OUTSIDE, INSIDE, AND THE IN-BETWEEN; A Journey Through the Design Terrains of the Design Practitioner

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy

Corbett Lyon

Master of Architecture, University of Pennsylvania, USA, 1980
Bachelor of Architecture, First Class Honours, University of Melbourne, 1979
Higher School Certificate and Dux of School, Brighton Grammar School, 1973

School of Architecture and Design
College of Design and Social Context
RMIT University

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OUTSIDE, INSIDE, AND THE IN-BETWEEN
A Journey Through the Design Terrains of the Design Practitioner

Invitational PhD
Candidate: Corbett Lyon
Supervisor: Leon van Schaik
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DECLARATION

I certify that, except where due acknowledgement has been made, this work is that of the author alone. The work has not been submitted previously, in whole or in part, to qualify for any other academic award. The content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program. Any editorial work, paid or unpaid, carried out by a third party is acknowledged and all relevant ethics procedures and guidelines have been followed.

Corbett Lyon

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I thank RMIT University for extending an invitation to be part of its Architecture and Design reflection PhD program. It has provided an opportunity to examine my work and thinking as a design practitioner through the lens of the discipline in which I work, and to uncover some of the seemingly hidden mysteries of why architects design the way that they do.

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PREFACE

Researchers working in the field of architectural practice and design have long sought to understand the inner workings of creative design practice. Studies of completed works, interviews with practitioners, and observations of architects at work have enabled researchers to come close to understanding its mysteries.

These empirical studies can however only be made from the ‘outside’; they do not allow the creative process to be observed directly, so they remain merely informed speculations, made by enquiring observers.

To observe design practice at first hand, and in action, one must enter into the mental space of the designer. This is an opportunity afforded only to those who practise design; it is a privileged and unique viewpoint from which to observe and record design thinking and practice as it happens.

The reflective research program developed by RMIT University, within which this dissertation sits, provides such an opportunity. The program forms part of a model of research into creative practice established and developed over the last thirty years by Professor Leon van Schaik AO and others at RMIT University.¹ It encourages design practitioners to step outside their day-to-day world of practice and to situate themselves in an environment of reflection: to critically examine their work and practice, and to observe and record their design thinking and practice in real time, and at first hand.

The research question for all candidates involved in the program is the same: what is the tacit knowledge that enables a creative practitioner to practise, and how can the act of designing be observed and captured?

Candidates are encouraged to adopt a methodology that includes a forensic examination of their existing creative products; a comparison of these with works by others from a defined community of practice; close observation and recording of their design work in progress; mappings of the mental spaces drawn on during a project and of the processes used; and documentation and analysis.

Applying this methodological template, this research project examines my creative outputs, and those of Lyons Architects, the architectural firm that I co-founded and in which I continue to work.

The dissertation’s central questions – involving self-reflection and direct observation of design practice from the ‘inside’ – are, by definition, focused on a series of personal reflections, enquiries and discoveries, made from the unique viewpoint of this designer.

Looking in and looking out from this privileged viewpoint, I attempt to shed light on how I design, how a personal history frames and supports design thinking and practice, and how a designer’s built works, public outcomes and public behaviours give insights into the workings of creative design practice.
INTRODUCTION AND ABSTRACT
INTRODUCTION AND ABSTRACT

The making of a work of architecture is a complex undertaking, demanding creativity and invention, the making of countless decisions, and the synthesis of multiple threads into a completed design. The architect, in the role of designer and creator, is front and centre in this process, bringing to the making of a work learned skills, spatial intelligence, predilections and stances, ways of thinking, and intellectual effort.

This research project is a personal, exploratory journey through the mental and physical terrains on which and within which I work. It attempts to capture and describe, through direct observations, recordings and critical reflections, what takes place in and across my terrains of creative practice.

The enquiry begins with an exploration of my inner, private mental space. Here, aspects of my personal history are explored – the development of my spatial intelligence, encounters with people who have been important mentors and teachers, and the development of foundational learnings and skills.

In this inner, mental world I explore the ‘repository’, a mental place that reveals itself as holding a vast, personal accumulation of images, remembered encounters and experiences.

A lifelong interest in the music of J.S. Bach is examined as another significant layer in my personal history. It is revealed to contribute both to the construction of my spatial intelligence and to my understanding of affinities between the disciplines of music and architecture.

The excursion then charts a path through my outside world – a terrain that occupies a place in the extended world and is characterised by its exteriority. This is the terrain on and in which architects experiment, play out their public behaviours, and give tangible form to their creative outputs. It is also where clients and users experience the results of the designer’s creative endeavours.

An examination of my built work, other creative outputs and public behaviours is undertaken in this outside terrain, to seek out its distinctive traits – figuratively its DNA – to see if these can provide clues to the inner workings of creative design practice.

As the journey progresses, common threads emerge across the built works: distinctive spatial constructions and formal attributes; juxtapositions of scale and monumentality; new types and hybrids; and works that reflect client visions for new places for work, living and service.

My interest in spatial scenography, evident in all of the examined works, is found to be linked to early developments in my spatial intelligence and thinking: to perspective lessons given by my mother, and to later learnings from American architect Robert Venturi and from other teachers and mentors.
My public behaviours and other creative outputs in this exterior world are also critically examined and are revealed to be supporting frameworks for my creative work and thinking, and as ways of sharing and disseminating my work among an extended community of practice.

After emerging from these excursions into my inner and outer worlds, I explore a third terrain, which appears to lie across and between them. In this in-between place, I make first-hand observations over an extended period of designing a new project, the Housemuseum 2. My observations, documented and recorded in real time, reveal a terrain that includes activity across both my mental and extended terrains. In this in-between terrain, the mental repository is encountered for a second time, where I observe it in action. The repository is shown to be a resource that is entirely portable, its contents able to be called upon at any place and time to support the designer’s creative work.

Drawing is encountered in this in-between terrain, as an intrinsic part of my design thinking and elaboration. Captured sequences of making these kinds of drawings reveal a connection between the inner world of the mind and the outer world of extended experience – between hand and eye. This same ‘hand/eye’ is observed and captured in a later part of the project, as I make a parallel set of observations of my learning and performing a musical work by J.S. Bach.

Reflecting on these multiple first-hand observations of the design process in action enables me to make an outline description of this in-between terrain, including the kinds of thinking tools and skills observed being used in different parts of the evolving design. The terrain reveals itself as comprising a mental platform, constructed from my personal history, on which sit clusters of mental rooms, each room devoted to a particular aspect of the design work at hand. In the middle of the cluster of rooms is a room of synthesis, a central place where I bring together the threads and workings from the various rooms, to be considered and synthesised.

I observe that I occupy different rooms at different stages and times in the design process. I am conscious of bringing particular tools, thinking skills and mindsets into each room, appropriate to the task being undertaken.

As I design, I make many excursions from these mental rooms to the outside world of extension and experience. This is particularly evident in the making of drawings and sketches, where activity in my mental rooms occurs simultaneously with the emergence of a sketch or drawing in my outer, extended world. Reflecting on these discoveries made in each of the terrains of personal history, public outcomes and design practice, I see that they share many affinities across and between them, and that all play an intrinsic part in a designer’s creative practice.

What begins as an exploratory journey through my inner and outer worlds leads, through a process of first-hand observations, to the uncovering of a terrain that lies across and between them. This in-between place shows itself to be a central place of creative design activity: a terrain comprising mental rooms and a mental repository, and supported by a practice platform fashioned from a personal history of spatial intelligence, learnings, skills and attitudes.
CHARTING THE JOURNEY
CHARTING THE JOURNEY

A scaffold for the enquiry: the three design terrains

I began by framing my enquiry around three pillars (Fig. 1). These pillars, each representing a different aspect of design thinking and practice, were derived from what I knew, at the time I commenced the project, about how I designed and made architecture. Each pillar springs from a design terrain.

![Diagram of the three design terrains]

Fig. 1 The three design terrains as a scaffold for enquiry.

The terrain of personal history (left).
The terrain of design practice (centre).
The terrain of public outcomes (right).

The first of these is the design terrain of personal history (Fig. 1, left). This is a mental terrain that holds those attributes of the designer’s background and personal history that contribute to his or her positioning, trajectories and thinking as a creative practitioner. It includes the designer’s values and stances, spatial intelligence, mental repository of remembered images and experiences, and foundational learnings and skills. These accumulated layers of personal history locate the designer in a unique and individual frame of reference from which to design. My explorations in this terrain of personal history examine the following questions:
What have been some of the key influences and touchstones in my personal history?

What key architectural moments and encounters have informed my stances and thinking, and why have they resonated with my spatial consciousness?

Who have been my significant teachers, mentors and challengers, and how have learnings from these people shaped my spatial intelligence?

How are my accumulated skills, memories, experiences and images stored in my mental space, and by what means are they recalled and retrieved?

The third terrain is the design terrain of public outcomes (Fig. 1, right).

This design terrain exists in the extended world – in the outside world of architecture and experience. It includes the physical manifestations of the architect’s creative practice and their public behaviours. In exploring this terrain, I investigate the following questions:

What are some of the specific traits and characteristics that can be discovered in Lyons’, and my, built work? How might these attributes – the work’s figurative DNA – be captured and described?

What do these works tell us about the designer’s attitudes, predilections and interests, including influences from the designer’s personal history?

What do these DNA markers reveal about the maker’s spatial intelligence and design stances?

The central pillar in the diagram (Fig. 1, centre) is presented as the terrain of design practice, a terrain that I imagined, as I set out on this research project, as sitting between the other two terrains – between the designer's outside and inside worlds.

The following are some of the questions explored in this third, in-between terrain.

Can direct, first-hand observations of a designer’s thinking and practice provide insights into the workings of the creative process – about the kinds of thinking used and decisions made in producing a work?

What skills, tools and techniques are employed by the designer, and how are these brought into the process as a design is conceived and evolved?

By what mean are ideas and images from the designer’s mental repository recalled, and how are they used in the creative process?

An external framework

These questions have been examined in the context of an external framework that has had particular significance for me in my work as a design practitioner. It has also provided a basis for me to critically consider and present reflections and discoveries made in the course of this project.
This overarching framework includes the writings and research work undertaken over the last twenty-five years by Leon van Schaik in the field of spatial intelligence. My re-reading of van Schaik’s seminal book *Spatial Intelligence: New Futures for Architecture*¹, before commencing this research project prompted me to develop a number of specific questions on the topic, and in particular to seek out some of the specific formative influences on the development of my spatial intelligence. The project’s investigative trajectory takes its initial cue from van Schaik’s definition of mental space and uses his reflective methodology to undertake an excavation and critical examination of my mental space.

The project’s key questions have also been examined in the context of the work of two other researchers; Jennifer Groh, a neuroscientist concerned with the interrelationship of sensory data and memory in the development of spatial awareness², and Frances Yates, whose explorations into the field of mnemonics present mental spaces in the form of ‘theatres of memory’³.

My own reflections and discoveries in relation to these theoretical frameworks are presented in Parts II, III and IV.

**Charting the journey**

With this framework and these questions in mind I set out to chart a journey through the three pillars of enquiry.

I begin in Part I by traversing my outside, extended world. It includes an examination of Lyons’ and my work, my creative outputs, and reflections on my public behaviours as a designer.

The journey then takes me into my private, inner mental space, seeking to uncover significant learnings and skills, influences, encounters and stances that have shaped my personal history. These are presented in Part II.

In Part III, I re-emerge from this inner world to explore the ‘in-between’ terrain of design practice. Here, I step into its centre to observe what it is like to be in this central place of creative activity, and to record my work and thinking as it happens, in real time.

In Part IV, these recorded observations and findings are brought together, and the emerging interconnections, relationships and affinities are critically reviewed and synthesised.

PART I
IN THE TERRAIN OF PUBLIC OUTCOMES:
THE WORLD OF EXTERIORITY
PART I

IN THE TERRAIN OF PUBLIC OUTCOMES: THE WORLD OF EXTERIORITY

I began by entering my terrain of public outcomes, my ‘outside’ world. This is the extended, public world of buildings and architecture, and the terrain in which a designer’s public behaviours and public outcomes are presented and played out (Fig. 2). It is a terrain characterised by outwardness and exteriority.

Fig. 2  The terrain of public outcomes.

What follows is an examination of this terrain through my work, and the work of Lyons and its public behaviours, and the ways in which I have engaged with the recipients and users of my creative outputs.

Lyons: a collaborative platform for venturous practice

Lyons was established in 1996 by Corbett Lyon and Carey Lyon. The two founding partners brought complementary backgrounds and interests to the newly formed enterprise.

Corbett Lyon, a graduate of the University of Melbourne and later of the University of Pennsylvania, studied and worked with American architects Venturi, Rauch and Scott Brown in Philadelphia and New York before returning to Melbourne to establish a practice with his brother Cameron (dec.) in 1982. Lyon + Lyon, later Lyon Lyon Hilbert, produced works for many private and institutional clients,
including a commemorative archway commissioned by the Victorian Government for the state’s sesquicentennial celebrations.

Carey Lyon studied architecture at the University of Melbourne and undertook a master’s degree at RMIT University. Following graduation, he worked in a large city practice, where he led the design of many major commercial, public and institutional buildings, including the Melbourne (then) Telstra headquarters building, and higher education and university buildings in Melbourne and across regional Victoria.

Corbett and Carey were later joined by brother Cameron, Neil Appleton and Adrian Stanic, and in 2015 James Wilson joined the directorial team.

Lyons was founded on, and continues to practise, a set of shared humanist values and a collective commitment to pursuing a venturous and expressive architecture built from ideas. The Lyons studio is a collaborative one, with design ideas and developing propositions discussed and critically reviewed by the directors and the firm’s project teams. Working from this shared platform, each director and senior designer brings their individual personal history, spatial intelligence, skills, interests and stances to the collective Lyons effort (Fig. 3).

Fig. 3 Lyons: a collaborative platform for venturous design practice.
Over the last twenty years, much has been written about the Lyons practice, including its stances, its built work and its public behaviours. Early critiques focused almost solely on the expressive, physiognomic qualities of the firm’s designs – on its interests in a representational architecture of surface, pattern and ornamentation.¹ These commentaries framed a narrow, formalist view of a practice that has since evolved to embrace a wider set of design and practice concerns. These include interests in gestural form, scenographic space-making, engagement with the public realm, experiments with new hybrids and types, and bespoke methodologies designed to involve clients and stakeholders in an interactive, collaborative dialogue as essential participants in the design process.

**Public behaviours and public outcomes**

Lyons’ built work has been accompanied by a parallel series of practice self-reflections, public behaviours, and outcomes, which have helped to build its public persona. These have been undertaken by members of the practice, by people outside the practice who are closely associated with it, and through public exhibitions – which the firm has used to present and speculate on specific aspects of its thinking and work.

Lyons has also used learnings from these reflections and public, creative outputs to distil and reshape its stances and design thinking, enabling it to refashion its shared platform for the next steps in its work and practice.

Examples of some of these practice reflections and public behaviours are described below.

**Client engagement**

A distinguishing attribute of the Lyons practice is the way it involves its clients and end-users in an interactive way from the beginning of a project. This approach enables the firm’s designers to enter into the mental space of the client, and to work with them directly and collaboratively to realise their vision for the project. This way of working builds client ownership in the evolving design and thinking.

Lyons’ engagement takes the form of facilitated workshops and design reviews with the project’s key stakeholders and representatives. It is a methodology that departs from more conventional briefing models, which are characterised by formulaic and functional briefing processes. Employing these interactive methodologies, Lyons’ design team members assume the role of an enabling, co-creating facilitator, in addition to that of a specialist, professional expert. In taking on this facilitating role, the firm’s designers are able to bring the client’s vision and collective corporate intelligence into the central, active place of design thinking and synthesis.

Since 1993, all of the firm’s project teams have used these interactive processes, which include clients and stakeholders being invited to express and articulate their future vision through words and drawings (Fig. 4).

![Fig. 4](image.png)

“Now” and “Future”

Fig. 4 Drawings made by client stakeholders at the initial envisioning workshop for the new Lady Cilento Children’s Hospital, Brisbane.

