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River Silting, Watered Common

Reimagining Govan Graving Docks



Submitted by Ruth Gilberta Mona Olden to the University of Glasgow, as a thesis for the degree of Doctor of Philosophy in Geography, in September 2016.

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Abstract

This thesis imagines an ecological future for the post-industrial landscape of Govan Graving Docks, situated on the banks of the River Clyde in inner city Glasgow. The research is framed by a context of urban renewal and at times violent change in early 21st century Glasgow which has seen the city's riverside transformed, with centres for culture, tourism and entertainment built on its infilled docks and sites of dereliction. Prompted by the development priorities of this change, and the nostalgia for an industrial past that has become a 'way of seeing' the river, this research seeks to better know the material life of this landscape. On Govan Graving Docks - an abandoned ship repair and fitting facility that remains as yet 'unresolved' - this thesis unearths the agencies, temporalities, ecologies and material legacies of a less familiar elemental landscape, and considers how these expressions could be tended and extended in a vision for a different future, focused on fostering new kinds of environmental engagement.

The research themes draw insight from emerging theories in new materialism and the environmental humanities, particularly those that are responding to the matter of the Anthropocenic landscape, and they are explored through a repertoire of creative and collaborative field methods crafted *with* the site of study; variations on ecological performance, landscape and ecological survey work, public consultation, material imagining and site-writing. These methods are founded on openness and attentiveness, they are opportunist and affirmative in nature, they are practiced on site and taken into the wider estuarine landscape, and they enrol many others beyond the researcher. These methods are first used to explore the expressions of life and vitality that can be found in the Graving Docks' new ecologies, material memory and more-than-human publics, and then to imagine the creative capacities of these agencies in new configurations of shared possibility. The researcher is another site of investigation: a distributive understanding of agency informs the emergence of an ecological sensibility through material engagement, which has implications both for the design process and the imagined landscape. These resources are used to imagine an alternative future for Govan Graving Docks: it is a vision that works with ruination, re-wilding, and the liquid dynamics of the city; a vision that honours both natural *and* industrial histories; a vision that is both challenging and necessary, where new experiences of 'worlding' in the city are made possible. Through this process of investigation and conjecture, the Clyde imaginary emerges as a space for critical and creative thought; a discursive space where the challenges facing this ecological landscape and its future are explored.

This thesis is both a product of, and contribution towards, cultural geographical enquiry, but it also has an interdisciplinary reach both theoretically and methodologically speaking, which enables the research to contribute to a wider debate about environmental futures that is currently taking place across the sciences and humanities. It can be defined as 'interdisciplinary in practice' for the way that it brings a wider range or perspectives to bear on a precarious urban wilderness and its associated communities, and seeks to develop a broader repertoire of research methods capable of exploring its diverse material world, and the multiple expressions of value that exist therein. Written in a style that has been highly affected by this kind of open and inclusive style of research engagement, the emotive environmental story that is contained within this thesis is open to a wider audience. This thesis identifies the productive role that cultural geography can play in larger environmental debates concerned with the current state and play of 'life on earth', and by enacting and engaging ideas related to the cultural landscape, place-based identities/communities/values, and landscape practices, it also identifies the particular conceptual and methodological resources that make cultural geography's contribution both unique and necessary to these debates.

Acknowledgements

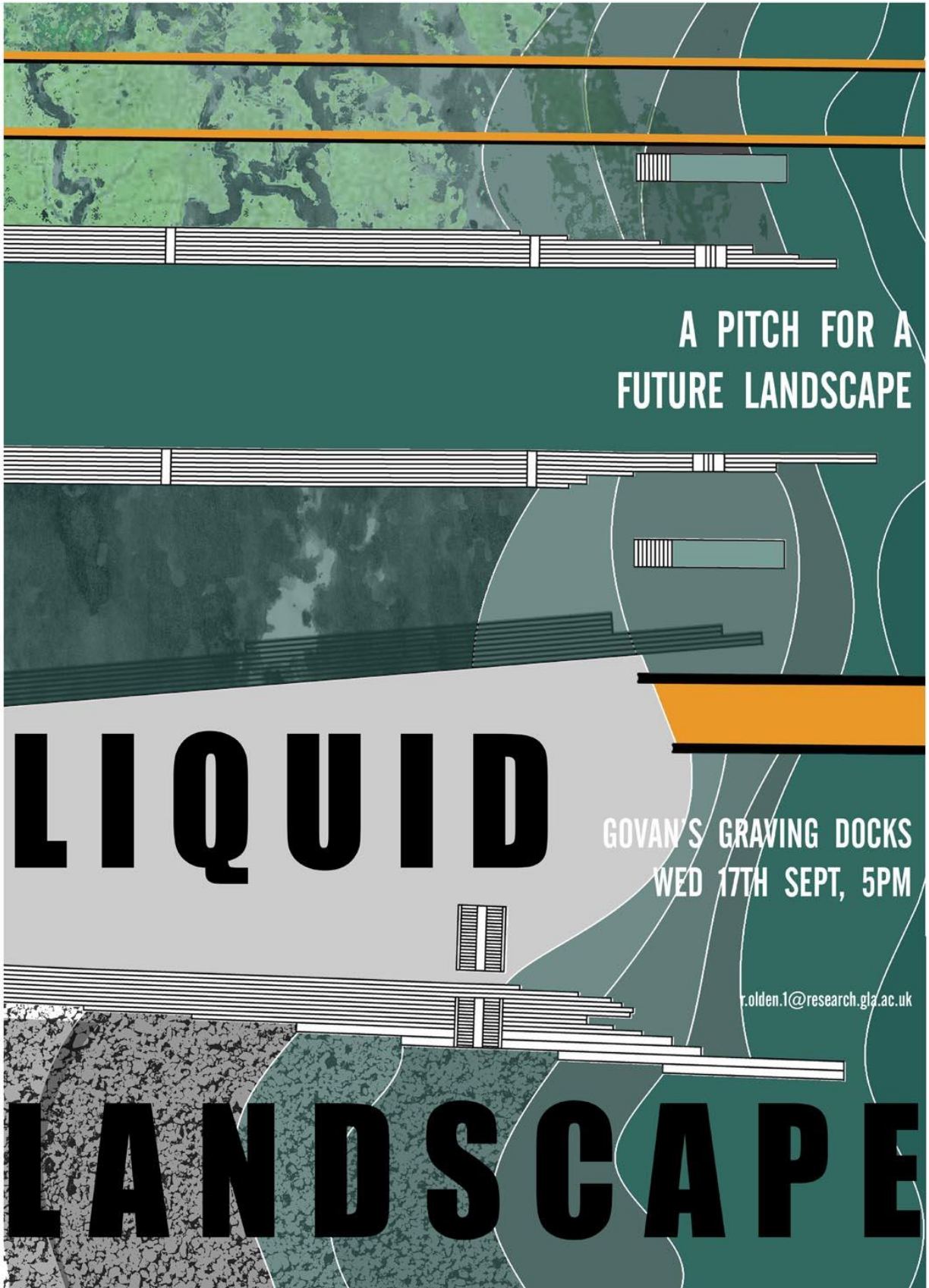
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A PITCH FOR A
FUTURE LANDSCAPE

LIQUID

GOVAN'S GRAVING DOCKS
WED 17TH SEPT, 5PM

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LANDSCAPE

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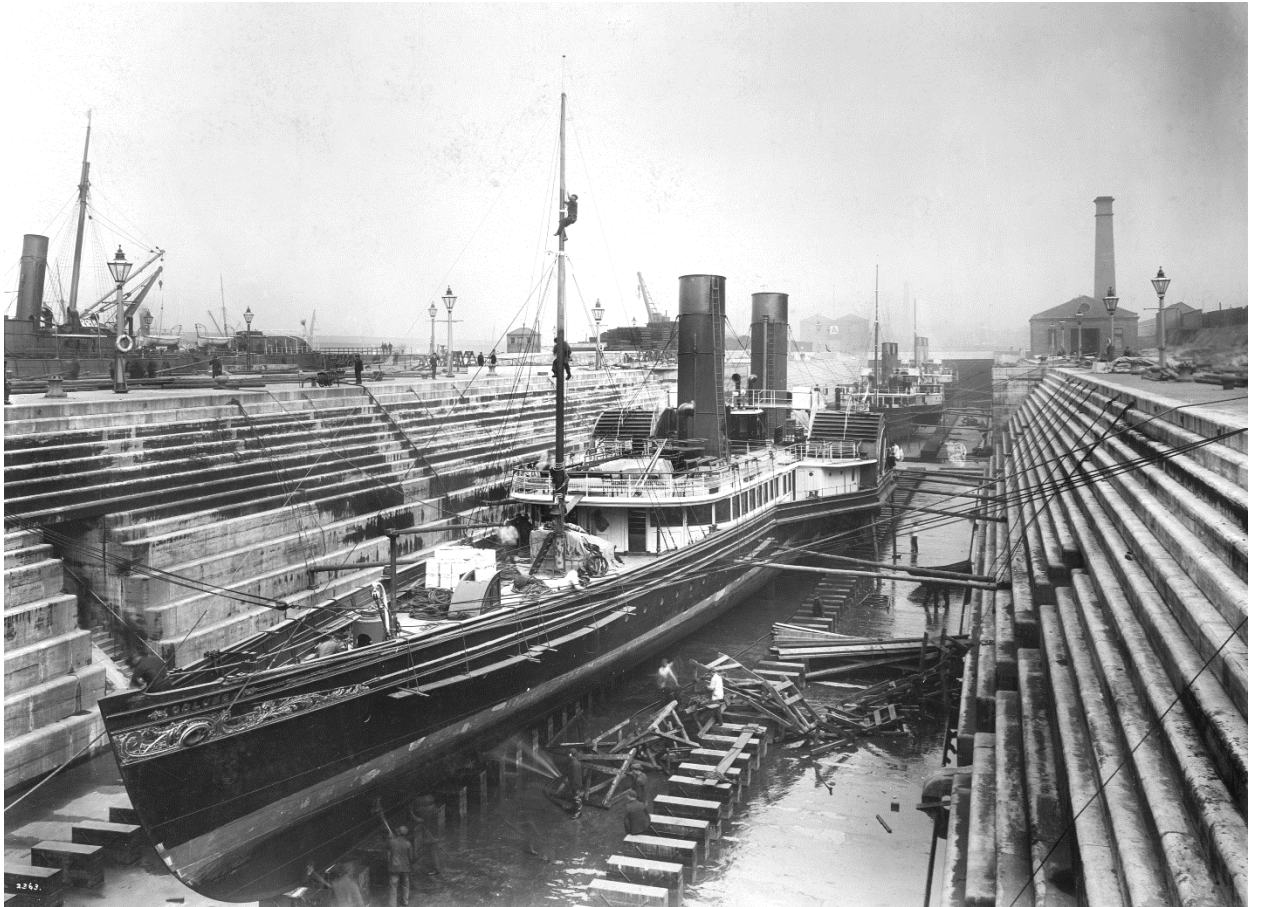


Fig. 01 Govan Dry Dock, 1916: Stagers and riggers in Dock Three (Image: C5240, Glasgow City Archive)

1

Look up River

It was a Sunday morning and Dad and I were in the Riverside Museum taking in the curated view of the upper Clyde. This is Scotland's new museum of transport and travel, a landmark building designed by world-renowned architect Zaha Hadid to 'contribute to the ongoing regeneration of the Clyde', and completed in 2011.¹ The interpretation panel next to the window told us to 'LOOK UP RIVER.' Yet more features of the Clyde's post-industrial development rose like a silvery halo over this vista: metallic domes and towers of glass, the latest entertainment arenas, exhibition spaces, media centres and commercial complexes – a collection of so called 'starchitecture' that has directed Glasgow towards 'a future of leisure and tourism' (Murphy and Bruno 2013: 5). A diagram on the interpretation panel picked them out, naming their use and the architects who built them. 'THE RIVERBANK IS A VIBRANT AREA THAT IS ALWAYS CHANGING... NEW BUILDINGS AND INDUSTRIES NOW LINE THE RIVERBANK BRINGING LIFE BACK TO THE CLYDE.' The car parks were mobbed, but the only evidence of life we could see from this window was a small Jack Russell sniffing around the shrubbery of the museum forecourt. We watched grey clouds roll over. 'Glorified sheds', dad grumbled.

Clyde Waterfront - a strategic growth coalition operating between 2003 and 2014, formed of the Scottish Government, Scottish Enterprise, Glasgow City, Renfrewshire and West Dunbartonshire Councils - envisioned this latest make-over. Their aim was to put the city's 'enduring asset', the River Clyde, back at the centre of Glasgow's economic growth, long after the fall of its world renowned shipbuilding and manufacturing industries. In a visioning document published in 2002, Clyde Waterfront outlined a development strategy to transform the waterfront into a 'world class' centre for business and tourism, so that it might again become an 'economic powerhouse and an international symbol of success'. In this document, they outline their vision to:

...transform the Clyde from a place that in parts is uncompetitive, blighted and excluded, into a competitive knowledge-age location characterised by dynamism, innovation, learning and connectedness. In short we see the Clyde Waterfront becoming a driver for economic growth in the west and a key force in the wider Scottish economy, while at the same time addressing local needs in existing waterfront communities. ²

The Riverside Museum, the SSE Hydro arena, the new BBC Scotland headquarters, the International Financial Services District, the high-end housing development Glasgow Harbour,

Braehead shopping centre and the XScape entertainment complex are just some of the key projects that the coalition realised – projects that were ‘largely market driven with the public sector taking a planning role’ (Pacione 2009: 154). In order to understand where the motivations and the development practices of this recent regeneration effort came from, it is worth looking back to the 1980s when the first attempts were made to salvage Glasgow’s river-based economy after deindustrialisation. Despite the negative imagery that was associated with the city during this time of widespread unemployment and social deprivation, Pacione (2009: 156) writes that the city council saw its future in a ‘visitor economy’, thus concerted efforts began to ‘rebrand the city’ so that Glasgow might sustain the difficult transition. The city waged a successful marketing campaign ‘Glasgow’s Miles Better’ from 1983-1990, and competed for international accolades and events, the most successful being the Glasgow Garden Festival, hosted in 1988, which represented something of a turning point as Glasgow’s biggest industrial docks were filled in to create festival parks for the 4.3 million visitors that flocked to the city that year (Leadbetter and Sibbald 2004). During this period, the first growth coalition ‘Glasgow Action’ (operating 1985-1991) - later replaced by the ‘Glasgow Development Agency’ - launched private sector involvement in Glasgow’s regeneration. Pacione (2009: 154) writes that the ‘doctrine of entrepreneurialism’ pursued by these early coalitions, and their focus on ‘property-led regeneration projects, place marketing and [the] promotion of cultural industries’, are all strategies that Clyde Waterfront would later build on in an effort to continue Glasgow’s transition to a post-industrial economy.

From our lookout at the Riverside Museum, it was clear that Clyde Waterfront’s new architectures valued the river primarily for its surface aesthetics; water was held in a frame and viewed from afar, and so our experience of it on this particular morning was all that we might have expected. I studied the stretch of the Clyde Walkway that was visible to us; a pedestrian and cycle way flanking the substantial ‘hard’ water edge of the north bank, which firmly held river and city apart. Even the walkway itself was fragmented by residential and entertainment complexes that had privatised the water’s edge. I thought about how the Clyde’s surface aesthetic has obscured other ways of knowing, and other ways of living with the river. Where were the places to know the elemental river itself and the relations of vulnerability, culpability and dependency that link the city to it? The Clyde’s tidal rhythms and freshwater flows, the aquatic ecologies and channel topographies, and the water birds and migrating fish are not familiar. It is only when the river exceeds the spectacle that it is given a passing thought: during the Summer of 2014 for example, when hundreds of dead salmon floated through the city during the Commonwealth Games because of the river’s overheated and deoxygenated waters,³ and in 2012 when an inner city river bank collapsed during a particularly intense March storm.⁴ This disconnect between river and city has invited a host of bad practices.

Specialist divers working the Clyde have found 'mountains of fridges' rising from the river bed oozing oils and bubbling gases at prime fly tipping spots.⁵ Untreated sewage is directed straight into the river during times of peak rainfall when Glasgow's sewage works are strained beyond capacity.⁶ These sewage works are part of the Clyde's unspoken 'outside', or the Untouchable Clyde as I've come to know it: the seemingly endless stretch of scrap heaps, sewage works and waste heaps that hog the water's edge further downstream – a landscape that, incidentally, was behind us now and out of view.

The elemental river is given no imaginative life either. There was a black and white photo on the interpretation panel by the museum window illustrating how the river in the view before us once branched out into the city fabric in a busy arrangement of docks and quays: this the landscape of water that established Glasgow as a world-famous centre for trade, shipbuilding and manufacturing throughout the 19th and 20th centuries, shoring up local livelihoods (Craig 2010), place-based identities (Bellamy 2006), and a far-flung economy (Pacione 2009). 'THIS VIEW OF THE CLYDE HAS CHANGED DRAMATICALLY OVER THE PAST 50 YEARS'. It was not unusual that the panel had prompted us to see the past before us. Glasgow-based artist-researcher Minty Donald has found that the predominant imaginary of the Clyde 'continues to coalesce around a version of the river's industrial past' (Donald 2012a; 2014). And this story has become a 'way of seeing' the de-industrialised present. The city's tourism and cultural memory are built on this story - evidenced in part by a gathering body of historical walking guides (Mitchell 2005; Osborne, Quinn and Robertson 1996) - and today the river is still described as 'empty', 'eerie', and a 'shadow of its former self'.⁷ The imaginary also obscures the challenges that the river faces today, and this is something that Glasgow based artists are increasingly seeking to challenge through ecological performance (Donald 2012a; 2012b; 2014), and site-specific theatre.⁸ Three central concerns emerge in this gathering body of critical, creative work. First, divorced from the present, the critical role of the Clyde imaginary has been lost - its potential for fostering civic responsibility and new kinds of urban aspiration with the river, for exploring what relationships between people and their environment could be. Second, with the present considered through the past, the new ecologies, challenges, opportunities and reflections that are just as much a legacy of Glasgow's industrialisation have been missed. Third, the imaginary is commonly told as a collection of human stories, such that it has forgotten the elemental river itself and the web of watery publics that share in it.

Growing up with the Clyde during its biggest regeneration project after industry made an enduring impression on me. Apart from the dramatic demolition of the Meadowside granary that left me one loved landmark short, most of the dismantling and dock-infilling had been completed before I was born. As a child it seemed to me that vast expectant spaces by the River Clyde were simply a natural part of the urban fabric. In his book '*Glasgow at the Crossroads*',

documenting the post-industrial city between 1976 and 1985 in black and white photography, artist Alan Knight (2010) describes the openness of the riverside and the opportunities it afforded the urban explorer:

In and around the docklands vicinity, the ease with which I could move freely around the quays, yards, cranes and sheds would be remarkable today. I had virtually full access to those areas – I literally just turned up and started roaming. Nowadays there would be heavy security, officious behaviour, maybe a touch of paranoia – perhaps a marker of the psychological changes that have taken place since then, and of the privatised corporate world we live in today (Knight 2010: 2).

However, as investment poured in to gentrify Glasgow's riverside communities and its derelict spaces (Paton 2009), the small window of reflection that this landscape had opened was fast closing over. My quicksilver home-city coursed with a flood of questions. How could the city of Glasgow remember the River Clyde's industrial past within the context of a *living* present? What new histories could this bring to light, what new ways of seeing the river exist, and how could these inform the river's post-industrial development to bring people and place, land and water closer together? What opportunities and challenges exist within the messy entanglement of human and natural agencies on this (ruined?) riverine landscape, and what directives do they offer for thinking about living together *with* the River Clyde, now and into the future? How might attempts to know these agencies inform the emergence of a new ecological sensibility for the Clyde? In what way could critical and creative engagements with the riverine imaginary challenge the commercial emphasis of the River Clyde's post-industrial development? Could an alternative landscape vision help us to reimagine our engagements with the river, to foster new relationships with the watery publics that share in it, and if so, what would that alternative landscape look like?

In time my preoccupation with the River Clyde grew into a larger concern for urban/environmental futures that would later lead me into the discipline of landscape architecture. I studied at Edinburgh College of Art and then moved to North Wales and later Switzerland to work for architectural practices that had looked promising in terms of their projects and outlook, but I returned to Glasgow a number of years later disillusioned with the world of landscape design and the commercial imperative that it appeared to turn on. In these practices, time and resources were invested in refining and replicating house styles. This focus on representation left little time for important site-based research: site enquiry was hurried, public consultation became a tick-box exercise, and memory work was selective and uncritical. I had been hopeful about my design profession, and its capacity to inspire new kinds of environmental engagement, but my experiences only left me feeling like a part of the ever more pressing problem. It was all in the method, my experience had taught me. Finding myself back

in Glasgow at a crossroads in my career, those questions from the Clyde now presented a timely invitation, and so I put together a research proposal to develop a critical spatial practice for the Clyde.

*

The presiding aim of this Clydeside research project was to construct a vision of a future riverine landscape for the city of Glasgow: a vision to identify other ways of seeing, and other ways of engaging with the river that would build a resilient river-city relationship. Given the limitations of the Clyde imaginary, and the role it has played in the river's regeneration, this Clydeside visioning sought to reinvigorate its critical potential as a realm of aspiration and experiment. The vision itself was to be highly ambitious; its imagined form and function would respond to the elemental river itself, the web of watery publics that share in it, and the very real opportunities and challenges that are the legacy of the Glasgow's industrialisation.

I brought these aims and objectives to Govan Graving Docks, one of the few remaining Clydeside sites that remains 'unresolved' – neither filled in, built over or monumentalised. This is a derelict ship repair and fitting facility that ends the slow march of redevelopment on the south bank of the river from the city centre, that Clyde Waterfront have praised as 'the most complete and evocative pieces of shipbuilding history on the Clyde',⁹ though their ambitions to redevelop it have always fallen through. Another kind of reclamation has taken place here, and it is particularly notable given the facility's former life. The maintenance operations that once took place here depended on the very particular orchestration of men, materials and water, but since its abandonment in 1988, the dry docks have been unsealed and infiltrated by the River Clyde, a distinctive urban ecology has taken route, and opportunist animal, human and vegetal publics have moved in. The taxi driver who first brought this place to my attention told me about some of its new communities: 'Folk with the dug like mahsel, and wan wee wummin who brings her bread doon tae the foxes'. I followed his advice and went to see Govan Graving Docks for myself, and from the first encounter, I was struck by its recombinant ecologies, its complex histories, and the unfamiliar expressions of vibrancy, life, regeneration and heritage that were full of possibility for thinking about how river and city might once again connect.

I began my research on Govan Graving Docks in the Autumn of 2014, and very quickly my clear visioning aims became a great deal more complicated. A future was already being mapped out for this site: the land was in the ownership of a property developer and when I met with the company director he told me about their plans to build a high-end housing and commercial complex in time to 'catch the 2016 market'. During the year I spent here I found myself in the midst of significant landscape change as the landowner-developer began drawing the site back 'back from the brink' through site preparations and survey work. Many

unexpected lines of enquiry began to emerge, and many new aims grew within and around the original visioning aims (which now take on even greater relevance and urgency). This thesis documents how these new commitments unfolded, and it also describes the different roles I was compelled to take on as new circumstances emerged. In light of the plans, the site seemed in need of a different sort of champion: a melancholic archivist and landscape activist, all in one. These were roles I hadn't anticipated taking on, but nevertheless, they became an important and necessary part of the time I invested in Govan Graving Docks. Through all manner of creative engagements, from ecological surveys to site-based performances, I found ways to ask and then address important questions about the future of this landscape, and to invite others to join me in this task.

*

Chapter Two of this thesis explains how my research interests in the hybridised landscapes of the Anthropocene and their complex spatialities and temporalities have informed this study of Govan Graving Docks. Given the rapid social and environmental changes facing the Clyde, and the failures of the Clyde imaginary to respond to them, I wanted to cultivate a material perspective on this post-industrial landscape – to know its agencies and temporalities, the new histories and species dependencies that were already in the making. Emerging research in the geo-humanities exploring the processes and patterns of human-disturbed landscapes helped me to develop research themes that would become formative in my own engagements with Govan Graving Docks – themes of waste and matter, agency, life, toxicity, the human, memory, nature and time. In this chapter, I review a number of studies which offer a portrait of an anthropogenic landscape - marginal spaces, such as brownfield sites, 'drosscapes' (Berger 2007), fallen monuments, dumping grounds, wastelands, and 'edgelands' (Farley and Roberts 2012). These studies then offer an important point of entry into the interdisciplinary literatures of new materialism, specifically vitalism and feminist materialism in order to develop the themes that they have introduced. At the root of the studies and material theories I consider in this review is an ambition to go beyond mere diagnoses of troubling local histories and uncertain landscape futures, to find hopeful resources within human-disturbance. This is an ambition that my own research shared, and so there were many provocations to thought and practice to be found in their accounts from the field.

In Chapter Three, I explain how a more-than-human methodology and site-specific knowledge practices enabled me to open up a fresh perspective on the material world of Govan Graving Docks. This was a methodology capable of responding to the complexities of a ruin in process, due to its focus on situated knowledge practices, and its experiments with inhuman

ways of knowing. In this chapter, a review of more-than-human theory enables me to set out my approach to thought and practice. The onus here is on situated knowledge: knowledge that explores the resonances, the limits, and the transformations that are enacted in the meeting of self and world. The specific research methods that this approach informed – the many elaborations on the idea of situated encounter, whether with lead or sediment, salmon or saline water - were always configured *with* the site and its agencies. From river-boating to dockland-abseiling, postcard-giving to ruderal-transplanting, devising active research practices was a sensitive exploration of the capabilities of self and site for sharing-in this landscape. Through these methods, which determined to strike a balance between self/earth-reflection and the exuberance of creative experiment, I was able to explore the possibilities that still clung to this abandoned landscape, and what too could yet emerge from its ruins.

My processual account of a year in the life of Govan Graving Docks is written chronologically as a series of site memoirs, told across Chapters Four to Eight. The people encountered in this narrative account are featured but anonymised, given plain titles to reflect the roomy space of recollection from which they emerged (an approach I elaborate on in Chapter Three). Those individuals who feature in the thesis by way of a prearranged meeting approved the research-memoir in which they feature, and have consented to its inclusion in the thesis. Other happenstance fieldwork encounters were the result of my active, engaged workings with the site, and they are included in this thesis to demonstrate the dynamic, social environment in which research took place. Chapter Four describes my first season on this ruin landscape, when I become familiar with the Graving Docks' varied rhythms and terrains, its blend of past, present and future, and the context of uncertainty that surrounds the site. In Chapter Five, I transport research practice into the neighbourhood of Govan in search of local knowledge and memory, and opinions on landscape futures for the Graving Docks. Chapter Six returns to the site for the arrival of Spring, only to witness the violent beginnings of the developer's regeneration project. Written in diary format, it captures the images and atmospheres of this fraught time, describing the process of environmental change that took place, and my attempts to come to terms with it. The fourth in the series, Chapter Seven describes my Summer boating the River Clyde, and the new natures, watery publics, urban politics, and enduring elemental forces I encountered – research which enabled me to contextualise the Graving Docks within a broader riverine system. Lastly, Chapter Eight opens up a new space in the Graving Docks imaginary, as thoughts about this landscape's many expressions of life and vitality and the affiliations and attachments that embed it in the city, are brought together to build an idea for a possible landscape future.

*

The museum was getting busier and a steady stream of visitors passed the window en route to the star attraction upstairs, a conveyor belt of model ships. A few paused for a minute at our side contemplating the view. 'It's just so bleak isn't it?' one passerby remarked. The window was cut deep into the wall so that it offered a place to sit. A couple of small children clambered inside. The glass was streaked with bird droppings so they took a moment to arrange themselves before pressing their noses up against the glass. The seagulls in the forecourt were perched in equal spacing along the stainless steel waterfront railing, watching the river expectantly too. 'The riverside! The River Clyde! The riverside! The River Clyde! The riverside...' one of the small boys sang. 'Shhhhhh. Look at the water Callum. What can you see?' his mother said, joining him on the window ledge. 'Where are the boats mum?'

In and amongst the silvery halo we could see the old pump house for Queen's dock, host now to 'Curryoke', an Indian restaurant with a twist. Queen's Dock was under the car park. Next door was the Metropolitan Police's helipad that had fenced off a promontory that had been the left arm of Queen's Dock. Dad recalled a Sunday like today when I was small and we had gone for a walk down by the river. Back then the helipad was rarely used and easily accessible, so Dad had carried me over the knee-high fence to enjoy one of the best views of the city. 'It was the closest thing to hanging off the prow of a ship' Dad said. We hadn't been there for long when a helicopter came roaring through the skies over the river, making a beeline for the helipad. Having always been shy of loud noises the increasing volume predictably set me off. Dad hadn't forgotten the hurried leg back down the river before we were finally out of earshot, me in his arms red faced and bawling.

Today the helipad was heavily fortified and populated with hangars and office buildings. 'Here today, gone tomorrow' Dad said with a weary note. We had been looking out on to the Clyde's last remaining dockland landscape all those years ago from the helipad - Govan Graving Docks. In fact, we had been standing on the remnants of Queens Dock wharf where workers would gather in the morning, flasks in hand, awaiting the ferry that would take them to the working dock - then a ship repair and fitting facility. But the side elevation of the Clyde's banks gives very little away, and so this place would remain a mystery to me for twenty more years until a Glasgow taxi driver urged me to take a closer look. 'The Graving Docks. If thir'wae anywhere that should have sum good done by it, it's got'tae be the dry dock. Aw whit'a place. Hiv you no seen it?' It's was a Saturday night and we had just seen the Clyde all lit up in theatrical reds, greens and blues from Glasgow Bridge. 'Ma da worked in they basins until '88. Blacksmith... Still walk mah dug there. No before time something good wae done by it.'

2

Anthropocenic Landscapes

Atmospheric chemist Paul Crutzen (2002: 23) proposed the Anthropocene concept to name the beginning of a new 'human dominated, geological epoch'. In a polemic article 'Geology of Mankind', he concluded that 'a daunting task lies ahead for scientists and engineers to guide society towards environmentally sustainable management during the era of the Anthropocene' (Crutzen 2002: 23). But this 'settled' scientific concept has since given way to a lively, interdisciplinary 'field... in ferment' (Swanson, Bubandt and Tsing 2016: 163). United with concern about environmental change, social scientists and the humanities have also heeded Crutzen's call, but a strong element of critique has galvanised their efforts too. The environmental humanities for example have entered the field as 'deconstructor-critic', concerned about how the materiality, agency and politics of this Earth event have been conceptualised (and given validity) by scientists in the public domain (Castree 2014: 243). Macfarlane (2016) writes that this 'global optic' has a tendency to move into crude 'absolutist' abstraction, that configures humans as a 'super-species' and nature a passive victim. This abstraction, he argues, only perpetuates 'the narcissist delusions that have produced the current crises', limiting the crises response to variations on planetary stewardship that still imagine nature and culture as separate domains. Whilst there is, Haraway (2015: 159) writes, an important role for the Anthropocene concept to capture the 'scale, rate/speed, [and] synchronicity' of the moment, clearer understanding is needed of the complex temporalities, spatialities and agencies that define this moment. In this chapter, I want to explore the components of this critical perspective (developed by the environmental humanities, new materialism, and feminist materialism), first, because of the many opportunities to hopeful, creative ecological thinking it opens up (which my research on Govan Graving Docks could draw from), and second, because of its capacity to speak to one of the Clyde's biggest challenges - that is the ongoing influence of its human-centred imaginary.

Environmental humanities scholars engaging critically with the Anthropocene concept are finding new ways to render the complexity of this moment with research that is material, historical, embodied, imaginative and interspecies in practice. Their research is shedding light on the relationality of the Anthropocenic world - the connections that bind nature and culture, self and world, past and present - and applying this knowledge to 'think politics after the nature-culture divide' (Swanson, Bubandt and Tsing 2016: 163). The field is shedding light on the plurality of Anthropocenic worlds that exist within that term, each geographically,

culturally and historically specific (Choy and Zee 2015). In a departure from the ubiquitous doomsday stories of the Anthropocene, environmental humanities research is thinking through the kinds of challenging/hopeful socio-environmental imaginaries that human-disturbed worlds can give rise to (DeSilvey 2012; Ingram 2014; Bennett 2014).¹⁰ Furthermore, the field is rethinking what it is to be human in a contested, contingent material world *with* other species (Tsing 2015). This is possible, Haraway (2015: 159) writes, when we ask: ‘what are the effects of bioculturally, biotechnically, biopolitically, historically situated people (not man) relative to, and combined with, the effects of other species assemblages and other biotic/abiotic forces?’. By mapping the webs of connection that comprise *being human* in an Anthropocenic world, scholars in the environmental humanities are beginning to identify the kinds of critical sensibility upon which sustainable futures depend.

The new knowledges emerging in these critical engagements with the Anthropocene are capable of speaking to one of the Clyde’s biggest challenges - that is the ongoing influence of its human-centred imaginary. Consider that enduring Glasgow phrase: ‘Glasgow made the Clyde and the Clyde made Glasgow’. Appearing in city guidebooks, local histories, public exhibitions and educational resources,¹¹ it is a phrase all the more ubiquitous, it would seem, for the absence of a known author. This phrase sheds light on how the river is commonly storied to acknowledge the city’s great human achievements: the making of a navigable watercourse, and all the great ships, pioneering technologies, materials and industrial processes that followed. But there are many omissions in this story. Local historian John Riddell (1979) dredges these up for scrutiny in his epic river history, *‘Clyde Navigation: A History of the Development and Deepening of the River Clyde’*. In this book, Riddell describes a river that continually resisted its industrial restructuring. In 1771, The Clyde Navigation Trust set out to narrow and deepen the river (Riddell 1979: 40). More than one hundred jetties were built to project from its banks between Broomielaw Harbour and Dumbuck, ‘so to cause Nature to assist itself by scour’ (Deas 1888: 599). But the river did not cooperate with the city’s plans; it continued to silt up, grounding ships, undermining the work of hundreds of labourers, and dividing Britain’s most experienced engineers who couldn’t agree on whether it was the receding tide that caused the most substantial erosion to the river bed (in which case the Clyde channel should be opened out rather than narrowed), or whether it was the downward flow of river water that was most effective. Even when the restructuring was complete, the River Clyde had to be dredged every day, twice a day to maintain a navigable depth. The river comes alive as an active wilful force in Riddell’s history, and humans are storied as part of an uncertain world. As the list of failures and frustrations go on, the assurances that have been distilled from this story begin to look increasingly problematic. In light of Riddell’s story, the complex and challenging legacies that have been left by human-disturbance on the Clyde today call for better

understanding of the river itself, and better understanding of the kinds of riverine relations upon which resilient futures can be built. Thus, in light of its theoretical resourcefulness and contextual relevance, this chapter turns to emerging research in the environmental humanities for insight and inspiration.

Within the environmental humanities, the 'broken and disordered landscapes' of the present day have become important sites for critical study of the complex spatialities, temporalities and interspecies relationships that mark the Anthropocene, and so these studies are the focus of this chapter (Tsing, Lien and Swanson 2015: 4). Curiosity and concern has drawn anthropologists, nature writers and geographers alike to these marginal spaces, where fragmented and discordant worlds have superseded the ordered worlds that came before (worlds ordered by human economies and ambitions in the name of 'productivity' and 'progress'). Across post-industrial ruins, brownfield sites, 'drosscapes', fallen monuments, dumping grounds, wastelands, stalled spaces, and edgelands, a pattern language is emerging. These sites are lively and processual, host to diverse agencies – meteorological, microbial, human and creaturely - that are drawn together in violence/affinity/symbioses as an uncertain future calls. They are places of contradiction - where wreckage and recovery, extinction and survival, loss and discovery, endings and beginnings, adaption and pollution keep a troubled sort of company (Tsing, Lien and Swanson 2014). They reveal their strata: the complicated inheritances, and the new histories that build on them (van Wyck 2013). They are sites where the matter of entanglement is to be taken seriously - where recombinant ecologies and contaminated cultures reveal the 'complex cross-weaves of vulnerability and culpability that exist between us and other species' (Macfarlane 2016). They are places of disruption that shed light on the contested, contingent nature of the present world and the failure of perceptual taxonomies and categories to make sense of it (Dixon, Lavery and Hassall 2014). Lastly, they are places of hope - where the affirmations that can found in muddled human and natural stories call for greater, more nuanced understanding of human-disturbance (Tsing, Lien and Swanson 2014).

In this chapter, I will review environmental humanities research of the Anthropocenic landscape, in order to glean resources for fieldwork on Govan Graving Docks. There are three elements that make up its fabric. The first is a series of ruin portraits sourced from across the environmental humanities' many diverse disciplines, that draw out three important Anthropocene concerns – how to understand the material world, our place within it, and how to envision sustainable futures. The second element is the material theory that these portraits help to ground. Questions concerning the nature of agency, nature, time and adaption raised by these grounding-studies direct this literature review into Deleuzian theories of vital materialism for example, which turn up yet more resources for thinking about the material life

of these landscapes, while questions concerning ruins and the human direct this review into feminist materialist theories that seek to configure new modes of being for the Anthropocene. The imaginaries that these grounding-studies have evoked, direct this review into Deleuzian and feminist materialist theories of the imaginary, that divulge tools for experimenting with ruin futures. The third element is a series of photographs that introduce points of connections to the landscape that this review of literatures foreshadows.

This chapter will describe important themes emerging in the literature that have been formative in my engagements with Govan Graving Docks. In the first section, 'Vibrant Materials, New Ecologies', themes of *vibrancy, life, creativity* and *waste* are considered. These themes are used by Anthropocenic scholars to explore the materiality of Anthropocenic landscapes - to locate and conceptualise the distributed agency of these sites, to study the restless configurations and new ecologies that they give rise to, and to critique the taxonomic categories that limit ways of seeing these landscapes (man-made/natural, waste/value, self/site, past/present) - and they have been important resources for this study (Bennett 2010; Hird 2012; DeSilvey 2007; Dixon, Lavery and Hassall 2014). The themes of *multiplicity, memory* and *emergent futures* considered in the second section, 'Warped Temporalities', have emerged as important tools in temporal explorations of Anthropocenic landscapes, enabling scholars to grapple with its layered, haunted and conflicted complexities (Lavery and Hassall 2015; DeSilvey 2012; Edensor 2005a; Munteán 2014). The third section, 'Belonging to the Anthropocene', explores themes of *connection, the self, criticality, and experimentation* that have directed the search for new modes of engagement with Anthropocenic landscapes, and new definitions of the human subject within this context (Hinchliffe et al 2005; Tsing 2012). Lastly, the fourth section, 'The Ruin Imaginary', explores how themes of *possibility, hope, resilience, and the commons* have been used to engage imaginatively with human-disturbed landscapes, in the task of envisioning hopeful futures for life on a changing Earth (DeSilvey 2014; 2012; Ingram 2014). These themes shaped my own attempts to see the Clyde's past critically in the present, to explore the challenges and opportunities, and the new histories that can be found in its ruins, and lastly, to identify the resources for imagining an alternative future for Govan Graving Docks.

In this introduction to the literature that will follow, I have located this thesis within an expanding interdisciplinary field of environmental humanities. On a more 'local' scale however, it is clearly located within the field of cultural geography, and this is a point that I would like to elaborate in order to conclude this section. Cultural geography has become a key contributor in wider environmental humanities debates and, in terms of its theoretical influences and methodological interests, it shares much in common with other contributing disciplines. For example, the theoretical 'turns' in material theory that are tracked on an interdisciplinary scale

in the literature that follows, also find their own particular expression in a genealogy of cultural geography. Cultural geography is a subfield of human geography that has focused on the relationships between culture and place. More specifically, cultural geography examines 'the cultural values, practices, discursive and material expressions and artefacts of people, the cultural diversity and plurality of society, and how cultures are distributed over space, how places and identities are produced, how people make sense of places and build senses of place, and how produce and communicate knowledge and meaning' (Castree, Kitchin & Rodgers 2013: 87). The earliest incarnation of 'traditional' cultural geography, the Berkley school as it commonly known, considered landscape the defining unit of geographical study (Wylie 2007). The prominent thinker in this school of thought, Carl Sauer, developed nuanced understandings of human-environment interactions at a time when environmental determinism was still prevalent in geographical debate. Sauer conceptualised an active and formative relationship between people and place, and undertook empirical research to demonstrate how human cultures shape natural environments, whilst simultaneously being shaped by them. At the intersection of these two agencies, he described the emergence of the 'cultural landscape' (Wylie 2007: 20). Rigorous observational fieldwork was undertaken by cultural geographers of the period to understand the specificity of the cultural landscape in its distinct locale, and this was achieved through areal and chronological landscape analysis. By observing patterns and histories of human occupation written in the land, Sauer and his contemporaries pioneered discussions around the notion of place-based identities and vernacular landscapes, as well as the more troubling and destructive aspects of human-environment relationships. During the 'quantitative revolution' in the 1960s and 70s interest in cultural geography waned as geographers sought to develop the discipline as a spatial science, but the subfield experienced a renaissance with the arrival of 'new' cultural geography in the 1980s, which was influenced by very different theoretical ideas, methods and subjects than those of the Berkley school. 'Traditional' cultural geographers had relied on the 'epistemic authority of the trained morphological eye' in order to determine geographical processes and to objectively quantify material culture, primarily in rural locations (Lorimer 2006: 516). 'New' cultural geographers on the other hand turned their attentions to 'culture in contemporary and urban societies, and focused primarily on investigating non-material culture (e.g. identity, ideology, power, meaning, values etc.)' (Patchett 2010). Methodologies also changed, with feminist and post-colonial approaches paving the way for a more reflexive style of cultural geographical research, mindful of the formative role of research practices (and the figure of the researcher specifically) in knowledges produced. In a historical overview of cultural geography, Patchett (2010) writes about the recent changes that 'non-representational theory' have brought to cultural geography, in a bid to move the field 'beyond

an interest in identity politics and other static representations of culture'.¹² Rather than research and represent social relationships, as 'new' cultural geography has done 'non-representational theory focuses upon practices – how human and nonhuman formations are enacted or performed – not simply on what is produced' (Patchett 2010). More-than-human geographies have extended this endeavour to account for the role that the elemental and the creaturely play in the production of hybrid geographies (Whatmore 2006). This thesis is grounded in the genealogy of cultural geography described above, as well as an expanded interdisciplinary field of environmental humanities that will follow. In terms of the former, this thesis reasserts the importance of the cultural landscape as a subject of critical enquiry, and explores more deeply its capacities as an active, emergent force with tangible social, environmental and cultural affects. It recognises the substantial agency and particularity of the place-based identities, communities, meanings and knowledges that are part of a local cultural landscape, it explores how they are produced, and it develops research methods for engaging them in a critical study of human-environment relations. It also recognises the substantial agency of the elemental, the geological, the creaturely and the meteorological in the making of a local (multi)cultural landscape, and gives imaginative life to these agencies as part of concerted environmental ambition. As such, this thesis actively engages with current concerns in cultural geography, (it is both a product of, and contribution towards this field), whilst also working beyond disciplinary boundaries to engage with issues of urgent environmental concern that are now finally bringing the sciences and the humanities into shared conversation.

2.1 Vibrant Materials, New Ecologies

W a s t e

To begin to explore the potential that abandoned, ruined sites hold, it is first necessary to look beyond their simple categorisation as 'waste' (Edensor 2005b; Hird 2012; Hird 2013). Considered through the lens of a modern capitalist value system, it becomes 'stalled space', 'wasteland', or 'relic' of a human past. 'Waste', Hird observes, is a category upon which modern selves and cities depend. Objects neatly categorised as such are put out of sight, buried, incinerated, demolished or boarded up, and then forgotten; this 'normative ordering' ensuring that the ordered, sanitised world is maintained (Edensor 2005b). Hird (2012: 465) writes that 'what remains after our disgorgement is what we (want to) consider our *real* self'. Hird confronts this excess on the iconic waste landscape that is landfill and finds that *perceptions* of



Fig. 02 Surface and Depth: Cracks underfoot in the Graving Docks ruined Pump House (Image: Olden, R.)

waste thoroughly skew its material realities. The stuff of waste has an excess that the category itself cannot contain. Waste doesn't fall into passivity when it is finally expelled to landfill, rather it becomes 'part of bacteria's production and consumption economy', and continues to evolve along with all manner of mobile systems that make the landfill site; the seasons, domestic routines, weather, precipitation, and industrial processes just to name a few (Hird 2012: 457). Waste continues to leak and spill: it 'fails to be contained, fails to be predictable, fails to be calculable... fails to be determinate' (Hird 2012: 465). To think of waste simply as the remainder of our human economy is to forget the material economy that *all* life and matter are a part of.

Hird is part of a 'gathering force' in the humanities that Whatmore (2006: 601) has called the 'recuperation of 'materiality'. This *return* to the material is in part a response to the *distance* that deconstruction and psychoanalysis have put between human and material worlds, such that 'questions of biology, nature, and even the body's materiality' have been construed as 'impossible, unknowable, or constructed objects, the consequence of cultural and inscriptive production rather than given or directly observable' (Grosz 2005: 36). Critical theory has been focused on questions of epistemology - on the language systems, the subjectivities and technologies that are supposed to make direct access to the material world impossible. The earth's inhuman agencies have all but disappeared from cultural theory, cast in shadow by a stable, analytic subject that would seem to be entirely unaffected by its excess. These are the reasons for the *return*. The *recuperation* of 'materiality' has been necessary because the concepts that the humanities have used to speak about matter before the cultural turn still revolve around 'the definitive features of (Aristotelian) being' and 'given (Platonic) form', and these ideas are now increasingly untenable in light of recent developments in the life sciences and complexity theory (Grosz 2005: 36). In material-culture theory, for example, 'materiality' is beset with dualist impasses, including the notion that life is transcendent, and matter a mere inert substance (Ingold 2007). New materialist Levi Bryant (2011) has argued that material enquiry has too often been reduced to talking about 'what is' by the post-Kantian Principle of Correlationism, which in part explains the limited theories it has produced. This episteme posits that 'we only ever have access to the correlation between thinking and being, and never either term considered apart from the other' (Bryant 2011: 36). At the root of correlationism is actualism, a doctrine expressed in Hume's empiricism, and Kant's materialism to a certain extent, that 'identifies the actual with what is given in sensations or impressions' (Bryant 2011: 57). Claims about material causality are 'claims about constant conjunctions of events given in sensation rather than about powers residing in objects or generative mechanisms that may go unactualised' (Bryant 2011: 58). As such, material ontology 'becomes not an interrogation of being *as such*, but rather an interrogation of our

access to being' (Bryant 2011: 35). The complexity of Kant's position was such that he acknowledged something more existed outside these human perceptions, but stated that we could only ever imagine that real dimension and never access it directly. Ultimately, this principle produces a version of 'materiality' *as it is for us*, rather than *as it is for itself*.

In the return to, and recuperation of 'materiality', the ambition has been to look again at the *distance* that has been put between life and matter in the humanities, privileging being over becoming, essence over existence, and a stable knowing subject over an excessive material world. *New* materialist scholars have sought to redefine it by 'return[ing] to questions of ontology in their analysis' (Lorimer 2012: 594). Collaboration with the sciences, and close study of emerging research in the life sciences are just two ways that the humanities have broadened the resources they have to speak about the material world in terms of patterns and process, capabilities and becomings. Through close study of generative configurations, new materialist scholars have encountered the 'aesthetic-affective openness' that exists between life/matter, human/animal, the organic/inorganic, thus making it possible to undo the binaries that have historically beset material theory (Bennett 2010: x). In order to account for the affective relationships they have found, new materialists have redefined 'materiality' as an 'intimate fabric of corporeality' in which 'livingness' emerges as a 'modality of connection between bodies (including human bodies) and (geo-physical) worlds' (Whatmore 2006: 603). In the proceeding subsections, I will detail how 'life', 'matter' and 'nature' have been redefined in this recuperation also, but before that, I will briefly reiterate why this new material perspective matters. Bennett (2010: ix) writes that the habit of dividing the world up into 'dull matter (it, things) and vibrant life (us, beings)' is not only mistaken, but it constructs a notion of human sovereignty that lies at the heart of earth's most pressing ecological crises, with 'dead or thoroughly instrumentalised' matter becoming 'so much putty in our hands'. Back on Hird's landfill (2012: 457), it is possible to appreciate the necessity of a material perspective that can go beyond the settled category of 'waste', and sharpen sensitivity to the 'fully inhuman' exuberance of life, matter and nature that makes it impossible to distinguish a human world.

The Vibrancy of Stone

Rotting, rusting, crumbling, and collapsing: disintegration can be found in many forms on abandoned landscapes. These processes urge us to reconsider our assumptions about stone and steel and wood - assumptions that would have us believe material to be discrete and inert, and 'already solidified or precipitated out from the generative fluxes...that gave birth to them' (Ingold 2007: 5). The way in which these processes transform ruins - bringing down structures,



Fig. 03 Dereliction: Shell of the pump house, open to the elements (*Image: Olden, R.*)

changing colours and patinas and the constituents of soil - has led many to describe the material of abandoned landscapes, the organic *and* non-organic, as having 'agentive power' (Lorimer and Murray 2015: 61).

Even that most durable and stable material concrete can be found unmaking and remaking itself. Rotting concrete is a significant feature of the now abandoned St Peter's Seminary in west central Scotland, a 'monument of post-war Scottish Modernist architecture' built in 1966, where Lorimer and Murray (2015: 58) have considered modes of address appropriate to an active, living landscape. The rot set in as 'climate patterns dominated by North Atlantic depressions' proved too much for the building (Lorimer and Murray 2015: 61). Water seeped in and the seminary was closed little more than a decade after its opening. Biogeochemical properties have since 'destabilise[d] the durable properties of concrete' (Lorimer and Murray 2015: 61), undermining not only the building itself, but also the tenets of the modern architecture movement that it was supposed to uphold. Concrete was at the heart of this movement's declarations, 'the foundation for its statements of futurity', not less than 'the materialization of urban optimism' (Lorimer and Murray 2015: 61). On Hashima Island too – a densely developed but now derelict island in Japan - Dixon, Lavery and Hassall (2014: 72) come to terms with the 'failure' of concrete as acid rain and salty sea water 'fracture its physical lattice'. Since the demise of the island's tightly orchestrated social and industrial operations, the island, its memory and architecture, slide into incoherence. This landscape 'seems to exist outside of the ready taxonomies established through both the Enlightenment and modernity, taxonomies that group entities around sharp-edged notions of sameness and difference' (Dixon, Lavery and Hassall 2014: 72).

Stone is not a discrete substance. It is 'relational', coming into being as a result of the differential material medium that it is immersed in (Ingold 2007: 14). Stone is part of a 'world of material' that is 'not [a] bland homogeneity of different shades of matter' but rather a 'flux in which materials of the most diverse kinds...undergo continual generation and transformation' (Ingold 2007: 7). It is this flux - a creative material force that Deleuze and Guattari call 'nonorganic life' (Bonta and Protevi 2004: 124) - that enjoins materials, bodies, ecologies, technologies – a force that brings them into being and through which they continue to exist and transform. Surfaces are thus conceived as an active site of exchange (Forsyth et al 2013). Stone demonstrates 'vibrancy': an agency that unfolds as a result of its capabilities and their interaction within a web of relational matter.

In order to understand the agency of stone, it is first necessary to study its intensive processes for traces of *capabilities*. Manuel DeLanda has written extensively on the subject of intensive processes – the 'linked set[s] of rates of change in an assemblage' that give rise to bodies and environments (Bonta and Protevi 2004: 101) – drawing on Deleuze and Guattari's

vital materialist philosophy. In his book, 'Intensive Science and Virtual Philosophy', DeLanda (2002: 22) offers an account of morphogenesis, and it begins, he explains, with the 'virtual continuum' - a *pre-individual* realm populated with 'virtual multiplicities'. The virtual multiplicity describes a configuration of differential relations, singularities and thresholds of emergence. It is the difference, distance (nonmetric space between terms) and inequality between the intensities which comprise the multiplicity that drive fluxes of matter or energy towards phase states defined by the multiplicity's singularity. Virtual multiplicities are explicated (unfolded) into extensive space through a multi levelled process of 'individuation', in fields of individuation which together comprise the 'plane of immanence'. The transition from one field to the next is instigated by the thresholds of emergence, otherwise known as 'symmetry breaking transitions', where the singularities belonging to any given field are 'bifurcated' which in turn alters the path of development (DeLanda 2002: 27). The evolving identities that this process gives rise to, are not aligned with physical qualities, characteristics, or essences. If they were, then this would preclude any kind of material transformation. Rather, identity is described in terms of morphogenesis. For Deleuze and Guattari (2004), this means describing an identity by its visible or hidden *capabilities*, defined by the singularities in its virtual realm, and also the 'speeds and slownesses' that comprise that individual. The former is known as the 'latitude' and the latter is the 'longitude' of the individual (Deleuze and Guattari 2004: 289). Deleuze and Guattari write that when we understand an identity in these terms, rather than its relation to a type, species, family or essence (which obscure capabilities), we can begin to comprehend its specificities, and creative possibilities:

We know nothing about a body until we know what it can do, in other words, what its affects are, how they can or cannot enter into composition with other affects, with the affects of another body, either to destroy that body or to be destroyed by it, either to exchange actions and passions with it or to join with it in composing a more powerful body (Deleuze and Guattari 2004: 284).

Once the capabilities of 'stone' (understood as a collection of dynamic capacities rather than a discrete object) are known, it is then necessary to consider their interaction with the web of relational matter that 'stone' is part of. Returning to the rotting concrete in St Peter's Seminary (Lorimer and Murray 2015) and Hashima Island (Dixon, Lavery and Hassall 2014) it is possible to see that the interaction of climate, minerals, atmospheres, and water have compelled concrete's transformation. The agency of concrete lies in the differential relations that link concrete and atmosphere, substance and medium. Whilst concrete may have its tendencies, it never really acts alone. It is part of a working group that has been called an 'assemblage' in the field of vital materialism (Deleuze and Guattari 2004). Within this assemblage (an arrangement described further in the following subsection) agency is

distributed. Bennett (2010: 21) writes that ‘while the smallest or simplest body or bit may indeed express a vital impetus, conatus or clinamen, an actant never really acts alone: its efficacy or agency always depends on the collaboration, cooperation, or interactive interference of many bodies and forces’. For the purposes of this study, vibrancy is defined as the interactive agency demonstrated by an identity within a working group. These identities have the capacity to act as a quasi-agent or force with ‘trajectories, propensities or tendencies of their own’, but their affects are always relational (Bennett 2010: viii).

In light of these individuation processes, it is possible to talk about the singularity, or ‘thisness’ of stone – an idea that is explored in Deleuze and Guattari’s (2004) account of material production. The concept of the ‘haecceity’ enables Deleuze and Guattari to write about the ‘uniqueness’ of bodies and environments (Bonta and Protevi 2004: 94). The haecceity describes a body or environment in all its immanence by mapping it according to its longitude and latitude (Deleuze and Guattari 2004: 287). It is a ‘nonpersonal individuation’ of a body or environment, a moment in its genesis, a ‘block of space-time’ (Bonta and Protevi 2004: 94). An important element of the haecceity is that time and space are by no means the setting or container for the assemblages that constitute identity. Time and space too have speeds and slownesses, and affects particular to them that make them co-workers in an assemblage. Time and space are formative of ‘event-character’, and they are completely inseparable from how we understand the new identities produced by an assemblage (Bonta and Protevi 2004: 94).

A season, a winter, a summer, an hour, a date have a perfect individuality lacking nothing, even though this individuality is different from that of a thing or a subject. They are haecceities in the sense that they consist entirely of relations of movement and rest between molecules or particles, capacities to affect and be affected (Deleuze and Guattari 2004: 288).

Shooting from the Rubble

Life depends on relational, ‘vibrant’ matter: as such, life is ‘not in but *of* matter’ (Ingold 2007: 12). If the world was otherwise comprised of stilled matter ‘locked up’ in discrete objects, as the life/matter binary has suggested, nothing could survive, Ingold explains:

Far from being the inanimate stuff typically envisioned by modern thought, materials in this original sense are the active constituents of a world-in-formation. Wherever life is going on, they are relentlessly on the move—flowing, scraping, mixing and mutating. The existence of all living organisms is caught up in this ceaseless respiratory and metabolic interchange between their bodily substances and the fluxes of the medium. Without it they could not survive (Ingold 2007: 11).



Fig. 04 Adventive: Rare Corsican wildflower germinates on the rubble. (Image: Olden, R.)

In ruins, decaying material creates opportunities for new life. Cairns and Jacobs' (2014: 69) study of dying buildings has found that decay is 'full of activity, exchange, acquisition, and redistribution'. The sedimentation of matter, the development of opportune water-filled cracks, and the absence of competition on sites of decay are just some of the conditions of abandonment that help ruderal ecologies to gain a foothold. Gandy (2011) has explored spontaneous forms of urban nature on a patch of 'wasteland' in Berlin where once the Berlin wall stood, replete with a heavy security regime. This once grim space, where East German border guards and their dogs had patrolled, has been transformed through a process of 'ecological alchemy' into a 'vibrant meadow', full of birds, butterflies, and wild flowers (Gandy 2011: 150). Ruderal, pioneer species are 'specially adapted for the colonisation of new substrates', and many of them have learnt their techniques at the end of the last ice age (Gandy 2013: 4). The term 'ruderal' is derived from the Latin *rudas* meaning rubble, and it is that rubble that entirely shaped the plant community, demanding that they develop 'novel ecological formations' in order to survive (Gandy 2011: 150). There is growing recognition of the value of these abandoned landscapes amongst the scientific community. They are studied for their notable ecological diversity, the novel plant associations that they nurture, the ways in which communities persist despite human disturbance, and for the remedial effects they have on urban soil and micro climates. The proliferation of exotic adventives on these abandoned landscapes evidence the effects of globalisation, particularly changing climate patterns, and even the common plants that grow on these sites are provoking new interest in light of the skill they demonstrate in adapting to transitional environments.

In his seminal text, 'The Unofficial Countryside', Mabey (2012) walks the 'twilight zone' encircling London to study the proliferation of life on sewage works, landfills, and industrial ruins. He chooses to focus on the universal 'mechanisms of adaption' and processes of succession, rather than the specific ecologies of each site, and so the book chapters are thematically titled: 'Spring - Settling in'; 'Summer - Living Together'; 'Autumn - Moving On'; 'Winter - Survival' (Mabey 2012: 22). For Mabey, 'it is the process that is important, not the place' (Mabey 2012: 26). Mabey's interest lies in 'how the natural world ma[kes] out in spite of change' (Mabey 2012: 28). 'Adaptability is its signature and saving grace', its 'fleetness of foot, anywhere, at any time' (Mabey 2012: 15). Even as abandoned places are demonised and 'redeveloped as if [they] were some under-used muscle', ruderals continue to exercise their 'perennial opportunism and exuberance' (Mabey 2012: 21). Mabey explains their heredity:

Many of our hardy weeds probably evolved originally where disturbance to the ground is the normal order of things - scree, glacial moraines, unstable cliffs, sand dunes. They have developed qualities which, as with the rosebay willowherb, help them take advantage of similar man-made habitats

where the ground is continually being churned up, and the slow- growing deep-rooted plants given little chance to settle in (Mabey 2012: 37).

Ruderals are fast growers, they establish a deep and intricate root system, and produce large numbers of seeds that germinate quickly and swamp competitors. The seeds may also have techniques for travelling long distances, or be capable of surviving dormant under the soil for generations. Despite all these marvellous coping mechanisms, Mabey laments that, 'alas, we have written them off as weeds' (Mabey 2012: 34).

