

DRAWING ON

JOURNAL OF ARCHITECTURE RESEARCH BY DESIGN

ISSUE 03

Architecture
Design
Research



CONTENTS

- 1 *Introduction: Architecture Design Research*
Dorian Wiszniewski and Chris French
- 11 *Megalomaniacal Plans: Exploiting Time and Transparency*
Rachel Hurst
- 33 *Canyon: Experiments in Drawing a Landscape*
Simon Twose, Jules Moloney and Lawrence Harvey
- 49 *Utterances of Everyday Life: Moving and Drawing in Sensitized Air*
Ainslie Murray
- 61 *Finding Byaduk: Field Notes*
Chuan Khoo
- 77 *Hot and Wet: Architectures of the Equator*
Erik L'Heureux
- 91 *Unreasonable Creatures: Architecture & (Bad) Behaviour*
Urs Bette
- 105 *New Geographies of Violence*
Jorge Valiente, Amaia Sanchez-Velasco and Gonzalo Valiente.
- 121 *The City as a School: An Urban Pedagogy*
Kathy Waghorn and Nick Sargent
- 137 *The Accumulation of Cyclical Operations*
Campbell Drake

Dorian Wiszniewski and Chris French

INTRODUCTION: ARCHITECTURE DESIGN RESEARCH

IN

The online version of this article can be found at:
<http://drawingon.org/uploads/papers/IS03-IN_191002.pdf>

**DRAWING ON: ARCHITECTURE DESIGN RESEARCH
 EDITORIAL TEAM**

Konstantinos Avramidis is a Lecturer in Architecture at the University of Portsmouth. He holds a DipArch from AUTH, an MSc from NTUA and a PhD in Architecture by Design from the University of Edinburgh. He co-founded Drawing On and is the principal editor of Graffiti and Street Art: Reading, Writing and Representing the City (Routledge, 2017).

Sophia Banou is a Lecturer in Architecture at UWE Bristol. She has studied architecture in Athens, Edinburgh and Newcastle. She is interested in questions of representation, mediality and mediation in architecture and the city. Her doctoral research by design (University of Edinburgh, 2016) examined the status of architectural drawing conventions through a critical-historical approach to urban representation.

Chris French is a Lecturer in Architecture and Contemporary Practice at ESALA, University of Edinburgh. He completed his PhD Architecture by Design, funded by the Arts and Humanities Research Council, at the University of Edinburgh in 2014. He is currently a studio leader in the MArch programme in ESALA, and is a founding editor of Drawing On.

Piotr Lesniak is an architect, designer and researcher, graduate of the PhD Architecture by Design programme at the University of Edinburgh. His design experience includes interiors, exhibitions, residential schemes and conservation projects. He has collaborated with Wiszniewski Thomson Architects and DAS Design in Scotland, and APP Draft in Poland. He currently teaches at the University of Strathclyde.

Maria Mitsoula is an architect, tutor and independent researcher. She completed her PhD Architecture by Design at the University of Edinburgh in 2016, funded by IPEP and Eugenides Foundation. Maria currently teaches in the MArch and MA(Hons) programmes at the University of Edinburgh.

Dorian Wiszniewski is a senior academic at the University of Edinburgh. He has lectured internationally and has been published around the world. He is currently programme director for the PhD Architecture by Design at the University of Edinburgh, as well as programme director for the MSc Architectural and Urban Design and MSc Reflective Design Practice programmes.

Dorian Wiszniewski and Chris French

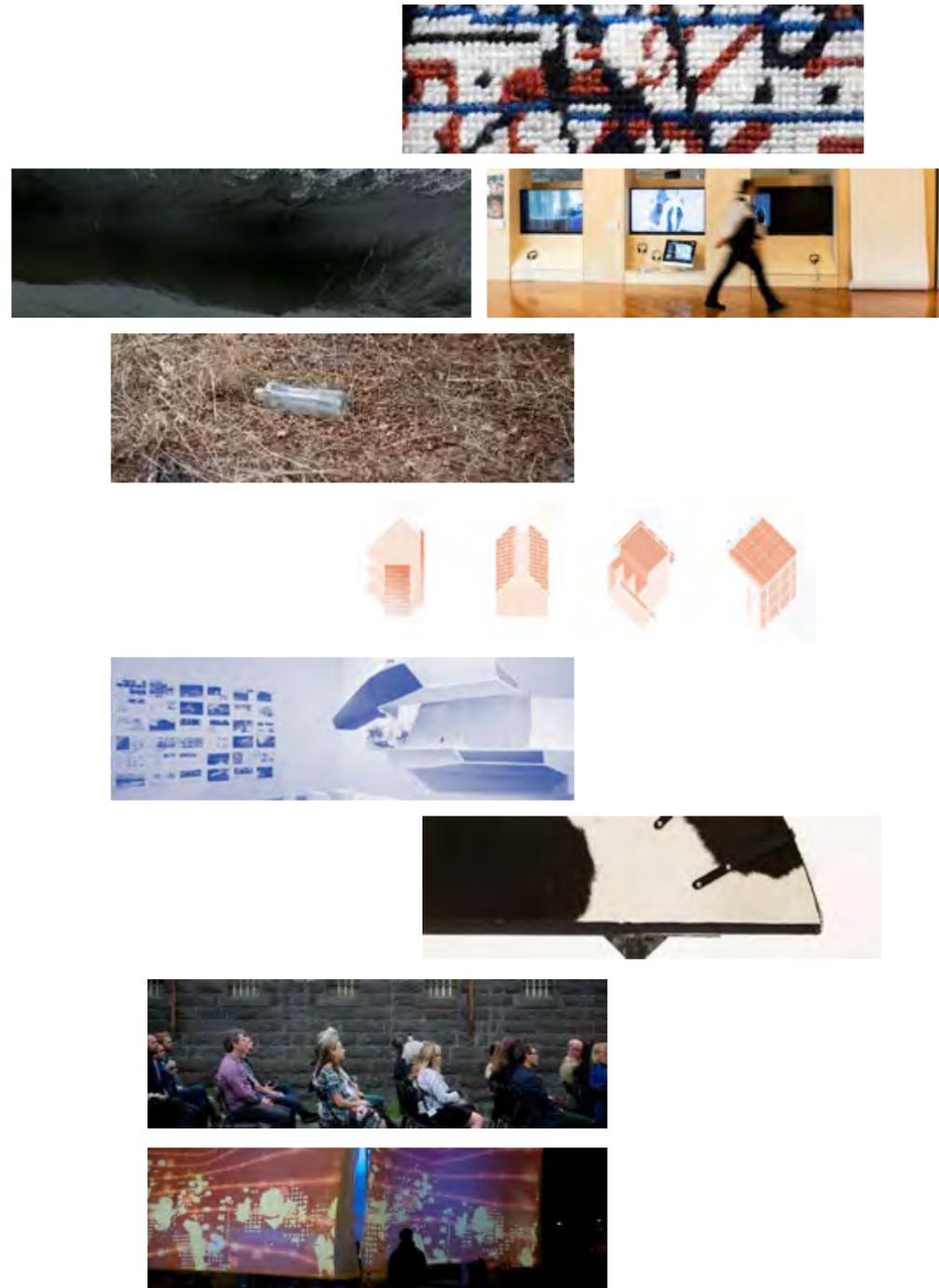
INTRODUCTION: ARCHITECTURE DESIGN RESEARCH

This issue of *Drawing On* was precipitated by a request from our colleagues Sarah Breen Lovett and Matthew Aitchison in the Architectural Design Research group at the University of Sydney Department of Architecture Design and Planning. Having established this research group as a “shared initiative” across Australia and New Zealand, Sarah and Matthew organised the inaugural Annual Design Research conference (*ADR18*) held at the University of Sydney in October, 2018. This conference, the first design research conference to be set up in Australia as an annual event, sought to give architect designers the recurring, refereed research forum that other disciplines already enjoy. Mathew, chair of the Architectural Design Research Group notes in the proceedings to the *ADR18* conference:

“Unlike the other research groups in the School, it struck us as odd that there was no annual conference that could fully embrace our work. In Australia, we were aware that architectural history and theory has an annual conference (SAHANZ: Society of Architectural Historians, Australia and New Zealand), as does architectural science (ASA: Architectural Science Association) and heritage studies (ICOMOS: International Council on Monuments and Sites). Until recently, the Association of Architecture Schools of Australasia annual meeting often had a strong design research focus, but we understood that this was not so much a standing conference, but rather one organised at the discretion of the group on a case-by-case basis. Similarly, we were also aware of the work going on in the multi-institutional Design Architecture Practice Research (DAP_r) group, led by RMIT, but to our knowledge it was not intended to be an ongoing forum.”⁰¹

The publication was to be a means to further discussions emerging from this forum, an outlet to further the design research work emerging from that event. We gave their request much thought. In principle, as editors we were more than happy to consider this as a special issue of *Drawing On*; we were delighted to learn that such an initiative was underway and equally happy to be asked to be involved. However, we were concerned from the outset to maintain the independence and critical autonomy of *Drawing On* from the emerging research group in Australasia, and from the conference, and likewise to allow this research group and all those who organised and participated in *ADR18* space to develop their own agendas. Although we share a similar desire to have design research formalised, recorded, disseminated and, most of all, encouraged, *Drawing On* does not represent any particular institution or regional/national constellation. Although we maintain a strong connection to the PhD Architecture by Design Programme in ESALA, University of Edinburgh, where our journal was first established, many of our editors (most of whom are graduates of the ESALA PhD Architecture By Design Programme), are now spread internationally and work closely with our ever growing team of volunteer reviewers who are recognised scholars from different international institutions. Neither we nor they represent a totality.

The publication of this issue was predicated on this mutual commitment to furthering both the multiplicity of design research practices explored through *Drawing On* and *ADR18*, and allowing these research platforms to develop independently. As a result, the process of selecting for the conference and selecting from the conference for



01:
 Contributions to *Drawing On: Architecture Design Research*.

publication in *Drawing On* were entirely separate and used different criteria. All the work included in this issue was peer-reviewed by both the conference reviewers and attendees, and subsequently by the *Drawing On* reviewers. This issue of *Drawing On*, therefore, does not replicate the work of *ADR18*, but provides a further platform for the development of some of the *ADR18* submissions as design research projects.

The work included here is a selective snapshot of the work presented at the *ADR18* conference, chosen by *Drawing On* in dialogue with the conference organisers. In the spirit of the conference, this issue is therefore something of a survey; it is a secondary survey, a survey of a survey of current design research work and practices in Australasia. We make no claims for ourselves or on behalf of *ADR18* to how accurate or complete this survey is. We are aware that many aspects of architectural research by design underway in Australasia have probably been missed by the conference and therefore also by *Drawing On*. However, the productive relationship with the organisers of *ADR18* has provided us with useful insight into—and developed our ongoing appreciation of—the design-led discourse in Australasia. Although the number of works we are taking forward through *Drawing On* represents a small percentage of what was presented at *ADR18*, the selection still feels representative of the conference. Like the conference, the issue includes work that has been presented through exhibition, installation and performance, and work that has been described through written papers. It offers, in each case, alternative means by which to re-present that work through the structure of the journal. The pieces included here have therefore been extended, re-framed, and re-formatted from how they were presented at *ADR18*, and have developed such that they describe in further diverse ways the making of their respective design-research projects.

Like the ADR group behind the conference, *Drawing On* also has an expressed interest in multi-modal design enquiries. In anticipation of the wide range of design research methodologies the ADR conference wanted to encourage, Mathew Aitchison thought the submissions were best generated through a “Call for Proposals” rather than a “Call for Papers.” The *Drawing On* mission statement declares: “design-led research involves, and indeed relies upon, multiple modes and means to fully elaborate its thinking.” However, perhaps a nuance in our different approaches, and hence something of an explanation as to

why we have made the selections we have for this issue, is an interest and commitment to what we at *Drawing On* call Research by Design. A propositional base to research is not uncommon. Given that *ADR18* is an initiative born out of the Australian academy, it is perhaps not surprising that many of the conference submissions reflect the common co-extensive aspirations of being professionally relevant and scientifically and/or technically framed. *Drawing On* respects all kinds of design-led research. However, it makes no bones about its particular interests in the complexities of representational questions in the various design modes. We would like to see design research to be as much about the unavowable and unexpected as the avowed or expected outcomes. The design-thinking we would like to encourage is a thinking in itself for itself as directed by the work of design.

However, like our ADR colleagues, one of the reasons *Drawing On* was developed was to provide a platform for making more present the perceived absence in both the academy and publishing worlds of the varied media of design-led research outputs. It is not so much that there is a lack of discourse on design. As Bryan Lawson stated in his excoriating review of Murray Fraser’s edited compendium, *Design Research in Architecture: An Overview*, “there never has been an argument that design research in architecture exists.”⁰² To make claims to offer an “overview” presented more as a “sampler” frustrates Lawson immensely. This appraisal by a proponent of the previous generation of some representatives of the newer generation of design research, for Lawson, presents a lacuna in such an overview: it excludes anything of the work of the Design Research Society, first established in 1966 and which continues today. It is for sure there is an apparent difference in sensibility between Lawson’s Empiricism and, for example, Grillner’s Phenomenology which marks the overall difference in aspirations between the DRS and Fraser’s new compendium. However, of greater concern to *Drawing On* in Fraser’s publication is that there is no design in evidence. There is no evident interplay between what they say and what they are talking about. Therefore, for *Drawing On*, what is more at stake in the selection of work for inclusion in our journal from *ADR18* and generally is the character of research: not whether it is just about design, but that it is by design.

Crucially, therefore, the aim in presenting this work is not to capture a totality of design-research practices; as Mathew Aitchison notes in his own review of Fraser’s book,

“diversity of thought is perhaps an acknowledgement of the maturity of the discourse.”⁰³ The pieces selected and presented here are not representative of a totality, or of a prescribed set of practices. Rather, they offer something of a re-framing of methods that we observe as emerging from *ADR18* but hopefully also where each method touches upon an aspect of the “representational crisis” at the heart of all design questions—within and between the varying media and how, then, the media in question advances the subject of research. Examining the conference proceedings, a recurrent reference for presenters at *ADR18* was Christopher Frayling’s ‘Research in Art and Design’.⁰⁴ Frayling is evidently an influential figure in the outputs from the Design Research Society and the work of the DRS is clearly influential in the Australasian schools. In his short text, Frayling develops a framework, put forward by Herbert Read, by which he understands art and design research as operating in three guises: research into art and design, research for art and design, and research through art and design. We question the absolute separation of these modes: conducting research through/by design, we would argue, entails a knowledge of and research into design, which might foster the production of a piece, i.e. become a piece of research for design that is subsequently significant to developing research through design. However, Frayling’s/Read’s categorisation is helpful in that it allows such complications to be stated, and contested.

The pieces selected here, from the broad array of projects presented at the conference, can be described—to differing degrees—in terms of those research modes described by Frayling. “Finding Byadhuk: Field Notes,” for example, offers an account of preparatory work that could be described as an exemplar of Frayling’s research-for-design. It narrates Chuan Khoo’s encounter with a place (Byaduk, Victoria) and how this encounter informed particular makings. Khoo’s description of ethnographic practices, of the written and visual accounts that document a recurrent engagement with a place, and of the significance of these accounts (in this case both literal and cognitive) for conceiving installations foreground makings. Khoo’s encounters with Byaduk, like Picasso’s experiences of Barcelona,⁰⁵ are precursors to, and instigators of, particular representations of the historic (material) and live (atmospheric) conditions of that place. Likewise, Campbell Drake’s “Spatial Tuning: The Cyclical as Critical Performative Practice” and Jorge Valiente, Amaia Sanchez-Velasco and Gonzalo Valiente’s (as

Grandeza/Bajeza) “New Geographies of Violence,” might both be described through their resulting pieces. Drake’s series of public events, in which the tuning of a piano—a preparatory, un-scored act—becomes a performance, foreground a set of operations intended to encourage audience awareness of particular spatial politics. Tuning ‘uncertain’ situations by these uncertain performances in varying senses—geographic (the historically contested territory of Culpra Station), geo-political (the boundary between a landfill near Hobart and the Mount Wellington National Park) and socio-political (HM Pentridge Prison, Coburg, Victoria)—reveal in greater certainty what is disputable in those situations. The ‘piece’ (the performance) represents spatial politics. Grandeza/Bajeza’s installations/performances *The Plant* and *Valparaiso Post-Liberal* both engage with contemporary urban political conditions. These installations are described as instances within a protracted practice that articulate both evolving thinking and a response to particular emerging realities. By invoking audience participation, they bring to light (represent) specific social conditions.

Urs Bette’s “Unreasonable Creatures: Architecture & (Bad) Behaviour” documents what we might describe as a project of research into design, where the subject of that research is the designer’s own practices, and where what is revealed through these practices are those assumptions that underpin architecture’s disciplinary behaviours (the use of recursive techniques for design and representation, for example, or the recycling of imagery and text). Kathy Waghorn and Nick Sarjent’s “The City as a School” offers an approach to architectural design pedagogy through descriptions of the design studios ‘Muddy Urbanism Lab’ and ‘Event Studio’, both of which encourage architecture students to engage closely with the multifaceted nature of contemporary architectural practice, including stakeholders, budgets, and regulatory limits. This contribution, too, could be considered a project of research into design, whereby what is designed is a set of pedagogical principles and practices, and what is researched is both the efficacy of those pedagogical practices in generating understandings of and approaches to the city, and the impact of the situation in which these pedagogies are enacted on the generation of those understandings. Perhaps the clearest example of this category, however, might be Erik L’Heureux’s “Hot and Wet: Architectures of the Equator,” in which a series of studies of modernist buildings in Indonesia, Ghana

and India that engage with the demands of their specific climates inform strategies for contemporary buildings in Singapore, buildings in which the ‘temperate hegemony’ of architectural discourse is contested.

These pieces, however already begin to challenge categorization. “Finding Byaduk: Field Notes,” begins to stretch what might be readily categorized as research for design by questioning the recurrent relevance and impact of the constructed artefacts for Byaduk; by enacting and performing live meteorological data through found engineered objects, at a distance but with material links to that place, the work complicates any description based on linear narrative (from research to thing). It suggests that the objects made have value beyond their status as representations of a particular thinking (closer, in some respects, to Frayling’s research through design, but without the ‘discoveries’ expected of research led by experimentation). They are, instead, markers of a particular moment in a (personal) practice, and also invitations and instigations to reconsider the material history of a particular place and its presencing (be it the tourist signage describing the town’s history, or the material histories of particular buildings). Similarly, “Hot and Wet: Architectures of the Equator” might be said to combine research into and research for design modes. L’Heureux’s study of equatorial architectures reveals the limits of particular drawing practices; describing architecture in an equatorial condition, L’Heureux notes, requires the development of new representational conventions. A body of research into specific architectures therefore reveals the limits of a specific representational lens, and simultaneously questions the representational assumptions under which design operates (the ‘means’ implicit in any work conducted through design). Bette’s presentation of work is, on the one hand, a record of practice, but is at the same time an exploration of media, of how format might offer new insights into our working practices. The field of images, overlapping text, diagrams, sketches and drawings plots a body of work spatially, in order that this work might become navigable—to readers, and to the author-as-reader—and subsequently, revelatory.

These projects, therefore, begin to embody the agenda of this issue of *Drawing On* described above in response to the *ADR18* conference. They begin to explore methods. We do not see an argument against architecture existing in a cloud or the anatomy of an animal (in reference to

Frayling’s invocation of Leonardo da Vinci, Stubbs and Constable). Nor do we expect such enquiries to be reduced entirely to a technical exercise (as interesting as this may be). Rather, we are interested in how design practices will establish how architecture can be found in clouds or anatomies and, furthermore, how these processes can be recorded and made present to others interested in such methods. In presenting these methods we intend to test the limits of those definitions that circumscribe (and, increasingly, ‘validate’ in certain terms and situations) design-research practices.

With this aim in mind, this issue of the journal provides space for a selection of those pieces that either actively question the separation suggested by Frayling’s categorisation, or implicitly question these categorisations through their methodologies and outputs. It provides support for speculative design investigations, design-research not driven by perceived urgencies toward specific ends. ‘Canyon: Experiments in Drawing a Landscape’, by Simon Twose, Jules Moloney and Lawrence Harvey for example, is concerned with an extension of drawing practices; it records, invokes and embodies the landscape of the under-sea trench of Kaikōura Canyon, Aotearoa, New Zealand. In developing drawing practices, it also questions forms of representation. In exploring the role of the installation as a representation of particular landscape conditions (through a description of the installation *Canyon*, at Palazzo Bembo for the XVI Venice Biennale, 2016), it develops (and indeed prioritises) non-visual representation. Through representational techniques ranging from developed rubbings and sketches to the precise—if unpredictable—orchestration of a score of overlapping, intersecting digital sounds in space, it critiques accepted representations of landscape and their associated imaginaries (engaging with histories of colonialism, the sublime, and the picturesque), and challenges the very idea that landscape is visually-conditioned. It develops methods of and critiques representation.

Similarly, Rachel Hurst’s “Megalomaniacal Plans: Exploiting Time and Transparency” describes an investigation into plan drawing: the plan as drawing and the drawing of plans. Hurst’s work focuses not only on the plan as a particular organisational or representational practice, but on what plans reveal. By superimposing various historical plans onto one another through tracing, Hurst begins to describe patterns in the organisation

of space through time. However, her work also reveals through drawing something of the contingencies of drawing as a practice. In identifying through tracing a row of four superfluous columns in Etienne Louis Boullée's drawing of a Basilique—what Hurst terms 'Boullée's error'—Hurst describes a particular condition afforded by drawing: a becoming lost in drawing driven by repetition that induces a particular type of attentiveness. Her working method and her object of study begin to intersect. The evolution of these drawings into paintings and subsequently tapestry is not simply intended to develop new outputs, but to further an inquiry into methods, into the making of drawings. As with Hurst's work, Ainslie Murray's "Utterances of Everyday Life: Moving and Drawing in Sensitized Air" is concerned with iteration. However, for Murray iterative practices (or, as Murray describes them, the practices of 'everyday life') are at once the subject of a series of drawing experiments and the source of a set of potential architectural gestures. Murray's work proposes that everyday actions become invisible to us. The revelation of these actions through the recording of their effects on the air is a revelation of spatial practices. Air becomes sensitized to our movements, and our engagement with air as a substance re-frames the spaces of architectural practice. Representation (method), subject and object overlap. Finding ways to draw the air is critical to understanding or re-thinking spatiality (of air, of the body, of architecture).

Should we care why, to return to Constable, anyone wants to find architecture in a cloud, or, as in Murray's case, in the air? Perhaps. It is our hope that those pieces of work described above offer insight as to why this is an interesting question. However, perhaps it is sufficient that what has been found through these investigations—namely, architectural means—is enough reward. This is not to remove politics and all the professional, academic and institutional urgencies from design and reduce it to merely aesthetic practice. This is to ask deep questions of how design works, in as many varied ways as possible. As we recurrently say about our journal, it is as much a surveying device, recording what we find as a growing index through the themes and issues we organise in series, as it is a forum—like *ADR18*, the upcoming *ADR19* conference 'Real/Material/Ethereal' to be held at Monash University, and hopefully subsequent iterations of the Annual Design Research conference—for presenting, discussing, encouraging and further developing the epistemology of research by design.

NOTES

- 01 Aitchison, Mathew. 2018. "Foreword to the ADR18 Conference." *Proceedings of the 1st Annual Design Research Conference, Sydney, Australia 27th-28th September, viewed 19th September, 2019.* <<https://sydney.edu.au/content/dam/corporate/documents/sydney-school-of-architecture-design-and-planning/research/ADR18-Proceedings-Final.pdf>>
- 02 Lawson, Bryan. 2015. 'Design Research in Architecture: An Overview.' Review of Design Research in Architecture: An Overview, by Murray Fraser (ed.). *Design Studies*, Vol. 36 (January), pp.125-130.
- 03 Aitchison, Mathew. 2016. 'Design Research in Architecture: An Overview.' Review of Design Research in Architecture: An Overview, by Murray Fraser (ed.). *Journal of Architecture*, Vol.21 No.2, pp.308-312.
- 04 Frayling, Christopher. 1993. "Research in Art and Design," *Royal College of Art Research Papers*, Vol.1 No.1, pp.1-5.
- 05 Frayling cites an interview with Picasso from 1923 in which Picasso refutes the notion that he was a researcher. Picasso stated: "When I paint, my object is to show what I have found and not what I am looking for." Frayling, Christopher. 1993. "Research in Art and Design," p.2.

FIGURES

All of the drawings, paintings and images included in this piece were produced by the authors of the various papers included in this issue of *Drawing On*.

Rachel Hurst

MEGALOMANIACAL PLANS: EXPLOITING TIME AND TRANSPARENCY

01

The online version of this article can be found at:
<http://drawingon.org/uploads/papers/IS03-01_191002.pdf>

Rachel Hurst

MEGALOMANIACAL PLANS: EXPLOITING TIME AND TRANSPARENCY

ABSTRACT

If there is one drawing indispensable to the description and production of architecture it is the plan. As it slices through space and substance, it allows us to describe and communicate the parts, construction and circulation of a building, all with the benefit of a bird's-eye, or God-like elevated view that confirms our architectural authority over the design. As the preeminent tool to conceive and construct architecture, the plan has evolved highly codified techniques of representation, including the superimposition of transparent layers of drawings to show alternative arrangements, additional storeys, reflected surfaces or site conditions. Superimposition thus allows an extrusion from two- into three-dimensions. This paper explores how this tactic of superimposition can also operate as an extrusion into the fourth dimension of time, to reveal insights into the histories of both drawings and buildings.

Three projects support this premise, described in intertwining, parallel texts of theory and practice, and in an accompanying gallery of images. Contextualised against Eisenman's defining use of 'superpositioning', and Rossi's analogical collages, the projects align with contemporary drawing-thinking practices of polyvalency and indeterminism. They develop a practice of using archival plans as a primary source for research and creative speculation. The resulting works explore three concepts: the conventions and possible future of analogue architectural representation; the use of the archive for speculative practices; and the use of speculative practices to construct new knowledge.

BIOGRAPHY

Rachel Hurst is Senior Lecturer and Design Coordinator in Architecture at the University of South Australia, joining the School of Art Architecture and Design after fifteen years in practice. She has an extensive exhibition and publication background, of over 20 shows and 80 text works. She holds a PHD by practice from RMIT. Her thesis, *The Gentle Hand and the Greedy Eye*, investigated the everyday, hybrid analogue representation and curatorial practices through works of diverse media and scale. It was awarded both the Pinnacle and Judge's Choice Awards for Publication in the 2016 Australian Graphic Design Awards, and was a finalist in the NGV Art Book Publishing Prize 2017. Rachel is a contributing editor for *Architecture Australia*, and regular juror in national and international awards and competitions

Despite the fact they carry a critical part of the DNA of a building within them, architectural plans are often artefacts of flimsy substance, inscribed on paper-thin, transparent or virtual ground. Their material reality belies the weight of the knowledge they store. But this is a characteristic of almost any architectural drawing, where the inherent linearity of the way we draw reduces the substance of material construction to micron-thin inscriptions of edge and boundary. This is no more apparent than when we use techniques of superimposition to collapse and collide spatial delineation as a way to see through not just one level of a building but through the entirety of its volume, or more speculatively, through its temporal context.

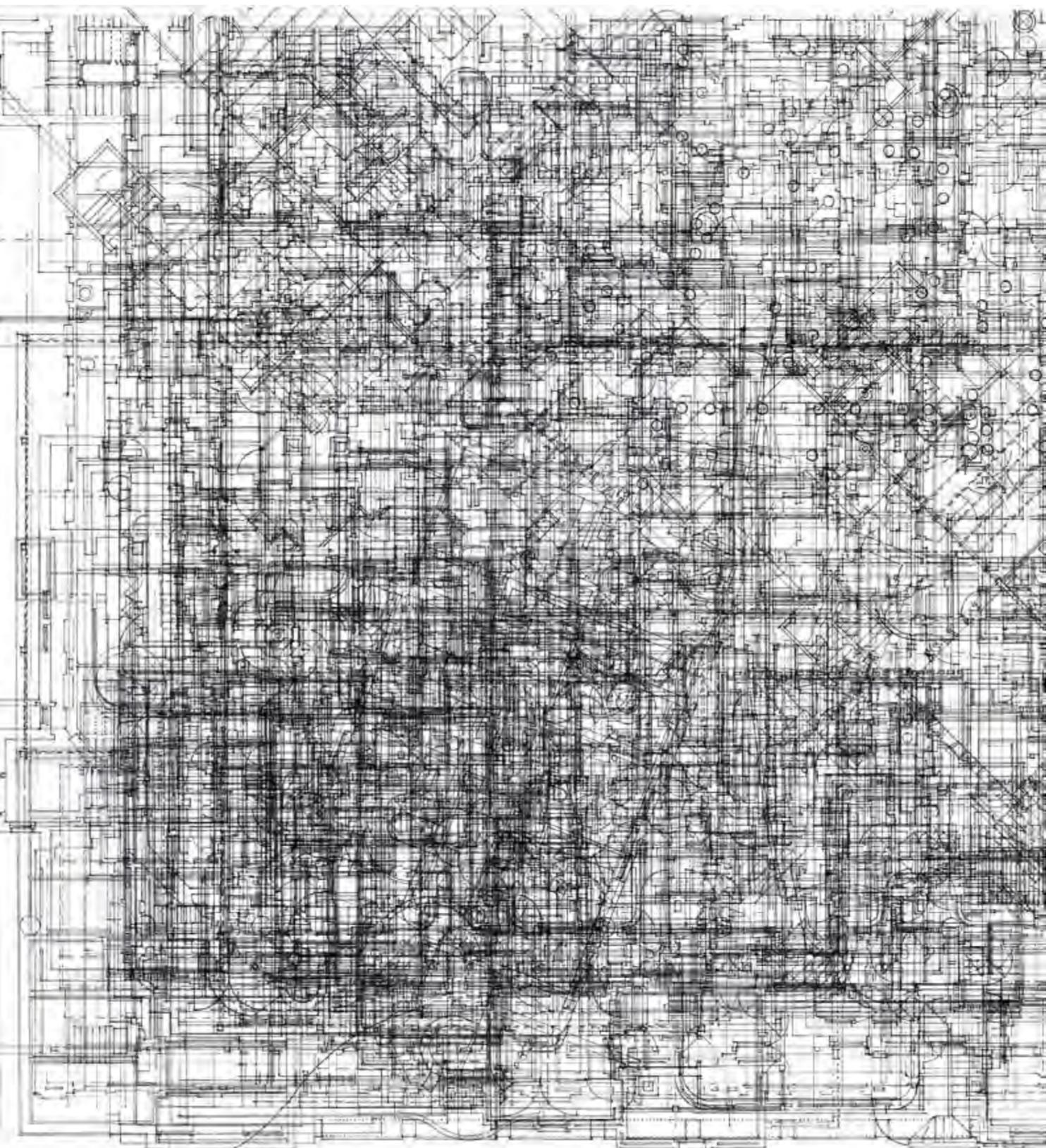
Simple in essence, superimposition is a methodology that has been widely deployed—beyond practical documentation—as a mode of drawing-thinking, from the imaginative interrogations of the recto-verso by Marco Frascari, to the analogical collages of Aldo Rossi, artificial excavations of Peter Eisenman and, more recently, archival ghosts of Perry Kulper. If there are commonalities between these it is in how the selective, malleably scaled and serendipitous collisions of varied architectural elements and associations is a generative tool, a foil to the inherently reductive, rational quality and purposes of orthodox documentation. Further, most of these techniques are slow, analogue processes, either by default or declamatory intent.

This forms the context for this paper, which is a tracing of two kinds: literally a suite of traced drawings and resulting artefacts, and figuratively as a tracing of the speculative

drawing practice of superimposition more generally. These are presented as two oscillating narratives throughout, indicative of the shifting dynamic between practice and theory, and the propulsion of the project from its practice-based methodology. Three themes underpin the overall project and structure the following discussion and drawing exposé: firstly, an exploration of the conventions and possible futures of analogue architectural representation; secondly, the use of the architectural archive for speculative practices; thirdly, the use of these two practices to construct new knowledge.

The works presented for *Megalomaniacal plans* extend a research project into the plan as the ubiquitous depiction of architecture, and foreground the tactic of transparency as a long-understood way of simulating X-ray vision through storeys, structure and time. The selective and narrow frame offered by focusing on the plan is a response to external circumstances, and does not deny the significance of other forms of orthographic projection. The section or axonometric, for example, might equally be employed to interrogate the specificity and latency inherent in any partial representation, or to challenge the norms of how we interpret drawings for what they 'say' they are. Kulper, for instance, attempts to augment (and subvert) the roles of the architectural drawing and move fluidly between conventions, "building the plan here and the section there."⁰¹

Here, however, three iterations develop a methodology that uses the analogue superimposition of archival plans only as both interrogatory research practice and creative production. An accompanying gallery of images



01:
Millions Hours_3 Layers Drawing, detail, 2017. Ink on polyester film, 420x594mm.

summarises a lineage of technique, resulting discoveries and artefacts.

Consisting of three pairs of ink drawings and oil paintings, *Million hours* responded to the *Drawing Millions of Plans* conference/exhibition at The Royal Danish Academy of Fine Arts School of Architecture in November 2017 which focused on “contemporary architectural drawing and, in particular, the drawn plan.”⁰² *Million hours* initiated an experimental tactic of superimposing and hand-tracing selected local archival drawings, sectioning through building and drawings typologies to reveal recurrent characteristics in both fields. A second stage transformed this content into painterly visual analyses, as a proposition for alternative modes of analogue representation. Exhibited in Copenhagen (and used as a teaching tool for a Masters of Architecture research practices course), the historical discoveries, potential interrogations and intricacy of the results prompted expansion, theoretically, technically and in terms of scale.

Megalomaniacal plans: conversations across 236 years, uses the same technique of hand-traced, superimposed archival drawings for an entry for the Australian Tapestry Workshop’s Tapestry Design Prize for Architects (TDPA). Established in 2015, the annual TDPA invites architects to explore the possibilities of tapestry and architecture through a design for a designated site. The 2018 brief asked entrants to design a tapestry for a cenotaph designed by Beaux-Arts architect Étienne-Louis Boullée, as the direct inspiration behind the recent Pharos Wing of the Tasmanian Museum of Old and New Art [MONA]. Presented as analogue drawings and digital renders of the proposed work enlarged and installed in MONA, the design compiles and contrasts drawings from the Bibliothèque Nationale de France of Boullée’s seminal works with Australian projects of a comparable type, age or intent, in an exploration of conceptual largesse and colonial aspiration.

The most recent iteration of this methodology, *Megalomaniacal plans: exploiting time and transparency* is fuelled in part by the tempting translation of the *Megalomaniacal plans* drawing into an alternative analogue medium of tapestry, but chiefly by a serendipitous discovery during the re-inscription of Boullée’s plans. Exploring translations of scale and pixelation, the work comprises an enlarged image of *Megalomaniacal Plans: conversations across 236*

years, printed on linen to evoke its original 18th century medium,⁰³ and an accompanying needlepoint, entitled *Boullée’s Error* that isolates a hitherto unnoticed mistake in Boullée’s original drawing.

EXPLOITING THE TRACES OF TIME

Orthographic projection is the architect’s dissecting knife, slicing through the material and spatial envelope of a building to reveal views and conjunctions never intended to be seen simultaneously.⁰⁴ The line of the cut is placed with surgical precision, to critically expose the inner workings of the design, the areas and joints in need of attention. In doing so, each plan or section becomes at once a digest of the salient elements and an assemblage of a scheme. Our representational media have evolved in support of this forensic capacity. The sheer tissue of tracing paper and the invisible ether of digital layers allow us to superimpose multiple orthographic drawings to assemble the volumetric whole of the architectural body. In this simulated panoptic view, it is possible to sense the three-dimensionality, if not tactility of the architecture.

These techniques are so embedded in architectural drawing that it is easy to forget the ingenuity with which they cross dimensions, from the two-dimensional plane to the evocation of three-dimensional space (at its zenith in perspectival and axonometric projections). And if we look closely at analogue drawings we can sometimes see the timeline of their facture—the slowly built scaffold of faint pencil construction lines and later confident brisk inking of top layers—revealing that each document has its own temporal history.

The drawing as a site of attenuated, embodied transformation of architectural projection is central to Marco Frascari’s plea for the preservation of analogue representation.⁰⁵ He argues that the majority of analogue processes work within a frame of space, time, atmosphere, measure, tactility, weight, balance, muscle, scent and sound; and in this preliminary anticipation of the design—what Sennett calls prehension—there is natural correlation with the multi-sensory temporal perception of architecture.⁰⁶ The sensations of how we will occupy space are there in the raw ingredients, even if they are, by definition, analogous to the ultimate outcome. The drawing could be considered a miniature rehearsal of making and occupying the building, a way of thinking into

space, perhaps even more so when it involves tracing and retracing decisions already in place.

While Aldo Rossi is identified as an exponent of drawing-thinking, both through his writing and prolific folio of analogue works,⁰⁷ his position on analogical thinking is much more profoundly knit with the concept of substitution than on embodied physicality. We use the term 'analogue' so often in the vernacular as antonym to its increasingly dominant other, digital, that it almost comes as a shock to return to its formal definition as something parallel, or comparable to something else, or which can stand in for it as 'analogous'. Rossi's canonical works, *An Analogical Architecture* and *The Architecture of the City* demonstrate a process of enquiry based on translation, substitution and metaphor, enacted through drawings and pivotally expressed in the 1973 and 1976 collages *Città Analoga*.⁰⁸ These superimpositions juxtapose a range of imagery and representational modes, plans and elevations, from historic and contemporary sources, that, in a direct challenge to Modernism, simultaneously reconnect and disconnect with time. Or, as Peter Eisenman summarises in an introduction to Rossi's work, "the time of analogy [is] a bifocal lens of history and memory, that "dispossess, reassociates, and thus transforms real places and real times."⁰⁹

For Eisenman a similar emancipation of the temporal fixity of the drawing acquires its own nomenclature: 'superpositioning'. Developed through a series of significant projects in the mid 1980s,¹⁰ this process identifies polemic urban and architectural structures and narratives as 'artificial excavations', which are then layered to produce "a suspended object, a frozen fragment of no past and no future, a place. Let us say it is of its own time."¹¹ Within the palimpsest of the drawing's inscriptions, Eisenman manipulates and traces authentic archaeological data, unrealised historical projections and fictional entities with contemporary conditions and programmatic demands, erasing, and folding so that "the fragments become a whole as the whole becomes fragment."¹² Scaling is deployed fluidly as an active protagonist in the process, not only in its dimensional sense, but as a tripartite strategy of destabilizing concepts of "discontinuity, recursivity and self-similarity."¹³ This heightens the sense of multiple texts informing both the drawings and the built works.¹⁴ Eisenman argues that while superpositions of scale and place address the dominant themes of the projects, "in the overlaps and coincidences

of registration arise interrelated elements of present conditions, memory and immanence, revealing aspects of the structure of the textual narrative."¹⁵ The tactic, then, is simultaneously deliberate and indeterminate.

Rossi and Eisenman's design approaches consequently reconfigure typology, site and the drawing itself as non-static, as both "palimpsest and quarry,"¹⁶ but there is a further nuanced way that superimposition defies the temporal stasis a drawing traditionally imposes. In layering separate plan drawings there is an inherent dynamic that takes these physical artefacts into the 4th dimension. Generally constructed from the ground floor up, every plan sheet has its own discrete role in the sequencing of space and circulation. The requisite transparency, consistent scale, register and orientation of superimposition enable us to coalesce these into one entity, one fixed moment of viewed experience, in the manner of most drawings.¹⁷ But equally by the simple act of re-ordering, reorienting or removing drawings we can make alternative assemblages, parallel worlds with different chronological characteristics, where one might not start at the 'beginning' of the building, but instead at the middle. It is a tactic exploited by contemporary Ethiopian-born American artist Julie Mehretu, whose architecturally-inspired works bear surface similarities with *Megalomaniac plans*.¹⁸ She describes using superimposition to produce paintings that "almost move in time or move in space," and to make ambiguous "story maps of no location."¹⁹

Peculiarly, these overloaded surfaces become transformed with perceptual depth, despite the flattened orthographic coding of which the individual layers are made. In Mehretu's "cacophony of marks,"²⁰ or the seminal *Micromegas* suite of Daniel Libeskind,²¹ there is visual intrigue in their obsessive complication, even if they initially appear enigmatic. The eye looks for form and a coalescing narrative, in a tension between complexifying and reductionism that resonates with aspects of Rossi's drawings. For, as he explains, "the construction of form and its destruction are two complimentary aspects of the same process,"²² and critically it is this "accumulation of form [that] amounts to an erasure of form" which can "create an analogical space for projective possibility."²³

The *Megalomaniacal* series responds to quite different briefs, yet constitute a unified development of the premise and technique of superimposition as a diagnostic drawing

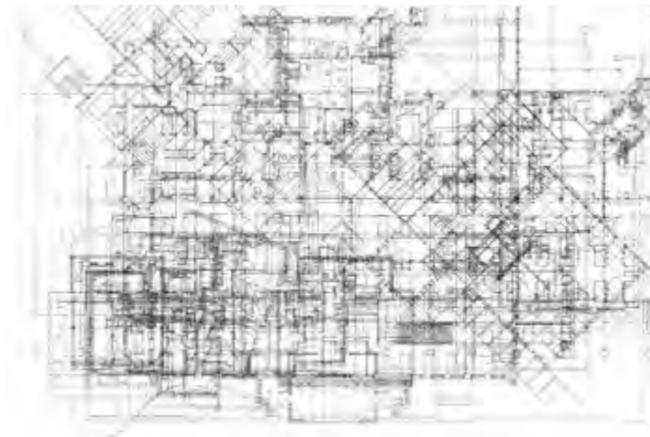
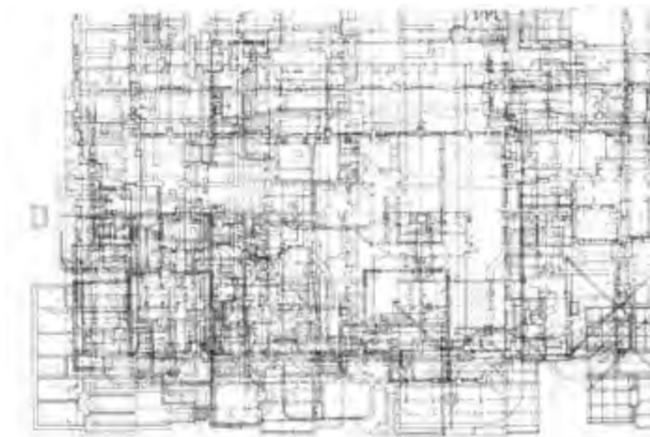
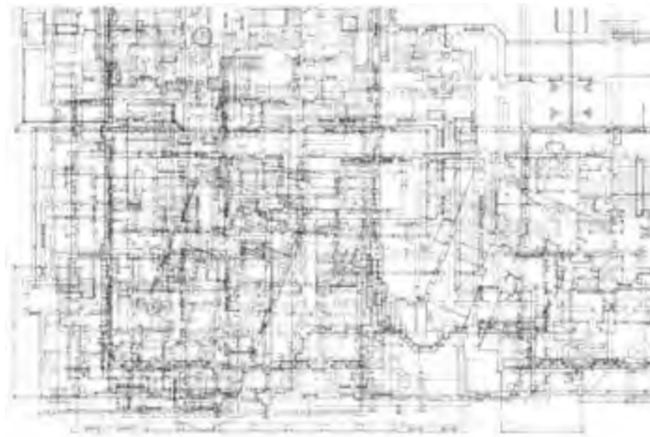
tool with spatio-temporal latitude. *Million hours* focused on the assumption that plans are autopsies of unborn buildings, and the intention was to synthesise a nominal million hours of existing plans into a hybrid rendition of the floor plan as graphic DNA, and decipher what was encoded there. Thirty plan drawings were gathered from a specialist Australian architectural museum allied to an architectural school, and traced by hand into three drawings, each containing ten superimposed plans of allied chronological origins.

The drawings were made on polyester film using only one pen thickness. Each drawing was aligned consistently at the bottom left hand corner, regardless of the layout of the original. This deliberately flattened the individual characteristics of the original depictions into a non-hierarchical format, such that grand public buildings assume the same representational status as pragmatic warehouse sheds. Unlike the drawings of Rossi, Eisenman, Libeskind and Mehretu, there is minimal adjustment or manipulation of content, nor variation in the type of drawing projections deployed. Each layer is a plan, and only a plan: the results are raw undifferentiated data, divorced from any programmatic agenda. The resulting drawings are nevertheless an intricate tangle of linework, intensified to an almost cosmological field if the three are further superimposed on each other. The slow, embodied ritual of their making exposes 'accumulations of form' across the set of three, evolving 'deconstructions of form'. Sections of these compilations were subsequently magnified in scale and reinterpreted through three oil paintings. Here, the intent was to reveal the prevalent structures of the narratives that have emerged out of recurrent plan devices, drawing physiognomies and "coincidences of registration." Akin to Eisenman's distillation of multiple texts, these are propositions of ambiguous time and form, with fragments rescaled and reworked to make a whole, or at least an image that is no longer pure plan, pure history. The linear surface of the 'raw data' is mined for any angularities and juxtapositions that might evoke axonometric projection, and these heightened with blocks of colour, to propel the paintings further from their planar origin. For while these paintings aimed to distil and amplify the pathology of each of the drawings, they were also an exploration of hybrid representations between architectural and art conventions, and part of the larger question of the future of analogue architectural representation.

