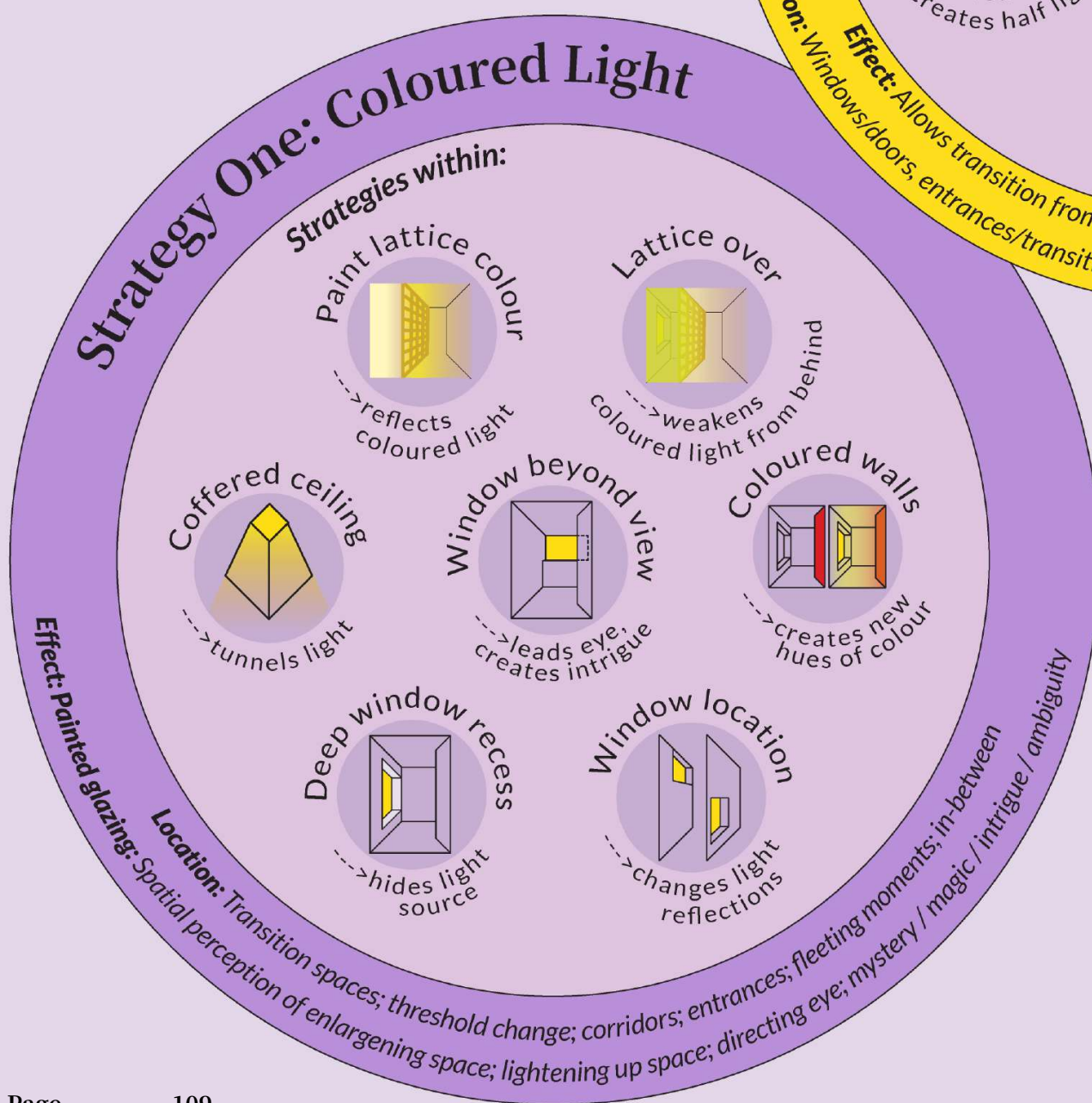
Enquiries Prompted:

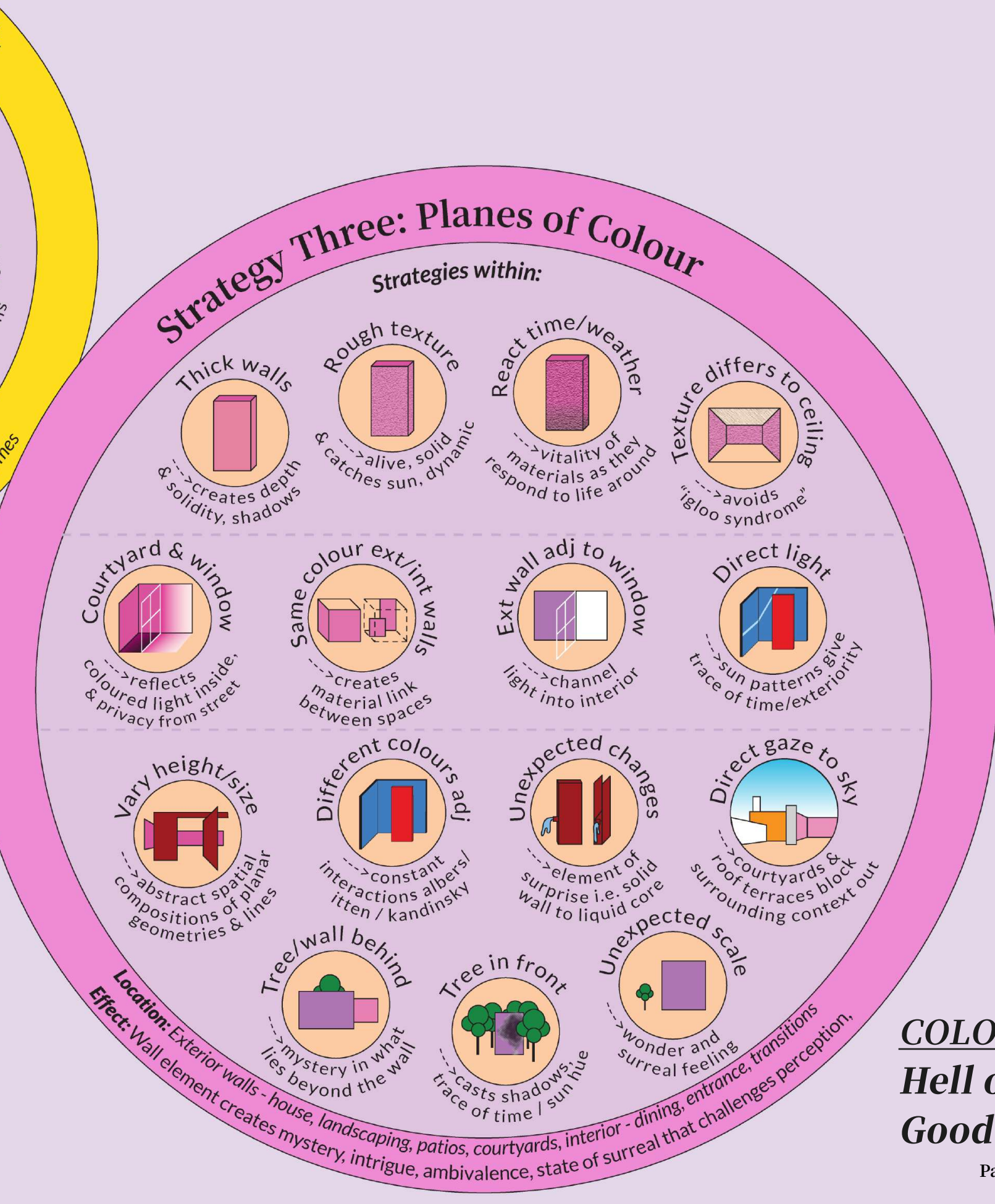
- Exterior wall/cladding colour and material
- Interior surfaces colours and materials
- Relationship to landscape



Fig.93. *Planes of Colour II/H3/D1/03*

PART B. BARRAGAN'S COLOUR/LIGHT STRATEGIES





COLOUR,
Hell of a
Good Thing!

PART B. BARRAGAN'S COLOUR/LIGHT STRATEGIES

B.05 *Summary Reflection*

Fig.95. *Timeline reflecting upon Barragan's architecture and influences*

This content is unavailable. Please consult the figure list for further details.

This content is unavailable. Please consult the figure list for further details.

PART B. BARRAGAN'S COLOUR/LIGHT STRATEGIES

B.05

Summary Reflection

Barragan Summary

Part C has enabled a rich understanding of the ways in which Barragan uses colour and light in his architecture, of which have been summarised visually through simplified illustrations. A surprising discovery throughout this investigation was that he learnt a great deal from other, primarily artists and architects from both Mexico and abroad, of which highly influenced this use of colour. It is clear that through the relationships he formed and the books he read, of Reyes, Rivera, Goeritz, Corbusier, Kiesler, De Chirico, Itten and Albers, Barragan enabled a dialect between the arts and architecture. As previously described, these people have undoubtedly fostered Barragan's development and as such demonstrates the wealth in exchanging ideas with others. Saito supports this, voicing that "*Barragan used his wide circle of friends among artists and architects to develop his understanding on aesthetics, philosophy, and attitudes to creation* (Barragán and Saitō, 15)." The research has so far exposed the great influence of artists in one architect's practice. This provokes a questioning of where to take this design-led research to from now; should Barragan's process be replicated by the thesis author by considering other artists for a practice in New Zealand? It is decided instead, facing both the extensive research on Barragan's work and the time constraints of a master's thesis, that the best avenue is to continue Barragan's strategies application in the New Zealand context. The intention going forward therefore is to undertake the design of an architecture project that will enable the testing of these strategies within a New Zealand context.

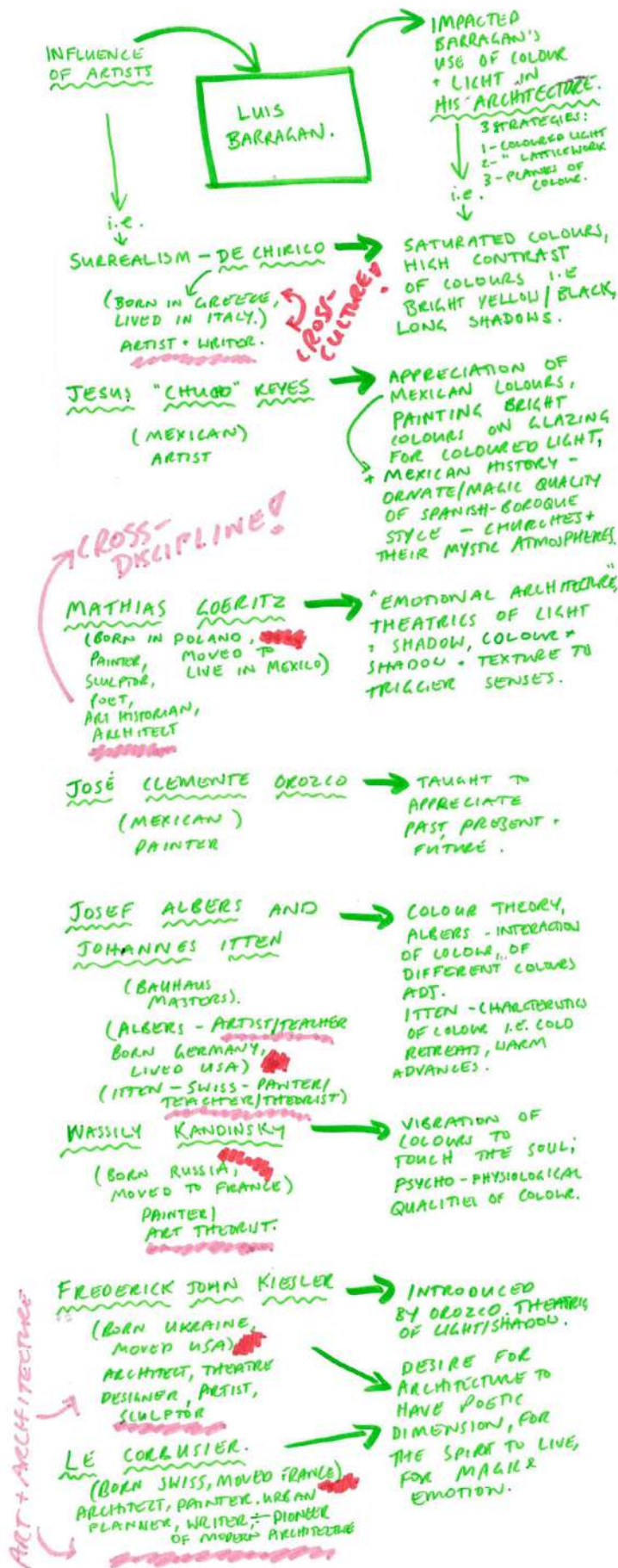
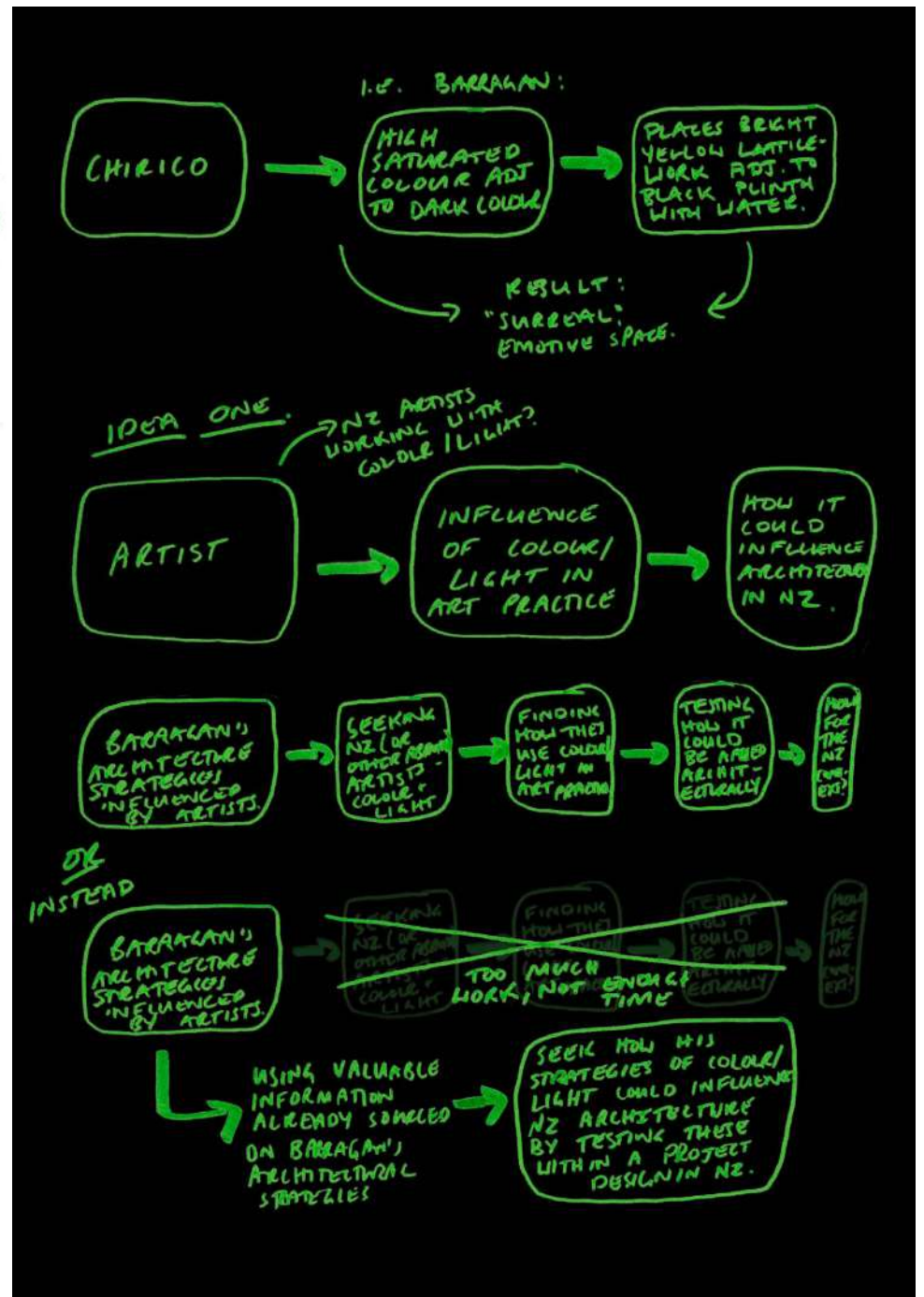


Fig.96. Barragan's artist influences upon colour/light & methodology shift ideas



PART C. ESTABLISHING THE BRIEF

- C.01** *Selection of Typology*
- C.02** *Analysis of Barragan's Residential Plans*
- C.03** *Selection of Geographical Area, Site & Client*
- C.04** *Design Process & Methodology (Stage Two)*

How can Mexican Architect Luis Barragan's strategies in choreographing magical atmospheres through light and colour influence contemporary architectural practice in New Zealand?

PART C. ESTABLISHING THE BRIEF

C.01 *Selection of Typology*

Typology

The next stage of this design-led research intends to expand upon the investigation of the influence of Barragan's colour and light strategies, to develop a synthesised architectural response in the context of New Zealand. This will be undertaken through the designing of a stand-alone residential house, selected amongst numerous possibilities implicit in the range of architectural typologies. This typology aligns with that of Barragan's. The design scope is effectively simplified, and the interrogation of excessive design variables can be avoided while considerable challenges will still be inherent in the designing of a house in a different context. A residential scale allows an in-depth exploration into the strategies used by Barragan, whilst complying with the time constraints coupled with the nature of this research.

PART C. ESTABLISHING THE BRIEF

C.02

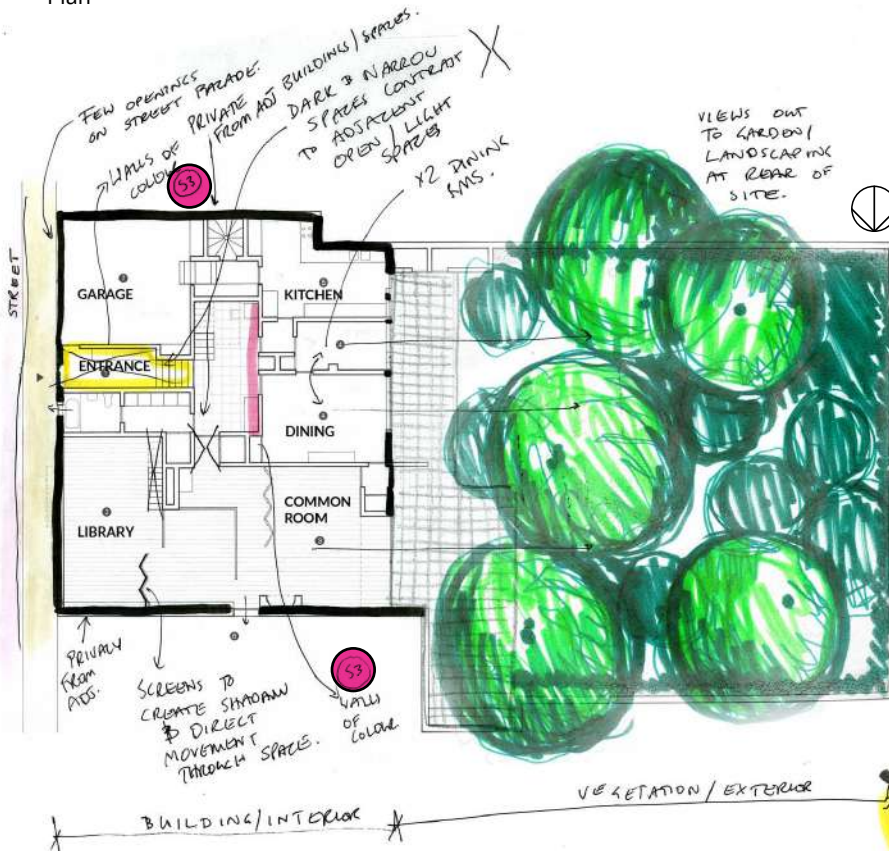
Analysis of Barragan's Residential Plans

The spatial configurations of five of Barragan's residential houses (those discussed in the previous text) will be analysed next. The intention of this exercise is to locate each strategy within the projects and distill key similar characteristics throughout. This is to build an understanding of the relationships between the colour/light strategies and the architecture of the house as a whole. Can this aid in determining what else contributes towards the impact of the atmospheric strategies?

1948

Barragan's House & Studio

Ground
Floor
Plan



Second
Floor



First
Floor

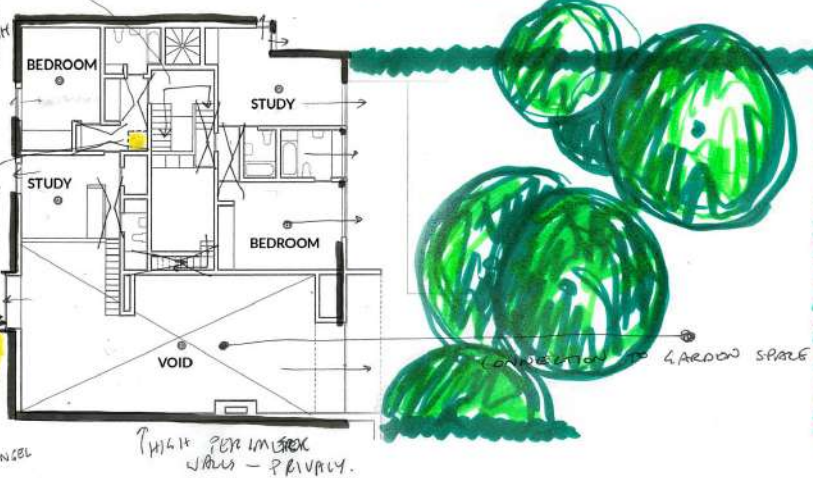
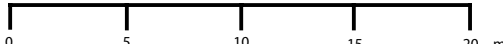


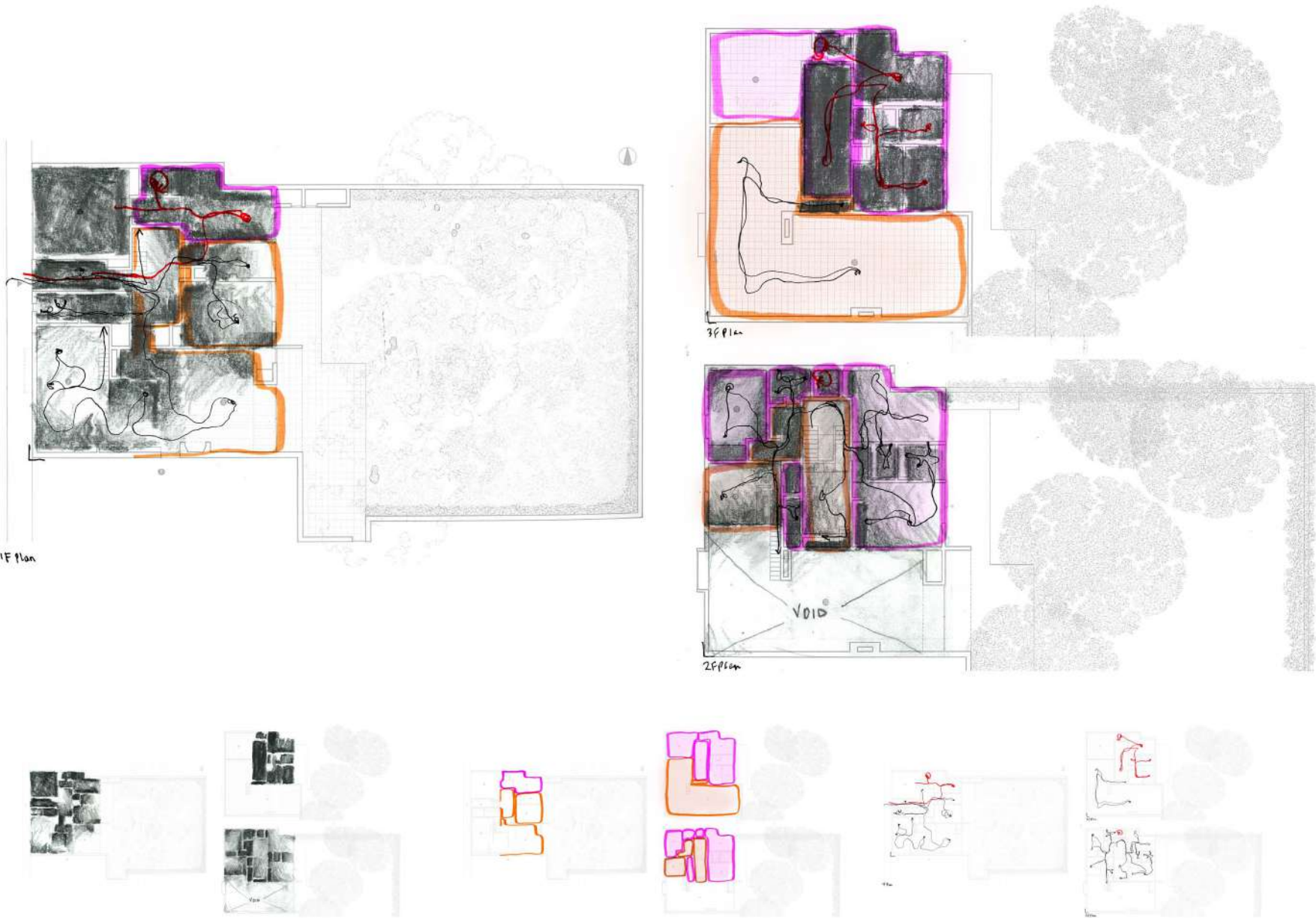
Figure Ground

Strategy Key

Floor Plan Scale

- 1 Coloured Light
- 2 Latticework
- 3 Planes of Colour





Light / Shadow
 Mapping dark vs light considering volume and window location in spaces. Transitions dark-light from entrance to living spaces, narrow-wide/open.

Collective / Individual
 Clear separation of collective and individual spaces (bedrooms and maid's areas are to southern side and on higher levels). Orange = public, purple = private.

Circulation
 Tracking movement in home. Black line = occupant, red line = maid. Fragmented spaces, twisting and turning. Central core for vertical circulation, separate for maid.

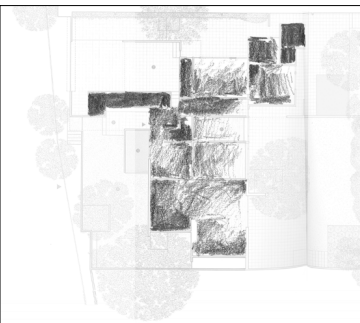
1955
Antonio Galvez House

Pimentel 10, Chimalistic, CDMX, Mexico

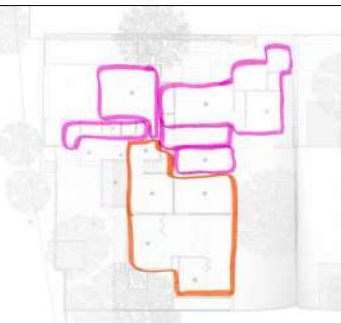
Ground
Floor
Plan



Light / Shadow



Collective / Individual



Circulation

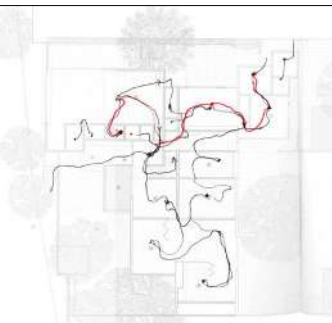


Figure Ground

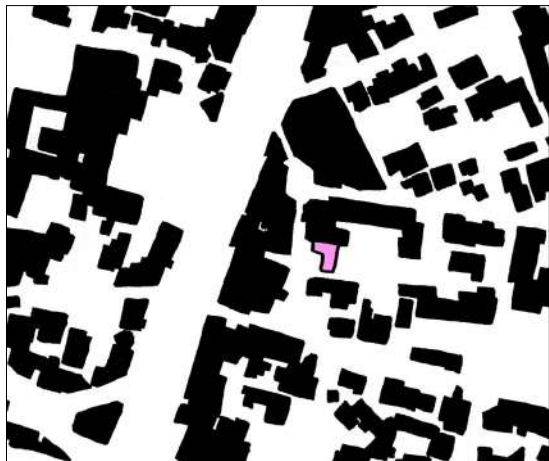
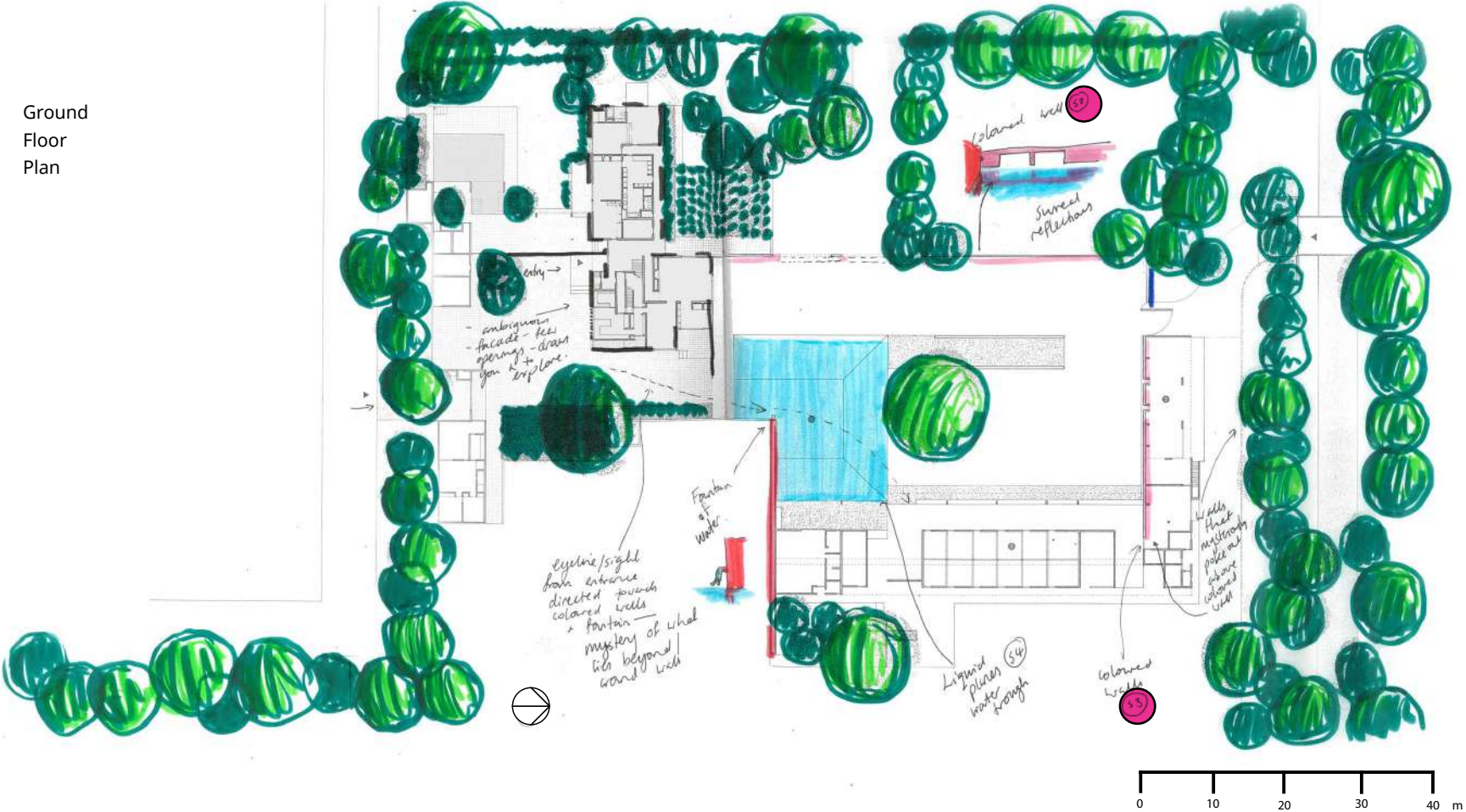


Fig.98. Analysis drawings related to Barragan's Antonio Galvez House

1968
San Cristobal Egerstrom
House & Stables

Cda. Manantial Ote. 20, Mayorazgos de los Gigantes,
52957 Cd López Mateos, CDMX, Mexico

Ground
Floor
Plan



Light / Shadow

Collective / Individual

Circulation

Figure Ground

1:5000

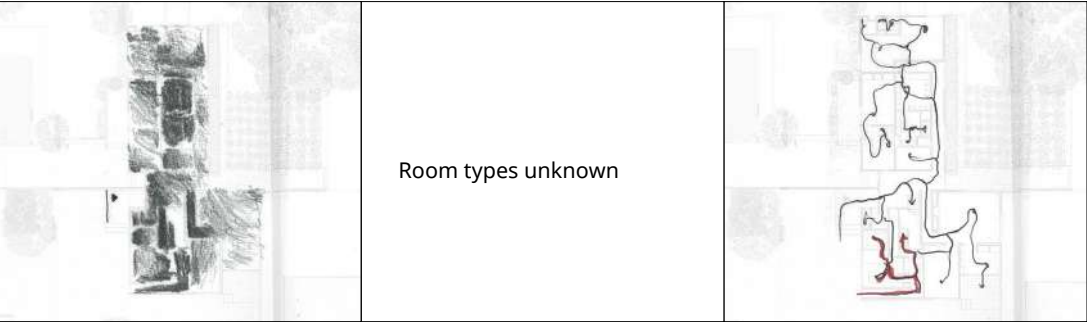
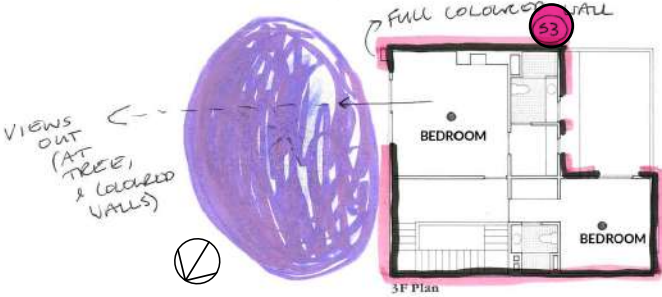


Fig.99. Analysis drawings related
to Barragan's San Cristobal

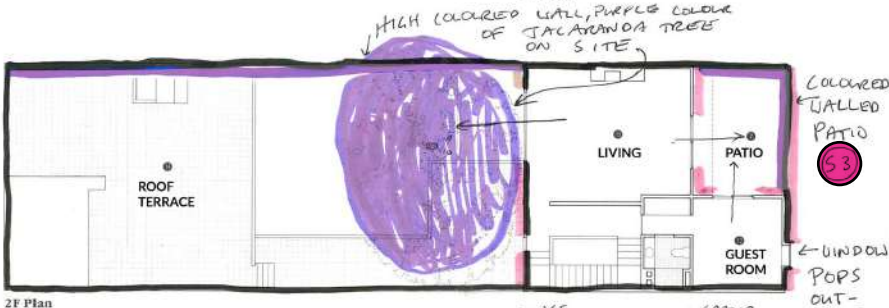
1976
Casa Gilardi

Calle Gral. Antonio León 82, San Miguel Chapultepec I
Secc, Miguel Hidalgo, 11850, CDMX, Mexico

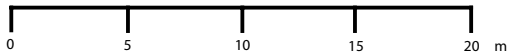
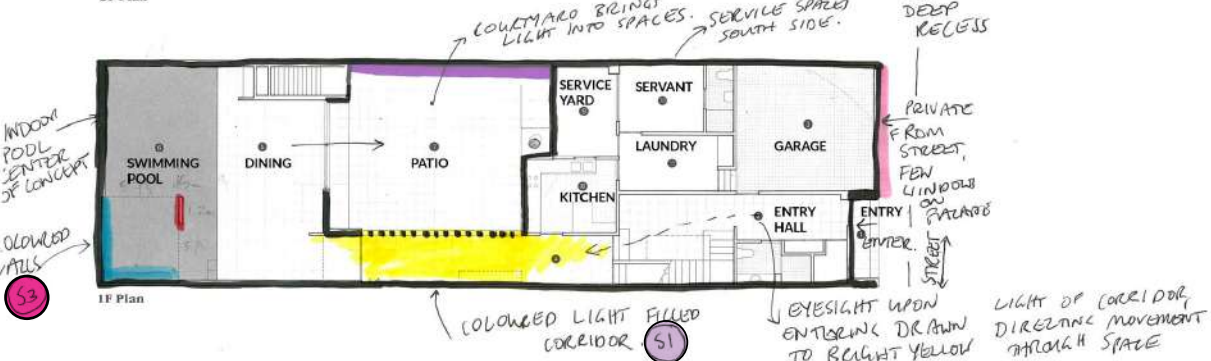
Second
Floor



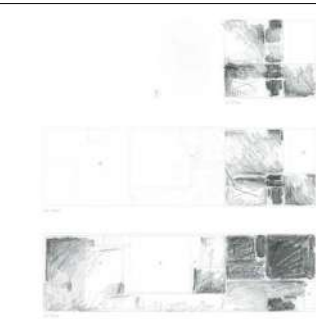
First
Floor



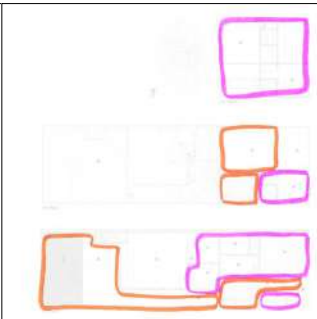
Ground
Floor
Plan



Light / Shadow



Collective / Individual



Circulation

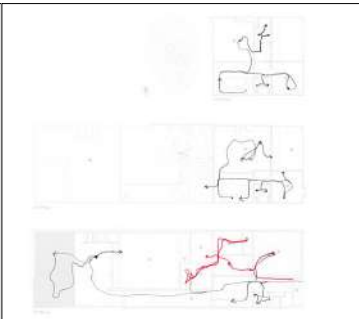


Figure Ground

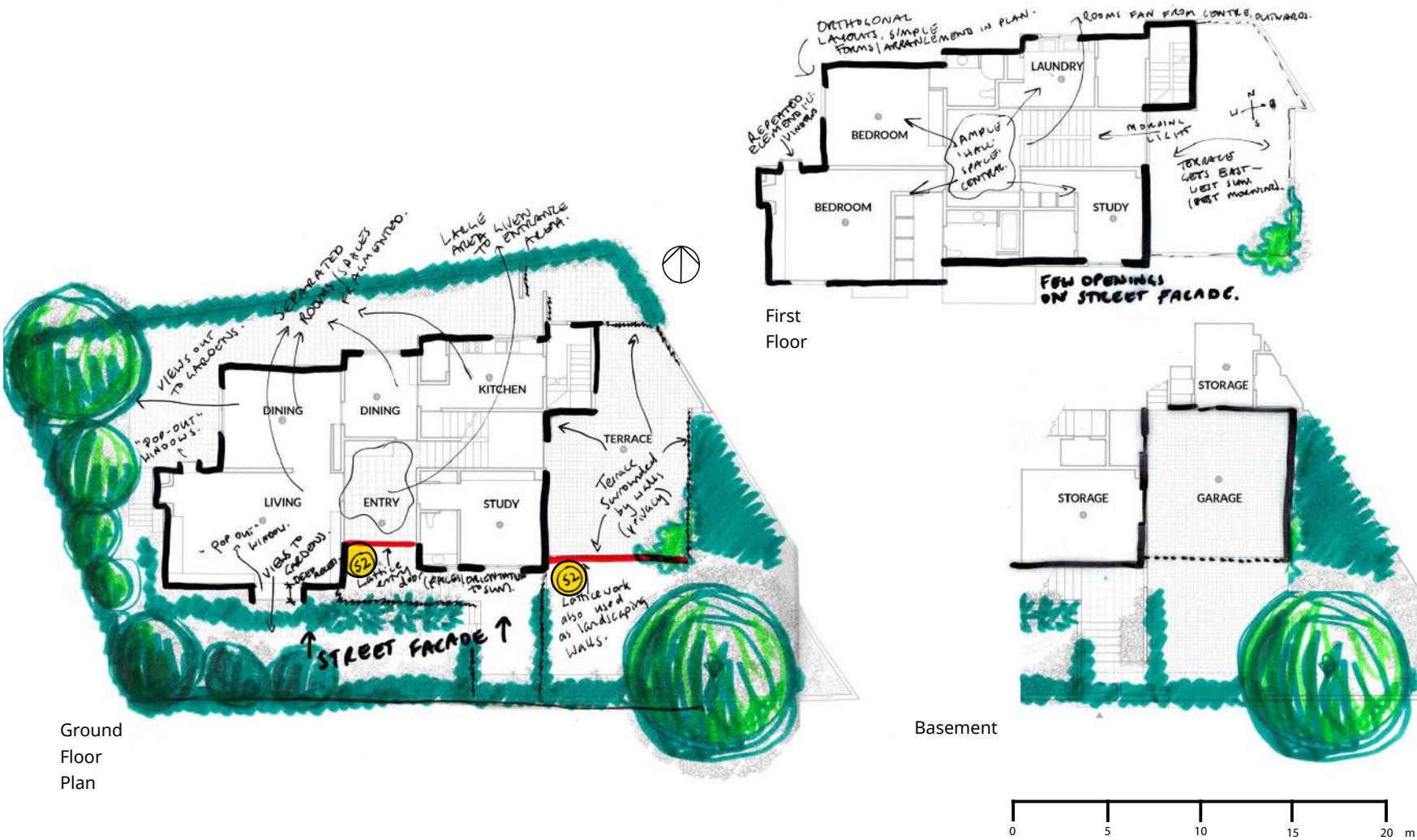
1:5000



Fig.100. Analysis drawings related to Barragan's Casa Gilardi

1981
Barbara Meyer's House

Bosques de las Lomas, Mexico City, CDMX, Mexico



Light / Shadow

Collective / Individual

Circulation

Figure Ground

1:5000

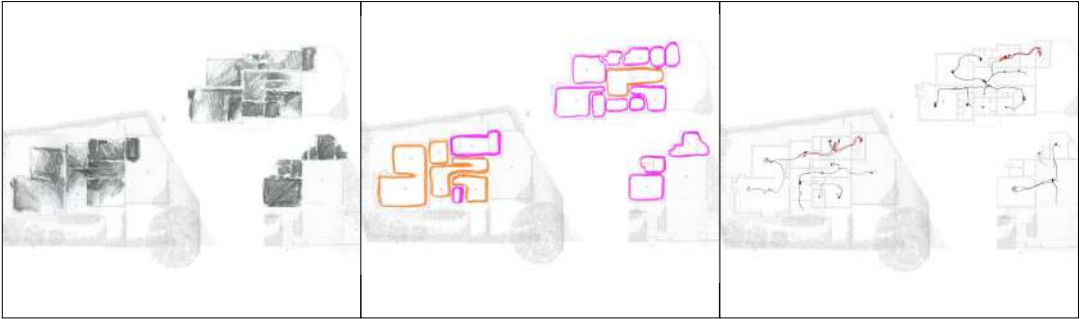


Fig.101. Analysis drawings related to Barragan's Barbara Meyer's House

PART C. ESTABLISHING THE BRIEF

C.02

Analysis of Barragan's Residential Plans

Analysis of Barragan's Residential Plans

The analysis of Barragan's residential floor plans provides a deeper understanding of how the colour and light strategies relate to the entirety of the architecture. Although the objective of this research is to focus on colour and light and the specific strategies extracted from Barragan's architecture, it is this further consideration of the in-between spaces and the configuration of the house as a whole, which enables a far richer perception of the former. In addition, identifying the grain of the architecture's surrounding buildings enables another dimension to this understanding. Similar characteristics have emerged from comparing the five residential buildings, built between 1947-1979, and can be linked with the discussions from the previous section. These have been bullet-pointed to simplify the findings, providing a clear distinction of each item to be reflected upon later in the design process.