Deleuze and Guattari's geophilosophy (2014) can help us to think about the 'crises' that are experienced by ecological systems on 'wastelands' and the creative transformations that result. In their work 'A Thousand Plateaus', Deleuze and Guattari distinguish between regulated and creative modes of material production in the material world. *Strata* are those material systems that operate 'at or near equilibrium'; these are highly stable systems which reproduce habits, behaviours and effects (Bonta and Protevi 2004: 150). Deleuze and Guattari explain these repeating behaviours by the points of attraction that are to be found in the virtual structure of all material systems, described in the section above. These points of attraction define the tendencies of a material system and what it is capable of producing in the physical world – a process which Deleuze and Guattari call 'actualisation'. An *assemblage*, on the other hand, is a system comprised of heterogeneous material elements and processes that achieve an emergent organisation that can be highly creative. Parts enter into these 'living, throbbing confederation[s]' which enables them to do new things (Bennett 2010: 23). Deleuze and Guattari draw on Spinoza's concept of the 'conatus body', which describes a body with an active impulsion to persist its own being, which it achieves by entering into structured relations with other bodies. In the arrangement of the assemblage, the parts generate a new power which exceeds that of the power of any of the individual parts. As such, agency is 'distributed across an ontologically heterogeneous field' (Bennett 2010: 23). What results is an 'animal-vegetable-mineral-sonority cluster with a particular degree of duration and power' (Bennett 2010: 23). When this system is pushed into crises - when the material intensities that surround it change in such a way that the capabilities of the system are now redundant, the virtual structure of the system is 'deterritorialised', a process described as 'leaving home, of altering your habits, of learning new tricks' (Bonta and Protevi 2004: 78). The parts of the system rearrange themselves in relation to the changed conditions, according to their own virtual structure – a rearrangement that might just produce a more productive arrangement. The capabilities that the parts demonstrate in this new configuration can be new and surprising when it is their first opportunity to exercise them. When all the parts of the assemblage are working together to increase their individual powers, they are said to have become 'consistencies' – assemblages



Fig. 05 Water Ecology: Water-filled relic spawning new life. (Image: Olden, R.)

which have even greater affects, increased powers of connection, and which lend themselves to more novel becomings (Deleuze and Guattari 2014).

But what does this say about the ruderal species that Mabey celebrates on the outskirts of London, and Gandy in the heart of Berlin, and their possibilities for creativity? It is the assemblages, or working groups that pioneering species form that enable them to persist on abandoned landscapes. The adaption mechanism that ruderals have developed to disperse their seed across long distances involves a seed-wind-wing working group. The colonisation of ruined structures first by fern involves a spore-crack-puddle working group. The mycorrhizal relationship that emerges between fungi and plant roots is another exemplary assemblage which can be vital for ruderals on abandoned landscapes with particularly challenging terrain. Tsing (2012) describes the mutually beneficial exchanges that take place between fungi and plant in mycorrhizal relationships:

...the most intriguing interspecies companionship is that between fungi and plant roots. In mycorrhiza, the threads of the fungal body sheathe or enter the roots of plants. Indian pipes and other plants without chlorophyll are supported entirely from the nutrients they gain from fungi in their roots; many orchids cannot even germinate without fungal assistance. Here plants gain sustenance from fungi; in more cases, however, the fungus obtains sustenance from the plant. But a mycorrhizal fungus is not just selfish in its eating. It brings the plant water and makes minerals from the surrounding soil available for its host. Fungi can even bore into rocks, making their mineral elements available for plant growth. In the long history of the earth, fungi are responsible for enriching soil thus allowing plants to evolve; fungi channel minerals from rocks to plants. Trees are able to grow on poor soils because of the fungi that bring their roots phosphorus, magnesium, calcium, and more (Tsing 2012: 143).

In this discussion of ruderal plants, and their creative response to crises, it is possible to conceive of life in very different terms than the life/matter binary allows. Far from transcendent substance or essence, life is witnessed as 'a movement' in the ruderal - a movement of 'fundamental becoming' that is an 'active response to time's provocation to endure' (Grosz 2005: 37). Grosz (2005) has found in Darwin's model of biological unfolding important resources for conceiving of this movement: namely life's principles of 'individual variation' and 'natural selection'. Grosz explains how life responds to, and endures by, the proliferation of difference within species and changing conditions of survival:

Life is that which opportunistically, in an ad hoc fashion, utilizes the contingencies of the material world to endure and extend itself, to evolve into something other than itself. The confrontation between endless, accidental variation and the more or less relentless and uncontrollable forces of natural selection is a machinery that explains the remarkable inventiveness of biological existence,

and the endless generation of new species, each of which is adapted in its own ways to the necessities of survival its position in the world entails (Grosz 2005: 38).

Life is ceaseless movement because it is 'never fully at home' (Grosz 2005: 40). Conditions are never such that it can never remain stable, it can 'never definitively know itself or its universe, control itself, its world, or its future' (Grosz 2005: 40). Life is not the fulfilment of divine direction - it is not an essence that fulfils a preconceived identity. Rather it is creative by its very definition, continually coming up with new methods, new resources and new solutions to the problems that the world poses to it, never foreseeing what it will become.

Feral Ecologies

In their paeon to the 'off-worlds' of urban edgelands, Farley and Roberts (2012: 5) celebrate Mabey's account for opening 'many eyes to the vitality and worth of urban edges'. They are concerned however, that Mabey's portrayal is somewhat reduced by the focus on 'the resilience of nature in these waste places, rather than... the places themselves' (Farley and Roberts 2012: 6). By describing universal processes of nature *in* the urban, Mabey runs the risk of holding the two apart. In following the edgelands around Manchester and Liverpool, through landfill and gravel pits, business parks and pylon fields, Farley and Roberts have come to think of nature as far messier configuration. They are interested in the way that the 'urban and rural negotiate and renegotiate their borders' (Farley and Roberts 2012: 5). Nature, they find, is not a stable and pure category confined to the 'countryside', and the urban is neither a self-sealed category, rather, on their circumnavigation of the edgelands, they find sites of unfamiliar and generative 'crossings' (Bennett 2001: 31), where nature becomes a multiple and dynamic matter.

The idea of nature has entered something of a crisis with the arrival of the Anthropocene and all its bewildering ecological repercussions. Environmentalists such as Bill McKibben (2006) have proclaimed 'the end of nature', on the basis that there is nothing left on the earth that hasn't been touched by human hands. This is a version of nature that is defined in opposition to society as an independent state. The nature/culture binary that it upholds ingrained in perceptions of nature and wildness, making it seem like so much mute material, that Latour (2004), for example, has argued that the word itself is now too hazardous for use. Hinchliffe (2007: 3), on the other hand, has sought out 'various natural relations, topologies of nature, [and] nature and 'difference'' in order to identify the multiplicity of spaces that *still* exist for nature – a task requiring that 'proximities and distances from, in, for, to nature' are found that avoid swamping nature with cultural artifice and sentimentality. Hinchliffe argues that

'that far from being dead and buried, nature is currently being practiced anew' (Hinchliffe 2007: 3). On wastelands (Hinchliffe et al 2005) and in laboratories (Hinchliffe 2007), he observes a nature that is not pre-formed and determined, rather a nature that is 'enacted' – co-produced by different species, people, habits, artefacts, and knowledges, in many different places, 'from soil horizons to developer offices, from prevailing winds to balance sheets' (Hinchliffe 2007: 2). Furthermore, the components in configurations of nature do not remain stable either, rather they are ongoing practices that change as they relate to one another in the production of new natures. This is the principle of a relational ontology: 'nothing remains unaltered in the event of relating' (Hinchliffe 2007: 51).

The new ecologies emerging in the *enactment* of nature today present an important challenge to the idea of universal ecologies. On a 'wasteland' on the outskirts of Birmingham for example, Hinchliffe et al (2005) find a 'recombinant ecology', that is not simply a pale imitation of a rural idyll, but rather nature enacted anew. Here, water voles, brown rats and humans are learning to cohabit in ways that are unfamiliar, creating a new ecology with its own particular relationships and trajectories that, in turn, mobilises constituent identities. By turning their attentions to the 'urban topology' and the 'lifelines' of these recombinant ecologies, to urban collectives that are as yet unfinished, Hinchliffe et al (2005: 134) observe nature's rejection of determinism. A recombinant ecology is 'so much more than a relict ecology or a restored ecology... Its times and spaces are quite different from the *representative* ecologies that often aim to mimic a distant memory' (Hinchliffe et al 2005: 134). The challenge is to *see* beyond these representations that have overshadowed nature as multiplicity and difference, as Farley and Roberts (2012) describe:

Somewhere in the hollows and spaces between our carefully managed wilderness areas and the creeping, flattening effects of global capitalism, there are still places where an overlooked England truly exists, places where ruderals familiar here since the last ice sheets retreated have found a way to live with each successive wave of new arrivals, places where the city's dirty secrets are laid bare, and successive human utilities scar the earth or stand cheek by jowl with one another; complicated, unexamined places that thrive on disregard, if we could only put aside our nostalgia for places we've never really known and see them afresh (Farley and Roberts 2012: 10).

Toxicity

But the vibrancy and vitality that can be found on spaces of ruination do not always lead to configurations of shared possibility. Many sites still grapple with layers of vibrant matter with capabilities and a critical mass that life struggles to endure. Toxicity is a relational term: a

substance becomes toxic when it comes into a relation of violent affect with a living body. The affect depends on the substance quantity, concentration and the species involved. On post-industrial landscapes, toxic chemicals might be found in the soil with the corrosion of industrial structures, or the soil and ground-water might already be saturated following years of intensive stockpiling, spillage and disposal. On these sites, toxicity is often a result of the dangerous mixing and meeting of materials that have unexpected consequences; where the concentration of toxic substances in bodies, soils and plants persist as environmental and social 'trauma' (Dixon, Lavery and Hassall 2014: 69). The thorny 'sym-chthonic' forms of life that can be found on these landscapes demand recognition as much as mutually-affirming forms (Haraway 2015: 160). But how then do we respond to toxicity? Morton (2013: 7) writes that 'apocalyptic environmentalism', self-pity and denial don't seem to go far enough. How then are humans to coexist with the sick places that they have created? What do humans do when they finally accept that there is no 'away' to which toxic substances can be banished? How can humans reintegrate toxic substances rather than push them away?

Tim Dee (2013: 180) writes that all 'horizons are local' in Chernobyl. He has studied the 'poisonous rewilding' of Chernobyl with a group of ecologists and ornithologists, and has concluded that everything that lives here is held imprisoned *inside* radioactivity – there is no escaping it (Dee: 2013: 209). This includes the swallows that fly overhead:

...the air might be their zone but the insects they take from that air pull the birds heavily down to Earth (Dee 2013: 182).

Insects, birds and plants are sick, and demonstrate strange 'aberrations' (Dee 2013: 181). The pine trees have 'weird sprouting balls of needles, dense and black like sea urchins, hanging from the end of the tree's branches' (Dee 2013: 190). There is a swallow expert amongst their group and he charts the species' variations which are 'vertiginous to contemplate' (Dee 2013: 185). This charting makes the invisibility of toxicity visible. By charting its unpredictable manifestations, Dee and his group have found that they can never *fully* know the radiation as it exists, nor how it will extend into the future - how it will be pulled into new ecologies and histories. Even live measurement is complicated when they try strapping heart monitors to the birds:

Everything is to do with counting and the more that can be counted the better. By your pulse, but also by your neighbour's pulse, we shall know how things are. Good or bad. At Chernobyl another pulse, the throb of invisible radioactive particles, complicates the picture, marking it brightly and terrifyingly if you know how to look (Dee 2013: 185).

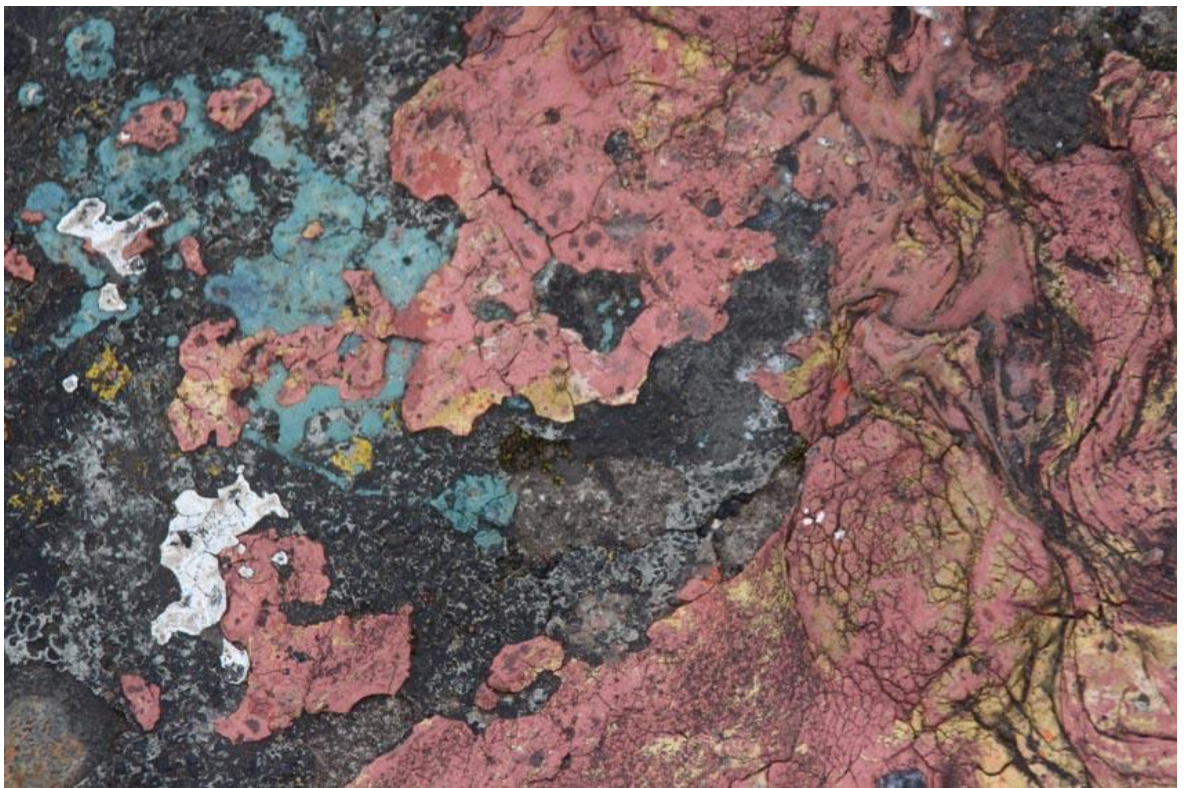


Fig. 06 Residues: Red lead encrusted on the altar steps of Dock Three (Image: Olden, R.)

And at Chernobyl, 'the ruin goes on'; there is no upward curve. There is 'much to be learned' Dee explains, from places like Chernobyl, which put a 'continuing stop on life' (Dee 2013: 185). Here Dee comes to terms with a version of death that he has not known before:

...the trees that grew here once were killed by radiation. Many of them still lay on the ground, preserved in death since 1986, their grey trunks wrapped in a fogged and brittle marquetry... Rot was killed, decay arrested and the dead kept immutably dead. There were no friendly worms. Death, needing no colleagues, moved as an absolute master through these woods and fields, armed solely with itself... I felt nervous in the Red Forest. It was ineffably strange: to be in a calm clearing that could kill you, where soil is dangerous, where the air might violate you, where standing under a blue sky is risky, where dust is lord of everything's future. I had walked only a few yards but had arrived on to an orphaned planet where nothing speaks to nothing (Dee 2013: 190).

Even when the group come out of the Exclusion Zone after their first long day, Dee considers that '*out... is only relative*' (Dee 2013: 211). The destruction in Chernobyl marks the end of an illusion that humans are outside the biosphere and that they can control and manipulate it according to their wishes. It marks the end of the human as we have known it:

To stand in the forest that was once a town is to look *after* us. Down the wooded streets of Prypiat's arrested past you are bowled into the aftermath of man, into a future that has already arrived. I have been nowhere else that has felt as dead as here, been nowhere else that made me feel as posthumous (Dee 2013: 209).

This end that Dee is referring to here, has been described by Morton as the return of the nonhuman (2013: 108): this end is 'the sound of something beginning', namely, the 'speculative sublime of disturbing intimacy'. Morton gives us the resources for thinking about this end, and the kind of response it demands, but first we have to understand Morton's particular philosophy, Object Orientated Ontology. According to this view, all things in the world, including humans, are objects. Objects have particular characteristics, an important one of which is that they only partially reveal themselves through 'local manifestations', according to their inner substance (Bryant 2011). The object then undermines the idea of correlationism - the belief that we can ever fully *know* an object. Our only possible engagement with objects is through 'speculative realism'. Nuclear radiation and pollutants like it are examples of 'hyperobjects', Morton explains. These are objects that are 'massively distributed in time and space relative to humans' whose manifestation cannot be predicted (Morton 2013: 1), and so they make non-correlationism hit home with even greater force.

The 'hyperobject' exposes a multitude of truths. First it undermines the 'cozy concept of 'world', typically comprised of human foregrounds and material backgrounds, but really

only presence at hand- a mere caricature of some real object' (Morton 2013: 102-103). It forces the human 'back on to the ground, which is to say, standing on a gigantic object called Earth inside a gigantic entity called biosphere' (Morton 2013: 18). There is no *outside*. The 'hyperobject' exposes another condition: that all bodies are intimately related, from human object to nuclear object. It 'summons into human field of thinking and action' something that was always already there; the nonhuman, that 'strange stranger' that has been repressed until now. Morton (2013: 121) calls on us to make all 'hyperobjects', including toxic matter and global warming, 'member[s] of a democracy expanded beyond the human'. New ways of life must be made to coexist with toxic substances. Tending to the hyperobject, caring for it and its 'distant future guardians', will bring about a transformation in human-nonhuman relations:

What is left if we aren't the world? Intimacy. We have lost the world but gained a soul – the entities that coexist with us obtrude on our awareness with greater and greater urgency. Three cheers for the so-called *end of the world*, since this moment is the beginning of history, the end of the human dream that reality is significant for them alone. We now have the prospect of forging new alliances between humans and nonhumans alike, now that we have stepped out of the cocoon of *world* (Morton 2013: 108).

'Apocalyptic environmentalism' is no longer effective Morton argues, because 'to all intents and purposes, the being that we are supposed to feel anxiety about and care for is gone'. This response is 'one of the most powerful factors that inhibit a full engagement with our ecological coexistence here on Earth' (Morton 2013: 7). Instead, humans must acknowledge their existence within gigantic 'hyperobjects', and observe the full repercussions of this: that the nonhuman is 'responsible for the next moment of human history and thinking' (Morton 2013: 201).

2.2 Warped temporalities

A Collage

Ruins have always existed in the imagination as relics that 'traffic with more than one timeframe' (Dillon 2014: 48). They are a 'portal into the past' and they 'cast us forward in time' – appearing to foretell the future of human worlds (Dillon 2011: 11). Ruins are 'collages of time' (Farley and Roberts 2012: 157). New material/nature enquiry has also explored the plurality, and entangled nature of temporalities in ruins, including longer time scales of species adaption, to the fast and often violent time scales of human inscription (Dee 2013). In this subsection, I

would like to explore the deep, haunted, entangled, and more-than-human aspects of time on the ruin, and how these ideas reframe understanding of the heritage landscape.

Deep Time

Inside Hashima Island's derelict and crumbling concrete structures, Dixon, Lavery and Hassall (2014) tune into the island's deep entropic time scales. Rather than view Hashima as 'a site of loss (of work and home, linearity and coherence)' they instead see it as 'a place that demonstrates the states of always already becoming that characterise all manner of entities' (Dixon, Lavery and Hassall 2014: 73). Their inspiration for developing this way of seeing comes from artist Robert Smithson, an American land artist and writer, whose work in ruined landscapes explored the multiple 'orders of time and space, from the continental, prehistoric, future, ruined and crystalline to the entropic' (Yusoff and Gabrys 2006: 445). In grains of sand, Smithson observed:

... the sullen dissolution of entire continents, the drying up of oceans – no longer were there green forests and high mountains – all that existed were millions of grains of sand, a vast deposit of bones and stones pulverised into dust. Every grain of sand [is] a dead metaphor that [equals] timelessness... (Flam, J. 1996: 15).

The 'father of geology' James Hutton theorised these near imperceptible processes in his work *Theory of the Earth*, published in 1875. This thesis evidenced a 'cyclicity in the decay and construction of continents', and thus concluded that the age of the Earth was a 'near eternity' (Craig 1987: 92). Hutton observed that the 'earth is a machine' (Craig 1987: 88). On the one hand, 'the Earth is constantly being subjected to decay by the action of heat and cold, water, and the effects of gravity', and this debris is carried down by rivers to the sea where it is eventually deposited (Craig 1987: 89). But this destruction is finely balanced by continual construction and regeneration. The Earth's subterranean heat is a generative force, capable of consolidating loose marine deposits and melting rocks and, as an expansive force, capable of folding them and raising continents from the sea floor. The mountains in the Alps and the Andes with limestones containing marine fossils evidence these processes. This slow, repeated cycle of decay and renewal operates over an immeasurable span of time. Hutton's ringing message was that there is 'no vestige of a beginning – no prospect of an end' (Craig 1987: 92). John Playfair, natural scientist and close friend of Hutton's, wrote a description of their encounters with deep time on a tour of the Berwickshire landscape in 1802:



Fig. 07 Symbiosis: Inkcaps practice survival mechanism on the cobbles. (Image: Olden, R.)

Revolutions still more remote appeared in the distance of this extraordinary perspective. The mind seemed to grow giddy by looking so far into the abyss of time; and while we listened with earnestness and admiration to the philosopher [Hutton] who was now unfolding to us the order and series of these wonderful events we became sensible how much further reason may sometimes go than imagination can venture to follow (Playfair, J. 1802. In: Craig 1987: 92).

Hutton's cycle describes geologic time, but uplift is also connected to denudation and hence climate systems, which have their own cycles within these longer cycles. Deep time is thus a nest of cycles that gives the seasons their structure, and biological time its rhythms and choreography (DeLanda 2002).

H u m a n T i m e

Industrial ruins also bear evidence of the early human temporalities that departed in dramatic ways with these natural cycles. In abandoned cotton factories and derelict steel works Edensor (2005a) has found 'clock-in stations, dockets, scheduled programs of work and delivery, and timetables', bells, alarms, and other forms of sound technology too, evident of a 'production process dominated by future-orientated projects and targets' (Edensor 2005a: 125). With these residues now caught up in the emergent temporalities of ruination – biological time, entropy, memory – these sites are ripe for critical reflection on the nature of human time, and the legacies that entrained linear time scales have left even long after their collapse.

In their history of 'clock time', Glennie and Thrift (2009) describe how time-keeping technology gradually separated out a version of human time from deep time:

...clocks were taking timekeeping further away from the cosmos as the direct source of time. The 'hours' indicated by clocks were a set accumulation of the movement of a mechanical device, which ultimately had to be consistent with celestial movements, but which proceeded independently of them... Clocks shifted from being purely proxies or intermediaries for what a sundial would show, were it not cloudy, to being themselves the source of times, to which causal powers could be ascribed (Glennie and Thrift 2009: 28).

The industrial revolution marked an even starker departure. E.P. Thompson studied the horological revolution of this period and argued that 'clock time' had become capitalism's vanguard instrument for social discipline. E.P. Thompson's thesis was a highly social determinist view of 'clock time' but it did highlight significant changes in the way that time was perceived. Industry incited the transition:

...from natural, irregular, and humanely comprehensible time, blurring work and leisure... to an 'unnatural' life tyrannised by the clock and timed labour. New time-disciplines were, initially, externally imposed through official timepieces, and systems of communicating time to the workforce and enforcing continuous work during the working day. But these disciplines became internally realised in quite new everyday time-senses among the labour force, and came to dominate society as a whole... (Glennie and Thrift 2009: 44)

Clock time has shaped a conception of the linearity of time, particularly within the Western imagination, and it is an important device around which states and capitalism continue to operate. Linear time is a version of time that unfolds in a causal chronology. It is important to mention that the *lived* experience of human time is far more complex than this - ruins for example are particularly fruitful terrain for thinking through the nuances of lived time, including looped time (Edensor 2005a), and anticipatory futures (DeSilvey 2012; 2014) - nevertheless, linear time and its associated discourse of historical progress has played its part in the acceleration of human-disturbance that has formed Anthropocenic landscapes and climates. The Anthropocene has witnessed the logging of ancient rainforests, burning of millennia-old fossil fuels, and the rapid urbanisation of vast swathes of desert, amongst many other things, which have resulted in human-induced climate change. This change has shaped the shorter wave cycles of a deep time - currently evident in research of ecologies and biospheres - and convincing arguments have been put forward that it will shape longer wave lengths also. This is where terms such as 'entangled' and 'plural' temporalities come into play, as a way of articulating the differences between human and deep time, and their affects when they meet.

R u i n F u t u r e s

There has been a concerted effort in ruin scholarship to focus on the futurity of ruins (Corner 1999). In particular, there is an interest in the expressions of 'intensive' time that can be found these landscapes, and the processes by which (nonlinear) futures are made (DeLanda 2002). Lavery and Hassall (2015: 113) for example argue that the humanities have a 'political and ecological' responsibility to explore its 'futures present', and their place of experiment is Hashima Island. They observe that the time of the ruin is constituted by 'disjunctive temporalities' that 'coalesce and overlap' (Lavery and Hassall 2015: 112). The future takes place in those present 'processes and possibilities that are both underway and yet always still to come', and this includes the potentialities of the past (Lavery and Hassall 2015: 113). On the subject of non linear time, Grosz (2005) writes that:

...time is both an enduring past, a past that accumulates as the present unfolds, and a continuous present. It is fractured between the virtual past and the actual present. This past, a past created simultaneously with the present and always carried along with it, is the ongoing resource, the site of virtuality, that provides any possibility of disruption to the forces that dominate the present because the past is able to be revived, actualized, in different ways according to the different possibilities the present affords it and the future opens up to it. The past is not inert, given, fixed, but is able to be illuminated, brought to life again, only through the active work of the present, which harnesses its hitherto unactualized resources (Grosz 2005: 181).

Ruins are places where it is possible to experience the real time of becoming; 'the absence or abyss that is constitutive of being itself' (Lavery and Hassall 2015: 122). They argue for engagements with time that 'derange' rather than 'console'; that set ruins and us too loose in time. Critical of the way in which 'ruin-porn' starves the ruin of time, they experiment with the medium of film to 'make time palpable' on Hashima. This film makes a 'space for the unknowable to disclose itself' (Lavery and Hassall 2015: 123).

Farley and Roberts (2012) offer a specific example of a future-in-the-making in their study of the edgelands. Life finds 'an opportunity' and an 'ecological niche', they observe, in the water that fills industrial relics. Life elaborates here unabated, creating its own temporality:

... time has thickened, an imperceptible convection of algae and slimes, where sunlight itself seems to slow to a final few persistent photons among the single-celled denizens of the pond bed. If the fast flowing stream or river is possessed of current, then ponds and gravel pits might be said to be cells themselves, self-possessed, simple batteries converting sunlight into energy. Though any child taken pond dipping knows how complex standing water can feel, how any trawl with a simple bamboo net yields up intricate water beetles and boatmen. It's like taking an old watch apart, its pieces spinning and winding down on the bankside. Perhaps it's this intricacy, this concentratedness, which can quicken our attention. In the same way a rocket frozen in mid flight is said to contain its velocity, so mature standing water is teeming with contained possibility (Farley and Roberts 2012: 80).

Inside the water filled relic Farley and Roberts observe the emergence of biological time by the processes of light and heat, and the mediums of water and bacterial life. The production of different temporalities or durations in the ruined landscape is something that Deleuze's materialism can shed more light on, specifically his ideas surrounding the production of biological time. This is a Deleuzian matter that Protevi (2010) has extended in important ways. An organism undertakes a process of synthesis in order to adapt to its environment – this, the first step in the emergence of an individual duration. Synthesis takes place at a number of levels - from higher levels of active thought and cognition to lower levels of passive interaction - but somewhere in the middle is 'passive synthesis' which is the process by which an organism



Fig. 08 Rot: Material returning to the Earth. (Image: Olden, R.)

produces its sense of here and now. This process involves 'organic syntheses', described as 'metabolism synthesising matter' (Protevi 2010: 5). This is a primary sensibility that comes before cognition, and even before the matter has been consciously sensed. An organism's metabolism is constituted by two things; first, 'retentions' which describe the memory of the cells, and second, 'expectations' which describe the 'faith that things will repeat in the ways we are used to' (Protevi 2010: 5). As the identity negotiates its milieu, a 'living present' coalesces between an 'accumulated past' which marks the 'inside', and a 'forthcoming future' which marks the 'outside'. This 'dynamic topological process of individuation that constitutes biological space-time' is called the Transcendental Aesthetic – transcendental because both elements that drive this process, 'need and freedom', constitute the 'transcendence of life', where life looks outwards and forwards, and matter overcomes itself.

But the production of space and time is not limited to biotic bodies. *All* material systems demonstrate what Protevi (2010: 9) describes as 'spatio-temporal dynamisms', from the biotic to the prebiotic. Time and space are not the *precondition* for actualisation, but rather they are generated in both the virtual, intensive and extensive realms (Protevi 2010: 9). In the virtual realm is the time of Aion, which is the 'movement' that 'progressively determines' the singularities that will inform individuation (Protevi 2010: 10). Extensive time, or 'Chronos' is that which has been actualised, and which is 'the time of measure that situates things and persons, develops a form, and determines a subject' (Deleuze 2004: 289). The thickening of time in Farley's pond offers us a window onto the time of Aion; 'the indefinite time of the event, the floating line that knows only speeds and continually divides that which transpires into an already-there that is at the same time not-yet-here, a simultaneous too-late and too-early, a something that is both going to happen and has just happened' (Deleuze 2004: 289). Deleuze's vital materialism highlights the multiple durations over long and short time scales that make up the ruin, and in particular, the resonances and dissonances – violences even - that emerge in the meeting of human and nonhuman temporalities.

Material Memory

DeSilvey (2006; 2007; 2012; 2014) too focuses on the subject of ruin futures, but where other studies have looked intently at the processes underway in the present, DeSilvey has made the active temporalities of the ruin more tangible by rethinking the stories we tell of their past - a necessary endeavour when so often the stories we tell about places make it impossible to comprehend the future at all. Mullion Cove in Cornwall is a key field-sites where DeSilvey (2012) has been developing these ideas about memory, place and storytelling: a cove that is

progressively failing due to the acceleration of coastal erosion. This is a harbour that has demanded constant maintenance and repair at huge expense to satisfy its preservation. But the determined effort to 'defend' the harbour against nature has proved to be unsustainable, and so the National Trust have proposed a novel new management solution, described as 'managed ruination' (DeSilvey 2012: 49). Complementary to this proposal DeSilvey suggests, is a new historical account of the harbour as environmental process, which undermines themes of 'succession and stability', of 'conservation and constancy', upon which traditional conservation approaches at Mullion Cove have been founded, along with the place-based attachments of local people (DeSilvey 2012: 10).

DeSilvey writes a story of Mullion Cove 'that goes back in time to describe a stormy history and the human will to tame it' (DeSilvey 2012: 50): an 'experimental history of environmental process' that explores a tense co-existence between human and more-than-human temporalities in the making of a coastal landscape, but a co-existence nonetheless, which confronts the persistent determination to see this as a human place, and the desires to manage it accordingly. DeSilvey's (2012: 49) account, investigates the possibility of 'managed ruination', which is about 'working with the grain of nature', and accepting our place within a transient material world. DeSilvey et al (2011: 9-10) gives the name 'anticipatory history' to this type of future-orientated historiography, which gives us the resources 'to imagine our own futures in a tangibly altered world'. The narratives that are used to story landscape must also be open to indeterminate futures.

Troubling Heritage

In light of its collaged temporalities, DeSilvey's observes an opportunity for memory work on the ruin that is more-than-human. Landscape memory is material, and as such it is splayed out, evident in processes of physical transformation, affective exchanges between site and self, and more-than-human bodies that are also remembering, industrial pasts in particular (van Wyck 2013: 263). How then can heritage landscapes story the past?

Munteán (2014) has explored the many problems that are encountered when trying to fix meaning in this way, by tracing the multiple afterlives of the World Trade Center's ruins to three ships – a warship built to memorialise the victims which integrated steel material from the ruins in its construction, a waste disposal ship that brought much of the material to Turkey to sell on the scrap market, and finally, the ruins of an 18th century ship found buried beneath the Ground Zero site which has been used to reclaim parts of the Hudson river before the World Trade Centre's construction. In the project of forging collective memory after the World Trade



Fig. 09 Bone: Animal remains underneath the rewilded bays. (Image: Olden, R.)

Centre terrorist attack, Munteán has found that the warship is made to 'monumentalise' loss within a narrative of sacrifice, but that it is also haunted by an 'abject 'other'' that brings material to the scrap market. These two ships are 'mutually incompatible at the level of reverence and at once uncannily compatible in the context of war and commerce' (Munteán 2014: 62). The unexpected find of an old ship 'unravels the monstrous materiality of [the] ruins', as it evokes the 'uncontainable 'landfill' of Ground Zero' (Munteán 2014: 60). In this landfill it is impossible to 'separate body from building and victim from terrorist', so that the urns given to relatives filled with dust from the site become uneasy sites of remembering (Munteán 2014: 58). The ruined ship beneath the debris heralds the 'deterioration of the semantic field of the object', so that there is a 'metonymic contiguity of body and building which denies us the comfort of metaphoric substitutions of body for building and building for body' (Munteán 2014: 60).

Munteán demonstrates through these case studies, the human tendencies to order and separate out the meaning of memory, and its vulnerability to instrumentalisation in this way. In addition, he demonstrates how memory's materiality continues to exceed and allude these stories. The ships connected with the World Trade Centre terrorist attack trouble the idea of collective memory and the processes that produce it, and they query whether there is still possibility for multiplicity within the message.

What is Left of the Heritage Landscape?

Given that the ruins of our carbon economy are increasingly being reimagined as sites for tourism and culture, I want to consider for a moment what heritage practices might learn from some of the material themes that have been discussed. What are the possibilities of broadening the agenda of the heritage landscape to account for nonhuman as well as human pasts, and the future-work that can be found on these sites? One of the most significant is that cultural heritage *and* biodiversity could become interrelated concerns in these landscapes. Ruined landscapes present an opportunity to confront the multiple inheritances that can be found in place, and also, in a reworking of their typical anthropocentrism, as places to experience 'living with and alongside the 'other'': the challenge is to make a new kind of hospitality of the ruin that 'welcome [its] monstrousness' (Dixon, Lavery and Hassall 2014: 69).

DeSilvey gives us resources for thinking about how heritage and curatorial practices can be reimagined for this kind of project. On a military ruin on the Suffolk coast (2014) she has explored art's capacity for bringing multiple, more-than-human temporalities into dialogue with human stories. On an abandoned Montana farmstead (2007: 328), DeSilvey has followed

the flows of material into the unfamiliar in an attempt to recall the geologies, environments, weathers, and all manner of nonhuman agencies that human histories are embroiled in: experiments which delve into ‘decades of co-habitation, of entangled lives and habits’ and which also speculatively ‘pull the remnant into other ecologies and expressions of value’ that have yet to come. On Mullion Cove she has explored the possibility of remembering as a kind of connection to difference and an openness to uncertain futures. These experiments with different modes of more-than-human remembrance that generate new kinds of environmental responsiveness.

2.3 Belonging to the Anthropocene

Troubling the Human Subject

The contaminations, disintegrations and unfamiliar alliances that are to be found in ruined landscapes collapse the categories that we use to make sense of the world and raise important questions about the sensing human subject. Historically ruins have been aligned with a sublime or picturesque aesthetic, but contemporary ruin studies is more recently departing from transcendental aesthetic principles, engaging instead with more explorative modes of encounter in these unfamiliar landscapes. As a result of these encounters with ambiguity, the figure of the ‘knowing’, fixed subject appears significantly destabilised – openness to difference builds along with affective relationships. Work on ruin subjectivities is beginning to expose the impasses of humanism and its vision of the human as an exceptional agent. In light of anthropogenic effects, global warming, rapid extinctions, and our struggle to respond to these issues, the search to find new modes of being in the world has become more urgent than ever, and a number of interesting approaches have been tried out on ruined landscapes, which I will now move on to discuss.

Experiments in Ruins

Ruined landscapes have hosted a variety of experiments in human sense-making. By way of vital materialism, DeSilvey (2006) has considered what it might mean to ‘vitalise’ the human - to explore its capacities for connection and care as a material body in a material world. Through her engagement with ‘mutable artefacts’ on an abandoned Montana homestead, she observes

how 'what we call 'human' unravels into what we call 'other'' (DeSilvey 2006: 325). As she digs through the remains, DeSilvey begins to feel herself subsumed:

I identified bits of mouse droppings, rubber shreds, wood splinters, paper, lint, wire, insect wings, plant stems, seeds, human hairs. An even finer grain of residue underlay these legible fragments, a slightly greasy amalgam of human skin, tiny fibres, crumbled deposits of mineral and animal origin. I remember feeling dizzy while I examined these leavings, sharply aware that I had reached the base level of materiality, the place where human artefacts blended imperceptibly into mass of worldly matter (DeSilvey 2006: 332).

The distinction between subject and object slips at the molecular scale. By acknowledging her embeddedness in a web of vital material, DeSilvey finds a moment of transpersonal connection.

Another distinct approach focuses more closely on the sensing human subject - its capacities for connection and the limits that are encountered also. On a 'wasteland' earmarked for commercial redevelopment on the outskirts of Birmingham, a site that is also believed to be home to the water vole, Hinchliffe et al (2005) learn how to search for traces of this elusive creature - how to recognise their inscriptions, their habitats and routines - in the interests of staging an experimental politics. They reflect on becoming 'bodies in process, gaining ways of looking, a new set of eyes (or newly conditioned retina), a slightly more wary nose, a different sensibility' (Hinchliffe et al 2005: 648). There is, they argue, a politically progressive moment in the task of 'learn[ing] to be affected' (Hinchliffe et al 2005: 648), but that's not to say that it isn't still a messy process, an 'ontological struggle' (Hinchliffe et al 2005: 655), full of misunderstanding and failed speculation - but this, they argue, is precisely what it means to work out a model for coexistence.

Gibson-Graham (2011: 2) see in both of these ecological orientations - the vital materialist and the feminist materialist position - the possibility to 'think connection rather than separation, interdependence rather than autonomy', which is vitally important at this time. The first, which I will call here the 'posthuman perspective', connects us through 'an ethical act of subsuming ourselves within others as well as our own materiality and tuning into a dynamism that does not originate in human action' (Gibson-Graham 2011: 3). This project constructs a notion of 'belonging' within a web of vital material, which calls for us to 'attun[e] ourselves more closely to the powers, capacities and dynamism of the more than human' (Gibson-Graham 2011: 3). The second, the 'relational perspective' involves actively thinking about what it means to connect, what kinds of new sensibilities and sensing capacities we need to develop as humans, and acknowledging the limitations of doing so. This perspective upholds that the human, with its capabilities for self-reflection, has a particular set of ethical responsibilities which would distinguish it from a meteor or a plant say, and that as a result,



Fig. 10 Understorey: Mosses, grasses and snails, inside the ruined Pump House. (Image: Olden, R.)

we must always consider the “witness’ and the ‘spacings’ that mark the post-human’ (Dixon, Hawkins and Straughan 2013: 225). This second project constructs a notion of ‘belonging to the world as one does to a family’, where an ethical disposition is invoked by ‘an affect of love and an ethic of care’ (Gibson-Graham 2011: 3) - and I would add - whilst also remaining sensitive to the vulnerabilities that can emerge in any interspecies relationship - of care or otherwise. Gibson-Graham (2011: 4) sees potential for both positions to be ‘in productive conversation with each other’, and I too would like to explore here further the usefulness of both approaches – specifically how a balance might be struck between the radical and creative experimentalism of vitalism, with all the self-reflection of feminist materialism. Is it possible to imagine new kinds of coexistence with the earth without causing harm? And if so, what kinds of methods and dispositions are required?

The Post-human

I will begin with the first project. Vital materialism presents a fascinating picture of our place within a web of vibrant matter. ‘Like all other creatures’ Ingold (2007: 7) reminds us, ‘human beings do not exist on the ‘other side’ of materiality but swim in an ocean of materials’. The vital flux of matter constitutes our own bodies too. Vital materialism connects us with the material world through ‘an ethical act of subsuming ourselves within others’ as well as our own materiality’ (Gibson-Graham 2011: 3). Bennett (2010) focuses on this common denominator that all groupings of vital matter in her limited dealings with the human subject. In order to ‘present human and nonhuman actants on a less vertical plane than is common’, Bennett (2010: ix) argues that it is necessary ‘to bracket the question of the human’. In order to sense the world of vital matter that we are part of, she suggests that we engage in a ‘strategic’ anthropomorphism. Anthropomorphism can help us to see that human agency finds echoes in nonhuman nature. It catalyses a sensibility where we see not ontologically distinct categories of beings, but similarities across categorical divides, structural parallels between material forms in nature and culture. As anthropomorphism gives way to ‘isomorphisms’ (Bennett 2010: 99), a new ecological sensibility emerges – a sensibility that can help us ‘to counter the narcissism of humans in charge of the world’ (xvi). Through the practice of vital materialism, Bennett writes that:

...an anthropomorphic element in perception can uncover a whole world of resonances and resemblances – sounds and sights that echo and bounce far more than would be possible were the

universe to have a hierarchical structure. We at first see only a world in our own image, but what appears next is a swarm of 'talented' and vibrant materialities (including the seeing self) (Bennett 2010: 99).

Feminist materialist Rosi Braidotti has thought more about the heterogeneous grouping that is the human subject, specifically the ways in which it crosses its borders and the kinds of dispositions, sensibilities, and capabilities that emerge in the process. In her book 'Metamorphoses' (2002) she demonstrates precisely what it means to place a body on Deleuze's experimental plane of consistency – 'a field of experimentation for constructing immanent and horizontal relationships' that subtend 'morphogenetic processes' (Bonta and Protevi 2004: 124) - which Braidotti does to target the social imaginary with 'new styles or figurations for the non-unitary or nomadic subject' (Braidotti 2002: 172). Braidotti argues that these resources are necessary to the task of moving beyond Majority subjectivities that are stuck on essentialised difference and the culturally mediated, oppressive categorisations of identity politics. Her 'enfleshed materialism' begins with the body, which is described as 'a surface of intensities', a 'transformer and a relay point for the flow of energies' that come from both inside and outside (Braidotti 2002: 21). Like all material assemblages, the body has the capacity to relate, but also a *desire* to, which Braidotti describes as a 'yearning for interconnections with others'. Through embedded connection with the world – with others, with the environment, with other species – the body's capacity to listen and respond to other bodies results in 'becomings', which mark the emergence of a new subject. 'Becomings' are constitutive of the 'nomadic', non-unitary subject that feminist materialism appeals to. Becoming is about:

...affinities and the capacity both to sustain and generate inter-connectedness. Flows of connection need not be appropriative, though they are intense and at times can be violent. They nonetheless mark processes of communication and mutual contamination of states of experience. As such, the steps of becoming are neither reproduction or imitation, but rather empathic proximity and intensive interconnectedness (Braidotti 2002: 8).

Braidotti draws on Deleuze's theory of becoming that describes the morphogenesis of a body (an emergent assemblage) on the plane of consistency through 'unnatural participations' with other bodies, materials, and atmospheres (Deleuze 2004: 265). 'Becoming' unfolds in phases, from becoming-woman, to becoming-insect, becoming-animal, becoming-molecular, and finally becoming-imperceptible. Braidotti focuses on the particular modality that is 'becoming-insect'. Insects are particularly interesting to Braidotti because of the significance of metamorphoses in their life cycle. That said, becoming-insect is *not* about imitating or performing insect-ness. Rather it describes a particular deterritorialised, nomadised human-



Fig. 11 Infiltration: Dry docks open to the tide and host to bird and water life. (Image: Olden, R.)

insect interaction. It happens when thought turns to what an insect can *do*; 'their power of metamorphosis, the parasitism, the power of mimetism or blending with their territory and the environment and the speed of movement' (Braidotti 2002: 149). When the grounds are found for an 'unnatural participation', it is possible 'plunge ever more deeply into the folds of [our] own materiality' (Braidotti 2002: 159). Becoming-insect describes the change that such encounter can effect in both subjects, where both protagonists 'change [their] assemblage, [their] body and regime of signs, so that the speed and slowness of its material elements, and hence its affects, what it is capable of, work together with those of [another body] to form a new, third, assemblage' (Bonta and Protevi 2004: 59-60). There are no fixed subjects - human or insect - only a 'block of becoming'. The distant points in phases of becoming - becoming-molecular and becoming-imperceptible - describe a particular subtle modality where a body lives *as* matter-energy whilst recognising the matter-energy it is part of. This is precisely what the insect is capable of doing, as Braidotti explains below. The insect is thus the perfect role model:

...insects are essentially about becoming-imperceptible, the becoming-molecular mostly because of the speed of their lifespan. Their significant traits in terms of a Deleuzian mapping of forces are dryness, hairiness, metal-like body-frames, great resilience. They are environment-bound, thus elemental, either because linked to the earth and to its underground/crust (chthonic forces) or defying its gravity thanks to aircraft-like bodyframes... Of great importance are the shifts in sensory and spatio-temporal co-ordinates that make the insects genuinely admirable organisms. The power of vision of some of them, for instance the fly's eye, can be considered as a masterpiece of evolution (Braidotti 2002: 153).

Deleuze's phases of becoming enable Braidotti to envision a specific subject figuration that she calls the 'post-human', which we can understand through its particular dispositions and choreographies. The post-human is a fractured, nomadic subject; embedded in the world, attuned to it, affected by it. It is a subjectivity defined by 'mutations, changes and transformations' which stands contra to 'classical humanism and to liberal notions of the self' (Braidotti 2002: 61). The post human is 'machine-like, complex, endowed with multiple capacities for interconnectedness' (Braidotti 2002: 22); a site for the 'empowering force of affirmative passions' (Braidotti 2002: 66); a 'multi-layered space of encounter, admiration and love of the multiple differences embodied in the other' (Braidotti 2002: 52); and a site for a 'trans-personal mode, ultimately collective' (Braidotti 2002: 85). The post-human is acquainted with other faculties through which to know the world - through the unconscious, through 'affectivity, desire and the imagination' for example (Braidotti 2002: 20) - accepting

that there is no 'rational' being at the helm of knowledge construction, steering engagements with the world:

The maniacal sleepless eye of Reason brooding over its empire is the reflection of this obsessional neurosis we still call 'our rational self', the biblical tree of knowledge allegedly encompassing in its vertical immobility all the possible ramifications of human science, fixity and the imperialism of the Phallus: sedentary, monolithic and nostalgic of its old hegemony. In reaction to this, the nomadic subject is shifting, partial, complex and multiple. It exists in the shifts and the patterns of repetitions – the opposite of the tourists, the antithesis of the migrant, the nomadic subject is flows of transformation without ultimate destination. It is a form of intransitive becoming; it is multiple, relational, dynamic. You can never be a nomad, you can only go on trying to become nomadic (Braidotti 2002: 86).

Self/earth – Reflection

But the posthuman perspective has been criticised by feminist materialists for a number of reasons (Haraway 2008; Tsing 2012). There is concern that too much focus on the subject itself rather than the relationships are simply reinstating a new kind of individualism. Part of this could simply be put down to the way that certain Deleuzian concepts have been applied. The 'glib quotability' of terms like 'becoming-animal' has seen it applied in all manner of individual quests, personal journeys for a kind of wild transcendence - applications that forget 'becoming-animal' is not a one way journey, but rather an emerging relationality between subjects (Livitt 2007). Tsing (2012) in particular has argued that being human is an 'interspecies relationship', and therefore material theories of subjectivity must focus on the 'complex relations of dependency and interdependence' that define the human subject. Donna Haraway, another feminist materialist to have considered figurations for a worldly subject, is particularly wary of the post human vision. Ultimately, she argues 'it is the patterns of relationality... that need rethinking, not getting beyond one troubled category for a worse one even more likely to go postal' (Haraway 2008:17). The challenge still remains to theorise a human subject that is 'properly pluralized, reformulated, and brought into constitutive intersection with other asymmetrical differences' (Haraway 2008: 17).

Deleuze's and Guattari's theory of becoming is subjected to significant critique in Haraway's (2008: 15) thesis on 'companion species'. For all their attempts to deterritorialise individuality, Deleuze's and Guattari simply create a more 'sublime' version of it argues Haraway, and she goes on to list a number of contradictions that emerge in their text – the use of the term 'my becoming' for example - which 'seem awfully important in a theory opposed to the strictures of individuation and subject' (Haraway 2008: 30). Haraway criticises Deleuze's

and Guattari for dismissing the relationship between pets and their owners in their theory of becoming-animal. If they had had the courage 'to look... a dog in the eye', then they would have found a most important 'becoming *with*' that should, she argues, underpin our understanding of *all* animals – human and nonhuman (Haraway 2008: 29, *my emphasis*). We are all 'companion species' Haraway (2008: 19) explains, that is, '[we] are who [we] become with companion species'. Rather than fixed categories of kin and kind, we are all 'entangled assemblages of relatings' and 'sticky dynamic openings and closures in finite, mortal world-making, ontological play' (Haraway 2008: 88). By refusing to 'reduc[e] everything to a soup of post- (or pre-) modern complexity', Haraway identifies the need for a 'multispecies cosmopolitics'; a politics based on the notion of care and the endeavour to ensure 'that significant others might flourish' (Haraway 2008: 92). Above all, this is a practical, everyday politics:

To hold in regard, to respond, to look back reciprocally, to notice, to pay attention, to have courteous regard for, to esteem: all of that is tied to polite greeting, to constituting the polis, where and when species meet. To knot companion and species together in encounter, in regard and respect, is to enter the world of becoming with, where *who and what are* is precisely what is at stake... Species interdependence is the name of the worlding game on earth, and that game must be one of response and respect. That is the play of companion species learning to pay attention (Haraway 2008: 19).

The second concern with the 'posthuman perspective' is that it has not quite dealt with the question of what, if anything, remains of the human. Feminist materialism is still committed to understanding the particular self-awareness of the human subject, its capacity for judgement and responsibility that would otherwise distinguish it from nonhuman agents. This psychoanalytic aspect of feminist materialism is something that Clare Colebrook (2014) has brought into Anthropocene debates, in an attempt to argue for an extension of our capacity for self-reflexivity. What has to be understood here is the relationship between the 'real' and the perceiver. Colebrook writes: 'it does no one any good either to save deconstructive mediation or to return to the matter that deconstruction vanquished' (Colebrook 2014: 131). A more radical materialism is one that acknowledges that 'realism, the real and reality are effects of... materiality: that materiality is textual, rhetorical and literary not because it is tied to some form of human construction or speech but because it is dispersal that effects a relation between interior and exterior, before and after, real and ideal' (Colebrook 2014: 131). What Colebrook is arguing for is an attention to the distances and spacings that enable encounters with the earth, for acknowledging the point of view from which a scene is viewed, and last, for recognising the 'difference, distinction and unfolding of our relation to what is', in the interests of increased responsibility (Colebrook 2014: 129). According to Colebrook, there is always



Fig. 12 Rewilding: Autumn on the cobbled bay of Dock Three (Image: Olden, R.)

something left of the human, and this is a capacity for distance and judgement that can be exercised in affirmative ways.

Geo a e s t h e t i c s

Given the opportunities that both 'posthuman' and 'relational' perspectives can bring to engagements with the Earth, where then can we find resources for thinking about a potential alliance between the two? Geoaesthetics is an emerging field that is experimenting with these two perspectives by exploring the nonhuman world of sense making. Aesthetics as a whole is a field that has been beset by a 'wrenching duality' that has been created by Kantian and post-Kantian interpretations (Hawkins and Straughan 2015: 284). In the first camp, aesthetics is the study of 'cognitive judgements concerned with questions of beauty or the sublime', in the second camp, aesthetics is the study of 'embodied sensory experiences' (Hawkins and Straughan 2015: 284). Both of these traditions have been much criticised for the unchanging subject at the heart of the process, such that they have been deemed a 'paean to narcissistic individualism' (Dixon, Hawkins and Straughan 2013: 250). Geoaesthetics has sought to salvage the aesthetic - sense making - because of its centrality to the existence of living bodies on earth.

Through studies of the Transcendental Aesthetic (discussed above) as it plays out in the natural world (Protevi 2010), and analysis of the 'liveliness' of Kant's aesthetic account that is now undermining the dualism that besets the discipline, Geoaesthetics has found that a 'productive tension' constitutes the aesthetic (Hawkins and Straughan 2015: 285). This is the tension between both the cognitive and the sensory, between the 'exercise of... judgement' and 'corporeal needs and desires' (Dixon, Hawkins and Straughan 2013: 251), between past and future, inside and outside. It is precisely through this tension that all bodies, including the human subject, draw their borders but also find new ways to challenge them. Geoaesthetics urges us to consider the unique set of thresholds and impulses that constitute all living assemblages, and yet how too they can also be negotiated in transformational ways.

2.4 The Ruin Imaginary

Configuring possible futures

It is the uncertainty facing abandoned, ruined landscapes that have made them such popular subjects for the imagination. The liveliness of matter, the emergence of surprising ecologies, the proliferation of multi-species becomings, even the effects of climate change on these forgotten places, inevitably raise questions about what these places might become. On those sites that face insurmountable development pressures, these questions are imbued with greater urgency - what do we stand to lose here? What *could* these sites become? Numerous ruin projects have sought to answer these questions by configuring possible futures for these sites, where the life affirming agencies of these ruin landscapes are imagined as enhanced, and extended into the future. These are ecological imaginaries with varied ambitions - to envision heterogeneous publics, to tend to layers of environmental and social trauma that these sites bear, and not least of all, to envision ways in which we might actually participate in these futures in positive ways.

In her thesis for a feminist materialist imaginary, Grosz (2005) gives us the resources for thinking about how we might become co-collaborators of ruin futures. Grosz has described the imaginary as 'the capacity to make the future diverge from the patterns and causes of the present rather than as an inherent quality of freedom or the availability of unconstrained possibilities' (Grosz 2005: 72). Feminist 'future work' is neither about idealised, projected utopias, nor deterministic extrapolations, 'neither [of which] is a way of politicising the present by showing an alternative future' (Grosz 2005: 72). Drawing on the tools that Deleuze gives us to engage with the virtual realm, Grosz recognises the possibility of an imaginary that is both grounded in the past and present *and* simultaneously capable of change. The task is to identify means of intervention in the virtual sphere of an existing assemblage by working with capacities, in order to enact transformation. As such, the imaginary represents 'the space of virtuality, of what is new and not yet actualised' (Grosz 2005: 73).

Art in the Anthropocene

Art practices have been particularly significant in the construction of ruin imaginaries, but the role that art has been assigned and the imaginaries that have resulted have been quite different. In this final section of the literature review, I would like to explore some of these approaches and the ways in which they mirror the tensions that can be found in discussions of the aesthetic and subjectivity for the Anthropocene more broadly, and then to end, I will turn to a hopeful example of landscape design that is seeking to bridge between a vitalist ambition

for creativity and experiment, and a feminist materialist concern for promoting continued reflection in relation to these ambitions.

On Orford Ness, an abandoned military ground once used for testing atomic weapons, DeSilvey (2014) considers the ways in which art installations have been used to make sense of transience. Owing to its coastal location, Orford Ness has become a significant ecological site since its dereliction. The National Trust have thus proposed a programme of managed ruination. Part of the management of this ruin includes the installation of site specific art which is designed to frame and story the change that is taking place. In this approach DeSilvey sees resonances with the task of palliative care:

Applied to the care of buildings, a palliative approach would accept that structures and artefacts have a finite lifespan, just as people do. Rather than trying to pull places like Orford Ness back from the brink, it suggests that steps be taken to ensure that their 'death' is attentive, respectful and intentional (DeSilvey 2014: 88).

The role that art plays here resonates with Tom Freshwater's definition in the anthology 'Anticipatory History' (DeSilvey et al 2011: 23), where art for exploring environmental change is 'both provocation against and solace towards newly contextualised, and rarely benign, futures'. Freshwater explains that art can 'provide creative markers of dynamic changes within the landscape – and demonstrate how contemporary art practice can articulate them in powerful ways' (DeSilvey et al 2011: 24). On Orford Ness, art is conceived as a measurer of time and entropy, a landscape frame, and a medium through which to make change sensible. It is a mediator between people and change, continuing to cultivate attachments to landscape, but also signalling a 'letting go'. Art can 'help us bridge the gap between 'there' and 'gone'' (DeSilvey et al 2011: 57). Art can make sense of loss of material integrity, making an asset of absence and fragmentation can be deflect criticism levelled at those who insist on inaction as a legitimate management practice. The ambitions of the palliative care approach are important – to make heritage and biodiversity shared concerns, and also to create a new kind of self/earth-reflexivity – but in the examples that we encounter at Orford Ness, there is perhaps something overly cautious in these gestures of marking transience. As a spectator, I'm left wondering whether this reflection and witnessing couldn't also have been something *more*. In light of anthropogenic effects, global warming extinctions, and our struggle to respond to these issues, Cameron has argued that we need hopeful examples of human-made natures that can 'rework our present relationships and alternative futures with the 'natural' world', landscapes that deal in 'human-produced, touched and loved nature' (Cameron 2013: 116). How then might we begin to create affirmative collectives that *include* the human as agents in the ruined landscape's ongoing creativity?

Another kind of art for the Anthropocene is one that explores possible creative alliances between human artists and the creative powers of the Earth itself (Grosz 2008). This is a form of 'vitalist' art that is exploring how the creative capacities of humans and nonhumans can be brought together in new configurations of shared possibility. One such project is Lillian Ball's 'WATERWASH'; a remedial landscape created on a patch of wasteland next to a neglected and toxic river in the Bronx (Ingram 2014). There is much in Ball's approach that resonates with the Deleuzian figure of the 'minor scientist', whose ambition is to extend, elaborate, and augment working assemblages on the 'plane of consistency' to increase their points of connection, and to 'elaborat[e] an increasingly rich and consistent material, the better to tap increasingly intense forces' (Deleuze 2004: 363). In the same vitalist manner, Ball attempts to forge new alliances between people, plants and urban water in the creation of a new urban space for remediation. The work is an urban wetland, the result of participatory design, which saw local residents come together under the direction of the artist to plant and maintain a riparian ecology whose phytoremediating capacities would cleanse the grey water run-off from the neighbouring industrial estate. Ingram has studied this work of 'urban environmentalism', which seeks to 'imagine[s] a new way of living in the city' (Ingram 2014: 105). Through the work of 'diplomacy', Ball stages encounters between people and plants in order to draw out their capacities for care. Participants learn how to care for plants which subsequently sustain them and the environment by maintaining the hydrological system. Just like the minor scientist, Ball looks to the capabilities of those agencies that inhere in the present. The result is a 'hopeful' human-made nature – an environmental-human assemblage that grows and builds alongside a river that has been deemed a 'waste channel' (Ingram 2014: 106), invoking new behaviours and forging life-affirming relationships. Ball's art is becoming-ontological. It is art that is as exuberant and experimental as the earth itself.

Lastly, there is a new park in Chicago that we can turn to for inspiration in an attempt to think about what an alliance between vitalist and reflexive art for the Anthropocene might look like. This is a project discussed by Dixon (2015: 9) in the inaugural editorial of the journal *GeoHumanities* as an exemplary model of 'geohumanities practice'. The park is a reimagining of an inner city stretch of the abandoned Chicago and Pacific Railroad – a place that seeks to 'Re-Imagin[e] Heritage Infrastructure for Climate Change', as outlined on the design team's proposal panels. France Whitehead is the Lead Artist on the team. Her work 'strives to make sensible an Anthropocenic world order that is no longer so readily demarcated as social or natural, human or nonhuman', and this ambition has been influential in the park's conceptual development (Dixon 2015: 9). Threading through the city, following the track line, a long swathe of Amelanchier trees will create a phenological spectacle: a fleeting profusion of

blossom travelling west to east with the arrival of Spring – the time lag a result of the cooling effect by Lake Michigan - which will reflect changes in climate from one year to the next.

What is most inspiring about this project is the diverse modes of aesthetic engagement that this park will promote. On the one hand, the park will promote a kind of measured reflection as it becomes an urban stage for a collective phenology – ‘the study of biotic life cycle events’ (Dixon 2015: 12): both trees and people are sensing, looking out, attuning to the environment. Dixon writes that ‘park visitors and serviceberry trees, warming breezes, and well-drained soils, are drawn into a temporal and site-specific collective as objects and instruments of research, albeit differently capable of responding to the same’ (Dixon 2015: 12). On the other hand, this is a space for ‘haptic immersion in the environment (undertaken through sight, feel, smell and hearing) that forges a sense of belonging in a now familiar place’ (Dixon 2015: 12). It is a place for affective feeling – promoting ‘awareness not so much of the deep time of earth processes, but of the material *nearness* of global warming’ (Dixon 2015: 12, my emphasis), for forging new relationships, and for actually *experimenting* with ecological models for living. It’s a designed landscape that shows the possibilities of setting art, science and aesthetic engagement alongside one another, in a brave and hopeful configuration for a new earth.