Though *Megalomaniacal plans: conversations across 236 years* uses an almost identical technique of compilation, it is an orchestrated interrogation of projects related not just by function and temporality, but also of intent—the historic intent manifest in the original drawing material, but also making a set of drawings that has a polemic, as opposed to exploratory motivation. The core material is inadvertently the same as that used by Rossi throughout his writing as a critique of "naïve functionalism."²⁴ and here serves a slightly more acerbic purpose. Rossi used Boullée's work, to postulate "a vision of rationalism as an alternative to the functionalist position" that "neither oversimplifies reality and humiliates fantasy and liberty."²⁵ He admired its architectural unity "where use and decoration are one,"²⁶ and saw the powerful monumental forms as definitive, if unbuilt, examples of his key analogical device of 'urban artefacts'.

At MONA, the direct reference to Boullée's work is no casual formal appropriation, but a deliberate play on its owner, David Walsh's own reputation for monumental moves. An iconoclastic professional gambler, art collector and businessman, Walsh correlates Boullée's taste for grandiosity with his own, stating: "'Boullée's fondness for grandiose designs has caused him to be characterized as both a megalomaniac and a visionary.' That's from the Wikipedia article on Étienne-Louis Boullée. Those around me, my staff, friends and sycophants, call me a visionary to my face and a megalomaniac to each other."²⁷ Recognising that superimposition collapses information contained in single documents into an instantaneously comparative visual field suggested a potential 'superimposition of megalomaniacal personalities' as well as related plans across time and distant places.

In one drawing plane and at one scale, six of Boullée's obsessively-platonic plans, (sourced digitally from the Bibliothèque Nationale de France) are layered against five historic Australian projects, selected as closely typologically and chronologically as achievable, and the plan of MONA. Each group is traced by hand initially (with schemes aligned by centre point and northern orientation) into three separate colour-coded drawings: black for Boullée's square schemes; blue for his celestial circular ones; burnt sienna for the Australian projects and the fiction of the empty ground of *Terra Nullius*. The accumulation is united by a mutual ambition for architectural presence—or megalomania—whether in the first church or lighthouse of the colony, or in the



02-04:
Million Hours_1-3 Drawings, 2017.
 Ink on polyester film (420x594mm)

expansive layout of Walsh's MONA, as the intended site for the tapestry.

Acknowledging Boullée's supreme draughtsmanship and the intensely analogue nature of tapestry, the design was produced by hand. It hence foregrounds threatened crafts as intrinsic to the making of both tapestry and traditional architectural documentation. The components deliberately play between the intense handcraft of the original ink-wash renditions and, with the hypnotic repetition of the magnified drawing, allude to both Boullée and MONA's intention to visually overwhelm.

SEE-THROUGH ARCHIVES: EXPLOITING HISTORY AT HAND

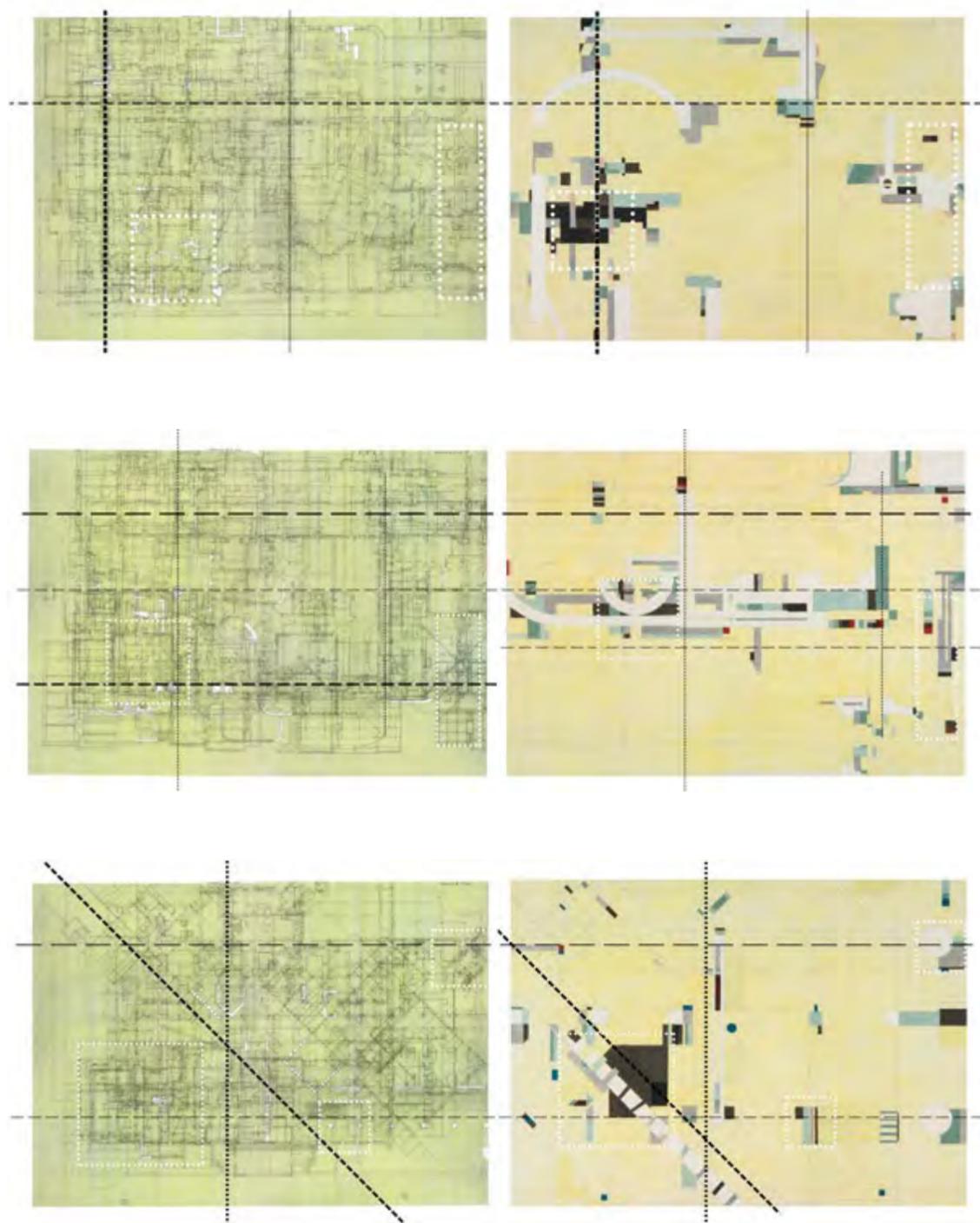
Notwithstanding the ahistorical manifesto of Modernism, architectural practice has always occupied a peculiar junction between the past and future. Dependent on the acquired knowledge of its past, it is compulsively propelled by projective thinking. Even as attitudes to architectural agency shift to take on the ethical obligations of sustainability, and we re-evaluate whether the appropriate course is to build, reuse or restore, our impulse is always "toward a new architecture" that marks the next point on the architectural journey.²⁸ The archive is hence a critical site to support any ideological or contextual position, whether to inform or deny contextual continuity.

And while perhaps the most powerful architectural archive is the one we inhabit on a daily basis, in the manner of Rossi's empirical analyses of *The Architecture of the City*,²⁹ conventional document and artefact based archives remain invaluable repositories to explore the genesis and processes of individual and collective architectural enterprises. If the "material of the past"³⁰ is a legacy rediscovered by post-modernism and "used somewhat promiscuously as a conditioning element for new material whilst remaining ahistorical," it remains a useful source, deployed sometimes verbatim (as in Eisenman's work), sometimes to illuminate architectural thinking (as in Frascari's writing), more often instrumentally for contextual or historic motifs in practice,³¹ and sometimes as a loose field for the imaginative reinterpretation of typologies (as in Perry Kulper's speculative mining of forms, constructions and cartographies).

There might seem a tempting parallel between the archive as a home for obsolescent things, and the perceived obsolescence of analogue drawing (that make up the bulk of specialised architectural museums and the focus of this paper), but this is superficial. The value of the archive is as a conceptual, accessible resource and curated taxonomy, equally applicable to the disappearing digital as to the stuff of paper, pencil or ink.

Furthermore, as contemporary preservation has expanded to embrace different scales (temporal and physical) and modes, so too the role of the archive has expanded from one of protective custody over significant historical artefacts, to one of active agency in defining what is significant in a rapidly changing environment. Rem Koolhaas suggests the scale of what merits consideration for preservation is escalating relentlessly to include entire landscapes.³² He notes that "everything we inhabit is potentially susceptible to preservation."³³ Certainly current practices to preservation view it as a living art form able to propel immediate, not just retrospective, architectural endeavours. Take, for example, the site-specific interventions performed by Jorge Otero-Pailos in his ongoing, decade-long series of works called *The Ethics of Dust*.³⁴ Making gossamer layers of latex peels from the faces of significant buildings, Otero-Pailos carefully preserves the fabric and data of architectural age as new archival content, and concurrently suggests new forms of architectural representation and materiality. These artefacts and his curation deliberately traverse disciplinary boundaries into hybrid art-architectural expressions that stimulate new ways of looking at our architectural surroundings. More subtly, it subverts orthodox values within the field of architectural heritage. Conventional preservation necessarily elevates selected artefacts as noteworthy, corralling them from their everyday milieu to become part of a static set, fixed in time and significance. But here, value is imbued in new 'archival documents' of latex and dirt, derived from accidental, anonymous, accretions, rather than an authorial architectural hand.

The Ethics of Dust works evoke the depth of a building's history through the accumulations on its surface. By comparison, similar stories can be uncovered through an accumulation of drawing surfaces. Each demands a recalibration of what merits consideration: the built edifice or the 'debris' of its drawing (for both are 'architecture' in Rossi or Eisenman's estimation).³⁵ Retracing such



05-07:

A comparison of *Million hours Drawings 1 to 3* and *Paintings 1 to 3*, showing the correlation of compositional characteristics, and amplification of recurrent construction elements. Ink, gouache, yellow tracing paper and graphite; oil paint on paper (420x594mm)

artefacts inevitably yields insights into their content, but additionally re-inhabits their facture in a way that catalyses a greater appreciation for and criticality about allegedly archaic forms and processes.

The archival selection in *Million hours*,³⁶ though nominally based on one million hours of local history (114 years 56 days and 16 hours), was curated with respect to characteristics of specific periods of drawing and building broadly represented in the museum's collection. Each compilation drawing spans a defined era: *Drawing 1: 1878–1923*, *Drawing 2: 1924–1945* and *Drawing 3: 1946–1992*. These groupings accord respectively with 19th century Victorian and Federation stylistic trends, 'between the wars' economic conditions, and lastly the influx of Modernist ideas after the Second World War, and were adjusted to take account of contemporary events affecting the local industry (for example, changes in building regulations). The selection inevitably privileges the predominant typologies of each era (civic, residential, commercial and later industrial), however the criteria for inclusion resisted focusing on what might, for reasons of age, association or built form, be regarded as the most significant items. Instead it aimed to be an egalitarian cross-section, as a counterpoint to the normal meritocracy of archival curation.

Recurrent formal languages and construction modes for each era become evident through repeated depiction and comparison: for example, the pronounced weight of building elements, fireplaces, moulded facades and elaborate thresholds in *Drawing 1*, which by the third set had been usurped by grids, thin partition walls and slender columns. The compilation drawings also amplify representational conventions of each group, so that shifts in composition and craft are highlighted. In *Drawing 1*, for example, verticality aligns strongly in two main axes, while the horizontal prevails in *Drawing 2*, and *Drawing 3* is dominated by the diagonal.

There is consistent respect for the bottom left hand corner, as the 'correct' location for the plan in any set of drawings, but surprisingly less agreement on the location of North points. Across the trio there is a discernible decline in drafting finesse. The meticulous care of the layers reproduced in *Drawing 1* implies a corresponding craft in building: minute plan variations (with few large-scale details) presume an informed, artisanal workforce able to interpret from minimal description. In comparison,

the plans superimposed in *Drawing 2* have brisker, less precise linework, with crossed lines suggesting drawings operating on site as direct documentation used to check measure, while in *Drawing 3* the underlying drafting is now less accurate, with more legends, annotation and standardized approaches to walls, windows and insertions.

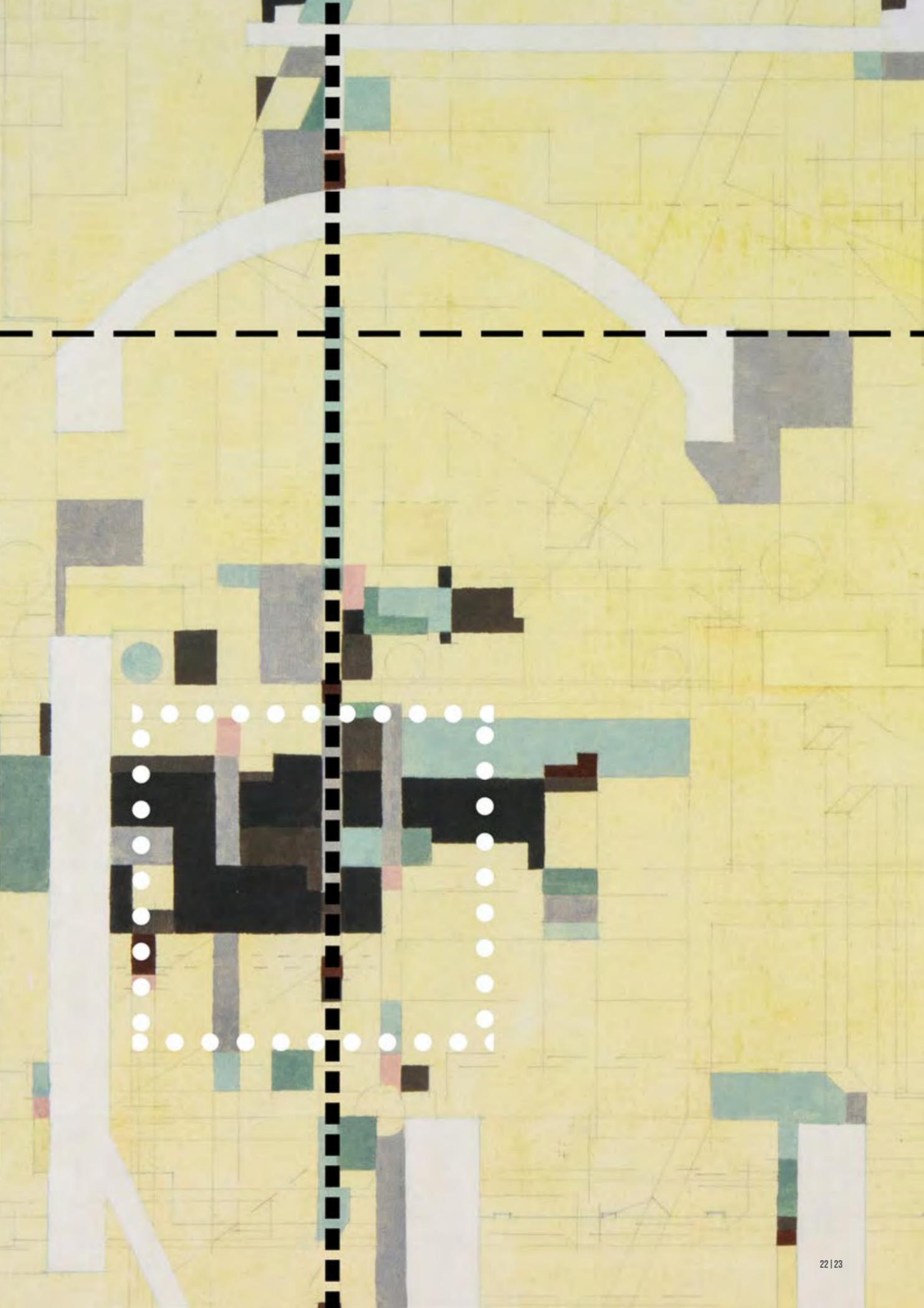
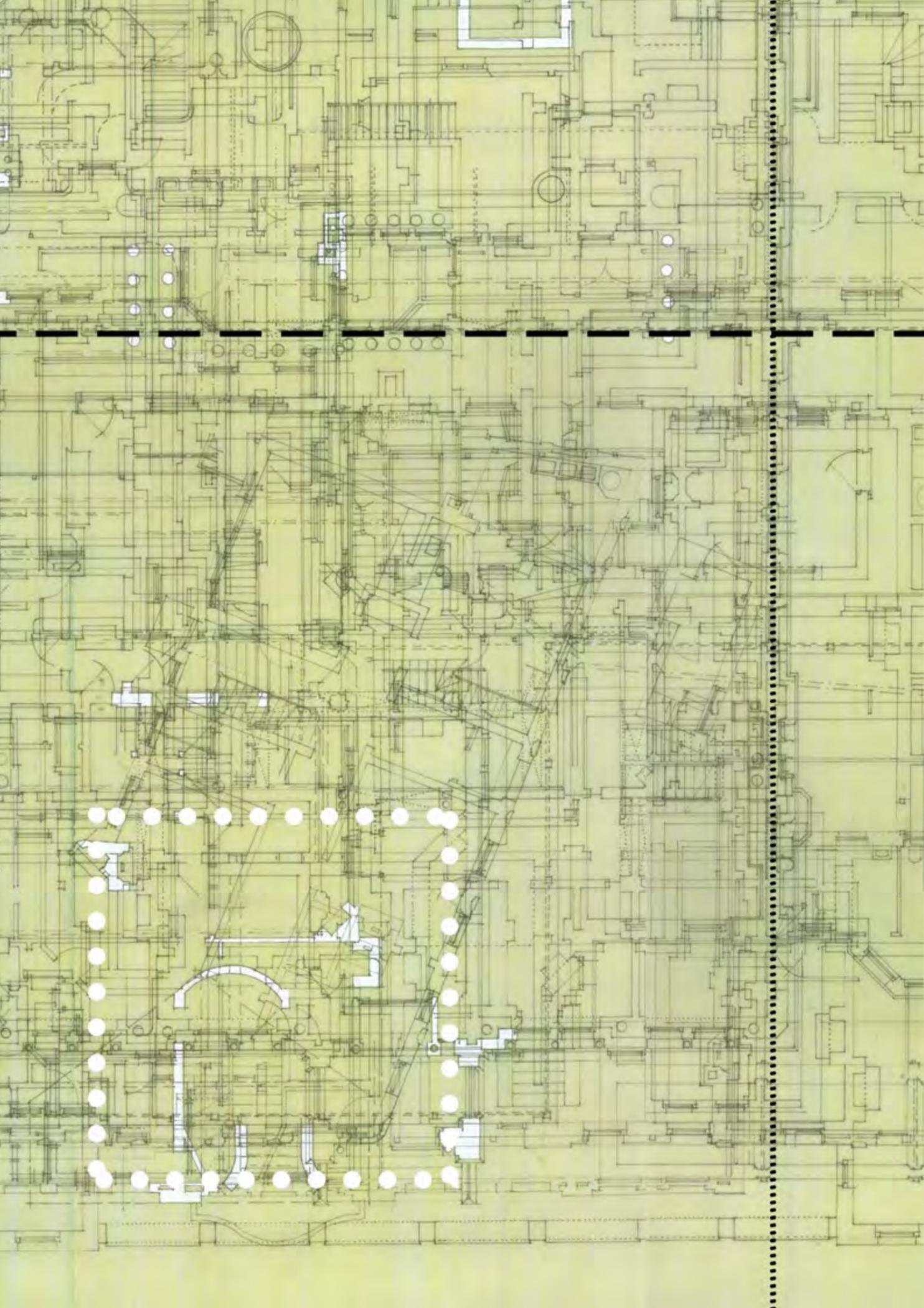
The insights from *Million hours* emerge without prior hypothesis of what might be discovered, and the nature of that content is—like its raw material—fine grained, incremental and comparatively modest. With *Megalomaniacal plans: conversations across 236 years* there was an initial agenda to contrast the extravagant scale and platonic geometry of Boullée's fantastic propositions with the compromised reality of a contemporaneous colony that in many senses was a by-product of such utopian thinking. From the outset it was an intentionally polemic piece. The time scale is bookended by Boullée's 1781 design for a Cenotaph for Turenne, and the MONA Pharos Wing extension completed in 2017 (by Fender Katsalidis), but concentrates on the late 18th and 19th century as an investigation of stylistic influences in the embryonic Australian colony. The 'wild card' of the 21st century MONA plan serves to locate the image in the present, underscoring the notion of architecture and its archive as a live continuum.

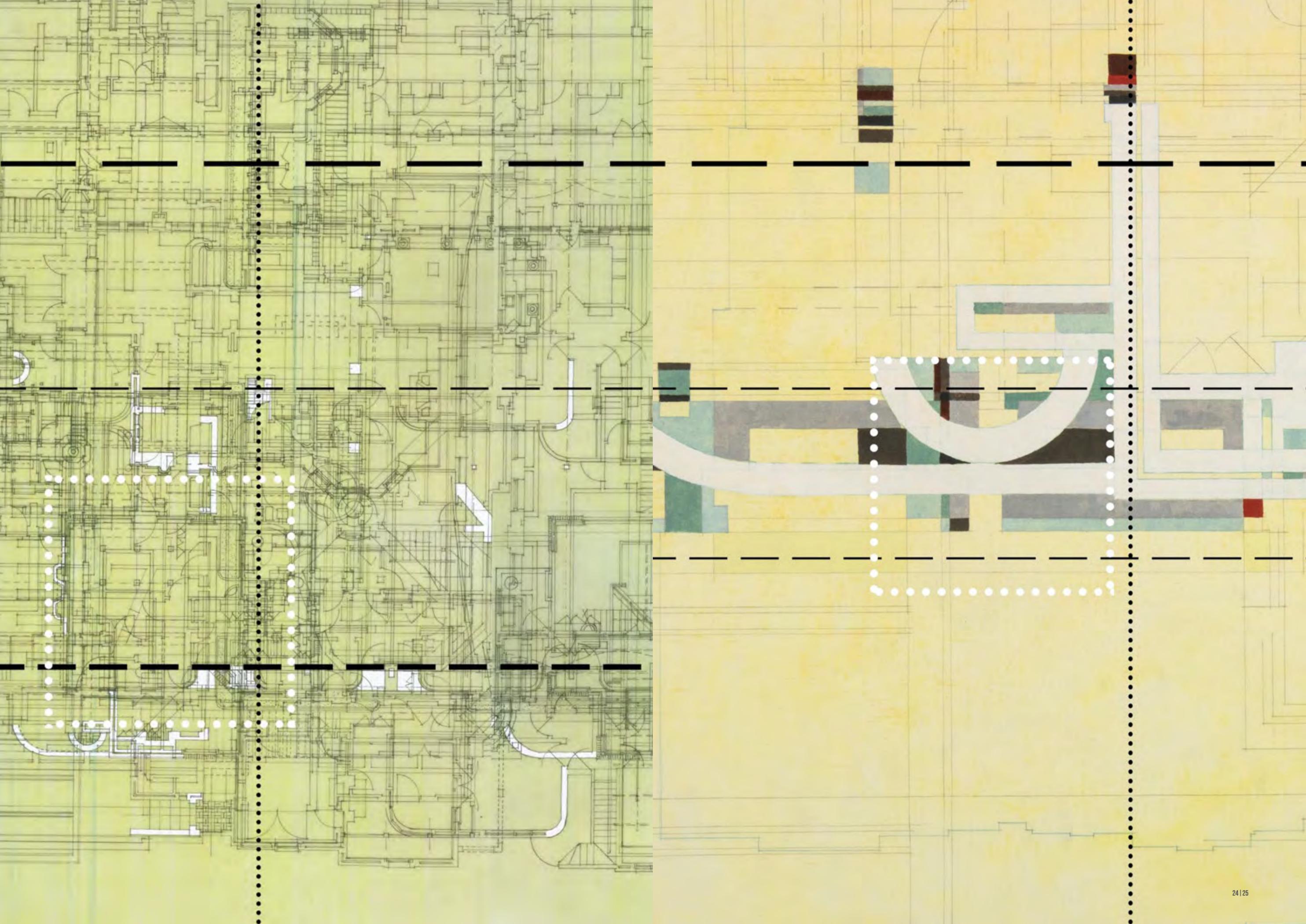
The resulting labyrinthine mandala of lines exposes not only contrasts of scale, but the relationship between idealised and realised neo-classical projects. Superimposing around a central point, (as opposed to merely comparing discrete drawings) highlights coincident axes, and the regularity or asymmetry of the data, while the ability to reorder colour-coded groupings of circular, square or irregular schemes allows different readings and hierarchies to come to the fore. Front and back aspects are persistently visible in the Australian selection, when viewed against the homogenous neutral directionality of Boullée's schemes. These gargantuan geometrically-pure Beaux-Arts propositions dwarf the actuality of the built, and the expedient adaptation to topology and orientation evident in the Antipodean examples.

Yet, establishing a colony on the other side of the globe—constructing civic edifices with unfamiliar materials and improvised labour force—arguably shows an equally grandiose aspiration. It is a dramatic manifestation of the disjunct between the canon and its colonial lineage.

08-09:

A comparison of *Million hours Drawings 1 to 2* and *Paintings 1 to 2*, 2017, detail. Ink, gouache, yellow tracing paper and graphite; oil paint on paper (420x594mm)





FELIX CULPA: EXPLOITING THE OBSCURE PATH

Working from archival material imbues speculative drawings with a degree of veracity, even if we use content in a somewhat cavalier manner to “pick the pockets of truth.”³⁷ But the processes of speculative drawing more typically works to unsettle the ground, challenging assumed architectural positions and the very nature of representation at the same time using one of these assumptions as a tool to critique and construct new knowledge. In a lucid discussion, where he argues for an expanded field of representation, Kulper describes “the latent potential of the drawing in relation to its explicit intent...and an expanded sense of what might be considered as fodder for the architectural mill.”³⁸ At the core of Kulper’s approach (and typical of other practitioners in the field) is a dismantling of dedicated instrumentality in drawing toward polyvalent techniques and readings of what a project might contain. The drawing is no longer singular in either representational codes or purpose, but may fulfil multiple functions, from “augment[ing] the picturing of architecture...to the generative roles of mediating drawings and their capacities to consider a wide range of ideas simultaneously.”³⁹ While not necessarily targeted at a built outcomes, speculative drawings can still be specific in their intent—studying in Kulper’s case, for example, relational thinking, erasure or other unexplored disciplinary conversations—and consequently can develop methods and artefacts with a freedom that approaches art practice, an architectural representation that in addition to its genetics as a design accomplice, produces “objects in the world with their own potential.”⁴⁰

Given their potential as a research tool, with all the connotations of rigour that this implies, it might seem incongruous that drawings are not always to be trusted. Kulper relishes the idea that “representational mediums’ techniques and design methods...are approximate, indirect and sometimes downright mischievous.”⁴¹ He is highlighting an essential characteristic of expanded drawing practices as open-ended, led by instincts as much as reason, and embracing serendipity and imprecision as, ironically, the most accurate translation of the material world. There is latitude in responding to “hunches and approximations” and allowing them to co-exist, that allows a project to be discovered through the drawing, rather than proved by it.⁴² And while error is generally anathema to architecture, as Francesca Hughes

explores in her recent book *The Architecture of Error*,⁴³ for speculative practices it is a vital axiom, whether in the fallibility of human input or natural resistance of material. Nat Chard, for example, identifies how the media we draw with are not neutral, and on one hand can translate a thought “unsullied into a state that others can understand and discuss”, while on the other “a seemingly insubstantial idea may be nurtured and productively corrupted by the capacity of the medium, helping the idea to emerge into something of substance.”⁴⁴ He notes that these connect intrinsically to the temporal: “one is about an instant, completeness. The other is about duration and a state of contingency.”⁴⁵ Similarly, in an introduction to Kulper’s work, Thomas Mical describes how “the difficult challenge of world making is always in the more subtle tissue of the minor slips, distortions, elisions and unobserved disappearances that are commonplace in the everyday world.”⁴⁶ The *felix culpa*, then is often a timely agent, a reminder of reality and forces beyond any project or page, and that every project is promisingly unfinished.

In *Million hours*, tracing precisely, mapping each tiny blip or variation, one can feel the ghosts of the original draughtspeople nearby. The process is a cold-case for the murdered drawings, and reveals subtle aspects of their making as well as the accumulation of habits that meld through their superimposition. However, after the embodied simulation of the original drawings, the subsequent oil paintings experiment with finding a new form, following the hunches and instincts that have evolved during the drawing process, and representing them as significant evidence. Consequently, these paintings suppress the ubiquitous linearity of both their sources and of architectural representation in favour of colour, tone and textural techniques derived from Cubism (for its focus on superimposition, phenomenal transparency and as roughly contemporaneous with the ‘million hours’). Each painting uses colour symbolically to emphasize singular aspects of its core referent group (the blue of post-war blueprints for example), but nevertheless keyed to connect as a frieze that indicates the continuum of architectural ideas and activity. Though never eschewing the task of accurately summarising the drawings, the paintings are design compositions within themselves, treating forms, linework, colour and opacity relationally in the image, as a propositional (albeit ambiguous) architectural field.

In *Megalomaniacal plans: conversations across 236 years* the drawings resulting from methodical superimposition are not reworked or interpreted in any way, save projecting them digitally as an installation into MONA, with a table of referent designs (colour coded to assist in tracing each source). Rescaling the filigree linework of the original A2 drawings to the space of the museum magnifies the glitches, prime territory for the threads of tapestry and nuanced interpretation of the weaver. Two variations offer alternative cropping and weight to the ground, challenging the weavers to recreate subtle evocations of material and transparency, anticipating future evolutions of the design through its translation to another medium, and a response to Frascari’s investigation of the substrate of drawings as protagonists in their facture.⁴⁷

As a condensed test of translating skeletal, transparent drawings to a thickened, double-sided medium, *Megalomaniacal plans: exploiting time and transparency* extracts, rescales and reworks a minuscule part of the drawing, for in tracing Boullée’s plans I encountered a mistake. In the original plan for a *Basilique*, dated 1781-1782, four columns troop across a domed space that, from the model of its 47 neighbouring spaces, was clearly intended to be column-free.⁴⁸ From the perspective of one whose embedded muscle memory is familiar with the mimicry implicit in tracing, it is all too easy to understand what happened: during the slow meditation of inking some 3,500 pillars in the drawing, Boullée’s mind must have wandered, the tempo of methodically moving the circle template or compass took over, and he continued a line of supports where none was supposed to be. In the moment of repeating then recognising the blunder more than 200 years later, the shock feels tangible. I can almost hear Boullée whisper “Merde!” under his breath. But unlike polyester film, ink is not easily erased from linen, so it is no surprise that in the Bibliothèque collection there is a second drawing of the *Basilique*, indistinguishable but for minute rendering variations – and no superfluous quartet of columns.⁴⁹ Neither document appears to be dated, but if it has perplexed scholars as to why there are two apparently identical depictions and which came first, the question is solved.

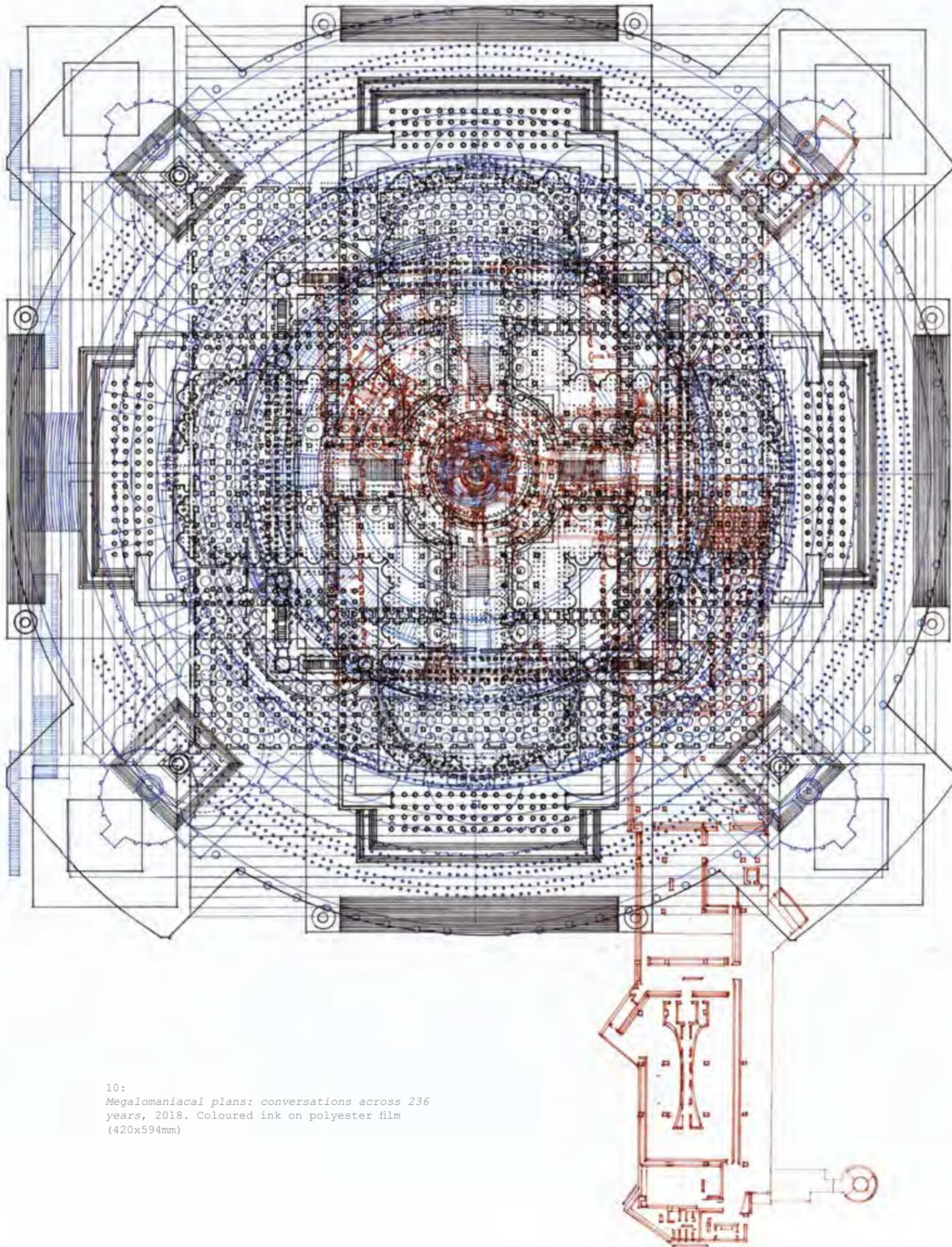
Here Boullée’s tiny slip offers a *felix culpa* through which we might comment on architecture’s pervasive quest for perfection. As an extension of the textile aspect of tapestry, but at a manageable scale, the detail is magnified a thousand times and translated into needlepoint, with

the offending columns sewn in red, the enduring colour of drawing mark-ups. Not only does the painstaking pixelation of the image conflate past and present techniques of depiction, the exposed ‘wrong-side’ of the canvas, with all its knots and trailing threads, discloses the recto-verso nature of the surface and what Frascari describes as “three-dimensional machine” of analogue images that allows us to negotiate “a chiasmus of theory and practice.”⁵⁰ Paired with an enlarged reproduction of the entire drawing, the design is re-materialised at two different scales related to the body – the whole body and the hand, creating an immersive tactile experience that both abstracts the original purpose of documentation and celebrates its embodied production.

CONCLUSION

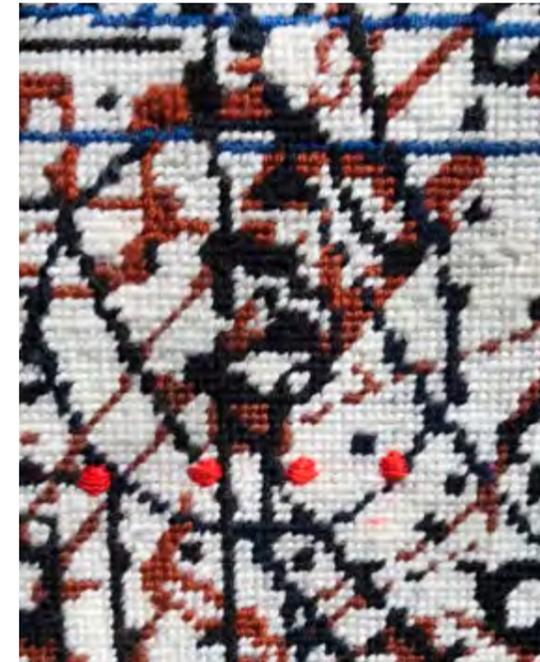
By altering the media, scale, and singularity of orthodox plans these projects explore what the plan cut of negligible thickness can tell us, not only of the three-dimensionality of architecture, but also its historical contexts, from the micro-level of manual fabrication, to the milieu of their times. Julie Mehretu describes her paintings as “tornados of visual incident...seeing them as pictures into an imagined, rather than actual reality.”⁵¹ In contrast, though the works of *Megalomaniacal plans* employ coincident techniques of superimposition and develop similar complexity, they are deliberate post-mortems of real architectural activity, drawn and built, offering new perspectives on familiar knowledge. Exhuming the ostensibly archaic forms and processes of analogue architectural documents as an active research tool and generative art form catalyses a greater appreciation of both their content and making. Hence archived drawings can be seen not as objects of nostalgia, but as means to synergistically preserve and revivify the skills embedded within them. These works also demonstrate how expanded drawing practices are propelled by different settings and tasks. Each exploration yielded fresh factual, historical information, in addition to producing creative artefacts that foreground the skills and communicative power of threatened representational modes.

Kulper makes the point that “the latent capacities and tacit knowledge gained through the making of a drawing have changed through the instrumental techniques linked to various digital protocols,”⁵² yet neither he nor other speculative practitioners exclude the arcane from



10:
Megalomaniacal plans: conversations across 236 years, 2018. Coloured ink on polyester film (420x594mm)

their work.⁶³ Instead he suggests that “other forms of imaging and visualisation ‘outside’ the conventions of drawing practices, [open] alternative potential for what is in play and what’s not in the project.”⁶⁴ Far from abandoning the analogue because precise, repeatable, robust architectural documentation is now the province of the digital, the works here willingly admit imprecision, and borrow from the extensive fine-art history of image making, to propagate the under-utilized expressive and material aspects dormant in architectural representation.



11:
Megalomaniacal plans: exploiting time and transparency_Boullée’s Error, detail, 2018. Wool on cotton needlepoint canvas (210x210mm).



12:
Megalomaniacal plans: conversations across 236 years_Australian Tapestry Prize for Architects 2018. Visualization in MONA.

NOTES

- 01 Kulper, Perry. 2013. "A World below," in *Architectural Design: Drawing Architecture*. Vol. 8, No.5. London: John Wiley & Sons. p.61. Available at: <<https://onlinelibrary.wiley.com/doi/epdf/10.1002/ad.1663>> (accessed 5th September, 2019).
- 02 *Drawing Millions of Plans*, The Royal Danish Academy of Fine Arts School of Architecture, Design and Conservation (KADK), 1st-3rd November, 2017. Curators: Anna-Katrine Hougaard, Martin Søberg and Jacob S Bang. "Programme + Abstracts", 5. Available at: <<https://kadk.dk/drawing-millions-of-plans>> (accessed 19th January, 2018).
- 03 These two components were exhibited at the 1st Annual Design Research Conference (ADR 18) Exhibition, School of Architecture Design and Planning at the University of Sydney, September 2018.
- 04 Marco Frascari uses the analogy of the "the knife and the pen" in Frascari, Marco. 2011. *Eleven Exercises in the Art of Architectural Drawing: slow food for the architect's imagination*. New York: Routledge.
- 05 See, for example: Frascari, Marco. 2011. *Eleven Exercises in the Art of Architectural Drawing*; Frascari, Marco. 2009. *The Virtue of Architecture: A 2009 Strenna*. Lexington: lulu.com; Frascari, Marco. 2007. "A reflection on paper and its virtues within the material and invisible factures of architecture" in Marco Frascari, Jonathon Hale & Bradley Starkey (eds.). *From Models to Drawings: Imagination and representation in architecture*. Oxford: Routledge; Frascari, Marco. 2004. "Semiotica Ab Edendo, Taste in Architecture" in Jamie Horwitz & Paulette Singly (eds.). *Eating Architecture*. Cambridge, MA. MIT Press; and Frascari, Marco. 1998. "the Drafting Knife and Pen" in *Implementing Architecture*. Atlanta: Nexus Press.
- 06 Sennett, Richard. 2009. *The Craftsman*. London: Penguin, p.153.
- 07 For a sustained discussion of this see McEwan Cameron. 2014. *The Architecture of Analogy: an Inquiry into Aldo Rossi's Theory of the City, The Discipline, the Type, and the Analogue*. PhD thesis University of Dundee, and McEwan, Cameron. 2018. "The Analogical Surface, City Drawing, Form and Thought" in *Drawing On*, Issue 02: *Surface and Installation*. Available at <<http://drawingon.org/issue/02>> (accessed 16th September, 2019). In "The Analogical Surface," for example, McEwan cites Tafuri quoting Rossi to the effect that "the lucidity of drawing is the lucidity of thought" (McEwan, "The Analogical Surface," n.12).
- 08 Szacka, Léa-Catherine. "Aldo Rossi, Bruno Reichlin, Fabio Reinhart, Eraldo Consiascio: ETH Zurich" in *Radical Pedagogies*, Princeton University School of Architecture. Available at <<http://radical-pedagogies.com/search-cases/e08-eth-zurich/>> (accessed 13th March, 2019).
- 09 Eisenman, Peter. 1984 (1982). "The Houses of Memory: The Texts of Analogy" in Rossi, Aldo. *The Architecture of the City*. New York: Oppositions Books, MIT Press, p.8.
- 10 Notably, the 1984 South Friedrichstadt Competition, Berlin, and the California University Art Museum, 1986, documented in the publication Eisenman, Peter. 1994. *Cities of Artificial Excavation: the work of Peter Eisenman. 1978-1988*, Jean Francois Bedard (ed.). New York: Rizzoli. See also: Eisenman, Peter. 1986. *Moving Arrows, Eros and other Errors: An Architecture of Absence*. London: Architectural Association; Derrida, Jacques and Peter Eisenman. 1986. *Chora L Works: Jacques Derrida and Peter Eisenman*. New York: Monacelli Press; and Eisenman, Peter. 1989. *Peter Eisenman*, Toshio Nakamura (ed.). Tokyo: A+U Publishing Co.
- 11 Eisenman, Peter. 1994. *Cities of Artificial Excavation*, p.76.
- 12 Eisenman, Peter. 1994. *Cities of Artificial Excavation*, p.80.
- 13 Eisenman, Peter. 1989. *Peter Eisenman*. p.70.
- 14 Taylor, Mark. 1993. "Refusing Architecture" in Eisenman, Peter. *Re:Working Eisenman*. London: Academy Editions, p.85.
- 15 Eisenman, Peter. 1989. *Peter Eisenman*, p.71.
- 16 Eisenman, Peter. 1989. *Peter Eisenman*. p.70.
- 17 Jeremy Till, for example, argues that as "the role of representation is necessarily an abstraction, [it] is a process outside the temporal and social; aspects of architecture as lived...". Till, Jeremy. 2009. *Architecture Depends*. Cambridge, MA & London: MIT Press, p.113. For a fuller discussion of the concept of time and drawing see Chapter 6: 'In Time', pp. 93-116.
- 18 Mehretu, Julie. "To Be Felt as Much as Read" in *Art21* [online]. Available at: <<https://art21.org/read/julie-mehretu-to-be-felt-as-much-as-read/>> (accessed 16th September, 2019).
- 19 "Julie Mehretu." *White Cube* [online]. Available at: <https://whitecube.com/artists/artist/julie_mehretu> (accessed 18th January, 2019).
- 20 "Julie Mehretu," *White Cube* [online].
- 21 Libeskind, Daniel. 1979. *Micromegas: the Architecture of End Space*. Available at: <<https://libeskind.com/work/micromegas/>> (Accessed 30th January, 2018).
- 22 Rossi, Aldo. 1987. "These Projects" in Peter Arnell & Ted Bickford (eds.), *Aldo Rossi: Buildings and Projects*. New York: Rizzoli, p.10.
- 23 McEwan. "The Analogical Surface," p.18.
- 24 Rossi. 1982. *The Architecture of the City*. p.167.
- 25 Rossi. 1982. *The Architecture of the City*. p.167.
- 26 Stein, Karen. "Il Celeste della Madonna" in Adjmi Morris (ed.). 1992. *Aldo Rossi: the Complete Buildings and Projects 1981-1991*. London: Thames & Hudson, p.271.
- 27 Australian Tapestry Workshop, Site and Brief in *Tapestry Design Prize for Architects 2018*. Available at: <<http://www.tapestrydesignprize.org/2018-tdpa-site/>> (Accessed 17th January, 2019).
- 28 A reference to Le Corbusier's seminal 1923 text, *Vers Une Architecture*.
- 29 Throughout *The Architecture of the City* Rossi makes a case for the immersive didacticism inherent in any city, stating, for example: "One need only look at the layers of the city that archaeologists show us; they appear as a primordial and eternal fabric of life, an immutable pattern." Rossi. 1982. *The Architecture of the City*. p.22.
- 30 Anderson, Ross. 2013. "Analogue Architecture: Between Imagination and Memory" in Ross Anderson (ed.) *ANALOGUE*. Christchurch, NZ: Freerange Press, p.4.
- 31 Examples of this in contemporary practice are too numerous to mention, however recent projects by Carmody Groarke (for example, Windermere Jetty Museum, 2019), John Wardle Architects (Captain Kelly's Cottage, Tasmania, 2016) and Muir Architects (DoubleGround, Melbourne, 2018) demonstrate this approach.
- 32 Koolhaas, Rem. 2014. "Recent Work" in Jordan Carver (ed.). *Preservation is Overtaking Us*. New York: GSAPP Books, p.15.
- 33 Koolhaas, Rem. 2014. "Recent Work". p.15.
- 34 Otero-Pailos, Jorge. "Ethics of Dust Series." Available at: <<http://www.oteropailos.com/the-ethics-of-dust-series/>> (accessed 17th September, 2019).
- 35 McEwan. 2018. "The Analogical Surface," p.18.
- 36 The full title of the project is *A Million hours of plans: exploiting time and transparency*, which will be abbreviated throughout to *Million hours*.
- 37 Kulper, Perry. 2015. "The Precision of Promiscuity" in *Offramp 9: Lies*. (Spring/Summer 2015). Los Angeles: SCI-Arc. Available at: <<https://offramp.sciarc.edu/articles/the-precision-of-promiscuity>> (accessed 15th April, 2019).
- 38 Kulper, Perry. 2012. "Drawing Architecture: Conversation with Perry Kulper" at *Architect News: WAI Architecture Think Tank* [online]. Available at: <<https://architect.com/news/article/54767042/drawing-architecture-conversation-with-perry-kulper>> (accessed 15th April, 2019).
- 39 Kulper.2012. "Drawing Architecture," [online].
- 40 Kulper.2012. "Drawing Architecture," [online].
- 41 Kulper. 2015. "Precision of Promiscuity," p.1.
- 42 Kulper.2012. "Drawing Architecture," [online].
- 43 Hughes, Francesca. 2014. *The Architecture of Error: matter, measure and the misadventures of precision*. Cambridge, MA & London: MIT Press.
- 44 Chard, Nat. 2017. "Fabricating Indeterminate Precision" in Ruari Glynn & Bob Sheil (eds.). *Fabricate 2011: Making Digital Architecture*. London: UCL Press, p.31. Available at: <https://www.jstor.org/stable/j.ctt1tp3c6d.10?seq=1#metadata_info_tab_contents> (accessed 12th April, 2019).
- 45 Chard, Nat. 2017. "Fabricating Indeterminate Precision," p. 31.
- 46 Mical, Thomas. 2010. "Perry Kulper's Imaginarium AS Darwin's Omission" in *Rensselaer Architecture* [online], available at: <<https://www.arch.rpi.edu/2010/10/kulper-perry/>> (accessed 12th April, 2019).
- 47 Frascari, Marco. 2007. "A reflection on paper and its virtues," pp.23-33.
- 48 Bibliothèque nationale de France, Gallica digital library, Etienne-Louis Boullée, (1728-1799) View 2. Available at: <<https://gallica.bnf.fr/ark:/12148/btv1b7701002q/f2.item>> (accessed 27th April, 2018).
- 49 Bibliothèque nationale de France, Gallica digital library, Etienne-Louis Boullée, (1728-1799) View 1. Available at: <<https://gallica.bnf.fr/ark:/12148/btv1b7701002q/f1.item>> (accessed 27th April, 2018).
- 50 Frascari, Marco. 2011. *Eleven Exercises*, pp.169-171.
- 51 "Julie Mehretu," *White Cube* [online].
- 52 Kulper, Perry. 2012. "Drawing Architecture" [online].
- 53 See, for example, the perversely analogue automatic drawing machines and their products in Burke, Timothy. 2018. "Exhibitionist Drawing Machines," in *Drawing On*, Issue 02: *Surface and Installation*. Available at: <http://drawingon.org/uploads/papers/IS02-01_180305.pdf> (accessed 29th January, 2019).
- 54 Kulper, Perry. 2012. "Drawing Architecture" [online].