1. Patios, courtyards and roof terraces provide refuge from the surrounding buildings, enclosed by walls that direct the view up to the sky. These also act to direct light into the interior spaces and trap shadows.
2. Street facade generally bare, with few openings, appearing closed-off from the public realm yet enticing to enter and discover what lies inside.
3. Orthogonal plan configurations, reflecting the nature of the architecture's interlocking orthogonal cubic forms.

“The living space of each scheme was designed in line with Mexican lifestyle, with the aim of creating something private and introverted. The focus is thus on forms that hug and protect (Pauly, 156)”.

4. Living spaces and the largest number and size of openings generally on the rear facade that opens to the gardens, providing an intimate and secluded connection with the site's landscape that is private from the surrounding areas.
5. Additional privacy was generated within the interior, with the more 'individual' bedroom spaces located on the upper floors, and the 'communal' living areas separated on the lower. This vertical configuration creates high exterior walls serving patios and courtyards.
6. There is a dynamic interplay between light and shadow which appears to direct movement through the interior spaces. Smaller, tighter areas of hallways and stairwells shroud in darkness that contrast to larger, brightly lit spaces. Shadowy areas are common, generated by a modest use of window openings; seeking shade from the Mexican sun, and peace from the chaos of the city. Careful placement of interior partition screens create adaptable smaller, darker areas, also directing spatial movement and sightlines.
7. The complex circulation patterns within the house, coupled with the alternating interior volumes and light intensities, creates a compelling sense of mystery and *“unveiling of spaces [which] was rather humorously referred to by Barragan as an “architectural striptease” (Pauly, 166)”*.

This design-led research will question which characteristics need to remain, be altered, or discarded within this new context, and why, with great consideration as to the impact each decision has on the effect of the colour and light influences.

PART C. ESTABLISHING THE BRIEF

C.03

Selection of Geographic Area, Site & Client

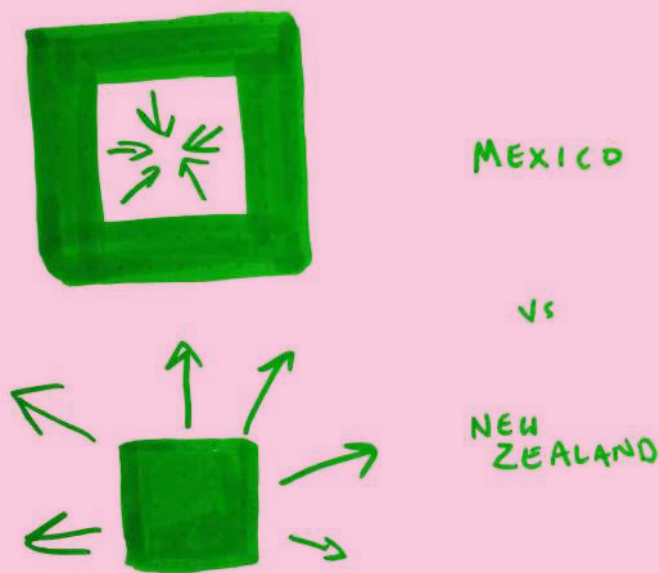


Fig.102. Mexico vs NZ: private & introverted; inwards relationship vs connections to surrounding land; outwards relationship

Geographic Area

Paramount to testing the influence of Barragan's colour and light strategies, is to consider the type of geographic area upon which the site and house will be situated. The rural setting of the Wairarapa region has been selected to provoke a challenging, and juxtaposing angle of investigation to the urban contexts of Barragan's projects. As previously discovered, major success behind the generation of emotive atmospheres was due to Barragan's control of colour and light that entangled with the ephemeral qualities of nature. The desire for a rural area, resides in the logic that it may arguably foster a greater level of freedom and flexibility to explore the relationship between landscape and architecture, than the innate limitations of an urban context. In addition, a rural area provides an interesting venture into the tension between Barragan's quest in Mexico; to design for privacy and refuge in the house from chaotic surroundings, versus the desire in New Zealand; to have open living and transparencies allowing for strong connections with the land. This introduces a dialect between wanting the latter, whilst questioning the relevance of the former – as although the kind of urban chaos is absent in a rural area, Barragan argues, *"even in buildings where there's nothing neighbouring them, just the surrounding landscape, you also need to have some walls to create corners with an intimate atmosphere, and it's possible that all this grows out of the need we have - being the mammals we are - for bits of shadow* (qtd. in Pauly, 158)". This research endeavours to unfold the impact that this, and other influential characteristics of the New Zealand context, will have upon the colour and light strategies influenced by Barragan.

Winter in the Wairarapa;
where lush,
leafy green,
tinted lime by the vibrant sun,
touches
suddenly
dark and sombre shade,

A pond's ripple,
clouds triple,
A tree's whistle,
wind's tickle,

Horizon is hiding,
hills rolling high,
Matisse and his scissors,
sourcing,
slicing,
here come paper trees,
cut-outs slapped on green and blue,

This place keeps changing,
changing,
hue.

Fig.103. Winter in the Wairarapa

Site

The criteria for selecting a site within the Wairarapa region was less defined prior to visiting the area, and was rather primarily based on what was experienced emotionally. This approach places emphasis on the importance of sharpening one's emotive relationship and sensibility with our spatial surroundings. This is not to disregard the more 'functional' aspects, but rather to place value on the emotional, of which is strongly advocated for by Barragan and his friend Goeritz, and contemporary personnel theorising in atmospheric architecture, as discussed in the beginning chapters of this research. A variety of site locations were considered throughout a journey of the rural areas of Southern Wairarapa, a region that gets a great amount of sunshine. The chosen site at Sec 41 Pahautea Settlement, South Wairarapa, exhibited a tranquil, yet peculiar atmosphere reminiscent of surrealist painting. This was manifested by long shadows appearing unrealistic, stretching across the vast land. This site embodied mysterious contrasts in colour like that of De Chirico's paintings that inspired Barragan and is echoed in his architecture. The intention is for this body of research to demonstrate a process that seeks how Barragan's colour and light strategies can influence one specific area and site in New Zealand. This process can then become an exemplar for others to refer to and follow when designing within a different location.

C.03

Selection of Geographic Area, Site & Client

Client

For this next stage of the design-led research an imagined client scenario has been constructed to provide programmatic parameters to drive the designing.

Client Profile:

- Family of four.
- Spaces to include: Main living, dining, kitchen, study, movie room, laundry, mudroom, bedrooms and bathrooms.
- Three bedrooms required: one for the two parents, and one each for the two children (to become guest rooms in the future once children leave home)
- Three bathrooms required: one for the collective living spaces, one for the two children's rooms, and an ensuite for the parents' room.

To give grounding to this scenario, the number of bedrooms was selected to reflect the housing market of the South Wairarapa District. This was based on the dominant number of bedrooms per occupied dwelling in the area, with three bedroom dwellings being most common as identified by the Statistics New Zealand, Census of Population and Dwellings 2018 ("2018 Census").

C.04

Design Process & Methodology (Stage Two)

This content is unavailable. Please consult the figure list for further details.

Fig.104. *Perspective sketch by Luis Barragan*

Design Process and Methodology (Stage Two)

An iterative design process will be used to explore possible ways that Barragan's atmospheric light and colour strategies can influence contemporary architectural practice in New Zealand. As a continuum of the research each of the three colour and light strategies documented will be explored. The characteristics of the client, site and context will affect the test and architecture response and will be reflected upon throughout. Barragan's design process will be followed as set out in Pauly's book, 'Space and Shadow, Walls and Colour'. This includes creating 'spoken portraits' in which written narratives are created to imagine possible spatial scenarios and developing these ideas iteratively through perspective sketches and cardboard models.

METHODOLOGY DIAGRAM

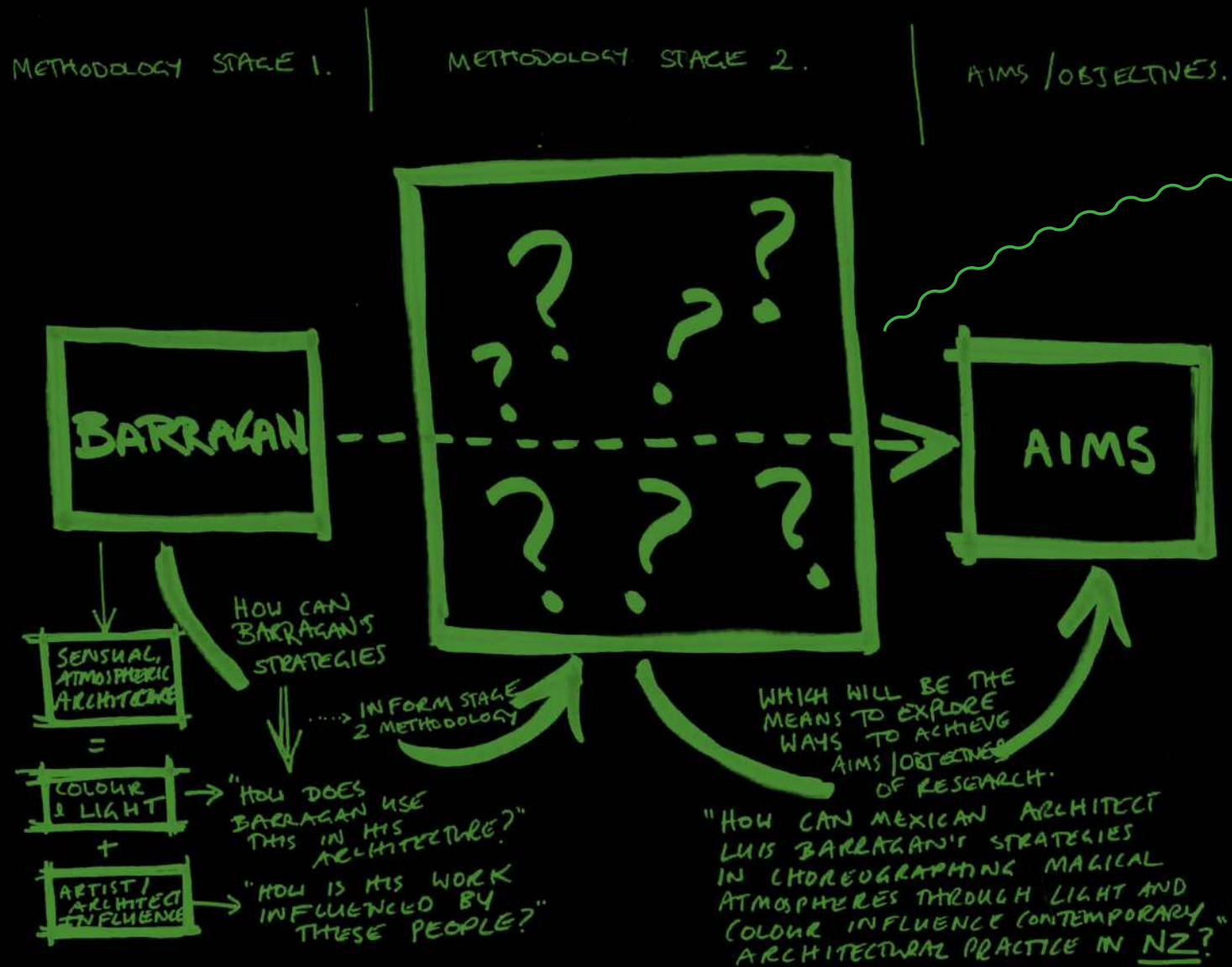


Fig.105.

STAGE 2 UPDATE

METHODOLOGY STAGE 1.

METHODOLOGY STAGE 2.

AIMS / OBJECTIVES.

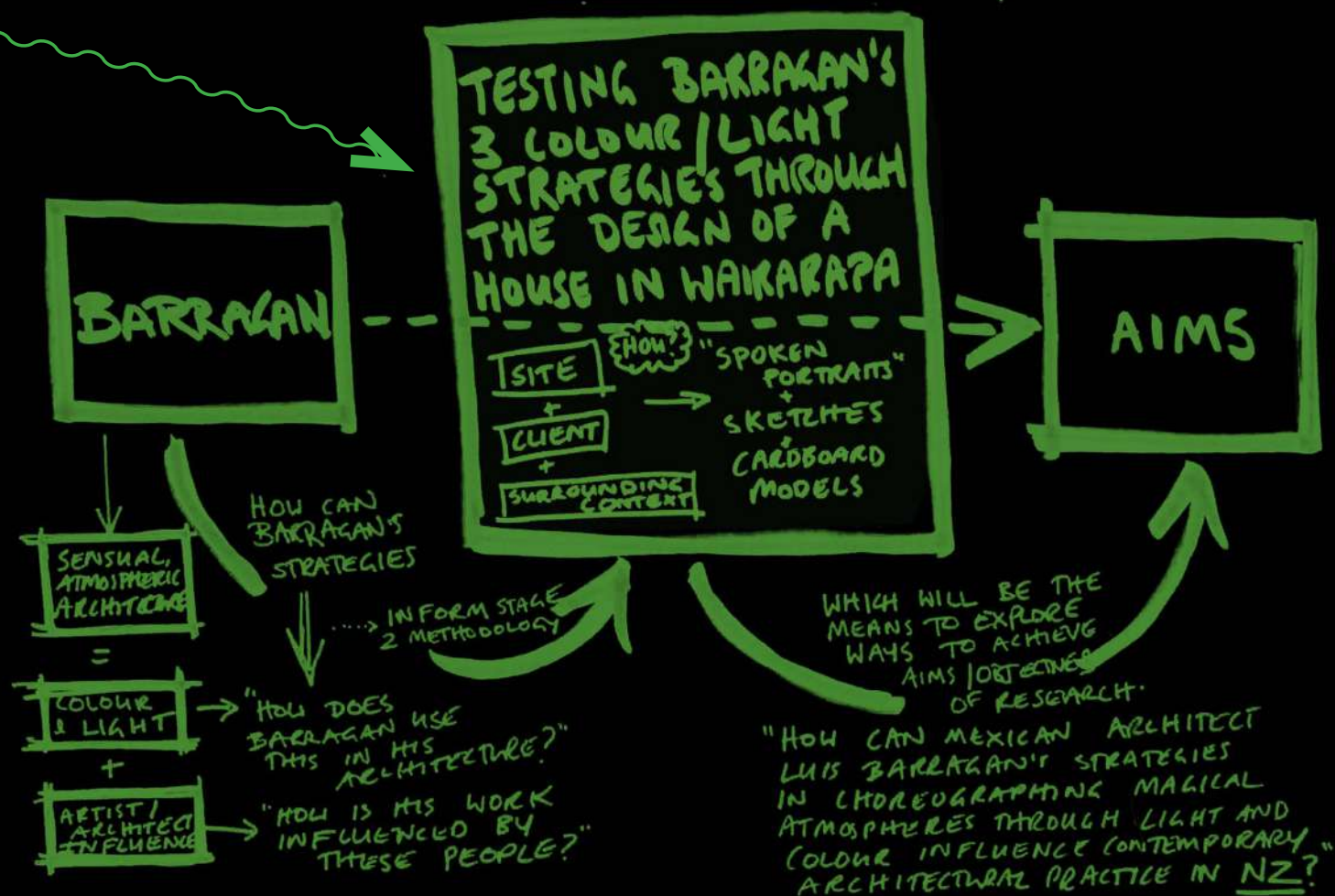


Fig.106.

PART D. RESIDENTIAL PROJECT DESIGN PROCESS

D.01 *Site Analysis*

D.02 *Architectural Context of South Wairarapa*

D.03 *Concept Design Part One*

D.04 *Concept Design Part Two*

D.05 *Developed Design*

D.06 *Final Design*

Fig.107. (next page) *Plan view of
physical model site and surroundings*



PART D. RESIDENTIAL PROJECT DESIGN PROCESS

D.01 *Site Analysis*



Fig.108. *Trees on site*



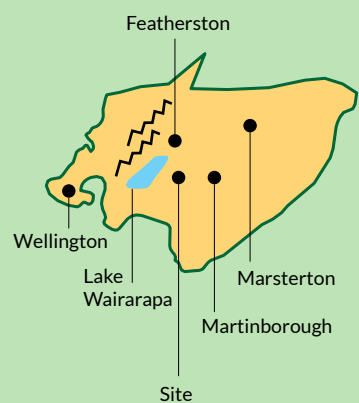
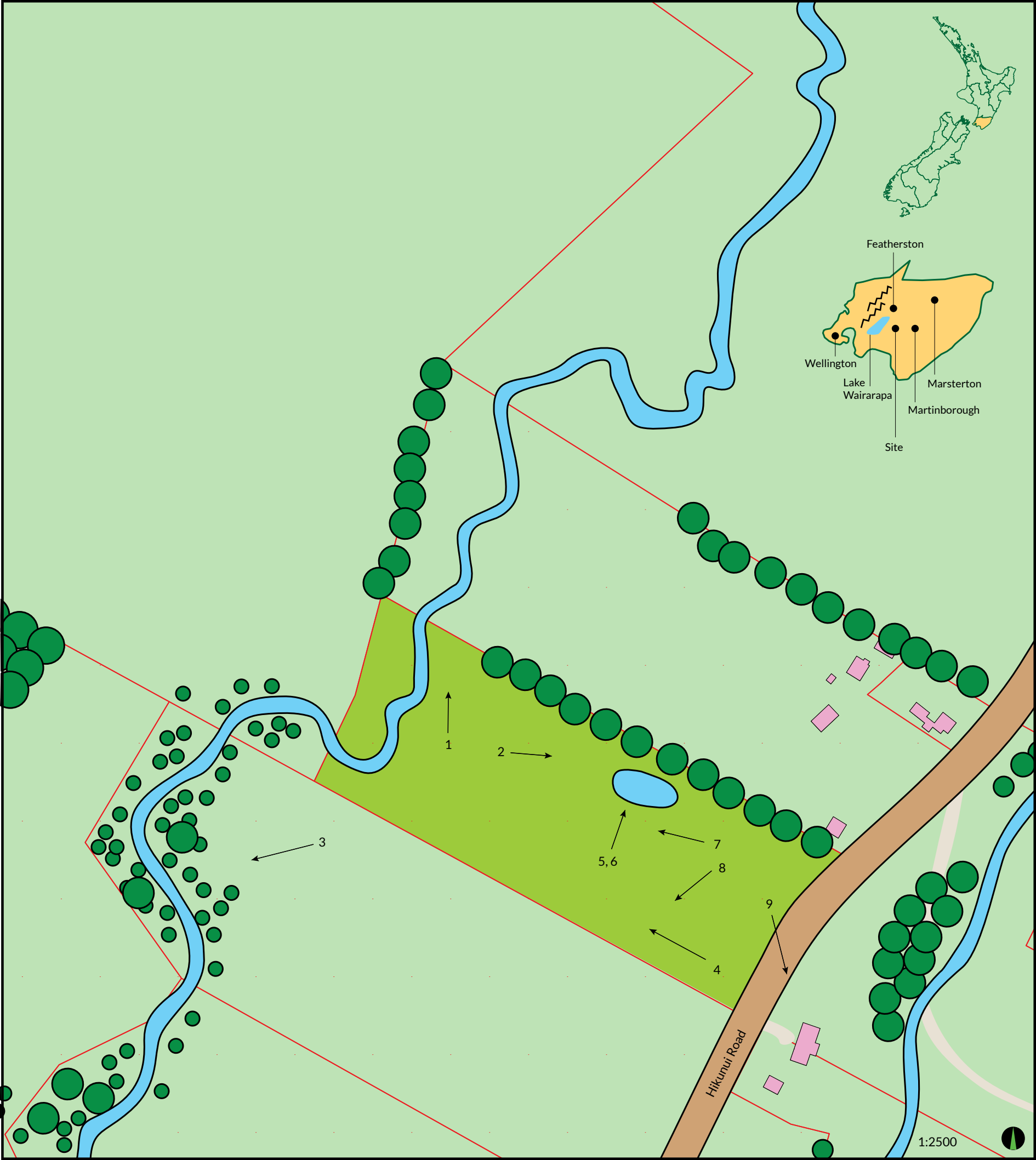




Fig.110. View NWW on site



1

2



3

4



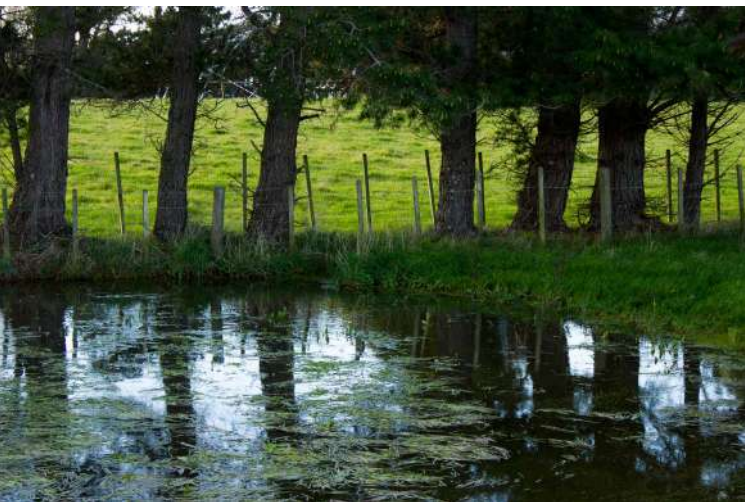
Fig.111. 1- 4 Views on site



Fig.112. Pond on site



D.01
Site Analysis

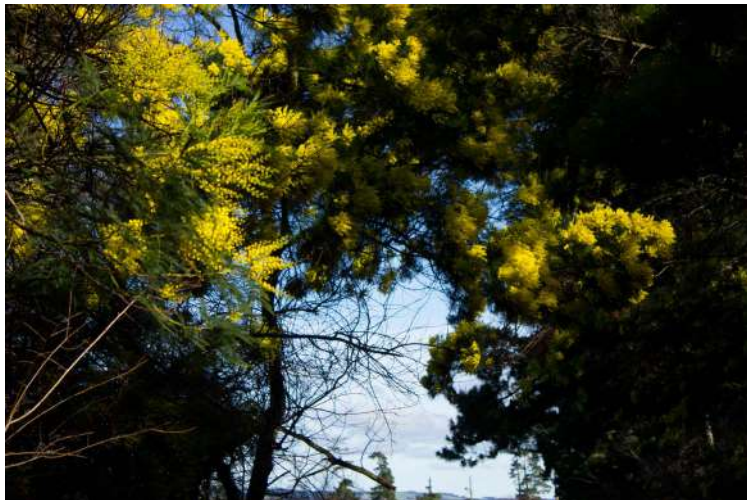


5
6

7
8

9
10

Fig.113. 5-14 Views on site



11

12

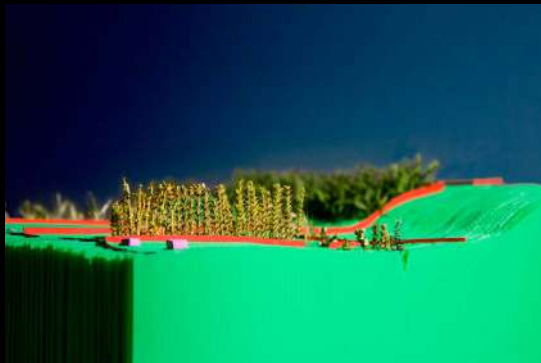
13

14



Fig.114. *NWW view of physical site model*





1:5000

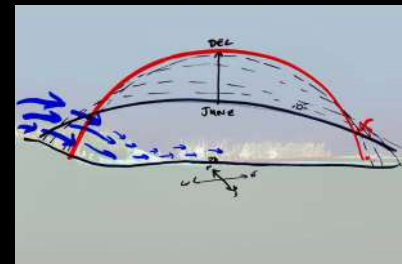
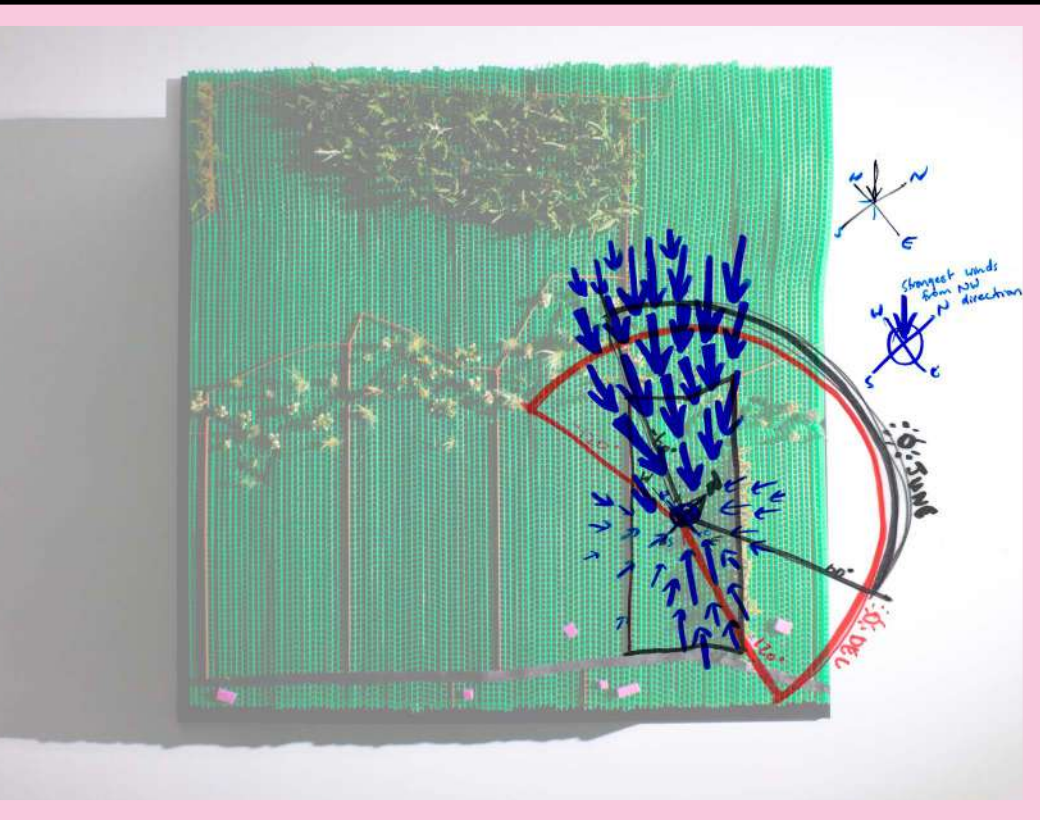


Fig.115. Physical model and sketches overlaid analysing site

PART D. RESIDENTIAL PROJECT DESIGN PROCESS

D.02

*Architectural Context of
South Wairarapa*

This next section covers a brief study of the housing types within a fifteen km radius of the selected site in South Wairarapa since early Māori Settlement. Farm buildings are also covered as these are quintessential to the region's history. The aim is to provide a contextual awareness of the residential architecture in the region and how this has evolved over time. This overview will form a foundation to aid the ongoing critique of design decisions, as to how the proposed architecture intends to be contextualised in a rural New Zealand setting that differs from Barragan's in Mexico.

D.02

Architectural Context of South Wairarapa

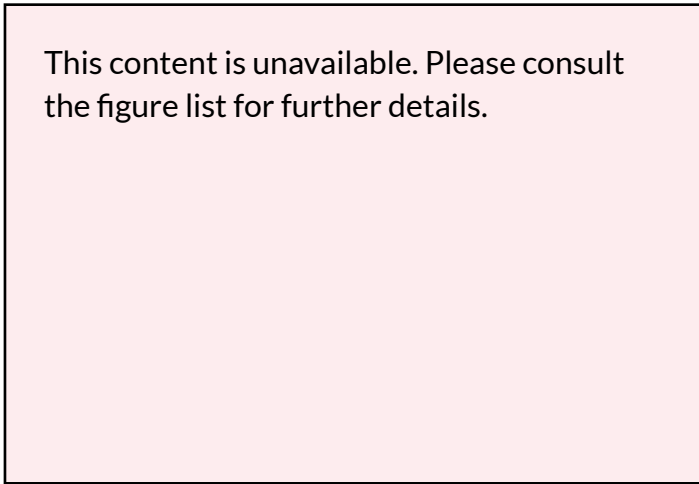


Fig.116. *Dicky Sayer's Slab Whare*

Introduction

The housing types covered include the Maori and early European whare, the cottage, villa, bay villa, farmhouse villa, transitional villa, Queen Anne style, bungalow, Art Deco, and farm buildings. The study includes personal photographs and illustrative observations of dominant architectural elements of each.

Maori Wharepuni

The Wairarapa heralds a long history in New Zealand as one of the earliest settled regions in the country (Kernohan, 11). Evidence suggests that the first settlement of people in the area arrived in Palliser Bay on the coast of the Wairarapa by AD 1000, with established communities by around AD 1050 to 1200 (Leach, 25). The wharepuni was the typical house construction for sleeping in, with other houses to serve specific purposes such as the whare pora (weaving), wananga (learning) or whareumu (cookhouse).

Early European Whare

Although Captain Cook first encountered the Wairarapa upon his arrival in Palliser Bay on the Endeavour in 1770, it was not until 1841 in the year subsequent to the signing of the Treaty of Waitangi, that Europeans explored the region (Leach, 29). By 1844 the earliest European settler houses were built in Wharekaka and Pihautea. The Europeans heavily relied on the Maori for their construction knowledge and techniques that utilised local materials. The abundance of timber meant the Europeans favoured using locally

sourced timber, such as slabs of totara, to construct their houses which were referred to as slab whare. Dicky Sayer's slab whare in Carterton, Wairarapa, built circa 1854, provides an example of one of the first fully European housing in the slab and batten construction. (Kernohan, 46-48)

The Cottage

The cottage was described by Charles Rooking Carter in 1866 as “... *genuine simplicity - a long, narrow but very large box ... divided into two rooms ... frequently supplemented with the fashionable and useful lean-to* (qtd. in Salmond, 73)”.

The Villa

Following the cottage, the Victorian Villa succeeded as a dominant housing style with its enlarged scale and sense of grandeur originating from the Italianate Style and its ornate complexity influenced by the Gothic Revival (Kernohan, 55).

The Farmhouse Villa and Homestead

As colonial settlement in the Wairarapa region was fundamentally one of farming, the country farmhouse villa and homestead held great significance (Kernohan, 111).

Bay Villa, Queen Anne and Transitional Villa

The Queen Anne style, with its predominant turret feature, was largely introduced in New Zealand around the 1870's through English Architects J J Stevenson and Norman Shaw (Kernohan, 57). The Bay Villa is recognisable by its bay window that is an exaggeration of the Villa's Chicago window (Kernohan, 56-57). Between 1900 and 1920 the transitional villa took shape, synthesising the form and plan of the Victorian Villa with the material and detailing of the Californian bungalow.

The Bungalow

From approximately 1920 the bungalow prevailed, largely influenced by the Californian Bungalow and was desirable through its “*implied relaxed lifestyle [that] contrasted with the more strait-laced yet overwrought designs of the villa* (Kernohan, 63)”.

D.02

Architectural Context of South Wairarapa

Art Deco

Art Deco reigned during the 1920s and 1930s, a time where there was great obsession over technological advancements such as the sleek and speedy appearance of luxury liners, automobiles, trains and aircrafts.

Farm Buildings

Wairarapa's picturesque qualities are inherent in the farm buildings dotted amongst the expansive land of rolling hills and wide pastures. Time slows as one passes the woolsheds, hay sheds, cowsheds, barns, living quarters and stables sitting idly amongst such wide, open space. There is a sense of charm inherent in the endurance of these buildings with their worn materials.