3

Crafting Clydeside Methods

On a wet windy day at the end of a bleak November, Minty Donald staged a performance on the River Clyde that complicated the Clyde's enduring industrial associations, somewhat unexpectedly. 'Bridging Part 1' (2010) was a 'failed' performance: an installation that was intended to end as twelve loops of rope tightly wound north and south across the river that made 'a grand visual metaphor of the Clyde rope-bound and inert' (2012b: 49). In reality the performance ended with 'the messy traces of a much more complex and inconclusive interplay between human and non-human agencies' (2012b: 49). As they worked 'among, alongside and against the material agencies of water, wind, tide, rain, rope, engine, propeller, winch' the 'anthropocentric perspective embedded in [the] original intention' was quickly supplanted by a 'more fluid and relational ecological model' (2012b: 49). Through embedded performative research, a fluid resistant and uncertain landscape emerged that was much more than its human storying. This was a work that provoked what Donald has termed 'reflective nostalgia':

Using the lens of reflective nostalgia, the Clyde's enduring associations with Glasgow's industrial heritage might be productively juxtaposed with alternative, overlapping and competing narratives of the river and the city. This important chapter in the river's history might be opened up, available to be revisited and re-imagined, rather than become a closed, fixed episode whose mythology functions to perpetuate prevalent conservative ideologies (Donald 2012a: 214).

'Bridging Part 1' asked a local audience gathered at the quayside to acknowledge the elemental forces that have shaped this landscape and its iconic human history: to consider a river that is not *for* them, but rather *with* them. It asked them to consider forms of engagement with the river that go beyond the visual spectacle and the nostalgic imaginary. Finally, in exploring the Clyde's many agencies, it called on them to consider again the self-image that selective storying of the Clyde has sustained. In this imaginative work, much was at stake; a more inclusive vision of cultural heritage, and not least of all, the future of an increasingly vulnerable relationship between river and city.

The concluding propositions of 'Bridging Part 1' became an important conceptual and methodological resource as I launched my own Clydeside research on Govan Graving Docks. I started by crafting methods to explore the Clyde's human and nonhuman agencies, and the way they came together to reconfigure ideas about materiality, time, the human and landscape futures. Variations on performance archaeology were staged to explore the past as an active

force in the present for example, and commons-building projects were conducted to explore the possible future of human relations with Glasgow's iconic river. Building on the critical work that 'Bridging Part 1' did to bring the Clyde imaginary out of its nostalgic and exclusively human fixation, I contributed a vision of a riverine landscape for the city, founded on the River Clyde's diverse expressions of life and vibrancy. As with 'Bridging Part 1', my research was turned outwards, and keenly receptive to nonhuman agencies, but I was also interested in exploring the double movement brought about by practical engagement as these agencies act back on the 'knowing subject', and so, in an autoethnographic sense, 'I' became another site of investigation throughout this project. This second site enabled me to analyse the role that embodied and sensuous engagements with the Earth play in making an ecologically orientated subjectivity, and in the latter stages of this project, to think about how the design of ecological landscapes might facilitate this kind of engagement. Also, to the extent that it demonstrated the decentred nature of human agency, this second site also urged me to consider what it might mean to design in a collaborative sense *with* Govan Graving Docks, in a move away from the didactic masterplan.

There are three sections in this chapter. The first section, 'More-than-human Methodologies', offers a review of research methodologies that have been developed by the environmental humanities to grapple with the diverse, relational agencies that make the Earth and society, from the geological to the human, the meteorological to the chemical. In the second section, I will introduce two timelines. The first timeline documents the processes of urban change that have been witnessed on Govan Graving Docks since the early 1800s (the linearity of which will be complicated in later chapters, as time on site unfolds). This overview, along with the short bio that appears in the introduction to this thesis charting my route into creative practice, establishes an important starting point in the analysis of those shifting relations between self and site that will come in later chapters. The second timeline maps my research methodology as it unfolded over the year. In the third section of this chapter, the methodology timeline will be deconstructed to describe the more-than-human processes and practices I crafted to develop a material sensibility on Govan Graving Docks. This included field-based observation, performance research, collaboration, autoethnographic description, and imaginative practice. Making methods *with* the matter of my research, rather than importing a toolkit of pre-existing methods, proved to be fruitful terrain for more-than-human enquiry on this Clydeside site.

3.1 More-than-human Methodologies

The suite of more-than-human research methods that I developed with Govan Graving Docks enabled me to explore its many expressions of life and vibrancy. More-than-human research frameworks have evolved with the social sciences' and humanities' 'material turn' and its revised conceptions of materiality. The aim is to reconfigure research paradigms that remain too long embedded within human exceptionalism. This traditional humanist philosophy observes a distinct division between humans, distinguished by a unique capacity to 'rescript' themselves and others to make change happen in determinable ways, and nonhumans, who are believed to 'perform to prewritten scripts' (Hinchliffe 2007: 2). More-than-human approaches are making the change by picturing the lives, qualities and capacities of the nonhuman world, and the full extent to which human lives, qualities and capacities are entangled with them. This is achieved through immersive, practice-based research. In this format, thinking takes place through embodied acts *with* nonhuman agencies such that they are revealed as active collaborators in the making of more-than-human worlds (Hinchliffe et al 2005; Choy et al 2009b; Tsing 2015). 'Knowing' is located in exchanges of affect between the 'researcher' and the 'researched' (affect understood here as the 'force of intensive relationality' through which capacities to affect or be affected are exercised) so that the focus shifts 'from what things mean to what they do' (Whatmore 2006: 604). Materialising thinking in this way enables more-than-human epistemologies to witness the material world in action, without making reference to the fixed signifying categories that have structured Western human perception (Lavau 2013). By 'reopen[ing] the interval between sense and sense-making' (Whatmore 2006: 604), the 'researcher' too emerges as a fluid, contingent site. The authority and certainty that has tended to become synonymous with this role falls away as the researcher 'learn[s] how to be affected' (Hinchliffe et al. 2005). As 'the mind wander[s] along pathways extending far beyond the envelope of the skin', the exuberant material world and the webs of connection that bind us to it are lived and felt (Ingold 2011: 238).

The more-than-human framework for immersive, practice-based research enabled me to configure new collectives (or more-than-human working groups) with the capacities of people, plants and relics on Govan Graving Docks, which shed light on its material agencies. As my own agency became thoroughly decentred and entangled in this material world, it was possible to reflect on my (human) capacities for connection, for affective becomings even, but then also the limits too and the invitation these limits presented for critical thinking. More-than-human methodologies produce 'situated knowledge' which describes a view of the world from *somewhere* by rendering the time, place and practices that have shaped it (Haraway 2009). This knowledge develops in the unexpected openings that emerge between a fractured self and an excessive material world (Wylie 2002; 2005). Haraway writes that the 'knowing

self is partial in all its guises, never finished, whole, simply there and original; it is always constructed and stitched together imperfectly, and therefore able to join with another, to see together without claiming to be another' (Haraway 2009: 25). The openings that emerge between self and world thus 'sustain the possibility of webs of connection called solidarity in politics and shared conversations in epistemology' (Haraway 2009: 24). More-than-human methodologies account for the world-making of human knowledge practices, technologies and distinctions, *and* the nonhuman agencies which continue to act back on them. 'Objectivity', Haraway (2009: 25) explains, is to be found in moments of 'partial connection' that account for the cleaving and the binding – or the 'withness and spacings' (Dixon, Hawkins and Straughan 2013: 225) - that marks any attempt to know the world.

The more-than-human approach also offered many practical tactics for discerning the vitality of material on Govan Graving Docks. Patience and attunement are a necessary part of becoming 'responsible and responsive to the world's patternings and murmurings' (Barad 2012: 1). Enchantment and curiosity lead the way (Bennett 2010; Tsing 2012), along with an amateur's humility and criticality (Fusco 2015). But becoming perceptive to forms of life and matter which are not of the human can be a challenging task. In an article about listening tactics for the Anthropocene, Kanngieser (2015: 3) writes that 'opening up and listening very carefully to the imperceptible, to the prospect of things beyond human cognitive and sensorial reach, and accepting their value and validity, is to leap into the unknown—a difficult process'. In response, more-than-human research has also looked at how to develop human limits for sense-making by looking at the tactics that are employed in the natural world. These projects turn their attentions to the kinds of knowing that occur, or are otherwise possible, in the 'contact zone' when two species meet (Haraway 2008: 226), and draw inspiration from nonhuman sensibilities in order to develop, and augment capacities for sensing and connecting to the world (Lorimer 2006; Hinchliffe et al. 2005; Hayward 2010; Macdonald 2014). The key is to think *with* the more-than-human, rather than *about* it. Research that has taken up this challenge in the environmental humanities and geohumanities is expanding our understanding of what 'to think' is, opening it up to the many modes and modalities through which the earth thinks. The earth is 'stray[ing] from all calculable paths, making leaps here and there, or rather, making here and there from leaps, shifting familiar practices, testing the waters of what might yet be/have been/could still have been, doing thought experiments with [its] very being' (Barad 2012: 2). Thinking is a material matter. In short, whether it is drawing inspiration from the tactical awareness of the Cup Coral (Hayward 2010) or the collaborative ontologies of the Matsutake mushroom (Choy et al 2009a; 2009b), more-than-human research is finding ways to following flows of material into the unfamiliar and becoming perceptive to other expressions

of life and time outside of the human. The ambition with such work is ‘to make the Earth a provocation for thought’ (Kanngieser 2015: 3).

Imaginative practice is another tactic employed in more-than-human methodologies, with close observations from the field often being used to construct ecological imaginaries. This more traditionally ‘human’ capacity is reworked by the materialisation of thinking discussed above. Where once imagining was a solitary, independent and utopian activity, based on the projection of fantasy and desire, more-than-human imagining denotes a highly practical, engaged activity, and one that takes place *with* materiality and its capacities (Farquhar 2005). It is the task of exploring hidden capacities for change contained in the present moment. Whether it is turned to the task of envisioning alternative subjectivities, possible new relationships with the world or new environments, Tsing writes that the process involves ‘staying with our observations until we find frames for thinking about pattern and trajectory’ (Tsing, Lien and Swanson 2014: 7).

3.2 Drawing Timelines

Govan Graving Docks

I have produced a simple timeline that charts the historical development and decline of Govan Graving Docks in four key chapters for the purposes of contextual orientation (*see* fig. 15). It begins with the pre industrial chapter, back in the early 1800s when Govan was a small burgh busy with weavers’ and potters’ workshops, strung out along Main Street. At the eastern end of the street where the Graving Docks would later be built, there was a riverside public common, Clydebrae Common, with a shared fresh water pump at its centre.¹³ Local residents grazed their sheep on this land, and they fished for salmon on its banks. A drove road known locally as ‘Highland Lane’ ran across the shared pasture and became a fording point where it met the River Clyde, creating a vital connection to Glasgow’s busy markets (Dalglish and Driscoll 2009: 53). The river was wide and shallow, and there was an island known as ‘Water Inch’ between Clydebrae Common and the Burgh of Partick over the water.¹⁴

The second phase begins in the mid-1800s with the dramatic increase in trading, shipbuilding and manufacturing on the Clyde due to the successful restructuring of the River Clyde’s channel. In a report submitted to Glasgow City Council in 1854, the Clyde Navigation Trust made an appeal for a public ship repair facility. The report states that ‘as a greater depth is obtained in the Harbour, and the capacity of the River increased, still larger and more powerful vessels may be expected to trade to Glasgow; but in order to be in position to take

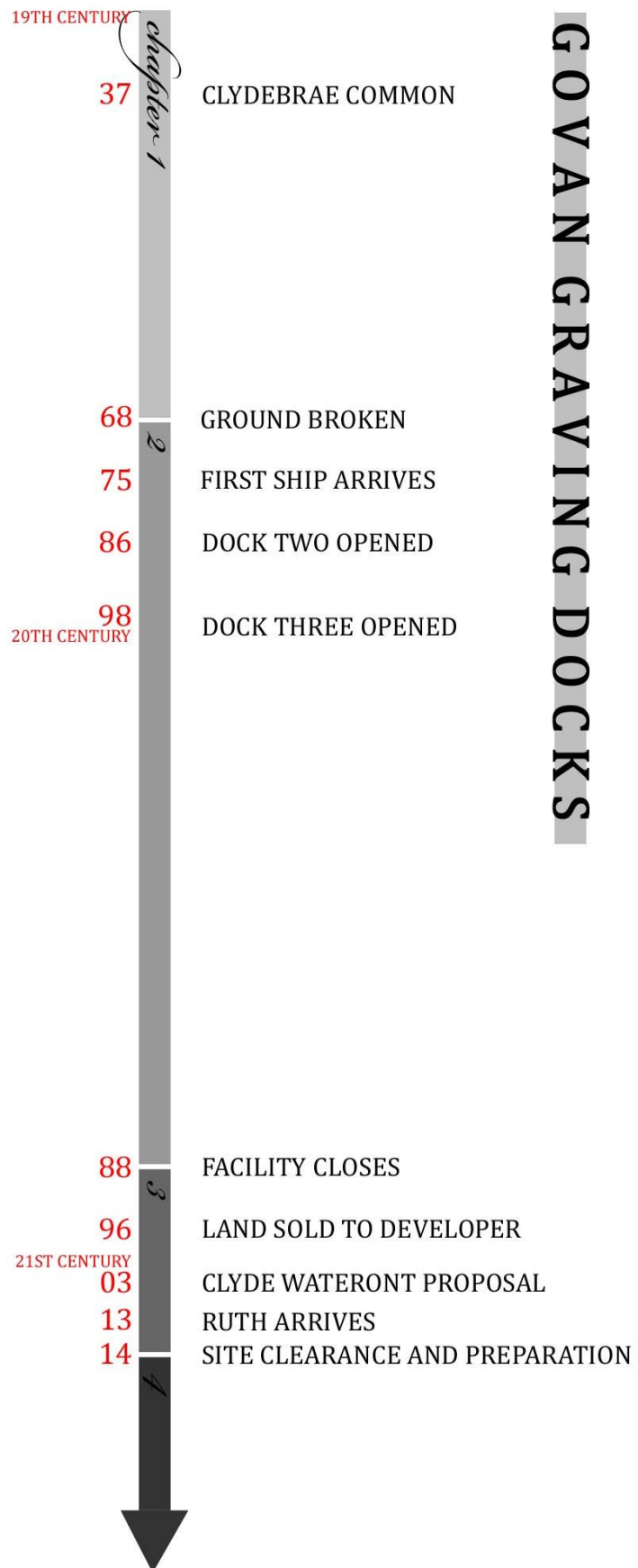


Fig. 13 Dockland History: History of the site in four chapters (*Image: Olden, R.*)

advantage of this enlargement of the River and Harbour, such vessels *must* have conveniently provided for them the means of examination and repair, if they are to be in a position to carry out their business under similarly advantageous circumstances to vessels trading in other places'.¹⁵ Ground was eventually broken in Govan in 1868, 'in the presence of a large and influential company of gentlemen' attending the ground-breaking ceremony.¹⁶ The Graving Docks was built to endure, despite the variabilities of a silty substructure and a powerful tidal influence:

Owing to the fact that the dock is constructed in a bed of sand and gravel of enormous thickness, it was necessary that its foundations should be of the most substantial character. Resting upon the gravel and sand there is, first in order, an inverted arch of cement concrete. This is continued under the walls. The, in order to form the floor of the dock, an invert of brickwork is built on this bed of concrete, the hollow part being also filled with concrete. On this brickwork and, and concrete invert there rests the massive ashlar masonry that forms the level floor. The walls of the dock are formed of rubble-backed ashlar sandstone masonry, and are finally capped with a granite coping, the whole being set in hydraulic cement.¹⁷

The first dock was 500 feet long by 60 feet wide, with a depth of 20 feet at spring tides.¹⁸ On 11th December 1875, the Anchor Line steamer *Ethiopia* became the first vessel to enter the new dock (Riddell 1979: 136). Soon a steady stream of vessels queued for its use. A second dock of similar dimensions was opened in 1886, and a third in 1898 that was 880 feet long and then one of the largest in the country.¹⁹ Men and women from the local area were employed in a variety of trades: dockmasters operated the sluices and guided ships in to dock; cleaners entered the drained dock first with wooden carts to clear the rubbish brought in by the river²⁰; 'stagers' erected the scaffolding that connected the altar steps to the hull; 'panel beaters' heated the steel hull with gas torches and beat dents back into shape; 'lead shotters' blasted barnacles off the sides; 'red leaders' painted the hull; electricians, plumbers and shipwrights worked on the interior; and 'tankies' cleaned the diesel, oil and sewage tanks out from the inside. Engineers operated the pump stations, and in the workshops strung out along Highland lane there were blacksmiths making replacement parts. The River Clyde had by now been deepened for navigation purposes, and so the fording point that had once linked Highland Lane to the north bank of the river became a busy ferry crossing for the transport of workers and materials.

The third phase begins with the closure of the facility in 1988 following the rapid deindustrialisation of the Clyde. The Clyde Navigation Trust sold it to The Company in 1990, but their development plans, the last publicised in 2013, have continued to fall through.²¹ So began thirty years of dereliction and rewilding. The tides and watery publics of the Clyde infiltrated the concrete caissons, and ruderals found a foothold on industrial soil. The Company

erected fences around the site but this did not dissuade those that could see opportunity beyond the boundary line: the photographers, pigeon fliers, dog walkers, fire-builders, fishermen, den-builders, bird watchers, urban explorers, courtiers, walkers and amateur historians. With Shieldhall sewage works and Govan's last remaining shipyard BAE taking up the length of Govan's river edge, the abandoned Graving Docks offered an unofficial invitation to the River Clyde, and it was taken up by residents of Govan and wider Glasgow alike.

After thirty years of perennial growth, phase four marks a very different beginning. In 2014, The Company appointed a Glasgow-based architect to draw up plans for a new housing and commercial complex that fulfilled their development specifications, and in the Spring of 2015 efforts began to pull the site 'back from the brink' with site preparations and survey work. A local social enterprise was contracted to raze the Graving Docks' urban ecology: The Company were concerned that the site's listed features and materials were in jeopardy, and in the longer term, that environmental activists might eventually intervene. I arrived on site during this period, and at the same time, another counter-campaign was launched to appeal for the site's conservation as a heritage park. Change was in the air, but the future was still uncertain.

A Year in the Field

The timeline that I have produced to map the year I spent working on Govan Graving Docks offers a far more nuanced account of time and agency than has been described above (see fig. 16). This timeline documents the lines of enquiry that I followed. These lines are traced out with text that identifies the methods used, the knowledges produced, and the site works that were staged as the year went by. 'Site work' is the name I have given to the performative modes of enquiry that were staged on/around the site, often marking the culmination of a particular line of enquiry, and a coming together of different site knowledges (identified by the columnar arrangement of text in the diagram). These lines describe how the temporality and agency of my research came to be entwined with that of the seasons (see the seasonal baseline), the city (see the arrhythmic red ruptures), and also material memory (see historical site works S2 and S7). As such, these lines demonstrate the distributed nature of agency, but also they tell of the particular contribution that both my agency, and the site itself made at various points to the direction of the research. My agency was born of the curiosity that I had for this ruined landscape, the concern I felt for its future, and also the strong sense of imagined possibility that became part of my way of seeing, and these capacities made their contribution, compelling a shift of gears in situ (and my shift in roles between archivist, activist and designer). The

METHODOLOGY: a timeline

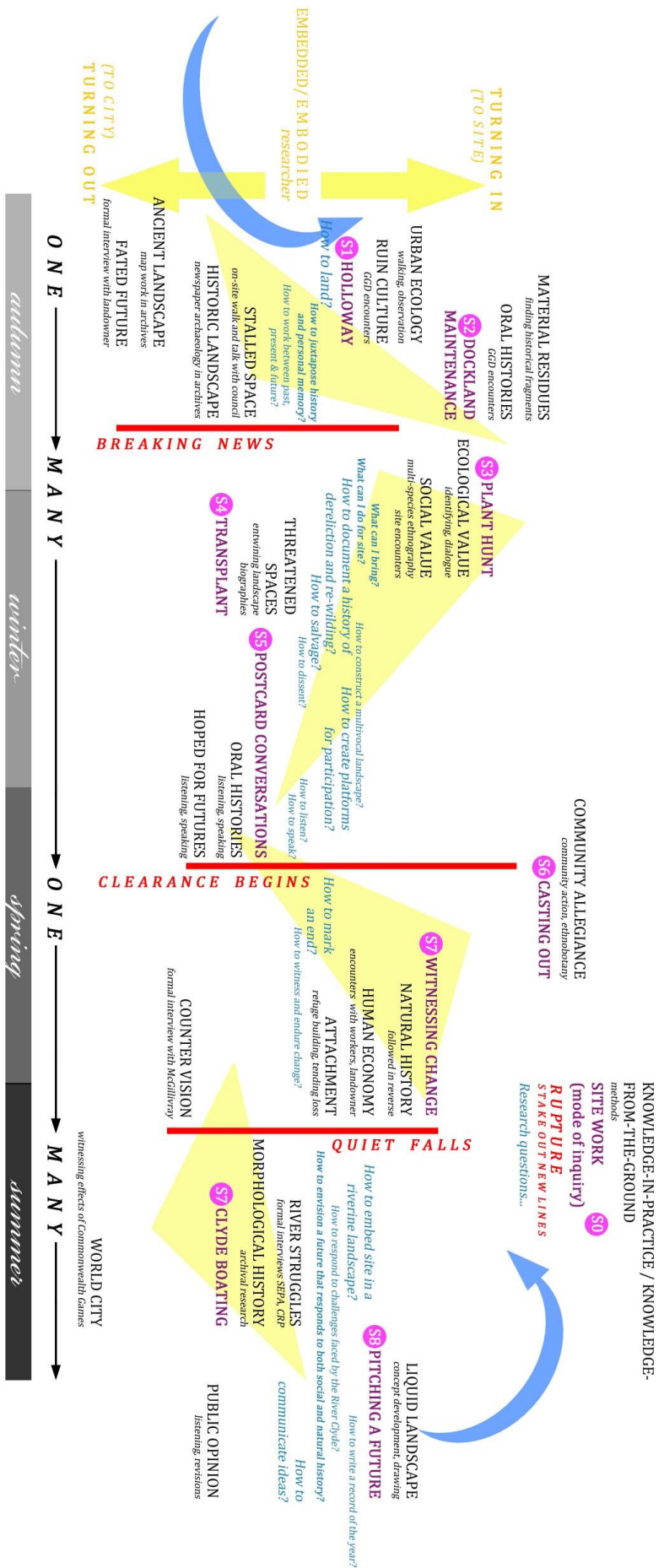


Fig. 14 A Year in the Field: Timeline documenting lines of research enquiry (Image: Olden, R.)

agencies of site (ecological, historical, political etc.) provoked the research that I undertook, and they shaped its content and direction in substantial ways too, as this chapter will go on to explain. In short, it was the shifting relations between me and the site that informed the lines of enquiry and the different roles they saw me take on – whether as archivist, activist, or designer. In the next section, I will use this timeline to describe some of the patterns of more-than-human working that emerged at this intersection.

3.3 More-than-human Methods

The Seasons: *To be Immersed*

I worked in the field by the arc of a year, from Autumn 2014 to Summer the following year, and the time scales that were nested within that, including the hours of light that a day brought, and the diurnal rhythms of the tide in the Graving Docks' basins. It was this seasonal immersion that enabled me to explore important expressions of life and vibrancy on this post-industrial landscape. In Autumn it was particularly lively. A riot of colour, an upsurge of fungi, and many regulars drinking around wild fires of burning buddleia had me busy foraging for mushrooms, companions, and opportunities within the excess. It was a time of plenty, and the pace of change had me working in haste as I gathered up stories and observations from the site and its regulars. The seasons were more than mere setting of the fieldwork. They became prompts to action on many occasions, hurrying my early bio survey works on in the Autumn for example (see S3) and inviting a trip down the River Clyde in high Summer (see S7).

The seasons were an important device through which to think about the play of human drama across the site. The human drama I refer to here is the The Company's efforts to take back this rewilded ruin, described by red arrhythmic marks that strike against the grain of the seasonal baseline in the methodology diagram. This was the all-too-human temporality that began to warp the arc of the year with the events that unfolded. It was in the Autumn of plenty, the Autumn of Inkcaps, puffballs, camaraderie and den building, that the landowner announced the Graving Docks' fate. In Spring the petrol chainsaws arrived. The wildflowers that were pushing up did so between fallen budding canopies. By Summer it was bare.

I was witness to moments in which the temporalities of site and city convened in contradictions. These moments persisted as vivid images in my memory: the flock of geese that flew overhead on their way north for the Spring while I was picking over rubble trying to find a wildflower lost in the clearance; the new buds on logged trees, and the luminescent animal

bones that were exposed after the Graving Docks' groundcover was lifted; another, the barren scenes of 'Summer'. The silence of that Summer, emptied of birds and rustling leaves, spoke volumes through its unseasonality. The processes of dispossession, even a certain kind of extinction, became audible (Kanngieser 2015: 2). The depiction of the seasons as a constant baseline in the timeline was challenged in these moments by the environmental change shed light on their multiplicity. I found myself staging all manner of unseasonal rituals to make sense of the bewildering indifference and the strange contradictions. In Winter, I appealed on the streets of Govan for a landscape that had already retreated to the earth for the coldest months. And the last was a ceremony to mark the eve before the passing, as Spring was just beginning. These were rituals to anchor in the changes of a warped year. Attuning to the seasons was an important method in the end – a way in which to seek out expressions of time, especially in the lived experience of their incremental erasure.

Rupture : To Work Amidst Uncertainty

How do you calculate upon the unforeseen? It seems to be an art of recognising the role of the unforeseen, of keeping your balance amid surprises, of collaborating with chance, or recognising there are some essential mysteries in the world and thereby a limit to calculation, to plan, to control. To calculate on the unforeseen is perhaps exactly the paradoxical operation that life most requires of us (Solnit 2006: 5-6).

Doing research amidst uncertainty presented its own particular set of challenges. As The Company began to reclaim the site, long term plans had to be jettisoned for more responsive ways of working. Windows of opportunity were small, and often decisions had to be made quickly. Uncertainty brought moments of 'rupture', when a trajectory I was following was broken by changing circumstances, requiring that I stake out a new line of research. These are depicted in the methodology diagram as arrhythmic red verticals that strike over the research process across the year. Ruptures marked breaks in the flow of activities, breaks often in morale, and breaks too in a certain way of thinking, which provoked a tumult of questions – 'what can I do for the site now?' often among them. Two important things came of these moments however. First, the concern and the unrelenting sense of imagined possibility that already had me invested in the site grew and spawned a deeper sense of attachment and loyalty. And second, through the complication of plans and ambitions, an important ethical commitment was established. Where at first it was dealt with as a thorny inconvenience, my engagements with uncertainty quickly spawned a code of practice for being in the more-than-human world. Planning was exchanged for a set of ethical commitments that were Deleuzian

in practice and ambition, which gave me the tools to follow uncertain change whilst also making opportunities to enhance, extend and develop the life and vitality of this landscape. In his 'making-do' methodology for landscape research, Lorimer describes such a Deleuzian ethical commitment to:

...environmentalism (where a personal commitment can be made to sustainable research practice), to protectionism (played out in the common urge felt to conserve and commemorate), and to vitalism (suggesting a set of values for renewal, retrieval, practical action and animation) (Lorimer 2009: 259).

Not only was this commitment necessary to sustain the research, but through it I also became perceptive to life and vibrancy on Govan Graving Docks that might otherwise have been missed in my visioning aims.

An important example of an enactment of this ethical commitment was the transplanting sitework (see S4) that saw a large batch of the Graving Docks' ruderals uprooted and transported to another city 'wasteland', before the clearance works began. This effort in ruderal archivism stemmed from a desire to make the change conscious somehow, and to salvage critical reflection and insight from the destruction. The inspiration came from Iain Sinclair:

Without a proper accounting of loss, these acts are final: not a scratch on our consciousness when the listed building is replaced by a loud nothing, protected by a corrugated fence and a battery of surveillance cameras. No record has been left behind of our shame in failing to resist. And no memorial... to the processes of weather, the complex entanglements of predatory humans and indifferent nature (Sinclair 2012: 8).

This sitework was another response to The Company's plans, which built on the findings of the biosurvey. It was the opportunism of dockland ruderals that inspired the response. Roots and their adaptations to this hard industrial ruin became the motif of the sitework – the way that they forage, travel long distances down unlikely paths and tap into one another to share resources. Their habits of growing became a precedent as I considered how life might be siphoned away from the site in advance of the clearance. Was there some life line I could establish, one that splintered away from the dock? Could I tend a vital offshoot? In these plants I found a prompt to action in the context of uncertainty.

These moments of rupture demonstrate that analysis and interpretation was an ongoing aspect of the research. It was part of the daily routine, but it also gained in momentum when siteworks were staged. These mark moments of intense and directed fieldwork when questions and concerns gathered in relation to different parts of the site and called not only for

understanding but also some kind of practical response to that knowledge. These siteworks created a lineage of critical thinking, of decision making and meaning making, linking each sitework to the next and eventually extending out into the realm of the imaginary.

Historical Fragments : To Remember (into the future)

The past might persist as mere nostalgic memory in the Clyde imaginary (Donald 2012a), but to step into the industrial ruins of Govan Graving Docks' is to find 'the material and sedimented accumulation of the 'past'... very much alive in the present' (van Wyck 2013: 257). Sensing the Graving Docks tidal rhythms and touching its crusty toxic residues pulled my own reflections out into a more-than-human future and then back to a more-than-human past. And yet this landscape has become a monument to human labour and engineering prowess in the public imagination. I undertook experiments in remembering to find ways to see outside this human story - to explore how the past had entered into new ecologies and presented new opportunities and challenges for the future. At fractious points throughout the field-working year, I turned my attentions out towards the city, to the people, places, ecologies and archives with various stakes in the meaning, materiality and even the fate of this landscape, and then returned to site again to think through their implications. The historical research that I undertook involved just this kind of shuttling back and forth, evidenced in the methodology diagram by a list of historical research practices spanning city and site featuring at the beginning of the time line. Working across the two brought important insights. Fragments from the field and fragments from the archive issued forth and they had very different stories to tell.

In the archives, leafing through strategies, budgets, inaugural speeches, drawings, photographs and the docking log books drawn up by the engineers, merchants, council members and other elites of the day, I found a story of industrial progress realised through the particular orchestration of water, steel, waste and men. But the past was also there to be discovered in this 'hybrid archival-field space' (Lorimer 2009: 258). Here, historical fragments were scattered and obscure, oral and earthy, elemental and material, and they could still be 'be scooped up, delved into, even dug up' (Lorimer 2009: 257). In terms of finding stories amongst these shards, Lorimer's 'making-do' methodology came in handy; a method for historical landscape research that sets out to work with what is at hand, requiring of the historical geographer both faith in one's research site and a 'receptive state, combining an attitude of mind, heightened powers of observation and an openness of manner' (Lorimer 2009: 259). Having immersed oneself in this way, 'things from the past issue forth, and begin to connect

up' (Lorimer 2009: 258). The hybrid archival-field space, Lorimer (2009: 257) writes, is a 'less settled phenomenon than the historian's palimpsest (of clean-cut layers resting level upon level) and enlivened by presence, landscapes promise depth and disruption'. Fieldwork on the Graving Docks unearthed active histories of toxicity and river flows, labouring bodies and broken-ground, that complicated the human story that this landscape is known by, urging me to think critically about the past, and its materialisation in the present as both challenge and opportunity.

The picture that was emerging prompted a more concerted effort with more-than-human historical methods. DeSilvey (2007) has explained that this begins with a new kind of remembrance; one that moves beyond the human history of artefacts to describe the geological, environmental, climatic, and all manner of nonhuman agencies that human histories are embroiled in. This is remembrance that 'pulls the remnant into other ecologies and expressions of value' that have yet to come (DeSilvey 2007: 328). Our task in mapping this 'ecology of memory', is to 'let the process run, and watch what happens in the going' (DeSilvey 2007: 324-325). Another useful method was to become perceptive of the way in which other agencies were remembering – how multiple and diverse agents were making sense of history, and making new opportunities from it. Van Wyck (2013) has described how a landscape's toxic history for example must be considered from the more-than-human perspective, in order to understand the multiple worlds that have elaborated from it:

The archive of toxicity is only ever legible, and only then aided by multiple literacies and actors – from benthic organisms, macrophytes and mammals, to biochemical transactions and curious academics... A reader, then, am I of this dilatory place, sifting and gleaning through the remains... the movement is not from archive to site – the indexical imaginary – but to see the site as archive, dispersed as it is (Van Wyck 2013: 263).

Having amassed all these fragments from the archives and the field I set out to bring them together in a composition that would explore critically the Graving Docks' layered past in place. Contemporary performance exploring landscape and material memory had much insight to offer this creative endeavour. Maria Fusco worked with fragments in her experimental audio play *'Master Rock'* (2015) which explored the histories of a blasted mountain Ben Cruachan.²² In this work, this landscape's geological, mythological and technological histories are intertwined in an inter-textual, multi-layered sound piece. What this piece demonstrates is the kind of insight that emerges from having multiple histories speak to one another; insight which Fusco has described as the 'conscience of history'.²³ Mike Pearson (2006) has also worked with fragments for site-specific performances in his home county of North Lincolnshire. These works are 'an attempt to record and represent the substance, grain and patina of a particular

place, through juxtapositions and inter-weavings of the historical and the contemporary, the political and the poetic, the factual and the fictional, the academic and aesthetic; depth not as profundity, but as density of both topics and modes of address, and in full cognisance of local and personal knowledge' (Pearson 2006: 68). Both of these performances, the first an excursion to a mountain, and the second a region, have opened up 'official' accounts of landscape to the lived and the material. To remember within the context of a living present, is to explore the challenges and opportunities that material memory will bring into the future.

It was the industrial relics touched by water since the site's inundation that inspired my first experiment with fragments. The Lord Provost remarked on the prodigious ingenuity of the Graving Docks' hydraulic engineering when he opened the first dock in 1875 but today the seal is broken and the chambers are tidal.²⁴ The remnants of the underground hydraulic infrastructure that once hosted the rush of pneumatic powered water are now spouting purple buddleia. The altar steps are struck across their length with an algal tide line, and the foundations of the pump house have flooded. Close reading of the dusty docking log books amassed in the Glasgow City Archives taught me that the dockland operations were in fact dependent on the agencies of the tide – ships could only enter and depart the docks on high tide.²⁵ The pre-industrial map illustrating the drove road cutting north across the site to the River Clyde found in the Glasgow City Archives, gave me a clear starting point to relate these (lesser known) more-than-human water histories in a sitework entitled *Holloway* (see S1).²⁶ This work reinstated the line of the droving road as a viewing axis in order to ask questions about the future of the Graving Docks' central protagonist. Although this sitework worked on a more metaphorical level in the end, it marked the beginning of these kinds of preoccupations with material memory.

Multispecies Landscape : *To be in Company*

Such a vibrant landscape lent itself to collaborative research at various junctures, because I needed the expertise and local knowledge of others to make sense of its patterns and processes. I set up partnered collaborations, larger scale event style collaborations, and interdisciplinary collaborations. The diverse perspectives that collaboration brought to bear on the Graving Docks were especially important when the meaning of the site seemed to be closing in with The Company's efforts to realise their city vision. Making research inclusive was part of my commitment to a social and ecological ethic – to open up perceptions, and to share in ideas and knowledge with local and earthly importance.

The transplanting sitework described above (S4) was a partnered collaboration with cultural geographer and colleague Erin Despard. This working model brought to light the self-reflexive nature of collaborative working. With two, reflection, discussion and negotiation was key as we decided on a shared plan of action. As Lorimer has observed, collaborative research programs often 'produce fulsome methodological commentaries because dialogue, exchange and conciliation are necessary to ensure that things actually get done' (Lorimer 2009: 251). As we worked together to up-root, transport and replant a batch of dockland ferns our exchanges took on the form of an 'echolocation' - a term adopted by Faier (Choy et al 2009a: 202) in a discussion about collaborative research in the field. This is an 'interactive sense that enables a creature to find its way by reaching out to other bodies with sound that return to it transformed' (Choy et al 2009a: 202). The conversations of our collaboration continually reframed the project. It drew attention to the nagging doubt that accompanies action and interpretation in the field - described by Tsing as 'the crucial 'gap' across forms of understanding in which ethnographic knowledge begins to appear' - and urged us to 'sharpen our senses' (Choy et al 2009a: 200).

I also tried interdisciplinary collaboration. The human-disturbed landscape has emerged as a rich testing ground for devising shared ways of working across the humanities and the sciences, in light of its entangled human and natural histories. These landscapes are 'disciplinary in-between spaces beyond the normal gaze of biology, such as human-disturbed forests and cities full of feral life' (Tsing, Lien and Swanson 2014: 8). They are places that invite 'the observational skills of both humanists and scientists to appreciate what comes together—and therefore, too, what might yet emerge' (Tsing, Lien and Swanson 2014: 45). A shared sense of curiosity and imagination bring the humanities and science together in this task: sensibilities which Tsing argues can 'form small pores in the two-culture barrier, which might allow diffusion' (Tsing, Lien and Swanson 2014: 7). In the hunt for the 'still-living' of the human-disturbed landscape, and for hopeful stories of human and nature's coexistence, interdisciplinary working presents an opportunity to tackle overlapping concerns, to share methods and to reflect critically on the knowledge practices of individual disciplines (Tsing, Lien and Swanson 2014: 5).

The Graving Docks 'bioblitz' (S3) - an event that rallied a mix of experts and enthusiasts to document the Graving Docks' biodiversity - put interdisciplinary working to the test with fruitful outcomes. Shared concern brought this group of together and it found expression in many small acts of knowledge sharing and sociality, as participants gathered around ruderals to discuss their life history, uses and value in the context of an uncertain future. The interests of the group were all quite different. The entomologists studied habitats using their nets, grubbing trays and sample tubes. The photographers, filmmakers and public artists studied the

Graving Docks' materials, atmospheres and assemblages through their camera lenses. The re-wilder foraged and nibbled, considering how long he might be able to survive here, while the ecologists and botanists thought about the bigger picture - rates of succession, adventive species, migration patterns and the level of diversity. The groups that participants had been assigned didn't always hold together - the birders wandered with their eyes to the canopies while the entomologists tended to dark corners. But shared working took place, and it brought important insights. There was a curiosity about each other's way of working, which led to knowledge sharing and skill sharing within the groups - birders explaining how to notice a cormorant, an entomologist explaining how to seek out a beetle habitat. Tools were shared, and impromptu workshops were held - which mushrooms are edible, how to use a butterfly net, how to tell the difference between an Alder leaf and a Beech leaf. Participants joined in a discussion at the close of fieldwork which explored the Graving Docks' urban ecology's value from a variety of perspectives - social, aesthetic, ecological and cultural. Describing methods along with values enabled many accounts to sit together. Then discussion drew out into the imaginary as participants used their observations to imagine this landscape's possible futures.

Shared landscape : *to tell a story*

Govan Graving Docks was a landscape tied up in many personal biographies, and the voices started to crowd in from the moment that I arrived. I met men that had worked here, childhood bikers who had spent endless summers making tracks on the rubble mounds, and keen photographers who waxed lyrical about the rust to be found in its ramshackle buildings. Many were already storying the more-than-human with reminiscences of harsh winters on the windswept working bays - a crane was brought down in a stormy surge one man told me - and with description of the Graving Docks' nesting swans that have become rich over time with daily dog walks. As part of their appeal for the development of innovative methods for ruin scholarship, DeSilvey and Edensor (2013: 479) have suggested that 'accounts of botanists, temporary dwellers, former workers and urban explorers could be collected to form compositions of multivocal narratives which capture the fluid meanings that circulate around particular ruins and foreground the multiplicity of these places'. Lorimer (2006: 516) has also called on 'a more inclusive sort of intellectual investment' when it comes to historical landscape research: 'one that accommodates understandings of living in the thick of landscape that are not only ours'.

Gathering stories from people who had variously shaped or been shaped by the Graving Docks' was a necessary part of understanding the many meanings of this particular ruined

landscape. These stories marked the beginning of new outlooks and opinions, as I began to walk with the memories of others. Pearson (2006) has advocated for the place of personal memory and its umbrella method oral history in landscape research. The stories that people have to tell about a life lived in this landscape '[hold] together a vast body of information: histories, geographies, genealogies' (Pearson 2006: 25), and they reveal the ways in which landscape and local identity are intimately entwined (Matless and Pearson 2012). Stories, Pearson writes, evidence this entanglement:

Just as landscapes are constructed out of the imbricated actions and experiences of people, so people are constructed in and dispersed through their habituated landscape: each individual, significantly, has a particular set of possibilities in presenting an account of their own landscape: stories (Pearson 2006: 12).

I had been speaking with people on the Graving Docks since my arrival, but when news of the clearance broke I decided to undertake this in a more structured way, in a naïve attempt perhaps to draw the site back into a space of discursivity. I set up a postcard stand outside Govan underground populated with images of the Graving Docks' urban ecology taken by the bioblitz participants. This created a time and space for the exchange of stories and opinion on this landscape and its fate. In making a space for critical urban dialogue, this sitework shared something in common with the field of relational art. By staging participative forms of sociality this is an art that sets out to create '[a] space of interaction, [a] space of openness that ushers in all dialogue' (Bourriaud 2002: 44). This is 'cultural do-it-yourself... the invention of the everyday, and the development of time lived' through which critical models for interaction are developed (Bourriaud 2002: 14). Outside Govan Underground Station I devised and tested a model for a form of public consultation that would be open and inclusive. People were more willing to speak at the postcard cart when I opened conversations with my own story from the field. In many cases, participants took my commitment to their local landscape personally, and wanted to make their own contribution to the research. Pearson (2006) has discussed the way in which storytelling can snowball into a communal project for storying a landscape:

What such a performance stimulates and elicits is other stories, and stories about stories. It catalyses personal reflection and the desire on the part of listener not only to reveal and insert her own memories, but also to re-visit communal experiences. It works with memory, raking over enduring ones, stirring half-suppressed ones. It can demonstrate multi-temporal densities of experience within a given location, place as palimpsest (Turner, p. 373), named and marked by the actions of ancestors (Pearson 2006: 22).

I listened closely to the materiality of the voice. In the ‘modulations and intensifications of speed, tone, volume rhythm, emphasis’ I could tell whether I was engaged in a chat, a lecture, a declaration or an oration, which said as much as the content (Pearson 2006: 26). It was in the ‘grain of the voice’ as Pearson (2006: 26) has called it, that the ‘story comes to life’ and through which connections are made. What made this model of public consultation particularly unusual was that the postcards were the protagonists of the conversations. They showed a landscape that had outgrown the public imagination in many ways, with many visitors to the cart exclaiming that they hardly recognised this industrial ruin. Fleeting companionships were struck up around particular prints too, as visitors and I spoke enthusiastically about rust and mushrooms and fishing, and shared our own personal maps of this landscape - the best place to appreciate the river, where to look for the hunting peregrine.

These conversations at the postcard cart gave me a more-than-human perspective on the past too. I met many of the Graving Docks’ former workers who had spent their lives painting the ships that docked at this maintenance facility with red lead, chrome and bitumen. One man called himself a dying breed because the toxins had taken their toll on most of his colleagues. Those that were still-living were ‘walking monuments’, (a term that Fusco (2015) has used in her discussion of Ben Cruachan’s Irish tunnelmen, the ‘Tunnel Tigers’), their veins still coursing with the residues of those ships that had brought Glasgow fame and fortune.²⁷ They rummaged through the postcards and talked about the return of foxes and ducks as an unlikely miracle. Material memory found important expressions at the postcard cart, revealing how the past has been drawn into new ecologies, new celebrations of value, and new desires for the future of this landscape.

Site Memoirs: *To Experiment with Description*

The changes that took place on the Graving Docks between Autumn 2013 and Summer 2014 would be remembered by me and many others: the residents of Govan, the sparrows that fled falling branches in Spring, the river that carried the residues of pesticide, and the fish that swam with it. By the time it came to writing up, I was faced with the somewhat unnerving task of creating a record of a lost landscape.

In the chapters that follow, I have written a memoir of my encounters with the Graving Docks histories, ecologies, materials and communities from the year. Bereft of the specificity and certainty of written notes, or recorded words, the raw material of this writing was my own memory. This memory resurfaced in fragments, never whole and complete. It wasn’t static information either, rather it had been reworked by the research practice that had come after it

(Jones 2011: 876): as the year unfolded, memories of self/site/practice were 'fundamental to becoming, and a key wellspring of agency, practice/habit, creativity and imagination'. As memory was drawn into the research in new ways, the past was reconsidered, reorganised, and repopulated. Drawing on emerging experiments in memory writing from the environmental humanities (Bolland 2015; Solnit 2013; Jones 2015), I developed a writing practice that was a creative (vitalist) and ethical response to memory, rather than an attempt to re-order and re-present fragments (that now no longer had a specific location in time and place). Writing in response to the vivid moments that resurfaced presented an opportunity to build on the curiosity that had taken hold in the field, along with the concern, and sense of imagined possibility that certain moments contained. There was scope to extend my ethical commitments, to cultivate new attachments, and to consider again patterns and trajectories into the future. There was opportunity to reflect critically on my role, my intentions, to acknowledge again the events that unfolded and their legacies. Lastly, it was possible to appreciate the spatial textures and affective registers of the site and how they resisted meaning even in memory. I worked with imagery and dialogue, metaphor and thick description, to explore scenes, conversations, tasks and design thinking. This process of re-collection reconfigured self, site and their relations. As such, the words cannot be read as a 'representation' of this time, but rather a creative engagement with it.

Memories from the field have been recounted in the following chapters in a chronological narrative. This decision didn't come without certain reservations. Would the writing be overdetermined by its direction? In the task of getting to a preconceived end, would writing be burdened by intention? In a critical study of narratives of suspense, Fusco (2007) quotes Derrida, who has said that this writing form has 'changed the order of the world even before we are able to awake to the realisation that, in sum, nothing will have been said, nothing that will not already have been blindly endorsed in advance'. They are 'an arrow whose flight would consist in a return to the bow'. For the purposes of this research however, this narrative structure enabled me to explore the many and diverse stories that gathered around the year's markers - life before the clearance, the clearance itself, and after it - the shared 'here and now' through which knowledge emerged and connections were made. It enabled me to reflect on the significance of the pull of the future that myself and others were subject to during this time - the pull of nature's reclamation efforts on the one hand, and the city's reclamation efforts on the other hand. The pull of the future, paired with a sense of urgency, led the way in my practice as it would do in my descriptions.

I storied as I worked. I storied to root myself in the pace of change, and to make sense of the frictions and indifference that I encountered. They were solitary mutterings at first, but then I started to update friends and family, and eventually they got in the habit of asking. I

storied and found humour, compassion, hope and consolation; each answering a need for a certain kind of resilience at points in the year. The habit exposed and simultaneously nurtured a deepening attachment. Through this telling, an authorial voice was already emerging. Pearson (2006) has described the voice as a key resource for reflecting on the various motivations of creative practice. He does this with his performative texts which are highly autobiographical. In this first person writing:

... the author identifies with the object of study, acknowledging affiliations and bias, and this drives the research: whilst conventional academic practice is clearly present, it is infused with personal observations and sources of lay knowledge. The method is emotional, self-reflexive and revelatory. A life-story is mapped onto the discourse and memory and desire are active agencies: the anecdote may be as significant as the historical fact (Pearson 2006: 10).

Although this voice that emerged on the Graving Docks was distinctive, it was no more certain for it. The narrative that unfolded did so in stops and starts, stuttering and lurching, picking up considerable pace for periods when a particular line of enquiry gained momentum, and then breaking in light of changed circumstances. As with Sinclair and Lichtenstein's (2000) book *'Rodinsky's Room'*, 'chronicling a topography of chance occurrences, inadvertent meetings and the following of crooked leads', I was 'inexorably... enveloped' in my own narrative and far from in control (Lorimer 2009: 267). By writing this precarious story line, I could reflect further on my work with uncertainty, and the kind of readiness of manner that it demanded. Uncertainty brought with it many challenges, but it was also the condition of my openness and another way of working. In her critique of suspenseful narrative, Fusco calls for experiments in 'temporal compression' as a way to explore outside the 'quotidian cause and effect... [which] is central to looking at and making sense of the world around us' (Fusco 2007). In the following chapters, I experiment with a temporal *extrusion* in an effort to occupy the spaces of indeterminacy upon which these ideas of 'cause and effect' are founded.

A Creative Approach : *Methodological Style*

In this chapter I have discussed the more-than-human methodology that informed my thought and practice on the docks. By way of summary I want to reflect further on the process of method making which is a defining feature of this project. Methods were developed *with* the site. The more-than-human methodology, and its emphasis on openness and attentiveness, set the scene for this working relationship to emerge. Methods were informed by a sensitivity to the way in which the site was making its expressions, and thinking about how to tend to these,

and extend them through practice. Making methods was about following and contributing. Methods on the Graving Docks were unfamiliar and unrehearsed, and having muddled through, often too immersed in the action, it was only latterly that I found important insights in the way that motivation, tone and choreography had been jointly devised. What I developed on the docks then was a bespoke methodological style that was founded on the 'stubborn particularity' of site (Cruikshanks 1997: 61). Our way was opportunist and affirmative. It was dogged, urgent, and public-facing. It was lived and not applied.

4

Maintaining the Feral Common

Holloway

Highland Lane was the desire line with the most footfall on Govan Graving Docks extending south from the opening in the fence until it met a riparian thicket 15m or so deep before the river bank. The regulars gathered around a hearth which was in fact a doocot before it collapsed. The cobbled stretch sparkled underfoot with tiny fragments of wine and vodka bottles and on the other side of the wall that marked the drop down to the docks' bays, there was a mountain of crushed cans - relics of a long liquid history and testament to the popularity of this scenic spot.

It was busy the sunny Monday afternoon that Patrick and I arrived with our long handed lobbers, secretors, map and compass. There was no fire in the hearth but it was a natural place to gather so everyone was sat around on the fallen granite capping stones. Tam and Jimmy were amongst the crowd and they were curious when they saw the tools. I told them that we were looking for the jetty at the end of Highland Lane. 'It's well hidden' Jimmy said. 'Whit's all the stuff fir?' Tam asked. 'We're going to try and make a clearing if we find it - to open a view onto the river' I said, waving the lobbers in that direction. This was met with both indifference and some grunts and murmurs of assent from the group.

I pulled the map out once we'd left them - an Ordnance Survey map of the original lane from 1896.²⁸ When the facility's workshops lining this armature were demolished the rewilded rubble shifted Highland Lane further east. 'Yer gaun the wrang way ye divvy bastards! ... Wrang way!' Tam shouted after us. We took a left upon his instruction and dived into the thicket of birch and elder by the river. The slipway was unremarkable when we finally found it: a rotting timber ramp caked in mud. We stood on the bank and got the compass out. The plan was to clear the north south-axis from the slipway that the lane had once followed, but after a short time pushing through the vegetation along this line we conceded that it was a job for more than two. The new lane was not far from the old line, so we decided to make a route through the thicket here to the river instead - a short 15 metres. That way the regulars would be able to enjoy the sightline from their den.

Highland Lane traced a historical water connection. Up until the early 1800s it had been a drove road and fording pass. When the dry dock complex was in operation it was a cobbled lane lined with workshops extending north-south from Stag street to the river. At the river end



Fig. 15 Holloway: Sightline to the River Clyde (*Image:* Olden, R.)

there was a jetty for the Kelvinhaugh ferry that transported workers and materials. The purpose of this sitework was to recover the lost line that extended a physical and visual connection to the river.

The first task was to stake out the proposed route with garden bamboo sticks. It was a tricky task keeping to the north-south line while at the same time avoiding any large trees, but we managed to work out a route after a couple of revisions. With one set of lobbers we took it in turns to fell and to clear, first the undergrowth of brambles and then the young trees. I had to retrieve my saw from the studio to assist with the trunks that the lobber couldn't get its teeth around. This sitework created a sense of unease that I wasn't prepared for. Sawing living wood wasn't easy on my hands or my conscience, and the ugly stumps that remained were hard to reconcile. It was a landscaping idea that was beginning to play with material appreciation, but there was nothing vitalist about this sitework in terms of what it could *do*. It was a piece of human infrastructure when it came down to it. As the thicket hollowed out, distant murmurings began to filter in from the north bank: police helicopters, screaming seagulls, the murmur of cars, and intermittent screeching from the Glasgow-Helensburgh train line. The hollow was becoming a small echo chamber for the city that now felt all too close.

The felled material was moved to the sheltered pump house (fire-building and den making would see it reused) and then all the beer cans and bottles that littered the new clearing were collected up in blue corner shop bags that were matted in to the undergrowth. The effect was immediate and my thoughts turned to a litter blitz on the larger scale, but the leaves were already yellowing fast above us, and there were many more things to do before the urban wild retreated to the earth for Winter.

I ended up with twelve full, sticky bags and started ferrying them up to the gate. The crowd on Highland Lane provided the commentary on the first few runs, and then Tam and Jimmy volunteered to help. 'I can tell yeh, ah've brought a great miny boatles in but ah don't mind ever bringin wan oot' Tam said.

Despite the terrible hacked stumps that remained, the clearing was well received by the regulars. They joined us at the mouth when we were packing up. The sun was low in the sky so the water was a deep navy - a fissure in the autumnal canopy - and the sky above a cracking blue. I wondered if it would become a well-trodden way to the river once again. I got the camera out and took some photographs. 'Aye. It's nice this' Jimmy said. 'Not bein hing'me, but it's bin a lang time since ah've looked at the watter' Tam added.

Over the coming months it became force of habit to check how the new route had been elaborated when I arrived on site. Broken coping stones were configured in different seating arrangements at the river end, and the tunnelling effect was enhanced by someone using sting

to train tree branches to meet those at the other side. A tarpaulin was later woven through those arching branches to form a den.

Although there were certain aspects of this sitework that had failed in the end to engage in creative ways with the elemental agencies of Govan Graving Docks, the work did explore and build on vital expressions that were more unexpected – these the place-based attachments that linked this rewilded landscape with a community of active appreciators. It also re-established a relic of a lesser-known history: that of water, an agent that has been a central protagonist in the biography of this landscape. This sitework reconsidered the memory of this water connection, and saw in it an opportunity to reimagine its legacy, by bringing people and place, land and water closer together in a new configuration.

D o c k l a n d L a b o u r

I walked around the Graving Docks' with local historian Colin Quigley in the early Autumn and he shared some stories that had been passed down to him by his father and his father before him about the labourer's daily struggle on this industrial facility. Both men had worked as 'tankies' - their job was to clean the inside of the engine, oil and sewage tanks that were buried deep inside the ship's hold.

'Wud'huv been a dark joab' Colin said. He told me that his dad had started off in a rope factory as a teenager – another one of the shipbuilding industry's vital ancillary industries – and had then moved to the Graving Docks to take up one of 'the most dirty and menial jobs there was', because it was better paid. He shared his disappointment that the Graving Docks and all the other ancillary industries hadn't been properly recognised in the city's shipbuilding histories. 'So ships wer'nae built here, but it was no less important for it' he said. Because this site couldn't be associated with all the spectacular imagery of the shipbuilding yards, it hadn't found a place in the public's imagination: this was what lay at the root of the indifference, Colin said, when it came to questions about the Graving Docks' future.

'I remember gaun in the docks', when ah wis a wee boy. Mah da flew pigeons you know - well we used tae call them doos - and he used tae build pens for them and you know like a welding rod? Well he would use they welding rods for bars of the cage, and he used tae send me doon as a wee boy to the dock and he'd say, 'go and see Jimmy' or whoever it wis, 'and ask for they welding rods' and I'd have to carry home this big bundle. So I remember looking up at the sides of the ships, but its only noo you know that you think, you know, I wish I'd paid a bit more attention.'



Fig. 16 Dockland Maintenance: Scrubbing the inaugural plaque, with Euan Maharg belaying (Image: Olden, P.)

Some weeks later, I discovered the Graving Docks inaugural plaque - the text was etched into the concrete chamber wall of Dock Two next to the water gate, and it was layered now with decades of sediment and algae that obscured the names and the dates. This plaque would have witnessed some sights at the helm of the central chamber. I decided to carry out some maintenance work of my own here, to reflect on the labour histories that Colin had recounted. I planned to abseil down the chamber wall of Dock Two with rubber gloves and cleaning implements and then to scrub the etched and blemished surface until the text was clearly visible.

On the morning of my descent my colleague and keen climber Euan Maharg met me on the water gate with all the necessary equipment and a plan for the belaying logistics. One end of the rope was looped securely around a mooring post and then fed under the metal fixings of a hydraulic shaft near the edge of the chamber. The second fixing prevented the rope rubbing over the lip of the chamber, and it would have lessened the strain on Euan were my primary rope to fail.

The cleaning solution was made up in a bucket - a dash of bleach and two flasks of hot water - and then with cleaning tools attached to my waist - scrubbing brushes of various sizes, and an old toothbrush - I climbed into the harness and stepped back over the brink. The primary rope had a series of knots in it that I could use to travel up and down the rope, so when I was over the centre of the plaque I clipped myself in to the nearest loop with the carabiner.

The plaque was a lot larger than I'd thought so I set to work on the top, scrubbing from left to right, and then lowered myself onto the next knot and began on the middle. The water in the bucket was muddied right away. There were many more marks that were not quite as easy to shift. Cement had seeped from the joints between the cement blocks to calcify on the plaque's face, and there was also a patina of red, yellow and orange speckles that I soon realised were splashes of the harmful lead-based paint that ships had been treated with inside the chamber. Many time scales were converging as I worked: the industrial residues, the moss and algae that had taken decades to build on this face, and the pace of my efforts that were erasing these layers quicker than I could think about them. I had consulted a geologist for advice on a cleaning solution and a very dilute bleach was recommended, but finding myself elbow deep in it, uncertainty began to grow as did the burning itch across my forearms. I looked down to see the dribbles down the dock-face setting off small ripples in the water-filled chamber below, and I quickly stopped scrubbing.

I swapped my cleaning implements for the camera and began capturing this privileged viewpoint in multiple shots. Together the photographs formed a post-cubist style montage that returned me to that swinging rope, whenever I looked at it again. Next I turned my attention to the text, though now the inscription paled against the vibrant splashes that danced across it.

THE ACT FOR THIS DOCK WAS PASSED ON 7TH JULY 1873,
HON. JAMES WATSON, CHAIRMAN. JAMES BAIN, DEPUTY CHAIRMAN.
FRANK BAIRD, CONVENOR OF NEW WORKS COMMITTEE.

GROUND WAS BROKEN FOR ITS CONSTRUCTION ON 2ND AUG 1882,
HON. JOHN URE, CHAIRMAN. DAVID ROWAN, DEPUTY CHAIRMAN.
WM RENNY WATSON, CONVENOR OF NEW WORKS COMMITTEE.

AND IT WAS OPENED ON 13TH OCTOBER 1886.
HON. WILLIAM MCONIE, CHAIRMAN. JOHN URE, DEPUTY CHAIRMAN.
WM RENNY WATSON, CONVENOR OF NEW WORKS COMMITTEE.
SECRETARY & GENERAL MANAGER GEORGE REITH
ENGINEER AND CONSTRUCTOR JAMES DEAS.
RESIDENT ENGINEER, ARCHIE HAMILTON.

LENGTH OF FLOOR FROM INSIDE OF CAISSON 515 FEET 0 INCHES
WIDTH AT BOTTOM 52 4
WIDTH AT TOP 92 0
WIDTH OF ENTRANCE AT BOTTOM 57 8
AT TOP 87 0
DEPTH ON CENTRE OF SILL AT AVERAGE 22 10
HIGH WATER LEVEL OF ORDINARY SPRING TIDES 22 10

A great deal of ground was broken for Glasgow's shipping industry: river banks that were excavated to accommodate docks and quays; the river channel itself that was dredged to make a navigable watercourse; and the Clyde valley with its carboniferous substrata that was pitted extensively to fuel it all. The inaugural plaque invited viewers to imagine the ground breaking rites, the ceremonial shovel, the grand unveiling of the plaque itself and the dignitaries' speeches that ushered in a new industrial chapter. The maintenance work that I undertook here unearthed memories and residues that expressed some of the more difficult aspects of that industrial history. In this way it had also explored what the future of maintenance work could be on the Graving Docks. The agencies of the site were formative in this respect, urging me to reconsider the actions I took, and also raising a number important questions. How could maintenance work respond to the difficult material legacies of the past?

How could the distributed agency of the feral common inspire a new approach, so that maintenance is concerned with interests that are more-than-human? What about a version of maintenance that was for nurturing and promoting configurations of shared possibility with people, plants, water and relics?