FIGURES

All of the drawings and paintings included in this piece were produced by the author.

Simon Twose, Jules Moloney & Lawrence Harvey

CANYON: EXPERIMENTS IN DRAWING A LANDSCAPE

02

The online version of this article can be found at:
<http://drawingon.org/uploads/papers/IS03-02_191002.pdf>

Simon Twose, Jules Moloney & Lawrence Harvey

CANYON: EXPERIMENTS IN DRAWING A LANDSCAPE

ABSTRACT

Canyon is an experimental design process that extends ideation through drawing via a novel hybrid of hand sketches, soundscapes and virtual reality (VR). The inspiration for the project is the dynamic undersea landscape of Kaikōura Canyon, Aotearoa, New Zealand. The experiment draws atmospheric qualities from the unseen topography and vast body of water of the canyon, recently jolted by huge forces in the 2016 Kaikōura earthquake. The ominous scale and power of this submarine landscape is distilled through multi-modal architectural drawing, merging presences within drawing with those in landscape.

The early phases of the Canyon project located a mixed media installation in the Palazzo Bembo for the XVI Venice Biennale. This paper reflects on the capacity for drawing to observe and record intangible presences, augmented by the affordance of VR and spatial soundscapes. Canyon also opens up a critique of the traditional view of landscape and its relation to architecture. It alludes to alternative ways in which landscape and architecture might intersect, drawing instead from landscape's intangible, scalar and material presence. The unseen marine canyon landscape is used as a virtual poetic site to provoke and test drawing and experiential techniques; drawing is expanded as a hybrid medium, able to research architectural presences through multiple platforms.

BIOGRAPHIES

Dr Simon Twose is an architect and senior lecturer at the School of Architecture, Victoria University of Wellington, New Zealand. His work focuses on drawing, particularly in the territories between art and architecture practices. Twose has published and exhibited widely, including invited contributions to five Venice Architecture Biennales and PQ15 Prague Quadrennial of Performance Design and Space.

Dr Jules Moloney is Associate Dean Research and Innovation, School of Design, RMIT University, Australia. He has held positions at Deakin University, Victoria University of Wellington, University of Melbourne and the University of Auckland. His academic career was preceded by a decade of architectural practice in the United Kingdom. The distinctive approach he brings to his research and teaching is based on expertise in digital technology and the importance of grounding computational design within the wider context of theory and practice.

Dr Lawrence Harvey is an associate professor at the School of Architecture and Design. He is also Director of the RMIT Spatial Information Architecture Laboratory (SIAL) Sound Studios. He researches spatial sound compositions and performance for large-scale diffusion systems, design pedagogy for sound-based studies, and soundscapes in urban environments.

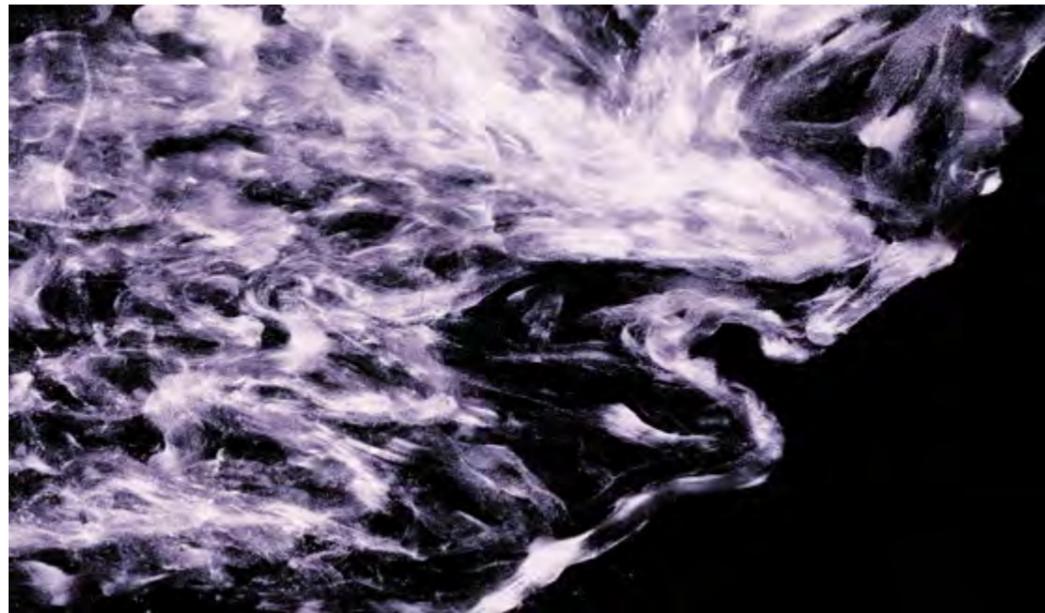
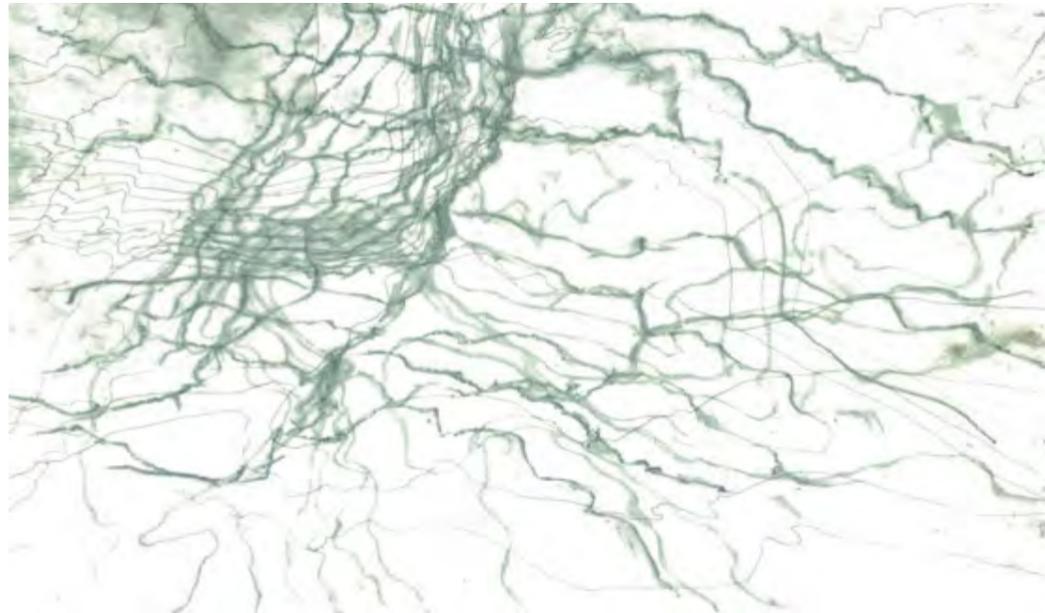
Canyon is the current iteration of a collaborative research project with a focus on drawing, where we are experimenting with a hybrid approach that builds from analogue sketches to explore the affordance of immersive virtual environments and spatialised sound. The theme guiding these experiments is a meditation on imagined landscapes, inspired by the submarine canyon near Kaikōura, Aotearoa, New Zealand. The canyon landscape is not visible beneath the sea surface, yet its presence is palpable; it is a vast and dynamic material entity, with water kilometres deep, figured by seismic jolts, turbid flows, pressures and intensities. Canyon imaginatively projects into this unseen landscape through multi-modal drawing; it distils the ominous scale and power of the Kaikōura canyon through evocative graphite sketches, soundscapes and the inherent canyon-like boundlessness of virtual reality (VR). The research follows two threads. The first asks how VR and spatialised sound can be sketch-like, having the open possibilities of a rapidly drawn mark, able to draw out abstract presences through a mix of material, virtual and sensorial modes. The second asks how landscape's abstract presences, drawn out in this way, might inflect architecture, how they might generate a complex shared space between the two. The early Canyon drawing research coalesced as a multi-media installation. This paper reports on this initial stage, using it as an armature to discuss ideas and research threads prompted by the Canyon drawing project.

PARATAXIS 01: CANYON INSTALLATION

Canyon was exhibited at Palazzo Bembo, a 15th century building on the Grand Canal in Venice, in an invited group show entitled TIME SPACE EXISTENCE, as part of the XVI Venice Biennale, 2018. The Canyon installation was shown in a dedicated room within the Palazzo. Once within the space of Canyon viewers became immersed in an inhabitable drawing, projected into a vast, sketched undersea landscape.

The installation was very dark and immersive, with the only light coming from flickering digital images on four small screens dispersed through the space. This light played on the surface of a crumpled black drawing, made from forty metres of black tar-paper. The drawing twisted and contorted within the gallery; it looped back on and around itself to create an enveloping landscape. The drawing's surface was figured by creases and distortions sketched directly in the tar-paper by imagining pressures, intensities and flows in the submarine canyon. The drawing became a dynamic topography that enclosed the viewer, which, along with the low light levels, disguised the boundaries of the space.

Six overlapping soundscapes were crumpled within the space alongside the black drawing. These responded to different conditions of mark making, such as smudge and granularity, and sketched the space of the canyon through sound. The soundscapes passed through the body, or appeared to attenuate in the distance, evoking scale and dynamic mass. Extended low rumblings overlapped sharper, 'pointillist' sounds and occasional loud jolts.



01:
Presence-Drawing Study: Pressures. From the 'Contour' Series.

02:
Presence-Drawing Study: Sediment Turbidity (Detail). From the 'Contour' Series.

These gave the sense of tumbling submarine rock falls, turbid sediment flows or the canyon's propensity for sudden, seismic rupture. The six soundscapes sketched the canyon in detail, bringing forth abstract, intangible conditions within the submarine landscape and making them appreciable by the body.

Four screens played through fissures located in random places amongst the drawings on the paper surface, prompting participants to move through the installation. The miniature imagery in the screens allowed glimpses into a virtual environment, composed of continuously morphing, abstracted sketches, with each playing scenes from a different virtual location. The images flickered and occasionally flashed brightly, jolting the space in a similar way to the soundscapes. In the full VR environment, when experienced through a headset, participants are swept through an abstract sea of transforming lines and smudges, accompanied by similarly transforming virtual soundscapes. These developed from analogue sketches, made navigable as vast three-dimensional marks. The VR environment sketched flows, smudges, contours and space, in response to the submarine canyon, in an attempt to intensify the abstract presence of the marks and the space they sketch.

The result of these overlapping multi-sensorial sketches is an installation where the visitor is physically present, in a tiny gallery, and also projected into a space of vast scale and dynamic movement, drawn from presences in the Kaikōura Canyon landscape.

PARATAXIS 02: ANALOGUE DRAWING

In *Canyon*, sketches recorded observations of the unseen environment in an attempt to distil abstract presences through gestural marks of graphite on paper. In these crude and rapid drawings, there is a correspondence between the performance of drawing and the performance of the drawings' subject matter: drawing, as a gestural trace across rough paper, was imagined to parallel the dynamics and materiality of the Kaikōura canyon.

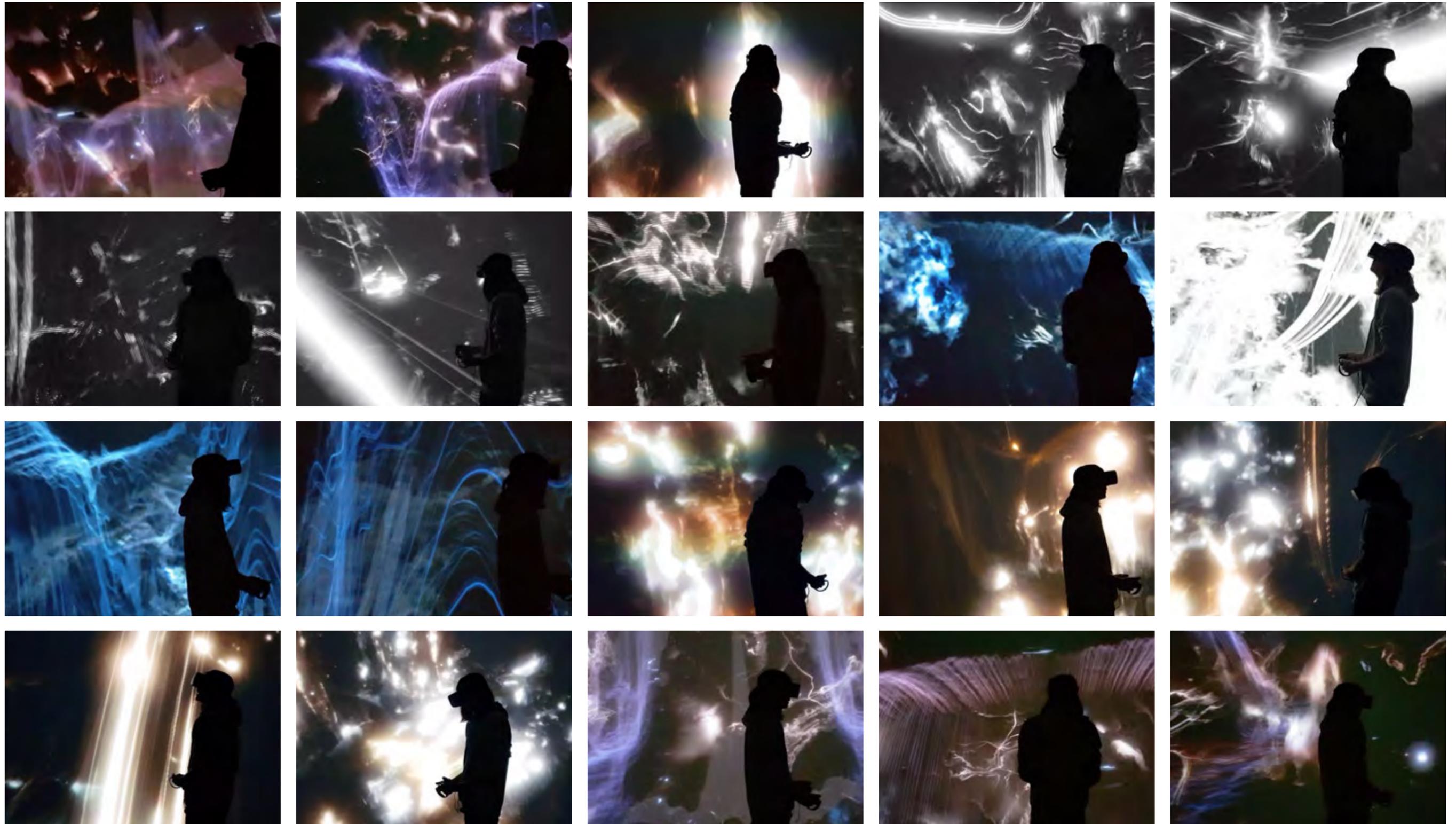
The *Canyon* sketches were made by drawing sections, plans and three dimensional 'scenes' over a rock-like surface. The graphite was caused to skip over the paper by the jagged shape of the rock underneath. This skipping allowed unexpected elements to influence the drawing's

marks. This was an exaggeration of the feedback normally found in analogue sketching and was used as an analogue of the material dynamics of the canyon; the rock beneath the paper caused the marks to smudge and change direction, so a sectional drawing of the sea floor became not a single line, but an indeterminate series of marks mapping the imagined presence of flows, pressures, mud and rock.

Some of the lines were singular and fine, and described pure boundaries between things, such as at the water's surface. Others described transitions between materials that are less defined, such as where sea water blends into mud then to rock, or where sea cliffs drop vertiginously into an imagined darkness. There were lines that had no material analogue and were merely about directions of current or degrees of pressure or intensity. The drawings, as a set, were not arranged according to different scales but were deliberately mixed, in an attempt to allow ambiguities between scales. The jagged contours of a rock at 1:1 correlated to landscape forms and flows at a larger scale, becoming indistinguishable. The overarching intention was for the drawings to traverse the imagined space of the canyon, allowing scale and material to be amorphous in order to distil something beyond instrumental description: architectural presences in the canyon.

Gestural analogue drawing has traditionally been associated with intangible, qualitative dimensions. Sketches are open: evocative, indeterminate, unfinished, and therefore, full of possibility. Drawing is, to quote Jean Luc Nancy, nascent, "the opening of form."⁰¹ Architectural drawing involves understanding multiple presences. Rapidly drawn lines, smudges and other 'recalcitrant marks', as described by James Elkins,⁰² open architectural drawing to possibilities. They are marks where blurrings and unexpected shifts allude not just to descriptions of contours, but intangible, imagined characteristics. They are marks whereby "nuanced misalignments, approximate thoughts and imperfect moments ... resist fixing normative figuration."⁰³

The gestural act of drawing crosses with the performative dynamics of the subject matter. In the case of *Canyon*, this overlaps movements in an undersea landscape with arcs of the hand over paper, creating an exploration of the presences in the canyon at the same time as an exploration of how those presences are drawn. In the *Canyon*



03-22:
Stills from a film documenting experiences of the Canyon VR Experience.

sketches, gestures evidenced by such things as smudges are taken into other media, such as VR and spatialised sound. The installation became a spatial composition of intensified gestures, evidenced by blurs, smudges and recalcitrant marks. These blurred gestural marks speak of a taxonomy of atmospheres imagined in the submarine landscape. Four characteristics of mark were identified that crossed with intangible characteristics of the submarine canyon: *Smudge*, relating to such things as undersea gas eruptions, *Flow*, evoking turbid movements of sediments, which after the 2016 earthquake rumbled hundreds of kilometres into the Hikurangi abyssal river; *Contour*, capturing intensities of water pressure and bathymetry and *Space* which attempted to draw the canyon's vertiginous depth and boundlessness.

The installation prompted the viewer/participant to move, but their movement was not incorporated into the sketch-space in a gestural sense. They inhabited the sketch environment more as sensorial observers to the gestural smudges than as active drawers.⁰⁴ The *Canyon* drawing project thus highlights non-linear, indeterminate and tacit modes of discovery. It experiments with pushing these to new limits through testing the intersection of multiple drawing techniques. Analogue drawing is exaggerated as a tool for observing or registering intangible conditions, bringing together multiple real and virtual influences affecting interpretation and conceptual ideation. The *Canyon* analogue sketches emphasise designerly understandings of space, in which knowledge might emerge out of drawing, and whereby drawing is not just as a tool for determining space but as an act of discovery, a way of researching intangible aspects through apparently simple gestural acts.⁰⁵

PARATAXIS 03: VR DRAWING

For architecture, virtual reality has typically been considered another form of visualisation, focusing on photorealism. In a similar vein to the transfer of drawing board practices to early CAD techniques, the tendency is to repeat existing practices without fully exploring and exploiting the affordance of the new medium. The reference point for architects using VR is the use of animation, which, as documented by As and Schodek, has been developed primarily to communicate the kinematic experience of architecture.⁰⁶ However, as they discuss, animation practice is conditioned by the traditions of

projective geometry that underpin architectural content, and the technical apparatus of the animation camera, which utilises principles of perspective developed in the 16th century. While there are notable examples of architects exploring motion as a conceptual device, such as in the animation of geometric parameters by Greg Lynn or the opportunity for kinetic composition, VR as the 'ultimate display' has had minimal impact on the design process. Most applications have been in the field of virtual heritage with a trajectory towards photorealism, such as the use of high definition graphics and the use of 3D laser scanning.

As outlined above, the trajectory of VR within architecture is towards verisimilitude. In contrast, the approach explored in *Canyon* is a doubling-down of the virtual, prompted by the legacy of openness in architectural drawings. The hand sketches are scanned and transformed in the VR version via procedural shaders, which drift in and out of focus within varying densities of particle systems, camera and lighting effects. The aim is to explore spatial qualities through VR technology, in order for them to be useful in creative ideation, similar to the traditional architectural sketch. For the Venice Biennale installation, the VR world is alluded to through glimpses of screen content, partially revealed through tears in the 40m drawing wrap. The raw physicality of the over-scaled tar-paper drawing provided a visceral spatial experience, at odds with the glimpse of lush digital graphics. The sense is of another boundless space obscured by the heavy tar-paper, a graphically seductive virtual canyon that is fleetingly present, requiring the surveyor to imagine its larger extents.

We might describe the VR aspects of *Canyon* through James J. Gibson's theory of affordance. The concept of affordance has been re-defined and used in a range of domains. This simple definition by Stuckey in relation to the design of virtual environments is the most appropriate for our research; "we use the concept of affordance to refer to the latent possibilities for action presented by an artefact, tool or environment."⁰⁷ From this definition and, given the current state of the technology, we propose that as well as immersive visualisation VR affords an immersive sense of kinematics that is more visceral than watching animations on screen. In a similar vein, sound is spatialised and experienced, opening up the, comparatively, underexplored capacity to use aural senses to evoke spatial conditions and materiality. Complementing

immersive kinematics and sound are haptic interfaces that, while at an early stage of development, enable an enhanced bodily experience. Triggering the kinematic, aural and haptic senses—alongside the visual—provides one agenda for the virtual canyon. The second agenda is as important, namely the affordance of the computer to process information in real time. As has been explored through algorithmic and parametric design, this shifts attention away from the discrete architectural representation, and towards manipulating variables within which multiple representations can evolve. Rather than occupying a drawing, we conceive the virtual version of *Canyon* as a procedural machine, that enables a journey through a landscape of possible spatial conditions.

PARATAXIS 04: SOUND DRAWING

The experience of the Venice Biennale installation is as much aural as visual, with an eight-channel spatial soundscape that evokes the vastness of an underwater terrain within the setting of a small exhibition space. The *Canyon* soundscapes are built from two layers of sounds that create an unsettling feeling of motion. Six random, cycling, multichannel extended soundscapes are built from textures with fluctuating detail. Static, smooth sounds rarely appear. Where smooth sounds do occur, they are usually the result of computer processing intended to slow down the spectral evolution of a sound, drawing the listeners' attention to the internal motion of that sound. In other instances, spectral filtering and spatialisation splits off layers of sound that orbit the space. Granular processing further breaks down sounds into smaller spatialised components. Overall there is a sense of being in motion, subsumed by forces perpetually in flux.

The temporal organisation for the *Canyon* sound design can be likened to a mobile slowly turning in the room where the sonic layers are circling or revolving at different cycles. To ensure that the order in which the soundscapes played throughout the day was never repeated, there were six multichannel soundscapes with staggered durations from ten minutes, forty-four seconds to eighteen minutes, ten seconds. These six soundscapes and two silent sections, of fifteen- and thirty-second's duration, were randomly selected and played. One possible reading of the sound design would be to experience this textural motion with the flows of the tar paper, or to connect the tar-

paper folds, dents, cavities with an unsettled continuum of forces. From a strictly spatial listening perspective the sound design doesn't provide cues by which the listener can construct a stable reference point. There is no single place in which to stand and experience an acoustic vista, a privileged point where the electro-acoustic environment is 'correctly' delivered.

In the spirit of Umberto Eco's *The Open Work*,⁰⁸ or improvising musicians, synchronisation between the sound and digital media here is a feature not a technical problem. This also draws on our experience of gazing at a landscape and the likely occurrence of an event that might capture our awareness. Perhaps we happen to notice a feature, a detail, something connecting two elements. We create a structural connection which becomes a memory of the place. We might just happen to be at the right position, at the right time when a small event, a movement, a change occurs and we imprint a memory of that moment. The asynchronous revolving mobile structure might, or might not, deliver such a memory in *Canyon*. These soundscapes, therefore, are not attempting to transport a listener to an actual location, but to create a setting where imaginative connections might be made between notions of landscape and its influence in drawing, digital design, composition, and digital installation.

OPEN MEDIA

Canyon explores the methodological complexities internal to both acts of designing and the materiality and spatiality of representational media. Drawing in VR commonly involves or is geared toward the production of realistic visualisations, and as such is not often associated with the openness ascribed to what might be considered more traditional forms of drawing, or the generative potential of the sketch. The *Canyon* project brings the open indeterminacy of drawing into VR technology by manipulating the visual acuity of VR space, and prompting a viewer to imaginatively project into it rather than experiencing it passively. This is part of the hybrid approach of the *Canyon* project, which draws together human, digital and material influences in open architectural drawing. The analogue sketch is traditionally dependent on a two-dimensional drawing surface and a representational picture plane. The VR technology prises the sketch away from these limitations and allows the 'mark' to become spatial, to be experienced bodily as well



23:
Kaikoura Canyon Sea Surface. Video Still.

24:
Raised Sea-Floor: Kaikoura Coast.

as imaginatively. A VR sketch environment, such as in *Canyon*, conflates the space of drawing with the spatiality of architecture, making marks, and the subject matter they draw, architectures in their own right. VR, employed in this manner, allows an intense navigation through (a) drawing, where understanding is gained *through* evocative atmospheric immersion, and through understandings framed by the body in space.

In *Canyon*, VR and sound begin to afford possibilities through the presentation of a dynamic sketch-like spatiality, developing theories of affordance (like those put forward by Gibson)⁰⁹ and arguments on material feedback as advanced by Sean Pickering,¹⁰ N. Katherine Hayles¹¹ and Tim Ingold.¹² VR, as a digital material, has the potential to afford or resist the separation of (active) drawer and (passive) participant, and thus generate different understandings contingent upon the role of the individual experiencing the drawing space. In this sense, the VR/sound environment extends the evocative power of a smudged, sketched mark, and with it the potential to generate knowledge through drawing. It opens drawing to more experimental territories. When the blurs and smudges of the sketch are brought into the world of VR and spatialised sound, the analogue drawing's inherent capacity for sketchy openness that contributes to it being an aesthetic 'lens', expands.¹³ The material feedback provided becomes more diverse than that of graphite on paper, and consequently the suggestive marks offer a more complex aesthetic lens on that which they draw, allowing nuances to emerge.

The *Canyon* project resonates with the semiotic plurality described in Umberto Eco's *Opera Aperta (The Open Work)*,¹⁴ but understands *open work* to allude to the vitality of those non-linguistic, non-semiotic undercurrents in architectural practice that largely escape interpretation. It merges ideas of openness inherent in the traditional architectural sketch, with arguments about the power of indeterminacy in art practice (such as that of Sarat Maharaj, who argues for knowledge pursued through art research to be continually ungraspable;¹⁵ of James Elkins, who argues for the power of non-semiotic marks to remain unknowable;¹⁶ or of Jean Luc Nancy, who observes marks in a gestural sketch to be necessarily irresolute, figured by "essential incompleteness, a non-closure or non-totalizing of form"¹⁷). These arguments suggest a poetic openness, an openness through which one might be able to distil intangible, tacit knowledge.

DRAWING LANDSCAPE

Alongside this inquiry into the poetic capacity of particular media, *Canyon* explores architecture's relation to landscape. *Canyon* attempts to draw presences from an unseen marine landscape and in so doing alludes to ways in which architecture's relationship to landscape can be shifted, reorienting our sense of landscape from the visuality of the picturesque landform to the atmospheric sensibilities of the sea. Landscape and its capacity to trigger the architectural imagination is a significant international theme, particularly for new world architecture. In New Zealand, and Australia, the scale and power of landscape is usually romanticised, reducing landscape to the natural, picturesque setting for an ideal, stand-alone architecture. The *Canyon* project departs from this picturesque tradition by focusing on a landscape that is not visible. It draws intangible, poetic presences from a submarine landscape in order that they might inform architecture, allowing landscape's scale, mass or even its ominous seismic potential to have an architectural impact.

On a small vessel, on a languid sea off the Kaikōura coast, the enormity of the sea is strangely present. Just 500m from the shore the water is over a kilometre deep, and continues to deepen as it flows to the Hikurangi trough, which marks the junction of the Pacific and Australian tectonic plates. Huge forces in this undersea landscape were released in the 7.8 magnitude Kaikōura earthquake in 2016. The seabed lurched upwards, triggering undersea landslides and turbid flows of sediment; the marine landscape, previously unconsidered, suddenly became powerfully evident.

This landscape is known through instrumental descriptions: multi-beam sonic scans, digital models and scientific data, yet less easy to record is its powerful and ominous presence. The landscape, in this sense becomes a dynamic medium with vast mass and complex movements and pressures, latencies and threats. It is not appreciable through vision but through imaginative projection. This inflects the tradition of the picturesque landscape, which is dependent on views of landform. In *Canyon*, the immense body of water and ocean floor are captured through presences, imagined in concert with open marks, intensified through multi-modal drawing.



25:
Photograph: Canyon VR drawings in a fissure within the installation.

The focus on drawing intangible characteristics from landscape aims to engage with discourse in art history and cultural geography, in which the Picturesque, the Sublime, and affective landscapes are both described and problematised. In this respect, *Canyon* operates in similar modes to other practitioners who look to map tangible and intangible territories, such as James Corner and Perry Kulper in architecture,¹⁸ or in art practice Anselm Kiefer, particularly the *Velimir Chlebnikov and the Sea* paintings in which ominous presences are drawn from a marine landscape. Collectively, these projects draw out intangible presences. Being an experimental proposition, *Canyon* often drifts towards or away from these discourses, and finds itself in new territories. It has tended to move away from representational modes, such as mapping or data visualisation, to engage with the non-representational aspects, or with possibilities afforded by digital creativity. This diverse context allows ideas to be continually open and cross disciplinary, with the possibility that this openness can prompt rethinking of conventions of drawing, as well as the relation between landscape and architecture.

The continued inflection of scale that has emerged through *Canyon*—initially conceived as hand-drawn sketches with scale-less spatial qualities, prior to

being installed as a 40m tar-paper drawing that is simultaneously surface and over-scaled mark, a physical space extended through soundscapes that evoke an immensity of scale—suggests a new form of discourse on landscape, relating in particular to the mathematical sublime. The mathematical sublime in nature occurs at instances when our imagination is afforded not so much a greater numerical concept as much as a large unit of measure (foreshortening the numerical series). A tree judged by the height of a person gives, at all events, a standard for a mountain.¹⁹ The Kaikōura submarine canyon defies such a scale measure, beyond the imaginative projection of the depths from its surface. This unknowable scale has, in retrospect, triggered drawings of a spatial condition that is beyond architecture's typical tools of representation. In this short article we offer these opening drawings as avenues for future discussion, within and extending the traditions of the picturesque and the sublime. The atmospheric power of the marine landscape, as something with vast mass and scale—and a latency for movement—provides rich possibilities for architecture. How might we situate these experiments as a way to conceive architecture in this spatiality of boundless, oscillating scalar resonance?

NOTES

- 01 Nancy, Jean Luc. 2013. *The Pleasure in Drawing*, trans. Philip Armstrong. New York: Fordham University Press, p.1.
- 02 Elkins, James. 1995. "Marks, Traces, "Traits," Contours, "Orli," and "Splendores": Nonsemiotic Elements in Pictures" in *Critical Inquiry*, Vol. 21, No. 4, p.860.
- 03 Chard, Nat, and Kulper, Perry. 2014. *Pamphlet Architecture 34: Fathoming the Unfathomable, Archival Ghosts + Paradoxical Shadows*. New York: Princeton Architectural Press, p.63.
- 04 Another interesting dimension would be added to the research if the participant could actively draw in the installation, and this was considered, but it proved technically complex. It may well be an extension of the research in future, which would allow a complete merging of gestural acts and material feedback from subject matter and drawing media.
- 05 This ties in with current discussions on the value of design research. Terms such as 'spatial intelligence' allude to design's capacity to make rich non-linear connections. See, for example: Van Schaik, Leon. 2008. *Spatial intelligence: New Futures for Architecture*. Chichester: Hoboken, NJ: Wiley.
- 06 As, Imdat, and Schodek, Daniel. 2008. *Dynamic Digital Representation in Architecture: Visions in Motion*. London: Taylor and Francis.
- 07 Stucky, Susan U., Shaw, Ben, and Ark, Wendy. 2009. *Virtual Environments Overview*. Technical report, San Jose: IBM Almaden Research Centre.
- 08 Eco, Umberto. 1989. *The Open Work*, trans. Anna Cancogni. Cambridge, MA: Harvard University Press.
- 09 Gibson, James. 1979. *An Ecological Approach to Visual Perception*. New York: Psychology Press.
- 10 Pickering, Andrew. 1995. *The Mangle of Practice: Time, Agency and Science*. Chicago: University of Chicago Press.
- 11 Hayles, N. Katherine. 2014. "Speculative aesthetics and object orientated inquiry (OOI)" in *Speculations: A Journal of Speculative Realism*, pp.158-179.
- 12 Ingold, Tim. 2013. "The Atmosphere" in *Chiasmi International*, Vol 14, pp.75-87.
- 13 Twose, Simon, 2015. "Practice Clouds: architecture still actively in formation" in Moloney, Jules, Smitheram, Jan, and Twose, Simon (eds.). *Perspectives on Architectural Design Research: What Matters, Who Cares, How*. Baunach: Spurbuchverlag/ADDR press, pp.73-76.
- 14 Eco, Umberto. 1989. *The Open Work*, trans. Anna Cancogni. Cambridge, MA: Harvard University Press.
- 15 Maharaj, Sarat. 2009. "Know-how and No-how, Stopgap Notes on 'Method' in Visual Art as Knowledge Production" in *Art and Research, a Journal of Ideas Contexts and Methods*, Vol. 2, No. 2, Spring 2009, pp. 1-11.
- 16 Elkins, James. 1995. "Marks, Traces, "Traits," Contours, "Orli," and "Splendores"... " pp.822-860.
- 17 Nancy, Jean Luc. 2013. *The Pleasure in Drawing*, p.1.
- 18 Corner, James. 2011. "The Agency of Mapping: Speculation, Critique and Invention" in Dodge, Martin, Perkins, Chris and Kitchin Rob (eds.). *The Map Reader: Theories of Mapping Practice and Cartographic Representation*. New York: Wiley & Sons, pp.89-101.
- 19 Kant, Emanuel. "The Estimation of the Magnitude of Natural Things Requisite for the Idea of the Sublime," in *The Critique of Judgement*, Section A, sub-section 26, trans. James Creed Meredith.

FIGURES

All of the drawings and photographs included in this piece were produced by the authors.

Ainslie Murray

UTTERANCES OF EVERYDAY LIFE: MOVING AND DRAWING IN SENSITIZED AIR

03

The online version of this article can be found at:
<http://drawingon.org/uploads/papers/IS03-03_191002.pdf>

Ainslie Murray

UTTERANCES OF EVERYDAY LIFE: MOVING AND DRAWING IN SENSITIZED AIR

ABSTRACT

Everyday Life calls attention to the movements and resulting interactions that develop from the habitual patterns of daily life; those movements that, through their regularity, become invisible. In this practice-led work, airflows within and around a pair of dancers were visualised as these dancers enacted a series of improvised everyday movements. The visualisations drew attention to air as a sensitised and complex three-dimensional field of influence that bristles with potential. Presented as twinned imagings, two types of footage contrast alternative approaches to the visualisation of air, and as the figures move within the imagings we focus not on their movement or their absent bodies, but on the wake of their passage made visible as restless whorls and lineations.

Architectural space is shown to be agitated—stirred and concocted by the body—where inhabitants actively generate ‘architecture’ through their movement and reframe architectural design as a participatory endeavour where all bodies, simply by virtue of their movement in the medium of air, are actively generating form. *Everyday Life* raises multiple questions, all brought together in a non-linear relationship of varied parts. In resisting a polarised framework of question and answer, this work instead aims to open the possibility of a grafted practice that might prick the architectural conscience and, perhaps, expand it.

BIOGRAPHY

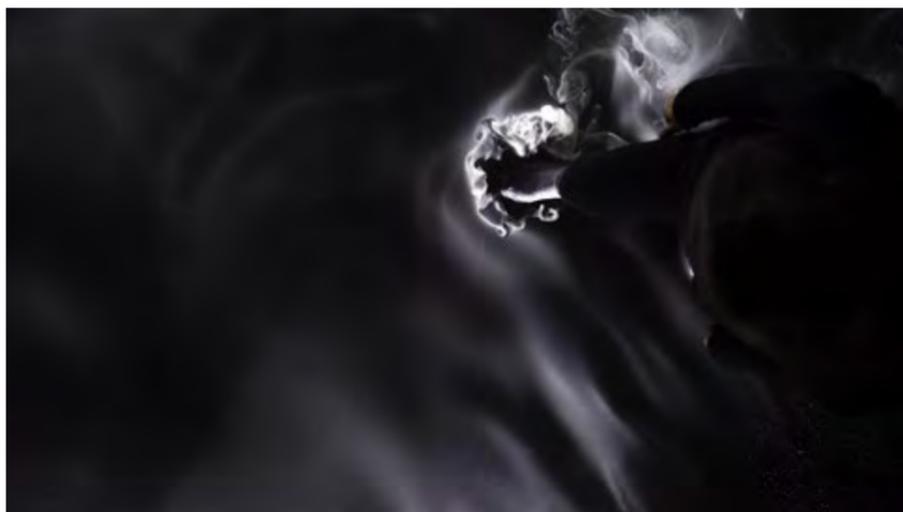
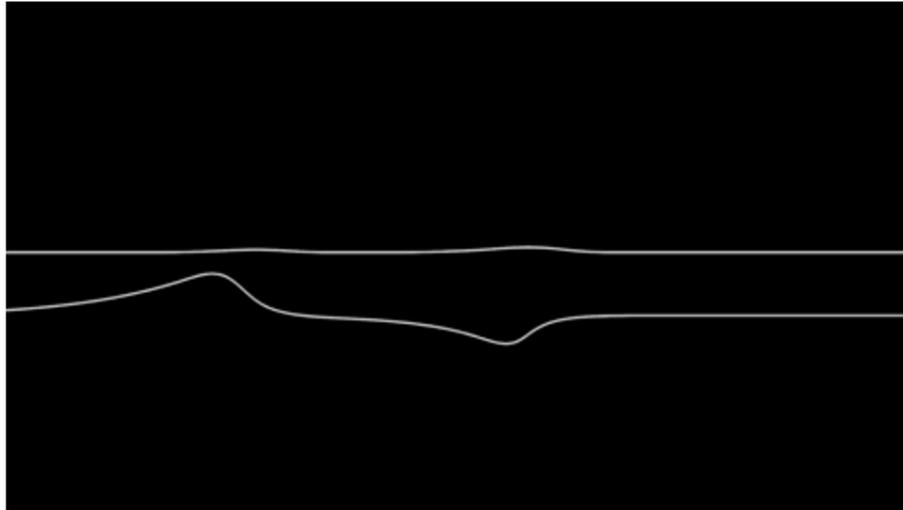
Ainslie Murray is an interdisciplinary artist and academic based in the Architecture Discipline in the Faculty of the Built Environment at the University of New South Wales in Sydney, Australia. Her work explores the augmentation of architectural space through subtle realisations of forgotten and intangible spatial forces. The atmosphere and its relation to the lived experience are areas of special interest, which have focussed her practice-led research for over 15 years. Ainslie was awarded her PhD in Visual Arts from Sydney College of the Arts, University of Sydney, in 2011. Her work has been exhibited throughout Australia and internationally in Canada, China, Denmark, Japan, New Zealand and the UK.

Everyday Life calls attention to the movements and resulting interactions that develop from the habitual patterns of daily life; those movements that, through their regularity, become invisible. In this practice-led work, airflows within and around a pair of dancers were visualised as they enacted a series of improvised everyday movements. Their magnified sense of their own spatial and bodily awareness was manifest as a kind of ‘kinaesthetic sympathy’ in which they were able to foreground aspects of their environment that are often elusive. The dancers heard the sounds of locomotion in the creaking, popping and grinding of their muscles flexing and extending. They felt the collision of body parts and ground. They smelled sweat and breath, and sensed proximity, tension, gravity and equilibrium as they moved.⁰¹

Invited to walk, spin and breathe, the improvised sequences of movements developed between the dancers encompassed a range of motion, from rapid, dynamic passages to slow and barely-discernible postural adjustments. As Erin Manning suggests, the ‘everyday’ is always a varied mix of improvised movement and a degree of individually-established habit, in which “we move not to populate environment, but to form it.”⁰² The rapport between the dancers, which developed over years of relational improvisation, surfaced in subtle readings of the other’s intentions. The small differences evident in the repetition of everyday movements and the spontaneous exchanges of improvised movement together generated a range of gestural ‘drawings’ enacted as a kind of inhabitation in the field of moving air.

The visualization of these drawings through film, coupled with the visualisation of the contextual airflows, form an architectural proposition in which space is agitated, stirred and concocted by the body, and where inhabitants actively generate an architecture through their movement. In the footage of these movements, the two bodies moving in relation to one another generate a spontaneous and responsive form of the ‘everyday’. Presented as twinned imagings, two types of footage contrast two alternative approaches to a visualization of sensitized air: a laboratory-based physical experiment on the right, and a digitally-generated speculation on the left. As the figures move within these two ‘screens’ we focus not on their movement or their absent bodies, but on the wake of their passage that is made visible through changes in the field of lines, and on the sheets of coloured light cutting across a field of smoke. Tides of smoke quietly advance across the frame; hypnotic whorls form and expand, the turbulent field collapses and diffuses. These imagings recall the compulsive experiments of the Bragaglia brothers and other Futurists who endeavoured to capture what they term the “persistence of movement.”⁰³ However, while the Futurist images are distinctly focussed on the moving body and often have a distinct physiological focus, the lens here shifts beyond their closed experiments to the air in which life takes place—the pervasive and invisible site of such persistence. They question what might happen when, for example, these experiments are extended beyond the lab, stage or studio? What might happen when these experiments are re-cast in the outside world?