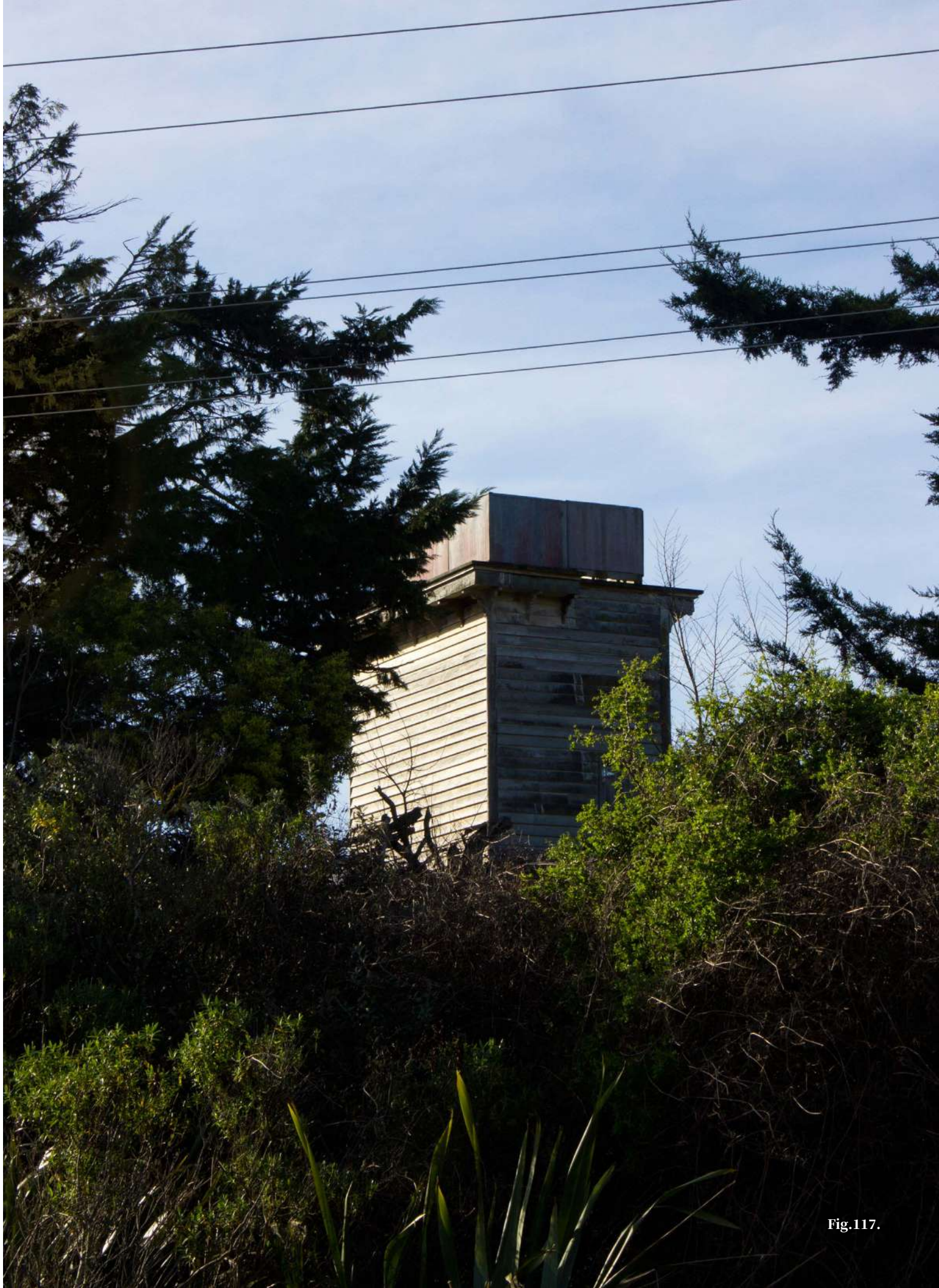
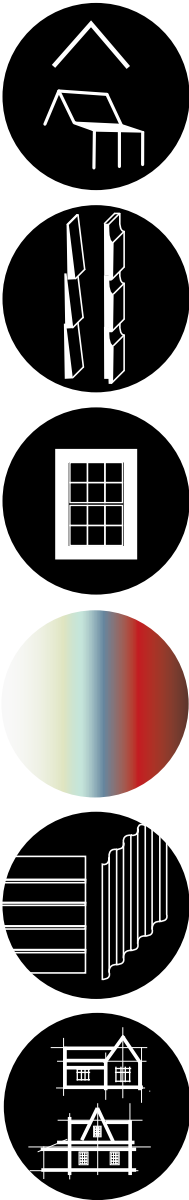


Fig.117.

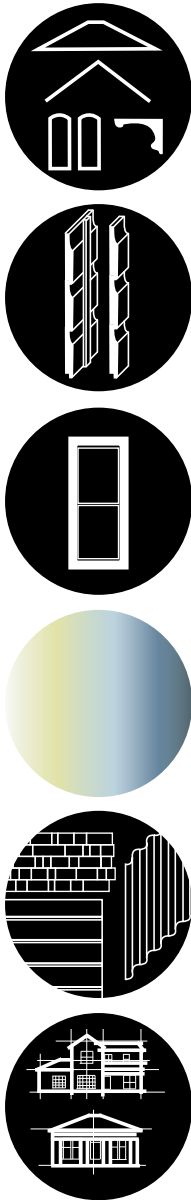
D.02

Architectural Context of
South Wairarapa

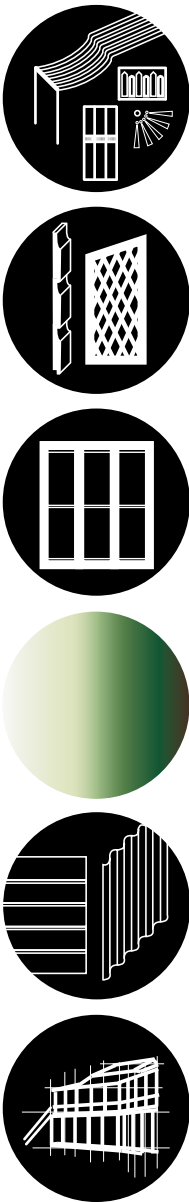
The Cottage



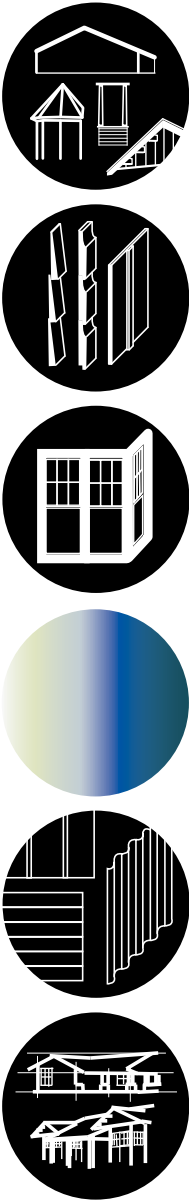
The Villa



The Farmhouse Villa / Homestead

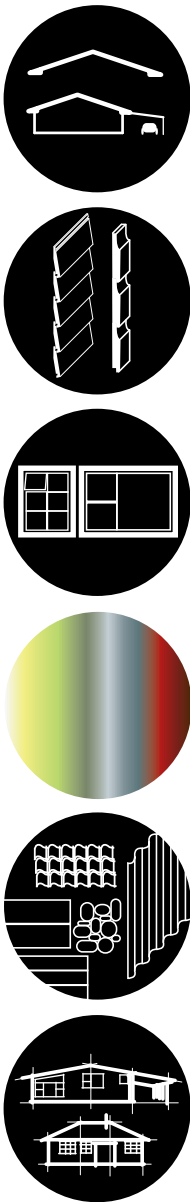


Bay Villa, Queen Anne & Transitional Villa



D.02
Architectural Context of
South Wairarapa

The Bungalow



Art Deco

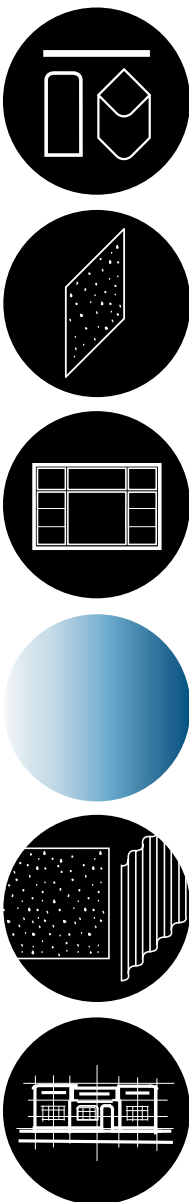
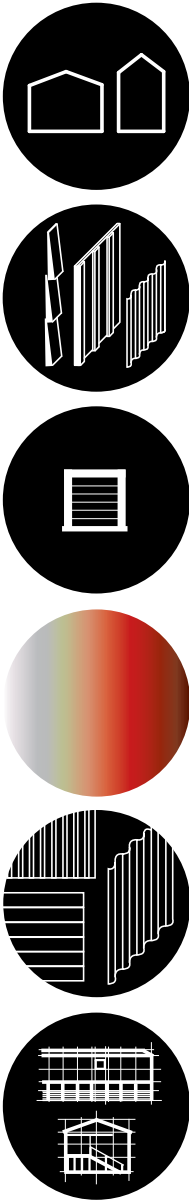


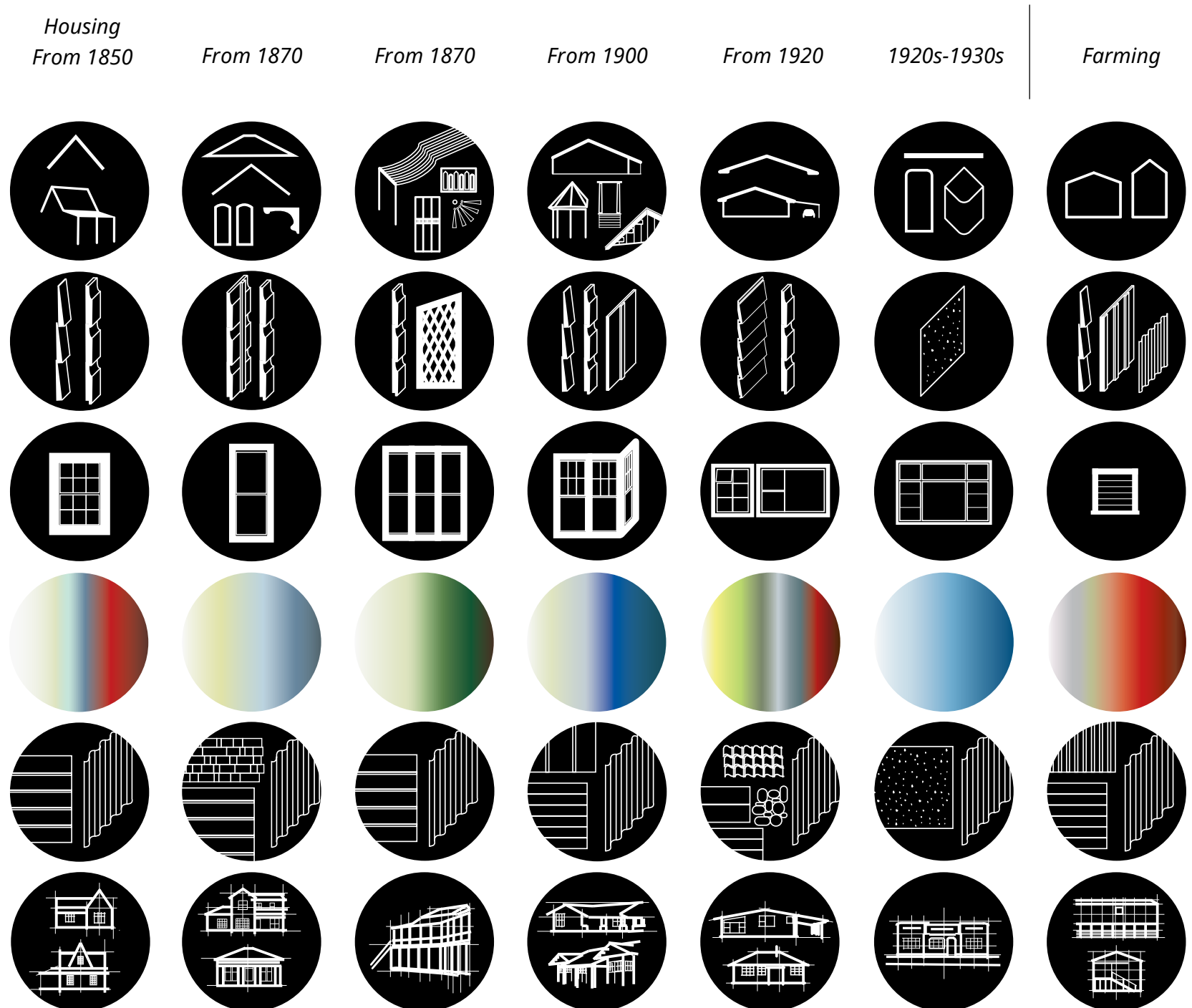
Fig.119. (Double spread) Observation photographs and illustrations

Farm Buildings



D.02

Architectural Context of South Wairarapa





D.02

Architectural Context of South Wairarapa

Reflection / Summary

Gabled rooflines and verandahs populate the Wairarapa, with timber being the most predominant material. Claddings are majoritively horizontal weatherboard, rusticated and ship-lap timber profiles, vertical board and batten, and corrugated iron. Simplicity is inherent since the earliest whare dwellings, whether through the floor plan or form, however the popular decorative elements of the 19th Century had a great impact on the picturesque charm of the Wairarapa. A strong use of colour is apparent, with the most common hues of reds, blues, and greens, and a clear lack of pinks and purples. The use of colour in the Wairarapa seems to have diminished with new builds since the rise of modernism and the reign of group housing. Contemporary houses arguably lack the charm of these earlier buildings, becoming repetitively achromatic, swollen by bulky garages, and dominated by characterless aluminium window and door joinery. In his book, *Wairarapa Buildings, Two Centuries of New Zealand Architecture*, David Kernohan suggests that *"a return to weatherboards and timber joinery may prove more successful not just in construction terms but also aesthetically (Kernohan, 77)"*.

Throughout this photographic journey, highly noticeable are the sharp shadows and high contrast between light and dark. Shadowy moments mask movements under verandahs and bright exterior faces shine brightly next to near pitch-black openings. Mysterious these openings are, disappearing to nothingness. Green pervades the surrounding landscape, turning a dry ochre in winter. Hues of timber and metal claddings change as they age and weather with



Fig.123. Key light observations

the environment. Charm in the Wairarapa is in the visible evidence of its transformations over time.

What this study further acknowledges, is New Zealand's strong historical tendency to borrow architectural influences from overseas. It becomes very appropriate to contemplate this, as the notion of seeking international influence yet appropriating it to a local context resonates with the central focus of this research, which is fundamentally doing just this - to seek influence from an architect in another country. Past attempts to make the borrowed architectural characteristics relevant for the context of Wairarapa include using local materials and construction methods. However, it seems this housing since European colonisation failed to make spatial planning reflect the social, cultural and climatic conditions of New Zealand. As Kernohan discusses, the Wairarapa saw little of the exploration into "*open planning and indoor/outdoor living, of economy and simple functionality* (Kernohan, 74-75)" that New Zealand architects such as Group Architects and John Scott were experimenting with. (Kernohan, 74-75) It is anticipated that during the design stages to come, this discussion of relevance will become prominent. From the ideas borrowed from Barragan, what will remain unchanged, or rather, what will be altered or discarded to achieve relevance for the Wairarapa context? Further, what happens as a result of making those changes; especially when considering the relationship with colour and light?

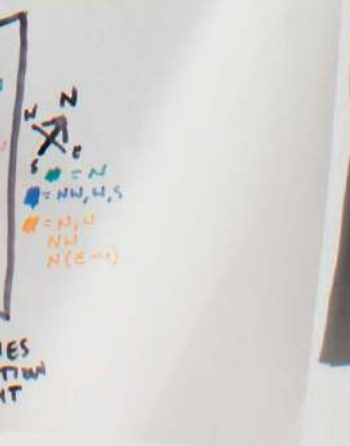
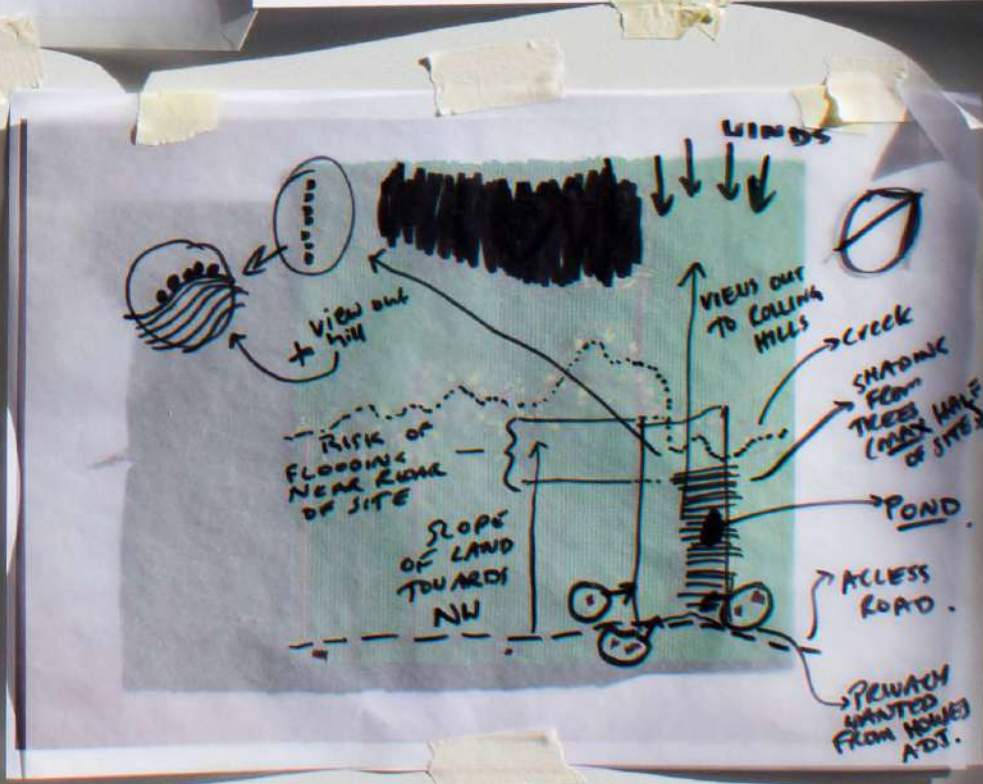
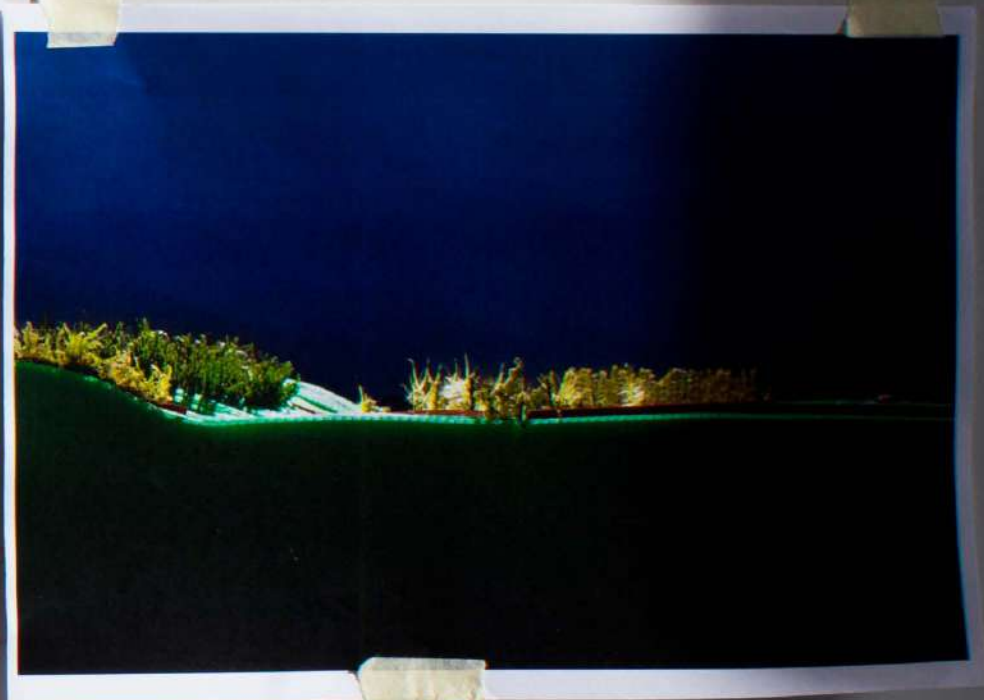
PART D. RESIDENTIAL PROJECT DESIGN PROCESS

D.03

Concept Design Part One



Fig.124. Studio Space



COLOUR, Hell of a Good Thing!

D.03

Concept Design Part One

Written Narratives

The orientation of each colour/light strategy was mapped on the site. These orientations are based on how Barragan staged each strategy within his houses. For example, he tended to always orientate his coloured latticework the same way to invite direct sunlight throughout the day, whereas his coloured walls are often orientated to invite a contrast of light and dark with walls perpendicular to one another. This helped to understand which orientations on the site may best suit each strategy. From this, two written narratives of spatial concepts were imagined as a starting point to test these colour/light strategies within the design of a house.

Fig.126. (double spread)
Conceptual written narratives

CONCEPT 1 - WRITTEN NARRATIVE

One walks down the gentle slope of the land towards the bare faced southern side of a house perched on a diagonal slope towards the north. A thin, tall opening punctures the blank facade on the left side. The opening, spreading from the ground to the start of the roofline is mysteriously inviting, a black depth in contrast to its adjacent cladded walls. Upon entering this narrow entrance, a door appears, as your eyes adjust to the darkness. This entrance door leads you forward towards a black wall and soft glow of coloured light illuminating surfaces from the right. This light guides you around the corner to a longer narrow corridor flooded with this coloured light. The source of this light is now more obvious, as a large coloured lattice wall to the left is painted to reflect colour + the interior. And further down the corridor, a stronger intensity of coloured light falling from above, from an unknown hidden source. Walking towards this light, as you pass the lattice wall you turn your head to catch a glimpse of the outside through the lattice's voids. The view is of dappled sunlight filtering through tall slender trees just outside the lattice wall, and of a courtyard with walls forming a barrier to any view beyond. At this point, the

space is enlarged in width and to the right is a low bench. Just after this, you stand at an intersection directly beneath the coloured light from above. Looking forward, there is a door about 2m in front. To the left is another similar sized corridor with a black wall at the end that extends beyond view to the right. Finally, to the right is a stairwell leading upstairs. The door in front opens to reveal a room which is dark and shadowy. In its corners to the right and left, a table, low ceiling compressing its volume, with couches to the right and a television to the left. In the middle corner however directly opposite your current position captures you. This corner is glazed on the left side taking up half the width of wall and full height to the ceiling. Light fills at this point, softly coloured from the reflection of two exterior walls that form a 90° angle with which echoes the interior angle of the glazed corner. These exterior walls extend above and to the side out of view. Between the glazing and the exterior wall opposite is a pool of water about 1/3rd the width of the interior space. Exiting back through the same door and turning right towards the narrow corridor, a darkness pulls you forwards.

This darkness is reminiscent of that of the entrance, however this time the glow of light at the end coming from the right is uncoloured. As you turn the corner towards the light, what faces you is a much larger, taller space that extends to both sides. Directly in front of you however, to the immediate line of sight however, is towards a window opposite with a width to match the width of corridor you are now standing in. The view out of this window is of a first glimpse of the land outside. Of the green grass at the base, the reflection of a pond beyond and the tall slender trees at the furthest point creating a dark expanse of shade in front. The kitchen is to the right, a dining table to the left, and at the end of the space what of the table is a large great window to the north. The glazing fills the width and height of this long rectangular space of which feels longer by the exterior decking that extends north from the window/door glazed door. Natural light fills the space and the elongation directs your movement towards the northern glazing. One past the dining table, another space lower down opens up to the left about the same size in width yet half the length. Solid walls flank each side, with a small set of steps facing the northern wall. Four or five steps take you to this bunkered space and a screen partition hides what lies around the corner. Turning to the

left, the space opens up, with glazing that wraps both west and northern sides. This living space feels separated from the kitchen and dining, yet linked without the separation of walls. The glazing creates a 180° view unobstructed by building towards the rolling hills beyond. Afternoon light warms this space. Decking wraps the exterior to the left towards a sheltered courtyard seen from the entrance lattice wall. You feel encompassed by the views and warm from the sun, like a final destination point at which you have finally arrived.

CONCEPT 2 - WRITTEN NARRATIVE.

Upon approaching the house, a tall slender dark void catches attention. It punctures a mass that is extruded forwards towards you, with the rest of the house sitting slightly further back. This black void, although daunting, must be the entrance. The voids mystery pulls you in to a tight corridor that faces a dark, bare wall. A glow of colored light softens this void from the right - pulling you around the corner. You now face a corridor that has tripled in length and also faces a bare wall at the end. Lattice-work to the left opens the space and makes it feel wider with light and views out to a courtyard. At the end of the corridor there is an entrance door to the left that leads inside. Upon entering is a lower ceiling height compressing you inside. Another corridor, yet wider this time and a high, long stretch of thin glazing extends the length on the left side. This glazing is colored and fills the space with warm light. Low down is a deck, where a long bench seat also extends from wall to wall below the glazing. Near the end of this corridor is a bench with a view to the right, this is the entry and mud room. On the end wall is another door, through this is a long corridor that stretches left and right, with a bare walk directly opposite you.

The dining room frames your view west to the afternoon sun and out to the green, rolling hills and trees. Walking back to the kitchen and facing now the steps that brought you up you now face the study and living room. Flanked by walls on either side, you descend the stairs and walk towards the large, northern glazed window/door and out onto the deck. This living area is an extension of the kitchen, yet cosy, lower down, private from surrounding buildings and exposed to the views beyond. Walking back down the colored light corridor you come back at the door that lead from the entrance / mud room. You continue down this where on the right is a stairwell leading upstairs - a glow of colored light flows down from above the stairs. A door towards you leads to the dark, shadowy movie/kids lounge room that is softly lit & one corner by an exterior patio. The patio of colored walls and a shallow plane of water on the ground between emits colored light inside. Through another door is a bathroom shared by this more space and a guest bedroom on the other. Lead by a dark small corridor, the guest bed opens up to a view of the languid pond and trees beyond. Private from the rest of the house, this guest bed opens to a small exterior deck. A small thin window in the room brings in the afternoon sun and from bed you can see directly a framed view of the hills.

But it is the colored light + the left that you continue to follow. This light comes from a series of repeated tall, slender colored glazed windows on your right. They face north, bringing in an overwhelming vibrancy of light. The ceiling height is higher. Before reaching a partition screen at right angles to the corridor at the end, is a small set of steps to the left. These lead up towards a kitchen at the south end of the house. Before reaching the kitchen island two things happen. The first, is your head swings to the left where a glazed door and window show an external courtyard that was seen through the lattice-work at the entry. Colored exterior walls catch attention in this courtyard and they lead the eye up to the sky. This courtyard is muted, quiet, sheltered from wind, it is just the passing of the day which is sensed through the change of shadows casted upon the walls - As well as the changing hue of the walls as the sun passes. This courtyard filters the kitchen with morning light. The second occurrence is turning your head to the right, or, if coming back to the kitchen through the door from the courtyard - looking directly ahead - another space wings off from the kitchen pointing west.

Barragan initiates

“...‘dreaming’ the project design and making a spoken story out of it...(Pauly, 138)”. During this period he does not draw, but rather allows the imagination inside his brain to run free, dreaming up possible architectural schemes (138).

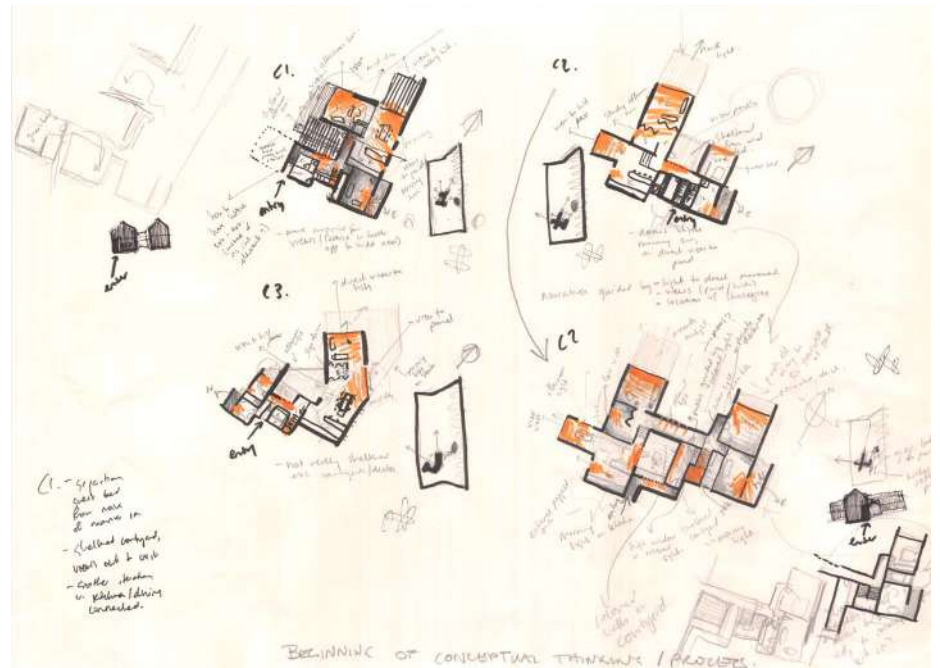
D.03

Concept Design Part One

Concept One

Conceptual Sketches & Models

These sketches and models of the following three architectural concepts are a continuation from the written narratives. Each concept explores the use of the three colour/light strategies, yet in three different approaches. These are derived from an imagined interior experience desired and how this connects with the surrounding site. This follows Barragan's process, in which the exterior results in a direct expression of the interior experience. Each concept is driven by the desire for a courtyard with high coloured walls that could also provide shelter from the dominant north westerly winds, a mysterious street façade with few openings, and a dynamic interior experience that reveals and surprises with twisting and turning, dropping up/down, varying interior volume sizes and contrasts between light and shadow. Choice of colour is not fully considered yet, only the placement is focussed on at this stage.



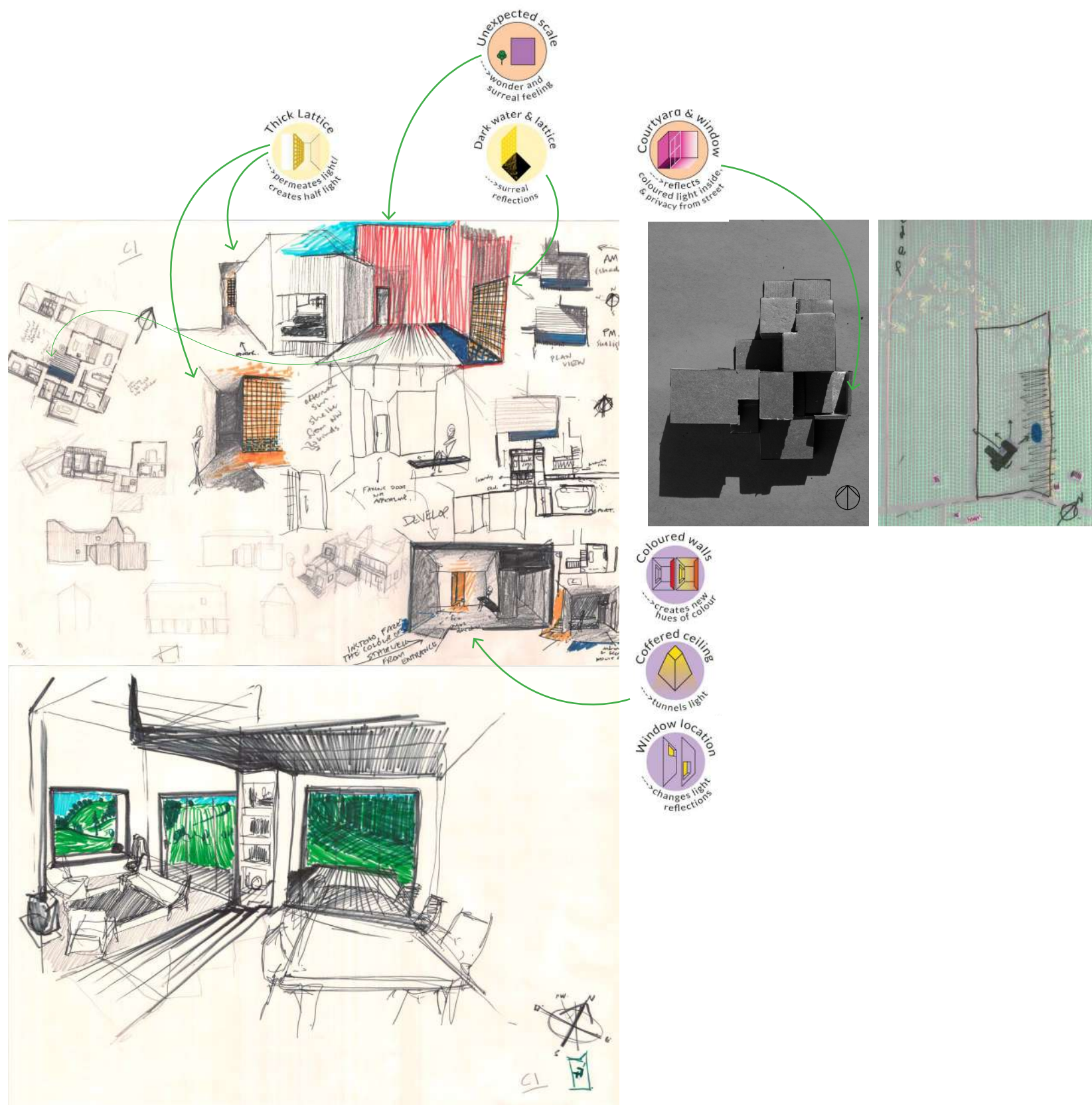


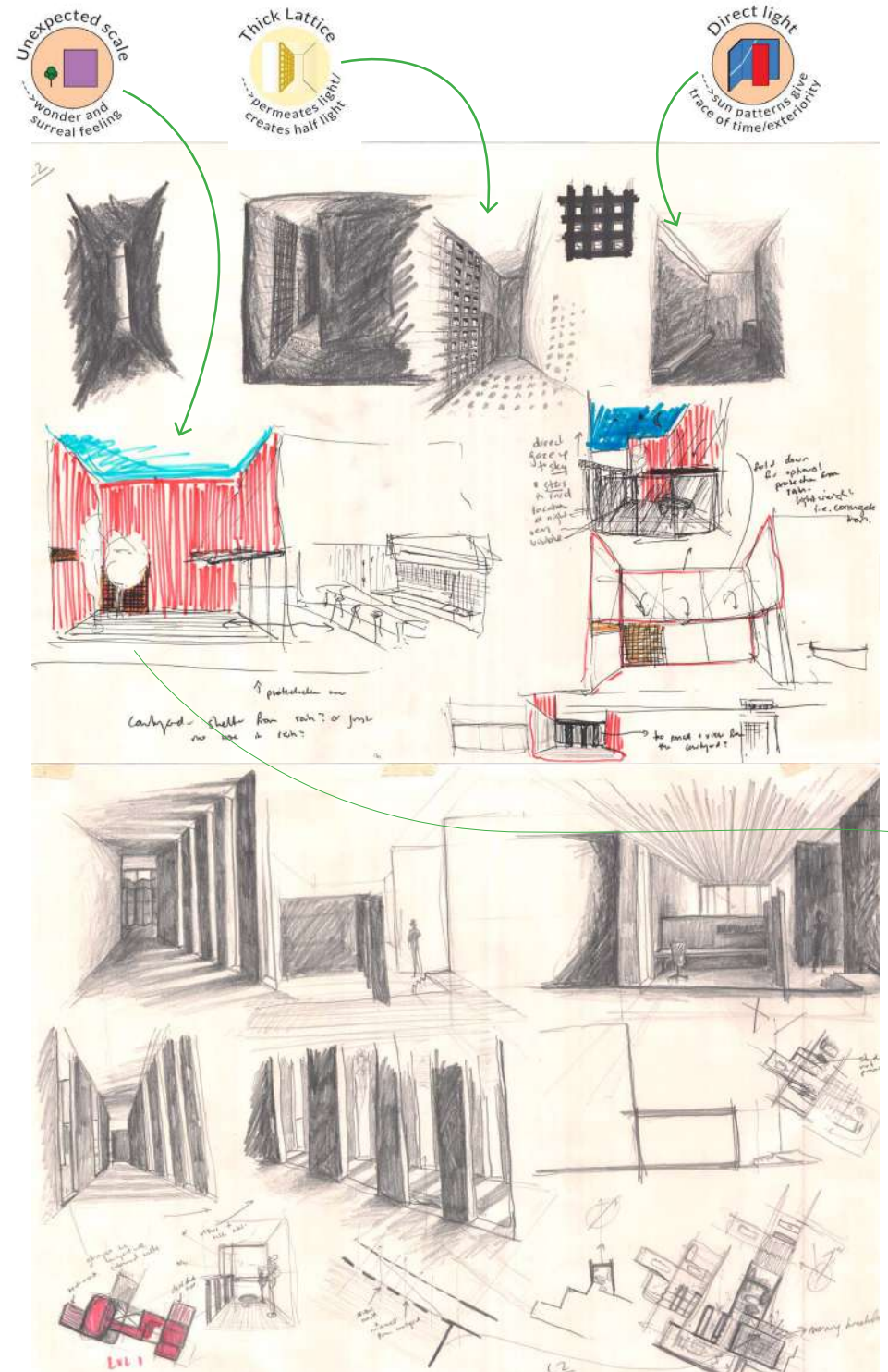
Fig.127. (double spread)
Conceptual sketches and models

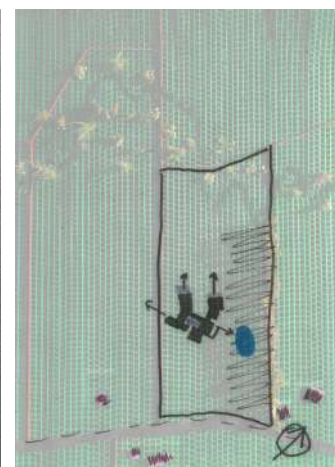
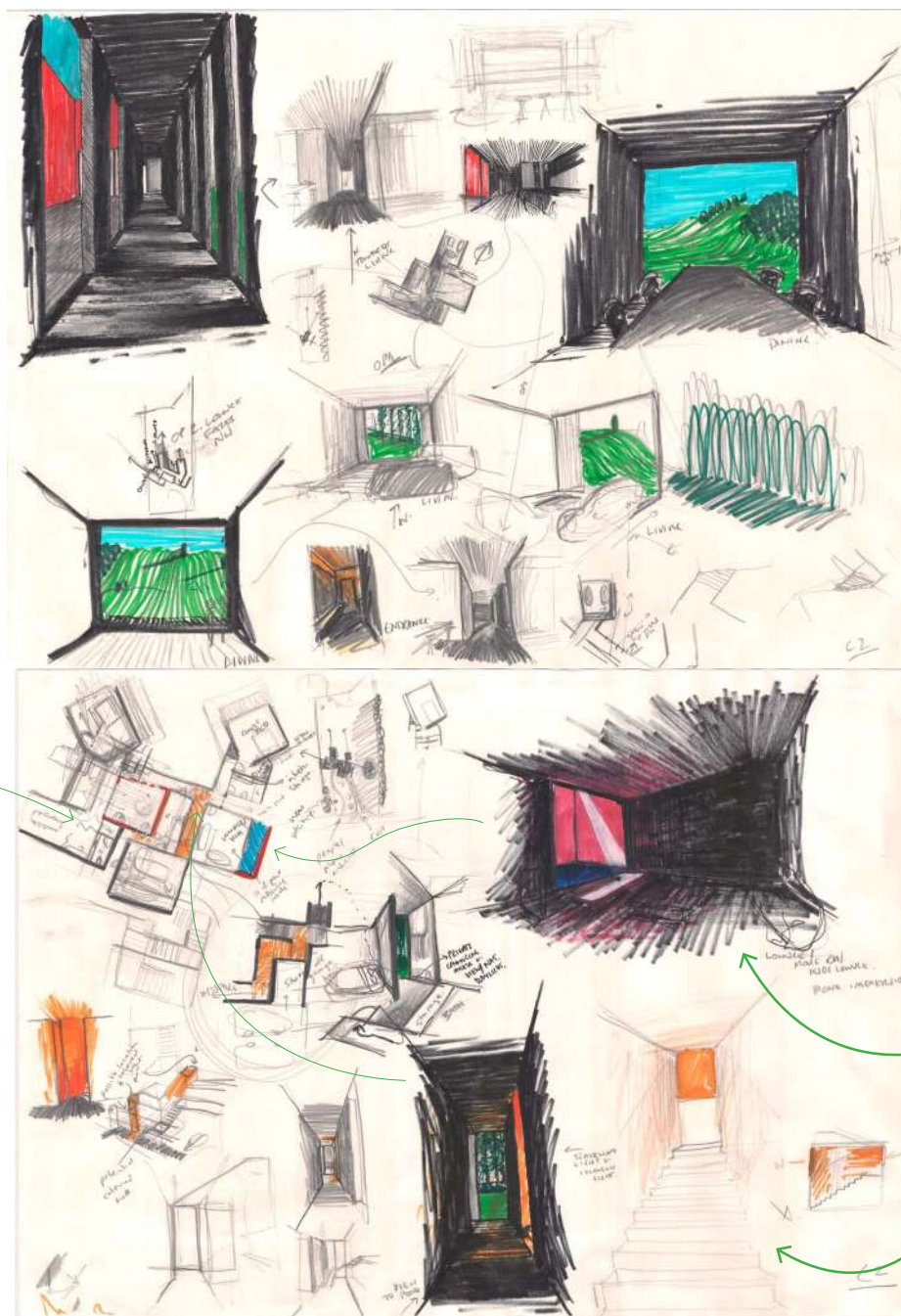
Concept Design Part One

Concept Two

Conceptual Sketches & Models

One of the major challenges of having a courtyard that provides an exterior space with buffering from the prevailing winds, is the great views to the hills from this direction. Each concept therefore allows for openings in the courtyard to allow for views out. In this iteration, the courtyard tunnels morning light into the kitchen space, and has a hallway with repeating windows to the north to allow for views to the hills. This provides privacy and shelter from the wind whilst allowing for visual connection with the surrounding land. In concept one, the bunkered down living space forms the northern side wind buffer of the courtyard, whereas in concept three priority has been given to the views towards the hill.