The First Rupture

When I found out about the site preparation and survey works that The Company were to undertake on the Graving Docks, I had to consider again the course that I was taking. I met with the director who told me about their ambitions for the development, and the immediate plans to raze the Graving Docks' urban ecology. I asked about the landscaping strategy for the river and was shown a plan that had 5 storey hotels, apartments and a fortified bund wall (to minimise the risk of flooding) running the length of the waterfront.

Doubts began to creep in about my work here. What did it mean to be working here, to be digging up stories and fostering local attachment in the lead up to this new development? Was I doing the groundwork for another future? My research was supposed to be challenging the sort of commercial future that The Company had settled on, but what could I possibly do when my access to the site depended on a good working relationship with them? My aim to develop an alternative vision for this site would be a great deal more difficult. And wasn't this task now pointless and concessionary in light of the circumstances? Who would speak to me now about possible futures when the contractors moved in with their chainsaws and pesticides?

Nevertheless, I was by now deeply invested. I was still curious about this 'unresolved' site and captured by its possibility, and the early concerns about development pressures and inevitable futures that had first drawn me here were now altogether more concrete. To step back now would have been nothing less than a dereliction of duty. Despite the real concerns, and the expectation that the way ahead would be messy, difficult, and clouded with uncertainty, I began to rethink my purpose here.

There were still important reasons to continue with my alternative visioning. This work could open this site up – discursively, imaginatively - at a moment when the meaning of the site was closing down. It could encourage the public to participate as the future of the Graving Docks was finalised: to join in public consultations perhaps, and to express their own aspirations. There were also new research aims to consider in light of the coming changes. First, it seemed important that the Graving Docks' recent history be documented in some way. In the Glasgow City Archives, the Graving Docks' archives only went as far as 1988 when the

last boat had been serviced, and while there was some 'urb-ex' photography on the internet, there was nothing that dug deeply into its recent social and natural history. Without this archive, it would be easy to forget how this landscape might have been different. Secondly the Graving Docks' needed a landscape activist. The change that was on the horizon had to be held to be questioned and discussed, and although it would be a tricky task under the watchful eye of the land-owner developer, there was still some room for manoeuvre.

The Graving Docks' fated future wouldn't deter my work but it would no doubt cast a melancholy shadow. Nevertheless, I signed up as ruin archivist, landscape activist, and artist and champion of a different future. I would find ways to provoke important questions about the future of this landscape, and invite others to join me in this task.

W a s t e l a n d B i o b l i t z

In light of The Company's plans, I resolved to document the Graving Docks' natural history before its dis-mantlement. Late in the Autumn, I met Richard Weddle of the Glasgow Natural History Society (GNHS) in the university's zoological museum and explained the kind of event I had in mind. He told me that society did these kinds of events quite often, in parks and in wastelands – a 'bioblitz' he called it.

Richard told me about the expertise in the society - entomology, botany and birding – and said he would try and get a group together for me. I would be following a great lineage of Glaswegian amateur botanists, he said. He suggested that I speak with Peter McPherson, a retired doctor who had taken up botany after retiring from a busy GP practice. Peter spent his days foraging on Glasgow's post-industrial wastelands and roadside verges, documenting the species that he found there which shed light on all manner of forces shaping the ecologies of the city. Peter was co-author of the seminal text 'The Changing Flora of Glasgow' (2000), and he wrote extensively for the British Society for Botanical Identification (BSBI). Richard suggested I read his article in the (1998) BSBI newsletter, 'Where Have all the 'Best' Flowers Gone?' - an epitaph for a wild landscape that was ploughed up for a Clyde Waterfront development neighbouring my site .

I gave Peter a phone, but between the bad line, Peter's hearing aid and a domestic bird squawking in the background, it was a broken conversation. I asked him his field equipment, and he listed it off: identification books, magnifying glasses, vasculum, scissors, good sandwiches. He added that he'd have liked to attend but he wasn't as spritely as he once was, so he wished us every luck in our endeavours and told me to get in touch if there were any interesting finds.

Next I had to seek permission from The Company. All aspects of the bioblitz had to be conducted sensitively - from the inception of the event right the way through to the public presentation of the findings - to ensure that the event could go ahead and that I didn't jeopardise the access that has already been granted. I sent him an email that pitched the event as an ideal opportunity for a group of specialists and enthusiasts to theorise urban ecologies, and as well as seeking his permission I also invited him along. He consented, though declined the invitation. The developer's insurers requested a copy of the University's insurance policy. After rigorous examination of my Health and Safety Risk assessment, the School's Insurance advisor sent a copy to The Company. In preparation for the event, I trained as a First Aider along with ten other newly appointed managers of McDonalds. The course coordinator had a hard time animating the classes with casualty examples relevant to both burger kitchens and post-industrial ruins, but she did a great job considering and we had all passed by the end of the week.

I sent an email invitation out to a wide range of experts and enthusiasts based in Govan and Glasgow more widely - ecologists, councillors, historians, botanists, geographers, artists, archaeologists and locals that I'd met in Govan - appealing for their participation. The broad interests of the group would enable us to understand the value of this urban ecology from many different angles. In the invitation, the bioblitz was pitched as an event to document and discover a local rewilded landscape. The notion of discovery was apt for a site that had all the qualities of a forgotten land. There were new ecologies to discover, unfamiliar adventures, and also new understandings about the possibility of a wasteland. There were also 'common' plants to *rediscover*, in terms of their values, uses and capacities for innovation. In the invite, the urban ecology was described as the Graving Docks' 'Green Mantle' in light of the character that it had given the site, and its role as a refuge and habitat.

The final inspiration for the bioblitz came late. A paleo botanist from the GNHS wasn't able to attend the event and so, curious about the site itself and keen to contribute, she carried out her own investigations a day earlier. Photos arrived in my inbox that evening of wild orchids growing on the cobbles beside Dock One. They weren't rare she said, but it was heartening to see something so delicate growing on a site such as this.

*

On the morning of the bioblitz I cycled down to the Graving Docks with back pack and panniers loaded with plant identification books and tools. It was late October and the sun still hadn't risen in the sky. At the mouth of the Holloway, I struggled against the wind until I had four pasting tables erected and standing in a generous circle. I set up a head table with a selection

of cuttings in glass jars and an image of the wild orchids for inspiration. Then I lay out all the equipment for the bioblitzers; lenses, scissors, plant identification books, measuring tapes, freezer bags and sample pots for the invertebrate. Peter advised me that a freezer bag was just as effective as the botanist's vasculum. There were also field diaries for each participant where they could document their finds. Each page of the diary had different headings to enrich the investigation. The first half were for the species groups: Trees and Shrubs, Herbaceous Plants, Mosses and Lichens, and Fungii. The second section half were for patterns and structures: Collectives, Landscape patterns, Macro/Micro, Sections, and Environmental Process. Next I walked a lap of the site to check the Health and Safety tape I had rolled out the night before, cornering off the worst of the hydraulic shafts and a section of subsiding cobblestone by the river. Just as I was rounding the top of Dock Three, two electric blue darts shot across the chamber's murky waters: Kingfishers. These winged auspices had to mean something hopeful I'd thought. Last of all, with great satisfaction, I tied a 'Permission Granted' sign to the unofficial entrance to the Graving Docks. I hoped it would make the bioblitzers feel welcome when they stepped through the hole in the fence.

*

I met the group outside Govan subway station, and gave my Health and Safety briefing. It was a great turn out: twenty five participants kitted out with binoculars and woolly hats. There were birders and botanists from the Glasgow Natural History Society and the British Society for Botanical Identification and entomologists from Bugs Life. Archaeologists, architects, artists, community workers, environmentalists, ethnobotanists, geographers, photographers, rewilders, sustainable food activists had also come to offer their expertise. After the briefing I walked them to our base by the Holloway. Each table had been assigned a study zone – Riverside, Dock Two, Dock Three and Highland Lane – and a 'herder' with knowledge about its potential hazards. Participants joined a table and were promptly given hard hats by their 'herder'.

The paleo botanist's orchids, the kingfishers and Peter McPherson's wasteland explorations all make it in to the bioblitz briefing, as did the factors that had compelled The Company to schedule the coming clearance works. I posed these factors as questions. Is this urban ecology of no value because there are no Tree Preservation Orders on the site – is this the only marker of value that should be recognised? Is this urban ecology incompatible with an attempt to acknowledge/preserve/remember the past? I asked the group to document all aspects of this urban ecology and to think about its diverse expressions of value using their

collective expertise. We had two hours and then we would reconvene at the Holloway to share our findings.

With all the worksheets and equipment shared out, the herders led the groups on to their study areas. I was the herder for the Riverside group and as I handed out the hard hats the others introduced themselves. We had a specialist entomologist Richard Weddle of the GNHS who had brought his insect net, sample tray, trowel, gardening gloves and a picnic bag filled with books and solutions and specimen bottles. We also had cultural geographer Erin Despard, birder David Palmar also of the GNHS, and Hayden Foreman-Smith, a social worker and keen urban explorer.

I led the group into the pump house first. Richard immediately unfurled his gardening mat and sets himself up in the undergrowth with his trowel and tray. Erin was drawn to the ferns creeping up the north facing wall. I joined her as she clambered across brambles to the largest specimens that were thriving in the dank and shade. She pulled back the leaf of a harts tongue to show me the ornate pattern of spores. 'They reproduce in water, so they've flourished in all these cracks in the wall'. Erin took a couple of cuttings while I worked on their identification. 'I've tried to grow them from spore once myself but it's not easy'.

When I emerged from the fernery, Hayden was on a window ledge taking pictures of the green room from above – once the dirty, oily, pumping heart of the whole facility. Richard, still on his hands and knees, had made it to the ash filled corner that was once the sluice control room. These days it was a popular spot for bonfires. Last week I'd found a scrapper in here burning a tangle of copper wiring that he'd scavenged from the streets around Govan. 'Tellies. Fridges. It's everywhere this stuff' he'd said. If he burns off the plastic then he gets double the price for it. '£3 per k instead of £1.60 per k'. The smell was intoxicating, and ash was falling onto my hair and clothes. I really couldn't have imagined an entomologist grubbing around in here with much optimism. Richard got up with his tray and Erin and I gathered around to have a look at the beetles scuttling around inside. There was only one that he doesn't recognise, so he put it into a tube for further analysis.

What with the hustle and bustle, it was no surprise that we'd lost birder David. I found him outside on the bay of Dock One with a long camera lens pointed at the sky. 'You've just missed the geese' he whispered. 'Quite a sizable flock. They must be travelling south - it's the right time'. He handed me his workbook with an inventory scribbled on the front. 'Here are your birds then'. *Robin. Chaffinch. Grey heron. Cormorant. Magpie. Wood pigeon. Herring gull. Black-headed gull. Blackbird. Song thrush. Blue tit. Kingfisher. Dunnock. Lesser black-backed gull.* 'A good selection' he added.

The rest of the group eventually joined us and we started to make our way down the bay to the watergates. Hayden showed us an unidentified mushroom in a freezer bag. 'An

Inkcap' Richard informed us, with a quick glance. Erin found the paleobotanist's orchids and lay down on the cobbles to capture them with her camera. She hesitated with her scissors and vasculum bag but David quickly jumped in. 'Don't worry, there is more where that came from. Those orchids have a rooting system like you wouldn't believe' he said.

Further along Richard was using his butterfly net, pulling on the lower branches of the willow and elder, and inspecting the insects that had fallen in. He emptied the net into the beetle tray and identified a couple of species of ant and a Harvestman spider. 'You should bring a butterfly specialist down here. With all this buddleia it's probably a hotspot for them' Richard suggested. 'They love the nectar and they're attracted to the red wavelengths of the purple flowers'. Hayden was working on some close up shots of the moss that had almost fully carpeted the cobbles. 'I wonder if it would be classified as a carbon sink? You'd only need to work out the area and then do the calculations' he suggested. Erin was drawn to the common plantain that grew in the joints - one of our most common wild plants, or weeds as they're more commonly known. 'They're cheering the way they grow' she said, 'I like to look at the variations'. Erin later sent me an ode to the common plantain:

'The humble plantain sprouts between cracks in the pavement, along building edges, in compacted soil where nothing else will grow. Self-contained and self-sufficient, like a well-employed, slightly neurotic bachelor, the plantain is common yet gracious, quietly making something of himself without fanfare or outside help. One wonders why some woman has not scooped him up. The plantain has a certain understated, monochromatic style, a compactness of purpose, sweet and tidy ways. A tendency to form groundcover, which is an underappreciated quality in general. Despite humble appearances, the plantain is a cosmopolitan weed: a citizen of the world. Propagated by seed, pollinated by wind, it is at home wherever it goes. Long-lived and ever tolerant, it survives trampling and abuse. It is not only versatile but edible: nutritious, if slightly bitter (but who isn't these days!). In Autumn, the flower stalks turn to brown, producing a modestly striking effect against the grey of asphalt or concrete. Leaves evergreen, the plantain remains sturdy, and retains its form while other urban plantings become dry and brittle, reminding everyone of their vulnerability, heralding the loss of light, the oncoming cold, and the ruthlessness of time generally. The plantain marches on while remaining in place. It is always doing fine. Polite and unflagging. Essential'.

*

The groups assembled again at the Holloway. They laid their finds out on the tables and then each took it in turns to discuss them. Cuttings and inhabited test tubes were held up for the others to see, inventories read aloud, conversations relived, the wider group pitched in

intermittently to help with identification. The material and ideas were broad in scope, demonstrating the many ways in which this urban ecology could be perceived and valued.

Botanical expert Angus Hannah of the BSBI opened with his discovery of *Agrostis scabra*, a North American grass typically found on docksides whose seed will have travelled into the Graving Docks by boat. Nautical migration had made its mark. With our thoughts turned to natural histories, I asked Angus how it was possible to find such diversity on what was once a barren landscape. 'The biota is diverse *because* of these early mean conditions, not despite them' Angus explained. With nothing to compete with, seeds settling between granite joints and cracks made the most of what little dust and water they had. The river helped succession along, inviting wind, water and bird carried seed. All those feet that have been traipsing in since its abandonment will have hurried this influx too.

Physical geographer Hazel Long pitched in with her reflections on the discrete worlds that could be observed around the base of each older tree. Where affordances had been made - whether in cracks or - pioneering shoots had sprouted. When these shoots had shed their leaves the first layer of mulch was laid. This new living layer increased in complexity as wildflowers and fungi appeared, and the original shoot continued to grow, eventually standing tall over the layers beneath. As this virtuous cycle went on, plant life, insect life and then bird life diversified. As more birds arrived, more seeds arrived with them. A whole world had folded out from a seed and a hollow.

There were more discoveries. Suzanne Bairner of Buglife, an invertebrate conservation Trust, presented a Hobo spider (*Tegenaria agrestis*) that she had found in the thicket behind Highland Lane. Holding up the invertebrate tube to the group, Suzanne explained that there were only a few records for this species and they were all for the East Coast. Richard Weddle confirmed that there had never before been a sighting in Glasgow and he was considerably excited by the encounter. She had also found its nest, a substantial structure made of twigs and glossy evergreen leaves. Nestled in the middle was an egg sac. The Hobo spider was returned to its nest once the groups had had a look.

The group working around Dock Three had a large selection of ferns on their table, some turned upside down to reveal their ornate spore patterns. There were cuttings of Maidenhair Spleenwort, Broad Buckler-fern, Male-fern, Polypody and bracken. Ferns were found in abundance in the damp and shade at the foot of the retaining wall on the southern boundary of the site, 4 metres tall to Govan Road. Smaller varieties had found a foothold in the joints between the Graving Docks' granite steps. The hydraulic shafts were another favoured location for the ferns. Hart's tongue and rusty back had spread matted roots across their damp walls. They expressed better than any other species the feats of invention and determination that characterised this urban ecology. This group had also found cuttings of horsetail, Field

Horsetail and Marsh Horsetail. They formed a bright green fringe around Dock Three. Sabina from the group explained that these plants are 'living fossils'. They are the last of the Equisetopsida class that dominated the understorey of late Paleozoic forests one hundred million years ago. They'd found a whiskey bottle in a disbanded den too. The heat and moisture trapped inside had created a tiny microcosm of mosses. Rough-stalked Feather-moss, Capillary Thread-moss, Redshank, Juniper Haircap, and Springy Turf-moss.

The group working around Dock Two noted that the rubble piles along their stretch were insect havens. Entomologist Niall Currie, a snail specialist of the GNHS, had found a number of species including Cochlicopa cf. Lubricella, and Oxychilus cellarius. They were both common air-breathing land snails he told us, and they had an important job processing the Graving Docks' organic matter. There was an interruption in proceedings when a Birch Shieldbug landed on Niall's jacket. David Palmer got his camera out for some close shots and Niall took it on to his hand. 'They are abundant in Autumn' Niall said, 'but they will be heading into hibernation any day now, only re-emerging in Spring to lay their eggs'. This is another common species but there has been a dramatic loss in numbers with the slow erasure of Britain's woodland. It looks unlikely that there will be a Spring here too. This group also had re-wilder Fred who was recording (and eating) all the edible species. 'The question I like to pose; could I survive here?' Fred told us all. He had found plenty to keep him going for the morning at least. He produced a list of plants and their uses:

<i>Alder</i>	<i>antibacterial 2nd year twigs use as toothbrush. Disgusting, but so is tooth decay...</i>
<i>Spear thistle</i>	<i>edible flower buds and stem pith</i>
<i>Rosebay Willowherb</i>	<i>sweet pith, edible roots, leaves as green tea...</i>
<i>Biting stonecrop</i>	<i>bitter emergency food and astringent for wounds, but can blister</i>
<i>Coltsfoot</i>	<i>edible bitter and great for lung phlegm removal. Can be smoked if you want to create more phlegm...</i>
<i>Prickly sow-thistle</i>	<i>edible but spine removal fiddly!</i>
<i>Catsear</i>	<i>edible but hardly worth it</i>
<i>Birch</i>	<i>ubiquitous ambassador tree, and very, very useful! Too many uses to list here...</i>
<i>Privet</i>	<i>good for basketry</i>
<i>Dandelion</i>	<i>another edible treasure,</i>
<i>Strawberry</i>	<i>eat</i>



Fig. 17 Wasteland Bioblitz: Suzanne Bairner showing Hobo spider to bioblitz participants (*Image:* Palmar, D)

There was some discussion between Fred and the other active environmentalists - including Carol the community food worker, and Hannah and Clem both of an environmental arts collective - about the sort of banners-and-bodies resistance that would be needed here in the coming weeks. It might have been a quieter form of activism, but I did think that the resistance had already begun that day. That there was an assembly of specialists and enthusiasts on the Graving Docks' to speak for the value of its urban ecology was significant. The act of resistance was also contained within the event's many moments of sociality and knowledge production, as the group gathered around scrubby wild plants to discuss their life history and uses.

The bioblitz was perfectly timed to appreciate the fleeting autumnal display of fungi. All the groups had found a rich selection. The puff balls were new to many, and there was resounding delight when Sabina demonstrated their spore spreading mechanism. Each table also had a buddleia head. When the group discussion came to our table Richard picked ours up and said that 'it shouldn't be underestimated'. There was so much of it that the site could well be an important butterfly habitat - we'd have to make this assessment in summer of course. The Graving Docks may also be an important 'tail' in the River Kelvin green corridor that extended north from our site, Richard suggested. Erin held up her cutting of the wild orchid, *Epipactis helleborine*, and the group discussed their survival mechanism. The orchids establish a symbiotic partnership with mycorrhizal mycelia. This is a fungus that colonises the roots of the orchid to benefit from a relatively constant and direct access to carbohydrates. At the same time, the orchid capitalises on the fungi's rapid water and nutrient absorption rates. It is this dependent partnership then that allows these orchids to survive in the most unlikely locations.

During the morning, the bioblitz participants had also made acquaintance with the Graving Docks' regulars, and learnt something of the bonds that endured here. The conversations were recounted. 'Ah luv raking about in here wi her. Makes me feel like a wean again' - this a keen endorsement made by a dog walker and former Graving Docks employee who had been curious about our activities. When the mechanic from the garage opposite heard about the clearance from one participant, he had said '...but whit about oor wee foxy?' They had been watching the fox come and go from the Graving Docks for some time and had become fond. A couple of artists from the studios on Clydebrae Lane visited us as we worked too, and one told me that she same came here often to think. Being here felt like being 'a child in the wilderness' she had said, when 'everything around you looks curious... and useful'.

During the bioblitz, different specialisms had provoked different ways of seeing: natural scientists saw species and systems; geographers, symbiotic cultures; artists, atmosphere, colour and miniature worlds. Through collaborative identification, these methods, specialist knowledges and markers of ecological value were all shared. The values that the Plant Hunt uncovered were as diverse as its participants: biodiverse, habitable, edible,

territorial, creative, symbiotic, tactile, curious, seasonal, evocative, remedial, medicinal, ornate, wild, and virtuous.

We stepped around an ephemeral art work made by Hayden Lorimer on Highland Lane on our way out: 'Green Mantle' spelt out on the cobbles with fragments of green glass. The pieces were already falling out of place with the footfall but for a brief time it spoke of our collective concern.

T r a n s p l a n t

Late Autumn wasn't a good time to undertake a transplant on the Graving Docks. The canopies and groundcover were wilting and browning by the day - life retreating into the ground for the long Winter ahead. I struggle to identify botanical species at the best of times, so this small matter of decay made it even harder. Nevertheless, the news of the clearance (a pressing mortality), willed a way out, an off-shoot, a siphon and splintered life line. This life line would take the form of a haphazard experiment in urban cultivation. I planned to uproot what plants I could from the Graving Docks, pot them, strap them on to a trailer towed behind my bike and transport them to another space across the city. The transplant established a siphon between two sites; the donor, Govan's Graving Docks, facing imminent dis-mantlement in the interests of developer-led urban regeneration, and the recipient, North Kelvin Meadow a much valued community urban wild space that has had to prove its 'worth' in the face of a similar future. This sitework entwined the biographies of these two precarious urban ecologies, so that an ending in one marked a beginning the other. It took cues from the opportunism and creativity of the Graving Docks' urban ecology that had sought out the cracks in an urban fabric and made them generative.

But which plants would survive the upheaval? I emailed the specialist botanists that had joined for the bioblitz to ask for their advice. Rewilder Fred took a pragmatic standpoint. 'My own personal feeling is that if you left a patch of semi-shaded damp land it'd grow into a similar pseudo-ecosystem, so what's the point of transferring? It'd be an interesting experiment and you'd learn much about wild propagation, but you could just tweak the existing plot's flora and label appropriately. If the project is for local community, local history or just academic, it all makes a difference as to which species you choose or omit...' Fred replied.

Angus of the BSBI thought that satellite dockland plants would be 'meaningless' because they would be cut off from the broader ecology that had given them life and shaped their development. 'There is nothing on my list that would particularly merit conservation for its own sake in a garden, and it takes quite a lot of time, effort and horticultural skill to manage

a 'wild-flower garden'. The plants that like garden conditions are the ones we call weeds; other wild plants don't grow spontaneously in gardens mainly because they don't like those conditions! The plants growing in the old dock area grow there because it is the way it is, and what makes it particularly interesting is the way that plant community has developed in response to that immediate environment. The plants would have relatively little meaning if transplanted to a different context. Many of them would be unlikely to prosper because the garden would not be a derelict stony wharf, and without intensive care they would soon be overwhelmed by more vigorous competitors able to take advantage of the richer soil, etc.', Angus replied.

Cultural geographer Erin Despard didn't agree with the pragmatic or the conservationist standpoint. 'This is a very conventional way of thinking about things and assumes that some plants are 'garden-worthy' and others are 'just weeds'. But one of the interesting things you can do here is create a different kind of garden - one that challenges some of these assumptions even if it fails to some degree. Plus, as far as the politics are concerned, it would be interesting to be able to show how certain plants require that ecosystem - precisely the one that is considered to be of no value. I agree with him that it is interesting how the plants have prospered in relation to that specific site, but I don't think that's the only way in which they can have meaning. That is a conservationist way of thinking that in a kind of backward way, supports the position that The Company has put forward: in other words, you can have either wild spaces, or development, and if a given 'wild space' is not valued more highly than development, then we just have a net loss in biodiversity. This gives us no way to make things better, except to make more parks and conservation areas, which is harder and harder to justify, and which in any case, just reassures people that they continue trashing urban ecosystems for the sake of development' Erin replied.

Erin kindly volunteered to help with transplanting task. She was an experienced gardener, and she also saw interesting possibility in the task of linking up with North Kelvin Meadow where she volunteered her time as a community gardener. Together we came up with a list of plants that we would try to move: Mugwort, Columbine, Meadowsweet, Michaelmas Daisy, Male fern, Broad buckler fern, Wood avens, Strawberry, St John's wort, Tutsan, Biting stonecrop, Forget-me-not, Glasgow Orchid, Ragwort, Hart's tongue, Biting stonecrop, Coltsfoot and Red clover. The plants selected would enrich North Kelvinside Meadow in various ways: ferns would be planted in the Children's Wood whose understorey was bare, and wildflowers would diversify the meadow. Fred's list of the Graving Docks plants and their uses helped with our selection too. I made up a final inventory with images that would help us identify the plants in the field.

*

It was a freezing early morning when we locked our bikes to the Graving Docks security fence and ventured through the opening with our tools. The temperature was ideal for transplanting roots but it wouldn't be kind on green fingers. We set to work on the ferns in the Pump House. There were many tactics to consider to increase their chances of survival. The ferns we chose had to be mature with an established root system, but young enough that they would still have some vigour to take to new soil. Patience and a dexterous hand was needed to get the majority of the plant's root system; to feel around in substrate of thin soil and beer cans, to trace the adventurous pathways of their roots through and between metal and stone, and to finally tease them from the cracks in the cobbles and from each other.

But no amount of equipment could have prepared us for the difficulty of extraction in the Pump House where the ferns were particularly large. The shovel was snapped in half by a particularly stubborn male fern, insubstantial root balls were removed, and gloves were lost in the undergrowth. Our efforts began to look hopelessly clumsy. The task was an education in roots, their tenacity and ingenuity. In the scale and extent of these roots we could see the determination of plants to survive in the meanest of conditions. Finally we potted them – a terrible domestication. They were reliant on our efforts now if they were going to make it.

Next we picked through the thicket between Highland Lane and the Pump House in search of the orchids spindly stems. I fell out the thicket near the Pump House to get my bearings at one point, and was confronted with a half clad woman standing on the open window ledge. Below there was a man with a camera encouraging her transition from pose to pose. It was an unlikely spectacle, but then I thought about me with my plant pots and trowel, and suspected they were thinking the very same.

Fred's words were never far off as we cut a wide circumference around the base of an orchid with a spade. 'All orchids have mycorrhizal relationships, so transferring them might be disastrous'. Feeling my hands along the cobbles, I peeled back a mat of dense and fibrous roots, and tried to tease the tap root from a joint in the cobbles. The orchids spread on rhizomes so cutting this one from its lineage was perhaps misguided. 'You might be able to transfer orchids if you transfer the surrounding soil too, in situ. The mycorrhizal mycelia (Scrabble top score there!) might survive the journey and keep the orchid(s) alive. All worth experimenting with!' Fred had said. The orchid had a rather sorry looking root ball and tap root by the time we had finished with the delicate operation. We put it in a pot with as much soil as we could rake up, and staked the spindly stem.

A plentiful fern source was the hydraulic shafts by the water gates. I climbed down the ladders to get close to these species that were thriving in the damp and shadow. With one hand



Fig. 18 Transplant: Dockland ferns in transit to North Kelvin Meadow (Image: Olden, P)

still on the ladder I pulled at a Hart's tongue and it peeled off easily - a small flourish of leaves and a huge mat of roots. The granite steps leading up to the watergates were another rich spot. The roots of Rusty backs and Polypodys had travelled right inside the joints between steps. We were pulling slowly, but there were a lot of severed roots. 'It's such a compromised situation' Erin said, standing back for a moment. 'What are the chances they are going to survive this? They could be too trained to what they've grown in. But then they're going to be destroyed anyway'. 'It does all seem a bit hopeless' I added, holding my breath, as I tried to coax out another Rusty back.

*

The strappy leaves of the Hart's Tongue quivered in the wind as we ferried our cargo to North Kelvin Meadow through the streets of Glasgow, with one eye on the road, and one eye on our bike boxes. The Rusty-Backs, Male ferns and Strawberry plants beneath them were no less perturbed. They had arrived as seed on the wing of a bird and the sole of a heavy workman's boot, falling from cargo dispatched on the Graving Docks bays, and they are on the move again, to find opportunity on an another urban wild – or so we hoped.

The Meadow had been a red ash tennis pitch originally, so the soil was thin. Beneath the ivy clad community notice board however we found some better soil. The noticeboard was full of articles and notices with the latest on the community's fight against The Company, who were intent on buying this land from the council. This was an appropriate place in more ways than one, so we dug some holes, patted the ferns in, and covered them with dead leaves to keep the frost at bay. Another batch was planted around the children's woodland. The strawberries, meadowsweet and coltsfoot were dig into the meadow.

But this was not the end of our work with these plants. We had to tend to them through the Winter and the Spring, pruning any dead leaves to focus the plant's energies on its re-cooperating root system. New growth, that's what we were looking for. From earth, to air, to earth again, the transplant was about staging transitions in the best way that our tools and knowledge would allow, so that the chances of survival didn't diminish as we went. To introduce these new additions to North Kelvin Meadow, Erin and I wrote a blog post on their website, entitled 'Growing North Kelvin Meadow':

[Growing North Kelvin Meadow](#)

'Have you spotted the ferns that have recently arrived in the Meadow? They traveled all the way from Govan's Graving Docks – an old ship repair and fitting facility on the South side of

Glasgow. Work stopped there in 1988, and since then nature has slowly claimed the dockland as an urban wilderness. A private development company now owns the site, and they are seeking approval for plans to develop a housing and commercial complex there. To make headway with their regeneration plans, they have plans to raze the urban ecology that has flourished there.

In the meantime, a precious few ferns and other plants have been transported to the Meadow via bicycles pedaled across town by Ruth Olden and Erin Despard—two researchers in the geography department at the University of Glasgow who also live in the area. Shortly before Christmas, in the course of Ruth’s doctoral research at the docks, Ruth and Erin came up with a plan to transplant some ferns to the North Kelvin Meadow. This was conceived in part as a rescue mission, but also as a giving of gifts from one so-called ‘wasteland’ to another. The plants were shortly to be without a home, but at the same time, the Meadow could benefit from a contribution to its biodiversity (however small in size, and coloured by wishful thinking). Before the transfer, there were only a few ferns to be found amongst the trees (and none of the species we moved)—and what is a wood without ferns?

The challenge of finding appropriate locations for the ferns made the legacy of the meadow’s past life apparent: in most places, the layer of top soil over gravelly clay is quite thin yet. Left to its own devices, it seems it will be a while still before the meadow and children’s wood can welcome a greater variety of plant species. This led us to wonder what it would take for the community to cultivate a more hospitable soil for newcomers such as these. What kinds of tending might be imagined – similar to those of the vegetable plots and the orchard, but in the wood itself? We invite you to search out the ferns and encourage them, and perhaps think of the ways in which we might make their reproduction, and the arrival of other woodland plants more likely in the future’.²⁹

Epilogue

The siteworks of this first season saw me working with people, plants, water and relics to explore expressions of life and vibrancy on Govan Graving Docks. ‘Holloway’ and ‘Dockland Maintenance’ engaged with the site’s historical fragments to explore the past within the living present, and brought to light important histories of water and toxicity and their active legacies. The original visioning aims of this research played a central role in these early works. They imagined the future of the Graving Docks relics and critical histories, but it became clear that this work was somewhat premature, and that more observation was necessary to ensure that my engagements with the site were sensitive as well as creative. This line of enquiry changed

with the news about the Graving Docks' fated future. With the bioblitz and the transplant my early focus on imaginative engagement turned to the more urgent task of archivism and activism. This reorientation established a more critical form of material enquiry: careful observation and preservationist engagements allowed me to think more seriously about the agencies of the site (elemental, human, vegetal, animal, geological), the cross-weaves of generativity between them, the creative capacities of these agencies, and how an ecological imaginary might build on them.

5

Lost World of the Nearby

After a season in the field, I took my research to neighbouring Govan to learn about the Graving Docks' presence in the public imagination - indeed if it had a presence at all. Did it exist in memory and myth? Was it still formative of local identities and notions of place - of home and belonging? And could it be a site to imagine new kinds of engagement with the Clyde? Using the photographs that the bioblitz participants sent on after the event I printed a series of postcards and distributed them outside Govan Underground Station using a borrowed prop; a moving market stall. As locals circled this miniature exhibition space and chose their postcard, a window for discussion was opened.

I learnt about the personal connections to this dockland, the memories, the continued occupations and ways in which this industrial landscape is valued. I also shared the news about the clearance and The Company's plans for Govan Graving Docks' future. Finally I sought local opinion on the changes and encouraged discussion about alternative futures. The aims of the bioblitz - to build an archive to a post-industrial natural history, to raise awareness about the impending landscape change, and to explore markers of ecological value on Govan Graving Docks - were extended through this public consultation.

The images that were selected for the postcard series presented an intriguing picture of this post-industrial landscape; one which was surprising to the locals, many of whom had deemed it an unsavoury and threatening dumping ground. They focused on the materiality of the docks' rather than its iconic forms and features. They opened up the scope of conversations to encompass life, nature, wilderness, urban futures, public space, rights to the city, urban change and wastelands. Negative connotations with failure, rot and abandonment fell away for a brief moment as the site shifted and expanded in the public imagination. 'Gosh you wouldn't have thought there was such beauty there' one Govanite remarked as she circled the cart.

The postcard was the ideal format to begin these conversations. These pocket sized documents have historically communicated the marvels of a loved place, with the image typically corresponds to a memory that the sender is compelled to share. As the postcard ages it is endowed with sentimental longing for the past. The postcards that I produced would serve as vehicles for memory too: when the change came to Govan Graving Docks, they would become small mementoes of a lost world.

The first challenge was to whittle down the many images that had been contributed by the bioblitz participants to a series of just twenty. The ambition with this series was to

represent the diversity of the bioblitz's finds, and the breadth of expertise and enthusiasms that identified them. I had to define some parameters to help the selection process. The series was to read as a material representation of the docks, one that was constructed through material studies of this landscape rather than its symbolic or recognisable 'features'. The images chosen were those that the viewer could get lost in; ambiguously scaled material compositions devoid of reference points, landmarks or compositions of completeness – visual devices with which the postcard medium is typically identified. They were images that 'made strange' a familiar landscape through experiments in scale, where a moss carpet read a thick forest and lichen island as a crop circle in the mid-west, where perceptions of failure had no traction. They were detailed, often close-up material studies; studies where a curiosity about living and non-living entanglements, the opportunism of plants, colour, texture, detail and scale were indulged with the use of the camera. They were images that stood for all the fleeting moments of creativity, where qualities in the landscape offering themselves as inspiration had been drawn out with a keen eye and an image frame. They corresponded to the ecological themes that had directed the identification work during the bioblitz; the elements (water, living systems, sky), hybridity (hard and soft structures), collectives, scale (macro, micro, strange), habitat (human and nonhuman), affectivity (atmosphere, colour, texture) and 'wasteland' (as a landscape category). Within these themes, all of the ecological elements were represented; water, plants, fungi, moss, invertebrate, and birds. Finally they spoke of a collectivist's archive through their variability in style, resolution and compositional approach. They were created using a variety of technologies - hand held digital cameras, camera phones and complicated SLRs with multiple lens at their disposal. The garish colours and lower resolution of the camera phones produced incredible expressionist images where formal subject matter was lost to a study in colour and texture. Those advanced SLRs produced some incredible close ups, where detail was picked out from a blurred focus background. The diversity of styles conveyed the multiple authors that had made them.

A typical textual composition was printed on the reverse side, with centred vertical bar, lines for an address, and a message to the receiver. The message would take the form of concrete poetry, an evocative poem by Edwin Morgan 'Strawberry Fields Forever' which maps a wilderness with imagery and onomatopoeia. It was an apt evocation of this landscape, and dedication to it. The last addition to the reverse side of the postcard was a message to the reader, 'Awaiting your thoughts on the past, present and future of Govan's Graving Docks along with an email address, the bioblitz photographer's name and the title of the image. *Shooting from the Rubble. Berries of the Rowan Tree. A Dusting of Clover. A Forest in Miniature. Dancing Orchids. Climbing Skywards. Mossy Island. Dockland Pioneer. A Sylvan Web. Green Mantle. Mushroom on Mossbed. The Hobo Spider's Nest. Rusty Screw and the Snail. Birch Break Through.*

Sunny Hawkweed. Autumnal Rainbow. Holloway. Casting Out. Buddleia and Broom. Turning Leaves.

Conversations at the Postcard Cart

On a dark December morning outside my Clydebrae Street studio, I attached a banner to the moving market cart that I had borrowed and renovated over the last week in preparation for my first day outside Govan subway station. 'Lost World of the Nearby' it read. The weather was less than favourable as I wheeled the cart down the road and I had to keep one hand on the handmade postcard display to stop it from blowing away. Black clouds overhead were threatening a wash out. I passed a pack of workmen rolling out new tarmac who were on a break by their van cradling takeaway cups of tea.

'Whits this all about then' shouted the man sat in the driver's seat from his open window. I pulled over. 'I'm giving out these postcards of the wildlife on Govan Graving Docks. It's going to be cleared soon by the developer' I explained. 'Awww the burds. Not the burds!' His colleague swatted him across his high visibility vest. 'It's just like that story on the news isn't it?' he said 'about that lily that was stolen from Kew?' He got some sideways glances from his colleagues but he carried on. 'Thieves broke into the glasshouses and nabbed it - the smallest lily in the world, smaller than a pound coin'. He curled a tar smeared index finger under his thumb to demonstrate.

I wheeled on to the subway and parked up in the square outside. When I'd asked the stewards for permission the day before they'd said I could station myself anywhere so long as I was clear of the entrance bollards for health and safety. I soon regretted my distance from the station canopy however: it was starting to drizzle and the outfacing postcards were curling at the edges. 'Security cameras are in operation throughout this station' boomed the loudspeaker.

Still, the pitch was ideal for drawing attention to the cart. I was standing at a confluence of commuters heading to and from Govan bus station and the subway, and there was nothing much else in this square so I did stick out like a sore thumb. I had drawn a timetable out for the cart's appearance outside the subway and posted it on the Govan Graving Docks LIVE! blog.³⁰ According to the timetable I would be out at morning rush hour all the way through to evening rush hour. But I had failed to consider this was one of the shortest, coldest months of the year. 'S'cuse me are you no getting chilly there?' This man couldn't stop to chat though - he had a bus to catch.

In the early days when I'd first thought about consulting the public another researcher working in the area was frank about my chances. 'You'd better have a really good story first'



Fig. 19 Lost World: Former Graving Docks electrician Don speaks at the postcard cart (Image: Olden, R.)

she'd said; Govan was suffering from 'research fatigue'. A member of the Govan Reminiscences group told me the same. 'There comes a saturation point. People just parachute in, get all the information off us, then they leave and we hear nothing more about where it's gone, what it's done, and whether we got any credit for it. It's disheartening'. With my postcard approach, I had stories and findings to share.

'Free postcards of the dry docks!' I shouted. The passer-by walked on. 'Naw yer awright ta'. Eyes were averted. Someone mentioned that my message made me look like a fanatic Christian missionary. Others thought I was looking for money. Many were curious but hadn't heard of the Graving Docks. This was a group I was glad to speak to too. I talked about its past, present and possible future and gave them directions to see for themselves.

'Free postcards of the dry docks!' I shouted. A passer-by stopped and put down her shopping. 'Where aboots is it? Doon there?' She pointed east. 'Just down there' I too pointed east, 'It used to be a ship repair facility, I have an image here'. She studied this for a moment. 'Oh right... God's sake'. 'They're going to develop it'. 'Oh aye. The usual' she said. 'So I'm just trying to raise awareness in Govan about the changes you know'. 'Och that's lovely, well done you'. She picked up her bags and struggled on to the bus stop.

This chapter presents a selection of conversations that took place at the postcard cart, and they are grouped into five sections according to themes of *memory*, *agency*, *urban aspiration*, *nature* and *inheritance*. The themes of these sections reflect the very specific discussion points that local people tied the postcard images to, which said important things about Govan Graving Docks, its agencies and legacies, and the specific relations that members of the public shared with the site. The sections of this chapter comprise both conversation reportage and postcard images. The primacy of the postcard images within the text reflects their agentive quality in the conversations that took place. These small fragments from the field evoked personal memory and provoked new lines of thought. They shed light on how biographies had become entwined with this landscape, how people had shaped and been shaped by it, what kinds of relations that had given rise to, and how these relations continued to inform sentiments of care, curiosity and ownership today.

The conversations feature a broad range of voices, and a diversity of perspectives on this local landscape. In the first section, 'Remembering Stevie's Yard', men who used to work on Govan Graving Docks talk about a lifetime of labour on this industrial facility, and their sons and daughters, brothers and grandchildren share the same stories that have been passed down to them. In the second section, 'Occupying the Ruin', local residents describe how they have used the Graving Docks since its abandonment. The third section 'Imagining Urban Futures' features the voices of local residents who talk around the topic of 'urban regeneration' - what it should mean for the local area generally speaking, and how The Company's plans stand up

to scrutiny more specifically. 'The Graving Docks has been too long derelict', one resident said, 'it's dangerous and unkempt. Development will be good for the area, besides, Govan has to keep up with the times'. Some thought that the Graving Docks would be wasted on residential development but that, nonetheless, '*something* must be done with it'. There were alternative suggestions for how this landscape could become 'productive' again. 'A lido?' 'An amphitheatre?' 'Riverside bars?' 'A lion pit for the councillors?' This section also includes conversations with local residents who are concerned about The Company's proposals. 'Privatisation and gentrification have gated the people of Govan out of their own neighbourhood', a local shop keeper told me. In the fourth section, 'Our Local Landmark', champions of Govan's industrial heritage talk about the role that the docks plays in the cultural landscape of Govan, and appeal for its protection. The fifth section, 'A Word for Nature, features conversations with people who would like to see the ecological value of Govan Graving Docks recognised in debates about its future.

The conversations in this chapter are written up in the form of reported dialogue; a dialogic form that was devised as part of my enduring research commitment to capture expressions of life and vitality from Govan Graving Docks and its wider neighbourhood. The words spoken by others are not mediated with interpretation by the author, rather they remain intact, written in language that seeks to get as close as possible to the expressive dialect in which they were spoken. The dialect and 'grain of the voice' captured here contained important local knowledges and personal feeling that would otherwise be lost. Finding an appropriate form in which to capture voices faithfully and respectfully enabled me to reflect further on the Graving Docks' historical legacies as they continue to evolve in the present, to consider how these legacies have become a source of agency today (informing opinion, desire, and new attachments), and how they might be acknowledged and built on in the future.

There was a diversity of opinion at the postcard cart but everyone left with a memento of the Graving Docks that fitted easily into their pocket. Some would be sent on to relatives and friends. One was going to Berlin, another to Athens. A set of six would line the tank of a gecko living in a Govan tenement. 'It'll gee him something to look at' his owner told me.

Remembering Stevie's Yard

The Graving Docks' menial workers – the 'red leaders', 'panel beaters', 'tankies', 'lead shotters' – and its tradesmen – the blacksmiths, shipwrights, electricians, dockermasters – visited the postcard cart and told me stories about the filth and danger, the comradeship and skill, and the capers that were enjoyed in brief moments of respite. A picture of this industrial site became

even richer and grittier as their sons and daughters, brothers and grandchildren share the same stories that have been passed down to them. For some, the Graving Docks had been part of the family for three generations. The menial workers had the dirtiest and most toxic jobs in the facility. A number of the 'red leaders' explained that their health had suffered badly following a lifetime working with lead, chrome and bitumen paints, and the 'tankies' too had not had it easy cleaning out the ship's diesel, oil and sewage tanks from the inside. Whether it was due to their memories of the toxicity or the spartan industrial ground, these menial labourers all spoke of their wonder at how nature had taken over - that a contaminated place like this could recover and become so green - and many of them continued to visit. Then there were the tradesmen who lamented the lost language, the lost skill, getting lost where they live now even, amidst the chaos of urban change in Govan. Those that hadn't already given up fighting the change hoped to see the heritage of the Graving Docks respected.

Toxic bodies

'Would you like a free postcard?'

'Whit pal? Naw not really... naw... what's that?'

'They're all of the dry docks.'

'Ah whit! I worked on there.'

I asked about his trade.

'I was a painter, a red leader. It's a dying breed. Fucking dying right enough. I think I've only got another five year. Everyone's dying of cancer. Red Lead. Chrome. Bitumen. All of them. They're all full of lead. You were only meant to go in there at 18 but I was in at 16 and a half, and I left when I was about 21. Is that number two dock? See number two, see if you go right up to that bridge up there right, see if you go along to that wee bit of wall there you'll get the full history of the dock on it. I wanted that taken oot. You know what I mean? I'd rather have that kept.'

'Oh yes the plaque...'

'Aye. It's got the full history and everything on it. It's quite good that one' he picked out a postcard. 'Did I see you coming up from riverside wit this? Dy'know I thought it was a hot dog stand!'

'That might have been a good idea! But no... I'm just handing out these postcards hoping to hear what people think of the Graving Docks and its future. Do you know about the plans to develop it?'

'Aye I've heard'

'And what do you think?'



Fig. 20 Holloway: Postcard distributed outside Govan subway station (*Image:* Olden, R.)

'I think it should be left as a wildlife place. To be quite honest with you. I definitely dae. Because its... what they gonnae dae fill it in and build hooses on it? I say it's sad that this is the way its gaun... I'd rather It was kept the way it is. I say because it is a beautiful place now. The wildlife that's came - it's phenomenal. The wildlife is phenomenal. There's swans and peregrines nesting there and everything. You wouldn't believe it man.'

'So do you still go down there?'

'Aye I go down with my dug. All the time. So if you come down I'll give you a tour.'

'Well I'll see you down there then. Take one - you might as well'

'Ay gimme wan.'

'Which would you like?'

'Any wan pal. In fact, gonnae give me that wan.' He picked out the image of the Holloway. 'Was that you that done that? I was wondering who done that. Its good isn't it?'

My auld man and the cat

'Whidye mean yer giving them oot?'

'I'm giving them away - postcards from the dry docks. Do you know it all?'

'Aye I used to live right across the road from it, when I was a kid.'

I asked him if he knew anyone working there.

'My auld man did'

'Oh what did he do?'

'He was a fitter. Where I stayed my windae looked right intae it. The hull was so close tae the windae I could almost step aboard. My cat used to go out on the boats - I swear it - and I'd see her 9 months later... I've just moved back to Glasgow after 30 years, you know what I mean, and I looked in when I passed it just there and thought, man, I used tae see that from ma windae.'

I explained The Company's plans. 'So I've just been talking with people to hear what they'd hope for the future of the Docks.'

'I would hope that they'd dae something like... maybe make it like a nature reserve. Rather than hiv all these new hooses. Because everywhere you look... I don't know if you know, but that wasn't there, the miler was busy, Stevies was still open, the ferry went - you know. And then you come back here and it's like... I know where I am, but I don't.'

'You know when all these things change people lose their sense of...'

'...direction.'

'Yeah. It has an effect on people doesn't it?'



Fig. 21 Dancing Orchids: Postcard distributed outside Govan subway station (*Image:* Chappell, E.)

'Well it does. Ahh. I'd thought we might have got a nice wee park or something - made it nice fae people tae sit or whatever. But it's Glasgow we're living in innit... So we need a wee crested newt or something flung in there eh? I know what the score is.'

Doon the tanks

'You used to work on them?'

'Aye.'

'What did you do?'

'Doon the tanks. Cleaning the tanks oot. But I started in 83 and it shut doon in 86 or something. I was the last boat crew. But we never regretted it though because we used to socialise down there. The work and that was hard, but then efter when it was a' the way it was the noo, I've fond memories of having a wee drink doon there. We used to go for all the scrap and that.'

'So how big were these tanks that you were inside then?'

'The tanks, they were... - I'm no very good at the 'hing'me but - ...three sometimes four times the size of me. It was some detergent and that you just sprayed and then you were *doomed*; you had to get on your knees and get in all the wee nooks and crannies. All they bits, you know in the corner? You had to get down on your knees with your knee pads. And you're scrubbing the 'hing'me inside it. Then you had it shining, and then your boss would come doon, 'eh that's no clean enough, want to do that again'. But I think they were just doing that to rage you up.'

I talked about the clearance and The Company's plans.

'Aye its changed days... It was impressive then, because see up on Govan Road on the first basin, you had the boat berthed in the first basin, see the size e' it? When you'd go along the Govan Rd you'd look up and see the whole thing up close...'

He took a browse through the postcards.

'What's that one?'

'Green Mantle - spelt out with bits of glass.'

'I'll take that wan. Thanks pal.'

Da!

'Aw ma da used tae work there. He was a crane engineer and then he was a steel worker.'

'Was he there a long time?'



Fig. 22 Green Mantle: Postcard distributed outside Govan subway station (*Image: Lorimer, H.*)

'Well he was there since he was fourteen until the age of 40 I think... I've got a funny story right. His da' worked there and aw' right. He's walked in and he's went 'da!' and everyone's turnt roond. You never called your da da if you worked on the docks' wi him. You called them by your name. There'd be that many people's sons worked on the docks' weren't there. Back then you just walked out of school into the shipyards. That's what you done. That was the history of Glasgow back then. There were two queues, one you were an engineer and the other you were a welder.'

Lost

'So what was your trade?'

'Shipwright. Aye.'

'Ship ride? What..? What does that mean?'

'*Struth*. Shipwright. Ship. W. R. I. G. H. T. Put in brackets; carpenter.'

I asked if that meant they made the furniture inside.

'Naw naw! We didn't make the furniture! We fitted the inside of the ship... we made the bulkheads... I shouldn't be telling you this. Cant and stringer right. We had cant which was a piece of timber 'bout 3 inches by 2 inches. And there was a check out it, a three quarter check down. So these were all fixed to the deck of the ship, so the panels would stand inside them. You had the stringer at the top, that was just a groove and a fancy moulding b side, and they were fixed to the deck head, and then the panels were fitted in between.'

'Ahh I see so this all marked out the spaces inside?'

'Of the cabins yeah. That's trade secrets. They don't do it now. But it doesn't matter - It's all gone now.'

'Did you have any sort of common room or anything - to get out the cold?'

'Workers huts! Naw naw!'

'You couldn't get out the cold for your break then?'

'No it was a can.'

'A can?'

'A can. A billy can.'

'A billy can?'

'You never seen a billy can? No? Jesus! Well, the youngest member of the squad, the youngest apprentice, he was sent down to the fire and he put the billy cans on the fire. Most of the guys carried a tea caddy. Have not seen one of these? Oh for god's sake. Double ended thing. The wee caddy that they carried in their pocket. Tea on one side, and sugar on the other. If they took milk too bad, they carried it in a small bottle. The boy went down with the cans, boiled



Fig. 23 Birch Break Through: Postcard distributed outside Govan subway station (*Image: Sandison, C.*)

them up, put the tea in, and took them back to the ship. 'Right tea break!' and everyone downed tools. We'd just sit somewhere out on the deck.'

'So what do you think about the future of this place then? Have you any thoughts about what would be right for a place like this?'

'Naah... that's it, lost world.' He pointed to the sign above the cart. 'It's demoralised.'

'Demoralised?'

'Govan is. People, when they come back here again, they're all... where um I? The tenements are all away. That was one thing, with the tenements they knew where they were. People that have lived here all their lives are getting lost. Literally getting lost. Including me.'

The pawn shop

'How much are you wanting?'

'Oh no they're free. Please take one. I'm interested to hear what people think about the place.'

She had a look. 'Well I'm a carer and a wee elderly lady I go to, her sons and husband used to work on the docks. The two of them were welders. I'll have that one. She's told me some cracking stories.'

'Ah that's a nice one. That's the hobo spider's nest.'

'The husband didnae know, but the wife would go and pawn his good suit through the week. She'd put a brick in it to make it heavier so they could get mare money, and then bring it back home again on the Friday. That's what she'd dae - it's what everyone did - send their kids to the pawn. To get a thruppence and whatever, so that they could get their bread and their porridge. I took pictures of it as well when I was in the wee ladies house, it faces on to this... A wee man I used to see and all, he was saying to me they used to build up all the bits of wood against the high wall, so it was like a ramp. They'd go aer that wall have their pint and go back aer the wall again, and their boss didn't catch them. Especially in the Winter, they'd get a whiskey or a brandy to heat them up again.'

'Ah yeah the Belle it must have been.'

'Aye I think so... I've been told there was thousands and thousands of men used tae come out the docks. You couldn't see along the road for all the wee hats, it was just their wee hats you'd see, coming oot at the one time. It was like a swarm of ants but it was all wee men! And you used to hear the siren. I used to hear that echo all the way to Ibrox where I was living. That's 5 o'clock, that's all the men coming oot, every day. I've been told it was so full a' life, and all the wee pubs.'



Fig. 24 Dockland Pioneer: Postcard distributed outside Govan subway station (*Image:* Foreman-Smith, H.)

'Can I have two?' She had a look on the other side of the cart. 'And aw' the wee birds and creatures created aw'e this...'

I explained The Company's plans. 'Have you any thoughts about its future?'

'Well it could have been a nice park. I went doon on the wee Braehead ferry last week and it was taking us in and out of all the wee nooks and crannies, the docks you know, and the captain was telling us what was on the docks - such and such was based there, that was based there. It was very interesting. It would be nice to go doon to the docks on a sunny day... they used to do that one lady was telling me.'

Bending and forging

'I didn't shoe horses mind...that's the other sort of blacksmith'

'You were making parts then?'

'Yes. Parts for anything and everything. Tools... Aw I worked on all kinds a ships for more than 20 years. I could make anything, in steel mind. Bending, forging, hammering it doon intae different shapes.'

'What do you think about all those skills disappearing now in Govan?'

'Yes, yes, they're disappearing here in Govan aye. I made horse shoes and aw' but I never put them on, I says that horse is no gonnae lean on me!'

'So what was it like to work there?'

'Well, sometimes the sweat poured oot ye, and in the Winter ye'd freeze. But I had a fire and an anvil and a big steam hammer. The only I thing I never did was put the shoes on the horses.'

I asked him what it was like with all the other types of tradesmen and labourers. 'Did you all get on?'

'We all helped each other. You got the odd stickler but apart from that. It was dangerous though mind. This bus is taking a long time... One of the cranes fell doon in the docks once. Killed the driver - he was up in the cabin, you know, and he lifted something too heavy. Right intae the river he went. Dead. It killed him. The crane man, he never had a chance. The cables holding the ships up could snap you in half too. I heard that had happened before my time.'

'And did you miss it when you gave it up?'

'...no that's not ma bus. Missed the money.'

'But what about the skill... did you miss the craft?'

'Och aye... you miss it. I used to be able to tell the other guys the weight of a piece of steel just by looking at it. The foreman hadn't a clue. I said if you need anything calculated then come fer me. The managers were delighted that I could put the weight down on the bit of card.'



Fig. 25 Shooting from the Rubble: Postcard distributed outside Govan subway station (*Image: Kromholz, S.*)

They used to give you a card of what to do, a sketch. So I used to put the weight in pounds. How did you do that they says. But I said that's my job, no yours.'

'It's an incredible place and it's a shame that its going to be...'

'Built over. A thing of the past. The boys leaving school will just hivtae learn something else... Housebuilding.'

Sunday trips

'Do you know the graving docks? You know the old ship repair and fitting facility?'

'Aye... down the road there? I used to go down there and look under the ships'

'Oh did you?'

'When I was a boy. There used to be a pub there called the Belle, right on the corner facing it, you could get a pie dinner.'

'A pie dinner?'

'A pie, chips and mashed totties. Then you'd go doon under all the ships and check it all out. We did that every Sunday'

I asked him if he still visits.

'I go doon fishing sometimes in the dry dock, its full now you know. Breem... I've never caught any by the way, but I've been told they're there.'

Hell on earth

'Hell on earth. Hell_on_earth.'

'What did you do?'

'Contract electrician. I was there for about three years.'

'So... was it the conditions?'

'I spoke moderately posh by their standards. The workers you know, they thought that I was a spy. They said, you're one of Bates' men in here to spy on us - Bates was the guy that owed the yard - he drove in every day in a Mercedes and still said he didn't have the money to pay everyone. Naw! I'm an electrician! Aye well that's just what you say. You're a spy, because guys that work in here, don't speak posh like you. But I don't speak posh I was saying to them. I went 'naw I'm an electrician!' We were on a different rate from them, but if they had known that they would've lynched us.'

'Oh right...'

'I remember one of the red leaders nearly killed me once. I remember this story, now this is a good one. There was a guy painting the deck, and all the painters - I was telling Pauline



Fig. 26 Climbing Skywards: Postcard distributed outside Govan subway station (*Image: Lochhead, E.*)

wasn't I Pauline' he turned to his wife 'that all the painters were all mad. They were all mad I mean literally mad. Day in and day out to be painting red lead on to something I suppose it was no surprise. So I was walking across a deck, and I felt something brush at my back but I kept going. The next minute a guy shouts and he says - a painter - 'you knocked my jacket onto the paint there'. But I denied it. And he said 'I never seen ye doing it but there is no one else around'. I said it could have been the wind, I wasn't admitting to anything. He said, 'see if I thought you'd did that I'd throw you straight into the Clyde right now - right now I mean it. I could feel my knees going away from me. And he meant it. He would have done it!'

'Gosh. Well I suppose there must have been some hard men in there.'

'The rats were murder. Since we were contractors and we were just given a wee horrible wooden shed for our breaks. But the thing was, it was full of rats. I told you the other day didn't I Pauline that the rats stole my piece?' He turned to his wife who was nodding. 'They were running across the table and aw the rest ey it. Not only that but there were halos of flies. Swarms of flies and rats. Absolute hell. The men used to joke when they were at the van getting their morning butties - there was a food van on Highland Lane - they used to say 'can I have a roll and sausage and a sick note'. The place was filthy.'

'I have heard about those rats yes...'

'Oh I've got another one. This happened in the 70s right. What happened was, ships came in from abroad right, with their cargo unloaded to be refitted right. A ship had come in. It had been to the West Indies or Africa I can't remember. It was a German ship the Brunich, I remember now. Anyways what happens most of the time is the boats just come in with a skeletal fleet, just to bring the ship in, but this time it was the whole crew and they all fled up to the road. And we were wondering, what on earth is wrong with that ship. Whats happened in there, to make them run like that and nearly knock us flat on we'r back. So we had to pick out some of the younger lads to go down and check the hold to see that everything was ok. So they went down into the pitch black with their torches. There was a chimpanzee stowing away on it, in the total darkness, and it ran right up to them and they thought it was a monster! The story was so good it got on ITV news that day. This story was told to me by the son who was a colleague of mine, an electrician, his father was one of the big gaffers in the yard and it was him that the chimpanzee jumped out on. He was saying that you know the ladders on ships, they don't slope, they're just totally vertical, well he was saying that the person that was first climbing up out the hold in fright was overtaken by the person at the back climbing right over the top of him. But they didnae know when they got up what it was. They were saying whit was it whit was it? So they had tae get somebody from Calderpark zoo tae come down and sedate it and take it to the zoo.'

He started browsing through the postcards and picked out the snail.



Fig. 27 Rusty Screw and the Snail: Postcard distributed outside Govan subway station (Image: Meyerricks, S.)

'Oh I've just remembered... This is a really good one. It was a holiday weekend right. The freezer hold, about the size of a one bedroom house, huge I mean huge, this was for all the crew all the frozen meat that they were going to eat. This was a ship that was going to be skimming oil off the north sea after the oil spills. This is what the ship was getting fitted for. So this was on a holiday weekend and on the Friday night somebody had shut a guy in that hold. Somebody done it spitefully, and locked a guy in this hold. And on the Tuesday, when they went in, they opened the door and the man ran out like a wild animal. Wanting to kill everybody. He'd been in for 3 days and he was in a state. So we had the police come in and he was saying somebody locked me in, I went in and the door banged shut behind me. He was like Ben Gunn on treasure island. It was all very serious stuff and nobody was laughing.'

