Drawing/Building/Cloud/

_Sfumato Practice as an Open Work_

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

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June 2017
Drawing/Building/Cloud/

Sfumato
Practice as an Open Work

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PhD Reflective Practice (Invited)
Architecture and Design
Declaration

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Practice as an Open Work

A thesis submitted in fulfilment of the requirements for the degree of PhD in Reflective Practice

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Abstract

This PhD proposes *Sfumato practice* as an open work; as a practice of drawing. The research seeks to extend drawing’s poiēsis to practice, to the things it draws, draws with and draws from. In doing so, architecture is shifted to something indeterminate and fleeting, and as such, a mode of discovery with productive uncertainty. This potential for open-ness is explored through close reflection on my body of work.

The research does not assume that architecture rests solely in a building, or in drawings, but within the continuum of materialities and actions that exist between them. This places emphasis on practice as a dynamic process that distils architecture from the complicated conversations drawing and building have with one another. In practice, they are in chiasmatic relation; they inflect each other through a crossing of their respective media. In this blended view, drawing and building are both part of the practice of drawing.

Drawing is inherently open. It is non-totalising, formative and constantly beginning. This research speculates on how practice can also be open, through being an extended version of drawing. An open poiēsis is sought in the
dynamic, formative forces that figure practice. I explore the push and pull between gestures, marks and forms in drawing, and find parallel marks and gestures in building. The research coalesces trajectories for a *Sfumato practice* that draws in an open way, pursuing poiēsis through a hovering between drawing and building.

This re-sketching asks a central question: how can architecture be practiced as an open work? This triggers a concatenation of other questions: how can built space remain a sketch, in a state of potentiality — ever unfolding and generative; how can intensities between drawing and building be materialised; what is the force and presence of marks that cross between them; what is their non-semiotic, poiētic potential? These questions surround a nascent *Sfumato practice*, evidenced by my body of work.

This research makes an original contribution to the knowledge of practice through articulating *Sfumato practice* as an open work. Past work from my practice is reflected upon and new work, completed within the academy, extends questioning surrounding practice’s open potential. The findings of the PhD are
evidenced through a combination of built work, installations, curated exhibitions and academic writing. This evidence is imagined as a cloud of relations. The PhD dissertation is organised as a series of movements through this cloud of practice which chart its internal dynamics, distilling formative forces in and between disparate phenomena, as elements in an open work of drawing. *Sfumato Variations* are distilled from the cloud that point to capacities of openness: *Marks, Scale, Form, Jolts* and *Lensing*. These build an image of practice as an open work, with drawing and building in sfumato relation to one another.
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And thank you to my family, for your support and understanding my need to perpetually disappear into my studio.
Preface

This thesis is a reflective project, drawing from more than twenty-five years of work, spanning from student work through to architectural and academic practice. Over the years, my work has bounced back and forth between academia, the industry, exhibitions and writing. This background provides material for the thesis but it is also the origin of its questioning. I always find myself wondering about elements of the discipline that slip beyond easy reach. Drawing has been a consistent focus around which questions of architecture’s restless and evasive potential have orbited. Drawing has been the tool for finding interesting uncertainties in architecture, but to my mind it has itself shifted to a restless state. Drawing has, for me, come to hover between freedoms of representation and the obdurate fixity and durational complexity of built space. It is as if, after looking at them as separate but intersecting patterns for so long, drawing and building have become merged into a strange stereoscopic image. This PhD is a navigation through the restless dimensions of this image. It has been an opportunity to use my practice as a thinking tool and at the same time re-think my practice.
1. Client negotiations in the drawing of Sheerwater House.
This PhD is an exploration into practice as an ongoing process of drawing, using my body of work as source material. I am interested in how practice-as-drawing might invest architecture with poïēsis, gleaned from drawing’s inherent open-ness. I am looking for aspects of practice that are irresolute, smudged, complex and potential, qualities that shuttle between the drawing and building of architecture and find presence in each in complicated ways. I suspect that the vibrant space between drawing and building is where an architecture of open poïēsis might rest, where architecture is constantly in a state of crossing and transference.

Over the course of the PhD I have grappled with the evasiveness of this line of questioning. It is inherently a pursuit of something that darts from view when scrutinised. This PhD is a record of this pursuit, through studying interplays between drawing and building in my own work and attempting to articulate their fleeting poiēsis. The research in this thesis seeks to contribute to the knowledge of architecture practice by exploring its agency as an open work.

In my work I find most pleasure where there are open possibilities. In the past, this has largely been something I observed in drawing, which has an inherent open-ness, but it has developed to include open possibilities in building, and latterly, writing. In a sense my work over the years has been a single drawing project that has morphed with the influence of practicing architecture; the drawing medium has shifted from lines on paper to concrete walls and surfaces that can be occupied in space and time. This makes me wonder how architectural practice, taken as a whole, can be drawing — a project with an inherent open-ness that includes built space in its ‘actions, of attraction, sense, permanent interruption, tension and intensity’ (Nancy 2013: 1). This PhD looks to develop my practice as drawing. It attempts to distil a Sfumato practice from my past and recent work, from drawings, buildings, installations and writing. These are explored as evidence of an ongoing practice of drawing that engages the various things that practice inevitably deals with, such as gestures, marks, scale, gravity, materiality and presence. These are viewed as formative forces in a drawing-focused practice.

Through this, I attempt to distil architecture and practice as ongoing, productively uncertain and ever emergent: an open work of drawing.

This introduction will briefly cover the motivations, questioning and contributions of this PhD. It defines key terms and summarises the framing of the research and methodology. It also alludes to how the research intersects with other practices within a wider community. At the end of the introduction there is a chapter summary that acts as a road map to the PhD dissertation. There is also an explanation of the design of the PhD book and how it might be navigated by a reader.

The Open work

To begin by introducing the concept of the open work. I adopted the phrase open work following a suggestion by Anna Johnson at a recent Practice Research Symposium and have found it to be useful as an over-arching thematic. It is borrowed from Umberto Eco’s Opera Aperta (The Open Work) of 1962.

Eco’s Open Work is a treatise on interpretation, exploring the potential for art and literature to have an elusive, semiotic plurality. In his introduction to Opera Aperta, David Robey highlights Eco’s approach to a semiotic open-ness: ‘Ambiguity, for Eco, is the product of the contravention of established conventions of expression: the less conventional forms of expression are, the more scope they allow for interpretation and therefore the more ambiguous they can be said to be.’ (Eco 1962: X).

I have found resonance with this idea of plurality, which I see as an important component in practice-as-drawing, but my use of the phrase differs from Eco’s. Rather than focusing on the phrase as solely to do with open-ness of interpretation, I use open work to also allude to the vitality of non-linguistic, non-semiotic undercurrents in architectural practice that largely escape interpretation. This PhD does not pursue open-ness of meaning so much as the open potential of smudges, marks, gestures and materials. Open work is used in this PhD as emblematic of drawing’s poïēsis, something that is continually fleeting from known parameters to a productive state of unknowing. Despite borrowing the title and poetics of possibility threading through Opera Aperta, this is not a PhD on Eco’s famous work.

The open nature of drawing, through the forcefulness of gestures and marks, is discussed by Jean Luc Nancy in The Pleasure in Drawing and is a key text for this research. Pleasure in Drawing was written as the opening essay in a catalogue for an exhibition on drawing that Nancy, a distinguished philosopher of Philosophy at the Université Marc Bloch, Strasbourg, co-curated at Musée de Beaux-Arts in Lyon. Nancy begins the book by declaring that ‘drawing is the opening of form.’ This sets the stage for a discussion of drawing as an ongoing process that actively pursues open-ness. Nancy highlights two ways in which drawing performs this opening: through gesture, ‘in the sense of a beginning, departure, origin, despatch, impetus, or sketching out’ and through an ‘inherent capacity,’ something that ‘indicates the figure’s essential incompleteness, a non-closure or non-totalizing of form.’ (Nancy 2103: 1). Through this, Nancy’s work tackles drawing as a formative
act; he traverses the various motivations and actions in drawing and describes how they give drawing its power as an open way of forming and seeing. In *Pleasure in Drawing*, the open-ness in drawing is through its constant beginning and the ‘purposiveness without purpose’ of mark making. (Nancy 2013; publisher’s notes).

I have merged Eco’s open work, which emphasises open possibilities in work as artefact, with Nancy’s opening of form, which focuses on open possibilities in the works’ forming. So, in this thesis, the concept of open work is at the same time a work of opening; an ongoing action or practice.

The two formative characteristics of drawing highlighted by Nancy, its determined gestures and its capacity to maintain incompleteness, resonate with my work. This PhD is in part pursuing a poësis that comes from this asymptotic aspect of practice. The evidence of this aesthetic condition — of gestural certainty that is also productive of uncertainty — is charted through the drawings and buildings in my body of work. This is highlighted as one of the contributions this research makes to the knowledge of practice. Architecture practice is often a project of determination and ordering, an act of closing rather than opening, and I am interested in how potentiality can be present in the process from drawing through to built architecture.

Questions surrounding drawing’s formative forces, such as its pleasures, intentionality and materiality, are expanded on in this PhD through reflecting on my body of work. These are looked at as ways in which architecture can be practiced as the opening of form — as an open work of drawing.

**Drawing/ Building**

I see drawing and building, in my practice, as in chiasmatic relation to one another. The later projects in particular look to intensify the crossings between them. This is attributing more to their relationship than simply one of instrumental projection.

The projective distance in architectural drawing has been widely discussed, and is a core idea in architectural practice’s raison d’être, ‘to effect transformations of reality at a distance’ (Allen 2000: 3). In my work the one way vector, from drawing to building, is deliberately misunderstood, or at least put on hold as a representational canon. This research seeks to explore the shared space between drawing and building and amplify intensities that commute between them. Presences and atmospheres crossing and transferring between drawing and building, and the marks, materialities and gestures that create them, are looked at for their formative force, or their potential as drawing. The objective is to develop a practice that extends the open, messy unfinished-ness of drawing to the obdurate, material world of building, and in doing so, challenge its propensity to be static, totalised and autonomous.

I would like to introduce my use of the terms drawing and building. I have used these words throughout the PhD presentations in a fluid way, slipping between them and sometimes combining them, with a view to deflecting their distinctiveness as terms. This fluid use of the terms is consistent with an interest in how they cross or transfer to one other; an impulse to see them as in sfumato relation.

Firstly, I tend to collapse them as verbs and nouns, so they can imply action and object simultaneously. In this, drawing as gesture is blended with the materiality of the marks that result, and building as making is merged with the built object. So when I use the terms drawing and building they are most often referring to a blend of act and thing. This is similar to Nancy’s use of the word drawing, in which gesture and form are not dissociable, as described earlier. This blending of the ‘doing and thing done’ aspect of the words drawing and building is part of the project to shift practice away from things that are fixed and towards a situation where practice’s objects, such as buildings, contain a presence of their making, or their drawing.

Another sense in which I understand drawing and building is that, in practice, they are magnetically tied to one another; similar to their individual doubling as both verb and noun, drawing and building, as a couplet, are not dissociable. It is fundamental to architectural practice that drawing relates to a real condition beyond it, however distant in space and time and however speculative or imagined the project. This is different to pictorial conventions in art practice. In pictures, marks make up forms. In architectural drawings, marks make up forms that refer to other forms, distant from them in time and space. Practice is a negotiation of qualities in transmission between drawing and building, usually in service to a final and built object — or a drawing with an experimental objective. The space between drawing and building is a maelstrom of information, dimensions, atmospheres and imagined occupation, constantly crossing and transferring. I am interested in this dynamic space and what it might be able to do in terms of shifting practice and architecture, if intensified as an architectural condition in its own right. Much of my work has been in pursuit of this. This magnetic tension between the two is the reason they often appear in this thesis with a diagonal slash between them, as in drawing/ building. Drawing as a generative act, alluding to more than itself, blurs with modelling, making prototypes, stacking building materials, their assembly into built space, and, as in the Concrete Drawing project, extends to space’s dynamic occupation. In this sense, drawing and building slide together and are used with a view that they span process and product, possible and real.
I also co-opt drawing for its more established characteristics, as a tool for observation and thinking, such as in the phrase practice-as-drawing. I state that the ambition of this project is to extend drawing’s poïésis to practice. This uses the term drawing in the sense of its known capacities, of pursuing experimental possibilities, as in Neil Spiller’s description of the drawings of the practice Smout Allen as pursuing ‘unstable terrains, unreachable horizons and fleeting perceptual events’ (Spiller 2008: 133). Or as a mode of active observation or inquiry, as described by John Hejduk in his Thoughts on the Architect: ‘Drawings and tracings are like the hands of the blind, touching surfaces of the face in order to understand a sense of volume, depth and penetration.’ (Hejduk 1986: 50).

Practice-as-drawing simply takes drawing’s sketchy power, for experimentation and observation, and attempts to invest it in architectural practice, which involves more material, scalar and performative complexity than pure representation. This is part of how I see practice as being a lens on contexts, such as sub urbanity, or even literature; like drawing a figure, practice can sketch aesthetic understandings of contexts through its process. I have often wondered, for instance, whether a house commission draws a personal portrait through the design of the architecture, one that depicts, in built form, the conceptual physiognomy of client, architect and the aesthetic climate in which it is designed.

So in summary, in this thesis drawing and building are almost always used as verbs and nouns at the same time and the two, as terms, are also blended. This allows the research to speculate on crossings and short circuits between drawing and building and their active and object characteristics, such as how gestures cross with built space, or how acts of building might be seen as marks. This chiasmatic relationship is developed as part of a Sfumato practice that is an open work of drawing — using drawing/building as the medium.

Marks and Materiality

Drawing and building are looked at in this research as being to do with marks, and these are seen as hybrid things that are evidence of an inherent blend of action and thing. I have used James Elkins’ discussion of marks as a base. Elkins, in an essay on mark-making in art practice, talks about marks as partly semiotic and partly non-semiotic. He unpacks the non-semiotic characteristics of marks, and argues that their ‘obdurate or incoherent’ complexity gives them the power to evade interpretation. I have extended his focus on the non-semiotic power of marks to mark making in my practice, where ‘recalcitrant, “meaningless” smears and blotches’ (Elkins 1995: 860) are found in marks in analogue drawing, digital drawing and in building. The first is understandably close to the practices of mark-making that Elkins is talking about, the ‘brushstroke, pencil line, smudge, and erasure’ (Elkins 1995: 822) but the digital and in building are perhaps less familiar.

I am taking digital drawing as having as much non-semiotic messiness as in analogue marks, despite it being an apparently clean medium. Likewise I take the elements of building as obdurate and incoherent marks. I expand on how these are marks and how their non-semiotic, blended nature becomes forceful, using my practice examples. Actions in spaces of making become marks, as do the repeated occupations of a building. This evidence builds to a proposition that the unseen ‘uninterpreted residue’ (Elkins 2014) of making is akin to an erasure or smudge that has force as a non-semiotic mark. This is one of the ways in which building contributes to practice as drawing.

The non-semiotic potentials of marks and marking raises other questions in parallel; questions of the agency of matter and objects, the interplay between representation and non-representation and the role of affect, among others. This PhD does not attend to contemporary discourses surrounding these in any detail as that would be a significant literary task and outside the scope of this PhD. I draw from work in the area, however, to inform my practice research. Ideas from this contemporary discourse resonate with the practice work and are discussed in the reflections throughout the dissertation.

Clouds, Atmospheres and Sfumato Variations

The image of the cloud is used in this PhD in a particular way. I use cloud as a metaphor to indicate a diversity of content in practice, in dynamic inter-relation. There are three ways in which I have imagined this metaphor: it calls to mind an indeterminate shifting that comes with the open possibilities of a field of things, both discursive and non-discursive, material and immaterial; it is aesthetically close to alogic, aleatory forces in practice, such as in marks and marking; and it is a way of establishing a narrative structure to the PhD. As the latter, it stands in for more linear narrative ways of unfolding ideas I have observed in practice PhDs, such as the journey. The cloud allows for my practice to be imagined as a material, something with grain, movements, resistance and affordance. The PhD dissertation is structured as a series of contours, or traces, through the cloud of practice, picking up on its sfumato material characteristics. I have written the word as /Cloud/ to pay homage to Hubert Damisch's use of the word in his work on the history of western painting. In A Theory of /Cloud/ Damisch uses slashes each side of the word to emphasise that he is using cloud in not
just its literal sense, but as a sign of undelineated possibility. He sees clouds, in painting, in opposition to representations of more stable, terrestrial elements, which are ordered through perspective. Damisch uses the dialectical relation between the cloud and perspective to reassess western painting traditions, and /cloud/ becomes a theory that merges literal cloudiness, interpretative possibility and perceptual registers in painting.

Within this /cloud/ metaphor, I have used the idea of sfumato, as a way to understand dynamics in the cloud of practice. In this PhD, /cloud/ is the over-arching protean condition, of multiple things in relation, and sfumato is the active crossing and blurring of one thing to another. In an image of a cloud, such as Constable’s Cloud Study of 1821, the cloud’s shape is depicted through gentle or abrupt transitions between light and dark. Sfumato is the shifting of intensities between the lights and darks, the pushing and pulling that gives the cloud shape.

Sfumato is a well-known painting technique that employs a subtle blend between light and dark shades. The effect of sfumato is to create a shifting relation between an element of a painting central to the gaze and a shaded contour peripheral to it. It creates, in Giorgio Vasari’s words, a ‘hovering between the seen and unseen’. Like the cloud metaphor, I use sfumato to bring to mind a state of liminalty, shifting possibility and asymptotic mutuality, such as between drawing and building. Sfumato paints a picture of practice as shades of things in a continual state of becoming — drawing becoming building, building drawing, even perhaps writing becoming building then writing.

Following the idea of sfumato, a central gaze on any of these elements is influenced by shades of things in the periphery. In a way I have taken Leonardo’s advice to ‘take care “that your shadows and lights be united without strokes or marks, in the manner of smoke”’ (“senza tratti o segni, a uso di fumo”) (Leonardo quoted in Nagel 1993: 11) and applied it to shadows and lights within practice. In this study, sfumato has been developed to be the term for practice-as-drawing. It draws tensile movements and abrupt jolts in a smudged, cloudy image of practice.

As much as sfumato is a metaphor of conceptual movements, I have also used it for its literal, atmospheric connotation. I have identified sfumato atmospheres in drawings and buildings in the body of work, associating it with curved surfaces and gentle transitions of light and shade. Sfumato and atmosphere are linked, through their smoky, meteorological origins. They both evoke conditions of space where material fixity is diminished in favour of dynamic and indeterminate relations. Atmosphere acts as a medium, ‘making the immaterial material and establishing a blurring between substance and medium, mergence and emergence.’ (Jenner 2013: 13). So sfumato is both an atmospheric architectural condition observed in the work and a model for conceptualising practice as a continual state of one thing becoming another.

Sfumato as a metaphor of graduated variations is mixed with another, similar idea: that of chiasmas. I take sfumato gradation to be an active process, rather than a static, blurred result; sfumato is a space of crossing and transferring between the various lights and darks that make up practice. The final section of this PhD points to ways in which practice can intensify this chiasmatic characteristic, in a section entitled Sfumato Variations.

Sfumato Variations identifies trajectories for future research. A set of practice strategies to address these research trajectories is also outlined, drawn from my past and recent practice. These involve a mix of drawing, making, recording and redrawing. Sfumato practice is proposed as a future practice that explores open potentials in practice-as-drawing, as part of ongoing practice research. Experimental making, installations and academic publication are seen as the main ways in which the research is conducted, but it also lies in with future practice in a more conventional sense, in terms of built projects. The Sfumato Variations section outlines the parameters for such a practice in its discussion of variations and strategies. The variations are drawn from observations in my practice and are necessarily contingent — and in continuing development — but are directed at ways in which sfumato practice can be a process of continued becoming, and as such an open work of drawing.

The variations chosen for further exploration are: Marks, Scale, Form, Jolts and Lensing. The first set, Marks, looks at the crossing of analogue and digital marks with atmosphere. It speculates on ways in which open-ness in the actions and materiality of drawing can find presence in the built; how it can have the potentialities of a sketch. A spectrum approach to what is considered drawing, or a mark, is taken, such that marks can be anything from a line on paper, in digital space, or one made through an act of building.

Scale is the link between marks and form and as such is the second characteristic. Scale looks to find ways in which scale can intensify a hovering between drawing and building. It attempts to create situations where multiple scales are present simultaneously, such as in a surface that alludes to texture and landscape terrain, and situations where the drawing is at the same scale as the built object, and so merges with it. Scale speaks of the correspondence between things so is inherently chiasmatic, it is effectively a strategy that deals with intensities crossing between Marks and Form.

The third set of strategies, Form, explores ways in which forms and materiality in built space are agential
in a work of opening. It looks at the recalcitrant potential of materials and their force on form, surface and ornament in the built. It sets the scene for drawing experiments in building.

The fourth, Jolts, looks at the capacity for things to impinge and jolt the process of ideation, such as in episodic repetition or the feedback from materials, both physical and in terms of digital media: elements of emergence, accident or other obdurate agency.

The last, Lensing, proposes a capacity of Sfumato practice to act as a lens, a way of drawing out intangible characteristics from myriad contexts within its sight. This engages with practice’s capacities to be ever emergent and productively uncertain and uses them to observe other conditions that involve similarly complex, chiasmatic characteristics. It discusses ways in which practice can be a mode of observation, in a similar sense to drawing, and as such an aesthetically imbued lens.

Sfumato Variations maps out future research into Sfumato practice as an open work, engaging the shared space between drawing and building.

**Chiasmas**

Practice is inherently chiasmatic, not least being the relation between drawing and building. This PhD looks at potentials in what I am calling Sfumato practice’s chiasmatic potential. By this, I am referring to the active crossing of atmospheres between drawing and building, and other, similar, interactions between disciplinary boundaries. Chiasma, or crossing in the sense used here, takes sfumato variation as an active condition; where things are in a constant state of becoming one thing or another; actively crossing and transferring. I see this as integral to my work as having open potential.

I borrow the use of chismatic from Marco Frascari, who borrows it from literature, and mines it for its etymological and metaphorical possibilities. Chiasmus is a literary metaphor of complex crossing where the things crossed are always in mutually dependent flux — not simply in sequence or transferring from one to the other but merged, overlapped or in vibration. Frascari uses the term to merge concept, thing and embodied making, and I use it for these crossings, but also to form an image of a practice that might operate between drawing and building; I have progressively zeroed in on the movements in the X marking the shared space between drawing and building.

The intention is to focus on the transferral of these atmospheres rather than on how they manifest themselves each side of the projective gap, between drawing and building, and to generate something in-between; not one or the other but a spatiality in a continual state of (incomplete) exchange; an atmosphere of transference. This allows the research to speculate on crossings and short circuits between drawing and building and their active and object characteristics, such as how gestures cross with built space, or how acts of building might be seen as marks. This chiasmatic relationship is developed as part of a Sfumato practice that is an open work of drawing — using drawing/building as the medium.

**Experimentation**

A desire for experimentation is an element of the practice that is consistent throughout. It is, I think, a key component of the proposed Sfumato practice. Experimentation, and speculation, have an etymological relation to viewing and specular reflection — bringing to mind the curious flashes one might see from a distant hill when the sun catches a pane of glass, tiny in comparison to the landscape but suddenly dominant. Experimentation involves a similar double of looking and reflection. To experiment is to find out by looking in order to un-see, in a way, what I refer to as a productive state of unknowing. This is a factor of drawing and is by no means a new idea. Leonardo argued for the necessary uncertainty of the line in drawing. He argued for drawing to be ongoing and open in its flux, as noted by Faust:

_Demonstrated by the welter of pentimenti that made up his preliminary sketches ... Leonardo conceived of the sketch as a liminal stage, a stimulation of the mind to further investigations, not a preparation for a particular work. In his concept, drawing becomes a “process which is constantly going on in the artist’s mind,” and instead of fixing the flow of imagination, the uncertainty of line keeps it in flux._

_Faust 2012:81_

Experimentation is loaded as a scientific term and implies rigours of empirical testing — but its use in art practice is freer in approach; part of experimentation’s etymology connects to magic, from old french, _esperment_ meaning ‘a practical knowledge, cunning; enchantment, magic spell’, (Online Etymology Dictionary: accessed 26/07/17). So the pursuit of unknowns through non-linear means is not incompatible with the term. Artistic experimentation is closer to play and the maintaining of uncertainty, while pursuing and capturing moments of certainty. Agamben and Deleuze note the importance of maintaining this curious state of experimental uncertainty, allowing things escaping reason to remain elusive. Anita Seppa, in an article on the Experimental Research Pavilion at the Venice Art Biennale 2015, has this to say:

_The positivist and utopian tones of modernity have largely been replaced by epistemologically_
more complex, even messy, forms of knowing, participating and presenting, that now also guide many activities of art and science. As Giorgio Agamben and Gilles Deleuze suggest, the potentiality inherent in this 'new logic' can be developed further only by a refusal to represent issues and phenomena that in themselves escape representation (Agamben 1999). In other words, we need to understand that 'potentiality,' be it artistic, scientific or whatever, must remain 'enigmatic yet non-arbitrary; in short, a new logic, definitely a logic, but one that grasps the innermost depths of life and death without leading us back to reason.

(Deleuze 1997:82). Seppa 2015

This raises the question of how the results of the experimentation, in art or architecture are articulated. This is necessarily a paradox. Academic reflection — writing — gives contextualisation for the speculations, while building another edifice, but in the end the articulation of the results is as much bound into the work as it is articulated in linguistic terms. Art practice is recognised as a generator of new knowledge through these non-certain means, and the articulation of its experimental results is deemed to be bound to the artwork — but architecture has a strong desire to explain, and account for itself. I suspect it is focussed on certainties and legitimising because it is a useful discipline. I suggest that when viewed as a tool for experimentation, architecture practice’s value is demonstrated or exhibited in similar ways as to art: in the work, which combines act and thing.

Evidence: Ten projects

I have selected ten projects to use as source material, or evidence with which to build an image of Sfumato practice. Within these, three primary case studies pick up on significant shifts in my practice: Te Papa, which was a representational ‘open work’ of paper architecture, dealing with interpretation, White House, which was a transitional work that mixed representation with gestural, non-representational concerns, and the Concrete series which explored the entanglement of representation, materiality and spatiality. These case studies, along with elements of the other eight projects, are expanded upon through traversing their various evidences in the contour chapters. The evidence is accompanied by a discussion of conceptual resonances intersecting with the work.

The image of my practice as a cloud allows me to look at individual marks as evidence. This gives licence to ‘put on hold’ the conceptual schemas that surround the works in order that other things might come to light. Things in the process that normally get cleared away in the pursuit of an ordered and solid built result are brought into the foreground as possible evidence. Writing, acts of making, or other part of the process are considered as marks, and as such practice evidence. The dispersal of my practice into a cloud of evidence points to the practice being a single project; evidence is played out in various ways, across drawings, installations and buildings.

So, I have taken a wide view of what constitutes evidence in practice. Traditionally, building takes centre stage as the most important evidence of practice, being the largest and most weighty materialisation of intentionality in designing. I would argue that there is a lot of other practice evidence that is not privileged, such as marks, gestural performances and the performances of materials and making. I am pursuing these as evidence in concert with the built evidence. I also see the curation of practice work in installations and writing as evidence. These are components of the discipline that de-stabilize conventions of what should be considered practice evidence. Installations and writing are lenses on practice at the same time as being evidence in their own right. They each have a particular spatiality that can inflect practice. I have pursued this potential in the writing and installations that are included in this research. The focus in this PhD is towards a wider evidencing of practice.

Contribution

This research makes an original contribution to the knowledge of practice, through articulating how a Sfumato practice, hovering between drawing and building, opens understandings of practice and architecture. It attempts to distil practice as open, nascent and potential, as an extended practice of drawing. As such, the research contributes to understandings of practice as an open work.

The work critiques the representational hegemony of drawing practices, where drawing is separate to building, and condenses the power of building as a thinking tool and open mode of observation. It contributes to knowledge of practice as a mode of discovery with productive uncertainty.

The research into practice as an open work contributes to a body of research, of how practice is an aesthetic mode of discovery. This also ties in to work in art practice that looks at how art practice is inherently open. These are methodologies that engage the open-ness of creative production as a way to pursue unknowable conditions, while at the same time maintaining their indeterminacy.

This research contributes to knowledge of practice articulation through various built works, installation projects and academic writing. Work created through practice produces new knowledge through its process and artefacts. The articulation of this knowledge is primarily embedded in the work, but is added to through academic reflection and publication.
In my opinion the poïësis of a project lies in its open indeterminacy. To me, designing is a process of pursuing indeterminacy while at the same time not determining it. The question is how does this open-ness and indeterminacy relate to architecture as a solid, heavy, constructed artefact? How might this open poïësis be present and cross between the various events and objects associated with practice? How might practice be generative of this open-ness through its many procedures and occupations — through its marks and marking as a practice of drawing? This PhD attempts to set the parameters for work to expand these questions and in doing so, contribute to the knowledge of practice.

Methodology

The research is carried out through reflecting on my practice and finding ‘questions to which the work is an answer’ to paraphrase Hans-Georg Gadamer (Gadamer 1975: 333-34). This places emphasis on practice as both the subject of the research and the mode of its discovery, and as such is necessarily fluid. Being practice based, this PhD does not attempt to legitimise its questioning through theoretical argumentation — it researches through knowledge embedded in the processes and outcomes of practice. Within this however, the observation of my work has been framed in a particular way. I am interested in where the work is uncertain and uncontrolled, where it evades interpretation and where the immiscibility of drawing and building gives way to a blend of logic and alogic (Elkins 2007). Throughout the PhD I look for aleatory possibilities in practice that might promote indeterminate, open discoveries.

To achieve this I traverse evidence in my body of work, looking closely at practices of drawing and building, installations and writing. Early in the PhD I reflected upon the gestures and materialities in mark making, and their atmospheric presence in built space, in a series of diagrams. I went on to extend the findings of this exercise through a series of curated exhibitions and installations. These progressively zeroed-in on the space between drawing and building, in order to prise out its open potential. These variations pointed to capacities of open-ness in a sfumato mode of practice, which are commented on in this document. Sfumato practice is proposed as an ongoing practice that is a methodology to continue to explore these capacities in detail.

Part of the motivation in this is to crystallise practice methodologies that are experimental, engaging uncertain potentials as creative agents. These are important to a creative process that allows ideation to be jolted through a shared authorship between architect and materials and phenomena in the process. Non-semiotic marks are an example of such agents of uncertainty. These can jolt the designer to escape the totalising effects of reason; space is shaped by taking these uninterpretable marks into account, and it becomes designed partly by human, partly by the messy contingency of the drawing medium. The intention in this study is to make practice the drawing medium.

Research Context

This PhD attempts to distil a sfumato view of practice by looking at formative forces between drawing and building, using my practice as source material. This interest springs from a tendency in my practice to pursue architecture that is close to drawing, and utilises drawing’s power as an ever unfolding and indeterminate mode of discovery. It is driven by a curiosity about how architecture operates as a critical medium, not just in terms of discourse, with its linguistic sophistication, or drawing, which is sketchy and open, but in terms of built architecture, which is fixed and spatially powerful. It looks at practice as a medium that coalesces all these conditions, from indeterminate sketch to physically present building.

This interest inevitably focuses on creative dynamics in designing, looking to prise understandings from the messily detailed practice of drawing and making buildings. This causes the research to fall into several areas with attendant literature, as well as contexts of architecture, art and academic practices.

Drawing

One area is drawing, over which a lot of ink has been spilled. In this PhD, I view drawing in the sense of its actions and material; as a formative medium, one with ‘infinite renewal of ends’ and ‘ambiguous pleasures’, as discussed by Jean Luc Nancy. This framing of drawing is in counterpoint to discourse on drawing from the late 1980’s and 90’s, which was the academic context in which I was trained. This theoretical and historical context provides the backdrop for the practice work yet this thesis does not claim to comprehensively survey of the discourse. The Drawing contour traverses this context through charting a shift evident in the body of work, from a focus on representation, with a criticality paralleling language, part of the post-structuralist milieu of the late 1980’s, to a focus influenced by recent thinking on non-representation. This critical domain is figured by understandings framed by the body and materiality. This PhD approaches drawing as a merging of representational and non-representational potentials, and their attendant domains. The Drawing contour sets the ground for drawing to have criticality, to be a lens on contexts, but for this criticality to be supported by understandings that evade description in language, as well as ideas that are located within it. In this way drawing becomes a nuanced play of
the discursive and non-discursive, subject and object. This is a subtle inflection away from the linguistically focused, post-structuralist trajectories of theorisations on drawing, perhaps most exemplified by the work of Peter Eisenman. For Eisenman, drawing is a pure mode of disciplinary thought, close to theorisation and the syntactic rigours of language. This viewpoint relies on drawing being distinct from building, as he asserts: ‘“real architecture” only exists in the drawings. The “real building” exists outside the drawings.’ (Eisenman interviewed by Ansari 2013: http://www.architectural-review.com/view/interviews/interview-peter-eisenman/8646893.article). My position springs from post-structuralist theoretical tradition but bends towards a contemporary embodied/ conceptual/ poetic approach, for which Jean Luc Nancy’s Pleasures in Drawing provides a rich source.

The research also engages with, and critiques, the idea of drawing as a projective medium, as discussed by Robin Evans. I suggest that the one way vector between drawing and the built space projected from it can be thought of in other ways, as more of a complex crossing and transferal. This is traversed in the introduction to the Drawing contour.

This PhD also sits in the context of contemporary discussions of drawing as a hybrid of analogue and digital media and touches on research by people such as Roland Snooks. RMIT PhDs such as Riet Eekhout’s work on process drawing, Katica Pedisic’s work on 4dimensional space and Jo Van den Berg’s psycho-geographic drawings provide context in reflective practice PhD research.

Material Relations

Other areas that intersect with the PhD are materiality or material relations. This is a large contemporary area of scholarship, part of various turns in the humanities toward body framed understandings and away from linguistic interpretation, and is relevant to practices of drawing and making. For instance, Karan Barad’s idea of relational ‘entanglement’ ties in to the approach of the research. Entanglements between material and non-material conditions in design are focused on as ‘mutually constituted’ to paraphrase Barad. Likewise research on the vibrancy of matter gives context to the PhD as in the work of Coole & Frost and Jane Bennett. The agency of matter is important to drawing, modelling, building and the occupation of space, so is a component of the context for this PhD research. Work on non-human agency and object ontologies is an example of the scholarship that surrounds these ideas. In this, writers such as N Katherine Hayles and Graham Harman speculate on the influence of the aesthetic point of view of ‘non-human agents’. Harman’s OOO (Object Oriented Ontology) expands on the aesthetic force of non-human agents, on the ‘shadowy subterranean depths’ an object-in-itself possesses (Harman 2011: 5). Hayles extends his work, posing problems for aesthetic theory, when the centrality of human sense experience is jolted to include aesthetics inherent to objects. She asks: ‘What would it mean, then, to imagine an aesthetics in which the human is decentered and inanimate objects, incapable of sense perceptions as we understand them, are included in the aesthetic experience?’ (Hayles 2013: 59).

These ideas are key to research into aesthetic feedback in designing. They point to interesting shifts from aesthetics centred on human perception to aesthetics shared between both human and non-human. The thesis follows the view, articulated by Giuliana Bruno and others, that matter is always in formation and in relation. The research extends these ideas to speculate on an architecture that is always in a state of becoming. This is extended to a set of trajectories and strategies, identified as sfumato variations, to explore practice as an open work, through its multiple material relations.

Atmosphere

The work also ties into research in building, in terms of scale, materiality, and atmosphere. This is linked to, for example, Peter Zumthor and Gernot Böhme. I have used Böhme’s approach to atmosphere as a beginning point. I am looking at atmosphere as something in active transference that crosses between drawing and building. Böhme’s work on atmosphere is primarily to do with built space, but my research uses his work to speculate on how atmospheres might commute back and forth between drawing and building.