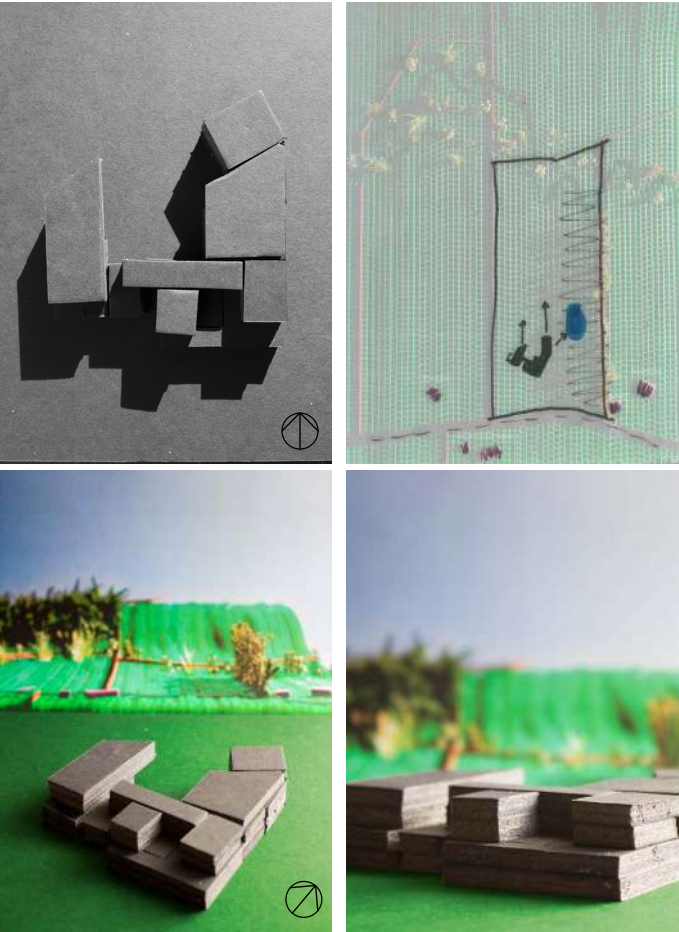
Courtyard & window
coloured light inside
& privacy from street

Window beyond view
leads eye,
creates intrigue

Fig.128. (double spread)
Conceptual sketches and models

D.03
Concept Design Part One

Concept Three



Reflection

Concept Design Part One – Reflection

The three concepts seem to have rather complex layouts as a result of the twisting/turning journeys to give emphasis on the surprise of the coloured moments. This complexity seems to juxtapose against the simplicity of Wairarapa buildings, and the charm inherent with this. These concepts lack the functional simplicity that underpins and reflects the region. The next task therefore, will be to test ways to simplify the design. The concern in doing this is that the twists/turns and dark/light transitions may be sacrificed. The challenge will be to seek a balance between the two in order to achieve coloured moments that are both surprising and impactful, yet part of a simplified whole. Concepts One and Three will be developed further.

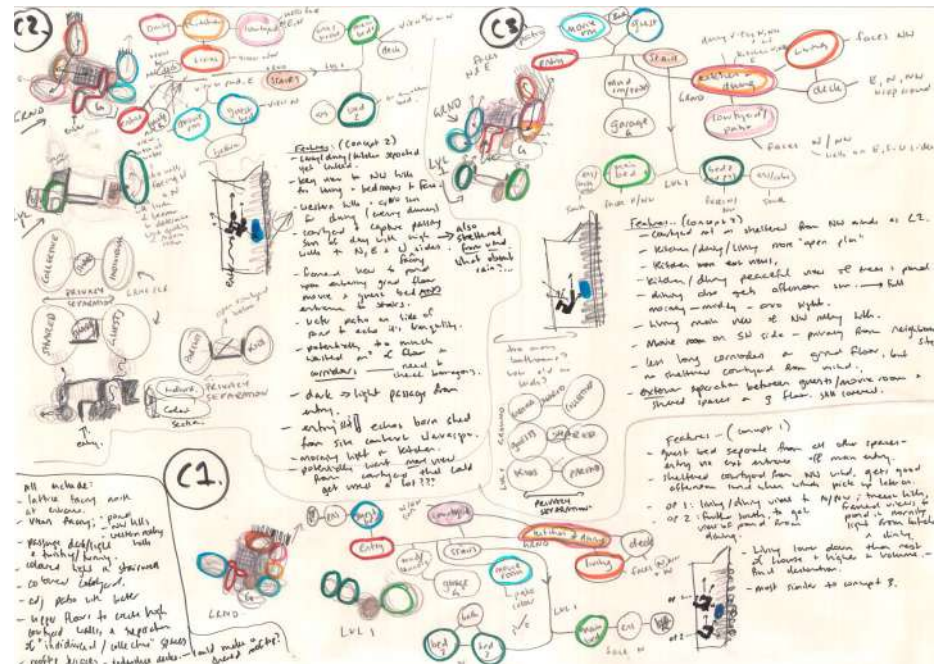


Fig.129. (double spread)
Conceptual sketches and models

PART D. RESIDENTIAL PROJECT DESIGN PROCESS

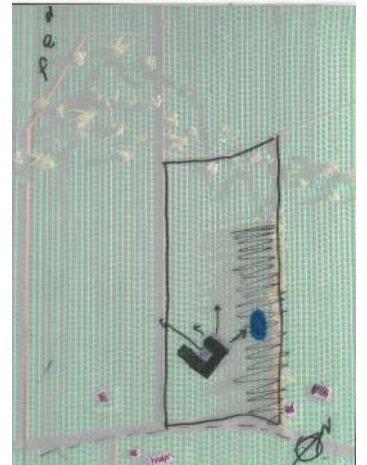
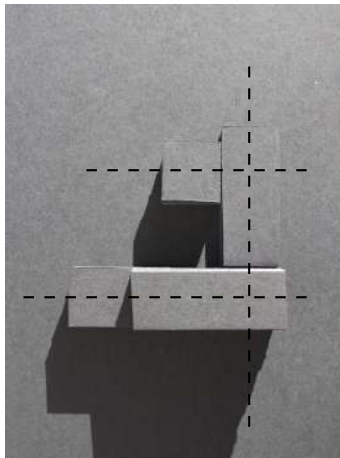
D.04

Concept Design Part Two

D.04

Concept Design Part Two

The form is now simplified into three main axes taken from concept one, with the middle block angled slightly to allow for greater views from the living spaces out towards the north westerly rolling hills.



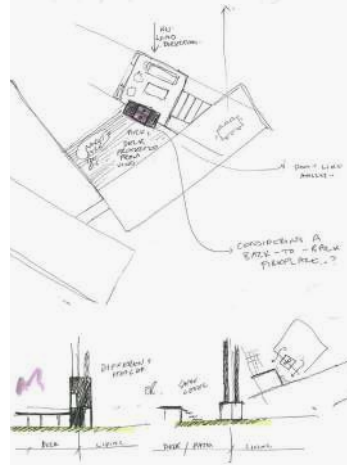
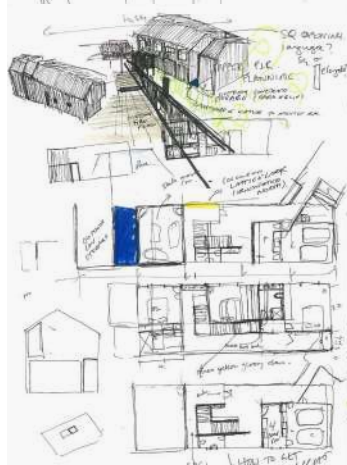
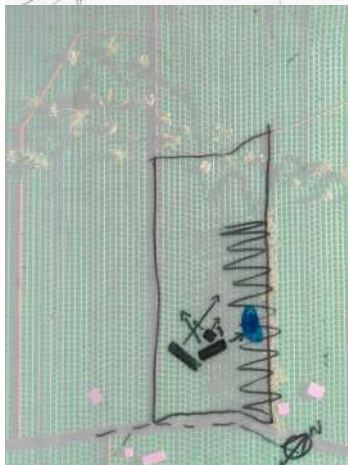
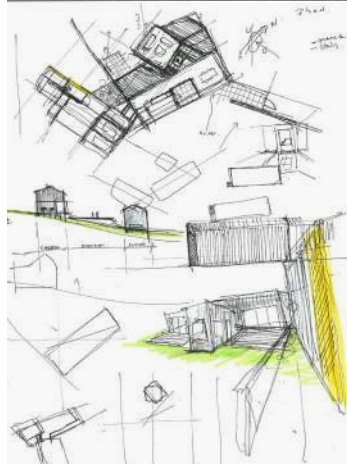
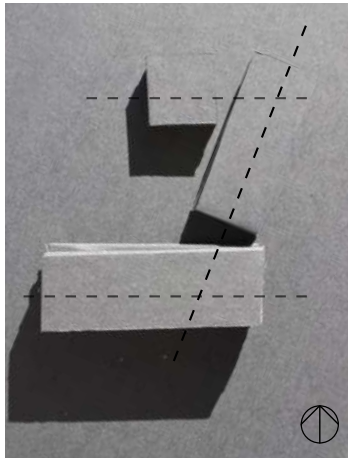


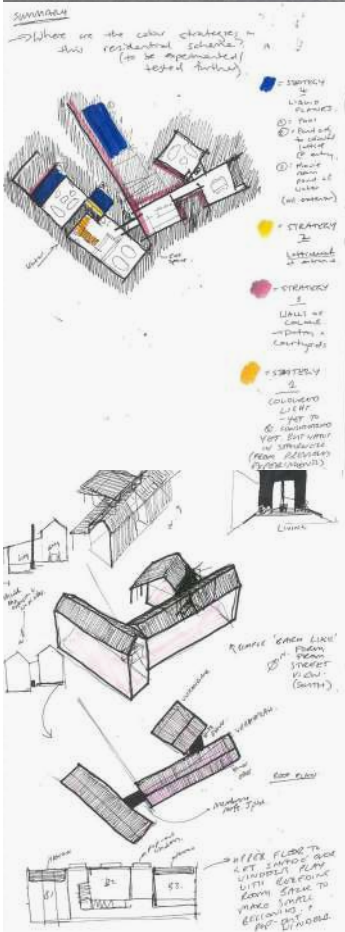
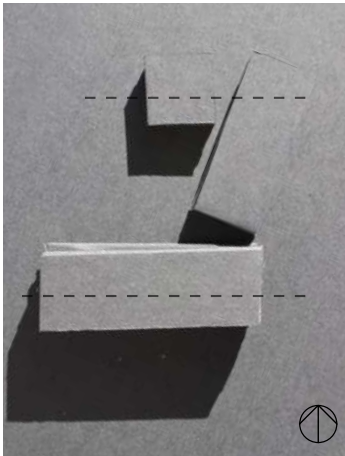
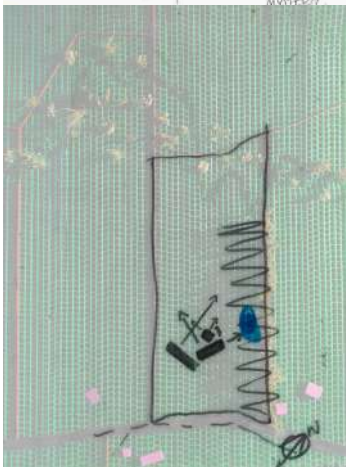
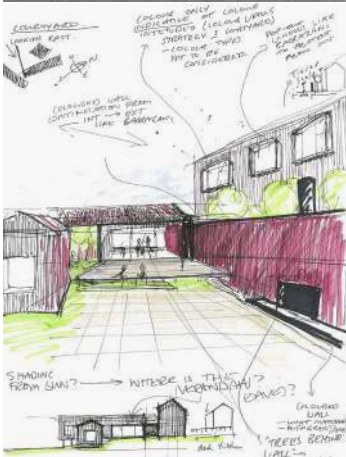
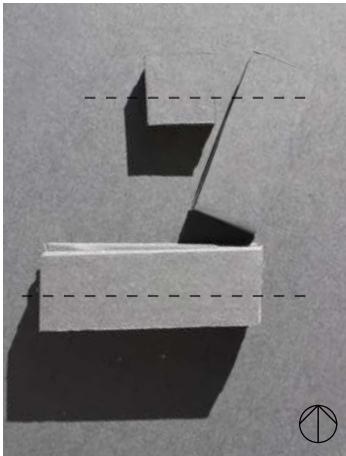
Fig.130. (double spread) Conceptual sketches and models

D.04

Concept Design Part Two

Reflection

The courtyard of this new, shifted configuration takes on a very different language, as a coloured wall extrudes from the interior out towards the hills. This wall becomes a landscaping element slicing through the land, directing your gaze out to the view beyond. At current, the colour/light strategies are mapped, with water planes integrated into the landscaping to provide surreal reflections with the walls of colour and latticework. Throughout this conceptual stage the formal language of the house remained orthogonal in keep with Barragan’s architecture, and as a means to simplify the massing of volumes. The rooflines are now tested as gable forms to echo surrounding architecture and accommodate rainfall in the region.



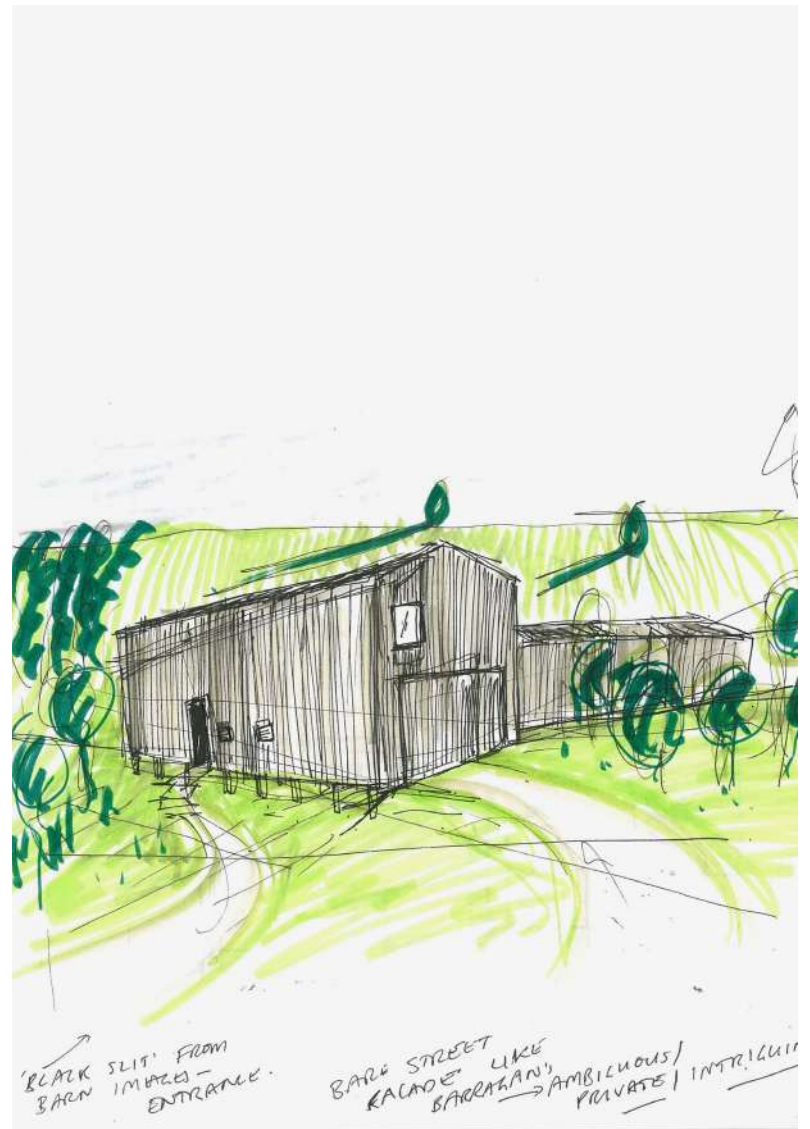
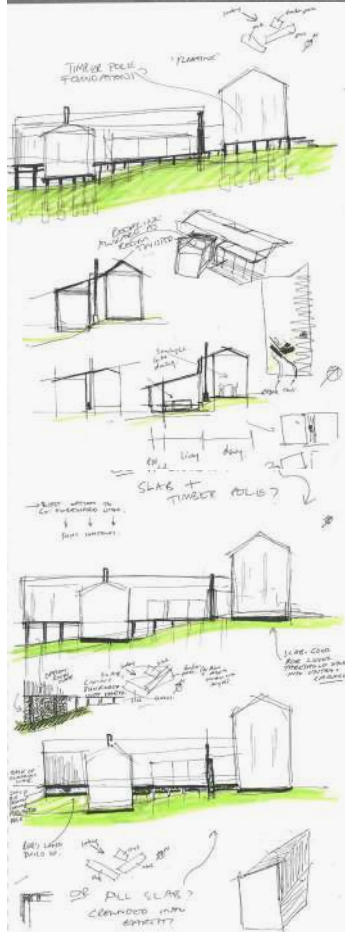
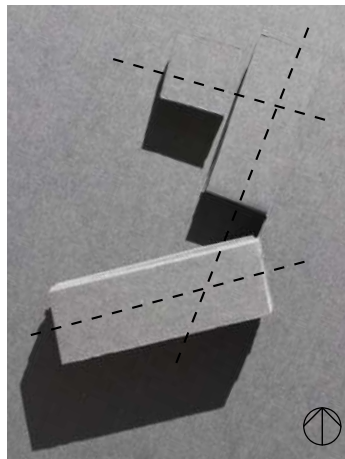
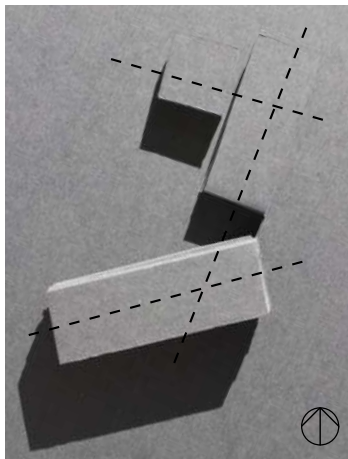


Fig.131. (double spread)
Conceptual sketches and models

D.04

Concept Design Part Two

Reflection

The current design now resembles the simplicity of a local farm building from its exterior, with its street frontage revealing little of what lies inside. This alludes a similar sense of mystery as Barragan did with his bare street facades, inviting one to discover what lies beyond. The exterior entrance way becomes a focal point as a contrasting slit of darkness punctures into the exterior form. Upon entering this, a coloured latticework wall faces north that reflects colour inside and transforms the space from darkness to a shadowy half-light. This area allows one to take off muddy boots whilst shading from the sun's heat before entering the interior of the house. Planes of colour intersect the simplified linear forms of the house, becoming tunnels for light to enter and for colour to reflect inside. One of these areas, is the patio adjacent to the rumpus room in which exterior coloured walls surround a pool of water. This is similar to Barragan's Galvez house, and was the basis for the design experimentations done earlier within the planes of colour section. The other pocket of colour is the outdoor patio that separates the kitchen and dining spaces, which also has coloured exterior walls. And finally, coloured

light is integrated into the stairwell leading to the bedroom and study spaces on the first floor. This coloured light washes down from a window on the first floor, hidden from view from the ground floor. The intention is that this coloured light would create a mysterious glow from the ground floor and be slightly visible from the entrance door. The design experiments from Part B initiated the design of each strategy within the house, for example the coloured walls outside the rumpus room are tall and have a coloured wall above to evoke the light qualities of S3, design experiment ii. Although simplicity has created a new restriction to the forms of the house, there remains a dynamic passage of differing light/shadow intensities through varying volume sizes, twists/turns, and stairs leading up/down that should attribute to the surprising coloured moments.

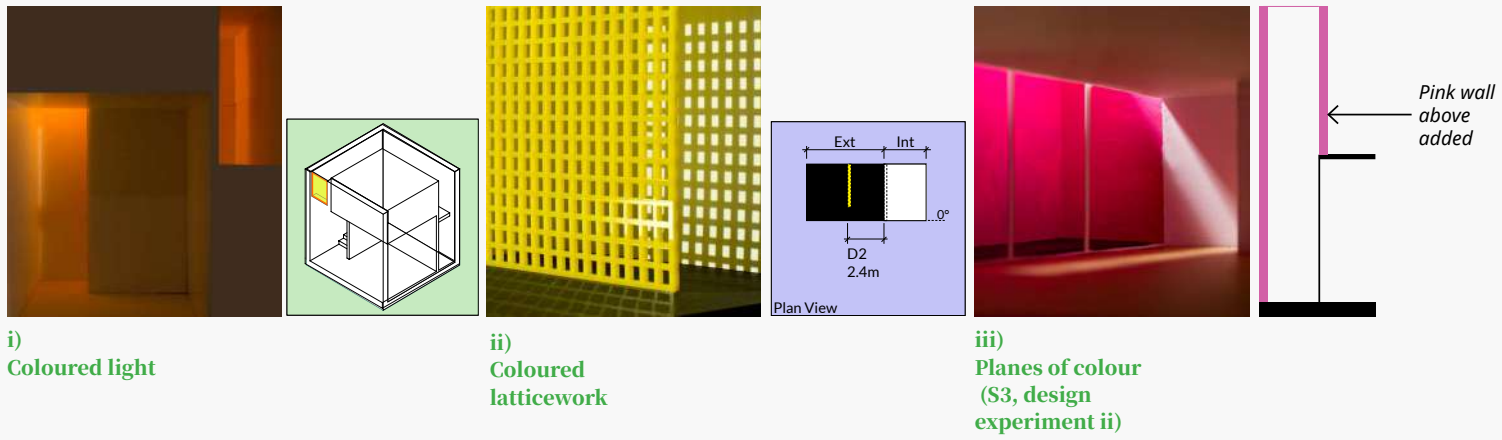
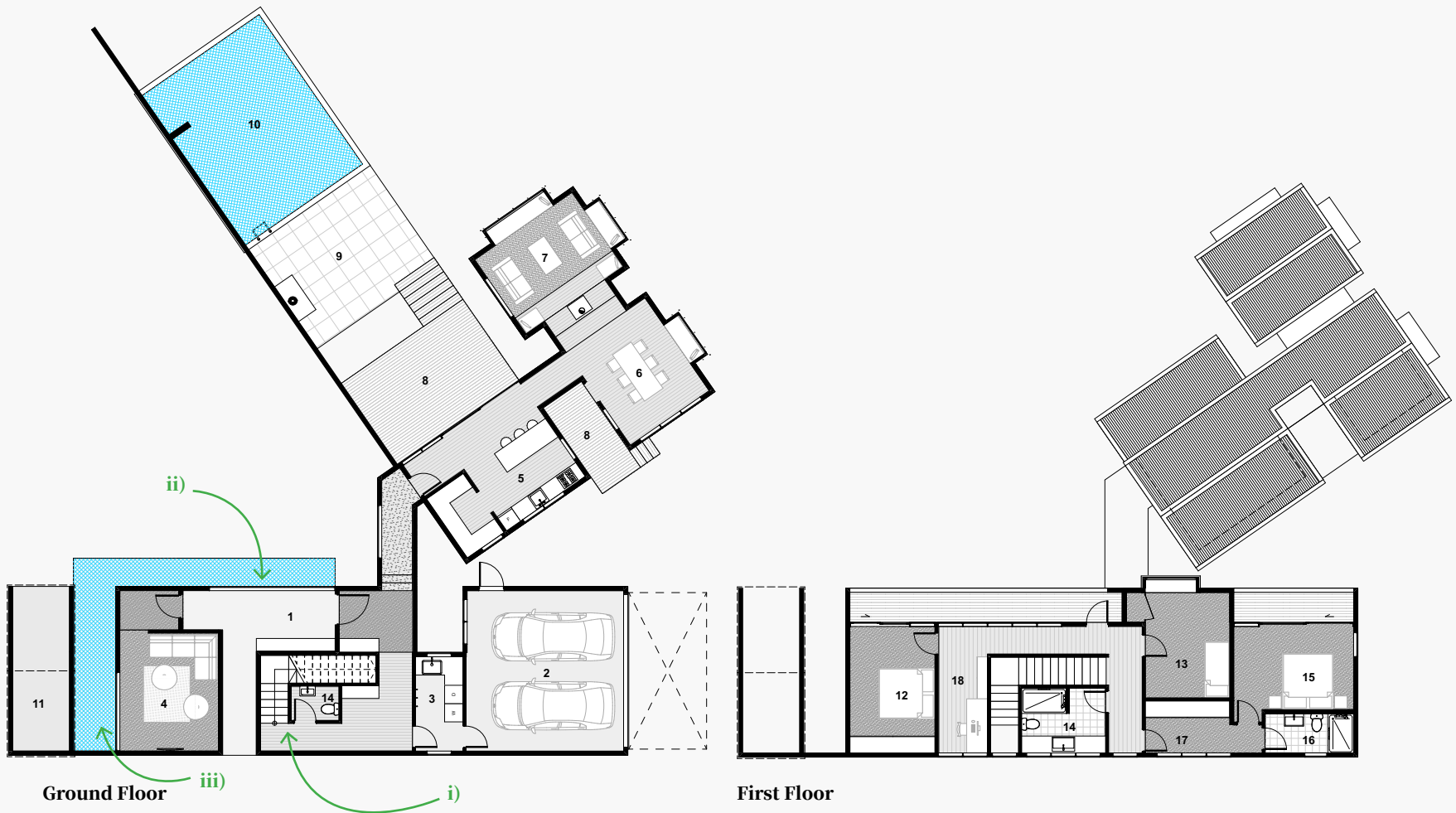


Fig.132. Colour/light design experiments from Part B



Floor Plan Legend
Scale 1:250

1	Entry	7	Living	13	Bed 2
2	Garage	8	Deck	14	Bathroom
3	Mud room / laundry	9	Patio	15	Bed 3
4	Rumpus room / outdoor water patio	10	Pool	16	Ensuite
5	Kitchen	11	Outdoor storage	17	Wardrobe
6	Dining	12	Bed 1	18	Study

Fig.133. Concept Floor Plan

D.04

Concept Design Part Two

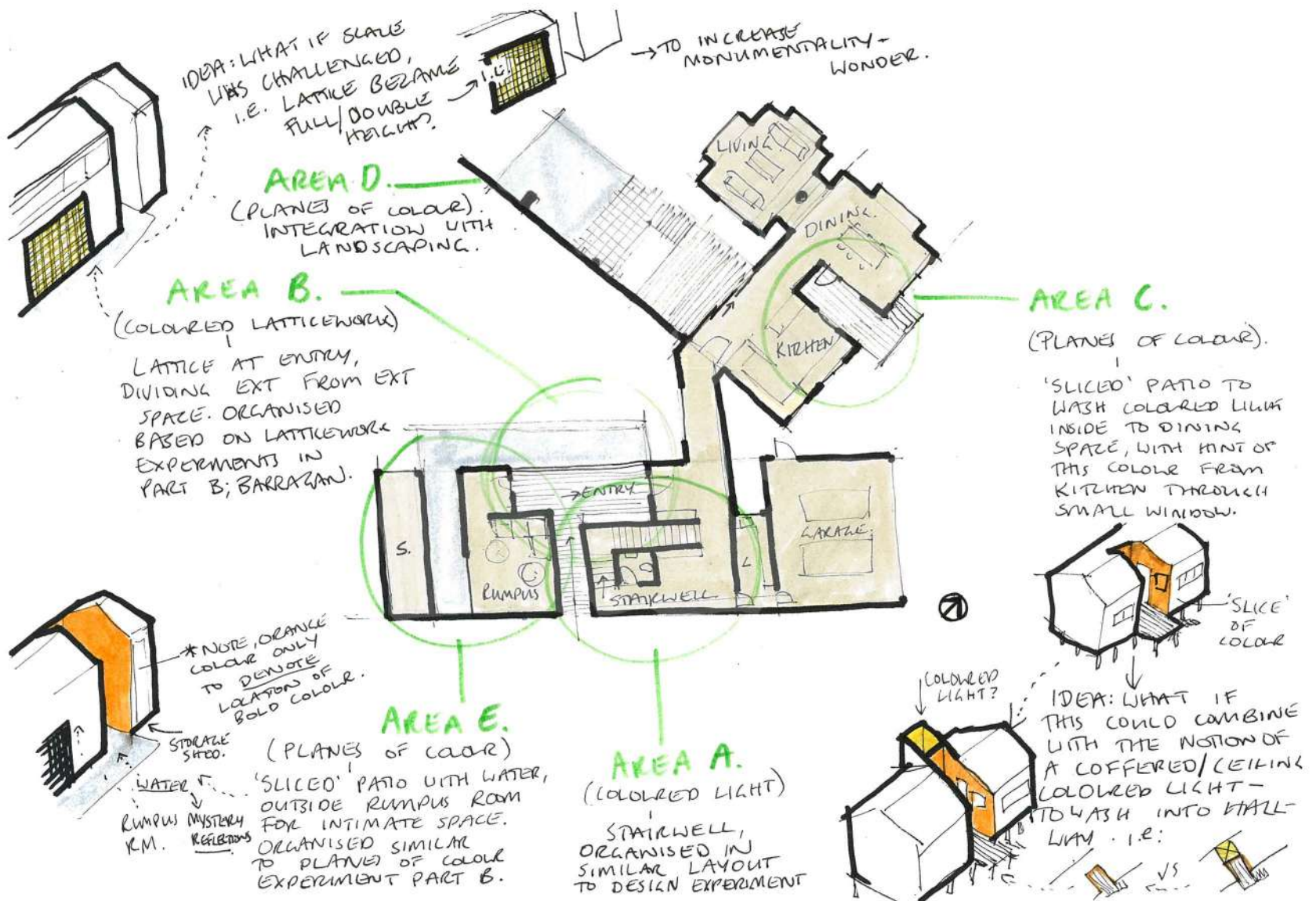


Fig.134. (Pages 183-186)
Integration of colour/
light experiments from
Part B in current design

AREA A: STAIRWELL. COLOURED LIGHT.

MATERIALS?
COLOURS?

MYSTERIOUS GLOW
OF COLOURED LIGHT,
COMING FROM WINDOW
HIDDEN ABOVE (TO THE
SOUTH - STREET FACADE).

↓
IDEA: THIS COULD BE
EXPLORED AS A
LIGHT WELL I.E FROM
ABOVE.

LAYOUT &
POSITION OF
HIDDEN WINDOW
SOURCE TAKEN
FROM PART B
DESIGN EXPERIMENTS.

WALL
PAINTED
COLOUR LIKE
IN DESIGN
EXPERIMENTS
FROM PART B.

STAIR UP
TO FIRST
FLOOR.

DOOR
TO
WC.

↓
ANOTHER IDEA: BRING COLOURED LIGHT
INTO ANOTHER AREA OF HOUSE.
I.E. IN HALLWAY BETWEEN KITCHEN &
DINING?

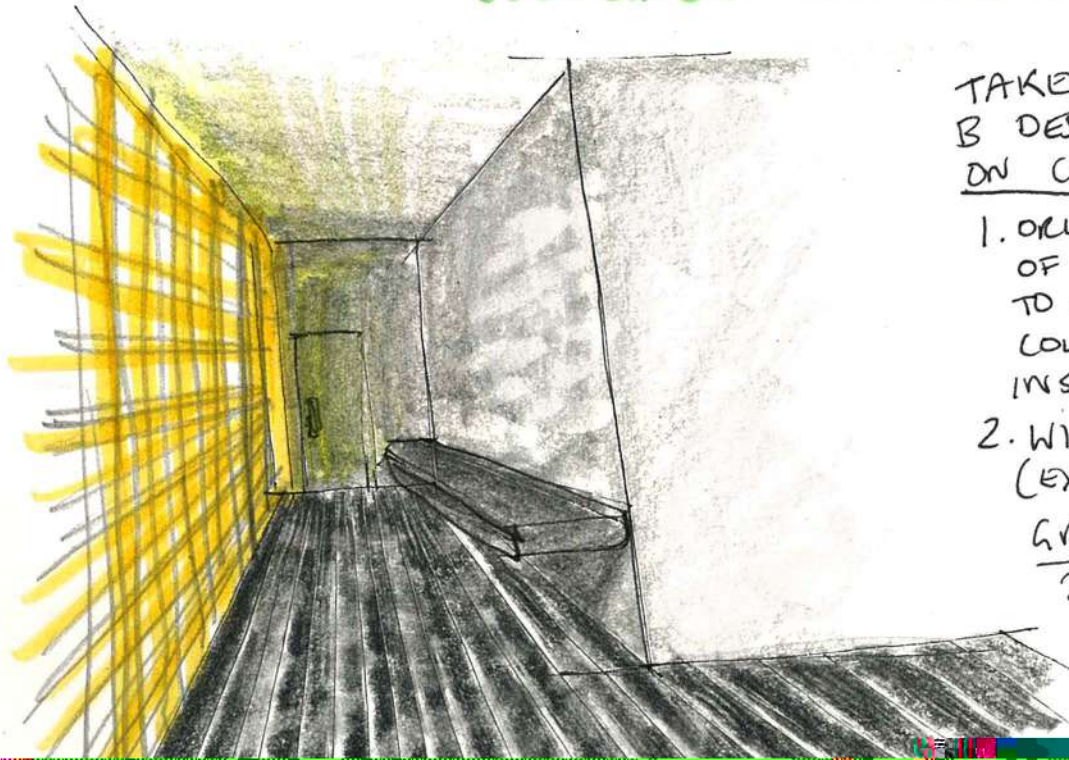
GLAZING
PAINTED
ABOVE.

THAT COLOURED
GLAZING FROM
ABOVE?

PEEP
THROUGH
TO PATIO
VALS
OF
COAR.

SURROUNDING
MATERIALS? EYE DRAW
IMPACT ON
ATMOSPHERE.
UP.

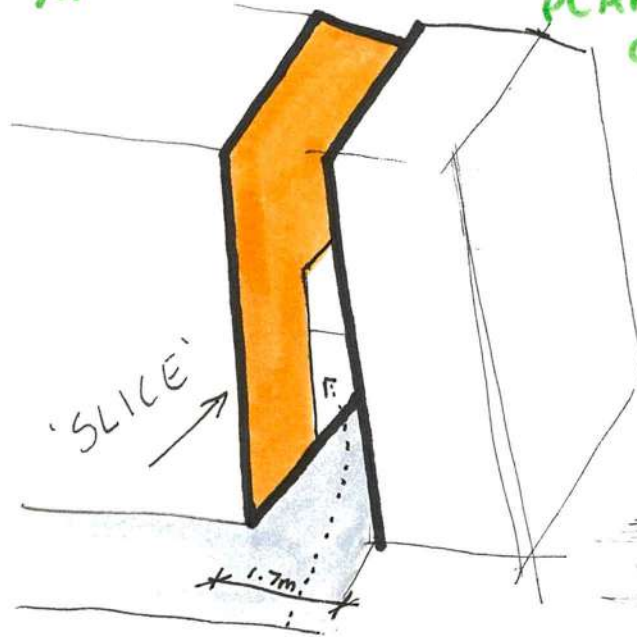
AREA B- EXTERIOR ENTRANCE. COLOURED LATTICEWORK.



