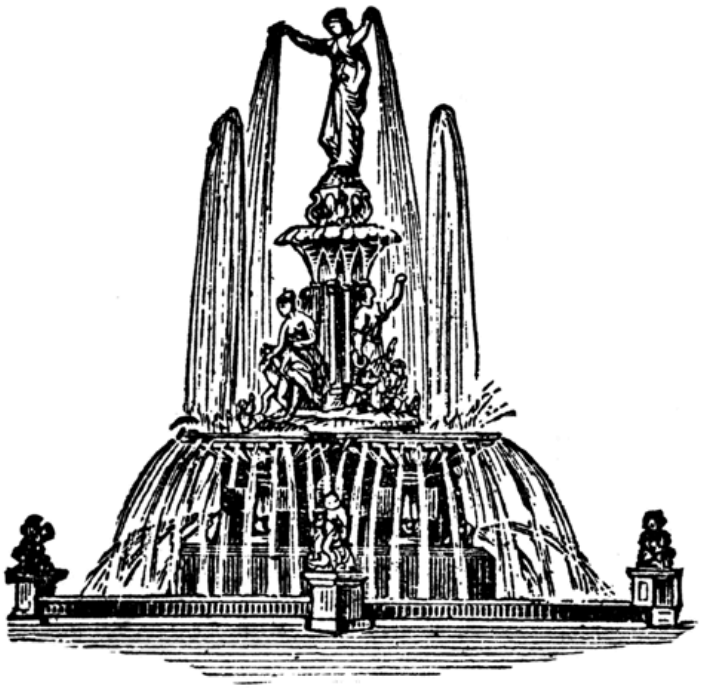

FOUNTAINS

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Bachelor of Fine Art

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ABSTRACT

This Master of Fine Art project is by studio research and exegesis.

The studio-based research developed as a body of artworks, which can be categorized as *Fountains* – sculptural systems designed to circulate and display the flow of water. These works explore how water infrastructure, engineering and ecology influence the physical and social shape of urban life. Themes of water solution, scarcity, collection, and a highly reductive formal language permeate the series' various iterations. Combining sculptural systems, interventions, and videos, these works explore how the fountain form can be used to highlight and re-evaluate the systems of water distribution, circulation and waste in the local context. At their core is an interest in the tensions inherent to urban water between engineering and ecology, fear and desire, scarcity and abundance, and the limits of control.

The exegesis presents a theoretical context for these works. It comprises practical research, fieldwork and the analysis of key artworks and texts. These antecedents form the basis for analysis of my own works, and a broad rationale for pursuing the fountain as a contemporary sculptural form. Fountains have traditionally served both aesthetic and utilitarian functions. They distribute free water for public consumption and display the circulation of water as sculptural form. I argue that these forms often represent humans' struggle to understand, celebrate and control 'nature'. Positioned at symbolic nodes in the urban landscape, I argue that fountains not only signify hidden water infrastructures, but delineate major cultural, spatial, ecological, and political flows of urban life. This exegesis seeks to answer the central question: How can contemporary sculpture revisit the historical form of the fountain, to critically reflect upon our relationship to water?

DECLARATION OF ORIGINALITY

This thesis contains no material which has been accepted for the award of any other degree or diploma at any university or equivalent institution and that, to the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

Joseph L. Griffiths - February, 2018.

LIST OF FIGURES

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I would like to dedicate this study to my grandfather Roy Griffiths, a painter and dreamer who learned to swim in the Moonee Ponds Creek and who instilled a deep respect for nature in me from a young age.

INTRODUCTION

This exegesis asks how contemporary sculpture can revisit the historical form of the fountain, to critically reflect upon our relationship to water? My interest in fountains began during a three-month residency at the British School at Rome in 2016. Roman fountains punctuate the urban landscape to supply, display and celebrate this precious substance. Positioned at symbolic nodes in the urban landscape, fountains appeared to not only signify hidden water infrastructures, but also delineate major cultural, spatial, ecological, and political flows of urban life. This research project developed to trace these complex relationships through the production of original artworks and written exegesis. My studio-based research developed as a body of artworks, which I categorized as *Fountains* – sculptural systems designed to circulate and display the flow of water. These works explore how water infrastructure, engineering and ecology influence the physical and social shape of urban life. Combining sculptural systems, interventions, and videos, these works explore how the fountain form can be used to highlight and re-evaluate the systems of water distribution, circulation and waste in the local context. This exegesis presents a theoretical context for my sculptural works. It comprises fieldwork and the analysis of key artworks and texts. These antecedents form the basis for analysis of my own works, and a broad rationale for pursuing the fountain as a contemporary sculptural form. Fountains have traditionally served both aesthetic and utilitarian functions. They distribute free water for public consumption and display the circulation of water as sculptural form. I argue that these forms often represent humans' struggle to understand, celebrate and control 'nature'. At the core of this study is an interest in the inherent tensions between engineering and ecology, fear and desire, scarcity and abundance, that frame our relationship to water. As such these recurrent themes spill across this exegesis' three chapters.

Chapter 1 asks how fountains may be used to represent the role of water in shaping the urban environment, and challenge historical distinctions between "nature" and "culture"? This study begins in Rome, tracing the significant utilitarian and representational roles that fountains have served since antiquity. Fountains traditionally celebrated the value of water and provided a point of connection to the natural world. They supplied fresh drinking water in public spaces and represented its cultural value through monumental expressions of civic power and pride. Water defined the city spatially, socially, materially and metaphorically. My sculptural installations simply entitled *Fountains* (2016-17) explored the constant cycle of geological growth and decay observed in the travertine fountains of Rome. I envisioned this material formation as a microcosm of urban formation, both processes generating from the circulation of water. Cycles of erosion and encrustation slowly transfigure Roman fountains, simulating the geological formation of travertine stone, from which they are carved and which paves much of the city. My installations attempted to frame this material loop, challenging the

binary separation of 'nature' and 'culture' that has underpinned fountain symbolism and cultural attitudes to water. Cycles of water and stone were central motifs of rustic fountains and Renaissance grottos that idealized nature and sought to dissolve the distinction between constructed and natural environments. The Trevi Fountain exemplifies a number of ideological paradoxes between the idealisation and domination of 'nature' that endure today. Tue Greenfort uses the fountain as a symbolic tool to frame contemporary ecological concerns, regarding the human impact on water and food supply. T.J Demos' critique of art's ability to influence ecological issues beyond consciousness-raising. However, by drawing together symbols from the renaissance grottos and contemporary agriculture, Greenforts 'fountains' crystallise the constructed concept of nature that governs our approach to our environments. Our relationship to water is part of a broader negotiation between relationship between urban civilisation and the natural world. This requires a serious consideration of the fundamental conceptions of 'nature' and 'culture'. Timothy Morton has argued that the 'natural' nomenclature must be undone so as to realize that human consciousness and cultural production are embedded within complex ecological systems. Morton and Demos, therefore raise new questions for this research, beyond the basin-ecosystems of Rome tracing water infrastructures and the real-world systems that entangle daily life.

Chapter 2 asks: "How can fountains highlight our dependence upon hidden systems of water infrastructure and their limited ability to control its flows?" The chapter follows a period of conceptual expansion for the project. Returning to Melbourne re-oriented my research toward the local context. *"The fountain has no enemies",* wrote H.V. Morton in 1963[1]. However in Melbourne today, fountains have come to represent old-world decadence, excess and waste in a time of water scarcity. Therefore I seek to understand the practicalities of city-wide water circulation, how infrastructural systems define our relationship to water and the influence of urban life on the hydrologic cycle. The systemic interrelationship of fountains and aqueducts in Rome opened up this greater interest in systems, and the theories of Jack Burnham articulate an artistic methodology for the *systems-oriented* sculpture I follow here. Hans Haacke used principles of fountain systems in works that visualize otherwise invisible ecological and bodily cycles. Michael Asher's *Kunsthalle Bern 1992* drew the infrastructure of the gallery into focus and affected the bodily conditions and experience of art-viewing. My own work *Fountain – Studio Plumbing* (2017) therefore builds on these antecedents, using the fountain as a form to highlight our dependence on hidden systems of water infrastructure, and articulate the tensions between fear and desire that water can produce. The installation harnessed the most readily available water source and redirected its flow via a copper pipe in order to display this constant supply as highly pressurised mist. The work builds upon Brian Larkin's notion of the 'poetics of infrastructure' and the 'material elegance' of Manuel

[1] Morton, H.V. *The Waters of Rome*. The Connoisseur and Michael Joseph, London, 1966, p. 17

DeLanda, to explore the sculptural application of readymade engineering solutions as expressive tools. This focus on a sculptural apparatus provided a strategy to overcome the formal strictures that impeded my earlier installations. Klaus Weber's public interventions show how water infrastructure is generally taken for granted, scarcely noticed until it malfunctions. In the case of *Fountain – Studio Plumbing* (2017), sculpture became a real-time event with real-world consequences, foregrounding infrastructure and our limited ability to contain the flow of water.

Chapter 3 re-directs this general systems approach to a specific local waterway. The Moonee Ponds Creek is a heavily engineered waterway in Melbourne's north-west. It is a complex site suspended between its engineered history; its multiple functions as a recreation arterial, drainage system and public amenity; the politics of its future development; and community initiatives to protect and restore its ecology. This chapter traces an attempt to transform the Moonee Ponds Creek into a fountain. The artwork *Fountains for Moonee Ponds Creek* (2017-18) developed to convey this sculptural gesture through a series of site interventions, video documentation, and a printed publication. *Fountains for Moonee Ponds Creek* (2017-18) returns traditional fountain form to the public realm, inserted directly in the Creek's concrete structure. Building upon Robert Smithson's conception of the suburban landscape as a *ruin-in-reverse*, the project reimagines the Creek's architecture as a sculptural artefact, shaped by historical attitudes toward nature and the process of urbanization. The intervention produces a moment of rupture through the collision of contrasting images – a fountain and a stormwater drain. Framed by the camera, this new image of the Creek attempts to challenge preconceptions of the site, re-imagined as a meeting place for the exchange of local knowledge and discourse. The work's multiple forms aim to circulate this vision in a range of contexts – on site, in the gallery and in the library. Rosalind Krauss' *Sculpture in the Expanded Field* provides a critical framework for site-oriented sculpture, that engages directly in existing urban landscapes. It figures sculpture as a negotiation of the oppositional terms arising from a cultural situation. The juxtaposition of utopian opulence against dystopian degradation frames the ideological polarities that surround urban waterways. Smithson's archaeological perspective, helps to identify the Creek's architecture as a sculptural form and a monument to suburban life. In turn, Nick Papadimitriou's *Deep Topography* gives structure to a practice of everyday engagement with sites, reading meanings and uses directly from the landscape. The narrative voice that introduces the themes of each chapter, attempts to utilise his poetic style of interpreting the urban environment. Miwon Kwon raises critical sensitivities surrounding site-specific art, which have informed my approach to the Moonee Ponds Creek including long-term community engagement that extends beyond the scope of this project and the context of art. The *Friends of Moonee Ponds Creek* have informed my understanding of the site's environmental history, the drainage works conducted there, the human influence upon the hydrologic cycle, and the role of urban catchments in mediating the flow of water. As

such, *Fountains for Moonee Ponds Creek* (2017-18) attempts to visualize this influence in sculptural terms, posing a new vision of the Creek as a site for social debate and the exchange of local knowledge.

These specific lines of inquiry by no means exhaust the possibilities for contemporary sculpture to address the complex tensions that bind our relationship to water. Nor does it claim that fountains are the only means for art to address this relationship. Rather this exegesis aims to identify recurring patterns in fountain symbolism and the ideological frameworks that have historically defined these complexities. The artworks, theoretical texts, and fieldwork that have informed this research critically reflect upon the influence of water in shaping urban life and our constant struggle to channel, circulate and contain it.

Figure 1. Installation view of Joseph L. Griffiths, *Fountains*, British School at Rome, 2016.

CHAPTER 1 – CYCLES OF NATURE AND CULTURE

How can fountains be used to represent the role of water in shaping the urban environment, and challenge historical distinctions between “nature” and “culture”?

Deep beneath the crust of the earth water drips… and drips. It seeps slowly through the landscape, through the layers of sediment, rich in calcite minerals. In stalactite caves and crevices this calcium-rich water solidifies over millions of years, forming underground worlds of towering spires, pools and dripstones. As the water evaporates and moves on through its enormous hydrological cycles, huge deposits of limestone, marble and travertine remain. One hour north of Rome in Tivoli, at a single moment in time, a man strikes his pick against the hardened turf. His wrists vibrate violently. His discovery will uncover the largest supply of travertine stone in Europe. Huge quarries will be excavated here over centuries, to resource a new urban crust forming in the remote city downstream. Today, suspended in chains, the clean cross-sectioned blocks reveal the rippling patterns of watery sedimentation, which gave them form. The Roman pavements display the same bubbly stratifications. So do the city’s walls, street-kerbs, cornices, and monuments pristine and crumbling. The broken corners of great travertine slabs, lie dismembered on the cobblestones, glanced by hurried transit vans, and occupied by disaffected youth. The stony arches of an ancient aqueduct disappear as I descend into the metro. The silky travertine balustrade is finely polished by the thousands of hands that trace it daily. The steps scoop toward the inside of the curving decent, a desire line etched in 4 dimensions. Emerging at Piazza di Spagna, the same desire lines continue up and across the giant travertine stairways above. The ubiquity of travertine in Rome is matched only by the presence of water itself. I weave through the crowd, dodging scooters and taxis drawn toward the sound of water. It splashes into the travertine basin of Pietro and son Gian Lorenzo Bernini’s boat-shaped Fontana della Barcaccia. The fountain, which was built below street-level to maximize water pressure, is now barely visible, permanently flooded with tourists. Megalitres of water cascade down the monumental façade of La Fontana di Trevi only moments away. Here the cubic extractions transported from Tivoli, have been precisely carved to represent the cliffs from whence they came. This bizarre display of stylised rocky naturalism is perhaps a hopeless attempt to turn back geological time. Continuing through the tangled streets and laneways, I stop to drink from a small fountain, one of approximately 400 modest spouts that continue to hydrate the old city centre. A travertine trough (possibly from the middle ages) has been repurposed as its basin. Mineral growths and moss encrust its undercarriage, like foundations for future stalactite formations. The urban crust is developing a new layer.

This chapter explores the constant cycle of geological growth and decay observed in the travertine fountains of Rome. My sculptural installations *Fountains* (2016-17) envisioned this material formation as a microcosm of urban formation, both processes generating from the circulation of water. Urban formation refers to the material paving of the city, the shape of development and flows of social inhabitation[2]. The history of Roman fountains illuminates the crucial role of water and infrastructure in this process. Fountains traditionally celebrated the value of water and provided a point of connection to the natural world. They embodied the convergence of nature and culture. The controlled display of water was used to symbolise the supremacy of human engineering and a mark of civic power. Water defined the city spatially, socially, materially and metaphorically. Fountains became important sites of reflection on these complex relationships. Cycles of water and stone were the central motif of rustic fountains and Renaissance grottos that idealized nature and sought to dissolve the distinction between constructed and natural environments. This historical study culminates at the Trevi Fountain and provides a background for the critical analysis of my own work. *Fountains* (2016-17) attempted to highlight complex roles of traditional fountains in shaping urban life, through the historical metaphor of geological growth. Cycles of erosion and encrustation slowly transfigure Roman fountains, simulating the geological formation of travertine stone, from which they are carved and which paves much of the city. *Fountains* (2016-17) sought to highlight this material loop and challenge the binary separation of "nature" and "culture" which has underpinned fountain symbolism and cultural attitudes to water. However, by distilling the fountain form to a minimal constellation of elements, the work disentangled the material cycles of transformation it sought to display. Contemporary artist Tue Greenfort uses the fountain as a symbolic tool to frame current ecological concerns, regarding the human impact on water and food supplies. By drawing together symbols from the renaissance grottos and contemporary agriculture, the work illuminates critics such as T.J Demos who question art's ability to influence ecological issues beyond consciousness-raising, and Timothy Morton, who calls upon artists to articulate the human position within larger ecological systems. Therefore this chapter asks how fountains may be used to represent the role of water in shaping the urban environment, and challenge historical distinctions between "nature" and "culture"?

I The Fountains of Rome

Tracing the history of fountains in Rome begins to illuminate the tensions between nature and culture that emerge from the process of urbanisation and the constant need for water. Rome's hydraulic engineers developed sophisticated fountain systems inspired by the Hellenistic

[2] This concept is also referred to as "Urban Morphology". See Albert Levy, "Urban Morphology and the Problem of the Modern Urban Fabric: Some Questions for Research" , *Urban Morphology* 3(2) (1999): 79-85.

examples they studied[3]. In ancient Rome water was worshipped and utilised for health and art[4]. Despite the city's strategic position in the valley of the Tiber River, its murky water was polluted, unpalatable and unhealthy. Monumental fountains were constructed in Rome's public squares to provide a source of fresh water, drawn from rivers and springs to the north and east[5]. They were part of a vast system of water infrastructure including hundreds of public basins, opulent baths, and drainage sewers all supplied by a network of 11 aqueducts[6]. In 97 A.D. Sextus Julius Frontinus authored *De Aqaueductu Urbis Romae*, the singular substantial source on ancient Roman water systems[7]. The document was written during his role as *Curator Aquarum* (Guardian of the Water) in which he oversaw a team of several hundred water inspectors, plumbers, masons and labourers who maintained the city's water infrastructure[8]. The sophisticated network is thoroughly detailed, focusing on the technical functions of the system, maintenance issues and commitments to public sanitation and safety[9]. The fountains marked the terminus of each aqueduct, displaying the perpetual flow of water and the civic prosperity it resourced[10]. The ingenious gravity-fed system provided an abundant supply of water that was considered a symbol of opulence and an expression of power[11]. The system of tunnels, bridges and elevated aqueducts' with impressive arcades crosshatched the city skyline and their fountains embodied the city's riches[12].

Value has traditionally been linked with scarcity. The harder something is to obtain, the more it is prized. Elizabeth MacDougall has argued that Greco-Roman art and mythology harbored abundant water metaphors due to the regional concern for water shortage in the Mediterranean basin[13]. Water was not always abundant in Rome, and the city shrivelled when its aqueducts were cut during the Gothic raids in A.D.537. Over the coming centuries the water supply would remain off, the fountains ran dry and were mostly destroyed[14]. This dry

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[3] Morton has noted *The Fountain of Arethusa* in Syracusa as notable inspiration for Roman engineers who are said to have visited to study its function. The fountain was built in the major port of Sicily under Greek rule between the 8th and 3rd centuries B.C. See H.V. Morton, *The Waters of Rome*. The Connoisseur and Michael Joseph, London, 1966, pp. 20, 46.