Released from an artificial environment, the air makes itself known as a medium in which life takes place. We



do not perceive the air as a substance external to us so much as we perceive *in* it;⁰⁴ we are within the air both internally and externally through breath, and there is no boundary between our bodies and the air as we breathe in space. This internality accounts in part for the sense of surprise that emerges in the observation of illuminated whorls of smoke forming and dissolving. There is an enduring wonder when we consider the air deeply; it is, like those invisible everyday movements, so present and so persistent as to be invisible. As Tim Ingold notes, we do not have a relationship *with* the air as one discrete entity might have with another, rather we are so intrinsically *of* the air that air must be understood as a medium that “ruffles every surface that it comes into haptic contact with,” instead of a mute substance that simply relates subject and object.⁰⁵

What form does this ‘ruffling’ take, and how might we understand it as it affects the medium of air? The air is, according to Ingold, a supporting structure that suspends interaction and life and without which “birds would plummet from the sky, plants would wither and we humans would suffocate.”⁰⁶ Air, whether conceptualised as a fluid, swirling and dissolving mass or as an agent of infiltration and sustenance, becomes sensitised through inhabitation.⁰⁷ In his observation of the movement of air in the outside world, Theodor Schwenk provides a vision of the air as a succession of surfaces that form and dissolve as air and object interact:

When a breeze blows through a deciduous or a coniferous wood, it is parted by every leaf, every pine needle, closing again behind it while forming the most delicate vortex trains. A feature of the life of the wood is the fact that as well as the great surfaces formed by its leaves, corresponding ‘leaves’ are formed in the air by the wind, like trailers behind the real leaves... A similar thing happens when a bird or butterfly or other insect flies through the air; endless surfaces are ceaselessly being created in the air. Just imagine the surface formations made by insects as they hover and dart about on a summer’s day. At every moment an invisible ‘field of leaves’ made of air arises and dies away, engraved momentarily in the air by the tiny wings of the insects.⁰⁸

In this sense architecture becomes a participatory endeavour where all bodies, simply by virtue of their movement in the medium of air, are actively generating form. As with Étienne-Jules Marey’s photographic experiments in which he placed stationary objects into flowing streams of smoke, our moving bodies condition

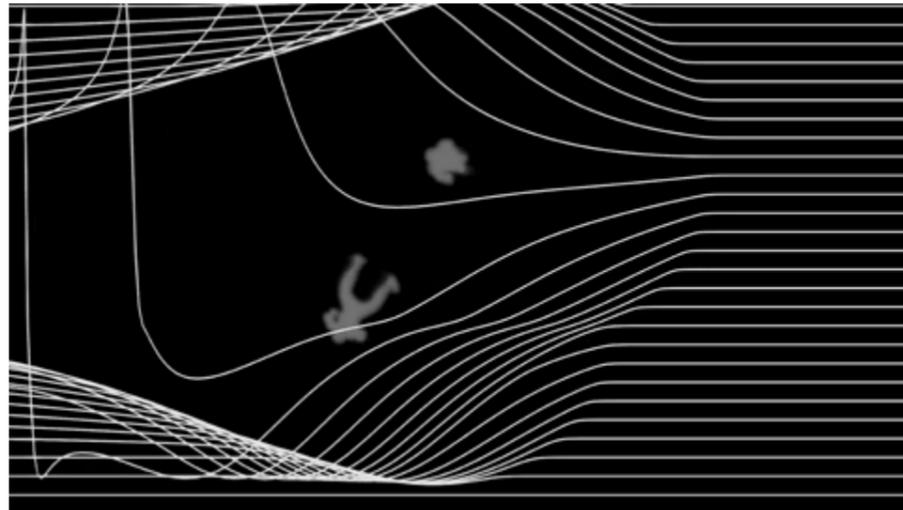
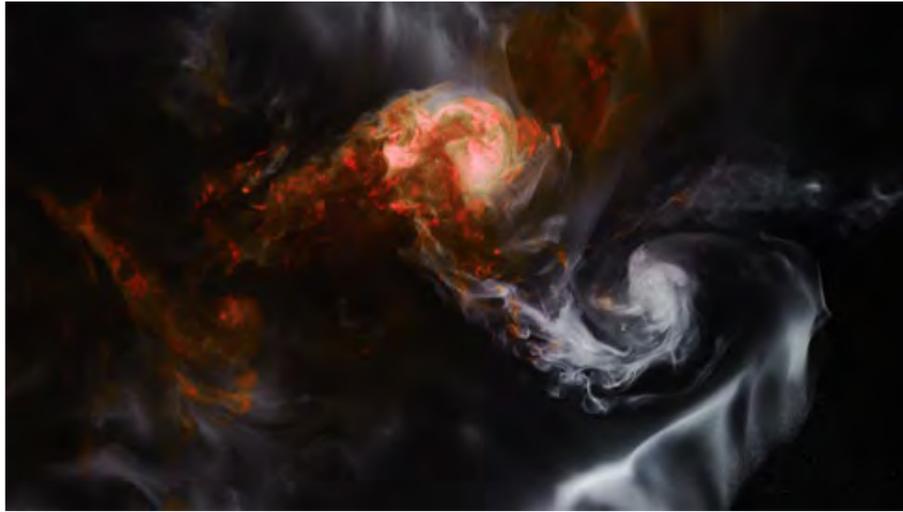
the air and generate—fleeting—its topographic and animate form. In the *Everyday Life* works, this conditioning is evident in the wake of the dancers as well as in the dynamic space between them that is continuously squeezed and stretched as they move in relation to each other. Air and body are simultaneously conditioning, as well as being the subjects of such conditioning, as if the whole forest is advancing at pace and is simultaneously acted upon by a breeze.

Manning proposes that we can think of movement in at least two ways:

1. I enter a room and see that room as pre-existing me. I walk across the room, drawing an imaginary line that cuts the space.
2. My movement creates the space I will come to understand as “the room.” The room is defined as my body + the environment, where the environment is an atmospheric body. Without that particular moving body that particular environment does not exist.⁰⁹

This second way of thinking of movement returns us to the environment of the forest where the medium of air is already in a state of constant reorganisation as a result of the interactions of body and air. The air is sensitised—bristling with potential and behaving as a complex and interrelated three-dimensional field of influence. Turning his attention from forests to the sky, Schwenk describes the elastic qualities of air through birds flying in formation whereby separate birds are linked to one another through the surrounding air “as if by elastic threads” stretched taut in anticipation of adjustment.¹⁰ Manning refers to this as the “elasticity of the almost,” a term to orientate our instinctive understanding of the possibility of movement in stillness, and the impact of action that has not yet occurred.¹¹ This imagining of the air as an elastic medium suggests an awareness of our being on the edge of a space made by the moving body; when the elastic contracts we feel the immediate perishing of one event and the concurrent pull into the next.¹²

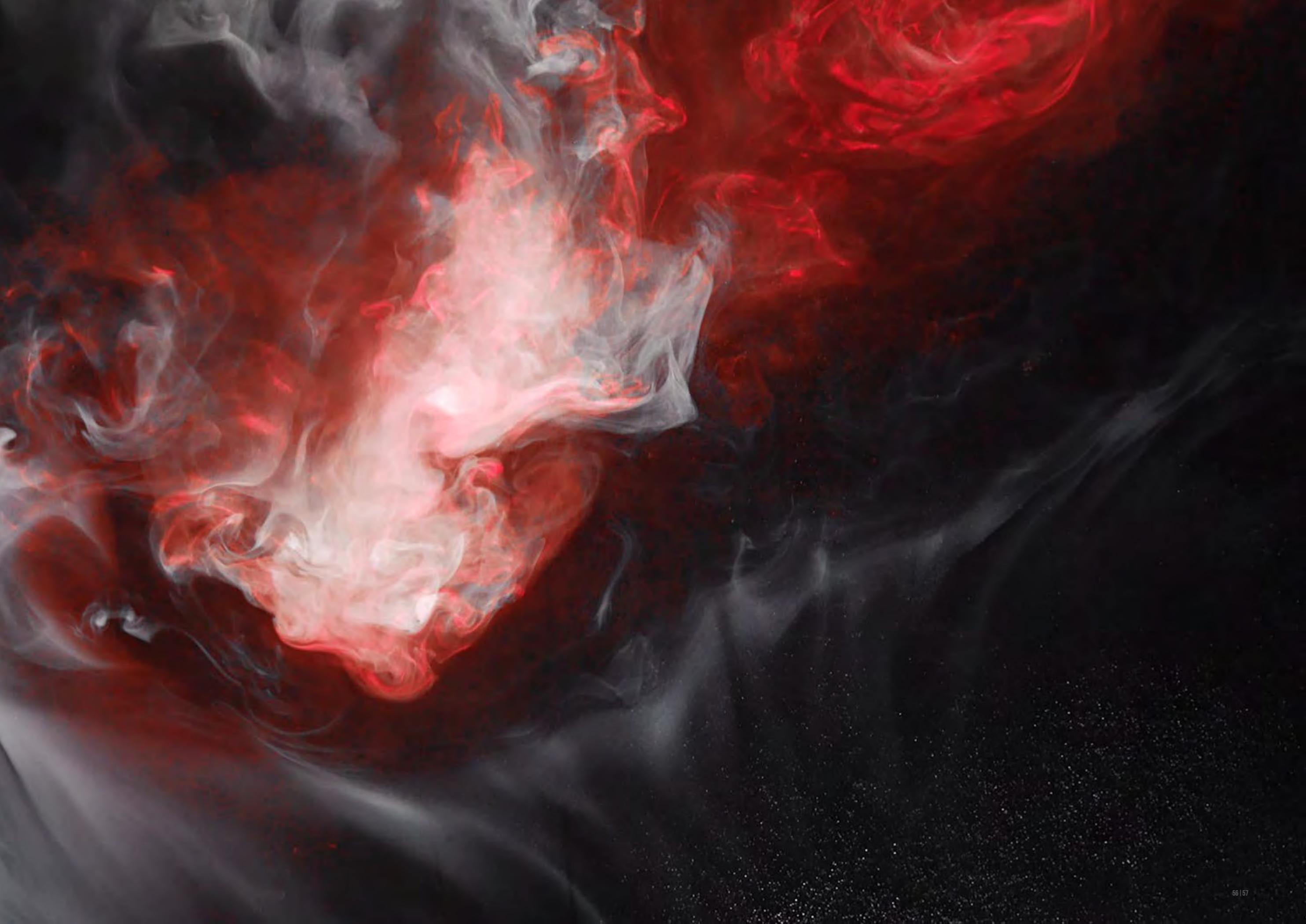
The *Everyday Life* works are part of a series of drawings, models, still photographs and videos associated with experiments in movement and air. The drawings are used generatively to describe performances to collaborators, but also reflectively to document and analyse what actually took place but was not anticipated. In this way, the works operate dynamically within a research process as documents that both provoke and gather knowledge.

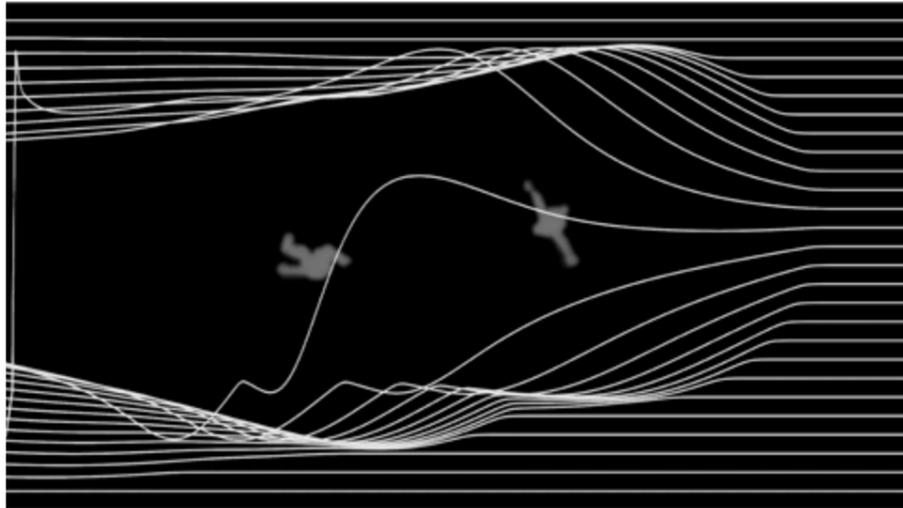


The works are never finished as such, but are instead laid out as anchor points that prompt responsive cycles of approach and retreat. Both these movements—the approach towards the production of a work and the retreat from it after it is made—are active processes in the sense that the method employed is one of proceeding backwards, in what Manning describes as coming to “know negatively.”¹³ Even here and now, writing seems akin to the erasure of a drawing or the ripping of a seam; the undoing of one structure motivated by the ambition of forming another. This raises multiple questions, all brought together in a non-linear relationship of varied parts. The work was made and is now deciphered by the maker; the smoke has emanated and dispersed and is now a mere echoic photographic trace; the dance was enacted and has now passed through its own inevitable process of self-erasure.¹⁴

The drawings of *Everyday Life* operate ‘backwards’ and the method developed for handling the multiple invisibilities at play involves producing drawings as ‘negatives’. The traditional additive processes of drawing are reversed using drawing instruments that dissolve the drawing surface, and the resulting drawings are intricate networks

of interrelated negative spaces. In this way, the drawings are presented as planes eroded through considered gestural action, where intensity is reflected through absence rather than matter. The more they are drawn, the more they threaten to disappear entirely. Like the systems of choreographic notation employed by Trisha Brown and William Forsythe that utilise vectors and gesture respectively, the drawings address that which is reforming in the precise moment that it is articulated.¹⁵ The drawings are ‘utterances’, likened to the word as it is spoken and caught in the surprising ambiguity of actualisation.¹⁶ Once spoken, the retreat from the alluring but ultimately misleading state of certainty is both necessary and inevitable because “artistic experience actually needs this aspect of indescribability in order to be able to justify itself and define itself as the counterpart to speech, the extra sense, the surplus of meaning.”¹⁷ In resisting a polarised framework of question and answer, this work instead aims to open the possibility of a grafted practice that might prick the architectural conscience and, perhaps, expand it. We do not see the whorls of air or the tides of forming and collapsing surfaces, but once grasped—however fleetingly—architectural space suddenly seems very different.





01-10:
Stills from Everyday Life (2018).

NOTES

- 1 See Foster, Susan Leigh. 1997. 'Dancing Bodies' in J. Desmond (ed.), *Meaning in Motion: New Cultural Studies of Dance*. Durham and London: Duke University Press, p.237. Foster discusses the notion of kinaesthetic sympathy in relation to dancing bodies.
- 2 Manning, Erin. 2012. *Relationescapes: Movement, Art, Philosophy*. Cambridge, MA: MIT Press, p.13.
- 3 Souriau, Paul. 1983. *The Aesthetics of Movement*. Translated by Manon Souriau (ed.). Amherst, MA: University of Massachusetts Press, p.181.
- 4 Ingold, Tim. 2015. *The Life of Lines*. Abingdon, Oxon: Routledge, p.70.
- 5 Ingold, Tim. 2015. *The Life of Lines*, p.150.
- 6 Ingold, Tim. 2015. *The Life of Lines*, p.70.
- 7 See Schwenk, Theodor. 2014. *Sensitive Chaos: The Creation of Flowing Forms in Water and Air*. East Sussex: Rudolf Steiner Press.
- 8 Schwenk, Theodor. 2014. *Sensitive Chaos*, p.119.
- 9 Manning, Erin. 2012. *Relationescapes*, p.14.
- 10 Schwenk, Theodor. 2014. *Sensitive Chaos*, p.116.
- 11 Manning, Erin. 2012. *Relationescapes*, p.32. Manning discusses 'elasticity' at length in 'The Elasticity of the Almost', pp.29-42.
- 12 Manning, Erin. 2012. *Relationescapes*, p.39.
- 13 Manning, Erin. 2012. *Relationescapes*, p.59.
- 14 Lepecki, André. 2004. 'Introduction: Presence and Body in Dance and Performance Theory' in Lepecki, André (ed.). *On the Presence of the Body: Essays on Dance and Performance Theory*. Middletown, CT: Wesleyan University Press, p.5.
- 15 See Louppe, Laurence (ed.). 1994. *Traces of Dance: Drawings and Notations of Choreographers*. Translated by B. Holmes and P. Carrier. Paris: Editions Dis Voir.
- 16 de Certeau, Michel. 1988. *The Practice of Everyday Life*. Translated by S. Randall. Berkeley: University of California Press, p.117.
- 17 Cramer, Franz Anton. 2007. 'Knowledge, Archive, Dance' in deLahunta, Scott (ed.). *Capturing Intention: Documentation, Analysis and Notation Research Based on the Work of Emilio Greco/PC*. Amsterdam: Emilio Greco/PC and Amsterdamse Hogeschool voor de Kunsten Lectoraat, p.12.

FIGURES

All of the drawings and photographs included in this piece were produced by the author.

VIDEO

Murray, Ainslie. 2018. *Everyday Life*. 2-channel video, sound. Courtesy of the artist.

Performers: Kate Sherman and Ryuichi Fujimura
Audio: 'Deep Space Breathing' by MAN ON WAX/ESOTERIC
Videographer and Editor: Kuba Dorabialski.

Special thanks to Tracie Barber, Kyle Forster, Billi Hayes and Jordan Vincent.

Filmed in the Fluid Dynamics Laboratory, UNSW School of Mechanical and Manufacturing Engineering, and at Deakin Motion.Lab.

The artist gratefully acknowledges the support of Deakin Motion.Lab and the UNSW Faculty of the Built Environment in the development of this work.



Chuan Khoo

FINDING BYADUK: FIELD NOTES

04

The online version of this article can be found at:
<http://drawingon.org/uploads/papers/IS03-04_191002.pdf>

ABSTRACT

The Finding Byaduk creative residency is an exploratory process aimed at producing speculations into the phenomenology of digital data representations of a landscape, and the design of interfaces and expressions to embody said representations. Part of this process is inspired by design ethnography, and the consideration of how its methodologies articulate a picture of the site in question. The creative brief centred around a thought experiment on 'affective telepresence', finding means to remotely convey the qualities of a place using environmental sensors, digital connected technologies, and the design of embodied expressions and/or interactions. Finding Byaduk: Field Notes covers the formative and supporting phases of this project, focusing on capturing ethnographic observations of the town, and connecting these to the eventual production of artefacts as a response to the written, visual and audio recordings of Byaduk.

I would like to acknowledge the traditional custodians of the land of the Gunditjmarra peoples on which this project took place, and pay my respects to the Elders past, present and future.

BIOGRAPHY

Chuan Khoo is an inter-disciplinary digital media artist, interaction designer and educator based in Melbourne, and current PhD Candidate at RMIT's School of Design. A core focus in his creative work is exploring the consequences of computing, questioning the darker side of digital media and the ethereal nature of these new ties that may not bind. Using a combination of traditional, digital media, and bespoke or hacked electronics, his work develops objects and installations that embody and critique technological utopias, eliciting a disarmingly-calm aesthetic that veils a technological underbelly.

Chuan's teaching experience is in the areas of Interaction and Experience Design. He graduated with an MFA in Digital+Media from the Rhode Island School of Design in 2008. He has headed the Diploma in Interaction Design programme at the School of Interactive & Digital Media, Nanyang Polytechnic, Singapore, and has given classes at the Rhode Island School of Design, the Guangzhou Academy of Fine Arts, and the Royal Melbourne Institute of Technology, where he currently teaches in the Master of Design, Innovation and Technology programme.

Chuan Khoo

FINDING BYADUK: FIELD NOTES

FIELD NOTES: OF PLACES TO WHICH WE MIGHT NOT OTHERWISE VENTURE

I first encountered Byaduk by suggestion, as a place for a short weekend 'escape' from the city, the kind of 'escape' that involves spending a few days in the relative quiet of the country. This suggestion prompted an initial visit, which grew into a creative residency that took place between 2017-2018, in which I made—and now, subsequently, continue to make—multiple separate short trips to the small township, an hour's drive south of Hamilton.⁰¹ As with most towns in the Western District of Victoria, Australia—just as, perhaps, relatively-remote towns around the world—the main street, the Hamilton-Port Fairy Road, is frequently heavy with passing vehicular traffic. A regional public bus stop fronts the local general store. In a rather clever attempt at self-deprecating humour, the store sells wooden carvings of ducks. Byaduk, however, is not the historic preserve of poulter ers. The name is an indigenous Australian word, with different translations depending on whom one asks. Officially, the Glenelg & Wannon Settlers & Settlement website suggests Byaduk translates as 'stone tomahawk', while the Southern Grampians Shire town information brochure on Byaduk suggests another meaning: 'running water'.⁰² I was later told by the proprietor of the old Byaduk Church that it might have been an old Scottish word, but all I could surmise at this point was that this uncertain etymology was the result of the meandering erosion of terms over multiple generations. *Finding Byaduk* is a finding of terms, not historical terms but a 'coming to terms', a negotiation through encounters with a place.

It took a decent four-hour drive to get here from Melbourne. My place—a rented house which became my temporary home for the weekend—provided respite from the unfamiliar surroundings. Byaduk is a small town; one could walk through it in under fifteen minutes at a brisk pace. The house is nestled on a side street at the north end of town, where a few other occupants reside. The Byaduk Uniting Church, now simply called the old Byaduk church, sits in the heart of the town, a ten-minute walk from the house, next to the Byaduk Mechanic's Institute and the statue of Simon Fraser, Byaduk local and a noted hero of the Great War. Its foundation stone was laid in 1864, with the adjoining Sunday school hall built in 1899.

Across the main street, the open space in front of a resident's home displays an interesting arrangement of farming equipment and curios for sale. 'Peaceful' is an apt descriptor for such scenes, at least upon first impression. As with any small town, human presences emerge, distant figures milling about their properties. The sun has to catch these distant figures at the right angle to announce what they are doing at any time: walking across the field, idling in a tractor, or moving equipment around their backyards. Sometimes a friendly wave from afar helps to break the monotony. Beyond these intermittent interactions, the Hamilton-Port Fairy Road is busy and heavily used by travellers moving between Hamilton, Port Fairy and Warrnambool. Some of them stop at the cricket oval and rest area. During one of my stays, a family caravan



01:
Morning light at the old Byaduk church.

camped at the rest area for an evening or two. As casually explained by the proprietor, peculiar lone cars and their drivers sometimes seek a night's refuge or two in this quiet town, seldom leaving their vehicles.

Magpies, crows and cockatoos dominate the morning birdsong. The township's cricket oval—the J. A. Christie Oval—features an immaculately-maintained white picket fence and equally pristine, green lawn. Care is obviously taken to maintain the oval. The ever-present wind can be heard through the rustling of gum trees, the rattling of tin roofing, and the shiver of two giant palms planted on the old church grounds. These palm trees are apparently part of the town's heritage and cannot be cut down, a covenant of sorts between residents and the trees, the oldest remnant bushland in Byaduk. The biting cold of the morning is particularly felt as air pushes through the passageway flanked by the external walls of the church and the Sunday school hall. In this passageway there are tell-tale signs of nocturnal wildlife: the sounds of scampering possums on the roof at night, small marsupial droppings and some evidence of attempts at scavenging.

A RESIDENCY FOR 'LISTENING'

I returned to Byaduk for a few subsequent, separate stays, acting as a fly on the wall, blending into the landscape. Throughout these different trips, I made it a point to seek out solitude, which was not a difficult thing to do there. It became a means to listen to Byaduk. By listening, I mean not only an auditory process, but a phenomenological involvement of experiencing the place in all of the senses of which I was capable. I use 'listening' over 'experiencing' in my attempt to foreground what I see as an intimate conversation with the land, as opposed to the grand gesture that an experiential encounter might seem to suggest or describe.

This act of solitary listening was my initial way of 'finding' Byaduk, an "antenarrative" that foregrounds the significance of forming nonlinear, incoherent speculations.⁰³ Standing, sitting amongst the soundscape of insects, birds, traffic, cattle, sheep, machinery, and the rustling of trees swaying in the wind, I noted the soundscape as analogous to those daily urban noises present in a city: new and jangly, yet largely easy to filter out after a while. It would have been odd to hear nothing in the country. Something is always afoot. As things are

more spread out, there seems to be more opportunities for sounds to travel. Those sounds that come back off the walls of the old church, the adjoining Sunday school hall and the neighbouring Mechanics Institute are particularly pronounced.

Traffic was one of the more significant contributions to the soundtrack of Byaduk. The north end of Byaduk had a slightly higher elevation, a gentle, almost double crest when viewed directly from the south. The doppler effect of approaching vehicles would telegraph their presence from hundreds of metres away, long before they made their presence known visually, tearing down the main road at (and sometimes over) the 80 kilometre-per-hour speed limit. I was not sure whether the wildlife quietened when this happens, in response to vehicular presence, or if wildlife sounds were simply drowned out by the roar of the traffic. What I do recall was being held hostage by each passing vehicle's presence, paralysed in both thought and activity in my listening.

Beyond the acoustics of the landscape, which permeated every aspect of being in Byaduk, the wind was another omnipotent presence. It seldom produced the characteristic loud howls we tend to associate with wind. Rather, it simply existed as a force that fluttered past our ears, buffeting and shaking things: sideboards, fences, trees, grass, open doorways, and most certainly, my own body. Casually, I realised that it is often through objects that wind presents itself. In the colder months in Byaduk, I noted the sharp bite that came along with the wind, accentuating the indoor odours of old timber and carpet; the winds of spring and summer brought with them an invigorating swirl of earthy, scorched odours picked up from the ground, the stone walls, and across the fields and paddocks.

Pink skies greeted me on foggy mornings, quickly giving in to the bright blue of day as the rising sun heated Byaduk up at a brisk pace. On clear days the raw, harsh beauty of Byaduk is apparent. Nature reclaims everything eventually. Drainage pipes sustain patches of green and yellow daisies on the otherwise parched grass at the end of the hot summer months. The dark, bluestone walls of the church and faded baby-blue sideboards of the hall contrasted against the deep blue sky like a harmonious triplet of swatches on a colour wheel, juxtaposed over the tanned and dying fibres of grass on the dry ground. Overcast days painted a mellow picture of Byaduk,

shrouding my view in soft hues, amplifying the isolation that the landscape brings. Visually, nothing changes much, except tiny movements from flitting insects and grass, or whatever flora the wind could influence and sway. Flocks of sheep would graze as a nebulous collective, quietly chewing their way through the adjacent paddocks, their grey, weathered wool coats bobbing slowly past. Sunsets can be spectacular, as one would expect, golden blue and uninterrupted by the geometry of urban skylines. On a cloudless night, the Milky Way can be observed, even before civil twilight. One can easily imagine hours spent in the evening, looking up at the stars without feeling that time could be better spent elsewhere.

THE SIGNS

Peppered around the rural landscape of the township are heritage signs offering short, curious stories of Byaduk's history. These stories were contributed by residents who grew up in the township. Each sign has a little serial number on the top left corner. There is a sign next to a stone bridge, the same bridge that was chosen to represent Byaduk's identity in a logo created for the township that adorns these signs. This particular sign described the builder who lived in Byaduk throughout the construction of said bridge, before heading home with all of his tools in a wheelbarrow. Another sign at the now-defunct swimming pool identified the builders and described how families from neighbouring townships congregated there on weekends. There is one that speaks of a flour mill that once stood nearby, now marked only by the presence of the sign, and another describing how the Mechanics Institute continues to host the annual Spring Flower Festival.

The stories on the signs were what spoke to me most distinctly in Byaduk. These signs are a very literal record of Byaduk's recent history, and the cracks that have begun to appear on some of the prints reminded me that even such attempts to extend the memory of a place have a finite lifespan. There is a sense of intrigue in these distant accounts, short stories that I suspect carry far more personal connections than can be conveyed or appreciated in their reduced role as inducements to heritage tourism. If written artefacts offer rewards for patient and intrepid wanderers to discover, is there a sense of anticipation, then gratification, experienced by the ones who wrote these stories through this passive

interaction? Regardless, careful effort was made to accompany these stories with old photographs to remind the reader of the town's recent past. It seemed to suggest a subtext, that of a collective memory of Byaduk's locals, an almost silent wish for their mundane stories to last just that little bit longer, beyond the lifetime of a single person.

Indoors, in the hall building, the dusty atmosphere and stillness of the interior hold further moments captured in time. Enlarged prints of old photographs adorn the dark, wooden walls of the hall, documenting activities as far back as the early 1900s. A cradle roll hangs on a wall, carefully protected within a plastic sheet. With each visit, upgrades and slight changes are discernible, the hard work of the proprietor constantly seeking ingenious ways to improve what comfort a 120-year old building can offer. Inside the small church, stained glass windows spill coloured light onto the mostly empty space, the pews having been long removed. In their place, a thin red carpet engulfs one's view, captured as it is simultaneously in old monochrome photographs, almost as if to prove that the carpet we are seeing in front of us has been untouched over the years. The space now exudes a cosy ambience for work and living. Despite these transformations, the material culture latent in these artefacts seems amplified by the atmosphere of the hall. This was particularly so in a place like Byaduk, the quintessential quiet township that comes alive through the richness of the narratives embodied in the mundane artefacts scattered around, at times randomly, and at others most distinctly intentionally, just like the carefully curated and written signage scattered around town. I interpreted the interior decor as a desire to nurture the somewhat precipitous future of a small, ageing town, to afford past and current residents a memory, a sense of presence in the world, and an identity.

"THAT'S WHERE I PICK MY WATERCRESS"

My time in Byaduk involved a series of walks, and a series of collections. These walks emerged from a simple curiosity driven by an unfamiliar place. I felt the proverbial call of the land; the stillness of the ground only interrupted by the sounds and feel of my footsteps on the dry grass.

Walking past the cricket oval on a side road headed to Peshurst, another town 38 kilometres east of Byaduk, I hear the soothing sound of a small stream—Scott Creek—

02:
Nightfall in Byaduk is illuminated predominantly by bright street lamps. Away from the main street, however, it was the glow of lit windows that leak out into the darkness.



03:
The J. A. Christie Cricket Oval entrance

with a tiny drop and bend, hidden next to the road and right next to a speed limit sign that reads 80 (the speed limit for the outskirts of most country towns in the Western District of Victoria, Australia). It was the church proprietor who first described this spot to me as a place in which to wander. Wild watercress grows where the creek flows, under a willow tree. “That’s where I pick my watercress,” she said, almost absentmindedly, before commenting on the sounds the creek makes. In retrospect, I realised that if Byaduk is indeed the indigenous Australian word for ‘running water’, Scott Creek might be Byaduk. To my own detriment (albeit ultimately humorously so), this creek is wider and deeper than it seems, concealed in part by the thick tangle of watercress. My clumsy attempts to leap over it while carrying my recording equipment resulted in both my feet sinking into the silty banks.

Noticing my interest in seeking out the mundane, and in the heritage signage, in one of my earlier visits I was led on a quick tour by the proprietor and curator of the old church. We walked around neighbouring fields, ducking huge, prickly hawthorn bushes that sprung up around places where skips once stood. We came across the footprint of a house that burnt down in an accidental fire. Further on, I was pointed to traces of circular stone formations in the ground, which hinted at the possibility (possibly remote) that these remnants might be related to the engineering efforts of indigenous Australian peoples, potentially of the Gunditjmara people.⁹⁴ It was impossible to verify these speculations without expert knowledge. Subsequent research revealed the proximity of Byaduk to the surrounding Mt. Eccles lava flow, or Budj Bim, as it is known to the Gunditjmara people,^[05] which suggests that my speculation of the presence of indigenous peoples in Byaduk might not be too far-fetched. The walk ended with a collection of more found objects—three glass bottles, a piece of burnt bark, part of a sheep’s jawbone, a lava rock and a decorative cast iron grille from the exterior of the hall—all of which seemed to reflect a part of the Byaduk I experienced.

The found objects had stories to tell. As they sat in my studio, looked at, manipulated and talked about, their material culture revealed themselves over time. For example, the phrase “HALF PINT, NO DEPOSIT NO RETURN” embossed on two of the glass bottles was recognisable to those who saw it because it was synonymous with childhood memories of bottled milk, and of the activities that unfolded around the use and re-purposing of

those bottles. Casually discussing the etymology of the embossed phrase brought up personal stories, or invited further speculation based on encounters with similar objects. Thus, the richness that each mundane Byaduk object possessed shifted the project towards exploring their semiotics and material culture: these found objects became conversation pieces. Sometimes they would speak to Byaduk: where they were found, why they were there. Other times, they simply pointed to the personal memories and relationships we associate with the type of object. A new question emerged: could such conversation pieces also become conduits for ephemeral digital data? Could they couple stories of the now—the environmental effects of Byaduk—with their semiotic richness and cultural, historical connection with Byaduk? Could using found objects identify a means of working with poetic, digitally connected things?

To test these thoughts, two activities unfolded after the walks and object collection activities. The first was to construct an environmental sensing apparatus, to record Byaduk. The second was to develop a process by which the found objects become coupled with the sensor readings generated.⁹⁶ In this process, I noted the specific moment in which a use for the milk bottles was found:

“It was a serendipitous discovery that led to the first result of this project. During the second stay of the residency, as I completed the installation work on the sensing units and solar panels, I have placed the bottles outside on a table. The glass bottles, in their upright position, became wind instruments as a gust arrived, resonating with soft howls just as one might hear by blowing across the top of a bottle neck. It seemed natural that wind emerged as the environmental quality to respond to these bottles, partly due to its omnipresence in the township. The poetry of the relationship between wind and glass bottle also played an important part in selecting this coupling: the futility of storing or catching wind in any vessel, against the affective experience of listening to a singing glass bottle in the wind.”

The first objects used, the milk bottles, were repurposed into Wind objects, and relied on custom electronics and programming that in turn re-appropriated the technologies related to the Internet of Things (IoT) to convey near real-time snapshots of wind conditions in Byaduk. They are electronic appliances of an evocative, poetic disposition, that sought to share a quality of a distant place. Having both the technology of digital connectivity and the physical medium itself—glass



bottles, re-appropriated from their originally intended use and context—was critical in examining my own role as a technologically-driven creative practitioner spending time in Byaduk. By bringing out the evocative potential of both tangible and intangible interactions—the glass bottle and the IoT—I was able to ponder the possibility of using functional IoT systems as aesthetic interventions for phenomenological telepresence: under the hood, these objects could be technologically complex, yet by virtue of their tangible presentation and ‘real-world’ aesthetics they tell us about the conditions of a remote place through an interface with which we can relate. They afford us opportunities to interpret them at a semiotic, reflective level.

FIELD NOTES AS INSPIRATION

It would not have been possible to discover the affective qualities of Byaduk without the prior ethnographic work, and more can be revealed still. The process of translating and attempting to condense these ethnographic observations into the various sensory affordances that each found object could represent or emit emerged as a key theme of the project. The process was built upon the narratives embedded in each observation, each possibility drawn out from observations. The ‘field notes’ here therefore accompany the project as its foundational material; they are not intended or interpreted as factual observations, but tend towards immersing oneself back in the phenomenological qualities of the site.

The walks, and the experience of encountering the objects *in situ*, presented an ideal opportunity to conduct visual and reflexive ethnography through photography.⁰⁷ In later visits this was complemented by audio-video recordings, with the intention to produce a sonic ethnography in which video footage supported a visual memory of the relatively unchanging, mundane soundscape.⁰⁸ While not initially considered central to this experimental project, it is important to note the contribution these recordings made in capturing the “empathetic engagements” of the found objects.⁰⁹ Similarly, in field recording, an “attention to dramaturgy” compels the listener to recall minute moments captured in the recordings.¹⁰ The unending roar of road traffic, birdsong, the clicking of grasshoppers, rustling of the palm trees and incidental slaps of the fly screen curtain hitting on the doorframe of the hall

formed a distinct imprint of Byaduk—a “soundmark” as a reflective tool.¹¹

This in turn afforded phenomenological re-visitations of the place whilst working in the studio, playing back the videos on loop while ideating, again allowing nonlinear “antenarratives” to further inspire responses.¹² Along with the notes, this collated material provided a sufficiently vivid means to recall the environmental conditions of Byaduk.

CODA: QUESTIONS AT THE LOST AND FOUND

It is important to recognise and discuss the nature of what constitutes an ‘abandoned’ object. With the exception of the iron grille—which was kindly donated by the proprietor for the project—the remaining objects are articles that appear to have been discarded or deserted for an extended period of time. In the case of the milk bottles, the act of taking them is a necessity in allowing such works to exist, but it was also made with a consideration of whether the removal of such an object would cause a disruption to the order and condition of Byaduk. I saw ‘taking’ these objects not as an act of removal, but as mutually communicative and reciprocal. The objects are representations of a place, much like museum artefacts. However, these objects remain connected to Byaduk on two levels. As with museum artefacts, the first connection is related to the material culture of the object, its prior existence and use in Byaduk, and the narratives evoked from understanding how it, and many others like it, existed there. The second, and perhaps the key connection here, is the nature in which the environmental readings in Byaduk get streamed, processed and translated into dynamic manipulations of the objects. In the case of the Wind objects, the sound of air moving around the neck of the milk bottles is produced by tracking the wind intensity as detected at the old Byaduk church. The objects are not severed vestiges simply removed from their original ‘found’ locations but are what I consider to be affective telepresence devices used to express an ephemeral condition, and, hopefully, allow us to forge a resilient, emotive connection between object and place.

As a practitioner, I am also conscious of my relationship with the town of Byaduk, and the implications of the relationship on this research. Like the almost-mythical Johnnie Daspar, the bridge builder who hauled his

04: The now-defunct and empty Byaduk pool, overlooking the cricket oval. The deep end was estimated to be around 2 metres deep.

wheelbarrow of tools to and from Byaduk, I made the drive out to Byaduk, installed and tested the Internet-connected sensors, and recorded observations, before returning to Melbourne to finish the artefacts. This voyage and return felt almost as precious as those stories recorded on the heritage signages.

Perhaps this could signal a concluding phase of the project, when the 'found' objects get returned to their original locations in Byaduk, once the devices have finished serving their purpose. When that moment might be I do not know. If they never return to Byaduk, perhaps they will simply become a remote incarnation of the signposts, representing a desire to extend the township's existence beyond its geographical location, and passing to more people who might chance upon the 'finding' of Byaduk.



06:
Inside the old church. Old steps have been temporarily repurposed into a small shelf for tea candles and scented reed sticks.

NOTES

- 01 The Australian Bureau of Statistics 2016 Census records a population of 123. Available at: <http://www.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/SSC20430> (accessed 19th September, 2019).
- 02 Povey, D. 2019. "Byaduk Pioneers & History." *Glenelg & Wannon Settlers & Settlement* [online], viewed 19th September, 2019 <<http://www.swvic.org/byaduk/index.html>>; South Grampians Shire Council. n.d. *Byaduk* [online], viewed 19th September, 2019. <http://www.visitgreaterhamilton.com.au/towns/NewFiles/byaduk_town_brochure.pdf>
- 03 Developing the term "Antenarrative" from Vincent Meelberg. See: Meelberg, V. 2019. "Noise Is What You Make It. Interpreting Auditory Environments As Sonic Ambient Narratives." *Proceedings of Inter.Noise 2019, Madrid, 16th-19th June*, viewed 19th September, 2019. <http://www.sea-acustica.es/fileadmin//INTERNOISE_2019/Fchrs/Proceedings/1417.pdf>
- 04 Coutts, P. J. F., Frank, R. K., Hughes, P., and Vanderwal, R. L. 1978. *Aboriginal Engineers of the Western District, Victoria*. Melbourne: Ministry for Conversation, p.1.
- 05 Builtth, H. 2010. "The Cultural and Environmental Landscape of the Mount Eccles Lava Flow." In L. Byrne, H. Edquist, & L. Vaughan (eds.), *Designing place: an archaeology of the Western District*. Melbourne: Melbourne Books, p. 80.
- 06 Details of this sensing apparatus and technology can be found in a paper detailing the *Finding Byaduk* project presented at the Annual Design Research Conference 2018. See: Khoo, Chuan. 2018. "Finding Byaduk: thinking objects as prototypes of affective telepresence with digital data." *Proceedings from Annual Design Research Conference (ADR18), Sydney, Australia 27th-28th September*, viewed 19th September, 2019. <<https://sydney.edu.au/content/dam/corporate/documents/sydney-school-of-architecture-design-and-planning/research/ADR18-Proceedings-Final.pdf>>
- 07 For the use of photography in ethnographic research see: Pink, Sarah. 2006. *Doing Visual Ethnography: Images, Media and Representation in Research*, 2nd Edition. London; Thousand Oaks; New Delhi: SAGE Publications, pp.67, 75.
- 08 For the use of sound in ethnographic research, see: Gherson, W. S. 2012. "Sonic ethnography in practice: students, sounds, and making sense of science." *Anthropology News*, Vol. 53 No.5, pp.5-12.
- 09 Pink, Sarah. 2009. *Doing Sensory Ethnography*. Los Angeles; London; New Delhi: SAGE, p.156.
- 10 English, L. 2014. "A Beginners Guide to... Field Recording," *FACT Magazine*, 18th November, viewed 19th September, 2019. <<https://www.factmag.com/2014/11/18/a-beginners-guide-to-field-recording/>>
- 11 Schafer, R. M. 1993. *The Soundscape: Our Sonic Environment and the Tuning of the World*. Rochester, VT: Destiny Books, p.10
- 12 Meelberg, V. 2019. "Noise Is What You Make It," *passim*.

FIGURES

All of the photographs included in this piece were produced by the author.

Erik L'Heureux

HOT AND WET: ARCHITECTURES OF THE EQUATOR

05

The online version of this article can be found at:
<http://drawingon.org/uploads/papers/IS03-05_191002.pdf>

Erik L'Heureux

HOT AND WET: ARCHITECTURES OF THE EQUATOR

ABSTRACT

The legacy of a temperate hegemony continues to influence how the tropical is perceived: largely as an exotic paradise or pestilence-ridden landscape. Architectural discourse has long deemed the equator a condition to be tempered; an atmospheric problem that requires a temperate fix. Contemporary architectural responses that centre on performance and efficiency improvements continue to purvey these prejudices as a foundation of their discourse, or, simply, to import temperate strategies as an atmospheric replacement to the equatorial. The work documented here investigates a theory of spatial depth and climatic gradient as key to developing buildings for the rapidly densifying urban equator. Through various architectural strategies—loosely categorized as deep envelopes—the core ingredients of space, material depth, and solidity are employed to produce architectural and atmospheric calibrations specific to the hot and wet equatorial city. Four architectural precedents traced from the 1930's to the 1970's demonstrate a range of architectural approaches that inform the author's contemporary design practice. The knowledge gained through the precedents is then realised through four contemporary projects based in Singapore. In doing so, the work presented here seeks to expand the discourse on equatorial architecture, by returning agency to architectural practice via expressive and atmospheric formal languages and techniques relevant to the hot and wet equator.

BIOGRAPHY

Erik L'Heureux lives and practices on the equator. He has developed a series of award-winning buildings that combine passive performance, pattern, and simplicity as a product of a hot and wet climate and a dense urban context. As a Wheelwright Prize recipient from Harvard University, Erik travelled the equator researching mid-20th-century architecture and its relationship with atmosphere and the city. In addition to being an award-winning American architect, he is an honoured educator and respected administrator. He is the Vice Dean leading the transformation of the School of Design and Environment at the National University of Singapore with over 40,500 sq.m of new and renovated facilities by 2023. He is also the BA Arch program director and a Dean's Chair Associate Professor where he teaches a new generation of architects to be committed to the complexities and potentials of the equator.

EQUATORIALISM: THE ARCHITECTURE OF THE HOT AND WET

Supported by a worldview that has its foundations in theorizations by Parmenides, Pliny the Elder, Aristotle, and Vitruvius onwards, temperate sensibilities have long rendered the equatorial⁰¹ atmosphere⁰² as an almost singular problem: too hot (and too wet) to dwell within. Legacies of these prejudices continue to percolate through architectural discourse, specifically with global modernism, in which architecture finds value in tempering the equatorial condition. Shaped by the ideologies of functionalism, and the promises of technologies and science, global modernism prioritizes the equatorial climate as a quantifiable and solvable problem with architecture as solution to its developmental challenges and aspirational visions. One sees this in large equatorial cities, where temperate strategies are imported as atmospheric replacements (glass towers sprout from the cities of Jakarta, Singapore, and Lagos alike). The logical conclusion is a complete exchange of the equatorial climate with an air-conditioned one, sealed in the prophylactic envelopes that dot the urban equatorial landscape in an aesthetic ethos of efficiency, transparency, and dematerialized precision through glass. It is a climatic colonialism; supplanting the tropical atmosphere with a mechanized and constructed temperate one.

The future of the equatorial is increasingly urban,⁰³ and importation of globalized design solutions with the 'unthinking uncritical acceptance' of temperate-

centric biases in the equatorial is a disservice to architecture. The efforts of Critical Regionalism and post-colonial architecture are noteworthy but the results predominantly serve a vernacular (and largely rural) vision of climatic appropriateness. The work presented here illustrates examples of an alternative design direction taken on temperate superimpositions on the equatorial which emerged from equatorial cities between the 1930's and the 1970's. Revealed through four precedent studies, one finds a history of architects and modern architecture deeply embedded in their urban contexts that advocated a nuanced understanding of the urbane, equatorial atmosphere. The exploration of these historical precedents, investigated alongside contemporary design, construction techniques and materials, are part of the body of translational design research that shapes four contemporary projects from the authors own design work.⁰⁴

THE HOT AND WET BIG ROOF

The Pasar Johar,⁰⁵ designed by Herman Thomas Karsten, is a dramatic big roof located in Semarang, an Indonesian city of 1.5 million people on the north-eastern coast of Java. Intersecting urbanism, commerce, and modernisation, it is claimed to have been South-east Asia's largest covered market at its opening in 1932. Through a covered yet porous roof spanning three city blocks,⁰⁶ it aggregates small-scale merchants within three rectangles, each of grand proportions.

Combining modern structural systems with a calibration of the equatorial climate,⁰⁷ the big roof sits atop funnel-shaped columns, which merge column to slab, towering 8.5 metres tall. Traces of Robert Maillart's column-slab structures and Frank Lloyd Wright's later Johnson Wax Headquarters are visible, though it is porosity that is the defining feature of the market. Two large roofs are rhythmically-punctuated by oculi that illuminate and ventilate simultaneously. The architecture choreographs air movement, permeating from the street, traversing across the market's open elevation and extending to the ventilation devices of the roof above. On closer inspection, the oculi reveal imprints of rattan formwork on their undersides, an intersection of technology and the tacitility of local craft. Lacking a physical envelope, the market's threshold is implied through its big roof, and the shadows that this roof casts. This changes throughout the day and is particularly ambiguous in the diffused light of midday; the bleaching quality of the equatorial sun at the periphery gradually tapers into the dark undersides of the lower market. Here, edge is ill-defined, shadow is prioritized over luminosity, and porous cover over impervious enclosure.