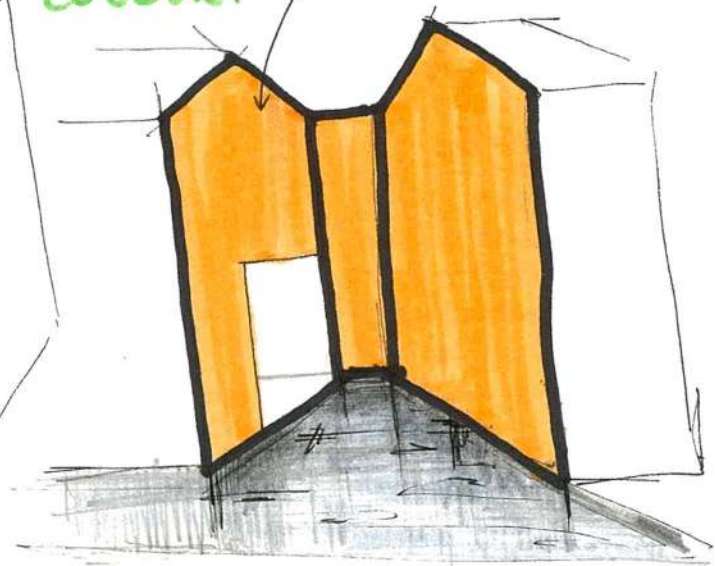
TAKEN FROM PART
B DESIGN EXPERIMENTS
ON COLOURED LATTICE:

1. ORIENTATION & THICKNESS
OF LATTICE (THICKEST,
TO REFLECT MORE
COLOURED LIGHT
INSIDE).
2. WIDTH OF SPACE
(EXPERIMENT 2-
GREATER WIDTH,
2.4M) WHICH
GAVE GRADIENT
OF COLOUR
REFLECTE +
SOFT REFLECTED

AREA E-MOVIE/RUMPUS RM + PATIO.
PLANES OF
COLOUR.



RUMPUS/
MOVIE ROOM.



TAKEN FROM PART B DESIGN
EXPERIMENTS ON PLANES OF COLOUR:
PLANE OF TUNNELLING

D.04

Concept Design Part Two

Fig.135. Physical
conceptual model



Fig.136. Colour/light strategy locations within house (in orange)

Legend

- Initial consideration of colour/light strategy locations for exploration (note - orange colour used only to locate these areas as actual colours yet to be decided)

- A Stairwell
 Strategy 1: Coloured light
 Strategy 3: Planes of colour

- B Covered exterior entry
 Strategy 2: Coloured lattice

- C Exterior courtyard off kitchen and dining
 Strategy 3: Planes of colour

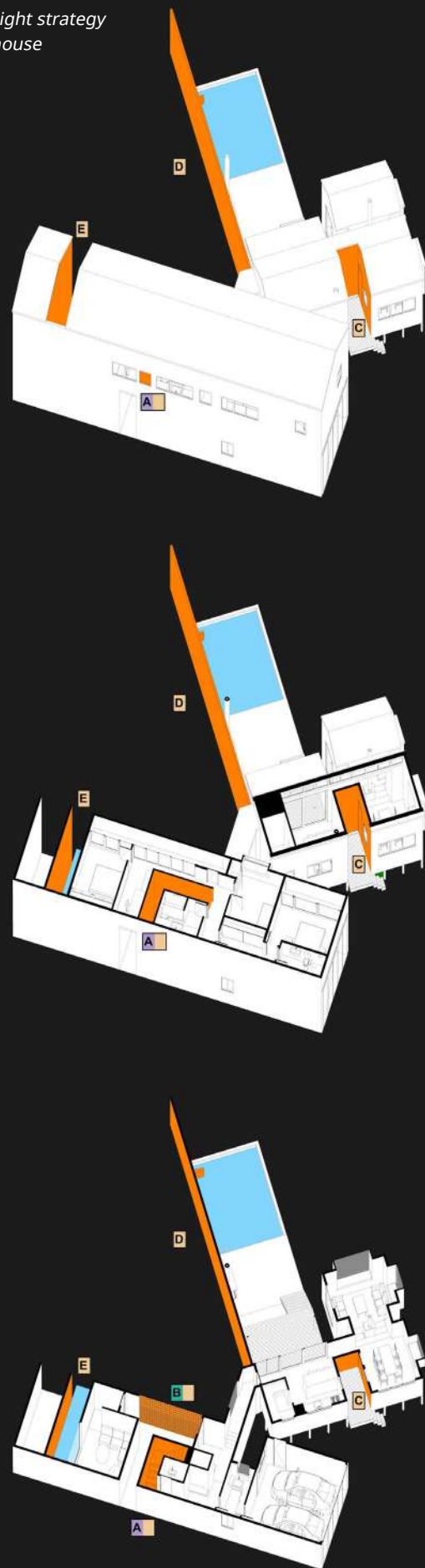
- D Landscaping wall adjacent to pool/deck
 Strategy 3: Planes of colour

- E Movie room with exterior water patio
 Strategy 3: Planes of colour

Specific areas of the house that focus on the colour/light strategies influenced by Barragan (diagram fig.137) will now be developed further in the research.

01

G



PART D. RESIDENTIAL PROJECT DESIGN PROCESS

D.05

Developed Design

The next developed design stage will interrogate scale, proportion, and materiality of the proposed architecture. These elements will be tested and reflected upon in terms of their impact on the colour/light qualities of the design. Concerns with the current design include; landscaped coloured wall too dominant and jarring compositionally with the house, coloured patio slicing into the building separating kitchen and dining less convincing than rumpus patio, and the scale of the double-storey part of the house seems to swallow the smaller single-storey part. Further modelling and sketching will be undertaken to test solutions.

COLOUR, *Hell of a Good Thing!*

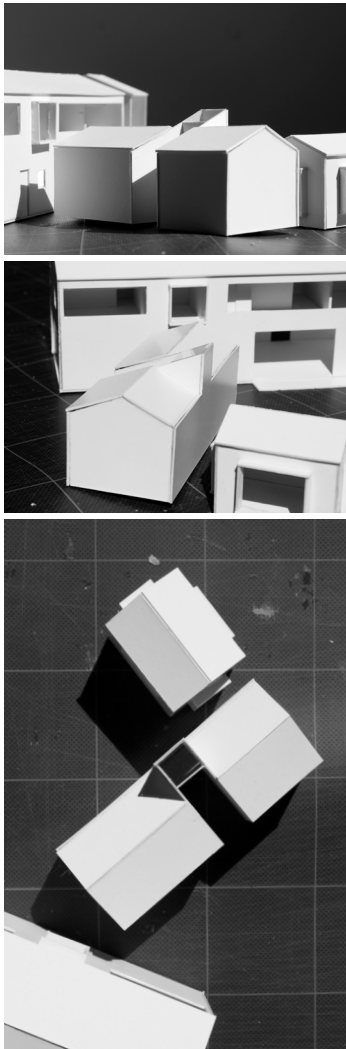
D.05

Developed Design

These physical modelling experiments in white card explore different approaches to increasing the height of the coloured courtyard that separates the kitchen and dining spaces. This is an attempt to mediate the house’s awkward scale in which the two-storey volume appears dominating over the single storey volumes in front.

The selected iteration to proceed with demonstrates an intriguing form created by continuing the walls of the courtyard upwards. This form slightly overhangs the exterior western wall, providing added depth to this facade and generating the opportunity for coloured light to filter into the interior. This new form not only provides added height to act as a bridge between the differing scales of the double and single storey volumes, but it further evolves the coloured courtyard through the addition of a coloured light well.

01
Courtyard / light well walls extended to form light well over interior passage



02
Walls extruded upwards in attempt to create a greater link with double-story height and accentuate coloured “slice” through building

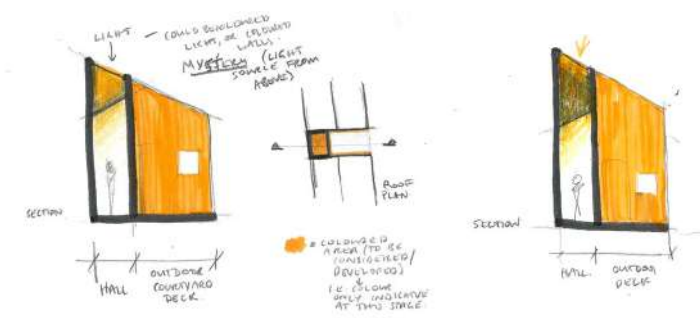
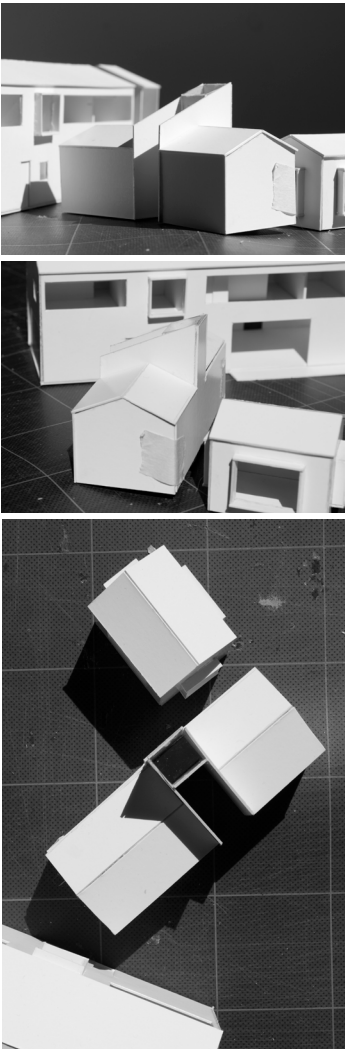
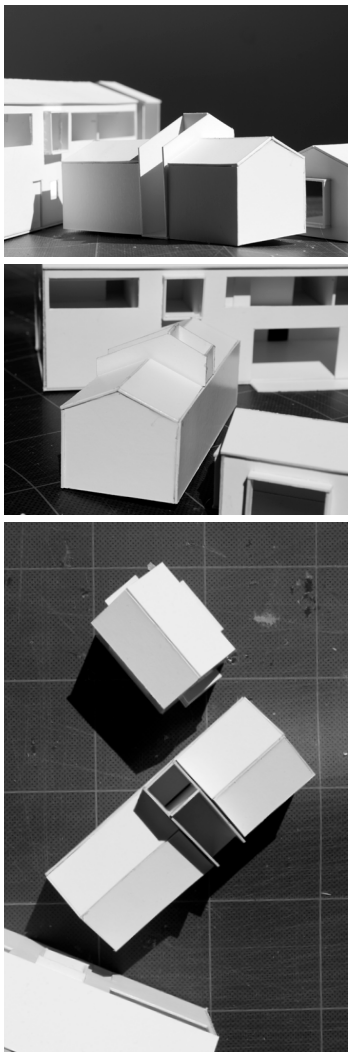
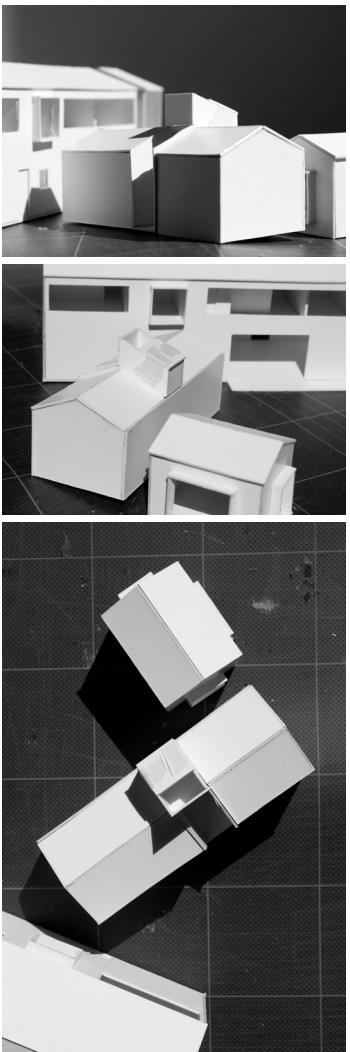


Fig.137. (double spread) Development sketches and models

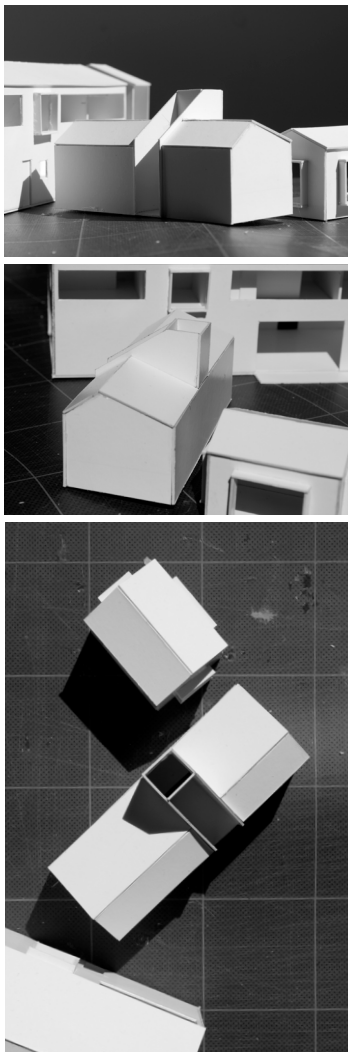
03
Iteration of 01 - with light well walls angled in parallel with adjacent roof slope



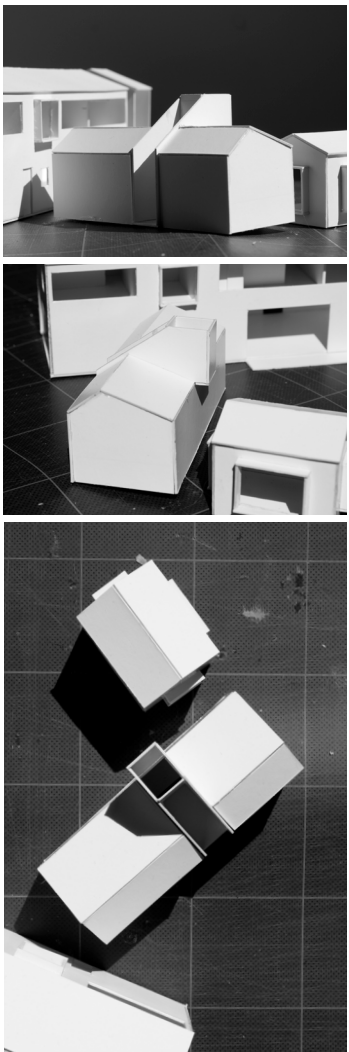
04
Light well extended to align with roof ridge to hide source of light above



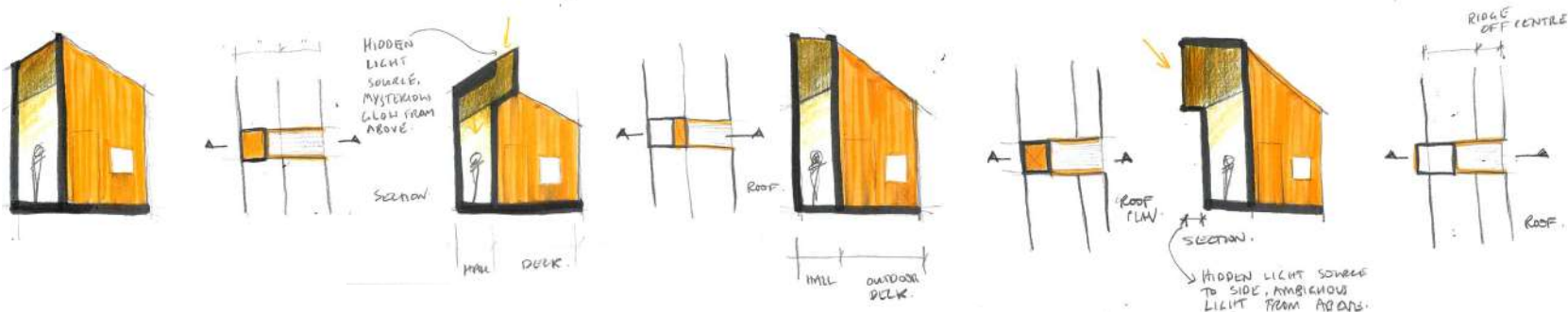
05
Ridge of gable adjusted to create steeper pitch of which the walls extend from.



06
Iteration of 05 - extension of light well form over exterior wall.



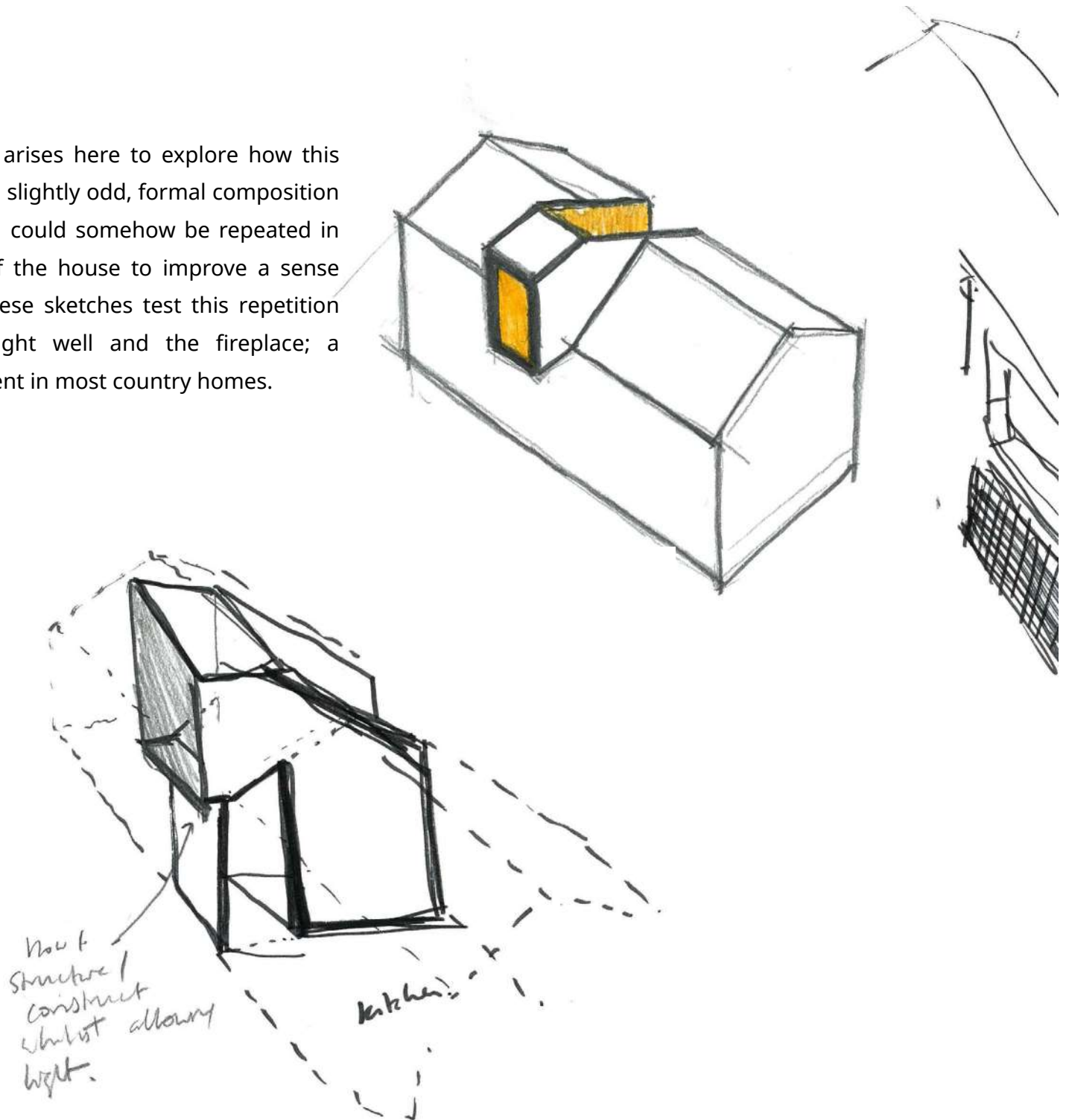
SELECTED ITERATION
TO PROCEED WITH



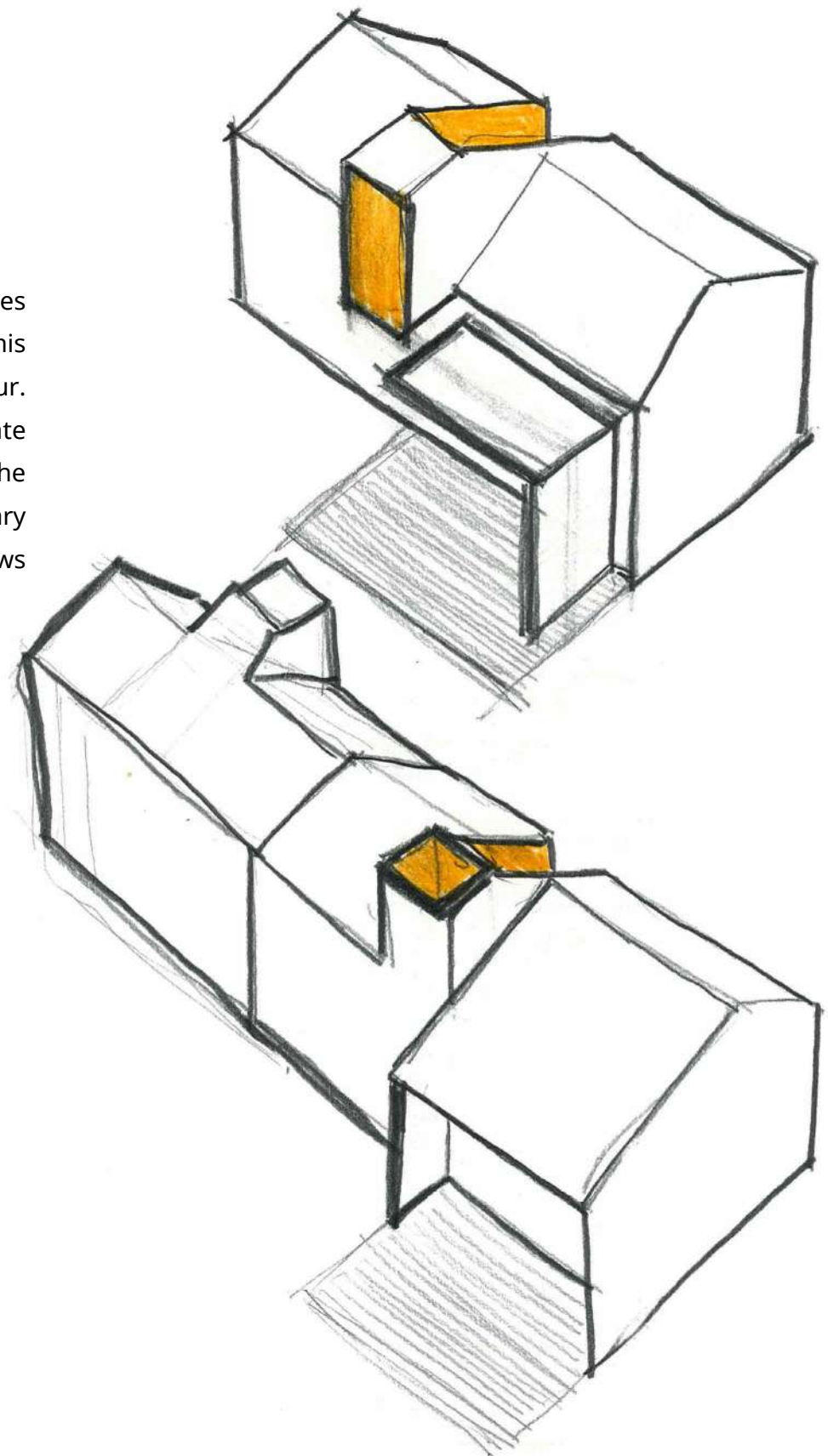
D.05

Developed Design

An opportunity arises here to explore how this rather bold, and slightly odd, formal composition of the light well could somehow be repeated in another area of the house to improve a sense of cohesion. These sketches test this repetition between the light well and the fireplace; a dominant element in most country homes.



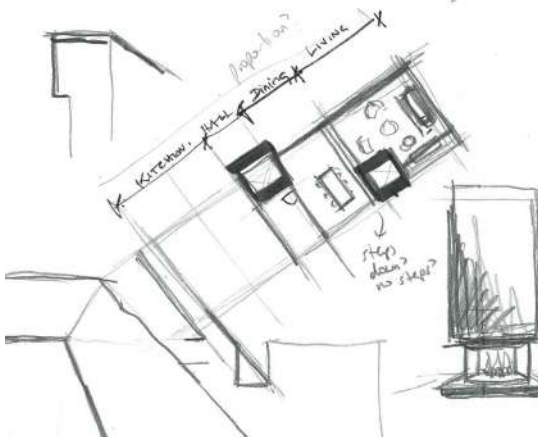
The repetition of this formal composition signifies that there is a relationship between the two, this being that each are vessels for light and colour. However, their form differs slightly to exaggerate how one draws light from the sun above and the other, from the fire below. This contemporary architectural expression highlights and draws attention to our natural light sources.



① Conversation with the heart of the home. → channeling the two elements - air vs high both → warmth.

② Well as landscape element detached from house

③ Possibility of the storage shed dropping in height & integrating into the ground / as landscaping.



D.05

Developed Design

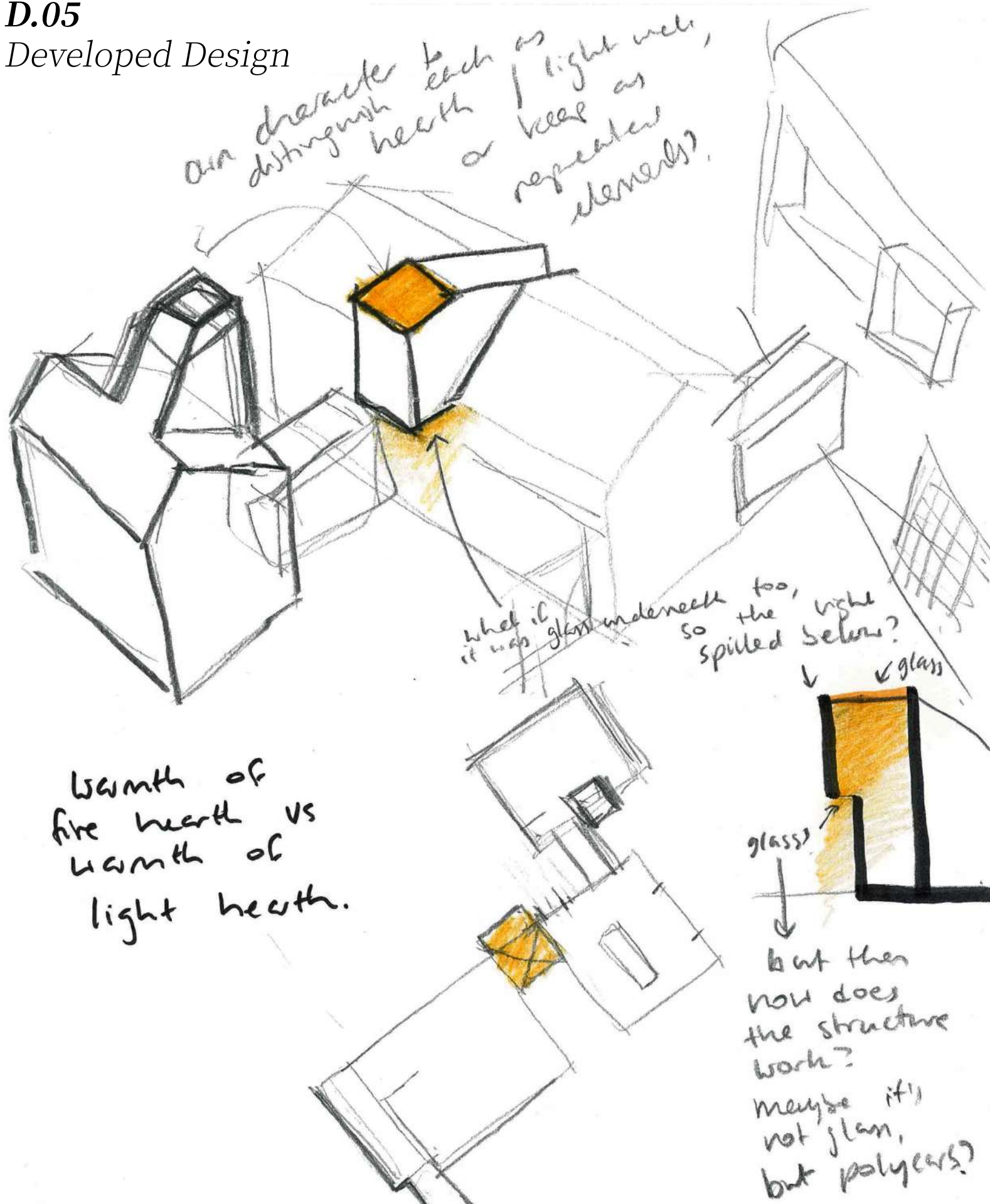
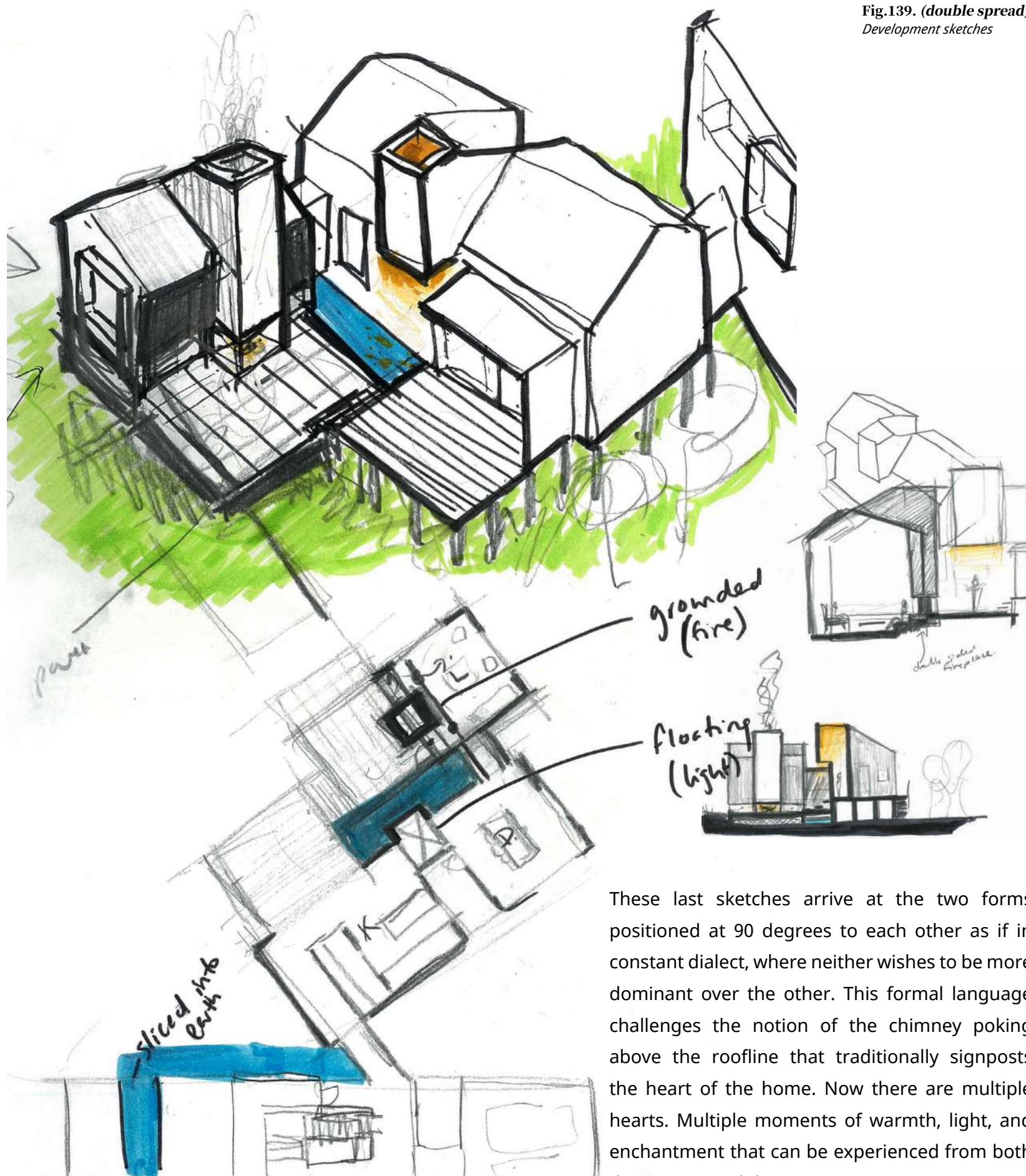


Fig.139. (double spread)
Development sketches

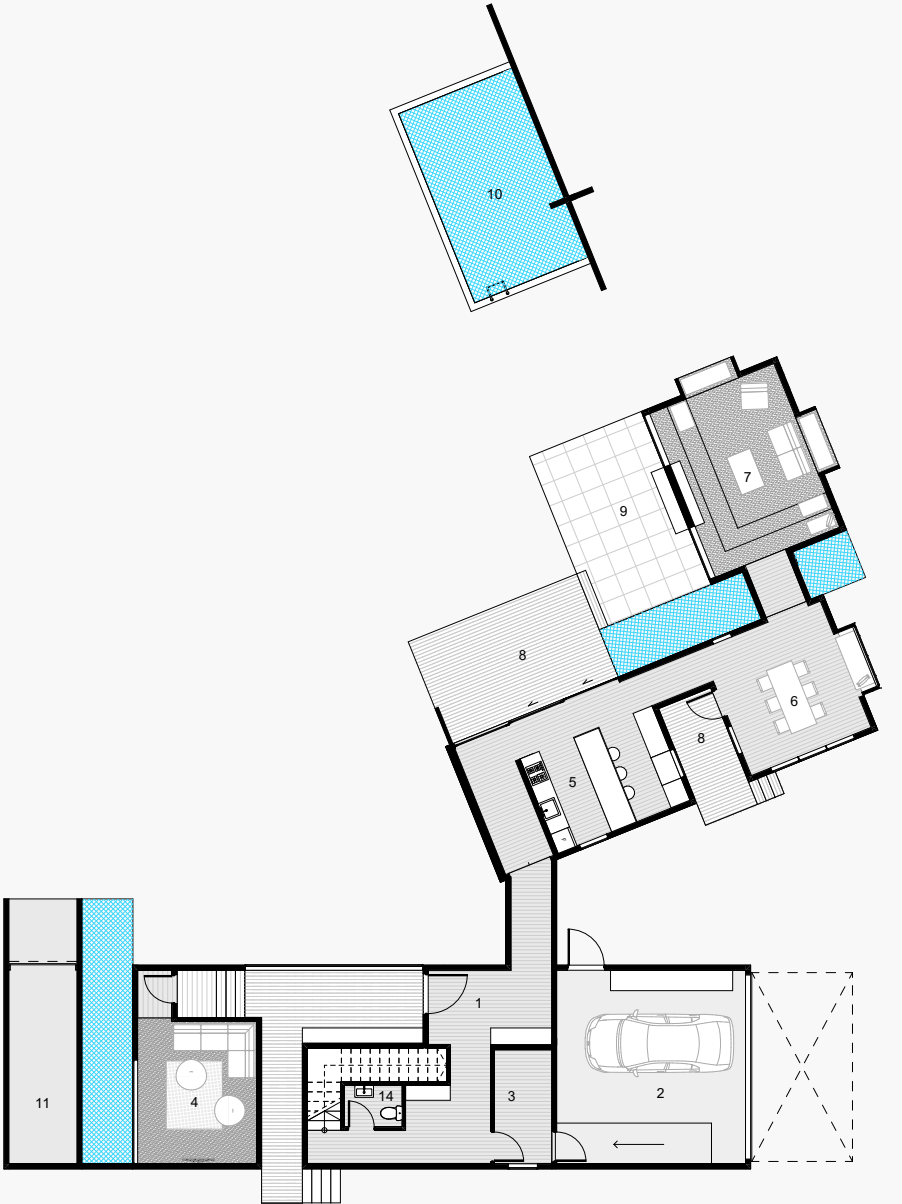


These last sketches arrive at the two forms positioned at 90 degrees to each other as if in constant dialect, where neither wishes to be more dominant over the other. This formal language challenges the notion of the chimney poking above the roofline that traditionally signposts the heart of the home. Now there are multiple hearts. Multiple moments of warmth, light, and enchantment that can be experienced from both the interior and the exterior.

D.05

Developed Design

The development of the relationship between the fireplace and light well has progressed the spatial configurations of the house. These are visible here in the developed floor plans. The landscaping wall adjacent to the pool and deck is now detached as a separate pool landscaping element, no longer clashing and competing with the house. More intimate and clearly defined spaces have been formed between communal living spaces. The two exterior paved and decked areas now hug the building and provide an alcove of protection from the north westerly wind, where the fireplace is strategically placed, backing onto its interior compatriot. The upper floor balcony has been decreased to allow for a double height exterior entrance. The lattice wall is extended upwards, heightening the monumentality of this space.