The performative

There is a thread through the work that connects to ideas of performance and the performative. Much of the project work expands on how drawing, as performative act, links to parallel performances in the embodied occupation of built space. The thesis charts how the manifold performances and performativities in practice have ‘formative force’ in prompting aleatory, uncertain and contingent possibilities — open possibilities in a sfumato practice.

The research context for these two inter-twined terms is broad and crosses territories as diverse as theatre, art practice, cultural geography, philosophy and speech act theory. In the latter, the genus of the term performative is connected to the speech act theories to John L. Austin. This connection was expanded upon in a co-authored article in an A ranked journal, Interstices Journal of the Arts, discussing the performative intra-actions in drawing the White House project and serves to contextualise the terms performance and performativity within contemporary
discourse:

Performativity has its origins in the philosophical discussions of John L. Austin, particularly in his work on speech act theory; speech as not only describing an act, but in itself performing an action. Performance and performativity, within the so-called performative turn, have generally been collapsed, despite their different origins, and are often interchanged and used at cross purposes. This is manifest in the continual rendering of performativity through the lens of performance (Steiner 2003: 187, Butler 1993, Campbell 1992, Nicholson & Seidman 1995, Parker & Kosofsky 1995). Within architecture, this shift to understand drawing, the built form and occupation through performative understandings is seen, for example, in the works of Jane Tormey, Peter Wood, Neal Leach and Iain Borden. This paper is grounded in such debates, which shift towards considering processual and performative relations between architecture and the body; but we also move towards a composite of performance and performativity to describe the complex and dynamic relations of drawing. In this paper we argue that interleaving these two terms allows a productive way to approach the complexity of drawing practice, where discursive and embodied acts inherently cross.

(Twose, Smitheram 2010: 51)

The article goes on to elaborate manifold intra-actions between matter and human in the drawing of the project, arguing for more than a one way causality of the human, painting a picture of drawing and building as inseparable performances. This is an example of how the performative and performance have been employed in the thesis to distil understandings that straddle the material, discursive, thing and doing. The terms surface in discussions of process, in analogue and digital drawing, and the aleatory potential of materials, models and the aesthetic force of built space. These discussions are tied back to discourse surrounding the terms but, being practice reflections, are not intended to be literary exegeses of the terms or their discursive context - rather, they are a ‘way in’ to the practice evidence, in order to winkle out its internal mechanisms.

Diagram

In the thesis I employ diagrams to expand on characteristics of dynamics in the work, both seen and unseen, discursive and non-discursive. An example is the Draw/Build diagram on the cover of the blue book. The diagram is thus a (drawn) term that evokes a body of discourse. I will briefly discuss the context in which my use of diagram, as a term, is located:

Diagram has an attendant cloud of discourse, from its theorisation in the 1980’s through to contemporary explorations influenced by computation. Diagram research traverses a landscape of characteristics attributed to diagrams and diagramming in relation to architecture: a capacity to abstract non-material or relational phenomena, an ‘abstract machine’ ... to understand ‘a map of relations between forces’ (Deleuze, paraphrased in Garcia 2010: 24); a device to understand intersections of concept, ideation, architecture and theorisation — the ‘becoming-present of presence’ — which, in Eisenman’s view, sets possibilities for non-presence, ruptures of signification and connections to writing (Eisenman 1999: 4). Diagrams have been theorised as ‘intermediary to the production of space’ (Eisenman 1999: 95), ‘performative rather than representational’ (Vidler 2000: 4), and with totally open downstream implications (Schumacher, Garcia 2010: 261). In much contemporary work, such as Rem Koolhaas and Lars Spuybroek, these implicit aspects coalesce, with diagrams becoming the architecture itself.

In recent research, diagrams have been used to drive the formation of space, particularly in digital projects. In Philippe Rahm’s work, for example, diagrams are ways to understand intensities and contingencies of atmospheres, both physical and sensorial. They are ways in which qualitative and quantitative characteristics can be materialised in space, through digital simulation and analogies: constructing space from its immaterialities through the coalescence of diagrams into space, with the aid of computation’s capacity to model multiple relations. Roland Snooks’ work is an example of this, where diagrammatic simulation of relations, such as multi-agent algorithms, capture the nature of swarming, and become an aesthetic and architectural vocabulary.

Diagrams thread into and out of discourse, materiality, language and spatiality. They remain mysterious elements with a propensity to shift between thought and material, aesthetics and information. My work connects to these discourses yet leans towards diagram’s generative and transformative possibility. As well as being ways in which abstract intensities can be ‘marked’ or made evident, diagrams are generative, they are ‘reservoirs of potential … the motor of matter’ (Kwinter in Garcia 2010: 250). Diagrams have the ability to distil new modes of working and thought, through their inherently open and mutable capacities; their open-ness is achieved through an ongoing maintenance of latency. This ties in to my practice. I pursue latencies within drawing, as materialisations that are necessarily incomplete, in an attempt to invest architecture with a poïetic open-ness. In this way the diagram is an appropriate adjunct to the research, it being steeped in latency and material ambiguity. It is a way to think of my practice as ‘highly obscure, esoteric and personal, and made, used and experienced in such uncertain mental states, contexts and conditions that they can be considered, in Umberto Eco’s sense, polygous, ‘open works’ …’ (Garcia 2010: 25).
The research in this thesis uses diagrams as abstract explanatory tools — but they are not seen as distinct from the drawings, or even other manifestations of the design process, such as built space. The thesis attempts to bring a diagrammatic form of visualisation, which is necessarily multifactorial and evades translation into material, into the materiality and performance of drawing and building. I don’t see diagrams as separate to other, more descriptive representations in the design process, but in a kind of creative collusion. To give one example: In Matter: Recalcitrant Lines I give a brief account of an exercise in diagramming. Using many layers of scruffily hand drawn diagrams, I investigated the materialities and gestural pleasures of scruffy, hand drawn architectural drawings. In this, the diagramming project merged with the drawing project, the White House, and the plethora of diagrams created a palimpsest of butter paper overlays that paralleled the drawing set they analysed. They began to merge with it in aesthetic terms, resembling the curved compositions bound into to the drawings. In doing so, the diagrams became like the drawings, and rather than completely describing the drawings in analytical clarity, were equally mysterious, covalent artefacts, requiring the same degree of interpretation. The diagrams were thus generative of new possibilities: the drawn analyses of practices within drawing, provides source material for further practices, drawings and projects.

In a similar way to how drawing and building are used as both verbs and nouns, and in productive pairing with one another, diagram and drawing also vibrate. They are terms that terms that are multiple within themselves, alluding to both artefact and a set of actions — diagrams and diagramming, drawings and drawing — and also cross with one another. This is consistent with the thematic of sfumato, where things are not singular, but instances of tone in a multiplicity of tonal gradation.

**Practice contexts**

I am within a community of practicing architects. The practitioner with the closest, personal, resonance with my practice is the late Rewi Thompson, who I shared an office with for many years and with whom I collaborated on several projects. Rewi had a very conceptual approach that focussed on Mātauranga Māori, or Māori knowledge, described as ‘the knowledge, comprehension, or understanding of everything visible and invisible existing in the universe’ (landcareresearch.co.nz, accessed 2/02/17). Rewi’s practice focussed on distilling intangibles, and his thinking was very influential on my practice. Architects looking into atmospheres have resonance with the practice, for example Peter Zumthor and Stephen Holl. I touch on Zumthor’s thinking on atmosphere in the Building contour but do not survey the work of architects working in areas of atmosphere or phenomenology. Atmosphere is a component of my research but I am taking a less phenomenological line than these architects; I am using atmosphere more as a vehicle for presences that are in vibration between representational and built conditions. Architects who work with surface and materiality also have resonance, such as Herzog & deMeuron and Reiser & Uemoto. Architects with a literary or critical component to their work, such as in the process based work of Eisenman and in the experimental work of Diller & Scofidio + Renfro are also figures whose work intersects with my own.

Uncertainties in architecture, particularly in representation and acts of drawing, are researched by Nat Chard and Perry Kulper, and their work resonates with my practice, particularly in its ambition to intensify uncertainties in drawing and building. I have noted elsewhere that my work is not exactly the same as that pursued by these architects, nor is their work exactly the same as each other, but their experimental focus resonates with the desire to shift away from known and towards less known ways of working, which is prevalent in my work.

My research is often installation based, so it intersects with art and architecture practitioners working in this area. In these, Mark West of C.A.S.T. is an example of someone who practices in a speculative way using 1:1 scale and actual material (concrete) as in my installation work. West’s work allows for an aesthetic agency that hovers between representation and built artefact, and, as huge sculptural objects, have a strange presence that shifts architecture away from function and occupation and allows for scale, materiality and a clear record of design actions to have a force in the final form.

Ensamble Studio, who directly scale up cast models to massive, full size cast sculptures, also have resonance with my installation work. Their full size models, cast in concrete, embrace material agency and question the purpose-ness and inhabitation of architecture. They are formed by simple acts of casting that are uncontrolled, and are textured by the marks in their design process.

Art practice continues to be an influence in my practice, in work such as Skulls, by Robert Lazzarini. Skulls (2000) exhibited 1:1 replicas of human skulls, 3D scanned, distorted digitally and 3D printed in bone. The resultant sculptures shifted an inherently known object to one where the plastic deformation, possible in digital space, became apparent. Skulls allowed a physical portal into the plasticity of the digital medium.
Assemblage of analytical diagrams from PhD process.
as a material. Art practice has the freedom to problematising which places it in a critical relation to architecture which generally has the onus of problem solving. By shifting architecture close to the critical motivations, and the problematising potential of art practice, fundamental priorities of architecture can be reimagined, such as its design, materiality, form and occupation. The work of artists such as Olafur Eliasson, Fred Sandback, and Mairin Hartt also have resonance to the research.

Sfumato practice is situated within this contemporary framework, of which a few examples are described above. It is predominantly based on my body of work in a conventional industry setting — New Zealand commissions in which I have endeavoured to pursue an experimental approach — but also draws from recent work in academic practice, such as installations and publications.

**Architecture and Art practice Research**

The research context also includes various debates on the agency of experimentation in architecture practice research and art practice research. Art practice research methodologies are relevant to this PhD, as in the art discipline there is a focus on maintain unknowing-ness, while pursuing knowledge. James Elkins writes on this area and one of his articles is a key text for the PhD. Sarat Maharaj has been particularly useful in this area, arguing strongly for the power of creativity as a research tool; he expands on the necessity for no-how over know-how, or methods of research that are non-linear, unplanned and give rise to unexpected outcomes.

**Practice research**

This PhD is in the context of architecture practice research, particularly that of reflective practice, following the RMIT model. It connects with the work of Leon van Schaik, Richard Blythe, Marcello Stamm, Peter Downton and others who are researching the particularities of knowledge discovered through practice.

The research in this PhD is generated through practice. A component of that practice is writing, but the research does not attempt to give a comprehensive account or close reading of the many areas of discourse that surround or intersect with the practice. Ideas from the various discourses that form climates for the practice, are touched on where they resonate with the work.
Thesis Structure

Drawing/Building/Cloud/ is structured as a series of movements through the cloud of practice, charting its contours yet contouring the cloud as it does so, like running your hand through smoke in an attempt to trace its shape. This is an aesthetic decision, to imagine the PhD dissertation as a material with nebulous qualities similar to those observed in the practice. This makes the document an assemblage, with clusters of ideas that come into focus as the cloud is navigated, similar to the way directional clusters come into focus in the Familial Clouds installation or Concrete /Cloud/. As such the document is not entirely linear and ideas fold in to one another as it progresses. Despite this, the document is organised into discrete sections. Four contours analyse and reflect on the practice material. These navigations through the material highlight key moments and shifts in practice as an open work. A section follows the contours, distilling these as sfumato variations.

The following is a brief summary of the sections in the PhD, as a snapshot of its structure.

Cloud/

The exegesis begins with a section entitled /Cloud/. This section introduces the cloud as a spatial organising metaphor for the PhD. It is accompanied by a collage which gives a sense of the practice and various aspects that are in dynamic relation within it. It shows drawings, lines, atmospheres, models, construction and conversations — visual material sampled from the process of the ten projects. These are composed as an assemblage, to allude to open associations when drawn into proximity with one another. The intention is to introduce the idea of a body of work composed of disparate aspects in tensile inter-relation, as if in a cloud. The dispersal of the body of work is seen as a way to make it useful as source material to generate something further to it, so /cloud/ is an idea of both a relational assemblage and the formative potential of practice.

Contours through the /Cloud/

This material in the cloud is traversed in four ways, discussed in four sections entitled Contours. These are largely analytical and reflective. In the contours, the material in the cloud is sampled in various ways to shape a topology of acts, fascinations, pleasures and tendencies in relation to feedback; resistances and affordances. Contour sections are organised in response to iterations in the practice’s design process: a section on Drawing is followed by Building, then Redrawing, and Drawing/Building, which explores the space between the two. The contours are selective of the project material and follow threads within it, breaking out prevalent themes and tendencies. Each contour ends with a discussion of resonances in the practice to the practices of others, as a way of contextualising the PhD in terms of intersections with figures, writing and works.

Contour 1. Drawing

The Drawing contour covers the background to drawing in the practice. It charts how my practice has morphed from an interest in representation, in analogue drawing, to more material and non-representational concerns. The matter of drawing is addressed; its marks and its propensity to be an ambiguous restraint, its potentiality and its transferences to building. The section ends by traversing resonances in the work with writing and the practices of others.

Contour 2. Building

Building contours the cloud of relations surrounding the space as a built, material fact. It attempts to discover how a practice of designing and realising buildings, and the built artefacts themselves, might contribute to an open poiesis. Building begins with space, looking at atmosphere’s transference, and moves through to representation, ultimately questioning whether building is a mode of representation. A section at the end attempts to locate the work within wider discussions.

Contour 3. Redrawing

The Redrawing contour looks at the redrawing of projects, or the tendency of one project to lead to another. It reflects on installations projects which have re-cast the practice in other spatial configurations and provided a lens on practice as having a dynamic spatiality in its own right.

Contour 4. Drawing/Building

The Drawing/Building contour charts the shared space between Drawing and Building. This contour looks at the elements of my practice pursuing the potential for architecture to be unfinished and ambiguous; a space of becoming between drawing and building.

The Contours are a way of ‘writing through’ the cloud material, in order to understand it. As such, the contours shape the cloud of practice as much as record its contours.

Sfumato Variations

This Sfumato Variations section draws from the contour sections and pulls together the results as a
proposed model of Sfumato practice. This is a practice that operates as an open work, as a mode of drawing. I have identified four areas for further study: Marks, Scale, Form, Jolts and Lensing. These are chiasmatic, in that they all involve intensities crossing between drawing and building. They are designed to provide the basis for future research in practice as an open work, through installations and building projects. A summary of a working method for how Sfumato practice explores these areas is outlined.

Ten Projects/ Case studies

There are ten descriptions of key projects. They form the material for the PhD discussions in the contours and the Sfumato Variations. The projects are introduced briefly as they come up in the contour discussions to give the reader some background to discussions of evidence associated with them, be it marks, atmosphere or other aspects. Brief descriptions of the case study projects are also appended to the dissertation. These can be read separately to the contour sections, or in parallel.

Design of the Dissertation

The hard copy of the dissertation has been carefully designed as a project in its own right, and is an attempt to collapse the cloud of practice into the form of a book, or books, there being eleven. The book was a collaboration between designer Craig Christensen and myself. The design of the book stems from installation works in the practice, such as Familial Clouds, where visual and textual evidence from the process of designing was arrayed in space to allude to elements in designing that evade representation. Installations such as Familial Clouds expand out into space, allowing drawings, writing, and ideas to prompt associations beyond what they represent in conventional terms. The design of the PhD document furthers this notion by assembling the various representations of practice, its visual and textual evidence, as a compressed installation, with images slipping around pages and text chasing image. The hard copy of the PhD document allows this compressed installation to expand out into space and find other associations through the performance of reading. By reading the book, the cloud is brought out of the book, becoming another cloud installation, authored by the reader and the material.

The book can be rearranged by the reader to break the linearity of chronology or argumentation, and allow the visual and textual evidence in the cloud to be active in generating understandings that are sfumato: they prompt understandings of practice that hover between space image and text, allowing them to impress their agency as artefacts on the ideas flowing through the thesis. This ties in with the ambitions of the PhD to pursue such nuanced and elusive, sfumato understandings.

Relation of figures to text

The electronic version of the dissertation holds less possibilities for physical rearrangement than the hard copy but maintains the notion of a cloud of images and text in relation. The figures are closely tied to the text as it unfolds, however, and their role is to illustrate the text while maintaining an aesthetic agency independent of it. The captioning of the images augments the arguments in the text and has an explanatory purpose, following the descriptive conventions of captions, but the text in the captions is also a parallel narrative that flows through the dissertation. The document can be read by navigating the image caption independently of the main text. While key images are referenced, others are to be read contextually. Assemblages of images are captioned as a group, individual images captioned individually. The assemblages bring together images in cloud-like arrangement to aesthetically support particular aspects discussed in the text. The individual images highlight or illustrate discussions in the text, as well as being part of the overall flow of material through the document. The image references reflect this and note the intention behind the assemblages and the role of the singular images.

End word

My work is figured by a desire for complexity. I see this complexity in elements of practice that are not singular: things that are merged, multiple, or otherwise in vibration, hovering between many possibilities. In the end, I see this as how work becomes poetic; it has a recalcitrant, shifting open-ness that evades totalisation or easy categorisation. Poïēsis (Ancient Greek: ποιήσις) is a subcurrent within poetics and is related to technē, or the making of things; the formative, becoming of form. In Heidegger’s words: ‘technē is the name not only for the activities and skills of the craftsman, but also for the arts of the mind and the fine arts. Technē belongs to bringing-forth, to poïēsis; it is something poïētic.’ (Heidegger 1977: 5). I am associating poïēsis with an ongoing pursuit of openness, as in the work of drawing. This PhD attempts to extend drawing’s poïēsis to practice, to the things it draws, draws with and draws from.
The printed dissertation is a project in its own right, and is an attempt to collapse the cloud of practice into the form of a book, or books, there being eleven. The book was a collaboration between designer Craig Christensen and myself.

Drawing/Building/Cloud/ consists of three document types: a blue book containing analysis, ten booklets that capture project case studies and ten small cards that condense each case study into a single image and statement. The three documents are described below:

Blue book: The main document explores connections and parallels in my architectural and art practice. It examines where projects and processes blur — cataloguing and analysing these interactions — assigning properties and virtual mechanisms, explaining physical, spatial and emotional states. The front cover features one of these virtual mechanisms; the Build/Draw diagram.

In the Blue book, Images play an essential role, flowing through the spreads, connecting with concepts explored in the text. A large foldout section introduces the /Cloud/ as an assemblage of images. This alludes to my practice as a cloud of source material with multiple elements at play in its ‘transformable form’. The dissertation is structured as a series of traverses through this cloud of source material. The soft cover supports this movement; it helps the publication feel malleable and reduces the physical barrier between the Blue book and the smaller books that follow.

Project books. The second document type is a set of ten individually bound books that are designed to showcase the key case studies. The layout of each book is simple and restrained to balance the floating cloud-like approach in the blue book. Each booklet has a diagram locating the project within the Draw/Build diagram. A delicate matt paper stock was chosen to give the project books a different feel to the blue book: to give them a lightness.

Project cards. The third component is a set of ten cards, each containing a single image and short description. These cards provide context to the abstract concepts in the main document. They are loosely placed within the main text and can be moved, to allow them to be freely associated with other text and images.

It was key that these separate components felt like one document that can be disassembled and rearranged, rather than a collection of documents that have been brought together. To achieve this we made the Project books the same paper size, using the same stock and weight used in the leaves of main document. The Project cards slot neatly into the spine and interact with printed images. A dust jacket combines all the components together and is illustrated with a hand drawn cloud diagram, effectively wrapping the cloud of elements within a drawing.
Cloud is a body without a surface but not without substance . . . Although it has no surface, cloud is visible.

(Hubert Damisch)
Clouds are transformable forms, swirling masses of minute particles that gather, flow and dissipate. They are, in a sense, composed through immaterial constituents; pressures, forces, flows — motile forces made visible through infinite gradations of light and dark. Clouds have fascinated painters, aesthetes and taxonomists, who have romanticised, theorised or attempted to categorise their changeable forms. Their unpredictable and complex dynamics have made them useful metaphors for relational systems: data networks, geopolitics, global economics — weather-like systems with multiple internal forces and agents. They are also metaphors of subjective complexity; poetics, interpretative plurality, mood and sense. Clouds are fascinating as models of dynamic relation and as beautiful, evanescent formations.

/Cloud/ is a way of thinking of my practice as an associative spatial assemblage. /Cloud/ takes the motile, relational characteristics of clouds and fuses it with clouds’ poetic possibility; cloud becomes /cloud/. I have applied this blended metaphor to my practice, to imply that it is at the same time a relational assemblage — a weather system of factors — and something
with aesthetic agency; a cloud of practice with aesthetic ‘formative forces’ that point to potentials of open-ness. /Cloud/ is thought of, in this PhD, as a nebulous material made up of a diversity of content, spanning across a number of projects. I imagine my practice as a field of discursive and non-discursive evidence where things have crossed and transferred, one to the other. This intra-acting field is composed of such things as gestures, marks, matter, atmospheres and intentionality. The image of the /cloud/ allows me to rethink my practice as a single project, in order to discover the formative forces that might exist within it and the open possibilities they might present. It is a way of using the various things that spill from the practice as source material for the PhD.

/Cloud/ is written with slashes either side of it to pay homage to Damisch’s use of the word in A Theory of /Cloud/ (Damisch 2002). Damisch develops the notion of /cloud/ as a theory that merges literal cloudiness, interpretative possibility and perceptual registers in painting. He uses the notion to reassess traditions in western painting. Damisch looks at examples of clouds in paintings, such as those by Turner,
to weave arguments that merge cloudiness in a literal, pictorial sense with clouds’ inherent capacities for indeterminacy. This merges cloud as a sign, in painting, with the performance of their viewing. Rosalind Krauss comments on Damisch’s /cloud/ as:

... a thematic element — functioning in the moral and allegorical sphere as a registration of miraculous vision, or of ascension, or as the opening onto divine space; or in the psychological sphere as an index of desire, fantasy, hallucination; or for that matter, before being a visual integer, the image of vaporousness, instability, movement — the /cloud/ is a differential marker in a semiological system. (Haskell et al quoted in Daws, 2014: 25, 26)

I use /cloud/ similarly, in that I am thinking of practice as both a cloudy array and as something with conceptual and performative cloudiness. This allows me to think through the tensile relations between physical evidence in my body of work and actions in its design, so called formative forces that cross and transfer between elements in the /cloud/. 
I have an aesthetic predilection for clouds, or cloudiness, and they have found their way into several projects, such as the *Familial Clouds* installation, *Te Horo House* and *Concrete Drawing, Concrete Cloud*. *Familial Clouds* was an installation at Palazzo Bembo in the 2012 Venice Biennale. The installation attempted to spatialise the design process of two buildings, *White House* and *Concrete House*. The design thinking behind these buildings was demonstrated through a cloud of over 500 drawings and images, which were reduced to business card size and arranged in the gallery space. The material was clustered in differing orientations and densities that responded to un-representable events in the design process, such as indecision, dead ends, or frustration. This was a cloud-like curation of material from the design process. It attempted to make invisible factors in designing spatial by using them to compose clusters of miniature drawings and images in a cloud-like swarm. This curatorial technique has extended to the arrangement of walls in the *Te Horo House*, and the constellations of surface texture in the *Concrete Drawing* and *Concrete /Cloud/* project.
These projects are examples of how I see the spatial curation of my body of work as a /cloud/.

Part of clouds’ aesthetic pleasure, for me, is derived from its shifting characteristic across material and immaterial concerns. By seeing my practice as a cloud I can play with tensile connections within the evidence and speculate on ways in which they promote open-ness. I see the /cloud/ composed of things that are discursive, instrumental, technical, linguistic and also non-discursive; sensorial, material and atmospheric. I see it as a coalescence of representation, actions and material.

Clouds, or cloudiness, has long held fascination for architects, as observed by Mark Dorrian, who have an ambition to “transgress architecture’s disciplinary constitution... opening architecture onto what is taken to be excessive to it, or as mounting an assault upon it.” (Dorrian 2007: 7). Dorrian’s work on Clouds of Architecture is a critical account of architects’ recent desire for blurred, undifferentiated form, as a way to invest what they do with the poetics of nebular atmospherics, which he allies with stylistic ambition and a vaporising of architecture’s social responsibility. I use the cloud metaphor
in a different way to this. It is more an image of complex material and immaterial relations, rather than an aesthetic, stylistic condition. It is an aesthetic precondition for poiēsis; a cloud closer to the way Hubert Damisch describes clouds, as “matter” aspiring to form, something with ‘registers of infinite provisionality and immanence.’ (Damisch 2002: 35). I do like the idea, however, that the /cloud/ might, as a blurred atlas of practice, hold some potential to assault architecture’s disciplinary boundaries.

The project of this PhD is to understand the variations in this cloud of practice, and attempt to distil some of its sfumato variations. *Sfumato*, ‘sfumati’ or so called smoky quality of form was perfected by Leonardo da Vinci, and praised by Vasari as a ‘hovering between the seen and unseen’; it is something that prompts the perception of ‘a liminal space’ (Faust 2014, Elkin, 2011). Sfumato points to subtle blurrings in a cloud of practice that is composed of many subjective and objective things in complex relation. It is a way of thinking of practice relations in more detail, linking specific elements in the cloud that are in active crossing
and transference.

The figure illustrating this /Cloud/ section is an assemblage of images from selected case studies. In the hard copy of the dissertation it slips around a fold-out of several pages. The assemblage is to introduce the idea of my practice as a cloud of source material with multiple elements at play in its ‘transformable form’. The dissertation is structured as a series of traverses through the cloud of source material. These traverses, or contours, are a way of ‘writing through’ the cloud of material in order to analyse it and find sfumato variations within it. In the following chapters the /Cloud/ is traversed in four contours: Drawing, Building, Redrawing and Drawing/Building. The next chapter is the Drawing contour, which traverses the /Cloud/ to comment on the variations in my practice of drawing.
Cloud assemblage of source material from selected case study projects.
Lines seem to be so straightforward, propelling us from here to there with no problems: architecture loves lines. Lines that are continuous, doubled, intermittent, are deployed in architectural processes when building is in sight. The rationality of architectural processes, implied by the clarity and singular trajectory of lines, is a fiction that it is often expedient to entertain. The vast amounts of capital involved in construction, and the shared realm within which architects operate, might be seen to promote a version of architectural representation committed to logic and intelligibility.

Treadwell, 2013
The Drawing contour records a traverse of the practice /cloud/ following the thread of drawing. It introduces drawing as a phenomenon and mode of ideation and uses drawings from key projects to expand on aspects of my drawing practice. The material in the /cloud/ is sampled in various ways to shape a topology of acts, fascinations, pleasures and tendencies in relation to feedback; resistances and affordances. The agency of these is charted and major shifts commented upon. Some of the sections in this contour follow a chronological path through the work, and explain conceptual motivations that prevailed at the time, others pursue things peripheral to the conceptual overlays, such as in gestures and spatialities in the making of the drawings.

Projects that form the source material for this section, and indeed the PhD, are introduced briefly as their evidence comes up in the discussions to give the reader context. This somewhat departs from the /cloud/ idea, of an assemblage of evidence ranging across projects, but is necessary to give context to the discussions. The case study projects are also described in the projects section, and these can be consulted in parallel to the contours.
NOTES:
1. LAYOUT MATCHES FLOORING BELOW
2. SOFFIT AND CEILING BOARDS LINE THROUGH
3. CHECK BUILDING SETOUT AGAINST BOARD LAYOUT BEFORE COMMENCING WORK
4. CHECK ALIGNMENT OF WALLS/ROOF OPENINGS ETC.
5. LAYOUT IS BASED ON 128mm COVER TO HARDWOOD BOARD PROFILE
6. NO VISIBLE FIXINGS
7. CHECK LAYOUT OF ALL CEILING FITTINGS WITH BOARD LAYOUT
8. REFER DETAIL DRAWINGS

SETOUT POINT: C/L

INTERIOR

4864 : 38 BOARDS

SKYLIGHT

INTERIOR DOWNLIGHTS

EXTERIOR DOWNLIGHTS

This document contains important details and diagrams for the project. It is essential to review all the notes and refer to the detail drawings before commencing work. The layout is based on a specific profile and includes instructions to check alignment and layout against the soffit and ceiling boards. The soffit and ceiling layout matches the flooring below. It is crucial to verify all dimensions and check the layout of ceiling fittings. The setout points and interior and exterior downlights are also mentioned. The copyright of this drawing remains the property of Simon Twose Architect Limited.
The *Drawing* contour begins with an overview of drawing’s representational influence, *Drawing’s yield strength*, looking at how representation has been entangled in my practice over time. It then expands on the influence of other aspects shaping the practice, such as drawing’s materiality, potentiality, resistance and spatiality. It ends by traversing resonances in my drawing with writing and the practices of others.

**Shapes in this contour**
- Introduction: Drawing’s vector
- Representation: Drawing’s yield strength
- Potentiality: Pleasure in the aleatory
- Resistance/affordance: Necessary obstructions
- Matter: Recalcitrant lines
- Space: Collection, atmosphere, transference
- Resonances: Figures, writing, works
Introduction: Drawing’s Vector

To introduce this traverse, or contouring of my practice’s drawing, I would like to briefly discuss Robin Evans. He has been brought up in many of my PRS presentations and I have been forced to dust off my (nearly) twenty year old copy of Translations from Drawing to Building and revisit his magical writing. At the time of this seminal essay, drawing was in an ascendant position — elevated to the level of language, and to an extent, Art. His essay was within this climate and, while incisively critiquing the elevation of drawing as an autonomous art form or text, Evans still argued that drawing’s power lay in its separation from building, as a coded activity with ‘distinctness from and unlikeness to the thing represented’ (Evans, 1997, 154). He did, however, argue that the two are intricately connected in terms of their actions, and suggested the ‘corporeal properties of things made’, involving ‘substantiality, tangibility, presence, immediacy, direct action’ might not be incompatible with ‘disengagement, obliqueness, abstraction, mediation and action at a distance’ (Evans, 1997: 160). As an example of the interplay of drawing’s generative capacity with built space he analyses the dome at the Royal Chapel at Anet. He discovers that the swirling floor pattern, which depicts the geometry of the dome above it is an incomplete and vexed translation. He then mines this for its possibilities to bind representation and built space in complex, projective association.

To me, the one-way vector of projection implied by Translation separates drawing and building too comfortably and places emphasis on linguistic ways of knowing. In the climate of the time, drawing was seen as a tool for thinking that approached the syntactic and semiotic complexities of language, and its corporeal or material aspects were downplayed. Evans cleverly articulates the embeddedness of drawing in the shape and material of the built, but drawing is still assumed to be the precursor to building, which receives a logic cast onto it, a logic cooked up in a representational crucible that is coded, scalar and instrumental. If the basic tenet of a one-way vector of translation, from drawing to building, was intentionally misunderstood, what would architecture be as a result? Would building project towards drawing, or would drawing disappear altogether, and become fused with the making and matter of building?

These questions imply a circularity or short-circuiting of the projective vector of drawing. They are also questions that find their way into the circular draw/build diagram shown on the cover, and discussed later in this contour. The draw/build diagram takes actions and materialities in drawing, written as draw, and places them in a continuum with those of building, build. It is intended to show the two, as actions and materialities, in both a dependant circular relationship and also a blurring of one into the other. It is intended to allude to a mutual friction between them and point to the possibility of short circuits that might happen across the loop, linking one blurred draw/build condition with another. These movements, of crossing and transferring, are discussed further in the dissertation as being part of practice’s chiasmatic potential, and point to an image of drawing’s vector as smoke-like and aleatory. This loop diagram is used to describe many intra-acting relations in practice; collectively they describe looping eddies in the /Cloud/.

My work has grown out of the arguments surrounding the distinctiveness of drawing, which I pursued as a student. In many ways my current practice ties back to this context, of privileging drawing as a device for thinking, yet the influence of practicing in the building industry for twenty-five years has brought the physicality of building into the mix. I have gradually morphed the representational agendas from my student days through the influence of the messy and non-representational world of practice. This section of the PhD is an attempt to traverse and map such elements of drawing in my practice that might otherwise have gone unnoticed, and place them within a (metaphorical) spatial field, where they might superpose or otherwise productively relate.
1.1 Representation: Drawing’s yield strength

Drawing’s yield strength charts how representation intersects with my practice. I follow a largely chronological path through the practice work, beginning with a paper project from student days, the Te Papa project, jumping to practices of analogue drawing in an early built work, in the White House, and then on to more recent work that blends digital and analogue drawing with making, in the Concrete series installations. In this way, Drawing’s yield strength serves to introduce the key case studies in a practice that has focussed on drawing, as well as traversing them as evidence. The intention in this section is to discover how drawing has been formative in my practice and conversely, how my practice has informed drawing — focussing particularly on representation. I have thought of the relationship between the two as akin to working a piece of metal until it reaches its yield strength, stretching or bending it repeatedly until it becomes plastic — except, in this case, drawing and my practice both work on each other and become plastic by degrees.

Source material bound into Drawing’s yield strength:

Te Papa — Drawing’s observational force, 1988

White House — Representation mixed with performance, 2000

Concrete series — Shift to non-representation, 2015, 16

Keywords:
representation, criticality, projection, observation, order, language, performance, non-representation.
Te Papa: Drawing’s observational force

The Te Papa student project (1988) is a key practice moment that has a curious entrainment with later work. Te Papa was immersed in questions of representation as a critical activity. An interest (at the time obsessive) in drawing as observation, as a mode of ‘seeing’, has continued in one form or another throughout my practice, since this project, so I have had to accept, reluctantly, that Te Papa is a key formative work. My practice has shifted over time to a more blended way of ‘seeing’, mixing representation with influences of embodied action and built space.

A brief description of the Te Papa project is below, followed by a traverse of the project in terms of representation.

With the Te Papa project, I took the opportunity to embark on an exercise of museal collection and observation of architecture, through the closed circuitry of the paper project. Drawing, as a coded representational activity, was conflated with possibilities offered by text, as was the zeitgeist of the time, shadowing the act of drawing with literary ‘critique’. The project pursued an ambition to ‘lay patterns of imbalance within the fixity of interpretation’ (Twose 1988: 1) and was interested in developing a mode of observation where ‘a central gaze is inevitably in a state of fleeting to the periphery’ (Twose 1988: 1). This set up a design process where architectural canons and principles were reinterpreted in delicate pencil drawings, and so observed and ‘critiqued’ through acts of drawing. The results of these drawn observations were collected on large sheets of paper, to become the plans, sections and three dimensional drawings of a museum. The mythical, paper museum was thought of as a finished piece of architecture, despite it being made of only graphite marks. The drawings were not projective of a building, in the Evans sense, and in fact were considered to operate in reverse of this vector, and be an implosion of things architectural into a drawn world.

The museum was designed as a nine-square grid composed entirely of architectural exhibits. Exhibits included famous (largely unbuilt) architecture and art, student designs, representational techniques, such as perspective; mathematical and geometric constructions; linguistic codes and annotations, puns, in-jokes and absurd references. The architecture of each exhibit was ‘withdrawn’ though a process of drawing aspects of the exhibits in plan and section, then breaking them apart, assembling the fragments in other arrangements, putting parts in storage areas, repeating, recombining, and so on. The tiny drawings that resulted fell into place along the nine square grid, building up its form in an ornamental manner, piece by piece as the drawings progressed, without erasure or iteration. The drawings were painstakingly drawn in miniature detail to give the impression of implosive complexity and a concealment of authorship; they appeared to be drawn by something other than the hand.

recollections of early drawings, inventions, repetitions ... are repeated at various scales throughout the museum, down to ‘infinite’ levels, to imply some sort of contagion of the whole with the part: an ornamentalisering of the gridded system ... the exhibits in the museum making up the museum’s structure.