[4] Bono, P. & Boni, C. "Water supply of Rome in Antiquity and Today" in *Environmental Geology*, 27, Springer-Verlag, Berlin, 1996, p. 126

[5] Ibid

[6] Frontinus, Sextus Julius. "De Aqueductu" in *Frontinus: The Strategems and The Aqueducts of Rome (trans. C. Bennett)*, William Heinemann, London, 1925

[7] Rodgers, R. H. (trans.), *Frontinus: De Aquaeductu Urbis Romae*, Cambridge University Press, Cambridge, 2004.

[8] Morton, H.V. *The Waters of Rome*. The Connoisseur and Michael Joseph, London, 1966, p. 34

[9] At the time of Frontinus' text, Rome had nine aqueducts which fed 39 monumental fountains and 591 public basins, not counting the water supplied to the Imperial household, baths and owners of private villas. Each of the major fountains was connected to two different aqueducts, in case one was shut down for service. See Frontinus, Sextus Julius. "Du Aqueductu" in *Frontinus: The Strategems and The Aqueducts of Rome (trans. C. Bennett)*, William Heinemann, London, 1925. Despite a plethora of archaeological evidence of water infrastructure, its fragmentary nature makes it difficult to trace the larger systems to which the various artefacts (sections of terracotta pipe, stone basins, etc) serviced. The lead pipes preserved at Pompeii are among the few exceptions.

[10] In many cases two separate aqueducts supplied these fountains, in case maintenance works should interrupt the triumphant spectacle. See Frontinus, Sextus Julius. "De Aqueductu" in *Frontinus: The Strategems and The Aqueducts of Rome (trans. C. Bennett)*, William Heinmann, London, 1925.

[11] Bono, P. & Boni, C. "Water supply of Rome in Antiquity and Today" in *Environmental Geology*, 27, Springer-Verlag, Berlin, 1996, p. 126

[12] Ibid

[13] MacDougall, Elisabeth, B. *Fons Sapientiae – Rennaissance Garden Fountains*, Dumbarton Oaks Trustees for Harvard University, Washington D.C., 1978, p. 4

[14] Morton, H.V. *The Waters of Rome*. The Connoisseur and Michael Joseph, London, 1966, p. 55

spell became better known as the *Dark Ages*, and it wasn't until 1453 that pope Nicholas V finally undertook to repair and re-instate the *Aqua Virgo* (now *Aqua Vergine Antica*). Reinstating these sparkling fountains would gradually lift Rome out of ruin. Indeed in modern cities, abundant water supply and financial wealth usually follow. The gigantic fountains at the Bellagio Hotel in Las Vegas are perhaps the most opulent of any in the world, because they circulate such great quantities of water (its basin holds 83 million litres) and are located in the heart of the Mojave Desert[15]. Despite the arid locale, the city is filled with fountains, and many of its largest casinos are decorated in themes of clichéd Italianate luxury.

Figure 2. Aerial view of the Bellagio Hotel Fountains, Las Vegas, Nevada.

Rome's water infrastructure defined the shape of urban sprawl, and the spatial flow of its citizens[16]. Much of the supply was devoted to the imperial palaces and large villas on private estates[17], however fountains supplied the majority of the city's daily water needs. Collecting water brought people together and the piazzas surrounding the terminus fountains became important sites for community exchange. Convenient proximity to a water source influenced real-estate value, and settlements sprouted in the fertile catchments of the fountains and aqueducts[18]. The fountains' grand facades were ornamented to herald the triumph of Roman ingenuity. Alongside decorative themes, they brandished the *stampa* of the emperor or benefactor who commissioned them, as later baroque fountains would be inscribed with the

[15] Buckley, Julia. "Belagio Fountains: Will the Famous Las Vegas Landmark Close to Make Way for a Shopping Mall?" 24 May 2017, Retrieved from http://www.independent.co.uk/travel/news-and-advice/bellagio-fountains-las-vegas-closure-shopping-mall-oceans-11-drake-a7752401.html

[16] Morton, H.V. *The Waters of Rome*. The Connoisseur and Michael Joseph, London, 1966, p. 28

[17] Bono, P. & Boni, C. "Water supply of Rome in Antiquity and Today" in *Environmental Geology*, 27, Springer-Verlag, Berlin, 1996, p. 132

[18] Wazer, Caroline. "The Cutthroat Politics of Public Health in Ancient Rome - And What We Can Learn from it Today" April 22, 2016. Retrieved from https://www.theatlantic.com/health/archive/2016/04/the-tricky-politics-of-ancient-romes-aqueducts/479298/

names of Popes[19]. Therefore fountains framed the democratic provision of water under the shadow of the state's power to withhold it[20]. As such fountains can be understood as pillars of an urban society, built on water, infrastructure, and political systems of control. As water sources, meeting places, civic monuments and circulation systems, fountains helped shape Rome's urban landscape, and defined the cultural value of water.

II Merging nature and culture

The tension between nature and culture is at the core of fountain symbolism. The discovery of *De Aqaueductu Urbis Romae* in 1429, sparked a revival in fountain design[21]. In 1550, Claudio Tolomei wrote in his letters "The ingenious skill recently rediscovered to make fountains, in which mixing art with nature, one can't judge if it (the fountain) is the work of the former or the latter; thus one appears a natural artefact and another, man-made nature"[22]. Renaissance fountains became increasingly ornate, often designed around iconographic or mythological themes, which commonly deified water itself. Recent discoveries of classical and Hellenistic fountain designs, produced a new thirst for pagan mythology and the classical epics, and new fountains often embraced aquatic themes including statues of water-gods, nymphs, mer-people and sea creatures. Water would figure both as the sculptural material and subject of the fountain[23]. Elizabeth MacDougall writes that the display of water has regularly been used in western culture, as an allegory to demonstrate contrasts between nature and civilization[24]. The design of 'rustic' fountains became popular in Italy in the late 15th and early 16th centuries, featuring elaborately modelled rock formations and stalactites known as *rocaille.* These designs simulated caves, mossy grottoes and rugged cliffs in an attempt to dissolve the formal architectonics of the fountain[25]. The grotto seamlessly blended naturally formed caves and naturalistic stone carvings, and was dedicated to the memory of water's sacred place in antiquity[26]. Leon Battista Alberti wrote of the ancient use of 'living-pumice' which

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[19] Morton, H.V. *The Waters of Rome*. The Connoisseur and Michael Joseph, London, 1966, p. 46
[20] Ibid, p. 36
[21] The manuscript was located in 1429 in the library of Monte Cassino by a papal secretary Poggio Bracciolini, and was vital to the re-investment in the cities water infrastrucutres. See Morton, H.V. "The Return of the Waters", pp 59-63 in *The Waters of Rome*. The Connoisseur and Michael Joseph, London, 1966.
[22] Tolomei, C. *Delle Lettere di M. Claudio Tolomei,* Venice 1550, Lines 8 and 10 from a letter dated 26 July 1543, as quoted in Symmes, Marylin. "The Rise and Fall of Water" in *Fountains: Splash and Spectacle, Water and Design from the Renaissance to the Present*, pp13-14. Rizzoli, New York, 1998.
[23] Bernini's *Fontana di Quattro Fiumi (Fountain of the Four Rivers)* is a late example of the way fountain designs refigured ancient traditions of river worship.
[24] MacDougall, Elisabeth, B. *Fons Sapientiae – Rennaissance Garden Fountains*, Dumbarton Oaks Trustees for Harvard University, Washington D.C., 1978, p. 4
[25] Wiles, Bertha Harris. *The Fountains of the Florentine Sculptors and Their Followers from Donatello to Bernini.* Hacker Art Books, New York, 1975, p. 73
[26] Miller, Namoi, "Domain of Illusion: The Grotto in France" in MacDougall, Elisabeth, B. (Ed.), *Fons Sapientiae – Rennaissance Garden Fountains*, Dumbarton Oaks Trustees for Harvard University, Washington D.C., 1978, p.187

combined green wax to simulate biological growth in grottoes[27]. The grotto at La Villa Castello near Florence, is a vaulted room covered in rocaille formations where water issues from stalactites and rises from the pavement itself[28]. Bernard Palissy's elaborate grottos incorporated overheated clays and stone embedded in stucco, imitating geological strata. His experiments with firing and geological composition led to the discovery that groundwater springs must be replenished by rainfall, thus establishing the modern theory of the hydrologic cycle[29]. This handful of examples shows how the interplay of stone and water in the formation of caves and natural waterscapes, has inspired fountains and their symbols. Water nourished an array of living bacteria in these fountains and grottos, cultivating gardens of moss, algae, and micro-organisms. Some fountains are living breathing ecosystems that support a range of birds and insects. Thus the physical experience of this sculpted 'nature' blurred the fundamental distinction between the natural and constructed worlds, reminding the urban citizen of their inexorable place within real-time ecological cycles.

III The Trevi Fountain

Designed by architect Nicola Salvi in 1730, *La Fontana di Trevi* marks the terminus of the Acqua Vergine (the revived Aqua Virgo) one of the principle aqueducts of the ancient city[30]. The fountain's monumental scale dominates the small piazza it occupies, which is flooded with tourists at all hours of the day and night. The lavish design incorporates a grand architectural façade, with surging rock-formations, reliefs, statuary and classical iconography, spilling into a vast basin. According to John Pinto, the fountain's chief biographer, Salvi's design symbolises *"the role of water as the primary animating principle of all Nature"*[31]. Given the enduring taste for classical mythology and allegory in the baroque period, 'Nature' is dramatized in the central figure of Oceanus (the god of the sea), travelling on a vast shell chariot and surrounded by dolphins, marine-horses, and Tritons (mer-men). The true power of water is in its dual capacity to give life and to take it away[32]. The fountain portrays water as a powerful force, but one that can be civilised – reined-in like a horse. The gushing water appears obedient to the will of its architect, performing spectacular cascades to meet human desires[33]. Therefore the iconography can be doubly interpreted as the representation of the victory of "culture" overcoming the vicissitudes of "nature". The sculptural gesture of control

[27] Wiles, Bertha Harris. *The Fountains of the Florentine Sculptors and Their Followers from Donatello to Bernini.* Hacker Art Books, New York, 1975, p. 73
[28] Ibid, p. 74
[29] Deming, David. "Born to trouble: Bernard Plissy and the Hydrologic Cycle" in *Ground Water*, Vol 43, No. 6, 2005, p969.
[30] Salvi's design actually placed second to Alessandro Galilei in a competition organized by Pope Clement XII, but was awarded the commission after public outcry that Galilei was Florentine.
[31] Pinto, John A. *The Trevi Fountain*. Yale University Press, New Haven, 1986, p223.
[32] Morton, H.V. *The Waters of Rome*. The Connoisseur and Michael Joseph, London, 1966, p. 17
[33] Ibid.

became a crucial symbol within my work *Fountains* (2016-17), which sought to frame this tendency as a recurring feature of urban development.

Figure 3. View of the Trevi Fountain *scogli*

The Trevi fountain figures humans at the juncture of nature and culture; between the rational architectural façade behind them and the wild rock formations ahead[34]. Salvi's obsessive attention to the rock formations, known as *scogli*, reveals a complex paradox between the natural material, and the naturalistic portrayal of his subject. Like most of the fountain and its supporting architecture, the *scolgi* are carved from rough-hewn travertine blocks, quarried at Tivoli approximately 35km upstream from Rome[35]. Started in 1735, Salvi's obsession with the scogli lasted ten whole years. According to Pinto,

> *Salvi took infinite care in the design of the scogli, studying each detail by means of small models in wax and clay and repeatedly rearranging the travertine masses themselves. Moreover, he often climbed out onto the scogli with charcoal stick in hand to sketch particular details onto the surface of the travertine for the stonecutters to follow[36].*

[34] Jellicoe, Susan and Geoffrey. *Water: The Use of Water in Landscape Architecture*. Adam & Charles Black, London, 1971, p103.
[35] Pinto, John A. *The Trevi Fountain*. Yale University Press, New Haven, 1986, p150.
[36] Ibid.

The naturalism is interrupted only by the masonry joints of the stone blocks. The paradox of using quarried travertine to emulate natural formations was an established feature of fountain design[37]. The excavation, quarrying, transport of the travertine, design, modelling and arrangement by highly paid architects, painstaking construction and finishing by sculptors and masons was a long and costly process. But for Salvi it was crucial the scogli *appear* natural, yet equally crucial that they weren't. Pinto continues; "rather than seeming shaped by the hand of man, the scogli appear to have been deeply eroded by the action of the water, which courses through and over them, to create an extraordinarily expressive form of abstract sculpture"[38].

IV Travertine, Speleogenesis and the Urban Crust

The natural cycles of travertine formation observed in Roman fountains, formed the basis of my installations *Fountains* (2016-17). The works attempted to show how this material loop challenges binary separation of "nature" and "culture". Roman fountain basins were envisaged as growing ecosystems, or crucibles for geological study. Travertine is a terrestrial sedimentary rock, formed by the precipitation of calcium carbonate minerals from solution in ground and surface waters. Cycles of erosion and encrustation naturally transfigure Roman fountains. In open air piazzas, the constant movement of air and water slowly erodes the surface of the fountain's travertine structure and deposits microscopic quantities elsewhere. Public fountains become living growing ecosystems that slowly morph, simulating the geological formation of the travertine from which they are carved and which paves much of the city. In *Materials Against Materiality*, Tim Ingold describes the material world as "a flux in which materials of the most diverse kinds – through processes of admixture and distillation, of coagulation and dispersal, and of evaporation and precipitation – undergo continual generation and transformation"[39]. The most ancient water architecture is the subterranean stalactite cave[40]. The chasm of Tivoli is a landscape shaped and defined by falling water. The process of *speleogenesis* describes the slow precipitation of water that forms spires of rock in caves over centuries.[41] Tivoli is the site of the main quarries which supplied ancient Rome with travertine. The waters transported to Rome are particularly rich in lime and calcium as

[37] MacDougall, Elisabeth, B. "Sixteenth Century Garden Fountains in Rome" in *Fons Sapientiae – Rennaissance Garden Fountains*, Dumbarton Oaks Trustees for Harvard University, Washington D.C., 1978, p. 87
[38] Pinto, John A. *The Trevi Fountain*. Yale University Press, New Haven, 1986, p. 150
[39] Ingold, Tim. "Materials Against Materiality" in *Archaeological Dialogues*, 14 (1) 1-16, Cambridge University Press, 2007, doi:10.1017/S1380203807002127, p. 7
[40] Jellicoe, Susan and Geoffrey. *Water: The Use of Water in Landscape Architecture*. Adam & Charles Black, London, 1971, p9.
[41] Ibid, p. 12

the majority are supplied from karstic springs[42]. In antiquity, travertine deposits were a main obstruction to the flow of aqueducts, which would sometimes collapse under their weight[43]. Extensive labour was required to chisel-out these deposits and maintain the aqueduct flows. Only the city's most visited fountains are maintained regularly enough to prevent a new mineral crust forming.

The Romans and their water systems were spread throughout Europe, laying the foundations for modern cities. The global spread of urbanisation is slowly paving more of the planet, drastically affecting the flow of water through the hydrologic cycle. The travertine tiles that pave the streets of Rome, and feature in the installation *Fountains* (2016-17) can be seen as a modular unit of this progression. Urban centres become paved basins, which mediate the circulation of water through the hydrologic cycle. This has had a drastic effect on the world's water sources, as little fresh water is allowed to penetrate the surface of the earth and return to the water table. This huge excess of run-off fills urban waterways such as the Moonee Ponds Creek examined in Chapter 3. *Water-Sensitive Urban Design* approaches desperately attempt to restore permeable surfaces within the city, harnessing the natural systems of the vegetation, soils and geology, to filter the vast quantities of water passing through them. Thus, the paved streetscape symbolises a threshold between subterranean flows, filtration and deposits; and the excavation, displacement and construction of the visible city above. Ingold declares, *"As with the Earth itself, the surface of every solid is but a crust, the more or less ephemeral congelate of a generative movement"*[44]*.* Therefore, fountains generate a constant flow of material, that entangles the processes of geological growth with the formation of the urban crust. My own sculptural installations attempted to visualise this complex relationship.

V *Fountains* (2016-17)

The series of sculptural installations *Fountains (2016-17)* was developed during a residency at The British School at Rome in 2016 and was exhibited in Rome, Berlin and Melbourne in 2016 and 2017. The works aimed to distill Roman fountains into a geometric constellation of

[42] Bono, P. & Boni, C. "Water supply of Rome in Antiquity and Today" in *Environmental Geology*, 27, Springer-Verlag, Berlin, 1996, p. 133

[43] Frontinus, Sextus Julius. "The Aqueducts of Rome: Book II, S.122" in *Frontinus: The Strategems and The Aqueducts of Rome (trans. C. Bennett)*, William Heinmann, London, 1925, p. 453

[44] Ingold, Tim. "Materials Against Materiality" in *Archaeological Dialogues,* 14 (1) 1-16, Cambridge University Press, 2007, doi:10.1017/S1380203807002127, p. 7

Figure 4. Installation view of Joseph L. Griffiths, *Fountains*, British School at Rome, 2016.

Figure 5. Installation view of Joseph L. Griffiths, *Fountains*, British School at Rome, 2016.

elements that could highlight the convergence of natural and cultural flows that shape urban life. Laid across the gallery floor, were low stacks of travertine pavers and rectilinear pools of

water. The sound of dull gongs echoed amongst the faint rustle of birdlife, while single drops of water precipitated occasionally from a micro-irrigation system installed in the ceiling.

Fountains imagined the basement galleries of the British School at Rome as an underground cavity located beneath the building's grand travertine stairway and portico, in which the subterranean flows of water and stone, were framed as a minimal installation. A soundtrack for the work "travertine bells", assembled my recordings of the travertine's resonant frequencies and their irregular rhythms echoed the languid droplets seeping from above. This accompaniment punctuated the viewer's presence before the pools of water interrupting their physical and psychic reflections. The cycle of geological growth already discussed, highlights the impermanence of the sculpted material, which is subject to the flows of time and entropy. We tend to view objects, including sculpture, as relatively fixed products, whose materials disappear into the thing they comprise. However the fluidity of materials continue to threaten the objects with dissolution or dematerialisation[45]. To Maurice Merleau-Ponty, the cyclical rhythm of fountains conveyed a simultaneous feeling of a single moment and the flow of eternity[46]. *Fountains* attempted to convey this dual temporality, through the processes of geological formation and the momentary drop of water.