Occupying the Ruin

The facility had not long shut its gates for the last time in the late 80s when it was occupied again for an eclectic mixture of creative and recreational exploits. I met many locals who had occupied the ruin then, those that still did, and they told me about the opportunities it had given them. These were stories that would not make their way into the history books. The lead and copper scrappers were the first to move in. Doocots were built on a grand scale. Those that had spent their youth on the docks' mucking around as children and teenagers had a strong attachment to this place. It was ideal for stunt cyclists and taggers, den building, summer romances, fair weather swimmers and drinkers. In the warmer months it was a popular place to camp out around a fire. One of the biggest groups to endorse the Graving Docks recent history was the photographers. Some were inspired to take up the craft through their explorations of the docks' as a youth and plenty visited because of its historical and material complexity. The rust, rot and reclamation still attracted photographers. Dens were still made, fires lit, foragers and scavengers still active. It was also a place to wander. The dog walkers espoused it as a place of escape. It was the sense of possibility unique to an urban ruin that still drew them all in.

Doocots

'My hut was right near the watter. Great security because it would have been a hell of a fall in the watter...'

He had a browse through the postcards.



Fig. 28 Berries of the Rowan Tree: Postcard distributed outside Govan subway station (*Image:* Schliehe, A.)

'I'll take that, for ma da. He knows that area. We were all drinking doon there... Aye so ma hut, 16 x 14 feet. Yer cage - naw yer hoose - would come oot on the top. It wisnae a cage it was a hoose. They'd all be sitting up there. There were hundreds of them back then.'

'Pigeons?'

'Dooocots. Everyone wis doon there on a Saturday, hoaching so it wis.'

'Did you fly them over the river?'

'No just above the hoose. You'd try to take the other pigeons. We'd go down to lie along the steps and sunbathe those days too.'

The yellow palace

'We used tae swim, frae that side tae that side.'

He pointed out their bathing spot on my map. 'You never did!'

'Aye we did! All the Govan crew.'

'You swam from one side to the other?'

'Aye. Aye'

'Wow'

'There was the big yella building and aw' - we used to call that the yellow palace. We always used to sit down there. I did the tagging and that and we'd go down and practice. That was a long time ago.'

I asked him whether people in Govan felt strongly about its future.

'Of course they dae. Its our legacy'

Summer romance

'Me and my girlfriend used to go down there and sit and watch the boats and have a wee drink and that. It was... it was quite romantic. We used to sit on a big rock and I'd hiv tae give her a leg up. We used to site right at the watter and we'd have a wee bottle of voddie. It would do us all day. We were right by the river, on a big rock, the two of us sitting the gether...'

I asked him if he still visited.

'Aye. That dock is an amazing place. Well you must know yourself. There must be a thousand places you've still not seen.'

He took a moment to browse through the postcards.

'There's shades there that people used to go and camp for the night and that. We used to camp for the night, build a wee fire, sit roon the fire. Great days it was. I'd rather go doon to the docks' than stay at home with my maw at one time.'



Fig. 29 Buddleia and Broom: Postcard distributed outside Govan subway station (*Image: Palmar, D.*)

Assembly

'So it had just closed down when you were hanging about then?'

'It would have been on the verge of closing down. This whole place was getting steam rolled. All the old tenements were getting ripped asunder. This is brilliant.' He picked out a postcard.

I talked about The Company's plans and the clearance.

'Ahh I didnae know that.'

'What are your thoughts?'

'I suppose I have mixed feelings about that. Because see one of my strongest memories from down there, see when there used to be strikes in the main yard – Fairfields and all that - and a lot of guys got paid off, they'd spent a lot of time down at the dry dock, especially guys from the Wine alley, and there was nae drink, nae booze involved at that time, this was guys that were needing the work obviously, they used to have wee sort of studio union meetings doon there, it was great honestly, this was a brilliant... there was a lot of socialists came from this area by the way, I'd imagine it was because of our strong Irish influx back in the day.'

'So it almost became a public common?'

'It was a hub. Definitely.'

'So what would they be doing?' I asked.

'It was mainly discussions about working conditions in the yard, there was a lot of unemployment back then, especially in the 70s, and of course you had a three day back then man so you were going back to house without any electricity after a certain amount of time. I'm painting a picture of extreme poverty but that's my personal opinion because that's what it was like for us. There was ten blacksmiths in the family. Up until probably about 7/8 year ago, you had certain auld guys of that era still talking socialism in the Govan Arms bar, but it's gone noo, Its completely gone.'

Giant nuts and bolts

'So how are you familiar with the Docks then?'

'I've lived here for years, and I used to play down there when I was a kid, many years ago. I caught the tail end of it, I was about 12 maybe?'

'So what were you up to down there? I was just hanging out with my mate. Latterly we got in to photography, we started experimenting with a camera there. His big brother had a dark room in his house and we set ourselves up in there. Oh I fell in one of them myself. Too busy playing with my flash...' He picked out the postcard with the overgrown hydraulic shaft.



Fig. 30 A Sylvan Web: Postcard distributed outside Govan subway station (*Image:* Despard, E.)

'It's wonderful down there. People willnae go near it because they're worried about the drinkers. So you always get it when it's quiet. There are some great views by the river up to the science centre and that.'

I asked him what it looked like in the early days.

'This was way before the garden festival site. There wasn't a lot of fauna down there at that point, dyknow what I mean, it looked like Chernobyl back then to be honest. It was in transition from being in use to what there is now.'

'So what kind of things did you photograph?'

'Lots of big giant nuts and bolts. Girders and clothes - clothes that had all been left behind. Hundreds of clothes. I remember '77, or maybe '76, a dead body. We never found him, we got there just as the polis got there, but that was a bit of excitement for the times.'

When I asked him about the future of the Docks he said that there are many wonderful examples across Europe where post-industrial sites have been developed sensitively. But Glasgow has been slow on the uptake, and the city's heritage was being dismantled by the day.

'Its extreme short sightedness. We need more of these spaces. They're important habitats, for the wildlife and stuff too, dyknow what I mean? I think to turn it intae anything retail and anything modern in terms of residential is nothing but selfish interest. Because developers, they don't give a damn about what people round here need... So I reckon they should landscape it in some form I think they should make use of the land for the people that live here. I don't know how they'd get that by when people are offering hard cash, but that's the sad reality... Govan was built by shipbuilding, and shipbuilding built Govan. And to lose that... It's the same in Clydebank. This place should maintained in some way - it's important.'

Dog Walking

'Ma mah wis a panel beater. Back in the day.'

'Oh right...'

'I still walk ma dug there.' He turned to his friend. 'Photography's lovely and aw in it Brian mate? I know exactly where that is. That. That and that. That's on top of the gate isn't it?'

'Help yourself to one.'

'That's what ah like. See that dry dock? You can go doon there and find some amazin' hings. It's got all sorts of fish and everything coming up in it. Naaaaw it's brilliant... Mullet. Mullet and every'hing. It's a sin - pulling it all up.'



Fig. 31 Miniature Forest: Postcard distributed outside Govan subway station (*Image:* Dixon, D.)

Imagining Urban Futures

Some visitors to the postcard cart were concerned about the Graving Docks perceived abandonment and neglect, and were relieved to hear the news about the coming changes. This group were disappointed about the 'lack of care' that had been shown to this site, and to Govan's post-industrial landscape more broadly. This group were looking for a design solution that would 'keep the place tidy', ensure that it was 'safe', and 'free from anti-social behaviour'. The supporters of The Company's future saw little value in the Graving Docks as a wild space, and talked of its history as a thing of the past. A strong sentiment expressed by this group was that 'Govan has to move with the times'. There was a perception that development would be good for the area: Govan's 'competitiveness' was at stake. This group speculated that development would put Govan on a par with other waterfront developments in the city.

But news of The Company's plans also sparked fierce indignation at the postcard cart. Many were concerned that 'the people with money and power' proposing this development could do so with so little obligation to the people that already lived in Govan. When I explained the Graving Docks' fate it was often met with a wearied, 'no surprise there then'. This plan was part of an emerging pattern as far as they were concerned; a pattern of privatisation and gentrification in the area. They argued that they should have some right of access to this land; that the Graving Docks or at least some part of it should be put to community use. A site of such public importance - of such importance to Govan - should not be developed in the interests of the few. Their right to the city, to the river, to their heritage was at stake with this development.

Lit and tidy

'Oh the Docks. Well there's been lots of plans up in the air for it but nothing has ever materialised.'

I explained The Company's latest proposal.

'Well I don't think people would be too worried as long as it was... I mean people that hang about will hang about, and if it's not there then it will be somewhere else, you know, but it would be good if they have something worthwhile, it wouldn't really matter if it was a retail place or whatever. I think everybody would just welcome development that kept the place lit up and used and you know... It's hard to say really. But yeah, it would be good to see something done with it.'



Fig. 32 The Hobo Spider's Nest: Postcard distributed outside Govan subway station (*Image: Bairner, S.*)

Common good

'Oh they're free? I love the idea; lost world of the nearby...'

I asked her if she knew the Docks.

'Oh the Graving Docks? Aye - especially before it was all built up down there. There used to be a guy that lived in there at that time - when the graving docks was abandoned and all the surrounding stuff wasn't built yet. I used tae walk up there a lot.'

I explained The Company's plans, and the clearance.

'Everything that they can grab in Govan... the developers, I mean... As soon as anything that has been given to the people of Govan, or that has been where they've worked, as soon as it has shut down, if it's not left to rot for years, then somebody gets it and it's not for the people of Govan anymore.'

We talked about possible futures and she emphasised the need for public space.

'There's nowhere for folk to meet. There's nowhere that people can go where they're entitled to be, where they can talk, and they don't have to pay. Everything in Govan is becoming gated, and the people of Govan are being gated out... Even the wee ferry they ran for time, they charged £3.50, to go 100 yards. So I used to see parents putting their kids on there to go across to the transport museum, have a good time, have an ice cream and come back and the parents would be waiting for them on this side because they couldn't afford it. And you cannae walk weans a couple of miles up and a couple of miles back on the other side. So I don't know what to say. But these are beautiful.'

We talked about the bioblitz finds and she picked out a postcard.

'I used to do this sort of thing when I lived in Dalmarnock - where I used to live, where the Olympic village has been built now. I used to live at the high flats there, and there was a meander in the river there and there was all kinds of fly tipping and stuff, and you'd find things like office chairs with moss growing on them - all sorts of things you know. I used to walk up there at the Graving Docks a lot and look at stuff too - and the way that plants always find a way tae grow, even when a place rots... There is a new life in it isn't there?'

Improving standards

'Have you any thoughts on its future yourself?'

'It's a difficult question, you know, because there's so much kind of commercial activity that is going on, that these areas are becoming valuable real estate to certain people you know, whether there is a history there or not.'

'The river has certainly become a lucrative setting...'



Fig. 33 Turning Leaves: Postcard distributed outside Govan subway station (*Image: Henry, C.*)

'So I think it's just part of the process really of the way things are at the moment you know, where obviously commerce is the main driver for anything. I mean I understand that there's legislation etc in place to protect certain areas or buildings etc but... but I know that the world is driven by market forces. It is a shame. I'm not sure much can be done about it mind you.'

'So what do you think would be right for the Docks then?'

'Well... anything that brings up the standards of Glasgow, whether it be housing, whether it be commerce, you know, media, arts... concert halls like you have already. Maybe we should have more of that sort of thing on this side of the river. Bring some of the big attractions to the south side of the river.'

Long term thinking...

'What are they doing with it now then?'

'Well it's set to be cleared in the next few weeks - to make way for a new housing and commercial complex.'

'Tuh. Long term thinking isn't it?'

'I'm just hoping to speak to people in Govan to hear what they think is right for a place like this, for its future I mean.'

'I think there is too much of this going on now. I was by the river further down a while ago and there was a mass of - I don't think it was butterfly bush but something like that - and it was *full* of butterflies. I do a lot of photography and that's the sort of stuff I love. I think they need something which is more - I know it's all about finances - but they need something which is going to be of more benefit to the local community. I mean I can't imagine these apartments are going to be affordable. And the land becomes semi privatised. There's that bit along by the new BBC Scotland, and they built all these fences and you can't even get into it. Should they have the right to do that? Whether you're religious or not, you know... the world belongs to everyone. I've always had strong opinions since the Garden Festival, because they came along - and it was a commercial thing - and filled in the docks there. And of course as soon as it was finished away they went, and you got these boxes flung up in its place. And this was the last... hopes wasn't it? So what are you doing with these, sending them to people?'

'No I'm just giving them out and hoping to speak to people, because I want to produce a...'

'Graving Docks. I haven't heard that word for *ages*. I was born by the Graving Docks in Liverpool... You know you're probably looking at something in the region of 400 people living there if this goes ahead, and they don't realise that sometimes these places are beneficial for



Fig. 34 Mossy Island: Postcard distributed outside Govan subway station (*Image:* Brackston, H.)

the wider community. Especially for the kids growing up - something for them and their future. Ok you might not make a lot of money on it in shares but it's the joy for them as they grow up.'

Govan has to adapt

'Are you talking about a wild landscape type thing? Is that what you're after? In the centre of the city? Well the countryside's the place for that if you ask me. It just looks like something that has been abandoned and is'nae cared for. You know, things move on. If it's no a dockyard it's gotta be something else. And unfortunately the people with the money want high end housing. You've got great facilities in Glasgow anyway haven't you - the SECC, the rotunda, the armadillo, all the theatres... Maybe more of that. Something for Govan.'

'Well I suppose they're great if you have the money.'

'So if you don't have money you're just going to sit in the wilderness!?! Glasgow has more parks per head of population. And you want to be here at 4 and 5 in the morning - there's foxes running all over the place. And this is just more ground for foxes.'

I asked him what he thought about the heritage of the site.

'Well change is happening everywhere, it's not just Govan. It's had its fair share. Things move on. It's like global warming. They're telling you about car exhausts and what have you. It happens, we've had an ice age before right, we're better equipped for it this time. It's how things are. And you adapt to live with them, and folk in Govan must adapt.'

Our Local Landmark

Many believed that the memory of the Graving Docks' history was at stake with The Company's proposal. Whether they had a relative that had worked there, or whether they were born in Govan or Glasgow more widely, individuals that felt connected to the Graving Docks felt as though they were tied up in its story somehow - that this place had had a bearing on their own lives and the place they called home. They had inherited this maritime history in the form of a landscape, memories, and thus it is one that they felt protective of. The urban photographers in particular were strong advocates for the protection of the Graving Docks' history. No group had a better sense of the forgetful city, the pressures of urban progress, and the erasures that are made in its name. Their photography had become something of a salvage operation in response. At one time the Graving Docks employed most people in the east end of Govan. It had shaped the lives of the people that had worked there, the development of the burgh, the wider



Fig. 35 Mushroom on Mossbed: Postcard distributed outside Govan subway station (Image: Hellman, S.)

city even. Its histories spoke of 'where we are', 'who we are'. This sentiment informed a sense of public ownership. 'If we don't own our history then what do we own?' one man said. Questions of heritage inevitably turned to questions of responsibility. Many hoped that the stories that had been passed on to them, their own stories too, could be passed on to the next generation. 'Salvaging something for posterity' was a prominent concern.

Who are you?

'Well I came from Poland 7 years ago when I saw Govan for first time. Govan... it's a lot of changes. A lot of buildings gone. A lot of places gone... That is interesting you know, because I shoot with camera and I have two three years and came back and... It's gone? Exactly. Something different. What is happening?'

'Well the developer that owns the site has plans to build a high end housing and commercial complex.'

'Oh right. So last time to photograph.'

'What are your thoughts on its future then?'

'If you ask me I like to see same thing people could see 50 years ago. Because it's amazing. Amazing. In my opinion the very important places for any city - whether it's my city or Glasgow doesn't matter - it should look after that. The story... you know to show my children. Might be a grandfather. I can go with them, show the story, explain there was your grand grand grand... father. You know, my opinion, it's very important for young people, and it's same for adult. To know, who_are_you, where you came from... you know what I mean? Living museum is the docks. For me, I love the place. I walk there thousands of times - I love, I love, it's quiet... This is good place for people born in Glasgow, and people who came from another country. Because it can show who_are_you, as Scottish. Who are you? Because always it very important. Question: who_are_you. Why you are here?'

Inheritance

'There's good wee cycle tracks in there. Well no the best tracks but just for messing about wi'. He pointed them out on my map.

'Ahh yeah those hillocks near the pump station?'

'Yes. Fun and games. We did a lot of cycling down there - well between there and Pollock Park - but it is good.'

'Have you any opinions about the future of the Docks? It's going to be redeveloped - perhaps you are already aware - so I'm just keen to hear what people in Govan think.'



Fig. 36 Sunny Hawkweed: Postcard distributed outside Govan subway station (*Image: Macleod, J.*)

'Well in my opinion, the old building, see that in the middle', he pointed out on the map again, 'they should try and do that up, keep the outer shell and obviously try and modernise it.'

'Yes the Pump House. So you think its history is important, to recognise that then?'

'Well... I'm only 32... and yeah history is important, cos if it wasn't for our ancestors we wouldn't have what we have today. That's the way I look at it. Yeah I'm 32, but there's things I don't know from the 80s, even though I was born in 81, so between 81 and say 1990 it's like a balancing act for me, but from anything over that then I can basically pass on what I know. The ancestral history is basically going out the window... It's a shame that man never bloody learns. He always wants to bulldoze what's not his to bulldoze then when it's all gone and when everything is up in arms, they're 'aww right we shouldn't have done that'.

They cannae touch that

'See those flats over there? That was all water at one time. That was all filled in over a period of 10 years and they reduced it by 72% to bring it into the future development. And you go along there behind the police station, that was a very famous place and there's not even a sign - that's exactly what I'm telling you about here - there's not even a sign or anything to tell you what was there. And I know *exactly* what was there. There was a famous place called Buchanans bakery there. Horse and cart on the cobblestones, and there's not even a picture of it. People don't know, but the older school like myself, we know what was there. I can tell you the plaza was there, the Elder was there, the Lyceum was there - the full history. You don't know what's hidden. That's why you *cannae* bury the past. You cannot bury the past. You shouldn't be *allowed* to.'

'What would you like to see happen to the dock?'

'Well they shouldnae close the dock. The dock should be protected. They should be kept for prosperity. You know... You shouldn't destroy these things because it has a side effect. It has a side effect it does. You come up in 50 years' time and go tae a child at a school, and say tae him, 'what was here?' Nobody knows. It's unmarked. It's like an unmarked grave. That's a great part of our history. What do you call those things the captains hooked the boats on...'

'Oh the mooring posts?'

'Aye, they cannae touch them. They cannae go and steal them, they cannae dig them up, they're no allowed. So they should do the same with the docks. Oh the destruction in Govan has been terrible...'

'I was hearing from one man just there about the cranes that came down in Fairfields. It seems there...'



Fig. 37 Casting Out: Postcard distributed outside Govan subway station (*Image: Olden, R.*)

'I could'nae believe it. I was sitting at the back of my sister in law's and the crane was opposite us, and I knew the crane - I knew it was number 4 because I drove it - and I seen the men and I was thinking how are they getting away with this? That should've gotten dismantled, taken somewhere, and put up as a monument. And you know, its no a case of just saying 'och its only a dry dock', its no a case of just being a dry dock. That dock was built through hard graft of people, the people of Govan. People were worn out, knackered in there. You know that don't you? I saw people coming out of there doing their red leading with their shoulder cut to the bone because in those days they didn't have the material, the machinery. They carried planks on their raw shoulders and their shoulders were bleeding. And they'd walk into the Bells pub afterwards with the blood pouring oot them and drink a pint. They were hard men. The history in that place you wouldnae believe it...'

A Word for Nature

Those that could see the Graving Docks' potential as a place for nature within the city were saddened by news of the clearance. As a wild space, it was described in terms of its community value - the uses it had and could have - and it was also valued for its own sake. That nature had taken hold of such an industrial site was extraordinary to many. There were hopes that life on the Graving Docks could continue to diversify; that the recovery of Govan's industrial spaces and the river persist. This group expressed the view that a wild space like this was all the more important *because* it was right in the centre of the city. Glasgow City Council might argue that the city is well endowed with 'green spaces', but those nature enthusiasts at the postcard cart argued that there needed to be more variety within that term.

Recovery

'All ye saw roond here wis pigeons and seagulls. The wildlife noo is *phenomenal*, It's great. Swans on the Clyde noo, ducks. It's always nice tae see this. Can I take wan?'

'Yes of course please do. And these spaces really do help to promote that don't they.'

'Even the red kites, ye can see them flyin roond the yards at Clydebank, ye can see them up there, which is always a good thing. The younger wans will say och we see that every day. But in the small space of what 50 years... aww a big difference. If ye ever fell in the Clyde they jist sent ye haim back then. I'll let ye work than one oor fer yoursell!'



Fig. 38 A Dusting of Clover: Postcard distributed outside Govan subway station (*Image: Sandison, C.*)

A place to muck about

'Well I think that... because there's some parks, but Govan itself doesn't have like a nature reserve if you know what I mean. It hasn't got that *kind* of green open space. Because I grew up in the country so I kind of miss things like that. I think my daughter - my daughters eight this year - I think she would benefit a lot more. A lot of people use it already too.'

'Absolutely it's a green oasis for many. And there is added factor of it being by the river. So it's not just any wild space, but a riverside one too.'

'I mean you could use it for all sorts of things. Kids could go down there to play, study nature, they could make a nature walk. Because up there there's loads of butterflies in the summer and things. Rather than sitting in the house they can go down and catch tadpoles and things like that. A place to go and investigate... to muck about.'

'It is interesting when you think about how people use different types of green spaces differently... Unfortunately the council lump them all together in their minds so presume we have plenty as it is.'

'Yeah because up at the Tramway, you've got the Hidden Gardens at the back and that's really nice because it is literally in the middle of the city, and it's nice to just have that kind of bit that you can sit and pretend that you're not in the city for 5 minutes. Maybe I'm being old fashioned but I grew up in the country and I do think kids need that. Just a place to go and fly a kite, and run about. Not specifically for swings and those things, but just to go and be... kids.'

Nature on your doorstep

'Aye aye, we used tae hang around there when we were younger.'

'Did ye?' his mum gave him a sideways glance.

'So have you any thoughts on its future, since you know it well?' I asked.

'Ayeeee... I'd like it to be made into shopping stuff. A mall or something like that.'

His mum browsed through the postcards. 'Can I take one? That's beautiful that. You don't realise that's one your doorstep. That's what it is though in't it? It doesnae look like ... It's like something you'd see, and I'm no bein funny, but somewhere around loch Lomond or something like that. I like that area.'

The son turned to me. 'I'm no bein hing'me but are you a botanist?'

'No, unfortunately not. It's all new to me too.'

'What would you like then?' he asked his mum.

'Yeah, maybe a wildlife park. Aye. To keep the history and that. Aye because I feel that people in the city they don't have the... if they want to go further afield, to travel to the



Fig. 39 Autumnal Rainbow: Postcard distributed outside Govan subway station (*Image:* Foreman-Smith, H.)

countryside, they've got to go out with the city, why can't it be developed in that area... That looks like... I'm trying to think, I was somewhere and I'd eaten a salad, and there was a flower just like that on ma plate, cannae remember the name of it, and it tasted beautiful. You wouldn't imagine there was something like that down on the Clydeside.'

Beauty

'Yeah well I see the docks' from the bus. But ye wouldnae wanting tae get aff the bus ye know. Looks very dangerous.'

I asked if they knew anyone that used to work there.

'Well our brother in law was a ships plumber.'

'Oh right.'

'But you couldn't get him to fix your bathroom fer love nor money!'

The two old ladies put down their shopping bags to look at the postcards.

'Look at this one Phillis...'

'Oh aye.'

'Aye... there is some beauty in it now I can see. I would never hiv thought...'

Fighting the change

'Do I know about the changes? Of course I know about the changes. I'm a docker you see, I know all about these things.'

'Oh you were?'

'Yes I was.'

'Doesn't look like much now because its Winter but see in the Spring, you'll see it in the Spring, little things jumping about, frogs. Do *you* know about that? Nature takes care of its own doesn't it? There's a lot of great stuff in there. A lot of great things that we don't know about because we don't understand nature. But as you say there's a lot of vegetation in there. Me being vegan, I know what the vegetation is. I'm vegan a lifetime. I have been all my life.'

'So what are your thoughts on this latest proposal?'

'Well. They should not under any circumstances be allowed to build on there. They've done part of it cos of these flats, right but there was major protest about that, because they filled in all the docks, all the water, the beautiful water. Have you been in touch with number 5?'

'Number 5?'

'Number 5 Brighton place. A house of activists, they protect trees and that sort of thing. Come by the van full.'

'Oh right...'

'I was with them at the Pollock Park protest down the road. Camping out you know. That was the beginning of Galgael. Do you know that? And their leader – he's dead now, Colin McLeod – he stuck all my poetry to the trees. I'm a writer see.'

'Really? What was the poetry about then?'

'It was about this'. He pointed to the postcards.

'So you're into flora and fauna then? Well go up and see this place I was telling you about. Up this road, up past Ibrox stadium, look to the left and there's a bridge goes over like that, and look over the bridge and you'll never see flora and fauna like this in all your life. That's gonnae be destroyed. And there's a beautiful pond in there. And little things flying about. I don't know what they are, little dragon things, with wings and all that right, you see them in the Spring, see when the sun comes through it, gorgeous. They've chopped all the trees down right tae that part. There were trees all the way along. All gone, all wiped out. For a railway.'

To work the land

'Oh aye the dry docks'? I know the dry docks'. I'm with the Galgael and we've been thinking about that place for a while. I've seen peregrine falcons doon there. Apparently they nest on the crane but they hunt and that doon there, chasing the seagulls and things.'

'Well I've been keen to speak to people in Govan about the plans that the developer has in place for a high end housing and commercial complex...'

'Ahh is it that time already.'

We talked about alternative futures.

'It's a place that deserves something of imagination rather than just flats doesn't it? Because of the industrial heritage in amongst there and its part of the identity of Govan itself... I don't know exactly but I don't want more of the kind of development we've been getting. I love nature but I love community as well, so I'd love to see it made into something special, a green learning space maybe...'

'So what kinds of things were Galgael talking about? I suppose it would make a great boat launching place being nearby and everything.'

'We just thought it could be a really interesting opportunity to do something new, like get the community set up in there... At the same time there's amazing wildlife so how do you harmoniously respect that nature's taken over it. It's an amazing site I'm sure you could dae... keeping the nature, cos it's badly needed in a place like this. I mean one of the things we looked

at was, looking at how an urban community can do kind of rural things within an urban setting. But looking at sites like this and saying let's bring in new ways of doing things and getting communities involved, start up wee businesses but at the same time respecting place and site and things like that, instead of just flattening everything.'

E p i l o g u e

This model of public engagement gleaned local knowledge about the (more-than-human) history and recent use of the site, it communicated the changes that this landscape faced, and it also gathered local opinion on these matters. There were many more unexpected outcomes. At the postcard cart, local people tied the photographic images to very specific discussion points that said important things about the site, its agencies and legacies, and more particularly, shed light on the specific relations that members of the public shared with the site. The images evoked memory and desire that shed light on how biographies had become entwined with this landscape, how people had shaped and been shaped by it, what kinds of relations that had given rise to, and how these relations continued to inform sentiments of care, curiosity and ownership today. The responses that were heard at the postcard cart prompted me to think about the Graving Docks' historical legacies as they continue to evolve in the present, how these legacies have become a source of agency (informing opinion, desire, and new attachments) and how they might be acknowledged and built on in the future. It was also interesting to learn that thoughts of heritage and nature had become joint concerns, in some cases even interrelated concerns, and would later lead me to consider the possibilities of both in my alternative proposal for the Graving Docks.

6

Dis-mantlement

The arrival of Spring would mark the end of this landscape as I'd known it. In some ways I was beginning to think that The Company's clearance might have fallen through. Six months and still nothing had happened. But then two contractors stepped inside the Pump House one afternoon while I was busy planning my next sitework. They broke the news: their workmen were moving in the following Monday.

With little time to spare, I threw myself into the organisation of 'Casting Out', a public event to mark the eve of the clearance. I contacted Galgael Trust, a boat-building, skill-sharing social enterprise based in Govan, and fifteen volunteers came down to the Graving Docks the next day to help me build a coracle using the site's new-growth willow. We took it in turns to forage, to make grass ties, and to weave the vessel into shape. Various floating strategies were tried and tested. The watertight skin made of Birch bark turned out to be all too time-consuming. Airtight plastic bags full of reclaimed beer cans worked but they weren't quite the effect we were after. Then team-leader Tam appeared with a battered life ring that he had found washed up on the western promontory of the site. We roped it to the bottom of our vessel and it floated on the first test. The night before the clearance, a sombre congregation gathered around this promontory. I filled the coracle with kindling of buddleia heads and dead wood, set it alight, and then released the green vessel on the turning tide.

The immediate purpose of the clearance works was to prepare the site for survey, and feasibility studies, in anticipation of The Company's new waterfront vision. The fieldwork recorded in this chapter details the stages of this 'dis-mantlement' over a four week period. There were two clear aims during this period of research. First, I set out to understand the material processes and patterns of transformation that took place on the Graving Docks, and second, to consider what was at stake with these changes.

But how would I study this change? The epistemological shift in studies of human and environmental violations since the material turn (within the field of human rights especially) informed my approach in important ways. Increasingly, evidence of violations are being sought out in matter by means of 'forensic architecture', rather than the testimonials of witnesses (Weizman 2012). The troubling aspect of testimony, according to forensic architects, is that it depends on the very possibility of speech, and so it's 'truth' is ethically and politically contingent. By means of forensic architecture, objects and surfaces become witnesses, which 'speak' the happenings of an event through an expert translator. Eyal Weizman, a critical



Fig. 40 Eulogy for a Wasteland: Willow coracle released on the turning tide (*Image: Olden, R.*)

theorist and practitioner of forensic architecture, has described the approach as one of 'evidencing force fields from forms'.³¹ Forensic architecture insists on two things. The first is that a moment of violation (or irregularity) is investigated in its 'singularity', and the second is that dynamic processes are inferred from the 'repetition' of these moments (Weizman 2012).

I adopted aspects of this forensics approach on Govan Graving Docks during the dis-mantlement, as a way to investigate specific *instances* of change, and the broader *processes* of urban change that they expressed: demolition, dispossession and displacement were all perceived by this way of looking. Furthermore, the forensic approach was a way to ensure that the more-than-human spoke in my account of the change. By an itemisation of bodies, materials, and their transformation, it probed the life, vitality and possible futures that were at stake during the dis-mantlement.

But there was also a place for testimony in my approach. I did not watch events unfold from afar, unaffected. My relations with the site were such that I also endured the change. Witnessing was a thoroughly material matter. Forensic architecture has democratised the practice of witnessing to enrol the many objects that are marked/affected by an event – who can thus speak as 'subjects' - and in this instance on the Graving Docks, the self was another of those 'objects'. The self was not a passive witness: there was evidence of transformation there too, a kind of becoming-with-destruction, in the sense that new commitments, ethics and aspirations took form, and were carried into subsequent stages of the research (Taussig 2011). It was just as important to think in terms of these legacies, as well as the processes that were underway. If the dis-mantlement of the Graving Docks had simply been documented as a before and after photo, without this personal narration of change, significant resources for thinking would have been lost. The linearity of this thinking would miss all the other lines (becomings) that emerged during this time. It would also obscure what was at stake for an individual who was part of it; what kinds of engagement, what relationships and what possible futures stood to be lost. This narrative gave texture, and specificity, to an instance of urban change. In this chapter, there was a forensics of dis-mantlement, and personal reflection on the scenes witnessed. Balancing the two was an exercise in feminist materialist witnessing.

Disbelief: Monday 31st March

It was a bright morning on the 31st of April, 2014, when the workmen moved in. I had my face pressed between a fist-width break in the fence on Govan Road in a vain attempt to follow the fluorescent jackets twisting through the budding willow. The workmen were using their chainsaws on mounds of demolished rubble near the southern Pump House. It was over in two

cuts: first the canopy came down, and then the trunk. The material was then tossed on to heaps coded by weight and species. The workmen were poised and focused, and held the chainsaws close. The blades looked like robotic arms from where I stood.

I took a photograph of the fast balding hillock. This was the first of many. I photographed to capture the fleeting landmarks of the change. I also photographed to believe it. Taussig (2011: 2) has said that there is an underside of witnessing that sets it apart from seeing. 'It is a seeing that doubts itself, and, beyond that, the world of man'.

The coded piles had reached quite a height. There was willow heap, silvered green and speckled with tiny catkins. Next to that the birch, then the buddleia. A stray willow branch lay on the granite bay, though it didn't seem to have the weight of something fallen. Like a grounded feather it would surely catch the wind and right itself again.

It had thinned enough around the Pump House to pick out the detail of this fly tipped edge. A porcelain sink, complete and catching leaf litter. Welly boot, emulsion tin. Dog basket. A North West wind whipped up from the river, bringing the rips and screeches and petrol fumes over the wall to where I stood.

I felt uncomfortable watching from above like this so I walked on to the entrance. At the corner of Stag Street I met the gaffer who was resting against the bonnet of his van with a flask of tea. I introduced myself. He told me about the job, and about the labourers who were taking part in a re skilling initiative. 'It's all good will' he said. I asked him what the plans were post clearance. 'Well that's what everyone has been asking me', the gaffer explained, 'but I can't tell them... I don't know. It's The Company's business, not ours. I'm just here to get the job done'.

He talked about the needles and cans that they were finding as they worked. The site had become a problem, and theirs was a remedial operation. 'Were there any natural survey obligations or anything? Before the works happened I mean?' I asked. 'Oh well there is nothing of any long term value here', he assured me, 'that wouldn't be necessary'. He opened the driver door, dumped the flask and fished out a hard hat. 'This is the rebirth of the docks' he added brightly, then set off for the official gate in the fence which was open now.

Standing by was difficult. I left these scenes behind and cycled back to the office to think. As I put the distance between us the concerns crowded in. I should have stayed longer. I should have spoken to the gaffer about access. But even if I did negotiate access, what on earth would I do there? I crossed the river and continued North with the sun at my back, but relief was not forthcoming.

Back in the office there was news from Angus, chairman of the Botanical Society for Britain and Ireland (BSBI). The week before I had sent him a photo of an unusual plant growing on the sunny leeward side of a rubble pile. It was quite remarkable; 30cm tall, a single unusually thick stem, succulent leaves and whorls of creamy green flowers. I wondered how it

was surviving on these rocks. Was survival the right word though? This was a resplendent exhibition. Angus had looked it over and urged me to take a cutting of the flowers and leaves, press them and post them on to BSBI's Glasgow-based botanist Peter McPherson for identification. Angus suspected it might be an interesting find.

The men and their chainsaws had been moving westwards when I left them - it might already be too late. I threw my jacket back on and darted back to my bike. On the road rush hour had begun. Weaving through the traffic I made it to the Clyde Arc Bridge but the south side was one massive construction site and I got stuck behind a procession of temporary traffic lights. These works had been creeping inexorably down the south bank of the river for as long as I had been making this commute; offices, hotels and apartments were springing up by the day. A boring drill hadn't stopped, and I felt the earth shake as I waited. I had a free stretch and pedalled hard, head down, bypassing heavy trucks and holding my breath through the dust clouds. These works had always been an uncomfortable reminder but that day they were unbearable. On Govan Road my eyes were off the road as I assessed the extent of the workmen's progress through the fence. It looked like they had done the full area around Dock Three. The plant's rubble mound was islanded in the middle of this barren stretch like a beached whale.

The workmen had gone home by now. I ducked through the fence and ran down the ramp under a dimming sky. Felled trees were splayed out around the base of the mound - the sorting and piling effort must have been shelved as the day went on. Wood pigeons were making do, still perching on the fallen branches. I picked over the mess to the rubble but I could already see that the plant was gone. I searched amongst the debris. Surely it was tossed aside somewhere. I disciplined my eyes to see bright apple green leaves, and when that didn't work I climbed to the top of the mound to do a broader survey. Just as I was scrambling up, two swans flew low overhead, their huge wings tearing through the air - an unlikely sight in inner Glasgow at the best of times, and at this moment they were surreal. It was a fleeting encounter, but their leaving left an impression.

I slid back down the slope again to the plant's rooting place, picked over the remains with a keener eye, and found a small, withered, earthy brown stem not far from the root. I turned it around in my hands and could tell from the serrated leaves and the whorl of skeletal flowers still clinging to the stem that it was part of the same plant I was looking for. Last year's growth was all that remained.

Missed Chances : Tuesday 1st April

I found the gaffer on the same street corner the next morning. I mentioned the missing flower and asked him if he could keep an eye out for it, which he agreed to. I asked him about access and he said that he wanted The Company to approve it. I left, but then halfway down Govan Road I turned around again. I needed to ask the workmen about the plant - someone must remember seeing it. I had to inch some metres beyond the boundary fence to catch the attention of the gaffer who was now demonstrating something with the chainsaw. He put the chainsaw down and walked up the ramp to meet me. 'Can I ask the men about the flower?' I asked. 'No, I don't think that is a good idea. I'll do it' he said. '*But*, the men have absolutely no interest in the stuff growing here. They won't remember seeing any flower'. I nodded and exited the fence. I had to reason with myself when I started to visualise 'missing' posters. If I wanted to be here at all I would have to be careful not to overdo it. Again, I retreated to the office.

The withered plant was lying on my desk and next to that a line of amber coloured glass jars. I drafted an email to The Company then trimmed the plant's stem with scissors until it fitted inside the first amber jar. The heavy glass lid sealed it tight. Its flowers rested against the walls of this airless vacuum, entombed in golden light. It was a small gesture given the scale of things. One story of loss, and only a partial story at that. In its half decayed state, it seemed unlikely that any of the BSBI members would be able to identify it. Anonymous, namelessness, a talisman, and symbol of all the others.

This jar joined the rest of the finds from the Graving Docks that I had on my shelves: a fragment of brick with a blue ceramic surface and yellow lichen flourish; a smashed decorative tile, cream with a chocolate coloured art nouveau scrawl; a heavy metal bolt, bent and rusted; and a whiskey bottle packed with moss. What had compelled me to bring all this stuff home? Kathleen Jamie has observed of her salvaged treasures from a small Hebridean island that it was 'not the things that endured, but those that had been transformed by death or weather' that had held the most appeal. My finds were ambiguous and fragile, and so too were the stories that they told.

I emailed Angus with news of the plant's plight and attached a photo. 'Is there anything more that I can do to identify the plant? Have I missed my chance?' Chance is a window of opportunity - a space and time where possibilities for action are still open. But maybe this understanding thought too much of one time line. I would no doubt have to fall in step, and run to catch up with this line at times - its deadlines, machines, budgets and human labour - but I wasn't only working in its cracks.



Fig. 41 Remains: Last year's growth of unidentified wildflower (*Image:* Olden, R.)

Re-ordering : *Sunday 6th April*

The Company's reply to my request for access wasn't forthcoming, so I ventured down in the evenings that week after the workmen had clocked off. Then the weekend arrived with the promise of respite from the machines, and the relentless routine that the Graving Docks was now host to. On Sunday morning I arrived with secretors and gardening gloves. It was raining but I took my time walking the long route down the bay and past the pump house, crossing the chambers of still water on the water gates, before arriving at the orderly pile of logs and branches on the South perimeter. Worse than watching them fall was seeing the lined up awaiting the shredder, so I decided to build something with them. I had a den in mind: '[those] most private and local of constructions, which have more in common with badger setts or fox lairs than any human habitation' (Farley 2012: 37). If 'part of the unspoken contract of [the den] includes elements of danger, as if the nest-like space is all the more cosy and secure for having some darkness or threat it needs to keep out' as Farley says, then it would seem most fitting. As with all the many and varied dens I had happened upon here over the months, this den would stake out a small territory, a refuge, for an afternoon at least.

I built next to the 'waste' heaps so that they diminished as the den emerged. I started with the nearest heavy log pile and built up a foundation with the logs laying sideways on the mossy cobbles. It was still raining. The logs were slipping out of place and collapsing, but I soon found that branch stumps protruding along their length could be positioned in such a way as to stabilise them. Sometimes a log was forked at its severed end – where an absent canopy had sprouted two or three primary arms – and these made stable corners. The timber walls were pitched inwards to prevent collapse, but it took a number of collapses to get the angle right. Finally, I had a structure indebted to gravity and friction (and a tempered frustration), with a viewing slat in its north facing side.

Secretors in hand, I set out in search of more new-growth willow and buddleia to thicken the walls and seal the roof. As I picked over the debris on the bay a fox leapt from a pile of fallen birch. When the men from the garage across the road had heard about the clearance, they wondered what would happen to 'our foxy'. Was the fox 'making do' now on its old ground, stomping ground, carving out a temporary territory, like I was? There were ways of life embedded in this site, and it in their becoming-irregular that urged thought and investigation about the bigger processes. These moments of irregularity – the swans, the fox – were particular, but a pattern of displacement emerging.

Glasgow has a terrible history of urban restructuring. 'If you want to drain the swamp, you don't consult the frogs', was a common saying among planners during the 60s when tenements were demolished and high rises built in their place, and writer Ian Jack (2014) has

observed history repeating itself in Glasgow's building projects for the 2014 Commonwealth Games.³² It was a phrase shorn of metaphor now in my small world of stumps and heavy skies.

Back at the den, I added the rest of this salvaged material to the roof and walls, and crawled carefully inside. It was a perfect hide – dark, with a panoramic view. I marvelled at the thought of foxy keeping watch on the workmen from here. The view captured the full skyline of the Clyde with its eclectic metal forms and towers of glass, and the foreground a desolate expanse and fallen trees. A scene that slipped into the future.

I headed back up to Govan road to look at my construction from above. The den was like an island in the midst of all the ordering efforts on the Graving Docks; a construction made with the elements of destruction. What would be the legacy of this small occupation I wondered? I wasn't planning on waiting out a forced eviction. I wasn't even planning on staying the night. I'd be lucky if the structure held up until morning. If it did, it would likely be dismantled. This occupation was as brief as a rejoinder. It entered the monologue of ordering, uninvited and unexpected, muttering its own disapproval.

On Pointless Work : Monday 7th April

I returned the next evening to find that the den had been dismantled. The various limbs had been returned to their piles as if the construction had never happened. I kicked about on its ghosted footprint. What can be claimed of pointless tasks I wondered – failed plans, tasks overcome by uncertainty and the unforeseen, tasks even which are bound to failure from the outset? From the perspective of artistic practice, the pointless is a fruitful zone of experimentation. Documents of process in themselves are seen to be critical, significant, and generative. But what if there is no such document left to contemplate?

I had thought about pointless work with my colleague Erin Despard during our transplantation effort. Lacking somewhat in the skills of cultivation, and uncertain about how our plants would cope in a very different environment, we were forced to contemplate an unfavourable outcome. What was the use of this activity if the plant didn't survive we wondered? In her blog post, 'Regarding the Pointless and the Photogenic', Erin considered a response that I carried with me:

...it is more important that there is a possibility the doing can lead, eventually, to something *else* that is important—something beside the fact of survival and which can in turn give rise to something else again, and maybe even to something else beyond that. In other words, the doing is worth doing, as long as it invites further doing (and thinking!) and can be creatively extended—or in this case, tended—into the future.³³

Looking at these neatly re-established timber piles, I wondered what would happen next. Would they be loaded on a truck and brought to landfill? I wondered if they would take other things with them too. Would they remove all the rubble? I had been hoping to use the broken ochre bricks to mark the ferns in North Kelvin Meadow which had been pruned back to encourage the roots. I headed back to the studio to get my bucket. On the way, I spotted Jimmy on Highland Lane with his dogs. The dogs were chasing each other up and down the lane with branches clamped between their teeth. Jimmy was looking out across the razed bays and I went over to stand with him. 'I hope they find something to undermine it –structural issues you know' he said. Jimmy knew of every last depression, every sign of subsistence on the Graving Docks. He had walked the site for years and followed these changes with interest. He had mentioned before that the site was precarious. 'Where are the burds going to go at night now?' he said flatly. The light was beautiful this evening - a soft orange glow had infused the plain of fallen trees before us. I could see that the workmen had only the river's edge left to tackle.

It was easy to share our worries talking to the trees like this. 'I hope they don't plough pesticides into the ground to kill the roots off. The run off would kill whatever might be living in the water', I said. 'Eels, massive ones...brown trout, roach, perch, flounder fish' Jimmy came in. He had told me in the past that he did a lot of fishing here with his nephew when he was younger. 'Where will the dog walkers go too? I don't know...' he continued, shaking his head. 'One wee wummin from the Riverside estate comes here everyday with the dog - brings one bag of bread, half for the fox and the other half for the burds'.

A group of kids ran past us, chased by a boy with a water-filled rubber glove on a stick. There was a huge squeal when the girl lagging at the back was hit. Everyone scattered. I left Jimmy to his bit of peace, and went on to the studio to collect my bucket.

I thought about the small exchanges that I'd had with Jimmy while I worked that afternoon. When I had been working with my trowel potting strawberries on Highland Lane last Autumn, he had reminisced about the profusion of colour here in the Summer. 'Wait 'til you see they bright red flowers when they come out in Summer', he had said. These orchids were, it seemed, significant markers of time and place for him. This Spring, in preparation for 'Casting Out', he had advised me on the best materials that the Graving Docks had to build a fire. The dead buddleia heads made fantastic tinder, he had said, and he was talking from experience. I noted all of these little affinities with interest. They were said often in passing, and rarely opened on to bigger claims, but by these small observations, attachment was taking place.

Scrub : Friday 11th April

I received a reply from The Company agreeing that I could continue to work on the Graving Docks through the clearance. They had discussed it with the gaffer, and the only stipulation was that I phone him each time I visit, so that he knows where I am. That morning when I went down I couldn't see any work vans anywhere so I just went on through the fence. I walked down Highland Lane in the morning sunshine and was relieved to think that the site was open to me again. At the Holloway I noticed that my efforts had been elaborated by another anonymous landscaper. Malleable young branches had been pulled across the pathway clearing and tied to adjacent trunks. The arching form I had imagined for this tunnel was looking stronger now. I got my camera out and started to take some pictures.

Then there was a distant – my name. I turned in fright to see the gaffer marching down Highland Lane towards me. I walk up to meet halfway, conceding foul play though resenting this new game all the same. I began to babble nervously about The Company and granted access. 'Look, Ruth, just what is it that you're doing here?' he said impatiently, 'Why are you taking pictures?' 'It's been confirmed that I can continue with my surveying... I should have phoned but there was no one here so I thought...' He frowned, eyes moving from the lobbies in my hand to the camera slung around my neck. 'I'm just looking at this tunnel here', I added, turning to look at the Holloway which looked rather pathetic now under the gaffer's hard gaze. 'Look Ruth, I'll trust you... so long as there is nothing sinister going on here'. He continued, 'We've had trouble in the past, so we need to be clear about this'.

It seemed strange to me that he should be so worried about my looking at things when the goings on are pretty clear from any vantage point on the road - the other side of the river even. I wondered whether it's more a question of the closeness of this looking. 'This is the rebirth of the docks, not the death' he repeated. 'All this 'Goodbye Graving Docks on the internet, it's just silly'. I nodded and assured him that I wouldn't be in the way. I'll be gathering new-growth willow for my studio today I explained – it's a useful model building material. 'Go ahead. It's only scrub after all', he said, gesturing to the wild on his left. 'Granted, there are magpies nesting in some of these trees' he added 'so we're leaving those standing for now'. There was a shout from the road – one of the workmen unloading the van was calling for a hand. 'Oh yes and the men saw your flower', he added before he left, 'but no one picked it'. I thanked him for the update, and he headed back up the lane.

I took a seat on a broken coping stone at the end of the Holloway by the river - one of three arranged around a burnt out fire. There have been many more 'remedial projects', many more landscapes, and uncooperative 'conservationists' by the sounds of things. The moral

economy at the heart of the operation has an immediate gain. Young men are (re)skilled in exchange for a prepared construction site. But what *really* is the legacy of this engagement? What will it have created? What does their relationship become? Does that not matter?

Looking back through the Holloway a young willow branch caught my eye. I pulled it over the clearing and got it to catch under the arm of a birch on the other side. The language of clearance wasn't very hard to learn as it turned out. 'Scrub' had already been used frequently to describe the Graving Docks' urban ecology. The word stripped it of the differentiation that makes life what it is (Grosz 2005). This made the missing plant an interesting case. The story of the missing plant was doing something to the 'wasteland' imaginary. It described the specificity of an exotic adventive on the sunny aspect of a rubble pile, which had become a home from home. *There* was difference within difference – something that this ecology was otherwise deprived of, and which made its removal easy and unobjectionable. Perhaps this was why the gaffer had called it 'my plant'. Was there something threatening about this sudden flicker of complexity? Is this why the search was reduced to a solitary fanaticism?

An Urban Inventory : Monday 14th April

I phoned ahead that morning and met the workmen at the fence unloading their equipment. The gaffer introduced me to the enterprise's crafts coordinator who had joined the group to see if there was any willow worth harvesting. He asked who I was with. Was the answer so unlikely to be 'no one, sustained by concern and curiosity alone'? But the gaffer got there before me. 'No she's a lone wolf this one!'

The workmen were tackling an area around the pump house so I kept to the perimeter. The noise and smell was distracting but I focused on the scenes at my feet. The tree grove that had cloaked the length of Bay Three was splayed out across the cobbles now. A thick stump was encircled by its fallen branches, as if it had collapsed from its centre. I picked over the fallen branches to get a closer look at the stump. Brushing away the sawdust revealed a fleshy red wound, its rings, and a ragged edge where the tough bark had resisted the chainsaw. Further down a regimented procession of stacked branches lined each side of the bay like a fallen avenue. The clear horizon, the wind pouring in from the river; all this openness was unfamiliar. There was a stack of greeny willow, with startled furry white and yellow catkins showered on the cobbles. Then a reddish purple pile - elder perhaps. It was hard to remember the landscape of intimate spaces that had been here before. This same walk two weeks ago was like walking deep into the heart of something.

I looked down onto the altar steps as I followed this edge, looking for the remains of those startling birch trees that had emerged from the joints in the thick concrete steps. With four careful jumps I was walking beside the lapping water. The tide was coming in. Branches fallen into the water were being pulled up the chamber with the rest of the floating debris. An island of polystyrene and bark configured briefly then drifted apart. I found the birch further down, its stately trunks swollen fingers now.

I climbed back up at the water gates and made it for the river edge. Daring roots that shot out from the steep bank, twisting wildly in the air and then plunging again into the lower bank, could be followed back to a stand of weeping stumps. There was a small lilac wildflower growing in the shadow of a fallen canopy. I lent in closely to behold its tiny form, relieved to come to rest on a sea of skittered lines. Spring; I had almost forgotten. New beginnings and nature's irrepressible forces seemed quite out of place. I had never known a Summer on the Graving Docks, it occurred to me now. There was another flicker in the canopies further on, this a small animal bone, tapered and polished white. A relic of the recent natural history, revealed with a lifted skin.

In 2011, artist Patricia Cain exhibited 'Drawing (on) Riverside' at Glasgow's Kelvingrove Art Gallery; a visual documentation of the construction of the Riverside Museum captured through a five month building-site ethnography.³⁴ With close observation of materials, structures, architectural plans, and the physical work of construction workers, Cain produced a series of oil paintings that captured the emergence of the museum. This arts research was an 'inaugural gesture': the ambition, to embed the new building within the public imagination through a process of documentation. The inventory of addition documented in Cain's story of creation, the incremental elaboration, was happening in reverse here. Mine was an inventory of loss, the underside. I wondered about the precursor to Cain's story.

Doocots and Caber Tossing: Tuesday 15th April

I headed down to the docks later that day when all the men had gone home. Just as I approached the fence Jimmy stepped out, his dogs in tow. We talked about the workmen's progress. A couple more days he said, then we might get some peace. He was going to check on his doocot before he headed up the road and he asked if I'd like to have a quick look. The doocot was a stone's throw away, sandwiched between a towering billboard on Govan Road for pay day loans and the Clydebrae Street garage. We waded through the tall grass on this hidden sliver of wasteland and the dogs raced ahead towards the tower, diving in and out of view. It was a solid structure - it had to be to ward off the vandals Jimmy said - with double thickness walls

of tough plywood, painted red and black. It had stood on the Graving Docks once Jimmy explained. Back in the late 80s, after the closure, the place was teeming with doocots. When the Graving Dock's buildings were demolished in 1998 most of the doocots went with them, so Jimmy relocated. As one reporter wrote in the Scotland on Sunday newspaper, 'these represent a guerrilla architecture in the city, and their rise and fall mirrors the successes and failures of Glasgow's housing policy. Where flats are cleared, doocots spring up; when land is earmarked for development, the doocots come down. Doo men abhor a vacuum; any spare ground is fair game'.³⁵

'So how far do you fly them then?' I asked. 'Oh no, no no no, this isn't a racing game' he laughed, 'It's all about whose bird goes home with who... just like the dancing'. A white bird appeared at the little hatch high above us and pecks at the wire mesh. 'There she is' he cooed, 'my best lady'. The aim is to breed a loyal bird that will successfully woo another doo man's flock, and bring *his* best bird back home. It's a competitive sport this 'doo fleein' as Jimmy called it, and it is taken very seriously. The doo man's pride is at stake, and they can get very upset if they lose a prized member of their flock. Jimmy lost one of his best hens to another doo man last year. 'I was grieving for weeks!' he said. During the doocot heyday on the Graving Docks, some birders did still like to race their flock across the river for a bit of fun. The docks' made a great launching place Jimmy said. They'd come from as far as the East End, set them off with the clock, and have their wives clock them in when they arrived home.

Jimmy visits his birds twice a day. I asked him what it is about the doo fleein' that he enjoys so much. 'It's in my blood' he replied - his father and grandfather both kept birds. He also enjoyed to see them flying in formation encircling the doocot - a 'lock in' he had called it. 'It takes a while to get them going, and for everyone to find their place... but once they're there, people passing on the street look at my pigeons like they've never seen a pigeon before!' Jimmy had tried to get his nephew into it, to keep the doo fleein' in the family, and began building a structure for him on the Graving Docks last year. I had been bemused by this half-finished, modern folly since my arrival, made of front doors and timber beams. It was lying in a heap now next to the other material.

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'I'd make myself scarce if I were you. Quickly - walk around the other way', Jimmy gestured to the rubble mound which screened the bay. I was engaged with my lobbers, harvesting new growth willow from the felled canopies. 'The director is on his way' he snapped. He hurried back up the ramp. Was I supposed to run away? I stayed where I was and resumed with the lobbers. Some minutes later the gaffer was walking back down the ramp in the company of two

visitors – the director and an architect, as it turned out. I removed a gardening glove to shake their hands. What a strange ritual for a place like this. We chatted briefly about the fair weather, and progress. The director was in a suit and black tie, briefcase in one hand. ‘We’ll have a better idea of what we’re dealing with’. He looked to the city skyline. ‘This openness is startling... it’s something to consider’ he said pensively. The architect nodded in agreement. The three carried on up to the water gates, and I watched their soundless discussions.

I gathered up the willow cuttings, bound them together with some rope and then walked on to the Pump House to get a better view of things from the tower. At the water gate I considered the remains of my favourite tree; a stately willow that had emerged from the altar steps like a specimen tree in a Japanese garden. When it was still in leaf in the Autumn the water had reflected its changing colours. The men had had a hard time getting this one, leaning as it did towards the water. The canopy was at the top of the altar steps now. Wings suddenly burst from the fallen mass. Miro’s painting ‘Man Throwing Stone at Bird’, pictures man’s envy of winged creatures and their aerial perspective on the world. These birds are flying just above knee height now.

At the Pump House I climbed the long rusty latter ascending the bell tower. Another anonymous dockland architect had built an impressive wooden structure at the top; a comfortable den comprising a small pitched roof and plywood perch, with just enough space to crouch in. The site was bleak from up here. There were two figures on the middle bay. They paused at edge of Dock One, then one of them picked up a heavy trunk and tossed it into the chamber. Ripples grew out across the still water, and birds wading on the lowest altar step took flight. The other figure had a go. They competed for height, then distance. The caber tossers reminded me of the stone throwing competition I’d had with my brother at the end of Dock Two last Autumn when we’d appreciated the open space that had invited us to aim further and higher. It is hard to tell where destructive practices end and creative practices begin on the Graving Docks. The thrown logs resurface and configure as small islands. Things are built to be destroyed. Things are destroyed and emerge anew in their ruination. I climbed back down the Pump House ladder and met the caber tossers on Highland Lane– a father and son enjoying an evening stroll. We talked about the works. ‘It’s a disaster... I’ve been down here for forty years watching the boats coming in and playing here... it’s a disaster’.

Tickets : Wednesday 16th April

The distant river bank was busy with fluorescent jackets the next morning when I cycled down Govan Road. The chainsaws were gone and attentions were now turned to sorting and stacking.

The gaffer was nowhere to be seen amongst the group and I was about to get my phone out when a workman with arms full dumped his load and cheerfully introduced himself – he was supervising today. The supervisor described the ambition of the training orientated social enterprise, and illustrated its importance by offering snippet biographies of his young workforce. ‘They’ve started life on the back foot’, he said, ‘and they just needed an opportunity’. The young men work for ‘tickets’ which they receive for mastering various landscaping jobs - one for the chainsaw, one for laying down pesticide, one for operating the van. These tickets add up to skill certificates which enable them to apply for labouring jobs.

Another fluorescent jacket appeared on the lane, wheeling a bike. ‘I saw your party by the river, and I just wanted to know what was going on’ he called out. ‘What’s happening to this place?’ The supervisor shrugged and turned to me too, and I gave a quick summary of The Company and their plans. The cyclist had known the Graving Docks since he was a boy. Before all the workshops and pump houses were demolished he had spent his youth down here with his first camera. He remembered the days following the closure when it was possible to get down inside the dry chambers. ‘The scale of it was breath-taking. The way the sky was framed, it was like seeing it for the first time. Those steps were like steps to heaven!’ He was an architectural photographer now based in London and he was back home to work on a job for the 2014 Commonwealth Games, making visualisations of the East End’s urban transformation. ‘I couldn’t miss the chance to visit my old haunt’ he said, looking out across the bays. ‘It was surprised that it lay dormant for so long, but to see it changing now is a bit of a shock’. The cyclist suspected that the clearance could be part of Glasgow’s anxious efforts to ‘tidy’ the city in preparation for the Commonwealth Games. There would be lots of visitors passing through the south side on their way to Ibrox stadium. ‘The city is eager to present a favourable impression’ he said. He didn’t seem to think much of the council’s ‘site dressing’ efforts though, particularly the replacement bronze statues on Kelvingrove Park’s beleaguered fountain. ‘They won’t be around for long!’

‘As unlikely and unrealistic as it may be’, he continued, ‘it would have been great if it had gone public - a wildlife park maybe... with a museum in the pump house’. Tom described his vision of a ‘working museum’ in thoughtful detail. This would be the ideal counterpoint to the Riverside museum he said. Its historic maritime vessels could be docked in the chambers. This relationship might draw the North and South bank closer together and warrant a much needed Govan bridge. The site could also be linked to the Science Centre. Green energy strategies could be installed here –solar panels, tidal turbines inside the watergates. ‘The Docks could become a vital connecting element on our River... and Govan would be back in the game too’. But he was reminded of the cranes crowding the London skyline again after the recent financial crash. ‘The property market is really picking up... and this is prime real estate

after all. I just hope they don't fill them in' he said, gesturing to the basins. It was an impassioned pitch, from the ground.

Machine Men: Friday 18th April

The next morning a bright orange petrol guzzling chipper arrived, and two men dressed in orange boiler suits. The machine stood next to the Pump House and the men fed it branches from the nearest stockpile. They went in through a gaping funnel and then the matter was ejected from a spout at the other end, making perfect silver arcs against the river.

I stood at the Pump House wall, mesmerised by these lines that started furious with energy before being overcome by the thickness of air. A pile of particulate matter built up on the other side. The spout of the chipper was turned in the direction of a thin wind which helped to manage the discharge. The operators were from a waste disposal business and they were well shielded. Their faces were screened with face guards, ear defenders clapped over their ears, and hands were protected inside thick black leather gloves. Their glasses were dark. I watched the bright white furry catkins shower over the cobbles beneath the greedy funnel. The blades rattled at an unbearable pitch as they ripped through the felled trees, the toughness of maturity lost to the sharpness of a blade. The air was thick with petrol. Once they'd fed the machine with their stockpile, they went to the bays for more. It was repetitive work. Gather, stockpile, shred, and so it went on.

I hung back, and asked for permission to take some photographs when there was a brief pause in proceedings. The petrol canister was removed and the operators headed back up to their van on the road to re fill. The woodchip piles had reached such a height that they had spilt down the retaining wall on to the cobbled bay below. I jumped down to this lower level and scooped up a handful of wood grains. They were colourless and indistinguishable. Everything does turn to dust, but this was a violent undoing. These changes were keeping pace with deadlines and budgets and visions of the future.