Twose, 1988, 36
**Te Papa** was a final year thesis project based around the design of a National Museum, *Te Papa Tongarewa*, which translates literally to ‘container of treasures’. The project was to design a National Museum on the Wellington waterfront. The museum was being mooted at the time and a building by JASMAX was eventually built. The studio project was entitled ‘The Construction of Order’ and focused on how the museum framed understandings through its taxonomic ordering of objects within it.

The *Te Papa* project was drawn in the context of the ‘paper architecture’ of the day and was part of the re-appraisal and elevation of drawing as a linguistic, coded mechanism. The project used the museum brief to engage with questions of order, ordering and collection. It was designed to be a museum entirely composed of its exhibits; every element of the building was a reference to or a manipulation of some key historical building, drawing, mathematical system or representational technique. The drawings were drawn with no rubbing out or amendments and were simply added to over the course of the design, like weaving a tapestry. The components of the plans and sections were drawn with precise, tiny lines that were intended to be more akin to surgical incisions than conventional iterative design drawings.
In the end, the museum was a self-contained series of pencil drawings that collected patterns of unseen things lurking within architecture, an encyclopaedia of slippery referents that wove a narrative about architecture other to it being a built thing; all painstakingly drawn in smaller and smaller scale as if by a machine.

**Corporeal dimensions**

*Drawings are graphic representation analogously related to the built world through a corporeal dimension and embodying in themselves the chiasm of conceiving and constructing.*

Frascati 1990: 12

Drawing, in the Te Papa project, was designed to ignore the material fact of architecture and its lived occupation. Similarly, the corporeal act of drawing was obscured. Drawing was used more as a method of observation or inquiry, looking into peripheral or less perceptible aspects of architecture. Things such as plans and sections, which normally cut through buildings and reveal logics not observable spatially, were used to cut through architecture as a discipline and put it under the microscope, or the knife, the drawings being like surgical sectioning. The results were tabulated in drawn, hieroglyphic taxonomies driven by an ambition for drawing to approach the sophistication of language.

The corporeal act of making these text-like drawings, however, was not recorded, and the lines were very ‘clean’; they did not reveal any human input. Each drawing was drawn in final form, piece by piece, through a little window of butter paper that was moved around the sheet, as is in a surgical operation. This kept the drawing free of any smudging. It also prevented an overall understanding of the drawing as a composition. There were no rub-outs or sketchy iterations; once one drawing had been committed to paper, the next had to deal with its predecessor, like weaving a tapestry one motif at a time. This was all part of the intention to ‘lay patterns of imbalance in the fixity of interpretation’, in this case unbalancing the drawer as an all-knowing author of the architecture being designed. These intentional constraints — the tininess and one-way additive nature of the marks on the paper, among others — aped the physical constraints of assembling building elements, that once installed have a finality to them.

This tendency to set up resistances of the material being designed to the actions of the designer, has carried through to later projects. In Te Papa, the imposed resistances, outlawing iteration and erasures for instance, made for delicate and deliberate marks, which contrasts to later work which deals with messy feedback in freehand drawing, such as in White House. Latterly, the physical world of materials and performance of making has been brought in a productive resistance, in such projects as the Concrete series commented on later in this contour.

**Te Papa as linguistic aestheticism**

*[For Vasari] the notion of disegno would make it possible to justify artistic activity as ‘liberal’ and no longer artisanal, because the word disegno was a word of the mind as much as a word of the hand. Disegno, then, served to constitute art as a field of intellectual knowledge …*

Didi-Huberman 2005: 78

Drawing, in the Te Papa project, was a way to ignore the material fact of architecture and its lived occupation, such that drawing might become a method of observation and a manipulation of ideas, approaching language. Similarly, the corporeal act of drawing was played down, despite being very present in the ‘impossibility’ of craft evident in the very small scale drawings. The project focussed on discursive understandings and proposed architecture as a solely representational activity, with all aspects of architecture contributing to a weird linguistic system that unfolded through the act of drawing. This made drawing/designing an active method of observing in a critical sense, and a way to dislodge habitual ways of seeing. More than simply spaces to be in, I wanted architecture to be a complex mode of thought and a lens turned in on itself.

What was not discussed at the time of Te Papa was the non-discursive force of drawing. As well as being a tool to critically engage with architecture, fuelled by the philosophy of the time, the Te Papa drawings distilled non-discursive, aesthetic conditions. The built drawings were austere, shifting, strange worlds within worlds — and there was a pleasure in this; making drawings that were like surgically precise incisions into architecture, as a spatial yet philosophical activity, was pleasurable. In a sense the drawings distilled a spatiality inherent to the discourse they engaged with, through the embodied, material exercise of making the drawings. Theory and to an extent, language was shown to have enigmatic and complex spatial qualities, which became aesthetically embedded in the drawings. In this way, the drawings were a kind of aesthetic lens directed at Language as well as architecture as a discipline. Despite not being foregrounded in the theoretical climate of the time, I did have the impression that highly theoretical work, such as Eisenman’s *Fin d’Out HouS* (Davidson, Allen 2006) seemed to distil strange philosophical worlds into an austere atmosphere.
Te Papa plan showing storage of wall sections, removed from elsewhere in the drawing set. In this case they have become floor patterns, lightly drawn, and made to interact with other walls. These are from another collection: they are L shaped remnants of vitrines dismembered elsewhere in the drawing set. The long distorted wall is from a sequence recording the rotation of ellipsoid geometry in Francesco Borromini’s San Carlino alle Quattro Fontane plan. Detail plan, 1988.
Through it being a mix of discursive and non-discursive characteristics, and spanning multiple spatialities, drawing is able to distill aesthetic understandings. To my mind, this is key to how drawing operates as a unique way of seeing, or a lens. My drawing of miniscule, coded plans and sections extracted aesthetic understandings from the subject matter through a practice of drawing, which is a common observation from those who draw. Riet Eeckhout, for instance, who is similarly focused on the observational power of drawing, explains: ‘I use hand drawing to speculate on the nature of an object or subject and I explore through speculative drawing how I can activate their presence’ (Eekhout 2013: 9). The Te Papa drawings, in spite of their conceptual overlays, distilled unseen dynamics in disciplines that had no obvious spatiality, such as language, extracted an aesthetic understanding from language in excess of its conventional interpretations.

The precise way of drawing in Te Papa gave way to a gestural, smudgy messiness in later practice work, particularly in the White House which was designed with large freehand drawings. White House was still concerned with representation, however, and is directly related to the early student work. White House used drawing as a tool for observation but brought in the spatial and embodied act of drawing, as part of the way of seeing. As a case study it is an example of a shift in practice towards performative concerns in drawing, fused with their observational capacities as representation.

**White House — Representation mixed with performance**

The White House was an Auckland project that attempted to observe Auckland, through design eyes. It distilled an aesthetic sense from the ‘motile, plastic and thin suburban landscape’ (Twose 2010: 49). It was drawn through many iterations of hand drawings on butter paper and simple paper models. The performance of drawing, of repeatedly making curves on paper to resolve the domestic imperatives of the design, was seen as analogous to negotiations in the suburbs. The practice of designing the building, through a process of visceral analogue drawings and wispy paper models, was seen as a way to make observations about the abstract material properties in the Auckland suburbs. The aesthetic conclusions were that Auckland was a pliable, insubstantial and responsive surface, a tensile carpet of domestic forces in active negotiation. This observation was realised in three dimensions as a house composed entirely of responsive, white buckled surfaces. The White House was part of a series of three houses that looked into the aesthetics of their context: the Concrete House, which looked at tensions in the Wellington landscape and Sheerwater House, which looked at notions of calm in the soft landscape setting of Lake Ototoa in the Kaipara.

White House was a key transitional project. I was coming to terms with practice, having worked as an architect for ten years, but I still had the desire for the work to be more than buildings. I saw drawing as a critical activity rather than just an instrumental way of communicating contract information about a project. I saw drawing as a way of critiquing the city through architecture; not just through drawing but through a combination of built space and drawing. The drawings had two purposes: they had to negotiate the many tangible and intangible factors in the design of a house — clients’ desires, my aesthetic desires, the spatial requirements of brief and objects — and they had to encapsulate the aesthetic of a city, driven by similar domestic pressures except at much larger scale. In a sense, the performances of drawing mapped to the performances of the city and extracted a responsive dynamic shared by both.

White House was about gestures and the trace of the marks. The repeated line, iterations and erasures. The mode of marking and qualities of line differed markedly from Te Papa. The marks built up the plans and sections through pentimenti, or the evidence of wilful indecision, heavy gouging over and over where the wall is thought to be. And the wall’s form is determined not just by the precise lines, but partly from the blurred edges, the ‘invisible extremity of the mark [trait], the point whereby which the line advances and loses itself beyond itself in its own desire’ (Nancy 2013: xiii). This material, gestural characteristic of the drawings in the White House is expanded on later in this contour, in the Matter: Recalcitrant lines section.

The White House was an extension of ‘drawing as observation’ from Te Papa ten years earlier, but mixed notions of criticality and representation with messy, intangible aspects of building and drawing. It was forceful in shifting my practice towards a consideration of built space and corporeal acts of drawing. These inflected the representational mode of drawing as seeing, from Te Papa, and brought in non-representational aspects. This impulse to stretch representation towards its mysterious and undefinable other has been pushed further in current projects, such as in the Concrete series.

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**White House:** Representation mixed with performance

**White House:** Sketchy layout. Wall emerging through rapid analogue drawing in response to pressures of the domestic brief and embodied action. Detail Plan, 2000.

**Sheerwater House:** Construction drawings and site image. Sheerwater attempted to distill an ordered calm, observed in the lake landscape, through ordered tectonics and BIM software. Various projections, 2005.

**Concrete House:** Part axonometric section. Concrete House was designed in digital software (MicroStation) to be an active assemblage of elements, in response to potentials in Wellington’s seismic landscape. Axonometric, 2011.
White House is an urban house and office building in Auckland. It was part of a larger study that looked at aesthetic dynamics of contexts, involving exhibitions prior to it, and focussed particularly on the aesthetic identity of Auckland. It was designed through a series of hand drawings and paper models that responded to the detailed domestic wishes of the client. The thin responsiveness of the building’s surface, allied to the analogue drawing process, was seen as parallel to the plastic, responsive field of the suburbs. White House was followed by two other projects that extended this idea; of a project that could be lens on contexts through its drawing practice. Concrete House followed the White House and looked at unseen dynamics in Urban Wellington and Sheerwater House looked at abstract tensions in the natural setting of a dune Lake.

White House is sited among a group of small commercial buildings in a commercial street in Auckland. It is tightly locked into the urban street texture but has unobstructed eastern views to the suburban landscape and harbour. The internal planning wraps around an enclosed courtyard, within which is an atria to light the lower two floors. The clients live in the top floor and their offices occupy the lower two floors. An entry lobby and carpark occupy the ground floor.

The house was painstakingly planned according to the client’s wishes of free flow and polite separation between activities. The spaces were negotiated through lengthy discussion with the clients, as to the events to house was to support, and each area morphed through gestural drawing and live tests at 1:1. Through this, the design was composed by the domestic requirements in each space coming to equilibrium, rather than through preconceived geometric parti. The devices of lobby, hallway and a central guest toilet were used to subtly organise hierarchies of public and private spaces. There is one bedroom for the clients and a private chamber for guests with discrete access. The private spaces are heavily acoustically treated.
Concrete Drawing, process drawings in the development of the plastic surface. The surface was a plastic substance, distorted through small scale elements inflecting the larger surface. The small scale elements were 1:50 scale walls, clustered in dynamic assemblages in digital space, the larger surface was one of these walls at 1:1. The large surface became marked by the movements of the smaller walls, and so became a record of their manipulation in digital space; and hence was drawing in plastic negotiation. Detail axonometric, 2014.
Concrete series — Shift to non-representation

Concrete Drawing and Concrete /Cloud/ are recent works that attempt to deal with things that are less easy to represent. In these projects I am trying to understand aesthetic mechanisms internal to drawing and building as things, actions and occupation.

The Concrete series projects deal with sensorial and material aspects of drawing and building, linking them together as much as possible. These later works are less concerned with ideas that overlay the work, such as might be interpreted as their meaning. They focus on aesthetics that might appear from strange pairings between drawing and building. In some ways this exaggerates the link between drawing and building discussed by Evans, and thinks of it as two-way rather than a straight translation, with conditions that normally escape representation vibrating between the two.

Concrete Drawing blends digital and analogue drawing with making. It is part of the representational legacy of the early work, such as Te Papa and White House, yet is focussed on understandings that come from the force of materials and performances. In this project I attempted to merge the acts and materiality of drawing and those of built space as much as possible. I tried to tie together small events in the design with large scale materialities in the built. For example Concrete Drawing attempts to capture the simple event of viewing a model in the hand. Small scale models of a concrete wall were manipulated in digital space to simulate the shifting attentions of a model in the hand — and the movements of these small scale walls affect the full scale surface of a similar wall. Both small scale and full scale walls are then constructed as a 1:1 drawing, in concrete, the material proposed for the building.

Concrete /Cloud/ extended this interest in 'habitable drawing', a term borrowed from artist Fred Sandback (Sandback paraphrased in Bois 2005: 28). The project was a reconfiguration of spatiality experimented with in Concrete Drawing, taking its scalar and performative operations and re-playing them at a global scale. Concrete Drawing was disassembled, packed, transported by sea and reassembled in another hemisphere (Venice). This expanded its spatial configurations, and actions contained within its making, to include the movement of ships, trucks and barges, the scrutiny of customs agents, the unpacking and man-handling of components by strangers and the eventual installing of an upsidedown version of its previous self in a gallery space on the other side of the world. Accompanying the work was a set of cloudy images that reassessed the model evidence in the design process. Images of models from the early design were made cloudy through being drawn over, in order to open them to possibility, and provide material for further work. In the gallery space, these were displayed as insubstantial clouds drifting away from the concrete object they helped generate.

The Concrete series extends from the obsessive interest in drawing and representation in Te Papa and then White House. It stretches the definition of drawing and its representational modes to another level, and conflates acts of drawing, the materiality of drawing — in digital and physical materials — the spaces of designing, the materiality of building, the spaces of building and the act of occupying buildings. It is part of a long progression morphing drawing from a representational project, with the linguistic, critical associations that come with it, to a hybrid of action, material and space.

Discussion: Drawing’s yield strength

In my practice, representation has been moulded by an obsessive interest in drawing as a critical lens that has itself distorted over time; the way drawing sees and what it is looks at has changed. Early the subject put under the drawing microscope was Architecture itself, in Te Papa. Then, landscape and city contexts were looked at through scruffy analogue drawings, in the White House and later in digital drawings, in Concrete House and Sheerwater House. Architecture became the central subject again in the Concrete series of installations, which looked at phenomena internal to drawing and building. The legacy of the early work is still evident in the most recent work, in what I do and how I understand projects. A fascination with the idea that drawing buildings can somehow extract strange and elusive understandings, of things internal to Architecture or contexts it rubs up against, continues through the practice. This, I assume is a version of representation, stemming from the imaginative days of the post-structuralist paper project, but latterly it has become much more nuanced: inclusive of intensities and dynamics of matter, and performances of other, aleatory potentials. Drawing as a tool for lensing is proposed in the Sfumato Variations section.
Concrete Drawing, sketch plan of cluster orientations. Clusters of 1:50 walls engaged viewers through being oriented to points in the space of the gallery. This was to allude to the viewer occupying the work in a similar way to the space of designing, rotating around the model walls, rather than the walls in rotation in digital or physical space. Plan, 2015.
Concrete Drawing: polylines in Rhinoceros software in the development of the plastic surface. Detail axonometrics, 2014.
Project Cards
Concrete Drawing was an installation in the Adam Art Gallery in a group show, Drawing Is/Not Building, 2015. Concrete Drawing was an attempt to draw with building. It is part of a series of works looking into curious atmospheres between drawing and building, as part of ongoing practice research. Concrete Drawing is an eight metre by three metre wall surface, constructed in concrete and laid horizontally in the gallery space. It is a 1:1 drawing of a wall from an existing design, Te Horo House, that is the same dimensions and material as the wall it is intended to represent. Te Horo House is an unbuilt design sited on the rock-strewn Kapiti coast of New Zealand and was designed to be an essay in dynamics. Concrete Drawing was an extension of this interest and captured plastic dynamics in drawing. These came to be imprinted onto the physical wall surface through distortions in its texture by constellations of small-scale objects.
Concrete /Cloud/ was exhibited in the XV Venice Biennale, 2016. It is the culmination of research that includes Concrete House, Familial Clouds and Te Horo House and Concrete Drawing with which it directly engages. The project is an attempt to ‘draw out’ curious atmospheres between drawing and building. Concrete /Cloud/ is in two parts: a large floor piece, Concrete Drawing, and a wall element titled /Cloud/.

The wall adjacent to Concrete Drawing is a sequence of cloudy images on torn paper. These /Cloud/ images are part of another series of work looking to capture presences in the design process and allow them to open other possibilities. The images are based on photographs of tiny models from the Te Horo House design process. The photographs have been made cloudy through grey-scaling and freely drawing over them with a clone stamp tool. By doing this, the images become sketches rather than records of physical models. This reduction in acuity and definition is accentuated by the printing technique which gives the photographs the appearance of being hand drawn. The intention of the /Cloud/ series is to deflect the process away from the concrete-ness of building and return it to a condition of potentiality, which is an inherent capacity of drawing.
White House 1:50 sketch iterations. The plan began as a fairly orthogonal description of the brief but morphed through a large number of iterations. These were in response to both the actions of the hand, in drawing, and the acting out of the spaces at 1:1 with the clients. Plans, 2000.
Drawing is the opening of form. This can be thought in two ways: opening in the sense of beginning, departure, origin, dispatch, impetus, or sketching out, and opening in the sense of an availability or inherent capacity. According to the first sense, drawing evokes more the gesture of drawing than the traced figure. According to the second, it indicates the figure’s essential incompleteness, a non-closure or non-totalizing of form.

JL Nancy: 2013: 1
1.2 Potentiality: Pleasure in the Aleatory

This section charts incomplete, unexpected and distorted forms that seem to creep into my drawing, turning up repeatedly. There is pleasure in the aleatory forces that these forms respond to, of various material and immaterial things resisting, affording or deflecting an aesthetic trajectory. They are aesthetic allies in the forming of form through drawing and part of drawing’s potentiality.

Pleasure in the aleatory moves through a pattern of contingent influences in the drawing evidence. It is primarily visually based, and attempts to collect and observe drawing’s aleatory and unfinished potential, using my practice as examples. The term aleatory has a connection to gambling, originating in the chance and luck associated with a game of dice. I use this term to allude to aspects in forming that are unexpected, contingent yet have pleasurable consequence in drawing (or less welcome consequences, if the association with gambling is taken seriously).

Aleatory Pressures: landscapes, concept, programme, sensorial

The active performance of drawing is a way of extending a sensory capacity and directing it towards the discovery of things hovering between the seen and unseen, revealing the ‘appearance of what was never hidden’ (Nancy 2013: 105). Drawing, as such, is an ongoing project in allowing unexpected capacities draw themselves, as Jean Luc Nancy, who this chapter
leans towards, points out: ‘the world never conforms to a pre-given plan but its truth is inextricable from its drawing/design in perpetual formation and transformation.’ (Nancy 2013: 105). My practice has been variously embroiled in this process of drawing out, or de-monstration (Frascari 1990) of unseen and inter-linked dynamics, such as in landscape, concept, programme, and sensorial conditions in drawing.

Landscape, concept, programme, and sensorial factors — like most design considerations — are not easily separable. These have blended together as aleatory pressures and have found form through my drawing practice. Curved pencil lines on paper, fractured forms, and forms in dynamic in relation to each other have appeared, pointing to an inherent plasticity in these pressures. To follow through how these have been drawn out, I briefly traverse some examples below:

Landscape is a powerful condition. It insinuates itself into architecture, especially in the New Zealand practice context, in strange ways. Ideas about landscape; expectations, entitlements and sensorial understandings pull and repulse another to inflect architecture’s form. Landscape seems to orient architecture, create porous boundaries — such as indoor outdoor flow; it questions architecture’s grounding, forces form into hiding, and it makes cities plastic: cities sprawl across landscape in pursuit of its beauty. Landscape can be seen as a complex field of physical and conceptual pressures that influences architecture at many scales, coalescing with similarly complex dynamics in programmes, particularly that of house and home. Designing allows the intra-action of these capacities to be drawn out.

The White House attempted to draw out aleatory dynamics of landscape, conflated with domestic desires, through fast pencil drawings. Simple plans were sketched and then overlaid with butter paper, coarsely traced, and adjusted though crude scribbles and erasures. A large number of such overlays gradually distorted a rational plan into one that was pushed into a composition by a strange kind of negotiation. The arcs of graphite responded to orientations towards views, intensities of occupation, movements through space; relations between spaces, objects and furniture — and clients’ desires: clients wanted to cook together, they wanted an austere entry lobby that gave the right impression for an important guest. They wanted zones of formality and informality, homeliness, and so on.

This intense exercise was a way of drawing out aleatory flows and pressures in landscape and the domestic at micro and macro scale. The house was designed through performances of analogue drawing which extracted curved, responsive forms — that spoke of inextricable ties between home and landscape in the suburban aesthetic DNA of Auckland. The propensity for the suburbs to shift, to morph over a softly contoured topography in pursuit of the ideal view or proximity to a beautiful beach, was aestheticised at small scale through multiple layers of butter paper and rough arcs of pencil. The plans became surfaces of contestation, similar to the suburbs and oddly, began to resemble the Auckland Isthmus coastline.

The landscape of Auckland seems to be complicit with the motion of the city, driven by personal desires for a home connected to views of sea or a generosity of space, and the coastline in this case is a line that entices movement along it, rather than a constraining border.

Twose 2010: 447

The White House drawings were fields of rapidly made marks that took pleasure in the plasticity of their subject matter. The plans formed themselves — to a large degree. Rather than having a preconceived composition for the plan or form of the building, the drawings were allowed to distort through repeated scribbles, erasures and overlays. This drew out aleatory things in the project through an element of chance — but not at complete random. Landscape and home also mixed with the pleasures of rapid and messy drawing.

Curved and distorted lines have only really found shape in the White House. I have never built with curvature again. This, I suspect is because of the shift to a digital way of drawing. The Concrete House began as a curved, hand drawn project but shifted markedly once drawn in digital.

Aleatory pleasure in digital drawing

Concrete House followed the White House except it is sited in the aggressively tectonic context of Wellington in contrast to the muddy, soft landscape of Auckland. Like the project prior to it, I was interested in drawing out pressures or competing forces in the landscape.

Concrete House is a large house compressed onto a tiny urban site. The early design was hand drawn and used curvature and gestural shapes to negotiate pressures of the programme within the constrained site. These drawings were scanned and translated into digital drawings in MicroStation software. This initial design failed, mainly because it was simply repeating the earlier method in an incompatible context. The landscape dynamics, client and the drawing method were different — and the drawings were not ‘working’.

The second attempt forwent the simulation of analogue pencil drawings, in 2D digital approximations and embraced the digital medium as a way of drawing.
Concrete House is an urban house in Kelburn, Wellington. It attempted to distil the taut seismic, aesthetic context of Wellington. The project was an architectural inquiry into potential seismic forces; the compression and ominous propensity of massive landscape elements to suddenly jolt and shift. Concrete House was the second in a series of projects that used drawing as an aesthetic lens on contexts. It followed the White House, which looked at Auckland’s aesthetic dynamic through analogue drawing, and preceded Sheerwater House, which abstracted strange tensions in a Lakeside landscape, through digital drawing.

Concrete House is compressed into a 250 sqm site in an inner city suburb. It is a courtyard house composed of curved and tilted concrete panels, arranged around the site perimeter to form a series of large screens. These are in different attitudes: leaning, rotated or elevated above the ground and are intended to reflect the seismically dynamic context. A thin glass envelope threads between the screens to divide off spaces of the house that need protection from the weather. Landscaped courtyards form exterior rooms that meet this glass line: one to the north and one cut in to the south forming the street entry. These courtyards almost meet at the waist of the house, which is at the nexus of the plan and the circulation. The landscape rooms are integral spaces in the house and are intended to allow landscape to have an active presence, rather than house and landscape being comfortably distinct.
Drawings became records of the movement of large building elements, moved around in digital space and in physical models. The pressures observed in the Wellington context, of ominous seismic movement and a vertical, material aesthetic, became drawn through the movement of objects in digital space. The design became a series of elements moved around the site in three dimensions, seemingly jolted into position, translated, rotated or cutting into the site. The final composition of the house was informed by the inherent affordances and resistances of the digital drawing medium, and was markedly different to the hand-drawn version that preceded it. In this way, the digital medium was allowed to effect the architectural outcome, through a pursuit of aspects of the medium that gave the most pleasurable feedback.

**Aleatory dynamics of programme**

The *Te Horo House*, sited on the shifting gravels of the Kapiti coast, pursued this way of forming further, and is designed through an array of large concrete elements moving within the space of digital drawing. *Te Horo* focused on invisible pressures of site and programme, and allowed a complex domestic brief to shunt and push large elements in digital space. The shifting field of gravels in the site, a river flood plain, were a parallel dynamics to the programme.

**Formal vocabularies: fractured and floating forms**

This way of drawing out ‘unseen’ potentialities through gestures and pleasurable contingencies of the drawing medium has found its way into several other projects. In these, the designs have been allowed to jolt or shift through a mix of scruffy analogue drawing and objects in free relation in digital space. Examples of this practice tendency are: *Kelburn House 2, House for my Brother* and *Waiheke House*. These are included in the assemblage of images in this section to give a practice context to the formal tendency.

23. *Concrete House*; axonometric of self-similar walls in rotation. The house was composed through large concrete panels that were moved in digital space. This reflected the landscape’s potential to jolt or shift heavy elements into unexpected compositions. Axiometric, 2016.

24. *Te Horo House*; plan diagrams of external and internal programmatic pressures that influenced the form of the house. Large elements were shifted in digital space, similar to *Concrete House*, but moved according to programme, as in the *white House* drawings. Plans, 2014.
House for my Brother, Titirangi, Auckland; early sketch plan of house amongst protected Kauri trees. This is an example of the aleatory pressures of site determining the programmatic and formal composition. Plan, 2008.
Te Horo House is an unbuilt project sited on the Otaki river plain, facing Te Horo Beach. It is composed of series of stone and concrete screens in dynamic response to physical and non-physical characteristics of site, program and drawing. The house design is the site of an ongoing investigation whereby architecture as a built entity and the process that engenders it; drawing, are merged.

Te Horo House is sited on the rock-strewn Kapiti coast, where the Otaki river plain meets the sea at Te Horo Beach. The project continues the formal and conceptual motivations of the Concrete House, in that it attempts to distil dynamics through arrangements of concrete elements in digital drawing. The wider site is an enormous field of river gravels that are subject to shifting from sea, river and earthquakes and the domestic brief is similarly dynamic. The house became composed of a series of large stone and concrete panels, moved into place in response to pressures of site and programme. A single wall from Te Horo House was extracted from the design and worked on in the Concrete drawing and Concrete /Cloud/ projects.

Te Horo House is located amongst existing buildings which it is intended to significantly outlast, but which it has to respond to in the short term. It is designed to go between an existing timber villa, a pool house, guest house, garaging, vehicle entry and established gardens. The villa will eventually be removed and Te Horo House expanded. In this sense it is considered an evolving building in response to dynamics that occur over a long time period.

The composition of the building is dictated by the garden and courtyard spaces and existing buildings that surround it: a courtyard to the north linking to the existing house, a space to the southwest linking to the existing pool house, a garden to the southeast linking to the tennis court and kitchen garden, and orientations to the eastern entry courtyard and the house lawn to the north. These orientations have pushed it to be a multisided building, opening to the various garden spaces in different ways so each outdoor has its own character. The interior is similarly multi-oriented, with many crossflows, views and sequences.

The house has been designed so the gardens and courtyards can be used at different times of the day, and different times of the year. Computer sun studies have verified that the sunlight will reach each space at the right times and there has been careful planning as to how the building would be used in relation to each outdoor space. These factors have meant the building is not a conventional geometry — it is composed of a number of vertical and horizontal concrete panels, each positioned in response to an orientation, activity or sun condition — and this contributes to the movement of the composition of the building.
26. Kelburn House 2: sketch plans of unbuilt courtyard house. The pressures of a restricted site, as developed in Concrete House, were used in this design to shift the house to a dynamic, four level composition. Plans, 2005.
Discussion: Pleasure in the Aleatory

I have been pursuing such contingent ways of forming in drawing in several other projects, except they have markedly shifted away from the mix of landscape, conceptual and drawing dynamics towards a focus on performances within drawing itself and how they relate to the built. Te Horo House has become a site for this shift to play out. A recent project, Concrete Drawing, takes a single wall surface from one of the concrete walls in the Te Horo design, and experiments with drawing out complexities very close to the actions and motivations of drawing itself. Concrete /Cloud/ extends this to explore unfinished atmospheres internal to acts of drawing. These recent projects are traversed in the Drawing/Building contour.

To return to Jean Luc Nancy, there is ambiguous pleasure in allowing contingent things to appear, through ‘drawing out’. He notes tangential conditions within pleasure, of ‘a mixture of pleasure and displeasure’ as well as a ‘contagion of form by the formless.’ (Nancy 2013: 82). Part of this ambiguous pleasure in drawing aleatory form is a deflection of intensionality, allowing coarse marks, smudges, or objects that float weightlessly through digital space to form, partly, of their own volition. In fact it is the volatility of such forming, and supposed suppression of authorial, aesthetic control that is lauded by digital design researchers, such a Roland Snooks. Snooks argues that computation generates potentiality through ‘volatile interaction of algorithmic behaviours’, promoting the ‘speculative potential of computational processes.’ (Snooks 2012: 55). But drawing as an act is always present, however suppressed by the autonomous, machinic pleasures of computation; drawing is a shared aesthetic enterprise that takes many dynamic conditions into account, and part of the pleasure within drawing is distilling potentiality — through ‘sensible apprehension’ (Nancy 2013: 85).
1.3 Resistance/affordance: Necessary obstructions

In drawing, there are necessary obstructions. They provide creative friction, and there is an ambiguity as to whether they solely resist, afford, or vibrate between both. Lars von Trier navigates this ambiguity in his documentary *Five Obstructions* where he sets up a series of obstructions to the remaking of a famous short film by his mentor, Jørgen Leth. Leth is tasked by von Trier to remake his experimental film *The Perfect Human* five times, each with an obstructive condition. Leth is forced to remake it set in a Mumbai red light district, or in scenes of only twelve frames, or even as a cartoon—a medium hated by Leth. *The Perfect Human*’s modernist, minimal purity is challenged through obstructions that undermine its author’s control, yet provide creative possibility.

In my practice I tend to set up obstructions (as pointed out by Michael Spooner on seeing the work at an early PRS). I enjoy the ambiguity between resistances and affordances. These come from many sources: materiality, making, ideas, building constraints, and others. I am interested in things that restrain ideation, and allow it to veer off into interesting directions. In this section I test the shape of a small number of these, using key factors in the process, such as scale. The interplay between resistance and affordance appears throughout the cloud of my practice so intersects with other contours, threading through materiality, representation and performances of drawing and building.

Source material bound into Resistance/affordance:

- Te Papa — Miniature drawing, 1988
- Concrete series — Scalar blending, 2015, 16
- Sheerwater, 2005 — Tensile stylism, 2005

Keywords:

abstraction, risk, atypological, scale, feedback, abjection, ambiguity, order, obstacles, restraints.

31. **Five Obstructions**: a feature length documentary by Lars von Trier, in which his mentor, Jørgen Leth is tasked with remaking *The Perfect Human* in five ways, each with an obstruction. Film still, 2003.
Scale traditionally sets constraints on hierarchy, order and projection, separating drawing from the things it represents. But scale is also affording, allowing creative possibilities. Scale can be thought of as a transferable condition that can be nested and can enable a rhythm of crossings. When understood dynamically, scale is an enabling constraint that can allow ornamentation to inflect structure, or the actions of drawing to coincide with those of built space. Katherine Hayles comments on the force of constraints, like scale, pointing out that ‘[c]onstraints enable by restricting the space of possibilities so that only the most viable self-organizing systems or models will emerge.’ (Hayles 2001: 145).

Scale was crossed in the pencil drawings of Te Papa, which had several self-imposed obstructions: the drawings had to be miniature, at the limit of physically drawing them, and the drawing could not be seen in its entirety. These limitations shifted the hierarchy to small-scale parts rather than the larger whole, meaning the drawing was composed through miniature elements self-organising through their ornamental relation to one another. This was a way of deflecting the priority of large scales, and the large and important things associated with them, such as in built space, in favour of small scales. The tiny was ambiguously nested within the large, giving an impression of the ‘miniature sublime’, something explored by the artist Mairin Hartt (Hartt 2012).

Scale is also nested in digital practices, such as when drawing short circuits to the fabrication of prototypes. In the Concrete series, the surfaces of walls were made to interact at two different scales. 1:50 scale walls were made to float and cluster in digital space and interact with 1:1 scale, digitally represented walls, which were effectively the same geometry and material. The fluid positioning of the smaller scale walls distorted the larger scale wall’s surface. This interaction was painstakingly drawn in Rhino using polylines traced around each tiny wall, and then the polylines lofted to create the creased surface of the larger scale wall. Drawings of this reaction between two scales became moulds, which were then cast at 1:1 in concrete. The surface of these was ornamented with the creasing of the tiny scale walls in the digital, the lines of CNC milling tool in making the moulds, mistakes and damage in the making and inclusions in the concrete material. Scale as a simple one-way hierarchy, from drawing to building, was intentionally tangled.

Tensile stylistism

Another example of ambiguous resistance and aff ordance in my practice was the Sheerwater House. This was a project that worked with and against stylist, materiality and tectonics. It is introduced briefly below:

The first scheme for this house, which is beside Lake Ototoa in the Kaipara, was drawn as curved forms responding to the dunescape, much in the same way as the White House, which was designed for the same clients. The curved project was rejected and the client imposed some strict restraints: no curvature should be used and the house should be a stylish modernist house, with clean lines. The house ended up as an essay in order and calm, abstracted from the calmness of the lake. It was composed as a simple geometrical figure, a T, hovering above the landscape. It was a recognisable type, being a stylish, floating modernist house, so posed no difficulty in design. Buildings in this idiom are common and are such recognisable typologies as to be almost parametric in their aesthetic, through being assemblages of known stylistic devices.

I set myself obstructions to this recognisable, stylish and easy typology. I drew the building through two detail elements that imposed their dimensions of the form. The house was rigorously ordered by two
dimensions of timber board, 128mm horizontal cover dimension and a 76mm vertical cover dimension. The large scale geometry of the house was allowed to look after itself and the simple geometry of the house became composed of small parts in strict relation and alignment. This is very similar to motivations in the Te Papa project where exhibits populated a simple structure, in a 'contagion of the part with the whole'. The drawings were completed in Revit which was compatible with the elemental design method and austere aesthetic being pursued.

These restraints made for an uneasy aesthetic. The house followed stylish principles, of clean lines and minimal palette but because of the extreme rigour of the ordering, from such an apparently insignificant detail element, the drawings extracted an aesthetic of tense calm, appropriate to its ambiguous relation to its landscape.

**Discussion: Resistance and affordance**

The work of Matthew Barney is of note here, particularly his Drawing Restraint series. His work was shown at the Adam Art Gallery alongside an exhibition of drawings from other artists in Linie, Line, Linea. This show was immediately after a show at the Adam that I curated, Drawing Is/Not Building, and the two are interesting disciplinary counterpoints to each other.