Fountains (2016-17) framed water within an invisible silicone edge. This minimal delineation captured the gesture of containment essential to the controlled circulation of fountains, but without an obvious basin. What had first appeared solid volumes (perhaps thick sheets of glass or acrylic), were enlivened by the sparse punctuation of droplets falling from the ceiling, sending lush ripples across the pools reflective surfaces. Framed only by an ultrafine rim of transparent silicone, the water seemed to betray its fundamental physical characteristics, holding a strict rectilinear form on the floor. The method of control was economic and elegant, and the water became transformed into refined minimalist objects, which seemed to combine the illusory qualities of Roni Horn's glass castings (*Well and Truly*, 2009-10), the flatness of Carl Andre' floor tiles (*144 Magnesium Square*, 1969), and the reflective spaces of James Turrell (*Baker Pool,* 2002-08). Pooled directly on the floor, the water's edge was held in tension by the ominous sense of overflow, as each drop threatened to breach the limits its frame.

The pools' rectangular forms harnessed Tim Ingold's analysis of the straight line as an icon of modernity and a symbol of the threshold between nature and culture[47]. An invisible grid structures so much of urban environment, and the repetition and tessellation of rectangular forms evoked excavated foundations. The sculptural forms represented foundational modules

[45] Ingold, Tim. "Materials Against Materiality" in *Archaeological Dialogues*, 14 (1) 1-16, Cambridge University Press, 2007, doi:10.1017/S1380203807002127, p. 9
[46] Merleau-Ponty, Maurice. *The Phenomenology of Perception*. Routledge, Oxon, 2012, p. 447
[47] Ingold, Tim.*Lines: A Brief History*. Routledge, Abringdon, Oxon, 2007, p. 152

of the contemporary urban environment, interpreting the idea of geometry in the etymological sense of earth-measuring[48]. The depth and proportions of the volumes of water obviously emulated the travertine tiles they were positioned against, and insinuated a process of formation, the pools and tiles set-up as a kind of before-and-after image of the geological cycle.

The highly reduced flow of *Fountains* aimed to reflect on the fragility of water sources and contrast the opulence of its Roman counterparts. Prior to this research, my experience of fountains was marginal but like many Melbournians, my awareness was peaked when the city's fountains were shut-off due to water restrictions imposed during the *Millennium Drought*. In the popular imagination of the time, fountains rapidly migrated from a benign civic spectacle to a monumental waste. They had become an ecological concern. To this sensibility, the abundant flows of Roman fountains appeared extravagant, insensitive to what is recognized as a global water shortage[49]. The slow precipitation of *Fountains* (2016-17) therefore reversed this logic. Instead the work minimised the flow of water to reflect on the fragility of water supply, and the fraught relationship of fountains to private displays of wealth and waste. The works I will discuss in the following chapters expand on these tensions.
Fountains (2016-17)clearly deconstructed its Roman counterparts, using a minimal syntax to reduce the traditional form to rectangular stones that pave the city. By drawing formal relationships between the fountain elements and the foundations of Roman streetscape, the work pointed to the crucial interplay of water in both urban and geological formation. However, separating the fountain's elements had the adverse effect of preventing the very physical interactions that would converge "natural" and "cultural" flows. Instead the viewer was forced to link the interplay of water and stone via formal repetition alone. Although small micro-organisms appeared to grow in the water over extended durations, the geological growth which the installation most directly sought to address, remained a conceptual leap of faith. In turn, the installation's orderly layout, unconsciously reinforced the very impression of civilized control it sought to discredit.

In subsequent iterations of the work in Melbourne, the sonic component of the installation was removed for practical and curatorial reasons, and to accommodate neighbouring works. Unfortunately, this removal reduced the cave-like atmosphere of the gallery. In addition, the original installation *Fountains* utilised a material language native to Roman audiences. When these stripped back elements were displaced or re-situated in Berlin and Melbourne, they took on new connotations relative to their new contexts, and without their title, local audiences may have failed to register a fountain at all.

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[48] Ingold, Tim.*Lines: A Brief History*. Routledge, Abringdon, Oxon, 2007, p. 159
[49] Research studies have predicted a global water shortage as early as 2040. See Aarhus University. "Worldwide Water Shortage by 2040" in *Science Daily*, 29 July 2014. Retrieved from www.sciencedaily.com/releases/2014/07/140729093112.htm

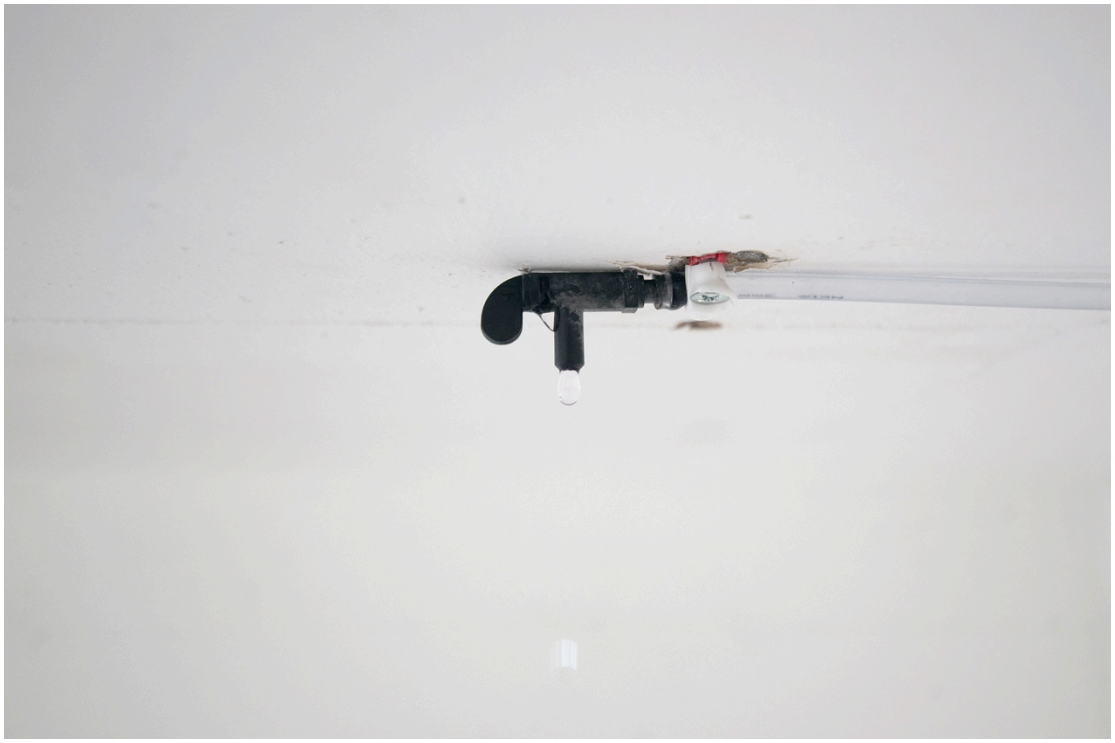

Figure 6. Installation view of Joseph L. Griffiths, *Fountains*. BUS Projects, 2017.

Figure 7. Installation view of Joseph L. Griffiths, *Fountains*. BUS Projects, 2017.

Out of context the 'reflection pools' and soft tones of the travertine, more likely conjured the "tranquillity" of a wellness-retreat, or kitsch Italianate garden design. The mess, tension and flux of real-world transformation and its consequences, were notably absent. Instead the distinctions between "nature" and "culture" were not so much challenged as displayed. This critical reflection upon *Fountains* opened up deeper questions about the ecological understanding of the human impact on water and our place within natural systems.

VI Art After 'Nature'

In *Ecology Without Nature*, Timothy Morton calls for a radical philosophical change to environmental thinking, to remove the image of nature itself. Morton insists that "nature" can't be objectified, separated or externalised, because living and nonliving objects are embedded within a "mesh" of social, political, and phenomenal relations[50]. Every aspect of urban civilisation is resourced by the extraction and transformation of the earth. In fact, human beings may be most distinguished by the speed and scale at which we transform our environment to service our ways of life. Civilisation has been traditionally seen as a testament to the supremacy of human rationality, however this is being challenged. Ecological awareness recognizes the "fundamental interdependence of all phenomena and the embeddedness of individuals and societies in the cyclical processes of nature"[51]. Despite the mechanistic understanding of the world engendered by the production lines of industry, which manufactured the global urban condition, in ecology there are no inputs or outputs. Everything flows in a constant cycle. Materials change, degrade, disintegrate and reform. They are consumed and expelled and grow into something else. They flow, trickle, spread out, evaporate, transpire, float, coagulate and descend again. Cycles repeat. Landfill waste and sewerage treatment plants are evidence of the foreshortened view of the engineered world, where the afterlife of human waste and by-products are insufficiently accounted for. As population and appetites for consumption have grown exponentially, these waste piles have reached a critical mass, which threatens the future of human civilization and organic life at large.

Tue Greenfort's *UREA Crystal Fountains (I – III)* utilise the fountain as a symbolic tool to frame contemporary ecological concerns. The works take the form of self-generating chemical stalagmites. They cycle water and urea in a vertical column, emphasising the autocreative quality of the substance that rapidly crystallises into white *rocaille* formations as it oozes

[50] Morton, Timothy. *Ecology Without Nature*: *Rethinking Environmental Aesthetics*. Harvard University Press, Cambridge, 2007, p1.
[51] Fritjof Capra, "Systems Theory and the New Paradigm" in *Systems,* ed. Edward A. Shanken, 22-27. (London: Whitechapel Gallery, 2015), 23.

through a hose[52]. Urea is an artificial carbamide fertilizer, rich in nitrogen, highly soluble in water and widely used in industrial scale agriculture. Like water, it is a material that specifically promotes growth. Yet as a chemical compound it is synthetically formulated in a laboratory for commercial use. The work blurs the distinction between organic and inorganic forces, fundamental to the notion of agriculture, which struggles to sustain a waning global food supply[53]. Like fountains and aqueducts, which traditionally sustained the populace by shaping and redirecting the flow of rivers, agriculture artificially enhances and disciplines organic growth. By staging the process of stalagmite formation Greenfort's work seems to hasten our perception of time. The work's DIY production aesthetic and human-scale defy the impossible sequence of geological time implied by the crystals almost growing before your eyes. Greenfort draws a connection from the renaissance grotto to the chemical laboratory, highlighting the persistent simulations of "nature" that infiltrate both art and science. In both spheres, organic life is shaped to the needs and desires of the culture. Greenfort's fountain is therefore a site for reflection where "*the fantasies we have about nature take shape, and dissolve*"[54].

T.J. Demos has criticized the reflective basis of Greenfort's work, asking *"what role art might play now that consciousness-raising is being accomplished by the mass media and culture industry, even if still plagued by governmental inaction?"*[55]. Lucy Lippard has observed that *"although there are no illusions that anything can be returned to its "original" condition, art's purpose… is to lay bare the questions which have been hidden by the answers"*[56]. Greenfort's *Diffuse Einträge* (2007) questions the motives of restoring ecosystems and beautifying the urban landscape, resisting the pretence of a clean solution. Developed for Skulptur Projekte Münster in 2007, the work employed a fertiliser truck to spray iron chloride (often used as a clarifying agent in recycled sewage and drinking water) into the artificial Lake Aasee in an ironic attempt to neutralise the green-blue algae that has poisoned its waters. This pollution is called 'eutrophication'; caused by fertiliser runoff (of the kind Greenfort's truck usually sprays) used in agriculture upstream of the man-made lake. *"Greenfort's criticality resides in his ironic*

[52] König, Johann. "Tue Greenfort" in *Artforum International Magazine*, October 2014. Retrieved from https://www.thefreelibrary.com/Tue+Greenfort.-a0389725260
[53] Ibid.
[54] Morton, Timothy. *Ecology Without Nature*: *Rethinking Environmental Aesthetics*. Harvard University Press, Cambridge, 2007, p1.
[55] Demos, T. J. "The Politics of Sustainability: Contemporary Art and Ecology." In *Radical Nature: Art and Architecture for a Changing Planet 1969–2009*, published in conjunction with the exhibition of the same name, shown at the Barbican Art Gallery, edited by Francesco Manacorda, 16–30. London: Barbican Art Gallery, 2009, p17.
[56] Lippard, Lucy. *Undermining: A Wild Ride Through Land Use, Politics and Art in the Changing West*. The New Press, New York, 2014, p. 82

Figure 8. Tue Greenfort, *UREA Crystal Fountain I*, Water pump, Acrylic glass, Urea

Figure 9. Tue Greenfort, *Diffuse Einträge,* 2007. Lake Aasee, Skulptur Projekte Munster.

exposure of the ridiculousness of such cosmetic measures to maintain the lake's idyllic appearance"[57]*.* Greenfort's interventionist practice seeks not to restore the lake's ecology, but to demonstrate that "*there is no Eden, no virgin spring to which we may return"*[58]*.*

VII Conclusion

There may be no neat convergence between 'nature' and culture'. Morton has targeted a conceptual conundrum that haunts ecologically oriented art practices. A society that *fully* acknowledges its embeddeness within the 'environment' and no longer distinguishes between nature and culture, would have little need to make a point of it[59]. Environmental thinking is wishful thinking. Alternatively, adjusting the frame to accommodate culture *within* nature may simply add industrial mines to the accepted list of extant caves[60]. In his quest to refocus our attention on the lives of materials, Ingold is weary of envisioning a *"landscape whose surface marks an interface … between nature and culture, the physical world and the world of ideas – 'two sides of a coin which cannot be separated', but two sides nonetheless"*[61]. He suggests that in order to fully comprehend the flows and relationships which shape the material world we must *"lift the carpet, to reveal beneath its surface a tangled web of meandrine complexity"*[62]*. Fountains* (2016-17) attempted to reveal this in earnest, but was too constricted by the formal decisions which ultimately shaped the installations. Greenfort's sculptures genuinely evoke ecological cycles of growth and degradation. However, the concept of ecology may be most useful when it helps to reveal the hidden, systemic interrelationship of things. As we have seen, fountains unite many complex relationships. They express historical beliefs and approaches to water, frame an experience of 'nature', define urban space and its flows of social and political power. They can equally represent wealth and abundance, or scarcity and absence. Their material cycles and ecological metaphors describe ancient fascination with the interplay of water and stone, which produces both natural and man-made environments. It is unlikely, however, that any individual work of sculpture could render the historical depth and complexity of these relationships visible in a singular gesture, or even a constellation of elements. Instead, we may ask how a systemic approach might aid sculptural works to unpack the broader networks of technical and socio-political relations that mediate the flows of water and shape such notions as "nature" and "culture" in the first place.

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[57] Demos, T. J. "The Politics of Sustainability: Contemporary Art and Ecology." In *Radical Nature: Art and Architecture for a Changing Planet 1969–2009*, published in conjunction with the exhibition of the same name, shown at the Barbican Art Gallery, edited by Francesco Manacorda, 16–30. London: Barbican Art Gallery, 2009, p17.

[58] Demos, T.J. "Art after Nature - T. J. Demos on the post-natural condition" in *Artforum* pp. 90-98

[59] Morton, Timothy. *Ecology Without Nature*: *Rethinking Environmental Aesthetics*. Harvard University Press, Cambridge, 2007, p. 141

[60] Ibid, p. 143

[61] Ingold, Tim. "Materials Against Materiality" in *Archaeological Dialogues*, 14 (1) 1-16, Cambridge University Press, 2007, doi:10.1017/S1380203807002127, p. 14

[62] Ibid, p. 9

CHAPTER 2 – THE POETICS OF INFRASTRUCTURE

How can fountains activate contemporary water infrastructure to reflect upon our dependence on hidden systems and the limits of control?

The street is heavy with rain. Water bounces everywhere, rushing through the gutters overflowing around me. It falls relentlessly as if circulated by some giant distant fountain. The sprawling streetscapes, squares and car parks that pave the city are awash, slowly filling up like a huge concrete basin. The skyscrapers clustered at the centre of it all, resemble a towering crystalline pyramid, tapering out toward the smaller domestically-scaled formations which encrust the basin's edges. Water cascades over and through them, off their roofs and spoutings, bursting from their taps and plumbing. It races toward the lowest points in the basin, disappearing through thousands of steel grills and grates; fortified portals to the hidden world beneath. A labyrinth of pipes, chambers, tunnels and drainage channels are submerged here, endlessly circulating water through the Fountain City. Water descends the dark network, twisting and turning for kilometres, before erupting into the sunlit valleys, creeks and channels at the foot of the great basin. Their smooth concrete surfaces are carefully engineered to maximise the flow of water out into the creeks and rivers. This huge and sudden increase in urban runoff, radically reshapes and erodes their meanders before gurgling forth into the bay. Here it will rest, ebbing with the salty tide, awaiting the temperate force of evaporation to return it by air, to the head of the fountain.

Almost everywhere we stand in modern cities, water circulates underfoot. Like the roots of a tree, complex underground water networks nourish and sustain urban life[63]. Fountains traditionally displayed these hidden flows above the surface. This chapter focuses in on the relationship between fountains and water infrastructure. It asks how fountains may be used to highlight our dependence on these hidden systems and articulate the tensions inherent to mediating the flow of water. Systems-oriented practices provide an historical method to expand fountains, to highlight our dependence on infrastructures, and visualize our systemic interrelationship to water. My work *Fountain - Studio Plumbing* (2017), seeks to strip away the fountain's decorative exterior, laying bare the system of pipes beneath. Here the sculpture is a functional apparatus, fused into the studio (or gallery's) existing water supply infrastructure in order to produce a 'fountain' event in real-time. Aesthetic and technical considerations are merged in order to draw hidden systems of water infrastructure into plain sight and reflect upon the limits of control.

I Systems Sculpture

In the mid to late 1960s a new way of thinking and seeing emerged out of systems theory, complexity theory and cybernetics (the interface of human and mechanical behaviors that characterizes modern computing and robotics). The new perspective came from a shift in focus from what a thing *was*, toward what it *did,* and its *systemic interrelatedness* to all other things[64]. Art-critic and theorist Jack Burnham developed a critical-framework for systems-oriented art practices. His influential articles "Systems Esthetics" and "Real-time Systems" (published in *Artforum* in 1968 and 1969 respectively), anticipated political concerns which persist today such as; *"maintaining the biological livability of the earth, producing more accurate models of social interaction, understanding the increasing symbiosis in man-machine relationships, establishing priorities for the usage and conservation of natural resources (…) and ongoing relationships between organic and non-organic systems"*[65]*.* These issues have gained renewed relevance in the age of global communications and trade networks, mass migration, hi-speed information exchange, and increased awareness of the human impact on global ecosystems.