**End Stop events**

In 2005, the directors conducted a series of in-house reflections and critiques of the firm’s completed projects (Fig. 5). Held episodically over a twelve-month period, these *End Stop* events were convened at the completion of a number of projects. The firm’s senior designers were invited to reflect collectively on the thinking and work involved in each project’s making. *What it is that we have made, what have we become, and how can these learnings be used to inform the next phase in our work and practice?*

The sessions were conducted after hours, and away from the day-to-day workings of the office. In this reflective environment, the firm was able to ‘stop’, critically review its work and thinking, and use its collected responses to refashion its thinking approaches and design strategies.
END STOP 1

Box Hill Nelson/10 ideas

- graphic patterns/scale juxtapositions
- spandek/the big shed/the rhetoric of the type
- the forecourt/hybridising the old with the new
- literalism/an internal street has a footpath and a café
- a fragment of space/incomplete utopias
- monumentality/a desire for civitas within an economic paradigm
- cutting up the body of architecture/an irreverence/lack of respect for manner
- strategies for representation/aversion to windows
- equalising walls and floors/the world is a surface/abstraction not articulation
- poor materials/celebration necessity
- metaphor/the globe/reading an idea.

Fig. 5 Record of End Stop event, ‘Box Hill Nelson TAFE project’, circa 2005.

Venice Biennale 2000

In 2000, Lyons was invited to present a solo exhibition in the Australian pavilion at the 2000 Venice Architecture Biennale. Lyons used this exhibition to present its thinking on urbanism, and its particular interest in visual culture and aesthetics as significant elements in city design.

The firm’s installation, City of Fiction,² directly challenged the Biennale’s title and theme, Less Aesthetics More Ethics, by presenting an urban proposition that championed more – rather than less – aesthetics. Lyons argued that an engagement with visual language and meaning is a core ethical endeavour for architects involved in designing the contemporary city.

The exhibition comprised a wall of postcards, ten cards deep, each containing an image or text relating to an aspect of the Lyons practice (Fig. 6). The postcards were configured to represent a panoramic image of a city skyline. The installation was also designed to be interactive, with visitors encouraged to remove a postcard from the wall, on the back of it write their comments on the Biennale theme and their thoughts on our installation, and post the card back to the Lyons office.

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A van Schaik ideogram

In 2004, Leon van Schaik interviewed the then five practice directors and created an ideogram that described and framed the practice’s shared attitudes and interests, and surfaced a number of its distinguishing public behaviours. The Ideogram (Fig. 7)\(^3\) brings the five partners together around a shared, central platform constructed from ideas, with each contributing their individual backgrounds and interests. The ideogram also speaks to the practice’s developing public persona and its methodologies, which look outwards rather than inwards. These include the active involvement of the client, and a challenging of norms through a radical pursuit of an architecture of resistance, invention and meaning.

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**Practice monograph**

In 2012, Thames & Hudson Australia published a monograph on the firm, *More: The Architecture of Lyons 1996–2011*, which documented Lyons’ built work over its first fifteen years of practice (Fig. 8). The book was conceived as a compendium of the firm’s built work and its design thinking and practice, presented in the form of an extended visual essay. The book was not designed to be polemical, nor did it seek to mark out the practice’s ideological position. It was an opportunity to make an outward, public contribution and presentation of the firm’s ideas, design strategies and modes of creative practice, and to contextualise the Lyons practice in its broader community of practice.

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Like the *End Stop* events, the book offered an opportunity for the firm to reflect on what it had done, and to critically review its body of work across a consolidated compendium of ideas, drawings and built works. The monograph included critical essays by Juliana Engberg, Leon van Schaik, Paul Carter and John McArthur, each exploring and critiquing a different aspect of the Lyons practice and its built work.

**Exhibition: Idea Building**

A second solo exhibition, *Idea Building*, was presented and curated by the firm at the University of Melbourne in 2012. The exhibition was used to explore two central propositions of the practice: that architecture is built from ideas, and that a combination of intellectual effort, skills and methods of creative engagement is the key to translating ideas into an expressive architecture of meaning.

The exhibition installation was constructed as a simulacrum of the Lyons office, with live video feeds from the real office projected onto large screens at each end of the exhibition space (Fig. 9). The installation highlighted the many prosaic realities with which a contemporary architectural studio is engaged while working in the messy world of ideas. It presented the Lyons practice as a place of collaboration, and as a creative laboratory for experimentation, speculation and invention.

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The exhibition *Idea Building*, presenting the Lyons office as a laboratory for speculation and invention.

*Idea Building* did not present images of the firm’s completed buildings; rather, it focused on the centrality of ideas in the work of the practice, and on the creative tools and thinking processes used to translate them into inventive designs.

**Exploring the built work**

The firm has undertaken more than two hundred projects (Fig. 10). Each one has in some way contested conventional paradigms, explored new types and hybrids, or opened up new ways of thinking about places for learning, working, living and service. Some of the significant projects in the Lyons oeuvre are presented in Fig. 11. In this genealogy, several threads carry through the work. These include a continued interest in representation using images, surfaces and patterning; gestural form; buildings exhibiting spatial complexity; and an architecture that contributes to the public realm.
Fig. 10  Selected Lyons works, 1996–2011.

Fig. 11 Genealogy of significant projects in the Lyons practice, 1998–2017. (above and overleaf).
Looking for an architectural DNA

Part of this journey through the public, exterior terrain of public outcomes involved an examination of Lyons’, and my, built work. Undertaken as forensic analysis, it sought to uncover attributes and characteristics that mark out these projects as creations of Lyons – looking to map these buildings’ architectural DNA (Fig. 12).
I began this exploratory phase of the project by making a drawing that attempted to capture some of the distinguishing attributes of the Housemuseum project – to identify and document elements of its architectural DNA (Fig. 13).

Fig. 13 Corbett Lyon, mapping the DNA markers in the Housemuseum project.

**Eight projects**

Using this methodology, I examine here eight projects in which I have played a lead authoring role, or that I have co-designed with others in the practice (Figs 14–21). What follows is an analysis of these projects, identifying distinctive traits and common DNA threads that run through them.
Sunshine Hospital, 2001 (Fig. 14)

Fig. 14  Sunshine Hospital, 2001, St Albans, Melbourne.

A glazed-brick facade rendered in the colours of Monet (left), with large bay windows for patients and visitors to enjoy the view (right).

- contesting an entrenched institutional type
- using pattern and figuration – optimistic and indelibly bright
- a new kind of urbanism on the city’s periphery
- exploring scale in a scale-less environment
- a facade rendered in the impressionist colours of Monet
- bringing delight to the moribund institutional hospital type
- connoting civic generosity – the new hospital as a symbol for its local community.
BHP Billiton Global Headquarters, 2004 (Fig. 15)

Fig. 15  BHP Billiton Global Headquarters, 2004, Melbourne.

A transparent and serrated curtain wall creates layered canopies at street level (left), and an in-between realm as the building’s entry foyer (right).

• working with the board of BHP Billiton to deliver a new type of workplace: open, collaborative and with column-free spaces
• critiquing and re-imagining the modernist office-tower
• responding to the building’s local context – a big window looking out onto the city
• open and transparent – making the corporation’s work visible
• a literal, transparent curtain wall, folding down over the building and creating an in-between space for the foyer.

John Curtin School of Medical Research, 2006 (Fig. 16)

Fig. 16  John Curtin School of Medical Research, 2006, Australian National University, Canberra.

A formal entry referencing the DNA spiral (left); digital concrete facade panels representing the human body, its cellular structure and coded DNA (right).
workshopping with some of Australia’s leading scientists to design a workplace for collaborative research

- a plan form based on the structure of a cell
- the grand staircase and piano nobile
- a DNA spiral opening out to form the entry
- humankind represented at multiple scales
- references and metaphors – the cell and the DNA strand
- extending the public realm – big, formal, spatial gestures
- representing science – embedding it in the object.

**Faculty of Law Building, 2006 (Fig. 17)**

Fig. 17 Faculty of Law Building, 2006, University of New South Wales, Kensington, Sydney.

A tent-like pavilion structure with inclined walls and folded roof (left) encloses a central public ‘agora’ and spaces for collaborative and discursive learning (right).

- interactive workshops with the law professors and students – listening to their vision for a new type of law school
- responding to *and* contesting the campus master-plan – contextual inflections, gestures, and new axes
- re-imagining the cloistered law school type – opening up the institution, reflecting social justice, and providing equity of access
- a tent-like pavilion structure enclosing the building’s multiple programs
- reflecting a new pedagogical model – collaborative and discursive learning.
Mornington Centre, 2007 (Fig. 18)

Fig. 18  Mornington Centre, 2007, Mornington, Victoria.

Aged-care residential facility designed as a hybrid of house and hotel (left). Conventional materials used in unconventional ways: bricks embossed with a digital, contoured design (right).

- re-imagining the conventional nursing home
- a new model – client-centred rather than medico-centred
- a hybrid of house and hotel, expressed through form, space and material
- relating to the local, the familiar – identity and meaning
- conventional materials used in unconventional ways – house bricks with an embossed digital design.
Hedley Bull Centre, 2008 (Fig. 19)

Fig. 19  Hedley Bull Centre, 2008, Australian National University, Canberra.

A pure hexagonal shape (left), referencing the plan form of a significant heritage building on the campus. The building program folds around a central atrium, creating a new public space (right).

- a central focal place for the building occupants, and a new public space for the campus
- an annular plan form, with no beginning and no end
- expressing the client’s vision for a collaborative, collegial environment for work and teaching – this involved weeks of client workshops
- connecting to the university’s history through a formal strategy
- further explorations of stretched wrapping skins.

The Housemuseum, 2009 (Fig. 20)

Fig. 20  The Housemuseum, 2009, Kew, Melbourne.

A typological speculation – hybrid of house and museum (left). Scenographic spatial constructions and layered spaces in the interior are used to explore new ways of displaying and viewing art (right).
• a new typological speculation – a hybrid of house and museum – the housemuseum
• contesting expectations and conventions of public and private space – combining art and living
• interior spaces that are designed scenographically
• re-imagining ways of viewing and displaying art.

Lady Cilento Children’s Hospital, 2014 (Fig. 21)

Fig. 21  Lady Cilento Children’s Hospital, 2014, South Brisbane, Queensland (with Conrad Gargett).

A large-scale urban intervention, anchored to its local context (left). Vertical atria and radiating branch spaces act as an armature for the hospital’s internal circulation system (right).

• patient-centred design – the first hospital building in Australia to apply principles of salutogenic design
• connecting inside and out with branch-like public spaces
• a building in dialogue with the city – the contextual urban object
• a clearly expressed generative idea for the public armature of the building.

Uncovered traits and markers
Below are some of the attributes and unique markers that have been uncovered in these eight projects.

Expressing a client vision: re-imagining public space – new places for work, living and service
Each of these buildings – whether intended for learning, health care or living – reveals, in its planning arrangements and design, evidence of a strong client vision. These visions include new work-settings, new pedagogical models for teaching and learning, facilities that make possible new ways of providing health care, and opportunities for users to interact meaningfully with their designed environments (Fig. 22).
Expressing client visions.

‘We want a collaborative teaching and learning building, with no dead-ended corridors’ *(lead user group representative)* – Hedley Bull Centre, Canberra (top left).

‘A place where visitors can experience both art and living’ *(Corbett and Yueji Lyon, owners and occupiers of the Housemuseum)* – the Housemuseum, Kew (top right).

‘For us, this project is about connecting our work to the city’ *(BHP Billiton project manager)*, BHP Billiton Global Headquarters, Melbourne (bottom left).

‘We are looking for a hospital that doesn’t look like a hospital’ *(Queensland Health stakeholder representative, at first project envisioning Workshop)* – Lady Cilento Children’s Hospital (bottom right).

**Space, scenography and the user experience**

A number of distinctive spatial structures can be seen in these works (Fig. 23). These include spaces that are used as a primary ordering device for the building and that frame the user’s experience it. Others direct space around fixed objects located strategically in the building’s plan.
Fig. 23  Primary spatial structures revealed in four of the eight buildings.

Left to right:
Free-flowing space around box-like elements in the Housemuseum.
Tree-like spatial armatures in the Lady Cilento Children’s Hospital.
A central organising space in the Hedley Bull Centre.
An ‘agora’ and ‘public street’ on the piano nobile of the Faculty of Law Building.

I also examined the buildings’ spatial character, and considered how these attributes might be perceived by an engaged spectator. The next series of images illustrates spaces in the Housemuseum, mapped in the manner of an infra-red image (Fig. 24). The mappings illustrate private and public space in the building (red and green respectively), and show areas where these public and private realms blur and are infused with one another.
The users' occupancy of and movement though these spaces has been illustrated with a further type of mapping (Fig. 25). This composite drawing, made by 140 first-year architecture students from RMIT University, shows peoples' movements though the Housemuseum. Each student used a different-colour pencil to trace his or her journey through the building. The composite drawing reveals the spatial and temporal qualities of the building in a new and visual way. It highlights the different paths taken by different people, how these movements ebb and flow, and the spatial friction created in various parts of the building.

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7 For the last four years, the first-year cohort in the architecture program at RMIT University has undertaken a design studio based on the Housemuseum. These drawings were made by students in the class of 2014, following their group visit to the Housemuseum.
The Lady Cilento Children’s Hospital in Brisbane has a very different kind of spatial construction: a tree-like armature designed with branch-like spaces radiating out towards the city (Fig. 26).

Many of the spaces in the eight buildings discussed here suggest that they are to be experienced scenographically. This reveals itself to be a distinctive Lyons DNA trait: the designer putting themselves in the mind’s eye of the user or involved spectator, and curating a series of spatial encounters with changing viewpoints (Fig. 27).
Layered, scenographic spaces.

The Housemuseum (left).
Lady Cilento Children’s Hospital (right).

**New types and hybrids**

Many of these buildings challenge conventional types and paradigms, including architectural types that have historically been resistant to change. These designs are the result of bringing typologies together, with the intention of inventing new hybrids, types and mutations. Many of these designs have resulted in new and transformative arrangements of conventional programs.

Lyons has designed buildings that hybridise:

- hospital + commercial showroom = new suburban health care facility (Fig. 28, left)
- house + museum = housemuseum (Fig. 28, right)
- nursing home + hotel = new aged-care facility
- hospital + public building + public garden = the ‘salutogenic hospital’
Experimenting with typological hybrids.

Hybrid of hospital and commercial showroom in Lyons’ PANCH Health Centre, Bell Street, Preston, Melbourne (left). Challenging conventional perceptions of public and private space through a new architectural type – the Housemuseum in Kew (right).

**Distinguishing formal and tectonic attributes**

*Taut wrapping skins*

Many of the buildings examined are wrapped in a tight skin (Fig. 29). These thin surfaces act as a divide between the building’s internal utility and its outward expression. As an in-between site, the building’s skin is a place of exchange, bound up with the cultural and material context in which the work is placed.

Left to right:
- Stretched concrete facade of the Hedley Bull Centre, Canberra.
- Black zinc skin wrapping the form of the Housemuseum, Kew.
- The cut and folded skin of the Victoria University Online Training Centre, St Albans, Melbourne.
Formal strategies and ‘rules’
The forms of the eight projects reveal themselves as having been derived from basic formal schemata, which have then been deformed or manipulated through a process of carving, eroding, translating or extracting (Fig. 30). A generative conceptual strategy or ‘rule’ has been used to derive the building’s final form.

Fig. 30 Primary forms.
Adaption (top).
Aggregation and deformation (bottom).

Symmetry
A long-standing interest in bilateral symmetry and the Rorschach Blot is expressed in several of the eight projects (Fig. 31). It is used at different scales – from the scale of an entire building, to small-scale moments of symmetry in a building’s interior spaces.
Rorschach Blot and examples of symmetry in Lyons’ work.

Clockwise from centre:
- Cricket bat ‘totem’ carved with representations of Lyons’ facades (created by Lyons for exhibition at the 11th Venice Architecture Biennale, 2008).
- Symmetry and asymmetry at internal wall junctions in the Housemuseum, Kew.
- Symmetry around the entry axis of the Faculty of Law Building, University of New South Wales.
- Rorschach lines of disturbance marking a line of connection between two stages of Lyons’ Lilydale TAFE project, Lilydale, Melbourne.
- Symmetry in the facade of the Hedley Bull Centre, Canberra.
- Rorschach Blot.

Ornament and patterning

Patterning and ornamentation are evident in all eight buildings (Fig. 32). The patterns and ornaments are derived from a generative conceptual idea, or are prompted by opportunities inherent in a material and how it might be manufactured and used. These patterned surfaces have not been designed as applied, surface graphics; rather, they are conceived as integral to the building’s fabric – as an intrinsic part of its skin or form.