Barney’s Restraint series exaggerates physical restrictions to drawing. He uses weights tied to his body, draws in rooms that resemble obstacle courses and marks gallery walls through huge blocks of graphite being pushed by female football teams. The imposing of extreme restraints speaks of the possibilities opened up through those same restrictions. The drawings are in a sense coauthored by the drawer and the restraining conditions; the difficulty of scraping a 2 tonne graphite block against a wall, as in one of his works, inevitably produces contingent results. This is a direct corollary to how affording or resisting conditions intersect with my practice. The embodied aspects Barney’s work are particularly interesting and something I have worked with at the level of the model, and the making of full scale built prototypes, and something which is expanded upon in the in the Building contour.

The manipulation of scale is one example of restraining forces that I continue to find ambiguous and creatively productive in my practice. Interplays such as this operate throughout the process of my making drawings and buildings. The subtle feedback from lines, materials, representational conventions, building constraints and scale is allowed to push and shift my understandings. Often, it is as simple a changing design medium or drawing in another way, which will promote a different understanding of the design, but in other projects it is more directed. I have actively set up obstructions that restrain drawing or deflect it from a comfortable aesthetic paradigm (such as a stylish house, or beautiful form) and send it down a risky path, of exploring the ugly, abject or strange. In Sheerwater House, for instance I was confronted by the stylish normality of a modernist house, so set up restraints that would promote an abstract condition that would destabilise those stylistic norms. This deflected it towards a less comfortable aesthetic paradigm, making stylistism itself a tensile, ambiguous and uncomfortable restraint.
Sheerwater Lakehouse is a country retreat for city-based owners of a deer farm that flanks Lake Otota, in the northern arm of South Head peninsular, Kaipara. It is designed in response to the calm, abstract quality of the lake and the soft dune landscape. It is the third project in a series looking at drawing as a way of observing unseen, abstract conditions in contexts; landscape or urban. It follows White House, which focused on the aesthetic context of Auckland and Concrete House which looked at the tensile, seismic context of Wellington.

Sheerwater House is sited beside Lake Otota, which is a sand dune lake in the ancient dunes making up the Kaipara peninsular. Sand dune lakes are unique bodies of water in that they are not fed by streams and have no streams leaving them, they are calm, landlocked bodies of water. The level of dune lakes seldom changes and the surface of Lake Otota is flat without swells or large waves; just textural changes caused by the elements. Lake Otota is surrounded by a softly contoured topography in which ancient sand dunes have solidified and become vegetated. The lake is a pure, level plane within these low lying and gentle contours. The architecture of the house responded to the tensile calmness of this landscape.

The house is designed as an apparently simple object, spanning over the dunescape. It is a level, geometric, horizontal form composed of a single skin of timber, which is wrapped inside and outside. The building is ordered through the vertical and horizontal modules of the timber boards that make up the single surface. The skin of timber is detailed to conceal the tectonic and pragmatic aspects of the house, in order for it to appear a simple and tensile wrapped form. In this way it is designed to have an abstract tension, in response to the calm tensions of the lake landscape. The house is ordered, regular and carefully proportioned, with generous and sparse spaces. It has simple hallway circulation to the private areas and a loggia that forms an exterior hallway, linking all the rooms. The house is a series of zones which progressively allow access to the landscape through framed views, culminating in a conservatory space, with large sliding doors opening onto a loggia that faces the lake. The loggia space, which is the exterior equivalent of a deck in terms of access to the landscape, is within the overall volume of the building, being a space carved out of the house. The loggia spills onto the landscape only at each end, by way of large stepping platforms. This approach to the site makes the house a discrete spatial zone within the space of the landscape. A studio space at a lower level is accessed from outside via a landscape stair.
... steps — scribbles, sketches, drawings, failed works, models, studies, thoughts, conversations — are of interest. Those that show the thought process of the artist are sometimes more interesting than the final product.

LeWitt 1967: 848
1.4 Matter:
Recalcitrant lines

This section looks at some lines I have drawn and their productive feedback as material things. Unlike the previous sections, it largely ignores what the lines were to show, or the specifics of the project they were associated with. The intention is to look at the lines as marks, either on paper or in digital space and try to extract how they were made — and how their matter inflected the drawing of them and the thinking that ended up being bound into them.

Architectural practice involves an ontology of marks and gestures of marking, in which the architect fashions built space. This is not a pure process. It involves marks that are known; instrumental in their descriptiveness of built space, but also marks that are less known — marks that are unmeasurable, un-coded and non-semiotic (Elkins 1995). In traditional design media these non-semiotic marks influence the shaping of space through their unpredictable possibility; smudges, smears and erasures are evidence of a shared agency (Hayles 2014) between the architect and the materiality of graphite and paper.

The mark, as determining a contour in relation to a background, has long been discussed in relation to Art, such in James Elkin's article “Marks, Traces, "Traits," Contours, "Orli," and "Splendores": Nonsemiotic Elements in Pictures” (Elkin 1995) but is also key to Architecture, and is perhaps becoming more so with digital modes of drawing. Philippe Rahm, for instance, discusses the pixel as a figural contour that blends with an amorphous digital ground (Rahm 2014). Elkin's discussion of the non-semiotic power of 'recalcitrant, "meaningless" smears and blotches’ (Elkins 1995: 860) links to Rahms' description of a sfumato spatiality engendered through digital means, causing '(us) to dispense with the notion of boundaries’ (Rahm 2014: 108). The marks in this section skip through analogue and digital drawings and acknowledge the similarities that exist between them, despite being having different material manifestations.

The liveliness of matter — its potential to be more than a mute participant in the world — is being looked at in many cultural domains, no less in Art and cultural geography. In Architecture the influence of these ideas is less developed, yet it is the architectural discipline that has the most direct relation to matter. Work such as in New Materialisms: Ontology, Agency and Politics edited by Cool and Frost, Vibrant Matter by Jane Bennett, Karan Barad's relational aesthetics in Meeting the Universe Halfway and Katherine Hayles work...
36. "White House: 1:50 sketch plan. This is a scruffy plan from a series of around 50 impatiently drawn overlays in the design of the White House. It is composed of many different marks that talk about entanglements in drawing — between architectural drawing as a thing and as a series of actions. Four types of lines are extracted from this plan for discussion. Plan, 2000.

on speculative aesthetics through Object Oriented Inquiry; these are examples of a turn towards the various agencies of matter in the humanities. This is part of a general move away from post-structuralist analysis and towards material engagements, or entanglements between human and thing (Barad’s term) as contributing to knowledge. A focus on a shared authorship between human and matter has deflected linguistic ways of understanding. This section attempts to draw out understandings, like this, that are embedded in the making and materiality of Marks. It looks at them as somehow recalcitrant and not entirely mute servants of ideation.

Matter: Recalcitrant lines shows a series of hand drawn diagrams that analyse lines from my practice. The diagrams attempt to discover how the matter of drawing allies with my input, as drawer. These diagrams were part of a project to analyse drawings and atmospheres from my practice evidence conducted at an early stage of the PhD.

The diagrams acted as a kind of ‘difference engine’ to explore possible connections and disjunctions in the materiality and making of lines, or marks. The diagrams took the Draw/ Build loop and extended it to encompass a host of other characteristics in drawing that could be similarly blurred, such as composition and projection, or even fascination and boredom. These were placed on the circular spectrums and used as analytical tools to reassess individual marks.

The lines discussed in Matter are a selection of analogue and digital marks from a range of projects. The analysis of these lines, by way of the diagrammatic ‘difference engine’, was unfolded through a series of diagrams that associated intangible characteristics of the lines, such as motivations and pleasures, with their materiality. As such, this set of diagrams worked as a kind of associative engine that allowed conclusions to be drawn that might not otherwise have been. The purpose of looking closely at marks was to shift attention from conceptual schemas that might overlay the work and allow the mess of the practice to connect in other, non-linear ways. The aim was for the patchiness, gaps and misalignments to emerge.
Gestural constructions

This section begins with an analysis of a single analogue drawing as an example. The various ‘recalcitrant marks’ in this drawing were looked at through difference engine diagrams. Aspects internal to the mark as a material and a gesture were looked at in correspondence to built atmospheres that the mark might cross with. The analysis described below is a small sample of a comprehensive diagramming that was conducted.

Around fifty impatiently drawn overlays in the design of the White House. The plan in figure 36 is one of these drawings. It was interesting to look at it as a material artefact (and with the distance of time). It is composed of many different marks that talk about the entanglements in drawing — between architectural drawing as a thing and as a series of actions. Four types of line from this drawing are zoomed in on as examples in the following series of images.

Line 1. (Figure 37). Diagrammatic line. In the left bottom margins of the drawing a set of lines make up a little detail plan. It is a tentative diagram of the basic orientations configuring the plan; more of a doodle that reminds me that the building is inward looking, toward a courtyard, as well as outward looking, to the landscape. The lines are largely descriptive, annotative and the orientation lines have more weight than to those describing built mass or scalar logic.

Line 2. (Figure 38). Flow lines. These are scribbly lines that appear all over the drawing. These are coarse, rapidly drawn marks that follow movements and flows — they pick up dynamics of occupation or variations in the compressions space as it transitions from one area to another. These flows are somehow paralleled by movements of the hand. These are episodic, repeating lines; part of a series impatiently drawn one over the other on butter paper overlays.

Line 3. (Figure 39). Hybrid of flows and built elements. This is an example of where the episodic, scribbly lines, describing flux of occupation in combination with hand movements, begin to coalesce into space divisions and start to describe walls and corridors. The drawing starts to become projective of space. The lines begin to have a scalar logic to them and develop thickness as possible built elements, at the same time as thinking through flows of occupation, orientations and the flow of the hand. The lines are fairly non-hierarchical and hover between these considerations.

This is a larger version of the previous image showing the lines’ context within the plan. The lines are part description of a fireplace unit (bottom right) and flows of occupation and a loose division of the dining area to the left with the kitchen and living room to the top and right.

Line 4. (Figure 40). Lines coalescing into walls. This is the fourth type of line. It is where the scribble has been worked over many times and been erased then reiterated. It’s pointing to a conclusion about a wall which has solidity and mass and a particular position in space, and a curved shape. It is apparently decisive and coalesces the flows into a representation of a conventional wall — and in this sense becomes projective of a built condition — while still being indeterminate and unfinished as an analogue drawing.
38. Line 2 is an example of scribbly lines that are all over the drawing. These are indicative of movements and flows — of occupation, transitions between spaces and also movements of the hand. These are rapidly drawn and episodic; part of a series of overlays impatiently drawn. Detail plan, 2000.

39. Line 3 is an example of episodic, scribbly lines, describing flux of occupation in combination with hand movements. These begin to coalesce into space divisions and start to describe walls and corridors. The drawing starts to become projective of space with an understanding of scale as well as being in the process of thinking through flows of occupation, orientations — and the flow of the hand. The lines are fairly non-hierarchical and hover between these considerations. Detail plan, 2000.

40. Line 4 is an example of where the scribble has been worked over many times and been erased, then reiterated. It is pointing to a conclusion about a wall which has solidity and mass and a particular position in space — and a curved shape. It is apparently decisive and coalesces the flows into a representation of a conventional wall — and in this sense becomes projective of a built condition — while still being indeterminate and unfinished as an analogue drawing. Detail plan, 2000.
**Four lines analysis**

It seems to me that the examples in this drawing vibrate between compositional characteristics and projective. Compositional to do with the engagement of the drawer with the material of the drawing and projective being the understandings that drawing holds about space projected beyond it. I have noted this relationship as a vectoral loop, where a line drawn anticlockwise links the two. I am thinking of this loop as implying that two things, in this case the projective and compositional aspects of a line, are related not only in sequence but also rub up against each other; they abrade and have mutual friction.

**Friction wheels**

The base for this diagram is a simple loop drawn in an anti-clockwise direction, solely because it is comfortable to draw a loop by hand in reverse. Either side of the loop are two conditions that are related, linked together by the vectoral flow of the circling line. This directional flow indicates that one leads to the other, so there is always a suffusion of both in varying degrees around the perimeter. This is intended to show two things in an intra-dependant and frictive relationship with one another, as “inseparable intra-acting ‘components’” (Barad 2003: 815). This looping, ‘friction wheel’ is used as a way to link various contingent aspects in drawing and building and these wheels are made to respond to each other later in this section, as if they were cogs in a difference engine, computing unrecordable aspects of the recalcitrant lines.

To give one example of these loops, the projective/compositional loop: on one side of this loop, there is the word *compositional*, which might describe the quality of line gained from its composition on paper or screen, on the other side of the loop is *projective*, which is the capacity of the line to project to something beyond it; to prefigure space in some way. Lines tend to vibrate between both and any line could be placed somewhere on the perimeter of this diagram.

Expanding on this frictional, relational loop idea, it is possible to look at a single line in a number of ways: a number of these intra-related binaries could be applied. For instance, where the line sits in terms of a kinaesthetic or conceptual approach, whether it’s drawn with an inherent understanding of built scale or is determined at the scale of paper, whether it records a decision or is evidence of indecisive procrastination, and so on.

This is an example of a wider analysis and looks at only four types of line in a single drawing, yet reveals significant variations: from the tentative plan in the margins, that identifies the basic orientations, to more scribbly lines that are working with flows and movements – of occupation, transitions – to denser scribbles indicating space divisions, scale and mass. These episodic lines seem to be about a coalescing of flows into form and mass, through repeated actions of the hand. These can be analysed by where they are placed on a number of other friction wheels, picking up on two way relations between the drawer and the line’s material. When looked at closely, the lines point to any number of strange relationships internal to their making, which can be drawn as simple frictional relation wheels. I came up with 16 loops of these frictional wheels after looking at a number of drawings from the practice. Some of these are shown in the assemblages in this section.

I decided to use the same little friction wheels, or ambiguous circular spectrums, to look at various conditions in the drawing, such as atmosphere. A selection of analogue and digital lines were looked at. I attributed characteristics to lines and started compiling lists. Early versions of these lists of attributes are shown on page 88.

These lists collected aspects of lines based on three observations: the type of line, its character and its apparent purpose. Type looked at lines as things, as fine or heavy marks, gestural or ruled. Character and purpose looked at the aesthetic of the line in terms of action and intentionality. The lines’ coded orthographic reason for being, to show a section cut or elevation for instance, or whether a plan drawing or axonometric, was deliberately not looked at. The intention was to dial back the representational factors involved in the drawings in order to allow non-representational influences in drawing to emerge.
These characteristics were set against the little relational wheels, and positioned in the circular spectrums. Intangible aspects, such as the degree to which a line was an act of discovery, to the drawer, or one of simple explanation, whether it was inspired by boredom or fascination – characteristics such as these were located within the spectrum loops. Groups of these results were assembled into the difference engine diagrams, allowing intangible, ‘formative forces’ in analogue and digital drawing to be considered, compared with one another, and their influence on built atmosphere speculated upon.

The so called difference engine, and its frictional wheels, has gone through many iterations. It was intended as a way to deflect attention from norms of representation and was necessarily obsessive as a process. Rather than being an explanatory tool, the many diagrams were an active way of discovering strange links in the cloud of intentions and material responses in the drawing of analogue and digital marks.

The initial results produced some interesting superpositions, for instance in aspects that I have called jolts. I was interested in the capacity of the medium to jolt or deflect the ideational trajectory of the design process. This seemed to be linked to obsessive, episodic drawing, restlessness, discovery, a shift away from logic and so on. Some of these I started to break out of the various diagrams and superimpose. This is a set of things related to the ‘jolts’ in the process that all seem to map to the same zone of the little wheels: the points of fascination that precede boredom, affordance before resistance, a bias to the kinaesthetic and multi-sensorial and so on.

The foregoing is a snippet of the analysis of one analogue drawing, as an example. But equally, any line from any drawing from the practice can be analysed in this way. Lines are revealed to be complicated mechanisms in a process of discovery, through a mutual agency of line and drawer.
Digital and analogue lines

The difference engine also tested comparisons between actions and motivations in analogue and digital lines. The diagrams compared some of the characteristics of digital lines from the Concrete Drawing to analogue lines from the White House and discovered some close similarities:

In the Concrete Drawing project, drawings were made in Rhinoceros, a sophisticated 3D modelling software, yet were drawn in a similar way to analogue drawing. The complex surface was created by individually manipulating polylines and adjusting them by eye, then lofting them into a surface. In a way, this was a misuse of a modelling tool designed to eliminate such a laborious attention to the shape of lines. The software has the ability to generate such interactions in a more automatic way, particularly if through a parametric method, such as in Grasshopper software.

The careful but laborious drawing of individual polylines simulated the attention to lines in the making of analogue drawings; the form of the surface, intended as a reaction of a 1:1 surface to 1:50 elements swarming over it, was determined as much by the aesthetic adjustments in response to the materiality of the medium. As in a pencil drawing, the resistance of the digital medium, how it took the lines, how closely it needed to be viewed, whether it glitched in an interesting way, was paired with immediate decisions of hand to eye, in the manipulations of each point in the space of the drawing.
Discussion: Recalcitrant lines

These diagrams have been helpful as a tool to engage with the stuff of the practice and as a way of deflecting my understanding of it — to a degree. The contingent conclusion about my practice from this exercise is that I have a fascination with maintaining things in an unfinished state. This seems to occur throughout the drawing process and on to the building, which then binds back into drawing again. This seems to be driven by an interest in maintaining a state of possibility across all stages of architecture.

I also tend to find ways of doing things that are episodic, repetitive, laborious and unfinished — that pursue an idea until there is some kind of productive jolt. These jolts might be a moment of obstruction or simply a moment of ugliness that undermines my aesthetic. These jolts seem to have strange correspondences between projects: jolts are evident in the heavy repeated lines of the impatient hand drawings and the small melted printed models; the surface of the buckled White House and the puckered surface of the Concrete Drawing. This episodic tendency, an interest in how things repeat and how they are jolted, might be productive as a way of uncovering something that evades other methods of discovery.

I suggest that the rather scruffy analogue drawing I looked at the beginning of this section is part of an interest in a bringing forth of drawing into built space; working with the presence of drawing, that might be captured in a future building.

This traverse through the lines ‘falling out from the practice’ is selective. The source material spans from student work to recent projects, and covers analogue and digital production of lines. The assembly of lines into geometrical figures — plans, sections and other orthographic conventions — is deliberately diminished in this exercise in order that non-normative aspects are privileged in order to, in James Elkin’s words: ‘understand what a truly uncoded image might be’ (Elkins 1995: 829). Other, more representational and projective aspects of drawing, such as geometry, and the conceptual bases that intersect with the work are looked at the other contours and project essays.

In Recalcitrant lines, the materiality of drawings and marks was looked at, along with less physical aspects in their making. This episodic tendency, an interest in how things repeat and how they are jolted, might be productive as a way of uncovering something that evades other methods of discovery. These discursive and non-discursive aspects are identified and collated in a reasonably non-plussed manner as if in some scientific enquiry, through the frictional, relational loop diagrams. The result is a series of ‘analytical’ diagrams that pick up unrecordable aspects of drawing as well as recordable, and cause elements to come together in unexpected ways. The intent is to discover rents, tears or sfumato blurrings in the practice. These will be discussed in the Sfumato Variation contour which collects aspects of the practice with speculative potential.
Friction Wheels analysis of four line types. This is an example of a larger attention to lines, both analogue and digital which was performed mid-candidature. Various, 2015.
... people who are said to understand marks best are other artists, and the most incisive critiques are taken to be other paintings instead of texts.

Elkin 1995: 822
Difference Engine diagrams; assemblage of sketches in the development of these diagrams. Various, 2015.
Concrete Drawing: negotiations in drawing space coalescing with the space of the computer. Documentary Photographs, 2015.
This section looks at the spaces of drawing and spatialities in drawing. I am interested in zeroing in on drawing and seeing what influence the spaces involved in drawing have, backwards and forwards across the projective divide between drawing and building.

As discussed earlier in this chapter, drawing has an observational capacity. Drawings are in a sense archives of thinking, by way of many acts of marking; they are fields of collected impressions. These impressions are tied to the space in which the marks are made, as much as the ideas and subject matter they respond to. Drawings are also instruments to predict built space. To me, this facet of drawing, as both an observational tool and way to predict the qualities of built space, opens questions about how it works as a medium of transference. As much as dimensions and form are transferred to the built, the sensorially charged space of mark-making might also transfer to the built and in some way influence its atmosphere. My drawing practice has orbited around these questions of transference and some examples follow that highlight key aspects.

Source material bound into Space:

Te Papa — Taxonomic fields of collection, 1988

White House — Performative, atmospheric fields, 2000

Concrete series — Transference of relational fields, 2015, 16

Keywords:
affective spatialities,
sensory extension,
wonder, occupation,
performance
Relational collection

In my practice, I have thought of the sheet of paper as a terrain where things can collect and relate to one another across a two dimensional surface. The drawing as a tableau, or field on which things are collected and manipulated, has been present in several ways — from taxonomic pencil drawings that arrange collections of architectural referents in two dimensions, in Te Papa, to performative marks collected on layers of butter paper, and digital drawing where objects collect in clusters or swarms in a virtual three-dimensional field. This interest in the drawing as a field of relations is ongoing and has gradually become more three-dimensional. It has begun to fuse with the field of relations outside of it, in the space of interaction between drawer and drawing.

Atmospheres of attention

The relational space of drawing, where drawer and medium encounter each other, involves different engagements. Analogue drawings have particular spatial dynamics. Pencil drawing is supposedly an obsolete medium and was heavily theorised in the nineties. I have expanded on some of key aspects of this large body of discourse in the introduction to this chapter. Drawing, as a term, is also contextualised in the introduction to this dissertation, along with other terms key to the research. I will briefly cover some of my observations about the space analogue drawing seemed to create.

Analogue

The sheet of paper on the board was almost always horizontal, just slightly tilted. It was usually large so you had to move bodily across it, leaning over from a standing position (I drew standing) and myopically zooming in to craft small details or retreating to view the drawing as a whole (usually while sharpening your pencil). The craft and labour of pencil drawings and the paper interface creates strong spatial dynamics. In an article on drawing, I observed that this is ‘its own compositional confinement, locking the drawer into the space of the drawing.’ An excerpt from that article is below:

Drawings are fields of movement, in the way they record not only movement of the pencil, but also movement of viewpoint: eye and paper, a performance between me and the space internal to the process of design. One’s proximity to the paper varies, and movements between close and far attention correspondingly adjust perceptual relations to the drawing. When closely engaged in a small part of a large drawing there is pleasure in the limited field of view and the reduction in understanding of the whole — the drawing becomes about elements and junctions and qualities of line, active relationships at detail level. Standing back, the composition of parts is seen together, in the conventional manner, and one’s understanding of the drawing at that proximity is tied to the active space around it, of the interaction between oneself and the drawing at a distance. At a distance, it can also be viewed obliquely, which opens another understanding of the design …

Twose, Smitheram 2010: 55

The analogue drawing process also involved butter paper overlays, so there was a vertical dimension to the drawing plane, albeit a much muted one, with butter paper overlays forming a kind of palimpsest. There as something in the collection and combination of drawings overlaying one another. The paper is not fully transparent so things get blurry as they get overlaid. Lines that were straight become bent through repeated impatient drawing. The other aspect of these overlays is the ability to un-tape them all and lay them out on the floor as a series. This is a different curation and makes the blurry sequence visible spatially. Selected parts can then be recombined and reattached to the drawing board. So seeing the ‘history of quirks and decisions’ in a spatial array is useful to deflect the drawer’s attention and ideation.
Digital/ hybrid

Digital drawing is much a cleaner medium than drawing by hand and is frictionless. It has a different compositional pressure on drawing than analogue techniques due to its inherent self-enclosed spatiality. Marks are manipulated in scale-less view on the screen. To compensate for the distancing effect of the medium, which disrupts a dialogical relationship between my body and the paper, I use a hybrid technique of drawing over digital prints or manipulating digital models. This brings the space of the digital in dialogue with the performance of drawing in other ways, and affects the composition. For instance, within the computer environment, everything has the same status, there is no distinction between interior and exterior, figure and ground. This spatiality within the computer interacts with the space of drawing. Mouse movements distribute supposedly weighty objects within an amorphous, gravity-less space. These are then assessed in real space as digital outputs, such as prints on paper or in 3D. This allows the frictionless space of the digital to have friction with the real space, and drawing becomes both a spatial merging of actions in space and scale-less space. This is an ambiguous context of particular attentions and markedly affects composition.

There are other characteristics of the digital that have a spatial impact — such as its parametric and generative capacities, which in a sense point to a particular internal messiness or volatility, as discussed earlier. There is also the potential for collaboration and hence multiple authorship in the same digital environment, which has significant effect on drawing as a material and performative phenomenon. In this section I commented on spatial engagements in the
prosaic use of the digital, in software such as Revit or MicroStation, in the drawing of buildings in my earlier practice. More recent projects, such as Concrete Drawing and Concrete /Cloud/, have engaged with digital drawing in more material and abstract terms. The possibilities of digital and analogue hybridity raised by these projects ties in to wider contexts in discourse surrounding the space between analogue and digital drawing. I have been able to explore this vibrant space in recent articles, such as: Concrete drawing: intra-active potentials in drawing, objects and urbancy (Twose 2016) and Experimental Material Research — Digital Chocolate (Twose, Du Chatenier 2016).

Arguments of the agency of digital/analogue hybridity are traversed in these articles. The first, Intra-active potentials looked at how the Concrete Drawing drew out material engagements in the space between the analogue and digital drawing.

The Concrete Drawing draws out the material and non-material dynamics shaping its surface, a process entailing several iterations of digital drawing and prototyping. Concrete Drawing has been designed in analogue and digital media, and is cast in concrete in forty panels using moulds routed from a CNC machine. The completed wall surface has been extensively recorded through photography and digital 3D scanning, which returns the built object to the realm of representation, so that its built presence can be fed back into the design process. The project is intended to be a concrete record of engagement - between small-scale objects, the weightless plasticity of digital drawing and the implacable presence of the built.

Twose 2016: 39

The arguments engaged with in Concrete Drawing and reflected upon in the Intra-actions article have a context in recent thinking on materiality and aesthetics, picking up on many contemporary threads. The work is located within the context of a great deal of writing in the humanities looking at an intricate mix of human and material agency – something specifically theorised by such thinkers as Karan Barad (2007) and Bill Brown (2004). In much of this thinking, objects are argued to be aesthetic/affective agents in their own right, things at once alluring and incomprehensible, orientating and withdrawn. Concrete Drawing is a built experiment that explores ideas through spatial and material means, and as such the results are ‘bound in to the object, in part as an (unrecordable) atmosphere of strangeness.’ (Twose 2016: 39)

Concrete Drawing was an experiment in hybridity between analogue drawing, digital drawing, materiality and built space. The article commented on the force of this hybridity, to jolt ideation and promote a drawing-like architecture, an ‘architecture of unfinished-ness and potentiality — neither drawing nor building’ (Twose 2016: 39)

Experimental Material Research — Digital Chocolate in the ACADIA conference Posthuman Frontiers: Data, Designers and Cognitive Machines explored the vibrant space between digital and analogue by looking closely at the materiality of digital drawing. It explored the productive possibilities when computation was allowed to gain aesthetic agency, challenging the drawer’s implicit authorial control. This was framed through discourse on OOI or Object Oriented Inquiry, as posed by N Katherine Hayles, Graham Harman’s OOO, and contemporary authors on digital practices, such as Brian Johnson, Sean Cubitt and Andrew Pickering. These provide a literary context for research into digital/analogue hybridity pursued by project.
In Speculative Aesthetics and Object-Oriented Inquiry, Hayles outlines an approach to understanding the world through an aesthetic agency shared between humans, objects and artificial intelligences (Hayles 2014). This builds on Graham Harman’s OOO (Object Oriented Ontology) which articulates the ‘allure’ objects have to one another, and the ‘shadowy subterranean depths’ an object-in-itself possesses (Harman 2011: 5). In Brian R. Johnson’s Virtuality and Place, he argues for a blending of physicality and virtuality by claiming that they are inherently both based on experience (Johnson 2002). Other contexts are Sean Pickering’s Mangle of Practice, looking at digital materials, and their shared/differing ‘resistances to human manipulation’ (Pickering 1995) and Sean Cubitt’s Digital Aesthetic, which speaks of the aesthetics of the digital and its effect on culture and society. These are part of a rich thread of contemporary discourse related to the vibrant space between digital and analogue materialities, which directly relates to and extends thinking on the space between analogue and digital drawing.

Digital Chocolate expanded on these ideas through a design research project undertaken by Rosa Du Chatenier. At the beginning of the project ‘digital chocolate’ was ‘melted’ through the virtual heat of mouse strokes, and the results printed and cast in real chocolate, to be further manipulated in real space. The resistances and feedback of the physical and digital chocolate to human ‘prodding’ (Hayles 2014) were analysed in terms of ‘a materials qualities and tendencies in digital space versus those in physical space.’ (Twose, Du Chatenier 2016: 424).

This project, and subsequent article, expanded on the shared agency that is prevalent in the digital but not greatly commented upon: where the aesthetic priorities of human and non-human are brought together as productive agents, or authors. This parallels material feedback prevalent in analogue drawing – graphite, paper and actions of the hand – but brings in hybrid possibilities of computation: of drawer, occupant and digital and physical material in collaboration.

Architectural practice involves an ontology of marks and gestures of marking, in which the architect fashions built space. This is not a pure process. It involves marks that are known; instrumental in their descriptiveness of built space, but also marks that are less known – marks that are unmeasurable, uncoded and non-semiotic (Elkins 1995). In traditional design media these non-semiotic marks influence the shaping of space through their unpredictable possibility; smudges, smears and erasures are evidence of a shared agency (Hayles 2014) between the architect and the materiality of graphite and paper. Digital media holds the same possibilities. It allows human intentionality to merge with obdurate resistances in the machine: drawing as an action becoming entangled with analogue and digital materialities.

**Performative**

The space of drawing as an action was experimented with at 1:1, in a performative sense, in the Prague City Drawing project, Resonant City. In this, twenty participants collected impressions of Prague using distorted mirrors and cameras as they flowed through the city, following the lines of flood waters. This project attempted to map the performance of drawing and the space of the city over one another. It provided another reading of the city, authored as much by a performing city as a performing drawer.
Resonant City: The Line of Least and Greatest Resistance was the New Zealand entry to the Space Section of the 2015 Prague Quadrennial of Performance Design and Space, PQ’15. It was a collaboration between Simon Twose and Katrina Simon. It involved a short film, shown with accompanying performance by the authors in Clam Gallas Palace, and a city walk performance conducted in the streets of Prague.

Resonant City was an experimental drawing performed in the city of Prague in 2015 by twenty participants. These ‘drawers’ flowed through the city, capturing it in strange ways using shaped mirrors on the end of selfie-sticks and cameras or mobile phones. The Resonant City project merged uncontrolled natural events in two cities. The propensity of Prague’s landscape to inundate the city with water was blended with the cataclysmic seismic jolts that occurred in Canterbury, New Zealand, in 2010/11. Drawers followed the movement of Prague’s inundations and recorded images in mirrors abstracted from the Christchurch earthquakes; some had broken or cracked geometries, some were puddle shaped. Drawers flowed through the streets and were deflected by their attention to the city through the mirrors, eddying or pooling depending on the possibilities presented by the city in their fragmented drawing instruments. Drawers were enticed to combine cobbled streets with surges of tourists with building façades, drawing new versions of Prague through a strange collusion between human drawer and the subject matter of the drawing.

The mirrored stencils gave a way of masking and cutting the view into reflected fragments, which could then be made to overlay other parts of the view. The unexpectedness of this possibility mixed with the inherent contingency of social interaction and compositional desires of the drawer. Drawers actively pursued jumblings of materials, colours and spaces and in the process were deflected from habitual or normative understandings of built space. They eroded the known condition of city with their fluvial, quake-inflected actions. The resulting images have a disturbing, mesmerising quality. They appear collage-like, grafting and inverting material, bodies, foreground and background in unstable assemblages.
Transference

The relation of the space of drawing to the space of building involves a kind of transference. The space of drawing is a fusion of thinking, affective sensing and aesthetic desires that is tied to events of mark making. These form a complicated spatial atmosphere that transfers to the built, its prefiguration being effectively the purpose of the drawing. For instance the ambiguous spatiality of digital drawing transferred to the Concrete House as single amorphous space, loosely bounded by free floating objects. This transference is not one way, and a pulse of transference from built space also bounces back to inflect drawing. The chiasmatic dialogue between these transferences, back and forward between drawing and building, is the focus of later work and is discussed in the Drawing/Building contour.

Discussion: Space

The interdependency of space with action, and its powerful effect on thinking, is well traversed in discourse on Art practice. Rosalind Krause, for instance, comments on the change in orientation in Jackson Pollock’s drip paintings, describing the shift between vertical and horizontal planes, in the making of the paintings, as a ‘foregrounding of the corporeal, and a shift away from an intellectual tradition of optical perceiving (Krause 1993: 243, 249). Pollock himself describes horizontality as part of a gravitational agency in his painting technique; as a way to decrease the friction in making lines with paint: “Someone tried to talk me into using a dagger striper but the sucker didn’t hold the paint long enough. I just wanted a longer line. ... I wanted to keep it going.” (Pollock quoted in Cernuschi, Herczynski 2008: 616).

The interdependencies of space and action in drawing architecture are similarly powerful. Although, unlike art practice, architectural drawings are complicated with the idea that: what is drawn will be somehow transferred to another space. This raises the question of the status of space in practices of making in architectural drawing, between designer/s and drawing, and what might be transferred, from this space, to the space of building. My practice has attempted to intensify the chiasmatic nature of this apparently simple situation.
Resonances: Drawing
Figures, writing, works

Resonances attempts to place my drawing practice within the context of other work. This section is a brief traverse of key works, authors and drawers that intersect in some way; it is not intended to be comprehensive. Through this, Resonances also collects ‘soft’ conclusions to the Drawing contour.

The image of my practice as a plastic or nebulous material begs the question of how it is shaped by other work: how it has been pulled towards influences in architectural practice, art or literature, or how it has been repulsed or found resonance, vibrating at the same frequency. The shape of it depends very much on the force of these kinds of influences. Drawing is a key thematic in my practice and has become expanded in its definition over time. It has been influenced by writing, particularly in early work, and by art practice, which I always seem to be attracted to. Other architects’ work has also been important, usually through an abrasive proximity rather than as heroes from afar. This section is a stepping back to get a broader view on these interconnections, highlighting a selection of conceptual resonances, from early student days through to practice and academic work.

Early resonances

Early work was strongly influenced by Ross Jenner and Sarah Treadwell, academics and researchers at the University of Auckland School of Architecture and Planning. Their teaching emphasised such things as representation, drawing, poetics, Italian modernism, classics and intricate connections between architecture and language, and this set the climate for much of my student practice. In the late eighties, it was common for students to argue that their designs responded to passages in Heidegger or Nietzsche. I was sceptical of this and wondered whether a similarly close attention to any text, even a low-brow example such as Best Bets magazine, would produce the same results.

I did, however, absorb the complicated and critical view of that post-structuralist milieu, and bound this complexity into my drawings. Text such as Derrida’s Truth in Painting, Foucault’s Order of Things and Ceci n’est pas une Pipe contributed to this, along with writing on drawing by Frascari, Scolari, Evans, Perez Gomez and others. Fictional writing by James Joyce, particularly Ulysses, also contributed. The allotrophic characteristic of Ulysses, with its manifold narratives, associations and geographies, nested within an single
Where does the work come from, how is it located? Step back to a broader view ...

Spooner 2015: Skype conversation

story spanning one day and one city, had a strong resonance with Te Papa being a project with a similarly encyclopaedic ambition. The possibilities of writing, of being able to build complex worlds with nothing more than immaterial assemblages of symbols, was very interesting to me and I wondered how architecture could reach this level of sophistication.

Mathematics was a prevailing interest and part of the theoretical milieu of the time: the fractal geometries of Mandelbrot, the chaos theory of Rene Thom, and the infinite triangular regressions in Blaise Pascal's conic sections contributed to an interest in repeating and nested geometries. Architecture being dependent on geometry for its structural syntax became allied to a linguistic view, and geometry became something mysterious and hidden within buildings, the generative logic of the architecture only being revealed by drawings which sliced through it. To me, architecture and in particular drawing, was where mathematic, scientific, linguistic and aesthetic understandings could all coalesce spatially.