Hans Haacke came to exemplify the systems approach producing sculptural manipulations of natural elements in real-time. The exhibition *Hans Haacke 1967* at Massachusetts Institute of

[63] Swyngedouw, Erik. *Social Power and the Urbanization of Water – Flows of Power*, Oxford University Press, New York, 2004, p. 49
[64] Shanken, Edward A. (Ed.) "Introduction: Systems Thinking/Systems Art" in *Systems – Documents of Contemporary Art*, The MIT Press, Cambridge Massachusetts, 2015, p. 12
[65] Burnham, Jack. "Systems Esthetics" in *Artforum* Vol. 7, no. 1 (September 1968), p. 31

Technology, presented the artist's early water pieces that employed a minimal geometric syntax to frame organic systems such as weather and growth cycles[66]. He called these early works 'Event-Containers' and 'Real-Time Systems'[67]. His iconic *Condensation Cube* employed a transparent acrylic box filled with clear liquid and air to simulate the hydrologic cycle of evaporation, condensation and precipitation[68]. The artist aimed to*"… make something which experiences, reacts to its environment, changes, is nonstable... make something indeterminate, that always looks different, the shape of which cannot be predicted precisely ... make something that reacts to light and temperature changes, that is subject to air currents and depends, in its functioning, on the forces of gravity ... make something that lives in time and allows the "spectator" to experience time..."*[69]*. Condensation Cube* is a system that frames the infinite variability of fluid dynamics in nature and includes the viewer as an active force among those variables.

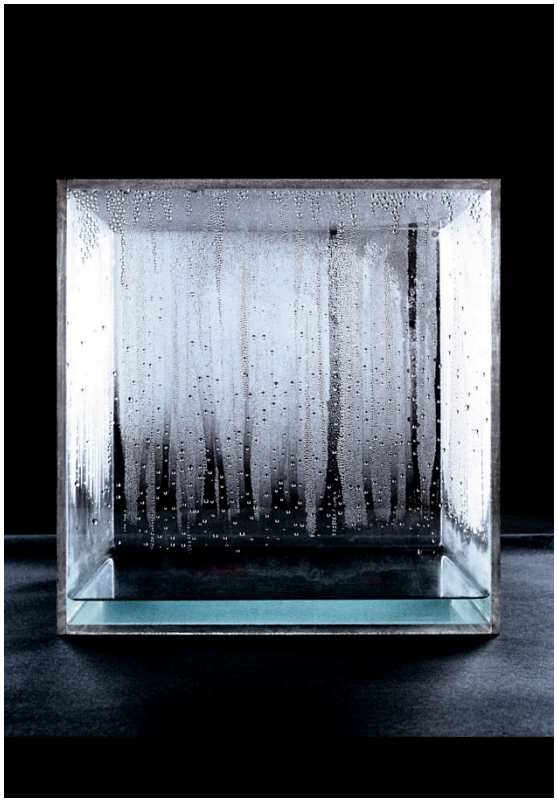

Figure 10. Hans Haacke, *Condensation Cube*, 1963-65. Plexiglass and water, 76 x 76 x 76 cm.

[66] Burnham, Jack. *Beyond Modern Sculpture*. George Braziller, New York 1968, p. 346
[67] The recurrence of the name "Real-time System" shows that Haacke and Burnham were close during this period, as friends and colleagues who greatly influenced one-another.
[68] Burnham, Jack. *Beyond Modern Sculpture*. George Braziller, New York, 1968, p. 279
[69] Ibid, p. 347

Burnham foresaw how the sophisticated computer automations would transform society's means of production, and warned that artists could no longer focus on the production of static objects and the fetishisation of traditional crafts[70]. In order for art to function in advanced technological societies, artists must sensitively merge aesthetic and technological thinking to *"reduce the technical and psychical distance between (…) artistic output and the productive means of society"*[71]. The aim was to bring art and life closer together. In the context of what Burnham described as a shift from an *object-oriented* to a *systems-oriented* culture, Haacke's work challenges the prime status of static art-objects. *Condensation Cube* functions *"like a camera"*, that gives form to the otherwise invisible meteorological processes that persist within institutional enclosures[72]. Atmoshpheric conditions such as fluctuations in humidity, heat radiating from visitors bodies, airflow and physical vibrations within the galleries, determine the rate of condensation and the extent to which change is visible.

As Linda Weintraub has shown, an ecological perspective renders objects relatively meaningless if we isolate them from their environments, social contexts and real-time temporal flows[73]. Sculptural materials for example, are resourced from specific locations, obtained and manufactured through networks of labour, transportation systems and influence the environments from which they are extracted. They are then transformed by artists, circulated through galleries, enter private and public collections which activate other networks of labour for storage, conservation and display, criticism and publishing. In spite of this, isolation remains a key strategy for art institutions to maintain the illusion that artistic value resides in specific rarified objects[74]. 'White-cube' exhibition spaces are designed specifically to focus attention through visual isolation, and aim to amplify the presumed meaning of given artworks, thus maximizing their cultural or commodity value. *Condensation Cube* critiques this paradigm by showing that conservation practices that maintain such collections are often helpless to the microscopic influences of atmospheric heat, light and moisture[75]. But Haacke's critique exceeds the gallery walls. His holistic thinking recognizes that the inevitable cycles of nature are unsympathetic to the whims of humanity. Caroline Jones has noted that for Haacke "*natural systems would be captured for art with an elegant minimum of technology in order to eradicate sentiment and contemplate non-human agency*"[76]. By reframing a macrocosmic system such as the hydrological cycle within a microcosmic system like the art gallery, Haacke distills the complex interactions of social and environmental systems down to a legible human scale.

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[70] Burnham, Jack. "Systems Esthetics" in *Artforum* Vol. 7, no. 1 (September 1968), p. 31
[71] Ibid.
[72] Nisbet, James. *Ecologies, Environments and Energy Systems in Art of the 1960s and 1970s.* The MIT Press, Cambridge, Massachusetts, 2014, p. 203
[73] Weintraub, Linda. *To Life! Eco Art in Pursuit of a Sustainable Planet*. University of California Press, Berkley, 2012, p. 69
[74] Burnham, Jack. "Real-time Systems" in *Artforum* Vol. 8, no. 1 (September 1969), p. 50
[75] Ibid
[76] Jones, Caroline A. "Reconsituting Systems Art" in *Hans Haacke 1967 Exhibition Catalogue*. MIT List Visual ArtsCentre, Cambridge, 2011, p. 7

II The Metaphor of Circulation

Haacke called for a contemporary form of water sculpture, which advanced upon the spectacle of baroque fountains, harnessing the principle elements of pressure, surface tension, reflection and prismatic qualities, and present them in new ways[77]. The development of my own *Fountains*, have in part, attempted to meet this challenge. His works with water and wind recalled elements of fountains, fundamentally producing the conditions for water to rise and fall, exploring circulation, and featuring water as the medium of reflection on the relationship between human beings and their environment. Following a trip to California in 1967, the artist developed an interest in the large public fountains being commissioned there[78]. He saw in them open and uncontained opportunities to scale up his experiments and a practical means to engage in larger social and atmospheric cycles outside of the gallery[79]. *Wind in Water* (1968) was one of many experiments to this end[80]. The work was 'performed' on the rooftop of the building housing the artist's studio, where a fine mist of water was sprayed from nozzles into the atmosphere creating an uncontained fog. The work was naturally formed by the prevailing winds and weather patterns on the day[81].

Figure 11. Installation view of Hans Haacke, *Circulation*, 1969. Water, water pump, PVC flexible tube and propylene connectors.

Circulation (1969) continued Haacke's distillation of fountain elements. Haacke utilized a mechanical pump to circulate infinitely varied patterns of air and water through a vein-like course of transparent hoses on the gallery floor. The counterpoint of mechanical and organic

[77] Hans Haacke in conversation with Jack Burnham in "Hans Haacke: Wind and Water Sculpture (1967)" in *Hans Haacke October Files 18,* MIT Press, Cambridge, 2015, p. 20
[78] Ibid.
[79] Ibid.
[80] See *Wind in Water: Snow* (1968) and *Spray at Ithaca Falls: Cast Ice* (1969).
[81] Fry, Edward F. "Introduction to the Work of Hans Haacke" in *Hans Haacke October Files 18,* MIT Press, Cambridge, 2015, p. 33

rhythms created specific perceptual registers. Haacke observed that the circulation systems of the human body are inherently attuned and receptive to fluid variable motion, what he called "natural patterns of time"[82]. Burnham had criticized earlier kinetic art for its inability to register this internalized kinesthetic experience of motion and duration[83]. *Circulation* (1969) demonstrates that our experience of moving water is as much bodily as it is visual or intellectual. Nevertheless, it is the work's *metaphoric* significance that is most compelling, and extends beyond biological or ecological phenomena. The perpetual motion, density and frantic repetition of water and air, might equally model the traffic of resources, commodities, currencies, and information signals that flicker constantly, and imperceptibly through the infrastructures of everyday life. Erik Swyngedouw has noted that the 'metabolism of the city' cannot survive without the relentless flow of water through its veins[84].

Therefore *Circulation* (1969) acts as a portal through which we can traverse the layers of parallel systems, from microscopic flows of oxygen in our bloodstream to the vast layered networks of global interconnectivity. Burnham related Haacke's experiments with fluid dynamics to Leonardo DaVinci's obsession with visualizing the infinite textures and effects of water in two dimensions. For Burnham, both artists' intense observations exhibit a "prescientific poetry" where careful visual analysis provides a bridge between art and science[85]. Systems-perspectives stimulate this analytical tendency, and have thus focused my own research beyond how fountains operate as artworks, toward their practical functions and the poetic potential of water infrastructures themselves.

III The Poetics of Infrastructure

Infrastructures are layered architectures for the circulation of people, goods, services and ideas[86]. They possess the unusual quality of being both things, and the relationships between things. They are both formal and functional. This dual character distinguishes infrastructures as the basis of systemic interaction between multiple technologies, people and places[87]. While these systems form the material undergirding of modern life, they cannot be seen solely as producers of the phenomenal world above.

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[82] Burnham, Jack. "Hans Haacke: Wind and Water Sculpture (1967)" in *Hans Haacke October Files 18,* MIT Press, Cambridge, 2015, p. 19
[83] Burnham, Jack. "Systems Esthetics" in *Artforum* Vol. 7, no. 1 (September 1968), p. 35
[84] Swygedouw, Erik. quoted in Graham, Steven & Marvin, Simon. *Splintering Urbanism: Networked infrastructures, Technologial Mobilities and the Urban Condition*, Routledge, London, 2001, p. 55
[85] Burnham, Jack. "Hans Haacke: Wind and Water Sculpture (1967)" in *Hans Haacke October Files 18,* MIT Press, Cambridge, 2015, pp. 9-10
[86] Larkin, Brian. "The Politics and Poetics of Infrastructure" in *Annual Review Anthropology,* 2013. (www.annualreviews.org) p. 328
[87] Ibid, p. 329

Anthropologist Brian Larkin has shown that infrastructures exist as forms, which are legible beyond their technical functions[88]. His notion of a 'poetics of infrastructure' provides a critical framework to extend systems-aesthetics by harnessing the *formal* and *symbolic* potential of infrastructural materials themselves. In poetry, words may be chosen for their sonic qualities such as rhythms or in order to rhyme, in addition to the meaning they signify[89]. Similarly artists may use the materials of infrastructure like words to evoke symbolic meaning and metaphors, signify historic moments and stimulate new sensory perceptions[90].

Figure 12. Charlotte Posenenske, *Square Tubes [Series D]*, 1967. Galvanized steel, Six elements: square tube: 460 x 460 x 920 mm; rectangular tube: 230 x 460 x 920 mm; cubic tube, 460 x 460 x 460 mm; angular element, opening: 460 x 460 mm; transition element, openings: 460 x 460 and T-piece, openings: 460 x 460 mm. Overall display dimensions variable

Minimalist sculpture introduced the aesthetic economy of industry into the sphere of art. Artists employed industrial manufacturing processes, materials, and prefabricated modular units to produce austere three-dimensional forms. Charlotte Posenenske developed a sculptural practice, configuring prefabricated ventilation ducts, as readymade modules for minimalist sculptures. Posenenske's works, however, reunited the non-relational 'specific

[88] Larkin, Brian. "The Politics and Poetics of Infrastructure" in *Annual Review Anthropology,* 2013. (www.annualreviews.org) p. 329
[89] Jakobson R. Closing statements: linguistics and poetics. In *Semiotics: An Introductory Anthology*, ed. RE Innis, Bloomington: Indiana Univ. Press, 1985, pp. 145–75
[90] Larkin, Brian. "The Politics and Poetics of Infrastructure" in *Annual Review Anthropology,* 2013. (www.annualreviews.org) p. 338

objects' of hard-line minimalist sculpture, with real-world systems. Her ducts appeared to snake into the white cube from the exterior streetscape, anthropomorphizing into a respiratory apparatus for the architecture itself[91]. So small was the distinction between her works and their functional counterparts, that having drawn their sculptural qualities into sudden focus, they dissolved the threshold between "art" and *"everything material that was not art"*[92].

Figure 13. Oscar Tuazon, Pipe Prototype, 2015. Fiberglass concrete, sonotube. 154.9 × 53.8 × 125.7 cm.

More recently Mandla Reuter and Oscar Tuazon have specifically used water pipes to question the ongoing construction of urban experience. Both artists have located ideas around fountains and water infrastructures as connective tissue. In the context of water management ideological conflicts are plenty, and Tuazon's suggest that like water, we will likely take the easiest way out. Reuter's *Fountain* (2010) consists of five, one-thousand-litre industrial water containers, allegedly filled from the Trevi Fountain in Rome displayed in the gallery on transportation palettes. The same pallets support the enormous pressure supply pipes of *Jet D'eau* (2012/13) both of which make physical the immense scale of displacement that these infrastructures perform. Tuazon's pipe pieces are like hand-made readymades that simulate pre-cast concrete sections of stromwater drains. The raw textures of *Pipe Prototype* (2015) evidence its making, and imply the accumulated signs of wear and decay. The recurring y-sections show a hands-on appreciation for the formal complexities negotiated by engineers. As physical junctions they embody choices between unseen directions or

[91] Posenenske's works seem to challenge Donald Judd who targeted the anthropomorphic qualities of art. See Fried, Michael. *Art and Objecthood.* 1967 [online] myuca. Available at: http://atc.berkeley.edu/201/readings/FriedObjcthd.pdf [Accessed 25 Apr. 2017].

[92] Greenberg, Clement quoted in Fried, Michael. *Art and Objecthood.* 1967 (http://atc.berkeley.edu/201/readings/FriedObjcthd.pdf)

projected alternatives. Like Posenenske, Tuazon seeks the frontier between sculpture and its point of disappearance as art, and its existence within the banality, or invisibility of real-world things[93].

Burnham insists that no component of a system has intrinsic significance independent of its application[94]. His interest is fixed upon what the object *does*[95]. For example, a copper or steel pipe serves the purpose of transporting hot or pressurized water over distance. It may derive artistic significance from its application within a fountain or sculptural apparatus to produce aesthetic affects. But since the pipe itself is not transformed, it can be repurposed once its function as art is complete. Indeed, the opposite may hold true as in *Fountain (Studio Plumbing),* where some of the plumbing hardware was salvaged from construction sites. The assemblage of old and new copper pipes in varying diameters, and minimal angles, evoked the formal economy of engineering. Engineering directly translates technical functions in to forms. These forms are derived from a trained optimization of materials and an economy of means that Manuel DeLanda's terms 'material elegance'[96]. For DeLanda, a solution to a given problem *"can be said to be elegant if it makes the most economic use of resources, if it produces the most with the least"*[97]. His theory is derived from the scientific "least principles" observed in natural processes, such as the tendency for light to travel the shortest possible distance between two points, and *"the tendency of all material processes to minimize the difference between potential and kinetic energy"*[98]. It is from these principles that we understand why water always follows the path of least resistance. Fluid mechanics defines the size, shapes, textures and contours of water infrastructure. The geometry of a pipeline is precisely calculated to optimize the force of gravity and minimize distance and friction-loss[99]. Thus the aesthetic economy of engineered forms can be used as a symbol of other financial, logistical, material and cultural economies that permeate everyday life.

The enormous systems of reservoirs, channels, pipes, sewers, chambers, tunnels and conduits, which water the city, maintain a curiously invisible presence[100]. Water infrastructure is deliberately hidden in ceilings and wall cavities, submerged deep underground, or simply camouflaged into ubiquitous normality. Larger infrastructure hubs such as reservoirs, power stations and sewage treatment plants are generally closed to the public and located on the

[93] Tuazon, Oscar. "Between Art and Archtecture" Artist talk at The New School, 28 November, 2012. Retrieved from https://vimeo.com/54601099
[94] Burnham, Jack. "Systems Esthetics" in *Artforum* Vol. 7, no. 1 (September 1968), pp. 34-5
[95] As stipulated earlier, the systems perspective was a philosophical position that shifted conceptual focus of art from form to function. See Shanken, Edward A. (Ed.) "Introduction: Systems Thinking/Systems Art" in *Systems – Documents of Contemporary Art*, The MIT Press, Cambridge Massachusetts, 2015, p. 12
[96] DeLanda, Manuel. "Material Elegance" in *Architectural Design*, 77: 18–23. doi:10.1002/ad.392, 2007, p. 18
[97] Ibid.
[98] Ibid, pp. 19-20
[99] Friction loss in fluid mechanics is the loss of pressure in a pipe due to the resistance between the viscousity of a liquid and the interior surface texture of the pipe. See further Munson, B.R. *Fundamentals of Fluid Mechanics* (5 ed.). Wiley & Sons, Hoboken, New Jersey, 2006
[100] Graham, Steven & Marvin, Simon. *Splintering Urbanism: Networked infrastructures, Technologial Mobilities and the Urban Condition*, Routledge, London, 2001, p. 57

remote fringes of our cities - out of sight and out of mind. As Larkin shows, however, "*what is background for one person is a daily object of concern for another*"[101]. Visibility is a matter of perspective. Infrastructures require careful maintenance, regulation and upgrades, which engage extensive labour networks from council officials, policy makers, specialist contractors, maintenance workers, and domestic tradespeople, all of whom see and know water infrastructures intimately[102]. In a systems perspective, the visible and invisible actors within a network are equally important[103]. Invisible actors may be transparent or hidden material elements, but also socio-political factors that influence systems. Pipes are not only attached to water supplies, but also to chains of regulation and administration, represented by digits in a budget spreadsheet and words in policy documents[104]. Infrastructures have traditionally been tied up in ideals of civic unity, techno-political forces of governance, and the centralized control of utilities and resources[105]. More recently water has subsumed as yet another commodity form of free-market economics[106]. In cities of advanced capitalism, the reliable supply of water for drinking, sewage and sanitation is taken for granted. However access to pressurized systems, and adequate, clean water supply are privileged[107]. In parts of Mumbai water pipes serve as perilous footways through informal settlements, whose residents have no access to the water being transported to affluent gated communities nearby[108]. Even in the 'hydraulic-zones' serviced by the state, water supply is heavily rationed and only available at certain times of day[109]. Under these pressures, residents often work with plumbers to hack or re-direct pipelines without permission of local authorities[110]. When social access to water is limited, the urgent necessity to understand and manipulate the functions of infrastructure becomes a central daily concern. Hacking into existing systems, may bring our dependence upon them into focus, but remains a practical means of survival in the age of commoditized water. Thus, despite the blinkered view of privilege, infrastructure remains hidden in plain sight.