Five degrees north of the equator, on a different continent, the big roof takes on a symbolic relationship with its context. In newly-independent Ghana, a laboratory emerged for architectural experiments with Modernism as a symbol for decolonization.⁰⁸ Under its first post-independence Prime Minister, Kwame Nkrumah, the nation's identity was crafted through values of scientific socialism,⁰⁹ pan-Africanism,¹⁰ and Cold War alliances channelled directly through its architecture. This was demonstrated within the grounds of Ghana's 1967 International Trade Fair (ITF), where a modernist masterplan played host to symbolically-charged architectural pavilions.

The fair's exhibition hall demonstrated the intersection of technology, imagery, and responsiveness to climate through its sculptural double-skin roof. Co-designed by the Ghanaian architect Vic Adegbite and the Polish architects Jacek Chyrosz and Stanislaw Rymaszewki, the building's pre-eminence was further reinforced by the landscape, by the grand entry ways, ramps, and bridges that it hovered over.

The big roof's dramatic thickness was sculpted in a diamond profile, capturing air between its two layers. Its large-span reinforced concrete structure was

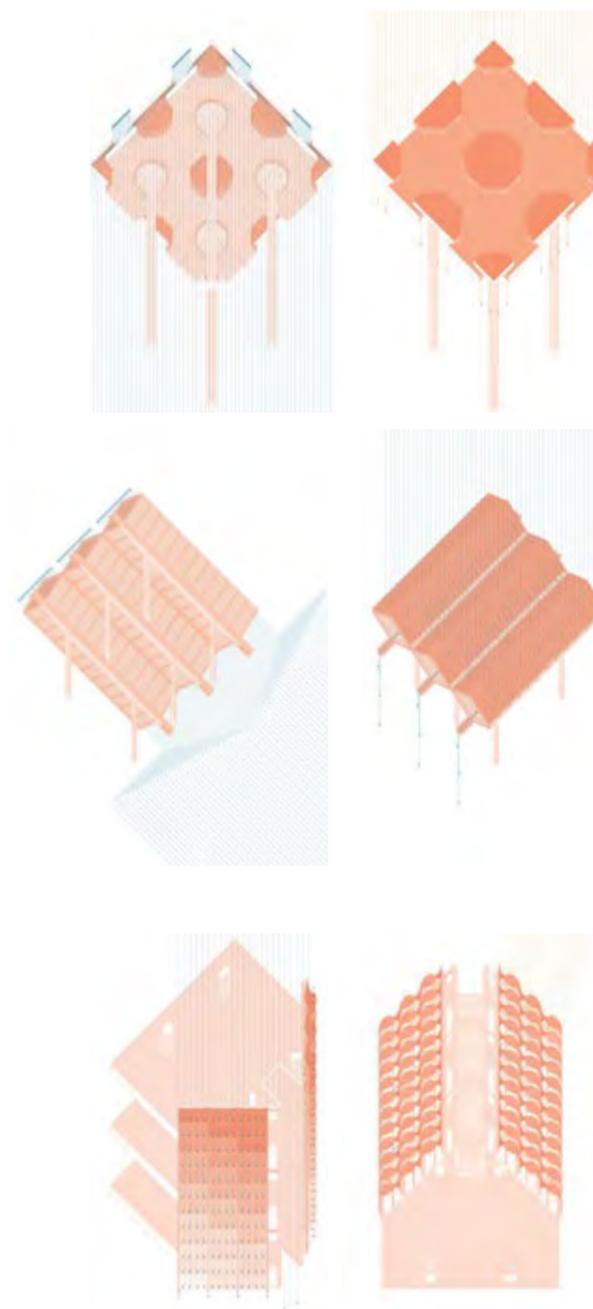
infilled with corrugated galvanized sheets, creating a lightweight design that paid homage to the ubiquitous modern material of the equatorial, while demonstrating its aesthetic and performative potential. Designed not to counteract the equatorial atmosphere but to celebrate its phenomenological qualities through dramatic expressions of the movement of hot air and the drainage of rain, the roof demonstrates Ghana's engineering prowess and cultural ambitions.

THE HOT AND WET DEEP ELEVATION

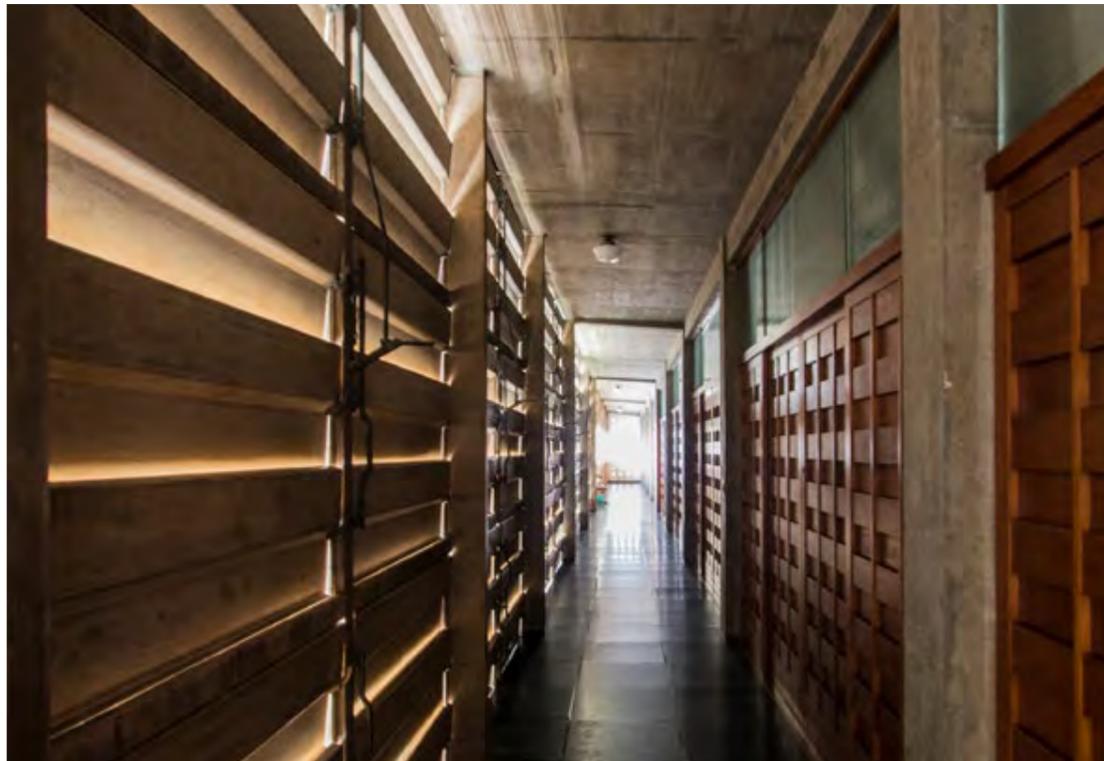
As urbanism in equatorial cities intensifies, the city's formal expression shifts from the horizontal to the vertical. The elevation becomes the primary filter between atmosphere and architecture, as well as the surface of symbolic and ornamental significance. Traces of this shift are evident in two exquisite projects: the Sequis Centre in Jakarta, and the Golconde Dormitory in Pondicherry.

Commissioned by the financial arm of Subud,¹¹ and designed by Hassan Roland Vogel in 1978, Jakarta's Sequis Centre is a 12-storey volume that sits within a dense urban context, dwarfed by increasingly-towering neighbours. Its opaque aesthetics, rich in symbolism, manipulates the equatorial atmosphere expressively in counterpoint to the temperate architectural language of the adjacent glass-enclosed structures. This quality is made evident and material through the building's envelope, which is composed of parabolic, glass fibre-reinforced concrete panels, a then-novel technology specifically licensed from Pilkington.¹² It forms an outwardly-protruding elevation that creates a spatialised thermal buffer, while also sheathing the interior from the ubiquitous monsoon downpour.

Alluding to the vernacular Indonesian pitch roof, the façade panels are a synthesis of the modern and vernacular. The roof is transformed into elevation, miniaturized, multiplied, and arrayed to form a continuous elevation of complex optics, porous yet opaque, that envelop an otherwise-banal office building. The panels are highly performative, allowing the building's windows—visible only from street level—to remain devoid of coatings or reflective films, an ironic realisation of the modernist penchant for transparency and optical clarity. Together, the interior wall and the exterior envelope form a paradoxical engagement, where the transparency



01:
 Pasar Johar, Semarang, Indonesia. Herman Thomas Carsten, 1932. Analytical Diagrams (Channeling Dense Air); interior (Amorphous Thresholds).
 02:
 International Trade Fair Hall, Accra, Ghana. Vic Adegbite, Jacek Chyrosz and Stanislaw Rymaszewki, 1967. Analytical Diagrams (Atmospheres of Air, Rain and Breeze); exterior (Big Roof).
 03:
 Sequis Centre, Jakarta. Hassan Roland Vogel, 1978. Analytical Diagrams (Parabolic Panels); exterior (Pointed and Pitched).



of modernism participates with equatorial demands for shade, jointly establishing a layered filter to the environment. Expressing an equatorial resistance to the temperate, the Sequis Centre provides an alternate vision for the equatorial city: shady, layered, porous, and material.

The elevation takes on a greater integration with its interior in the Golconde Dormitory, designed by Antonin Raymond, Francois Sammer, and George Nakashima for Sri Aurobindo Ashram between 1935 and 1942.¹³ Employing gestures similar to the aforementioned ITF Exhibition Hall in Ghana, the dormitory's roof doubles its thickness through air. Expressed through a layering of enlarged ceramic roof tiles—vaulted in section—the roof is a double-layered entity that channels both air and the monsoon rain, establishing a breathable thermal buffer. The roof performatively and programmatically eschews the domain of mechanical systems and temperate ideas of insulation. The Golconde Dormitory presents a comprehensive design, beginning with a straightforward massing—a bar building displaced about a vertical stair core—that addresses critical performative and symbolic concerns. It exists as an object-like formation in collision with the city's grid, a sanctuary amidst the dense blocks of Pondicherry achieved by precise alignment of the building's east-west axis to the tropical sun-path. Serendipitously, three courtyards are positioned as a result of to this alignment, furthering performative and symbolic goals. The northern courtyards heat up in the afternoon while the southern courtyard remains shaded, creating a pressure differential that amplifies airflow through the architecture. These courtyards establish an equatorial Eden, but on terms defined from within the urban equatorial environment.

The main building's architecture is a sequential arrangement of thickened spaces and interconnected elements: adjustable lightweight fibre-reinforced screens, veranda-like corridors, teak sliding screens, dormitory rooms (furnished with custom-designed furniture) and screened window-bays. While they function holistically to modulate atmosphere, the architecture's *raison d'être* was the "materialization of self-apotheosis;"¹⁴ its construction a meditative ritual for its inhabitants. The ascetic community's ethos reveals itself through subtle yet considered details: unfinished concrete, glare-minimising anthracite floors, and Nakashima's teak and

rattan woodwork espousing a language of tactility and ventilation.

SAMPLING THE EQUATORIAL

These historical precedents inform the author's design grammar, mined for their critical reconfiguration of modernist tropes as they confront the equator, embodying pattern, volume, mass, and porosity in simple architectural formations. Novel materials and construction logics permeate these works, enabling a complex intersection between context and atmosphere.

A series of contemporary projects seek to continue and extend the ambitions of these buildings by actively approaching the equatorial as an atmospheric medium to work with in order to produce a sensorial architecture that calibrates atmosphere in subtle yet evocative ways, despite the constraints of dense urban contexts. While the precedents were realised through then-novel concrete innovations, the following projects investigate contemporary lightweight materials, digitally-controlled fabrication techniques, and software simulations to build upon the earlier era of fruitful architectural creation.

A Simple Factory Building is a response to the heaviness of the equatorial atmosphere. It creates an envelope that calibrates and filters air, sound, temperature, and views, akin to that of the Sequis Centre and the Golconde Dormitory.¹⁵

Placed 1200mm proud of the window wall, and continuously looping in section, a lightweight Dryvit EIFS *brise soleil* defines the building's elevational identity,¹⁶ an anamorphic pattern calibrated between ornamental pattern-making and pragmatic concerns through digital software tools.¹⁷ Front elevation, roof, rear façade, and ceiling are merged in a singular pattern that wraps in section, adjusting porosity in relation to internal programming and privacy demands.¹⁸ Here, the EIFS system—a low-cost, temperate and repairable cladding solution—is appropriated to meet the demands of the equatorial atmosphere.

As demonstrated in Pasar Johar, subtle architectural devices can powerfully adjust and express the equatorial climate, calibrating visual perception and revealing the movement of air. Located within an urban block of finely-

04:
 In precise alignment to the tropical sun-path, in collision against the Pondicherry's grid; Golconde Dormitory, Pondicherry, India. Antonin Raymond, Francois Sammer, and George Nakashima, 1935-1942.
 05:
 A thickened lamination of spaces and elements, of different scales; ; Golconde Dormitory, Pondicherry, India.

spliced plots, *A Simple Factory Building* adopts the party wall typology of its neighbours to produce a contiguous urban fabric. Its four double-storey massing, however, is elevated and carved to reveal an interior open-air courtyard, linking interior workshop spaces to their urban surroundings while amplifying cross-ventilation between front and rear volumes through zones of negative pressure. This carved space, glazed in bronzed glass, becomes a counterpoint to the opacity of the envelope and the rough-hewn concrete shell elsewhere, forging a dialogue between advanced and crude construction techniques. In a region fascinated by glass, transparency, and air conditioning, the design offers a counter-narrative, a meditation on the potential of layering architecture. Closed and open, shadowed and reflective, permitting view and creating interference, the project illustrates that architecture can engage in robust and powerful ways with its context.

Land-scarcity is a dominant political narrative in Singapore, and its urban master plan prioritises density as both a stated ambition and opportunity,¹⁹ even as it strives to maintain the illusion of landscape and of atomisation through setback lines.²⁰ The *Hut House*, a modest extension to a colonial bungalow, emerges from this ethos. It's simple massing, expressed through expanded-mesh panels set proud of the building mass, is an idealised hut carved and chamfered by setback constraints, working in tandem with verdant vegetation to amplify acoustic and visual camouflage in a strategy reminiscent of Jakarta's Sequis Centre. Behind a folding envelope are fenestrations positioned to different alignments and sizes, undermining normative conventions of scale. An object-like entity emerges, peeking above the plot's lush vegetation. The panels are subtly tapered, creating a rippling effect that reimagines the performance and aesthetics of Ghana's ITF Exhibition Hall roof in elevation. While visually less complex than *A Simple Factory Building*, its envelope establishes spatial depth with changing scales of its expanded-mesh assembly, the operability of the envelope (where windows are present behind), and its interface with protrusions for views.

Ghana's ITF Exhibition Hall and Pasar Johar reveal an elemental architectural lexicon that celebrates the equatorial atmosphere: the roof unifies and attunes while the plinth becomes a symbolic elevation of this atmosphere. These tropes are employed within the *Stereoscopic House*, a waterfront bungalow with close

neighbours. The scheme's primary device, a continuous spatialised envelope spanning all five elevations, mediates these concerns. The tight site demanded a stacked programme approach; its deep plan was bifurcated through a highly-sectional and pervasive big roof. This established a central courtyard for visual and atmospheric connection between all floors. Materialised through a herringbone ironwood wrapper (sourced in Indonesia), and interspersed with operable perforated aluminium screens, this envelope is never fully opaque. It is a breathable and permeable surface that entwines the domestic with the equatorial.²¹ This vocabulary creates the opportunity for angular-pitched overhangs and skylights. The former calibrates views towards both the seascape, and landscape of an adjacent golf course, while the latter, like the oculi of Pasar Johar, shapes internal atmospheres through diffused and reflected daylight. Materially, the silver-patinaed ironwood is juxtaposed against a polished travertine plinth, with translucent channel glass and transparent sliding windows between them. The windows conflate interior and exterior thresholds when fully opened, elevating the equatorial air to be crowned by a bold roof.

In *A Simple Terrace House*, one sees the cumulative influence of the historic precedents on design. Sandwiched within an urban block, the project adopts and refines many tropes employed within the *Simple Factory Building*, most significantly its section-driven approach. The massing consists of two elevated pitched volumes containing private domestic spaces, arranged to form an open-air courtyard that bifurcates the volume. Folding in section, similar to a periscope, this courtyard is designed to draw air in from nature reserves around into the centre of the house. Performatively, this becomes a device that amplifies cross-ventilation of the ground floor and thermal stratification. Akin to the passive-cooling strategies of Pasar Johar, cool air collects on ground level, pushing hot air upwards from the living spaces through the courtyard like an exhaust. As was the case in Golconde, the house seeks to engage the equatorial atmosphere in a variety of ways. The courtyard becomes a celebrated architectural and performative element, while an off-form concrete structure allows the thermal mass of the building to modulate temperature differentials. A louvered ceiling on the ground floor ensures that the thermal mass of the architecture is maximized while moderating acoustic noise.



06:
 Façade Pattern on North East Elevation; *A Simple Factory Building*, Singapore, 2008-12.

07:
 The distinct anamorphic pattern wrapping the roof, creating an ornamental play of light and shadow; *A Simple Factory Building*, Singapore, 2008-12.

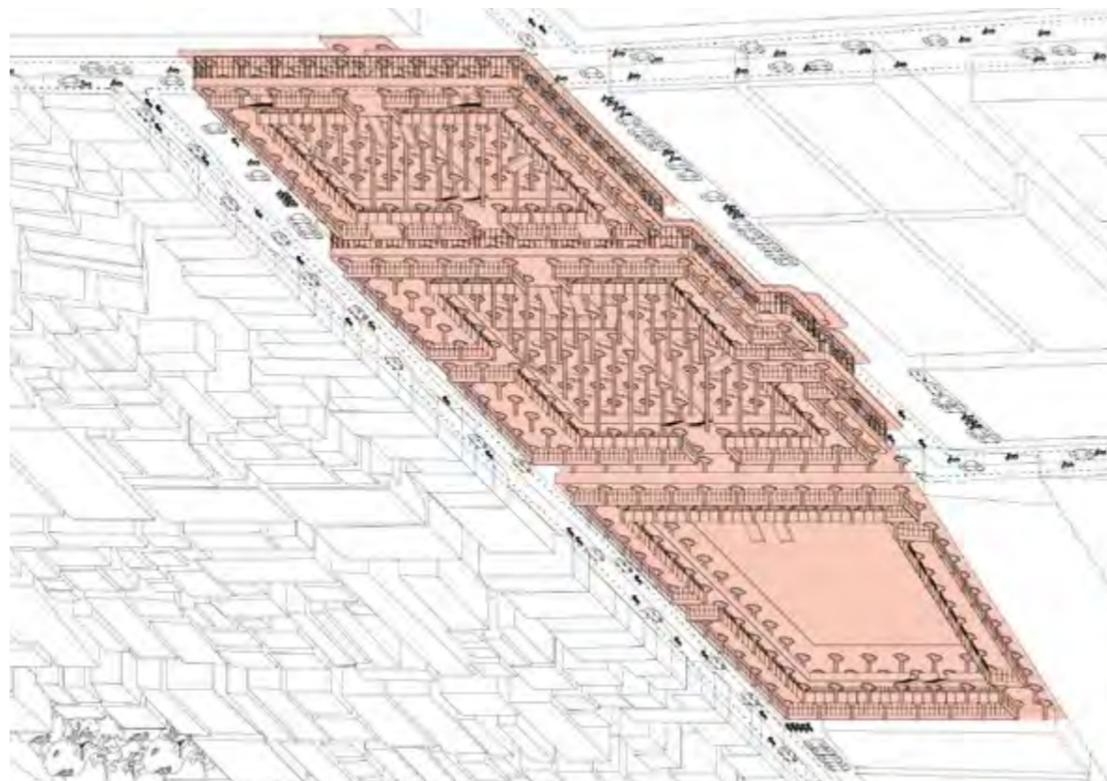
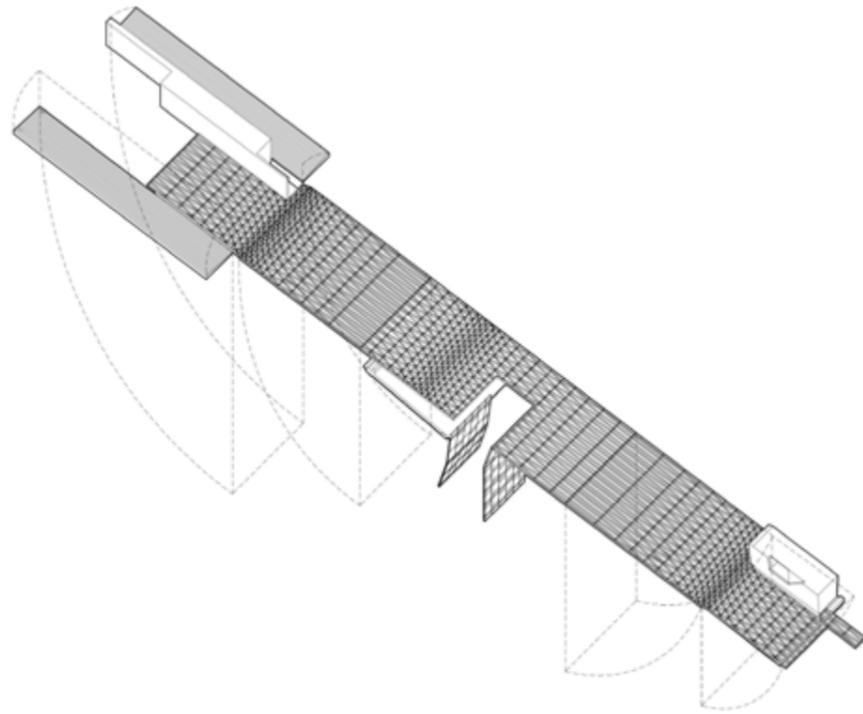


08:
A unifying and continuous big roof. *Stereoscopic House*,
Singapore, 2007-11.

09:
A camouflaging envelope, upsetting normative conventions
of scale; *Hut House*, Singapore, 2013-15.

10:
The equatorial atmosphere as foreground; *A Simple
Terrace House*, Singapore, 2014-17.





Externally, the building's elevation and attic perform in a manner analogous to the double-layered roof of Ghana's ITF Exhibition Hall, functioning as a thickened layer that calibrates the movement of air. Its outermost layer, a continuous aluminium grate screen, wraps the two pitched volumes along one axis—an economical solution to thermal and visual privacy. Like the *Stereoscopic House*, the homogeneity of the envelope consolidates the house as a unified entity, while allowing for varying degrees of porosity and cross-ventilation through its secondary layer of masonry and fenestration. This screen also addresses the perennial challenge of long and narrow plans: that of maximising daylight penetration, while mitigating excessive thermal gain; it calibrates and camouflages a series of skylights and ventilation windows throughout the attic.

Superimposed with slight breezes and aural atmospheres from a nearby nature reserve, the equatorial atmosphere permeates the house, in a manner reminiscent of the scenographic tropes of colonial bungalows. Materials, tones, and volumetric complexity are pared-down to amplify the atmosphere of light, ventilation, and thermal comfort, in a design that engages the hot and wet equator.

concerns as a set of filters in response to the equatorial atmosphere.

As evinced in the four precedents, and the author's work, the urban equatorial atmosphere demands an architecture that is concerned with deep, porous and spatial envelope, not only for its performative outcome, but also because they address the symbolic and ornamental (essentially transcending mere concerns and discourses of efficiencies). Mining, sampling, and redrawing historical precedents, through expressive and considered orthographic projections promises to reveal and distil forgotten architectural languages and techniques relevant to the hot and wet, combating normative temperate prejudices that percolate the discourse of the equatorial, setting the foundations for a contemporary yet durable practice.

PROJECTING THE EQUATORIAL

Normative architectural representations—the axonometric, and the plan—are tainted by temperate biases towards the flatness of the elevation and distinct separation between interior and exterior, by prioritizing the view from above and delineations of edges. The worm's-eye axonometric affords an alternative, somewhere between the precision of orthographic projection and the sensorial atmosphere of space. The worm's-eye expresses the performative and atmospheric potentials of architecture's underside,²² while revealing a spatial richness and elevational complexity that would be camouflaged through a normative planimetric projection, or simply obscured by the big roof if seen from above.

Likewise, the continuously unfolded elevation diagram which includes roof and undersides highlights the deep envelope as an architectural assembly that allows porosity, view, shade and air to breathe across its depth. Ornament and pattern (as prominently showcased in *A Simple Factory Building*) operate alongside performance

09:
 The unfolded elevation; *A Simple Factory Building*,
 Singapore, 2008–12.

10:
 A typological big roof, aggregating and condensing the
 equatorial market over three city blocks of the Pasar
 Johar, Semarang, Indonesia. Herman Thomas Carsten, 1932.

NOTES

- 01 The author's research is specifically concerned with the atmospheric output of the equatorial—the hot and wet; the classification of the tropical climate is not sufficiently attuned to this lens, in that it includes the climate of the tropical savannah, which experiences a pronounced dry season that demands a differently-calibrated architecture.
- 02 'Atmosphere' rather than 'climate' is the preferred terminology in the author's research, as the former encompasses the latter while also considering other phenomenological concerns.
- 03 United Nations. 2016. *The World Cities in 2016: Data Booklet*. New York: United Nations, Department of Economic and Social Affairs, Population Division, p.4.
- 04 The critical translation of elemental findings about equatorial architecture from mid-century modernist buildings into contemporary architectural projects.
- 05 Literally, Johar Market; *Pasar* is Indonesian for bazar or market.
- 06 The big roof is punctured with octagonal skylights that make the architecture permeable to the dynamics of hot and wet equatorial atmosphere.
- 07 Pasar Johar bears structural similarities to Robert Maillart's beamless mushroom-slab construction technique, first deployed in 1910 in the Giesshübel warehouse, Zurich, and subsequently in the grain storage facility, Altdorf, in 1912.
- 08 Stanek, Łukasz. 2015. "Architects from socialist countries in Ghana (1957–67): modern architecture and mondialisation." *Journal of the Society of Architectural Historians*, Vol. 74, No.4, pp.416-442.
- 09 Scientific socialism', as defined by Pierre-Joseph Proudhon, refers to a society ruled by a scientific government, one whose sovereignty rests upon reason rather than sheer will. See: Proudhon, P.J. 1876. *The Works of P.J. Proudhon. Volume I: What is Property?* Trans. B.R. Tucker. Princeton, MA: Benjamin R. Tucker.
- 10 'pan-Africanism' describes a worldwide movement that aims to encourage and strengthen bonds of solidarity between all indigenous and ethnic groups of the African diaspora.
- 11 Subud is framed about the practice of *latihan*, a highly-individualised meditative exercise, the process of which must be enabled and initiated by another practicing member of the movement in a formal ceremony referred to as the "opening." The purpose of the *latihan* is to attain awakening by the Power of God, leading to a spiritual reality free from the influence of the passions, desires and thinking.
- 12 GRC Widjojo. 2004. "Riwayat Singkat - Brief History" [online], viewed 25th September, 2019: <https://web.archive.org/web/20110220043605/http://www.grcwidjojo.com/about_history.htm>.
- 13 Sri Aurobindo Ashram is a spiritual community founded in Pondicherry by Sri Aurobindo, which advocated a spiritual practice called Integral Yoga in the pursuit of attaining divine life on earth.
- 14 Antonin Raymond writes: "the purpose of the dormitory was not primarily the housing of the disciples; it was the creating of an activity, the materialization of an idea [of the human life evolving into the divine], by which the disciples might learn, might experience, might develop, through contact with the erection of a fine building." See: Gupta, Pankaj Vir, Mueller, Christine, and Samii, Cyrus. 2010. *Golconde: The Introduction of Modernism in India*. New Delhi: Urban Crayon Press, pp.21-22.
- 15 The author's research uses the term 'envelope' to signify the role of the building skin, its edge, surface and attachments, as well its environmental, territorial and representational roles. For a developed description of the building envelope see: Zaera-Polo, Alejandro. 2008. "The Politics of the Envelope." *Log*, Vol.13-14 'Aftershocks: Generation(s) since 1968 (Fall), pp.193-207.
- 16 Exterior Insulation Finishing System: Light weight fiberglass stucco over expanded polystyrene.
- 17 The *brise soleil* pattern is scaled in a gradient creating an optical effect on the building volume.
- 18 Envelope thermal transfer value (ETTV) calculations for the building's envelope design indicate a rate of 28.25W/m² for full height glazed single pane window walls, exceeding the thermal performance standard Green Mark Platinum for new air-conditioned office buildings in Singapore.
- 19 See, by way of example: Mohandas, Vimita. 2015. "Land is a resource that must be managed carefully: Heng Swee Keat." *Channel NewsAsia*, 29th October, viewed 25th September 2019. <<http://news.nus.edu.sg/sites/default/files/resources/news/2015/2015-10/2015-10-29/land-cnaonline-29oct.pdf>>
- 20 The Singaporean narrative of a "garden city" demonstrates the lasting legacies of temperate conceptions of the equatorial as an exotic paradise, while paradoxically also implying the ability to discipline and contain nature, espousing an ingrained attitude towards the equatorial aligned with the temperate sensibilities of its former colonial masters. See Barnard, Timothy P. 2014. *Nature Contained: Environmental Histories of Singapore*. Singapore: NUS Press, p.296.
- 21 The ironwood timber planks are joined by battens and biscuit joints. They are offset, creating an air gap between internal and external elements that reduces thermal transmittance and allows for effective rainwater runoff.
- 22 Worm's-eye axonometric drawings explore the vessel of study from a subterranean viewpoint that reveals the criticality of underlying surfaces in equatorial architecture.

FIGURES

The drawings and photographs included in this piece were produced by the author unless stated below. All images are reproduced with permission.

- 06 *A Simple Factory Building*, Singapore. Photograph: Kenneth Choo (2013).
- 07 *A Simple Factory Building*, Singapore. Photograph: Owen Lam (2013).
- 08 *Stereoscopic House*, Singapore. Photograph: Daniel Sheriff (2012).
- 09 *Hut House*, Singapore. Photograph: Khoo Guo Jie (2015).
- 10 *A Simple Terrace House*, Singapore. Photograph: Kevin Scott (2017).

Urs Bette

UNREASONABLE CREATURES: ARCHITECTURE & (BAD) BEHAVIOUR

06

The online version of this article can be found at:
http://drawingon.org/uploads/papers/IS03-06_200813.pdf

ABSTRACT

Unreasonable Creatures: Architecture & (Bad) Behaviour presents an investigation into the epistemological processes of (an) architectural practice; both a practice (a firm) and practice (a way of working). It presents these processes not by explication, but by a staging of one of the key concerns with which that practice engages, the unreasonable; that which cannot be reduced to reason. This presentation operates through two similar but distinct modes: an openly navigable Prezi (online), and a matrix of projects arranged in the form of a document; both might be thought of as maps. In the former, the extended plane of the Prezi interface offers a surface through which the work can be navigated. The lack of orientation (signage) here is deliberate, encouraging a wandering through image and text fragments, allowing an unpicking through zooming, panning and scanning of moments within the field; the pre-formatted presentation sequence provides just one staged 'passage' through this field. The latter, the matrix, stages a similar wandering, but is aware of the limits of digital zoom and resolution; it presents material in a manner that intentionally equates text and image and explores their respective (i)legibilities.

Both underlying 'maps' (field and matrix) are composed of extracts from the author's PhD thesis, earlier texts, and project images. Their arrangement is based on the interplay of these different modes as visual content, accepting that parts of the text act as supplementary fallout. The text passages within do not constitute a continuous text to be read as a whole, but rather stage intersections and oppositions between the modes of image and text. The overlap of discarded, cut and edited texts reveals (visually) those phrases, thoughts, insights that persist. Pieces are identified, relationships traced, and connections made by a revelation through overlapping and juxtaposing imagings. Visuality (imaging) leads reasoning.

This revelation through forms of visibility enacts one of the core concerns developed through the projects documented within, namely: how to provoke the emergence of novel types of space through the staged opposition between conditions, be it the architectural object and its ground, cognition and analytic synthesis in the design act, or—as in this case—between text and image. In these oppositions there is a necessary engagement with 'unreasonable' thought or behaviours. The projects contained within develop an approach to architectural design in which these oppositions (confrontations) and the unreasonable are understood as constructive pathways towards developing the performative potential of design, to inform the site-related production of architectural character and space.

BIOGRAPHY

Urs Bette is the principle of Urs Bette : Design and Program Director for Architecture at the University of Adelaide. He holds a Masters degree from the Institute of Architecture at the 'Angewandte' - University for Applied Arts Vienna - and a PhD from RMIT University Melbourne. His research investigates the role of 'the unreasonable' in the design process, revealing strategies that facilitate the poetics of architecture within a professional discourse dominated by expectations of quantifiable performance. His design works have been shown at the Architectural Biennale Venice, the AEDS Architecture Gallery Berlin and the FRAC Centre Orléans. He leads practice-based research at the School of Architecture and Built Environment.

**UNREASONABLE CREATURES:
ARCHITECTURE & (BAD) BEHAVIOUR**

Urs Bette



background 3

4 preface



Agents | space

In the project, the 'agents' of space are the architectural elements and the people who inhabit them. The project is a study of the relationship between the two, and how they interact to create a unique space.

The project is a study of the relationship between the architectural elements and the people who inhabit them. The project is a study of the relationship between the two, and how they interact to create a unique space.

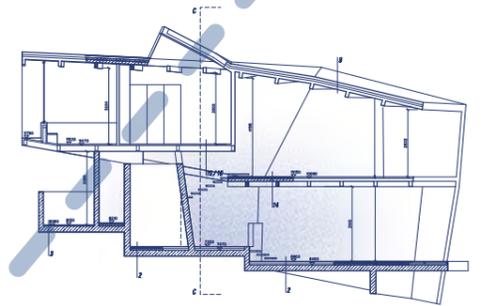
space 17

Project: Uralia Court, Residence and Studio, 2004
Client: Auburn / Bette
Ground: 1911 m², Blackwood, South Australia
Floor Area: 230 m²
Structural Consultant: Prof. K. Bollinger

The project is a study of the relationship between the architectural elements and the people who inhabit them. The project is a study of the relationship between the two, and how they interact to create a unique space.

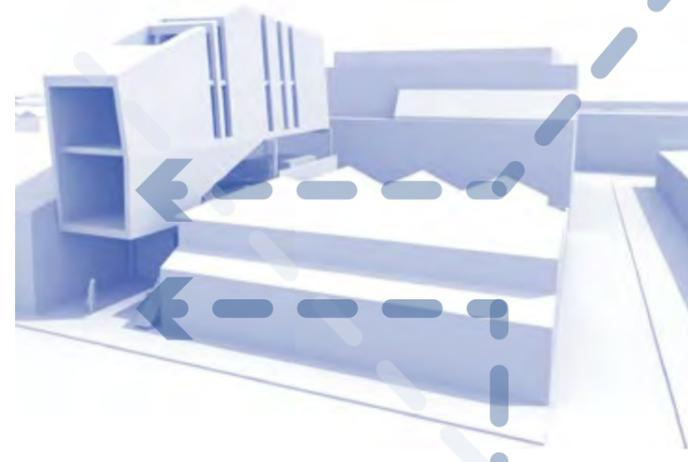


Uralia Court - original and final model



18 appendix Uralia Court - section BB 1:100 overlay of initial and final drawings

A strong site can negotiate an equally powerful architecture.



projects 31

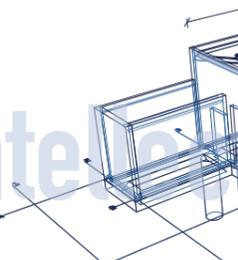


AN house - void between incoming object and existing structure

Project: AN house, Residence and Studio, 2009
Client: Gallagher & Hargreaves
Ground: Brunswick, Victoria
Floor area: 320m²

The competition entry for the project was selected in 2009.

32 appendix AN house - existing building structure and diagram of proposed addition



interior



Thalia Graz - opening up the space of the street towards the sky - photo: Herta Humaus

built 05



Thalia Graz - San/Ott Bauhaus and Butta | subtle void and ground reaction | photo: Herta Humaus

05 case study

Case study | Thalia Graz

The decision to try to give the building a sense of movement and to play with the design of a concrete structure is the result of the project's programmatic requirements. The building's facade is a complex of volumes that are not only functional but also sculptural. The design of the facade is a result of the project's programmatic requirements. The building's facade is a complex of volumes that are not only functional but also sculptural.

The project continuously oscillates between irrational/intuitive advancements and rational/objective steps of justification to 'make sense' from these two different epistemological readings.

The project continuously oscillates between irrational/intuitive advancements and rational/objective steps of justification to 'make sense' from these two different epistemological readings.



Thalia Graz - part of aperture and derived strategy

built 07

The project continuously oscillates between irrational/intuitive advancements and rational/objective steps of justification to 'make sense' from these two different epistemological readings.

The project continuously oscillates between irrational/intuitive advancements and rational/objective steps of justification to 'make sense' from these two different epistemological readings.

The project continuously oscillates between irrational/intuitive advancements and rational/objective steps of justification to 'make sense' from these two different epistemological readings.



Thalia Graz - different stages of design development

08 case study



built 09

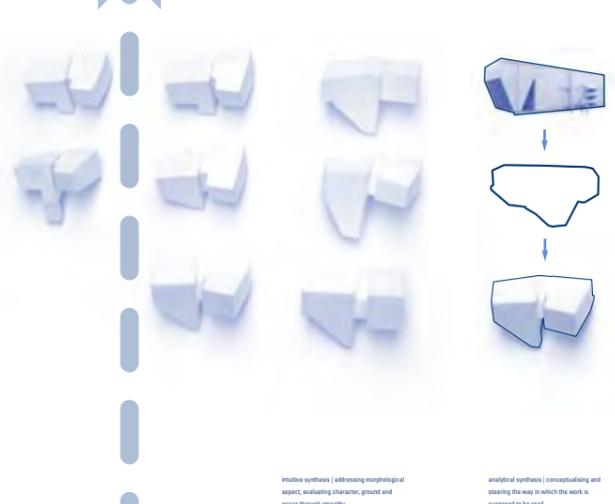


EAF extension, South Australia 2009 - image: Daniel Kertler

characters 59

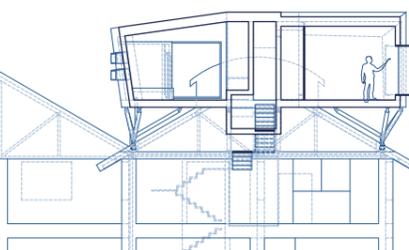
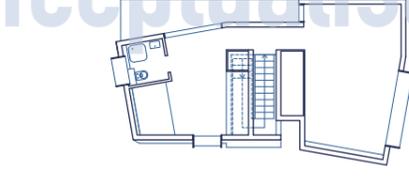
Project EAF extension, artful in residence studio
Client: Australian Experimental Art Foundation
Ground: EAF Bldg, Register Street, Adelaide
Floor area: 500'

The project continuously oscillates between irrational/intuitive advancements and rational/objective steps of justification to 'make sense' from these two different epistemological readings.

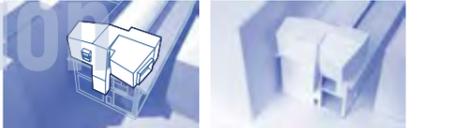


EAF - floor plan and longitudinal section

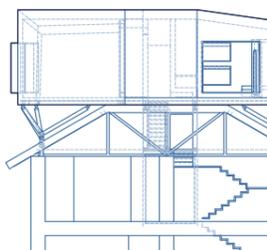
provoking a reaction that through reading and interpretation, reveals the character of the location.



EAF - floor plan and longitudinal section



EAF - two model nodes



EAF - eastern elevation

00 appendix

projects 01



islands - Adelaide, South Australia 2012 - image: Daniel Kertler

speculative 73

Case study | Dissecting the whale

The project continuously oscillates between irrational/intuitive advancements and rational/objective steps of justification to 'make sense' from these two different epistemological readings.

The project continuously oscillates between irrational/intuitive advancements and rational/objective steps of justification to 'make sense' from these two different epistemological readings.

The project continuously oscillates between irrational/intuitive advancements and rational/objective steps of justification to 'make sense' from these two different epistemological readings.



island 2 - in the islands | unreasonable topographies

74 case study

assuming the spiritedness of the architecture itself and the ground it sits upon.



island 2 - in the islands | unreasonable topographies

76 case study



island 2 - in the islands | unreasonable topographies

experimental 77

emotive cognition

form - space



Thalia Graz | view towards Basilika Opera House | photo: Maria Hutterer

50 case study



Horroa footbridge - view towards the sea | gradual transformation of the ground in order to meet the object - image: Daniel Kattler

70 case study



Dissecting the whale - installation at RMIT Design Hub

84 case study

BIBLIOGRAPHY

- Barthes, Roland, and Lavers, Annette. 1972. *Mythologies*. New York: Hill and Wang.
- Barthes, Roland, Lavers, Annette and Smith, Colin. 1968. *Elements of Semiology*. New York: Hill and Wang.
- Bateson, Gregory. 2010. *Steps to an Ecology of Mind*. Chicago: The University of Chicago Press.
- Blundell-Jones, Peter. 1998. *Dialogues in Time: New Graz Architecture*. Graz: Haus der Architektur.
- Boeckl, Matthias. 2005. *Günther Domenig: Recent Work*. Wien: Springer.
- Bogner, Dieter. 1988. "Von der Raumstadt zum Endless House" in *Friedrich Kiesler: Architekt, Maler, Bildhauer, 1890-1965*, Wien: Löcker.
- Böhme, Gernot, Eliasson, Olafur, Pallasmaa, Juhani and Borch, Christian. 2014. *Architectural Atmospheres: On the Experience and Politics of Architecture*. Basel: Birkhäuser.
- Bollnow, Otto Friedrich. 2011. *Human Space*. London: Hyphen.
- Breton, Andre. 2012. *Manifestoes of Surrealism*. Ann Arbor, MI: University of Michigan Press.
- Brünner, Margit. 2015. *Constructing Atmospheres: Test-Sites for an Aesthetics of Joy*. Baunach: AADR.
- Chillida, Eduardo, Finn, David, Carandente, Giovanni and Merriam, Dena. 2003. *Eduardo Chillida: Open-Air Sculptures*. Barcelona: Ediciones Polígrafa.
- Chillida, Eduardo. 2009. *Eduardo Chillida: Writings*. Düsseldorf: Richter.
- Coop Himmelb(l)au. 2005. *Texte 1968-2005*, Martina Kandeler-Fritsch and Thomas Kramer (eds.). Ostfildern-Ruit: Cantz.
- Feuerstein, Günther. 2006. "Visionary architecture in Austria in the sixties and seventies, Inspirations - Influences - Parallels" in *Sculptural Architecture in Austria*. Vienna: Verlag Anton Pustet.
- Feyerabend, Paul K. 1979. *Against Method: Outline of an Anarchistic Theory of Knowledge*. London: Verso Edition.
- Frichot, Hélène. 2015. "Five Lessons in a Ficto-Critical Approach to Design Practice Research." *Drawing On*, Issue 01 Presents. Available at <<http://drawingon.org/issue/01>> (Accessed 22nd July, 2019)
- Glanville, Ranulph. 2003. "Second-Order Cybernetics" in *Systems Science and Cybernetics*, Francisco Parra-Luna (ed.). Oxford: EoLSS Publishers. Available at <<http://cepa.info/2326>> (Accessed 22nd July 2019).
- Gould, S. J. and Vrba, S. 1982. "Exaptation—a missing term in the science of form." *Paleobiology*, Vol.8, pp.4-15.
- Grundmann, Peter. 2015. "Architekten müssen auch Produzenten politischer Räume sein" in *arch+ Feature*, Vol.41 (May). pp.2-16.
- Heidegger, Martin, and Seibert, Charles H. 1973. "Art and Space" in *Man and Worlds*, Vol.6, No. 1 pp.3-8.
- Hollein, Hans, and Weibel, Peter. 2012. *Hans Hollein*. Ostfildern: Hatje Cantz.
- Kauffmann, Stuart. 2003. "The Adjacent Possible: A Talk with Stuart Kauffmann." Available at: <<http://edge.org/conversation/the-adjacent-possible>> (Accessed July 18, 2013).
- Karmel, Pepe. 1998. "Pollock at Work - The Films and Photographs of Hans Namuth" in *Jackson Pollock*. New York: Museum of Modern Art, pp.87-137.
- Kiesler, Frederick, and Bogner, Dieter. 1988. *Friedrich Kiesler: Architekt, Maler, Bildhauer, 1890-1965*. Wien: Löcker.
- Kipnis, Jeffrey. 2013. *A Question of Qualities: Essays in Architecture*, Alexander Maymind (ed.). Cambridge, MA: MIT Press.
- Kipnis, Jeffrey. 2005. "Against Two Gravities" in Prix, Wolf D., Kandeler-Fritsch, Martina and Kramer, Thomas, *Get Off of My Cloud: The Texts of Coop Himmelblau, 1968-2005*. Ostfildern-Ruit: Hatje Cantz, pp.14-19.
- Loomis, John A. 1999. *Revolution of Forms: Cuba's Forgotten Art Schools*. New York: Princeton Architectural Press.
- Melville, Herman. 2013. *Moby-Dick; or, The Whale*. London: Penguin Classics.
- Next ENTERprise (Firm). 2007. *Close to the bone: the next ENTERprise*. Seoul: DAMDI Publishing co.
- Pallasmaa, Juhani. 2010. *The Thinking Hand: Existential and Embodied Wisdom in Architecture*. Chichester, UK: Wiley.
- Paz, Octavio. 1973. *The Bow and the Lyre: The Poem, the Poetic Revelation, Poetry and History*. Austin: University of Texas Press.
- Pendleton-Jullian, Ann M. 1996. *The Road That Is Not a Road and the Open City, Ritoque, Chile*. Cambridge: The Graham Foundation / MIT Press.
- Prix, Wolf D., Kandeler-Fritsch, Martina and Kramer, Thomas. 2005. *Get Off of My Cloud: The Texts of Coop Himmelblau, 1968-2005*. Ostfildern-Ruit: Hatje Cantz.
- Puga, Cecilia, Mardones Hiche, Patricio, and Radic, Smiljan. 2010. *Cecilia Puga*. Barcelona, Spain: Gustavo Gili.
- Reisner, Yael, and Watson, Fleur. 2010. *Architecture and Beauty: Conversations with Architects About a Troubled Relationship*. Chichester, West Sussex, UK: John Wiley & Sons.
- Ruby, Andreas. 2007. "Espace Trouve" in *Close to the bone: the next ENTERprise*. Austria; Seoul: DAMDI Pub., pp.137-147.
- Sergison, Jonathan, and Bates, Stephen. 2005. "Lessons Learnt from Alison and Peter Smithson" in *Architecture Is Not Made with the Brain: The Labour of Alison and Peter Smithson*, Pamela Johnston, Rosa Ainley, and Clare Barrett (eds.). London: Architectural Association.
- Smithson, Alison M., and Smithson, Peter. 2001. *The Charged Void-Architecture*. New York: Monacelli Press.
- Tschapeller, Wolfgang, Ritter, Arno, and Jauernik, Christina. 2012. *Hands Have No Tears to Flow...: Reports from/Without Architecture*. Wien: Springer.
- Van Schaik, Leon. 2005. *Mastering Architecture: Becoming a Creative Innovator in Practice*. Chichester, England: Wiley.
- Van Schaik, Leon. 2008. *Spatial Intelligence: New Futures for Architecture*. Chichester, England: Wiley.
- Varela, Francisco J., Thompson, Evan, and Rosch, Eleanor. 1993. *The Embodied Mind Cognitive Science and Human Experience*. Cambridge, MA: MIT Press.
- Von Foerster, Heinz. 1993. *Kybernetik*, trans. Birger Ollrogge. Berlin: Merve Verlag.