Biomass Tumuli : Wednesday 23rd April

I returned to the Graving Docks the next day expecting an eerie silence. Instead there was a bigger machine, a big yellow digger this time, its pneumatic arms holding a solid trough with pointed teeth. The digger ploughed up and down Bay Two following the line of the rusted crane tracks. I stood at the brink of the altar steps in the middle of the bay and watched as its teeth



Fig. 42 Particulate Matter: Willow fed through the chipper (*Image: Olden, R*)

scoured the surface of the cobbles. Moss, grasses, ferns and disembodied roots were lifted into the trough as the digger moved forwards. A trail of bare granite and strewn soil extended behind it. The digger carries its load to a towering dump at the western end of the bay. I walked out on to the bay to take a closer look. Peeking from the joints in the rusted metal crane tracks there were a few lone dandelions tilting in the fresh Spring wind. One of the bioblitz postcards had shown a micro world of moss here before. The photographer Deborah Dixon had called it 'A Forest in Miniature'.

I returned to the water gates to get out of the way. I was joined by husband and wife photographers loaded up with tripods and camera cases who were here to take pictures of the ruined structures. They had a particular enthusiasm for rust, they told me. The driver climbed out of the digger and walked up to the watergates. 'A tidy up' he said. 'It's a big job' the woman remarked. The driver nodded, looking over the bays with a furrowed brow. 'What's going to happen after the clear-up?' she asked. The driver shrugged. 'I'm only an operator. I do what I'm told'. He did some stretches. 'It's taking its toll though' he added; 'I keep banging my head on the window when I get too close to the mooring posts'. There was only progress left to talk about now, and so I did. 'How much longer until you're finished then?' I asked. He looked out over the bays again, and measured it up. 'I'll be gone by the end of tomorrow' he said.

I left this party on the water gates and walked over to the waste piles rising up from the ground like earth moulded tumuli. It was a monstrous island - a heap of matter thoroughly chewed up and spat out. There were moss clumps, loose earth and bewildered roots. Stray branches strained out of the mass like distressed limbs, and woodchip dusted the top, like icing on a cake.

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I left these difficult scenes behind and returned to the office. Angus had news. He has set my shaky field recording, and the photo of the dead branch laying on my desk to Douglas McKean, Scotland's 'Referee for Rare Aliens'. They also went to Mick Crawley, BSBI's most expert and enthusiastic recorder of British aliens who was currently writing a definitive book on the subject. And last they went to 'our most accomplished local botanist', octogenarian Peter Macpherson, via his daughter's email address and a coloured printer, Angus said. I was thrilled that Peter had been enrolled. They were all in agreement; the missing plant was a *Helleborus argutifolius*, as Angus had originally suspected, a Corsican wildflower. This plant, more used to the rocky terrain of the Mediterranean, had found a home from home on the Graving Docks demolished workshops. There was no record of it growing wild in Scotland until now. Peter was keen to know the OS grid reference of the plant's rooting place so that he could put it into

his new book, documenting the wild flora and fauna of Lanarkshire. The find was important to those botanists enrolled in its identification. The migration routes, changing ecologies and climates, and the adaptive mechanisms that it expressed were still unfamiliar. It was a true artist, this Helleborus.

E p i l o g u e

Thirty years after the official closure of Govan Graving Docks, with the property market picking up, The Company decided that voluntary labour and heavy machinery would effectively and quickly draw the site back into the urban fold. The moral economy at the heart of these works would perhaps nurture public support for its redevelopment, it would be cheap, and it would pave the way for the Graving Docks next incarnation as a high end housing and commercial complex.

On the ground, the bigger picture of urban change was lost to an interminable present. From one day to the next, I was never sure just what would happen next. Nor was it easy to witness. Nevertheless, I continued in a tactical way. I inserted myself into the ordering process that unfolded over the course of the clearance. Small building projects with the felled material, and the perseverance with the Hellebores search were just some of the kinds of practices that I undertook to find a foothold in the change. Another response was the task of witnessing itself. This intensity of study made me perceptive to the collisions of temporalities on the Graving Docks. Hurried felling and scouring, had all but warped the season of Spring, and this recognition would become formative later on when imagining the possibility of connected temporalities for a future landscape.

With the workmen gone and the dust settled, the task of counter planning for the Graving Docks future seemed more urgent than ever. The site had been razed but there were still material agencies pressing in from the outside that needed careful consideration. Post clearance I moved into the wider landscape and continued my material enquiries. I settled on an affirmative response to the Graving Docks' impending urban transformation - rather than stand and watch.

7

The River Clyde, in Two Parts

Opening the research up to the scale of the estuary was a relief after being site-bound for so long. Experiencing the estuary could bring new knowledge to bear on the site. The counter plans drawn up for the Graving Docks by The Company and Mr McGillivray were contained by the site's perimeter: their plans would seal the docks against the vagaries of the tide with a river bund and new water gates respectively. But I was curious about the tidal variations in the Graving Dock's chambers, the adventive plant life that had found its way in, as well as the marine life in the subterranean hydraulic infrastructure. I was curious about the bigger water system that these agencies described, and I wondered how the site's relationship with this water system might be taken further.

To begin this riverine research I'd attempted to see the River Clyde by bike, but with large stretches of the river flanked with screened industries, secured brownfield sites and private residential gardens and golf courses, my understanding of the river was as fragmented as the public cycleway itself.

A boat on the other hand would grant me a continuous perspective of the land and water. It would give me a better understanding of the gradations of the river in ecological terms but also how the urban fabric interacted with the river according to its *own* gradations, from the centre to its margins. It would help me to map the urban processes of regeneration, production, waste and exclusion that the river is implicated in, processes that have a particular geography according to city and river interactions.

I hatched a plan with my brother Patrick to take to the waters of the River Clyde in a boat; to travel downriver in the fashion of a 'source to sea' exploration. We purchased a second hand canoe and altered it so that it would perform as a rowing boat also. This hybrid vessel, we hoped, could take to two different worlds – the fast white waters of the Upper River in paddle mode, and then the expansive open stretches of the Lower River in rowing mode. In this way we could span the two parts of the Clyde and interrogate their division for ourselves.

Getting this 17 foot canoe into the backroom of my tenement flat was no mean feat. After a series of manoeuvres that would likely be forgotten on the way out, we finally shunted it into the empty room at an angle and hitched it up to two dining room chairs at each end so that it hung at workbench height. Here, on our beached boat, we worked out a rigging framework for the oars and built it with cheap softwood. We had wanted roller rowing seats to travel up and down the spine of this framework but we found out in a rather messy way

following a disastrous capsizing that our body weight couldn't be this high from the water. Instead we had to construct hammock seats with retired climbing rope to keep us low enough and balanced, and dry. After a great deal of to-ing and fro-ing with different prototypes and failed launch attempts, we finally sourced oars and paddles from the Loch Lomond Rowing Club and readied ourselves to take to the water.

Downstream

'I think we'll take off before we lose that boat!' Patrick shouted over the wind roaring in through the open windows. I had my eyes fixed on the nose of the boat that was hanging over the front windscreen of my dad's car as he shuttled us out of Glasgow along the M74 towards Strathclyde Country Park. Patrick and I had our necks craned out of the window every time the motorway bridged over the Clyde to survey the conditions. It was an extraordinarily hot day. We entered the gates of the park and drove to the southern boundary of the park to a sandy bay opposite the Avon Water tributary. St Mungo performed one of his legendary miracles at this confluence.

I recounted the legend to Patrick as we unloaded the boat from the roof of the car, the brackets on the rigging coming dangerously close to the windows as we unsteadily lower the weighty timber and plastic load to the ground. It began with a ring given to Queen Languoreth by her husband King of Cadzow, Hydderch Hael. When the King found out that his Queen had given the ring to her secret lover he ordered his footman to retrieve the ring and throw it in the Clyde, before demanding that the Queen wear the ring on their anniversary the next day. St Mungo saved the Queen from a gruesome execution when he pulled a running salmon from the Clyde on the banks of the Avon tributary and gutted it to reveal the ring inside. That legendary salmon with the ring in his mouth, forever remembered as 'the fish that never swam' features on Glasgow's coat of arms along with the tree, bell and the bird which are the subjects of Mungo's other miracles. 'An auspicious place to start then'. I hoped Patrick was right.

Gripping the head and tail Patrick and I ploughed through the riverside thicket and beached the boat by the water. We loaded up with paddles, oars, maps, cushions, and provisions. There was a borrowed camera in a Tupperware box. I was keenly aware that it was a bad idea after my own had been lost in a spectacular capsizing during a trial event in Dock Three. A large crowd of teenagers gathered on the altar steps to watch had revelled in the spectacle. One at a time we clambered into our hanging baskets bringing muddied feet with us. We took a moment to perform an essential shake test. Dad watched from Avon Bridge as we pulled out into the open water and after some poor steering and clashing of oars we finally progressed around the first meander.

'It's just as well we launched the boat where we did' I shouted over Patrick's shoulder, noticing the interminable stretch of security fencing following the river edge. The 2014 Commonwealth Games had colonised the park and there were barricades everywhere to contain the spectators of the triathlon events and the marathon. On the drive in we saw that Strathclyde Loch at the centre of the park is strewn with buoys and bunting for the rowing and open water swimming events.

The river followed a perfectly straight course alongside the artificial loch. When the loch was created in 1975 the valley was flooded; the small mining village of Bothwellhaugh put underwater, and the river diverted and straightened. The pits of the colliery – Hamilton Palace Colliery - were prone to major flooding due to their proximity to the river, and so the facility was closed and the village subsequently abandoned. The old meander was still in evidence between Bothwellhaugh Island and the east bank of the loch.

It should have been simple following this straight course but the boat was determined to veer right. The imbalance in mass between us had created a pivot point at the bow. We had to experiment with differently weighted strokes to avoid getting tangled up in the weeping willow that poured over the banks. Synchronising our strokes was more difficult than I'd imagined. I had a tendency to lose focus and prod Patrick in the back with oars that had been pushed too far forwards on the recovery. But for those short stretches when everything was coordinated, the traction and momentum of the pull and glide was thrilling. I had the maps on my lap and suspend the oars now and again to track our progress. Included in the pile was an aerial photograph of the route printed on ten pieces of A4 paper and stapled together which was the best water map we could find. The light and shadow on the river indicated where we could expect disturbed waters: hazardous rapids, turbulence outfalls and weirs. I gauged our position on the land and the page by bridges and meanders. It was disappointingly landlubberly but it was the best we could do to stay afloat. The sun was searing like I have rarely known it in Scotland - the unperturbed river surface mirroring the verdant river bank and a perfect blue sky. The vegetation was so vivid and thick with the reflection that when I swung round to get a view of things ahead it looked like we were journeying down thick jungle on the Amazon River.

'We should see the first bridge around this bend' I called to Patrick. Heavy lorries were flying over the river on the M74, cutting across this illusion of deep country - their bulk doubled in the water where a family of swans and signets were treading water. We pulled under the rumbling concrete bridge and found light dancing delicately over its teal green underbelly. There was a hidden history beneath this bridge. The tree lined Grand Avenue that extended north from Hamilton palace crossed the river here linking the palace and Chaterleau hunting lodge to hunting grounds further afield. Hamilton Palace had been home to the Dukes of

Hamilton since it was built in 1695, and it was widely considered Britain's grandest house.³⁶ Major expansions and refurbishments were made over the centuries using the almost limitless wealth falling upon the family from their ownership of the Lanarkshire coalfields, but in 1927 the 12th Duke lost his battle against the building's subsistence into the region's now hollow earth and the building was demolished. Unwittingly, we were tracing a carboniferous seam by drowned villages and sunken palaces.

The boat was set to become a ruin too. Back out in the sunlight an overzealous stroke from Patrick strained the bracket attached to his left rig and the bolt holding it in place dropped into the water. We had half expected this to happen. Our drill couldn't penetrate the metal brackets to make a hole big enough for longer bolts, and so we had decided to chance it with the unit's existing hole, and bolts that barely met the nut on the other side. We paddled into the bank and I pulled out the contingency bag with two spare bolts, and four more cable ties which keep the brackets safely attached to the oars come what may. If we lost the brackets then we'd have to paddle all the way home. Ankle deep in mud and grumbling, Patrick fumbled underneath the rigging with the tiny nut. 'This is a countdown we could really do without'. An exotic looking palm *Cordyline australis* was growing in the rushes behind him.

We set off again with a more tentative stroke. When we'd made it to Hamilton Bridge we pulled into the embankment and scrambled up onto the bridge to plan a route over our first stretch of white water, which we could see on the other side. Back in the boat we got ourselves into paddle mode with Patrick chief navigator on his knees facing the oncoming rapids and me at the back in control of steering. Patrick shouted into the spray as the boat was sucked onward and away from our intended route. 'Left, left, left Ruth!' No amount of practice on the canal in the run up to the big expedition had addressed my poor ability with the paddle that had to serve as a rudder at these critical moments, and I was well aware that Patrick was unhappy with this responsibility of mine. But the rigging had been custom made for our measurements and so we were stuck where we were on the boat. This stretch of white water marked a descent in the Clyde valley. The rocks on the river bed created a series of water steps, and the question was whether to take them nose first and risk diving at a critical angle or to take them side on and risk a sideways roll. The current was moving too fast for us to assert any sort of plan. On the last step an involuntary sideways approach sent us into a frenzied spin in the frothing waters below.

Surprisingly, we made it out dry enough. We swung the boat around and continued on rowing through Blantyre where the bank was lined with woodland. A number of stately heron were watching us from the shallows. I consulted the map to gauge the distance to Blantyre weir. 'We can relax now. We have 15 metres until the weir' – I had my mind already on the next job as the words left my mouth, the camera, the herons. 'Oh no... sorry, I mean 15 minutes'.

'Can't you just use the right term Ruth?!' Patrick snapped. 'Minutes aren't metres. Bolts aren't screws. Oars aren't paddles'. He's a stickler for precision, but there was concern too for what we were facing ahead, and my absent mindedness could hardly have been reassuring. It was this seed of self-doubt that made me turn around to look ahead. The lip. It was right there, barely twenty metres ahead. 'Quickly pull right! Turn!' I exploded. We had to fight the current that was pulling us closer but somehow we got ourselves to the north bank to a large dead tree that was bunged up at the edge. I leashed a rope around its trunk. The drop looked dry on this side. Patrick got one foot on to the lip and disappeared down the other side. He shouted over the wall. 'We're lucky the river is running low'. With Patrick guiding the nose from the front and me pulling the weight from behind on the lip we got it down the concrete slope and back into the frothing waters at the bottom despite the slippery film of water and algae. 'That's the end of the bridge counting' – he was not waiting for confirmation.

On the 5th of November 1983, a salmon was photographed trying to jump Blantyre weir for the first time in 150 years. The image was published in the Daily Record under the headline 'Return of the Kings: Silver Salmon Leap Again'.³⁷ The river had been so polluted that the salmon couldn't make it to their ancient spawning grounds. With this discovery, the Clyde River Foundation installed salmon gates to enable them to run beyond the weir, and new protection measures were put in place. Ken McCluskey from Bothwell who fished these waters was the first man to be charged with poaching. A picture of him surrounded by two policemen at Blantyre weir appeared on the front page of the Glasgow Herald under the headline 'First Poacher Caught on the Clyde for 100 Years', though he claimed he hadn't known about the reinstated permits.³⁸

Round the next bend we found two fishermen sat back in their camping chairs on a pebbly bay monitoring the rods set up at the water's edge. 'Watch out! There is a huge waterfall round the corner!' one called out. The river became picturesque on its journey through Bothwell and Priory Wood. We passed the ruins of Bothwell castle and then those of Blantyre Priory - a house of Augustinian Canons established in 1235 – both poised high on the river bank. Then the views opened out as we cut through a hazy wildflower meadow. We rowed at a leisurely pace on to Haughhead Bridge, a mineral railway bridge that was used to transport coal from Lanarkshire's pits to the various manufacturing industries of the Lower Clyde. It had four spectacular archways that strode across the water and beneath them we found a fly fisherman shin deep in the shallows. The boat ground to a halt and we had to feel our way over the slippery rocks by foot to the other side of the bridge. Back in the boat, as we paused to catch our breath, a lump of partially submerged sandstone rolled slowly past on the shallows beside us.

Patrick kept us moving while I consulted the OS map. We were travelling a stretch of open country between the middle class commuter town of Hamilton and the twilight edges of the city. According to the map it was scarred with disused coal workings and when I looked beyond the channel I saw verdant hillocks that could easily be reclaimed spoil heaps. The omnipresent M74 skirted the next meander. We'd started to take the white waters on without preplanning now but the next stretch, where the Rotten Calder and the North Calder Water tributaries flowed in to the river, looked a little more complicated. The momentum in this stretch had begun to carve a shortcut across the neck of the meander and the water looked particularly frothy on my printed aerial photo. Unanimously we decided to bypass it. We pulled the boat out on to a grassy track by the river, thick with ground elder, hedge bindweed and swathes of blue comfrey, and hauled it past this section. It was an awful creature on the land.

Once we were back in the water we sat back for a while and floated downstream to get our breath back. 'You're doing a good job there!' called the proprietor of the Clyde Aerial Ropeway from his wrought iron landing stage high on the north bank - though it took us some time to spot him. He didn't have any customers, much to our disappointment. 'Wouldn't it have been great to see commuting suits fleeing over the water? Briefcase handles clenched tightly between teeth?' - I agreed with Patrick.

The ropeway seemed even more unlikely when, not twenty metres on, we were battling with the outflow from Daldowie sewage works. The sky was thick with oversized seagulls. The outflow of the treated 'mixed liquor' as it's known to the Scottish Water operators - comprising sewage, household and industrial grey water, and surface run off - nudged us into the south bank where excreted fats swirled like white marble over the turbid water. The stench was harrowing with it being such a dry day. Scottish Water's consent to release treated water into the river, as set by the Scottish Environmental Protection Agency, is subject to tighter regulation upriver than it is downriver. Upriver water must have a measurement of 20 dissolved oxygen whilst in the estuary it need only be 5. The consent boundary is the weir at Glasgow Green. When SEPA announced last year that consent upriver would be increased to 25 in line with the Water Framework directive, knowing that their current system couldn't achieve that higher standard, Scottish Water drew up a plan to pipe the outflow from Daldowie and Dalmarnock sewage works to the western side of the weir. Since then, the response has changed and trials of Nereda Aerobic Granular Biomass Technology are now underway at Daldowie, and it will be the first pilot in the UK when the treatment is fully converted next year, displacing the century-old practice of activated sludge.³⁹

Aside from the outflow, the only other part of the complex that we could see through the trees was the incinerator for the Daldowie Sludge Treatment Centre. This is one of the largest sludge drying centres in Europe, and it's where the sludge from hundreds of wastewater



Fig. 43 Upper Clyde: Patrick navigating downstream (*Image: Olden, R.*)

treatment plants in the West of Scotland is processed into sludge pellets. Every year the centre turns more than 2.3 million cubic metres of liquid sludge into 55,000 tonnes of PSP, which is burned to produce electricity.⁴⁰ The seagull flock settled on the sludge pipe that crossed the river, the steel nearly bright white for the droppings. It was the smell that got us in the end so we picked up the pace with the rowing.

There was a putrid fragrance in the air but nevertheless, we found a tent pitched up around the next bend. It was somewhere here that occult archaeologist Harry Bell came looking for the ancient Carmyle fording point that was supposedly part of a geometry of ley lines that Glasgow was founded on. In his thesis, 'Glasgow's Secret Geometry' (1993), Bell proposed that the fording point formed the 'Glasgow Triangle' along with the Necropolis and Crookston castle - a triangle that aligned ancient pilgrim routes extending out into the landscape through the then heavily wooded Clyde forest. In the first section of his text Bell outlines his theory, and in the second section entitled 'The Test', Bell describes his attempt to seek out and follow these ley lines. He describes his investigation of Carmyle fording point:

'The Duncolm to Tinto alignment crosses the Clyde at Carmyle, so a few weeks later, just to be a thorough researcher, I went down to the place for a look. I took compass bearings and paced out the distance as a rough guide to the point where the line crosses the river. About 300m west of The Auld Boathouse pub there was a gap in the foliage at just about the right spot. The banks of the Clyde are not normally accessible so near the city, but at that point I was able to walk in under the trees and down a gradual slope to the water's edge. It looked like an excellent place for fording the river' (Bell 1993: 6).

Whether he bit the bullet and rolled up his trousers is not quite clear but Daldowie sewage works would likely have given him every reason not to. Extending from the fording point on this particular ley line Bell identified Drumsargad Castle, the site of an earlier fort, and then Cadzow Castle on the tributary of the Avon Water - the ruin of myth and legend that had marked our starting point. About this landmark, Bell writes that 'branches push their way through cracks in the crumbling masonry and strange scurrying noises are everywhere... the old castle talks in its sleep' (Bell 1993: 6).

The next weir at Carmyle was a little easier. With improved steering and control we managed to tread water with the swans at the lip of the horseshoe shaped drop near where it was driest, and then hauled the boat over onto the slippery concrete slope as before. The only concern was the sluice gates that Carmyle coal fired power station had used to operate the weir, but we managed to avoid this. At the bottom of the weir, the corpse of a seagull floating on the water knocked relentlessly against the side of the boat before we finally managed to push ourselves off the shallows. We had some spectators - a class of schoolchildren waving

their fishing nets on one bank and two smokers outside the Auld Boat House pub on the other. George Parsonage of the city's river rescue trust, The Humane Society, told me about a day last Summer when he had brought rescue floats to the pub to train the bar staff. Too many punters were falling in the water here.

We were closing in on the city, channelling through industrial estates that passed one into the other. Plastic bags were caught up in the canopies and we pulled past the body of a burnt out car choked with algae and the detritus of the river. Under the concrete belly of Cambuslang Bridge the map told us we'd made it to the reach of the Clyde's tidal waters. A clapped out trampoline was standing in the rushes. The M74 was still weaving over and around the river. Past the next of its flyovers we found two fishermen amongst the nettles, seemingly indifferent about the motorway thundering behind them. The overhead gantry, hazy in the heat, announced the A74 Tolcross and Cambuslang turn off. Bare chested the fishermen were turned to face the watery scene before them, cans in hand. 'Hello ladies!' they called down from the bank, spotting the sunhats and our canoe's pink cushioned interior.

Further round this hairpin meander was the last shed belonging to Clydebridge Steelworks, once the most prolific steelworks in Scotland, The works' steel plates were formed into many of the most famous ships built on the River Clyde including the Lusitania, Mauretania, Queen Mary, HMS Hood, Queen Elizabeth, QE2. There were no remains of the neighbouring Clyde Iron Works that supplied Clydebridge and where the hot blast process was invented in 1828, by James Beaumont Neilson, which rapidly increased the manufacture of iron (Osborne, Quinn and Robertson 1996). The M74 now followed the line of the old mineral railway lines and bridge that brought iron ore, coal and limestone in to this industrial complex from the pits upriver, from which the works takes its name.

We passed a few more fishermen on banks as we channelled through the housing estates of Cambuslang. Then we passed into an estate that was held behind security fencing two metres high. The defence was so elaborate that the fencing continued to step down the river bank to the water at the estate's eastern and western extents. We'd made it in to the Commonwealth Games Athlete's village.

Giant Hogweed, *Heracleum mantegazzianum* had taken over the river bank below the village – this a noxious adventive that causes phytophotodermatitis in humans, resulting in blisters, long lasting scars and blindness in the worst cases and so it seems entirely apposite as part of the village's fortress. Giant Hogweed was first brought to Britain in the 1900s for its ornamental value – its striking palmate leaves, sculptural, umbrella shaped white flowers and towering stalk – but it was soon designated as a threat to human health.⁴¹ As the seed from this invasive species has travelled down the Clyde it has been gradually restructuring the river bank. Glasgow City council issues fines to any landowner who doesn't try to control its spread

with pesticides, though of course those same chemicals kill everything else in the soil and the water.

The stretch of the Clyde Walkway along this bank had been closed to the public since the athletes had started to arrive. Security cameras standing tall at 10 metre intervals followed our progress as we pulled through the village. Sandstone tenements, many of them social housing, stood here before they were cleared by the council to develop this 'Olympic Legacy'. Many of the residents put up a fight before their eviction however. Margaret Jaconelli a Dalmarnock resident for more than 30 years who had owned her flat outright and who had been offered inadequate compensation to leave her property managed to barricade herself in for four weeks before the police finally forced entry.⁴² The new properties were already being marketed on the Clyde Legacy website for sale post-games, and the river counted for a big part of the sell. The blocky brick apartments and townhouses that we could see through the security were variously named 'The Lily' and 'The Lotus' and both boasted fantastic views of the river according to the website.⁴³

The sun was searing in the middle of the river so we pulled into the shade of a weeping willow and got the water bottles out. Through the canopy I could see two police officers stalking the top of the river bank, one with a walkie talkie close to her mouth. 'I can't help feeling we're being watched' I whispered. 'Stop being so melodramatic Ruth', Patrick said with a mouth full of sandwich. I pulled my oars back into the boat to rest my arms and noticed a small black headed gull in the rushes. I was surprised that it hadn't already taken flight with our arrival but then I could see that it was choking, silently rolling its neck left and right. I paddled in to get closer to the bird but then a police helicopter appeared overhead, the turbulence from the propeller whipping the willow and rushes up into a frenzy. 'I don't think they like us hanging around here Patrick...' I shouted over the rotor and the wind, shielding my eyes from the sun as I tried to get a look in the cockpit. 'But what on earth do they expect two ladies in their sunhats to do!' Patrick shouted back, as we quickly pulled out of our dappled berth. We'd picked up speed by the time I remembered the gull and I was too cowardly to go back for it.

The helicopter didn't follow us but with its nose dipped to the water it watched us fleeing downriver. When we pulled under Dalmarnock's red iron bridge we were well out of Commonwealth territory and the helicopter seemed to have moved on. Another bolt suffering from stress dropped into the water. We pulled into a little muddy bay where, ankle deep in silty mud, Patrick fitted the last spare, Marsh Yellowgrass flower heads bobbing around between his arms and legs which he started to swipe with frustration. 'Will you stake us in please?' Patrick said impatiently, as the boat's nose started to swing out from the shallows. It was somewhere around this bridge that last September a Chinese Mitten crab was found by John

Clark, a bailiff for the Mid Clyde Angling Association while he was patrolling the river in search of illegal eel traps.⁴⁴ This was the first recording ever made in Scotland of this invasive species. The crab is on the International Union for the Conservation of Nature's red list, and it's on the Invasive Specialist Species Groups' '100 of the World's Worst Invasive Alien Species'.⁴⁵ They are substantial creatures, with bodies measuring up to 9cm across, and after their introduction to Germany in the interests of pest control they travelled to the Thames, Humber, Medway, Wharfe, Ouse and Tyne where they are now well established. The crabs feed on salmon and trout eggs and undermine the structural integrity of river banks with their burrowing habits so the Clyde River Foundation has been monitoring the river for them ever since last September's discovery. They worry that if the population burgeons then the crabs will pose significant challenges to the biota of the Clyde which is still recovering from centuries of poor water quality and structural modification.⁴⁶

The north bank opened up on this side of the bridge where more of the Dalmarnock tenements had been demolished and the ground succeeded by wildflowers. It had turned into a beautiful evening and there were plenty of runners and walkers out using the Clyde Walkway on the bank above us. Affected ourselves, we rowed at a leisurely pace and watched the revelers on the tow path until we came to Dalmarnock sewage works where the path had disappeared again. It was only the smell that gave it away. The works itself was screened by mature vegetation and the outflow was underwater. When I looked more closely I could see sanitary waste, the 'rags' as the treatment works' operators call it, hanging from the lower canopy of the trees, rising as high as one meter up their trunks. These works take surface run off as well as household and industrial waste water, and in times of heavy rain they quickly reach capacity. A water scientist from Scottish Water had told me that there are storm basins to hold excess flow when it's needed, but every so often untreated water from the inlet has to be directed straight into the river when there is no more holding space.

We picked up the pace again perturbed by the stillness of it all and another bolt fell off Patrick's rigging. Neither of us was willing to dive in and rescue it. 'Well that's the end of that then' – Patrick slumped back into his hammock. Patrick held the oars out over the water and I carried on for the two of us. We passed beneath Rutherglen Bridge. George Parsonage of the city's river rescue trust, The Humane Society, told me that anyone finding themselves on the silty bay under the bridge will also find themselves ankle deep in chromium. The river still hasn't righted itself after its colonisation by heavy industry. He also told me that when he was a young boy helping his father on the river, you would never know what colour the river would be from one day to the next because of the pigments that were disposed in the river by the dye and paper works - pink one day and purple the next he had said.

The light was blinding when we left the black beneath the bridge. The water looked green today but that must have been the freshwater algal blooms that were thriving in this chemical soup. I pulled us somewhat laboriously past the pontoons and beached boats of Rutherglen Cruising Club, once the site of the Clyde's uppermost slaughterhouse. We were entering the city proper now. We passed under Shawfield Bridge, a gleaming arc bridge installed last month by Clyde Waterfront - a development partnership of Glasgow City Council, South Lanarkshire Council and Scottish Enterprise, backed by funding from the Scottish Government, that is investing public money in 'starter' projects for the East End of Glasgow such as bridges, roads, public realm, and soil remediation in order to attract developers to Glasgow's more deprived areas. This urban regeneration model is replicated further downriver with the partnership Riverside Inverclyde, and one of their most successful projects has been the gated James Watt marina which resulted in the conversion of the dock's original Sugar Shed into lucrative rental property.

My thoughts turned underground again to the mine shafts that criss-cross underneath the city. Shawfield Bridge, still as yet a bridge to nowhere, was awaiting the arrival of a new National Business District that was in construction on the old Shawfield industrial estate, and this development was as a testing ground for the use of the region's geothermal energy. A study by US energy firm Aecom and the British Geological Survey found that water heated by the earth's interior to more than 17 degrees Celsius in the Clyde Valley's old coal mines could be tapped to provide for a third of Scotland's heat demand. The study detailed that Scotland's 600 cubic kilometers of old mine workings could provide a maximum accessible heat source of 12 gigawatts.⁴⁷

I pulled us under the sparkly bridge, my arms beginning to ache now, then out of nowhere a two man rowing boat fired past us upriver. These sleek, light-weight boats were everywhere on the other side of the bridge. 'You should get a brownie badge for that creation!' one rower in Lycra and mercury shades shouted. Patrick pulled his sunhat over his eyes and I struggled on. The river was so busy that I was beginning to worry that we might be breaking some lane etiquette, so I pulled us in to skirt the south bank. Eventually we make it to the eastern end of Glasgow Green. At the top of the steep bank, mature elder and beech trees lined the park's riverside promenade which was busy on this balmy evening with dog walkers and runners. Some were sitting on the benches beneath the shade of the stately trees looking out to the river to track the rowers.

Before the public works on Glasgow Green in the early 1800s, this end of the green was low lying pastureland, referred to locally as Flesher's Haugh. The green was a public common then. It was used to graze livestock and for everyday domestic chores like linen washing and bleaching and carpet beating, with the Camlachie and Molindinar burns that channelled

through the green playing an important role in these tasks. It was a wild landscape too and frequently flooded. Owing to the marshy conditions there were a host of wildflowers that were used for medicinal purposes, some even used in mystic rituals like the yarrow which young ladies picked to wish on a husband. Fishermen used the small jetties that protruded from the Haugh to catch salmon and the timber diving boards installed along this edge made it a popular bathing spot too. A local poet John Wilson wrote about the scenes that could be seen from the bank (Leyden 1862: 74):

The summer's heat drives frequent to the pool
The active youth, their glowing limbs to cool;
They dive and distant far emerge again,
Or easy float along the liquid plain,
While curling waves around their bodies twine,
Through which their limbs like polished marble shine;
Now with strong arms they strive against the tide;
Now oaring swiftly, with the current glide.

But this watery landscape was deemed 'unsavoury' by Glasgow's then Superintendent of Public Works, James Cleland (Cleland 1813). He began a topographical restructuring of the Green, the plans of which can be found in his 1813 report 'A Description of the Manner of Improving the Green of Glasgow' (Cleland 1813). The lower green was raised, the river banks built and serpentine tree lined avenues planted. The Green's founding burns the Camlachie and the Molindinar were banished to the earth in culverts too. The common became a public park - an urban stage for civil promenading and widely celebrated as an emblem of the city's development.

We almost missed the outlet of the Molindinar. It flowed into the river from a concrete pipe that tunnelled out of the river bank, capped with an iron grille, just like all the other drainage outlets we've come across. It was on the banks of the Molindinar two miles upstream that St Mungo established his monastery in the 6th century. It was from there that Glasgow grew, becoming Scotland's second largest bishopric in medieval times, and later extending south to meet the small salmon hamlet that had established on the Clyde where Molindinar had made a fording point.

Following the discovery of coal just south of Glasgow Green, James Cleland began boring experiments on the green in 1821. The experiments suggested that 'one million, five hundred thousand tons of coal were lying below' (M'Ure 1874). This coal field was expected to last 100 years if coal was extracted at a rate of 10,000 tons annually. For many decades, intense public protests quelled any threats to carry out this commercial project; but this changed with

the debt the city found itself in following the construction of Kelvingrove Park in 1854. From the outset these two parks came to symbolise the class divisions in the city, with the Green in the east end enjoyed by the working classes and Kelvingrove enjoyed by the professional classes in the west. When the municipal authorities decided that coal under the Green would be used to pay for the new west end park class warfare almost broke out (Fisher 1994). With the city set to lease the mineral rights to John McDowall (Airn John), owner of the Milton Ironworks in Northwoodside, the indignant east-enders took to passionate protesting and the mining proposals were dropped. One of the popular protest songs of the day (M'Ure 1874):

If you come tae the Green, John, ye maun expect a fight
For a' the folk at oor gate-end'll stan' oot for their right
We'll come wi' sticks an' stanes, John, an' fight while we've a spark
You'll never get the Glasgow Green to pay your west-end park.

Further along the Green we passed the busy slipway of the Clyde Amateur Rowing Club, and then the boathouse for the Humane Society House. There was no sign of George Parsonage today which was a relief because I was fairly sure we'd be out on our ear. The Human Society is a river rescue trust that has worked the river; from 1780 to the 1900s it has been run by successive generations of the Parsonage family. George Parsonage took over from his father in 1970, serving as the lifeline in every river crises, from accidental drowning to suicide attempts. He went off call six years ago when the city's fire and rescue service took full control of river patrol.

George still polices the river occasionally but more time is spent training people in river rescue, giving talks in schools and participating in the design boards of waterfront development projects. His knowledge of the river and water safety is unparalleled. He has taken on more janitorial duties - clearing the river of rubbish and storm material, and tending to any injured birds and swans. During the Commonwealth games he spent a difficult week removing the hundreds of dead salmon that had suffocated in poor water that was made worse by the heat. He is also called upon to help policemen remove swans that find themselves on the motorways. The policemen are always very bashful when they see him march over to the birds with purpose and scoop them up into his arms he told me.

George offered his own perspective on this urban river which has been shaped by many years of challenging work. 'Its human life before fish life' he said to me in his boat house, 'this is an urban river in a big city, we have to be realistic'. Back in the Humane Society office George had shown me his favourite photographs of river ladders including a picture of a huge corten steel river barricade in Clydebank that had been erected while a housing development behind was in construction. The developer had installed river ladders on the temporary barricade to

keep his workers safe – ‘beautiful’ George had said. He has also been campaigning for the removal of the trees that grow on the river bank in the Green because with a clear view the public have no need to get closer to the water, and how could I possibly argue with a man who has seen all that he has seen?

We just had to find a landing place by this point. The weir at Glasgow Green was getting nearer. On the north bank of the Green we found an abandoned rowing club house with a mouldering wooden amphitheatre stepping down to the water. I pulled us in, relieved to make it back on to dry land once again. It was a Mungo miracle we hadn’t needed George that day.

Upstream

‘Don’t go down there, ye’ll sink!’ the little boy shouted, running in circles around our boat as we dragged it down Erskine beach to the water. ‘Yer gonnae sink! Yer gonnae sink!’ His grandmother was watching him from the dunes, and she didn’t call him back. I ran back to the car to get the last of the baggage, and realised then without the company how dizzy I was with nerves and lack of sleep. We’d had one day off to recover from the last leg but it had been anything but restful.

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We had started first thing in the morning in the hardware shop, armed unusually perhaps with our oars for measurement as we dug around for brackets with holes big enough to fit longer bolts. There was nothing like it, so we’d found ourselves trawling through the curtain and handrail section trying to find an appropriate unit. In the end we left with 6mm long bolts and a titanium drill bit that we had to hope would penetrate the metal brackets we already had.

Then I had to find an appropriate place to launch the boat on the other side of Glasgow Green weir, so we could continue our journey down the Clyde, or ‘doon the watter’ as Glasgow folk would say. I took my bike to the river and checked under the bridges. Possible sites included an old Waterbus pontoon under George IV Bridge, some inconspicuous sets of river stairs and an overgrown RNLi slipway near the weir, but they were all fenced off and it would require a laborious effort to get the boat over. If the police were to see us then we would probably have to give in before we had even started. The search was compromised by an unruly wind that I could barely cycle against, and I had to stop myself dwelling on the conditions further downriver or I would have given up.

We couldn't get any favours for transport so I returned to the house with a rented two door Peugeot, a flustered choice. 'What on earth Ruth..? It's never going to fit on there...' Patrick had said stepping out from the back garden come workshop into the lane where the car was now parked ready for loading. Of course he was right. The roof was too short and whilst the boat just about perched on top, the port and starboard effectively blocked out the front and rear windows respectively. I had slumped against the garden fence in the gutter whilst Snowbell, the next door neighbour's cat, prowled around the boat and made an elegant leap into this thing that was so unbearably cumbersome. I couldn't see the humour in this at the time.

It was too late to change the boat by this point. The rental place had closed. Reasoning that we could change it first thing in the morning, I went back indoors in a state of strained calm and set to work printing off the maps that would guide us downriver. Still unsure about where we might launch I check the Scottish Canoe Society website to see if they have any suggestions. There is a phone number there for the relevant canoe officer and the promise of keys to access a slipway beneath George VI Bridge. Thrilled, I phone him up. 'Well unfortunately things have changed recently. They've closed access to canoes and kayaks ...because it's still a working harbour you see' he explains, and when he hears nothing on the other end of the line he continues, 'It is outrageous really. We are working hard to overturn the ruling.' I stand on the top step of the back garden and declare its going to be a disaster. The launch site, the bye laws, the transport, the turning weather. 'We should just pack the whole thing in' I announce petulantly.

Patrick downs tools no doubt tired of my tantrums and we head inside to contend with the uncertainties over a cup of tea. 'As far as I'm concerned, according to the information on their website, we have the Scottish Canoe Society on board, figuratively speaking' he says. I pause for a moment and think about that. Right enough. 'Agreed' I say. Then we pour over the forecast and the tide details on my laptop. Tomorrow we will be heading into a 10mph wind and we will have an incoming tide against us all day. According to Patrick's calculations we will be making headway at 1 mph. We could walk it faster. 'What if we come up the estuary with the tide?' Patrick suggested. 'We'd find an easy launch place downriver and it would postpone any kind of eviction until we got into the city'. It wouldn't be the smooth 'source to sea' of your typical riverine travelogue, but our journey would reflect the realities of the river we were travelling.

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Back at the rented car I removed our makeshift roof - two long triangular foam prisms beefed up with brown tape - to inspect for dents. It was all clear. Quickly I gathered up the maps, the camera and the cushions, locked up and run back to the beach, keen to be on our way. The tide was out at 10.50am and it has just turned so there was no time to spare.

Emerging from the shelter of the pine forested car park, Patrick and the boat were but tiny specks in a sea of grey sand and heavier grey skies. The monolithic Erskine Bridge flew over the river high above the beach - the bridge had to allow clearance to the biggest warships leaving BAE on the Clyde. It's one of Scotland's most notorious suicide spots, estimates suggesting that more than fifteen people commit suicide there each year, which has led to the Samaritans installing signs with help phone numbers at intervals along the pedestrian walkway on the top deck.⁴⁸ There was a snatch of a transistor radio on the wind and I spotted two maintenance men on a perch dangling from one of the suspension cables - a feat that seemed even more ridiculous than ours.

We waded out in the water with our lifejackets on and shakily climbed aboard bringing silt and mud with us. The boat grounded on the soft sucking sand but after much paddle staking and pushing we were able to make headway with the oars. The little boy was still waving his stick somewhat ominously. Patrick and I both wondered how far we would get. 'It's funny, I haven't done anything like this for such a long time...' - I was feeling seasick already - 'you know, not knowing how it's all going to end up?' The wind was stirring the waves that were pushing us upriver but in a somewhat unruly fashion. After the beach the quay wall that came after looked like a fortress. Dealing with a not unlikely capsized would be difficult.

'We need a plan in case we turn over... Leave the boat. Save the oars. We need to give them back' Patrick said. When we had capsized in the Graving Docks on an early buoyancy test we nearly lost the boat to the murky depths. Hauling it up the altar steps, still carrying water and with a saturated timber structure, was not at all easy. I could see the last buoy of the Lang Dyke recede into the distance over Patrick's billowing mop of hair. The buoys marked an artificial embankment that held an intensely dredged two lane river channel for three miles downriver to Port Glasgow. On the landward side of the embankment were expansive mudflats, the remnants of a much wider natural estuary that are inundated on high tide. Come evening these buoys are twinkling green lights that guide the Clyde's navigators through this deep river passage to and from the Firth.

River engineering was still an emerging science in the 18th century when works began on the Clyde and most of the techniques employed were a case of trial and error. But this was an urgent task for the sea merchants of the day. The river was 'some two to three hundred feet apart and, except in times of flood, tended to meander sluggishly over the whole of this breadth' (Riddell 1979: 31). Ships were frequently grounded on its shallows and shoals, and travel had

to be coordinated with the tides. Deepening the river was the only way in which Glasgow would grow as a centre for trade and manufacturing. The first project began in 1764 with the construction of 132 jetties along the length of the river from Anderston to Port Glasgow. These timber structures would catch sediment and so narrow the channel, making it fuller and faster flowing and capable of scouring the river bed to maintain ever greater depths. In the days before the dredger, this was the ideal way to 'harness the power of nature' (67).

Over the course of half a century these works continued and sea merchants enjoyed the benefits, but the Clyde Navigation Trust were determined for further change. In 1815 Joseph Whidbey, Master Attendant of the Royal Dockyard at Woolich on the Thames was appointed to offer further professional advice. The Trust were hoping for advice on how the training walls might be improved but instead they were presented with a total condemnation of all the work that they had done. Whidbey found that the jetties had choked out the tidal water and it was his opinion that the ebbing tide had greater scouring power than the downward flow of freshwater. In his report, Whidbey had written; 'I beg you to recommend a stop being put to all the proceedings now going on in the Clyde, and if you could undo all you have done, it would be a good thing' (91). Following the highly esteemed Whidbey's recommendations the Trust dismantled every jetty and dug up the reclaimed land. Early dredgers were beginning to work the Clyde in 1817 so a decision was taken to employ them to deepen the channel, to widen and to straighten it. There were however many seams of hard rock crossing the Clyde at intervals which the dredger just couldn't address, and so dynamite was used to destroy these landforms. This deep canalised channel is still maintained today by Clydeport Limited who have a statutory duty to tackle the build of sediment in the river, where it is commercially important.

'We're being followed!' Patrick shouted. A grey seal was treading water in a covert manner a short way off. We kept pace and sure enough it seemed to be getting closer with every surface dive. That I honestly thought that it might just follow us two fool hardy humans upriver as our trusty companion said a lot about the strange fiction I was living by this point. Our grey seal had soon seen enough and dunked down for the last time.

It was a bleak water's edge that stretched on from Erskine, featuring the brutalist architecture of the Erskine hotel, an empty harbour, the grated outfalls of concrete culverts, and a procession of pylons that held cables taut across the river. The algae line marking high tide struck the harbour wall three metres above us and below this was a thick mat of brown seaweed that clung to the brick. A momentary panic ensued when a rescue boat sped past prompting us to prepare for a forced eviction, but miraculously it continued with its course. I watched the backwash from the boat somewhat absent-mindedly at first but then realised that those waves were growing as they rippled out towards us. 'Ehhh Patrick I think there is going to be some turbulence here...' – I had my oars suspended in wait for the first hit. The drop

on the other side of each wave was wild but as this great dipper effect played out, to our great relief, the waves didn't catch the lip of this big plastic tub so our dry bastion it remains.

Next along the south bank was the nature reserve and wetland park Newshot Island. It hasn't been an island proper since the channel north of the island was deepened to concentrate and speed up the river flow in 1823 and the river channel on the south filled in with dredged material (Riddell 1979), but the old river footprint is still inundated at high tide and serves as an important stretch of mud flat and salt marsh for wader birds. At the mouth of this buried river a ruined mud scow unwittingly monumentalises the history of this place, though it won't be long before it's buried by the offerings of the tide. Oystercatchers, redshanks and curlews pick around its rotting timber frame on the mud exposed now at low tide.

Beyond the wreck the island was a slither of muted greens compressed between a heavy grey sky and tarnished silver sea. The details of this tidal landscape remained a mystery to us on our boat with our limited cross-sectional perspective. On the other side of the river, the Titan crane stood proudly over the town of Clydebank. This 150 foot blue steel edifice was the largest crane of its type when it was completed in 1907. Built on the banks of the John Brown shipyard it was used to fit out the biggest battleships and ocean liners manufactured on the Clyde including Queen Mary, Queen Elizabeth, the Queen Elizabeth 2 and the Royal Yacht Britannia (Osborne, Quinn and Robertson 1996). With eyes shielded against the sun I studied the cantilevered arm which opened to the public in 2005 as a viewing platform and launch point for adrenaline junkies – 'No bungee jumpers today then'. The yard was empty save for piles of sandstone rubble and a solitary dog walker who tracked the river edge along the quay wall. Clydebank lost its shipping industries very suddenly and those that worked there still returned to walk the ruin, so I'd been told by a resident of the neighbouring Clydebank boatyard. The River Cart flows into the Clyde opposite the yard which meant that John Brown could launch the biggest ships on the Clyde. Having successfully rowed across the confluence's disturbed waters we found ourselves on the banks of Renfrew, renowned in the 19th century for its advances in the development of the dredger. Here prototypes could be observed working the river, 'the iron bucket tearing its way and bringing up its spoil' (Millar 1888: 31).

It was on the banks of Renfrew that a prehistoric canoe was found in 1978 by archaeologists and staff from Glasgow Museums. Once it had been zealously lifted from the earth and taken back to the city however this vessel made from hollowed oak had become too fragile to preserve. Many of these canoes from the Iron and Bronze ages have been found since dredging first began in the 1700s. Some have also turned up a great distance from today's channel as ground has been broken for the city's foundations, their burial revealing the Clyde's early extent (Riddell 1979).

The Clyde has been an experimental ground for all kinds of nautical engineering, from those early canoes to today's monolithic warships - this lineage telling of a strong desire to extend the worlds open to human exploration. I wondered if our own eclectic hybrid river boat fashioned to travel fresh and saline water worlds would qualify as a contribution to that boat building legacy. Robertson has discussed the early innovation that the Clyde witnessed:

'Of the various works of art on which the primeval inhabitants exercised their ingenuity, probably none are more interesting than their boats. In these we see the first rude efforts of savage man to adventure on the deep, and to float himself on his native waters. Our noble Clyde appears to have been, from immemorial time, a favourite locality for the construction of vessels; and the deep alluvial strata, skirting the river of Glasgow, has at various periods yielded up the wrecks of canoes which these unknown savages had launched. No less than seventeen have been discovered within the last eighty years, at various places, on the plain of Glasgow; some under the very streets of the city' (Robertson 1884: 75).

Although we were keeping close to the south bank, we could see Clydebank boatyard over the water, easily identified by the string of old boats beached high atop the river bank awaiting repair. This bank is in fact a thin peninsula, and behind it there is a sheltered basin that runs parallel to the river, which hosts live-in house boats and, for a short time in the night, sizeable oil tankers that deliver to Clydebank Oil Ltd. Most of the residents have learnt to sleep through it, one boat dweller told me. Opposite the yard on our side there was a mountain of crushed cars. Reduced to tiny parcels of coloured metal the cars were stacked high like a Tetris wall. We tracked the south bank along this stretch and initially failed to notice anything strange about the hillside that had cast our boat in shadow. This was Christie's, one of Scotland's largest exporters of scrap metals, where 10000 tonnes of ferrous scrap metal is processed each month into high quality furnace feed. This is exported to international smelters, and the non-ferrous material is sent on to the domestic recycling market. The processing facility includes a 1000 tonne shear, a fragmentising plant and a separation system which produces the high grade ferrous and non-ferrous material. According to their website the company also has a number of 'specialised recovery services' which includes the 'Dismantling Service' the 'Guaranteed Destruction of Obsolete Parts' and more recently the 'End-of-life Vehicle Disposal'. Along with the other scrap metal yards on the Clyde they pitch themselves as an environmentally responsible recycling centre, one 'responding to the environmental and quality standard challenges to recycle scrap metals into high grade raw materials'.⁴⁹

There was a break in the mountain and we could see conical mountains of shredded scrap metal, fine rusty oranges, bronzes and silvers, and a deep rumble of trucks and machinery. An anthemic pop tune spilled out from the metallic hillside's hanging valley. I'm intrigued about the music. 'I've heard that the call of a gull in its final throes is often played in



Fig. 44 Lower Clyde: 'End of life' cars at Christie's (Image: Olden, R.)

recycling works to keep the living variety at bay. Do you think they have an aversion to Coldplay too?’

We did our best to pull quickly past the mouth of the scrap yard’s dock, feeling especially exposed. Its quay walls were hung with huge tractor tyres to buffer the cargo vessels that berthed here. On the other side we pulled into the bank to get our breath back. I was just about to hand provisions down to Patrick when my eye caught something on the watery horizon. ‘Ruth come on I’m starving’ Patrick said irritably, his arm stretched out expectantly behind him. I came to focus on the fluorescent markings of a police speedboat that was heading downriver towards us. ‘This is it Patrick’. We bobbed quietly on the water watching its approach. Towed to the nearest slipway, questions and disapproving frowns – it was a finale I’d already imagined. But the boat sped past us. We hardly had time to celebrate before we were dealing with another backwash. We remained berthed here for a while longer, directly under the flight path to Glasgow airport as it turned out. Minutes from the runway these planes were hanging low in the sky, their huge bellies casting a black shadow over the redundant waterway. I peeled the maps off the muddied floor cast aside in the latest panic and checked to see how the new bolts were faring. Everything was pinched together nicely.

The next obstacle was the Renfrew ferry. I don’t think the ferryman will be pleased with us getting in his path. ‘At £1.20 a crossing we could make a mint!’ - Patrick’s pitch as we rowed past the south side slipway - oars clashing when our timing went awry - while passengers were still disembarking on the north. Passenger ferries, and vehicular ferries with decks that could be adjusted according to the tide, teemed across the River Clyde to bridge its banks from the mid-1800s. But these services were greatly reduced with the arrival of the tram system, the underground and the building of bridges in the early 1900s. The Renfrew ferry is the last of its kind this far up the estuary - the service kept going by the commuters of Renfrew who made the two minute river crossing to get to Yoker station and on to the city centre.

We were in the thick of Clydebank’s post-industrial terrain by now, with empty docks that cut into the north bank like missing teeth. A single swan was paddling upriver in the foreground of BAE Soctstoun’s fabrication shed where parts of the second Queen Elizabeth Class Aircraft Carrier were being constructed. There have been discussions about them taking on the contract to build the Royal Navy’s new Type 26 warships, but work in general has been slow and questions concerning the future of the yard persist.⁵⁰

‘My god look at the size of them Patrick...’ I squeaked. Rats were busy scurrying over the breakers and washed up rubbish of the south bank. Two culverts spilled their cloudy yellow liquid close to another pack who had taken to the water. These dark secrets were concealed beneath a long stretch of cantilevered timber decking. We pulled the boat out to see what was on the bank and Glasgow’s most popular out of town shopping centre Braehead made a

surprising appearance. All those times I'd hopped in a car, fired down the motorway, and rushed into Braehead's artificially lit, air conditioned indoor shopping streets I had never actually known I was beside the river. Not only had I no idea where I was, but it also hadn't occurred to me that this was the case. There were a few people on the veranda - mainly suited staff draped over the balustrade flicking fag ash into the water. The overhang hid the view of the sludgy bank. Exposed now on low tide the bank revealed ancient trollies wracked with seaweed and crisp packets. The timber decking stepped down to become a gated pontoon further down.

Next along the south bank was Shieldhall Wastewater Treatment Works, Glasgow's largest sewage works. BAE Govan's fabrication yard was getting closer and we both agreed that we didn't want to chance the possibility of finding ourselves beneath the launch of a 50 tonne warship. This was as good a time as any to cross to the other side. We swung the boat out and made a bee line for the other side, rushing over the deepest point and the furthest we could be from land, eyes peeled all the while for oncoming traffic. The waves that had been gently pushing us onwards were now nudging the side of the boat and between them and the rude north easterly wind we were not far off a critical pitch. I leant into the left and held my breath, just as I had done in the car as a child whenever we'd passed through the Clyde Tunnel.

Patrick was feeling seasick at the other side. He pulled himself up on to the weedy embankment and slumped against a rock with his head in his arms. I stayed in the boat holding on to a conveniently dumped bollard. We were not the only things to have washed up on this shore. There was a doctor's waiting room chair with a missing arm, and a disembodied flight of concrete steps laying sideways like an Escherist dystopia. 'Patrick, listen, we can stop now. If this is all getting too much we can just stop now' - I was worried and trying to think of our options, but the security wall lashed with barbed wire behind Patrick reminded me that we were compromised either way. We were under the fading Barclay Curle crane, this bank once the site of Whiteinch's prolific shipbuilding yard. Behind the wall I could see yet more summits of scrap metal. It was surprising they hadn't turned on their relic crane yet.

When Patrick had finally steadied his stomach and his vision he clambered back into the boat and we pushed clumsily off the bank. Our boat was set deep within the concrete channel now. Industries were flanking the river but we could only guess what they were by the fragments that exceeded the quay wall: incinerators, an edifice of tired car tyres, mountains of plastics and gravel, and boiler tanks. Running up the quay wall were a number of rescue ladders that had been contorted by boats running too close to the edge. There were other ladders that were too high up the wall to reach. George Parsonage later told me that the engineers had taken their measurements on high tide and hadn't realised about the tidal range. Directly over the river, despite the cloud of metal dust that billowed across the horizon, we

could see the same on a far more majestic scale. Centre stage, amidst the theatrical fog, we watched three huge machinic arms pick at mountains of scrap metal and then drop their loot over the Arklow Ruler that was berthed outside the yard. An ascending conveyor belt continued to deposit material on the tallest pile behind them. We suspended the oars by the boat for a moment just to take it in, our nostrils filling with metal and dust.

To the east of this scrap yard was another waste works for demolished buildings and built infrastructure, featuring three mountains of aggregate that had been ground to dust, and batches of the processed material that had been parcelled up like hay bales. When I'd tried to get a better look through the fence of a similar aggregate operation in Port Glasgow, the driver of a ten ton digger had approached me about my picture taking. They had been struggling with public relations since they had demolished a listed tenement row on Bouverie Street, he told me. This tenement was once home to Port Glasgow's ship workers and also thought to be one of the longest continuous tenements buildings in Europe.⁵¹ The council contracted the works then sold it River Clyde Homes who plan to redevelop it. 'It could have been listed, and there were people up in arms about it', he said. And there have been other recent struggles - the dismantled crane that had arrived from Govan last year despite a fraught community battle to save it, and then the proposed demolition of the Red Road flats which was to feature in the 2014 Commonwealth Games opening ceremony. The operator was a man caught in the cross fire between the city's vision of urban progress, and the community's commitment to the places they'd grown up with.

Once we'd put some distance between our boat and BAE, we crossed the river again to Govan's ancient Old Parish Church. It was another hair raising crossing - our boat only ten strokes clear of a speedy 'booze cruiser' at one point. The scale of things changed on this side. We got some waves from the children playing in their gardens behind Elderslie Street and an older resident in her deckchair by the back door gave us the thumbs up. The jetty for the Govan ferry was empty. It had been an important connection to the north for Govan's residents, but the ferry kept to the hours of the city's tourists now, and the Riverside Museum that had ownership of the north bank jetty was closed on a Monday. This was another ancient water connection on the Clyde. The River Kelvin tributary has maintained a fording pass here before dredging operations began, and Govan's oldest street Waterrow was aligned with the route.

Parked next to the Riverside Museum in the river channel was the Glenlee, a merchant ship built in 1876 that had been refurbished by the museum. There was a family on the top deck having a go at the steering wheel. Glasgow has filled in all the docks so there is nowhere to put these veterans. The museum is on a concrete plinth that stands well back from the water, and a sea of cars takes up a considerable stretch of the waterfront on its eastern side. I told Patrick about the fog machines set in the concrete benches outside the museum - typically used

as microclimate adaptors in public spaces on the continent. What were they supposed to be doing we wondered? A vapoury ode to the Clyde Valley fog? 'Ridiculous!' Patrick said.

The flats of the Riverside estate were above us on the north bank, once one of the city's most challenged social housing schemes. With the building of the museum, the council invested a great deal of money in its exterior regeneration due to the estate being in sight of the museum. Public artist Matt Baker was commissioned by the Glasgow Housing Association to create the public art works for the regeneration. Concerned about his complicity in this urban politics Baker spent more of his residency staging public events to politicise the community. In 'Govan Armada' for example, an event staged during the Glasgow International Festival, a gaggle of young Govanites dressed as pirates crossed the river by ship and 'raided' the museum for Govan's ancient artefacts.⁵² There was also a meeting of Govan's ancient parliament on the site of the medieval doomster hill, which the estate now sits on. The museum were suitably challenged by this critical work and from this came a collaborative PhD project 'Riverside Connections', awarded to Govan based artist and performer Tara Beall, which would forge connections between the museum and the south.⁵³

'Drop the right!' Patrick shouted. We were getting too close to the river wall again. The boat was still pivoting at the helm. We pulled past the mouth of Govan Graving Docks' Clydebrae quay. There was fragment of timber wharf floating in the water in the middle of the quay, a sizable 2x3m panel, roped on one end and anchored to something below. I had watched it from the western promontory of the Graving Docks and was familiar with the cormorants, herons and swans that had used it in rotation. Now was an opportunity to get up close. We paddled nearer and Patrick reached out to hold the thick lashings of rope that were green with algae. 'Don't even think about it Patrick!' – I was clutching both sides of the boat as he started to pull himself up.

We watched Govan Graving Docks slip by as we rowed on, past the bare banks, and in to Princes Basin to face the industrial iron water gates. They were in shadow now that the evening was setting in. I wanted to hang around for a bit – it felt like the site had turned inwards, and I wasn't quite ready to leave on that note - but Patrick was getting impatient so we moved on. Crossing the mouth of the Basin, the Glasgow Tower bared down on us; £10 million and it was closed to the public only weeks after opening because it was sinking into the silty river bed. Then there was a long series of Glasgow's waterfront icons, all those curious, metallic, egg shaped arenas - the Science Centre, the Hydro conference centre, the IMAX cinema, the Armadillo. 'What *is* this egg phenomenon?' 'Hatch a mythological river monster? ... To bring the tourists in' Patrick suggested. We passed under Bells Bridge, busy now with commuters. A couple of people gave us a wave.

A sightseeing bus pulled up to the base of the listed Finnieston crane on the north bank, and a cluster of tourists on the top deck rose from their seats to photograph it. This industrial relic was the muscle that loaded steam engines and heavy cargo onto ships at Lancefield quay, and it had become a postcard favourite. The river was getting bumpier now with the waves diffracting and amplifying on the high river walls. Our arms were getting tired and interest in the scenes around us was waning. This deep down in the channel everything looked rather distant and flat. 'The tide is turning in ten minutes' I reported. We started pulling harder.

Under the arches of the 2nd Calendonian Railway Bridge, the water was calmer. It was a very low arch, and black as night underneath, but a strange gloaming lit the water. This was 'suicide corner' as George had called it, the stretch between the Bridge and Gateway nightclub. There was a terrible rumble overhead as another train left the station. Glasgow's nautical college was on the other side – a group of buildings that stepped down from street level to the water, with its various RNLI lifeboats past and present displayed around the river. Under the last bridge festooned with the 2014 Commonwealth Games logo 'PEOPLE MAKE GLASGOW' we could see the verdant lawns of Glasgow Green ahead. We just had to decide how to get the boat out now.