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[101] Larkin, Brian. "The Politics and Poetics of Infrastructure" in *Annual Review Anthropology,* 2013. (www.annualreviews.org) p. 336

[102] For a detailed insight into the lives of the workers constructing and servicing New York's behemoth system of water tunnels see: Grann, David. "City of Water: Can an intricate and antiquated maze of tunnels continue to sustain New York?" in *The New Yorker*, September 1, 2003

[103] Burnham, Jack. "Systems Esthetics" in *Artforum* Vol. 7, no. 1 (September 1968), p. 35

[104] Larkin, Brian. "The Politics and Poetics of Infrastructure" in *Annual Review Anthropology,* 2013. (www.annualreviews.org) p. 335

[105] Graham, Steven & Marvin, Simon. *Splintering Urbanism: Networked infrastructures, Technologial Mobilities and the Urban Condition*, Routledge, London, 2001, pp. 62-3

[106] Ibid, p. 91

[107] For a more detailed understanding of the forces that limit or privilege access to water see Swyngedouw, Erik. *Social Power and the Urbanization of Water – Flows of Power*, Oxford University Press, New York, 2004

[108] Graham, Steven & Marvin, Simon. *Splintering Urbanism: Networked infrastructures, Technologial Mobilities and the Urban Condition*, Routledge, London, 2001, p. 2

[109] Anand, Nikhil. *Hydraulic City: Water and the Infrastructures of Citizenship in Mumbai*. Duke University Press, Durham and London, 2017, p. 2

[110] Ibid.

Figure 14. Installation view of Joseph L. Griffiths, *Fountain – Studio Plumbing*, 2017. MFA Studios, Building B6.32 Monash University Faculty of Art Design and Architecture.

Figure 15. Installation view of Joseph L. Griffiths, *Fountain – Studio Plumbing*, 2017. MFA Studios, Building B6.32 Monash University Faculty of Art Design and Architecture.

IV *Fountain – Studio Plumbing* (2017)

The installation *Fountain – Studio Plumbing* (2017) aimed to draw water infrastructure undeniably in to view. Research of the technical functions of water infrastructure heightened my appreciation for their sophisticated engineering. However the fountain-like events produced by system malfunctions, not only highlighted the presence of the unseen, but captured the complex tensions of mediating water and the limits of control. *Fountain – Studio Plumbing* juxtaposed the experiences of a fountain and a plumbing fault, to highlight the opposing attitudes and mixed emotions caused by our struggle to control water. The work continued the reductive method of *Fountains* (2016-17) stripping the fountain of its decorative exterior, this time emphasizing the system of pipes that make its function possible and which render fountains both works of art and engineering. This fountain was a direct extrusion of the existing infrastructure of the building, a single pipe extending into the centre of the exhibition space, redirecting the course of water to this point. At the terminus of this extrusion, the constant pressure of the building's water supply is made visible, spraying freely into the air as a mist, descending into puddles in the gallery floor. The audience physically engaged with the work through touch, sight and sound, the changing shape of the pooled water influencing their movement into or around the work, accompanied by the soft hiss produced by the mist. The visibility of the transparent water was contingent upon the natural and artificial light conditions of the gallery, the accumulation of water over time and the viewers changing physical orientation to the work.

Figure 16. Installation view of Michael Asher, *Kunsthalle Bern 1992*. Kunsthalle Bern 1992

Michael Asher's *Kunsthalle Bern 1992* provided a practical strategy for me to address the interior systems of the art institution, in this case the Monash University MFA studios and exhibition space (b). Asher's piece concentrated the cast-iron water heaters from the entire institution into a single room, by extending the copper-pipes that supplied them. The multiple paths of parallel pipes trace the walls of each of the museum's rooms, bisecting the architecture and leading the viewer through a flow-chart of the pre-existing spaces. In *Fountain – Studio Plumbing* (2017) the system was similarly foregrounded, drawing a distinct path through the space. Tapping into the existing pipes beneath the studio sink, it transported the water along the floor of the studio passage way, made a right-angle turn to the left through the entrance to the exhibition space and another angled chicane, finally protruding vertically 80cm(approx.) to its terminus at the exact centre of the room. Both works draws their extended environments into themselves. The linear pathways draw attention to the existing architectonics and systems of water supply or temperature regulation we would normally overlook. Fountain designers, like architects landscape architects, planners and engineers, typically go to great pains to hide their circulatory systems. Here systems were the primary sculptural material. The route of the pipe was direct and efficient embracing the formal economy of engineering. As an infrastructure it was both a thing and the connection between things[111]. It was a sculptural object, a line, and a functional conduit. It was simultaneously visual and conceptual conduit tying the event to the larger systems of infrastructure that made that event possible. In this sense, the pipe led the imagination in two directions at once, drawing out of the exhibition space, through the corridors of studio production, inside the service ducts and concrete walls, and out into the networked infrastructure of everyday life.

The assemblage of old and new copper pipes in varying diameters, their minimal geometry, reflected the practical nature of such utilities, which show signs of ongoing repairs and modifications. The discoloured patina and visible residue of the repurposed sections added to signify their former life and contrast the luminous surface of the new pipes. Positioned directly on the floor, their sinewy path evoked the roots and veins that transmit water biologically, hinting at Haacke's conflation of bodily, infrastructural and climatic circulation. Like *Wind in Water* (1968), the misty spray was 'performed' in real-time with the audience. However bringing the event indoors, *Fountain – Studio Plumbing* (2017) refocused the circulation of water through the porous materials of 'contained' architecture. Bringing the fountain-form indoors related the gallery and public-square as sites of communal congregation and exchange. Before domestic plumbing was commonplace in Rome, fountains positioned in central public places were important meeting places and sources of nourishment. Unlike the public realm of most fountains, the exhibition space seeks to obfuscate the outside world, in order to neutralize the viewing conditions of works of art. As Asher and Haacke have both

[111] Larkin, Brian. "The Politics and Poetics of Infrastructure" in *Annual Review Anthropology,* 2013. Retrived from www.annualreviews.org p. 328

Figure 17. Detail of Joseph L. Griffiths, *Fountain – Studio Plumbing*, 2017. MFA Studios, Building B6.32 Monash University Faculty of Art Design and Architecture.

Figure 18. Detail of Joseph L. Griffiths, *Fountain – Studio Plumbing*, 2017. MFA Studios, Building B6.32 Monash University Faculty of Art Design and Architecture.

shown, museums galleries and arts-institutions are always implicated within socio-economic, political, and environmental systems, which are far from neutral. While the *Condensation Cube* drew the unavoidable presence of nature into view, the constructed ideal conditions of art were immediately upended by *Fountain (studio plumbing)*. The artificial enclosure of the gallery was forced into conflict with the real-world consequences of the work. In light of this we may question the role of the gallery itself as site of cultural nourishment.

As H. V. Morton observed, *"the fountain and the firework have the odd distinction of displaying elements of devastating possibilities in a mood of playful benevolence"*[112]. In daily life we pass gushing fountains without considering the huge force they display and often indifferent to their presence at all. It is our trust in the precise equilibrium regulated by fountain systems that makes this possible, and allows us to experience feelings of calm reflection or physical intensity almost simultaneously. Water infrastructure is required to maintain a similar equilibrium but on a vast scale, the perfect balance between adequate supply and sufficient drainage. Imagine a glass that is constantly refilled but never overflows. The reticulated water supply our kitchens, baths and lavatories, the pressurized plumbing in a given building is a twisted tap or a split pipe away from a spraying fountain. It is often only when these systems malfunction that they attract significant attention. Klaus Weber's public installation *Fountain Loma Ave/W6th St* (2002) staged the collision of a car into a fire hydrant at the Los Angeles intersection that completes the works title. The one-day exhibition orchestrated the quotidian spectacle of catastrophe as an organized rupture of the urban fabric[113]. Hired actors performed the roles of traffic-control police, maintaining the duration of the work while a hidden camera documented the reactions of bystanders. As Katie Stone has observed, their "simultaneous fascination and disregard for the accident interestingly reflect on the relationship between trauma and spectacle"[114]. This tension indicates that malfunction need not be a negative force. The work can be seen as a utopian gesture, where the beauty and function of water are displayed against the backdrop of artificially-watered desert metropolis[115]. Thus Weber liberates our cultural anxiety for control and inclination towards repression[116].

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[112] Morton, H. V. *The Waters of Rome*. The Connoisseur and Michael Joseph, London, 1966, p. 17
[113] Bell, Kirsty. "What Goes Around: Imagination as a form of resistance in the work of Klaus Weber" 1 October 2010. Retrieved from https://frieze.com/article/what-goes-around
[114] Stone, Katie. "Klaus Weber". 1 June, 2004. Retrieved from https://brooklynrail.org/2004/06/artseen/klaus-weber
[115] Hunt, Andrew. "Klaus Weber at Herald St." 1 November 2012. Rerieved from http://www.contemporaryartdaily.com/2012/11/klaus-weber-at-herald-st-2/
[116] Anon. "Klaus Weber" 18 September, 2008. Retrieved from https://www.secession.at/en/exhibition/klaus-weber-2/

V Conclusion

Fountain – Studio Plumbing (2017) attempted to highlight our dependence on hidden systems of water and the conflicting emotional responses that water can produce. One of the great conundrums of urban life is that we are simultaneously dependent upon and threatened by water[117]. While it is essential and often scarce, our limited capacity to tame its flows threatens the stability of urban landscapes and way of life[118]. The work slowly floods the contained exhibition space and threatens the adjacent studios. Without a system of regulation, once activated the even will unfold until it is physically shut off. This contingency means that the work may be extremely short lived, or may be allowed to progress for a number of hours or even days. The duration of the work is thus limited by the ability of the institution to accept this event as art, to accept the risk and potential damage it may cause, and the audience's tolerance for waste. It is a gesture of antagonism, whereby the behavioural structures of art viewing, not-touching or disturbing a work of art, the trust in the institution to mitigate risks to visitors, etc. served to support the duration of the piece. Each viewer's value of water, architecture, interior space, property and art were called into question. Their personal and collective commitment to the art-viewing experience and their pleasure or interest in the event, were forced into conflict with their concern to conserve water and prevent potential damage to property. Therefore the work drew subjective tensions around water into question forcing the viewer to instinctively consider personal position and their sense of responsibility to act. While the scale and complexity of water infrastructures pose problems of imageability, the existing water infrastructure was nonetheless drawn into view. The fountain's overt simplicity was a psychic conduit to the larger water supply systems upstream, pointing to our dependence on them and the systemic embeddedness of the exhibition space into real-world forces of nature. Its real-world consequences enabled *Fountain (Studio Plumbing)* to render the complexities of our relationship to water tangible.

[117] Swyngedouw, Erik. *Social Power and the Urbanization of Water – Flows of Power*, Oxford University Press, New York, 2004, p. 49

[118] The threat of sea-level rise on coastal settlements is a common topic in political discussion of global climate change. Likewise, urban water infrastructures are called upon to manage increasingly extreme weather events such as flash flooding and drought.

Figure 19. Detail of Joseph L. Griffiths, *Fountain – Studio Plumbing*, 2017. MFA Studios, Building B6.32 Monash University Faculty of Art Design and Architecture.

Figure 20. Installation view of Joseph L. Griffiths, *Fountain – Studio Plumbing*, 2017. MFA Studios, Building B6.32 Monash University Faculty of Art Design and Architecture.

CHAPTER 3 - FOUNTAINS FOR MOONEE PONDS CREEK

How can fountains be used to reimagine urban waterways?

The Moonee Ponds Creek is place of personal significance to me. I grew up in a house built by my great-grandfather on a steep piece of paddock he purchased on the slopes of Moonee Valley. My grandfather learned to swim in the creek which traverses the foot of our hill and would recount stories of his childhood adventures exploring 'the cliffs' downstream. My own adventures played out in a very different landscape, a vast concrete architecture that my mother euphemistically referred to as 'the aqueduct'. It was my first encounter with the word or the concept of the ancient infrastructure. The allure of forbidden tunnels and huge sloping surfaces, strange cars parked under bridges - the mixed sense of danger and freedom was a sweet cocktail. Down from the bike paths and walking trails one can fully experience its architectural grandeur. The brutal economy of its engineering, has created spaces that are simultaneously barbaric, austere and elegantly streamlined. The endless walls serve as sloped canvasses, marked with the traces of spray-paint, wheels and slime. The severe angles carved by intersecting service ramps, and stepped waterfalls become sculptural features within the geometric environment. Water seeps in from everywhere, draining the suburbs of this north-western corridor, collecting curious minds and real-world escapees along with the chemical effluent, runoff and waste. A stolen car sits abandoned in the water… huge litter traps are filled with "Mount Franklin"… cyclists fly by… clay bricks and bitumen are slowly reshaped into river stones and fresh native plants show faint signs of growth.

Figure 21. Video still from Joseph L. Griffiths, *Fountains for Moonee Ponds Creek*, 2017-18, HD digital file.

Figure 22. Video still from Joseph L. Griffiths, *Fountains for Moonee Ponds Creek*, 2017-18, HD digital file.

This chapter traces an attempt to transform the Moonee Ponds Creek into a fountain. This sculptural gesture has been articulated through temporary interventions in public space, video documentation, and a printed publication. These three formats attempt to engage different modes of circulation, in real-time, in the gallery and in the archive. Together they form the installation *Fountains for Moonee Ponds Creek* (2017-18), which was exhibited at Monash University for examination as part of this Master of Fine Art project. While the work stands here as a culmination, it likewise marks the beginning of my artistic engagement with the Moonee Ponds Creek site, which is intended to continue beyond the scope of the Master of Fine Art. Building upon Robert Smithson's conception of the suburban landscape as a *ruin-in-reverse*, the project reimagines the Creek's heavily engineered form as a sculptural artefact, shaped by historical attitudes toward nature and the process of urbanisation. The interventions in public space produced a moment of rupture within the concrete architecture of the Creek through the collision of contrasting images – a fountain and a stormwater drain. *Fountains for Moonee Ponds Creek* engages directly with the history and local conditions of it's site, returning the fountain form of my previous indoor works to the public realm. Framed by the camera, a new image of the creek is produced that challenges the preconceptions of degradation and neglect, which the dominate public opinion of the site.

The Moonee Ponds Creek is a complex site suspended between its engineered history; its multiple functions as a recreation arterial, drainage system and public amenity; the politics of its future development; and community initiatives to protect and restore its ecology. This chapter develops a methodology to address these tensions in a variety of contexts, combining sculptural intervention, video and a printed publication designed to circulate on site, in the gallery and in the library. Rosalind Krauss' *Sculpture in the Expanded Field* provides a critical framework for site-oriented sculpture, that engages directly in existing urban landscapes. It figures sculpture as negotiation of the oppositional terms arising from a cultural situation. The juxtaposition of utopian opulence against dystopian degradation frames the ideological polarities that surround urban waterways. Smithson's archaeological perspective, helps us to identify the Creek's architecture as a sculptural form and a monument to suburban life. In turn, Nick Papadimitriou's *Deep Topography* gives structure to a practice of everyday engagement with sites, reading the meanings and uses from the landscape directly. The environmental history of the waterway and the drainage works conducted there, have shaped an understanding of the human influence upon the hydrologic cycle, and the role of urban catchments in mediating the flow of water. As such, *Fountains for Moonee Ponds Creek* attempts to visualize this influence in sculptural terms, posing a new vision of the Creek as a site for social debate and the exchange of local knowledge.

I Fountains for Moonee Ponds Creek

Fountains for Moonee Ponds Creek is fundamentally a sculptural gesture, presented in three forms: real-time site interventions, video documentation, and a printed publication. Each of these forms sought to activate different modes of circulation. The public interventions sought to renew the fountain's traditional role as a meeting place, drawing bystanders down from its banks to stimulate the exchange of local knowledge, personal histories, and discussion surrounding key issues of the Creek. The video documentation circulates a new image of the waterway within exhibition contexts, seeking to engage audiences beyond the immediate community of the catchment. Finally, the printed publication binds video stills together with a short text, embedding them within a facsimile lost government document[119], outlining the history of development of the Creek as a drainage system. The images here served as a visual intervention within the publication format, which itself will be circulated through libraries and archives. The configuration and presentation of these components is not fixed into a single compositional form/constellation, and while exhibited together here, may function and circulate as independent entities in a range of contexts.