Jorge Valiente, Amaia Sanchez-Velasco & Gonzalo Valiente

NEW GEOGRAPHIES OF VIOLENCE

07

The online version of this article can be found at:
<http://drawingon.org/uploads/papers/IS03-07_191002.pdf>

Jorge Valiente, Amaia Sanchez-Velasco & Gonzalo Valiente

NEW GEOGRAPHIES OF VIOLENCE

ABSTRACT

The work presented here narrates the creative and design research methodologies of Grandeza (in collaboration with Miguel Rodríguez-Casellas, alias Bajeza), an architectural collective that operates between the fields of spatial practice, design, cultural production and pedagogical exploration. These methodologies are described by analysing the material, discursive and representational qualities of two of their latest artworks: *The Plant* (2017) and *Valparaiso Post-Liberal* (2017). Both installations are discussed here as one-to-one scale architecture models that stage, perform, debate and challenge new geographies of violence.

Grandeza's research and creative practice detects, denounces and challenges the transformative violence that late-capitalist practices apply over subjects, spaces and ecologies. As a collective, they started collaborating in Madrid in 2011, where they graduated together as Masters in Architecture at the Polytechnic School of Architecture (ETSAM). Since then, they have developed a cross-disciplinary practice based on collaborations with architects, collectives, artists and institutions in Madrid, Berlin and Sydney. Their work has been exhibited and published in Germany (*Bauhaus Dessau* in 2014); USA (1st *Chicago Architecture Biennial* in 2015); Australia (*Mildura Arts Centre* in 2016, *Wagga Wagga Art Gallery* in 2017, and in 2018 at the *Bank Art Museum Moree*, *Tin Sheds Gallery*, and *Australian Design Centre*); Chile (*XX Chilean Biennial of Architecture and Urbanism* in 2017); Spain (*Madrid and Santander*, at the *XIV Spanish Biennial of Architecture and Urbanism* in 2018); and Italy (*XXII Milano Triennale*, in 2019). Since mid-2017, the Grandeza members have been collaborating with Miguel Rodríguez-Casellas (alias Bajeza) thus forming the architectural ménage à quatre Grandeza/Bajeza. They share a commitment to linking pedagogy, research, critical thinking, and creative practice as complementary tools for political emancipation. Their most recent project, *Teatro Della Terra Alienata*, was the Australian pavilion at the *XXII Triennale di Milano*, which received the *Golden Bee Award* for the best national pavilion.

BIOGRAPHIES

Jorge Valiente is an architect, academic and co-founding member of Grandeza Studio. He graduated from the Madrid Polytechnic School of Architecture (ETSAM) in 2013, and subsequently received scholarships to undertake studies at the Technical University of Architecture (TU) and the School of Fine Arts (UDK) in Berlin in 2007-2008, and at the School of Architecture of Granada (UGR) in 2009-2010. In 2013, Jorge was invited to take part in the postgraduate research program *Bauhaus Lab*. Since 2009, he has developed multidisciplinary collaborations with architects, collectives and artists between Madrid, Berlin and Sydney, and since 2015 has worked as a Lecturer in the Faculty of Design, Architecture and Building (University of Technology Sydney), where he co-directs the architectural ménage à quatre Grandeza/Bajeza. Jorge co-curated the awarded Australian pavilion at the *XXII Triennale di Milano* 2019.

Amaia Sanchez-Velasco is an architect, academic and co-founder of Grandeza Studio. She graduated as a Master of Architecture from the Madrid Polytechnic School of Architecture (ETSAM) in 2011. Amaia received a scholarship to undertake studies at the Technical University (TU) and the School of Fine Arts (UDK) in Berlin in 2007-2008. She has practiced as an architect in Germany (*Sauerbruch Hutton*) and Spain (*Aranguren & Gallegos*), and since 2015, has worked as a Lecturer in the School of Architecture at the University of Technology Sydney. Her project *Factory of Hyperecologies*, at the Great Barrier Reef, has been awarded by the Australian Institute of Architects and nominated by the AASA (Association of Architecture Schools of Australasia) as an exemplary teaching and research project. She co-curated the awarded Australian pavilion at the *XXII Triennale di Milano* 2019.

Gonzalo Valiente is an architect, academic and co-founding member of Grandeza Studio. In 2012, he was awarded an MArch at the Polytechnic School of Architecture, Madrid (ETSAM). Since 2009, Gonzalo has developed international collaborations with practices including *Izaskun Chinchilla* (Madrid), *Renee Van Zuuk* (Netherlands) and *Fake Industries Architectural Agonism* (Sydney, NY), and since 2015, he has lectured at the University of Technology Sydney, where he cooperates with the members of Grandeza/Bajeza. His most recent collaboration, "*Teatro Della Terra Alienata*", was presented at the Australian pavilion at the *XXII Triennale di Milano*. At the forefront of his research is a project titled *Valparaiso Post-Liberal*, a work that he co-directed and presented at the 2017 *Chilean Biennale of Architecture: Dialogos Impostergables*.

NEOLIBERAL VIOLENCE(S)

Byung-Chul Han describes violence today as "shifting from the visible to the invisible, from the frontal to the viral, from brutal force to mediated force, from the real to the virtual, from the physical to the psychological, from the negative to the positive, withdrawing into the subcutaneous, sub-communicative, capillary and neuronal space, creating the false impression that it has disappeared. It becomes completely invisible at the moment it merges with its opposite, that is, with freedom."⁰¹ What Han describes as 'micro-violence' crystallizes the so-called 'post-political' shift as the consequence of the hegemonic consolidation, from the microscopic to the global scale, of the neoliberal "common sense."⁰² The multiple scales of contemporary forms of neoliberal violence is the focus of two recent installations by Grandeza (one of them in collaboration with Miguel Rodríguez-Casellas, alias Bajeza): *The Plant* (2017) and *Valparaiso Post-Liberal* (2017). By analysing, describing, and narrating the material, discursive and representational qualities of these two artworks—understood as one-to-one scale architecture models that stage, perform, debate and challenge new geographies of violence—this account of a developing working practice aims to open Grandeza/Bajeza's developing methodologies to scrutiny. Both works establish links with previous and upcoming projects, all of which form an ongoing body of work that studies late-capitalist spaces and narratives to identify (through critical analysis) and neutralize (through political imagination) the mechanisms that veil and normalize neoliberal violence.

These two works depart from the critical analysis and research of diverse geographies of concealed violence, which are spatialized and revealed through architectural models that dislocate, decontextualize, and relocate objects and subjects. Props, authors and audience become part of an antagonistic and relational political arena where information is not just displayed as data but also negotiated and discourses.⁰³ Combining humour, absurdity, mythology, philosophy, history, aesthetics and politics, the two projects fantasize and spatialize post-heteropatriarchal political imaginaries. As Rosi Braidotti states, "We need more conceptual creativity, more theory rather than less, and a renewed trust in the cognitive and political importance of the imagination."⁰⁴

In a state of planetary civil war, environmental annihilation and perpetual crisis, we argue that it is the 'crisis of the political imagination' that perpetuates our schizophrenic march towards extinction. The greatest success of late-capitalism is, perhaps, its capacity to self-portray as 'scientific' and 'natural' rather than 'ideological' and 'imposed'.⁰⁵ As academics and creative practitioners, we feel the responsibility to open up fissures in the 'excess of positivity' embedded within contemporary discourses and aesthetics to propose new epistemological frameworks in which the imagination can flourish and engage with dissonance, disruption and discomfort, embrace ugliness, failure and otherness, and generate doubt, friction and dissent.



01:
The Plant. Installation at Wagga Wagga Art Gallery.

DESIGN AND RESEARCH

We will narrate a close reading of the two projects and of how the research, together with discourse, thought, design and fantasy are articulated and juxtaposed. A multiplicity of meanings have been constructed at the intersection of uncertain realities and feasible fictions. This narration of events will take place at this intersection of reality and fiction, uncertainty and feasibility.

In both installations, the research questions formulated by the curators took us to the periphery of our previous research. This supposedly fragile position meant that the projects were simultaneously informed by previous work, and open to further study and interpretation. Thus, we occupied and vandalized the space between knowledge and doubt as a space of creation where collective discussion and design converged.

In response to the curatorial questions, we appropriated the performative strategies that artists and architects of the past century used to question the cultural and political assumptions of their time (the 'epic theatre' of Bertolt Brecht, for example, who called himself an architect). We combine this with the aspirations of the Situationists of making artistic creations that perished in the impact that they produced; and with the irreverence and apparent absurdity of the Dadaist gesture, which was capable of challenging artistic conventions by positioning the audience in a state of pleasant discomfort. Through architectural pastiches that comprise dissonant aesthetic and linguistic expressions (from different movements and times) we intend to talk, with the most serious absurdity, about the present.

CASE STUDY ONE: THE PLANT, WAGGA WAGGA ART GALLERY, 2017

The Plant was exhibited in 2017 at the Wagga Wagga Art Gallery, in the Riverina region of New South Wales, Australia. For around forty thousand years, this was the land of the Wiradjuri people. It was so when Anglo-Saxon graze squatters took over the region less than two hundred years ago.

The Plant was one of nine works by artists and architects commissioned by the New Landscapes Institute to reflect on the past, present and future of the Australian Travelling

Stoke Routes (TRS).⁰⁶ The curatorial team contacted Grandeza when they came across *Transhumance*,⁰⁷ a previous research project on the contemporary situation of Spanish transhumance, a semi-nomadic shepherding practice which has had a presence on the Iberian Peninsula since the early times of animal husbandry.⁰⁸ The curatorial team was interested in bringing international input into the discussion.

The commission started as a dual request. Firstly, they wanted Grandeza to design an artefact that incorporated the research that Joni Taylor (chief curator) had conducted on the state of the art of both Australian and international stock routes. The project had to integrate a series of maps, texts and audio interviews. Secondly, and simultaneously, Grandeza's intervention should become an artwork in itself, be nomadic, and expand the conversation outside the gallery. Furthermore, the work should respond to a research question posed by the curatorial team as part of the commission: they wanted the team to unravel the contemporary condition of the 'plant'. *The Plant* is a term that refers to the ensemble of human, animal and technological resources involved in the tradition of moving stock across the TSR network. This movement, throughout the country, facilitates the transportation of food, energy and shelter.

After some conversations with the curatorial team and other artists, we perceived a nostalgia or sense of loss over the picturesque ideal of an Australian landscape populated by stockmen with horses and ropes. Moreover, there was a longing for the time when these paths were shaped by the passing of long horse-driven caravans at the beginning of the colonial period. Indeed, the recommendation of the indigenous population—who knew the country better—was fundamental in many cases to finding the best corridors and to accessing pastures and water. We purposely distanced ourselves from the 'white male anxiety' described by Rossi Braidotti, or from what Zygmunt Bauman described as a 'retrotopia', a form of utopia that idealizes the past for the simple fact of being past, both of which are common place amongst Western artists and architects whose practice intertwines with the complexities of contemporary rurality.⁰⁹ Instead of approaching the project from an eco-nostalgic perspective, we decided to reveal and stage the contradictions and the inherent violence concealed behind the seductive beauty of the Australian countryside. By examining the history of these landscapes and by

tracing the technologies that comprise the 'contemporary plant', we found that the colonial history of Australia is continually evolving. It is perhaps more voracious and effective than ever in its extractivist capacities, and as sophisticated as always in concealing and normalising the uneven access to the wealth that it produces.¹⁰

The Australian Travelling Stock Routes have not disappeared; they have expanded temporally and spatially. During the twentieth century, a constellation of pioneering farming and transportation technologies shifted the scope of the Australian TSR from a territorial to a planetary scale. Today, the movement of livestock across time and space operates 24/7, in one continuous season.¹¹ The farming industry has become autonomous and flexible, adapting to post-Fordist modes of production and capital accumulation. Trains, trucks, vessels, drones, helicopters, cattle crushes, portable fences, refrigerated chambers and supermarket trolleys are part of an archipelago of concatenated technologies, which can be thought of as the material qualities of a 'globalised plant'. As Rosi Braidotti suggests:

"to say that 'naturecultures' today are fully integrated into a technological apparatus that maximizes efficiency and profit, is stating the obvious. But coming to terms—psychically, socially and ethically, with this statement seems a problem of an altogether different order and scale."¹²

We must not forget that these technologies are fuelled by individual subjects that operate as 'the other' to one another, in an atomized and sprawling social landscape inhabited by farm owners, workers, and exploited backpackers in search of visa extensions,¹³ Aboriginal communities struggling for sovereignty,¹⁴ and environmental activists rebelling against the relentless inaction of the Government against climate change.¹⁵

We sought to deploy this convoluted and disputed landscape in the exhibition, bringing it into the gallery to avoid confusions or ambivalent messages. Similar to Forge's *On Exactitude in Science*, we wanted to develop a map of the region whose size was that of the region, and which coincided point for point with that region. As this was an exquisitely impossible task, we decided to design a compressed version: a stage, and a synecdoche. We knew that the act of squashing the whole thing into a fragment of that thing was yet another violent and reductive act of expulsion and omission. Thus, the ambiguous

juxtapositions of fragments and the de-contextualisation of isolated parts allowed us to embellish the incongruence of the system itself. *The Plant* is a synecdoche of a territory, a geography of absences. It is an inhabitable one-to-one architectural model and pastiche.

CHARACTERS AND PERFORMANCE

The *Merino Chairs* belong to a previously unknown chair species that can live both indoors and outdoors. Their skeleton, made of a light, foldable aluminium structure, supports a fluffy body covered by a synthetic sheep-like fur. It is a light and portable creature with a cosy look, and a hybrid specimen at the intersection of two mirrored trading routes. Millions of Australian Merino sheep travel overseas annually, aided by a sophisticated network of technologies for livestock transport,¹⁶ while tons of synthetic sheep-like furs reach Australian ports in shipping containers. If Androids dream of electric sheep, the *Merino Chairs* graze on surreal landscapes that blur the dichotomy between the pastoral picturesque and the rural techno-aesthetics of a nature-culture continuum in perpetual becoming.

Thirty square metres of synthetic fur, bought in Wagga Wagga (one of the cities in Australia that delivers larger amounts of sheep products into both national and international markets),¹⁷ were used to fabricate the *Merino Chairs*. At 3:00am, on a cold night, on the outskirts of the city near the highway, six outsiders worked inside a rented fibreglass cabin (that held four) in an archetypical Australian caravan park. It felt like a clandestine sweatshop; six workers captured inside a one-to-one scale architectural model that was representative of the same suburban field in which it sat. An Aboriginal artist, a French professor, an Argentinian architect, and the three members of Grandeza were finalising the preparations for an exhibition. Under the gleam of three disturbing fluorescent lights, they constructed thirty *Merino Chairs*, the night before the opening. Aided by the rhythm of techno music, cocktails and other substances (three pizzas ordered by telephone), they completed the mission in time. When the pizza arrived, they had started to perform an improvised, post-punk version of *Don Quixote* in the cabin. Using the newly assembled *Merino Chairs* as props, they enacted a surreal theatre play, which did not go unnoticed by the pizza delivery boy. "I see that you are enjoying yourselves," he said.



02:
Margarita, closed, carrying the Merino Chairs.

Indeed, for the rest of the night, and in preparation for the artists talk, they combined joy, collective hedonism and the most seriously absurd conversations about the project and its multiplicity of meanings. This scene was illustrative of the approach to design-research that this bunch of amateur actors, stage designers and architects—called Grandeza—develop as a form of emancipatory practice.

Margarita ('Daisy' in Spanish) is a punk cow-table on wheels that escaped from an automated dairy farm on a foggy winter morning when the guard drones were blinded by meteorological mischief.¹⁸ She has the tactile qualities of a living creature, the gracious appeal of a domestic animal, and the sensual qualities of a carefully handcrafted piece of furniture. However, she refuses to describe herself in these terms, as she resents the hetero-patriarchal gaze that commodifies her elegance and disregards her talent. Even if *Margarita* has always been attracted to bondage aesthetics, her liberated soul resists domination and authoritarianism. A cold morning in April, grazing along the Murrumbidgee River, *Margarita* spotted a flock of fluffy grazing chairs. Mesmerized by her arresting presence and dignity, the chairs began to follow *Margarita* and became a loyal gang of apprentices and supporters.

Resembling Don Quixote and his squire Sancho Panza, the furniture herd—composed of *Margarita* and the *Merino Chairs*—operates as a nomadic ensemble that extends the exhibition beyond the gallery to incite and freshen political encounters and debates. Was *Margarita*, as Don Quixote, a mentally alienated creature in search of chivalrous adventures in an empty landscape where no one was willing to listen? Or were the Grandeza members inebriated by “folk-political” literature, like both Don Quixote and his author, Cervantes, were inebriated by knight-errant romances?¹⁹ “But you gathered,” says *Margarita*, “you gathered around me by the river. Was the round-table encounter not authentic? Was it just a performative representation of a desirable debate never to transcend?” she continues.

When the thirty *Merino Chairs* and *Margarita* arrived at the gallery on the opening day, a queer cattle crush on wheels, dressed-up as a media machine, was ready to capture them. As the windmills in the most infamous passage of *Don Quixote*, the cattle crush became the delusional giant for this chivalrous furniture-mob, an unbeatable creation of reason, progress and efficiency. Nevertheless,

Margarita knows that the “inescapable” advancement of industrious technologies—like the algorithms that govern them—are not the politically ‘neutral’ result of ‘natural’ evolution. They inherit, replicate and reproduce the same patterns of violence, exclusion and dispossession of the bond to which they belong.²⁰ A cattle crush is a machine that smoothens hyper-productivity, a robot that reduces labour costs, and a technological artefact that immobilizes animals to safely and efficiently manoeuvre them. It operates as a boundary device that consolidates and articulates fences while accelerating, safeguarding and optimising transactional exchanges of animals in an increasingly technologized rural realm.

Its presence in the gallery surprised local visitors, although it was an artefact with which they were familiar, but visitors from urban areas were captivated by the tangible precision of this mechanical presence. Re-situating such an artefact inside a cultural institution incited the visitors to interact with it, to play. This Dadaist gesture transformed an object of hyper-efficient production into a purposeless and innocent playground. Similar to the world exhibitions of the Industrial Revolution, the behind-the-scenes technology of the consumer society became the attraction at the centre of the stage. However, instead of celebrating the features of its technological advancements, visitors profaned them with childish behaviour. Intentionally or not, they turned into performers of a post-capitalist fantasy—of a world without work—where automated technologies produced an equitably distributed wealth.

CASE STUDY TWO: VALPARAISO POST-LIBERAL, XX CHILEAN BIENNALE OF ARCHITECTURE AND URBANISM, 2017 (BY GRANDEZA AND MIGUEL RODRIGUEZ CASELLAS, ALIAS BAJEZA)

On the occasion of the XX Biennale of Architecture and Urbanism in Chile, the curatorial team invited us to answer an ‘unpostponable’²¹ and provocative question: “Why did the UNESCO heritage project for Valparaiso fail?” Answering that question could open the door for us to participate in the Biennale. In this case, the curatorial team knew about our previous research project *Immaterial Company Towns*, a work that studied the rapid urban transformations of Valparaiso (an important Chilean seaport city). *Immaterial Company Towns* was

exhibited at the 1st Chicago Architecture Biennale in 2015, as part of the *Indo Pacific Atlas*. Although that project was not explicitly related to the UNESCO heritage project, it documented some of the reasons for Valparaiso's rapid transformation. Once again, we dusted off a previous research project and expanded on it to answer a different question.

During its industrial peak, Valparaiso's harbour became an entry point to the city for 'others' arriving from all over the world. This was the melting pot that fuelled the consolidation of an eclectic, picturesque, post-industrial landscape that appears today in every heritage postcard of the city. In turn, the economic exploitation of newcomers' anxieties established the city's bohemian character. Today, Valparaiso is neither prosperous nor untouched by the gentrifying processes of real estate speculation and tourism. Moreover, the city is unable to reconcile with its productive industry (the port) nor fit UNESCO standards. In 2016, a report written by Juan Luis Isaza (a Colombian expert in heritage management) stated that Valparaiso's project was "calamitous."²² The conclusion not only summarized the institutional miscommunication and unclear hierarchical relations between UNESCO, the Chilean government and the municipality, but also reported on the dreadful conservation of the city's architecture.

Our response, then, to that initial questions was that the failure of Valparaiso as a heritage city was a symptom of the lack of epic aspirations in the political and social projects of the twenty-first century. It was, in the end, the failure of neoliberalism and a sign of its exhaustion. If the 'picturesque postcard' was that important, we wanted to cut it open and transform it from within into a spatial diorama. We wanted to bring back and make present the expelled and undesired subjectivities to the postcard,²³ and affirm their role in the consolidation of Valparaiso's cultural identity. We wanted to recover unproductivity, hedonism, pleasure and sensuality as some of the supreme values that, combined with a cosmopolitan human dignity, gave shape to the social character of its citizens.

INSTALLATION AND PERFORMANCE

Valparaíso Post-Liberal appropriates three key concepts of neoliberalism (namely urgency, unavoidability, and the demonization of the state's apparatus) to propose a new political, institutional and collective subjectivity.

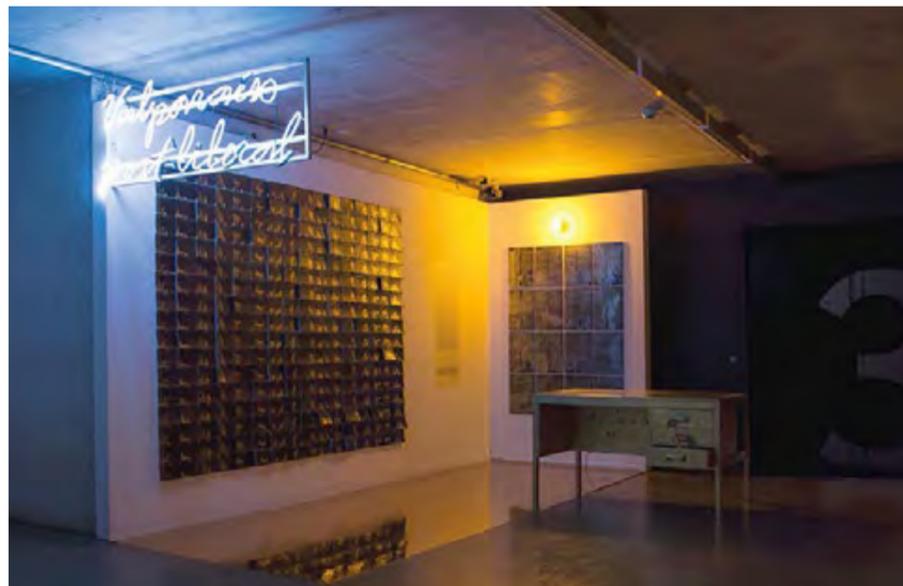
We proposed a 'public trust' (a property trust) as the main axis of a parallel state in charge of transforming the current tourist playground into a productive territory. In turn, the validation of excess and clandestine activities—two foundational elements of the port's bohemia—would be the focus of an urban rebranding. On this occasion, the one-to-one architectural model was simultaneously a space designed to 'promote' the foundation of the parallel state, and a clandestine nightclub inspired by those dissonant atmospheres expelled by the heritage project. Through an electoral process, the new citizens would collectively define the agenda of the alternative political apparatus.

The wall of this space was composed of a mural—formed of 4080 postcards—which was an enlarged and vandalized version of the archetypical heritage postcard. On one side the postcards were stamped with golden seals appropriated from the classical European painting tradition (where the ideals of emancipation that once inspired revolutionary projects in America were depicted). On the other side of the postcards were 272 political proposals which underpinned the epic tone of the political aspirations of *Valparaíso Post-Liberal* (ranging from short poems exacerbating Valparaiso's social and aesthetic contradictions, to exhortations to discredit neoliberal common sense). Here, the visitors were invited to select their preferred political proposals and send them to the Chilean Government.

This civic mobilization took place in a setting that reflected the features of both a luxurious boutique and a bohemian nightclub. On top of a reflective gold floor (that introduced the metaphor of the parallel universe) there was a second-hand desk, painted in gold and riddled with bullet holes, where the visitors deposited their votes. This desk simultaneously embodied the traces of violence that dismantle the bureaucratic system (the bullets) and the promise of emancipation of the deposited votes. Hidden inside a drawer, the voice of Alejandro Arellano played from a speaker, a retired journalist and victim of the violent expulsions engineered decades ago by the Chilean



03:
Valparaíso Post-Liberal. Bulleted bureaucrat desk on reflective floor.



04:
 Valparaiso Post-Liberal. Nightclub atmosphere.
 05:
 Valparaiso Post-Liberal. Installation.

dictator Augusto Pinochet. After a euphoric welcome to visitors, Arellano's voice proclaimed the political ambitions of the parallel state.

While vandalising the bureaucratic desk we approached the Dadaist gesturalism and moved away from the language of architectural representation. The day that the desk, already painted in gold, was shot at the headquarters of the PDI (Chilean Investigations Police) by the officer and architect Renato Román, the project reached its greatest poetry. The exercise of creative violence had moments of great beauty; between bursts, the shot pattern was assessed as if it were a work of art. This act (which summarizes the seriousness with which we approached even the most absurd aspects of the project) turned us, without knowing it, into performance artists.²⁴

CONCLUSIONS: (ARCHITECTURAL) DISCOURSE AND REPRESENTATION

Currently, the re-politicization of academic work within architecture schools runs the risk of being reduced to another instance in a seemingly endless, recurring search for novelty. For instance, the dissociation between architectural discourse and marketing (namely, that of the icon and the 'starchitect')—a shift deemed necessary after global capitalism's last crisis—has now led to a new trend that embellishes political violence with social management languages of political mitigation. In this framework of 'architecture-as-troubleshooting', concepts such as resilience (extensively used in current academic discussions and publications) appeal for the adaption to, or self-recovery from, the effects of ecological or political devastation, without questioning or altering the institutional roots or causes of such devastation.

Parallel to these social alleviation trends (epitomized at the 2016 Biennale of Architecture in Venice: *Reporting from the Front*), architectural discourse has also shown a growing interest in tackling spatial issues that go beyond the traditional scales of the built environment. Anthropocene, climate change, mass extinctions, hyper-surveillance, migrations, sovereignty, borders, belongings and transit are only some of the recurrent topics that nurture a generalized feeling of embodied disempowerment, which fuels the determinism of a technologically-driven planetary annihilation. According to Rosi Braidotti, "new necro-technologies operate in

a social climate dominated by a political economy of nostalgia and paranoia on the one hand, and euphoria and exaltation on the other."²⁵

Following these discourses, different forms of architectural representation attempt to catch up with the emerging disciplinary concerns. Aided by the development of ways to collect data and precise mapping technologies, ubiquitous cartographic representations filled with filtered information and aerial photographs populate architectural publications, biennial exhibitions and academic works. These large-scale forms of Cartesian representation, which rely on a 'dataistic' accumulation of information, epitomize a new paradigm of objectivity, conquering a discipline that has historically navigated the tensions between the construction of objective truths and the formulation of subjective realities.

While accepting the challenge of architecture's peripheral condition when reflecting on the big questions of our time, we reject the depiction of a world ruled by an unstoppable and technologically-driven Anthropocene, where the salvation is relegated to an army of SMART technologies. In these depictions, human and non-human subjects are rendered invisible or disempowered. We acknowledge the vulnerability of traditional architectural languages when addressing the scales of representation of the territories and transits that we inhabit today, but we also discard the estrangement of these new forms of Cartesian representation. Contemporary forms of political violence require alternative forms of spatial representation, and commonly forgotten forms of subjectivity need to be recognized, acknowledged and included in the picture.

Using the words of Paul B. Preciado (who, in turn, invokes Félix Guattari):

"We need to invent new methodologies of knowledge production and a new imagination capable of confronting the logics of war, hetero-colonial reason and the market as the hegemonic place of value and truth production. We are not simply talking about a change of the institutional regime or a rearrangement of the political elites. We are talking about the micro-political transformation of the 'molecular domains of sensibility, intelligence and desire'. We need to modify the production of signs, syntaxes and subjectivity – the modes of life production and reproduction. We are not talking about reforming the nation-states of Europe. We are not talking about moving borders or replacing one state for another. We are talking about decolonising the world and interrupting the integrated

global capitalism. We are talking about transforming the 'Earth-politics'.²⁶

IMPACT AND INTERPRETATION

When José Luis Pardo describes the impact of the Situationists' practices he states that the Situationists did not produce art with the intention of that art being interpreted. Rather than seeing art as an object, transcending the instant of emission to posthumously become part of a collection, their artistic interventions aimed to produce an impact and perish in the collision between creation, performance and reception.²⁷ In recent years, "impact" has—to the point of becoming almost a meaningless meme—come to dominate discussions about academic research. Its influence on the computable accounting of individual performance seems to be just another threat to the increasingly bureaucratic world of academia. We use this impasse (in which the academic apparatuses are still debating the meaning of the word) to rescue the Situationist reading of the term and repoliticize its meaning. Moreover, we embrace their avant-garde ambition of blurring the boundary between life and art, by embedding ourselves in collective research processes that celebrate discussion, difference, dissonance and joy while questioning the prevalence of individualistic and competitive forms of knowledge production.

NOTES

- 01 Han, Byung-Chul. 2018. *Topology of Violence*, trans. Amanda DeMarco. Cambridge, MA: MIT Press, p.vii.
- 02 We feel comfortable here with the description of neoliberalism made by Wendy Brown. In the first chapter of her book, *Undoing the Demos: Neoliberalism's Stealth Revolution*, Brown describes neoliberalism as "enacting an ensemble of economic policies in accord with its root principle of affirming free markets. These include deregulation of industries and capital flows; radical reduction of welfare state provisions and protections for the vulnerable; privatized and outsourced public goods... replacement of progressive with regressive tax and tariff schemes; the end of wealth redistribution as an economic or social-political policy; the conversion of every human need or desire into a profitable enterprise... and, most recently, the financialization of everything and the increasing dominance of finance capital over productive capital in the dynamics of the economy." In the same chapter, Brown suggests the post political shift by stating that "the absence of a scandalized response to the state's role in propping up capital and demoting justice and citizen well-being is also the effect of neoliberalism's conversion of basic principles of democracy from a political to economic semantic order." See: Brown, Wendy. 2017. *Undoing the Demos: Neoliberalism's Stealth Revolution*. New York: Zone Books.
- 03 Bishop, Claire. 2004. "Antagonism and Relational Aesthetics." *October*, Vol.110 (Fall), pp.51–79. In her critique of Bourriaud's "Relational Aesthetics," Bishop argues—through Chantal Mouffe and Ernesto Laclau—that "a democratic society is one in which relations of conflict are sustained, not erased. Without antagonism there is only the imposed consensus of authoritarian order—a total suppression of debate and discussion, which is inimical to democracy. It is important to stress right away that the idea of antagonism is not understood by Laclau and Mouffe to be a pessimistic acceptance of political deadlock; antagonism does not signal "the expulsion of utopia from the field of the political." On the contrary, they maintain that without the concept of utopia there is no possibility of a radical imaginary."
- 04 Braidotti, Rosi. 2017. "Posthuman and All Too Human: The Memoirs and Aspirations of a Posthumanist." Transcript, Tanner Lectures, Yale University, delivered 1st-2nd March, 2017. Available at: <<https://tannerlectures.utah.edu/Manuscript%20for%20Tanners%20Foundation%20Final%20Oct%201.pdf>> (accessed 26th September, 2019). See also: Braidotti, Rosi. 2017. *Memoirs of a Posthumanist* [video]. Available at: <<https://www.youtube.com/watch?v=OjxelMWLGC0>> (accessed 26th September, 2019).
- 05 Bifo, Franco Berardi. 2011. "The Future after the End of the Economy." *E-flux Journal* [online], No. 30 (December), viewed 26th September, 2019. <<https://www.e-flux.com/journal/30/68135/the-future-after-the-end-of-the-economy/>>. In this article, Berardi compares 'sciences' and 'economics', clarifying that "science is a form of knowledge free of dogma, that can extrapolate general laws from the observation of empirical phenomena, and that can therefore predict something about what will happen next. [...] In the schools of economics and in business schools they do not teach or learn about physics, chemistry, biology, astronomy—subjects that deserve to be called sciences, that conceptualize a specific field of reality. Rather, these schools teach and study a technology, a set of tools, procedures, and pragmatic protocols intended to twist social reality to serve practical purposes: profits, accumulation, and power. Economic reality does not exist. It is the result of a process of technical modelling, of submission and exploitation."
- 06 Taylor, Joni. 2017. *The Long Paddock. Curated by Joni Taylor and the New Landscapes Institute*, exhibition catalogue, 6th May–17th July, Wagga Wagga Art Gallery, Wagga Wagga, New South Wales, Australia.
- 07 See: Grandeza Studio. *Multi-scalar strategies to reactivate the transhumance in Spain – project*. Grandeza Studio, viewed 26th September, 2019. <<https://www.grandeza.studio/projects/multiscale-strategies-to-reactivate-transhumance-in-spain>>.
- 08 Rodríguez-Pascual, Manuel. 2004. *La Trashumancia: Cultura, Cañadas y Viajes*. León: Edileasa, p.24-32. Translation by the authors.
- 09 In her essay *New Radical Enlightenment*, Marina Garcés links the concept of 'retrotopia' (described by Zygmunt Bauman in his posthumous book of the same name) with the emergence of ethno-nationalisms as a response to the accelerated worsening of the material conditions of life. In the chapter "Posthumous Condition," Garcés explains the concept of 'retrotopia' as one of the responses to the "posthumous condition," which manifests itself in the blind belief in the irreversibility of the destruction of our living conditions. See: Garcés, Marina. 2017. *Nueva Ilustración Radical*. Barcelona: Anagrama, pp.13-32. Translation by the authors.
- 10 Daley, Paul. 2017. "It's 50 Years since Indigenous Australians First 'Counted'. Why Has so Little Changed?" *The Guardian*, 19th May. Available at: <<https://www.theguardian.com/inequality/2017/may/18/50-years-since-indigenous-australians-first-counted-why-has-so-little-changed-1967-referendum>> (accessed 26th September, 2019).
- 11 See: Crary, Jonathan. 2013. *24/7: Late Capitalism and the Ends of Sleep*. New York: Verso Books.
- 12 Braidotti, Rosi. 2017. "Posthuman and All Too Human: The Memoirs and Aspirations of a Posthumanist." Transcript, Tanner Lectures, Yale University, delivered 1st-2nd March, 2017. Available at: <<https://tannerlectures.utah.edu/Manuscript%20for%20Tanners%20Foundation%20Final%20Oct%201.pdf>> (accessed 26th September, 2019). See also: Braidotti, Rosi. 2017. *Memoirs of a Posthumanist* [video]. Available at: <<https://www.youtube.com/watch?v=OjxelMWLGC0>> (accessed 26th September, 2019).
- 13 Davies, Anne. 2017. "'Get Naked If You like': the Australian Working Holiday from Hell." *The Guardian*, 10th December. Available at: <<https://www.theguardian.com/australia-news/2017/dec/10/get-naked-if-you-like-the-australian-working-holiday-from-hell>> (accessed 26th September, 2019).
- 14 Maddison, Sarah. 2019. "White Australia Can't Solve Black Problems. White Australia Is the Problem," *The Guardian*, 7th April. Available at: <<https://www.theguardian.com/australia-news/2019/apr/07/white-australia-cant-solve-black-problems-white-australia-is-the-problem>> (accessed 26th September, 2019).
- 15 Various. 2019. "'We Declare Our Support for Extinction Rebellion': an Open Letter from Australia's Academics." *The Guardian*, September 20. Available at: <<https://www.theguardian.com/science/2019/sep/20/we-declare-our-support-for-extinction-rebellion-an-open-letter-from-australias-academics>> (accessed 26th September, 2019).
- 16 Ahedo, J. Maria. 2015. "Shipping and Handling." *Log*, No.34, pp.143-146.
- 17 City of Wagga Wagga. n.d. "Livestock Marketing Centre." *City of Wagga Wagga* [online], viewed 26th September, 2019. <<https://wagga.nsw.gov.au/city-of-wagga-wagga/business/livestock-marketing-centre>>.

- 18 Daley, Paul. 2016. "Transforming the Bush: Robots, Drones and Cows That Milk Themselves." *The Guardian*, 4th June. Available at: <https://www.theguardian.com/australia-news/2016/jun/04/transforming-the-bush-robots-drones-and-cows-that-milk-themselves> (accessed 26th September, 2019).
- 19 In this paragraph, "folk-politics" is used as a term of self-critique by which we consider our proposal, referring to the term defined by Srnicek and Williams in their book *Inventing the Future: Postcapitalism and a World without Work*. According to the authors, "Folk politics names a constellation of ideas and intuitions within the contemporary left that informs the common-sense ways of organising, acting and thinking politics. It is a set of strategic assumptions that threatens to debilitate the left, rendering it unable to scale up, create lasting change or expand beyond particular interests. Leftist movements under the sway of folk politics are not only unlikely to be successful - they are in fact incapable of transforming capitalism." See: Srnicek, Nick, and Williams, Alex. 2016. *Inventing the Future: Postcapitalism and a World without Work*. London: Verso.
- 20 In relation to the allusion to algorithms in this paragraph, in *Weapons of Math Destruction* the mathematician Cathy O'Neil reveals the societal impact of algorithms and how they are increasingly used in ways that reinforce pre-existing forms of inequality. See: O'Neil, Cathy. 2017. *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy*. London: Penguin Books.
- 21 Cancino, Miguel. 2017. *Unpostponable Dialogues (Dialogos Impostergables) XX Chilean Biennale of Architecture and Urbanism*. Curated by Felipe Vera, Rodrigo Tisi, Jeannette Sordi, José Mayoral, Miguel Cancino, Claudio Magrini, Pola Mora & Pablo Navarrete, exhibition catalogue, 26th October-10th November, Parque Cultural de Valparaíso, Valparaíso, Chile.
- 22 Isaza, Juan Luis. 2016. "El estado de conservación patrimonial de Valparaíso es calamitoso - interview." *El Mercurio de Valparaíso*. 26th May. Available at: <http://www.mercuriovalpo.cl/impresas/2016/05/26/full/cuerpo-principal/2/> (accessed 26th September, 2019). Translation by the authors.
- 23 Invoking Saskia Sassen's use of the term. See: Sassen, Saskia. 2014. *Expulsions: Brutality and Complexity in the Global Economy*. Cambridge, MA & London: Belknap Press (Harvard).
- 24 Valiente, Gonzalo; Rodriguez-Casellas, Miguel; Sanchez-Velasco, Amaia; Valiente, Jorge. 2017. "Post-liberal Valparaíso: 272 Political Postcards." *ARQ*, no. 97, pp.112-119.
- 25 Braidotti, Rosi. 2017. "Posthuman and All Too Human: The Memoirs and Aspirations of a Posthumanist." Transcript, Tanner Lectures, Yale University, delivered 1st-2nd March, 2017. Available at: <https://tannerlectures.utah.edu/Manuscript%20for%20Tanners%20Foundation%20Final%20Oct%201.pdf> (accessed 26th September, 2019). See also: Braidotti, Rosi. 2017. *Memoirs of a Posthumanist* [video]. Available at: <https://www.youtube.com/watch?v=OjxelMWLGC0> (accessed 26th September, 2019).
- 26 Preciado, Paul B. 2019. *Un Apartamento En Urano: crónicas Del Cruce*. Barcelona: Anagrama, p.#. Translation by the authors.
- 27 Pardo, José Luis. 2015. "Prologo," in *La Sociedad del Espectáculo (The Society of Spectacle)*. Madrid: Pre-Textos, pp.9-31. Translation by the authors.

FIGURES

All of the drawings and photographs included in this piece were produced by the author.

Kathy Waghorn & Nick Sargent

THE CITY AS A SCHOOL: AN URBAN PEDAGOGY

08

The online version of this article can be found at:
<http://drawingon.org/uploads/papers/IS03-08_200713.pdf>

Kathy Waghorn & Nick Sargent

THE CITY AS A SCHOOL: AN URBAN PEDAGOGY

ABSTRACT

'The City as a School' describes an urban pedagogy, an approach to design teaching and research that leaves the exclusivity of the school as a space apart, and the safety of a discrete studio-based project behind, to immerse students and teachers in the contingent space of the city. It describes two exemplars of this urban pedagogy, developed at the University of Auckland; the Lab and the Event Studio. These exemplars explore the city as an assemblage, and inquiry as a performative form of pedagogy that embraces the uncertainty that such an understanding of the city-as-assemblage brings forth. Four emerging ideas are explored: hybrid research forums, shared uncertainty, material politics and fragile democratisation. Borrowed from the field of urban studies—specifically from the work of Ignacio Fariás and Anders Blok—these four ideas determine the dimensions in which urban pedagogy takes place. Considering design research teaching and learning as a kind of social labour set within these determined dimensions re-contours the subjectivity of teachers, students and communities as collaborators in design research projects and, we propose, prepares students for contemporary and future forms of expanded architectural practice.

BIOGRAPHIES

Dr. Kathy Waghorn's research sits at the intersection of art, architecture and urbanism and acts to critique normative architectural procedures and concepts of agency, instrumental design and disciplinarity. With her collective HOOP-LA [www.hoop-la.nz], Kathy develops public realm initiatives in her neighbourhood of Tāmaki Makaurau Auckland. In this work the agency to transform place is opened to a wider constituency and is as much social and performative as it is material. At the time of writing, Waghorn taught architecture design studio at the University of Auckland; she has recently joined AUT University's Huri Te Ao Hoahanga / School of Future Environments as Associate Professor.

Nick Sargent is a lecturer at AUT's Huri Te Ao Hoahanga, a new program established to teach architecture in relation to participatory, climate and indigenous politics. He has previously taught and practiced in New Zealand and Australia, and recently completed an M.Arch (supervised by Kathy Waghorn) exploring some of the political implications that the ontological claims made by actor-network theory might have for architecture.

In this essay we will discuss a form of design teaching and research that leaves the exclusivity of the school as a space apart, and the safety of a discrete studio-based project behind, to immerse students and teachers in the contingent space of the city.⁰¹ This approach is underpinned by the idea that the field of architecture is shifting. No longer “done by an ‘architect’,” architectural work is increasingly “distributed and dispersed, collaborative and entrepreneurial, knowledge-based and open sourced, specialized and flexible.”⁰² As a result, as Peggy Deamer notes, designs are developed by “a socially diverse panoply of contributors” engaged in collective processes.⁰³ Alongside this opening up of the skills, knowledge, processes and persons engaged in design-making, others propose architectural practice re-cast as ‘spatial agency’, where buildings “enter into socially embedded networks, in which the consequences of architecture are more significant than objects.”⁰⁴ When design-making is understood as a social and ethical practice, produced through dialectical forms of social labour, and set within the complexity and incompleteness of the city, what might this mean for design research and teaching?