The grassy banks at the green looked too steep, and there were high fences on the street level. We started to turn around to try the risky Waterbus pontoon three bridges back when I spotted the lip of the abandoned RNLI slipway. The ramp of trammelled earth carved into the bank at a manageable angle up to Glasgow Green's riverside promenade. The downside; it was thick with a soaring jungle of nettles and brambles.

I was tired and all for leaving the boat behind now – 'I just really can't imagine getting a 17 foot boat up there'. Patrick clambered out, lashed the boat to the branch of a neighbouring willow tree, and then set to work thrashing through the green wall with his paddle. Reluctantly, I drew the oars in, and pulled myself out to help him. Pushing our way up the ramp we could see glimpses of Glasgow Green and its inviting preened lawns and promenades. Nearing the end we slipped back down the bank to begin hauling the boat up through the clearing. Stray branches clawed out for it and the gradient was a struggle but eventually we staggered to the top, glorious, and not at all ready for the police officers who were waiting for us to emerge from the foliage.

'We saw you from Albert Bridge, landing your boat' one said. 'Ah yes' I said, quickly dropping my paddle which was still raised above my head. The other officer had his notebook and pen poised. 'What are you doing with the boat?' 'Well we've been rowing in it. We left Erskine Bridge late this morning' Patrick said nonchalantly, pulling twigs from his hair. There was a long silence. They had decided something was amiss but hadn't quite put their finger on it. A couple wheeled a buggy along the promenade past our unusual party; we in our wilderness

and the policemen on the lawn, the ornamental park fence between us. 'Well, you see, now we have a boat in a bush...' one officer said slowly. 'We have a boat in a bush' he confirmed. 'Hmmm', I said, furrowing my brow, hopefully looking concerned also. When they'd finally left, satisfied that the boat was awaiting collection, we both jumped the fence. With time to spare we strolled down the promenade busy with people out to savour the last of the summer's day, and found the next empty park bench.

Epilogue

In the end our route was not the seamless 'Source to Sea' that is the currency of the pedestrian psychogeographer (Fergus and Mitchell 2008; Laing 2011). Our route was divided in two by river flows, tides, local climates and byelaws. The boat was launched at Strathclyde Country Park, five miles upstream from the city. Having made it past the rapids and shallows, carried by the flow of freshwater, we finally made it to the weir at Glasgow Green which marked the end of leg one. For leg two we came upriver with the tide from Erskine Bridge to meet the weir on the other side. It was frustrating to re-perform an arbitrary line that divides the river and the estuary in the public imagination at the weir, but our encounters soon undermined this separation.

We came to know the River Clyde as a passageway. It is a passageway that running salmon, trout, and eels from the Sargasso Sea use to journey to their spawning grounds upstream. It is a route in for 'difficult' invasive species including the recently discovered Chinese Mitten Crab. The watercourse is travelled by biological matter, most notably the seed of Giant Hogweed, that is travelling downriver from Hamilton and restructuring the ecologies of the river bank, and eroded sediment whose build up downriver has kept the Clyde's dredgers busy for more than 200 years. It is also a pathway for the outflow of sewage waste whose disposal upriver has severe effects on dissolved oxygen levels downriver. Contrary to popular belief tidal water surges as far as two miles beyond it to Cambuslang Bridge. The industrial histories of the Upper Clyde are also intricately linked with those of the Lower Clyde. The creativity of the Lower Clyde depended on the depletion of a valley upriver and its carboniferous strata, just as today the refurbished waterfront relies on hidden landscapes of waste further downriver. Neither the fish, seed, water, pollution, nor histories and mythologies of the river respect the boundaries they have been set. These flows, with their expansive geographies and interconnected affects, all found expression on the Graving Docks and they would all have been acknowledged in my landscape proposal.

The aesthetics of this riverine research would also have a bearing on my landscape proposal. Travelling by river, with winds and tides and fresh water flows, we were intimately connected with it. We became perceptive to its rhythms and cycles and the watery publics that shared in it. We also became perceptive to the sorts of human impacts that were throwing the river's interconnected relationships into disarray, or squeezing them out – the developed river edges, the channel infrastructure, the pollution, dumping and urban heating. This research encouraged me to analyse the role that embodied and sensuous engagement with the river played in making an ecologically orientated subjectivity, and I would bring these ideas with me into the next stage of the research, to begin to imagine how an ecological landscape might facilitate this sort of engagement.

7

The Dockland Imaginary

Counter Planning

The site's imaginary – that realm of future imaginings long the privileged sphere for the musings of the developer and his investors – began to splinter in surprising ways soon after the land clearance. Alternative ideas and visions for the Graving Docks began to spark in the public imagination and the site's future no longer seemed quite so certain. During the Summer of 2014, a counter plan for an industrial heritage attraction, dreamt up by Glasgow citizen and retired industrial chemist Mr Iain McGillivray, received a great deal of public support, and to this was later added my own.

The petition arrived at some point in the midst of the Clyde rowing/canoeing challenge. '#SaveGovanDocks' it read.⁵⁴ The petition was a campaign for an alternative vision, and it had come at an important moment. I added my name to a list of 700 others and forwarded it on. I sent the campaigner an email and suggested a meeting. We met in Govan's *Café 13* and exchanged introductions. Mr McGillivray talked about his interest in Glasgow's industrial heritage and then handed me a crisp copy of his executive summary and conceptual proposal for 'Govan Graving Docks Heritage Park'.⁵⁵

He led me through the thick document which detailed everything from the environmental strategies of the project to employee working conditions. The heritage park would be 'an appealing new urban quarter' with museum heritage displays and outdoor exhibitions including restored vessels, a mix of residential development and berths for live-aboard boats, small scale commercial development, quayside public realm spaces, landscaped gardens, and a market space. 'The development will draw tourists, residents, locals and visitors from surrounding areas, as well as accommodating micro-enterprises', Mr McGillivray read aloud.

He opened up his laptop and we zoomed into a virtual model of the heritage park. There were houseboats and stepped gardens in Dock Three, huts arranged in rows down the middle bay – premises to be occupied by social enterprises and small local businesses Mr McGillivray explained – and lawns and poplar trees that define public-realm spaces. The western portion of the site had a fenced nature reserve with a grand water fountain in the centre. I noticed that the water level of Dock Three was significantly lower than the river level, and asked him about the design intentions here. 'Yes it has to be level so that people can get down the original

stairwells to access the pontoons for the live-aboard boats' he explained. 'It could be concreted in with an inner shell. Or water could be pumped out. Obviously there are ways around that'.

I was struck by the urbanity of Mr McGillivray's vision on the screen - the polished cobbles and the manicured lawns. 'It's very urban isn't it?' 'Well it's to make the site more attractive and more appealing to business owners' Mr McGillivray explained, 'and obviously to open it up, so that links can be established with Pacific quay and the Science Centre, and ideally with the North bank too, to the Riverside museum and car parking facilities in the SECC'.

'So can I ask about the sorts of ideas behind your proposal?' I asked. 'Well, if I can bring your attention to the executive summary again...' He thumbed the pages of his document vigorously to return to Page 1. 'It's founded on some core concerns... regarding the Clyde corridor's development, in the main'. I took a read while Mr McGillivray sipped his coffee. 'There is an inadequate level of recognition in Glasgow of the city's shipbuilding and maritime heritage', it reports, while the Docks site is 'the only remaining major industrial dock complex on the Upper Clyde that has not been filled to make way for modern developments and may represent the only remaining opportunity to create a heritage site of this kind'. The Company's plan was subject to critique, likely to render the site 'exclusive', its impact on the established community 'may not be entirely positive', with the possible effect of 'isolating or restricting parts of the dockland waterfront areas from public access'. On this diagnoses we both agree.

'I've been looking at the great dockland renovations of Liverpool, Cardiff and London - Camden in particular' he explained, 'where new commercial and recreational uses are now complementary to the history of the area'. I took note of the precedents as he listed them, so that I could look them up later on. 'The plan is to submit the proposal and petition to the council whilst the City Development Plan is open for public comment' Mr McGillivray explained. 'Ah yes. 800 houses. 800 flats', I added, recalling the prospective 'City Plan 3' released the previous month - the third draft of a development plan for the city of Glasgow - in which the Graving Dock (and North Kelvin Meadow incidentally) is earmarked for housing developments. 'Indeed. The question remains though just how could they really afford a development like this'. 'Oh?' 'My research tells me that their finances are in a bad way. Liabilities. Negative net worth. Limited working capital. A tax scrape. Accounts overdue for this year. The auditor resigned last month too which doesn't sit well'.

Mr McGillivray expected that The Company would have to raise venture capital to proceed with their plan. The petition would be well timed to dissuade any investors he explained. The petition's community of interest could then organise for a community buyout. 'If a buyer came along with the right kind of offer, they might be inclined to dispose of the site. I don't know how they could refuse' he added. 'This is a listed site after all and the longer it lies

there the more its condition is compromised. They have a statutory responsibility to ensure that doesn't happen, though it doesn't seem that this is forefront in their minds'.

If the campaign won the support of the council and Historic Scotland then there was also the possibility of a compulsory purchase. He told me that he had put the case to Historic Scotland to have the site registered as a scheduled monument and a UNESCO heritage site. There was reason to doubt support from this side though, he conceded. Historic Scotland had given The Company permission for their 2006 draft plan which would see apartments built over the grade A-listed chambers. But 700 signatures of support for his campaign was hard to ignore, so he remained optimistic about both courses of action.

Mr McGillivray extended a sincere invitation for my participation in his steering committee before he left. The nature reserve will require the right expertise he told me. I thanked him for his time and promised to be in touch. My public pitch on the docks was coming up and it would be good to have him there.

Our aspirations were wildly different. Mr McGillivray's plan spoke of a traditional conservation approach centred on restoration, with ecologies stripped back to recover a landscape of the past. Reimagined as an outdoor museum, a model of its former self, the Graving Docks would be arrested in time with readily consumable histories. My time spent on the site had convinced me that there was more than human interest and nostalgia to account for here.

Liquid Landscape

Finally, the base plan was sent through by the architects but when I open it a storm of lines and layers splay out across the computer screen. I quickly close it without having made a mark. It was a beautiful late Summer afternoon so I headed down to the Graving Docks to think. The river looked nearer than I remembered it, and I didn't recognise the way that the water filled hollows stretch on for miles like an upturned sky. It seemed so bare. I took a seat on the granite steps at the head of the middle dock.

Water had been my ongoing curiosity here. It had to do with this land's use-history – one that could be described in terms of watery dependence, from early farming and traditional craft practices, to the river edge's later industrialisation. But it also had to do with the role of water on the site today. Urban water was creeping back in, but it was a tentative reclamation. The site's hydraulic infrastructure has eroded to such a degree that the basins were partly tidal, but the water inside and the life it hosted was still restrained by the infrastructure. Plants, people and birdlife, publics all contribute to the active transformation of the site, but was

curious to imagine what more water could do. The prospective loss of those unusual land/water intersections with the Graving Docks' regeneration only fuelled this preoccupation.

I walked to one of these sites of watery reclamation. At the eastern end of the middle bay there was an industrial relic, a wrought iron receptacle roughly 5 x 3m, filled half a metre deep with rainwater. Whilst the other watery reclamations on the site were effected by diurnal, lunar and tidal temporalities, these water-bodies were quite still. Time was slower here. I peered into the shallow water. 'In the same way a rocket frozen in mid-flight is said to contain its velocity, so mature standing water is teeming with contained possibility', Farley and Roberts write (2012: 80). As the sun penetrated the shallow basin, heat and light were conducted through the water, spurring on the growth of algae and aquatic plants. Farley continues his observation, noting that if 'the fast flowing stream or river is possessed of current, then ponds and gravel pits might be said to be cells themselves, self-possessed, simple batteries converting sunlight into energy'. Time emerges from within rather than without, so that contemplating these still waters 'is like taking an old watch apart, its pieces spinning and winding down on the bankside' (Farley and Roberts 2012: 80).

I walked back to Highland Lane to settle down on my perch atop the wall. With legs swung out over the middle dock now reflecting a dimming sky, I dug out my sketch-book and a thick black pen. If The Company's 2003 plan had been successful, this chamber would have been built over to maximise the site's capacity for saleable units. Whilst this initial plan was aborted for structural reasons, it was a proposition that didn't bode well for further urban water considerations. When I had spoken with the director about the latest plan he had described the river bund that was to be built along the river edge to protect the development from flood risks. What would that mean for river access? Would engagements with the river be limited to a privileged apartment view? Maintaining strict control of the river border would exclude all sorts of social and ecological opportunities too.

And what of the urban water in Mr McGillivray's Heritage Park? It's handled in the same way as all the other dynamic elements of the site; by building infrastructure to mediate a human experience of it. Bridges. Boats. Floating gardens. His proposal to seal Dock Three so that the pontoons can be accessed throughout high and low tide is another good example. I could diagnose the shortfalls of this approach because I had considered it myself. Early in the fieldwork I had come up with a handful of fairly lacklustre interventions for watery locations on the site, grouped around the title of 'Making Water Collectives'. Each work imagined how objects, populations - human, animal, botanical - and ideas might be brought together in order to re-define the role of this medium within the city. There was a tidal bridge, a boat house and restored slipway, a microscope field station, a series of diving boards, or fishing platforms, referencing the scaffold structures that once held ships erect in the docks, and turbines in the

water gates. I had wanted to design *with* water but had ended up with a load of infrastructure that only mediated human experiences of it. They were interventions neither celebrating nor assisting the sites capacities.

But it was this failure that led to new investigative activities and what felt a much stronger second approach. The early proposals spoke of a site boundedness that had limited my sense of water's possibilities. So I took to the water itself, travelling the broader estuarine system of which the docks' were a part. Contextualising the site within a greater geography and deeper riverine history led to a very different perspective on the site. I could see a bigger role for this dockland - a more-than-human role.

I flipped the last sketch page over to start on a new sheet. I filled the space of a double page with three chambers and the river channel, and started to work between them. What if this landscape were to open out on to the estuarine system that had made it - to tend to its waters and ecologies in various ways? This had been a maintenance landscape after all. Then, water was tightly orchestrated in the interests of servicing the ships of the day. Could this machinic landscape be reimagined now in more dynamic terms? What could be achieved by blurring the boundary between river and land? What would it mean to give the Graving Docks up to the river?

F r e s h w a t e r

I was curious to know what sort of challenges the river's water ecologies face, and whether there might be some way to address them through my proposal. When I heard about the Clyde River Foundation research group based in the university's zoological department I send the director a hopeful email.

'The River Clyde doesn't behave like an extreme environment, as it should', Willie said, hunkering down over the table during a busy lunchtime at the university café to get beneath the rabble, 'An estuary should be unpredictable and highly dynamic. But the Clyde? Well, it's more like a big funnel'. He handed me a copy of the Foundation's latest report about their delivery of The River Clyde Fishery Management Plan.⁵⁶ He drew a sketchy diagram of the early Clyde estuary on a napkin. It was more like a tidal plane at one time, as he described it, shallow, hugely wide and pulsing.

The Foundation's research is focused on the freshwater of the Upper Clyde. They seek to improve fish populations and their habitats and to increase community engagement with the river. Willie explained that this involves a combination of long-term monitoring, a

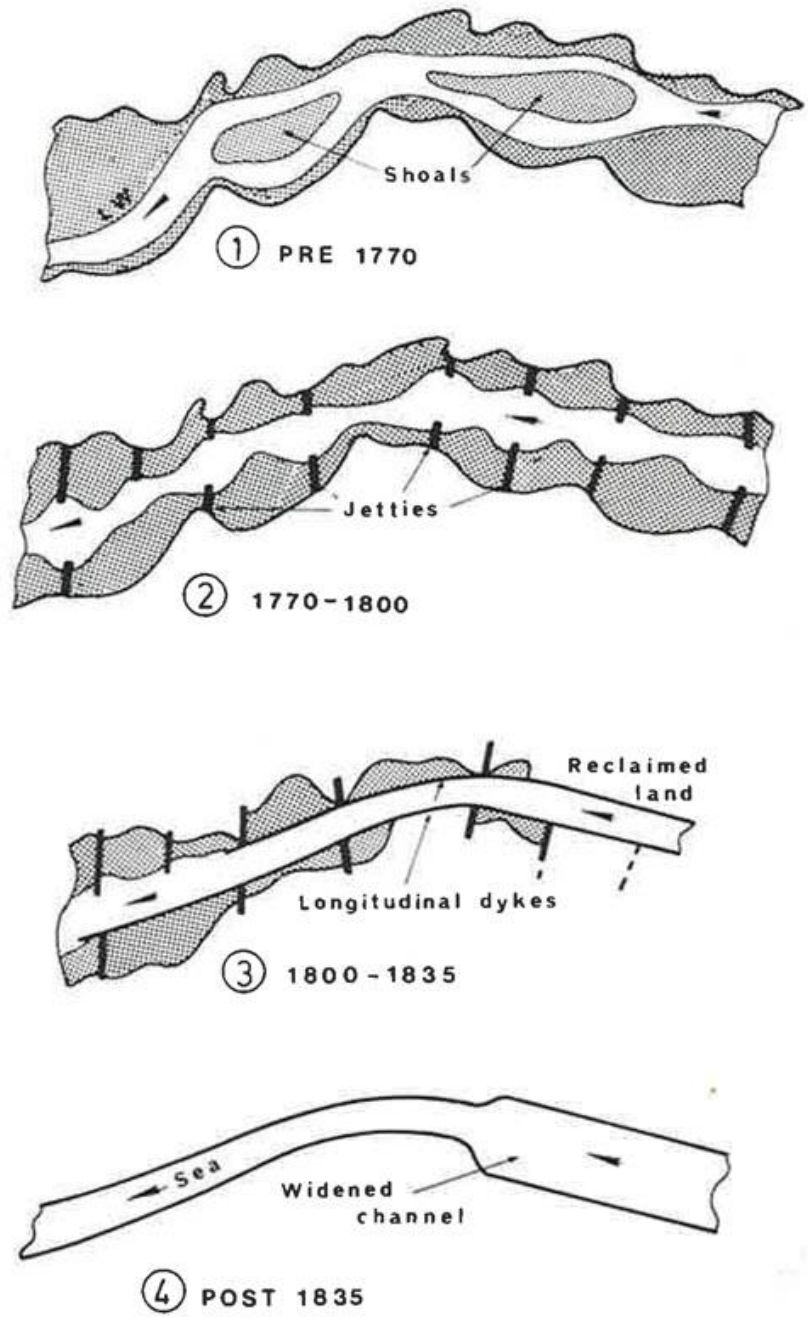


Fig. 45 River Deepening: Successive stages of River Clyde restructuring (Image: Riddell, J. 1988: 8)

sustained investment in education and 'citizen science' initiatives. 'This is an especially fragile ecosystem you see. The lower estuary is more resilient because it is connected to the open sea.'

Supplies of freshwater to the estuary are limited, and once polluted the rate of recovery is slow. Care is necessary to preserve the waters because the entire estuary relies on its oxygen content. This is one reason for the group's dedication to a part of the estuarine system. There are practical reasons too. Different equipment is needed to work in fresh and saline water. In freshwater it is possible to use electrical emitters to attract fish shoals to the boat. Infrared lasers can then be used to count the population. The data gives a sense of numbers, but also the spread and movement of species. However in saline water, different methods have to be used because it is impossible to conduct an electrical current. 'It's better to focus on one system and get the best equipment', Willie explained.

I was surprised to hear that research of the estuary is divided into two parts when the water system is actually graded in reality. Willie told me that the tidal weir at Glasgow Green marks the boundary point between his study area and the lower estuary. He suggested that I get in touch with the SEPA officer for the lower stretch so that I have the full picture.

'So what kinds of tests do you do on your water samples?' I asked, curious to understand the water issues the foundation want to monitor. 'Oh no, we don't take samples. We use biological indicators – invertebrate, habitats, fish mostly'. He drew my attention to images in the report of their boat and equipment. 'We can learn all that we need to know about water quality from them.'

'So what sort of fish are in there?' I asked, embarrassed that I don't have a clue what's in my own river. 'Well not much, up until recently' he said shaking his head. 'But the eels have returned. They come all the way from the Sargasso Sea, just off the coast of Bermuda. Then there are the salmon of course. These migratory species can tell us a lot about the health of the river system as a whole', he said. 'And there are plenty of surprises too nowadays, what with the changing climate. Just last week in fact, we were out combing through the foreshore near the Livingstone Centre, and do you know what, we found an exotic crab species, a... well...' He stopped himself. 'Sorry but I can't say much more about that actually'. Exotic crabs? In the River Clyde? I'm was hanging on, waiting for him to continue. 'We're a charity, so we have to be careful about what we do with our data', Willie explained, with a hint of disappointment, 'It's our income you see, and we couldn't continue without it'.

Willie turned to the topic of the salmon. 'An emotive creature here of course. They were choked out up until the late 1980s. The whole species. Extinct'. He went on to describe the effects that pollution and structural changes of the river had on them. The Clyde is 'a great example of a recovering river', according to the Foundation's website, but there is a lot more

to do to assure the future of the salmon population. They still struggle to reach their upstream breeding grounds - their 'natural extent' as Willie described it - due to the number of weirs that divide the Clyde. Even if they manage to jump high enough over these man-made waterfalls, then they still have to navigate through oxygen starved effluent soup outside two major sewage works. It's not an easy trip. The River Clyde is a vital passageway but this has been recognised all too late.

Willie told me that the Foundation have been installing fish passes at some of the major weirs, the last one completed at the David Livingstone weir. I remembered the drop vividly - it being the one we nearly nosedived over in our canoe/row boat. This latest addition uses an infra-red fishing rod to count the salmon that pass through the turnstile. What a thought. A fish-way. In a river.

The Foundation are trying to get people to engage with the River, to care about its vitality through what Willie calls 'citizen science'. They have been training anglers to do fish counts. Public outreach in schools is an important part of their mission. Every Summer they gift trout eggs to a number of local schools and teach classrooms of kids how to care for them. 'They learn a great deal by taking ownership of them' Willie explained.

This question of stewardship is an interesting one but with time short I'm keen to return to the issue of the Clyde's structural changes and how they have affected its water ecologies. This would seem to have implications for any sorts of land/water intersections I could consider. Might the right sort of river edge make a difference? 'What would the ideal urban river bank look like?' I asked, hopefully. He paused for a moment. Perhaps thinking it's going to take more than a verdant riverbank, but he was obliging. 'The key way to think about it is as a transition area. A graded space between land and water. Ideally you're looking for a loose foreshore and marginal habitat.'

On departure, Willie recommended I look at their website. A sentence in their mission statement stood out. 'Our mission is to pursue scientific understanding of the ecological health of the River Clyde and its tributaries, drive environmental improvements and build capacity for its stewardship'. But is stewardship really the best way to form a relationship with the river I wondered? What can we really learn from trout extracted from the river and domesticated in a classroom that doesn't assure us of our own self-importance? It was the Foundation's use of the biological indicator that I had found most compelling. Where knowledge and understanding comes with viewing the river as an interconnected system. Where fish are studied to understand water quality for example. Coming to know the river by the qualities that emerge as species, elements, topographies and forces come together would perhaps better put us in our place.

Saline Water

So, I had half a picture, and some sense of the kinds of challenges it might be possible to address, but what about the lower Clyde? It wasn't simple trying to contact the SEPA officer responsible for this stretch. Any enquiry only makes it through the organisational bureaucracy if it is detailed on a Freedom Of Information request form. I submitted several before finally receiving an email from George Rattray. I had also thought to ask for data recorded at the SEPA monitoring station that bobs about on a yellow buoy on the river directly adjacent to the docks' pump house, measuring salinity, oxygen and chemical composites of the water, but the FOI form for this is even more complicated *and* costly so I held off to see what George was willing to share. I was invited to the SEPA Glasgow headquarters, situated in the leafy suburbs of West Dunbartonshire. I expected something huge and complicated, an army of staff, a labyrinth of corridors, but the HQ is modest with only a handful of employees. When I arrived, George was at the reception desk in search of envelopes.

George led me through to the meeting room and opened his laptop. He had a SEPA slideshow to show me. 'It's a good introduction' he told me. He closed the automatic blinds with his remote control, and the projector lit the wall. Slide One was a graph - a historic chart of the oxygen levels in the Clyde spanning the last century, from the river's industrial heyday, through its demise, and on to the present day. The O₂ line cowered low alongside the x-axis until the last few decades when it sweep upwards all of a sudden. 'Dissolved oxygen is the elixir of life in the river Clyde... the city learnt has learnt that much too late', George explained. SEPA started working on the situation in the late 1980s when the river was devoid of life. George told me how thrilled they are to see the improvements, particularly the increase in fish numbers and species diversity.

'The flounder was the first to return', he explained, 'a species much more pollution tolerant'. I remember the flounder fish I'd spotted in the mournful waters of the ruined pump house with its wide flat body barely visible in the shallow murk. I could see that it was strangely still - nowhere to go in this mean pool full of detritus I'd thought. But perhaps it was just out of oxygen. In the last few years they have recorded the return of a sustainable salmon population which seemed impossible when they first started out. 'Mother nature fighting back' George declared, 'a recolonization...its slow but it's happening'.

George listed the threats to the river Clyde's water ecology in order of importance, and to my surprise, it's wasn't all about waste disposal. Dredging is by far the most significant threat to the river's water ecology. Man's gouging out of the river has left a long legacy of issues. The sewage works come second and then the output from industry. 'This is a great diagram', George

said, moving on to a wedge-shaped isometric with sweeping arrows for water flows. 'A summary of all our problems'. The summary wasn't imminently forthcoming, even when I shuffled my chair in towards the screen, but George pointed out its features to give me a better idea. The wedge defines the form of an estuarine water body, and it is in two parts; a lighter blue at the tapered end representing freshwater flowing from the source, and the deeper end of the wedge in dark blue representing saline water flowing in with the tide. Mid-way along the length of this water body, saline water is shown creeping up the estuary bed with freshwater flowing over the top. A degree of division is typical of estuarine water dynamics. Saline water is denser than freshwater. However, the Clyde estuary has been violently deepened and straightened that these two water systems no longer mix at all. 'Saline water pulses upstream along the base of this deep trough, whilst outgoing freshwater skitters over the top', he explained. He swept his hand to and fro in front of the wedge, indicating the tidal rhythms. The saline water lies so deep that it is often stagnant on the river bed where it is starved of the freshwater's oxygen - a deficiency exacerbated by the deoxygenating organic matter accumulating on the river bed. And with these sorts of depths the estuary can't easily flush out the waste. 'Dirty, deoxygenated water simply sloshes about and doesn't go anywhere', George concluded.

Deoxygenation is always worse in the Summer, when temperatures rise and river flow is reduced. Fish have to compete for oxygen and struggle in concentrated pollutants so large scale fish kills are common. The species begin to suffocate. The worst for a long time took place at the beginning of the Commonwealth Games, he explained, when 200 salmon washed up on the banks. I wondered how I could possibly missed this event. 'In fact, the waters are very poor, at their worst in fact, where you are, outside the docks' he pointed to a map of the river, his forefinger landing on the waters adjacent to the pump house. 'This is where the estuary is at its deepest'.

This depth is maintained by dredgers continuing work right up to Springfield quay where the Waverley paddle steamer docks, outside the Glasgow Science Centre. Clydeport Limited has a statutory duty to respond to the relentless sedimentation of the river where it is commercially viable. The work is essential for the Clyde's remaining ship building industries, its waste industries, and commercial craft like the Waverley. SEPA have tried all sorts of strategies to deal with the effects of dredging - 'mad experiments' as George described them - particularly deoxygenation. They have tried bubbling artificial oxygen into the Clyde using pneumatic pumps fixed to a barge. But it was neither sustainable nor economically viable and 'it didn't get to the root of the problem', George reckoned.

But there have been exciting developments in their research since then. Water quality stations docked along the river from the Science Centre up to the tidal weir have shown that

sedimentation has drastically improved water flows, turbidity and dissolved oxygen. This research has been carried out in collaboration with Glasgow Strategic Studies and Scottish Water with the view to meeting the goals of the Water Framework Directive. 'From our analysis, we can say with confidence' George explains proudly, 'that the key to the river's improvement is morphological change... better shaping the river to improve water flows, chemistry and habitat'. I tried to picture it. The river silted up. The return of the Clyde's tidal flats, the islands, the flooded banks.

'Our hands are tied of course', he said frankly. 'We can't go about calling for the closure of the Clyde as a working port. We have to maintain a holistic outlook'. It's a difficult brief – to find a solution to an ailing river that works within the limits of a disregarding economy. Their solution will always be compromised but there are things that can be done. SEPA are working with the dredger operators to devise sustainable methods of extraction and deposition. They suspect that river profile can be sculpted differently, in a more sensitive way, to less severely impact on the dynamics of the estuary.

I was keen to find out again whether there is some role that the river's adjoining landscape can play. George suggested that I look at the Sustainable Urban Drainage (SUD) scheme on Strathclyde Street, where grey water is treated before making its way into the river. 'The SUD scheme in the Commonwealth Games' athlete's village is very successful too' he added. 'Ah yes, I'm familiar with that one' I replied, remembering our strange experience docking at the banks of the village: the black gull writhing and choking amongst the reeds; the helicopter chase. 'You see, urban water should remain visible. This is the great thing about the SUD landscape. Water is treated in a transparent way'. Glasgow has a terrible history of burying its important water-ways, George explained. Our drainage channels, waste water routes, even the Clyde's important tributary burns are funnelled in culverts beneath concrete. SEPA would prefer that we capture urban water and feed it through integrated green infrastructure. In terms of the bigger picture, this infrastructure can play an important role in tackling the heat island effect of the city too, which is of course exacerbating the deoxygenation of the river. 'The benefits are two fold', George said, 'where blue and green come together you can have amenity spaces alongside water treatment. It's these kinds of integrated landscapes that we work towards'.

My thoughts turn again to the Clyde as passageway. Not only is it a struggle for the Clyde's migratory species to travel upstream, but the tidal water itself has been arrested, with the dredger compromising a vital link from source to sea. It's a call to think beyond the river edge, to think beyond the limits of our land-based concerns for effluent outflows and river views. Could we instead think of the river's edge as the threshold to a vast, complex estuarine system upon which many living species depend, for oxygen at the very least?

Sedimentation of Memory

I met artist Douglas Morland on the north bank Broomielaw Quay one Summer evening. This was the site of his performance 'Keening Luna (A Tidal Threnody)' which was staged during the Glasgow International Festival of Visual Art in 2012. It's a small cobbled spot by the river, considered one of the riverside's 'public realm' spaces, host to a scattering of benches and the Clyde cycle way which elsewhere is squeezed between the river and a busy road. We hung around its edges since the thoroughfare was busy with commuter traffic on bike and foot. 'I decided on this place because it's so well endowed with these industrial remnants', Douglas explained, scuffing his feet on the rusty crane tracks. 'It's one of the best places to see the river industry as relic'.

The performance was part of a larger project entitled 'High-Slack-Low-Slack' which saw five different artists engaging with the movements of the tide in various ways, across the GI Festival's run of dates. Contributions from the other artists enrolled a variety of sonic technologies, props and spaces in different city environs. Minty Donald translated the Clyde's tidal chart into a musical score which was then played from inside an otherwise ordinary wheelie-suitcase at bus stops around the city, and Nic Green orchestrated a call and response piece performed by two female ensembles standing on either bank of the river at high tide. 'It raised a concern I never knew I had, the brief I mean' Douglas explained. 'Every day I cross Kings Bridge but when this project came along it was like I was seeing it for the first time. It's become invisible to us, this river. The work was about opening up a space for the imagination here, and that was a challenge to me too'.

The concept for Keening Luna started with the moon and its cyclic pull on the Earth's waters, the relentless concealing and revealing it stages which is indicative of the way that memory works. The tides became a frame through which to explore the memory of the Clyde - the memory that *is* tide, the memory carried by it and the memory it offers up. In the Glasgow City Archives, Douglas unearthed a history according to the city's tidal forces - the culture, economy, topography and human stories. 'It was a story of progress in many ways, but in fact I was more interested in the way that each step forward continued to dredge up the past.'⁵⁷ The prehistoric timber canoes pulled up by the dredgers during the deepening, narrowing and straightening of the Clyde during the 19th century was a particular curiosity. In his Keening Luna essay Douglas writes, 'Opening a space in the imagination of the Victorian Glaswegian river-user, he too dependent on its ebb and flow, a sense of continuity may have been perceived'. There was a personal dimension to this work too. Dougie's father grew up in Whiteinch to the 'clank and clangour, klaxon bursts and shrill whistles of heavy industry' and

later sailed the same river as a merchant seaman. Douglas wanted this work to explore the idea of sedimented memory, a kind of collective memory that accretes across the generations. 'I wanted to know if there was something of my dad's Clyde in me. Could I place it? How far did it stretch back? The work was really a call to memory really. A call to the moon, its tide and the memory it carries.'

Douglas showed me to the quay edge where the first ritual of the performance took place. Here, buckets were hurled into the river and a female choir grouped by the edge sung to the water and sediment as it was extracted. It was a grand symbolic gesture in many ways, this archaeology of the river, and of the the mind too. But it also involved a material engagement with substances that took it beyond the symbolic - substances of water and sediment that are memory in its physical form, substances that speak of origins and beginnings. 'Memory started to materialise' Douglas explained, 'and it opened this strange space - a space connecting the audience to the Clyde's tidal continuum, a continuum that weaved into past lives and landscapes as it stretched back.'

The materials framed by Robert Smithson's 'Spiral Jetty' (1972) suggested this same materialisation of memory - memory that he described as the 'geological imaginary'. Reflecting on the work Smithson writes: 'Chemically speaking, our blood is analogous in composition to the primordial seas. Following the spiral steps we return to our origins, back to some pulpy protoplasm, a floating eye adrift in an antediluvian ocean... Perception was heaving, the stomach turning, I was on a geologic fault that groaned within me' (Flam 1996: 148). Smithson figures himself enmeshed in the work, the history of that rock is his history, his geological history. In sediment and proto materials we know our origins and inevitable future.

For the second part of the performance Douglas brought the water and sediment extracted from the river to the Trust Hall of the Clydeport Authority Headquarters, an opulent nineteenth-century relic of Glasgow's maritime heritage. Here the water was poured into musical glasses, then using his fingers, a loop pedal and a delay pedal Douglas created an improvised sound work. 'The motif of the circle returned again and again in this work, in its rhythms, the gestures, the loops and the echoes' he recalled. We sat on the rusting mooring posts, the refurbished riverfront all around. We talked about another line in his essay; 'Progress and industry leads to an unearthing of the ancient, the unknowable'. It's a past that is still live in the water and the earth, offering itself not to nostalgia but to a present that might better know its possibilities.

Act 1 Excavation

Re-opening the architect's base plan the following day, I panned around the fractal shapes and coloured lines in black space, trying to situate myself. The visualisation provided by ZM architects had a former design proposal drawn over the base plan. Clydebrae quay was filled in and built over with crescent streets and suburban houses, large apartment blocks built into Dock One and Two, with hotels lining the river bank. One-by-one I switched off the fifty-two drawing layers until I was left with 'DOCK-CHAMBER' and 'ALTAR-STEPS'.

With the water-filled chambers existing as an outline now there was no getting past the hard, isolating forms and the effect this will have on the water flows captured by them. What would happen, I wondered, if it was possible to connect one chamber to the other? I started a digital-dig into the bay between Dock One and Dock Two, removing the lines of the altar steps - *Trim*, click, click, click... - grading the ends with contours until there was a new ground plane lowered by four metres - half a metre above the level of low tide. Culverts already expose the chambers to the tidal river outside but they are too narrow to keep pace with the full, dramatic tidal range of four metres. Cleaving the riverbank was the next priority.

This lowered bay would become a tidal plane, hidden then revealed by the fluctuating tide. But thinking more about this tidal transformation I was compelled to take the excavation further. If I lowered the full extent of the bays around Docks One and Two the entire area would be flooded at high-tide, and at low-tide the iconic scalloped forms of the Dock's would be revealed. The cultural heritage of the site would be remembered in a dynamic way as a vital water ecology took over the site; a site for heritage *and* ecology, a theatre of bio-memory.

I drew a quick cross section across the breadth of the excavated bays, adding two blue lines - one for high-tide, one for low. I populated the scene in Photoshop with vegetation and people to give a better sense of scale. The extent of the excavation was pretty drastic. What would the heritage enthusiasts, the defenders of industrial preservation think? Might they judge it an evisceration? I'd have to work hard on the visualisation of this idea, to demonstrate just what it made possible.

With thoughts fixated on excavation, I was reminded of a proposal by Govan based artist Tara Beall made when it seemed likely that the docks' were to be built over. On her 'Hidden Histories' blog, Tara suggested making a cast of the first chamber as a monumental piece of public art. Like the lifesize casts produced by artist Rachel Whitread, the surface of the concrete volume would memorialise the inscriptions of the chamber's material history. If the chambers' fate could be different, the excavation of the bays would *augment* that process of inscription that Whitread sought to capture in her works. As water flooded the bays they would

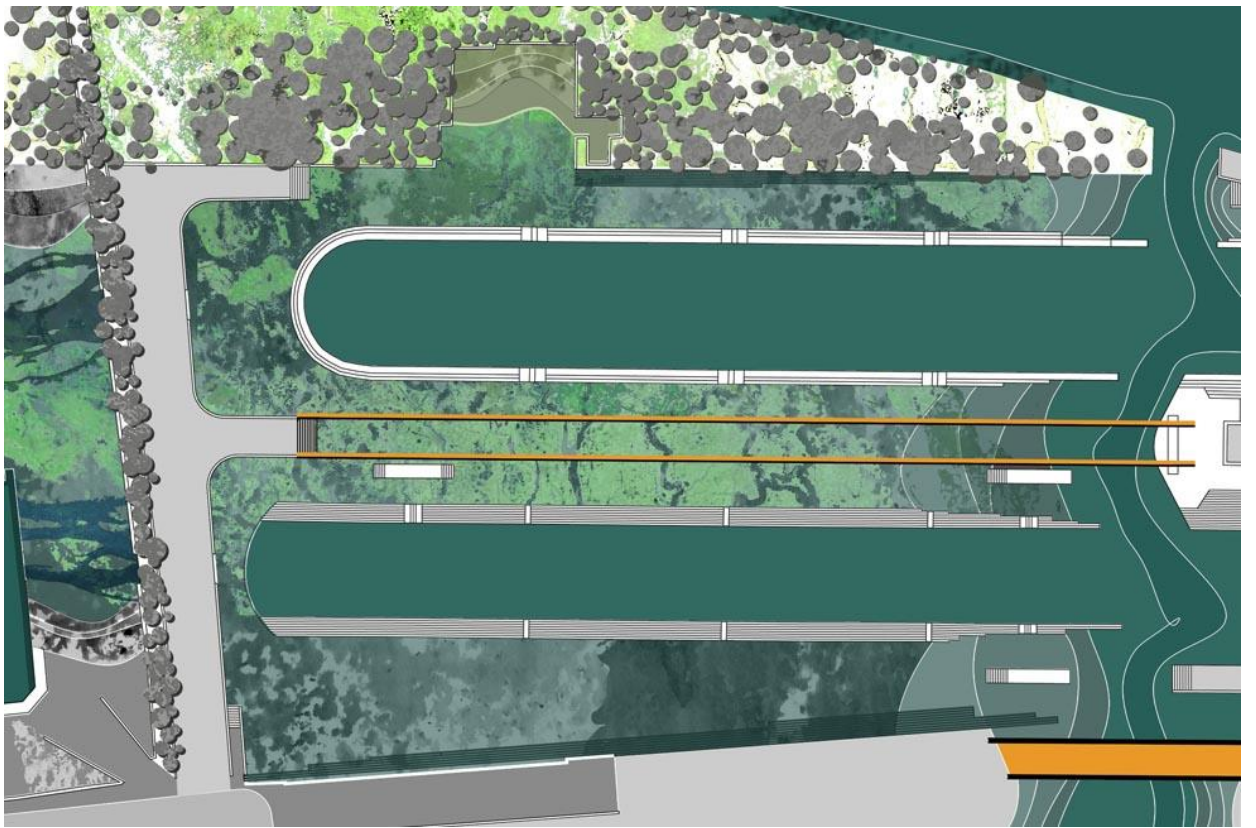
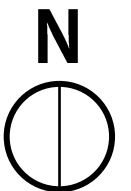


Fig. 46 Act 1: Excavation: Tidal plane framing dynamic histories (Image: Olden, R.)



be marked by flows of water and the detritus it carried. Things would be washed up and left behind - the river offering up an archaeology of itself. In the dusty log books filled out by the Dockers when the site had been in operation, there was an individual column to record the number of carts of rubbish that had been removed once the gates had been closed behind each arriving ship and the chamber water drained away. There were as many as six and eight carts a time but no further details to allow for context or comparison. Today, steep river walls along the length of the Clyde ensure that its flotsam and jetsam remains a mystery. What would the river throw up for us to contemplate?

Next on the baseplan, I had to address the crane tracks running the length of the bay I had just CAD-excavated. I found the layer for the crane tracks and clicked. They are wonderful artefacts - thick as structural beams, rusted a warm orange. If there was some way to suspend the tracks at their original height by fixing them to the retaining walls at either end of the bay, then they could mark the excavation. They would frame the empty space of the bay - a space that The Company was intent on filling in - marking it as a territory, an air space, a passageway of sorts.

To finish, I drew a flight of steps descending from Highland Lane on one side and the Watergate peninsula on the other into the sunken bay. It marks the descent into a very different space. A dynamic, elemental zone. Even slightly hazardous. This Liquid Landscape would pose some challenging questions. I remembered my struggle on the mud flats outside Port Glasgow when I was confronted the arrogance of urban bipedalism that was my own. Could we accept a future that does not privilege the human? Could we accept the challenge of tricky muddy, stony terrains and periodic flooding, where access would not always be possible?

B e n e a t h t h e A r c h e s

As temperatures soared in the sweltering city, anticipation for the Commonwealth Games broke into a state of fevered excitement when sporting competition commenced. One stretch of my daily commute, nearby the riverside Hydro arena, was closed for the duration. Each morning I dismounted, giving myself up to a human tide of spectators waving and cheering with oversized foam hands as they sweep down the road towards the gymnastics venue, passing a phalanx of security guards and rank of pungent burger vans. 'Floor, bars, horse, rings, beam!' announced my neighbour in the crowd to her accompanying party, flapping a Games program in the air. We filed past the Hydro, a strange metallic egg of a building. I picture the lithe and ludic performance space inside.

It wasn't yet 10am but already the sun was blazing, and I was desperate to get to the other side. I had to test my excavation idea. The four-metre drop needed more consideration to ensure that all the edges were resolved, particularly on Highland lane and around the Pump house. I fetched my metre stick from the studio and headed down to the fence. Piled high on Highland Lane were two stacks of weighty-looking security fencing - shiny, metallic grids that haven't yet lost their function to decay like everything else around here. They were a bit unnerving. I saw Jimmy at the end of the lane with his dogs and walk down to meet him. 'What have I missed?' I called, gesturing to the fencing. 'Fireworks. They tried to keep me off when they were setting up. The flotilla were fleeing up the Clyde and I was raging I couldn't get on to see them'. The director later told me that the site was used for the production of the opening ceremony that took place in the canting basin adjoining the Graving Docks. I looked at the details of the 'Sound to Sea' event online that had been staged to celebrate Glasgow's river. The pyrotechnics, pirates, treasure, princesses and rendition of *Ave Maria* made for an eclectic interpretation.

I left Jimmy and the dogs and walked round to the Pump House. The drop might be too severe where the Pump House aligned with the edge of the bay - it might tower at a substantial height from the bay. I got to work with the measuring stick. But if this excavation also exposed the underground boiler room then that could be very interesting. I walked through the Pump House arches and around the tower, looking down on to the bay from this higher verge. There was a new den. Another anonymous dockland architect had taken two of the security fences from the stack on Highland Lane and placed them over the exposed underground boiler room. The fences were woven with willow and broom.

*

That evening I headed back down to the river to the majestic arches of the 2nd Caledonian Railway Bridge in the city centre. Once an echo chamber for Susan Philipz's (2010) Turner prize-winning installation 'Lowlands Away', today it was host to an outdoor cinema event 'Cargo, Camera, Action'. The event was commissioned by the Glasgow Film Theatre, and it was part of a day-long program of performance events marking the Commonwealth Games. Here, artists Minty Donald and Nick Millar were projecting footage of their performance project 'Bridging' onto a screen set up beneath the bridge's arches. The screen was hung at the end of a pontoon once used by the Clyde water bus. Up until 2013, shoppers could board a ferry here and make their way downstream to Braehead shopping centre. I joined a small party waiting for the evening light to fade. The inscription on Iain Hamilton Finlay's column supporting the bridge, our shelter, slowly dimmed:

ΤΑ ΓΑΡ ΔΗ ΜΕΓΑΛΑ
ΠΑΝΤΑ ΕΠΙΣΦΑΛΗ ΚΑΙ ΤΟ
ΛΕΓΟΜΕΝΟΝ ΤΑ ΚΑΛΑ
ΤΩΙ ΟΝΤΙ ΧΑΛΕΠΑ

ALL GREATNESS
STANDS FIRM IN
THE STORM

Images flickered into life over the screen, with the ebbing inky waters of the Clyde as backdrop. Weather-worn hands grappled with heavy rope. Rain fell on the surface of turbulent water. White foam bubbled up behind a boat trawling across the Clyde. Features screwed up on faces exposed to a bitter headwind. The men in the boat transport the rope back and forth across the river, weaving it around the mooring posts lining the edge of the north and south river bank. The film closed with a view of eight loops strung out across the Clyde. It read like a meditation on a wilful river and man, man and a wilful river, and the ongoing (im)possibility of collaboration.

The works comprising 'Cargo, Camera, Action' were commissioned to showcase the River during the Commonwealth Games. They celebrated the Clyde's industrial heritage, with a headlining, larger-than-life offering from artist collective 85A telling part-truths part fantasies of an abandoned Russian cruise liner that drifted up the Clyde, crewed only by a slew of rats and a loyal Captain. Over the day, the Clyde emerged in performances as symbol and myth.

But the river that emerged in 'Bridging' was quite different; though it had been a surprise to Minty and Nick too, as the work had unfolded. Originally they had planned to install 12 loops across the river's surface with the help of a Clydeport trawler. These loops would symbolise the Clyde's 12 bridges whose construction historicise the river's emptying out - bridges which could be built with the disappearance of the river's majestic vessels and which sealed that future. In the tension of those ropes strung out across the water we would be invited to reassess our own connection with this watercourse. In the steady work of the trawler we would be reminded of an animated river of the distant past. But when it came to it, they managed just eight loops of the rope. The full force of the elements hadn't been reckoned on. The tides, the weather, the light turning to dark, all began to resist the artistic vision. This finale changed their practice entirely, raising a new concern for environmental agencies, and

informing their commitment to 'performative investigations', such that, as Minty explained, they would 'never again try to predict the outcome of the work'. It was through this failure that the Clyde as active phenomena emerged. A Clyde that, it could be argued, we are not so familiar with today.

Minty explained her complex relationship with the imaginary realm over coffee later that week. Her belief that it is important to have 'wild, unachievable visions - as aspirations and prompts to challenge our habitual positions' was counterbalanced by a wider awareness to 'expect and accept the failure of these visions... the arrogance of these visions'. Her practice has taught her that 'the everyday reality requires, compels a different sort of engagement'. Ultimately, the imaginary and the every can be 'contrary positions'.

This tension emerged during the performance of 'Bridging' when the workmen could no longer see what they are doing on the boat because of fading light, fog and rain. These people lived and worked on Clydebank boatyard. They were hard working rivermen and Minty was slightly embarrassed asking for their help with a 'symbolic work' which was, on one level, 'completely stupid'. 'We could rig up some lighting!' one of skippers shouted, over the howling wind and growling diesel engine. 'Oh no but we'll lose the artistic vision!' his mate retorted. 'Aye, aye... aye' the skipper nodded, bracing the steering wheel, white-knuckled against the tide.

Since then, Minty's performance works on the Clyde have investigated the realm of the real. As investigations of the Clyde, they do not seek to claim 'this is what it is', nor 'this is what it should be', rather she is interested in asking 'what is this?' She wonders whether rushing to 'improve' things should really be the first priority. After all, it is too much 'knowing better' which has been the root cause of many of the Clyde's problems. Even now, a diverse ecology of slugs and bacteria thriving in the toxic sludge on the river-bed conflicts with negative measures of water quality. At times, it can seem we are incapable of agreeing to see the river beyond a human perspective. Minty would rather the city faced up to what it has created, developing some sort of relationship with this blighted, polluted river beyond stewardship, before beginning another overhaul.

'Of course there are still aspirations borne of the work I do', she explained. 'Yes I would like to see a cleaner and more accessible river, but first I think we have to address the larger human/ non-human interactions which the Clyde today is a symptom of.' Through her work we are offered glimpses of what displaced human sovereignty might look like; what might be allowed if immersion in the material world is accepted, moving beyond the concrete retaining wall.

Act 2 Infill

I returned to my drawing, growing ever surer in my approach. The next part was easier. I'd last left the drawing having made a major excavation. Now I had a mass of sand and silt, granite cobbles and broken altar steps to deal with. I wanted to continue to sculpt the urban basins so turned my attention to the largest and deepest, Dock Three. This one was built later than its neighbours, and was designed to contain the larger ships that navigated the Clyde once deepened by dredging. I traced out rounded contours on the Eastern and Western ends of this chamber with a 'spline' drawing tool, filling them with the excavated material. How would these gentle rubble gradients be colonised? What would be washed up here as the tide rose over its surface? And how would water respond to this edge?

This aspect of the design responded to the sedimentation already taking place around the site. When George Rattray of SEPA and I surveyed the Graving Docks on Google Earth, he suspected that there would be a great deal of sediment build-up on the riverside of the dock gates, and the dock chambers themselves would still be deep and empty. Once I worked out how to breach the river wall, the site would be exposed to these processes, but for now the infill in Dock Three continued George's recommended 'morphological change'.

Water Modelling

I hired two wheelbarrows from the University's Department of Archaeology for use in a model-making workshop with Masters students in the early Autumn. The plan was to give the class an account of my water research and then to set to work with them imagining different land/water intersections inside a small 4x3m water-filled industrial basin (the remaining foundations of a crane I suspected), using rubble as our model material. I was curious to see what a watery starting point would do to our thinking.

The day before the workshop, with all other means of transport variously indisposed, I set off for the Graving Docks in a black cab - the muddy wheelbarrows rolling around in the back so that the driver was thoroughly disgruntled by the time we got there. I wheeled them down to the small basin. It was full after a night of heavy rain, about 40cm deep to the base. The water was a bit murky but I had brought rubber gloves for the students. I fished out some beer cans and crisp packets, and removed some of the larger stones inside to make a level base.

Next I had to gather our materials. I took the wheelbarrows to the rubble of demolished workshops piled up on the bay of Dock Two and scrambled up to the summit throwing the best stones behind me into the wheelbarrows below. From the top I could see a large group

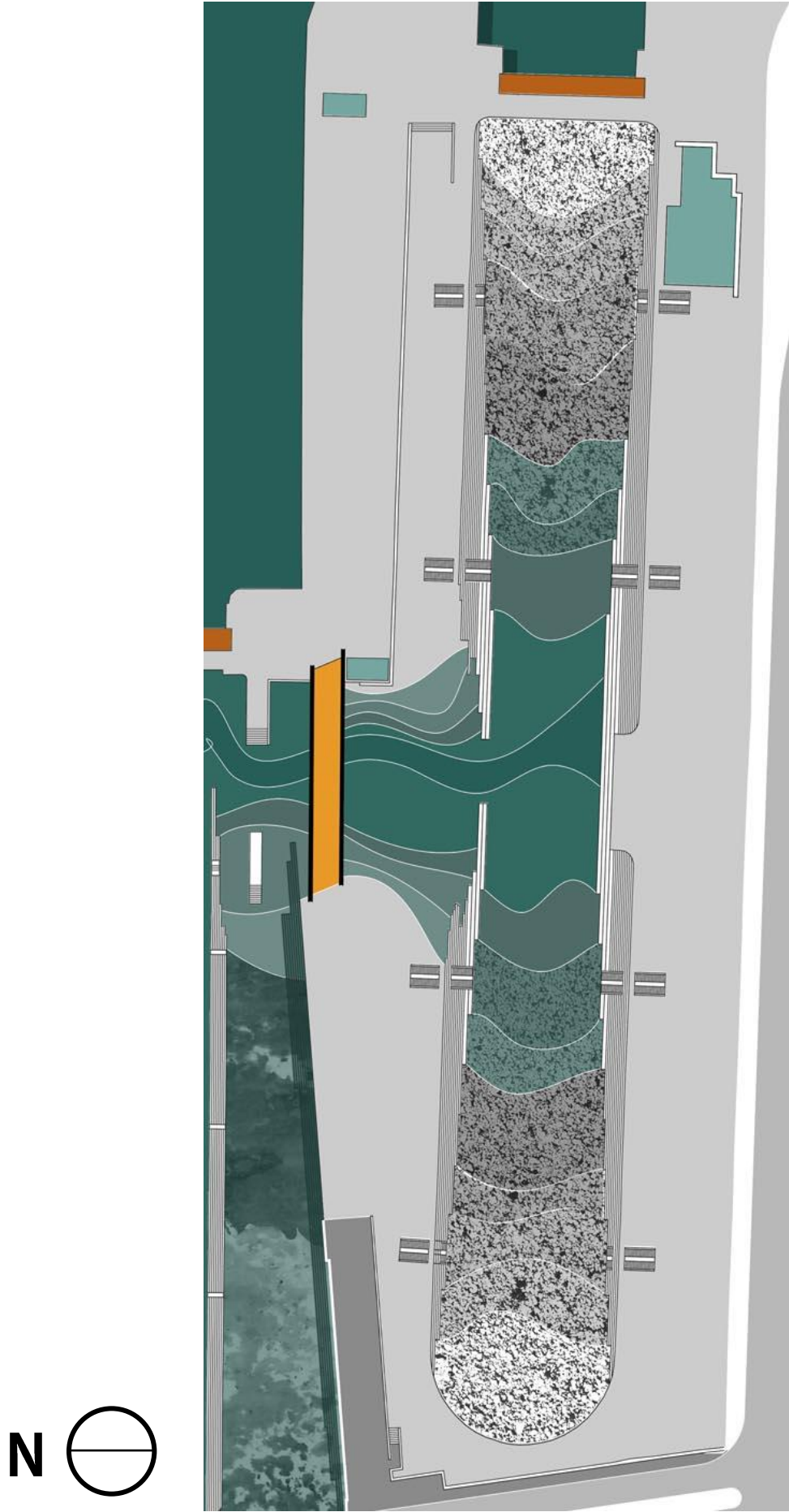


Fig. 47 Act 2: Infill: Excavated material graded in Dock Three (Image: Olden, R.)

gathered at the fence. A guided tour? As they approached I shouted hello. One of the men was carrying a camera. 'We're from River City', he shouted back, 'here to do some filming'. 'Oh hello, yes that's fine', I say, not for the first time relishing my janitorial role. 'We're filming a murder', he added, shifting the camera from one shoulder to the other 'we'll just be up there doing a bit of rehearsing' he said, pointing to the water gates. I carried on stocking up then set off back to the basin, past the final confrontation that was unfolding on the altar steps with my overburdened wheelbarrow that had developed a squeaky wheel.

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After a couple of trips back and forth I had two sizeable rubble piles by the basin. The River City crew had moved around the site to the pump house by now. I was taking a break sat on the edge of the basin when I spotted a dog making a bee line for me down the bay. 'Satan!' came a distant shout from his owner. The little terrier ran circles around my legs. 'Sorry about him', the man said when he had finally caught up, 'he's harmless really'.

We introduced ourselves. Terry was a professional swordfighter and the director of a combat training organisation for film and TV. He was here to train some actors. 'Its perfect down here', he said, 'a great stretch to parry up and down'. He started shuffling down the bay jibing an imaginary sword, Satan close behind. The dog stopped suddenly, his eyes set on something in the distance. Two policemen were walking down the bay towards us. 'Aw gawd!' Terry shouted 'he has a taste for policemen'.

The dog started running but Terry managed to tackle him some way down the bay. The policemen strode past Terry - who was then grappling the dog against his chest - and on towards me. 'Can I ask what you are doing with this wheelbarrow here?' one of them asked, arms crossed. 'I'm just moving rubble from that rubble pile over there. I'm making a model here.' I said, pointing to the basin. 'You're not dumping anything in the river then?' he said, eyes narrowing. I hesitated for a moment, mystified still, 'no, no I'm not'. 'Right, well there is a problem with fly tipping in the area so we need to know what's going on here', he said impatiently. First the boat, now the wheelbarrow.

So what's this model all about then?' asked the other drily, 'We'll need to have a look at that'. I brought them to the basin, amused now to think I was a suspect plotter. 'I'm building a model landscape inside this water pool with the rubble here'. Right', the other said peering into the murky water 'well make sure you take these wheelbarrows away with you'. The first officer scribbled in his pad and they set off up the road, leaving me to get on with a few more loads.

'Here we have Govan Graving Docks in miniature' I began. The students were grouped around the basin to receive their brief. 'Imagine a watery future'. I gestured to the rubble and invited them to work like sculptors. 'You can populate it too', I said, pointing to a pile of cuttings and other artefacts that I'd found lying around. 'Trees. People. Structures'. There was some moment of hesitation from the group. Sometimes it's more interesting to see what happens as you work - you don't need to have the idea first, I explained hopefully. 'So what *exactly* do you want us to *do* then?' asked one student, hanging back, her rubber gloves hanging limply from her right hand. A soft chinking was coming from the idle wheelbarrows that were now slowly filling with rain water.

Eventually we got going. A stone jetty was installed across the length of the basin. The edge was made green with branches and mosses. A slate slip way was added to the jetty. Small stacks of twigs were bound with grass and set afloat until we had a flotilla of green islands. Bricks were arranged around the basin - artist's workshops. Finally a large rusty screw was balanced on its head at the end of the jetty. A folly perhaps.

By the time the group had exhausted their ideas, Terry's swordfighters had arrived for their training, so we downed tools and trooped over to the other bay to join him as he barked directions from the side lines. There were four large men altogether thrusting at each other with long blue foam sticks, two of them defending the Pump House against two violent intruders. Satan was at Terry's feet riveted by the action.

Sludge

To the west of Govan Graving Docks is Scotland's largest sewage works, Shieldhall Wastewater Treatment Works.ⁱ It's one of six sewage works that occupy the river edge before the Firth of Clyde. At the end of the Summer, a scientist from Scottish Water toured me around the treatment course that wastewater takes until it reaches the outlet at the River Clyde.

I was decked out in steel capped boots, waterproof trousers, high visibility jacket, hard hat, blue rubber gloves and plastic goggles. My guide then led me to the inlet where the rush of stuff banished to an underworld of sewers and culverts spewed from a protruding pipe to meet the light of day once again: the sewage and wastewater of half a million people, and the surface run off that has mopped up city streets; a flow of precipitation, cleaning products, fuels, acids

ⁱ This section 'Sludge' is taken from published article: Olden, R. 2016: 'Sludge'. *Cultural Geographies*, published online before print.

and chemicals, organic matter, disposed rubbish and sanitary products, and on occasion, money, dentures, jewellery, and illegal trade discharges. That week, notable arrivals had included a large and very much alive snake subsequently collected by the RSPCA, and a giant Winnie the Pooh soft toy that momentarily blocked the outfall. The operators monitoring the facility's frontline keep a trophy wall of things they discover in the murky soup my guide told me.

Here at Shieldhall, the task is to separate water from waste. Wastewater runs a course which sees it filtered, settled, dredged and then metabolised by nitrifying and carbonaceous bacteria. The rubbish that has been filtered out is sent on to landfill, the sludge and scum is piped to an incinerator and the water that finally runs clear is directed back into the River Clyde.

The concrete walls at the inlet were high and the water was black and frothing and sloshing up against the sides. The inlet narrowed to meet four big wheels that plunged filters into the black water. These filters emerged covered in 'rags'; an offensive medley of nappies, wipes, tampons and ear buds. Only two wheels were in operation. 'Bearing the brunt as they do, breakdowns are standard', my guide explained. They are staffed around the clock. We watched two operators inside the cage of a motionless wheel removing a choked filter. When the problem is underwater, the diving squad are called in. What world of waste do they know - those that dive in this sulphurous fog day in day out, those that dive in the thick of night with it, those that dive in in its very medium? At the inlet I could feel the vapour cling to my pallid face like a fever, and I compensated by hardly breathing.