Fountains for Moonee Ponds Creek started with a sculptural intervention in public space, using a portable pumping system to transform Moonee Ponds Creek into a temporary fountain. It harnessed the Creek's concrete architecture as a readymade 'basin' to frame the eruption of creek water redirected into the air. In this sense the work can be considered an *axiomatic structure* – intervening in the "real space of architecture"[120]. The system conveyed high-volumes of water at pressure in the attempt to meet the scale of the Creek itself, fusing them into an integrated fountain-image. Meeting the scale of the spaces presented significant technical challenges that required intensive research and testing of the appropriate system, flow-rate, pressure, machinery, and transport apparatus. The testing of these elements on-site constituted the first public interventions. A large pump designed for quick response fire-fighting became the driving force behind the final interventions, due to its combined power, flow-rate, relative portability and its inbuilt power source. Whilst a petroleum-powered engine may be seem out of place in a project that questions ecological value, it was a necessary practical concession toward the larger project of producing this symbolic gesture. The power required to produce adequate pressure was crucial to the realisation of a fully-scaled fountain

[119] A copy of the document was provided to me by the Friends of Moonee Ponds Creek, who obtained it from the MMBW archives prior to their dissolution in 1992. The exact circumstances of the publication are unknown. Most likely it was never published, as it contains no page numbers and elements of the text are discontinuous. However a later draft may have been completed. It is unknown if it was intended for internal use or public circulation, however its language and graphic content are less technical than similar drainage documents from the period suggesting a more public readership. See Melbourne and Metropolitan Board of Works. *Interim Drainage Basin Management - Criteria Manual*. MMBW – D – 0016, 1981.

[120] Krauss, Rosalind. *Sculpture n the Expanded Field* in October, Vol. 8. (Spring, 1979) The MIT Press, p. 30. Retrieved from http://links.jstor.org/sici?sici=0162-2870%28197921%298%3C30%3ASITEF%3E2.0.CO%3B2-Y

image. The temporary nature of the work was crucial to this decision, whereby the energy cost of producing a more permanent solution, and the ability of the pump to be sold-on after use were taken into account. The apparatus was devised specifically to facilitate the re-staging of the fountain event in future, throughout the 32km creek catchment, drawing in different environments, architectonics and audiences at each location. Various sites were tested during the development of the work. This impermanence and mobility disrupts the customary model of public fountains, which are physically bound to their locations by fixed infrastructure, entangled in the politics of commissioning permanent public-art and the democracy of public space[121]. While *Fountains for Moonee Ponds Creek* documents a single intervention, it is designed to enable future iterations of various durations, to renew the function of public fountains as a meeting place for social exchange and discourse. The complex tensions of the site we will explore later in the chapter, become tangible through conversations with local residents and community members for whom the site is a matter of daily concern. Memories of the Creek's living history, the various ideological positions about the Creek's form, and visions of its future transpire. Therefore the sculptural intervention proposes that fountains could be used to activate the Creek as points of access to local knowledge and discourse.

As Nick Kaye has observed, *"site-specificity arises precisely in uncertainties over the borders and limits of work and site"*[122]. Unbounded by the institutional/gallery frame, publicly sited artworks operate amongst the noise of daily events and flows of images. They are differentiated as 'art' only when all other possible explanations have been logically exhausted. Therefore their critical reception is contingent on the audience's subjective frame of reference. Confronted by the unexpected rupture, bystanders must decide if what they see is incidental or intentional, legal or illegal, threatening or benign, interesting or banal, and ultimately whether to stop or move on. These interventions thus become integrated into the *"the actual events of the 'real world,' that is the world of politics, money-making, ecology, industry, and other pursuits. In effect the work becomes not only the original concept or piece, but any significant public or official response to it, or any further variations which the work may take as a result of its engagement with the world at large*"[123].

A traditional public fountain and a concrete waterway are both fundamentally structures to control and circulate water. Water constitutes the main material component and the central figure of the work. Redirecting the flow of water into the air temporarily liberates it from its disciplined course through the engineered channel. What is usually a narrow stream of water

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[121] For a review of the innumerable challenges for public-art, democracy and public space see Deutsche, Rosalyn. *Evictions: Art and Spatial Politics*. The MIT Press, Cambridge, Massachusetts, 1996.

[122] Kaye, Nick. *Site-Specific Art: Performance, Place and Documentation*. Routledge, London and New York, 2000, p. 215

[123] Burnham, Jack. "Steps in the Formulation of Real-Time Political Art" in *Hans Haacke Framing and Being Framed: 7 Works*, Halifax, Nova Scotia: Nova Scotia College of Art and Design, 1975, p. 133

is transformed into a commanding physical presence. For a spectacular moment the water is released back into the atmosphere from which it fell. The hydrologic cycle itself appears suspended, the water turning to vapour, delaying its inevitable passage through the impermeable urban basin and into the salty bay. Hans Haacke's *Wind in Water* (1968) is recalled again here, the meteorological effects he sought to visualize on his studio rooftop, dramatically enlarged and re-contextualised to highlight the great processes of mediating water through the city.

Figure 23. Video still from Joseph L. Griffiths, *Fountains for Moonee Ponds Creek*, 2017-18, HD digital file.

Figure 24. Video still from Joseph L. Griffiths, *Fountains for Moonee Ponds Creek*, 2017-18, HD digital file.

Figure 25. Video still from Joseph L. Griffiths, *Fountains for Moonee Ponds Creek*, 2017-18, HD digital file.

The moment of rupture is produced through the collision of two contrasting images – a drain and a fountain. The video component of *Fountains for Moonee Ponds* Creek uses the camera to frame this collision; compiled, edited, sequenced and projected into the gallery space. The relationship between the events and their documentation has been central to performance practices, and the sculptural interventions are in turn events that unfold in time. Phillip Auslander has shown that an event is raw material for documentation, the final form by which it will ultimately become identified and circulated[124]. The video's frame precisely controls movement of the viewer's eye through the site. It is this gesture, which renders a unique experience of the intervention that would be impossible in-situ. The camera is used to emphasise the sculptural form of the Creek and a dystopian reading of the landscape. This juxtaposition of cultural highs (fountain) and lows (stormwater drain) is key to challenging preconceptions of the site. Timothy Morton suggests that juxtaposing the frame against its contents is crucial to its critical function, stating *"the most extreme example of "frame " would be the ideological matrix that makes things meaningful in the first place"*[125]. As I will ague in more detail later, the Moonee Ponds Creek is itself such a frame – shaped by changing cultural value of water and the historical domination of natural environments. The contrast between decadence and degradation at the heart of *Fountains for the Moonee Ponds Creek* relies on this ready-made frame as an 'ideological matrix' that the intervening jet of water surges against. The concrete structures and the gushing column of water are drawn together

[124] Auslander, Phillip. "The Performativity of Performance Documentation" in *PAJ: A Journal of Performance and Art,* Volume 28, Issue 3, September 2006, p. 3

[125] Morton, Timothy. *Ecology Without Nature*: *Rethinking Environmental Aesthetics*. Harvard University Press, Cambridge, 2007, p. 143

by a vaguely classical sense of proportion and symmetry, the footbridges and freeway overpasses providing a background of colonnades.

The camera follows the flow of water through the air as though circling a baroque marble, taking in its details, and zooming out to appreciate its overall position in the site. The assemblage of vantage points attempts to resist fixing the Creek in a single idealised composition[126]. Instead the video leads the viewer through the site, coloured by the ever-changing conditions of light, sound, and the atmosphere of surrounding activity. The sculptural and filmic acts of the work are linked by their reliance upon mechanical apparatus'. As Arnold Hauser observes, the mechanical origins of the camera, make film (and by extension video) the ideal means to convey automation, movement, and speed – the mechanical motion from which the camera's own function derives[127]. The audible rattling of the pump's motor recalls the flickering shutter of the camera, and the imperceptible frame-rate that forms the moving image. It figures as a frantic metronome, marking the flow of water and images through time.

Miwon Kwon has outlined the paradox of imaging site-based practice stating that *"although the site of action or intervention (physical) and the site of effects/reception (discursive) are conceived to be continuous, they are nonetheless pulled apart"*[128]. James Meyer's theory of a "functional site" presents a model that acknowledges this dislocation[129]. Reminiscent of Robert Smithson's theory of *Non-Site*[130], this model affords a looser combination of text, photographs and video recordings, physical places and objects. These overlapping elements map the movement of the artist and the artwork between the site of creation and the site of display. Therefore the "functional site" is *"structured (inter)textually rather than spatially"*[131]. The gallery therefore becomes a vantage point from which the viewer might look out toward designated, mapped locations[132]. *Fountains for Moonee Ponds Creek* adopts this strategy, mapping my engagement with the Moonee Ponds Creek, through physical space, sculptural events, video installation and publication.

The printed publication *Development of the Moonee Ponds Drainage System* forms a third component of *Fountains for Moonee Ponds Creek.* The publication is an approximate

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126 Lippard, Lucy. *Undermining: A Wild Ride Through Land Use, Politics and Art in the Changing West*. The New Press, New York, 2014, pp. 167-8

127 Hauser, Arnold. *The Social History of Art, Volume IV – Naturalism, Impressionism, The Film Age*, Routledge, London and New York, 1962, pp. 162-3

128 Kwon, Miwon. *One Place After Another: Site-specific Art and Locational Identity*. The MIT Press, Cambridge, Massachusetts; London, England, 2002, p. 29

129 Ibid.

130 A brief discussion of "Non-Sites" follows later in this chapter. See also, Smithson, Robert. "A Provisional Theory of Non-Sites" (1968) in Flam, Jack (Ed.) *Robert Smithson: The Collected Writings*, University of California Press, Berkley and Los Angeles, California, 1996, p. 364

131 Kwon, Miwon. *One Place After Another: Site-specific Art and Locational Identity*. The MIT Press, Cambridge, Massachusetts; London, England, 2002, p. 29

132 Kaye, Nick. *Site-Specific Art: Performance, Place and Documentation*. Routledge, London and New York, 2000, p. 91

facsimile of an official administrative document originally produced by the Melbourne and Metropolitan Board of Works in 1981. The circumstances under which the original document was produced are uncertain and it is currently unavailable in the public record[133]. It details a comprehensive history of surveying, engineering and reconstruction of the Moonee Ponds Creek catchment undertaken since colonization, including maps, diagrams and photographs. The administrative style evokes Frontinus' *De Aqueductu Urbis Romae,* reminding us of the debt our urban water systems owe to that Roman model[134]. It conveys the systematic drainage works that 'managed' the Moonee Ponds Creek waterway, describing them in detail to the wider public. The somewhat defensive tone of the text suggests it was aimed to address mounting public criticism of the Creek, as ecological concerns in the local community spiked following the construction of the Tullamarine freeway[135]. The extensive detail provided suggests that the Board of Works intended to drown criticism with an abundance of technical and statistical information. Consequently, the document is both a thorough source of practical information outlining the development of drainage works, and a time capsule to a complete cultural way of thinking.

Nick Kaye suggests, *"documents (can) act out some of the complexities of the relationship between work and site"*[136]. Documentation may refer to both the material process of capturing events and the complex assemblage and organization of documents, which draws relationships between them[137]. The new facsimile aims to (re)circulate this information into the public domain, with the addition of photographs, texts, research materials and documentation of *Fountains for Moonee Ponds Creek.* Despite prolonged on-site engagement, I suggest the layered histories and changing attitudes to the Moonee Ponds Creek are too numerous and complex to summarise in a singular sculptural gesture. Anne Whiston Spirn advocates reconstructing environmental histories of urban spaces "*shows how natural processes are significant agents in urban development, and how social and cultural processes are active ingredients of urban ecosystems"* [138]. Such a project necessarily assembles historical documents, maps, photographs, verbal descriptions and gleans information from the site itself[139]. The printed images I have inserted within the publication format, become layered strata within the existing narratives of the Creek's development.

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[133] Melbourne and Metropolitan Board of Works. *Interim Drainage Basin Management - Criteria Manual*. MMBW – D – 0016, 1981.
[134] Frontinus, Sextus Julius. "The Aqueducts of Rome: Book II, S.122" in *Frontinus: The Strategems and The Aqueducts of Rome (trans. C. Bennett)*, William Heinmann, London, 1925.
[135] This general date is based upon anecdotal evidence only, emerging from conversations with founding members of the Friends of Moonee Ponds Creek group, established in 1989.
[136] Kaye, Nick. *Site-Specific Art: Performance, Place and Documentation*. Routledge, London and New York, 2000, p. 216
[137] Berger, Christian & Santone , Jessica. "Documentation as Art Practice in the 1960s" in *Visual Resources*, 32:3-4, 2016, pp. 201-2. DOI: 10.1080/01973762.2016.1241030
Retrieved from https://doi.org/10.1080/01973762.2016.1241030
[138] Spirn, A. W. *Ecological Urbanism: A Framework for the Design of Resilient Cities,* Massachusetts Institute of Technology - Department of Landscape Architecture and Planning, Massachusetts, 2011, p. 204. Retrieved from http://www.annewhistonspirn.com/pdf/spirn_ecological_urbanism-2011.pdf
[139] Ibid.

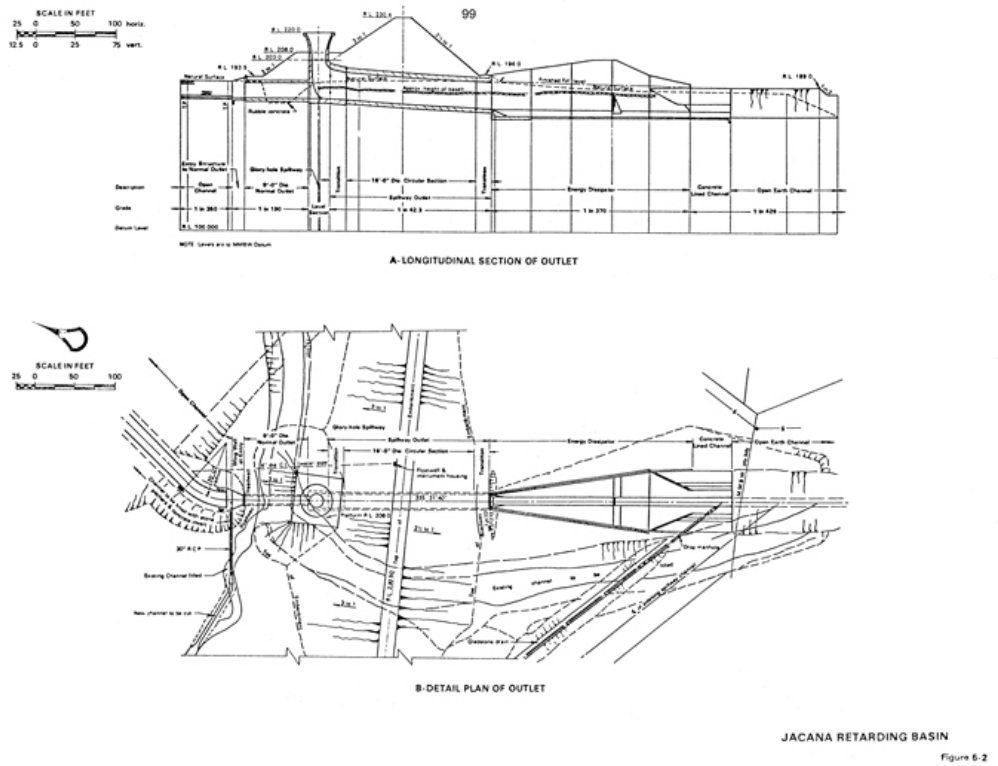

Figure 26. Scan from *Development of the Moonee Ponds Drainage System.* Melbourne and Metropolitan Board of Works, 1981.

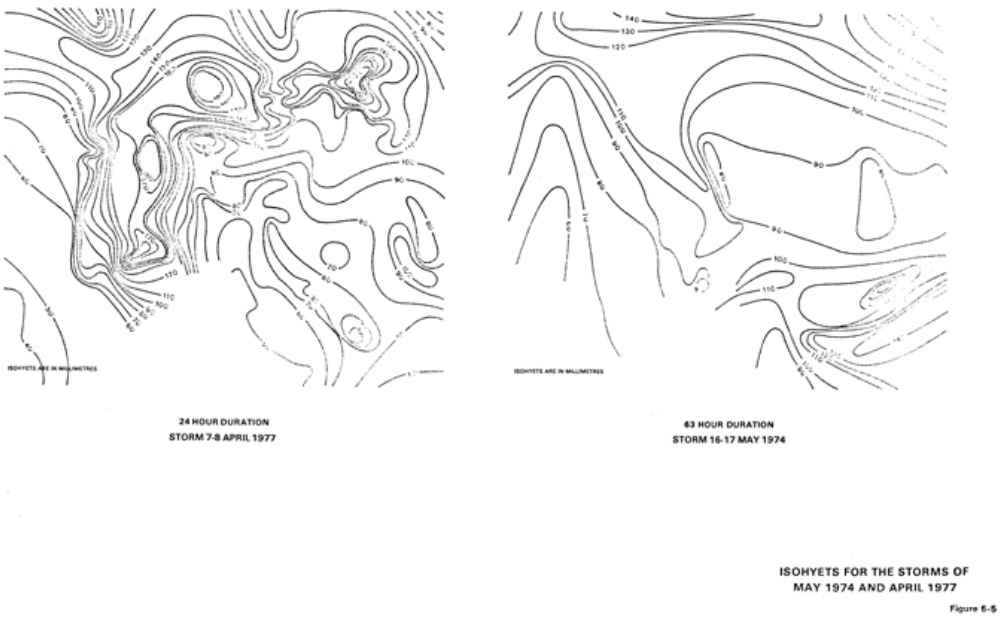

Figure 27. Scan from *Development of the Moonee Ponds Drainage System.* Melbourne and Metropolitan Board of Works, 1981.

The specific format, an MMBW-branded ring-binder, leaves the publication 'open' to future additions and amendments. Printed on different paper stocks and acetates, large full-colour photographs punctuate the black and white administrative tone of the document, which evokes the Creek's aesthetics of pure function. Thus, the strategy of intervention at the heart of the project is reinstated in printed form. This methodology – interspersing artworks and research material within an administrative document, borrows from Sam Lewitt's *Stranded Assets – Modulo 2: Protezione Ambientale*, recently published for the 57th Biennale d'Arte Venezia in 2017[140]. Lewitt pairs his own photographs of the decommissioned *Volpi* power plant, within the pages of their general operations manual. The bureaucratic style of the manual's graphic design and publishing, produces an echo chamber in which a fading industrial history reverberates against the fading printed page.

Five copies of *Development of the Moonee Ponds Drainage System* have been produced and presented as part of the Master of Fine Art Examination, with a single copy displayed open inviting extended viewing. The volumes were displayed on a purpose built shelf fixed to the rear of the pine and plywood screen, constructed for projection of the video component, and illuminated by a commercially available fluorescent light. This presentation format suggests a dimly lit back room of a council building, or storage area. It in turn forms a 'back-stage' to the video installation, which dominates the room. This relationship serves the purpose and limitations of the exhibition environment, however the document would ideally be accessed in a library or archive.