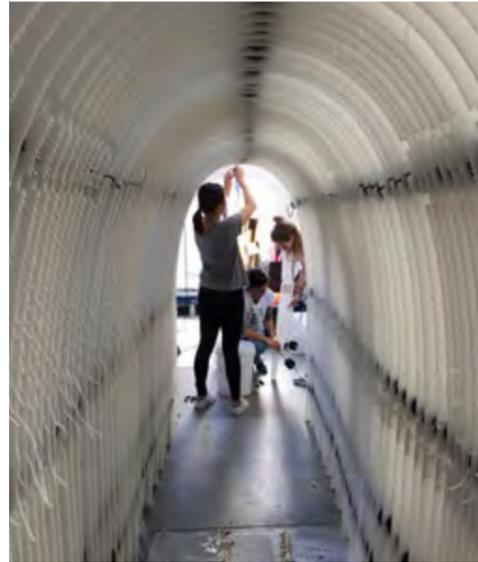
We will first briefly describe two studio approaches developed at the University of Auckland that take students outside the studio spaces of the university and embed their study and design work within urban environments. We will then explore the city as an assemblage, and inquiry as a performative form of pedagogy that embraces the uncertainty that such an understanding of and approach to the city brings forth. Finally, we will introduce the ideas of hybrid research forums, shared uncertainty,

material politics and fragile democratisation. Borrowed from Ignacio Fariás and Anders Blok, these four ideas are explored as the dimensions in which these types of urban pedagogy might take place. Considering design research teaching and learning as a kind of social labour set within these ‘dimensions’ re-contours the territories of teachers, students and communities in design research projects and, we propose, prepares students for those shifting contemporary and future forms of architectural practice described by Deamer.

TWO APPROACHES TO THE CITY AS A SCHOOL: THE MUDDY URBANISM LAB AND THE EVENT STUDIO

APPROACH 1. MUDDY URBANISM LAB.

The **Muddy Urbanism Lab**⁰⁵ was based on the supposition that the urban estuarine spaces of Tāmaki Makaurau Auckland are poorly utilised. The research conducted by this Lab focused on the Whau River, a tidal waterway bisecting the city's inner west, which was once an important food source and transport route but is now a site of neglect and ecological degradation. Through critically mapping the river's neighbourhoods such issues were brought to light, and new interfaces were proposed to operate between urban policy, ecological systems and projects involving community participation in the regeneration of the catchment. These proposals—made by students in this Lab—ranged across scales



01-04:
 Installation component of the curated event 'Sustainable Sustenance', produced during an Event Studio for FESTA, Christchurch, 2018.

and programmes, and in scope from realist/pragmatic to speculative/utopian. They included:

- lowering or removing boundary fences on riverside properties, disrupting the 'no man's land' designation of the river's edge that is frequently used for rubbish dumping;
- re-imagining the network of pylons that use the river as a corridor as multifunctional resources for locals, contributing to the micro-scale of the neighbourhood below while still supporting the national power grid above;
- devising an active river edge, reintegrating the marginal, disconnected reserves of post-industrial 'waste' land on this coastal edge into a linear pathway, re-connecting neighbourhoods cut off by arterial traffic routes, and thereby reinstating the mobility of the river under new urban conditions; and,
- harnessing the extensive coastal mangrove forest for energy production and for mitigating the effects of climate change.

Each proposal in the **Muddy Urbanism Lab** responded to the particular conditions and conflicts identified in the Whau river catchment, while also proposing strategies and tactics that might be employed for rethinking urban policy and modes of urban intervention in Tāmaki Makaurau Auckland more broadly. Working backwards from each situated proposal, students and teachers together identified a series of research questions, and used these to generate diagrams of the complex assemblages of property and cultural rights, material entities, legislation, infrastructure and spatial planning, environmental policy, and the array of sanctioned and unsanctioned activities within which these speculative design proposals were situated.

Initiated for 'The LAB' at the 5th Auckland Triennial at Auckland Art Gallery, and in collaboration with architect-activist Teddy Cruz, the **Muddy Urbanism Lab** has involved the work of post-graduate students, university staff, independent researchers, municipal agencies and community stakeholders. This speculative research has transitioned from the space of the academy as a result of a position of advocacy adopted by us as organisers, distributing the research through exhibitions, publications, presentations and websites. Advocacy from the **Muddy Urbanism Lab** has led to the establishment of a partnership between a community trust and Auckland

Council for the realisation of Te Whau Pathway, a thirteen-kilometre shared path that connects riverside reserves. This is currently under construction.

APPROACH 2. EVENT STUDIOS.

Event Studios⁰⁶ are live projects where architecture students, working in groups, produce large-scale installations for civic public events. These studios focus on architecture as both material culture and collaborative enterprise, where the work is made and tested with publics. Here, design research is not a private project, bounded by a screen or notebook, but is instead given a collective, physical presence. In **Event Studios** students source their own materials and fabrication services, they locate and negotiate access to spaces for fabrication and assembly and they handle transport logistics. In so doing they produce not just the project but the ecosystem needed to materialise that project, and in this ecosystem they take on roles and develop expertise beyond those normally attached to the architecture design studio—the material technician, the facilitator, the logistics expert, the project manager, the promoter, the producer—and which extend into the social realm—the host, the confidant and the colleague. In **Event Studios**, students work collaboratively in trying circumstances (including the inner city of post-earthquake Christchurch), within the shifting constraints of large public festivals, meeting non-existent budgets and tight non-negotiable deadlines. Although temporary, the work made in these studios collectively makes places, and students, who have often never so much as lifted a hammer, realise something both speculative and material, and have the opportunity to register its civic presence and reception.

AN URBAN PEDAGOGY

These two approaches are examples of a developing urban pedagogy, an approach to design research and teaching that hinges on two interrelated positions. First, it adopts an attitude that posits urbanism as an assemblage, and second, it understands knowledge making as an inquiry, as an emergent, locally situated and inherently social practice.

Adopting such an attitude toward urbanism is to put a "highly complex, multiple and evolving entity, the city," at

the core of our inquiries.⁰⁷ In advocating for an approach to design teaching predicated on an assemblage attitude we appreciate the advantage that such a schema allows in that it prompts a “move away from a notion of the city as a whole to a notion of the city as multiplicity, from the study of ‘the’ urban environment to the study of multiple urban assemblages.”⁰⁸ This attitude is informed by Ignacio Fariás, who provides us with an ontological framework within which the world is understood as incomplete, and as continually being made and unmade.⁰⁹ Drawing from Latour and Stengers, assemblage urbanists conceive the city as the recombination and continual re-constitution of materialities, objects, human and more-than-human life-forms, technologies, processes and phenomena, through which urban life is constantly composed.¹⁰

Manuel DeLanda notes that the assemblage is an elastic theory (perhaps better a tool, method or, as we have used, an ‘attitude’) geared towards avoiding the intellectual habit of privileging either the macro or micro view, and his appreciation of the assemblage schema lies in its resistance to such reduction. Assemblages are wholes constituted from the interactions between multiple heterogeneous parts that relate contingently, and consequently an assemblage cannot be reduced to an essential notion (the essence of a single part). The parts constituting the whole of the assemblage can be assembled in different ways and at different scales based not only on their own properties but also on their capacities, that is what the parts are capable of when in combination with other parts (in more or less numbers, in denser or looser configurations etc.). Moreover, these component parts, “may be detached from and plugged into a different assemblage in which its interactions are different.”¹¹ DeLanda explains, “cities are assemblages of people, networks, organizations, as well as a variety of infrastructural components, from buildings and streets to conduits for matter and energy flows.”¹²

As Fariás points out, in taking the ‘attitude’ that underpins assemblage urbanism Lefebvre’s ‘right to the city’ can be understood not as a democratic right to the singular and complete city-as-object, with a coherent, legible and stable form, but instead as the agentic capacity to engage in multiple, overlapping, fragmentary and synchronous urban-life assemblages, that are open to political contestation.¹³ For Fariás and Blok “urban democratic participation is based on a sense that cities are assembled, not structured,”¹⁴ and the actual urban

situations we find ourselves in define our spaces of intervention. They cite John Dewey’s position that the city is a “universe in which there is real uncertainty and contingency, a world which is not all in, and never will be, a world which in some respect is incomplete and in the making, and which in these respects may be made this way or that according as men [sic] judge, prize, love, and labor.”¹⁵

In articulating the difference between assemblage urbanism and other positions on the urban¹⁶ Fariás and Blok claim that assemblage perspectives “promote a more open and explorative form of engagement with the world”, which they construe as a process of inquiry.¹⁷ Inquiry in their work is positioned as a methodological mode by which to avoid reduction (to either an essence or a grand narrative) and through which urban students confront “radically uncertain situations in which we don’t know what we are looking for until we find it.”¹⁸ In working with such ‘radical uncertainty’, new modes of inquiry, of collective experimentation and representation are necessary. If an urban pedagogical approach to architectural design teaching—such as that we are developing—adopts an assemblage urbanism attitude, we need also to develop ways of working that can embrace such radical uncertainty and the city as a multiple, ever incomplete entity. In such an inquiry there is no place for the ‘objectively distanced’ design researcher, and the position of a singular ‘expert’ who can ‘teach the city’ is similarly dubious. Instead, as students and teachers we are together cast as part of the continuous worlding with which the assemblage approach contends. The feminist economists J.K. Gibson-Graham describe their adoption of an “up-close, piecing-it-together, participatory approach to understanding (or performing) the world rather than a big-picture, spectator approach that captures and reduces everything via universal laws.”¹⁹ This piecing-it-together approach, they say, “is a way of being in the world; it’s improvisational and experimental.”²⁰ Like Gibson-Graham, in developing an urban pedagogy we are exploring how teaching and learning can take place, and how knowledge can emerge, when immersed ‘in the world’, and we ask; how does our entanglement in such ‘radical uncertainty’ differently contour the relations of students, teachers, design schools, publics and cities?

Education philosopher Paulo Freire vigorously critiques a so-called ‘banking’ model of education, where the one-way transfer of knowledge from teacher to student takes

place in a space especially set apart for this process. Instead, for Freire, knowledge emerges only through “the restless, impatient, continuing, hopeful inquiry human beings pursue in the world, with the world and with each other.”²¹ Invoking learning as a process of knowledge making through inquiry, immersed in and with the world, aligns Freire with Fariás and Blok’s assemblage urbanist approach. Learning, for Friere, is an inherently political process and social practice, through which the iterative actions of inquiry and dialogue cultivate knowledge. Freire proposes that the work of learning is one of praxis, where thinking “does not separate itself from action, but constantly immerses itself in temporality without fear of the risks involved.”²² Fariás and Blok note that Dewey in his work on pedagogy similarly places an emphasis on knowing not as abstract knowledge (or theory) but as a social practice. For Dewey, knowledge is achieved “not when things are ‘found out’, but when they are also ‘known’, and ‘known’ means here that they are shared, socially accessible, discussable, open.”²³ This proposes that knowledge has an implicit social dimension, one that combines the ‘up-close’ capacity of Gibson-Graham, and the action emphasis of Freire.

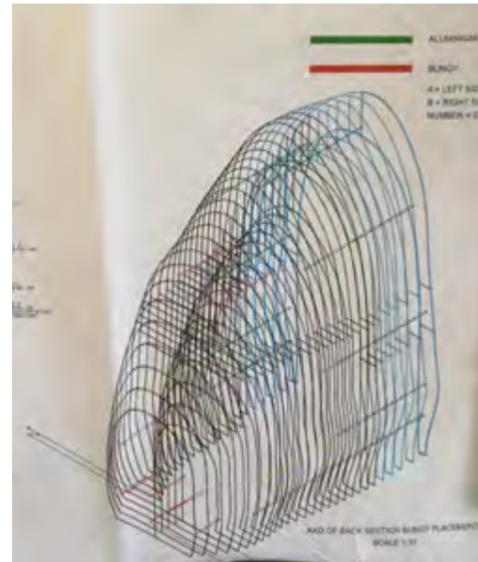
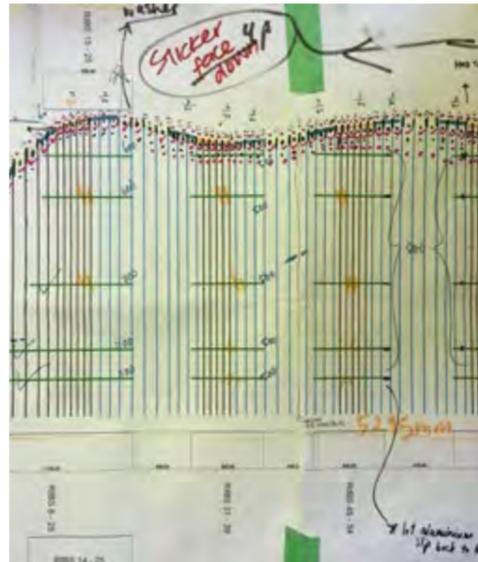
From the perspective of cultural anthropology, David Turnbull considers the production of knowledge as itself an assemblage process. For Turnbull, the process of formulating knowledge is a dialectical one, produced through “the work of negotiation and judgement” that each participant has to contribute to in order to produce meaning.²⁴ This knowledge-making labour does not take place in an objectively distanced, universal ‘no-where’. Instead, this dialectical process of knowledge-making produces a social space, a space located in and emerging from specific local conditions. This combination of social labour produced within the specificities of place Turnbull calls a ‘knowledge space’. In his knowledge space schema, theory can be understood not as a universalising master structure, to which local knowledge must defer, but as a “pattern that connects” different knowledge spaces.²⁵ Turnbull, like Freire, Gibson-Graham and Dewey, places a focus on the social, situational and performative nature of knowledge production in contending with the uncertainty and contingency of the assemblage.

The **Muddy Urbanism Lab** situated the university design studio in the civic art gallery. As well as exploring topics in such a highly visible space, adopting the label ‘lab’ framed the city as an experimental terrain, open in real

time for active inquiry. In the gallery this experimental work was not concealed from publics or stakeholders, rather students and teachers were together answerable to and in conversation with a much wider audience. In this way, the students are ‘socialised’ into the role that Dewey describes of the architect as a knowledge-maker working with others. The design educator and researcher Anthony Dunne has recently proposed that focussing design education on ‘the real’ leads “to the ongoing suppression of the design imagination.”²⁶ He calls for designers to be “realists of a larger reality” and for design education that “would encourage designers to be constructively unrealistic.” To do so “it would be necessary to embrace new ways of thinking.”²⁷ This is the terrain of the **Muddy Urbanism Lab**, where the focus was not on problem solving but on problematising, not on fixes as much as provocations and speculations, set within an emergent knowledge of a specific urban assemblage.

The **Event Studios** generate an experience of city-making as a material effort, and of design as a socially collaborative enterprise, both within the student groups and with a wider body of constituents convened in the making and testing of work in the public realm. Students register this in their commentary, recalling their experience of knowledge making as a temporal and performative endeavour, the “realisation that an idea or proposal doesn’t have to be ‘complete’ or ‘perfect’ before you expose it to a community/place - that makeshift or incomplete tests can facilitate more productive engagement due to their openness to change and discussion” as key learning experiences fostered by the studios.²⁸ Another student commented that the **Event Studio** developed their “understanding of ‘the architect’ [to be that] value of making yourself vulnerable as a designer to clients, communities, collaborators.”²⁹

Evidently, through the **Event Studios** students register space in the sense of Lefebvre, as inherently social, constituted through encounter, assembly and simultaneity,³⁰ and design-making as a practice immersed in the contingent, even risky conditions, in which as part of an inquiry one might actively welcome vulnerability. To draw out a specific example from one event studio in Christchurch (as part of FESTA 2018), students experienced their projects forming a temporary assemblage. Operating on a post-disaster city they devised and used mobile architectural elements to help form a public around the festival’s aim to promote a



Assembly Process_ 19/08/2018

Chronologically →

Person A	Person B	Person C	Person D	Person E
Unpacking and arranging boxes	Lay out tarp on floor/organize workspace (clear space)	Kites strings Taken out and ordered, aluminium set aside	Put up shop drawings, get organize bungee lengths	Get Washers and toggles, set off toggles at ends.
Get K-flex for each section and unrolling into bucket	Take first bolted ribs from F.G and toggle bungee start stringing up (88 → 1)	Get lengths of aluminium for each section. Feed aluminium on help D	Slot spacers on and put through	Get new ribs from F.G (88 → 1)
			(at end, tie off toggle and hot glue end)	(at end, tie off toggle and hot glue end)
Get K-flex for each section and unrolling into bucket	Take first bolted ribs from F.G and toggle bungee start stringing up (88 → 123)	Get lengths of aluminium for each section. Feed aluminium on help D	Slot spacers on and put through	Get new ribs from F.G (88 → 123)

05-08:
Drawings, diagrams, components and schedules. Working documents developed during construction of the 'Sustainable Sustenance' installation for FESTA, Christchurch, 2018.

discussion of food production, access and equity in the city rebuild.³¹ The students designed a performative object that transported and deployed furniture requiring diners to coordinate their bodies to balance shared tables, speculatively challenging the norms of food consumption in public and contributing a “constructively unrealistic” material experience to larger public discussions about the future of food production and consumption in Ōtautahi Christchurch.

A PEDAGOGY OF RADICAL UNCERTAINTY

To further think through an urban pedagogy, we have found it productive to position these approaches to design research teaching alongside the aims and actions of ‘technical democracy’, a concept advanced through Science and Technology Studies. The movement towards technical democracy arises from the contemporary situation of uncertainty, whereby science and technology cannot provide certainty to policy makers, where the expansive qualities of science and technology now contribute to the generation of greater uncertainty.³² Technical democracy is the pursuit of increased democratisation in the policy development process through attempts to foster “dialogue and collaboration among experts and lay-people in processes of technology design, knowledge production and attendant world-making.”³³ For Fariás and Blok, power in the contemporary city does not reside in institutions or government, but in an ability to forge ‘hybrid research forums’ that can navigate states of ‘shared uncertainty’ and ‘material politics’, working through collective experimentation towards the ‘fragile democratisation’ of civic agency. We are interested in these dimensions as frames through which to describe the methodological terrain in which an urban pedagogy operates.

HYBRID RESEARCH FORUMS

Bringing ideas of technical democracy to the realm of urban studies, Fariás and Blok identify the creative collaboration of experts and lay people, who in groups and communities collectively experiment with and prototype fragments of urban life. Such ‘hybrid research forums’³⁴ support collective experimentation and learning in the face of complexity and uncertainty as they “facilitate a process in which what counts as expertise, and who

counts as an expert, becomes open to discussion and contestation.”³⁵ In urban-realm hybrid research forums, a local’s knowledge is valid and maybe as useful as that of a technical expert, and expertise emerges as a collective achievement.³⁶

Compelled by this means of engaging the city, we see an urban pedagogy as a kind of ‘training’ for the practice of such an approach, in which ‘hybrid forums’ coalesce around design research projects and where an experimental attitude is fostered. In the approaches to the City as a School we have described here, the ‘teacher’ sets up relationships through which a project is established. However, the teacher is not cast as the knowledge expert, instead the roles of teacher and student are hybridised, embarking on the project through social labour within an assemblage, we are together co-inquiring, making knowledge and invoking meaning.

SHARED UNCERTAINTY

Fariás and Blok note that occupying a contemporary state of shared uncertainty is at the core of the politics of technical democracy and the *raison d’être* of hybrid research forums.³⁷ Experiences of shared uncertainty in the urban realm often coalesce around matters of concern³⁸ where hybrid forums undertake the hard work of “un- and re-framing” techno-political issues in the city “according to their emerging sense of how experts fail to deal in satisfactory ways with the shared uncertainties of the urban.”³⁹ Generation Zero is an example of a hybrid forum in Aotearoa New Zealand, where youth, not normatively considered ‘experts’, have convened around climate change issues and the need to transition from a dependence on fossil fuels. This non-partisan youth-led organisation invites diverse solutions “from all backgrounds,”⁴⁰ and has gained considerable traction and political agency in re-framing and communicating the issues of carbon based transport in Aotearoa New Zealand.

In our urban pedagogy, an example of the fertile capacity of shared uncertainty is when the **Muddy Urbanism Lab** worked with the ecological restoration NGO Friends of the Whau. Together we convened a forum around our shared uncertainty in relation to ‘top down’ government’s capacity to imaginatively embark on caring for the river’s future in the face of complex and intertwined urban

impacts on the catchment. While we did not always agree, in the **Muddy Urbanism Lab** the open investigative approach, combined with the expertise of the students in imagining and imaging speculative or 'constructively unrealistic' propositions through various documents and models, was valued for opening future-oriented dialogues about the river.

In **Event Studios** shared uncertainty is palpable within student and staff groups. In these studios the value of the architectural render as a document of certain outcome quickly becomes anachronistic. As students engage with the contingencies of a public event outside the confines of the classroom, other documents take on more valuable rolls; documents which translate assembly systems into codes in attempts to manage the choreography of many parts and people, yet open to disruptions of weather, access, material constraints and competing interests. Such documents help the student-teacher-event management forums to 'un- and re-frame' the techno-social issues that inevitably arise in these projects. In such work, as Till notes, the tutor assumes a new role, no longer the "possessor and purveyor of power and knowledge," the tutor is cast as "one potentially fragile human among others, with past experience in coping with contingency as the main point of support to the students."⁴¹

MATERIAL POLITICS

Rather than operating in a purely philosophical, theoretical or policy domain, the dimension of material politics registers the materiality of objects of concern in the urban realm. Contemporaneous with 'vital materialism' and 'thing power',⁴² this aspect attempts to "bring things back into the picture of urban politics."⁴³ Fariás and Blok note here the need to "recognize the recalcitrance, contingency and indeterminacy of urban materialities, and the way this shapes and conditions urban-political conflict."⁴⁴

Such a close attention to 'urban things' is at the core of this urban pedagogy. Using critical mapping as a means of inquiry, the **Muddy Urbanism Lab** immersed students and staff in the materialities of the river catchment. A proposal to address the interstitial space of the river bank grew from an 'up-close piecing it together' approach, whereby dumped rubbish was closely recorded and described through its incidents, variety and placement in relation to the height, materiality and

location of differing boundary fences. From this detailed recording a proposition was made for different kinds of adjacencies and neighbourhood spatial relations to the river, addressing the conflict between the needs of domestic space and the degradation of the river. The **Muddy Urbanism Lab** found other recalcitrant, contingent and indeterminate urban materialities and imagined their potential 'plugged into' other assemblages and producing alternate urban politics; long concrete driveways recast as suburban social spaces, mangroves considered as energy supply, submerged shopping trolleys as reef structures supporting oyster beds, power pylons re-deployed as infrastructure for neighbourhood-scale solar farms, and in one particular site, the presence of ponies, radio controlled model cars and skateboarders as indicative of forms of 'industrial recreation', ill-suited to the inner city but perfectly attuned to this specific river-side light industrial suburb.

In the most recent **Event Studio** the agency of materials became a central challenge, especially in relation to transport and afterlife. Students produced agential effects through a series of light-weight wearable furniture items which were eagerly adopted by the event public. Made by adapting readily-sourced components (buckets, hula-hoops and night lights) the furniture generated intimate conversational spaces for strangers to meet within the broader public realm. These items have successfully found an afterlife in the ownership of a Steiner school, who plan to use them in support of their annual fundraising fair. However, another aspect of the project, made from hundreds of CNC-cut Corflute parts, is proving a recalcitrant thing. A visual and performative success at the one-night-long event, and supposedly designed for re-use, this 'thing' has proved too complex for easy and ready re-assembly. With no future owner yet identified and with consignment to landfill ruled out on ethical grounds, this 'thing' remains stubbornly indeterminate.

COLLECTIVE EXPERIMENTATION

Callon, Lascoumes, and Barthe's depiction of technical democracy refers to processes of research 'in the wild', amidst real-world uncertainties and through collaboration between affected parties.⁴⁵ Through the shifting constituencies of urban 'hybrid forums', technical democracy is an inherently experimental process, where

urban collectives are convened and recomposed in partial and open-ended ways. Anyone who has belonged to a community advocacy group will know that aims and goals shift as knowledge is generated and group expertise is formed. There is often reluctance to arrive at final decisions as the emergent expertise necessitates an ongoing process of "new knowledge, voices, events and visions."⁴⁶ Fariás and Blok observe the performativity of such urban knowledge, whereby "knowledge production is never a purely descriptive or analytical practice, but has performative effects, that is, the capacity to (trans-)form the objects and subjects it refers to."⁴⁷ Such performative affects are at work in our urban pedagogy, as was indicated by the student quoted earlier, who acknowledged her own transformative subjectivity in 'making oneself vulnerable as a designer'. This performative effect is articulated by Elizabeth Grierson who, in considering creative practices as conditions of knowing and being says, "implicit in the process or events of knowing are inevitable reflections on processes of self-making through creative actions and activities as one is mediated by, and opens up to one's research process to the point that one 'becomes' a subject."⁴⁸ For Grierson, in the creative arts (and here we include designing and *architect-ing*) we work with materials, technologies and bodies to reveal something about the world and ourselves in the process.⁴⁹ This underscores a new attention to practice as a way of knowing, entailing a focus not on the realm of theory or ideas, but on the lived world, where knowledge has been out of sight, "hidden in the thick undergrowth of the everyday."⁵⁰ This shift in focus "relocates social agency in practice or performance rather than discourse."⁵¹

This is what we see happening through urban pedagogy. Through acting as an advocate in the **Muddy Urbanism Lab** or inhabiting one's installation with the public in an **Event Studio**, such processes of self-making occur. The contours of the roles of teacher, student, expert and colleague, and the situated places in power structures these imply, are unsettled in carrying out such urban pedagogies. An urban pedagogy that is inquiry-oriented, can and does have effects beyond the course's completion. The **Muddy Urbanism Lab** has led to the establishment of a hybrid collective growing beyond the limit of the studio. While the students who undertook this work are now graduates, their advocacy has led to the partnership between a community trust and Auckland Council for the realisation of a materially transformative project, a thirteen-kilometre river-side shared path

currently under construction. Here the urban pedagogy studio is truly performative, even if its action is only to stimulate or initiate an external project.

Importantly then, this urban pedagogy is preparing students not for the realm of the architect as the transcendent expert, dropped into a situation with their complete 'property' of disciplinary knowledge,⁵² but rather for the more messy and open ended 'design researcher' roles many in the field of architecture are now occupying and describing. In concert with Deamer's distributed and dispersed, collaborative and entrepreneurial, knowledge-based and opensource, specialised and flexible architectural worker, Awan, Schneider and Till advocate for an 'expanded architectural intelligence' with the intent to "posit a much richer set of activities that give new scope, and hope, for architectural activity."⁵³ It is this richer set of activities that an urban pedagogy fosters. Such expanded bodies of knowledge might be cultivated and convened through opening pedagogy (and practice) to the hybrid forums Fariás and Blok describe and through understanding design research pedagogy as a transformative process, even a 'wild' process, not easily captured in the pre-determined learning outcomes and course metrics that universities often prefer.

CONCLUSION

The City as a School, such as we have described it here, is counter to the one-size-fits-all direction in which many universities are currently travelling.⁵⁴ In the contemporary university, learning generally takes place apart from the world, it is broken into discrete moments of individual assessment, tested against rubrics of pre-determined criteria, quantified and 'managed' via learning management software. This model of pedagogy is by nature risk averse and does not sit easily with the "radically uncertain situations" that we seek in an urban pedagogy.⁵⁵ Such a pedagogy also neglects current understandings of the bond between learning, emotion and affect. Those who champion the development of a more locally inflected 'situational intelligence' (as is emerging through an urban pedagogy) tell us that "students and teachers think more effectively in the context of a community—as opposed to a collection of separate individuals,"⁵⁶ and that "what motivates students to persist with difficulties are the positive emotions arising from 'affiliation' or belonging."⁵⁷ Tied to this, as Latour notes, a public only forms around



09: Collected projects in 'Skyrise City', a one-night-only city produced for Auckland Architecture Week.
 10: Installation for the Rugby World Cup Fan Trail, Event Studio, Auckland, 2011, tutor Mike Davis.
 11: Installation 'Luxcity', providing the first public access to the post-quake city center. Produced during an Event Studio for FESTA, Christchurch, 2012, led by Uwe Rieger, tutor Craig Moller.
 12: Event Studio 'City Ups', post-quake red zone, part of FESTA, Christchurch, 2014, led by Uwe Rieger.

a concern or interest.⁵⁸ A public forming around the Whau river (that can also continue forming beyond the studio) is very different than the limited publics that form in individualised studios and their moments of the architectural critique and assessment.

Despite the employment risks and bureaucratic difficulties that crop up in disrupting the structures and temporalities of the normative university education model,⁵⁹ the approaches to an urban pedagogy we are developing are effective in coalescing communities of praxis; students and teachers become affiliated with each other in pursuit of the project at hand and in company with the many other associated groups, publics and individuals engaging with our work. If we subscribe to a view of the contemporary urban realm as one of assemblage and emergent technical democracy (as sketched by Farias and Blok) then as architectural educators we are obligated to develop design research pedagogies that attend to the dimensions of shared uncertainty, material politics and collective experimentation. We must also recognise and tap into the performativity of knowledge, and the fluid subjectivity and forms of collective expertise found in 'hybrid research forums'. Developing an urban pedagogy, that treats the City as a School, is a move towards this.

NOTES

- 01 The phrase 'the city as a school' has been used by other authors, for example in McLuhan, Hutchon and McLuhan's book *The City as Classroom* which expands on Marshall McLuhan's argument that "the amount of information that is embedded in young minds per minute outside the classroom far exceeds anything that happens inside the classroom." McLuhan, Marshall. 1966. "Electronics & the Psychic Drop-out." *THIS Magazine is about SCHOOLS*, Vol.1, No.1 (April), p.38. See also: McLuhan, Marshall, Hutchon, Kathryn, and McLuhan, Eric. 1977. *City as Classroom: Understanding Language and Media*. Agincourt, ON: Book Society of Canada.
- 02 Deamer, Peggy. 2015. *The Architect as Worker: Immaterial Labor, the Creative Class, and the Politics of Design*. London and New Delhi: Bloomsbury, p.72.
- 03 Deamer, Peggy. 2015. *The Architect as Worker*, p.72.
- 04 Awan, Nishat, Schneider, Tatjana and Till, Jeremy. 2011. *Spatial Agency: Other Ways of Doing Architecture*. Abingdon & New York: Routledge, p.32.
- 05 *Muddy Urbanism* was instigated as part of 'If you were to live here . . .' the 5th Auckland Triennial (Auckland Art Gallery 10th May – 11th August, 2013) with architect/activist Teddy Cruz (Professor of Public Culture and Urbanization in the Department of Visual Arts at the University of California, San Diego), and from the University of Auckland Kathy Waghorn, graduate teaching assistant Esther Mecredy, independent researcher Nina Patel and post-graduate students Herman Haringa, Raimana Jones, Chia Venn Khoo, Sophia Whoi Seung Kim, Antonia Lapwood, Zee Shake Lee, Steven Lin, Vinni Paget, Hannah Ryan and Angela Yoo. It included discussions with guests Robyn Mason (historian), Marcus Williams (curator of the Rosebank Project), staff from Auckland Council and from the following NGOs: the Whau River Catchment Trust, Friends of the Whau, Sustaining Our Streams, Ecomatters and the Keep Waitakere Beautiful Trust.
- 06 Event studios have been led by Uwe Rieger (2011, 2013, 2014) and Kathy Waghorn (2009, 2010, 2012, 2018). University of Auckland staff have included: Mike Davis, Chris Holmes, Anna Tong, Rob Aerts, Jennie Aerts, Nina Patel, Judy Cockeram, Cameron Rowe, Kate Rogan, John Hayden, Sou Muy Ly, Jessica Knight, Harriet Richards, Andrew Johnston, Jessica Barter, Michael O'Sullivan, Sue Hillery, Graham Burgess and Craig Moller. The studios have contributed to public events such as FESTA (Christchurch), Auckland Architecture Week and the 2014 Rugby World Cup (Auckland).
- 07 Fariás, Ignacio. 2011. "The Politics of Urban Assemblages," in *City*, Vol.15, No.3-4, p.368.
- 08 Fariás, Ignacio. 2011. "The Politics of Urban Assemblages," p.369.
- 09 Fariás, Ignacio. 2011. "The Politics of Urban Assemblages," pp.365-74.
- 10 See Fariás, "The Politics of Urban Assemblages," in which Stengers' "The Cosmopolitical Proposal" and Latour's Politics of Nature are frequently cited (Stengers, Isabelle. 2005. "The Cosmopolitical Proposal" in Bruno Latour and Peter Weibel (eds.), *Making Things Public*. Cambridge, MA: MIT Press. Latour, Bruno. 2004. *Politics of Nature: How to Bring the Sciences into Democracy*, trans. Catherine Porter. Cambridge, MA: Harvard University Press).
- 11 DeLanda, Manuel. 2006. *A New Philosophy of Society: Assemblage Theory and Social Complexity*. London and New York: Continuum, p.10.
- 12 DeLanda, Manuel. 2006. *A New Philosophy of Society*, p.5.
- 13 Blok, Anders, and Ignacio Fariás. 2016. "Technical Democracy as a Challenge to Urban Studies: Introduction," in *City*, Vol.20, No.4, pp.539-48.
- 14 Fariás, Ignacio. 2011. "The Politics of Urban Assemblages," p.372.
- 15 Dewey, John. 1918. "Philosophy and Democracy," *University of California Chronicle*, Vol.21, p.44, cited in Fariás, Ignacio, 2011. "The Politics of Urban Assemblages," p.372.
- 16 Specifically, 'critical urbanism' as defined by Neil Brenner, David Madden and David Wachsmuth that rejects Fariás' "more open" ontological proposition, arguing instead that any theory of the urban must understand the city as a structural effect of capitalism. See: Brenner, Neil, Madden, David and Wachsmuth, David. 2011. "Assemblage Urbanism and the Challenges of Critical Urban Theory," in *City*, Vol.15, No.2, pp.225-40.
- 17 Fariás, Ignacio. 2011. "The Politics of Urban Assemblages," p.366.
- 18 Fariás, Ignacio. 2011. "The Politics of Urban Assemblages," p.367.
- 19 Gibson-Graham, J. K. 2011. "A Feminist Project of Belonging for the Anthropocene," in *Gender, Place and Culture: A Journal of Feminist Geography*, Vol.18, No.1, pp.1-21.
- 20 Gibson-Graham, J.K. 2011. "A Feminist Project of Belonging for the Anthropocene," p.4.
- 21 Freire, Paulo. 2000 (1970). *Pedagogy of the Oppressed*, 30th Anniversary Edition. New York: Continuum, p.72.
- 22 Freire, Paulo. 2000 (1970). *Pedagogy of the Oppressed*, p.73.
- 23 Fariás, Ignacio. 2011. "The Politics of Urban Assemblages," p.372.
- 24 Turnbull, David. 2000. *Masons, Tricksters and Cartographers: Comparative Studies in the Sociology of Scientific and Indigenous Knowledge*. Amsterdam and Abingdon: Harwood Academic, p.13.
- 25 Turnbull, David. 2000. *Masons, Tricksters and Cartographers*, p.42.
- 26 Dunne, Anthony. 2018. "A Larger Reality," in Mullin, Mary V. & Frayling, Christopher (eds.), *Fitness for What Purpose: Essays on Design Education celebrating 40 years of the Sir Misha Black Awards*. London: Design Manchester/Eyewear Publishing. Available at: <<https://www.readingdesign.org/a-larger-reality>> (Accessed 29th January, 2020).
- 27 Dunne, Anthony. 2018. "A Larger Reality." Available at: <<https://www.readingdesign.org/a-larger-reality>> (Accessed 29th January, 2020).
- 28 Anonymous student reflection gathered as part of course evaluations.
- 29 Anonymous student reflection gathered as part of course evaluations.
- 30 Lefebvre, Henri. 1974. *The Production of Space*, trans. Donald Nicholson-Smith. Oxford: Blackwell, p.101.
- 31 The Festival of Transitional Architecture (FESTA) is a free public architecture festival in post-earthquake Christchurch that features a headline event where hundreds of architecture students from around New Zealand and Australia design and construct temporary pavilions to house a one-night street party. See <http://festa.org.nz>.
- 32 Callon, Michel, Lascoumes, Pierre and Barthe, Yannick. 2009. *Acting in an Uncertain World: An Essay on Technical Democracy*. Cambridge, MA: MIT Press. pp.18-19.
- 33 Fariás, Ignacio, and Blok, Anders. 2016. "Technical Democracy as a Challenge to Urban Studies," in *City*, Vol.20, No.4, p.546.
- 34 'Hybrid forums', described in STS studies by Callon, Lascoumes and Barthe, facilitate dialogue and "cooperation between specialists and laypersons", providing "visibility and audibility to emergent groups that lack a spokesperson." Callon, Michel, Lascoumes, Pierre and Barthe, Yannick. 2009. *Acting in an Uncertain World*, p.36.
- 35 Fariás, Ignacio and Blok, Anders. 2016. "Technical Democracy," p.542.
- 36 Fariás, Ignacio and Blok, Anders. 2016. "Technical Democracy," p.542.
- 37 Fariás, Ignacio and Blok, Anders. 2016. "Technical Democracy," p.544.
- 38 Noting Latour's use of the term 'matters of concern.' Latour, Bruno. 2004. "Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern," in *Critical Enquiry*, Vol.30, No. 2, pp.225-48.
- 39 Fariás, Ignacio and Blok, Anders. 2016. "Technical Democracy," p.544.
- 40 Generation Zero. 2011. 'About', *Generation Zero*, viewed 29th January, 2020, <<https://www.generationzero.org/about>>.
- 41 Till, Jeremy. 2012. "Resuscitating Architectural Education," in Melanie Dodd, Fiona Harrisson, and Esther Ruth Charlesworth (eds.), *Live Projects: Designing with People*. Melbourne: RMIT University Press, p.9.
- 42 As discussed by Jane Bennett in her 2010 book *Vibrant Matter: A Political Ecology of Things*. Durham and London: Duke University Press.
- 43 Fariás, Ignacio and Blok, Anders. 2016. "Technical Democracy," p.545.
- 44 Fariás, Ignacio and Blok, Anders. 2016. "Technical Democracy," p.545.
- 45 See: Callon, Michel, Lascoumes, Pierre and Barthe, Yannick. 2009. *Acting in an Uncertain World: An Essay on Technical Democracy*. Cambridge, MA: MIT Press.
- 46 Fariás, Ignacio and Blok, Anders. 2016. "Technical Democracy," p.546.
- 47 Fariás, Ignacio and Blok, Anders. 2016. "Technical Democracy," p.546.
- 48 Grierson, Elizabeth. 2009. "Ways of Knowing and Being: Navigating the Conditions of Knowledge and Becoming a Creative Subject," in Elizabeth Grierson and Laura Brearley (eds.), *Creative Arts Research: Narratives of Methodologies and Practices*. Rotterdam: Sense Publishers, p.17.
- 49 Grierson, Elizabeth. 2009. "Ways of Knowing and Being," p.18.
- 50 Cresswell, Tim. 2002. "Theorizing Place," in Tim Cresswell and Ginette Verstraete (eds.), *Mobilizing Place, Placing Mobility: The Politics of Representation in a Globalized World*. Amsterdam and New York: Rodopi, p.21.
- 51 Whatmore, Sarah. 2006. "Materialist Returns: Practising Cultural Geography in and for a More-Than-Human World," in *Cultural Geographies*. Vol.13, p.603.
- 52 Lefebvre describes architects, among others, as specialists with "carefully drawn property lines" who "view social space through the optic of their methodology and their reductionist schema." Lefebvre, Henri. 1974 (1991). *The Production of Space*, p.108.
- 53 Awan, Nishat, Schneider, Tatjana and Till, Jeremy. 2011. *Spatial Agency: Other Ways of Doing Architecture*, p.30.
- 54 This changing academic culture is outlined by Berg and Seeber who note the rise in contract positions, expanding class sizes, increased use of learning management technology, downloading of clerical tasks on to faculty and the shift to managerialism as aspects that distinguish the 'corporatisation' of the university. See: Berg, Maggie and Seeber, Barbara K. 2016. *The Slow Professor: Challenging the Culture of Speed in the Academy*. Toronto and London: University of Toronto Press, p.3. For this overview they draw on a number of researchers in this area including Collini (2012), Donoghue (2008), Ginsberg (2011), and Washburn (2005).
- 55 Fariás, Ignacio. 2011. "The Politics of Urban Assemblages," p.367.
- 56 Berg, Maggie and Seeber, Barbara K. 2016. *The Slow Professor*, p.39.
- 57 Berg, Maggie and Seeber, Barbara K. 2016. *The Slow Professor*, p.39.
- 58 Latour, Bruno. 2004. "Why Has Critique Run Out of Steam?," p.237.
- 59 A number of these risks and difficulties, as well as the very real rewards, are traversed in Harriss, Harriet and Widder, Lynette. 2014. *Architecture Live Projects: Pedagogy into Practice*. Abingdon and New York: Routledge; and Dodd, Harrisson and Charlesworth. 2012. *Live Projects: Designing with People*. Melbourne: RMIT University Press.

FIGURES

All of the drawings and photographs included in this piece were either produced by the authors or by participants in the various studios noted. All images are reproduced with permission.

Campbell Drake

THE ACCUMULATION OF CYCLICAL OPERATIONS

09

The online version of this article can be found at:
<http://drawingon.org/uploads/papers/IS03-09_200811.pdf>

Campbell Drake

THE ACCUMULATION OF CYCLICAL OPERATIONS

ABSTRACT

The Accumulation of Cyclical Operations examines how site-specific performances can activate engagement with the spatial politics of contested Australian landscapes. It describes a series of iterative performances situated in contested spatial contexts, each centred on the semiotic potential of pianos as cultural artefacts of European origins. Emerging from the iterative project work are a series of three operations: *Spatial Inversions*, *Instrumentalising* and *Spatial Tuning*. Synthesised as a concluding performance within Melbourne's decommissioned H.M. Pentridge Prison, the research offers this combined set of operations as a methodological contribution to the field of critical spatial practice, with capacity to activate new spatio-political formations and to critically engage in the spatial politics of contested landscapes.

BIOGRAPHY

Educated in Australia and the UK, Campbell Drake is an architect, researcher and a senior lecturer in the School of Architecture at the University of Technology Sydney. His research is focused on intercultural creative practice and participatory design strategies for sustainable development within regional contexts. Drake has completed a PhD in the School of Architecture and Design at RMIT University and holds a Masters of Research Architecture from Goldsmiths University, University of London. Recent publications include Curatorial Design at the Cultural Interface: Mapping Culpra Station, *Curator Journal* (2019), Spatial Tuning, Performance, the Piano and the Spatial Politics of Waste Management, *SOPHIA Journal* (2018) and Instrumental: Performance and the Cumulative Potential of Distributed Sites published in *OAR: The Oxford Artistic Research Journal* (2017).

PROJECT 01: DURATION.



This design research examines how site-specific performance can activate engagement with the spatial politics of contested landscapes through a series of iterative performances situated in various Australian contexts, each centred on the semiotic potential of the piano as a cultural artefact of European origins.

Originally focusing on iconic architectural spaces, the research evolved through two phases of project investigations. **Phase #01_Urban Landmarks**, begun in 2012, explores two nineteenth century landmark buildings; Melbourne's Flinders Street Station ballroom (*Duration*) and the Princess Street Theatre (*The Princess Theatre Inversion*). **Phase #02_Contested Australian Landscapes** engages with the spatial politics of Hobart's municipal rubbish dump (*Spatial Tuning*) and on a property acquired by the Indigenous Land Corporation as part of a land bank established for Aboriginal people (*Instrumental*).

Consistent throughout is an exploration of the performative relations between spectatorship, action, and spatial contexts. Emerging from this iterative project work are three operations: *Spatial Inversions*, *Instrumentalising* and *Spatial Tuning*. Synthesised as a concluding performance in Melbourne's decommissioned Pentridge Prison, these operations are offered here as a methodological contribution to the field of critical spatial practice,^[01] with the capacity to activate new spatio-political formations and to critically engage in the spatial politics of contested landscapes.

**PHASE #01 _ URBAN LANDMARKS, PROJECT 01:
 DURATION**

Flinders Street Station is located in Melbourne on the corner of Swanston and Flinders Street. Running parallel to the Yarra River, the station covers two city blocks from Swanton Street in the North to Queen Street in the South. The Station serves the entire metropolitan rail network, including suburban and regional rail services, and is the busiest station in Melbourne, with over 100,000 entries per weekday.⁰² Listed on the Victorian Heritage Register, Flinders Street Station was the first railway station in an Australian city and in the late 1920s was the world's busiest passenger station. The main station building, with its prominent dome, arched entrance, tower, and clocks was completed in 1909 and is a Melbourne cultural icon, and one of the city's most recognisable landmarks.⁰³ In the early 1900s, in addition to acting as Victoria's largest transport hub, the station was a hive of public activity, incorporating a ballroom, gymnasium and kindergarten. Following privatisation in the 1990s, almost half of the station complex had been cordoned off by 2012, and left to deteriorate. Of all these off-limit spaces, it is the ballroom that attracts public fascination. Since its conception as a concert hall in 1910, this space has hosted lectures, meetings, drama, opera, orchestra, and dance. Purpose built for performance, the ballroom's vaulted ceiling and double-glazed windows provide acoustics that are ideal for the performing arts.