In some of the examples, ornament is designed to be concordant with the form of the building, as in the Hedley Bull Centre in Canberra. In others, it is used to disrupt the building’s form, or to blur in some way its organisational content – a strategy that puts the surface decoration at odds with the building’s form.
Fig. 32 Ornament and patterning.

Left to right:
Figuration referencing colours and patterns found in nature at Lady Cilento Children's Hospital, Brisbane.
Timber-grain pattern rendered in textured polychrome brick on the facade of the Mornington Centre, Mornington.
Pixelated image of ‘sunshine’ rendered in glazed polychrome brickwork, Sunshine Hospital, St Albans.
Graphic representation of an architectural ‘section’ using a diagonal hatch, Lilydale TAFE Stage 2, Lilydale.

Gigantism
Many of the buildings express a sense of the monumental (Fig. 33). This creates a heightened awareness or frisson for the observer that comes from attempting to read, register and resolve a building and its elements at a scale that is unconventional or unexpected. It includes the use of architectural elements that are large in scale or that differentiate themselves from the prevailing morphology of the building’s surrounding context.

In some of the examples, a reductionist approach is used to create an impression of monumentality – through the use of large, abstracted forms.
Gigantism.

Large-scale texts on the brick fence at the Housemuseum, Kew (left). Use of large-scale abstracted forms creates an ambiguous, monumental scale for the Housemuseum (right).

A number of the buildings incorporate or juxtapose super-sized elements. Lyons’ monumental entry staircase at the John Curtin School of Medical Research is larger than is needed functionally, but is right-sized to fit with the expansive urban scale of the university campus (Fig. 34).

Other buildings use finely scaled, repetitive elements on their facades to create an illusion of a larger, monumental scale. Alternatively, conventional scale references are removed altogether, to create an ambiguous scale reading.

Large and small
All eight buildings exhibit twin attributes of large and small. They embrace the very large, often at a city or urban scale, and the very small and fine. They do not manifest any form of middle scale (Fig. 35).
Fig. 35  Exhibiting large scale (form) and fine scale (texture and surface detail).

From top:
Large-scale, monolithic form, and contrasting, finely textured cast aluminium panels in the BHP Billiton Global Headquarters foyer.
The Housemuseum’s abstracted form, contrasting with fine texts imprinted onto the building’s interior walls and ceilings.
The large-scale form and urban-scaled figuration of the Lady Cilento Children’s Hospital, contrasting with small-scale elements in the building’s interior.
Large-scale urban wall of the Sunshine Hospital, made up of finely pixelated polychrome brickwork.
A large, encompassing roof form at the Mornington Centre, with finely detailed ‘timber-grained’ facade designed with textured polychrome brickwork.
PART II
VENTURING INTO THE TERRAIN OF PERSONAL HISTORY:
A WORLD OF INTERIORITY
PART II VENTURING INTO THE TERRAIN OF PERSONAL HISTORY: A WORLD OF INTERIORITY

This next part of the journey takes me into a very different place: into my inner mental space. In contrast to the outward, public world just visited, this terrain is characterised by private inwardness and interiority (Fig. 36).

I ventured into this terrain attempting to discover attributes that have contributed to my makeup as a designer, including my personal history and the development of my spatial intelligence.

This terrain includes many things that have shaped, and continue to shape, my personal mental space and the mental platform on and in which I practise design. These include foundational skills and learnings in drawing and spatial thinking, experiences and encounters with people and places that have been captured and retained in my mental repository, and continuing interests in art, philosophy, music and literature.

I present below the findings from an exploration of four of the significant strands in this personal history: the development of my spatial intelligence, the construction of my mental repository, skills learned in making drawings, and the influence of the music of J.S. Bach. These shapers of my mental space continue to inform and support my design thinking and practice.
Developing a spatial intelligence

Spatial intelligence and its application to architectural thinking and discourse were introduced by Leon van Schaik in his ground-breaking book *Spatial Intelligence: New Futures for Architecture*, published in 2008.¹

Van Schaik’s central proposition is that all human beings build a spatial intelligence as a way of engaging with the world. This special form of intelligence is developed from early childhood: one’s awareness and memory of spatial environments and relationship to them continues to grow and evolve over a lifetime.

Spatial histories are also built through a growing awareness of one’s place in space and time: from sensory observations, through captured and remembered experiences and encounters, and from new, learned skills and ways of imagining. New layers in the construction of an individual’s spatial history continue to be added to those that have gone before. It is an awareness of this spatial intelligence and an ability on the part of the designer to access and use this internalised knowledge that van Schaik believes are the keys to effective creativity.² It is through their developed capability to tap into, and apply, spatial intelligence to design practice and thinking that architects are able to create meaningful environments that acknowledge both place and time.

Neuroscientist and researcher Jennifer Groh extends van Schaik’s work in this field of spatial intelligence into the discipline of neuroscience³. Like van Schaik, Groh proposes that an individual’s mental maps of the world are constructed by the mind from data collected via the senses of sight, smell, hearing and touch (movement). In building these constructions, she sees memory and an individual’s spatial abilities as being inextricably linked; they support one another in the form of a recursive dialogue.

Groh’s research suggests that memory is not only integral to building an individual’s sense of space, but that it serves as a kind of cataloguing system for the storage and accessing of memories. Her work also suggests that much of the information stored in our memories is intrinsically spatial.⁴

A significant revelation in this research project has been the realisation that my spatial intelligence and spatial history have been shaped and forged by a set of particular and specific personal experiences and learnings, all of which can be founded on and linked to the theoretical frameworks developed by van Schaik and Groh.

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¹ van Schaik, *Spatial Intelligence: New Futures for Architecture*.
² Ibid, p. 29.
³ Groh, p. 189
⁴ Ibid, p. 190.
**Significant spatial moments and encounters**

I can recall many memorable encounters with architectural spaces and buildings that have resonated with my developing spatial consciousness and memory. These include:

- a visit to the Schröder House in Utrecht in 1977, which revealed a remarkably complex spatial arrangement of its domestic program, the walls and ceilings of which could be reconfigured at will by the owner.

- the mannerist, idiosyncratic forms and spaces in the buildings of American architect Frank Furness including the Furness Library at the University of Pennsylvania where I studied in 1979.

- the surreal object/spatial juxtaposition of Aldo Rossi’s yellow Teatro del Mondo, floating in the Venice Lagoon off Piazza San Marco, 1980.

- lying on the floor of Borromini’s Church of Sant’ Ivo alla Sapienza in Rome, several years later, in 1984, looking up at its towering, three-dimensional central space of astonishing spatial plasticity and geometric complexity.

Each of these spatial encounters, and many others like them, remains embedded in my spatial memory and consciousness (Fig. 37).
Fig. 37 Examples of architectural encounters that have resonated with my spatial consciousness and memory.

Visit (1980) with owner Truus Schröder-Schräder at the Schröder House, Utrecht, Netherlands, with drawing by Corbett Lyon recording the spatial complexities of the house (top left).
Interior rotunda of the Church of Sant’ Ivo alla Sapienza, Rome, architect Francesco Borromini (top right).
Il Teatro del Mondo, Venice, 1979, architect Aldo Rossi (bottom left).
The extraordinary forms and complex interior spaces of the Furness Library (now Fisher Fine Arts Library) at the University of Pennsylvania, architect Frank Furness (bottom right).

Early lessons in perspective
My earliest understandings, and learnings, about architectural space came from my mother, Marietta Lyon (née Perrott, 1930–2004).

Mother trained as an interior designer, and taught architectural delineation and rendering at the Royal Melbourne Institute of Technology in the late 1950s. In the 1950s and ’60s she produced perspective drawings, delineations and renderings
for her father’s architectural firm, and for many of the other large architectural practices in Melbourne. In her classes at RMIT, she taught single-point and double-point perspective constructions, based on the mathematical and geometrical principles developed in the Renaissance.

As I began my undergraduate studies, she taught me her methods of spatial construction, using rudimentary tools: a timber drawing board, a T-square and a single drawing-pin. It was an expedient, short-form method of constructing a representation of a three-dimensional space.

Mother’s ‘method of squares’ began with her pinning a sheet of tracing paper to a drawing board and drafting a horizontal line across the sheet as a horizon line. A vanishing-point was then marked on this line with a drawing-pin.

A wall-plane would then be drawn at the ‘end’ of this virtual space-to-be, with the horizon line crossing it at the eye-height of the viewer (Fig. 38, left).

Mother would then extend lines out from the vanishing-point (the drawing-pin) through each corner of the rectangular wall-plane, transforming the flat, two-dimensional sheet of paper into a virtual three-dimensional space (Fig. 38, right).

On one side-wall, an approximation of a foreshortened square would be drawn and, using triangulation, squares would be extended forward along the length of this wall (Fig. 39, left). The squares would then be transferred across to the opposite wall, to calibrate the depth of the emerging space (Fig. 39, right).

Fig. 38   My mother’s ‘method of squares’.

Beginning with a vanishing-point and a wall-plane (left).
Extending lines out from the corners of the wall-plane (right).

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5 The firm of Leslie M. Perrott and Partners was one of Melbourne’s largest architectural practices in the 1950s and ’60s. Leslie M. Perrott senior (1892–1975), founder of the firm and my maternal grandfather, began what is now a four-generation genealogy of architects.
Fig. 39  Approximations of squares mapped onto the two side-walls, to calibrate the depth of the emerging space.

This geometric construction took no more than ten minutes. I remember marvelling at the effect of mother shifting the viewer’s viewpoint by simply moving the vanishing-point (the drawing-pin). Entirely different representations of the space, and the view’s relationship to it, could be created by moving the drawing-pin along the horizon line. Raising the drawing-pin above the horizon would generate a bird’s-eye view of the space.

This was my first remembered understanding of the connection between viewer (viewpoint) and a space being perceived and experienced. By changing and re-orienting the point of view, I could see that a designer could effect a particular relationship between space and viewer. I have since used this technique to test many propositions about spatial vistas, multiple viewpoints and ideas about layered, spatial scenography. As observed in an earlier part of this dissertation, many spatial constructions identified in my built work have been influenced by these single-point, perspectival constructions. Many spaces in the Housemuseum, for example, were conceived and designed using single-point perspective, while thinking about how these spaces would be seen and experienced by the museum visitor (Fig. 40).

Fig. 40  Similar spatial constructions.

Single-point perspective drawing (left). Entry space at the Housemuseum (right).
Space, movement and simultaneity: learning from Edmund Bacon

In 1979, I studied at the Graduate School of Design at the University of Pennsylvania. Edmund Bacon, author of *Design of Cities*, was one of my three professors there, and his teachings were a significant foundational influence on the development of my spatial intelligence. Bacon’s semester-long course involved students making drawings and spatial diagrams of the world’s great cities, in order to develop an understanding of their spatial constructions and lines of movement.

In his lectures, Bacon emphasised the *experiential* attributes of space, and how – as observers or involved spectators – we experience spaces in the city through our senses and in a kinaesthetic way, through movement and as an unfolding sequence of spatial encounters (Fig. 41).

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Fig. 41  Extract from Edmund Bacon’s *Design of Cities*.

‘Sailing City’ by artist Paul Klee, describing a multi-dimensional perception of space (left).

Bacon’s analysis of spatial constructions involving viewpoints, layering and the engaged viewer (right).

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In one afternoon class, Bacon conducted our student group on an extended walking tour through central Philadelphia: through its historic precinct and its central business district and along its river's edge. The following day, he asked each student to make a drawing, from memory, of what they had experienced and seen – to capture their recollections of this walk through the city as a bodily, kinaesthetic experience. My drawing, created nearly forty years ago and made from memory, is reproduced below (Fig. 42). Reflecting on it now, I see that I represented this unfolding spatial experience from a detached, bird's-eye view, not from the point of view of the engaged, experiencing spectator that I am sure Bacon had intended.

Fig. 42 Drawing made from memory by Corbett Lyon following student class walk through central Philadelphia with Edmund Bacon, August 1979.

This newly discovered appreciation of space as something that could be constructed and arranged into an unfolding experience through time added a temporal and scenographic dimension to my mother’s fixed-perspective viewpoints. It opened my eyes to the opportunity that architects have to use this kind of spatial intelligence to create engaging spatial experiences for people who occupy and use their buildings. I extended and practised this new-found spatial awareness on subsequent postgraduate trips through America and Europe – walking, experiencing, and recording with sketches and drawings, my spatial experiences of buildings and cities in the manner of an involved Baconian spectator (Fig. 43).
Fig. 43 Drawings made during a postgraduate study trip to Paris in 1980.

Sketches of the grand staircase (left) and grand foyer (right) in the Palais Garnier (formerly Opéra de Paris), designed by Charles Garnier, capture the complexities and flows of people through the building’s public spaces.

**Learning from the Venturis**

During my time at the University of Pennsylvania I also worked in the Philadelphia and New York offices of architects Venturi, Rauch and Scott Brown. Here, working under and learning from architects Robert Venturi, Denise Scott Brown and Steven Izenour, I was exposed to two further kinds of spatial thinking.

The first was an appreciation of space as something that could be moulded to create spatial, and experiential, conditions of complexity, openness, layering, tension and compression. Examples of these kinds of complex spatial constructions were illustrated in Venturi’s seminal books *Complexity and Contradiction in Architecture* and *Learning from Las Vegas* (with Denise Scott Brown and Steven Izenour). These included many of the firm’s early works, including the Vanna Venturi house, which the architect designed for his mother (Fig. 44).

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Early works by Robert Venturi.

Left, clockwise from top left:
Fire Station No. 4, Columbus, Indiana, 1965–67.
Hersey House (project), Hyannis Port, Massachusetts, 1968.

The second was a specific spatial framing that positioned a building to be viewed frontally, from a fixed, single viewpoint. This spatial framing, of extreme frontality and flatness, was a way of privileging a building's principal facade and allowing it to assert itself in a scale-less, place-less context.

This spatial sensibility was first developed through the firm’s photographs of the Las Vegas strip, and later through photographs made by the firm of its early projects. In these images, flattened, formal compositions comprise three nearly equal parts: one-third foreground, one-third building and one-third sky (Fig. 45).

Fixed, frontal viewpoints with one-third foreground, one-third middle ground (building) and one-third sky.

This way of representing architectural objects in space is evident in the way many of Lyons’ early buildings were photographed and depicted (Fig. 46) – through this particular way of ‘seeing’ learned from the Venturis.

Fig. 46 Early Lyons buildings (1998–2001) photographed in the manner of the Venturi office, with flattened facades and equal parts foreground, building and sky.

Last summer, while sitting at home, I was looking at a large photograph hanging on a wall on the opposite side of the room. It was a photograph of the Piazza San Marco in Venice that I had taken as a graduate architect, following my internship with the Venturis (Fig. 47). It shows a flattened image of the square’s long, northern facade, and is composed in the same manner as the Venturi/Izenour images (Fig. 45), with roughly equal parts foreground, building and sky. This image of San Marco predates the images of Lyons’ early projects (Fig. 46), suggesting that I had already absorbed and assimilated this way of seeing, and of representing space and objects, into my developing spatial intelligence.
The mental repository

As I ventured further into my private, interior world, I encountered what I have described as my mental repository. This is a private, mental space that holds an accumulation of my remembered and retained experiences and encounters: places of my childhood, foundational memories, learned skills, and other elements in the construction of my mental space. Learnings from completed projects and works add to this continually expanding collection.

In what form are these memories and experiences recorded and retained?

In reflecting on one of my most significant (and recently useful) memories, I recalled my experience of visiting the Peggy Guggenheim Collection in Venice for the first time, in 1980. As I think of it, I am able to recall a specific image of Peggy Guggenheim standing in the hallway of her house, her Alexander Calder bedhead, a large Max Ernst on her dining room wall, the palazzo’s dining room furniture, a photograph of Frederick Kiesler sitting on a chair in her New York gallery, people standing and sitting in the living room of her palazzo looking at works on the wall (Fig. 48), and the garden and cafe. These form my repository images of the ‘Peggy Guggenheim experience’.
In recalling this again as I write, I see that my repository memory of this experience is constructed from a number of very specific images and recollections. It does not include images describing the museum’s situation on the Grand Canal, or mental notes that it is run by the Solomon R. Guggenheim Foundation in New York.

A designer’s repository also includes physical artefacts and resources that can be seen and touched – books available on bookshelves, architectural models, other significant memory objects – but it is the mental repository that has been the principal focus of this research project. I return to it in Part III, making detailed observations about how I access it, and about how images and memories are recalled in the act of designing.