My early drawings responded to classical and early modernist architecture. I was interested in the Baroque and studied Francesco Borromini’s drawings of San Carlino alle Quattro Fontane very closely — through redrawing parts of them. I was fascinated by unbuilt, paper projects, such as the Danteum by Giuseppe Terragni and Magnifico Collegio by Giovanni Battista Piranesi and re-drew their geometric schemas. The drawn arguments of contemporary practitioners such as Lebbeus Woods, Daniel Liebskind and Peter Eisenman were strongly present.

Buildings that hovered between being collections of classical elements and built artefacts were important, such as John Soane’s museum. These seemed to include drawing as part of their physicality, and dissolved architecture into a spatial array of objects in relation. The works of Carlo Scarpa similarly presented a fusion of drawn and built craft, and an architecture composed of collections of motifs and elements that reoccurred across several scales.

In parallel with this I studied early modernist conceptual art, in particular Marcel Duchamp, and the minimalist work of Sol le Witt and Donald Judd. Le Witt's Grid works and Duchamp's Fountain were among artworks bound in to the Te Papa project.

Early drawing projects intersected with a general milieu of speculation through drawing, current at the time. My work differed from the prevailing work, however. It was not sequentially processual, as in Peter Eisenman’s ‘decomposition’ works, nor did it follow an aesthetics of fracture, associated with deconstructivist work such as in Daniel Liebskind’s drawing or contemporary drawings by Zaha Hadid. It was more related to classical multi-scalar collection, of the part being in relation to the whole. I was very interested in the Aristotelian ‘horror vacui’ aspect of ornamented drawing, which suggested an infinite nesting of detail-within-detail, the closer it was inspected. This early milieu and my drawn response to it markedly shifted after several years of architectural practice.

Practice Resonances

In practice, my work primarily resonated with the late Rewi Thompson, whom I shared an office with and collaborated with on several projects. His highly conceptual approach gelled with mine, however his was largely a symbolic attribution of meaning — a fish to symbolise community in the Ōtara Market project, for instance — whereas my approach to meaning was less readable. I was not interested in buildings being easily assigned with meanings — or assigned with any meaning other than their own logics. Rewi's drawings were rough, conceptual and exploratory and were combined with rough conceptual models. I followed this technique of designing which seemed to keep detail at bay throughout the process, in favour of the idea. Rewi introduced a strong connection of concept to landscape, which also bound in to my drawing practice.

The built work I completed early in practice intersected with artist/architects such a Noel Lane, who I worked for. He approached building in a painterly way. His drawings were highly composed pictorially and his fluid compositions in plan influenced my drawing. The DNA, or put another way, some of the compositional predilections found in work such as White House can be traced back to Lane's painterly plans. His talent in understanding styles and current fashions shifted
how I understood my work. I came to react against
the economy of style that was part of practicing in
Auckland at the time, in some projects deliberately
exaggerating the stylistic content of the design to
test its acceptance with the client. At Noel Lane’s we
worked with clients from Auckland’s upper economic
strata and the art and fashion community. This was an
opportunity to both experiment with form, materials
and detail, and to play with how these intersected with
wealth, taste and stylistic values and sensibilities.

Current resonances
I have moved from drawing being a critical enterprise
— drawing looking at architecture — to drawing
as a way of looking at landscape contexts, such as
in the three house series, White House, Concrete
House, Sheerwater House — to drawing looking at
drawing. Recent work has tended to explore creative
mechanisms in the design process; how the drawings
are made and how they relate to the buildings they
supposedly determine — and how these phenomena
constitute research. This is partly due to being a
practicing academic as well as being an architect.
The academy gives me the luxury of researching
architecture through design in a different way than
would be possible in a commercial practice. I can
test ideas through collaborations with master’s
students, gain feedback from other academics at

Current thinking on new materialisms, speculative
aesthetics and so called post-humanism influences
what I do and the way I draw; work such as Karan
Barad and Katherine Hayles, who discuss the
enmeshed, multiple relationality of aesthetics. Art
Practice is a continuing influence, with examples being
the perceptual experimentation of Olafur Eliasson, the
habitable drawings of Fred Sandback and the Skulls
work by Robert Lazzarini, which ties in particularly
with my understanding of digital drawings. Thinking
on practice and how it constitutes research is also
influential, with the work of Leon van Schaik, Peter
Downton, Jane Rendell, Johnathan Hill, Neil Spiller
being examples.

My drawing work resonates with this milieu, but is in
ambiguous relation to it. I am within the thinking of
the time I imagine, following the various ‘turns’ away
from linguistic understandings and towards embodied,
merged understandings, but as a drawing practice I
have not found any architect who operates in exactly
the same way. The discussion of my Community of
Practice, in the Redrawing contour, addresses the
question further through an account of a symposium
and an exhibition which attempted to locate my
thinking on drawing amongst other contemporary
practices.
Endword:  

*Drawing*

Drawing’s internal creative mechanisms, and its ties to built space are by no means without turbulence. It has been variously positioned, as a tool for critical observation, as a discrete world with its own spatiality, as a method of engaging with aleatory dynamics, or as a device for distilling and transferring atmosphere. The Drawing contour attempted to highlight some of these turbulent conditions through a close attention to drawing practices in my work over time, in order to extract variations within its chameleon skin. Built space has similarly turbulent relations, depending on drawing for its generative form, and investing it with understandings of scale, material, mass and occupation. The Building contour that follows expands on these, by moving through the built practice material.
There’s a critical proximity between materials, depending on the type of material and its weight. You can combine different materials in a building, and there is a certain point where you will find they’re too far away from each other to react. And there’s a point too when they are too close together, and that kills them.

Zumthor 2005: 27
Contour 2, *Building*, traverses some of the cloud of relations surrounding space as a built, material fact and as a process or action. It attempts to discover how practices of designing and realising buildings, and the built artefacts themselves, might contribute to an open poiēsis. This is thought through using evidence from my practice as examples. Evidence from the practice is mapped to broad categories that align tendencies with apparently simple, fundamental characteristics of building, such as atmosphere, materiality and scale. The sub-sections are similar to the *Drawing* contour except in reverse order: *Drawing* began with representation and followed through to drawing’s transferences to space. *Building* begins with space, looking at atmosphere’s transference, and moves through to representation, ultimately proposing building as a mode of representation. A section at the end of this contour traces resonances with the practice of others and attempts to locate the work within wider discussions.
Throughout the *Building* contour, and the PhD in general, I use the term ‘building’ as both a noun and a verb, sometimes referring to it as a constructed artefact, sometimes as a process of making, and sometimes as both combined. This is similar to the use of ‘drawing’ as a mixed term, implying that it can hover between being an artefact and event. This fluid use of terms is part of a desire to think of architecture as a transformable condition that spans built objects and practices in designing. When viewed through practice eyes, architecture is an ongoing materialisation of performances, atmospheres, representation, and built space.

**Shapes in this contour**
- Space: Atmosphere and its transference
- Matter: Building's material presence
- Resistance/affordance: Scale, mass, finite objects
- Potentially: Aleatory shaping
- Representation: Building’s yield strength
- Resonances: Figures, writing works
2.1 Space: Atmosphere and its transference

Any built work has an atmospheric presence — as an entity that has scale, mass, texture and shape, modifying dynamics of light, temperature, or mood. This presence affects those who occupy it, either directly, through physically being in a space, or in some other capacity, such as via imaginative projection into a photographic image. A built work is also an archive of making. The presence of a built work’s making, as an assembly of parts or process of building, is less easily identified. I am interested in how these two presences might coalesce; presences of building and the presence of building. This section traverses some examples from my practice where I looked at atmosphere as a coalescence between the presences of making and the thing made. In Gernot Böhme’s words on such evasive presences ‘it is never only a matter of giving form to an object, but always of creating at the same time the conditions of its appearing’ (Böhme 2000: 98).

I have decided to adopt atmosphere as vehicle to characterise the built evidence of my practice, although I realise I am using the term in a fluid way. I have associated it not with only the ‘theatre of materials’ that is built space and the Haphe, or haptic sense that Böhme describes as a mutual condition of materials and the sensing capacity of the body, but also, I have mixed the idea with the intentionality of making. For instance, I have observed atmospheres in the White House that are ‘gravity-less, temporal, sfumato and strange’ which allude as much to the designing of them as the felt space that exists in the building. So threads of my involvement with the making of space can be traced through looking at the spaces themselves.

This section threads together atmospheres from the White House, Concrete House, Sheerwater House and Concrete Drawing and disposes them in a field that dislodges them from their situated-ness. This way of showing the work intentionally ignores chronology, site or conceptual schemas in order to view the practice bound into the work, rather than the work as an artefact or translation of a concept.

Source material bound into this traverse:

White House — Relational, temporal, immaterial atmosphere, 2000
Concrete House — Relational, material atmosphere, 2011
Concrete Drawing — Chiasmatic atmospheres, 2015

Keywords:
Mass, materiality, gravity, fixity, time, light
Difference engine

Atmospheres appear to vary across the projects, from heavy, pressured and tectonic to immaterial and responsive. Early on in the PhD I attempted to identify aspects of atmospheres in the body of work and associate them with intangible aspects such as intentionality in drawing. I conducted a diagramming exercise, which I loosely called the ‘difference engine’. These diagrams were a way of associating evidence in the practice, such as marks and atmospheres, with sets of intangible factors such as fascination, beauty, resistance, affordance. Sixteen friction wheels were identified that worked as circular spectrums between co-related, intangible terms. The drawing contour discussed the use of these diagrams in relation to the ‘formative forces’ of marks and marking. This section discusses just three examples from this exercise where the diagrams were used to associate atmospheres with the same spectrums. For example, I looked at an atmosphere from the White House.

I have variously written about the atmosphere exemplified by the door detailing of the White House which pursued the interruption of a flowing interior surface by a door:

The walls curve into the door jambs, which reduces the tectonic and technical drama of the openings: rather than a door being a break in the wall, the wall surfaces are directed from one space to another along a curved route, around the curved jamb detail. The open leaves also slightly indent the walls they rest against. A sfumato light to the door edges helps in softening the rupture of the walls and the detail reduces the emblematic ‘doorness and realness’ of the door and, consequently, the space.

Twose 2010: 57

I have described it as a temporal atmosphere with distorted, responsive surfaces, intensified by light:

Light, for example, normally a clarifier of form, in this case is the agent of soft, drawing-like indeterminacy. The white walls, floor and ceiling are swamped in reflected light, which makes for a foggy boundary to the space and supports distortion as an event. The distorted surfaces are physically static but their curvature gives an impression of temporality; they are this shape but could be another shape, along some continuum of distortion over time.

Twose 2010: 57

And this motivation, to create indeterminate, temporal atmosphere informed the detailing, as I noted:

The space is more like an inhabited drawing, like being within a superficial thinness, which appears to have a trajectory. The detailing in general was carefully designed to give this impression — to reduce the seriousness and finality of a built architecture. Things indicating building were reduced or eliminated: junctions between elements were made as simple as possible; there are no skirtings, no window sills, no apparent material to anything other than white, edges were detailed to give an impression of thinness and insubstantiality — everything was designed to give an impression of the provisional or possible, as in a drawing.

Twose 2010: 57
These descriptions were written with ideas of drawing in mind and tend to point to the atmosphere as a shared condition of material, occupation and design action (in this case, hand-drawing). They begin to discuss the presence of drawing in building.

From the difference engine diagrams, this atmosphere in the White House was associated with formative forces in mark-making. When looked at through the difference engine, I observed that this atmosphere was: curved, unbounded, non-hierarchical, sfumato, strange and gravity-less. The diagrams highlighted gestural aspects associated with marks, and linked them to motivations that were more restless than deliberate, closer to fascination than boredom, more compositional than projective (descriptors in the difference engine diagrams italicised).

Similarly I have written about atmospheres in the Concrete House and have described it as pressured and strange, composed of a series of heavy elements in dynamic response to some unseen actions. It is composed of things that are implacably material, and in dynamic positioning.

Another set of diagrams compared atmospheres generated by digital means. These compared atmospheres from the Concrete House and Concrete Drawing.

In these two cases strangeness is carried on forms that allude to movement, responsiveness to some invisible action. In Sheerwater House, by comparison, atmospheres of strangeness were due to a lack of movement. The project pursued strangeness through calm, static order.

I drew a great deal of these diagrams to discover relationships between discursive and non-discursive factors, in atmospheres and their generation. The foregoing is just a small set of examples. The exercise was fairly intensive, and inscrutable, being an act of drawing that inevitably created unreadable associations in its supposed exegetical purpose, but it did help me shift away from conventional ideation and conceptualising and view the built work in terms of ‘formative forces’.
White House: detail of door in relation to interior surface. The doors were detailed to ‘press into’ the surface of the walls, as if it was a soft substance. 2000.


White House; assemblage of atmospheres composed of curved, responsive surfaces. This developed from analogue drawing, which necessarily involves plastic negotiation. The curvilinear surfaces reflect the negotiations on paper that preceded them, and transfer drawing’s negotiation to built space as a responsive atmosphere. Drawing, as an atmosphere, is then mixed with the plasticity of occupation. 2000.
Discussion: Space

This section looked at atmosphere as in some way connected to its making, both as a physical object and as a set of actions. This implies a covalency between human and the object-ness of space, as François Jullien notes:

Unlike the activity of cognition, ‘atmosphere’ could not be conceived in terms of the opposition between the objective and subjective. It is an influence that emerges from beings and things and is valid only by virtue of the impression in us: it emanates or imparts and hence circulates inseparably between what is neither ‘that’ nor ‘us’ anymore, something that, as a result, cannot recede into a ‘what,’ not even into the ‘I don’t know what.’ Indeed an atmosphere is diffuse, disseminated, dispersed, elusive. Its presence cannot be isolated into determinate elements, it is both sparse and undelimitable. Above all, it is not assignable. Evasive, evanescent, it can be analysed not in terms of presence or essence, but only in terms of heaviness or valence, ex-haling, influencing, in an ontological mode, between ‘there is’ — ‘there is not’.

Jullien 2009: 41

This covalency is usually considered as a phenomenon with the active relationship coming from occupation: the subject in dynamic relation to object-formed space. But in design, space is not yet formed and atmosphere is more ambiguous, being something imagined and projected into representation. And there are other subject-object relationships at play during designing, such as designer to drawing, designer to model, and designer to fabricated prototype. These could also be considered atmospheres. The crossing and transferring between atmospheres in designing and atmospheres in built space is I believe one sfumato moment in the practice of architecture.

To achieve the diminished contour of sfumato in the implacable material of built space has been an early ambition of my practice — in buildings that work in a translative way, i.e. from drawing to building. White House is a particular example where the intention was to extend analogue drawing into the fabric of the building, in order to translate and maintain some of the qualities of drawings into space. Concrete House began in this way, with analogue drawing, but became informed by the material object-ness of digital space. Concrete elements were jolted in digital space and composed a building with a chiaroscuro atmosphere. Crossings and inflections between them have appeared, that point to ‘sfumato blurrings’ in the cloud of practice. These are collected in the Sfumato Variations chapter.
White House; assemblage of interior and exterior atmospheres, 2000.
2.2 Matter: Building’s material presence

Building’s material presence assumes buildings to be implacable material facts, assemblages of large and heavy things that bound space. Architectural practice inevitably has to understand these things, in order to prefigure their form and qualities. As such, designing has to take the forcefulness of building’s materiality into account, and come to a conclusion as to the degree of its inevitable presence. This section looks at how the substance of building intersects with my practice. It charts a fluid pushing and pulling between the two, with building’s materiality acting as a force on designing, and my desires for abstraction inflecting the materiality of building. The contour identifies how, in my practice, the attention to the physicality of building has morphed over time. In early work, building’s materiality was absent. This morphed in later work to it being present yet absent, in buildings that could be thought of as ‘habitable drawings’ (Sandback paraphrased in Bois 2005: 28). In more recent work, there has been a shift towards an ambiguous situation where the materiality of building and that of drawing are strangely co-present. The morphology of practice implied by this pushing and pulling is reflected upon as part of a ‘way of seeing’, or mode of thinking, linking the discussion to the Drawing contour among others.

Source material bound into Building’s material presence:

- Te Papa — Absent matter, 1988
- White House — Built, absent matter, 2000
- Sheerwater House — Order, abstraction, matter but no matter, 2005
- Concrete House — Matter, gravity, 2011
- Te Horo — Matter as presence and performance conflated, 2009
68. Concrete House; pressured, strange atmosphere.

69. Sheerwater House: strangeness through tensile order.

Diagram; analysis of Concrete House atmosphere. Detail, 2015.
Absent matter

There was assumed to be no built matter in the _Te Papa_ project. As discussed in the _Drawing_ contour, the physicality of building was actively countered. Mass was collapsed into representation, evident in such conventions as in the hatching of monolithic walls. This was part of shifting the project to being only about drawing, the graphite marks on the paper being ‘constructions’ in their own right. Elements were intentionally drawn too thin to provide physical support, as in the crypt plan where, despite retaining the ground, a wall is ‘so tenuous as to become enigmatic by way of its absurdity as a structural element’ and ‘at the limit of what is contractionally logical in order to court the reading that it is in the “realm of theory.”’ (Twose 1989: 28). This rendering absent of the physics and materiality of building is part of the (now historic) ideology of the paper project but this tendency has continued in my practice to varying degrees. The fascination with gravityless-ness and immateriality continues in the _White House_ which was an exercise in de-materialisation, using, in this case, a real, material building.

Present yet absent matter

The matter of building in the drawing of the _White House_ was thought of as being present yet absent. Conceptually, it was composed of a single non-substance, inside and out, with no particular distinction between things, walls, ceilings and even furniture having the same status. This was part of an ambition to make the building work in a similar way to drawing which, as arcs of graphite, could also be any of those things — or a paper model which could equally be folded into a façade or piece of cabinetry. The building is conceptually a habitable drawing, a term I borrow from minimalist artist Fred Sandback (Bois 2005), and as such became an architecture ‘in which it has become possible to inhabit an idea’ (NZIA citation, NZ Architecture Awards 2009: 36).

The _White House_ building was drawn by a protracted analogue process, whereby the form was distilled through many iterations of scruffy pencil drawings. The paper became the site for various things to contest one another: the clients’ desires for a particular domestic life, my aesthetic desires, and the spatial constraints of objects, furniture and site, were allowed to push and pull the building’s composition in arcs of pencil on large sheets of butter paper. This dynamic drawing process alluded to negotiations at larger scale, in the suburban Auckland context. I imagined the Auckland suburbs as a thin plastic material, fraught with internal domestic pressures, and I used drawings to observe this through analogous performances in drawing. The observation of the suburbs as impossibly thin, responsive and superficial led to the _White House_ being made of similar things; a single papery surface with no apparent thickness or material. Like the pencil drawings, this non-material was conceptually responsive to unseen things, such as simple domestic desires, and became a series of buckled white surfaces in the building.

Scruffy drawings and flimsy paper models were scaled up to become surfaces of the building, which was thought of as a large model. It was a habitable drawing, with no attention to tectonics or gravity, and as such it was detailed so edges appeared thin and surfaces appeared to distort under the influence of pressures — from such things as door openings. Every surface was white and curved, and unified as much as possible through white velvet paint. Other things, such as curtains, cabinetry or furniture, were designed to match and were curved and thin and white. Everything was done to suppress the material fact of the building, it being reduced to a single surface of non-material, without any visible tectonic. These tectonic characteristics were refined through analogue models, which were parallel to the drawings but had a materiality of thinness derived from the drawings. They were simply (the paper from) the drawings wrapped into spaces.

The desire for a building where materiality was both present yet absent was something that was very much connected to ideas of drawing. The building was meant to be an unfinished document, part of an extraction of the aesthetic DNA of the suburbs through pencil on paper and built form. The implication was that the building could fold back into the process, something that was attempted in the _Familial Clouds_ installation, and so hovered between materiality and immateriality. It was a shift from the representational focus of the very early work, for example _Te Papa_, to a representational architecture that included the materiality of building, like as a habitable drawing.

71. White House; assemblage of paper models and built atmospheres. Analogue drawings were tested through paper modelling, which became a thin three-dimensional version of the negotiation on paper, engaging the materiality of the drawing sheet itself. Present yet absent matter. 2000.
Matter conflating with abstraction

In Sheerwater House materiality was again present yet absent, similar to the White House, but in this case, matter had more force in the design.

Sheerwater was the result of a desire to build an abstract condition. It coalesced an abstracted calmness, something observed in the lakeside site context. The reduced approach to surface employed in the White House was continued except in this case it was a definite material rather than a supposed non-material. The building was wrapped inside and out with a single species of timber, Vitex Cofassus. The building was designed based on two dimensions of timber: a 128mm board, used in the horizontal and a 75mm board in the vertical. The building was rigorously ordered based on these two cover dimensions. The house became a highly ordered object, covered in a tensile skin of timber that distilled the calmness of the landscape through order. Materiality in this building was present, yet absent; it is a statement in timber, but was designed to be not entirely real — having an abstract agenda.

Materiality had a strong presence in the drawing process, constraining and resisting the design into a modularity based on two board widths. This fed back into the drawings, which were completed in BIM software, with the result that a tensile, uncomfortable sense of calm came through to the building, carried in part by the ambiguous presence of its materiality.
Building as a dialogue with gravity

Concrete House was an essay in material presence, in tandem with the design being a way of seeing. The substance of building was designed to distil unseen dynamics, so called, in the seismic context of Wellington. In this project the building material became real, concrete, yet the project was still to use material as a marker for something, as a representational connection to something observed through the process. The building was designed through a combination of digital drawings and physical modelling, rotating cardboard models in the hand and moving objects around in the frictionless space of the digital. Large heavy concrete panels were shunted or jolted into a composition through such physical and digital manipulations. Panels were distributed around the site — lifted up, tilted or rotated in a spatial dialogue with gravity and potential seismic jolts. The drawing process was an analogue of the dynamic performances of the material elements themselves, rather than a way to represent qualities through an abstract code of lines. In this way it was tending towards a very direct correlation between the act of drawing and the active responses of real, weighty matter.
Concrete House; assemblage of atmospheres. Building in dialogue with gravity. 2011.
Co-presence of Building and Drawing matter

Te Horo House and Concrete Drawing brought the presence of building, as matter, and drawing together. Material became central to the mode of seeing. The performance of moving large concrete elements in digital space and physical models, in the Concrete House, was extended. In the Concrete Drawing, the moving of scale model of the walls was made to influence the full scale counterpart, tested through digital manipulations. This effectively captured the performances of designing in the real material of the building.
**Discussion: Building’s material presence**

This section charts a shifting interest in how matter is handled in the building projects — and how the material realities of building have found increasing presence in the practice over time. Matter and representation have crossed to become a chiasmatic double in the work. This engages several aspects that are covered, in part, by several contours in this PhD. The vibration between representation and non-representation, in the drawing contour is paralleled by this contour which charts a morphing from the absence of materiality, following an abstract ‘critical’ stance, to an engagement of materiality in that criticality. This points to matter as key to a particular way of seeing, that engages the multiple and holistic modes of thinking that are inherent to designing.
<Levels of Intimacy>. It all has to do with proximity and distance. The classical architect would call it scale. But that sounds too academic. ... It refers to the various aspects — size, dimension, scale, the building’s mass by contrast with my own. The fact that it is bigger than me, far bigger than me. Or that things in the building are smaller than me.

Zumthor 2005: 49,50
2.3 Resistance/ affordance: Scale, mass, finite objects

The implacable scale and mass of building sets it apart from representational modes of understanding space. Buildings are finite objects that are understood by occupying them in time and space, in ever-changing proximity to their spaces, materials and surfaces. Buildings are not mute but resist or afford occupation, and in the making, they are similarly forceful. My practice has engaged with the ambiguity of things in building that resist and afford understanding, such as scale and finite massive elements. An example is in the Concrete House where scale and finite mass of the building elements were intentionally played with — to create a spaces that have ambiguous resistance and affordances. The Concrete House as a composition of massive elements in space, engaged the sensory appreciation of elements at the scale of building — in relation to the occupier — to convey a sense of large-scale forces; the idea of making vast seismic forces palpable through architecture, or at least, alluding to them through a representational approach that employs scale and mass. This play of scale and mass to imply the finite reality of building, and then hint at its possible lack of finality — through it appearing to be in a dynamic position, raised from the ground for instance — is an example of where building material resistance becomes an affordance in design terms.
2.4 Potentiality: Aleatory shaping

This section attempts to unfold the aleatory possibilities in building. Buildings have an undeniable logic, as a set of assembled, material things. They have a kind of heavy and immutable grammar. Building, however, is a different machine and has the possibility for these heavy things to become aleatory agents, when looked at through procedures of making. The heavy material elements are forceful in their own shaping. This occurs in the making of models as much as in the scaled-up versions of these that constitute buildings. In making — of models or buildings — the grammar of buildings becomes broken down and aleatory possibilities emerge.

In an essay on visual art as knowledge production, Sarat Maharaj discusses ideas in art practice that are similar to my use of the term aleatory. He adopts the word ‘agglutinative’ to describe the contingent possibilities of art practices which he speaks of as having ‘liquid, wordless syntax’ and as the ‘grammarless zone’ of unknown possibility ...’ He goes on to associate this grammarlessness with the ‘streamsbecoming’ of associative possibility put forward by Henri Bergson: ‘the agglutinative brings into play associative manoeuvres, juxtaposition, blend and splice, non-inflexional modes of elision and stickiness.’ This sets it against the ‘slice and carve’ mechanism of grammar (Maharaj 2009: 4). He sums up the power of agglutinative as an uncertain knowledge maker in a distinction between know-how,
relating to institutional methods of enquiry, and no-how, which embraces aleatory, agrammatic ways of knowing.

... we are faced with the agrammaticality that has the capacity to oscillate rapidly between several modalities. In a sense, it is at odds with the computational constancy and equilibrium of know-how and closer to the all over smears, surges and spasm, the unpredictable swell and dip of no-how.

Maharaj 2009

I am interested in these aleatory, grammarless, or agglutinative aspects of building. In designing, it figures most in the act of modelling. Manipulating models with the hands is an experimental-embodied practice, where the performance of the material is as much an author of form as the drawer (I use drawer in the sense of the term disegno, encompassing all designing, including modelling). I have run several master’s design studios looking at these possibilities, such as in one in 2016 entitled: City Drawing: plastic performances, recalcitrant materials and potential space. In this studio, students looked to create urban architecture authored by aleatory performances of material. I have also supervised several master’s theses looking into these aspect of designing. Rosa Du Chatenier’s thesis: Speculative Aesthetics: Between us and the other looked at a shared aesthetic agency between matter, drawer and computation, and she and I went on to co-author a paper on the results, which is noted in the bibliography. I have also experimented with questions of ‘agglutinative and aleatory agencies’ in my architectural practice, the most clear example being in the White House project.

In White House, the generative potential of drawing, the main design method, was paralleled with generative paper models. A large series of paper models were made as the drawings were doing their rhizomatic dance on the flatter, pencil-and-paper world. These were not simply extrusions of the plans to visualise the space in the drawings, like some kind of checking mechanism, but were to add another layer to the responsive drawing thrust that was developing in the project. I wanted to take the paper of the drawing, beneath the lines, and manipulate it as a material — to see what was in it aesthetically. There were a large number of very crude models made from 90gsm paper, which is largely inappropriate as a modelling material to make a serious architecture. The result was a flimsy tectonic of floppy and curved surfaces. To make these more rigid some were creased, otherwise they wouldn’t stand up. I documented these curves and creases in hand drawings and many of these grammarless, aleatory shapes found their way back into the project. The very initially developed designs proposed the surface of the building in sheet metal, as a way of transferring the creasing potential to the scale of the built. In the end the play between the drawings and the paper models built to an
atmosphere of ‘temporal distortion’: ‘The distorted surfaces are physically static but their curvature gives an impression of temporality; they are this shape but could be another shape, along some continuum of distortion over time.’ (Twose 2010: 57). In my view, in this way, the aleatory no-how of the modelling inflected the building.

Another example of this material play, at a different weight, was the Concrete House. In this case, an aleatory, contingent and, in some sense, self-forming capacity came from the heavy elements of building. The house was composed through an assemblage of large and heavy elements in dynamic positioning, in digital space. There were physical models made in parallel but they were more for checking purposes and the atmospheric came more from the building performing at 1:1 in the void beyond the computer screen. In this, the aleatory force of the building itself was more present, rather than it being something projected from paper space. The atmospheric result was a house composed of a single space, modified only by heavy elements in dynamic relation to one another. In this way the house embeds the no-how of the design process in concrete assemblages, in an ambiguous grammar and in ambiguous dialogue with gravity.
2.5 Representation: Building’s yield strength

This section is intended to mirror the piece on drawing’s representational underpinnings at the beginning of the drawing contour. In a sense the material metaphor used in the introduction to that section, of representation as a metal being repeatedly bent until it becomes plastic, is closer to the subject, building being immersively entrained to the performance of materials. My interest here is to wonder about building’s capacity to yield to representation, to perhaps even become representation — and its ability to cause representation to bend until it suffers a plastic yielding of sorts.

Drawing as observation, as a visual and embodied tool for thinking, is part of its representational power, its formative force. If, as in my practice, drawing is not considered separate to building, then building becomes simply another stage in this thinking. Building then becomes formative in itself and a complex way of opening knowledge. It has however different cogs and wheels to representation, as understood through language, and through drawing. Building deals with scale, mass, surrounding space and surrounding objects (Zumthor 2005: 35) which add to a critical view. As a critical, and hence representational, thinking tool building’s presence bends representation towards a constellation of unknowns generated through its massive presence.
2.6 Resonances: Building
Figures, writing, works

There are many resonances in my practice with the buildings of others, and writers who hold positions intersecting with my own. The purpose of the Resonances section is to parse out how my practice connects to a wider discussion.

My understanding of making as generative and aleatory connects with many other discussions, particularly Eliasson, who argues that ‘models are real’ and have a singularity as sensorially understood objects (Eliasson 2007). It also connects with writing on new materialisms that argue for matter not to be mute (Barad), and the speculative realist stance that argues for materials and objects other than human having an aesthetic impact (Hayles, Harman). So there are many connections to building as a negotiation of material and builder, or designer, in varying assemblages.

There are also intersections with arguments that understand building as atmosphere. Figures such as: Peter Zumthor, with his nine categories of atmosphere, Stephen Holl, with his phenomenological approach, Juhani Pallasmaa, with a shift away from ocular-centrism and towards hapticity. These approaches parallel my practice, with the closest connection being to Zumthor’s holistic understanding of building as atmosphere. Mine is not exactly like these practices however.

My approach to building draws from these sources but engages much of the elements in other work in a different way. Atmosphere for instance is key to my practice, but is a distorted version when viewed in the light of Zumthor’s atmosphere. I have used atmosphere a mode of transmission and as a mode of extracting understandings. In terms of atmosphere as a transmission, I think of it as something that carries the presence of one part of the design process to another, such as the atmospheric presence of drawing being somehow transposed to the built. Similarly I have thought how the weighty atmospheres of built space, and the act of building, transpose to, or towards drawing. I am now thinking of atmosphere as a modifiable condition across both drawing and building, something that varies in intensity as it moves through the spectrum of action and material performances in designing and building. I am putting this atmospheric understanding forward as an aesthetically imbued mode of understanding, and as such key to a hybrid, speculative critical practice.

With this idea, of building being a critical act or building having the potential to be critical, I am leaning toward art practice and art practice commentaries and discourse. People such as Elkin and Maharaj and Eliasson, who actively enquire into the research power of art and its various modes. I am now thinking that architectural design research is made powerful primarily through modes that are similar to art practice.
Concrete Drawing, Concrete /Cloud/, assemblage of materials, scales, spaces and actions in building the work. 2015, 16.
Endword:

Building

To return briefly to sfumato. Sfumato and atmosphere are linked through their smoky, meteorological origins. They both evoke conditions of space where material fixity is diminished in favour of dynamic and indeterminate relations. Atmosphere acts as a medium, ‘making the immaterial material and establishing a blurring between substance and medium, mergence and emergence’ (Jenner 2013: 13). And sfumato is a ‘most gentle receding, a delicacy on the horizon of our sight, which both is and is not.’ (1556: bk. 7, cap. V. Quoted in Jenner 2013: 1). As discussed earlier, sfumato is a metaphor for the constant flickering between the centre and periphery that I have imagined as a way to view the cloud of practice: to find the sfumato moments, where the practice hovers between one state and another — between drawing and building. So sfumato is both an atmospheric architectural condition observed in the work, and a model for a way of seeing the practice. When arrayed as a material, I hope to show the practice as having material characteristics, such as grain, direction, and blurrings of varying intensity. Building, as atmospheres which blurred with materials and events in its design’ was a sfumato intensity I looked at in this contour that points to its open potential.

The Building contour attempts to find shape in this generative potential of building. It is a topology of dynamic conditions that surround building as an act and a material fact, things that are “other” to what already exists’ (Maharaj 2009:8). This focus on things that surround building renders building a less stable act, and brings a discussion of the instability of creative mechanisms in designing, and how they are captured by the built, or how they are part of building itself. I enjoy the idea of a lack of stasis in architecture — an ex-stasis— a word linked to pleasure through its connections to ecstasy and its concomitant move beyond the self. Pleasure, in this sense, becomes something that is beyond immediate appreciation, something that transcends the physical, pointing to architecture’s potential to be ex-static: architecture presents pleasures through its ex-static form, extending from an ex-static design process. Pleasure in architecture’s forming, its drawing, is made appreciable as a transcendent, ex-static atmosphere, something open, elusive and poetic.

This notion of ex-stasis as a powerful poetic condition extends back to Plato, or further: in his Republic, Plato argues that Poets encourage ecstasy through their practice; ecstasy being an ex-stasis or a lack of stasis. This lack of stasis, encouraged through the ecstasy promoted by poetry, Plato saw as anathema to a necessary social stability. Accordingly Plato banished poets from the republic. (Partee 1979: 209).

In designing, the mass, scale and presence of built space, and its making, is always in dynamic negotiation. They have generative potential, making building part of a critical mode of thinking that spans architectural practice’s many modes of performance. In this, buildings are end points but practice is successive and one building leads to another. This episodic tendency of my practice to draw, build, then redraw, is discussed in the next contour: Redrawing.
All architecture is exhibitionist. Exhibitions are not simply sites for the display of architecture, they are sites for the incubations of new forms of architecture and new ways of thinking about architecture.

Redrawing contour looks at the redrawing of projects, or the tendency for ideas to thread through a series of projects, and oscillate between them. In practice, drawing leads to building then binds back into drawing. Through these run lineaments of ideas, tendencies and aesthetic predilections, finding various forms and manifestations over the course of many projects. My practice is figured by these threads that continually commute between representation and constructed space, through successive drawing, building and redrawing. I tend to blend one work into another and, in some senses, my practice has been a single project, with drawings and buildings being the result of various attempts to pursue the same questions: of representation, process, concept and embodiment. Installations are ways in which this questioning can be intensified. They can distil the thinking that colours practice through redrawing that thinking spatially. Installations allow undercurrents and conceptual threads, running through a sequence of projects, to be spatially active and palpable to an exhibition viewer, which opens them to new discoveries.
The evidence in this contour is largely from installations where projects have been re-cast in another spatial configuration. They use the evidence from previous projects as source material and are a spatial way of reflecting on that work. They are also propositional and attempt to generate something in excess of the project material. Rather than being drawings of a project yet to be built, or buildings that are supposedly finite endpoints, the work in the redrawing contour is propositional of an in-between spatiality in practice-as-drawing.

The Redrawing contour concludes by arguing that the episodic tendency in these projects, the tendency to pursue nascent qualities and reduce the finitude or complete-ness of things, amounts to an architectural approach to practice, as an ongoing mode of drawing.