Ground Floor

Floor Plan Legend
Scale: 1:250



- | | | | | | |
|---|-----------------------------------|---|---------|----|----------|
| 1 | Entry | 5 | Kitchen | 10 | Pool |
| 2 | Garage | 6 | Dining | 11 | Woodshed |
| 3 | Mud room / laundry | 7 | Living | 12 | Bed 1 |
| 4 | Rumpus room / outdoor water patio | 8 | Deck | 13 | Bed 2 |
| | | 9 | Patio | 14 | Bathroom |

Fig.140. (double spread)
Development floor plans



- 15 Bed 3
- 16 Ensuite
- 17 Wardrobe
- 18 Study

- LW Light well
- FP Fireplace

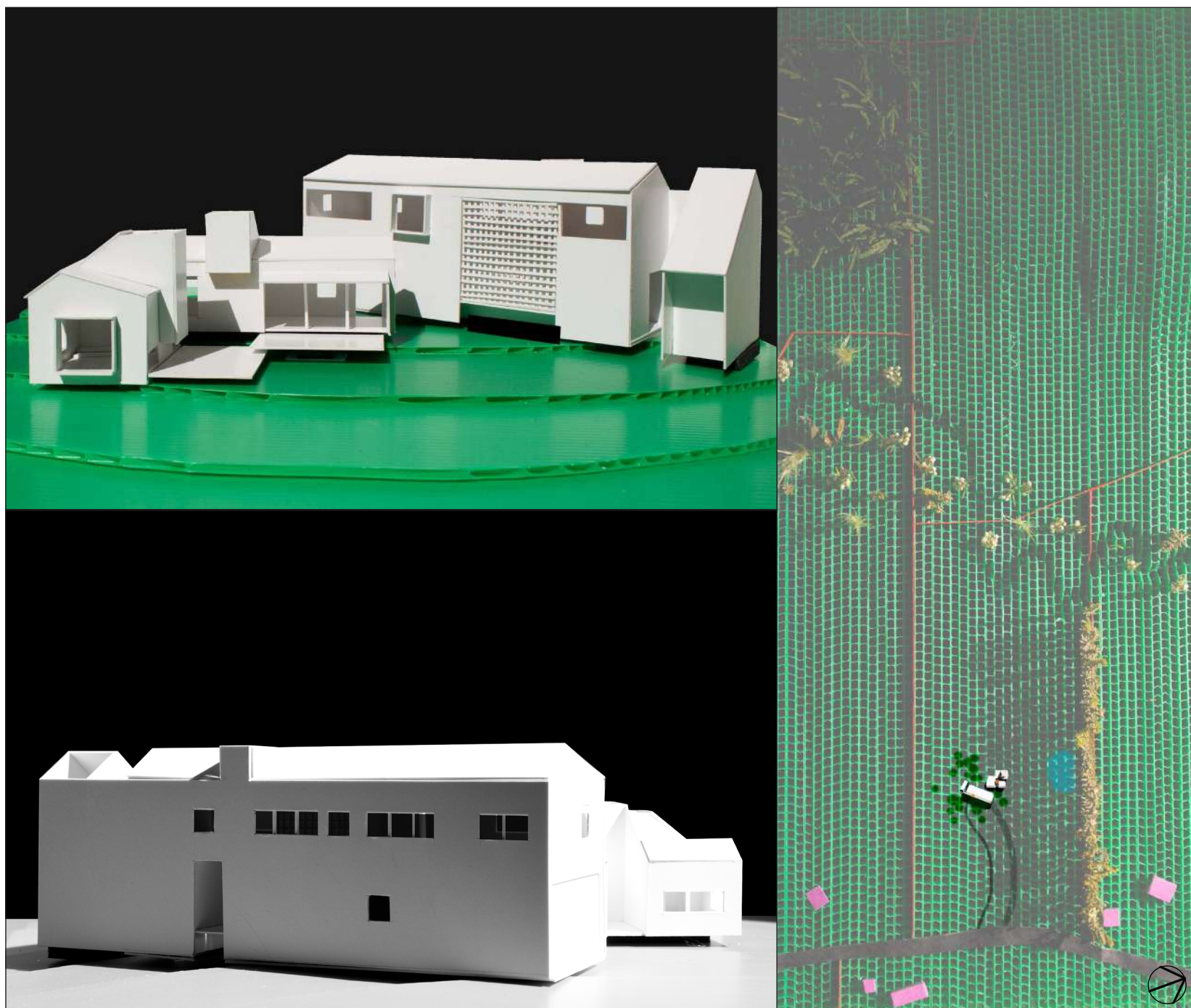
D.05

Developed Design

The increased height of the light well and fireplace has helped improve the relationship between the building's three major forms. The roofline covering the woodshed was also extended to invite more light into the sliced water patio and rumpus room. Further, the woodshed's form now echoes that of the light well and fireplace and reduces the scale of the rear part of the house so that it is less dominating to the smaller forms in front. The overall scale and composition appear more unified. With the formal and spatial composition now well developed, consideration into the selection of materials and their colours will now be tested.



Fig.141. (double spread)
Development white card model of house



D.05

Developed Design

As the design of the house and location of coloured strategies is now developed, the final set of tests explore different approaches to exterior cladding materials and how their colour schemes correspond with the surrounding environment.

There is a juxtaposition between the areas of the house that are predominantly for the enjoyment of the individual versus those for the collective public realm. For example, the interior spaces and exterior that faces away from the street towards the hills are more private as they would be rarely visible from the street or neighbouring houses, whereas the exterior facades facing the street is also going to impact the public realm. As Walker states in an interview with Allardice in regard to his own house and office, *"the house is not painted purely for private pleasure since it has a strong and direct interaction with the street (Allardice, 61)"*. Yet, how does one decide on what colours are 'best' for public enjoyment? It is arguably easier to decide on colours for areas of private enjoyment versus those for public, where the latter has far more people to cater to. This is likely why whites, blacks and neutral tones are more commonly used as they have a more universal acceptance, especially as this is what we are used to seeing in

New Zealand. These colours are also devoid of the complications inherent with saturated hues that are elusive and variable, that can be perceived dramatically differently depending on the viewer. As Allardice points out, *"the colour 'red' is thought of as bright and cheerful but at some as yet undefined point the colour becomes overstimulating causing reactions of fear, shock and aggression (Allardice, 30)"*. Further, it seems that in New Zealand if bold colour is used this is negatively perceived either as disrespectful of surrounding nature, or as a selfish endeavour that disregards collectivism. This research, and series of next design experiments, aims to challenge this mindset and encourage the expression of individuality, personality, and difference through the use of colour.

These design experiments test six different approaches that expand on the ideas within Pamela Allardice's 1984 thesis 'Colour for New Zealand Architecture', in which she interviews various New Zealand architects, mainly those in Wellington, on their design philosophies with respect to colour. The intention of this exercise is to investigate various approaches for being bold with colour even when in a rural setting, as the default today seems to be choosing colours that

don't stand out too much and merge with the landscape. As discussed in Part A, this attitude seems synonymous with that of New Zealanders, to blend in with the crowd. What this designed research is investigating, is to test a design process that can provide opportunities for designing with colour and how to consider the surrounding context in doing this. As the colours in the Wairarapa change quite dramatically from a vibrant green in winter, to a warm and dry ochre in summer, the following design experiments will be visualised against both. This is to seek a colour scheme for the architecture that is cohesive with the varying colour changes of this rural setting.



It may come as no surprise that New Zealanders also appreciate these tones when it comes to choosing colours for their homes. We are a people who don't like to stand out too much, and coming from such a beautiful country, we appreciate a good view, unblemished by human intervention. Perhaps this is why FlaxPod®, now available in an understated Matte finish, is such a popular choice in the COLORSTEEL® range.

Having a matte finish means the material evenly diffuses light, delivering richness and depth of colour. This helps it to pair well with a range of natural and contemporary materials and finishes, as well as merging nicely with the landscape.

Fig.142. Screenshots of Colorsteel article

a) Colour as:
**association
with place.**

“The colours you use relate to philosophy and with us there are strong colours which relate well to our buildings, which reaffirm our New Zealand character and trying to relate to people.” *Gordon Moller in an Interview with Pam Allardice, 1984 (Allardice, 66)*

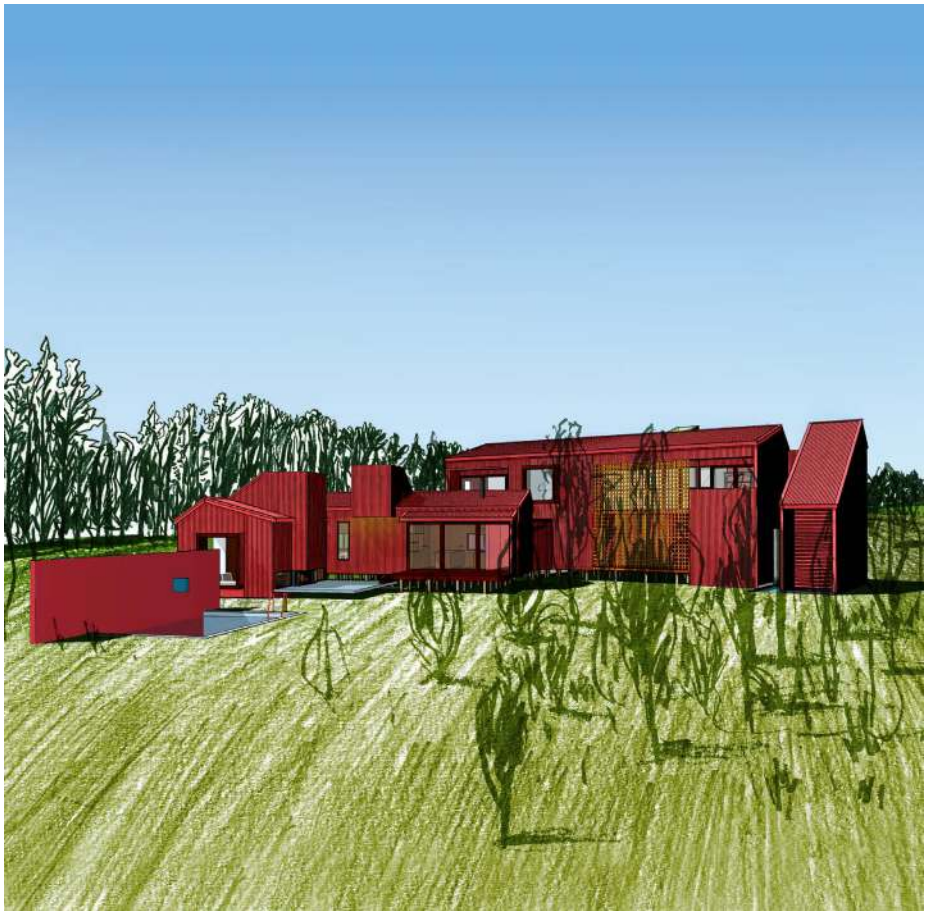
This first approach experiments the idea that colour can be associated with a place. The aim is for the house to appear like a barn sitting comfortably in the rural landscape, having both its wall and roof claddings as red corrugate. The specific use of red corrugate has a particular familiarity and association with the rural barns of the Wairarapa region. The red corrugated iron does not stand out as a provocative colour, as the people of this area are already well accustomed to it.



Fig.144.



Fig.143. Approach a) tested on site in summer and winter colours



b) Colour as: accents of association & to blend.

“The main influence in all cases is the neighbouring buildings, you pick up the colouring system from what’s happening in the area.” *Marshall Cook in an Interview with Pam Allardice, 1984*
(Allardice, 86)

This test explores what happens when the red corrugate becomes the coloured accents and leaves the remaining wall and roof cladding as a more subdued colour that would give an element of surprise to these accented areas. Another colour that would not seek provocation or contrast in this rural setting is the grey of corrugated iron found throughout the Wairarapa. As this colour does not intend to stand out, it can be considered to blend with the environment.



Fig.145.

Fig.146. Approach b)



c) Colour as: accents of emotion & to contrast.

“The colour white provides a strong contrast against the natural landscape which Ian Athfield uses particularly successfully in his plastered buildings. The white seems to shirrrer both against the landscape and also against the sky.” Pam Allardice (Allardice, 56)

Here, colour acts as a provocation by opposing the colours of its surroundings. This notion can be compared to Athfield's white plaster or Walker's pop of bold colour accents that contrast against the landscape of New Zealand. White corrugated iron is selected as it yields an arresting contrast to the landscape as the wall and roof claddings. The colour accents also contrast, bright hues selected for their emotional stimulation as opposed to fixating on seeking combatibility with the surroundings.

This content is unavailable.
Please consult the figure
list for further details.

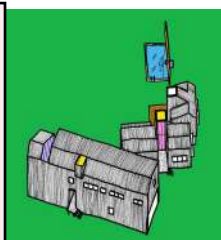


Fig.148.

Fig.147. Approach c)



d) Colour as: accents of emotion & to contrast. (alternative)

“When we use ‘natural’ to describe colours or finishes or tones we aren’t looking closely at what’s really there -sticking to grey, brown and off white when there is more colour in nature and more things to respond to and contrast with than we give credit to.” Ross Brown *in an Interview with Pam Allardice, 1984* (Allardice, 87)

This approach challenges how the building could seem to disappear with the landscape whilst having accents of colour that contrast; colours not typically noticed within the area. These are the bright yellow and orange hues of local flowers. The colour of natural timber cladding appears to blend or disappear with the landscape, a material influenced by rural buildings. In this case, the accented colours of contrast will be painted upon fibre cement board to achieve the vibrancy desired.



Fig.150.

Fig.149. Approach d)



e) Colour as: accents of contrast & to blend.

“If you are doing a house in a heavily bushed site it has a high proportion of browny-green or blueygreen of the bush itself. You have the branches which are greyish brown. Now if you do a weathered timber house it takes on a brownish-grey and sometimes even a grey-grey or even silvery-grey appearance and disappears into the background.” Gordon

Moller in an Interview with Pam Allardice, 1984 (Allardice, 68)

This test aims to keep the idea of coloured accent areas as in c) and d), however have the remaining exterior “blend” more with the landscape than stand out. Vertical timber shiplap cladding is used to try achieve this. This aligns with Moller’s approach to use weathering timber that appears to disappear amongst the greens and browns of the surroundings. Although not a “heavily bushed site” as Moller refers to, the same philosophy can be applied.

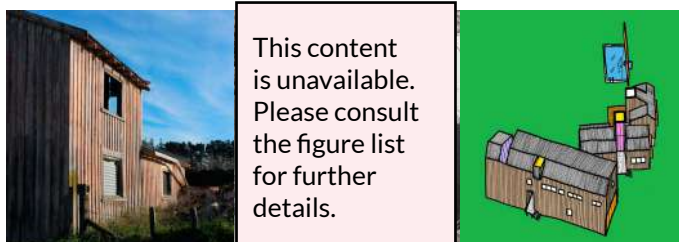


Fig.152.

Fig.151. Approach e)



f) Colour as: accents of contrast & to blend. (alternative)

“In nature you get strong colour in smaller elements, in a garden you get mainly greens and browns but you get the intensity of colour in the petals of a flower and birds [that] seem to be coloured while larger animals are darker.”

*Roger Walker
in an Interview with Pam Allardice, 1984
(Allardice, 61)*

This test aligns with Roger Walker’s philosophy of architecture that draws a parallel with nature. Here, the accented orange colour used in the coloured accented areas and window/door joinery elements echo the intensity of flowers that stand out amongst natural landscapes of green and brown hues. Horizontal weatherboards provide an alternative to the shiplap profile tested in e) as another widely used cladding in the region. The intent again is for the exterior to blend more with the environment.



Fig.154.

Fig.153. Approach f)



D.05

Developed Design

This series has provided six different approaches in considering the relationship between the colours of a proposed building and its surroundings. They remind the architect and client of the importance in responding to the surrounding context, and of seeking influence from nearby colours found in nature. As Saito describes, *"I had thought that Barragan's colors derived from an indigenous Mexican tradition... [Yet] Barragan's colors are those of the flowers of his living environments (Barragán and Saitō, 15)"*. These approaches reflect various attitudes towards the use of colour, in the hope that this will raise confidence in branching out from the typical colour scheme that is to hide amongst the landscape. Of course, there will be *"overlays of culture and personality over basic psychological responses ... (Allardice, 48)"* which will impact the selection of colours. Therefore, the architect and client must work together to find a cohesive scheme that considers these factors, whilst attending to both the client's individual tastes and the collective realm of the public and surrounding environment. Each approach tested is a viable option going forward with this house design, and would be dependent on the client and architect as to which philosophy they wish to proceed with. However, for the purpose of this

research only one will be taken through to the final design, which will be an accumulation of the approaches that use colour as accents. The grey corrugate from approach b) will be combined with the colour accents of approach f). Combining the two creates a nice contrast between the coldness of the grey corrugate and the surprising warmth of the orange coloured accent areas. This approach provides an interesting compromise between pleasing the public through an expected exterior colour palette, and pleasing the inhabitant through pockets of bright colour that are private from the street and neighbouring properties. This could be a 'stepping stone' for those to grow confidence in using colour at a personal level, before proclaiming its use at a public level. Furthermore, this approach aligns with the exterior street facade of Barragan's house and studio of which is bare and colourless, giving heightened impact to the surprising coloured moments that lie within. New Zealand Architect Ross Brown exclaims, *"Colour - hell of a good thing - use plenty of it! (Allardice,124)"* Put simply - in 'kiwi' fashion - these words emphasise the significance of colour and have influenced the title of this research.

Fig.155. Experiment b)

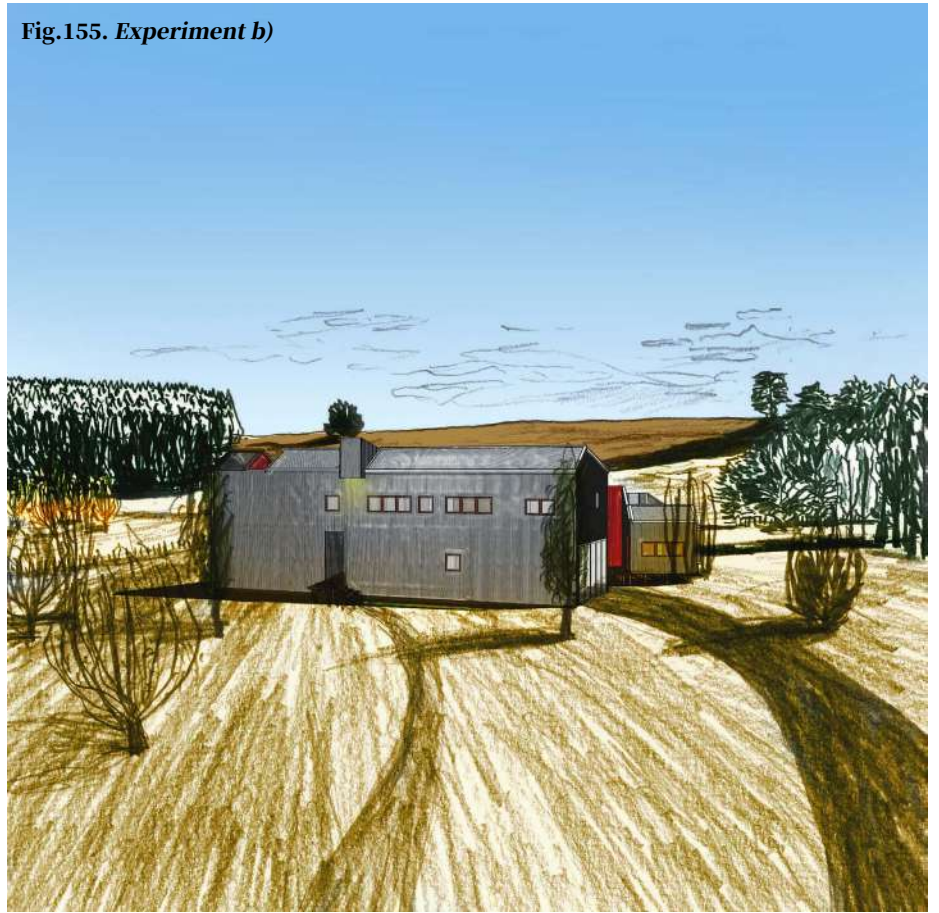


Fig.156. Experiment f)



D.05

Developed Design

These design experiments test interior material and colour schemes, allowing visualisation of their atmospheric qualities and relationships between inside and outside. As a locally sourced material in New Zealand, timber is explored as an interior finish. As Barragan used white or coloured plaster walls for coloured light to reflect upon, these design iterations extend this thought to see what happens when another material is used. The result is a warm mix of colours that generates intimacy inside the home. Darkened tones of timber provide a greater contrast to the exterior light, accentuating the impact of colour and the magical atmosphere created.

TEST 1.
→
(LIGHT TONES
OF TIMBER)



↑
ENTRY TO
LIVING SPACES

TEST 2.
→
(DARKER
TONES OF
TIMBER)
↓
RICHER
INTERIOR
ATMOSPHERIC
EXPERIENCE.



↑
PLANE OF
COLOUR

YELLOW LIGHT HAS LESS EFFECT; LETS SWOLLEN LIVING AMONGST BRIGHT LIGHT OF EXT + INT MATERIALS. LACKS FOCAL POINT ON COLOUR.



FIREPLACE

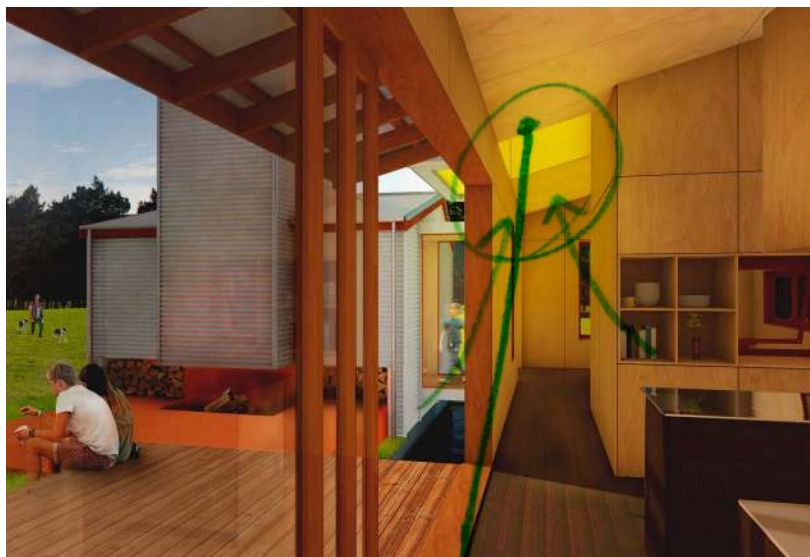
DINING

KITCHEN



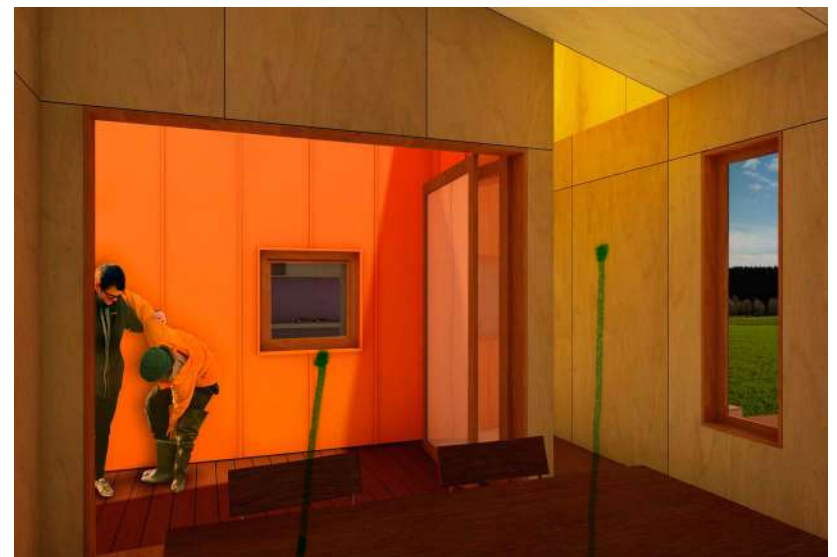
EXT PATIO

DINING



MORE COZY/INTIMATE! COLOURED LIGHT WELL

EVEN DARKER TIMBER FLOORING; GROUNDS THE SPACE + LIVES IMPACT TO FLOATING, MYSTERIOUS QUALITY OF YELLOW COLOURED LIGHT ABOVE.



PLANE OF COLOUR

LIGHT WELL

PART D. RESIDENTIAL PROJECT DESIGN PROCESS

D.06 *Final Design*



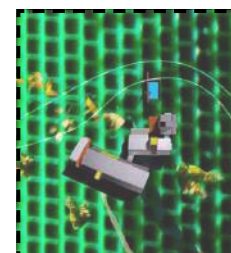
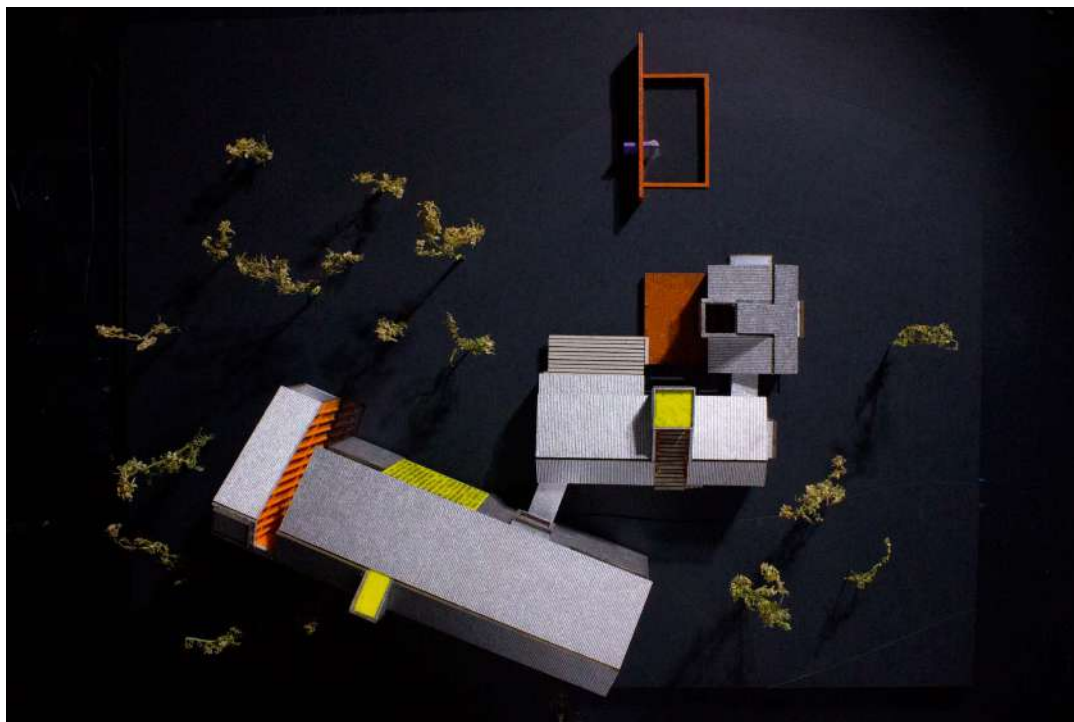
Fig.158. (previous page)
*Physical site model and final
house design located on site*

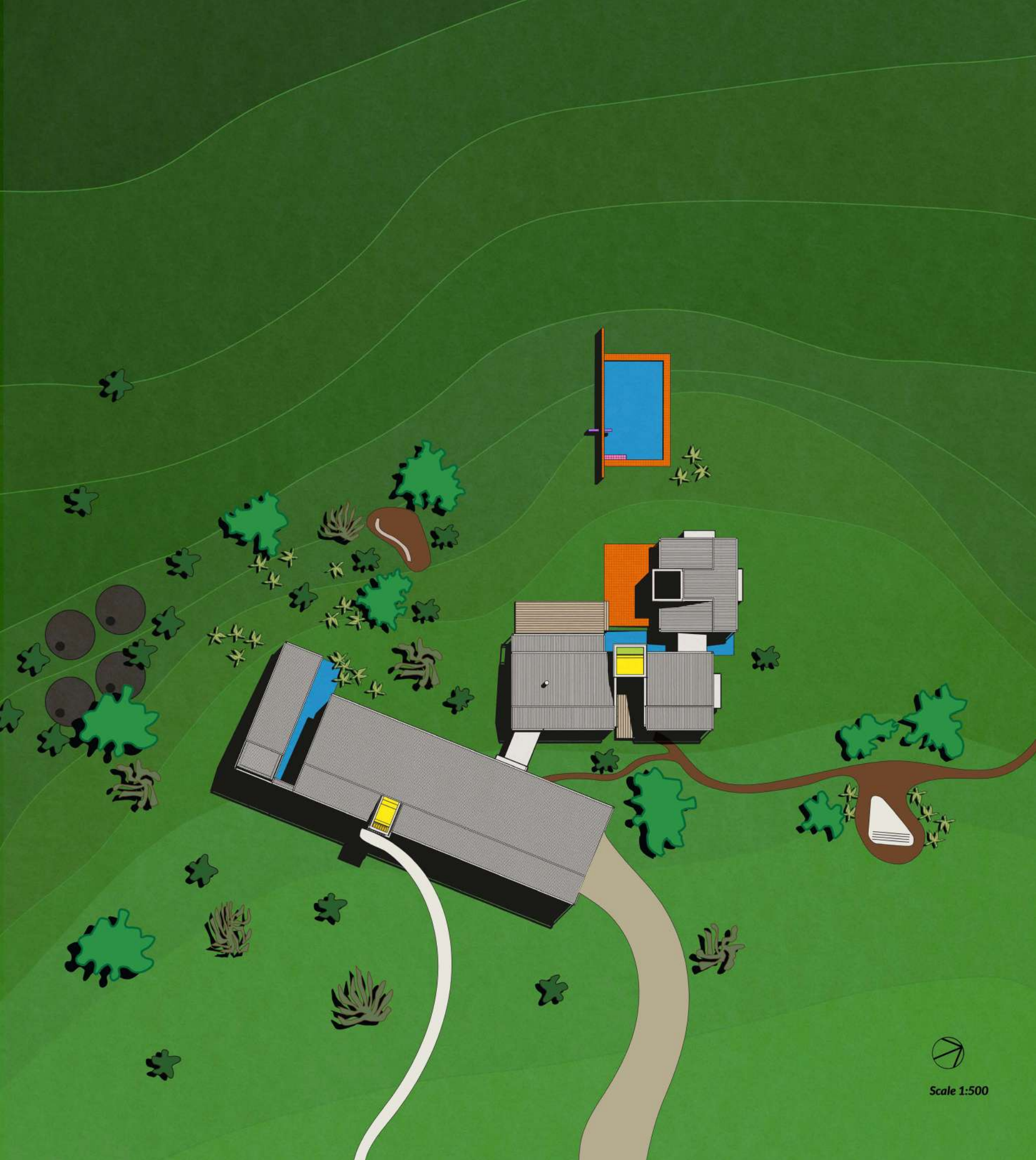
Fig.159. Physical model - entry



Fig.160. *Physical model - plan view*

Fig.161. *(next page) Site Plan*





Scale 1:500

Fig.162. *Final Design*
Axonometric Drawing

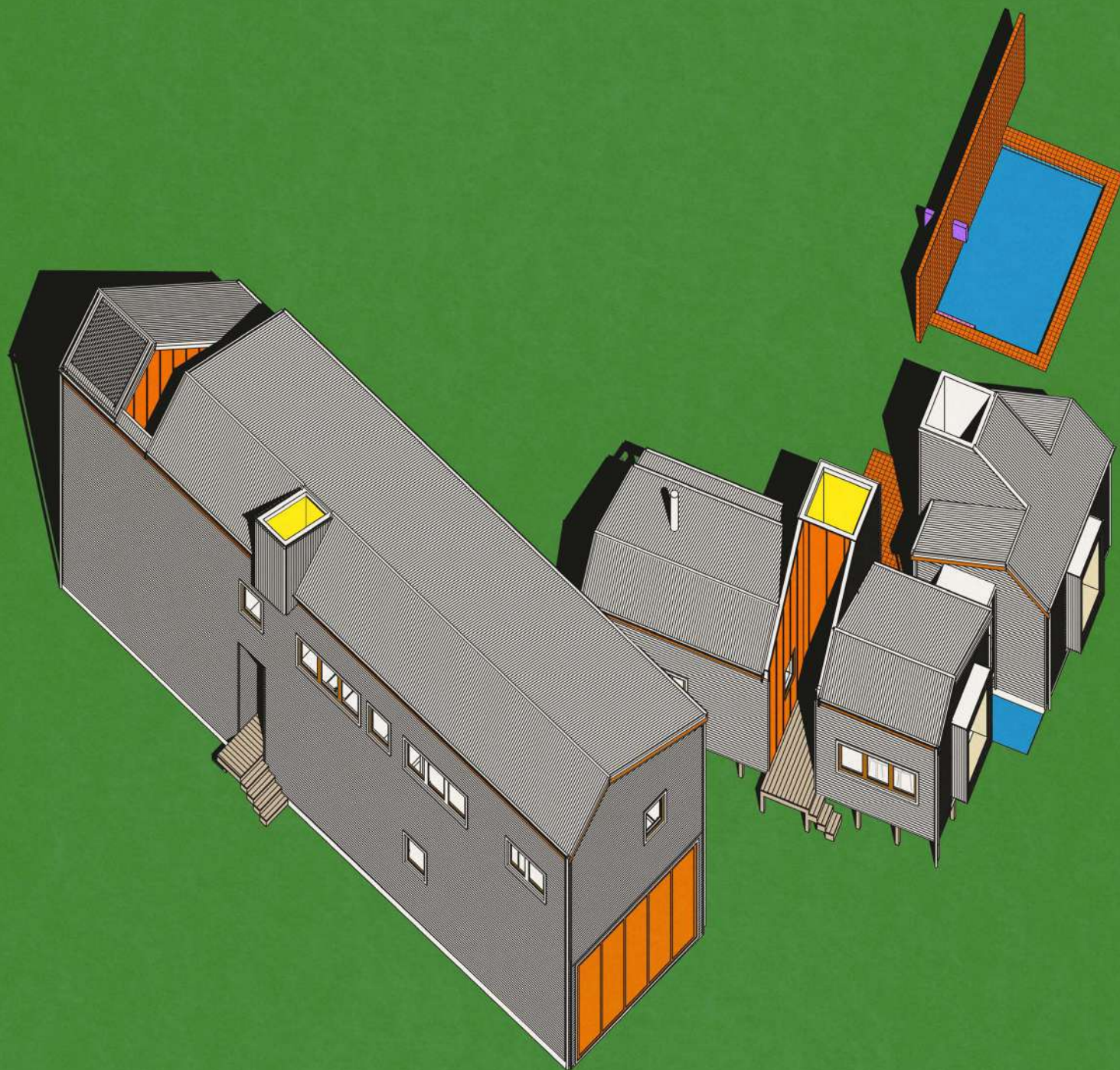
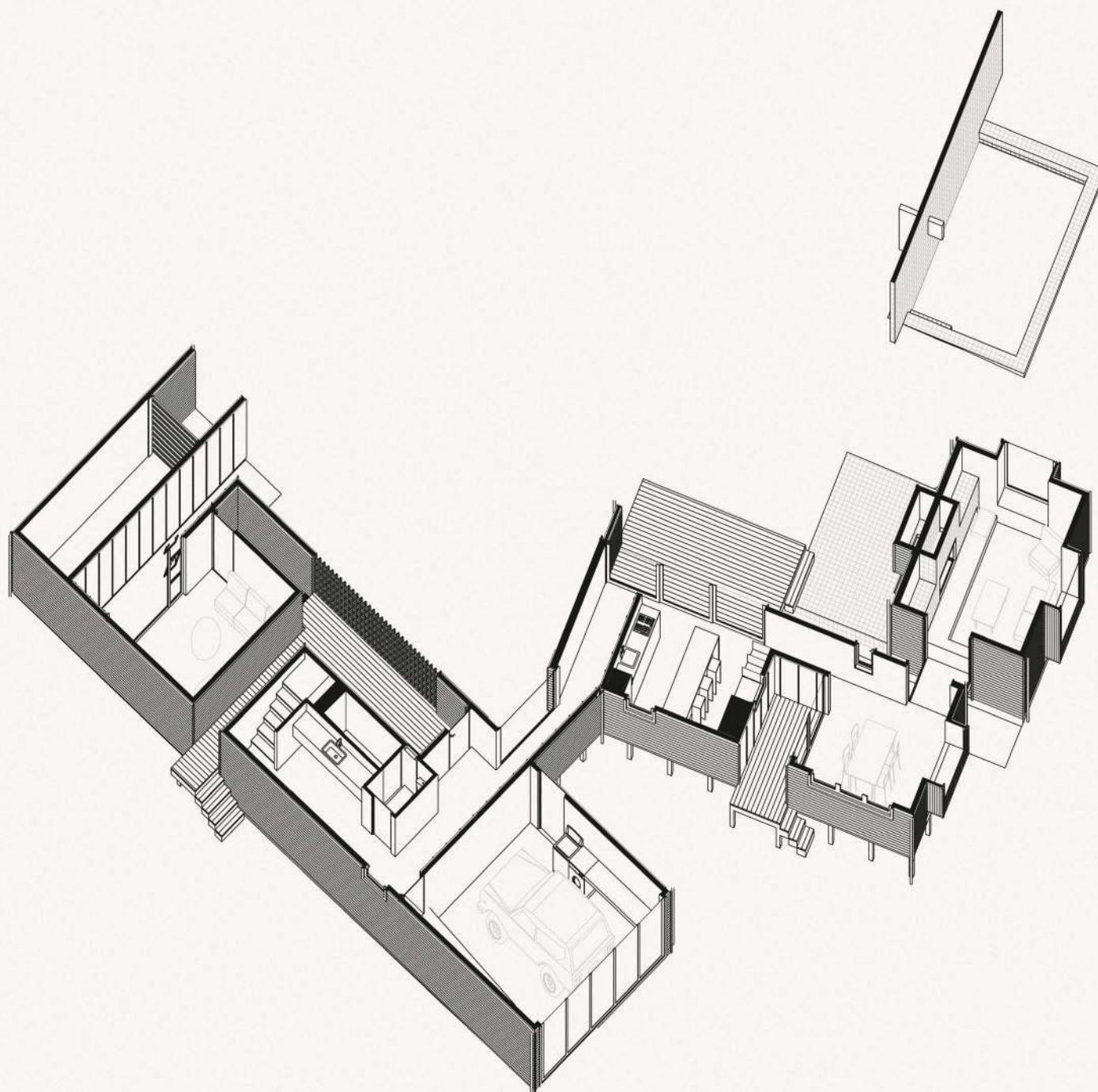