Learning to draw
A third significant thread in this terrain of personal history is skills learned in making a drawing.

Growing up in an extended family of architects, my brothers and I were taught to sketch and draw from an early age. We were taken on summer drawing excursions, where we were taught to capture and record, with lines on paper, the essential features of a subject or scene set before us. We learned how to represent the elements of the scene (or building) in their correct proportions, describing it more or less correctly in perspective, and learning how to abstract and simplify the scene’s complexities in a way that would highlight its important characteristics.
I recall the enormous mental and physical discipline needed to translate the image, captured and held in one’s mind’s eye, through carefully directed movements of the hand (and the pencil or pen held in it) onto the blank sheet of paper that sat in front of me. A drawing I made at the age of ten from one of these family drawing excursions (Fig. 49) shows an early, emerging grasp of perspective and proportion, and an understanding of how an image can be abstracted and represented with lines on paper.

Fig. 49 Pen-and-ink sketch by Corbett Lyon, aged ten, made during a family drawing excursion, circa 1965.

During my studies at the universities of Melbourne and Pennsylvania, and on study tours abroad, I filled many journals with drawings and sketches, in order to record significant architectural encounters, ideas and experiences. These sketches and images, many of which I have recalled over the years, were made on site, at the time of the encounter, or soon after from memory (Fig. 50). Taken together, these sketches represent a form of hard-copy addition to the array of images stored in my mental repository. This form of record drawing or memory drawing has become deeply embedded in my terrain of personal history, and continues to play an important role in my design thinking and practice.
Fig. 50 Drawing made from memory following a visit to the Schröder House in Utrecht, The Netherlands, 1980.
My excavations into the use of drawings have also revealed that I use drawing as a means of bringing ideas to the surface and exploring concepts and ideas (Fig. 51). I examine this type of drawing further in Part III, as I make direct observations of the making of a drawing in the terrain of design practice.

Fig. 51 Sketches exploring and revealing spatial structures and circulation flows.

From top, clockwise: the Housemuseum, Mornington Centre, Sunshine Hospital, Housemuseum 2, Hedley Bull Centre, BHP Billiton Global Headquarters.
The presence of Bach

The fourth significant strand on my pillar of personal history is the music of Johann Sebastian Bach (Fig. 52).

Fig. 52  Elias Gottlob Haussmann, Portrait of Johann Sebastian Bach (detail), 1748.

The music of Bach has been a constant presence for me since early childhood. Through this research project I have come to understand that my connection to Bach and his music has been a significant formative influence on the way that I think as an architect. In particular, it is a foundational pillar in the development of my spatial intelligence – connecting ideas about structure, space, time and experience.

I have also included Bach, and my experiences in learning to play Bach’s works, to see if there are parallels between the thinking processes involved in designing and making architecture and those involved in performing a work of music.

My first encounter with Bach was at age twelve, when I heard a short keyboard work played on a Moog synthesiser.\(^\text{10}\) As I was studying piano, I entreated my teacher to teach me this short, two-part work. Researching it recently, I discovered that it is a work that Bach wrote specifically to instruct young musicians in the techniques of fingering, and playing in a follow-on, canonic style. The work, a Two-Part Invention in F Major, begins with the subject played by the right hand in staccato and at a vivace tempo (Fig. 53). This is followed a bar later by the same sequence of notes played an octave lower by the left hand. And so it continues, with one hand following the other, to the end of this short piece.

I remember this composition’s canonic architectural structure revealing itself as I began to learn it, and also becoming aware of the demanding technical skills that were needed to play it. But I particularly recall the complex and layered effect that these two simply offset lines of notes produced as I finally performed it. It was my first introduction to the architecture of Bach’s music.

As I have continued to study and learn works by Bach, attempting larger and more complex works and moving from the piano to the organ, I have come to appreciate these compositions on many levels (Fig. 54).
The first is a deep understanding of the complexities of the music’s structure and construction – its notation on the written page, the kinaesthetic experience of *feeling* its complexity when playing it, and the sensation of hearing this complex aural architecture in the physical realm of a large, reverberative space.

![Musical Notation](image)

Fig. 54 Understanding the complexities of the music’s structure and construction.

From left:
- Seeing the complexity of Bach’s music in the written score.
- Experiencing the work aurally.
- The kinaesthetic experience of playing it.

Secondly, learning and playing Bach involves mental and physical skills that can be seen to be analogous to the skills required to make a drawing or design, connecting the mental space of the musician with the extended physical world into which the music emerges: into the realm of perception and experience.

Early in the research project, as a precursor to the more detailed explorations and observations of performing a work by Bach set out in Part III, I conducted a small experiment to pair a number of my building designs with works by Bach. In doing this, I discovered that I have a form of synaesthesia, whereby a building, through its form and arrangement, triggers or suggests a musical form that parallels it. These pairings are illustrated in Fig. 55.
The Hedley Bull Centre (Fig. 55, top), with its continuous, circular internal circulation system, is reflected in a work by Bach that has a continuous, clockwork rhythmicality.

The Housemuseum (Fig. 55, third from top) is paired with one of Bach’s most complex organ sonatas, composed in five-part counterpoint, reflecting the complex, layered constructions of the Housemuseum’s interior spaces.

The loud and dramatic opening sequence of Bach’s Toccata in D Minor echoes the monumental form, structure and scale of the entry to the John Curtin School of Medical Research at Canberra’s Australian National University (Fig. 55, bottom).

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Fig. 55  Synaesthesia.

From top:
Hedley Bull Centre and Bach’s Toccata in F Major, BWV 540.
BHP Billiton Global Headquarters and Bach’s Prelude in A Minor, BWV 543.
Lyon Housemuseum and Bach’s Organ Sonata No. 6 in G Major, BWV 530.
In each of these musical works, the structure and complexity of Bach’s composition is deeply embedded in the substance of the music. It is not something that the composer has grafted on for virtuosic effect. These seven illustrated buildings also embody a spatial and formal complexity which is, in a similar way, an intrinsic and embedded part of their architectural DNA.

In Part III of the research project, I extend these initial discoveries to look at some of the specific thinking processes and technical skills involved in learning and performing works by Bach. These are captured by my directly observing and recording my learning and playing one of the composer’s most complex organ works. Recorded over a five-month period, these discoveries reveal a number of affinities between the disciplines of music and architecture.
PART III
IN THE TERRAIN OF DESIGN PRACTICE:
OBSERVING AND CAPTURING DESIGN IN ACTION
This journey began by charting a course through my exterior world – an outward, public terrain of built work and public behaviours. The journey then turned inward, as I explored and excavated significant parts of my mental, inner space and personal history. This third part of the journey sets out to observe and describe a terrain that appears to sit between these worlds of exteriority and interiority – the terrain of design practice (Fig. 56). Is it here, in this in-between place, that we might find creative design thinking and practice actually taking place?

Fig. 56  The terrain of design practice.

**A design methodology: ‘But where are you in all of that?’**

I began this part of the journey by documenting my reflections on Lyons’ (and my) design methodology, beginning with something that I knew (Fig. 57).
Fig. 57  Sketching out the Lyons (and Corbett Lyon’s) design methodology.
The drawing was made quickly, to capture key elements of the Lyons creative process. The following notes describe some of the main steps illustrated in the drawing:

- ... A new commission arrives into the practice.
- We quickly take its measure, 'book-end' it, and frame it in a way that allows us to interrogate its possibilities ...
- The project’s metrics are quickly assessed – what funds are available, what is the program, how big or how small is the client’s ambition?
- We begin to search for ideas, for starting points in the ‘project circumstance’ – the site, the budget, the client’s aspirations and vision ...
- We never have a preconceived idea of how a building will look when we begin.
- We mark out a new ‘terrain’ on and in which the new project will be conceived and developed.
- We establish rules of engagement. What will be our stance for this project? How adventurous and challenging are we (and the client) willing to be?
- We engage the client through interactive envisioning workshops, to better understand their aspirations and expectations.
- We call up ideas, precedents and exemplars from our collective repository.
- We reflect on these ideas and discard those that don’t seem to have value, and send others back to the repository for possible future use. We leave the good and useful ones in play, and let them ‘spool’...
- This creates an open-ended opportunity for formal and spatial exploration around these constellating ideas.
- The design begins to evolve in a state of disequilibrium as we wrestle with the project’s complexities, trying to test and hold together multiple ideas and threads.
- We look for an operation – an architectural one, a formal one, a cultural one, or some kind of ‘rule’ – that allows us to generate the design of the building without needing to think about composition. These rules are not arbitrary, and are always connected to, or derived from, the central ideas of the project.
- We begin to develop spatial strategies, planning layouts and formal strategies for the new building …
- Our experience tells us when it’s time to stop designing ...
- Everything remains contingent and latent until a point is reached where the ideas and threads constellate into a synthesised whole.
- Technical processes of constructing the building are developed, all the while making sure that we maintain the design intent.
- As we design, we continue to think about how people will experience and use the building.
- We enjoy being surprised – we like the unexpected.

In presenting this drawing at one of the project’s milestone reviews, I was asked:

This drawing is a description of a design methodology, and one that could have been made by other members of the Lyons practice. A more interesting question is, 'where are you in all of this, and what does it feel like to be in there, in the centre of the design process?' (Fig. 58).

Fig. 58 What is it like to be there, in the centre of the design process?

Stepping into the terrain of design practice

Prompted by this question, I set out to explore four places in this terrain of design practice where I thought answers could be found. The first was drawing as an intrinsic and embedded part of my creative thinking and practice. The second was a chronicle of design thinking for the Housemuseum project. This was done by examining an evidentiary trail of drawings and sketches taken from the Housemuseum archive. I then journeyed into the centre of this terrain, to observe my design thinking directly, and in action, as I designed a new project: the Housemuseum 2. Here, I recorded many significant episodes in this new building’s design – all observed, captured and recorded in real time.
The last part of the journey through this third terrain took me out to another specific place on my extended mental terrain: a place where I learned to play a new musical work by Bach. Here I attempted to discover parallels between the thinking processes I employ in designing and those involved in learning and performing a work of music.

Drawing and the hand/eye

Earlier in this dissertation I reflected on how drawing skills are learned and how these contribute to the construction of a designer’s spatial intelligence. Here I explore drawing of a different kind: drawings that are made as part of the creative design process. These drawings act as mediators between the designer’s inner, mental world and their outer world – as a conductive bridge between their mental and extended worlds. How are these kinds of drawings made, and how are they explained?

While I was working as an intern in the office of Venturi, Rauch and Scott Brown, Robert Venturi introduced me and my fellow students to the concept of the ‘hand/eye’. He described this as the capability of a designer to connect their mental space, through eye and hand, to the making of a drawing on paper. By conducting the designer’s thinking through the hand/eye, a drawing would emerge as the result of a dialectical process (Fig. 59). Venturi further explained that the emergent drawing would then ‘talk back’, recursively, through the same hand and eye to the mind, and that this would prompt further thoughts and ideas, and the making of a new or modified drawing. This iterative feedback loop would continue as the design and its ideas developed.
The two design terrains explored thus far – the mental terrain of personal history and the extended terrain of public outcomes – appear, from a cartesian perspective, to be disconnected and seemingly irreconcilable. How is it that, in making a drawing of the type described by Venturi, the designer might simultaneously connect these two dissimilar worlds?

Lambros Malafouris, in his book *How Things Shape the Mind*, attempts to break with conventional cartesian dualism – the ontological separation of mind and body – by offering an alternative view of the creative mind that is at once embodied, extended and distributed, not simply brain-bound. He proposes that the relationship between cognition and the material world is not one of abstract representation, or action at a distance, but one of ontological inseparability. When looked at in the context of this project, Malafouris’ thesis suggests that my mental terrain of personal history is in some way connected with my external terrain of public outcomes, and that a ‘hand/eye’ drawing is not simply a record of the contents of

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1 This drawing is one of many made by Robert Venturi for a proposed new parkway and underground highway along the west side of Manhattan. I worked as part of the project team in the Venturi, Rauch and Scott Brown New York office and was able to observe Venturi’s iterative thinking and sketching processes directly.

the mind, but represents an embodied extension of it, with cognition and action acting dialectically.

Do the sensations, both mental and physical, experienced in my making of such a drawing validate Malafouris’ findings? I made a series of design drawings over a two-week period in late 2016 (Fig. 60), and recorded the following observations (and thinking about Malafouris).

Fig. 60 Observing and recording the making of a series of design drawings, November 2016.

- A new design often makes its first appearance in the extended world with the first marks that I make on paper …
- It is often not possible to distinguish which comes first – the impetus/image from my mental space directed towards the hand, or the hand prompting/surfacing a yet-to-be-revealed thought or idea.
- In making these drawings, I recorded that I (unconsciously) suspend all external stimuli, and move to an internalised and embodied mode of thinking. (This observation foreshadows the model of the ‘mental rooms’ described later in this dissertation.)
- Occasionally, a drawing reveals something entirely new and unexpected – a small Eureka moment that embellishes an existing design idea, or changes the design trajectory.
- Making a sketch in plan is like accompanying the user through the building. Drawing in plan, I have an almost physical sense of the spaces as I make the marks on the drawing – a new wall here, a contained space there, an opening oriented this way, a vista line constructed through the building. How will these marks that I am making affect the user’s experience of the building?
- I’m not conscious of the pen’s interaction with the surface of the paper, or of its movement across its surface.
- I observe that my eye does not follow the pen as it makes its way across the page (unlike handwriting where it does). Rather, I take in a field of view that encompasses the whole of the drawing sheet (the drawing space) and observe the drawing being made in it and across its various parts.
• I do not seem to consciously direct my hand or the pen to make a line this way or that; the lines seem to flow naturally. I recorded this as being akin to writing, where we are able to write as we think without thinking about how we shape the letters.

• Some drawings are made after a mental image (or a concept, or a thing) has formed in my mind, and are used to capture it so that it can be examined.

• Some drawings are made and materialise simultaneously with the thinking of a thought or the recalling of a mental image. Sometimes it is impossible to tell which comes first as the hand and eye conduct their rapid, co-creative collaboration.

• These sketches nearly always develop in an iterative way. You begin at one point in a session and end up, not unexpectedly, at another place at the end of it. Almost always, every iteration refines and improves the preceding sketch, as a way of distilling and refining the design.

• I observed that all of my drawings were done quickly, none taking more than ten minutes, and none was laboured. Having learned the skills of making and constructing a drawing, the hand and eye revealed themselves to be free to contemplate the subject and intent of the drawing, not focus on its technical construction or formal structure.

• Drawings or sketches made in one part of a project often prompt ideas in another part.

• I do not have to think about the style or construction of the sketch or drawing, because they are built into my personal history – a learned way of drawing, through years of doing it, and one that is meaningful to me.

• Before I make a mark, I generally know I want to make a particular type of drawing – a plan, elevation or section, or a drawing in three dimensions – and I mentally select one of these conventions that I have practised so often.

• Once a drawing or sketch is made, it can be reflected upon and interrogated – I give it time to let it tell me more. Some drawings are pinned up and observed for a number of days. Others are reflected on and iterated quickly, sometimes in a single half-hour session. Others are iterated without reflection or critique, to see what might be discovered next.

• I recorded that it was not possible to draw an abstract concept or idea; one can only draw something in a concretised form – an idea or concept represented through an image, a word, a diagram or in other formal or spatial form.

In the following section, I present a series of design drawings and sketches made during the design of the Housemuseum. These are presented chronologically, in the form of an evidentiary trail of my design thinking. I have also included reflections, as far as memory allows, on how and why these drawings were made, as examples of the hand/eye at work.
The Housemuseum

**An evidentiary trail of design thinking**

The Housemuseum was designed between 2005 and 2007 and was completed in 2009. It is a new, hybridised architectural type combining ‘house’ and ‘museum’. It serves as both a home for my family and as a publicly accessible museum displaying the family’s collection of Australian contemporary art. Its role in displaying art and engaging with contemporary art practice has been examined elsewhere; the focus here is on the development of the architectural and spatial arrangements in this new hybridised type.

The vision for the Housemuseum was that it be experimental and speculative: it would explore new ideas about art and living, contest conventional paradigms about public and private space, and explore new thinking in relation to curatorial practice. Looking back on its design and making, I see that much of my early thinking focused on the conception of a new architectural hybrid. What does a contemporary ‘house museum’ look like? Like a house? Or like a museum? Or something that has attributes of both? What might people experience when living in such a building? How might art be viewed and experienced?