Development of the Moonee Ponds Drainage System is designed with the intention that it be donated and accessioned within library collections in order to extend the circulation of the project, and embed a trace of this work within a rich research resource. Because no external reference is made to the document's artistic context, it remains directed toward researchers with an interest in the Moonee Ponds Creek, rather than in public art, etc. Thus, it is crucial that it be accessioned within the appropriate geography, town-planning or engineering collections rather than as an artist book. In this context the added materials, especially the images documenting the fountain intervention, will appear as an unexpected visual interruption to the flow of historic information, attempting to open my sculptural reading of the creek to future scholar's. This process of accessioning the documents will commence once the examination is complete. If future exhibition of the document is required, it would need to be loaned from one of the libraries to which it was donated. As the Creek is a living history, the binder-format makes it possible to update its contents. New inserts resulting from future research, or interviews, may be produced and discretely included within the re-borrowed text.

[140] Lewitt, Sam. *Stranded Assets – Modulo 2: Protezione Ambientale.* Onestar Press, Paris, 2017.

Figure 28. *Fountains for Moonee Ponds Creek* (2017-18). Installation view, Monash University Faculty of Art Design and Architecture, 2018.

Figure 29. *Fountains for Moonee Ponds Creek* (2017-18). Installation view, Monash University Faculty of Art Design and Architecture, 2018.

II Sculpture and Site

In order to understand how fountains may be used to re-imagine urban waterways, we must account for the evolving relationship between contemporary art and site and acknowledge the challenges for site-oriented practice today. In *Sculpture in the Expanded Field,* Rosalind Krauss sought a new critical framework for site-oriented sculpture of the 1960s and 70s, which in various attempts to reunite art and everyday life, moved outside of the gallery into deserts, swamps, parking lots and industrial landscapes. Her diagrammatic model maps this "expanded field" which figured sculpture as just one of a range of possible negotiations between architecture and landscape[141]. The development of site-specific sculptures and land-art had suspended sculpture *"between the built and the not-built, the cultural and the natural"*[142]. Sculpture could therefore be defined less by its material forms, but as the negotiation of the oppositional terms arising from a cultural situation[143]. Krauss saw this as part of a post-modern compulsion to reunite sculpture with site. As modern sculpture became self-referential it likewise became nomadic, relocating from the town square to a moveable plinth, thus relinquishing its relationship to any specific location[144]. The traditional role of sculpture as a public monument had functioned to commemorate events, people and relationships, and mark the site to which these events or relationships are significant[145]. New site-based sculpture sought to reclaim these direct and symbolic connections to real-world events, people and places.

As we have seen in Chapter 1, fountains have traditionally negotiated the space between architecture and landscape, serving as civic monuments and specific-sites of public exchange[146]. However, monuments are historically entangled with powerful social-elites who commission them, whose politics they promote, and whose legacies they preserve[147]. This paradigm has carried over to the problematic funding models, attitudes to site and community collaborations that continue to plague public-art[148]. The result has seen a glut of ideologically neutral public sculpture which as Sergiusz Michalski noted has *"significantly eroded the functions of the public monument"*[149]. He proposes that "negative-form" monuments such as Horst Hoheisel's *Ashcroft Fountain Monument* (1988) in Kassel, reflect on the limitations of

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[141] Krauss, Rosalind. *Sculpture n the Expanded Field* in October, Vol. 8. (Spring, 1979) The MIT Press, p. 30. Retrieved from http://links.jstor.org/sici?sici=0162-2870%28197921%298%3C30%3ASITEF%3E2.0.C0%3B2-Y

[142] Ibid, p. 37

[143] Krauss, Rosalind. *Sculpture n the Expanded Field* in October, Vol. 8. (Spring, 1979) The MIT Press, p. 30. Retrieved from http://links.jstor.org/sici?sici=0162-2870%28197921%298%3C30%3ASITEF%3E2.0.C0%3B2-Y

[144] Ibid, p. 33.

[145] Ibid.

[146] See discussion in Chapter I.

[147] For a comprehensive study of the complex power-relations associated with public monuments, see: Michalski, Sergiusz. *Public Monuments – Art in Political Bondage 1870-1997*. Reaktion Books, London, 1998

[148] These politics are discussed at length by Miwon Kwon, see Kwon, Miwon. *One Place After Another: Site-specific Art and Locational Identity*. The MIT Press, Cambridge, Massachusetts; London, England, 2002, pp. 56-137

[149] Michalski, Sergiusz. *Public Monuments – Art in Political Bondage 1870-1997*. Reaktion Books, London, 1998, p. 201

monuments through gestures of inversion or disappearance[150]. Hoheisel re-imagined the site's original fountain that was destroyed by Nazi forces on the grounds that its benefactor was a local Jewish manufacturer. The work is drenched in the sordid history of the site which is beyond the scope of this study, however its central gesture provided a practical strategy at the core of *Fountains for Moonee Ponds Creek*[151]. The new work acts as a mirror-image of the original, physically and metaphorically inverting the fountain to form a hollow concrete pyramid that funnels water beneath the pavement[152]. Rather than bursting into the air, water is displayed pouring into the buried system of pipes and tunnels. The work rescues the history of the site by physically reflecting the fountain's absence. Hoheisel's gesture of inversion transforms the fountain into a drain, which subtly undermines the old-world form and reframes the monument as a "wound and an open question"[153]. *Fountains for Moonee Ponds Creek* attempts an inversion of this inversion – converting a drain into a fountain. The engineering of the concrete stormwater channel can be seen as a scar in the Creek landscape marking irreparable damage to its ecology. However, its momentary life as a fountain aims not to rescue this history, but rather to pose an open question of its future.

Site-specific works incorporate the "physical conditions of a particular location as integral to the production, presentation, and reception of art"[154]. Over time the notion of sites has expanded and with them the perceived responsibilities of artists to their site. As Miwon Kwon notes *"the very term 'site specificity' has itself become a site of struggle, where competing positions concerning the nature of the site, as well as the 'proper' relationship of art and artists to it, are being contested"*[155]. Early Earthworks such as Michael Heizer's *Double Negative* (1969) or Robert Smithson's *Spiral Jetty* (1970), tended to share a pioneer-ethic toward the 'open' landscapes of the American west, showing relatively minor concern for local residents, environments, geology, community history and identity of their sites[156]. However, what distinguishes site-oriented practice today is precisely its focus on the social, historical, environmental, and political conditions of specific locales[157]. These conditions are not limited to geographic locations, rather cultural positions, institutional frameworks, neighborhoods, political problems or histories have all been deemed 'sites'[158]. For this reason, it can often be

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[150] Michalski, Sergiusz. *Public Monuments – Art in Political Bondage 1870-1997*. Reaktion Books, London, 1998, p. 177

[151] The *Ashcroft Fountain Monument* is drenched in the sordid history of ethnic cleansing that deserves attention beyond the scope of this study, and I do not intend to suggest the historical narratives of the two works are equivalent. However, its central gesture provides a crucial formal tool to this project, and an important update to the function of fountains as contemporary monuments.

[152] Ibid, p. 178

[153] Ibid, p. 178

[154] Kwon, Miwon. *One Place After Another: Site-specific Art and Locational Identity*. The MIT Press, Cambridge, Massachusetts; London, England, 2002, p. 1

[155] Ibid, p2.

[156] Lippard, Lucy. *Undermining: A Wild Ride Through Land Use, Politics and Art in the Changing West*. The New Press, New York, 2014, p. 82

[157] Kwon, Miwon. *One Place After Another: Site-specific Art and Locational Identity*. The MIT Press, Cambridge, Massachusetts; London, England, 2002, p. 26

[158] Ibid, p. 28

difficult to distinguish between the site and content of an artwork[159]. As such the Moonee Ponds Creek is both the *site* in which the fountains are activated, and the *subject* upon which they reflect.

III Fieldwork – A Suburban Archaeology

Physical exploration has played an important role in my research, and has defined my understanding of the Creek since my youth. Nick Papadimitriou's notion of "Deep Topography" has provided a method to consolidate this personal and poetic engagement with place, acquiring a "continuous physical knowledge" of the landscape through direct experience. It is the process of learning to read the landscape by walking, collecting observations and local knowledge through conversation that I refer to here as 'fieldwork'[160]. Author Iain Sinclair suggests that the pace of walking is roughly equivalent to the natural stream of consciousness, and therefore promotes the construction of narratives. Katherine Wentworth Rinne's updated study of Rome's water systems was informed significantly by walking and physically observing how variations in altitude in the seven hills surrounding the city, facilitated the sophisticated gravitational systems devised by early engineers[161].

"Has Passaic replaced Rome as the eternal city?" Thus reads the sub-heading to Robert Smithson's 1967 article and photo-essay, *A Tour of the Monuments of Passaic*, *New Jersey* (1967). Smithson had explored the shifting terrain between sculpture and site employing a wide range of visual and conceptual strategies including earthworks, videos, writing, photography, drawing, mapping and material displacements which he assembled and installed in galleries as *non-sites*[162]. Burnham understood that so long as art was to embrace whole environments, sculptors must *"assume a span of problems more natural to architects, urban planners, civil engineers, electronic technicians, and cultural anthropologists"*[163]. Smithson himself described his attempts to divine meaning from the built environment as an "abstract anthropology"[164]. He takes the reader on a carefully narrated journey through Passaic, a New Jersey suburb in the process of post-industrial transition, casting an

[159] Kwon, Miwon. *One Place After Another: Site-specific Art and Locational Identity*. The MIT Press, Cambridge, Massachusetts; London, England, 2002, p.28

[160] Anne Whiston Spirn has referred continually to the process of reading the landscape, tracing its forms and patterns as evidence of historical use and social change. See Spirn, Anne, Whiston. "Restoring Mill Creek: Landscape Literacy, Environmental Justice and City Planning and Design" in *Landscape Research*, Vol. 30 No. 3, July 2005, pp. 395 – 413

[161] Tchikine, Anatole. "The Waters of Rome: Aqueducts, Fountains, and the Birth of the Baroque City" Reviewed in *Journal of Landscape Architecture,* pp 82-83. Published online: https://doi.org/10.1080/18626033.2013.800000 29 Nov 2013, (accessed 10 December 2016).

[162] Smithson defines the "Non-Site" as a 3-dimensional indoor earthwork that forms an abstract, diagrammatic representation of a specific location. See Smithson, Robert. "A Provisional Theory of Non-Sites" in Flam, Jack (Ed.) *Robert Smithson: The Collected Writings*, University of California Press, Berkley and Los Angeles, California, 1996, p. 364

[163] Burnham, Jack. "Systems Esthetics" in *Artforum* Vol. 7, no. 1, September 1968, p. 34

[164] Smithson, Robert. "Untitled (Site Data)" (1968) in Flam, Jack (Ed.) *Robert Smithson: The Collected Writings*, University of California Press, Berkley and Los Angeles, California, 1996, p. 362

archaeological eye across the changing geography and architecture. The tone of the piece moves easily between travelogue and science-fiction, with a focus on the blurred temporalities he observes in the everyday structures and infrastructures he designates as 'monuments'. Smithson frames suburbia as a kind of readymade archaeological site, replete with stormwater 'fountains'[165].

Figure 30. Robert Smithson, *The Fountain Monument – Side View*, 1968, Instamatic photograph.

I saw a monument in the middle of the river—it was a pumping derrick with a long pipe attached to it. The pipe was supported in part by a set of pontoons, while the rest of it extended about three blocks along the river bank till it disappeared into the earth. One could hear debris rattling in the water that passed through the great pipe. Nearby, on the river bank, was an artificial crater that contained a pale limpid pond of water, and from the side of the crater protruded six large pipes that gushed the water of the pond into the river. This constituted a monumental fountain that suggested six horizontal smokestacks that seemed to be flooding the river with liquid smoke. The great pipe was in some enigmatic way connected with the infernal fountain"[166].

[165] Smithson, Robert. "A Tour of the Monuments of Passaic, New Jersey" in Flam, Jack (Ed.) *Robert Smithson: The Collected Writings*, University of California Press, Berkley and Los Angeles, California, 1996, pp. 68-74
[166] Ibid.

In 1917, Marcel Duchamp's readymade *Fountain* famously re-contextualised a men's urinal as a piece of sculpture. Amidst the work's controversial reception Duchamp scoffed: *"the only works of art America has given are her plumbing and her bridges!"* [167]. Smithson, appears quite happy with this assessment, extending the nomination of the readymade artwork to urban infrastructure, and its links to ancient Rome[168]. His 'site-selections' identifying mammoth engineering projects as artworks show him to be a direct descendent of the re-contextualising gesture of 'found objects'[169]. This nomination practiced by Duchamp and Smithson alike, reconsiders the everyday world, in art-historical terms. There is a radical democracy in this gesture in that it affords the reader the freedom to designate their own monuments in their own familiar contexts, and reshape the way they see their world. As Krauss describes, *"the new is made comfortable by being made familiar, since it is seen as having gradually evolved from the forms of the past"*[170]. She warns, however, against the use of historical lineages that can restrict and oversimplify the complex differences of the new[171]. While fountains may be potent 'historically-bounded' symbols, their historical connotations risk limiting the critical imperative of artworks to engender genuinely new perspectives.

However, Walter Benjamin observed, buildings, streets and infrastructure are not only *"embodiments of objective historical forces, but they simultaneously enter into our unconscious and hold sway over the imagination"*[172]. Smithson imagines the construction of new suburbs as 'ruins in reverse', inscribed with their own temporal lifespan, their incomplete state forecasting their future obsolescence and decay. His terminology is carefully chosen. Monuments suggest two very clear frames through which to view Passaic: time and value. However Smithson seeks to collapse canonical understandings of these archaeological criteria. Rather his temporal lens zooms out ever-further, to reveal the monumental *im*permanence of the built environment, slowly spreading out on its entropic journey through deep time.

Like Smithson, Nick Papadimitriou pays specific attention to the '"interzones", liminal spaces drifting between urban and rural landscapes[173]. Victor Hugo christened this space the *"terrain vague"* or *"bastard country"* and referred to the ugly and bizarrely amphibious quality of the

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[167] Duchamp, Marcel. "The Richard Mutt Case" in *Blindman*. New York, 1917, p5. Duchamp made the remark as a sharp retaught to rebuff critics of his *Fountain*.
[168] Burnham, Jack. "Systems Esthetics" in *Artforum* Vol. 7, no. 1, September 1968, p. 34
[169] Smithson, Robert "Towards the Development of an Air Terminal Site" in *Artforum*, (Summer 1967) pp. 36-40
[170] Krauss, Rosalind. *Sculpture n the Expanded Field* in October, Vol. 8. (Spring, 1979) The MIT Press, p. 30. Retrieved from http://links.jstor.org/sici?sici=0162-2870%28197921%298%3C30%3ASITEF%3E2.0.C0%3B2-Y
[171] Ibid.
[172] Larkin, Brian. "The Politics and Poetics of Infrastructure" in *Annual Review Anthropology,* 2013. (www.annualreviews.org) p. 333
[173] Psychogeography, coined by Guy Debord in 1955, describes a methodology for studying the urban environment in terms of its influence upon individual emotions and behaviours. Originally conceived as a strategy to stimulate fresh perspectives of the urban landscape, interrupting the designated flows of urban design via a series of randomized walking games. See Debord, Guy-Ernest. "Introduction to a Critique of Urban Geography" in *Les Lèvres Nues* #6, Paris, 1955 and Hart, Joseph. "A New Way of Walking" in *Utne Reader,* July/August 2004

city-fringe, girt by sea and swamp[174]. This image permeates J.G. Ballard's *The Drowned World*, which forecasts rapid sea-level rise as a result of climate change. In this vision of the future, Europe becomes a tropical swamp whose vast network of drains, canals, harbours and urban waterways gurgle and overflow, transforming the continent into a shifting wetland. Urban waterways such as the Moonee Ponds Creek traverse the lowest topographic points of the city, the valleys into to which all-else drains. My meandering journey's of *Deep* Topography have drawn me deep inside the network of drains, tunnels and underground chambers that connects the Moonee Ponds Creek to city at large. Physically inhabiting the pathways of water through the city provides a level of appreciation for this systemic relationship that is difficult to convey in words. According to Lucy Lippard, a place is a landscape that has been lived-in and explored; *"the geographical component of the psychological need to belong"* [175]. My meandering through the Creek and its history have been grounded by my participation with the Friends of the Moonee Ponds Creek. This engagement provides insight into the local political landscape of the creek, and the interests of its community and stakeholders[176]. It also establishes a framework for consultation. As Kwon has observed *"the sitedness of the artist becomes one of the central points of contention in community-based public art"* [177]. The Friends' openness to my sculptural approach has encouraged a bold physical engagement with the site, and reflects the potential for art projects to plug-in to longer-term community engagement with waterways.

[174] See Hugo, Victor. Les Miserables. Trans. Charles E. Wilbour. Random House Modern Library, Newyork,1992.
[175] Lippard, Lucy. *The Lure of the Local*: *Senses of Place in a Multi-centered Society*. The New Press, New York, 1997, pp. 7-8
[176] 'Community' can be seen as a constructed idea that serves the art-world categorization of a certain type of site-specific practice, more than it defines a group of people. The FoMPC hold enormous collective knowledge of the catchment, its ecology and the socio-political forces which influence it. My membership to this loose collective of individuals consists of conversations, meetings to discuss imminent political issues for the catchment, and the planting of native vegetation. Most importantly it is a chance to listen, to local knowledge, oral-histories and folklore which is otherwise unpublished.
[177] Kwon, Miwon. *One Place After Another: Site-specific Art and Locational Identity*. The MIT Press, Cambridge, Massachusetts; London, England, 2002, p. 135

Figure 31. View of the Moonee Ponds Creek at West Brunswick, Melbourne 2017.