Fig.163. *Final Design Axonometric
Drawing cut walls*



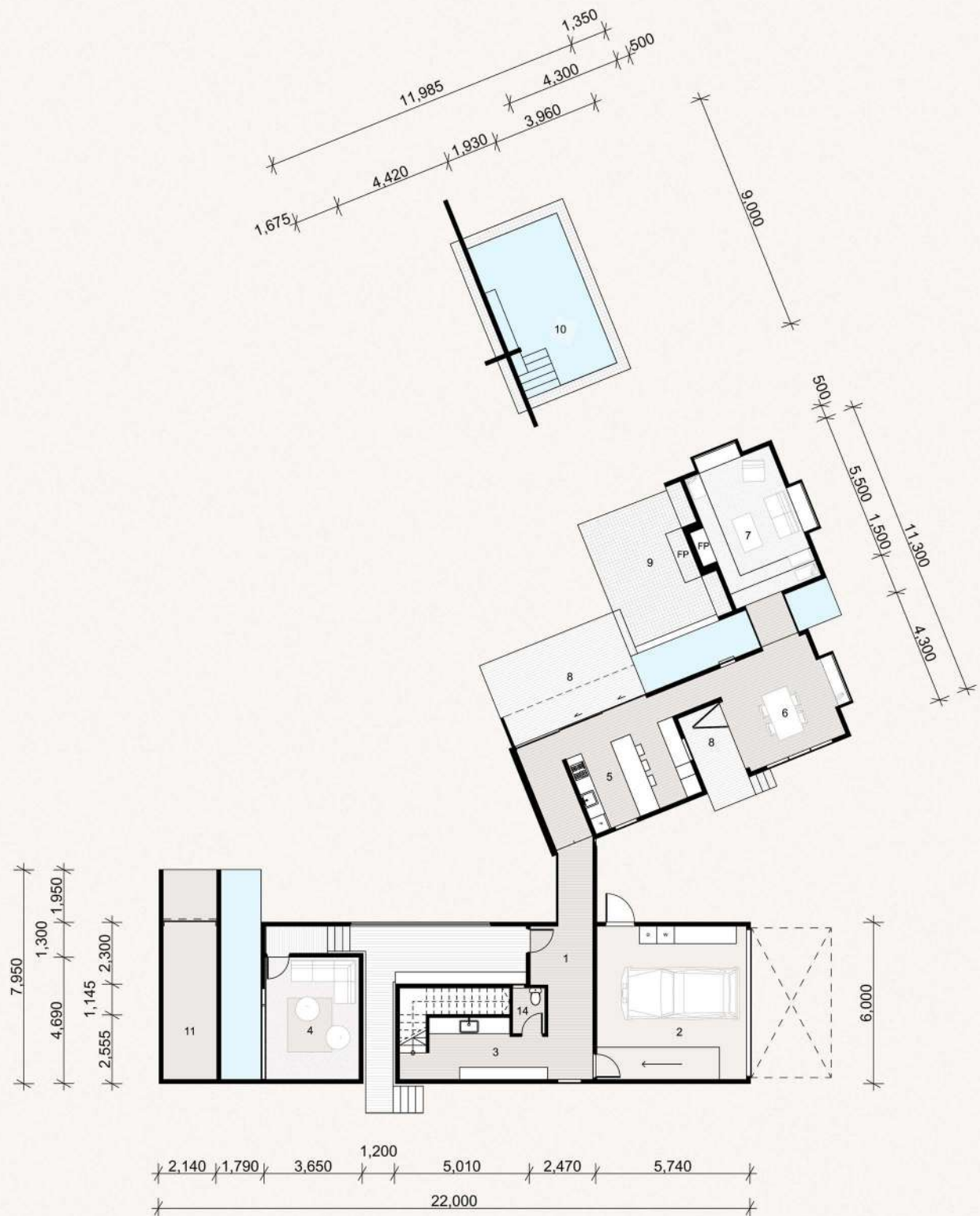
D.06

Final Design



Legend
Scale 1:250

- 1 Entry
- 2 Garage / Laundry
- 3 Mud Room
- 4 Rumpus Room / Water Patio
- 5 Kitchen
- 6 Dining
- 7 Living
- 8 Outdoor Deck
- 9 Patio
- 10 Pool
- 11 Storage Shed
- 12 Bed 1
- 13 Bed 2
- 14 Bathroom
- 15 Bed 3
- 16 Ensuite
- 17 W/Robe
- 18 Study



Ground Floor

Fig.165. *Final Design Street Elevation*

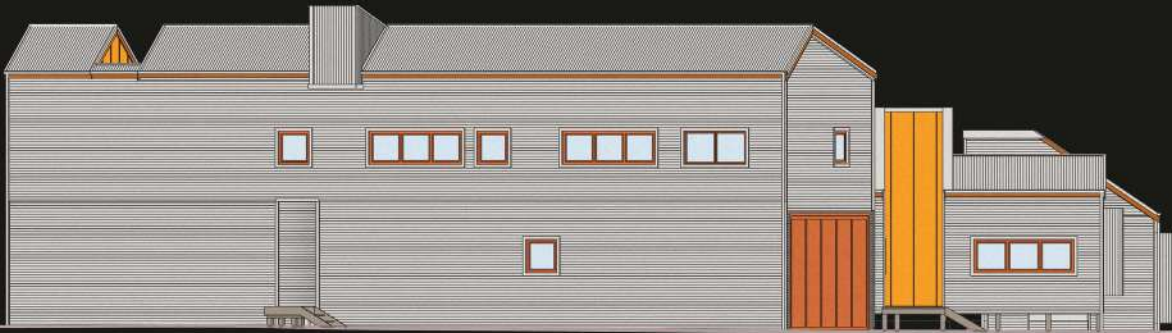


Fig.166. *Farm building
in South Wairarapa*





Fig.167. (previous page)
Final design exterior entrance

**Fig.168. Final design physical
model exterior entrance**



Fig.169. *Aluminium corrugate
common in South Wairarapa*

Fig.170. (next page) *Final design
exterior entry with latticework wall*





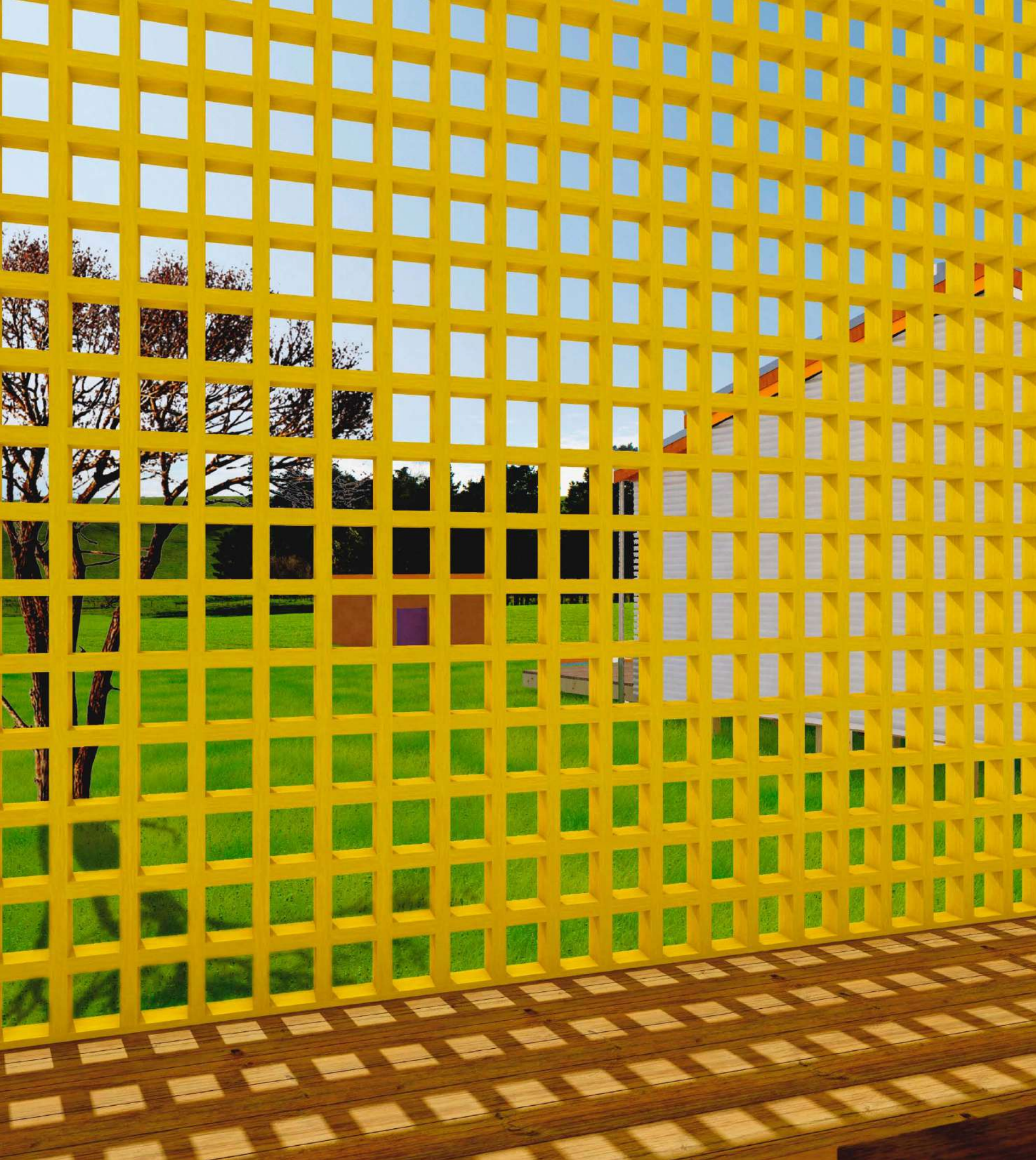


Fig.171. (previous page)
View out latticework wall

Fig.172. View opposite latticework wall - entry bench seat

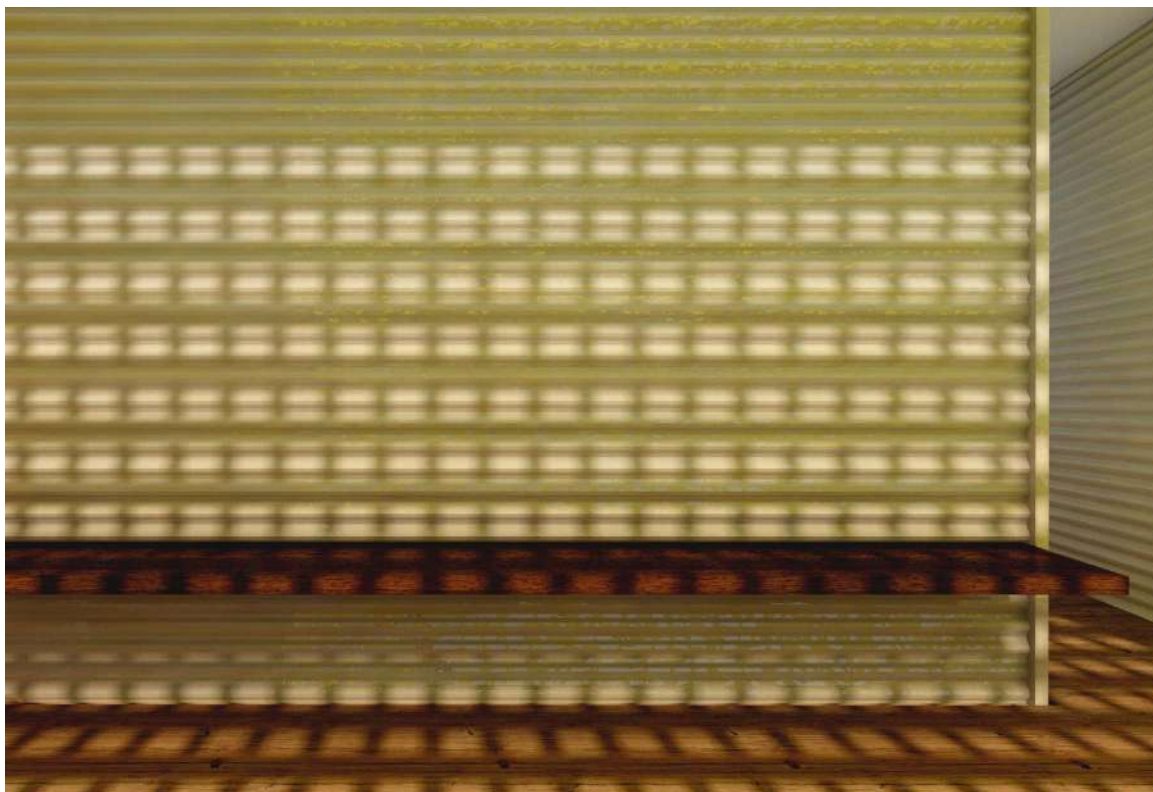


Fig.173. *Final design physical
model SE view close-up*

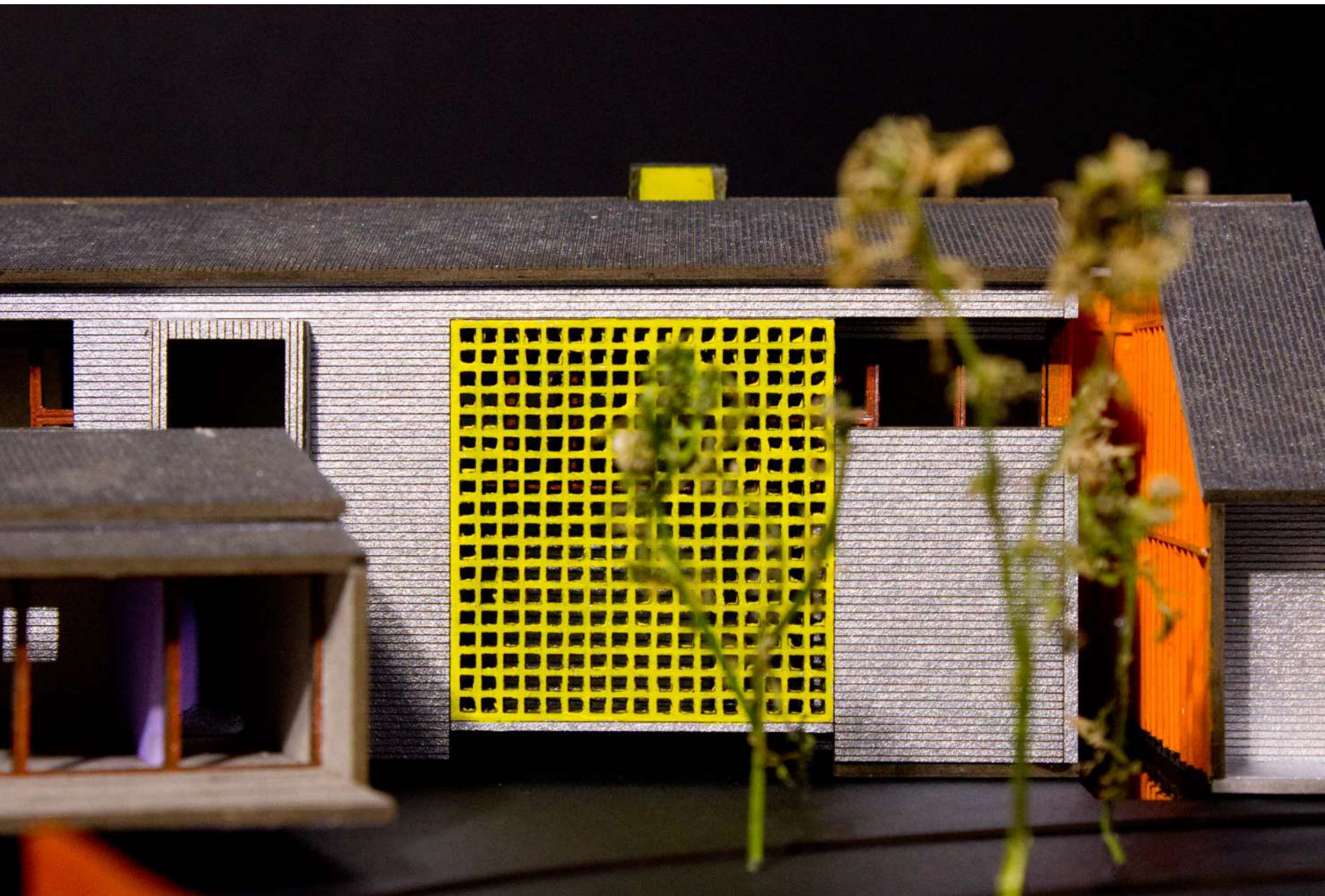
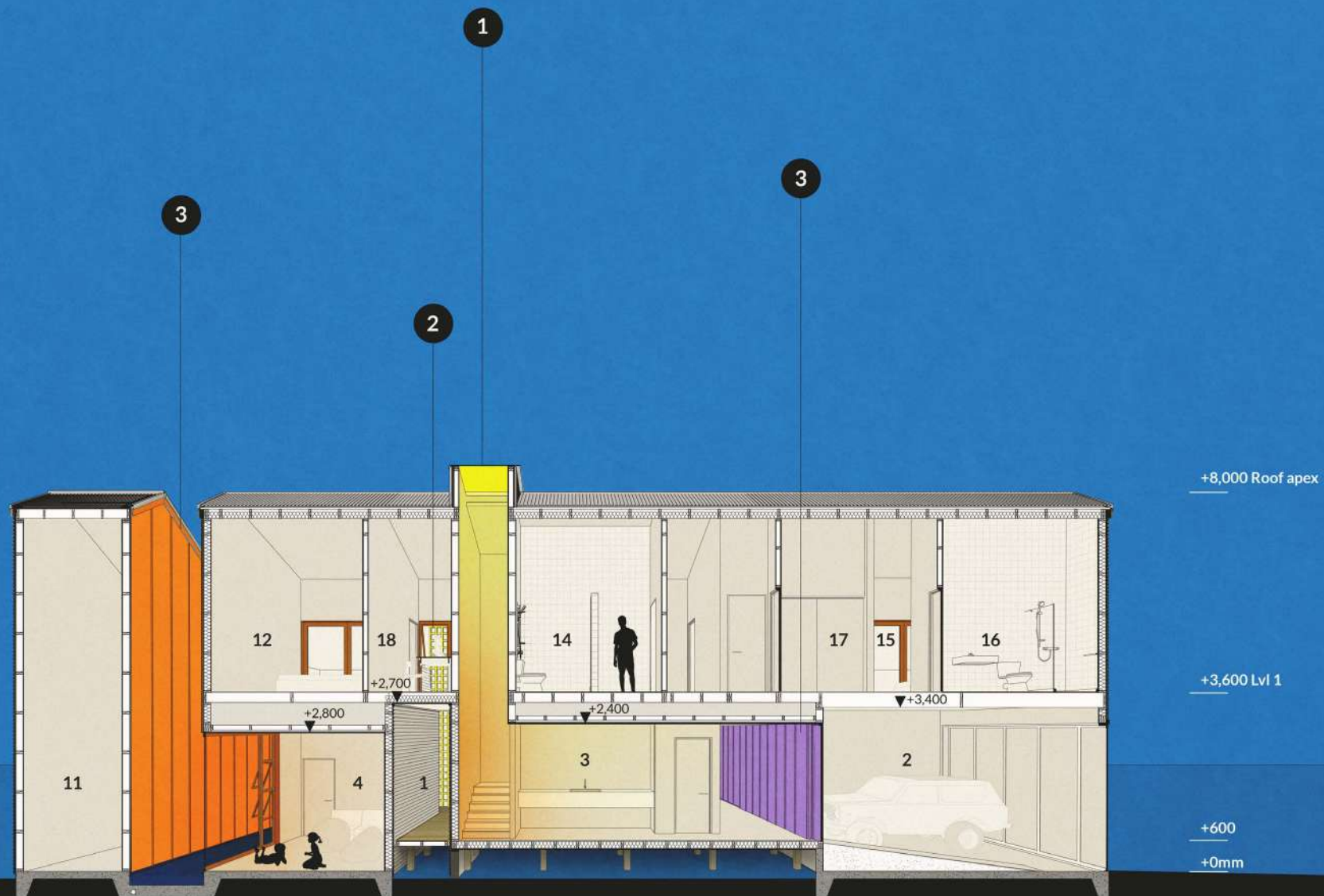


Fig.174. *Final design*
physical model SE view



D.06

Final Design



Legend

- 1 Entry
- 2 Garage / Laundry
- 3 Mud Room
- 4 Rumpus Room / Water Patio
- 11 Storage Shed
- 12 Bed 1
- 13 Bed 2
- 14 Bathroom
- 15 Bed 3
- 16 Ensuite
- 17 W/robe
- 18 Study

Colour / Light Strategies

- ① Coloured Light
- ② Coloured Lattice
- ③ Walls of Colour

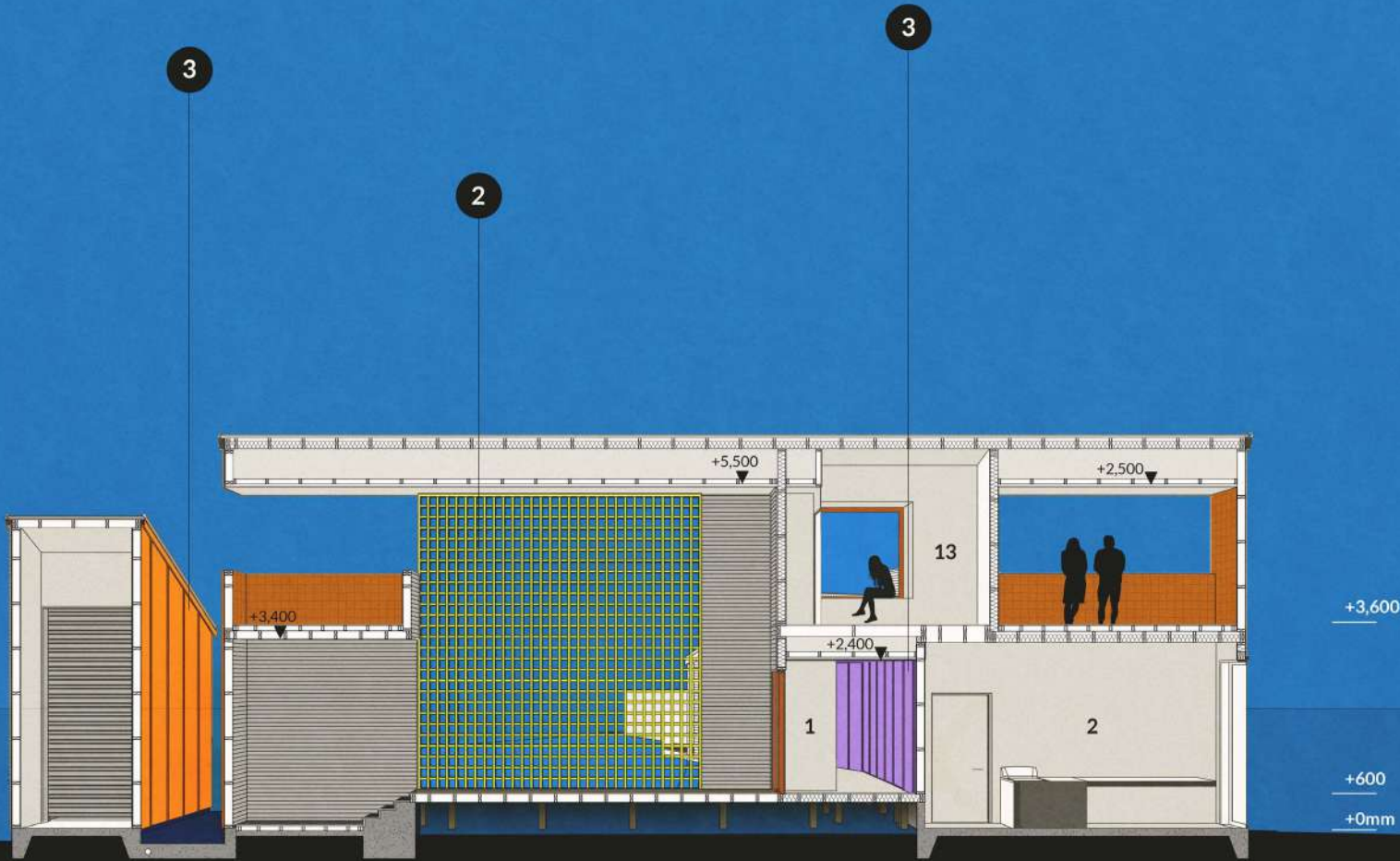
+2,700



Ceiling height (measured from FFL to underside of ceiling structure, all dims in mm)

Section BB

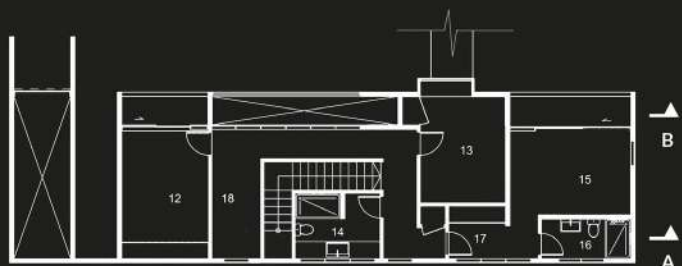
Fig.175. (double spread)Final
design sectional perspectives AA & BB



Section BB



Floor Plan Key
Ground Floor



First Floor / Lower Roof



Fig.177. *Pond water reflections on site*

Fig.178. (next page) *Rumpus
room and outdoor water patio*







Fig.179. (previous page)
Final design physical model

Fig.180. *Final design physical
model SW view*



Fig.181. *Final design entry
to kitchen afternoon light*



Fig.182. *Final design entry
to kitchen evening light*



Fig.183. *Final design looking
towards kitchen and light well*





Fig.184. *Yellow colour
of local flowers*

Fig.185. (next page) *Final design
section CC through light well*



+4,040 Chimney

+4,040 Roof apex

+240mm

+5,900 Roof apex

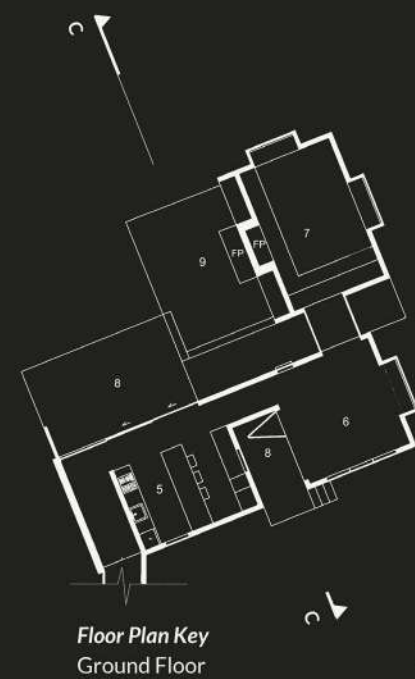
+600

Legend

- 8 Outdoor Deck
- 9 Outdoor Patio

Colour / Light Strategies

- 1 Coloured Light
- 3 Walls of Colour



Section CC
1:100

Fig.186. *Final design section CC
through light well (close-up)*

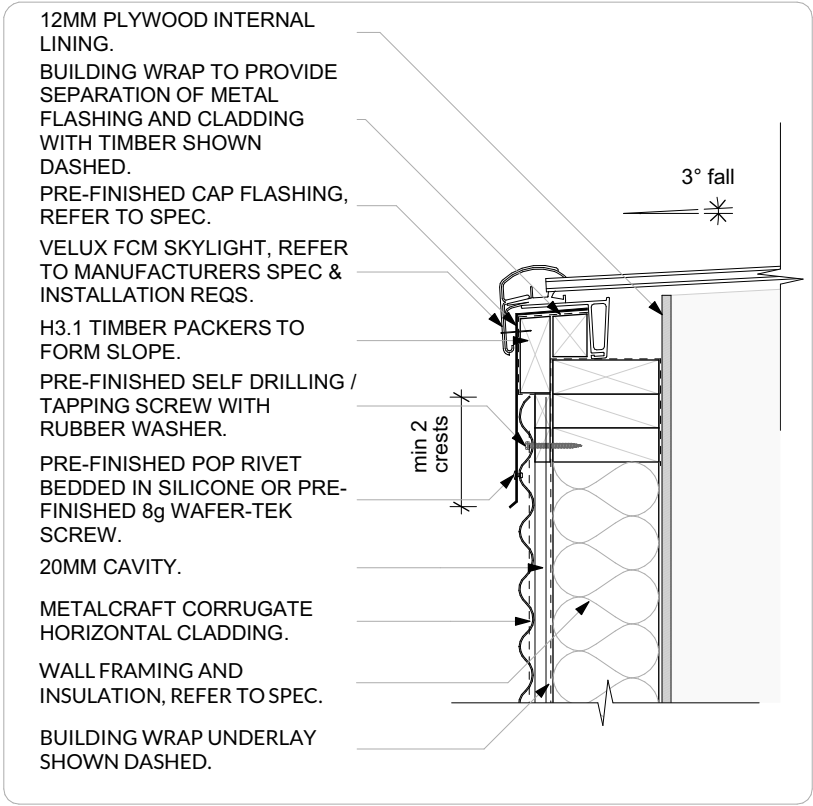
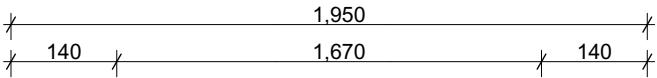


Section CC
(S-C)

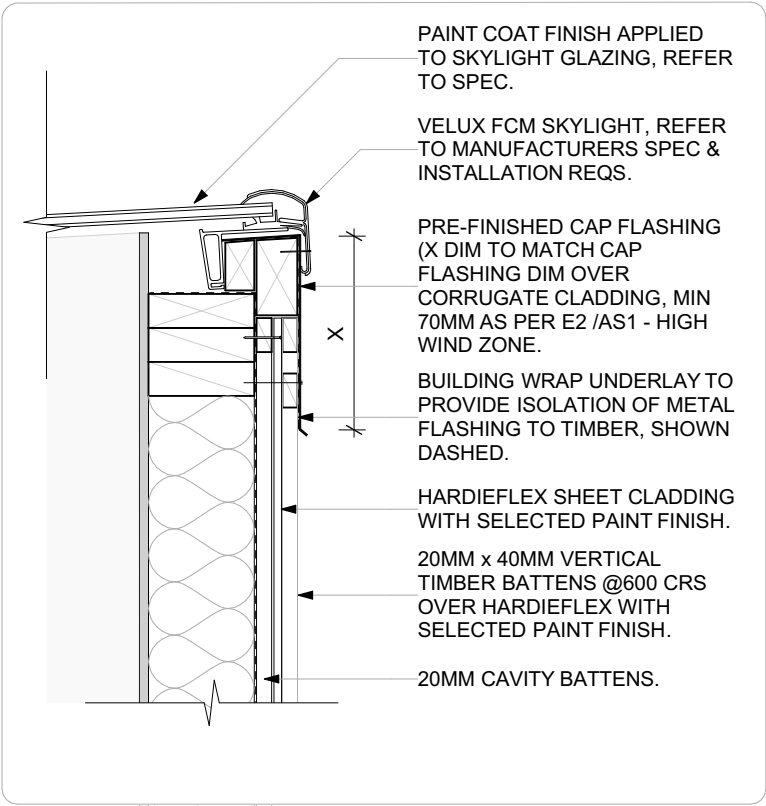
1:50

Fig.187. *Light well construction details*

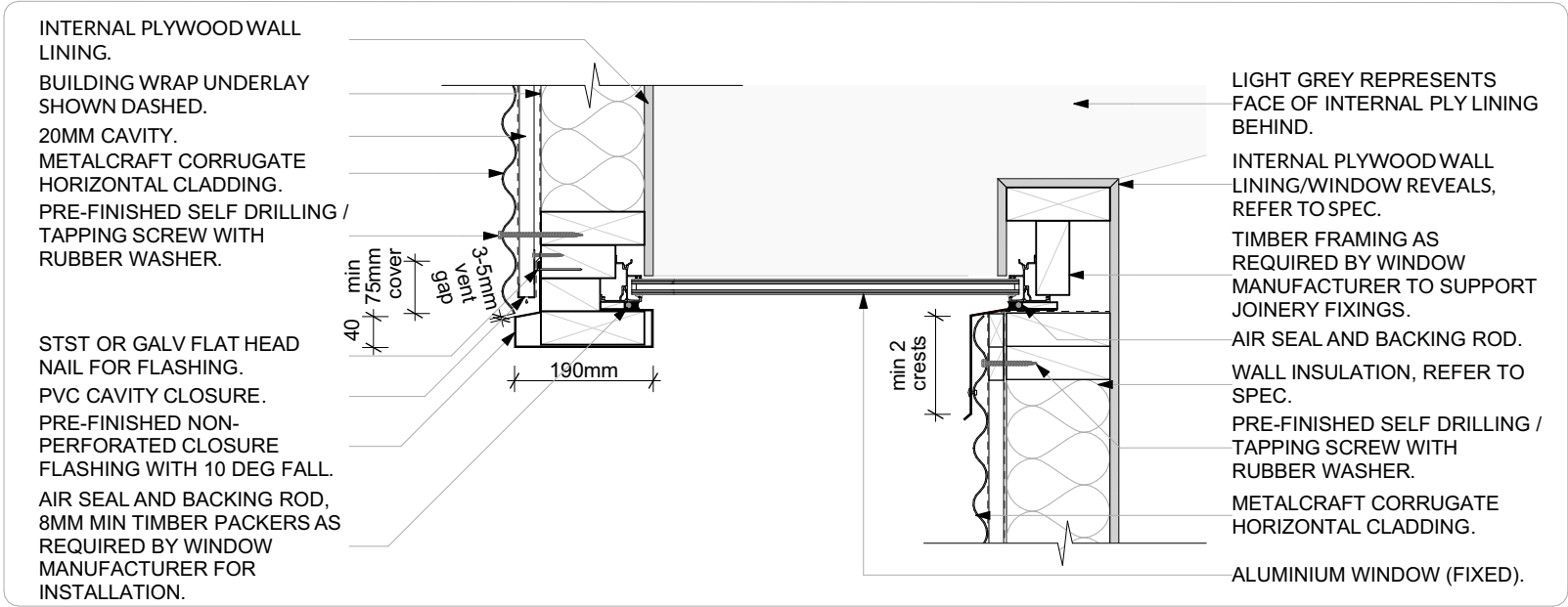
WALL FRAMING DIMS



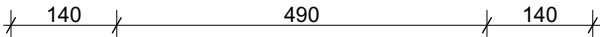
01S-C
1:10



02S-C
1:10



WALL FRAMING DIMS



03S-C
1:10

Fig.188. *Yellow local flower*



Fig.189. *View upwards in light well*



Fig.190. Section DD through kitchen/dining spaces



Section DD
1:100

Legend

- 5 Kitchen
- 6 Dining
- 7 Living
- 8 Outdoor Deck

Colour / Light
Strategies

- 1 Coloured Light
- 3 Walls of Colour

+1,900
▼

Ceiling height (measured from
FFL to underside
of ceiling structure,
all dims in mm)



Fig.191. *View of physical
model towards dining patio*

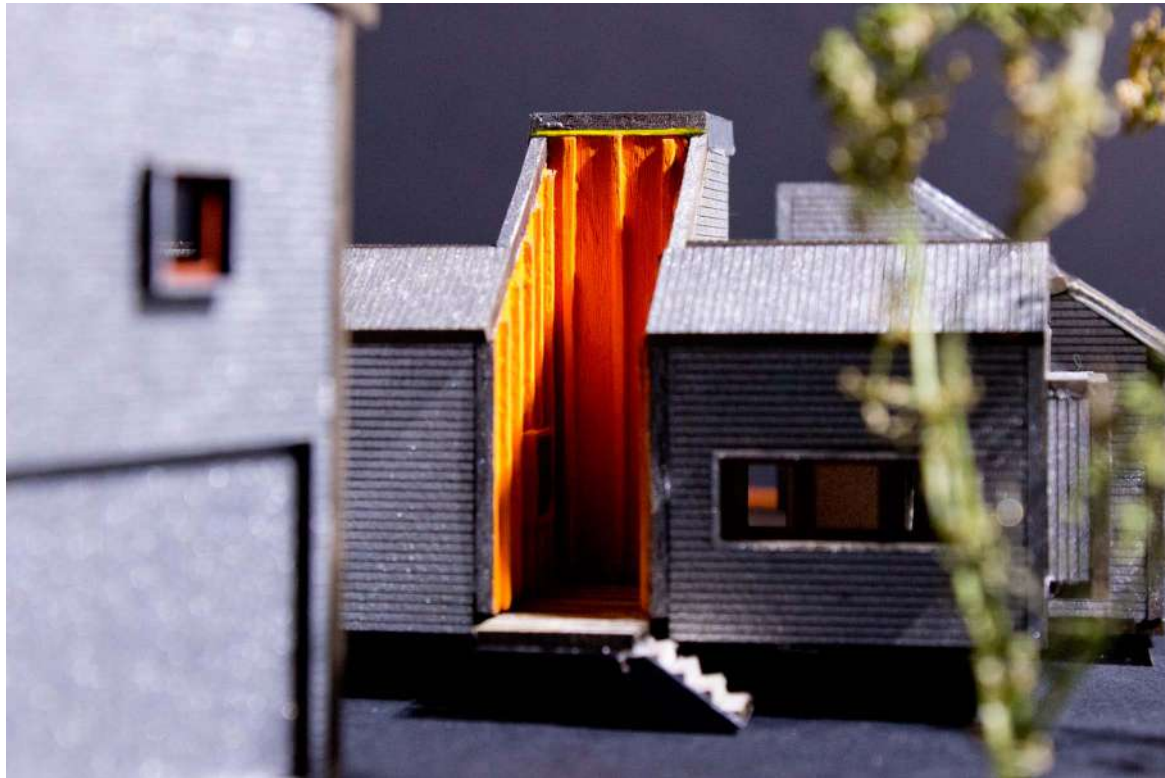


Fig.192. *Interior view from dining*



Fig.193. *Orange colour
of local flower*



D.06

Final Design

Fig.194. *View of physical model
towards dining and living*



Fig.195. Section EE through living



Section EE



Floor Plan Key
Ground Floor

Legend

- 7 Living
- 9 Outdoor Patio
- 10 Pool

**Colour / Light
Strategies**

- 3 Walls of Colour

Fig.196. Poolside



Fig.197. *View of physical
model viewing S*





PART E.

CONCLUSION

E.01 *Concluding Reflection*

E.02 *Works Cited*

E.03 *List of Figures*

COLOUR, Hell of a Good Thing!

PART E.