The drawings that follow are historical: no real-time records were kept of the thinking as it happened. Nonetheless, these drawings, sketches and notes capture many of the important moments and sequences in the design of this building. What is evident is that these sketches and drawings reveal a design process that is non-linear – they show my design thinking moving from parts to the whole, to specific details, and include sketches and notes that focus on the project’s initial conceptual strategies and ideas.

**Inventing a new hybrid**

The drawings in Fig. 61 document some of my early explorations of the relationship between the two parts of the program. Should the public ‘museum’ be physically separated from the spaces used as a private ‘home’? If so, how? As an extension grafted onto the house? Or in the form of a stacked parti, with the public museum located on the ground floor and the family’s private spaces on the first floor?

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3 ‘The artists collected by Corbett and Yueji Lyon are (or have been) their contemporaries in Melbourne. Their Housemuseum resonates with conversations they have engaged in with artists, and with the dialogues that thread through this city’. Leon van Schaik, *Meaning in Space: Housing the Visual Arts, or Architectures of Private Collections*, Melbourne, Australia: Lyon Housemuseum, 2011, p. 2
Fig. 61 Exploring ways to combine the two programs and types.

A third diagram in this sequence (Fig. 62) documented an important moment in the conception of the building: looking at the building as a true hybrid, in which the two programs, and types, would be infused and juxtaposed with one another.

Fig. 62 Infusing and juxtaposing public and private: the ‘housemuseum’.

A collage drawing (Fig. 63) extended this typological line of thinking, and the term ‘housemuseum’ was invented to describe the newly created hybrid type.
Fig. 63 Exploring a new hybrid of house and museum, 2007.
Collaged printed images mounted on foam-core board, 16 × 21 cm.

A concurrent series of sketches (Fig. 64) explored in plan the interweaving of the two programs, one public and one private, with house and museum co-habiting in a new, single building.

Fig. 64 Sketches exploring the interweaving of house and museum elements.
In reflecting on my previous built work, which included juxtapositions of scale, I was interested in introducing large-scale and small-scale spaces into the plan. The sketch at Fig. 65 is an early development of the building’s floor plan, moving from conceptual drawings and thinking to a sketch that represents the building to scale. This sketch foreshadows two large anchoring spaces in the plan: a two-storey white cube at the front of the building and a black cube at the back, with other spaces flowing freely around and between them. Artworks are proposed to be displayed across all of these spaces in the building, in the form of a scenographic tableau.

![Sketch of building floor plan with two large anchoring spaces](image)

**Fig. 65** White-cube and black-cube spaces anchoring the plan, with domestic and museum spaces flowing around and between them.

I discovered another drawing made at this time (Fig. 66), which shows that I was thinking about architect Roy Grounds’ house in Toorak, with its large central courtyard. Could the housemuseum also have a large central space, but instead of an outdoor courtyard might this be a large, enclosed room? It would present something disconcerting and unfamiliar, large and ‘out of place’ where you enter the building.

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4 Roy Grounds, Roy Grounds House, 24 Hill Street, Toorak, Melbourne, 1952–53.
This drawing includes a small sectional sketch in its upper right-hand corner (Fig. 67), which documents the beginning of a second important design strategy for the building: thinking about its spaces three-dimensionally, as a scenographic construction. This sketch also ‘talks’ about constructing views in and out of, and through, the new building. On the lower level, views are directed outward to the garden, while on the upper level, an internalised and inward-looking arrangement is contemplated.

In Fig. 68 are two sketches that capture some of the initial ideas for the central white-cube space. It is conceived as a double-storey exhibition space with slot-like windows cut into the upper parts of its bounding walls. These frame views into the central space from the upper galleries that surround it. The slot windows also frame extended views across and through the layered spaces of the building.
Fig. 68  Slot-like windows framing views into the central white-cube space.

In reflecting on this drawing, which I made more than ten years ago, I saw that I had captured – on a single sheet of paper – an exploration of this space in section, as a flat, unfolded elevation, in single-point perspective, and from the perspective of a viewer looking through the slot windows. Taken together, these drawings are attempting to explore what it is like to be in this space, looking at art, and to be on the outside looking in.

The sketches in Fig. 69 are of the same space, but explore it from an entirely different perspective: from a bird’s-eye view, in plan. They explore different numbers and arrangements of doorways into the space, and consider the movement and occupation of the spectator as they enter and move through it, experiencing art on display. How does a particular placement of openings – at the corners, or at mid-points of the walls, or diagonally opposed – affect one’s perception and experience of the space? What opportunities do these arrangements present for the placement and viewing of artworks?
Fig. 69  Exploring different positionings of doorways, and their effect on the user’s experience of the space.

In making this kind of drawing in plan, I imagined myself as a user/observer moving through and experiencing the spaces and the art in the building. What if I enter here … or here …? If a wall is placed here, how will this affect the way I encounter an artwork, and the way in which my experience of the building will unfold?

The earlier conceptual drawings for the infused/juxtaposed plan and program prompted further explorations into more specific spatial arrangements for the new building. Fig. 70 explores a series of box-like forms that are located in the still undifferentiated spatial field of the building’s plan.
Fig. 70  Box-like forms positioned in the plan to structure the surrounding space.

These box-like forms accommodate many of the Housemuseum’s programmatic elements, such as the kitchen, bathrooms, storerooms, stair and work areas. They are arranged so that they articulate a series of flowing, interconnected spaces. I remember that, as I made this drawing, I thought of architect Louis Kahn’s ‘served’ and ‘servant’ spaces.²

The drawing also suggested an opportunity to use the outer walls of each box for the hanging of artworks, represented by the dotted lines around each box. A number of these boxes were later elaborated into a series of ‘servant’ spaces containing storage, cupboards, display cabinets for art, and working spaces with shelving and storage (Fig. 71).

² Louis Kahn, architect (1901–1974) categorised spaces in his buildings as ‘servant’ or ‘served’ spaces. Servant spaces were those used for limited habitation and for the accommodation of systems. Served spaces could be freely inhabited by the occupants, as living or working spaces.
In addition to making sketches in plan (as a way of exploring movement and circulation through the building) and in section (exploring three-dimensional interconnections of spaces), I also developed a spatial scenography for the building from another frame of reference: that of the viewpoint of the building user. How might they experience these layered, flowing spaces in the building, and the artworks presented in these spaces, as they move through them? Many early sketches of the Housemuseum’s spaces were made using single-point perspective, reflecting my early spatial learnings and the spatial scenography taught by Bacon at the University of Pennsylvania (Fig. 72).
These drawings explored the framing of a particular viewpoint or artwork and how space and artwork could be made to work together to create a sense of anticipation and discovery for the viewer.

The Housemuseum also explored another of the Lyons’ DNA traits revealed in Part I: relativities of scale, and gigantism. This appeared in the form of large-scale letters spelling out the word ‘ART’ across the building’s internal walls and ceiling. Fig. 73 shows one of the upper galleries (in single-point perspective) with the over-scaled letters overlaid on the building’s domestic walls and ceilings.
Fig. 73    Letters of the word ‘ART’ overlaid onto the Housemuseum’s interior walls and ceilings.

Each capital letter is made up of thousands of words, in the form of strings of texts – more than 35,000 words in all. The words were collected and collated by members of the family as a form of family history, recorded at the time of the building’s design. Renderings and drawings were made to test the appropriate scale for these words and text strings – not so small that they could not be read from a comfortable distance, and not so large that they would distract from the viewing of artworks that would be hung on these inscribed walls (Fig. 74).
Fig. 74 Testing the scale of the printed wall texts.

A further series of sketches explored how the letters A, R and T might be positioned on the ceiling of the building to give its reading greatest effect. The last in a series of five iterated sketch drawings (Fig. 75) locates each letter above a key space in the building. It positions the curve in the capital letter ‘R’ in the ceiling of the entry/arrival space – reminiscent of the expressive curved motifs of a baroque church interior.
A subsequent passage of sketches and notes looked at ways in which artworks might be placed and presented across the building’s layered scenographic terrain. These drawings were made to explore how artworks might be seen from multiple viewpoints: some embedded into the fabric of the building, others placed to emphasise axial arrangements or to prompt particular visitor movements through the building.

With the exception of two spaces designed for specific artworks, spaces in the Housemuseum were designed without consideration of the placement of particular works. Rather, the newly created spatial terrain was designed to be open-ended, with works placed in a way that would highlight the building’s spatial structure, and create meaningful moments of encounter for the viewer.

Fig. 76 is a large composite sketch made shortly before the building’s completion, sketching out the arrangement of spaces and artworks and describing a series of designed encounters for the museum visitor.
Fig. 76 Exploring the inter-relationship of art, space and viewer in a sketch for the Housemuseum’s first exhibition, circa 2008.

In re-tracing these key moments in the design of the Housemuseum through sketches from the project archive, it is clear that drawing in its many forms played an important part in my design thinking, and in making this thinking visible. The drawings also revealed a specific kind of spatial intelligence, one that is particular to me. I see many of the spatial orientations and attitudes in these sketches and drawings stemming from the foundational developments in my spatial intelligence and thinking, as outlined in Part I.

In reflecting on the speed and fluidity with which these drawings were made, it is clear that the disciplines and skills used to make them, learned as a child and young adult, are embedded in my mental space. Hand, mind and eye are revealed to be working together in simultaneous dialogue – an interconnected stream of creative thinking and practice. Fig. 77 illustrates how the ideas and design thinking captured in these archival sketches and drawings found form in the completed building.
Capturing design thinking as it happens

The Housemuseum 2 mental rooms
The drawings and sketches from the Housemuseum archive presented in the previous section revealed significant moments in that building’s design, and recalled the types of thinking processes used in its making. What these drawings do not reveal is how these captured moments, recorded in sketches and drawings, were situated in time. Were these design ideas developed quickly, and in rapid succession, or were there pauses, reflections and changes in direction along the way?

The archival sketches also give no sense of the experience of being in these key moments – at points of conceptual creativity, of decision-making, moments of recall and passages of evolving development and synthesis. To understand and 'see' this process directly, it must be observed from the inside, and these observations need to be recorded in real time as they happen.
This next step in the exploration of my terrain of design practice took me to its very centre, to make a series of direct observations and recordings of my design thinking and work over a twelve-month period. The project I selected to follow, observe and record was one that I had just begun at the time I commenced this research project. It is a new extension to the Housemuseum – provisionally named ‘Housemuseum 2’ – and is being built on vacant land adjacent to the original building (Fig. 78). Unlike the private Housemuseum, Housemuseum 2 is being developed as a public art museum, which will show exhibitions of contemporary art, architecture and design. At the time of writing, its design has been completed and construction has commenced.

![Housemuseum and Housemuseum 2: private and public.](image)

The Housemuseum (right) and new Housemuseum 2 (left).

My records of these early stages in the design of Housemuseum 2 have not been kept in the form of a conventional diary. Rather, key moments and sequences have been recorded as they happened: episodically, in the form of notes, sketches, images and other documents and fragments (Fig. 79).
I approached these observations and recordings using Edmund Husserl’s method of *epochē*, or bracketing. This involved the ‘bracketing out’ of any awareness of the external world, with my full attention directed to the systematic examination of phenomena as presented directly to my mind. This process of observing and recording yielded a number of unexpected discoveries about how I design and think, and about the *kinds* of thinking that I bring to my design work. Having recorded these episodes in real time, I was able to stand back and reflect on what I had observed and what had been revealed, and then to attempt to describe this mental place, with its many attributes, in which my design thinking had taken place.

The drawing at Fig. 80 attempts to describe this mental place, which I occupied as I designed Housemuseum 2. It is not a studio or a physical space, but a mental terrain that I was conscious of occupying in making this project design. The terrain sits, or floats, on a platform made up of my personal history, the many predispositions I bring to my work and thinking, and the particular attitudes and stances that I have developed towards design.

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6 Edmund Husserl (1859–1938), philosopher and founder of the school of phenomenology, proposed that any phenomenological description must be made free of assumptions about the external world (‘bracketing’), and must be performed from a first-person point of view to ensure that the item is described exactly as experienced by the subject.
Fig. 80 Capturing and describing the designer's mental space: my ‘mental rooms’.
The central project space is a mental space, and I have described it in this drawing as being like a series of rooms. I didn’t attempt to redraw this sketch, because that would have risked concretising the description too much, into something that perhaps would look too much like a building, or architecture.

The mental space for the Housemuseum 2 project comprises a series of rooms that I occupy to work on different parts of the project. These rooms have defined thresholds, but no doorways that I need to walk through. I experience this cluster of rooms as an open-plan arrangement with a fluid-like structure. And in the centre of this cluster of rooms is a central room where design synthesis takes place.

There are many of these kinds of places in my mind, residing in different parts of it: places for other projects that I am working on in the office, places where I live my family life, and a special place where I am starting to learn a new organ work by Bach. This last space is in a different part of my mental terrain, which I go to and occupy. It has four rooms, each different, that I inhabit as I learn a new work by Bach. But for the new Housemuseum 2 project, there are five or six rooms that I have been consciously aware of occupying over this twelve-month period.

The conceptual room is near the centre. There is a room to do with commodity (in the Vitruvian sense of *utilitas*) – it’s very prosaic … it’s about what goes into this new building. There is another room, a square, rational-looking space, where I look at how art is moved in and out of the building. What are the dimensions of the artwork? Logistically, how are works moved through the building?

There are other rooms to do with the spatial, experiential qualities of the building, another key objective in the building’s design.

I recorded that I never occupy more than one room at a time, and observed that I am able to move freely – sometimes with intent, sometimes subconsciously – from one to another during the development of the project. The time that I spend in each room varies, from five minutes to many weeks.

A further recorded observation was that I take a particular mental disposition and toolset into each room. If I am looking at how artworks might be moved though the building, I enter that room in an almost mathematical frame of mind, with the intention of being very precise, and focusing on function. I enter the room where I think about the new museum as a public building with a different set of mental attitudes and tools.

I recorded that I am aware of connections between the rooms in my mental space, and also connections to the outside world, particularly as I share my work and thinking with others in the office. But this drawing attempts to describe and document my observations of my innermost personal design space, where I know that my design thinking happens.

At the bottom of the drawing I have noted the repository. This extended mental place provides a source of ideas, images and exemplars to each of the mental rooms.
I recorded that I am able to recall and retrieve images from the repository at any time and bring them into any of the rooms. It is not a place that required me to reach down to bring ideas and images up into the thinking places of the project. Rather, I recorded it as being an extended mental place of seemingly infinite extension. And I observed that, for me, the repository holds only images. Any idea that I hold in my mind, even an abstract one, is always accompanied by an image – it would seem that you can't have a thought without an attendant image.

Reflections on the mental design rooms and the repository: a conversation with Leon van Schaik

LvS: How big are the ‘rooms’?

CL: They’re not small, certainly not claustrophobic; nor are they large. They are not infinitely extended. They feel ‘right-sized’ for me – like generously proportioned rooms.

I enter each room with a particular mental disposition and intent, and a toolset appropriate for the task at hand.

My time spent in each room ranges from momentary visits to extended occupation, sometimes over several weeks.

Images from the repository (ideas, exemplars) and tools can be called up or recalled to be used in any room.

LvS: My impression of your description of the repository is that it’s like an Aldo Rossi flattened cone, with fat walls and a large door.

CL: For me it feels or looks like a mental terrain of infinite extension.

My repository holds a vast collection of images: architectural exemplars, spatial moments or experiences, ideas.

I find that images can be consciously retrieved, or can appear spontaneously when triggered by a particular thought or idea.

The recalled image always seems to be a specific image, and from a specific viewpoint.

The images don’t seem to be stored in any particular order or system.

I seem only to store things that my subconscious is telling me are likely to be useful or interesting – everything else is filtered out and thrown away.

When I’m designing in a particular mental room, I feel present in that mental place, not elsewhere.

I can only be in one room at a time … but always feel a sense of connection to the other rooms and back to the central room of synthesis.
I recorded that drawing/sketching is a common tool that I use in all of the rooms.

If I’m not being productive, I’ll turn out the lights and leave; sometimes moving to another room, beginning again on a different piece of work and with different tools and a different mindset.

* * *

do these mental rooms and their associated repository that I have described have parallels with models conceived by others?