Shapes in this contour

- Repetitions: Episodic projects
- Demonstration: Collection, exhibition, curation
- Space: Architecture of process
- Resonances: Figures, writing works
3.1 Incomplete repetitions: Episodic projects

My work is a set of reiterations. They range from repeated lines in a single drawing to repeated ideas in a sequence of drawings and running through sequences of buildings. These repetitions are a way of maintaining a state of possibility, or generative open-ness, despite the built outputs being fixed and implacably material. In this way, buildings contribute to an ongoing process of drawing; their facticity is bound into the drawings of the project that follows them. Installations are another manifestation of this redrawing procedure. They are spatial manifestations that are, in a sense, complete as spatial entities, like buildings, but are propositional and open, both in the sense of interpretation and in terms of architectural possibility. Installations have been a useful way of proposing architecture that hovers between the potentialities of drawing and the material fixity and spatiality of building.

Work coalesces into space then drops back into representation. With each repetition, or episode, the previous project is shifted, even while pursuing the same ideas. Successive projects in my practice look markedly different, and use different design techniques, from analogue to digital drawing to physical modelling. Despite this the ideas running through the projects are repeated, although never in the same way; they are tested in different contexts.

Source material bound into Redrawing:

Familial Clouds — White House and Concrete House bound together, 2012

Resonant City — Performative city drawing, 2015

Concrete Drawing — Drawing with building, 2016

Concrete /Cloud/ — Cloud configurations of Concrete Drawing, 2016

Keywords:
intensities, presence, in-between-ness, atmosphere
Identità e Differenze, White House, Concrete House, Sheerwater House; a sequence of projects investigating the conflation of architecture, landscape and concept through practice. Identità presented NZ architecture as in negotiation with its landscape; it was a large scale crumpled paper form that was both landscape and a document in negotiation. It alluded to Te Tiriti o Waitangi, the treaty between crown and Māori of 1840, and showed examples of NZ architecture hovering above a contested, crumpled surface. White House looked at the similarly contested surface of Auckland, Concrete House, the active seismic landscape of Wellington and Sheerwater, tensile relations between architecture and ‘natural’ landscape in a lakeside setting.

The contexts of each project are figured by the vicissitudes of site, client and time — as project always are — but they are also figured by specific contexts within practice. The creative mechanisms in drawing, building and redrawing allow each design to be a successive, but discrete, trial in an aesthetically imbued understanding. To give one example of this kind of tumbling, episodic process: White House, Concrete House and Sheerwater House were a sequence of projects that distilled landscape dynamics through practices of drawing. These buildings look completely different from each another and are designed in different ways, despite all three developing the same idea — of conceptual and physical landscapes being in complex intra-action. The repetitions of the idea are necessarily incomplete and find different forms in the situated-ness of each project. The projects don’t cement an architectural style or build a vocabulary of formal motifs, as is commonly the goal in architectural practice, they are more a way of bringing things to light through a sequence of practice investigations. When looked at independently of the built results, the threads that run through the practice of designing build to an architecture in their own right.
Familial Clouds was an installation by Simon Twose and Andrew Barrie at the Palazzo Bembo, as part of an invited group show of international architects at the 13th Venice Architectural Biennale, 2012 entitled TRACES OF CENTURIES AND FUTURE STEPS.

The installation was composed of two related parts: In the centre of the space a large plinth displayed a family tree of New Zealand architects; surrounding this, a cloud of miniature drawings was composed on the walls.

Encircling the walls, two projects were dispersed into a ‘cloud of process’. Five hundred and fifty drawings, 35mm slides and models, extracted from the design process of two buildings, were shown in miniature, shrunk to less than a business card. Each of these was displayed with a mirror, specifically angled to direct attention to a certain point in space. The representations in the cloud were clustered according to a set of these foci or station points — constellations of tiny images and mirrors aligned to the station points — and spoke of the iterations, alternatives, developments and dead ends in the design of the projects. Viewers traversing the cloud installation could discover these points as they moved through the installation.
My ambition to reveal the threads running through episodic projects and test their generative potential, has been played out in several installation projects, such as in Familial Clouds. This section begins with an account of Familial Clouds, and describes projects that have sprung from it: Concrete Drawing, Concrete /Cloud/ and Resonant City.

Familial Clouds was an attempt to spatialise the mess of practice — as an architecture in its own right. It redrew the material from two projects, White House and Concrete House, to present invisible aspects of practice. It attempted to spatialise the thinking and actions flowing through these successive projects by using drawings and images to activate space.

The installation used a cloud of miniature drawings, images and models to show intensities in the process. The various representations were made to become active spatially. Each drawing or image had its own mirror which was angled to orient to a particular location in space. When first entering the gallery space only the backs of the drawings are evident, presenting a cloud of white paper, but on closer inspection, the other side of the drawings was revealed in the mirrors. These were angled to create visual connections across the gallery space, and to bind the viewer into the cloud through reflection. Viewers were intended to traverse this field and encounter varying intensities created by clusters of drawings, directed towards certain viewpoints. The cloud of material was arranged in roughly chronological order so viewers entering the space could naturally flow through the unfolding of one project into another.

The drawings were clustered according to such things as iterations, dead ends or even crises in the process. For instance, a large group of sketches testing alternatives for the façade were arranged to crash together in the corner of the gallery. The frustrations involved in this practice event — of cost, complexity, indecision — were intensified in the active arrangement of the drawings, swarming like triffids in the corner of the gallery. The drawings in the cloud were used, not for the representational purpose of exhibiting a building that was absent, but to show the dynamics in the process. Invisible aspects in the process were made to configure the cloud’s form. Diagrams mapping the various forces in that drove the clusters were made, some of which are included in the section.

Familial Clouds was organised based on clusters of drawings and images that self-organised, in the sense that they prompted associations between each other that then influenced the overall composition.
Familial Clouds; view of cloud condensing in the corner of the gallery. This is where a sequence of facade iterations in the design of the White House were clustered, to spatialise intensities in the changes of direction, frustration and shifts in that part of the drawing process. Various facade tests, drawings, and 35mm slides of models were clustered to and oriented towards several points in space, at close range to the cloud. A viewer could discover these points on close inspection of the corner clusters. Photosynth image, 2012.
The composition was finalised at 1:1 through a kind of riffing, with the drawings and the memory of the events in the design process combining in the decision to locate each piece. The mirrored drawings and images were placed individually through this contingent method, but there was some structure to the clouded arrangements. Thirty-five points in space were determined, that corresponded to specific events in the process, and these became ways of orienting clusters of material.

The points in space, which I called station points, were located with masking taped crosses on the floor of a clone space of the Venice gallery, at Victoria University of Wellington. The installation was composed in this space and then recorded precisely, dismantled, and each drawing, mirror and support bracket numbered, so that it could be installed in Venice. The installation was then packed into a single suitcase for transport to Venice, weighing twenty-two kilograms.

Familial Clouds used a ‘redrawing’ technique to hint at peripheral and evasive aspects of practice. Concrete Drawing and Concrete /Cloud/ were also concerned with these ideas.

The presence of the Concrete Drawing has been difficult to capture and has involved various recording techniques, including 3D scanning and videos. This effectively is part of the redrawing, and is an attempt to capture strange atmospheres of this state between the episodes or materialisations of projects. I have used such techniques as Helicon photography which takes one hundred images of the same frame, each with a different focal point. These are either blended together to create a hyper-focused image, where the foreground and background are equally sharp, or the individual images are strung together as an animation. In the animations, the focus slowly tracks across the surface of thing being photographed. I have found that images made in this way capture surreal shifts in the sense of scale. This has an interesting sfumato effect of periphery-to-centre, through focus. I have photographed objects at different scales using this method and the miniature tends to expand to huge scale and the large to small. This episodic way of mapping or recording the Concrete Drawing ties into iterative modes of drawing, and is part of this episodic way of working and thinking. This is manifest in drawings and models, some of which are included in this contour.

Concrete /Cloud/ expanded on the redrawing investigations of Concrete Drawing. The concrete installation from Drawing Is/Not Building was re-configured in its move from Wellington to an exhibition in Venice, at the 2016 Venice Biennale. The representation of this work created a set of geometries and spaces; the fragmentation, transportation and re-assembly of the concrete pieces from one hemisphere to another made for another set of drawing-like evidence. Like the scruffy marks of a pencil sketch or generative model, these parts of the process are normally cleaned away when a building is constructed, yet are its formative genesis. They are integral to practices bound into the work but in ambiguous relation to it. Concrete /Cloud/ was a project that attempted to extend these aspects of practice.

Concrete /Cloud/ brought the physicality and finality of the Concrete Drawing project back to drawing-like state. It looked for sketchy possibilities in the design process that surrounded the project and attempted to redraw it to give it another life. The mass and materiality of the two tonne installation had a counterpoint of cloudy imagery — images of models that had been redrawn to deflect their acuity as representations.

Another redrawing project is underway, pursuing aspects of this episodic way of thinking, expanding on the Resonant City project. Resonant City was a 1:1 performative drawing exercise where twenty people actively recorded Prague space using mirrors and cameras. This was intended as both a performance and a way of generating source material for future installations.

In the Resonant City performance, Prague was redrawn through a set of unruly images. This was a performative drawing at the same scale of the city. The drawing of it was coincident with the thing being drawn, and the city influenced the resultant drawings/ images. The contingency of human error or desire to capture a material or form inflected the recorded material. It was a messy visual collection that reordered Prague space through a shared authorship between drawers and city. The intention is to use this visual material to ‘reverse engineer’ Prague in a future installation.
Familial Clouds; diagrams of clusters in the cloud. These recorded events in the process of designing the two projects, the projects’ genesis and connections between. The diagrams also record the spatial composition of the installation, such as the ‘station points’ associated with each cluster, and the flows through the cloud, such as time, gradations from sketch to resolved detail, smudge to built space, and so on. Diagrams, 2012.

Concrete Drawing: helicon image. In helicon images, of the work. Helicon images involve a blend of many images of the same scene, each with a different focal point. Normally these are fused into a single high resolution image. Examples here are single frames in that process, showing a thin band of focus that traverses the image in gradations. When animated in a video, these images present a traverse of a single scene, with a band of focus slowly tracking across the landscape in the image. Helicon Image, 2015.
3.2 Demonstration: Collection, exhibition, curation

If the artist carries through his idea and makes it into visible form, then all the steps in the process are of importance. The idea itself, even if not made visual, is as much a work of art as any finished product. All intervening steps — scribbles, sketches, drawings, failed works, models, studies, thoughts, conversations — are of interest. Those that show the thought process of the artist are sometimes more interesting than the final product.

Sol LeWitt 1967

I started by collecting things in order to inform my work. What seems to have happened slowly is that the collections eventually became my work.

Patrick Pound, Adam Art gallery description 'Documentary Intersect' 2016

This section of the redrawing contour reflects on the tendency in my practice to collect and arrange material falling out of the design process. This material records ordinary events in the process, and is something not usually divulged by architects. Or if it is, it is mythologised, such as in the ‘sketch on a napkin’, contrived to show the genius of the building’s creation, usually after the fact. These collections are demonstrations; of performances of material, space and bodies.

I have taken Marco Frascari’s use of the term demonstration, which implies monstrousness, and argue that the showing of the collections somehow makes their monstrousness generative. Frascari played with the meaning of demonstration to evoke oscillations between drawing and building, demonstration being etymologically linked to monster, showing and exhibition. The Latin monstrum, means wonder or portent, but also means monster. Monstrare, the verb of monster, means to show (Ridgeway 2014: 27, 28). Frascari notes that the Italian word for exhibition, mostre, comes from this hybrid root. Recording, collecting and curating the ‘fallout’ from the design process is a way of demonstrating the monstrous generative potential of this material.

The collection and redrawing of architectural elements was a key method in the very early drawings of Te Papa, as described in the drawing contour. In Te Papa, the paper was a tableau for various architectural elements to be collected and manipulated in various ways. It was a way of demonstrating, or showing hidden aspects of architecture. In the Te Papa drawings, the proposed museum was composed of collected material, curated as in various states of disassembly and reassembly.

This tendency to collect and re-configure continued in Familial Clouds which collected and curated evidence from two prior projects. It was, in this work, a demonstration of a non-representational messiness, which it used the collected assemblages to reveal. The material was arranged to extract the background noise in the transmission of ideas through serial projects.

Later work on collection and curation become more forceful. The Concrete Drawing installation used one wall of the exhibition space to show a cloud of images from the design and building process of the installation. In this assembly of images, swarming over the wall in an irregular composition, the images were encouraged to self-organise. Images were loosely arranged according to their mutual attraction or repulsion to one another, and the collage allowed to find its own form. I thought of this way of arranging as similar to forming a material with a definite grain: allowing some directions and resisting others. This shifted the idea of collection from a personal drawing technique, to a drawing technique where the drawer was one author amongst many, the visual material having its own agency.

Resonant City was also a collection, and extending the idea of the collected material having its own life or agency. In this case Resonant City employed an embodied, performative technique to collect contingent images, using twenty drawers and the city of Prague. From this process, a large number of images were collected. Each image is a collage, by virtue of shaped mirrors mapping the city in unusual ways, but the curation of the material is intended to involve other assemblages. The intention is for future installations of Resonant City images to be clouded together in ‘hyper-collages’ which would distil another Prague, something co-authored by the drawers and the city. The new Prague spatiality would then be a sum of the drawing, performed in the city, and the curation of the results as a re-drawing exhibition or demonstration.
3.3 Space: Architecture of process

Demonstrations of practices in drawing and building point to an ever-evolving generative state. They are part of the ‘infinite renewal of ends’ observed by Jean-Luc Nancy (2013: 1). As a practice this is part of an ambition to engage building in a similarly emergent process. Buildings have distinct atmospheres and are part of the complexity of our surroundings and are theatres of materials (Böhme 1998) and this material complexity also exists in drawing. Redrawing, I would argue, also has a spatiality which is atmospherically complex. The mess of production in a project, recorded in images or by other means, is like the smudgy, half-erased line of a sketch — of a wall, for instance — where its position has been tested many times, erased and then re-iterated. Through drawing, I am interested in how these smudges find form in buildings.

I am likewise interested in how the collections of process mess find their monstrous way into spatial form. I suggest that various contingent spatialities in the recording, collection and curation of process evidence creates atmospheres that are distinct from drawing or building. These spatialities are a mix of performances — of material, people and space — that are part of the process of designing and making projects. Redrawing, in exhibitions and installations is one way to distil this ambiguous spatiality.

3.4 Resonances: Redrawing Figures, writing works

In terms of objects in relation to one another, John Soan’s museum is an influence from student days, in his museological, tableau-like arrangement of architectural elements. Frascari, as mentioned earlier, is one figure whose ideas have intersected with the redrawing projects, in his emphasis on hybrid demonstrations.

An example of work that involves similar techniques of collection and demonstration is in the practice of artist Patrick Pound. Pound makes collages of photographic material in order to elicit strange and unusual associations. His assemblages of photographs are seemingly arranged, in part, through personal control of the artist and also through an element of the photographs’ self-organisation: as compositions of shape, tone or even glossy surface. This double of authorial control and the materiality of an image is part of the ordering I pursue in my arrangements in order to prompt an elusive and cloud-like spatiality.

Another artist with whom I find resonance is Olafur Eliasson, who arranges sequences of thematically similar images in episodic sequences and gridded compositions, for example in his *Morning Cloud* Series (Eliasson 2006). Eliasson’s work intersects with my practice on many levels. In my observation, he is interested in tacit, embodied knowledge and thinks of his work as a constellation of tests that contribute to ever-evolving ideas. Eliasson has made a project out of the classification of his work as ongoing aesthetic research. *Your Uncertain Archive* is a navigable cloud of associations, which is internet based, that assembles his projects according to various keywords — and then reassembles them to other keywords, depending on which is chosen. It is a digital spatial tableau that shifts to different configurations. My work intersects with his in terms of ideas, without having the volume of work nor the digital sophistication in its clouded curation.


Endword: Redrawing

The Redrawing contour picked up on threads that run through a practice of continuous shuttling between representation and built form, evident in my work. It followed an idea of architecture that is constantly in formation, through drawing, building and redrawing. My tendency is to record then collect, then curate material in order to redraw threads running through the work. This then becomes source material for further work, and so the process is rendered episodic. It is also its own spatial condition. The messy parts of the process that are normally discarded are in themselves spatial systems, in parallel to the more recognisable spatiality of the built, and become source material for generative work.

I argue that the spatial curation of visual material, collected from the process, builds to an architecture of process. This architecture of process has an atmosphere in between drawing and building, and is a monstrous architecture that is both generative, as material for more work, or a spatiality in its own right. Exhibitions and installations are useful tools to demonstrate this propositionally in-between architecture. This notion of in-between-ness is expanded upon in the following chapter, in which the shared space between drawing and building is examined, in the Drawing/Building contour.
Te Horo House, Concrete Drawing; assemblage of drawings re-drawing the Te Horo House, Various, 2009, 14, 15.
A prophecy: “Architecture started with stones; stones turned to concrete (‘trapassarono,’ as Brandi says); stones will disappear from architecture.”

Gio Ponti 1960: 36
The *Drawing/ Building* contour charts the shared space between drawing and building. This contour looks at elements in my that practice pursue the potential for architecture to be unfinished and ambiguous, a space of becoming between drawing and building. It is a study in how drawing might be building, and how building might be drawing.

The projects illustrating this contour have been designed to explore the shared space between drawing and building and amplify intensities that commute between them. They are projects which were undertaken during the course of the PhD in order to focus its questioning. There are three that form the source material: the *Concrete Drawing* installation; *Drawing Is/Not Building*, an exhibition of drawing practices; and *Concrete /Cloud*, an installation at the 2016 Venice Biennale. These projects were part of the PhD research and designed to hone in on the crossing and transferring between drawing and building, as well as the intersection of my practice with the practice of others.

The *Concrete Drawing* and *Concrete /Cloud* projects were introduced in the *Redrawing* section so are only introduced briefly here.
The *Redrawing* contour looked at the lineage of these projects in connection to a series of installations dealing with episodic repetitions, collection and demonstration. This contour looks at these projects for their research into the potentialities of chiasmatic space.

The *Drawing/ Building* contour begins by discussing the chiasmatic relationship between drawing and building, using *Concrete Drawing* and *Concrete /Cloud/,* and touches on the chiasmatic atmosphere evidenced by these projects. A brief overview of *Drawing Is/Not Building* then follows which discusses the resonances of others’ work in my own. The contour concludes that this shared space, between drawing and building, has potential for poiēsis in practice-as-drawing.

**Shapes in this contour**

__Chiasmatic Space: Atmospheres of transference__

__Resonances: Drawing Is/Not Building__

Community of practice

**Source material bound into this contour:**

__Concrete Drawing, 2015__

__Concrete /Cloud/, Venice, 2016__

__Drawing Is/Not Building, 2015__
4.1 Chiasmatic space: Atmospheres of transference

This section looks at what I am calling practice’s chiasmatic potential. By this, I am referring to the active crossing of atmospheres between drawing and building and other, similar, interactions between disciplinary boundaries. I borrow the use of chiasmatic from Marco Frascari, who borrows it from literature, and mines it for its etymological and metaphorical possibilities. Chiasmus is a literary metonym of complex crossing where the things crossed are always in mutually dependent flux — not simply in sequence or transferring from one to the other but merged, overlapped or in vibration. Frascari uses the term to merge concept, thing and embodied making, and I use it for these crossings, but also to form an image of a practice that might operate between drawing and building; I have progressively zeroed in on the movements in the X marking the shared space between drawing and building.

This is evidenced by the Concrete series of work. The intention with these projects was to focus on the transferral of atmospheres rather than on how they manifest themselves each side of the projective gap between drawing and building. They looked to generate something in-between; not one or the other but a spatiality in a continual state of (incomplete) exchange; an atmosphere of transference. The evidence in this contour is largely image-based, rather than theorised, and involves atmospheres recorded in the making of the works or in the final manifestations. The first experiment in this is the Concrete Drawing, an installation piece at the Adam Art Gallery, June 2015.

Concrete Drawing’s chiasmatic atmosphere was recorded in a series of moving images, time lapses and helicon photographs. The resulting material became yet more source material, as described in the Redrawing contour, but did begin to distil the chiasmus of drawing and building. The blurrings and shifts in attention, in the moving images and stills began to speak of the crossed atmosphere as something temporal that could only be experienced over time. For me this began to coalesce with an idea of Sfumato practice that blurs and shifts from one thing to another.

The Concrete Drawing was also shown in Venice in the 2016 Architecture Biennale, at the Palazzo Mora. It was part of the Concrete /Cloud/ installation. Concrete /Cloud/ developed the dynamics within the Concrete Drawing further, it being a re-configuration of the work in another space, and in its association with a wall work, /Cloud/. The wall work adjacent to the Concrete Drawing was a series of images from the Concrete Drawing process, which were sketched over in Photoshop. These were images of models from the design process and that were deliberately marked to reduce their acuity as representations. The idea was to render them generative, rather than descriptive, and evoke a gestural and material messiness. In this way their pictorial usefulness was reduced and they were caused to become useful as smudgy, ambiguous marks.
The cloudy model images were a selection from a series of similar images. These were images of the designing of the Concrete Drawing installation as well as its making, the spaces in which the making occurred, the spaces of stacking, ordering, crating, transportation and assembly — that were part of the Concrete Drawing's reconfiguration and transportation to Venice. These all received a similar treatment — of a reduction in representational acuity and a focus on gestural blurry smudges.

Discussion

At one level drawing is an instrumental means to determine how matter is formed; how it is shaped, constructed and, perhaps, felt. It also has its own set of material entanglements: the understanding of scale that comes from turning a physical model in the hand, the slow application of a pencil over paper, the rapid generation of multiplying lines by computer software. These facets of the architectural process are usually hidden, cleaned away by the presence and seriousness of buildings the drawings are deemed to represent. Yet these delicate, complicated things figure the designer’s spatial understanding and are the tissue of architecture; they are the making of it.

Twose, 2015, excerpt from Adam Art gallery wall text

The aim of this contour is to allude to, and intensify, building’s presence in drawing, and show the two as in some kind of frictive relation. In a sense, building binds into drawing through imaginative projection; a plan can reveal that a corridor is ‘just too tight’; an assessment based on prior, professional, spatial knowledge. The scale, materiality and presence of building, through habitual understandings gained through practicing architecture, inflects drawing and the drawings that result. They absorb affective spatial understandings, from experiences in the built, into their compositional schemas. This is a reversal of the convention. Buildings normally occur after drawing, remote from it in space and time; buildings are projected, they are projects. They are not normally considered to be both one and the same.

This contour suggests that the shared space of drawing and building is a ground for experimentation. It intensifies the potential for this space to be a state of becoming, with a strange, chiasmatic atmosphere. This is a key element of what I am calling Sfumato practice; that attempts to draw out poïēsis through such motile becomings and crossings.
Drawing Is/Not Building was an exhibition designed to bring together three practitioners of drawing, each with a markedly different approach and technique: Sarah Treadwell, Roland Snooks and myself, Simon Twose. The exhibition was an active way of testing where my practice sits amongst a wider community. I instigated and curated the show so I had the opportunity to invite two other contributors who held particular positions on drawing that were in relation to mine. Roland investigates the possibilities of the digital, Sarah the analogue and I look at hybrid modes, combining analogue and digital. A book of essays accompanied the show that further contextualised contemporary practices of drawing. Below is an abridged version of the introduction to the book Drawing/Is/Not Building published in 2016.

This project began with a simple impression; of drawing and building being one and the same, as if both were merged in a curious stereoscopic image. Bringing these two together seems to jolt things into question, not least being representation, occupation and matter. In this weird shared space, drawings might gain the mass and presence of buildings and buildings the criticality of art.

*Drawing Is/Not Building* was shown at the the Adam Art Gallery, April – June 2015.
This PhD has been useful to clarify where I am positioned within the discipline, as an architect who also practices as an academic. I have discovered that I am interested in architecture as a critical activity, more than as a commercial practice. Apart from personal discovery, I would like this PhD to contribute in a deeper sense, in some way adding a small blip or blurriness to the edge of the bubble of knowledge, drawn in such a succinct way in diagram form by Richard Blythe in a lecture on practice research. (Blythe 2014). I suspect this tiny blip is in the area of design research. I am looking at a very specific mode of practice that is a crystallisation of many years of work, and is by no means universal as a methodology. Despite this, I am within a community of practicing architects, artists and academics and there is a great deal of commonality and resonance in my work with the work of others.

The exhibition Drawing Is/Not Building offered a frame in which to look at a drawing-oriented community of practice. I was interested in the positioning of myself within a community of practice to be a project in its own right, and this was part of the motivation for curating Drawing Is/Not Building (Adam Art Gallery, April 24 – June 28, 2015). For the exhibition, I brought together three practitioners who research through architectural drawing, each in a particularly different way: Roland Snooks, Sarah Treadwell and myself. A book followed the show and, as well as commenting on the work of the three contributors, included essays on drawing from seventeen architects, academics and artists. These were a useful survey of the intellectual terrain in which drawing sits and gave me a context to which my practice might align or react to.

I can’t avoid the fact that my work stems from the Auckland University School of Architecture and Planning in the late eighties, in the post-structuralist climate that saw architecture regarded as a critical tool and drawing seen as paper architecture. At the Auckland School this was led by Sarah Treadwell and Ross Jenner. These two lecturers had a strong influence on my thinking and I continue to collaborate with them. A discussion of Sarah’s contribution to the Drawing Is/Not Building exhibition is later in this section. This era several practices with an interest in representation and I see myself among that group, working in a way more allied to academia and art-based activity than the profession. My way of working stems from this early, representation-centred environment but has shifted over the years to a stance that looks at things that are beyond representation and evade language. This is through the influence of the practice of realising buildings, with all the messy complexities and technicalities that involves, and working as an academic, which has allowed forays into contemporary discourse, and with it the stimulation of teaching, writing and exhibitions. Drawing Is/ Not Building was one such exhibition, and was an opportunity to engage with a wider discourse, in an exhibition and accompanying book.

The book collected seventeen essays from leading architects, artists and academics. Each author was invited to write about a single drawing, using it as the object of discussion, to present a position on drawing. I will not traverse the many positions but select the main contributors as key examples to discuss my practice in relation to others.

Roland Snooks’ work seems to be hyper-representational, in its concern with distilling the aesthetics of digital tools and digital environments. The representational characteristics of digital experimentation such as this seem to be foregrounded in the work but backgrounded in the discussion which primarily emphasises possibilities of computation; to a degree the generative agency of the drawing tool is privileged over the agency of the built.

My position is in parallel relation to this. I am interested in the agency of media and materiality inflecting the design process, although in my case these are usually built things, or at least physical objects and materials. To my mind, much of the digital experimental work operates in a conventional representational mode — drawing siloed from building, and concerned with mimesis — in simulations of natural dynamics for instance. The physical manifestations of the digital creations are often largely transitive, in that they are outputs from a representational medium and the impact of their building is not given as much agency as that ascribed to computation. I find Snooks’ work is countering this through such things as his use of direct robotic fabrication. His work has an artful, aesthetic approach which I see in alignment with my practice; I think Snooks is distilling poíēsis in the digital.
Sarah Treadwell's work comes out of a critical theory context and tends to be poetic and meshed with writing. Her recent work on 'ekphrastic writing' tests the spatial connection between architecture and text, for instance. I am from this critical tradition but my thinking has shifted: due to being a practicing architect as well as an academic, vicissitudes of the industry have become merged with criticality. Such things as mass, gravity, cost and the social complexity in commissions and realising buildings have inflected my interest in reversing or merging this condition to one that encompasses more than literary theory.

I would categorise Treadwell's work as an example of drawing as critical observation. It is determinedly not translatable and to an extent relies on a separation from the built to maintain its abstract poetic. My work is close to Sarah's in terms of a shared history, in critical approaches to architecture, and a pursuit of poïësis, but remains in parallel. My work attempts to draw-in architecture, as practiced, into this criticality.

Another example of drawing as an observational tool is Riet Eeckhout who uses drawn overlays developed from images to create geometric vocabularies. She states: 'I use hand drawing to engage with the complexity of what is visible. I use hand drawing to speculate on the nature of an object or subject and I explore through speculative drawing how I can activate their presence' (Eeckhout 2013: 9). These are drawings that are internal compositional worlds closely tied to representational, two-dimensional techniques.

Space is extracted from them through conventional projection, with the resultant built objects as outputs. To a degree the drawings hold more than the buildings projected from them. In this work, drawing has agency as a tool for knowing, something consistent with art practice understandings, and building is projected or translated from it. My practice is related to this use of drawing as an observational tool pursuing poïësis, but my interest is in reversing or merging this condition to find new understandings; to bring in the vagaries of the built into the practice of drawing.

Jo van den Bergh makes much use of drawings in her PhD thesis and quotes from texts on drawing from key proponents, such as Perez Gomez and Marco Frascari. His discussion is located, to my mind, in these Frascari poetics. Van Den Bergh's viewpoints on the relation of the poetic idea (or concept or dream, magic) and building seem to align with the 'construal of construction and construction of construal', to paraphrase Frascari (Frascari 1991). Because his understanding has been developed through a long experience in built projects, the poetic agency of building and making is bound into his thinking. This approach is close to my own, as I am interested in the poetic agency of building. My practice differs from Van Den Bergh's however, in that I am interested in intensifying the shared space that exists between drawing and building; taking the poetic force Van Den Bergh observes at play between drawing and building, and finding its architectural potential.

Van Den Bergh's drawings recollecting his grandmother's house (Van Den Bergh 2012) are a way of using drawing as a notational tool for psychogeographic explorations, and there is a merging of the (dark) aspects of his drawings with that of personal memories. He does not articulate what role the analogue drawings play in this transaction to any great degree, and has argued for them to be a means to an end, diminished in their import in favour of the realities of construction. I see my position as distinct from his in that I am considering the qualities of multiple things, be it drawing, materiality, construction or less physical things, such as psychogeography, as being covalent.

Drawing Is/Not Building collected a snapshot of contemporary thinking on drawing. The forgoing was a sample of the work in the book, and exhibition, and its resonances in the work of my practice. Within this context, my practice engages with traditions of observational, poetic capacities in drawing, as exemplified by Sarah Treadwell and Riet Eekhout, and traditions of poetics of building, as exemplified by Van Den Bergh's work, but is also moving away from these traditions; it attempts to discover experimental possibilities through intentionally misunderstanding the vectors of translation and separate identities in their traditions. Digital work, such as Snooks' seems to be opening this ground, where representational separation is being challenged. My practice is allied to these arguments, yet is pursuing a subtly different position. I am attempting to add to the understanding of drawing, as a poïëtic tool, while not lauding it as a separate ideological and aesthetic sphere, and engage it with the vicissitudes of practicing architecture, which is inevitably about building. I am wanting to make drawing building and building drawing; to discover movements in the space between them.
Drawing/Building discussed an experimental condition where architectural practice is in vibration, between drawing and building. The atmospheres and fluid relations in this in-between state are proposed as a mode of practice that engages architectural understandings — which have translation, transposition and transference at their root — as a restless way of uncovering restless and evasive knowledge. In the next chapter, *Sfumato Variations*, blurrings in practices of drawing, building, redrawing and drawing/building are identified as source material for further investigations, in a *sfumato practice*.

**Endword:**

**Drawing/Building**
Although the word sfumato is familiar, its exact meaning is unclear. It seems almost appropriate when using the word to allow it a certain indeterminacy. Taken literally, sfumato describes not merely the appearance of smoke but its disappearance, its imperceptible diffusion in the atmosphere.

Nagel 1993: 7
Sfumato Variations coalesces trajectories for a Sfumato practice that draws in an open way, pursuing poiēsis through a hovering between drawing and building. It articulates areas for study and outlines ways in which they might be researched. These variations are drawn from observations in my practice and are necessarily contingent — and in continuing development — but are directed at ways in which Sfumato practice can be a process of continued becoming, and as such an open work of drawing. The variations chosen for further exploration are: Marks, Scale, Form, Jolts and Lensing. These are chiasmatic within themselves and are also in vibration with one another, so in practice they blur together rather than completely standing alone as separate categories. This section sketches these variations using evidence from my body of work as examples.

The variations are distilled from the practice cloud. They are moments that point to capacities of open-ness: of liminality, shifting possibility and asymptotic mutuality, such as in the dynamic interplay between drawing and building. They are thought of as the forces within the /Cloud/ and are evidenced through material collected from the contour sections in this document.
A set of practice strategies to address these variations is also outlined, drawn from my past and recent practice. These involve a hybrid of drawing, making, recording and redrawing. *Sfumato practice* is proposed as a future practice that explores open potentials in the sfumato variations through strategies like this, as part of ongoing practice research. Experimental making, installations and academic publication are seen as the main ways in which the research is conducted, but it also ties in with future practice in a more conventional sense, in terms of built projects. This section outlines the parameters for such a practice.
1. Marks:
Gestures/ Matter/ Atmosphere

The first set of variations is to do with Marks. I am interested in the non-semiotic, blurred and aleatory marks that surround the drawing and building of architecture. These are marks that are integral to the process but are normally cleaned away in the development of built architecture. They include the erratic marks of a wall sketched repeatedly and partly erased, marks in digital space caused by idiosyncrasies of software, marks through gestural acts of making, in drawing or building, or even writing, which influences the design of space. How these marks transfer to built space is difficult to determine, as they are by definition indefinable, but marks like this are part of the drawing process, so accrete to spatial understandings that inform built space. I am interested in how these uncertain marks cross with and find presence in atmospheres of the built.

The list below includes marks of interest to the research, along with speculations as to the atmospheres they cross with. In practice any one of these marks could be explored in an aesthetic research project, or the crossing of several types could be pursued.

**Shapes in this contour**

- Sfumato variations
  - Marks: gestures/ matter/ atmosphere
  - Scale: proximity/ transference
  - Form: composition/ geometry/ materiality/ surface
  - Jolts: aleatory agents
  - Lensing: observation/ showing
- Sfumato practice strategies
  - Drawing and making
  - Collecting and Recording
  - Redrawing the recordings
  - Curating the redrawn recordings
  - Recording the redrawing
- Discussion
  - Situating Sfumato practice

**Keywords:**

*Shifting possibility, asymptotic mutuality, scale shifting, agency of objects, feedback/abjection/ risk, presence, wonder, architecture/ art/ academic practice hybrids.*
Analogue marks:

I am interested in the smudges, stains and erasures that occur in making marks by analogue means, through, predominantly, hand drawing. I see these as the uncoded and irresolvable marks that surround marks that are more deliberate and instrumental. These are marks that are normally considered to be indicative of movement or flows, or simply in the ‘holding pattern’ of indecision that comes with architectural drawing. These are normally cleaned away in the translation of the drawing to built form, which is intolerant of the uncertainty and multiplicity of these marks. In my view, these ‘recalcitrant marks’ as described by Elkins have a presence in built space and serve to inform an aesthetic of responsiveness and indeterminacy. I suggest that these blurred, complex marks carry through to influence atmospheres in built space. They are not instrumental in their translation — multiple scratchy lines in plan don’t correspond to layered walls — but they are carried through by a host of aesthetic decisions about curvature, light, surface and materiality. They tend to hover between the professional understanding of the thing being considered—a wall, for instance—and the materiality and gesture of the mark itself. In this way their form is partly gestural and partly observational, of a condition beyond it. The atmospheric merging between the mark and thing is where I believe these marks have their most potential for an open poiesis.

The primary example of such marks and the atmospheres they cross with are in the White House project. The analogue drawings in this design were seen as a way of drawing out intangible flows, in both the embodied acts of drawing and the Auckland suburban landscape. They attempted to use drawing as an observational device to distil the motile aesthetic of a domestically driven landscape. There were many drawings and a great deal of blurrings, erasures and multiple lines that eventually became solid walls. Although only a small proportion of lines prefigured the built objects, the aesthetic of indeterminacy present in the efflorescence of marks in the process crossed with an atmosphere of responsiveness. This was carried through curvature, lack of apparent materiality (white surfaces), and a softness of light.