In occupying the ballroom, *Duration* sought to reveal "the traces of people who have inhabited it in the past, the stories of partially erased or contested inhabitations – and to raise the issue of ownership."⁰⁴ According to Gay McAuley, "anyone setting out to make a site based performance must of necessity enter into negotiations with the owners of the site, those who currently occupy it, and those who have control over it,"⁰⁵ and in substantiating the performance design for *Duration*, Flinders Street Station was no exception. As we were the first group to be granted permission to use these spaces in nearly thirty years we had to factor in a number of contingencies. This constraint demonstrates that "a serious engagement with place necessitated by site based performance practice is likely to involve engagement with weighty matters which are themselves at the heart of major political conflicts."⁰⁶

Funded by the City of Melbourne public art commission, *Duration* took place in the Flinders Street Station ballroom on the evening of the 19th October, 2012. Two pianists, Elizabeth Drake and Caroline Almonte, gave a 90-minute performance of Simeon Ten Holt's *Canto Ostinato* performed on two grand pianos. Health and safety constraints prevented a public audience. In their place, a film crew broadcasted the performance from the ballroom to the Federation Square screen, to the internet, and via the public announcement system to the stations' thirteen platforms and public concourse. Through the inversion of conventional spatial arrangements between the performers and audiences, *Duration* temporarily enabled the reactivation of privatized public infrastructure, returning the ballroom to the public realm for the first time in 29 years.

**PHASE #01 _ URBAN LANDMARKS, PROJECT 02:
 THE PRINCESS THEATRE INVERSION**

The Princess Theatre is regarded as one of Melbourne's most spectacular landmarks. Opened in 1886 and designed in the style of the French Second Empire, the theatre has a symmetrical brick façade with three pavilion bays, each roofed with mansard domes crowned with elaborate cast iron crestings. The facade is adorned with urns, a frieze of festoons, and giant Corinthian pilasters and columns.⁰⁷ Re-appropriating this landmark, *The Princess Theatre Inversion* questions conventional socio-spatial structures by inverting the relationships between performers, audience and theatre, and exploring the activation of new socio-spatial formations by re-framing interactions between the piano as cultural artefact, an audience as community, and the Princess Theatre as an urban landmark.

Leading scholars writing on site-specific performances are quick to point out the limitations of engaging critically with the theatre;⁰⁸ however, *The Princess Theatre Inversion* contests this, and seeks to critique the proscenium theatre as a dominant site of cultural production. Rather than developing a narrative-based critique on stage with a live audience, the performance challenges the structure of traditional theatre space by destabilizing conventional social and architectural spatial relationships.

An invited audience of one hundred people were asked to queue up at the service entry on Little Bourke Street.

At exactly 20:00, the side door opened, and the audience moved into the loading dock. The intention was for the audience, clustered together, to be aware of what Fischer-Lichtes refers to as emergent community through the corporeality of performance.⁰⁹ While the audience waited in the loading dock, an usher announced the commencement of the performance, and requested that everyone remain silent while entering the theatre. Moving through the oversized steel doors to stage right, the audience were guided through darkness towards a hundred blue seats lit from above, lightly obscured in stage fog. Filing into the rows and instructed to leave no free seats, the audience took their places. Once seated, the spotlight above the audience gradually dimmed, leaving the audience in complete darkness, unknowingly facing the empty auditorium of the Princess Theatre.

**PROJECT 02: THE PRINCESS THEATRE
 INVERSION.**



In the darkness, pianists Elizabeth Drake and Vanessa Tomlinson made their way to two grand pianos interlocked on stage right. Taking their cue from a second spotlight, the performers commenced a twenty-minute recital of Reich's *Piano Phase*. As the music progressed and phased, synchronised lighting gradually introduced the audience to the empty auditorium. The lush red velvet seating and crystal chandelier emerging from the darkness as a foggy apparition, hyper-real under full house lights. According to one audience member, the theatre "slowly revealed itself and its architectural form as well as its decoration. The lighting highlighted areas that you would usually ignore or consider as a given." "The music had the drowsy mania of bees," another noted, "the chandelier the honey from the roof of the hive caught in the suspended moment before the fall. A poem in seeing what was already there, till my eyes closed from the lushness of the empty theatre. I didn't feel like talking. Just walking in the dark."¹⁰ At the halfway point of the twenty-minute recital, the lighting sequence was reversed, removing definition from the auditorium once again and submerging the audience into darkness, the musical and light sequence completing with the spotlight again over the audience.

THE THEATRE AND SPATIAL POLITICS

In actively engaging with the spatial politics of the proscenium theatre, *The Princess Theatre Inversion* sought critical insights into a dominant space of cultural production. Exposing conventional arrangements of human (audience) and non-human (space) participants

by inverting conventional spatial relationships between performers, audience and the architectural environment questioned the spatio-political formations of the theatre. This revealed that despite inverting the physical relations between stage, audience, performers and auditorium, normative behaviour within this context was unaffected. The audience adopted their usual passive role, only seated on stage. In surveys conducted after the performance, it was noted that while half the audience had previously attended the Princess Theatre, over half had no idea they were sitting on the stage.

By shifting customary access to the auditorium (from the front door of Princess Street to the service entry of Little Bourke), and removing the visual cues provided by exit lights (blacked out to create complete darkness), the audience was unable to locate themselves. Some noted that they thought the performance was a prank, and that they had been led into a warehouse adjacent to the theatre. Re-appropriating normative architectural cues in this way provoked a dissociative impulse and a feeling of disorientation.

In a post-performance survey, one audience member noted: "The performance provoked a sensory engagement in which the architecture became dynamic in the participation of space. The work provoked me to reflect on myself as though the theatre was reconstructed as having eyes."¹¹ This reference to the theatre as 'having eyes' resonates with Jacques Rancière's description of 'a third thing'.¹² Rancière writes: "It is not the transmission of the artist's knowledge or inspiration to the spectator, it is the third thing that is owned by no one, whose meaning is owned by no one, but which subsists between them."¹³ While Rancière's 'Emancipated Spectator' is focused on hierarchical relationships and issues of equality played out between spectators and performers, *The Princess Theatre Inversion* extends this relational concern through its emphasis on a third performative agent: the built environment.

The Princess Theatre Inversion provokes a spatial condition in which the performers, the theatre and the audience might experience each other anew. By assigning the built environment an active role, the assumption that architectural environments are passive, static, and immobile is questioned, re-framed by the viewers' gaze to produce a heightened present.¹⁴ By focusing attention on the empty auditorium and the pianists, the absence

that is the empty auditorium provokes a transformation in which spectators become aware of their own presence in relation to the performers, the audience and the built environment, or, as Gabriella Giannachi writes, "the listener is made to encounter what is in front or before them, so that they may become alert to what is around them... the subject relocates, re-presents in space and time in order to re-encounter themselves in the other or as the other."¹⁵

PHASE #02_CONTESTED AUSTRALIAN LANDSCAPES, PROJECT 03: INSTRUMENTAL

The piano and music selected in *Duration* and *The Princess Theatre Inversion* are recognisable as belonging to a canon of minimalist composition, associated with a certain type of formalised spectatorship. Confirming this mode of spectatorship, **Phase #01_Urban Landmarks** explored unconventional spatial configurations between audience, performers, and space, enabling an interruption of normative modes of audience engagement. This interruption is enhanced by informing the audience of certain elements in the event dramaturgy in advance, such as the music selection (Reich/Glass) or the way in which to enter the space (side entry/silence). This advance information provokes a preconception of the way in which a performance may be conducted. **Phase #01** sought to engage these preconceptions, then shift traditional modes of performance, forcing the audience to relocate themselves in relation to the performer, the space, and fellow audience members.

Through three regionally-situated piano experimentations, **Phase #02_Contested Australian Landscapes** sought to move away from the limited way in which *Duration* and *The Princess Theatre Inversion* engaged with the political implications of the piano. Working with these semiotic inflections, the projects in **Phase #02** actively engage with these implications in a variety of contexts, including the piano's implied relation to Australian colonial history and the ongoing impact of colonialism. Breaking out of the urban context of **Phase #01**, **Phase #02** explored contested Australian landscapes in Tasmania and New South Wales: a property acquired by the Indigenous Land Corporation as part of a land bank established for Aboriginal people for the project performance *Instrumental*; and Hobart's municipal rubbish dump for the project *Spatial Tuning*. These two projects develop

PROJECT 03: INSTRUMENTAL.



The placement of the piano inverts conventional tuning practice, repositioning pianist to piano (human to non-human) relations by assigning the environment (non-human) an active role in the tuning process.



A local piano tuner from Mildura, forty kilometers away, tunes the salvaged piano for thirty minutes (to the best of his ability) in the blazing midday sun.



As he toiled away, the piano resisted. It could not maintain harmony in a foreign environment. The concept of 'tuning space' emerges from the experience; the distance between passive spectators and constructed environments collapses, recalibrating the spatial temporal qualities of landscape.

a specific type of practice described by Jane Rendell as critical spatial practice—work that intervenes into a site in order to "critique and question" those "existing social and spatial orders" present.¹⁶ Extending the semiotic, spatial and performative potentials of the piano, they explore how site-specific performance can activate engagement in the spatial politics of contested Australian landscapes.

Instrumental, the first of three spatial investigations, engages with the semiotic resonance of the piano as a critical instrument in activating spatial politics. The performance took place in 2015 within the critical mapping workshop *Interpretive Wonderings*.¹⁷ *Instrumental* features a local tuner attempting to tune a broken upright piano outdoors on Culpra Station, on land intended to form part of a compensatory land bank for the dispossession of Aboriginal people. It provided an opportunity to explore the semiotic potential of the piano for engaging in the spatial politics of land, Indigenous Country and the ongoing impact of colonialism in Australia. The title of the work, *Instrumental*, is both a framing device and an operation. The operation of *Instrumentalising* actively engages with the spatial politics of Culpra Station through a sustained encounter with the spatio-temporal conditions of the duplicitous identity of a contested Australian landscape. *Instrumentalising* seeks to poetically problematize the instrumental logic of colonialism in Australia by reframing and assigning non-human agents an active role in the renegotiation and activation of new socio-political formations.

Reflected in the provenance of Culpra Station are traces of both Indigenous and non-Indigenous occupation and cultural practices dating back 20,000 years. The colonial and modern pastoralist histories have left some obvious marks on the land, including laser-levelled pastures, redundant irrigation channels, farming infrastructure, and the remnants of a former homestead. Alongside this pastoralist history, the land at Culpra Station has a number of significant Aboriginal historical and cultural sites, including burial sites, hearths, scarred trees, an ochre quarry, middens, and a fish trap.¹⁸ In making reference to the provenance of Culpra Station in relation to Indigenous and non-Indigenous ownership and demarcation, it is interesting to consider Paul Groth's assertion that "landscape denotes the interaction of people and place: a social group and its spaces, particularly the spaces to which the group belongs and from which its members derive some part of their shared identity and meaning."¹⁹

THE SEMIOTIC REGISTER OF THE PIANO

The first piano arrived in Australia in 1788 with the first fleet, and was once considered the cultural heart and soul of the colonial home. It occupied the parlour, “a place for families and their guests to gather, entertain and socialise, as well as a place to retreat into private solace.”²⁰ Historically an object of desire, status and ‘civilization’,²¹ pianos have in recent times been replaced with alternate forms of screen-based entertainment, including television, personal computers and smart phones.²² Whilst we might imagine the piano’s place in the modern home has become redundant, and indeed these instruments are often gifted for free,²³ the symbolic recognition of the piano in Australia as part of a western cultural heritage has remained intact, with a perceived identity that is tied to a British colonial past.²⁴

The move from iconic architectural spaces, purpose built for performance, to a landscape setting marked a methodological shift in this work, affecting both the type of piano selected and the mode of pianist-to-instrument interaction. The pianos selected for *Duration* and *The Princess Theatre Inversion* were concert grand pianos, upon which formal recitals were played by professional musicians. Moving from the environmental and political context of an urban to a rural setting, from controlled interiors to an externalized landscape condition, necessitated a shift from grand pianos to salvaged upright pianos, and in the mode of interaction with the piano from formal recital to a staged tuning. While it cannot be denied that certain pragmatic concerns influenced these decisions—availability, cost, permissions, and the logistics of transporting a grand piano to a remote region— this shift from grand to upright piano was also intended to highlight the spatial conventions associated with types of piano. The symbolic register of piano types and forms in relation to particular historical lineages is made clear in this shift; the grand piano as associated with cultural institutions of high art becomes clearly distinct from the upright piano found in more informal, domestic environments.²⁵ The formal, rehearsed performance of the ballroom or theatre gives way to the practiced negotiations between the piano and tuner, problematised and at once extended by demanding that instrument and actor also engage with the immediate environment.

INSTRUMENTAL: THE EVENT

Instrumental was staged in an area of Culpra Station dominated by a ghostly forest of dead gum trees, which had suffered in the state-wide drought of the early 2000’s. By situating the piano on the black soil surrounded by gnarled trees, I hoped to invoke a dialogue between the piano and environment of Indigenous Country in which the piano becomes vulnerable, poised to be subsumed by the Australian landscape. I commissioned a piano tuner from Mildura, forty kilometres away, to tune the salvaged piano on site for thirty minutes, to the best of his ability, in the blazing midday sun. The instrument had not been played in over fifty years, and had a cracked sound board. The act of tuning and tightening strings only put additional pressure on the internal mechanisms, which slid in and out of tune as the tuner moved through the keys. As he toiled away, the piano resisted. It denied its new situation, and could not maintain harmony in a foreign environment.

Swatting flies from their eyes, a small party of silent onlookers took shelter in the shade of nearby vehicles. One unfortunate spectator sitting on an ants’ nest suppressed the urge to call out and disturb the meditative space produced as the tuner went about his futile task. The act of tuning could be conceived as re-enacting a colonial preoccupation with dominating land that was perceived as a hostile, harsh and foreign environment. In *Instrumental*, the tuner, a solitary figure in the landscape, is not a recognised “noise musician” or “sound performer” but becomes an almost absurd caricature of his colonial forbears. But more than this, the placement of the piano outdoors not only inverts conventional tuning practices, repositioning pianist-to-piano (human-to-non-human) interaction by assigning the environment (non-human) a more active role in the tuning process, it offers the landscape (or Country) a chance to be made manifest through the instrument. As one audience member observed, *Instrumental* “produced a space of meditative contemplation” in which “the act of tuning the piano allowed the landscape to speak through the instrument as the piano was tuned to the wind and the birds.”²⁶

Through tuning, the sonic and spatial qualities of a once-subjugated landscape – the acoustic ecology within which the tuner recalibrates the instrument – is given presence. The act of tuning the piano outdoors is therefore both a satirical commentary on the colonial desire to control the harsh landscape and conditions presented by Australian



Tuning re-enacts the colonial preoccupation with fighting what was perceived as a hostile, foreign environment.



As the tuner played and tuned each of the notes, the sounds of the landscape were seemingly amplified as a form of symphonic accompaniment.

PROJECT 04: SPATIAL TUNING.



Situated between environmental extremes of human consumption and natural landscape, the different sonic and visual frequencies combined to reveal the anthropocentric nature of contemporary society.



environments, and a means of highlighting “the duplicity of landscape,” “the tension between thing and idea-matter and meaning, place and ideology.”²⁷

PHASE #02_CONTESTED AUSTRALIAN LANDSCAPES, PROJECT 04: SPATIAL TUNING

The operation of *Spatial Tuning* emerged from the experience of conducting research in a specific place/space in the performance *Instrumental*. The distance between passive spectators and constructed environments collapsed, provoking an active engagement in the spatio-temporalities of the Australian landscape. Following *Instrumental*, a fourth performance entitled *Spatial Tuning* took place at a municipal landfill site in Hobart, Tasmania.²⁸ *Spatial Tuning* involved a second staged piano tuning, this time at the contested boundary between the Mount Wellington National Park and the McRobies Gully Waste Recycling Centre. In shifting emphasis from Indigenous to environmental politics, *Spatial Tuning* sought to explore the contingencies of different spatial contexts on the symbolic resonance of the piano.

On a cold winters day in June, 2016, an audience of eighteen people made up of members of the Performance Studies international (PSi) Performance + Design Working Group arrived at a predetermined meeting place at the top of the McRobies Gully southern escarpment. We set off down the road and up the fire break. I located the walking track and passed along the ridge and through a burnt-out patch of eucalyptus forest. Coming to a marker, we veered right, leaving the path and heading down the ridge. At this point, I realised the difficulties some audience members were having descending the hillside on an unmarked track, but we continued, picking our way through broken branches and the litter of the forest floor. From the valley floor, the sound of heavy vehicles could be heard dropping off and working piles of rubbish. As we moved closer to the site, we heard the sound of crows and notes from a piano being tuned in the distance.

Twenty chairs had been arranged in close proximity to the piano tuner, who sat with his back to the audience overlooking McRobies rubbish dump, framed by the forest of Mount Wellington National Park in the distance. The piano was perched against a gate next to a sign which read

'No Unauthorized Entry – Trespassing Prohibited' in bold red text.

Like *The Princess Theatre Inversion*, the audience were instructed to file into the seating without leaving a space. The ground was muddy, and the legs of the chairs slowly sank into the ground. To the right of the piano, in the middle distance, was the tip face, where an excavator picked at the rubbish next to a man unloading building waste. Their activity disturbed flocks of seagulls and crows eating at the tip face who took to the air in waves, like plumes of black and white smoke. For thirty minutes the audience sat, listened and observed the piano tuning, the machines of the tip, and the birds.

TUNING (IN)

Providing a theoretical framework for *Spatial Tuning*, the term 'tuning' is presented as a concept, a process and a framing device. While the common definition of tuning—"the action or process of tuning something and the extent to which a musical instrument, performance, or ensemble is in tune"—is at the centre of the performance, a secondary definition of 'tuning', to "adjust or adapt (something) to a particular purpose or situation," is equally relevant.²⁹ The 'something' that is adjusted or adapted within the performance is both the piano and the spatial context; the 'purpose' is to bring an audience into close proximity with the adulterated landscape; and the 'situation' is the environmental impact of human consumption. So too, the notion of being 'tuned in', of being "sensitive to or able to understand something," and 'tuning into', or "becoming sensitive to," resonates with the aim of the performance: exposing normally passive spectators to the environmental and spatio-temporal conditions of a landscape.

The reflections of the spectators described how *Spatial Tuning* as an operation fostered new perceptions of the relationships between landscape and bodily absence, enabling close encounters with previously distanced landscapes. One response noted that the performance "attuned us to that which was out of tune with the natural environment," while making them "more attuned to a certain theatrics of an environment simultaneously in and out of tune."³⁰ Others stated that "the performance invited us, the audience, to collaborate in attuning ourselves to the contested location of the tip," and that the overall

perception was "more of being the thing being tuned." Seeking to explore how the audience perceived the role of the landscape I asked if they considered the landscape to have performed. The answers were unanimously affirmative, however the ways in which the landscape was perceived to have done so varied. One audience member suggested that the landscape was "an immersive and troubled player," while another thought "the (problematic) spatial and performative agency of the tip was amplified/intensified through the piano tuning and collective witnessing." Another audience response reframed the landscape as a fragmented, pluralistic and performative condition, stating: "I think it (the landscape) exists on many levels. It is the naturally occurring landscape of the park, but it also contains the human interventions of the tip." Another noted, "In the moment, I sensed two landscapes: that of the tip and that of the forest surrounding it. The landscape as forest performed the wind and rustling. To me, the landscape under the tip was performed upon as though it was a body anesthetised and being cut into."

These responses perceive the landscape as dynamic; the national park and the rubbish dump are reframed by the viewers' gaze, temporarily collapsing the distance between spectator and environment. This 'collapsing' of audience and landscape through the performance facilitated a prolonged encounter with the rubbish dump at a proximity that is both uncommon and unfamiliar to contemporary society. The performance provoked a temporal disorientation in which a sense of being-present is intensified through a recalibration of normative modes of human and non-human interaction, of a coexistence which normally extends no further than discarding rubbish in a bin or putting bins out for collection. In redefining these normative modes, *Spatial Tuning* has the potential to open up a transformative encounter between the tuning, the landscape and the audience, in which the perception of the situated audience may oscillate from the meditative drone of the piano tuning to a renewed sense of embodied presence with the surrounding landscape.

By focusing on the rubbish dump and the piano tuning, *Spatial Tuning* sought to provoke a temporal transformation in which spectators become aware of their own presence in relation to the performance, the audience and the landscape. Using the post-performance surveys to qualify such a claim, I asked the audience if during the performance, whilst seated at the performance site, they imagined or 'projected' themselves into the tip



I sensed two landscapes: that of the tip and that of the surrounding forest, which performed the wind. The landscape of the tip was operated upon, as though it were an anesthetised body being cut.



In the middle distance was the tip face, where an excavator picked at rubbish and a man unloaded building waste. They disturbed flocks of birds eating at the tip face, who took to the air like plumes of smoke.



The piano was first tuned to 440 Hz (the frequency commonly used for contemporary orchestras) and then down to 432 Hz (a popularhistorical frequency). Tuning, in effect, became a turning back of the clock.

or the forest beyond, looking back at themselves seated in the audience?' One audience member responded: "I experienced my own presence and agency in the site sharply, because I was confronted with my own complicity... in the making of such spaces... the agency of making such [a] site-responsive performance is how it can amplify/intensify the politics of a specific location... mobilise a collective experience of witnessing — the tip became a shared location for participants to critically reflect on questions of environmental justice."³¹

PROJECT 05: THE ACCUMULATION OF CYCLICAL OPERATIONS

The spatial operations *Spatial Inversions*, *Instrumentalising* and *Spatial Tuning* which emerged from these two phases of iterative performances revealed a particular potential for performance to activate engagement in the spatial politics of contested sites of national significance. Consistent with the practice-led mode of enquiry, a final summative performance was undertaken to draw together these operations, to explore the potential of these accumulating cyclical operations for a critical spatial practice. This performance, entitled *The Accumulation of Cyclical Operations*, was staged on the morning of 18th October, 2017, in D-Division of the former HM Pentridge Prison complex in Coburg. Structured in two acts, *The Accumulation of Cyclical Operations* offers an intensification of the previous research and performances through an embodied encounter with the critical spatial operations of *Spatial Inversions*, *Intrumentalising* and *Spatial Tuning*.

Nicknamed the 'Bluestone College', Her Majesties' Pentridge Prison was established in 1851 in response to increased pressure on the penal system arising from the gold rush. According to the Victorian Heritage Register, the former prison buildings are of historical significance as the biggest prison complex built in Victoria in the nineteenth century, and of architectural significance due to their monumental size and the austere 19th century Classical style of their grim and imposing bluestone walls and towers. In 1924, Pentridge replaced the Melbourne Gaol as the main remand and reception prison for the metropolitan area. The bodies of a number of prisoners executed at the Melbourne Gaol were exhumed and relocated to Pentridge, where they were reburied. Pentridge also became the venue for all subsequent

hangings, until the last Australian prisoner to suffer the death penalty, Ronald Ryan, was executed in D-Division in 1967. HM Pentridge Prison officially closed in 1997, following the transfer of most of the prisoners to Barwon Prison.³² In line with the 1990's trend for privatization, the land was released for development. D-Division is a three-storey blue stone building located on the southern edge of the former prison complex. Constructed in 1894 as a women's prison, the building became dedicated to remanding prisoners in 1956 until it closed in 1999. Relocated from the Old Melbourne Gaol, and still intact within D-Division, is the infamous hanging beam.

Entering the building for the first time during a preliminary site visit in 2017, D-Division struck me as the most disciplining kind of architecture, through "its expression of the requirements of containment and order."³³ The Victorian architecture struck me as both inhumane and ethereal, with its long central axis, central crossing, and three-storey vaulted ceiling lit by clerestory windows, washing the internal atrium with a church-like atmosphere. Set against this lightness, the weighty slabs of blue stone are skilfully laid throughout the ground floor. In each of the cramped cells is a single tiny window; with the knowledge that cells had been originally designed to house the inmates for a 23-hour day, the unattainable, light-filled void outside the prison doors was a constant, painful reminder of the outside world.

ACT 1: TUNING

The performance commenced at 05:45. An invited audience of fifty people were asked to assemble in the darkness at the front gates of HM Pentridge Prison. The audience was led to a prison yard where an upright piano had been positioned in front of a block of fifty deck chairs, all facing the prison wall. The yards had originally been divided into five sections, with a watch-tower located on the first floor of the main building as a kind of half-panopticon. In the twentieth century, with increased prisoner numbers and penal reforms that no longer permitted prisoners to be locked in their cells for twenty-three hours a day, these outdoor spaces were reconfigured into three larger yards by the removal of two sections of the original walls.

Despite the modifications, the yards were no less forbidding. On one side, the yard was enclosed by

formidable blue stone masonry three storeys high, punctuated with the tiny barred windows of the prison cells. Bounded by concrete walls adorned with razor wire and rusted metal spikes, the yards had a covered seating area and a decaying basketball hoop along one wall. The wall behind the piano was around five metres high, with the first four metres built of solid bluestone capped with a later addition of red brick. The piano had been salvaged from a group of local musicians who were moving house due to rental increases; while it was relatively in tune, the structural integrity of the instrument had been seriously compromised by termites that had hollowed out the timber base, which now appeared to be held together by the thin veneer of the piano's varnish.

Drawing on the *Instrumental* and *Spatial Tuning* performances, the audience were presented with a man tuning a piano. Taking their seats, the audience sat in silence, listening and watching the tuner go about his task. In a symbolic, material and sonic dialogue, the tuner sat facing away from the audience in close proximity to the bluestone and brick wall. In the early dawn, the sunrise gave orange highlights to a purple sky, and a fast wind in the troposphere blew clouds across the sky. Birds flew around in the breeze, and weeds popping through the concrete swayed. A beam of sunlight shot from the clouds, momentarily lighting a section of the razor wire with a distinct gold. The audience sat in a bus-like configuration, and while they were stationary the wind-directed movement above evoked a certain forward momentum, as though the tuner was driving the performance into and through the wall.

Through the non-musical, systemic atonal quality of the tuning the ear of the audience members dialled into both the discordant sound itself and the sounds of the prison yard, of the "constant, unnerving threat of violence as abhorrent and meaningless as humans are able to create" that still permeated that space.³⁴ According to one audience member: "We were in this courtyard environment which had the most disciplining kind of architecture, hard and arresting. The barbed wire at the top, the blank wall, and I felt like we were bound to these seats. It was an uncomfortable experience. But as the piece went on and it was quite mesmeric."³⁵

Understood through Murray Schafer's theory of acoustic ecologies—defined as a discipline studying the relationship mediated through sound between human

PROJECT 05: THE ACCUMULATION OF CYCLICAL OPERATIONS.



We were in this courtyard environment which had the most disciplining kind of architecture, hard and arresting. The barbed wire at the top, the blank wall, and I felt like we were bound to these seats. It was an uncomfortable experience. But as the piece went on and it was quite mesmeric.



The background keynotes of the first Act were defined by the morning bird song, the buzzing of insects, the wind, and the sound of mounting traffic in the distance. The foregrounded signal sounds were dominated by the acoustic discipline of tuning the instrument that really didn't want to be restrained.



beings and their environments—the performance brought background sounds or 'keynotes,' foreground sounds as 'signal sounds', and those sounds particularly regarded by a community defined as 'soundmarks' together in one performance.³⁶ Employing Schafer's terminology we see how the performance begins to express a particular locality and spatial identity through sound, to the extent that a site can be read and characterised by sound. The background keynotes of Act 1 were morning bird song, the buzzing of insects, the wind, and the sound of mounting traffic in the distance. The foreground signal sounds were dominated by the acoustic discipline of tuning the instrument that really didn't want to be restrained. The echoes and reverberations that reflected from the hard and arresting surfaces of the prison yard were amplified by the bluestone and concrete before they escaped and were whisked away by the turbulent air above. Together, this ecology of sound reveals tensions latent within the space of the prison yard, but also the possibility of hearing a space in a way that unsettles these tensions, that situates space and politics within a landscape, no matter how visually remote.

ACT 2: PHASING

After being seated for twenty minutes, the daylight in the courtyard had brightened considerably, and the audience was encouraged to move back into the building for the second act. On the ground floor inside D-Division, two pianists sat in position at two interlocked grand pianos.

The participants filed into preconfigured seating beneath the octagonal atrium, on either side of the instruments. According to one audience member, the pianos were "hugged together with the lids propped up; they looked almost like insects in a kind of embrace ritual around one another."³⁷ The spectators were presented with clear views of the ornate Victorian skylight, from which light filtered down through the suspended corridors on the two levels above. From one side, the hanging beam was clearly visible, overlooked by a fortified observation box that sat awkwardly at the eastern end of the atrium. On the opposite side, behind the second group of audience members, thick metal bars and a padlocked gate cordoned off half the complex. Once seated, a minute's silence was held, while the audience listened to the continued tuning in the courtyard outside, now accompanied by morning song echoing from the birds roosting in the skylight above.

Breaking the silence, the pianists commenced a 25-minute recital of Steve Reich's *Piano Phase*. Written in 1968, *Piano Phase* is a minimalist composition that is commonly referred to as 'process music'. According to Reich, process music is defined "as pieces of music that are, literally, processes;" he writes: "the distinctive thing about musical processes is that they determine all the note-to-note (sound-to-sound) details and the overall form simultaneously."³⁸ Reich's phasing works generally have two identical lines of music, which begin synchronously, but slowly become out of phase with one another as one of them speeds up. In *Piano Phase*, Reich subdivides the work into three sections, with each section taking the same basic pattern, played rapidly by both pianists. The music is made up, therefore, by phasing the initial twelve-note melody.³⁹ Reich called the unexpected ways change occurred via the process 'by-products', formed by the superimposition of patterns. The superimpositions form sub-melodies, often spontaneously due to echo, resonance, dynamics, and tempo, and the general perception of the listener.⁴⁰

Once seated for Act 2, the defining keynotes shifted to the single notes of the prison yard tuning accompanied by the morning bird song above. For twenty-five minutes of the second act, the audience were drowned in the signal sounds of *Piano Phase* that, according to one audience member, began to "transform the interior" through a "complete inversion, where I suddenly saw the piano as something different, and the human interaction with the piano suddenly became this moment of freedom where the acoustics were liberated by that interaction."⁴¹

This audience account registers a *Spatial Inversion* that was potentially caused by the sonic, material and spatial phasing between the outdoor piano tuning and the indoor recital. The audience, I suggest, in phasing between the spaces of confinement was first attuned to the single notes of the upright piano, and subsequently—despite their relocation for the recital of Act 2—remained attuned to these original environmental sounds. This provoked a cross referencing between instruments and the sonic practices presented within each act.

By phasing between the highly orchestrated, disciplining interior space of the abandoned prison and the exposed prison yard, where the tuner battled the decrepit piano, wind and non-human actants, the performance evoked resonances of "disciplinary and knowledge practices

between ongoing colonial regimes and Indigenous Australians"⁴² perhaps provoked by an awareness of the disparity between Indigenous and non-Indigenous incarceration in Australia.⁴³

THE ACCUMULATION OF CYCLICAL OPERATIONS

While *Spatial Inversions*, *Instrumentalising* and *Spatial Tuning* have been described separately and sequentially, their formation was by no means linear or independent. Rather, these operations run through the projects, resurfacing and recombining in cumulative and cyclical ways.

Informed by the reflective and iterative processes specific to artistic and practice-based research, the different performance sites overlap to create a discursive framework that operates across traditional and non-traditional research platforms. Emerging from this discursive framework are different forms of knowledge that reach diverse audiences within academic and non-academic contexts. Each subsequent iteration provides opportunities for critical reflection informed by modes of interaction, engagement and spectatorship, suggesting that the efficacy of practice-based research is defined by the convergence of sites of research production and research output in a cumulative field of discursive operations.

The final summative performance—*The Accumulation of Cyclical Operations*—offers these cumulative cyclical operations as a set of working methods for activating critical engagements with the spatial politics of contested landscapes and sites. By actively engaging in the relations between aesthetic practices, human and non-human interaction, and spatial politics, *The Accumulation of Cyclical Operations* questions how performance and architectural practices can be used to understand the issues of "how we are positioned at the interface of different knowledge systems, histories, traditions and practices."⁴⁴

The act of accumulating these conceptual operations of *Spatial Inversions*, *Instrumentalising* and *Spatial Tuning* within one site provides insights into the limitations of traditional architectural and musical practices to control the dynamics of 'natural' environmental systems. Through an active engagement with the spatial politics of this



the tuning of the colonial instrument outdoors within the prison yard brought into focus the entanglement of Indigenous and western knowledge systems and disciplinary regimes.



By phasing between the interior of the abandoned prison and the yard, where a tuner battled against the decaying, decrepit piano, the swirling wind and non-human actants, the performance evoked resonances of 'disciplinary and knowledge practices between ongoing colonial regimes and Indigenous Australians.'



contested urban landscape, *The Accumulation of Cyclical Operations* reinforces a critical standpoint that seeks not only to reflect and describe our relation to the order of things as validated by western knowledge systems, but also to transform and imagine something different.



NOTES

- 01 The author draws on Jane Rendell's definition of 'critical spatial practice' with the aim of transgressing the limits of art and architecture to engage "with both the social and the aesthetic." See Rendell, Jane. 2006. *Art and Architecture: A Place Between*. London: I. B. Tauris.
- 02 "Train Station Patronage FY2008-2014" (XLS). Public Transport Victoria. 14 May 2015. Archived from the original on 30th March, 2016. Retrieved 1st November, 2016.
- 03 Davies, Jenny. 2009. *Beyond the Façade: Flinders Street, More than just a Railway Station*. Mt Macedon, Victoria: Publishing Solutions.
- 04 McAuley, Gay. 2005. "Site-Specific Performance: Place, Memory and the Creative Agency of the Spectator," *Arts Journal of the Sydney University Arts Association*, Vol.27, p.30.
- 05 McAuley, 2005, "Site-Specific Performance," p.30.
- 06 McAuley, 2005, "Site-Specific Performance," p.31.
- 07 Heritage Council of Victoria. 2008. *Victorian Heritage Database Report: Princess Theatre. Statement of Significance*. Available at: <https://vhd.heritagecouncil.vic.gov.au/places/805/download-report> (Accessed 14th July, 2020).
- 08 McAuley, 2005, "Site-Specific Performance," p.27.
- 09 Fischer-Lichte, Erika. 2008. *The Transformative Power of Performance: A New Aesthetics*. New York: Routledge.
- 10 Audience response, *The Princess Theatre Inversion* post-performance survey. May, 2014.
- 11 Audience response, *The Princess Theatre Inversion* post-performance survey. May, 2014.
- 12 Rancière, Jacques. 2011. *The Emancipated Spectator*. Translated by Gregory Elliot. London, New York: Verso, p.15
- 13 Rancière, 2011, *The Emancipated Spectator*, p.15.
- 14 Rancière, 2011, *The Emancipated Spectator*, p.15.
- 15 Giannachi, Gabriella. 2012. *Archaeologies of Presence: Art, Performance and the Persistence of Being*. London, New York: Routledge, p.56. See particularly Chapter 3: Environmental Presence.
- 16 Rendell, Jane. 2009. "Constellations (or the Reassertion of Time into Critical Spatial Practice)," in Cross, David and Doherty, Claire (eds.) *One Day Sculpture*. Bielefeld, Germany: Kerber Verlag, p.22. The performances extend Ross Bolleter's Ruined Pianos (2000) and Richard McLester's The Piano is the Sea (2008) which engage the politics of a given spatial context by leveraging symbolic connotations of the piano. See also Andrea Buttner's recent show, which speaks of pianos, destruction and masculinity: <http://en.artcontemporain-languedocroussillon.fr/evenement-939.html> (Accessed 3rd July, 2020).
- 17 The workshop Interpretive Wonderings emerged through discussions with Barry Pearce, Aboriginal Elder and secretary of the Culpra Mill Aboriginal Corporation, in which he expressed a desire to develop representations of Culpra Station expressing an Indigenous perspective of land and Country. See: Drake, Campbell and Gilbert, Jock. 2016. "Interpretive Wonderings." *Field Work : Unlikely Journal for Creative Arts*, Issue 2. Available at <https://unlikely.net.au/issue-2/interpretive-wonderings> (Accessed 3rd July, 2020); and Drake, Campbell. 2017. "Instrumental: Performance and the Cumulative Potential of Distributed Sites." *OAR: The Oxford Artistic and Practice Based Research Platform*, Issue 1, pp.96–110.
- 18 Environment and Heritage Management Plan (DRAFT), Culpra Station, NSW, 39-40. Prepared by Sunraysia Environmental. 2013.
- 19 Groth, Paul. 1997. "Frameworks for Cultural Landscape Study," in Groth, Paul and Bressi, Todd W. (eds.), *Understanding Ordinary Landscapes*. New Haven, CT and London: Yale University Press, p.1.
- 20 Wolfe, Jocelyn. 2016. "Pioneers, Parlours and Pianos: Making music, building a state in the Queensland bush," in *The Piano Mill Catalogue*, pp.9-11.
- 21 See Douglas Gordon's *The End of Civilisation*. Available at 'Art on Fire: Douglas Gordon's *The End of Civilisation*', *The Guardian* Tuesday 3rd July, 2012. Available at: <https://www.theguardian.com/culture/video/2012/jul/03/douglas-gordon-cultural-olympiad-video> (Accessed 3rd July, 2020).
- 22 The Australian Communications and Media Authority (ACMA) estimate 99% of Australian homes have a working Television set. See: ACMA. 2012. 'TV Sets in Australian Households.' Available at: <http://www.acma.gov.au/theACMA/Library/researchacma/Snapshots-and-presentations/tv-sets-in-australian-households-research-library-landing-page> (Accessed 18th March, 2018).
- 23 On the 3rd July, 2020, Gumtree listed eighty four free upright pianos available in Australia (https://www.gumtree.com.au/s-upright+piano+free/k0?sort=price_asc).
- 24 See Jane Champion's 1993 film *The Piano* (New Zealand: Jan Chapman Productions, CiBy 2000).
- 25 Wolfe, Jocelyn. 2016. "Pioneers, Parlours and Pianos," pp.9-11.
- 26 *Instrumental* post-performance survey (Response 23), November, 2015.
- 27 Chaudhuri, Una and Fuchs, Eleanor (eds.). 2002. *Land/Scape/Theatre*. Ann Arbor, MI: University of Michigan Press.
- 28 For details of *Spatial Tuning*, including audience reception, see: Drake, Campbell. 2018. "Spatial Tuning: Performance, The Piano and the Spatial Politics of Waste Management." *Sophia Peer Review Journal*, Vol. 3 Issue 01. Available at: <https://www.sophiajournal.net/sophia-3-spatial-tuning-by-campbell-drake> (Accessed 3rd July, 2020).
- 29 "tuning." Lexico.com. 2020. <https://www.lexico.com/definition/tuning>. 5th July, 2020.
- 30 *This and the following audience responses are taken from post-performance surveys conducted following the Spatial Tuning event in August, 2016 (Responses 8, 9, 11, 12, 16 and 24)*.
- 31 *Spatial Tuning* post-performance survey (Response 09), August, 2016.
- 32 Heritage Council of Victoria. 1998. *Victorian Heritage Database Report: HM Prison Pentridge*. Available at: <https://vhd.heritagecouncil.vic.gov.au/places/183557/download-report> (Accessed 5th July, 2020).
- 33 Heritage Council of Victoria. 1998. *Victorian Heritage Database Report: HM Prison Pentridge*. Available at: <https://vhd.heritagecouncil.vic.gov.au/places/183557/download-report> (Accessed 5th July, 2020).
- 34 Farley, Donavan. 2016. "10 Performances in Prisons That Matter." *Paste Magazine* (online), 24th March. Available at < <https://www.pastemagazine.com/music/10-performances-in-prisons-that-matter/>> (Accessed 5th July, 2020).
- 35 *The Accumulation of Cyclical Operations* post-performance survey (Response 28).
- 36 Schafer, R.M. 1977. *The Tuning of the World*, New York: Knopf, cited from Wrightson, Kendall. 1999. "An Introduction to Acoustic Ecology." *Journal of Electroacoustic Music*, Vol.12, pp.10-13.
- 37 *The Accumulation of Cyclical Operations* post-performance survey (Response 29), October, 2017.
- 38 Reich, Steve. 1968. "Music as a Gradual Process," reproduced in Reich, Steve. 2002. *Writings about Music, 1965–2000*, Paul Hillier (ed.). Oxford, New York: Oxford University Press, pp.9-11.
- 39 Reich, "Music as a Gradual Process," pp.34-36
- 40 Epstein, Paul. 1986. "Pattern Structure and Process in Steve Reich's Piano Phase," *The Musical Quarterly*, Vol.LXXII Issue 4, pp.494-502.
- 41 *The Accumulation of Cyclical Operations* post-performance survey (Response 30), October, 2017.
- 42 Nakata, Martin. 2007. *Disciplining the Savages, Savaging the Disciplines*. Canberra, ACT: Aboriginal Studies Press, p.12.
- 43 Indigenous representation within the prison system exceeds twenty eight percent, despite being only three percent of the Australian population. Korff, Jens. 2020. "Aboriginal Prison Rates." Available at: <https://www.creativespirits.info/aboriginalculture/law/aboriginal-prison-rates> (Accessed 5th July, 2020).
- 44 Nakata, 2007, *Disciplining the Savages, Savaging the Disciplines*, p.12.

FIGURES

Project 01: *Duration*. Flinders Street Station Ballroom, 2012, Photographs: Greta Costello. Reproduced with Permission.

Project 03: *Instrumental*, Culpra Station, 2015. Photographs: Greta Costello. Reproduced with Permission.

Project_05: *The Accumulation of Cyclical Operations*, HM Pentridge Prison, 2017. Photographs: Greta Costello. Reproduced with Permission.

All other images included in this piece were taken by the author.

ISSUE EDITORS

Konstantinos Avramidis
Sophia Banou
Chris French
Piotr Lesniak
Maria Mitsoula
Dorian Wiszniewski

CONFERENCE ORGANISERS

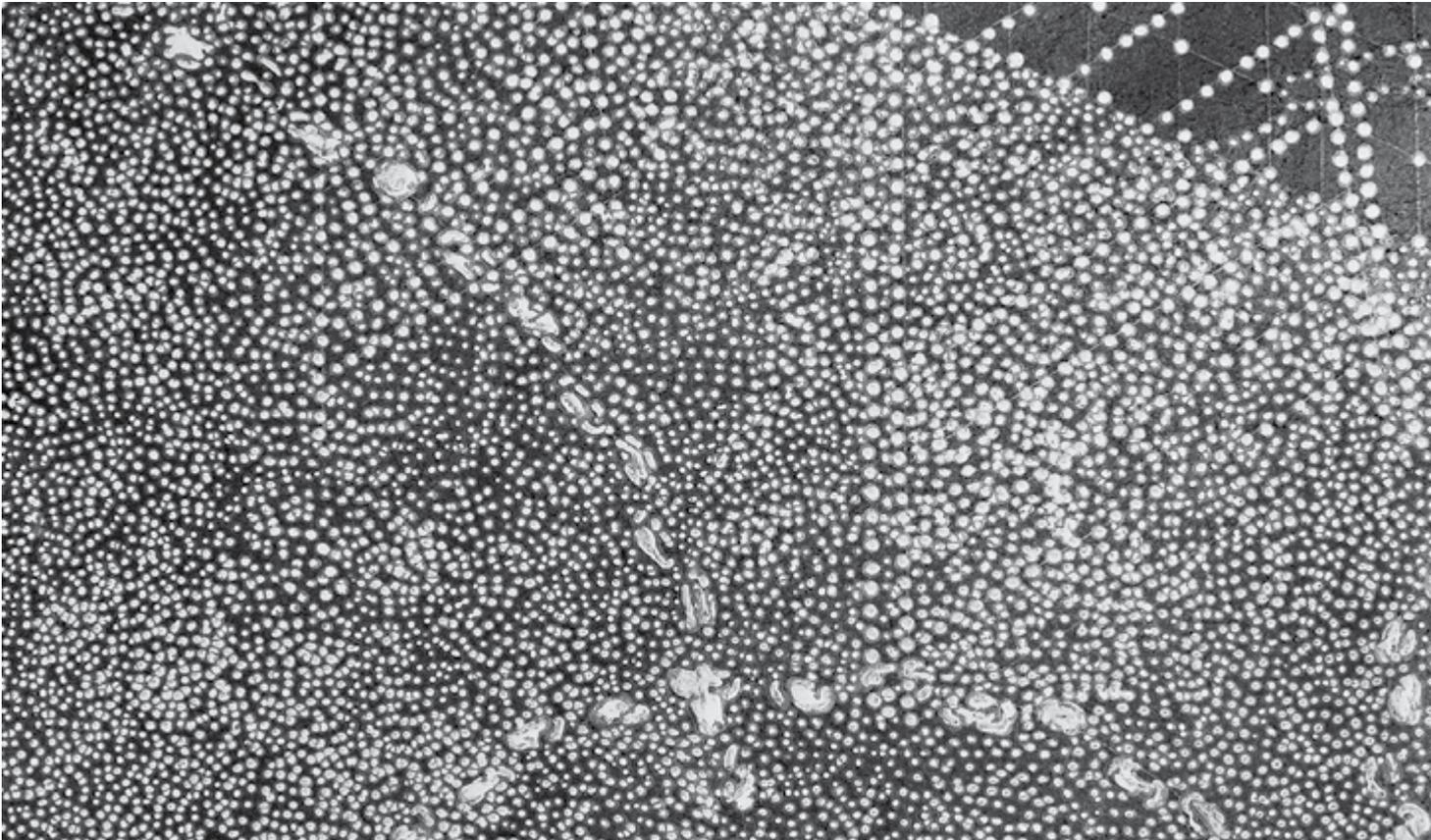
Matthew Aichison
Sarah Breen Lovett
Rachel Couper

CONTRIBUTORS

Urs Bette
Campbell Drake
Lawrence Harvey
Rachel Hurst
Chaun Khoo
Erik L'Heureux
Ainslie Murray
Jules Moloney
Amaia Sanchez-Velasco
Nick Sargent
Simon Twose
Gonzalo Valiente
Jorge Valiente
Kathy Waghorn

COVER IMAGE

Ainslie Murray



ISSN: 2059-9978