In her book *The Art of Memory,* Frances Yates traces the history of mnemonics, from ancient to modern times. She describes the classical art of memory that involves the thinker conceiving of a ‘memory building’, consisting of multiple rooms into which things to be remembered – images, words and objects – can be placed. The mnemonist is then able to walk through these mentally constructed spaces to trigger the release of its contents.8

Yates describes the many elaborate ‘memory palaces’ and mental theatres conceived in the seventeenth century by philosophers and thinkers who were practised in the art, including English physician and philosopher Robert Fludd.9 Fludd’s mental theatres were made up of mentally constructed architectural spaces to which he attached specific physical attributes: the placement of doors, colours on walls, and the quality of light in each space, all designed to aid in the retention and recall of objects and images placed in them.

In all the examples cited by Yates, these rooms and theatres of memory were conceived architecturally, with specific spatial layouts and architectural attributes. By contrast, the mental rooms that I observed and recorded myself occupying were abstract mental places: ‘rooms’ without floors or walls, devoid of colour or materiality, but enclosing nonetheless.

First-hand observations of my mental repository also suggested a kind of mental place very different from those conceived by Yates’ mnemonists. In Yates’ examples, the rooms of memory and the repository for ideas and objects are one and the same – a single, mental, architectural construct that holds images and objects, and that also acts as the ordering or triggering device for their retrieval. My repository has revealed itself to be of a different kind. Images and objects are not held in a discernible taxonomic arrangement, and the place in which these images are stored is one that I could not visualise or capture.

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8 Ibid, pp. 18–19.

I observed that, unlike the mnemonists, I had no need to walk through my repository to trigger a recall of ideas, images and objects. Images, experiences and memories were recalled from my repository through triggering mechanisms of ideas and drawings made in the act of designing.

The above reflections and discoveries have been drawn from the following first-hand observations, and captured sequences in my designing of Housemuseum 2.

**Captured moments and sequences of design in action**

Fig. 81 presents the first sketches made for the new building. In the upper part of the page is a drawing showing the Housemuseum with the new Housemuseum 2 sitting beside it. The Housemuseum is on the right and is sketched with its distinctive internal spatial arrangement and its connectivity to the outside. An early idea for the new building was that it could be, by contrast, a large single space for displaying contemporary art. This was a drawing that simply said that, and no more. It had no attitude to the building’s form, or to its architectural language.

![Fig. 81 Housemuseum and Housemuseum 2: a spatial and temporal contrast?](image)
A week later I made another sketch – to scale – of the new building, and drew it alongside the Housemuseum. Its wanting to be ‘big’ relative to its sibling was clearly expressed in this drawing, and it too gave no hint of the building’s form or architectural character. It simply talked about being ‘big’ relative to its neighbour (Fig. 82).

![Early sketch of Housemuseum 2, showing a singular, all-encompassing exhibition space.](image)

A number of weeks later, I spent several days (and nights) in another of my mental rooms, working on commodity. The question I recorded working on was: ‘Is the central space big enough to accommodate the largest work in the collection, The Field Equation by artist Daniel von Sturmer,\(^\text{10}\) which is to be displayed in the new building (Fig. 83)?’

Fig. 83   Considering the new building’s commodity: will Daniel von Sturmer’s *The Field Equation* fit?

Another commodity question was: ‘How should this large central room be supported with storage spaces, toilet facilities, carparking and other ancillary spaces?’ That led to a sequence of further sketches, outlining some of the support rooms, staircases and public amenities, and exploring whether or not the building should include a basement for art storage (Fig. 84).
In making this drawing, I noted that I had begun to think about how the building might address the street. This prompted my moving to another of my mental rooms – one in which I could think about the building’s attributes as a work of public architecture. While I was occupying this new mental room, experiencing a different mindset and focus, an idea emerged: a large public seat in front of the new building on its main street frontage, Cotham Road. As I contemplated this idea, I experienced a spontaneous recall of an image from my mental repository (Fig. 85). Many architects have sat on this particular seat outside the Palazzo Strozzi in Florence, and I experienced a very vivid, momentary recall of a very specific image of it.
Fig. 85 Public seat on the street facade of the Palazzo Strozzi, Florence.

Immediately after recalling this image, I made Fig. 86 – a drawing that shows a long public seat on Cotham Road. The building in the background is still unformed, but here in this drawing is an idea of a generous, extended public seat, triggered by this recalled image.

Fig. 86 Sketch exploring the idea of a generous public seat on Cotham Road, triggered by a spontaneously recalled image of the Palazzo Strozzi.
This sequence of an idea followed by the spontaneous recalling of an image and the making of a drawing that connected idea and image was something that I recorded happening frequently as I designed this project.

A month or so later, I spent time in the spatial mental room, exploring my interest in spatial scenography – in particular how users and visitors might experience spaces in the new building. In connecting the two buildings, Housemuseum and Housemuseum 2, how might people move through and between them? Fig. 87 is an early drawing, exploring an idea of a sideways connection, as an extension to the original Housemuseum.

![Fig. 87](image)

Thinking about the spatial flows between and through the two buildings.

I made another drawing several days later (Fig. 88). It foreshadowed an idea of peripheral movement around the large exhibition space in the middle of the building.
Emerging idea of peripheral movement around the central space.

In sketching these peripheral spaces – tall, narrow and cloister-like – I had the feeling of walking around the big central space. The making of this drawing suggested something that I had not expected: that these surrounding spaces did not want to be rooms.

And then came this next drawing, which looks very prosaic, but was a pivotal moment in the design process (Fig. 89). The key was a space that I had sketched, unconsciously, across the front of the new building.
In completing the peripheral circuit around the central space, this sketch prompted the idea of using the same spatial arrangement that I had developed in the Housemuseum: beginning with a large central space and being able to circulate freely all the way around it. This drawing spontaneously triggered the next idea: a window onto the street. The window idea immediately prompted the recall of three images from my repository, and in quick succession. Fig. 90 is the diary entry I wrote in that moment, and I remember being excited to have captured it as it happened.
The three images written on this note did not need to be consciously retrieved – they all appeared spontaneously in the moment that I thought of the big window on the street front.

The three images were of Shaun Gladwell's Beatboxed,\textsuperscript{11} which is an image of urban art, Peter Blake’s Pollock Museum\textsuperscript{12} and Dan Graham’s Alteration to a Suburban House.\textsuperscript{13} And the three images appeared in that order.

Fig. 91 is the first of the three images that appeared from my repository. There are many different images from this Gladwell video artwork, but it was this particular one – I had to go and look for it – that appeared. This image had been stored in my mental repository as an idea about urban art and graffiti on an urban wall.

Fig. 91 Recalled image from artist Shaun Gladwell’s video work Beatboxed.

Fig. 92 is an image of a scale model that Peter Blake made of his ‘Ideal Museum’ in which to show the work of Jackson Pollock. There are many different images and views of this work, but it was this particular one that I had retained in my mental repository. This image also talks about artworks seen at large scale from the street, through large glass windows.

\begin{footnotesize}
\begin{itemize}
\item[\textsuperscript{11}] Shaun Gladwell, Broken Dance (Beatboxed), 2012, production still, two-channel synchronised video.
\item[\textsuperscript{12}] Peter Blake, model of Ideal Museum (‘Pollock Museum’), shown at Betty Parsons Gallery, New York, 1949.
\item[\textsuperscript{13}] Dan Graham, Alteration to a Suburban House, 1978, painted wood, textile, plastic, fibreboard, paper and glass, 152.4 × 147.3 × 124.5 cm.
\end{itemize}
\end{footnotesize}
Fig. 92 Peter Blake, 'Ideal Museum' with Jackson Pollock artworks visible through its full-height windows.

The third image was of a Dan Graham artwork (Fig. 93): a model of a suburban house with its front facade removed, and a mirror on the back wall of the interior. This explored ideas about public/private and how a private building might open itself up to the street to connect to the public realm.

Fig. 93 Dan Graham, Alteration to a Suburban House, 1978.
I then made a drawing that attempted to synthesise the ideas suggested by these three recalled images (Fig. 94). It is a drawing of an arbitrary artwork placed behind a large window in the front of the museum. Again, the form of the museum is as yet undefined, but the sketch talks about the idea of public art on the street and of the building revealing itself to the public realm. I made two ticks at the top of the drawing, a recorded mental note to say that this felt like an idea worth pursuing. All of this happened in the space of an afternoon.

![Figure 94: Public art on the street. Sketch triggered by three recalled images.](image)

I returned briefly to this mental room a week later, to think further about the spatial arrangements and architectural qualities that had emerged thus far. As in the Housemuseum, I was interested in ideas of temporality – the temporal attributes of the new building’s spaces and how they might reveal themselves to visitors as they move through the new building.
A distinctive attribute of the original Housemuseum was that all of its spaces connected in some way to the outside world, to the daily rhythms of the surrounding city. This contested the modern museum paradigm, where time is suspended and all connections to the outside world removed. In Housemuseum 2, I explored an idea of designing thresholds and openings between the spaces in such a way that they could be reconfigured over time, and the building’s spatio-temporal qualities modified accordingly. I looked at an idea of designing multiple openings and thresholds, each of which could be closed or opened, to produce a specific spatial and temporal effect. The central space could, for example, be completely closed to the outside world, to create a sense of suspended time, or alternatively opened out to the street, connecting the space and its art to the daily rhythms of the surrounding streets (Fig. 95).

Fig. 95 Exploring the potential to transform the spatio-temporal characteristics of the building’s spaces.

This potential to transform the spatial structure of the museum could also be used to change the visitors’ patterns of movement through the building. In exploring this second kind of temporarily, I thought of my learnings from Edmund Bacon in Philadelphia.
Figs 96–99 record a later sequence of drawings captured in the conceptual room. Here I spent several days focusing on how these two buildings – the old and the new – might relate to one another. Fig. 96 is the first sketch I made in this sequence. It connected directly to my long-standing and continuing interest in the Rorschach Blot. This drawing was not recorded as having been made as a solution, but rather as a starting point for further ‘spooling’ in my mental rooms. Here are two museum buildings, owned and designed by the same person: collector and architect. There seemed to be something elegant and simple about mirroring the idea and form of the Housemuseum – they could be made ‘the same’, yet ‘different’.

The following day, I made Fig. 97, and recorded having made this drawing in a session that I had approached with a specific intent. I began this session (on entering this mental room) with the idea of really exploring a particular question: how should these two buildings relate to one another? The sketch at the centre of the drawing is of the ‘twin’ churches in Piazza del Popolo in Rome, an idea of mirrored pairs. Other sketches below it explore ideas of contrasting pairs, pairs in series, and pairs that share similar forms but different materiality.

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14 Carlo Rainaldi, the ‘twin’ churches of Santa Maria di Montesanto (1675–79) and Santa Maria dei Miracoli (1675–81), Piazza del Popolo, Rome.
Fig. 97 Exploring pairs and twins.

Fig. 98 was made in the same session and in the same mental room. This drawing looked at the idea of the new Housmuseum 2 being a ‘copy’ of the original building, but, rather than being mirrored, it might take the latter’s outline shape and translate it to the site next door.
Fig. 98  Housemuseum 2 as a translated and enlarged ‘copy’ of the original Housemuseum.

The local town-planning regulations allowed the new building to be slightly taller and wider than the original building, so this sketch explored copying across the Housemuseum’s outline and enlarging it to fit the allowable space.

Seeing the two buildings paired in this way on a sketch enabled me to contemplate the idea for several days. I recorded that I liked the idea that the two buildings would not be identical, but that there would be a discernible formal and familial connection between them. I also made a note that the idea of the new Housemuseum 2 being slightly larger than its sibling was a good one, because the increased size reflected its public role. Fig. 99, made in a later, more detailed phase of the design process, shows how this idea of the paired siblings was developed.

Fig. 99  Two siblings sitting side by side on the same street.

A week after the ‘copying’ sketch, I made another drawing, overlaying the outline of the enlarged Housemuseum over the central space in the new building (Fig. 100). This was one of the simplest, but most important, drawings in the design process, because it suggested a possible spatial relationship between the new building’s central space and the peripheral spaces surrounding it.

The idea of being able to circulate around the big space was also interesting, and I sketched in two small figures occupying these outer spaces. This drawing indicated that these spaces could be developed with a strong sectional figuration that referred to the form of the Housemuseum – transplanting one of its significant DNA markers across to the new building.
Fig. 100  A crucial design moment: a sketch suggesting a sectional, spatial idea for spaces surrounding the central gallery.

And to make sure I recorded that on paper, I made a note to myself to ensure that, as I developed the Housemuseum 2 design, the two buildings would continue to reference each other and share this formal and spatial DNA (Fig. 101).

Fig. 101  Note recording that the two buildings should share the same spatial DNA.

Fig. 102 is a record of work done in another of the mental rooms – one dealing with the museum’s systems and logistics. Our family inventoried all of the art in the collection, measuring the dimensions and volume of every work. The work I undertook in this mental room was about solving the logistics of moving these works in and out of the building, and how each would be displayed and stored.
In the same period I began to think about how the new building might express itself as a public building: as a contribution to the public realm on Cotham Road. This sequence of work was undertaken over a three-week period in January 2016. As I occupied my ‘public architecture’ mental room, I reflected further on some of the other DNA discoveries I had made in my previous built work, including that they exhibit attributes of large and small. This provided a clue to how this building might present itself to the street, particularly a physically small building that has, by virtue of its public role, an obligation to act big.

The Housemuseum’s fence provided a ready-made example of the big scale that I was looking for. Its corbelled brickwork spells out the names of the Housemuseum’s two street frontages: ‘Florence’ and ‘Cotham’. It is a suburban fence of fine-textured corbelled brickwork, with a big-scale idea overlaid on it in the form of texts (Fig. 103).
Fig. 103 The Housemuseum brick fence, spelling out the corner street names in super-scaled letters.

Fig. 104 is the drawing that applied this idea to the new museum. The sketch explores laying large letters over the facade of the new building, recorded here on the drawing as 'like Palladio'. I saw this design strategy as being similar to Palladio’s giant orders, although instead of columns or pilasters they would be letters – a ‘cultural’ giant order incorporated into the public facade of Housemuseum 2.
Exploring a ‘cultural’ giant order for the building’s public facade.

In the centre of the drawing, under the note ‘like Palladio’, is a small sketch of one of Palladio’s buildings, illustrating his giant order. It was an image that I recalled from my mental repository as I made this drawing: an image of the Loggia del Capitano in Vicenza (Fig. 105).\(^\text{15}\)

\(^{15}\) Andrea Palladio, Loggia del Capitano, Vicenza, 1571–72.
The recalled image of Palladio’s Loggia del Capitano.

The idea of the super-sized letters was tested on the new building's facade in Fig. 106. The letters were drawn over the full height of the building, with the big window and entry space for the new museum carved away. I also explored in this sketch how the letters might be formed. Should they be tall, thin letters, conventionally proportioned? Or letters that have been stretched vertically, as a way of emphasising the building’s monumentality?
Fig. 106 Applying the stretched, large-scale order to the new museum’s facade.

This sketch prompted me to consider a further idea. Could these letters go all the way around the building, in the manner of a frieze, as a way of branding the new museum? Fig. 107 is one of a series of sketches I made in my ‘public architecture’ mental room, thinking about how these gigantic words might contribute to the public persona of the new building.

Fig. 107 Sketches exploring the wrapping of texts around the four elevations of the building, circa October 2015.
Some months later I returned to the public architecture mental room and spent several days thinking, with directed intent, about the materiality of the new building.

The Housemuseum had been clad in black zinc, a material appropriate to its residential and private museum program. I thought that the new building had an obligation to reflect its role as a public museum, connoting a sense of the civic and contributing to its public realm. I thought of stone, a material that has been used in many public buildings to connote these qualities and attributes. From my mental repository I recalled many images of buildings using this material, but all presented buildings with heavy and monumental appearances.

I had recently completed (with others) the design of the new Lady Cilento Children’s Hospital in Brisbane (Fig. 108), and had designed fine vertical fins across its facade as a way of dematerialising and softening its facade.

![Fine vertical fins on the facade of the Lady Cilento Children's Hospital, Brisbane.](image)

This was an idea that continued to interest me: how could a material such as stone be used in Housemuseum 2 in a way that could appear delicate and light? Occupying my mental room one evening, I recalled an image of a church facade I had seen on a recent trip to Naples: the Church of Gesù Nuovo (Fig. 109).\(^\text{16}\)

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\(^{16}\) This was originally built as a palace in 1470. The building was later purchased by the Jesuits who, under architect Giuseppe Valeriano, converted it into a church. The new church retained the palace’s distinctive facade of diamond-shaped stone projections.
This building had stone on its facade in three-dimensional relief, using the effects of light and shade to break up its solidity and mass. The church used a particular type of stone – basalt – a material with which our office was currently working on a number of projects.