Drawings are a resource of design uncertainty. In my opinion indeterminacy is where the poiesis of a project lies. Designing is a process of pursuing indeterminacy while not determining it. With pentimenti, smudges, erasures, and other such recalcitrant marks, there may not be a measurable correlation between them and built space, but their aesthetic force transfers something, through accretion, to built space and is in active dialogue with it; in an architectural drawing atmospheres of imagined space combine with the dragging and dark burnishings of graphite on paper.

In the Drawing contour I traversed the gestures, materiality and atmospheres in marks like these in a series of diagrams I called the ‘difference engine’. The diagrams looked at analogue marks that are: erased, episodic, multiple, space bounding, fast, resultant of flows, indeterminate. These diagrams crossed these characteristics with atmospheres, in the built, that are: curved, unbounded, non-hierarchical, sfumato, strange and gravity-less. The diagrams also highlighted gestural aspects associated with these marks, and linked them to motivations that were: more restless than deliberate, closer to fascination than boredom, more compositional than projective. The diagrams, while fairly inscrutable, helped me to think through the many crossed factors in the ongoing materialisation of indeterminate potential in analogue drawing.

The qualities highlighted in these diagrams serve as examples of the chiasmas between the gestures, matter and atmospheres in analogue marks that point to practice being an open work.
Analogue mark; drawing as a resource of design uncertainty.

Analogue mark space; distorted surface imbued with atmosphere from repeated analogue marking. The ‘Nuanced misalignments, approximate thoughts and imperfect moments … (that) resist fixing normative figuration …’ (Kulper 2013: 63).
Digital Marks

The marks associated with digital drawing media are also interesting in relation to potentials of openness. My practice is based in relatively conventional software, such as Revit and Rhinoceros, so the marks are similar to analogue marking, in that they involve fairly direct authorial input. I am very interested in the ability of digital media to shift authorship through its algorithmic agency but have not directly researched this in my own work. Recent master’s students under my supervision have worked in this area, however, and I have published a co-authored paper recently on non-human agency in digital drawing: *Digital Chocolate*. In, *Posthuman Frontiers: Data, Designers and Cognitive Machine*: ACADIA (Twose, Du Chatenier 2016). I am interested in digital marks and marking as promoting a shared agency of computation, material and designer. I allude to the volatile possibilities of the digital medium, to jolt ideation away from authorial control, in the *Jolt* variation.

The digital marks in my work are from such things as: the free manipulation of elements in digital space, shapes created through lofting individually traced poly-lines, CNC fabrication, and, according to my diagram analysis, correspond to atmospheres that are pressured, angled, constructed, tectonic yet non-tectonic, ominous, still, temporal, abstract, strange.

Examples of such marks are in the *Concrete House* and *Concrete Drawing* project which attempted to distil an aesthetic, atmospheric sense from digital marks and marking. The apparent accuracy, cleanness and resolution of digital marking was explored as a view into the virtual; as a distillation of an aesthetic capacity of digital drawing. It is similar to the aesthetic distillation of text in the *Te Papa* drawings which were pre-digital, yet had the same machinic characteristic, drawn as if by something other than the hand, being so miniature and precise. These ideas cross with the sfumato variation that deals with lensing, or the ability of practice to show (monstrare) aesthetic aspects within contexts.
Digital Mark; example of tensile actions and resistances, between drawer and digital drawing, within the space of digital drawing.

Digital mark space; digital marking in fabrication. Lines of tool paths creating surface modulations that break space and light into successive gradations.
Gestural marks

These are the marks of performances in drawing and building that normally go unrecorded, such as rotating a model in the hands to assess its qualities, or the various actions in constructing a full scale prototype, or even the dynamic operations involved in constructing buildings. The marks are gestural but occur in space and time. The evidence of these intangible events is captured by the process — buildings are marked by gestures that have occurred in space and time distant from them. A model rotated in the hand marks the building by crystallising decisions about its arrangement or proportion, for instance, but the event that led to the decision is not directly recorded in the built. In the Concrete Drawing project such fleeting gestures and spatialities were fused with the built object, as a way of recording ephemeral events in the drawing process through marks in the concrete surface.

Events such as this, the simple viewing of a model, construction of a prototype, the stacking, ordering, numbering, transporting, reconfiguration and assembly of elements in an installation, or building, have a spatiality which is forceful yet erased; barely present in the (so called) finished work. I see these as similar to the ‘welter of pentimenti’ in a sketch (Faust 2013: 81). These are active worlds that are in chiasmatic relation to that of the built, with atmospheres in vibration between.
Mark’s marking

These are marks made through redrawing recorded material. These are marks made to distort other marks, to shift them from being descriptive and towards being generative. An example of this is the drawing over images of models in the Te Horo and Concrete Drawing projects, which were exhibited in Concrete/Cloud/ installation in Venice. These were manipulated to reduce their acuity and render them irresolute and possible, and as such generative rather than descriptive.
Marks of intensity

These are traces of dynamic intensities, such as in site, programme or embodied actions. These have a forceful impact on drawing and building through their flows or constraints. Such things as the events that make up a domestic brief, which cause lines to distort and walls to move, mark the process with their formative force. These marks are intangible but they nonetheless influence the heaviest of elements.

Examples are the White House, which was designed as a drawing that responded to clients’ desires and the aesthetic motility of the Auckland landscape. Concrete House, which was drawn in response to invisible landscape forces — of seismic potential; and Te Horo House, which was composed based on the everyday requirements of the domestic programme and a dynamic site jolting large concrete elements.

Programmatic intensities are often negotiated in a sequence of drawings; analogue drawings that cross gestural marking with flux of the brief, such as in the drawing of the White House:

... everyday actions and protocols were recorded, along with their thinking about space, furniture and objects. Minutiae of pragmatic concerns merged with intangible requirements; the use of a particular piece of furniture for instance; for receiving keys and gloves, seamlessly overlapped with discussions of the right dimension of ‘polite’ space around it, which would in turn determine the success of the lobby. This success was discussed in terms of both the formal properties of the space and space as mediator of an event; such as a hurried exit to a meeting, or the first impression of an important guest. Many complicated requirements and understandings of built space, such as this, were accommodated in the drawings, and as the design progressed, the drawings were performed in real space: the clients moved around an improvised kitchen island, made from the nearest pieces of cardboard, they sat in folding chairs in the building site, to check the view, imagining they were relaxing in a comfortable living room. The clients went over every detail of how the spaces would be used, what they would be like, how people would react on entering them for the first time, how the building presented itself to the street, how it directed views towards the landscape; many interconnected complexities of space, object and action embroiled in the personal performance of home. These desires for home, and imaginings of future home life, were negotiated in design drawings.
108. Programmatic intensities negotiated in a sequence of drawings: analogue drawings that cross gestural marking with flux of the brief, such as in the drawing of the White House.

109. Building elements in dynamic response to imagined and actual pressures of site: large concrete screens composed through a mix of compression, within a tiny site, and an ‘aestheticisation’ of the seismic potential of the landscape, through manually jolting and shifting elements in digital space.

110. Spatial force of programme: allowing a domestic brief, mixed with spatial influences of site, to form the building through internal and external pressure.
2. Scale: Transferences

The Scale variation looks to find ways in which scale can intensify a hovering between drawing and building. It attempts to create situations where multiple scales are present simultaneously, such as in a surface that alludes to both a texture and landscape terrain, or where a drawing is at the same scale as the built object that it represents, and so merges with it. Scale speaks of the correspondence between things so is inherently chiasmatic, it is effectively a strategy that deals with intensities crossing between Marks and Form.

Mass and landscape is a thematic prevalent in my practice. This has triggered an interest in proximity, of drawer to drawing and drawer to drawn things — be they buildings or landscapes. Drawing and building have scale as the relational glue that can bind the tiniest model or drawing to qualities of space at much larger scale. It is one of the primary conundrums of designing: the knowing — and, at the same time unknowing — attention to scale. When a model is viewed, for instance, the drawer mentally edits out their own hand, viewing instead a projected occupation of the built space alluded to by the model, or an occupation of space at a scale very much larger than that evidenced by the tiny object moving before them. Scale is a sfumato variation that offers possibilities to shift scale, merge the drawn with the built, encourage strangeness of atmosphere, and, through these, discover open potentials in architectural practice.
111. Crossing of scales; an ambiguity between built space and that in design space that supposedly precedes it. The surface comes to allude to a spectrum from landscape to texture.

112. A mix of scales; small scale remnants of the drawing process, in constellations of 1:50 walls, evident in the 1:1, built walls surface. The two scales coexist, in this work, and offer themselves as surface ornamentation and projective possibility, building and drawing.
3. Form: Composition/Geometry/Materiality/Surface

The Form variation explores ways in which form and materiality in built space are agential in practice as a work of opening. It looks at the recalcitrant and blurred potential of materials and their force on form, surface and ornament in the built. It sets the scene for experiments that draw with building.

Surface is the ground for such shifts to play out, carried by surface plasticity, surface tension and light. Surfaces collect movements, occupations, traces of prior action; space dissolves into surface, collapsing temporality into its texture and weave. Surface becomes an archive of making and this connects with occupation, by prompting the viewer to interact with its skin. As such, surface has possibility as a dynamic space of relations.

Various projects evidence this responsive, aleatory way of forming. The White House was formed as a responsive and amorphous set of surfaces and spaces. Concrete House formed as massive and gravitationally dependant elements in fixed but conceptually dynamic relation. Te Horo House and Concrete Drawing explored aleatory formations of large concrete walls and the unbounded interior and exterior spaces that surrounded them. All these examples utilised surface and ornamentation as part of their formal composition. Geometries of curvature, orthogonality and fractured compositions are variously engaged in projects which explore similar things: the forming of objects and space through forces not entirely at the hand of the author, and not entirely ordered.
Assemblage of forms; results of aleatory forming, each from a particular ontological situation; drawings' materiality and gestural capacity offering different formations of space, surface, texture and atmosphere.
4. Jolts: Collections, episodic recording

Jolts looks at the capacity for factors to impinge and jolt the process of ideation, such as shifts in media, episodic repetitions or the feedback from materials. These are aleatory forces that shift authorship from the drawer to one that is shared between drawer and the vicissitudes of medium, in order to encourage uncertainty and open-ness. Jolts allow an aesthetic forcefulness of things other than the drawer in the process, creating orders that are responsive, unexpected and uncontrolled. This points to a potential for work that evades interpretation, though a productive vibration between logic and alogic.

Katherine Hayles’ work on Object Oriented Inquiry provides a contemporary literary context for Jolts. She works in the area of aesthetic philosophy, and discusses the impact of non-human influences in aesthetics. This has a direct relation to my work which looks at closely at the various performances in designing, such as drawing, that have so called non-human feedback at their core. Writing on new materialisms is also connected to this approach, which deals with the liveliness of materials, in a practice that distills ‘the never fully foreseeable emergence and unfolding — of any materialisations under scrutiny. This unfolding requires modes which stay attentive to the emergence of the subject matters of the research, so as to be able to actualise, in always somewhat unpredictable ways, the research process.’ (Tiainen et al, 2015: 5).

Jolts can be constraints or obstructions in the process, as in Lars von Trier’s Five Obstructions, or simply moments of ugliness that undermine a prevailing aesthetic. These are moments when the abject qualities of the work push back on the process, feeding into work that is an unfolding sequence of discovery. These jolts are evident in the heavy repeated lines of impatient hand drawings and the small melted printed models; the surface of the buckled White House and the puckered surface of the Concrete Drawing.

Drawing is episodic. It is a practice that is figured by iterations and shifts in media. In my work this predilection to multiply and repeat — to incessantly draw contingent lines — is driven by a desire to maintain the provisionality of drawing. This is a process whereby gestures and marks are repeated until a jolt occurs to productively shift them into another mode. These jolts are figured in the gesture of the marks and their material and form.
Printed model, its form disrupted through machinic mistakes in printing, jolting the pure transmission of idea to form.

Surface jolts, the aesthetic force of materials in the process; deflecting the one-way vector of intentionality.
5. Lensing: Observation/showing

Lensing comments on the ability of Sfumato practice to act as a lens: a way of drawing out intangible characteristics from contexts that it rubs up against. This engages with practice’s capacities to be ever emergent and productively uncertain and uses them to observe other conditions that involve similarly complex, chiasmatic characteristics. One example of this study of aesthetic identity is in the White House project which drew out and materialised intangible dynamics in the aesthetic DNA of Auckland. Other contexts where intangible characteristics are drawn out are home, landscape and aesthetics internal to discourse.

Sfumato practice — and indeed, any architectural practice — is put forward as a way of drawing out uncertain and intangible understandings from contexts beyond it. Practice’s internal aesthetic mechanisms involve negotiating intangibles, developing uncertainties, crossing between immaterial and material concerns, incorporating invisible dynamics of action or occupation, moving between discursive and non-discursive factors. For these reasons, practice has the capacity to be a sophisticated aesthetic lens on other contexts, drawing out intangible understandings that might evade other ways of knowing.

Drawing practice is an aesthetic lens that is in excess of its instrumental reason for being. Through its multiplicities of material, action and spatiality, drawing practice is a way of observing contexts; paper architecture distilling intensities of theorisation; as (drawn) atmosphere.

Conflations of landscape dynamics with the contingencies of occupation, at multiple scales — landscape, building and drawing — can be brought within a design lens. This engages practice as a process, crossing multiple spatiities in the production of knowledge. These are examples of practice as an aesthetically imbued lens, and a restless way to pursuing restless and evasive knowledge.

My focus, in the end, is on knowledge that is not measurable. I see practice as a cloud of events and phenomena that synthesise unmeasurable, aesthetic, intangible, poietic knowledge. This capacity allows practice to be a way of understanding unmeasurable aspects in contexts beyond it — as an aesthetically imbued lens. The strange presence of this unmeasurable poietic, in measurable, physical architecture, is what, in my view, is key to good work. It is also what makes design research research.
Contexts such as the suburbia of Auckland can be observed through the lens of design, concluding that there is an inherent mobility to their spatial DNA that can be discussed through the practice of designing buildings.

Conflations of landscape dynamics with the contingencies of occupation, at multiple scales — landscape, building and drawing.
Sfumato practice strategies.

The everyday practice methods of researching the subject matter outlined in the Sfumato variations is described in this section. In essence Sfumato practice is an architecture of process, concerned with ongoing materialisation. Each output from the process is assumed to refer to something beyond it, and as such, always to have some generative capacity, as well as being a finished artefact. Practice involves a series of acts of marking or making that fold the real-ness and certainty of the outputs back into the process, which is by nature uncertain and imbued with potentiality.

The artefacts that spring from this process are considered certainties or stoppages in an ongoing process. The process is to take the stoppages and reduce their acuity so they become sketchy again. This is done in a number of ways, such as redrawing, and by manipulating recordings of the process and assembling them in spatial installations. This provides material for further stoppages and subsequent redrawing, giving the practice a method of pursuing certainties that are also productive of uncertainty. Like Leonardo's famous description of the many 'uncertain lines' in the determination of a contour, it is an image of practice as a multiplicity of shades between one thing and another, between drawing and building. A list of process strategies is below, drawn from my body of work:

1. Drawing and making

These are acts of design that occur in pursuing a specific project. I am seeing the project as one of two things: a design for a building, such as in a real commission, or an abstract investigation into one of the sfumato variations. In the first, the project becomes the vehicle for testing some of the variations. In the second, the project is pinpointed research that zeros in on the variations, such as the materialisation of the non-semiotic blurrings of an analogue line for instance. Drawing and making is necessarily hybrid and shifts from one medium to another. It involves such things as:

- analogue drawings of flows, trajectories, forces, intensities,
- analogue physical modelling,
- digital drawings of forms in spatial relation,
- CNC fabricated moulds and prototypes,
- casting of prototypes — of surfaces, forms,
- digital scans of physical models,
- analogue drawings and physical models of iterations,
- ongoing theorisation.

2. Collecting and Recording

The collection and recording of actions and marks in the process means keeping everything, not throwing anything away. This means collecting all the sketches and iterations for future use, photographing multiple trials of models and prototypes and photographing acts of making. This gives a cloud of material for further use, and involves:

- collecting drawings, models, prototypes as physical evidence of the process,
- recording marks,
- recording performed actions, such as drawing, making, viewing models,
- recording the spaces in which drawing or building occurs,
- recording the spatialities of buildings that result,
- recording process in text, notes, diagrams and theorisation.

3. Redrawing the recordings

The recorded material can then be manipulated to reduce its acuity, making the recorded elements generative, blurry, insubstantial and uncertain so they allude to other possibilities. This involves such things as:

- photography of marks, models,
- prototypes at close range or in moving image,
- redrawing, working over images: blurring, grey scaling,
- shifting scale of images,
- casting.
Various spatialities and materialities in drawing and making.

The collections of actions, spaces, marks; in this case time-lapse imagery of an installation in progress.
4. Curating the redrawn recordings

The manipulated records can be spatialised to create another architecture. This is a way of redrawing the material to give it other spatial possibilities. This leads to the recorded material being made into:

- arrays, assemblages, clusters, constellations;
  spatial configurations that prompt active movement in the space of ‘building’.

5. Recording the redrawing

The arrayed process material can be then recorded in images, to be further manipulated: redrawn, reduced in acuity, changed to something generative, as part of the ongoing materialisation, using such things as:

- helicon photography; diagrams; models; text.

6. Drawing and making

The recordings become source material for further materialisations, such as in building projects.

The impulse is to see architecture as spanning a blurry range between drawing/s and building/s. At times drawing is brought close to building, at other times building is brought close to drawing. Practice, as a discipline that deals with the transmission of qualities from one thing to another, is a process of uncertainty that leads to certainty. The physical certainties of drawings and buildings are always surrounded by the contingent, inscrutable and uncertain conditions — of occupation, for instance, so architectural practice, which negotiates these complex conditions, is the most appropriate discipline in which to research them. Practice is a discipline that deals with the transmission of qualities from one thing to another. It is a process of uncertainty that leads to certainty. The Sfumato practice strategies are put forward as a methodology to explore the open potentiality of practice-as-drawing.
Discussion:
Situating sfumato practice

Sfumato Variations looked at ways in which practice can be a work of opening: an ongoing action or practice. It is directed towards understanding how practice can be generative of open-ness through its many objects, procedures and occupations — through its marks and marking — as a practice of drawing. The Variations section attempted to crystallise a methodology for future aesthetic research in Sfumato practice as an open work, engaging the vibrant, uncertain and blurred zone between drawing and building.

There are many contemporary threads that parallel the contours of Drawing/Building/Cloud and the Sfumato practice that is drawn from them. Sfumato practice is situated within a contemporary framework which tunes down associations with language and representation in order for questions of material ontologies to surface. This introduces work in the humanities looking at the agency of matter, the contingent power of human performances and motivations, and the aesthetic force of things other than human, such as objects, concepts and digital media. These resonances are alluded to through the contours. This thinking reorients architectural practice as a set of probing jabs at things that feed back contingent information, through a multiplicity of human and non-human aesthetic factors. This allows practice to draw out open potentials in the cloud of indeterminate dynamics it necessarily negotiates with. Architectural practice is peculiar in that it has to deal with multiple relations and transmissions to and from drawing and building. This makes it a unique lens and allows it to be a practice of pursuing uncertainties and their potential for open poiēsis. Sfumato practice attempts to frame a practice that might distil some of these dynamics, in this crossed space.
Endword: Sfumato Variations

In the Drawing and Building contours I was interested in the idea of practice as inevitably involving transferences. This is a one way vector, in the traditional relationship of drawing to building, which has drawing ‘projecting to a project’, the etymology of project being based on this act of ‘casting’. The most important assumption with this apparently simple relationship is that there is always an object distant to the drawing. Architectural drawing is unique among drawing practices because of its complicated, magnetic ties to space beyond it. It is a mechanism that is always in a state of implied transference from one thing to another. Instrumental data is transferred but what else might be transferred? There might be less tangible atmospheres transferred from the drawing process: acts of mark making, acts of building; Elkin’s recalcitrant smudges or Maharaj’s unpredictable swell and dip of no-how. These are interesting as a set of gestural certainties that are also productive of uncertainty. I see Sfumato practice as experimenting in this, as something ongoing, productively uncertain and ever emergent; an open work of drawing.
Hans-Georg Gadamer argues that we need to know the question to which something is an answer in order to understand it. Texts, artworks, and buildings ask a question of the interpreter when they become the object of interpretation. What is to be recognised is “the horizon of the question within which the sense of the text is determined”. “A work of art”, he continues, “can be understood only if we assume its adequacy as an expression of the artistic idea. Here we also have to discover the question it answers, if we are to understand it as an answer (Gadamer 1975:333-34).”

Jenner 2013: 205
My work is figured by a desire for complexity. I see this complexity in elements of practice that are not singular: things that are merged, multiple, or otherwise in vibration, hovering between many possibilities. I see this as how work becomes poetic. It has a recalcitrant, shifting open-ness that evades totalisation or easy categorisation. This poetic is itself always in negotiation. By designing buildings, through poiēsis in drawing, presence and non-presence are crafted into form and remain uncertain – sketched and open to possibility – despite becoming implacable, material, built artefacts. This PhD has been a project in exploring contours and movement in this poetic. Poiēsis (ποίησις) is the etymological root of poetics and is related to technē, or the making of things; the formative, becoming of form. In Heidegger’s words ‘technē is the name not only for the activities and skills of the craftsman, but also for the arts of the mind and the fine arts. Technē belongs to bringing-forth, to poiēsis; it is something poiētic.’ (Heidegger 1977: 5). I am associating poiēsis with an ongoing pursuit of open-ness, an ever present becoming of presence, as in the work of drawing. This has been the core poetic pursued in the PhD: the poetics in a sketch.

Work from my practice has been source material to support this pursuit and has given lights and shades to its contours. Poietic, poetic possibilities in my practice, despite and perhaps because of its nebulousness, have provided ways in which practice can be an open work, with the smudged potentiality of a sketch. And through this sketchiness, this continual opening of possibility, the work has pointed to how practice can shape new understandings. This has implications for creative practice as research. As an open work, practice becomes more than instrumental drawings and mute buildings but a device for thinking, experimentation, and aesthetically imbued observation. It becomes a way of drawing out, a sketching of open questions through the poiēsis of practice-as-drawing.

The power of practice to be a lens, in the sense of an active way to observe or draw out, comes from its inherent intra-relatedness, between multi-sensorial, conceptual, material and linguistic understandings. These are the crafted through practice’s poiēsis. Intangible relations are drawn out and understood through mechanisms within practice that are equally intangible. Practice as a drawing out allows the discovery of new insights, providing a restless way to understand restless and evasive knowledge. This poietic, poetic agency is how creative practice becomes agential as research. It is a way of uncovering knowledge that evades more linear modes of research.

The ambition behind Sfumato practice is to distil creative mechanisms to achieve this kind of research. As such, the work in this PhD contributes to wider discussions of creative practice research. Practice-based research argues that architectural designing has a unique capacity to create new or inflected understandings (Fraser 2013, Moloney, Smitheram, Simon).
Twose 2015, Jenner 2013, Candy 2006). How it does this, and what questions it might answer, is complex and connects to discussions that are happening amongst many factions in the architectural and art disciplines, as well as in literary-based research. The material in this PhD contributes to these conversations by focussing on the 'contraptions' (Maharaj 2009) in creating buildings. It looks at some of the multiple crossings between aesthetics, technology, materiality and performance in the creation of built space, their creative mechanisms, and their research agency. Through intensifying crossings, intensities and sfumato gradations, in a multi-faceted model of practice, *Sfumato practice* adds to understandings of how practice is research — and what practice, as a creative enterprise, might uncover.

The questioning in the PhD supporting these contributions, although pursuing a singular poetic of open possibility, is itself a relational cloud. The PhD involved a series of singular questions that foliated out from one another as the PhD reflection progressed, rather than spiralling inwards to a point. Being a practice-based PhD, a component of the research is forensic, addressing questions that are embedded within an existing body of work, rather than pursuing a research hypothesis. So practice PhD research becomes a traversal of drawings, buildings and writing — by way of more drawing, building and writing. The research is carried away on a sea of answers rather than pursuing a singular question. This is consistent with scholarship addressing creative research. Gadamer, for example, argues that we need to know the question to which something is an answer in order to understand it, as he declares in the quotation at the beginning of this section (Gadamer 1975:333-34). Despite the non-linearity of the research question, however, in contrast to a traditional PhD, the framing of questions and their ongoing discovery is crucial to creative practice research being focussed and having an original contribution to knowledge. *Sfumato practice* frames its questioning, posed by the work’s answers, in the pursuit of open-ness.

This pursuit has coalesced research questioning which is aesthetic, even atmospheric, in its composition. It is not the singular pin-point that pierces the tissue of known understanding; if there is a pin, it jabs through smoke. The questioning in *Sfumato practice* harnesses this smoky movement by bringing up questions about the open-ness of practice, how it can be an open work, through practice being drawing.

Drawing/ Building/ Cloud/ is a document in progress. It arrays my practice as an uncertain archive (Eliasson 2013) that alludes to an architecture in its own right, an open work of drawing and building. It paints an image of a *Sfumato practice* that extends drawing’s poësis to practice, to the things it draws, draws with and draws from. /
References:


Bibliography:


Practice/ design research:


RMIT PhD theses


Figures

The assemblages of images in this document are composed of a variety of sources. Most are directly from the process of designing, so are drawings, images documenting those drawings, as well as photographs of various stages in the making of the works. These are by the author unless otherwise attributed in the figure list. Images of completed works are a mix of author’s photographs and commissioned images: photographers were commissioned to document completed works for purposes of publicity and academic publication. Some of these images are specifically captioned and are attributed in the figure list below. Others appear in assemblages and are not individually identified. Some images in the assemblages are from collaborators or research assistants, or are produced as collaborative works, and so are co-authored by collaborator and Simon Twose. Where the image is the result of a collaboration, Twose is noted as ‘author’ and the collaborator or research assistant are noted by name.

Photographers commissioned to document the completed works are listed below, by project:

White House: Rebecca Swan
Sheerwater House: Rebecca Swan, Patrick Reynolds, Harriet Richards
Concrete House: Paul McCredie
Concrete Drawing: Sean Waugh, Paul Hillier, Tom Ryan
Concrete /Cloud/: Peter Bennetts
Collaborators and research assistants, listed by project:

Familial Clouds: Andrew Barrie, Henry Stephens, Hannah Wolter
Te Horo House: Grant Douglas
Concrete Drawing: Declan Burn, Tom Ryan
Concrete /Cloud/: Tom Ryan
Resonant City: Katrina Simon, Sarah Berg.

A list of image attributions is below. Where the assemblage contains a number image authors they are noted as ‘various’, in which case the images are from the list of authors above.

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Exhibitions, Publications, Presentations, Buildings: Simon Twose

Performances/ Creative works


Exhibitions/ Curation International:


Exhibitions/ Curation National:


Exhibition Catalogues:


Studio Christchurch. (Collaboration with Auckland University + Unitec — design research work from Christchurch studio summer school), Auckland University, 2013.


Edited Books:


Peer Reviewed papers:


Invited Presentations:


Twose, S. (2013). Familial Clouds and Writing. Two presentations in the Thinking/Practice Speakers Series, Auckland University of Technology, Auckland.


Exhibition Reviews:


Selected Unbuilt Projects — Simon Twose Architects:


Selected Projects — while at Noel Lane Architects (NLA), Architecture Warren and Mahoney (WAM):

2003 Sanctum Apartments, Wellington WAM

2003 Taranaki Stadium, New Plymouth WAM

2003 Auckland Women’s Correctional Facility, Auckland WAM

2003 Herd Street Apartments, Wellington WAM

2002 Clermont Development, Wellington WAM

1997 Classic Car Museum, Auckland NLA

1997 Jacks Bay House, Bay of Islands NLA

1995 – 97 Auckland War Memorial Museum Refurbishment NLA

1995 Didsbury House, Brick Bay, Warkworth NLA

1995 Craddock House, Horne Bay, Auckland NLA

1994 Magic Barn, Auckland Zoo, Auckland NLA

1994 Kermiddle Restaurant, Auckland NLA

1994 Grays House, Auckland NLA

1994 Matthews House, New Plymouth NLA

1990 Barker House, Fendalton WAM

1990 NZ High commission, New Delhi, India WAM

1990 NZ Parliament refurbishment, Wellington WAM
Practice collaborations:
2007 St Marys Church, Wanganui, with Praxis Architects
2000 Tainui Endowment College, Hopu Hopu, with Rewi Thompson
2000 Rangiatea Refurbishment, Otaki, with Rewi Thompson
1995 — Several local and international competitions, with Rewi Thompson

Professional Awards:
2016 NZCS (New Zealand Concrete Society) Travel Bursary
2013 DINZ best awards, bronze: Familial Clouds Venice Biennale Exhibition (Simon Twose commissioner + contributor — Andrew Barrie collaborator)
2013 Shortlisted for MOMA YAP programme (artist in residence programme)
2012 NZIA national award, shortlisted project: Concrete House (sole author)
2011 NZIA regional award, residential architecture: Concrete House (sole author)
2011 Home magazine home of the year award, finalist: Concrete House (sole author)
2011 Living Channel home of the year award, finalist: Concrete House (sole author)
2010 Cavalier Bremworth National Design Competition, Commended: House for my Brother (sole author)
2009 NZIA regional award, residential architecture, multiple housing: Herd Street Apartments (Architecture Warren and Mahoney — concept design role)
2009 NZIA NZ architecture medal, shortlisted project: White House, Newmarket (sole author)
2009 NZIA national award: White House, Newmarket (sole author)
2008 NZIA regional award: White House, Newmarket (sole author)
2008 NZIA regional award, shortlisted project: Sheerwater House (sole author)
2008 NZ wood national timber design award: Sheerwater House (sole author)
2007 Master Builders association northern region supreme award: Sheerwater House (sole author)
2003 NZIA award: Brick Bay House (Noel Lane Architects — project architect role)
2002 Waitangi park design competition, shortlisted project: Auckland War Memorial Refurbishment (Noel Lane Architects — design and project architect role)
1999 — 1999 NZIA national award: Kermadec restaurant (Noel Lane Architects — design and project architect role)
1999 — 1999 NZIA national award: Kermadec restaurant (Noel Lane Architects — design and project architect role)
1999 — 1999 DinZ national award: Kermadec restaurant

Chronology: Simon Twose
2012 — 2014 Director of postgraduate programmes, School of Architecture, Victoria University of Wellington
2009 — present Senior lecturer in Architecture, Victoria University of Wellington
2004 — present Principle of Simon Twose Architect Ltd, Wellington
2001 — 2004 Senior Architect with Architecture Warren and Mahoney, Wellington
1992 — 1997 Architect with Noel Lane Architects, Auckland
1989 — 1990 Graduate Architect with Architecture Warren and Mahoney, Christchurch
1988 — present Teaching in VUW, Auckland, AUT, Massey, Unitec
te rapa
Te Papa was a student project drawn in 1988. It was a design for a National Museum of New Zealand Aotearoa on the Wellington waterfront. The full project title, Te Papa Tongarewa, translates literally as ‘container of treasures’. The project was in response to an international design competition for a New Zealand national museum, which was won and realised by New Zealand architects: JASMAX. Te Papa responded to the competition brief by focussing on how the museum framed interpretation through taxonomic ordering of objects within it.

The Te Papa project was drawn in the context of the ‘paper architecture’ of the day. It was part of the re-appraisal and elevation of drawing as a linguistic, coded mechanism. The project used the museum brief to engage with questions of order, ordering and collection. It was designed to be a museum entirely composed of its exhibits: every element of the building was a reference to or a manipulation of some key historical building, drawing, mathematical system or representational technique. The drawings were drawn with no rubbing out or amendments and were simply added to over the course of the design, like weaving a tapestry. The components of the plans and sections were drawn with precise, tiny lines that were intended to be more akin to surgical incisions than conventional iterative design drawings.

In the project, historic works of architecture and art were selected and mapped and remapped within a nine-square system. The museum was a coded matrix of architectural parts and operations: Giuseppi Terragni’s glass columns, from the Danteum paradise room, were arrayed as an entry hypostyle hall, Megaron temples were reordered to become elevators, axial symmetries were captured, along with numerical proportioning systems, perspectival conventions and so on. Even the dots and hatching techniques had a reference, the dots referring to the drawings of the draughtsperson Letarouilly, for instance, and the radial hatching from Francesco
Borromini's plans for *San Carlino alle Quattro Fontane*. I noticed in Borromini's plans that the hatching of the walls fanned around drawing, originating from the arc centres in the plan's ellipsoid geometry. The intention behind capturing observations such as these was to design a building that was encyclopaedic and 'museumised' the complexities of architecture in as sophisticated a way as language. These intentions keyed into the largely post-structuralist arguments of the time, which were searching for connections within architecture and language.

There were four key exhibits within the matrix of exhibits/building: Giovanni Battista Piranesi's *Magnifico Collegio*, Giuseppe Terragni's *Danteum*, Marcel Duchamp's *Fountain* and Francesco Borromini's *San Carlino alle Quattro Fontane*.

Drawing was thought of as an active way of critiquing or analysing the exhibited architecture, and various lines of inquiry were arrayed through the set of drawings, shifting from one representational mode to another: things manipulated as elements on tableaux, in plans, were collected in sections or folded around each other in axonometric. *Te Papa* was paper project where the coded representation of architecture was turned in on itself, and plans and sections became investigative incisions into its logics.

To give one example of this museal play with the exhibits: I put Marcel Duchamp's *Fountain* artwork in relation to Francesco Borromini's church of the four fountains, *San Carlino alle Quattro Fontane*. I discovered that Duchamp's *Fountain* was directly related to Borromini's *Quattro Fontane*. They were closely tied geometrically, linguistically — through their titles — and in terms of mathematics. When geometrically analysed *Fountain* had the same generative geometry as the *Quattro Fontane* plan, and when multiplied by four to make the *Fountain* a *Quattro Fontane*, the urinal form became eyes, as well as mapping almost exactly to the shape of the church. This seemed to relate to the idea of museum as an architecture of interpretation or seeing, 'drinking in the museum with your eyes'. I took pleasure in linguistic plays such as this; Duchamp had reversed the normal flow of liquid by changing the urinal to a fountain, and I returned the movement to its original flow through the four fountains eyes, drinking in the sights.

The exhibits were worked on in the design in various ways: I brought in mathematics of conic sections — related to the ellipsoid geometries of church and fountain — worked on numerical systems of three and four, hyperboles, quadratics, I cut exhibits and stored the cut parts elsewhere in the plan, reassembled the parts, and so on.

This play continued in three-dimensions. It was important that even modes of representation were museumised, such as elevation oblique, perspective, sciagraphy and so on. The project was an implosive world that was completely constructed through painstaking and miniature drawing. The drawings were the building. Doing these intricate drawings was a way of understanding and playing with the seen and unseen complexities of architecture. And the design was built by hand as a coded linguistic analogy, in intricate detail.

In *Te Papa* the marks were like incisions, like knife cuts. This followed the idea of the drawing as an investigative cut, sectioning and cutting in plan or section. Because each line in the drawing was a cut each one was made without the possibility of erasure, because once a cut is made it can't be undone. The body in which the cuts were made, I imagined to be architecture itself, and the cuts were in geometry, architecture's relation to sciences of mathematics, architectural history, and art. In this project, drawing was an investigative act, slicing into architecture.

The *Te Papa* project was exhibited at the Venice Biennale in 1991 in an exhibition in the Arsenale, as part of an exhibition of work from architecture schools around the world. The New Zealand installation, organised by the Auckland School of Architecture, won the *Venice Prize* for best exhibition, judged by Arata Isozaki, Massimo Scolari and Marco Frascari.
Axonometric of early scheme, discarded, hence the cross.
Plan of ground level, section line dotted
Cross section taken obliquely through museum.
128 Detail of section showing theatre space
129 Detail plan of service stair
White House
Newmarket, Auckland, 2000

White House is an urban house and office building in Newmarket, Auckland. It was part of a larger study looking at aesthetic dynamics in physical and conceptual contexts, involving exhibitions prior to it, and focussed particularly on the aesthetic identity of Auckland. It was designed through a series of hand drawings and paper models. The thin responsiveness of the building’s surface, allied to an analogue drawing process, was seen as parallel to the responsive field of the suburbs. White House was followed by two other projects that extended the idea of a project acting as a lens on contexts through its drawing practice: Concrete House followed the White House and looked at unseen dynamics in Urban Wellington and Sheerwater House looked at abstract tensions in the natural setting of a dune lake: Lake Ototoa.