CONCLUSION

E.01 *Concluding Reflection*

The underlying aim of this research was to seek ways in which Luis Barragan's magical atmospheric light and colour strategies could influence contemporary architectural practice in New Zealand.

In the context of a lack of vibrant colours in New Zealand architecture, this research endeavoured to explore new strategies to recall colour as an important element in the design of architecture as a spatial tool for altering the perception of space. It has demonstrated a methodology and set of processes for how colour can be integrated right from the beginning stages of design. With colour commonly left until much later on in the design process, such as in the selection of paint, this research highlights the great potential of colour to extend its role beyond just a decorative one. Additionally, this research utilises the ideas of three key strategies; coloured light, coloured latticework, and planes of colour, as borrowed from Luis Barragan to design with colour and light. It is encouraged that others follow this same process to investigate how these strategies can be incorporated into future designs. This could be expanding on the approaches taken in this research to appropriate the strategies for a New Zealand context, and the new ideas that have risen from this. It is hoped that this research and its findings will encourage new ways for architecture in New Zealand to be influenced by Barragan's colour and light strategies. Or, as a guide for seeking influence from elsewhere. Furthermore, the findings from this research suggests that architects should not only embrace the influence of artists and the relationship between art and architecture, but the wealth in cross-disciplining and exchanging of knowledge with others. As

the context of every project will differ, this research highlights the importance of determining how the light and colour strategies and their integration with other architectural elements will respond to the characteristics of the site and surroundings.

This research has presented an investigation into the potential ways of designing with colour and light in a residential New Zealand context. Although, one may argue there is irony in that the design resulted in having a rather “colourless” grey exterior. This could seem to epitomise earlier criticism of New Zealand’s dreary suburban monotony. However, the context is rural and as a result the cladding was selected to fit in well with the landscape as a colour associated with the buildings in the region. As Ian Athfield exclaims, *“there are colours you find hard to work with but then a situation will arise where such colours will work and then your attitude to those colours changes (Allardice, 94)”*. This exterior contrasts with the vibrant colours that puncture its form; enchanting pops of colour that lure the eye in. This research has highlighted the importance of considering contrast when designing with colour and light. Contrast; to juxtapose so as to bring out differences in form and colour, is a design instrument utilised by Barragan to augment wonder in his architecture. Here, the grey’s coldness gives impact to the surprising warmth of colour within. The colour accents generate emotive interior experiences as they morph with the ephemeral qualities of exterior conditions. This design’s approach of having small glimpses of bold colour offers a way to incrementally build the confidence of experimenting with colour in New Zealand. For the more daring clients however, a bolder use of colour can be encouraged. This design employs subdued colour to contrast with hidden vibrant colours like in Barragan’s House and Studio, while another tactic is to use a contrasting vibrant colour such as in the Casa Gilardi House.

This conversation of colour choice forms a dialect between not only how the colour is treated and experienced as an exterior versus interior element, but how it intends to serve the public versus the more private realms. From the research it is concluded that as a

E.01

Concluding Reflection

public concern, the architect and client must be critical of how the exterior colour intends to respond to its surrounding context and pose itself to the street that is enjoyed by the public. Equally, they must consider what colours best suit the more private matters of the inhabitant(s) in terms of personal taste, emotional perception, and atmosphere desired. It is believed that this research has challenged how colour can coexist simultaneously between both the public and private, as vibrant colour accents of the final design straddle exterior and interior thresholds; seeking compatibility with both environments. Further research on the play of luminosity on specific colours in New Zealand would be worth investigating.

Two additional key points of criticism can be made here. Firstly, although the exterior colour scheme was iteratively tested in response to its surroundings within the project's design process, the extent to which the interior schemes were tested was minimal. It would have been beneficial to explore this further, especially as such a large part of the background to this research was pivoted around the focus on interior atmospheric experiences. The analogue design experiments of Barragan's light/colour strategies were especially successful as they utilised real light in the staging of imagined spaces to generate convincing representations of emotive atmospheres. It perhaps would have been worthwhile to revisit this process in the design stages, and to challenge the extent to which this could be used at a more detailed level, such as testing the effects of different materials. This could have been pushed further through the use of real materials that test the relationship between colour and light at larger scales to offer a rich exploration into the bodily responses of the multi-sensorial. What makes this process crucial in supplementing the design of architecture, and validates the need for its further exploration, is that it propels oneself to be removed from the ocular centric and aesthetic based domain of digital software. Secondly, while the theory of colour could have been an avenue used to select colour in the design process, intuition was actually the primary mode of choice. This fact does not undermine the theory of colour of which should be encouraged.

The final interior perspective visualisations that tested the colour and material schemes of the house were significant in emphasising the role of darkness and shadow to enhance the atmospheric effects of colour and light. The hidden light well positioned above the transitional corridor between kitchen and dining that generates a wash of coloured light into these spaces can be used as an example. When the tones of timber internal linings and floorboards were lighter, the coloured light got lost amongst this and the harsh exterior light that dominated through large sliding doors. Returning to the importance of contrast; when these interior tones were darkened, a greater level of depth within the composition was created. As a result, the coloured light became the focal point and its emotional impact was enriched. The even darker flooring anchored the space and enhanced the floating, wondrous effect of the coloured light above. This illustrates the necessity for architects to consider the inclusion of intimate darkness when designing their moments of colour, and how this corresponds with the desire for sunlight and views out.

It is hoped that this research has provided the foundations for others to build upon and push creative boundaries on the colour and light strategies. As such, the concept of adaptability could be an avenue for further research; as our mood or taste changes the inhabitant might want the ability for these colours to change also. Or, the notion of what a lattice is, or how it is constructed or arranged within a space could be challenged. The lattice within the final house design remained fairly similar in its form to Barragan's. It is evident that there are many ways to design the lattice in different sizes, dimensions, locations, orientations – horizontal or vertical, and this can be found in several residential projects in New Zealand. Perhaps using colour in this architectural feature could further provoke new modes of interacting with natural light as well as creating new atmospheres.

As this research explored a design process for a single site and typology type, going forward - the intention is that this can be followed to test different contextual areas and typologies. For

E.01

Concluding Reflection

instance, it would be particularly interesting to test how an urban setting would impact the use of colour and light. Without the vibrant hues abundant in more rural landscapes, New Zealand's urban environments promise dull buildings that are in dire need of a dramatic colour boost. As land becomes less abundant and the need to design sustainably through smartly designed, smaller spaces is more eminent than ever - the strategies within this research that capitalise on the use of colour and light could be excellent devices to aid this and help avoid claustrophobic, static atmospheres. Not only this, but as we intensify our urban cities to include more multiple living units, these strategies could also be very relevant in controlling light with respect to desires for intimacy and privacy. Furthermore, it is anticipated that the collaboration between client and architect on the choice of colours will give the former a sense of pride in the expression of personality and identity.

Finally, this research highlights the value of colour and light within architecture as a means to stimulate the senses and excite emotion. The public concern of colour is just as crucial as its private concern. Colour is a powerful tool for expressing individuality, identity and culture, and as such should be heavily encouraged. New Zealand's vibrant natural landscapes should be our greatest source of inspiration for the built environment, and the clarity of light should be utilised to our advantage. This research acts as a reminder to be adventurous and daring with colour, as it can elicit magical atmospheres that are both visually and emotionally pleasurable. Although each person will react differently to colour, this should not limit the confidence to use it. As demonstrated within this research, when colour is given considerable thought and its intention is clear, the outcome is more likely to be enjoyed. The confidence in creating compatible colour schemes will become greater when architects learn more about the characteristics and relationships between colours. As imagined within the final house design, the surprising coloured moments lead to a feeling of wonder, a wonder that will make us in awe of, and more attuned to the world around us.

This content is unavailable. Please consult the figure list for further details.

E.02

Works Cited

- Adcock, Craig E. *James Turrell: The Art of Light and Space*. University of California Press, 1990.
- Allardice, Pam. *Colour for New Zealand Architecture*. 1984. Victoria University of Wellington. Bachelor's thesis.
- Allen, Jim. "Gallery - Futuna Windows by Jim Allen." *Futuna Trust*, Words & Images Ltd, 2011, <https://www.futunatrust.org.nz/gallery/>. Accessed 4 Feb. 2021.
- Ambasz, Emilio. *The Architecture of Luis Barragan*. Museum of Modern Art, 1976.
- Bachelor, David. *Chromophobia*. Reaktion Books Ltd, 2007.
- Bannister, Matthew. "Kiwi blokes: Recontextualising Pakeha masculinities in a global setting." *Genders Journal*, no. 42, 2005.
- Barragán, Luis, and Yutaka Saitō. *Luis Barragan = Ruisu Baragan No Kenchiku*. Yasusuke Hamada, 1992.
- Böhme, Gernot, et al. *Architectural Atmospheres: On the Experience and Politics of Architecture*. Birkhauser, 2014.
- Böhme, Gernot. "The Theory of Atmospheres and Its Applications." *Interstices*, vol. 15, 2014, pp. 92–9. *Interstices*, doi: <https://doi.org/10.24135/ijara.v0i0.480>
- Borioli, Leonardo Diaz. *Collective Autobiography: Building Luis Barragán*. 2015. Princeton University. Dissertation.
- Boucher, Brian. "Check Out These Glorious Photos of James Turrell's Renovated Skyspace at MoMA PS1." *Artnet*, Artnet Worldwide Corporation, 2021, <https://news.artnet.com/exhibitions/glorious-photos-james-turrell-moma-ps1-696773>. Accessed 4 Feb. 2021.
- Chandavarkar, Prem. "Wonder, Wisdom, and Mastery in Architecture." *Architecture, Culture, and Spirituality*. Edited by Thomas Barrie et al., Ashgate, 2015, pp. 211–20.
- "Colours of Aotearoa." *Colorsteel*, <https://www.colorsteel.co.nz/inspiration/colours-of-aotearoa/>. Accessed 4 Feb. 2021.
- During, Simon. "What Was the West?: Some Relations between Modernity, Colonisation and Writing." *Meanjin (Melbourne, Vic. : 1977)*, vol. 48, no. 4, 1989, pp. 759–76.

Faulkner, Waldron. *Architecture and Color*. Wiley-Interscience, 1972.

Frichot, Hélène. "Olafur Eliasson and the Circulation of Affects and Percepts: In Conversation." *Architectural Design*, vol. 78, no. 3, 2008, pp. 30–5. Wiley, doi: <https://doi.org/10.1002/ad.671>.

Gage, John. *Colour and Culture: Practice and Meaning from Antiquity to Abstraction*. Thames & Hudson, 1993.

Gatley, Julia, and Bill McKay. "Futuna Chapel: John Scott, Modern Architecture and Māori in Aotearoa New Zealand." *The Handbook of Contemporary Indigenous Architecture*. Singapore: Springer Singapore, 2018, pp. 607–35. Springer, doi: https://doi.org/10.1007/978-981-10-6904-8_23.

"Gerald Parsonson." *Interior Magazine*, <https://www.resene.co.nz/homeown/colour-inspiration/pdf/16-gerald-parsonson.pdf>. Accessed 27 Jan. 2021. PDF file.

Hoffman, Carl. "Vanishing Point." *The Paris Review*, The Paris Review, 2016, <https://www.theparisreview.org/blog/2017/03/06/vanishing-point/>. Accessed 3 Feb. 2021.

Itten, Johannes. *The Art of Color: The Subjective Experience and Objective Rationale of Color*. Van Nostrand Reinhold Co, 1973.

Kandinsky, Wassily. *Concerning the Spiritual in Art, and Painting in Particular*. 1912. [A Version of the Sadleir Translation, with Considerable Re-Translation by Francis Golffing, Michael Harrison and Ferdinand Ostertag]. Wittenborn, Schultz, 1947.

Kernohan, David. *Wairarapa Buildings: Two Centuries of New Zealand Architecture*. Wairarapa Archive, 2003.

Kosky, Jeffrey L. "CONTEMPLATIVE RECOVERY: The Artwork of James Turrell." *Cross Currents (New Rochelle, N.Y.)*, vol. 63, no. 1, 2013, pp. 44–61. Wiley, doi: <https://doi.org/10.1111/cros.12012>.

Le Corbusier. *Towards a New Architecture*. Courier Corporation, 2013.

Leach, B. Foss. "The Prehistory of the Southern Wairarapa." *Journal of the Royal Society of New Zealand*, vol. 11, no. 1, 1981, pp. 11–33. Taylor & Francis Group, doi: <https://doi.org/10.1080/03036758.1981.10419449>.

Linton, Harold. *Color in Architecture: Design Methods for Buildings, Interiors, and Urban Spaces*. McGraw-Hill, 1999.

L'Orange, Mette. "Approaches to colour in architecture and design: The discourse of Polychromy/Teaching colour today." *Cumulus conference What's on: Cultural diversity, social engagement and shifting education Hosted by the University of Aveiro Aveiro, Portugal, May 8–10, 2014*.

"Luis Barragan 1980 Laureate Acceptance Speech." *The Pritzker Architecture Prize*, The Hyatt Foundation, 2021, <https://www.pritzkerprize.com/laureates/1980>. Accessed 27 Jan. 2021. PDF download.

- "Magic." *Collins Dictionary*, HarperCollinsPublishers, 2021, <https://www.collinsdictionary.com/dictionary/english/magic>. Accessed 24 Feb. 2021.
- "Magical." *Collins Dictionary*, HarperCollinsPublishers, 2021, <https://www.collinsdictionary.com/dictionary/english/magical>. Accessed 24 Feb. 2021.
- Martinez, Antonio Riggen. *Luis Barragan: Mexico's Modern Master, 1902-1988*. Monacelli Press, 1996.
- Melling, Gerald. *Positively Architecture!: New Zealand's Roger Walker*. Square One Press, 1985.
- "Mystery." *Collins Dictionary*, HarperCollinsPublishers, 2021, <https://www.collinsdictionary.com/dictionary/english/mystery>. Accessed 24 Feb. 2021.
- Pallasmaa, Juhani. "Space, place and atmosphere. Emotion and peripheral perception in architectural experience." *Lebenswelt (Milano)*, no. 4, 2014. *Lebenswelt*, doi: <https://doi.org/10.13130/2240-9599/4202>.
- . *The Eyes of the Skin: Architecture and the Senses*. 3rd ed., Wiley, 2012.
- Pauly, Daniele. *Barragan: Space and Shadow, Walls and Colour*. Birkhauser, 2002.
- Pearson, David G. *The Politics of Ethnicity in Settler Societies: States of Unease*. Palgrave, 2000.
- Pelletier, Louise. "Modeling the Void: Mathias Goeritz and the Architecture of Emotions." *Journal of Architectural Education*, vol. 62, no. 2, Nov. 2008, pp. 6–13. *Taylor & Francis Group*, doi: <https://doi.org/10.1111/j.1531-314X.2008.00234.x>.
- Phillips, Jock. *A Man's Country?: The Image of the Pakeha Male, a History*. Penguin, 1987.
- Porter, Tom, and Byron Mikellides. *Colour for Architecture Today*. Taylor & Francis, 2009.
- "Resene Total Colour Awards 2020 Winners." *Resene*, <https://www.resene.co.nz/awardwinners.htm>. Accessed 27 Jan. 2021.
- Salmond, Jeremy. *Old New Zealand Houses 1800-1940*. Reed Methuen, 1986.
- Shaw, Peter, et al. *A History of New Zealand Architecture*. 3rd ed., Hodder Moa Beckett, 2003.
- "Suburban Wellington's Sea of Grey Roofs Is Frightening, Architect Says." *Stuff*, 2 Aug. 2018, <https://www.stuff.co.nz/life-style/homed/latest/105912289/suburban-wellingtons-sea-of-grey-roofs-is-frightening-architect-says>. Accessed 27 Jan. 2021.
- "Te Horo Bach." *Parsonson Architects Ltd*, <https://p-a.nz/te-horo-bach>. Accessed 4 Feb. 2021.

"The Matisse Chapel." *Communedesign*, 10 Apr 2018, <https://communedesign.tumblr.com/post/178730654235/the-matisse-chapel>. Accessed 4 Feb. 2021.

Thornes, John E. "Cultural Climatology and the Representation of Sky, Atmosphere, Weather and Climate in Selected Art Works of Constable, Monet and Eliasson." *Geoforum*, vol. 39, no. 2, 2008, pp. 570–80. *ScienceDirect*, doi: <https://doi.org/10.1016/j.geoforum.2006.10.015>.

"2018 Census population and dwelling counts – amended 5-3-2020." StatsNZ, New Zealand Government, 23 Sep. 2019. <https://www.stats.govt.nz/information-releases/2018-census-population-and-dwelling-counts>. Accessed 28 Jan. 2021

Walden, Russell. *Voices of Silence: New Zealand's Chapel of Futuna*. Victoria University Press, 1987.

NZIA. "Citation." *Roger Walker: New Zealand Institute of Architects Gold Medal 2016*. Edited by John Walsh, New Zealand Institute of Architects, 2018, pp. 4-5.

Weber, Willi, et al. *Lessons from Vernacular Architecture*. Routledge, 2014.

"What do our houses tell us about New Zealand Culture?" *ArchiPro*, 2021, <https://archipro.co.nz/articles/architecture/what-do-new-zealands-architectural-languages-tell-us-about-our-culture-parsonson-architects>. Accessed 27 Jan. 2021.

Zanco, Federico, and Emilia Terragni. *Luis Barragan: The Quiet Revolution*. Skira Editore, 2000.

Zografini, Eleni. "Constructing (with) Light." *ARCHISTART*, PAZLAB, 2021, <https://www.archistart.net/news/constructing-with-light/>. Accessed 4 Feb. 2021.

E.03

List of Figures

Images on pages i - viii are personal photographs:

pg. i	<i>In the courtyard of Barragan's Casa Gilardi during visit in 2019; myself on the left, Camilla on the right.</i>
iii	<i>Hallway to pool and dining room in Casa Gilardi.</i>
iv	<i>Courtyard walls, Casa Gilardi.</i>
vi	<i>Friends at Laundry, celebrating and saying goodbyes; Left to right: Jess, Hannah, Petra, Emma, Becca, Amber, Bligh.</i>
viii	<i>Casa Gilardi</i>

Images from page 1 of research:

Fig.1	<i>Have you forgotten the body in its environment?</i> , personal sketch, 8 May 2020.
Fig.2	<i>Where is the magic?</i> , personal sketch, 8 May 2020.
Fig.3	<i>Domination of technology</i> , personal collage, 8 May 2020.
Fig.4	<i>The Weather Project, 2003</i> , photograph, Tate Modern. (Frichot, 32)
Fig.5	<i>James Turrell's Renovated Skyspace at MoMA</i> (Boucher)
Fig.6	<i>May bubble diagram brainstorm of research interests</i> , personal sketch, 18 May 2020.
Fig.7	<i>Bedroom</i> , personal photograph, 9 Apr 2020.
Fig.8	<i>Kitchen</i> , personal photograph, 9 Apr 2020.
Fig.9	<i>Kitchen</i> , personal photograph, 9 Apr 2020.
Fig.10	<i>Living Room</i> , personal photograph, 9 Apr 2020.
Fig.11	Screenshots ArchiPro article ("What do our houses")
Fig.12	<i>We're becoming sheep!</i> Personal sketch, 20 Apr, 2020.
Fig.13	Screenshots Stuff article ("Suburban Wellington's")
Fig.14	<i>NZ, Where is the POP?!?!?</i> Personal sketch, 20 Apr, 2020.
Fig.15	<i>Silly Sally</i> , Personal sketch, 20 Apr, 2020.
Fig.16	<i>Chromophobia</i> , , Personal sketch, 20 Apr, 2020.
Fig.17	<i>Futuna Windows by Jim Allen</i> , Photograph, Futuna Trust (Allen)
Fig.18	<i>Ronchamp Chapel Le Corbusier (1954)</i> , Photograph, Archistart (Zografini)
Fig.19	<i>The Chapelle du Rosaire de Vence (The Matisse Chapel)</i> , Photograph, Communedesign ("The Matisse Chapel")
Fig.20	<i>Park Mews, Hataitai, Wellington (1973)</i> , Photograph, NZIA (NZIA, 44-45)
Fig.21	<i>Roger Walker House, Thorndon, Wellington (1998)</i> , Photograph, NZIA (NZIA, 56)
Fig.22	<i>Glen Stanley House, Island Bay, Wellington (1991)</i> , Photograph, NZIA (NZIA, 5)
Fig.23	<i>Point Wells Cricket Club by Pac Studio</i> , Photographs, Resene (Resene Total)
Fig.24	<i>Te Horo Bach by Parsonson Architects</i> , Photographs, Parsonson Architects Ltd ("Te Horo Bach")
Fig.25	San Cristobal (Ambasz, 96)
Fig.26	Left to right: Anni Albers, Luis Barragan, Josef Albers, Legorreta couple, 1967 (Borioli ,24)
Fig.27	<i>Brainstorm of research interests</i> , personal sketch, 5 April 2020
Fig.28	<i>Methodology diagram stage one</i> , Personal sketch, 30 Apr 2020.
Fig.29	<i>Timeline of Barragan's architecture</i> , Personal sketch, 3 May 2020.
Fig.30	<i>Coloured light design experiment L4</i> , Personal photograph, 11 Jun 2020.
Fig.31	<i>Luis Barragan, caricature of "Chucho" Reyes</i> (Zanco and Terragni, 242)
Fig.32	"Rooster against a sky blue background". Gouache by Jesus Chucho Reyes around 1950 (70x43). (Pauly, 27)

Fig.33	<i>House and Studio roof terrace</i> (Zanco and Terragni, 188)
Fig.34	<i>House and Studio coffer in ceiling</i> (Pauly, 181)
Fig.35	<i>Galvez coloured glazing in corridor leading to the bedrooms</i> (Pauly, 189)
Fig.36	<i>Galvez coloured glazing in corridor leading to the bedrooms</i> (Pauly, 189)
Fig.37	<i>Tlalpan chapel</i> (Barragán and Saitō, 83)
Fig.38	<i>Mathias Goeritz, El Eco Experimental Museum, Mexico City</i> (Zanco and Terragni, 223)
Fig.39	<i>Le Corbusier, Chapel of Notre Dame du Hau, Ronchamp</i> (Borioli, 64)
Fig.40	<i>Tlalpan chapel crucifix and shadow</i> (Ambasz, 48)
Fig.41	<i>Tlalpan chapel window by Mathias Goeritz</i> (Barragán and Saitō, 83)
Fig.42	<i>Gilardi entrance hall and stairway, coloured light from corridor beyond</i> (Pauly, 165)
Fig.43	<i>Gilardi corridor to pool</i> (Pauly, 191)
Fig.44	<i>(Next page) Coloured light in Tlalpan Chapel</i> (Ambasz, 47)
Fig.45	<i>Barragan's colour / light strategy diagram - coloured light</i> , Personal illustration, 11 Jun 2020.
Fig.46	<i>Largest window, before coloured glazing added</i> , Personal photographs, 11 Jun 2020.
Fig.47	<i>Photograph position with respect to the model</i> , Personal photographs, 11 Jun 2020.
Fig.48	<i>Testing three different window sizes ,locations, and addition of coloured walls</i> , Personal photohraphs and illustrations, 11 Jun 2020.
Fig.49	<i>(double spread) Coloured light design experiment II overview</i> , Personal photographs and illustrations, 11 Jun 2020.
Fig.50	<i>(double spread) Coloured light design experiment II - light source 01</i> , Personal photographs and illustrations, 11 Jun 2020.
Fig.51	<i>(double spread) Coloured light design experiment II - light source 02</i> , Personal photographs and illustrations, 11 Jun 2020.
Fig.52	<i>(double spread) Coloured light design experiment II - light source 03</i> , Personal photographs and illustrations, 11 Jun 2020.
Fig.53	<i>(double spread) Coloured light design experiment II - light source 04</i> , Personal photographs and illustrations, 11 Jun 2020.
Fig.54	<i>Coloured light design experiment II - F3</i> , Personal photograph, 11 Jun 2020.
Fig.55	<i>Coloured light design experiment II - H4</i> , Personal photograph, 11 Jun 2020.
Fig.56	<i>Coloured latticework</i> , Personal photograph, 3 Jul 2020.
Fig.57	<i>Tlalpan chapel exterior, latticework at entrance</i> (Ambasz, 53)
Fig.58	<i>Chapel interior, magical linger of coloured light</i> (Barragán and Saitō, 83)
Fig.59	<i>Tlalpan chapel latticework, reflects coloured light, strong contrast of colour</i> (Pauly, 142)
Fig.60	<i>Giorgio de Chirico, Mystery and Melancholy of a street, 1914</i> , Oil on Canvas, The Paris Review (Hoffman)
Fig.61	<i>Tlalpan chapel, reflections of latticework in black stone plinth</i> (Martinez, 111)
Fig.62	<i>Bougainvillea flower colour</i> (Barragán and Saitō, 131)
Fig.63	<i>(next page) Barbara Meyer's House, latticework entry door</i> (Barragán and Saitō, 131)
Fig.64	<i>Barragan's colour / light strategy diagram - coloured latticework</i> , Personal illustration, 3 Jul 2020.
Fig.65	<i>(double spread) Coloured latticework design experiment I overview</i> , Personal photographs and illustrations, 3 Jul 2020.
Fig.66	<i>(double spread) Coloured latticework design experiment II overview</i> , Personal photographs and illustrations, 3 Jul 2020.
Fig.67	<i>Coloured latticework</i> , Personal photograph, 3 Jul 2020.
Fig.68	<i>Coloured latticework</i> , Personal photograph, 3 Jul 2020.
Fig.69	<i>Planes of Colour</i> , Personal photograph, 3 Jul 2020.
Fig.70	<i>House and studio roof terrace</i> (Ambasz, 42-43)
Fig.71	<i>Gilardi courtyard</i> (Barragán and Saitō, 127)
Fig.72	<i>Tlalpan chapel</i> (Barragán and Saitō, 85)
Fig.73	<i>Galvez patio</i> (Barragán and Saitō, 85)
Fig.74	<i>Galvez interior</i> (Barragán and Saitō, 159)
Fig.75	<i>Las Arboledas Muro Rojo</i> (Ambasz, 70-71)

Fig.76	<i>Las Arboledas Plaza del Compa</i> (Ambasz, 69)
Fig.77	<i>Fuente de Los Clubes</i> (Barragán and Saitō, 159)
Fig.78	<i>Contrasting surface textures of San Cristobal</i> (Ambasz, 103)
Fig.79	<i>San Cristobal entrance</i> (Barragán and Saitō, 159)
Fig.80	<i>Liquid core revealed</i> (Ambasz, 101)
Fig.81	<i>Planes of colour within San Cristobal</i> (Ambasz, 94-95)
Fig.82	<i>Gilardi pool</i> (Barragán and Saitō, 110-111)
Fig.83	Josef Albers, <i>Variation</i> , 1955 page bookmarked by Barragan (Pauly, 152)
Fig.84	<i>Gilardi pool direct light</i> (Martinez, 138)
Fig.85	(next page) <i>Gilardi pool</i> (Pauly, 195)
Fig.86	<i>San Cristobal</i> (Ambasz, 92-93)
Fig.87	<i>Barragan's colour / light strategy diagram - Planes of Colour</i> , Personal illustration, 3 Jul 2020.
Fig.88	(double spread) <i>Experiment I - wall height 1</i> , Personal photographs and illustrations, 14 Jul 2020.
Fig.89	(double spread) <i>Experiment I - wall height 2</i> , Personal photographs and illustrations, 14 Jul 2020.
Fig.90	(double spread) <i>Experiment I - wall height 3</i> , Personal photographs and illustrations, 14 Jul 2020.
Fig.91	(double spread) <i>Experiment II</i> , Personal photographs and illustrations, 14 Jul 2020.
Fig.92	<i>Planes of Colour I/H3/D1/01</i> , Personal photograph, 3 Jul 2020.
Fig.93	<i>Planes of Colour II/H3/D1/03</i> , Personal photograph, 3 Jul 2020.
Fig.94	<i>Barragan's colour / light strategy diagram</i> , Personal illustration, 3 Jul 2020.
Fig.95	<i>Timeline reflecting upon Barragan's architecture and influences</i> , Personal collage, 10 Aug, 2020.
Fig.96	<i>Barragan's artist influences upon colour/light & methodology shift ideas</i> , Personal sketches, 10 Aug 2020.
Fig.97	(double spread) <i>Analysis drawings related to Barragan's House and Studio</i> , Personal sketches, 10 Aug 2020.
Fig.98	<i>Analysis drawings related to Barragan's Antonio Galvez House</i> , Personal sketches, 13 Aug 2020.
Fig.99	<i>Analysis drawings related to Barragan's San Cristobal</i> , Personal sketches, 13 Aug 2020.
Fig.100	<i>Analysis drawings related to Barragan's Casa Gilardi</i> , Personal sketches, 13 Aug 2020.
Fig.101	<i>Analysis drawings related to Barragan's Barbara Meyer's House</i> , Personal sketches, 13 Aug 2020.
Fig.102	<i>Mexico vs NZ: private & introverted; inwards relationship vs connections to surrounding land; outwards relationship</i> , Personal sketches, 20 Aug 2020.
Fig.103	<i>Winter in the Wairarapa</i> , Personal poem sketch, 20 Aug 2020.
Fig.104	<i>Perspective sketch by Luis Barragan</i> (Zanco and Terragni, 165)
Fig.105	<i>Methodology diagram stage one</i> , Personal sketch, 30 Apr 2020.
Fig.106	<i>Methodology diagram stage two</i> , Personal sketch, 4 Aug 2020.
Fig.107	(next page) <i>Plan view of physical model site and surroundings</i> , Personal photograph, 5 Aug 2020.
Fig.108	<i>Trees on site</i> , Personal photograph, 8 Aug 2020.
Fig.109	(double spread) <i>Site Plans</i> , Personal drawings, 8 Aug 2020.
Fig.110	<i>View NWW on site</i> , Personal photograph, 8 Aug 2020.
Fig.111	<i>1- 4 Views on site</i> , Personal photographs, 8 Aug 2020.
Fig.112	<i>Pond on site</i> , Personal photograph, 8 Aug 2020.
Fig.113	<i>5-14 Views on site</i> , Personal photographs, 8 Aug 2020.
Fig.114	<i>NWW view of physical site model</i> , Personal photograph, 8 Aug 2020.
Fig.115	<i>Physical model and sketches overlaid analysing site</i> , Personal photographs, 8 Aug 2020.
Fig.116	<i>Dicky Sayer's Slab Whare</i> (Kernohan, 47)
Fig.117	<i>Building in South Wairarapa</i> , Personal photograph, 30 Aug 2020.
Fig.118	(Double spread) <i>Observation photographs and illustrations</i> , Personal photographs and illustrations, 26 Aug 2020.

Fig.119 (Double spread) Observation photographs and illustrations, Personal photographs and illustrations, 26 Aug 2020.

Fig.120 Summary illustrations of architectural elements in South Wairarapa, Personal photographs and illustrations, 26 Aug 2020.

Fig.121 (next page) Farm building in South Wairarapa, Personal photograph, 30 Aug 2020.

Fig.122 Wairarapa Building, Personal photograph, 30 Aug 2020.

Fig.123 Key light observations, Personal sketches, 30 Aug 2020.

Fig.124 Studio Space, Personal photograph, 2 Sep 2020

Fig.125 (a,b,c,d) Mapping orientation of colour / light strategies on site, Personal sketches, 5 Sep 2020.

Fig.126 Conceptual written narratives, Personal sketches, 6 Sep 2020.

Fig.127 (double spread) Conceptual sketches and models , Personal sketches, 6 Sep 2020.

Fig.128 (double spread) Conceptual sketches and models , Personal sketches, 6 Sep 2020.

Fig.129 (double spread) Conceptual sketches and models , Personal sketches, 6 Sep 2020.

Fig.130 (double spread) Conceptual sketches and models , Personal sketches, 6 Sep 2020.

Fig.131 (double spread) Conceptual sketches and models , Personal sketches, 6 Sep 2020.

Fig.132 Colour/light design experiments from Part B, Personal photographs

Fig.133 Concept Floor Plan, Personal drawing, 8 Sep 2020.

Fig.134 (Pages 183-186) Integration of colour/light experiments from Part B in current design, Personal sketch, 20 Dec 2020.

Fig.135 Physical conceptual model, Personal photographs, 8 Sep 2020.

Fig.136 Colour/light strategy locations within house (in orange), Personal drawing, 8 Sep 2020.

Fig.137 (double spread) Development sketches and models, Personal sketches and physical models, 10 Sep 2020.

Fig.138 (double spread) Development sketches, Personal sketches and physical models, 10 Sep 2020.

Fig.139 (double spread) Development sketches, Personal sketches and physical models, 10 Sep 2020.

Fig.140 (double spread) Development floor plans, Personal drawing, 13 Sep 2020.

Fig.141 (double spread) Development white card model of house, Personal photographs, 15 Sep 2020.

Fig.142 Screenshots of Colorsteel article ("Colours of Aotearoa")

Fig.143 Wairarapa photographs and drawing of intended scheme, Personal photographs and drawings, 20 Sep 2020.

Fig.144 Approach a) tested on site in summer and winter colours, Personal drawings, 20 Sep 2020.

Fig.145 Wairarapa photographs and drawing of intended scheme, Personal photographs and drawings, 20 Sep 2020.

Fig.146 Approach b) tested on site in summer and winter colours, Personal drawings, 20 Sep 2020.

Fig.147 Wairarapa photographs and drawing of intended scheme, Personal photographs and drawings, 20 Sep 2020.

Fig.148 Approach c) tested on site in summer and winter colours, Personal drawings, 20 Sep 2020.

Fig.149 Wairarapa photographs and drawing of intended scheme, Personal photographs and drawings, 20 Sep 2020.

Fig.150 Approach d) tested on site in summer and winter colours, Personal drawings, 20 Sep 2020.

Fig.151 Wairarapa photographs and drawing of intended scheme, Personal photographs and drawings, 20 Sep 2020.

Fig.152 Approach e) tested on site in summer and winter colours, Personal drawings, 20 Sep 2020.

Fig.153 Wairarapa photographs and drawing of intended scheme, Personal photographs and drawings, 20 Sep 2020.

Fig.154 Approach f) tested on site in summer and winter colours, Personal drawings, 20 Sep 2020.

Fig.155 Experiment b) Drawing of house on site in summer colours, Personal drawing, 20 Sep 2020.

Fig.156 Experiment f) Drawing of house on site in winter colours, Personal drawing, 20 Sep 2020.

Fig.157 (double spread) Interior colour and material scheme tests, Personal drawings, 5 Dec, 2020.

Fig.158 (previous page) Physical site model and final house design located on site, Personal photograph, 10 Dec 2020.

Fig.159 Physical model - entry, Personal photograph, 10 Dec 2020.

Fig.160 Physical model - plan view, Personal photograph, 10 Dec 2020.

Fig.161 (next page) Site Plan, Personal drawing, 30 Nov 2020.

Fig.162 *Final Design Axonometric Drawing*, Personal drawing, 30 Nov 2020.

Fig.163 *Final Design Axonometric Drawing cut walls*, Personal drawing, 30 Nov 2020.

Fig.164 (double spread) *Final Design Floor Plans*, Personal drawing, 30 Nov 2020.

Fig.165 *Final Design Street Elevation*, Personal drawing, 18 Nov 2020.

Fig.166 *Farm building in South Wairarapa*, Personal photograph, 25 Nov 2020.

Fig.167 (previous page) *Final design exterior entrance*, Personal drawing, 25 Nov 2020.

Fig.168 *Final design physical model exterior entrance*, Personal photograph, 10 Dec 2020.

Fig.169 *Aluminium corrugate common in South Wairarapa*, Personal photograph, 8 Aug 2020.

Fig.170 (next page) *Final design exterior entry with latticework wall*, Personal photograph, 10 Dec 2020.

Fig.171 (previous page) *View out latticework wall*, Personal drawing, 20 Nov 2020.

Fig.172 *View opposite latticework wall - entry bench seat*, Personal drawing, 20 Nov 2020.

Fig.173 *Final design physical model SE view close-up*, Personal photograph, 10 Dec 2020.

Fig.174 *Final design physical model SE view*, Personal photograph, 10 Dec 2020.

Fig.175 (double spread)*Final design sectional perspectives AA & BB*, Personal drawing, 10 Dec 2020.

Fig.176 (previous page) *Final design physical model S view*, Personal photograph, 10 Dec 2020.

Fig.177 *Pond water reflections on site*, Personal Photograph 8 Aug 2020.

Fig.178 (next page) *Rumpus room and outdoor water patio*, Personal drawing, 20 Nov 2020.

Fig.179 (previous page) *Final design physical model*, Personal photograph, 10 Dec 2020.

Fig.180 *Final design physical model SW view*, Personal drawing, 20 Nov 2020.

Fig.181 *Final design entry to kitchen afternoon light*, Personal drawing, 20 Nov 2020.

Fig.182 *Final design entry to kitchen evening light*, Personal drawing, 25 Nov 2020.

Fig.183 *Final design looking towards kitchen and light well*, Personal drawing, 25 Nov 2020.

Fig.184 *Yellow colour of local flowers*, Personal Photograph 8 Aug 2020.

Fig.185 (next page) *Final design section CC through light well*, Personal drawing, 25 Nov 2020.

Fig.186 *Final design section CC through light well (close-up)*, Personal drawing, 25 Nov 2020.

Fig.187 *Light well construction details*, Personal drawings, 3 Dec 2020.

Fig.188 *Yellow local flower*, Personal photograph, 8 Aug 2020.

Fig.189 *View upwards in light well*, Personal drawing, 20 Dec 2020.

Fig.190 *Section DD through kitchen/dining spaces*, Personal drawing, 20 Dec 2020.

Fig.191 *View of physical model towards dining patio*, Personal photograph, 10 Dec 2020.

Fig.192 *Interior view from dining*, Personal drawing, 20 Dec 2020.

Fig.193 *Orange colour of local flower*, Personal photograph, 8 Aug 2020.

Fig.194 *View of physical model towards dining and living*, Personal photograph, 10 Dec 2020.

Fig.195 *Section EE through living*, Personal drawing, 10 Dec 2020.

Fig.196 *Poolside*, Personal drawing, 10 Dec 2020.

Fig.197 *View of physical model viewing S*, Personal photograph, 10 Dec 2020.

Fig.198 (next page) Luis Barragan in his House and Studio (Zanco and Terragni, 284)