Prompted by this recalled image, I made a weekend trip to one of Australia’s largest basalt suppliers, located in the town of Port Fairy in western Victoria. As I made a tour of the quarry with the owners, I learned that basalt from this quarry had been used to construct the National Gallery of Victoria in 1968. This serendipitous discovery added to the Housemuseum 2 DNA narrative that I had been developing. The new museum could share the same DNA material, like a third cousin twice removed.

I was given a tour of the quarry factory and shown how the stone was cut from large basalt boulders into dimensioned slabs (Fig. 110). These new learnings about the material were embedded in my repository as I walked around the site, and were retained for future contemplation in my mental rooms.
Several weeks later, I noticed a pin-impression toy that our office had bought from a local discount store. The toy had occupied many desks during its time at Lyons, and there had long been a desire to make a project using it – to make some kind of architectural impression. I thought about my giant Palladian letters, and in our office library found a plastic capital letter ‘A’ used for architectural signage, which I pressed into the pin toy to test its effect (Fig. 111, left). I photographed the result (Fig. 111, right) and this image hovered and spooled in my mental room for several days. Could this be a way of imprinting and embedding the giant letters into the facade of the new building, at the same time creating a soft, textured surface for a stone wall?

Several weeks later, another serendipitous moment occurred. Walking the streets of Kew, I observed a builder coring out cylinders from a recently constructed concrete driveway. I collected these core samples (Fig. 112), which made an immediate connection to the pins in the office’s pin toy.
Over several weeks, I let these many disparate ideas and images – the Palladian giant-order letters, the Gesù Nuovo, the facade of our Lady Cilento Children’s Hospital building, the visit to the basalt quarry, the concrete cores, the pin toy – gather, float freely and ‘spool’ in the main mental room in the centre of my design space.

None of these ideas or images was ultimately discarded – rather, they began a slow but progressive constellation. I recorded their coalescing around a single design strategy of surprising clarity. I would design a basalt facade in high relief, with monumental, imprinted letters, using basalt projections in the form of pins.

The synthesis was aided by a series of notes that I had made during an evening session in my central mental room, and is reproduced in Fig. 113. By committing these ideas and thoughts to paper, I was able to see possible connections between them, and to think about how they might be brought together into a single, synthesised design.
Fig. 113  Committing the spooling ideas to paper, prompting the next step in their synthesis.

The final phase of this part of the design work took place in a different mental room: one focused on the constructional and technical considerations of the project. Drawings such as Fig. 114 explored how the stonework might be coursed and the masonry pins arranged, like the pin toy, to produce an even and geometric field of three-dimensional projections.

Fig. 114  Translating the design idea into a constructional system.
The design concept was ultimately elaborated into a series of prototype wall elements (Fig. 115), made in collaboration with the basalt quarry company. The giant letters were then impressed into the facade in their giant order (Fig. 116).

**Fig. 115** Prototype facade elements developed collaboratively with the contractor and basalt supplier.

**Fig. 116** Giant order on the facade of Housemuseum 2.
The above observations, recorded in real time, represent only a small part of the many thoughts, ideas and decisions made during the design of Housemuseum 2. Nevertheless, these directly observed and recorded sequences have enabled this outline description of the interior mental space in which I designed the building.

Exploring my extended mental terrain, and further reflections on the mental rooms

Following a presentation of these revelations and reflections on my mental rooms, I was asked by my supervisor: ‘Surely there are other mental spaces in which you work? What does your extended mental space look like?’

Over the following four weeks I made further observations of my extended mental space, and sketched Fig. 117 in an attempt to describe its contents and structure. The drawing does not include mental spaces devoted to family, to social relationships or to interests in art and philosophy, but focuses on the extended terrain that I occupied while involved in other project work.

![Fig. 117 Drawing of Corbett Lyon’s extended mental space.](image)

This drawing too was made quickly, without prior thought as to how it might be structured, or how it might look. It took the form of an exploratory exercise, as a conversation between mind and hand. Like the Housemuseum 2 mental rooms, this extended terrain was supported by the same foundational platform: one made up of my personal history and experiences, values, predispositions and skills.
I unconsciously demarked a boundary around this extended terrain – a boundary of no particular shape or scale, but a boundary nonetheless – to differentiate my inner mental world from my outside world of everyday experience. The drawing shows my extended mental terrain containing many different rooms and places – mental rooms that I occupied to think about and work on different projects and tasks. The positions that they occupy on the sketch are, on reflection, not important, but the way that each occupies a specific territory and place seems to be significant. Each project has its own dedicated site with its own room or cluster of rooms. Over the four-week observation period, I noted that I had occupied some rooms for no more than half an hour, others for a day, and others for several days. Moving from one site, or set of rooms, to another was done with conscious intent, suggesting that I moved from one project to another with a specific intention to work on it.

The cluster of mental rooms occupied while designing Housemuseum 2 is shown on the left of the drawing. Alongside, and occupying its own site on the terrain, is a separate cluster of rooms, occupied during the design and planning of a major new health care facility at Melbourne’s Sunshine Hospital. I recorded occupying a number of separate mental rooms as I designed that project: rooms for conceptual thinking, functional planning, how the new building might be constructed, and a room dedicated to thinking about it as a work of public architecture. This project also involved design collaboration with others in the Lyons office, and I marked this place of collaboration with a point on the periphery of my mental terrain.

Other rooms shown on this drawing were occupied for design thinking about new master-planning studies. These are illustrated clustered together, as a kind of precinct within the mental terrain. While each room relates to a specific project and client, the three master-plans involved similar kinds of thinking, and I moved between and across them regularly during the course of the observing month. These rooms were also connected to the mental spaces of others inside and outside the office: of fellow designers, engineers, clients and end-users. At these times, I was conscious of emerging from my private, inner world and moving out into the extended, outer world of dialogue and design collaboration.

There is a small, single mental space, with thick walls and a small opening, that I created especially for this research project: a mental space that is very private, allowing for reflection and introspection.

Dotted lines between and through the occupied sites and rooms suggest both perceptual connections between them and my mental movements across them. They also suggest an awareness of the many different mental activities taking place across this extended mental terrain.

On the left of the drawing is a new site that I marked out in anticipation of a new design competition. The formation of new mental places and rooms on the terrain, like this competition site, is something that occurs at the beginning of each new project. As a design is completed, its site and mental rooms fade from the terrain and its significant contents are transferred to my mental repository.
On the right side of this extended terrain is a new mental space, which I marked out for studying and learning a new musical work by J.S. Bach. It too comprises a cluster of interconnected rooms, each focusing on a specific aspect of studying, learning and playing the work. The place of synthesis, where these elements are brought together in the final performance of the work, lies at the centre of the cluster. I foreshadowed that it might function in an analogous way to the central room in the design rooms, where the various thinking threads are brought together in a central constellating space of synthesis. This was examined through a similar process of observation and recording, which is presented below.

**An excursion through the Bach rooms**

The last part of my journey takes the form of an excursion through the Bach rooms that I marked out on my extended mental terrain (Fig. 118). The excursion seeks to discover if there are parallels between the mental spaces occupied, and the thinking and kinaesthetic processes used, in making a drawing and those occupied and used in learning and performing a work of music.

![Mental rooms devoted to learning and playing a work by Bach.](image)

I approached this parallel enquiry in the same way as the design process: by directly observing and recording my thinking and practice over the five months that it took me to learn and play this work by Bach.
The work I chose is a piece for organ: the sinfonia that opens the cantata *Wir danken dir, Gott, wir danken dir*, BWV 29. Bach originally composed it as a partita for solo violin, and subsequently orchestrated it as a sinfonia for this cantata. The orchestral version includes an organ part that carries the virtuosic, fast-moving subject line of the original violin partita, with the left hand providing counterpoint harmonies and the pedal organ a deep foundational base.

I recorded that the process of learning this work also involved occupying different mental rooms, each attending to a different aspect of the learning and performing process. And, like the design rooms, the completed work (performance) emerged as a synthesis of the learnings and skills developed and discoveries made in each of the rooms. This cluster of Bach rooms comprised a number of specific places: a room focused on listening to the music; another for studying its architecture and structure; a third devoted to learning and executing its technical requirements; and, in the centre, a space where the learnings from each would be brought together in the final performance. As I occupied each of these rooms, I noted that I brought a particular type of thinking, disposition and intent to the particular task for which it had been created. This paralleled one of the key discoveries made in the design mental rooms.

The way in which I moved from room to room in this musical excursion was, however, different from my movements across and through my design rooms. Here, rooms were occupied for longer periods, and there was a clear sequential progression from one room to the next. This contrasted with the design rooms, where many different parts were worked on concurrently, and where I moved frequently between and across my rooms of mental activity.

Following are some of the sequences captured during this five-month musical excursion.

**The listening room**

I began by listening to recordings of the work many times over, at irregular times of the day: before work, in the car driving to the city, in the music room of the Housemuseum, and during weekend walks. While this listening took place in different locations and spatial environments, the place for listening was a mental, interior place – a mental room for listening.

I heard many recordings by different performers, each presenting and interpreting the work in their own way. I listened to transcriptions for organ, for full orchestra, and to many variations of the original single-line violin partita. I noted that in these listening sessions I imagined myself in the kind of space in which the work was being performed, with its attendant aural and reverberative qualities present in my inner mental space.

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18 The sinfonia and cantata were created, and first performed, for the installation of a new town council in Leipzig on 27 August 1731.
As I listened to the sinfonia’s fast, motoric theme and its spectacular conclusion, it became clear that my attention in this mental room was being directed towards the sensory and aesthetic appreciation of the music – a little like experiencing the aesthetic and spatial qualities of an architectural space. These sessions served to imprint the score’s subject line in my mental memory, not unlike the way I had captured and stored architectural and spatial experiences and encounters in my mental repository. I recorded that in this room I had no expectation of understanding the structure or architecture of the music, nor did I think about the (demanding) technical skills required to perform it. For the moment, this mental room was for appreciating the aesthetic and emotive content of the music.

**Moments and reflections captured in the listening room**

… As I walk down the street, I listen on my iPhone to American organist Diane Bish perform the work. She is playing it too fast …

… I listen to the work beginning dramatically and proceeding without interruption and at great speed to its dramatic finish – one musical thought spanning four minutes …

… It has an unrelenting pulse …

… I can hear its inner complexities but can’t yet see them…

**Studying the score: in the analytical room**

I occupied a second mental room for approximately three weeks as I made a detailed study of the score in its many versions, including Bach’s original autographs for both the orchestral and organ settings (Fig. 119).
Fig. 119  Bach’s autograph scores for the sinfonia.

For orchestra (left).
For solo organ (right).

I did this without listening to the music or attempting to play it on the keyboard. I noted that my attempts to understand and unlock the complexities of the work’s architecture required me to use a different set of mental faculties. As I studied these scores, I saw them being in many ways like an architectural sketch or drawing. The designer’s sketch is not the building, in the same way that the composer’s score is not the music. But both are representations of the architect’s or composer’s ideas, and enable somebody else to read something about the work – musical or architectural – through annotated marks and representations, using their respective conventions, on the page.

An early discovery in reading the score was that the work is highly complex but is not contrapuntal in style. It is a flowing piece, with the right hand moving quickly across the pages of the score with a forward, directional momentum and pulse. The left hand and pedals have a different structure, providing harmonies and a bass that support the energetic, fast-moving subject line of the right hand. Studying the manuscript also revealed where and how Bach made the transition from one passage of the work to another, and also how he changed key (twice) without disturbing the flow and tempo.
Fig. 120 is a visualisation of the sinfonia as a rolling score, without staves or key signatures. It provides a different but equally compelling architectural representation of the work.

![Visualisation of the sinfonia as a rolling score.](image)

The subject line (in orange) moves up and down through this passage, with the accompanying foundational elements continuing across the middle and bottom of the scroll.

This form of notation reminded me of one of the traits uncovered in my architectural work: the inclusion of both large and small, of the monumental and the fine. It also suggested similarities to the way in which we experience the world as a series of unfolding spatial encounters. Here we see music revealing itself with a similar kind of unfolding temporality.

As I studied these autograph and rolling scores I reflected on further similarities to an architect’s drawing. Both score and drawing provide durable records of the creator’s thinking and creative outputs, and ensure that the works are given a life beyond their initial conception by the composer or architect (Fig. 121).

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The architect’s drawing and the composer’s score provide durable records of their creative outputs.

**Moments and reflections captured in the analytical room**

… I recorded it as a revelation to ‘see’ the structure of the music in the form of a score, like looking at an architect’s drawing …

… it has given me a completely new dimension to my understanding of it … I’ll never hear it the same way again …

… the score reveals something hidden in the work …

… in the score we see glimpses of the composer at work, how Bach made decisions, choosing to go this way or that at key moments … elements of surprise, consonances and dissonances … in the same way that a drawing reveals aspects of the designer’s thinking … their architectural moments of surprise, consonance and dissonance …
Revisiting the listening room

Having studied the work’s structure, I returned for several days to the listening room, this time accompanied by a copy of the score (Fig. 122). As I followed it, line by line through its nine pages of notation, I observed that I now listened to the music differently. I could ‘see’ the music in my mind’s eye as well as hear it. This added another layer to the imprinted memory of the work in my mental repository, the result of a new synthesis made in the space between these two rooms.

At the keyboard: the mental room of technique

Sitting at the keyboard, I moved to a new mental room, to learn and master the technical requirements of playing the work. How should it be fingered? Should the parts for each hand and the feet be learned separately or in unison?

This technical learning work was recorded as being both a mental and kinaesthetic exercise: reading the score, directing the fingers and hands to the right notes, slowly imprinting the sequence of the notation on my mental memory, and translating this to the keyboard (Fig. 123). This seemed to have strong affinities with design, in particular with the making of a drawing, involving simultaneous activity across both my inside and outside terrains.
Learning the work also took the form of bodily movements, of fingers and feet that directly connected me to the structure of the work. As I learned to play it, with my repository now drawing on its kinaesthetic memory, I was reminded of Edmund Bacon’s lessons about how we experience architecture and space kinaesthetically.

Bach’s music sets difficult technical challenges for the performer. Hands and feet need to come together in perfect, synchronous movements to render the work accurately. As I began to play the sinfonia, I thought of my first steps in learning to make a drawing: small, tentative steps in learning a new skill. Like my boyhood sketch of the suburban house (Fig. 49), this musical work began to emerge from the keyboard with its perspective not quite right, and with inelegant proportions (Fig. 124).
Reflections and captured moments
… this room wasn’t about focusing on the work’s emotional content, its pulse or rhythm. It was about mastering the technical demands of playing it (Fig. 125).

… practising, practising, practising … a small section at a time …

… I recall my organ teacher’s advice that in playing Bach you need to ‘let some light in between the notes’…

… after three weeks I am able to play the subject line almost all the way through … the left hand and feet need to catch up …

… I am reminded of how sketches and drawings are iterated and how these suggest new ways to develop and improve a design. As I play this work over and over, successive practice sessions suggest new ways to perform and interpret it.

… playing both hands and feet, in different rhythms and pulses, is proving difficult; my mental image of the structure of the work does not seem to match what my hand/eye is telling my hands and legs to do …

… like my design mental rooms, I observe myself occupying my inner mental world and my outer world of bodily experience simultaneously, and I can sense that they are intrinsically connected …
... I begin to master it, bringing the parts together, one page at a time ... and with each practice session, my mental imprint and my hand–eye co-ordination become stronger and more deeply embedded ...

Fig. 125 Mastering the work’s complex fingering and technical demands.

The room of executio: the hand/eye at work
As I made the transition from studying the score, to learning it, to finally playing and performing it, I recorded moving to another mental room. Here, unencumbered by a need to think about how to place the notes, or to visualise the work’s construction or be aware of technique, this mental room could be devoted to playing and performing it (Fig. 125).

Fig. 126 Into the room of executio.
This reminded me of the crucial discovery revealed when making a sketch: the ability to make a drawing and ‘think’ design without needing to give conscious thought to the technical skills and other apparatus required to support it. It was at this point of being able to perform the work – seeing, feeling and hearing it as I played – that I felt that I was occupying the central crucible of the Bach rooms. In this place of synthesis, I was aware that the same hand/eye was at work, revealed so clearly in my observations of my making a design. All of the constellating threads were being brought together as the work began to take on a life of its own (Fig. 127).