Description

White House is sited among a group of small commercial buildings in Newmarket, Auckland. It is tightly locked into the urban street texture but has unobstructed eastern views to the suburban landscape and harbour. The internal planning wraps around an enclosed courtyard, within which an atria admits light the lower two floors. The clients live in the top floor and their offices occupy the lower two floors. An entry lobby and carpark occupy the ground floor.

The house was painstakingly planned according to the client’s desires for free flow yet separation between activities. The spaces were negotiated through lengthy discussion with the clients, as to the events to house was to support, and each area morphed through gestural drawing and live tests at 1:1. The building was composed by the domestic requirements in each space coming to equilibrium, rather than through a preconceived geometric parti. The devices of lobby, hallway and a central guest toilet were used to subtly organise hierarchies of public and private spaces. There is one bedroom for the clients and a private chamber for guests with discrete access. The private spaces are heavily acoustically treated.

The house is composed of thin, white surfaces that, conceptually, have no substance or material. The spaces have soft indeterminate atmospheres created by the gently curved, papery surfaces. The curved surfaces and reduced detailing promote soft gradations in light which, along with the universal use of the colour white, promotes the impression that the building is composed of light. The façade is an extension of the interior and is a soft surface that has been distorted through the tilting and twisting of the windows to three primary views: to the sea, suburbs and the street.
**Client’s Desires**

The clients wanted to move to an urban location but retain a ‘house-ness’ in their work environment and an urbanity to their living. This approach coloured the thinking of the house programmatically and conceptually. The clients’ brief was an extremely detailed account of how they would like to live and work, down to minute detail. Their requirements for space of a ‘correct and polite dimension’ were applied to the plan and it formed organically by the competing pressures in each zone coming to equilibrium. The flows created by the process distorted the dividing walls and each space was physically modelled and sketched many times until it moulded to the clients’ desires. The clients wanted a relaxed and ethereal aesthetic that minimised the clutter of life, by focussing on pure space and light. Furniture elements were specifically designed to integrate with the cerebral spatial aesthetic.

**Conceptual agenda**

The house was part of an investigation into Auckland, looking at the city as a dynamic material. It was imagined as a large motile surface with internal forces and pressures, flowing over similarly dynamic landscape. The aesthetic movements of this surface were argued to be integral to Auckland’s aesthetic.

*White House* was designed in a series of hand drawings and models that directly responded to the desires of the client: the drawings were seen as fields on which the clients’ desires were negotiated. Paper models were also used as ‘responsive fields’ to capture negotiations in three dimensions. The building became curved and distorted as a result.

The project was an observation of the Auckland context through design. Below is an excerpt from *The Paper Life of Building in Interstices Journal of the Arts* where the ideas behind the project were expanded upon.

*The White-House project began as a response to Auckland, and looked at the city as an aesthetic phenomenon, as a suburban landscape of complex domestic influences flowing over an apparently implicit topography. I argued that the suburbs, the landscape, and Auckland’s architectural identity were all part of a complicated inter-connected economy. In the design process, the drawings and the subsequent building were seen as responsive to domestic influence, and to parallel larger domestic flows and influences in the action of the city; the design aestheticised on a small scale what the thin suburban field was doing at the scale of landscape. The drawing process, in this sense, was a representational lens in which to view Auckland, and the design developed notions of thinness, responsiveness and lack of fixity in material and position, drawn from observations of the city. Curved freehand drawings and a curved building resulted, and during the drawing process, an interest in flow merged with performative flows, in drawing and building.*

*(Twose, Smitheram 2010)*

The ideas built on the thinking behind three exhibitions: the Auckland University School of Architecture and Planning’s *Venice Prize* installation at the 1991 Venice Biennale, the New Zealand entry to the 1995 Milan Triennale, *Identità e Differenze* and *Connections*, the *House in the Auckland Scene*. The first two exhibitions discussed New Zealand architecture in terms of its lightness, contingency and vexed relation to physical and cultural landscapes. The third, *Connections*, explored the aesthetic landscape of Auckland. *The White House*, was an extension of the concepts and responsive, negotiated surfaces developed in these exhibitions.
130 View of eastern facade
View from living space, towards dining and courtyard
134. Detail view of wall and ceiling junction, dining room
3. Interiors composed of light, formed by dimensions and desires of home.
View of adjacent bathroom and bedroom
View of built-in furniture, kitchen
concrete house
Concrete House
Kelburn,
Wellington,
2011
Concrete House is an urban house in Kelburn, Wellington. It was designed in response to the taut seismic, aesthetic context of Wellington. The project was an architectural inquiry into the potentiality of seismic forces; the compression and ominous propensity of massive landscape elements to suddenly jolt and shift. Concrete House was the second in a series of projects that used drawing as an aesthetic lens on contexts. It followed White House, which looked at Auckland’s aesthetic dynamics through analogue drawing, and preceded Sheerwater House, which abstracted aesthetic tensions in a Lakeside landscape, through digital drawing.

**Description**

Concrete House is compressed into a 250 square metre site in an inner city suburb. It is a courtyard house composed of curved and tilted concrete screens, arranged around the boundaries of the site. These are in different attitudes: leaning, rotated or elevated above the ground, in response to aesthetics of tension and movement in the seismically dynamic context. The house occupies the whole site, with two ‘landscape rooms’ carved out of the site volume, one to the north, acting as a garden, and one to the south, forming the street entry. The landscape rooms almost meet at the waist of the house, which is at the nexus of the plan and the circulation. The courtyards are integral to the house and allow landscape to have an active presence, rather than house and landscape being comfortably distinct.

The house flows to the limits of the site, within which bedrooms, bathroom, office, garden, dining and living blend together. Although this is a dynamic social arrangement, the home has areas of intimacy and varying degrees of privacy to suit the activities within: it is conceptually one space but varies in intensity through ways other than wall divisions. The concrete screens allow connections to the street in unconventional ways and views out from the house are atypical, between or under the concrete screens. Although the house flows through the whole site, there are varying degrees of connection and enclosure to each area.

**Client’s Desires**

The client for this house has a sophisticated knowledge of construction and built the house himself, over eight years. It was very much a collaboration between architect and client/builder. The client did not want an ordinary house, but beyond that did not have a complex programmatic brief at the outset. The brief evolved over the process of drawing and building the house, through intense discussion between architect and client/builder. The challenges brought up by the design, its complexity, cost and buildability were constantly negotiated in terms of the core ideas. This meant the construction process became a vibrant dialogue between architectural intentions, client’s desires and the vagaries of materials, cost and building.

**Conceptual agenda**

Concrete House had similar conceptual ambitions to the White House project. It attempted to distil aesthetics from an urban context. Whereas the White House reflected the thin, insubstantial Auckland suburbs, flowing over a soft topography, Concrete House responded to the abrupt and tectonic aesthetic landscape of Wellington. It became about the ominous potential of the ground to jolt large, lithic masses. Where the White House context was immaterial and smoothly flowing, the Wellington context was material, pressured and vertical.

Concrete House was designed as an essay in material, gravity and seismic forces, observed through digital drawing. The house is composed of panels that appear to have been jolted by some kind of force, reflecting the ominous power of the tectonic plates beneath Wellington, but like White House they also relate to the way in which they were designed; they are partly about the frictionless ease of moving apparently weighty elements in the space of digital drawings.
Detail view of street panel and entry courtyard
View of eastern facade from street

View of western facade
View of north courtyard
Detail view of north courtyard
View of north courtyard from upper level
sheemwater
house
Sheerwater is a country retreat for city-based owners of a deer farm that flanks Lake Otota, in the northern arm of South Head peninsular, Kaipara. It is designed in response to the calm, abstract quality of the lake and the soft dune landscape. It is the third project in a series looking at drawing as a way of observing unseen, abstract conditions in contexts, landscape or urban. It follows White House, which focused on the aesthetic context of Auckland and Concrete House which looked at the tensile, seismic context of Wellington.

Description

Sheerwater House is sited beside Lake Otota, which is a sand dune lake in the ancient dunes making up the Kaipara peninsular. Sand dune lakes are unique bodies of water in that they are not fed by streams and have no streams leaving them, they are calm, landlocked bodies of water. The level of dune lakes seldom changes and the surface of Lake Otota is flat without swells or large waves, just textural changes caused by the elements. Lake Otota is surrounded by a softly contoured topography in which ancient sand dunes have solidified and become vegetated. The lake is a pure, level plane within these low lying and gentle contours. The architecture of the house responded to the tensile calmness of this landscape.

The house is designed as an apparently simple object, spanning over the dunescape. It is a level, geometric, horizontal form composed of a single skin of timber, which is
wrapped inside and outside. The skin of timber is detailed to conceal the house’s tectonics and services, in order for it to appear to be a simple and tensile wrapped form. In this way it is designed to have an abstract tension, in response to the calm tensions of the lake landscape.

The house is ordered, regular and carefully proportioned, with generous and sparse spaces. It has simple hallway circulation to the private areas and a loggia that forms an exterior hallway, linking all the rooms. The house is a series of zones which progressively allow access to the landscape through framed views, culminating in a conservatory space, with large sliding doors opening onto a loggia that faces the lake. The loggia space, which is the exterior equivalent of a deck in terms of access to the landscape, is within the overall volume of the building, being a space carved out of the house. The loggia is connected to the landscape only at each end, by way of large stepping. This approach to the site makes the house a discrete spatial zone within the landscape. A studio space at a lower level is accessed from outside via a landscape stair.

Client’s Desires

The clients for Sheerwater House were the same as for White House, which is their urban residence. They wanted a house that was a calm retreat from the city and addressed the qualities of the lake landscape. They lake house was to have a palpable materiality and order, in contrast to the curvilinear and immaterial character of their urban house. Unlike the typical New Zealand response, of a relaxed bach with a series of decks and domestic gardens opening onto the landscape, they wanted a more formal response where landscape was separate to architecture, preserving its identity and dignity. Their brief called for generous spaces and a formal layout that would support a set of specific activities. The clients were very detailed about the way they would live in the house.

Conceptual agenda

A critical aspect of the design was to create an aesthetic of calm, abstracted from the lake and landscape. The house became an exercise in drawing out a tensile calmness through ordered architecture. It was designed through an ordered mode of drawing: it was drawn in BIM software that has an inherent abstract, elemental aesthetic. The drawing mode was seen as in parallel to the abstract calmness observed in the landscape. The house is thought as a pure logical element, respecting the soft landscape but in a tensile relationship to it, distilled through drawing.

The building presents a contained architectural ‘condition’ which is in dialogue with the natural but always has architecture as its mediator; even when on the loggia, the outside space facing the naturalness of the lake and trees, the inhabitant is within the ordered geometry of the building - a mathematicae of arrangement of natural timber. The house is proportioned according to the rigorous application of two dimensions, the width of a floorboard or sarking on the horizontal, and the height of a weatherboard on the vertical. It uses only one species of timber inside and out as a kind of tensile skin related to the calm flat surface of the lake. The building is conceived of as an ordered instrument spanning over the land, as if in some way measuring it. It sets up a progression of cinematic views and spaces that allow degrees of connection to the landscape, without complete possession of the natural.

The result is a building that sits in an active relationship with the land, rather than trying to dominate it. It does not pretend that its presence should be considered natural or entitled. Even in this relaxed, calm environment, architecture is not necessarily in complete concert with its landscape — there is always an element of unease — and thus this house is somewhat strange, and austere. The house is a cultivated object in the landscape but is critically conscious of its position.
147 View of Lake Ototoa
148 Early sketch of west elevation
NOTE:
REFER ENGINEER FOR ALL SIZES AND DETAILS - FOR CO-ORDINATION PURPOSES ONLY

1. Entry
2. Garage
3. Mudroom
4. Hall
5. Living
6. Dining
7. Kitchen
8. Conservatory
9. Terrace
10. Office
11. Bathroom
12. Bedroom
13. Sauna
14. Steps to Studio

MAIN PLAN

Plan of ground level
Axonometric of steel structure set out
154. View of underside, towards studio.
View of eastern side, towards lake.
156. View of conservatory, northern end

157. View of entry loggia and living room from entry courtyard

158. View of loggia, western side
familial clouds.

*Familial Clouds* was an installation by Simon Twose and Andrew Barrie at the Palazzo Bembo, as part of an invited group show of international architects at the XIII Venice Architecture Biennale, 2012. Palazzo Bembo is a 15th century building on the Grand Canal and is a venue for collateral Biennale exhibitions curated by GAA (Global Art Affairs).

In 2012 the Biennale theme was ‘Common Ground’, curated by David Chipperfield, and was directed towards architectural practice as research. *Familial Clouds* responded to the theme by commenting on ‘common grounds’ in New Zealand architectural practice research.
The installation was composed of two related parts: in the centre of the space a large plinth displayed a family tree of New Zealand architects. Surrounding this, a cloud of miniature drawings was composed on the walls. The work on the plinth showed ‘who worked for whom’, back to the earliest days of architectural practice in New Zealand by way of a landscape of miniature paper figures and buildings. This formed a diagrammatic ‘village’ of iconic Kiwi buildings and architects, connecting work histories, buildings and reputations. The work on the walls showed connections internal to the practice of designing, with drawings from two buildings displayed as a cloud of process. The installation commented on architectural practice at two scales: New Zealand’s practice history was the landscape, and practices within designing, the cloud that surrounded it.

Encircling the walls, two projects were dispersed into a cloud of five hundred and fifty drawings, models and 35mm slides, extracted from the design process of two buildings. These were shown in miniature, shrunk to less than the size of a business card. Each of these was displayed with a mirror, specifically angled to direct attention to a certain point in space. The cloud of representations were clustered according to a set of foci or station points: constellations of tiny images and mirrors were aligned to the station points and spoke of the iterations, alternatives, and dead ends in the design of the projects. Viewers traversing the cloud installation could discover these points as they moved through the installation.

The cloud alluded to unseen conditions in practice. These are aspects that surround the process of drawing and building architecture, and are part of its lens-like capacity. This idea, of practice as an ongoing research lens, was developed in a paper, Practice Clouds: Architecture Still Actively in Formation (Twose 2015). An excerpt is below.

Familial Clouds exhibited the White House and Concrete House as an uninterrupted stream of design material: hundreds of drawings, shrunk to business card dimensions, along with models, text and images swarmed around the walls of the exhibition space. The intention was to make unseen dynamics in the practice of architecture spatially palpable; to use the fallout of the design process to allude to myriad crossings of representation and occupation that precede and figure built space. In composing this evidential material into a cloud, drawings, models and images were clustered into constellations according to events in the process. Design iterations bloomed in frenetic groups, aesthetic dead ends crashed into the gallery corner, analogue drawings overlapped with digital; the various clusters were arranged to reflect intensities in the events that created them. Clusters were directed towards thirty five points in space by way of small angled mirrors springing from the walls. Viewers traversing the installation at close range could discover these points of intensity through somewhat comical head movements.

Two buildings provided the source material for this spatial array, the White House and the Concrete House. The White House was designed through fluid hand drawings, as a way to distil the apparent suburban plasticity of Auckland. Concrete House used digital drawing to distil the seismic potentiality of Wellington. Each developed ways of seeing through performances of practice.

Familial Clouds displayed the intimate, largely unseen conditions in the practice of realising White House and Concrete House. Drawing led to building led to installation, making the process one of continuously unfolding research. Familial Clouds presented practice as an ever in-folding process of occupying representation; a mode of enquiry coloured by a constant shuttling between subjective and objective understandings. Practice is a discipline with an active way of seeing, a spatial acumen gained from drawing, building and redrawing. (Twose 2014).
Collage showing work table and installation in suitcase
View of installation towards wall 2
162 Views of gallery-goers viewing installation
Detail view of concrete house model
Detail view of 'family tree' on Plinth.
Detail view of mirrors, images.
166. Detail view of 35mm slides, drawings, text and mirrors.
Te Horo House
Kapiti coast,
Wellington,
2009

Te Horo House is an unbuilt project sited on the Otaki river plain, facing Te Horo Beach. It is composed of series of stone and concrete screens in dynamic response to physical and nonphysical characteristics of site, program and in drawing. The house design is the site of an ongoing investigation whereby architecture as a built entity and the process that engenders it, drawing, are merged.

Te Horo House is sited on the rock-strewn Kapiti coast, where the Otaki river plain meets the sea at Te Horo Beach. The project continues the formal and conceptual motivations of Concrete House, in that it attempted to distil dynamics through arrangements of concrete elements in digital drawing. The wider site is an enormous field of river gravels that are subject to shifting from sea, river and earthquakes. The domestic brief was similarly dynamic. The house became composed of a series of large stone and concrete panels, moved into place in response to pressures of site and programme.
Description

Te Horo House is located amongst existing buildings which it is intended to significantly outlast, but which it has to respond to in the short term. It is designed to go between an existing timber villa, a pool house, guest house, garaging, vehicle entry and established gardens. The villa will eventually be removed and Te Horo House expanded. In this sense it is considered an evolving building in response to dynamics that occur over a long time period.

The composition of the building is dictated by the garden and courtyard spaces and existing buildings that surround it: a courtyard to the north linking to the existing house, a space to the southwest linking to the existing pool house, a garden to the southeast linking to the tennis court and kitchen garden, and orientations to the eastern entry courtyard and the house lawn to the north. These orientations have pushed it to be a multisided building, opening to the various garden spaces in different ways so each outdoor has its own character. The interior is similarly multi-oriented, with many crossflows, views and sequences.

The house has been designed so the gardens and courtyards can be used at different times of the day, and different times of the year. Computer sun studies have checked the sunlight will reach each space at the right times and there has been careful planning as to how the building would be used in relation to each outdoor space. These factors have meant the building is not a conventional geometry — it is composed of a number of vertical and horizontal concrete panels, each positioned in response to an orientation, activity or sun condition — and this contributes to the movement of the composition of the building.

Client’s Desires

The clients originally wanted a building that would last 500 years. This was an interest in the wider ecology of the site and landscape, and they saw the building as being part of that wider time scale. The clients criticised New Zealand architecture for its temporariness and were interested in how such things as castles remained, leaving behind the ideological dynamics of the day and taking on a landscape character.

The clients have an extended family life which is rich in complexity. They were detailed about the various events the house had to support and the qualities it should have, of view, permanence, materiality and atmosphere.

Conceptual agenda

Te Horo House is composed of a series of massive concrete elements that have been pushed around by various ‘forces’, either observed in the landscape or in the dynamics of programme. The house is for an extended family who have a complicated use of the existing site which they wanted the new building to tie into. The building has multiple orientations to all points of the compass: the northern clearing, the entry garden, the pool house, internal courtyard, existing villa, kitchen garden; views at various levels to the wider landscape; Kapiti Island to the west, Tararua ranges to the east. Each area has been carefully negotiated to provide for everyday events, from family Christmases, with multiple generations, to the tracking of grandchildren from beach through to kitchen to internal courtyard. The large concrete elements have been adjusted in location and shape to reflect these messy and dynamic spatialities. These small timescale dynamics were seen as in parallel to larger timescale dynamics of the site, which is constantly shifting over time through the actions of the river and sea. The building in a sense solidified these negotiations.

The house is thought of as a relational field of elements and is an extension of ideas explored in the Concrete House project, which distilled aesthetic dynamics and ‘pressures’ in the Wellington context through an array of large concrete panels. Te Horo House responds to a different condition based on its situated-ness, physically and conceptually. Its composition as a relational array, stemming from a practice of drawing, was extended in the Concrete Drawing and Concrete /Cloud/ projects, where a single wall was extracted from Te Horo House the design and worked on in more detail.
171. Aerial view of site

172. Montage of house from Te Horo Beach
Detail view of 1:1 plaster prototypes of concrete walls.
Images of 3D printed test models
Concrete Drawing
An installation in group show
Drawing Is/Not Building,
Adam Art Gallery,
Wellington,

Curator: Simon Twose.
Concrete Drawing was an installation in the Adam Art Gallery in a group show, Drawing Is/Not Building. The exhibition, curated by Twose, was intended to capture and comment upon contemporary understandings of architectural drawing. Works from Roland Snooks, Sarah Treadwell and Simon Twose were shown as three distinctly different approaches to drawing practice. A book associated with the exhibition was published, that included essays on drawing by leading artists, architects and academics.

Concrete Drawing was an attempt to draw with building. It is part of a series of work looking into curious atmospheres between drawing and building, as part of ongoing practice research. Concrete Drawing is an eight metre by three metre wall surface, constructed in concrete and laid horizontally in the gallery space. It is a 1:1 drawing of a wall from an existing design, Te Horo House, that is the same dimension and material as the wall it is intended to represent. Te Horo House is an unbuilt design sited on the rock-strewn Kapiti coast of New Zealand and was designed to be an essay in dynamics. Concrete Drawing was an extension of this interest and captured plastic dynamics in drawing. These came to be imprinted onto the physical wall surface through distortions in its texture by constellations of small scale objects.

The small objects were 1:50 scale walls, also from the Te Horo House design. These were arrayed in constellations and their various orientations were caused to distort the concrete surface in digital space. These impressions on the wall were then formalised through digitally fabricated moulds and concrete casting. The constellations of small scale walls attempted capture to movements in the space of drawing: they allude to the handling of models during designing, turning them in the hands to assess their qualities. In this way, spatial interactions in designing were recorded through an imprinting of actions, in drawing, designing, onto the finished, built surface.

The clusters of small scale walls were oriented to several points in space. As gallery-goers walk around the work, which is laid horizontally in the space, the blade-like edges of the small walls align to seven points in the gallery, and so actively engage the viewer. The intention behind this was to make a connection of the dynamic space of drawing, designing with that of built space, by having the two overlap — the exhibited object becoming a composite of both.

Concrete Drawing was cast in 2000kg of concrete, using CNC milled moulds, and has 315 smaller scale concrete walls arranged on its surface. The wall surface was designed in pencil drawing, Rhinoceros, Grasshopper, Revit, 3D printing, CNC machined models, plaster, wax and concrete casting. The many operations in its drawing and building were recorded, along with its material presence as a completed work, and this provides material for further research projects. Concrete /Cloud/ followed this project and worked with some of this peripheral but active material that surrounded the project.
Simon

View of installation in Chartwell gallery. Adam Art Gallery Te Pātaka Toi

Page 308
Detail view of installation
Collage of installation views
181. Video still of gallery-goer
182. Detail view of installation
drawing is not building
At one level drawing is an instrumental means to determine how matter is formed: how it is shaped, constructed and, perhaps, felt. It also has its own set of material entanglements: the understanding of scale that comes from turning a physical model in the hand, the slow application of a pencil over paper, the rapid generation of multiplying lines by computer software. These facets of the architectural process are usually hidden, cleaned away by the presence and seriousness of buildings the drawings are deemed to represent. Yet these delicate, complicated things figure the designer's spatial understanding and are the tissue of architecture; they are the making of it. (excerpt from wall text).

Drawing Is/Not Building was an exhibition designed to bring together three practitioners of drawing, each with a markedly different approach and technique: Sarah Treadwell, Roland Snooks and me, Simon Twose. The exhibition was an active way of testing where my practice sits amongst a wider community. I instigated and curated the show so had the opportunity to invite two other contributors who held particular positions on drawing that were in relation to mine. Snooks investigates the possibilities of the digital, Treadwell the analogue and I look at hybrid modes, combining analogue and digital. A book of essays accompanied the show that further contextualised contemporary practices of drawing. Below is an abridged version of the introduction to the book Drawing Is/Not Building published in 2016.
This project began with a simple impression; of drawing and building being one and the same, as if both were merged in a curious stereoscopic image. Bringing these two together seems to jolt things into question, not least being representation, occupation and matter. In this weird shared space, drawings might gain the mass and presence of buildings and buildings the criticality of art.

*Drawing/Is/Not Building* attempted to flesh out this weird space by bringing together three people who research through architectural drawing: Roland Snooks, Sarah Treadwell and Simon Twose. It was important that these three had markedly different approaches, not only to cover the bases in terms of drawing technique, but also to create some critical friction between three polar positions. Roland Snooks works in a digital way, Sarah Treadwell's work is largely analogue and allied to writing, and Simon Twose's work is a hybrid of analogue and digital drawing and architectural practice. Drawings springing from these approaches played out over the three levels of the Adam Art Gallery in April – June 2015.

The book associated with the exhibition is an extension of *Drawing/Is/Not Building* and uses the work in the show as an armature for a larger discussion about contemporary architectural drawing. The first section of the book captures the spatial curation in the gallery and presents images of Snooks' *agentBodies Prototype* project, Treadwell's *Oceanic Series* and Twose's *Concrete Drawing*, with each critically reviewed by an invited author. This provides a base for a series of short, sharp articles from twelve invited authors. These articles are a shotgun blast of positions on drawing, with each author taking a single drawing as the object of their discussion. The sum is a contemporary traverse of academic, architect and artist's thinking on drawing. An incisive forward by Leon van Schaik and a reflective piece by Neil Spiller bookend an assemblage that, as much as it establishes a terrain of understanding about drawing, also opens small tears in its surface.

**Three Contributors**

*Drawing Is/Not Building* set out to render explicit material relationships in drawing, by focussing on the way three drawing projects came to realisation. Each was drawn in a different context, with different feedback loops, and different actions and conceptual motivations. The work of Roland Snooks, for instance, responds to the plastic material world of computation.

Roland Snooks works in a digital aesthetic realm and looks at possibilities offered by the shared authorship of human and computer. His *agentBodies Prototype* project is created through algorithmic processes, where lines develop their own computational prerogative and swarm together into organic compositions in digital space. Snook's work is inflected through digital fabrication that feeds back the influence of the construction material and the mode of making; Snooks experiments with robotic arms that mimic the arcs and delicate placements of the human hand, and builds complex surfaces that conflate structure with highly patterned ornament.

*agentBodies* uses thin metal to realise a swarm of lines. It is a dark, gun metal cloud made from a bewildering array of individual steel sheets, bent and pop riveted by hand to reflect the lines' dance in digital space. The work is accompanied by three video screens showing the design process. These show animations of lines actively coalescing into shape in the black void of the screen.

Sarah Treadwell's work challenges the representational onus of drawing to predict or order future space. Her large scale lithographs and mixed-media drawings engage the impossible scale of the ocean and the calamity of its pollution. The black drawings are sections through the sea, and are made through applying inky, oily materials that merge together or react and resist being shaped. Adjacent to these large dark drawings are two huge lithographic prints, completed with John Pusateri, one in positive and one in the negative. These are a mass of aleatory lines that come together as an intense surface and, when viewed at close range, have slightly

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bleeding edges and subtle variations in calmness and intensity. This reflects the material and connective dynamics of the ocean, which is the subject matter for the drawings.

Treadwell uses drawing's observational capacity, engaging poetic potentials in the physical acts of drawing to critically view politically charged phenomena and events. The drawings connect to their subject matter in material ways.

With my work, the Concrete Drawing, I was interested in fusing the active space of drawing with that of built space. The work is a 1:1 drawing of a single wall surface, cast in concrete, which is the material intended for the building. The surface of the wall/drawing is a record of the design process, much as any drawing becomes a terrain marked by a plasticity of decision and material interaction. Its surface is puckered with impressions from moving elements; little walls that have been played with in digital space swarm in constellations over the larger wall's surface. These small scale walls allude to the handling of small scale elements when designing, turning things in the hands to assess their qualities. In this way spatial interactions in designing find their way into the built object, creasing the concrete surface. These constellations are arrayed to engage the gallery goer as they move around the object. By closing the representational distance between drawing and building, the Concrete Drawing hovers between, with viewers in some curious occupation, and participation, in the space of both.

'Buildings have such a weighty presence that the negotiations on paper that preceded them are usually invisible. The understanding of scale that comes from turning a physical model in the hand, the slow application of a pencil over paper, the rapid generation of multiplying lines by computer software. These facets of the architectural process are usually hidden, cleaned away by the presence and seriousness of buildings the drawings are deemed to represent. Yet these delicate, complicated things figure the designer’s spatial understanding and are the tissue of architecture; they are the making of it.' (Excerpt from gallery wall text)

Drawing Is/Not/Building picks up on many contemporary threads. Drawing's traditional connections to language and representation are tuned down to allow questions of material ontologies to surface. This coincides with much work in the humanities looking at the agency of matter and how actions can expand understanding through human and matter being 'mutually constituted', to borrow a term from Karan Barad. Drawing's capacity to be the 'opening of form' as Jean Luc Nancy has observed is merged with this materialist stance and drawing/designing is put forward as a set of probing jabs at things that feed back information, and remain in an unfinished and potential state. In this way, drawing is proposed as an ongoing negotiation with things, and as such, something with the potential to uncover new and evasive understandings.

Drawing's ties to the space that it apparently orchestrates are by no means without turbulence. It has been variously positioned, as way of understanding atmospheres, as a tool for critical observation, as a discrete world with its own spatiality, or as an instrumental yet aesthetically reticent servant to building. Built space has a similarly complicated relation to drawing, investing it with understandings of scale, mass and occupation. Both worlds could be argued to occupy the same space; architecture might span across the making of both drawings and buildings – popping into a curious stereoscopic three dimensions.

The recent show at the Adam, Drawing Is/Not/Building, and this book attempted to capture contemporary understandings of architectural drawing. The works from Roland Snooks, Sarah Treadwell and Simon Twose, and the array of essays from invited authors, bring material entanglements within drawing into focus, and point to new architectural directions in a very old practice.
View of Laminar Bodies, 2015 by Roland Snooks

Detail view of Laminar Bodies
Detail view of process diagram, Concrete Drawing installation.
resonant city
Resonant City: Elusive Paths and
The line of Least and Greatest Resistances

A short film and Performance at the 2015
Prague Quadrennial, PQ15, Simon Twose,
Katrina Simon collaborators.
Resonant City was the New Zealand entry to the Space Section of the 2015 Prague Quadrennial of Performance Design and Space, PQ15. It was a collaboration between Simon Twose and Katrina Simon and involved a short film, shown with accompanying performance by the authors in Clam Gallas Palace, and a city walk performance conducted in the streets of Prague.

In the curatorial brief for the Space Section, Serge von Arx called for artists and designers to ‘relate to local identities, to reverberate, question, and reshape them...’ The brief asked entrants to set these local identities in dialogue with the city of Prague. Twose and Simon chose to set up a dialogue between the radically destabilised architectural condition in Christchurch, brought about by recent earthquakes, and historic flows of water inundation in the city of Prague. The city was redrawn through a group of drawers flowing through the city, recording it in earthquake inspired viewing devices.

Resonant City: The Line of Least and Greatest Resistance was an experimental drawing performed in the city of Prague in 2015 by twenty participants. Twenty participants, or ‘drawers,’ flowed through the city capturing it in strange ways using shaped mirrors on the end of selfie-sticks and cameras or mobile phones. The Resonant City project merged uncontrolled natural events in two cities; the propensity of Prague’s landscape to flood the city was blended with the cataclysmic seismic jolts that occurred in Canterbury, New Zealand, in 2010/11. Drawers followed the movement of Prague’s inundations and recorded images in mirrors abstracted from the Christchurch earthquakes. Some had broken or cracked geometries, some were puddle shaped. Drawers flowed through the streets and were deflected by their attention to the city through the mirrors, eddying or pooling depending on the possibilities presented by the city in their fragmented drawing instruments. Drawers were enticed to combine cobbled streets with surges of tourists with building facades, drawing new versions of Prague through a strange collusion between human drawer and the subject matter of the drawing.

The mirrored stencils gave a way of masking and cutting the view into reflected fragments, which could then be made to overlay other parts of the view. The unexpectedness of this possibility mixed with the inherent contingency of social interaction and compositional desires of the drawer. Drawers actively pursued jumbling of materials, colours and spaces and in the process were deflected from habitual or normative understandings of built space. They eroded the known condition of city with their fluvial, quake-inflected actions. The resulting images have a disturbing, mesmerising quality. They appear collage-like, grafting and inverting material, bodies, foreground and background in unstable assemblages.

The collective drawing that resulted is source material for another Prague, authored by city and drawer in unusual relation. This other Prague, and the multiple relations that swirl around its re-drawing, point to drawing’s potential to radicalise both city and itself. In their traverse of the city, the participants became part of an active drawing of the fluvial that is both revealed and newly created by their collective movement though the city’s spaces. They experienced an alternative dimension of the city through walking and by collectively gesturing at critical moments through the walk, in ways that evoked the dramatic and resisted influx of water. Participants encountered the city as a form of flood, and a line of least resistance, and their collective and individual movements were recorded as redrawing of the city.

In The Line of Least and Greatest Resistance, the contingent drawing method, using multiple drawers engaging with their subject matter at 1:1, intensified drawing’s capacity to imaginatively observe, record and project space. By virtue of the multiple relations projected back from the city, and those projected towards building by acts of analogue drawing. Drawing became a collage of authors, actions and built space.
Assemblage of images and views from the Resonant City performance
concrete cloud
Concrete /Cloud/

Concrete /Cloud/ was an installation in a group show of invited international architects at the Palazzo Mora, entitled TIME–SPACE–EXISTENCE a collateral exhibition in the XV Venice Architecture Biennale, 2016.

Concrete /Cloud/ is part of a series looking into the shifting ground between art and architecture, drawing and building. The project is the culmination of research that includes Concrete House, Familial Clouds, Te Horo House and Concrete Drawing with which it directly engages. The project is an attempt to ‘draw out’ curious atmospheres between drawing and building. It is partly a document describing a piece of architecture yet to be built, partly a record of engagements between drawer and drawing. It is an experiment in an architecture invested with the fluid potentiality of drawing. Concrete /Cloud/ is in two parts: a large floor piece titled Concrete Drawing, and a wall element titled /Cloud/.

The concrete floor piece, Concrete Drawing, presents the surface of a single concrete wall, taken from Te Horo House, an unbuilt design sited on the turbulent, rock-strewn Kapiti coast of New Zealand. The wall surface has been peeled away from its two dimensional context and constructed as a full size drawing; it hovers in the gallery space as a massive concrete ‘sketch’, becoming its own surreal and engaging landscape.

The surface of the floor piece is cast in 2000kg of concrete, using CNC milled moulds, and has 315 smaller scale concrete walls arranged on its surface. The constellations of small walls allude to performances in designing, such as the simple act of viewing a scale model; turning it in the hand to view its qualities. Movements such as this have been captured in the surface of the wall, which is puckered with ornamental shapes and textures as a result. Concrete is used for its material presence and reality as a building material. Its seriousness as a building is lightened by its response to light, through subtle variations in textures and colours.

On the wall adjacent to Concrete Drawing is a sequence of cloudy images on torn paper. These /Cloud/ images are part of another series of work looking to capture presences in the design process and allow them to open other possibilities. The images are based on photographs of tiny models from the Te Horo House design process. The photographs have been made cloudy through grey-scaling and freely drawing over them with a clone stamp tool. By doing this, the images become sketches rather than records of physical models. This reduction in acuity and definition is accentuated by the printing technique which gives the photographs the appearance of being hand drawn. The intention of the /Cloud/ series is to deflect the process away from the concrete-ness of building and return it to a condition of potentiality, which is an inherent capacity of drawing. /Cloud/ is intended to generate further experiments in drawing and building, in order to continue test aesthetic possibilities in the space between building and drawing. Concrete /Cloud/ is part of on-going research into how designing and constructed space intersect; how materiality, space and time cross from drawing to building, and building to drawing.
Simon

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view of installation
Image of /Cloud/ drawings, one of ten wall elements in installation
View of installation towards entrance