IV The Creek as a Sculptural Form

The history of the Moonee Ponds Creek is a history of sculpting the landscape to control the flow of water. Prior to colonization the Moonee Ponds Creek was best characterised as a chain of low-lying ponds which would expand and contract seasonally[178]. The lowest ponds never reached the Yarra River as they do today, rather they formed an abundant wetland ecosystem, habitat, and cultural landscape. Stuart Oliver has described waterways as cultural geographies interwoven with the meanings of human use and symbolic attachment[179]. This concept carries particular local significance given the indivisible bond between Aboriginal culture and country. The Moonee Ponds Creek was important tribal country, a hunting ground and a plentiful source of fish and *Murnong* (Yam Daisy)[180]. Like all the lands of the Eastern Kulin Nation it has been irrevocably transformed since European settlement[181]. In the nineteenth-century, the Creek's lower reaches were dredged and channelled to allow barges to transport goods between nearby industries in North Melbourne, Flemington and

[178] Leigh, C. H. "The Moonee Ponds Creek Basin at the Time of European Settlement" in *Development of the Moonee Ponds Creek Drainage System*. Melbourne and Metropolitan Board of Works. MMBW – D – 0016, 1981.
[179] Oliver, Stuart. "The Desire to Metabolize Nature – Edward Loveden Loveden, Wiiliam Vanderstegen, and the Disciplining of the River Thames" in Heynen, Nick, Kaika, Maria and Swyngedouw, Erik (Eds.) *In the Nature of Cities – Urban political Ecology and the Politics of Urban Metabolism*. Routledge, New York, 2006, p94.
[180] Presland, Gary. *First People: The Eastern Kulin of Melbourne, Port Phillip & Central Victoria.* Museum Victoria Publishing, Melbourne, 2010, p. 71
[181] Ibid, p. 9

Kensington, and the port of Melbourne. Oliver has shown the engineering of the river Thames as a process of 'disciplining' - withholding and channelling its flows, to behave in accordance with human needs and desires[182]. In nineteenth-century London as in Melbourne, the disciplining of waterways served primarily commercial interests and the river's locks and channel's expedited the flows of trade and capital. This 'discipline' evidences deeper cultural tendencies toward repression, self-discipline and control that defined a nineteenth-century Anglo image of civilized masculinity[183]. As Tim Ingold explains, the straight lines travelled by rays of light, captured by mathematical calculations, used to map physical space and plan infrastructure are symbols of the path to a modern notion of enlightenment[184]. They stand for a cultural belief in the triumph of rational design over the fluctuations of the natural world[185]. As such rectilinear infrastructures may represent an insensitive, arbitrary, or even phallocentric approach to the natural world[186]. Contemporary urban landscapes can be seen as sprawling catchments of impervious surfaces and engineered waterways, which mediate the flow of water through its cycles of evaporation condensation and precipitation. Extreme gestures of human intervention in the waterway, characterized by concrete lining, re-alignments, and steep channelization have produced distinctive architectures, which serve as a ready-made sculptural basin for *Fountains for Moonee Ponds Creek.*

> *In Western societies, straight lines are ubiquitous. We see them everywhere, even when they do not really exist. Indeed the straight line has emerged as a virtual icon of modernity, an index of the triumph of rational, purposeful design over the vicissitudes of the natural world. The relentlessly dichotomizing dialectic of modern thought has, at one time or another, associated straightness with mind as against matter, with rational thought as against sensory perception, with intellect as against intuition, with science as against traditional knowledge, with male as against female, with civilization as against primitiveness, and – on the most general level – with culture as against nature.*[187]

In this statement, Ingold pinpoints a cluster of social, cultural and environmental values that have helped transform the Moonee Ponds Creek in to a concrete stormwater drain. Its current form might be understood as an over-engineered response to the suburban transformation of the area. As Melbourne grew, suburban development sprawled northward along The Creek's flood prone banks, their soft alluvial silt un-suited to support dwellings. The developments compacted and paved large swathes of Moonee Valley, drastically increasing rainwater run-

[182] Oliver, Stuart. "The Desire to Metabolize Nature – Edward Loveden Loveden, Wiiliam Vanderstegen, and the Disciplining of the River Thames" in Heynen, Nick, Kaika, Maria and Swyngedouw, Erik (Eds.) *In the Nature of Cities – Urban political Ecology and the Politics of Urban Metabolism*. Routledge, New York, 2006, p94.
[183] Ibid, p. 98
[184] Ingold, Tim.*Lines: A Brief History*. Routledge, Abringdon, Oxon, 2007, pp. 152-3
[185] Ibid
[186] Ibid, p. 153
[187] Ibid, p. 152

off and erosion[188]. My own family helped pave the paddocks of West Brunswick into the impermeable basin in the 1920s. A series of unseasonably large floods ensued, threatening what had become valuable real estate. In ancient Egypt, the annual flooding of the Nile would wash away property boundary markers, which complicated ownership claims, and the rents and taxes that the government extracted from them[189]. Since the 1930s the Melbourne and Metropolitan Board of Works (now Melbourne Water), who managed the waterway, have continually fortified the banks of the Creek and altered its course in attempts to mitigate this flood risk. Although these works legitimately satisfied ratepayers whose backyards were literally washing away[190], they perpetuated a view of the Creek as subordinate to and in service of urban life. Anne Whiston Spirn has noted that without design vision the future urban landscape will be shaped by the politics of expedience[191]. The sculpting of the Creek is therefore the product of deeply rooted cultural values and the financial mechanisms that underpin them. Sculptural interventions and the images they produce, may conjure a vision of the creek shaped by art, rather than the lowest economic, social, and environmental denominators.

Figure 32. View of the Moonee Ponds Creek at Strathmore, Melbourne, 2017.

The concrete sections of the Moonee Ponds Creek span the history of its construction and the changing cultural attitudes, which continue to form it. Recent site-oriented practices have

[188] New suburban growth had flourished in West Brunswick, Ascot Vale, Moonee Ponds, Pascoe Vale, Essendon and Strathmore following World War 1. See *Development of the Moonee Ponds Creek Drainage System*, M.M.B.W. – D – 0028, Melbourne Metropolitain Board of Works, 1981.

[189] Ingold, Tim.*Lines: A Brief History*. Routledge, Abringdon, Oxon, 2007, p. 159

[190] *Development of the Moonee Ponds Creek Drainage System*, M.M.B.W. – D – 0028, Melbourne Metropolitain Board of Works, 1981, pp. 50-87

[191] Spirn, Anne Whiston. "Reclaiming Common Ground - Water, Neighborhoods, and Public Places" in Fishman, Robert (Ed.) *The American Planning Tradition: Culture and Policy*, Woodrow Wilson Press and Johns Hopkins University Press, 2000, p. 297

increasingly foregrounded the cultural, historical, environmental and social conditions of sites, treating the aesthetic dimensions of sites as secondary concerns[192]. The physical characteristics of a place, however, are inscribed with their cultural, environmental and political histories. Their forms follow their functions and their materials are historically bounded. The concrete architecture of the Creek symbolises the persistent tension between engineering and ecology that continues to define it. Smithson wrote *"art can become a resource that mediates between the ecologist and the industrialist"*[193]. Smithson's photographs and psychogeographic essay transform the pipes and pumping derrick into a fountain. *Fountains for Moonee Ponds Creek* seeks to physically transform the Creek into a fountain through sculptural intervention. Following Smithson, the Creek architecture stands as a *ruin in reverse* – a monument to a past we may not be proud of, but upon which we stand nonetheless.

V Conclusion

Fountains for Moonee Ponds Creek seeks to re-orient our perspective on urban waterways. It is a complex layered site shaped by multiple histories and cultural positions. The fountain produces a moment of rupture that attempts to cut through these layers, to radically rethink the Creek as a site of value and critical self-reflection. The tensions between engineering, ecology, community, amenity and the circulation of water through the catchment continue to shape this site. Timothy Morton suggests that our fixation on images of "the world" or "nature" as abstract concepts "*inhibit humans from grasping their place in an already historical nature"* [194]. While the Moonee Ponds Creek is not merely an ecological concern, we must harness an ecological mind-set in order to understand our way of life as embedded within environmental flows. Morton suggests, *"Subverting fixation is the radical goal of the Romantic wish to explore the shadow lands"*[195]. The Moonee Ponds Creek, is indeed a shadow land snaking beneath the bridges and overpasses – a receptacle and a conduit to drain the city's watery waste. *Fountains for Moonee Ponds Creek* attempts to rescue the waterway from a simplistic image of environmental degradation or civic neglect, to express something more complex. Its monumental form represents the impact of a suburban way of life upon the landscape. The flow of water through the urban landscape affects the circulation of water through the hydrologic cycle at large. Impermeable surfaces drastically reduce sub-surface flows and natural filtration, meaning that small tributaries like the Moonee Ponds Creek have had to be engineered to compensate for the increased flows. As we have seen, urban sprawl has

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[192] Kwon, Miwon. *One Place After Another: Site-specific Art and Locational Identity*. The MIT Press, Cambridge, Massachusetts; London, England, 2002, p. 24

[193] Smithson, Robert. "Untitled" (1971) in Flam, Jack (Ed.) *Robert Smithson: The Collected Writings*, University of California Press, Berkley and Los Angeles, California, 1996, p. 376

[194] Morton, Timothy. *Ecology Without Nature*: *Rethinking Environmental Aesthetics*. Harvard University Press, Cambridge, 2007, p. 141

[195] Ibid.

followed these fertile catchments since ancient Rome[196]. The momentary transformation of the Creek into a fountain confronts the habits to control and shape the flow of water. As such *Fountains for Moonee Ponds Creek* proposes that sculpture can be used as a creative means to reflect upon the complex histories and changing cultural values that shape our waterways, and frame a local outlook to their future.

[196] See detailed discussion in Chapter I.

Figure 33. Video still from Joseph L. Griffiths, *Fountains for Moonee Ponds Creek*, 2017-18, HD digital file.

Figure 34. Video still from Joseph L. Griffiths, *Fountains for Moonee Ponds Creek*, 2017-18, HD digital file.

CONCLUSION

How can contemporary sculpture revisit the historical form of the fountain, to critically reflect upon our relationship to water? This core question has driven the production of artworks and this written exegesis. The combination of studio and site based research with academic analysis of existing artworks and texts, has aimed to strengthen the critical intentions of my artistic practice. At the core of this research has been the desire to understand the overlapping cultural, spatial, ecological, and political flows that circulate in fountains. Fountains are a rare instance of a historical from, defined by its sculptural relation to a natural force. As such, fountains have presented unique possibilities to explore the circulation, containment and display of water, and the worldly implications of these processes. Underpinning this study has been an archaeological exploration of urban space and infrastructures as expressions of contemporary culture. As such, I have observed the cities and infrastructures described in this exegesis as living artefacts. The writing of Robert Smithson has provided an important foundation for this perspective, where patterns of cultural ideas and behaviours are tracked across extended timeframes. In the case of this study, I have attempted to follow the currents of water through cities from antiquity to the present, between Rome and Melbourne, gleaning observations and anecdotes, which have driven both practical and theoretical research questions.

Chapter 1 began by asking how fountains represent the role of water in shaping the urban environment, and how they may be used to challenge historical distinctions between “nature” and “culture”? Tracing the history of Roman fountains revealed a pattern of symbols tracking the interplay of water and stone. Renaissance grottos and rustic fountains emulated the stalactite formation of subterranean caves, dissolving the distinction between constructed and natural environments. Cascading effects became increasingly naturalistic, and in spectacular baroque fountains such as *La Fontana di Trevi*, quarried travertine stone was precisely carved to mimic the natural formations of cliffs and gorges from which it was extracted. The real-time cycles of calcification I had observed in fountain basins during my residency in Rome, drew these material loops into focus. The stone pavers upon which I stood had been physically formed by water, one drip at a time. The geological formations usually only visible in caves, were precipitating in fountains before my eyes. My series of installations *Fountains* attempted to illuminate this loop of geological formation, which complicated the concept of the city as a purely cultural construction. Instead, water was slowly transforming the urban landscape continuously. By distilling the elaborate forms of baroque fountains down to a minimal arrangement of rectangular pools and travertine pavers, my installations laid the fundamental elements of fountains bare – the controlled volume of water, the system of circulation, and the sculptural edifices which frame them. By drawing formal relationships between the fountain elements and the foundations of the Roman streetscape, the *Fountains*

pointed to the crucial interplay of water in both urban and geological formation. However, the physical dislocation of these elements prohibited any real-time geological exchange between them. The messy tensions and material flux of real-world transformation remained a conceptual leap of faith. Therefore the distinctions between “nature” and “culture” were not so much challenged as displayed, and the formal strictures of the installations, limited their ecological potency. In contrast, Tue Greenfort’s sculptures genuinely evoke ecological cycles of growth and degradation, and frame ecological concerns as cultural and ideological problems. The agricultural fertilizer needed to maintain adequate food supply, in turn degrades waterways and freshwater supply. Greenfort reveals the artificial acceleration of agricultural production by staging an auto-creative urea stalagmite that literally hastens geological time. T. J. Demos questions the symbolic power of art to influence real environmental change. However I would argue that Greenfort’s sculptures show the value of confronting cultural preconceptions of ‘nature’ with new hybrid visions. As Timothy Morton notes, a radically rethinking of ‘nature’ is required, which embeds human beings and our constructed world deep within the ecological cycles of the planet. The profound interconnectedness this implies raised new questions for my research and I began to seek a systemic understanding of water through a systems-oriented methodology.

Drawing out from the microcosmic basins of Roman fountains, Chapter 2 explored the fountain’s intrinsic connection to systems of water infrastructure, and how these systems in-turn interlace contemporary life. This exploration developed around the question: how can fountains highlight our dependence upon hidden systems of water infrastructure and the limits of control? Jack Burnham’s critical-framework for systems-oriented art practices provided a way to think through complex interrelationships of people, events, socio-political forces, and their environments. He showed that in order for art to function in advanced technological societies, artists must sensitively merge aesthetic and technological thinking. Hans Haacke’s early works employed sculptural apparatus’ to produce real-time cycles of water and air. His minimal structures applied principles of fountains to frame real-world systems of circulation such as hydrologic cycles, visualizing the infinite variability of fluid dynamics and the influence of humans on ecological flows. Haacke demonstrated the how metaphors of circulation and perpetual motion – might equally model the traffic of resources, commodities, currencies, and information signals that flicker imperceptibly through the infrastructures of everyday life. Brian Larkin advocated for the poetic qualities of infrastructures to convey symbolic meanings and metaphors, signify historic moments and stimulate new sensory perceptions. Charlotte Posenenske, Mandla Reuter and Oscar Tuazon all harness the sculptural potential of infrastructural materials to blend into the ongoing construction of urban experience. Michael Asher’s *Kunsthalle Bern 1992* extended the existing system of copper pipes to intensify the institution’s atmospheric conditions, concentrating its entire heating system into a single space. Asher draws the gallery’s existing infrastructure into view. Likewise, my own

installation *Fountain – Studio Plumbing* (2017) extruded a pipe from the MFA studios' existing plumbing system. This work juxtaposed the experiences of a fountain and a plumbing fault, to highlight the opposing attitudes and mixed emotions caused by our struggle to control water. Pressurized pipes encase all modern architectural spaces providing privileged access to domestic water supply, so ubiquitous that we barely notice them. However in communities where such privileges are scarce, intimate knowledge and manipulation of plumbing systems is a means of survival. Klaus Weber reminds us that these infrastructures are hidden in plain sight – using the fountain as a historical reference through which to reframe a catastrophic malfunction as a sublime event. *Fountain – Studio Plumbing* (2017) threatened the stability of the exhibition context, and drew subjective tensions around water into question forcing the viewer to instinctively consider their personal implication in the event and their sense of responsibility to intervene. The combination of a systems-perspective and a simple sculptural apparatus enabled a real-time event with real-world consequences. These contingencies produced a highly charged atmosphere, which exceeded the symbolic effects of my previous installations, intervening into the real-world flows of daily life.

Finally Chapter 3 has explored how fountains could be used to activate and reimagine urban waterways. It traced an attempt to transform the Moonee Ponds Creek into a fountain. The artwork *Fountains for Moonee Ponds Creek* (2017- ongoing) utilised a sculptural apparatus to return the traditional fountain form to the public realm, intervening directly in the Creek's dystopian architectures. Their heavily engineered form was conceived as a ready-made fountain basin, ruptured by a spectacular jet of water inserted at it's centre to re-circulate its meagre flow into the air. This simple sculptural gesture, produced a new image of the Creek through the collision of a drain and a fountain. It adapted the gesture of inversion, central to Horst Hoheisel's *Ashcroft Fountain Monument,* to upturn preconceptions of the Moonee Ponds Creek as a historical monument. The public siting of the work, assumed Rosalind Krauss' "axiomatic" structure, a sculpture intervening into the space of architecture. The work's multiple lives as a real-time intervention, video installation, and printed publication present different modes of circulation. This multi-form approach drew upon James Meyer's theory of a "functional site" to map the project inter-textually between the site of creation and the site of display. Tim Ingold and Stuart Oliver have illustrated the geometric and ideological constraints imposed on urban watercourses, embody modernist ethics of discipline, and a lack of appreciation of urban spaces as cultural geographies. Physical journey's of deep topography and my personal connection to the site, have provided a thorough cultural appreciation of the Moonee Ponds Creek. My involvement with the Friends of Moonee Ponds Creek, has nourished my research with local knowledge and provided a consultative context to develop my sculptural approach to the site. As such, the bold gesture at the projects core was achieved without official approval or mediation, vanishing as quickly as it had surfaced. *Fountains for Moonee Ponds Creek* sought to re-orient our perspective on urban waterways,

suspended in the tension between engineering, ecology, community, amenity, politics and the circulation of water. The fountain produced a moment of rupture that momentarily cut through these layers, to circulate a new sculptural vision of the Creek, posing an open question to its future.

Throughout this research project, a number of paradoxes surrounding the human relationship to water have emerged. Water has the power to give life and to take it away. This has led humans to distrust water, and idolize it simultaneously. It is essential to urban life, yet urbanisation exacerbates flooding and erosion which threaten its foundations. Water is highly valued when it is scarce, yet wasted in abundance. While these have traditionally been matters of survival, they have also become means for social and political control. Therefore fountains provide a window into our deep need to control and manage the flows of water.

I have found in the fountain's combination of utility and aesthetics, a new sculptural methodology, combining a systems-perspective, site-specific research, and employing functional apparatus' to produce real-time sculptural events. This dual process of creative expansion and refinement has presented new questions for my practice, which extend beyond the scope of this project. Most immediate is the question of how to better integrate informal sculptural interventions into the flows of daily life? What form would such interventions take, and how would they be experienced? In addition, innumerable narratives emerge surrounding the politics of water provision, indigenous water practices, and deeper ecological impact upon waterways that have only been touched on here. Such questions as "How can art inform approaches to global water shortage?" come to mind. But the increased localisation of my research presents the most promising avenue to approach these large-scale concerns, plugging in to deep community commitment and local histories to engage sculpture directly in the real-world flows of daily life. The artworks, theoretical texts, and fieldwork that have informed this research critically reflect the influence of water in shaping urban life and our constant struggle to channel, contain and circulate our most precious resource.

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