Fig. 127 Thinking and drawing design; thinking and playing music.
PART IV
REFLECTIONS AND CONCLUSIONS
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When I began this project I had only a faint grasp on the inner workings of my creative practice, and an indistinct understanding of the mental ‘places’ in which I undertook it. Through my research, I set out to uncover some of the mysteries of why and how I design, approaching the exploration through a structured process of critical reflection and direct observations of my designing in action. Setting out with tentative steps, I charted a course through three pillars of enquiry that I established from what I knew then about my work as a design practitioner.

But now, as I look back from this vantage point at the end of my journey, I see that my initial framing of the project looks almost Descartian: a description of the designer’s world comprising an inner, mental space on the one hand and an ontologically separate world of extended experience on the other. What has emerged from the discoveries made over the course of this project is a very different picture of my creative terrain: one embracing these inner and outer worlds, but with a central place of creative activity, an in-between place that lies across and between them.

How has this new picture emerged, and how have the discoveries made enabled me to depict it?

My explorations began with an examination of my private, inner mental space: a place of extreme interiority. Here, I set out to uncover aspects of my personal history: how my spatial intelligence evolved and developed; my mental collection of personal images, encounters and memories; and the development of foundational learnings and skills.

Exploring this inner terrain, I uncovered many remembered encounters with architectural space and early learnings in spatial thinking, including lessons in drawing and perspective construction given by my mother. These layers in my spatial intelligence were extended with further insights into spatial design and practice by American architect Robert Venturi and others with whom I studied at the University of Pennsylvania – ideas about complex and contradictory space, and the construction of privileged viewpoints that enable the designer to frame specific relationships between object and viewer. I rediscovered learnings from my postgraduate classes with Edmund Bacon, and reflected on how these developed other aspects of my spatial intelligence: ideas about scenography, and how space is experienced both with the mind and kinaesthetically through the body. These discoveries confirmed many of the key propositions presented by van Schaik and Groh, including that one’s spatial intelligence is built up over a lifetime from remembered spatial encounters and learnings.

As I delved further into my private, inner world, I encountered my mental repository: an expansive mental place that I discovered to hold a vast accumulation of images, encounters and personal experiences. My repository appeared to contain only images, and I observed that all of my remembered experiences were recalled through images, or collections of images, with these images always captured and remembered from a specific point of view.
The journey through my inner terrain continued with an examination of my lifelong interest in the music of J.S. Bach. This uncovered a number of hidden affinities between aspects of the disciplines of architecture and music. In particular, similarities were revealed in the thinking and kinaesthetic processes used in the act of designing architecture and in performing a work of music. This part of the research confirmed the findings of Malafouris: the existence of the hand/eye as an embodied extension of the mind, with cognition and action acting dialectically. This was a discovery which, as a designer, I found particularly useful.

Each of these layers in my personal history was shown to have contributed to the shaping of a unique and personal platform on which, and in which, I undertake my creative work.

My journey then took me on a different path: on an excursion through my outside world, a terrain characterised by its public exteriority. Here I explored my public behaviours, my built work, and other creative outputs. This began with an examination of a number of my completed buildings, and the work of Lyons, which I undertook as a forensic exploration. I discovered that my works contained distinctive traits and markers – a personal and distinctive architectural DNA – that would later reveal further clues to the workings of my creative practice.

Many common threads were uncovered across the projects: scenographic spatial constructions; distinctive formal attributes including symmetry, juxtapositions of scale and monumentality; new types and hybrids; and works giving expression to client visions for new places for working, living and serving. All were shown to be the result of interactive engagement with clients and stakeholders from the earliest stages of the project.

I also critically examined the firm’s, and my own, public behaviours and creative outputs, as played out on this exterior terrain. I found that they are complementary to and act as intrinsic supports for my design work and thinking. They also serve as ways of disseminating these thinking and practice methods across my extended community of practice.

In reflecting on the discoveries made across these inner and outer terrains, I did not find any form of direct causal relationship between them. Rather, what emerged were discernible affinities that could be traced across and between them. The scenographic spatial constructions uncovered in the built works could be seen to be linked back to revealed layers in my spatial intelligence: to my early lessons in perspective and to my later awareness of space as a temporal and experiential attribute of architecture. Looking back through this same lens, I discovered that my interest in the music of Bach, particularly the music’s construction and architecture, suggested a particular way of conceiving and shaping space and form, again evident in the built work.

These and other affinities suggested that my constructed projects and my current creative practice have been shaped by, and are in many ways an expression of, a particular way of seeing, thinking and making – a way that has developed from a practice platform forged from a unique personal history.
As I concluded my excursions though my inner and outer worlds, I emerged to find myself occupying another terrain: a place that appeared to lie across and between them. In this in-between place, I made a series of first-hand observations of my designing in action, making records in real time of what happened as I undertook my creative work. These observations and records documented the designing of a new project, the Housemuseum 2. As I observed and recorded my design process in action, I encountered sketches and drawings used not as records of experiences and encounters, but as an inherent part of my design thinking. I recorded drawings being made to capture ideas as they emerged into my mental space, or as responses to ideas triggered by a previous drawing. Other drawings were prompted into being by a recalled image from the repository, while yet others were used to iterate and refine a developing design idea.

These real-time records of the making of drawings revealed a hidden, conductive agency – one that appeared to facilitate a seamless and simultaneous dialogue between the drawing being made in the extended world and the thinking taking place in my inner, mental space: a bridging of the Descartian duality. These discoveries again confirmed the findings of Malafouris. As I continued to explore this in-between terrain, I encountered my mental repository for a second time, but here I was intent on observing it in action. Through my recorded observations, I saw how and when images were brought into the design process. I observed images recalled with conscious intent and others appearing spontaneously in response to triggering mechanisms of ideas, sketches and drawings. From these recorded observations I was able to make an outline description of this repository. It differed from the mental architectural constructs – the ‘theatres of memory’ – described by Yates; I recorded and described my repository as a mental place of indeterminate extent, in which my personal images, memories and encounters were stored – in no particular taxonomic order – for later recall. I observed it as a continually evolving resource that was portable, enabling me to call upon its contents at any place and at any time, to support my creative work and thinking.

As I brought together these many observations and discoveries, I attempted to capture in a drawing the attributes of this in-between terrain (Fig. 128).
Fig. 128  My ‘mental rooms’ in the in-between terrain.

The drawing described the structure and workings of this central place of creativity, including the kinds of thinking tools, skills and dispositions that I applied to different aspects of the Housemuseum 2 design. It describes my design terrain as a supporting mental platform, constructed from my personal history, spatial intelligence, personal stances, interests and predispositions. On this platform, I observed and recorded myself occupying a series of mental rooms, with each room devoted to a particular aspect of the design work at hand. I observed that these mental rooms did not look or feel like architectural spaces, and in this sense, they too differed from the mentally constructed memory theatres described by Yates. I experienced my rooms as a series of separate and distinct mental places, without defining walls, floors or ceilings, but each presenting as a ‘room-like’ place to be mentally occupied.

Over the twelve months during which I made these observations, I noted that I occupied different rooms at different stages and at different times in the design process, and that my time in each room varied from momentary occupancy to a stay of many days. I was especially conscious of bringing into each room particular tools and thinking skills, appropriate to the specific task at hand, and to entering the room with an intentionality and directed disposition to work on a particular aspect of
the evolving design. In the middle of the cluster of rooms was a central room of synthesis, a place where I would bring together the various threads and workings from each of the design rooms to be further considered and synthesised.

Explorations of other concurrent projects on which I was working revealed further clusters of mental rooms across my extended mental terrain. These occupied different sites on the terrain, but all drew on the resources of the all-encompassing mental repository.

The last part of my journey took me back into the world of music. Having experienced my mental rooms as I designed Housemuseum 2, I set out to discover if there might be parallels between these mental places and those involved in learning and playing a work of music. As I began to learn a major organ work by Bach, observing and recording my experiences and processes in real time, I found myself occupying a new and distinctly different set of mental rooms. But, in a similar way to my design rooms, each was devoted to a particular aspect of my musical task: one room focused on listening to the music, another on studying the architecture of its score, another on mastering its technical demands, and one that I occupied as I performed the music. Bringing these threads together in the central Bach room of synthesis, I became acutely aware of the same hand/eye at work that had been revealed so clearly in my observations of designing Housemuseum 2. As I had observed in my making of a drawing, all of these spooling threads came together in a seamless dialogue between my inner and outer worlds, between hand and eye, as the work took on a life of its own.

* * *

The discoveries made in these terrains of personal history, built work and design practice have revealed a number of affinities, and have shown themselves to play inter-related roles in how I think and create as a designer. Now, as I conclude what has been a personal journey, I see these explorations and discoveries contributing to a further understanding of the workings of creative design practice, and how design thinking is shaped.

The research project offers a critical, exploratory framework and a series of guided pathways through the terrains of design practice, which may be used by other practitioners in undertaking their own journeys of self-reflection and discovery. The project’s most significant contribution to knowledge has emerged from discoveries made through first-hand observations and recordings of design thinking in action. Beginning with excursions through my inner and outer worlds, it has concluded with the discovery of a place that lies across and between them.

I have experienced at first hand this in-between place, and have found it to be the central place of creative design activity: a terrain made up of mental rooms, a vast mental repository, and a platform fashioned from a unique, personal history of spatial intelligence, skills, learnings and experiences. My discovery of the hand/eye strongly suggests that this third, in-between place is not a third terrain after all, but a place that is contemporaneous and coextensive with the inner world of the mind and the outer world of experience and architecture.
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PROJECT IMAGES
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Sunshine Hospital, St Albans, Victoria, 2001

Above: Claude Monet, Grainstack (Sunset), 1891. Museum of Fine Arts, Boston.
Opposite: Large windows punctuate south facade of ward building, creating habitable depth.

Sunshine Hospital
Completed 2001
Above: Typical high rise floor plan.
Opposite: Curtain wall on south side of building forms canopies as it approaches street level.
Overleaf: Serrated, layered canopies along Lonsdale Street.

BHP Billiton Global Headquarters Building
Completed 2004
Opposite: Die-cast aluminium panels form wall murals in main foyer.
Above: Fabrication of custom-designed panels for main foyer walls.
Top left: View of entry foyer looking towards lift lobby.
Top right: Creating an in-between realm, the foyer engages with the street.
Bottom: Ground floor plan.
John Curtin School of Medical Research, Australian National University, Canberra, 2004–07

Above: Entry forecourt seen from Garran Road.
Opposite top: Entry is open to campus but is shielded from west afternoon sun.
Opposite centre: North elevation and concept image.

John Curtin School of Medical Research
Australian National University
Completed 2007
Above: Digital documentation of precast panels.
Opposite right: North facade panels represent the human body, its cellular structure, the DNA molecule and its chemical base as letters.
Faculty of Law Building, University of New South Wales, Kensington, New South Wales, 2006
Above: Main entry on University Mall framed by Moreton Bay fig trees.
Opposite: Ground floor 'agoras' with views into the student work areas of library.
Opposite top: Elevations.
Opposite centre: Main auditorium with views out onto University Mall.
Opposite bottom: Student-focused agora space on the second floor provides for meeting and exchange.
Mornington Centre, Separation Street, Mornington, Victoria, 2007

Above: Dining room at the building's heart. The centre provides short-term residential accommodation and nursing care for older people.

Mornington Centre
Completed 2007
Below: Designed like a coastal hotel rather than a hospital, the residential rooms have bay windows for residents. 
Opposite top: North-east corner of the building with landscaped therapy gardens. 
Opposite bottom: Brickwork expressed as timber planks.
Above: Connecting with the local coastal vegetation.
Opposite: A civic building with residential scale.
Below: Elevation, including proposed second stage to the left.
Bottom: Details of brick ‘fins’. 
MORNINGTON CENTRE

[MAP] A new nursing home in the seaside community of Mornington.

[VIEW FROM STREET] Like a large beach house or coastal hotel – Sea Ranch combined with Mornington Peninsula vernacular.

[ELEVATION SKETCH] A big gabled roof encompasses the whole building. Bedrooms with bay windows expressed as serrated projections along each facade. Openable windows for daylight and fresh air.

[DETAIL OF FACADE] Larger windows and balconies mark the communal spaces in the building – dining rooms, sitting areas and rehabilitation spaces.

[INTERNAL VIEW] Inside, the clinical support and treatment spaces are suppressed – timber wall linings, flooring and warm colours define the spatial reading of the interior.

[RECEPTION DESK] Arrival space and reception desk are like a hotel concierge desk – friendly and welcoming – designed to reduce people’s anxieties on arrival.

[DINING ROOM] Dining room as the social heart and family focus for the building – a place for a cup of tea or a family chat.

[BRICK FACADE] Outside, the building is clad in oversized ‘timber’ planks made up of house bricks embossed with an abstracted digital design. We collaborated with industry to prototype and fabricate the bricks with their digital design.

[CLOSE UP OF WALL] Different combinations of clay colours and arrangements of embossed flat bricks give a textured grain to the horizontal planking.

[HERO VIEW] The building contests the conventional paradigm of a nursing home, shifting from a medico-centric model of care to one where family and carers are at the centre. A building with a strong sense of place and local meaning for this coastal community.
Hedley Bull Centre, The Australian National University, Canberra, Australian Capital Territory, 2008
Opposite: Offices for reflective work are on perimeter, with collaborative workspaces facing central atrium.
Below: Windows fold around corners of hexagonal form.
Overleaf: View of central daylight forum space.
Above: Facade is detailed with elongated grooves.
Opposite centre: Design concepts for the facade – banikoia pods and stretched perforated metal sheet.
Opposite bottom: Prototype fibreglass moulds for the precast concrete facade panels.
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Above: Stretched skin rendered in white concrete panels.
Top: Site plan.
Opposite: On the upper floors circulation forms a continuous loop around the atrium.
The Housemuseum, Kew, Melbourne, 2009

Lyon Housemuseum
Completed 2009
Previous page: Two double-height spaces anchor the ends of the building.
Below: View from Gotham Road.
Middle: View from Florence Avenue.
Bottom: Names of the streets on which the corner block sits built into corbelled brick fence.
NOTES FOR LYON HOUSEMUSEUM

Building as hybridisation of the following types

- house
- the small museum
- exhibition pavilion
- retail showroom
- shopping mall

Museum building as a:

- showcase/vitrine
- cabinet of curiosities
- a box (Cornell, Duchamp)
- a miniature museum
- display window (Dan Graham)

Current Orthodoxy

- museum in major cultural centre
- display of objects/didactic institution
- the big museum
- enclosed - suspended time and space
- 'religious' spaces/codes
- the formulaic, 'franchised' museum
- the eternity of the masterpiece, museum as a
  place of no time
- exclusive audiences
- museum codes of behaviour
- sacred space
- global pretentions
- homogenised, committee-driven collections
- duty
- a mausoleum: 'where all great art goes to die'
- clear separation of art and architecture
- institutionalised type - formulaic and orthodox
- sacred space
- contained spaces
- the white cube
- people looking at the 'idea of art'
- art in the familiar, institutionalised setting of the
  public museum
- institutionalised curation
- looking at one work at a time in a
  predetermined path
- the modern hang, isolating the work
- big, abstract 'white' spaces
- the detached observer/ 'Eye'
- didactic

Our Housemuseum

- 'off centre' museum
- laboratory of ideas
- the small museum
- open - real time and space
- residential spaces/commercial display codes
- the unique, idiosyncratic curiosity
- bringing art into the present space and time of the
  viewer
- everybody
- hybridised codes of conduct - the store and home
- secular space
- local focus with global connections
- eclectic, personalised selections
- delight
- a container
- a blurred line between art and architecture
- hybridised type - particular and new
- communicative surface
- spaces in series, en suite, labyrinth-like,
  meandering, open to the outside, landscape-like
- the wallpapered salon
- people looking at the art
- art relocated into an unfamiliar, non-institutional
  setting
- idiosyncratic display/personal story telling
- a field of vision encompassing multiple
  works/vistas/relations between works
- the salon hang (+ Keister)
- big and small spaces, with colour
- the engaged/involved spectator
- multi-interpretive, multi-relational
Lady Cilento Children’s Hospital, Brisbane, Queensland, 2014

Queensland Children’s Hospital
Due for completion 2014
Lyons and Conrad Gargett Architecture

Below: Internal ‘tree’ diagram connecting inside and outside.
Opposite: North, south and west elevations.
‘Housemuseum 2’, Kew, Melbourne, 2017–18