My guide suggested that I climb up on to the gantry of the big wheels to get a better look at the grit troughs on the other side. On our way around the inlet we were faced with a head high mound of silty aggregate peppered with bright yellow speckles. Sweetcorn. This, my guide explains, is the heaviest stuff that is first to settle. Gravel, sand, sludge, and all those things that our bodies fail to metabolise. We skirted around a skip piled high with blackened rags which are headed to landfill.

Stray rags hung from the gantry like stalactites. The inlet must experience some wild days in the Winter when the sewers storm. The microclimate created in here during the Summer was worse my guide told me. She couldn't keep her lunch down when her inaugural induction day coincided with a rare Scottish heatwave. But the hotter weather doesn't only cause problems for sensitive noses. My guide took a water sample from the grit troughs using an automated sampling machine. The blue topped bottle was as black as the stormy April morning outside. After the hot dry weather of the previous week a backlog of sewage had finally made it through in one big purge.

On the way to the next processing area we passed a large tanker parked outside next to the inlet. My guide explained that the facility supplements its income by taking industrial waste – but that the management do practice discretion. They declined the liquid waste of a shampoo factory that morning, for fear that the city might descend under a blanket of shampoo froth and sewage bubbles, and all the stuff we hadn't expected to see again.

The next processing area was the primary basins and, as before, we were on a metal grille platform, this one flying over four water bodies each with a water plough travelling slowly down their extensive length. Wastewater was immobilised so that all its constituent parts would settle out. The ploughs dredged the sludge and scraped the surface scum. In the first water body a mixture of oils, fats and grease slowly crept towards us, solid like an iceberg. The second body was glittering with an illegal trade discharge, that wasn't easy to contain my guide explained. In the third body the scum had been pulled right up to the edge of the basin where it clogged up the arterial drainage channel.

The smell lived, and it invaded my nostrils as it rose up from the fatty ground beneath the platform. My guide took another sample here, then began a lengthy talk about 'levels', 'solids', and 'turbidity'. I'm was looking out over the third water body where the plough had almost ground to a halt in the scum and my stomach was churning. I was full of horror. Or was it shame? 'Are you ok?' my guide asked – 'you've gone very quiet'. I nodded. 'Just taking it all in'.

My guide took another sample from the dispensing unit at the primary basins. She held the bottle up to the sky to light the turbid water. The situation was even worse here. Not only were they dealing with a backlog, but the pipe to the Sludge Treatment Works in Daldowie was closed for the day because they had exceeded their daily quota. The exceptional influx of solids had nowhere to go.

The sludge line to Daldowie was relatively new, my guide explained. Before then sludge was transported down the Firth of Clyde by the 'Garroch Head' and 'Dalmarnock' steam ships, and dumped in waters between the Isles of Bute and Arran. During the Summer months the sludge steamship would also bring parties of day-trippers along for the journey. Before the development of Shieldhall and other facilities like it, the River Clyde was an open sewer notorious for its 'highly offensive smell' and 'absolutely sickening sights' (Riddell 1979: 129). Because of its tidal dynamics 'sewage went with the ebb and came back up with the flood – a mess that, like an unwanted stray dog, could not be shooed away' (O'Hagan 2008: 152).

With the installation of Shieldhall and other facilities like it, trips 'doon the watter' became increasingly popular. The sludge boats were free, and frequented by and large by pensioner groups who would hardly notice the 'billowing columns', the 'fierce puffs, great Turner clouds of wayward brown matter' (O'Hagan 2008: 156). By this point in the voyage they

would be too busy 'dancing on the deck, or if the weather [was] wet or windy, playing bingo in the lounge' (O'Hagan 2008: 150). But a European Union directive banned this dumping at sea in 1998. Today sludge is piped to Daldowie where it is moulded and dried into processed sludge pellets which are burned to produce electricity. From tourism to energy production, the histories and geographies of sewage on the Clyde demonstrate the myriad ways we've capitalised on our own shit.

We walked on to the storm basins where untreated wastewater is directed on those stormy occasions when Shieldhall reaches critical capacity. Two mallards were padding out over the silty bottom 6 feet below us, searching for food on the urban mudflat. When the storm basins are full, the Shieldhall operators have no choice but to direct unfiltered, untreated wastewater straight into the river. I've already seen the evidence for myself on the Clyde boat trip; rags hanging from tree canopies by the river's edge, and fish that have suffered asphyxiation floating lifeless in the channel.

After the primary basins, wastewater is directed out to the aeration chambers where it runs a figure of eight watercourse over a variety of oxygen pumps. With the increase in dissolved oxygen, carbonaceous and nitrifying bacteria spawn and break down the suspended solids. My guide and I take a turn around the course. The mix of bacteria, solids and water called 'mixed liquor' was like a choppy sea, sloshing up against the concrete walls and falling through the air as mist. My guide lowered an old margarine tub lashed to the railings into the water and poured its contents into a sample bottle. Next to the other sample bottles we could see that the water was becoming clearer. 'The bugs are working hard', my guide said.

We brought the samples into a small lab next to the control room to take a look at the mixed liquor under the microscope. My eye came to focus on the 'free swimmers' that swirled through this miniature cosmos using tiny hair-like structures that beat in unison so that they could move, feel and feed. These are the ciliates my guide explained. They feed on the other bacteria and are usually an indicator of good quality sludge. The darker bacterial floc is the one that contains the carbonaceous and nitrifying bacteria. A whole world fell out of a drop.

At the outlet we watched as the treated water rushed down a series of drops and into a culvert that would bring it out to the River Clyde. The Scottish Environmental Protection Agency come to the outlet each month to monitor Shieldhall's output, which must comply with set standards for dissolved oxygen, turbidity, and ammonia content. Consent is less stringent here than a stone's throw up the estuary, where SEPA have cut the estuary with a boundary line to delineate where freshwater begins. The water was clearer but there were still traces of fat and ear buds that made curious constellations in the outlet's little nooks. Then a lone condom glided gracefully through the water and over the last drop to the river. Shieldhall's

wastewater was 'spill[ing] into the future' (Gabrys 2009: 677), but the city has already forgotten.

Act 3 Blue Bridging

There was still one final feature that I had to work out on my base plan. I had made topographical changes to link the water-filled chambers but the next thing was to connect this internal system to the River Clyde. Unsealed sluices had allowed infiltration to a certain extent, but the tidal range inside the chambers was only 0.5m compared to the 3m range in the river outside.

I worked with contours until I had a north-south breach extending from the river bank through the latitudinal bays and on to the meeting of the sediment banks in Dock Three. Water poured in as I worked into the breach with a blue render. The excavated material would be used to silt up the 'black spot' in the River Clyde, located directly outside Govan Graving Docks – the deepest section of the river's profile that suffers most from deoxygenation. I graded the truncated breaks in the bays with contours and addressed the altar steps so that they stepped down to meet the water, and extended further out into the breach to intercept the water flow and sediment. With the watergates now severed from the bays, they took on the form of an urban peninsula.

With this final act the river permeates the site. The stagnant water of the chambers are animated by tidal dynamics. The rise and fall hides and then reveals the iconic forms of the chambers. Tidal dynamics mark the land. The site's historic river connection – that lay line marked today by Highland lane – is reimagined with a vital form of 'blue bridging'. The bridging elements here are water and sediment - elements that are exchanged between river and site to form a liquid passageway.

The Pitch

A group of locals, artists, geographers, natural scientists, and all round GGD enthusiasts congregated by the fence on a late October evening to hear my pitch for Govan Graving Docks' future. 'Participation is key in this period of uncertainty', I began. 'Today you are invited to voice your hopes for this place, to contribute to understandings of its value, and to critique a possible future'.

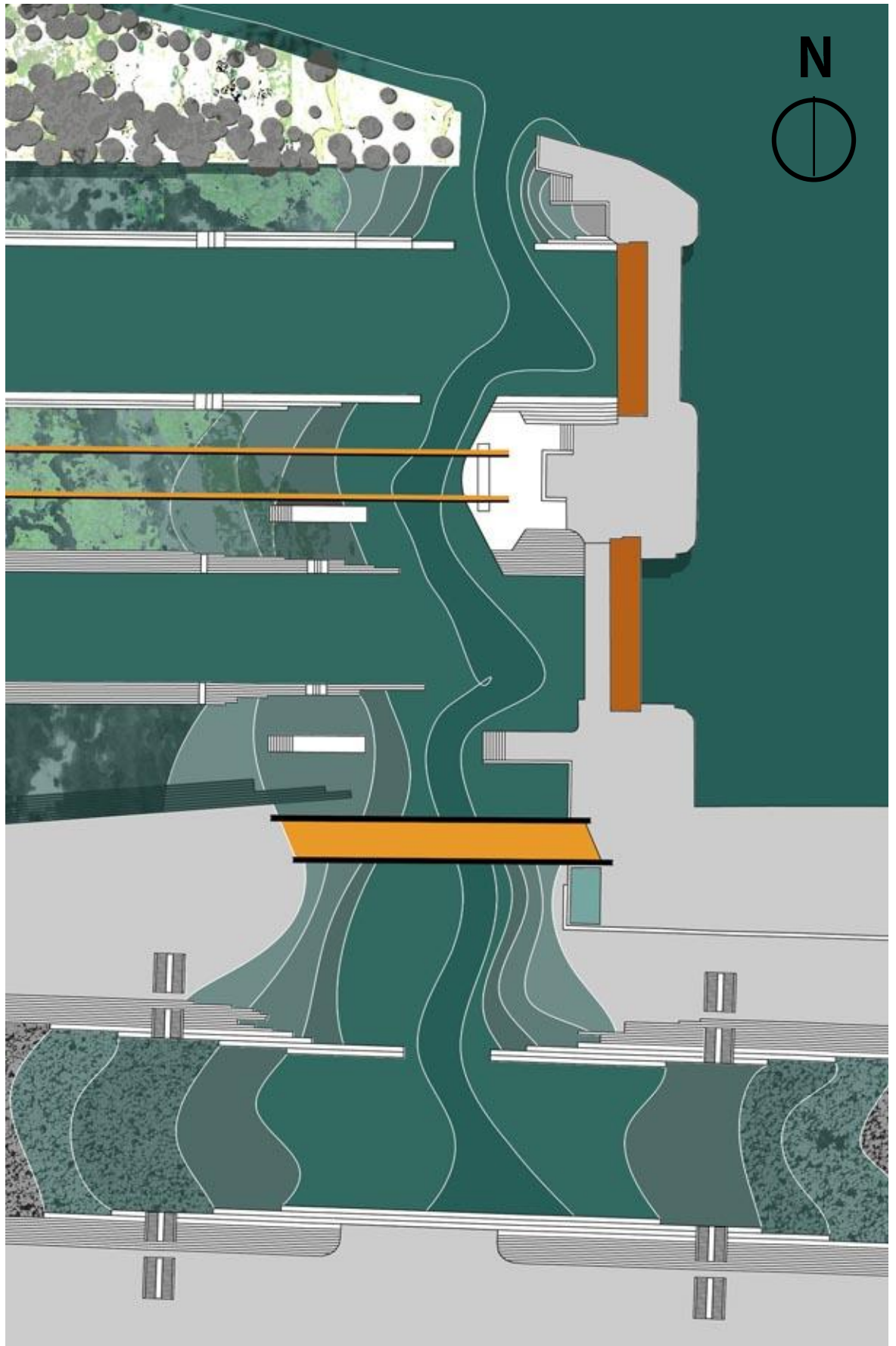


Fig. 48 Act 3: Bridging: The river's 'black spot' is tended by material unearthing to make an opening in bays (Image: Olden, R.)

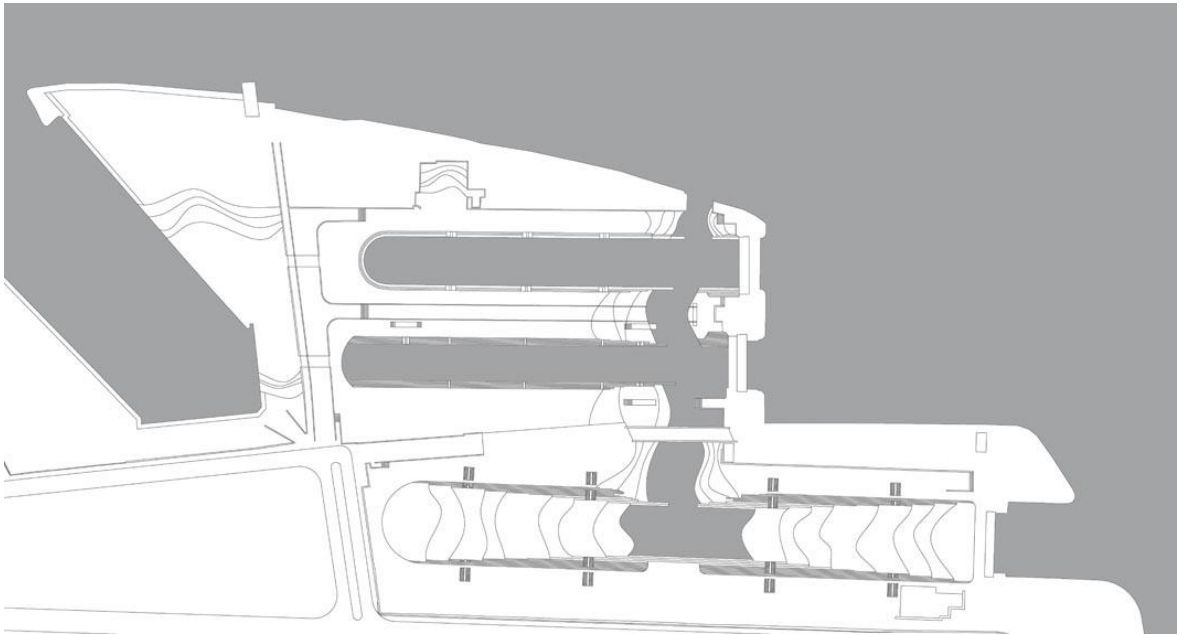


Fig. 49 Low Tide: Dock chambers defined on low tide and tidal plane exposed (Image: Olden, R.)

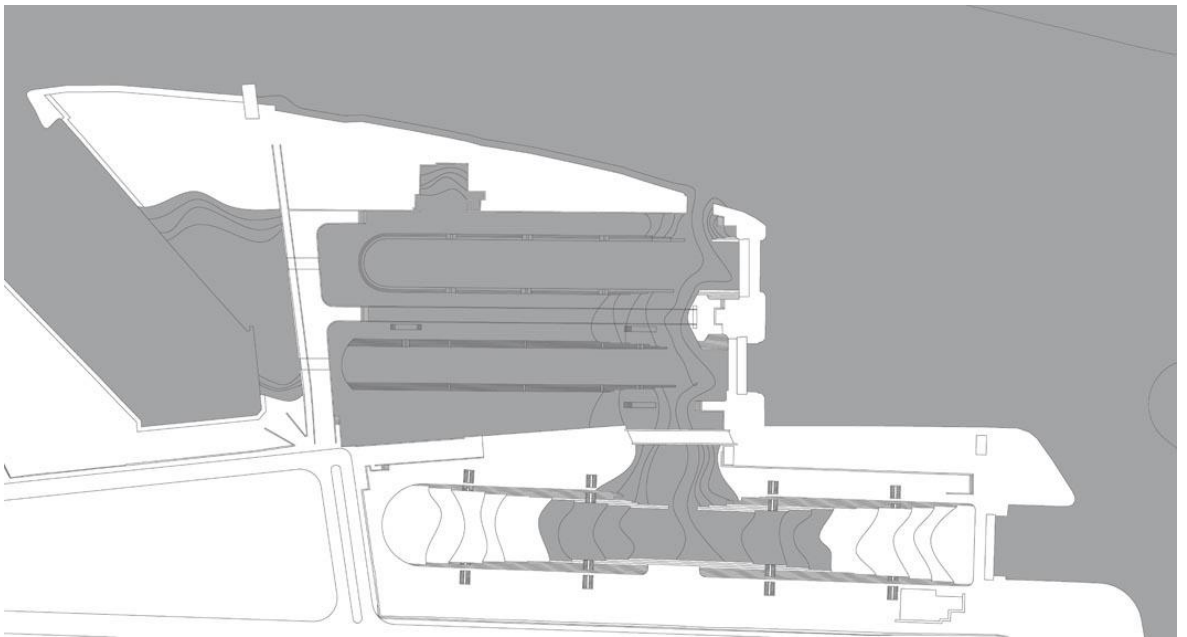


Fig. 50 High Tide: Inundated landscape navigable by Highland Lane and watergates (Image: Olden, R.)

I walked the group round the site's cues that introduced the key inspirations for the proposal. We stood at the western promontory, the Holloway, the quay east of the Pump House, and the water gates, and discussed the deep morphological history of the site and the Clyde estuary and the present challenges.

Next, I brought the group to the first site of intervention. We gathered on Highland Lane at the head of Dock Two, and looked out on to the water filled chamber and the bays that embrace it. I unfolded my script and began to read Act 1.

'This liquid future is best described in three acts of excavation and fill. The first is the excavation of bays one and two, lowering the ground level here by 4m so that the bays become a tidal plane. A number of openings to the river will expose the docks to a greater tidal range of 2m, the new ground level then occupying a level between high and low tide. Channels underneath Highland lane connect this water body to the quay on the other side, improving water flows and habitat provision. The tidal plane also picks out significant historic lines depending on the tide. On high tide the drove road and Govan's old main street are defined by the water edge, whilst also islanding the north of the site. On low tide, the docks themselves are defined. So the site's history is framed in a more dynamic way. The crane tracks down Bay Two are suspended at the original height, marking the excavation, and steps allow for access to this new muddy, silted flooding plane.'

Each participant had a design booklet so we consulted the plans, sections and visualisations of Act 1 illustrated inside. Next we gathered at the side of Dock Three, and looked northwards over its waters.

'The second move is the in-fill of Dock Three using the excavated material from the previous gesture, graded to create a littoral habitat on either end of the dock. As for the excavated material itself, would be comprised of a mix of sand, silt, gravel and granite. Looking to the ecologies of the Graving Docks' existing rubble piles, it is perhaps not so unrealistic to hope for the proliferation of interesting habitats. In the midst of the landscape clearance here in the Spring, I found a rare Corsican wild flower growing on the rubble pile on Bay Two, clearly having found a home from home on this miniature rocky landscape. Water would also rise and fall over this graded foreshore, where it could be filtered and treated by intertidal habitats.'

Last of all, I brought the group to the water gates where we followed the imaginary breach from north to south.

'The meeting of Dock Three's foreshores marks the beginning of the third gesture - a breach through the bays. This stretch is excavated and used to silt up the black spot in the river, the interior and exterior of the site then connected through the improvement of water flows and turbidity. Water would also be allowed a clear way in, allowing an equilibrium to be reached with each tide. In this move, the truncated altar steps take on an active role as sediment

jetties. The water gates and aligning infrastructure take the form of a peninsula, not quite bridging. In this liquid landscape, the bridging elements are silt and water’.

The questions and comments that came at the end were rich and thought provoking. What were the next steps to take this counter-planning idea forward? Could I get a professional feasibility study done on my plan to give it greater clout? How would this landscape be managed? Who would manage it? Who would use it? What about building a bridge from the Graving Docks to the North bank of the river so that this watery landscape could be accessed by the rest of the city? Perhaps it could be planted with species with particular remedial capacities? What about adding some of SEPA’s measuring buoys to the tidal chambers, to make their work on the river more visible? Perhaps links could be built with the Glasgow Science Centre neighbouring the Graving Docks, and its education and public-outreach program?

‘I like that it’s a stubborn landscape’, artist Nic Green added. ‘I like that at certain times it will be inaccessible, that you won’t always be able to get to where you want to go because of the tide, that conditions underfoot aren’t easy’.

One critique had me thinking long after the event. ‘Perhaps we would learn more by learning to live with what we have created?’ This participant reminded everyone that bacterial populations and slugs thriving in the ‘toxic’ sludge at the bottom of the Clyde. The city has already restructured the entire river system once with industrialisation – would my approach bring an end to ecosystems that were already finding ways to adapt to the challenges that have been created? Was there still human interest clinging to this effort to change the river? Who was the remediation for? What should living with the Anthropocene really mean? The questions and considerations multiplied.

This proposal for Govan Graving Docks would see humans, water, sediment and memory working together to make opportunities for new kinds of environmental perception and engagement on Clydeside. The criticality of this project would be an ongoing process, and this first discussion between artists and scientists, geographers and residents on the Graving Docks’ began to explore what form that might take.

Epilogue

Govan Graving Docks became a site of discursivity over the Summer of 2014 with the diverse proposals that emerged – one commercial, one conservationist in the most traditional sense, and another ecological. The Company’s visioning was guided to a large extent by market speculation and a signature portfolio style. Mr McGillivray drew his inspiration from precedent



Fig. 51 The Pitch: Locals, artists, geographers and natural scientists gather for a pitch (Image: Olden, R.)

heritage projects and conservation conventions. My imaginative practice took a different approach. Having spent a long time observing the vitality of this landscape, and the kinds of relationships that were taking root here, I imagined what it might mean to tend to this becoming. Studies of water - its agency and capacities – on-site and beyond, identified it as a medium worthy of greater attention. I spoke with a variety of water scientists at SEPA, CRF and Scottish Water, to consider the lines of possibility that could be drawn out from existing patterns and processes. There was a lot more that water could do – existing legacies that it could tend to, new kinds of engagement it could make possible, new kinds of memory work it could animate. This task of anticipating ‘the yet-to-come, of what is not yet in being... [was] a philosophy of hope, of activity, and of agency’ (Grosz 2005: 72). I also spoke with Glasgow-based artists to understand how their research processes are responding to the Clyde’s material landscape in similar ways. Their imaginaries presented an entirely different way of thinking about this urban river and its future, and they were highly influential as I worked out my own approach. By thinking with water, memory, sediment and topography, it was possible to see a place for all in a vision of a watered commons.

9

Bringing up the Bodies

Towards evening, when the security (a mere formality at the best of times) is abandoned, groups of children and some older people break in through all manner of entries and travel the site looking for 'things to do'. It is a most excitingly dangerous place for children to play in, unhampered by adult interference... In the Graving Docks the natural leaders are likely to be those whose adventurous natures are deployed at the interface between the permissible and the impermissible, the legal and the illegal, and whose futures are as uncertain as the docks. As the docks await 'development' by the property company which owns them, those who were born under its aegis, some less than a decade ago, flood in from the local area in the early evening to risk themselves at the dead end (Brisley 1990: 13).

It was only after two years of hectic fieldwork and site writing, that I realised I'd been beaten to the punch. Stuart Brisley's artwork for the Govan Graving Docks dated all the way back to 1989. Surprising, unlikely, it was a gift in many respects, not least because my belated discovery marked the twenty-fifth anniversary of his installation. I received it gratefully: a live-wire protruding from the past, sparking new life into my mercurial landscape.

Born in Surrey in 1933, Brisley has been a prolific political artist, activist and writer, whose career spans six decades. Brisley's performance work explores the 'mechanics of power...using his own body as a metaphoric or allegorical site', and in doing so, he 'enacts and comments upon how the individual manoeuvres himself fitfully, haplessly between authority and freedom' (Roberts 1984: 11). Brisley's site-specific exploration of place and politics for Govan Graving Docks was commissioned as part of the 'TSWA Four Cities Project' (1990) - an initiative intended to reflect on the nature of British public art, specifically 'what art outside the gallery can be' (Lingwood 1990: 8).

The Docks facility had only been closed for two years when Brisley arrived in Govan in 1990. Feelings of loss were still raw. The political context of late 20th century Conservative government policy cast a long shadow. Troubled by the impact that the docks' closure was having on local lives and community cohesion, Brisley drew on Marxist-inspired theories of the urban political economy to propose a work recalling the labour history of this industrial landscape. Using life-size mannequins cast from the iconic figure of Action Man, he arranged a series of installations across the Graving Docks over the course of a single day. Come evening time, with the work complete, a sequence of events began to unfold that even Brisley himself had not anticipated. Regular users of the abandoned site arrived, the artist recalls, 'looking for

'things to do" and proceeded with their own post-production, sending the mannequins into disarray, smashing up and throwing around their component parts as is customary on the docks (Brisley 1990: 13). Brisley was left wrestling with personal artistic ambition and the community's own association with the place, and finally resolved to join the fray. The next morning, he gathered up the broken mannequins, re-arranging them in the middle dock which had been pumped dry for the artwork. In a wilful act of auto-destruction, Brisley switched off the pump, allowing the river's waters to slowly seep back in, steadily rising at a rate of 3-inches per day. Inundation reinvented the installation anew, industrial art becoming ecological performance. Trawling Govan in search of memories of the event, I tracked down a barmaid in The Belle, a local drinking hole, who recalled serving a man carrying a life-size plastic head under his arm. The loot he intended as a decorative feature amongst his garden gnomes, she recalled.

The TSWA catalogue twins a short essay by Brisley written at the time of the work's commissioning in 1989 with a reflective commentary on the process as it occurred on-site. Together they comprise an illuminating account of 'before' and 'after'. There is much that I can recognise, finding echoed in my own encounters. Brisley and I found our plans flummoxed, our ideas challenged and our practices transformed, by the landscape and its multiple agencies. We both worked in the shadow of a seemingly inevitable ending, wondering what art could possibly do in the circumstances. That he found reason to persist, doggedly committed to making some small contribution to the way that the Graving Docks could be imagined, was a heartening discovery. Finding the existence of a forerunner work so close to the end of my own, it seems appropriate to dredge up from the depths of the docks what residues still remain in material and collective memory. By way of conclusion then, I want to bring my work on the Graving Docks into conversation with Brisley's efforts, to reflect on some of the key themes that we have both spoken to through our research. His earlier intervention serves as the lens by which to analyse my own artful engagements and encounters.

Monuments, Memory and Material

There is something compelling about the sheer scale of the Graving Docks, the still hulking presence of its industrial history that makes the place feel monumental. But what is it a monument to? And what form does memory take on the site? In his proposal for the commissioned work Brisley outlined a desire to remember the docks within the context of its ruined present. The distant past, when this industrial landscape was the 'foci of Enterprise and the Empire', still had a hold over the imaginary (Brisley 1990: 11). He imaginatively configured

the docks as an 'unintended expression of the Three Graces' (Brisley 1990: 11). There are other troubling histories hidden in this landscape – look to the ruins and pay heed he urges. It is the 'enormity of the investment in material and human life' that he wanted attention drawn towards (Brisley 1990: 11). He set out to create a memorial to the forgotten worker, a hero figure who spent a lifetime building up a local economy and united community. Using life-size mannequins of the heroic figure, he re-populates scenes of industrious activity on the Graving Docks. But economic history reminds us that workers are easily disposable; a reality alluded to by the mass-produced mannequins sourced from China. These fabricated men serve symbolically as hero *and* antihero in the cultural imagination- they are men of action, but they are also deliberately 'adulterated' in the work (Brisley 1990: 11). Amputated, beheaded, and, in one of the most striking images of the work, descending the steps into the chamber in orderly fashion, three abreast, with missing body parts tumbling down the steps ahead of them. This work is an 'anti-monument' in terms of *what* it remembers and *how* it remembers (Lingwood 1990: 9). Rather than embody or enclose the memory of these men in a classical poses, it is immediately scattered, becoming part of this material landscape, recalling their memory within the context of a ruined present and reflecting the process of slow disintegration.

Brisley's broken and dismembered bodies reflect a familiar 'site-sensibility' encountered through my own research, one which says much about the workings of memory and the form this takes at an industrial ruin. I met many working sons who had followed their fathers into the docks and like them spent a lifetime labouring here. Here ships were painted with red lead, chrome and bitumen to protect iron bodies against the salty seas. The toxic substances took their toll on the workers' bodies. 'Red leader' was the label for those charged with the paint-job; 'a dying breed' as one man poignantly described them. Those still living are 'walking monuments', their systems tainted with the residues of the shipping industry that brought Glasgow its worldwide fame and fortune (Fusco 2015). I came upon memory that was material, present in the living bodies and the new ecologies of the docks, and carrying with it new opportunities and challenges for the future. Industrial infrastructure, toxic residues, recollections and urban water: all were playing a new role in the present. Watching memory scatter and transform prompted new thoughts about the recognitions and responses to the past, suggesting that it was a more-than-human sort of remembering. This is what it meant to remember the River Clyde's industrial past within the context of a living present.

An 'ecology of memory' could be heard in the recollections shared by many of the dock workers (DeSilvey 2006: 336). Following years of gruelling labour (cleaning ships' diesel, sewage and oil tanks from the inside-out, knee deep in the swill of the drained dock, hauling materials and machinery, breathing the already smoke-choked air of the Clyde) for these men, the reclamation was nothing short of miraculous. When I arrived on the docks' in Autumn for

example, one regular pointed out the spindly orchid stems with a sense of anticipation: ‘just wait ‘til you see they red flowers in the Summer. You would’nae have imagined that a place like this could recover’. Through its rewilding, the landscape seemed to tend in small but significant ways to the trauma that lay sedimented beneath. Unemployment and the precariousness of life that it produces were persistent social conditions in the local area. The losses were undeniable but the Graving Docks’ reclamation also seeded new sensibilities and resiliencies. Here it was possible to ‘enter another world’, as one regular observed. A place for simple pleasures: feeding birds, tracking foxes and walking the dogs. Hopes for the future were also tied into many of these memories, and it was important that they were salvaged, as an act of recognition at the very least. Material enquiry on the Graving Docks brought to light the River Clyde’s bodily, chemical, and ecological histories and considered their legacies within an ecological imaginary for the Clyde.

New Ecologies, Unfamiliar Alliances

New ecologies were emerging on the Graving Docks only two years after its abandonment. By the point that Brisley arrived, thrill-seeking local residents had established spiky love-hate relationships with the ruined ‘carcass’ of the docks. Like the ruderals that would later take root, residents found an opportunity in abandonment. Through decay, with first-function and commercial purpose removed, its material forms and aquatic spaces grew increasingly unfamiliar. The Graving Docks began an eclectic, edgy unlawful life as public common, where possible uses seemed near limitless. Territories and dens of varying sophistication were established. Doocots erected and doos moved in. Tents were pitched on Summer nights, fires were lit, friendships formed, girlfriends and boyfriends courted, differences settled, parties had. The colours and textures of rust, rot and reclamation seduced many a photographer and filmmaker. Bolshie regulars donned togs and raced the infiltrated chambers. It became a risky playground, a contested territory, an outdoor workshop and mythical place. A generation of childhoods can be charted here and the elders grew with the changes too. Community lives were thoroughly entwined with the ruin and the connections were formative.

The new ruderal ecologies that were burgeoning by the time of my arrival, brought yet more important alliances to light. Early floral colonists found advantageous conditions on a barren industrial landscape where there was very little in the way of competition. Ferns reproduced from spores stranded in water filled cracks, and rubble piles were a home-from-home for exotic adventives. Wild orchids grew on the dusting of soil infilling the cobbled bays that surround the basins, spindly fragile stems reaching knee-high. Remarkably in the thinnest

of conditions, they extended a carpet of Mycorrhizal roots across the cobbles to tap into resources elsewhere. This colonising ecology was particular to place. The Graving Dock's riverside location, its built infrastructure and history of maritime arrivals all shaped what grew here. New riverine ecologies established here too. With its defences down, the docks water table fluctuates with the tide. Colonised but unmanned debris islands sail their lengths endlessly but find no escape. According to local fishing enthusiasts, the waters are host to brown trout, perch, eels and flounders. On the bays, rain-filled industrial relics form geometric pools now host to micro ecologies; time measured by the slow growth of algae in still water processing the sun's heat and light. Amidst the mess of human disturbance strange new ecologies were emerging. Adaptations, symbioses and cohabitation could be observed in the messy entanglement of human and natural histories on this (ruined) riverine landscape, and they offered directives for thinking about living together *with* the River Clyde, now and into the future.

W a r p e d T e m p o r a l i t i e s

By its form and composition Brisley's artwork anticipated the later complex workings of time on the ruinous Graving Docks: the assembly of mass-produced plastic mannequins on derelict industrial infrastructure; the careful reconstruction of historical scenes of dockland labour against a backdrop of dereliction; and, the irresistible, eternal tidal energies that push and pull through the lot. By each temporal aspect on the site, Brisley exposed powerful tensions. The very performance and afterlives of the artwork embody the numerous, scrambled temporalities of the process of ruination. This scrambled sensation of time passing was noted by Lavery and Hassall (2015: 112) in their research trip to the ruins of Hashima Island, Japan: 'performance becomes an analogue of the ruin'. A sense of the past emerged through the artwork's relics, prompting reflections on losses and legacies, and possible futures, as the agencies of the site took over the work's production and meaning, all of which were left open and unresolved. Futures featured in the 'processes and possibilities that [were] both underway and yet always still to come' (Lavery and Hassall 2015: 113). More than two decades after installation Brisley's mannequins lie submerged beneath the water of the middle dock, a reminder of the most fraught times following the docks' closure, and now part of the docks' slow sedimentation. The bodies constitute new ecologies, an archaeology bequeathed to the site, forming its modern mythology, awaiting dredging day and rediscovery.

When I spoke with Glasgow City Council's Development and Regeneration Officers they had a tidied-up temporary category for the Graving Docks. It was a 'stalled space', the term

substantially underestimating the value of time's work on this ruin. Here many different temporalities meet and meld - the industrial, the tidal, the geological, the machinic, the vegetal, the urban, the residential and the intellectual. Becoming attentive to these rhythms opened my eyes to worlds existing beyond immediate human concern. Where the ruin's temporalities came together in confusing ways, sometimes the cause of ruptured or scrambled time sequences, there were often important insights to be found. The rotting industrial sluice gates prompted reflections about the clockwork operations of this industrial facility; its necessarily tight orchestration of men, water and materials, and slow-but-sure decay before tidal waters breach the barrier, recalling other estuarine rhythms and associated tidal landscapes. The slow sedimentation of the river and the docks that has occurred since deindustrialisation was a reversal of the rapid, invasive evisceration of the natural water course to facilitate the Clyde's industries. But slow reclamation was itself suddenly disrupted by a new version of urban profiteering and short-termism. Having witnessed violent landscape changes, I became intensely conscious of the ways that anthropocentric time (my own included) and the local temporalities of site met disruptively. Becoming perceptive to the Graving Docks' more-than-human temporalities was the first step to envisioning a riverine landscape that could challenge the commercial emphasis of the Clyde's post-industrial development.

The Imaginary

Stuart Brisley's original intention for his hero-antihero figures was that they make an 'ironic interpretation, an operation in the mental space' of this post-industrial landscape. As the work evolved with the site, remembering what was being all too quickly forgotten was still important, but Brisley also found a way to make his art-audience conscious of the rapid social and environmental change faced by the docks - a fact conveniently overlooked by the 'confident mercantile atmosphere of central Glasgow just across the river' (Brisley 1990: 11). In his retrospective essay for the TSWA catalogue, Brisley describes the atmosphere of anxiety which built after turning off the pumps and the waters began to rise inexorably. Photographs tap into the sense of dread caused by inundation, showing torsos treading water, then heads near-to-submerged. I recognise a site-sensibility embodied by the mannequins and my own questions about how to respond to irresistible processes of change. How can places, communities and art struggle against a rising tide? Where are the resources of hope? And what kinds of imaginaries can be built from imperilled places?

The contribution I made to the Graving Docks' imaginary was also compelled by the rapid changes that this site and the wider de-industrialised river landscape face today. The fate

and future of the docks, and greater agenda of Clyde waterfront development, remain the cause for much of the anxiety expressed by residents of Govan. The fragmentation of community, the privatisation of public spaces, the increased monetisation of leisure and cultural activities, the building over of valued green spaces, and access to local heritage increasingly centralised in the cities major museums were hot topics for many. The changes proposed for the Graving Docks by The Company – high-end housing and high-rise hotels – were beginning to feel all too familiar for those who take it upon themselves to monitor waterfront proposals and developments. My engagements were also compelled by environmental change in the wider river landscape: rising water temperatures and levels, polluted waters, surge tides, increased storm events, disposal of untreated effluent, species depletion and reduced distribution. Beyond this list, there is the legacy of toxic materials, the river’s industrial restructuring, and a riverine imaginary centred on nostalgic reflections for a distant past. These were changes I felt acutely through the embedded nature of my research practice. Everyday discoveries felt weighty with significance, like the rare Corsican wildflower that storied a change in a local climate before being put through the shredder, and a passing conversation with Jimmy during which I realised I’d never seen the docks’ wild orchids in bloom. Post-industrial development of the River Clyde continues to keep publics at arm’s length from these realities, and The Company’s plan promises more of the same, concreting over fragile worlds that have been felt here for a fleeting chapter.

The alternative future that I proposed for the Graving Docks offered an imaginative and critical response to the changes witnessed during my fieldwork research. This was an important site that once tended to the ships that brought Glasgow’s economic, political and cultural prosperity. I imagined the roles reversed, so that now this site tended to the challenges that have been the legacy of its industrial history, extending well beyond the limits of a local landscape. It is a vision that works with ruination and re-wilding, where stories from the past are framed in new ways by the agencies of the River Clyde, and the intersection of land and water is reconfigured to nurture closer contact with the forces of time and tide. Tending to the biodiversity of the Graving Docks and its cultural heritage turns out to be a compatible combination. This is a liquid landscape both challenging and necessary, where the river would enter as a new material presence in the life of the city. Making connections, encountering interdependence, is the first step to a more resilient world – reimagined, this disturbed landscape becomes a boggy, silty and tidal ruin for worldly encounter. This is a landscape to reimagine our engagements with the river, and to foster new relationships with the watery publics that share in it.

New Materialisms and Landscape Studies

New materialist theories (vitalist and feminist) and contemporary landscape studies (in cultural geography and performance studies) came together on Govan Graving Docks, bringing differing perspectives to bear on the materiality of this abandoned, anthropogenic landscape. The two approaches were fused in the literature review and the methodology, reflecting a sustained practice of dialogic engagement, shuttling back and forth between influences, often turning to landscape studies to ground theory and ideas of practice, and new materialisms to think through their limits and possibilities. Whilst this framework enabled me to chart material theory for landscape research, it did perhaps miss the opportunity to reflect further on the affinities and differences that are emerging between these two literatures in relation to debates about landscape and the Anthropocene. As a way of advancing towards a close, I want to reflect on the sharing that has occurred already, what their particular contributions have been, and where there is scope for further exchange. By way of a guide, I will speak to three key provocations that these literatures posed throughout the research process.

How do we take part in the earth's creativity? Both new materialism and landscape studies have been overhauling research practices to account for the livingness, and the creativity of the earth. There is presently in cultural geography and cognate subjects a shared curiosity about the world beyond the human, identifying opportunities in the indeterminacy, unpredictability and unknowability that plays out in creative knowledge practices employed to learn about the material world. Emergent models for experimental forms of collaborative learning *with* these creativities has also been a shared concern. Landscape studies in particular has explored the vitality of landscape in this way, showing how a variety of commons-building practices - from gardening to ecological performance - can generate a richer understanding of meaningful practices capable of tending to (and extending) existing lifeworlds. Through these pragmatic efforts they have discovered new possibilities for developing connections with the world, shared ways of being and affirmative legacies. Whilst particular academic traditions and the sites themselves have had a part to play in the development of these approaches for landscape studies, new materialist theories have in many ways become an important guiding force, particularly in terms of the conceptual tools offered for understanding the material world, and the Deleuzian 'vitalist ethic' that has shifted the focus of research practice (Lorimer 2009: 259). Recent interest in emulating particular modes and sensibilities observed in the world of the researched has already left an important legacy (Hinchliffe et al 2005; Ingram 2014). In studies of landscape, there is yet more scope for expanding this repertoire of tending and extending practices with the help of vitalist theory. My own research responded to vitalist

writings about the imaginary, and considered the capacities of imaginative practice, as another source of 'hope, of activity, and of agency' in studies of landscape (Grosz 2005: 72).

What do we become through the encounter? Both new materialism and landscape studies are exploring the role of affect in research practices and how we might attune to affective encounters to make formative connections with our environment (Lorimer 2006; Tsing 2012). New materialism takes this ambition further, turning analysis back on the sensing subject, in order to explore what being human could mean in light of the transformations and the sensing capabilities that emerge in moments of encounter (Hinchliffe et al 2005; Hayward 2010). What are the possibilities of being human once we break the habits of transferred identity, when we exchange our projections on to the world, those cumbersome crutches, for uncertain becomings with the earth and our 'companion species'? (Haraway 2008). And what specific kinds of responsibilities do we still have in this creative moment as specifically *human* agents? In landscape studies, this kind of research is taking place in more implicit terms, through the development of richly descriptive and reflective ethnographies (Lorimer 2006; Tsing 2015). Nevertheless, there is yet more scope for reflection on what being human actually means in light of these encounters. What happens in the process of decentring the self and what are its limits? This is not to turn attention away from the material world, rather in tracing the contours of an encounter, real things can be said of self *and* site. By taking these questions further, landscape studies seems well placed to challenge the Anthropocene debate's current failure to account for the interdependencies, vulnerabilities, and seeds of hope that exist within that term 'human'. In the same way that terms like 'nature', 'material' and 'life' have been reimagined in all their multiplicity by new materialist theory, the human is full of the very same potentials. Through my engagements with the materiality of Govan Graving Docks, I developed an ecological sensibility that enabled me to think both creatively and critically about the future of this landscape. My relationship with the Graving Docks was built on curiosity, concern, and a sense of imagined possibility. The repertoire of research practices and situated site knowledges that emerged from this building self-site relationship was formative in many ways, not least of all inspiring the 'Liquid Landscape' proposal which imagined a space for others to grow through this kind of environmental engagement too.

What can a small story do? In order to see the world in all its multiplicity, to see beyond, or rather before tried and tested taxonomies, both new materialism and landscape studies have honed their attention to the local, the specific and the particular, and in doing so have developed a convincing case for the role of 'situated knowledge' in our accounts of the earth (Haraway 2009). Landscape studies demonstrate the important role that local stories of life and land taking place can play in understandings of the Anthropocene. It might be an overwhelming issue, but it is necessarily connected to the world we witness and so there has

been a proliferation of 'small stories' from the field (Lorimer 2003), localised and specific renderings of environmental change, which as Cameron has observed 'add texture and specificity to connectedness' (Cameron 2013: 107). Far from a turn away from the bigger issues, these stories are a way into them (Daniels and Lorimer 2012; Cameron 2012). In 'micro-scale inquiries', Lorimer has explained it is 'possible to find small kingdoms of worldliness, and to craft short stories as outcrops of global history'. (Lorimer 2009: 268). These close studies present the opportunity to explore more deeply the relations of interdependence that are to be found in landscape and the opportunities and challenges they face. The historical dimension they give to these relationships is also particularly significant and unique, bringing new insights to the project of material theory, where new materialism's focus is more often on the workings of immanence. This small story from the Graving Docks has both a critical and creative contribution to make. First, by picturing the materiality of a Clydeside landscape and its possibility, this small story offers a critical view on longer histories of urban change on River Clyde since the 1800s (post public commons and riverine habitats), and also on more recent urban/commercial histories and the kinds of development priorities that they evidence. Second, by storying the relationships that have been made and found on the Graving Docks (and the longer histories that they can be traced through) this small story identifies the life-lines that stand to be effected on the Clyde if this critical perspective cannot be brought into practice.

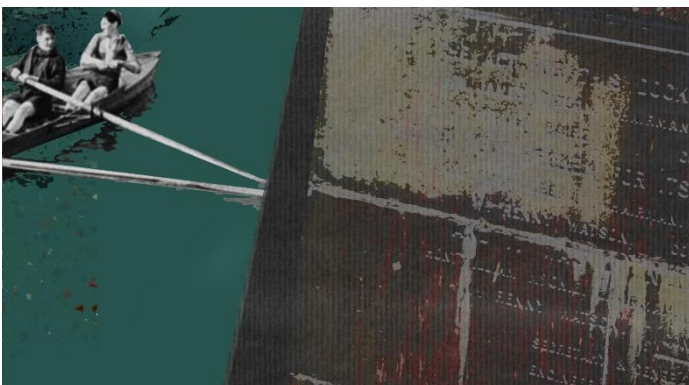
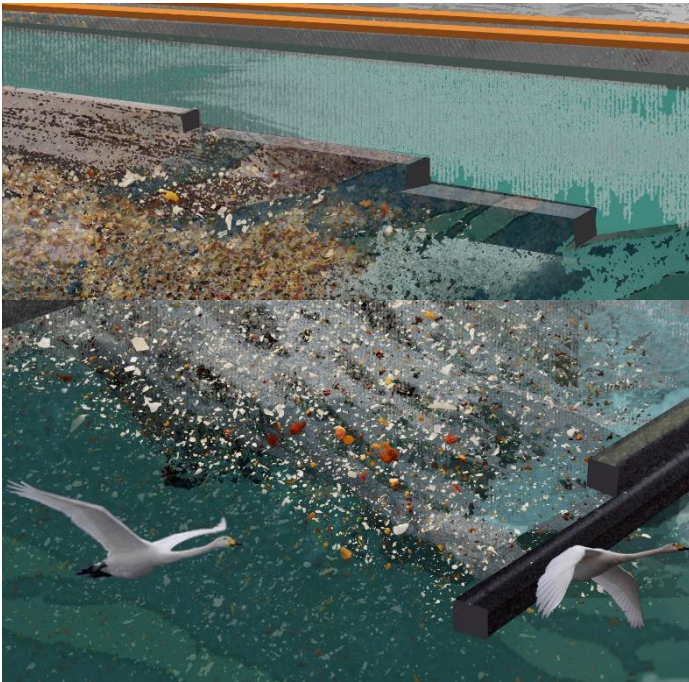
Crafting Methods

I came to rely on a creative pragmatics during my unpredictable year spent on the docks, an approach that was one part craft and one part graft. The craft was to be found in the ways that research methods were devised *with* the site, so that they became a measure of site responsiveness and self-reflexivity. The graft was there in the spadework, the strain and the long days it took to realise these approaches, not to mention the task of 'keeping...balance amid surprises' (Solnit 2006: 5). Both creative responsiveness and a need for efficacy were essential on this particular site, where research problematics were substantial and very real: inspirations had to be translated into messy processes and pure ideas quickly entered into the fray of noisy conversation. In my attempt to reconcile both approaches on the Graving Docks, I worked out a role for myself as applied cultural geographer. This was a cultural geography that grappled with the gritty realities and everyday struggles, a role demonstrating the value of cultural work as it, or rather as *I* got muddy and attached and torn, in an attempt to make meaningful differences on the ground. I became a creative practitioner as well as a critical

commentator in this version of cultural geography. Finding myself embedded, to the point of feeling truly native to the site's ecology, in the end, the legacy of this research had to be as much about the practical contributions that I make to the site through my creative knowledge-practices as much as it was about the understanding alone. The methodology diagram makes this clear when mid-autumn I ask: 'what work could this knowledge do?'

Self and Site

At the time of writing this final reflection The Company's vision still awaits planning permission. For the moment I can only imagine what it will be like to step inside the proposed new residential complex. How will it feel to stand in my usual haunts, but between new-build high-rise apartments? Would my loitering likely be viewed suspiciously by new residents? Places of the past are still part of the fabric of a life, and often we return in search of memories, to feel rooted, maybe even to recognise ourselves again. Of course there is a reluctance if we suspect that time has changed things: there is always the worry that 'it wouldn't be the same again', and memory, like a precious metal, could be tarnished by the experience. But inevitably I will return to take it in, and inevitably it will be an estranged sort of encounter. At the postcard cart a local resident explained his difficulties getting around Govan in light of recent transformations: 'People that have lived here all their lives are getting lost. Literally getting lost. Including me'. I remembered his disorientation after the clearance, when those intricate spaces I was in the habit of burrowing through for hours on end became a 'loud nothing' (Sinclair 2012). Past and present jolted apart and my story became the stuff of urban myth. I imagine that my return at some future juncture will bring more of the same. From a more pragmatic point of view, at some point, I will have to think about the hoard of site-treasures that have slowly but surely filled my home. It began manageably enough, with the mud trampled into the hall, the twigs in my hair and the dirt under my fingernails, then the willow, and ceramic rubble and painted tiles arrived, the dried flowers and props, the amber jars on the mantelpiece, and the photographs, posters and maps which wallpapered the study and then began to spread. There are misplaced objects elsewhere in the city. There are dockland ferns and wildflowers living on in little nooks and crannies across the city, and a pet gecko in Govan contemplating ruined follies and bright purple clover.



Bibliography

Barad, K. 2012: *What Is the Measure of Nothingness: Infinity, Virtuality, Justice: 100 Notes, 100 Thoughts: Documenta Series 099*. Hatje Cantz, Berlin.

Bell, H. 1993: *Glasgow's Secret Geometry: An Account of the Discovery of the Glasgow Network of Aligned Sites*. Leyline Publications, Edinburgh.

Bellamy, M. 2006: 'Shipbuilding and Cultural Identity on Clydeside'. *Journal for Maritime Research*, 8(1), p1-33.

Bennett, J. 2001: *The Enchantment of Modern Life: Attachments, Crossings, and Ethics*. Princeton University Press, Princeton.

Bennett, J. 2010: *Vibrant Matter: A political Ecology of Things*. Duke University Press, Durham and London.

Bennett, K. 2014: 'Beautiful landscapes in drag, the material performance of hypernature'. *Journal of Landscape Architecture*, 9(3), p42-53.

Berger, A. 2007: *Drosscapes: Wasting Land in Urban America*. Princeton Architectural Press, New York.

Braidotti, R. 2002: *Metamorphoses: Towards a Materialist Theory of Becoming*. Polity, Cambridge.

Brisley, S. 1990: 'Stuart Brisley: Govan Graving Docks'. In: Lingwood, J. (ed) *TWSA Four Cities Project*. TWSA, Glasgow.

Bolland, E. 2015: 'Every Place a Palimpsest: Creative Practice, Emotional Archaeology, and the Post-Traumatic Landscape'. *GeoHumanities*, 1(1), p98-206.

Bonta, M. and Protevi, J. 2004: *Deleuze and Geophilosophy – A Guide and Glossary*. Edinburgh University Press, Edinburgh.

Bourriaud, N. 2002: *Relational Aesthetics*. Les Presses du Reel, Paris.

Bryant, L. 2011: *The Democracy of Objects*. Open Humanities Press, Michigan.

Cairns, S. and Jacobs, J. 2014: *Buildings must die – a perverse view of architecture*. MIT Press, London.

Cameron, E. 2012: 'New Geographies of Story and Storytelling'. *Progress in Human Geography*. 36(5), p573-592.

Cameron, L. 2013: 'Resources of Hope - Wicken Fen Stories of Anthropogenic Nature'. *Cambridge Anthropology*, 31(1), p105-118.

Castree, N. 2014: 'The Anthropocene and the Environmental Humanities: Extending the Conversation'. *Environmental Humanities*, 5(1), p233-260.

- Castree, N. Kitchin, R. & Rodgers, A. 2013: *Oxford Dictionary of Human Geography*. Oxford University Press, Oxford.
- Choy, T. Faier, L. Hathaway, I. Satsuka, S. and Tsing, A. (Matsutake Worlds Research Group) 2009a: 'Strong Collaboration as a Method for Multi-sited Ethnography: On Mycorrhizal Relations'. In: Falzon, M. (ed) *Multi-sited Ethnography: Theory, Praxis and Locality in Contemporary Research*. Ashgate Publishing Limited, Surrey.
- Choy, T. Faier, L. Hathaway, I. Satsuka, S. and Tsing, A. (Matsutake Worlds Research Group) 2009b: 'A new form of collaboration in cultural anthropology: Matsutake worlds'. *American Ethnologist*, 36(2), p380-403.
- Choy, D. and Zee, J. 2015: 'CONDITION—SUSPENSION'. *Cultural Anthropology*, 30(2), p210-223.
- Cleland, J. 1813: *A Description of the Manner of Improving the Green of Glasgow*. Glasgow Corporation, Glasgow.
- Colebrook, C. 2014: 'Not Kant, Not Now'. In: Askin, R. Ennis, P. Hagler, A. and Schweighauser, P. (eds) *Speculations: Aesthetics in the 21st Century*. Punctum Books, Brooklyn.
- Corner, J. 1999: *Recovering Landscape: Essays in Contemporary Landscape Architecture*. Princeton Architectural Press, New York.
- Craig, C. 2010: *The Tears That Made the Clyde: Well-being in Glasgow*. Argyll Publishing, Edinburgh.
- Craig, G.Y. 1987: 'James Hutton and his theory of the Earth, 1787-1987'. *Endeavour*, 11(2), p 88-93.
- Cruikshanks, J. 1997: 'Negotiating with Narrative: Establishing Cultural Identity at the Yukon International Storytelling Festival'. *American Anthropologist*, 99(1), p56-69.
- Crutzen, P. 2002: 'Geology of mankind'. *Nature*, 415, p23.
- Daniels, S. and Lorimer, H. 2012: 'Until the end of days: narrating landscape and environment'. *Cultural Geographies*, 19(1), p3-9.
- Dalglish, C. and Driscoll, S. 2009: *Historic Govan: Archaeology and Development*. Council for British Archaeology and Historic Scotland, York and Edinburgh.
- Deas, J. 1888: *The Story of the Making of a Dock*. Clyde Navigation Trust, Glasgow.
- Dee, T. 2013: *Four Fields*. Vintage Books, London.
- Deleuze, G. and Guattari, F. 2004: *A Thousand Plateaus*. Continuum, London.
- DeLanda, M. 2002: *Intensive Science and Virtual Philosophy*. Continuum, London.
- DeSilvey, C. 2006: 'Observed decay: Telling stories with mutable things'. *Journal of Material Culture*, 11(3), p318-338.
- DeSilvey, C. 2007: 'Salvage memory: constellating material histories on a hardscrabble homestead'. *Cultural Geographies*, 14(3), p401-424.

- DeSilvey, C. 2012: 'Making sense of transience: an anticipatory history'. *Cultural Geographies*, 19(1), p31–54.
- DeSilvey, C. 2014: 'Palliative Curation - Art and entropy on Orford Ness'. In: Olsen, B. and Petursdottir, P. (eds) *Ruin Memories – Materiality, Aesthetics, and the Archaeology of the Recent Past*. Routledge, London.
- DeSilvey, C. and Edensor, T. 2013: 'Reckoning with Ruins'. *Progress in Human Geography*, 37(4), p465–485.
- DeSilvey, C. Naylor, S. and Sackett, C. 2011: *Anticipatory History*. Uniformbooks, Devon.
- Dillon, B. 2011: 'Introduction – A Short History of Decay'. In: Dillon, B. (ed) *Ruins – Documents of Contemporary Art*. Whitechapel Gallery and The MIT Press, London.
- Dillon, B. 2014: *Ruin Lust*. Tate, London.
- Dixon, D. 2015: 'Editorial: Imagining the Geohumanities'. *GeoHumanities*, 1(1), p9-12.
- Dixon, D. Hawkins, H. and Straughan, E. 2013: 'Of human birds and living rocks: Remaking aesthetics for post-human worlds'. *Dialogues in Human Geography*, 2(3), p249–270.
- Dixon, D. Lavery, C. and Hassall, L. 2014: 'Recuperating the Monstrous: Matter and Entropy on Hashima Island'. In: Douglas, C. and Monacella, R. (eds) *Places and Spaces of Monstrosity*. Inter-Disciplinary Press, Oxford.
- Donald, M. 2012a: 'The Urban River and Site-specific Performance'. *Contemporary Theatre Review*, 22(2), p213-223.
- Donald, M. 2012b: 'Bridging Part 1'. *Performance Research: A Journal of the Performing Arts*, 17(4), p49-51.
- Donald, M. 2014: 'Guddling About: Experiments in Vital Materialism with Particular Regard to Water'. *The Goose*, 13(1), p1-26.
- Edensor, T. 2005(a): *Industrial Ruins: Aesthetics, Materiality, and Memory*. Berg, Oxford.
- Edensor, T. 2005(b): 'Waste Matter – The debris of industrial ruins and the disordering of the material world'. *Journal of Material Culture*, 10(3), p311-332.
- Farley, P. and Roberts, M. 2012: *Edgelands: Journeys into England's True Wilderness*. Vintage, London.
- Farquhar, A. 2005. 'Designing with Nature'. In: Farquhar, A (ed) *The Storr*. Luath Press Limited, Edinburgh.
- Fergus, K. and Mitchell, I. 2008. *The River Clyde from the Source to the Sea*. Breedon Books Publishing Limited, Derby.
- Flam, J. 1996: *Robert Smithson: The Collected Writings*. University of California Press, London.
- Forsyth, I. Lorimer, H. Merriman, P. and Robinson, J 2013. 'What are surfaces? *Environment and Planning A*, 45(5), p1013-1020.

- Fusco, M. 2007: *There is little respect for those who claim that Superman is not Clark Kent: Fiction, Criticism, and the Art of Anti-Suspense*. Available at: <http://fillip.ca/content/those-who-claim-that-superman-is-not-clark-kent> [Accessed 4 Sept 2016].
- Fusco, M. 2015: 'An amateur's Prolegomenon'. *Parse*, Issue 1.
- Gabrys, J. 2009: 'Sink: the dirt of systems'. *Environment and Planning D: Society and Space*, 27(4), p666-668.
- Gandy, M. 2011: 'Interstitial Landscapes: Reflections on a Berlin Corner'. In: Gandy, M. (ed) *Urban Constellations*. Jovis Verlag GmbH, Berlin.
- Gandy, M. 2013: 'Marginalia: Aesthetics, Ecology, and Urban Wastelands'. *Annals of the Association of American Geographers*, 103(6), p1301-1316.
- Gibson-Graham, J.K. 2011: 'A feminist project of belonging for the Anthropocene'. *Gender, Place & Culture: A Journal of Feminist Geography*, 18(1), p1-21.
- Glennie, P. and Thrift, N. 2009: *Shaping the Day: A History of Timekeeping in England and Wales 1300-1800*. Oxford University Press, Oxford.
- Grosz, E. 2005: *Time Travels – Feminism, Nature, Power*. Duke University Press, Durham and London.
- Grosz, E. 2008: *Chaos, territory and Art: Deleuze and the Framing of the Earth*. Columbia University Press, New York.
- Haraway, D. 2008: *When Species Meet*. University of Minnesota Press, Minneapolis.
- Haraway, D. 2009: 'Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective'. In: Fotun, K. & Fortun, M. (eds) *Cultural Anthropology VOLUME IV: Engagements*. SAGE Publications, London.
- Haraway, D. 2015: 'Anthropocene, Capitalocene, Plantationocene, Chthululcene: Making Kin'. *Environmental Humanities*, 6, p159-165.
- Hawkins, H. and Straughan, E. 2015: *Geographical Aesthetics – Imagining Space, Staging Encounters*. Ashgate, Surrey.
- Hayward, E. 2010: 'FINGERYEYES: Impressions of Cup Corals'. *Cultural Anthropology*, 25(4), p577-599.
- Hinchliffe, S. 2007: *Geographies of Nature: Societies, Environments, Ecologies*. Sage publications Ltd, London.
- Hinchliffe, S. Kearnes, M.B. Degen, M. and Whatmore, S. 2005: 'Urban wild things: a cosmopolitical experiment'. *Environment and Planning D: Society and Space*, 23(5), p643-658.
- Hird, M. 2012: 'Knowing Waste: Towards an Inhuman Epistemology'. *Social Epistemology: A Journal of Knowledge, Culture and Policy*, 26(3-4), p453-469.
- Hird, M. 2013. 'Waste, Landfills, and an Environmental Ethic of Vulnerability'. *Ethics and the Environment*, 18(1), p105-124.

- Ingold, T. 2007: 'Materials against materiality'. *Archaeological Dialogues*, 14(1), p1-16.
- Ingold, T. 2011: *Being Alive: Essays on Movement, Knowledge and Description*. Routledge, London.
- Ingram, M. 2014: 'Washing urban water: diplomacy in environmental art in the Bronx, New York City'. *Gender, Place and Culture*, 21(1), p105-122.
- Jones, O. 2011: 'Geography, memory and non-representational geographies'. *Geography Compass*, 5(12), p875-885.
- Jones, O. 2015: "Not Promising a Landfall...": An Autotopographical Account of Loss and Place, Memory and Landscape'. *Environmental Humanities*, 6(1), p1-27.
- Kanngieser, A. 2015: 'Geopolitics and the Anthropocene: Five Propositions for Sound', *GeoHumanities*, 1(1), p80-85.
- Knight, A. 2010: *Glasgow at the Crossroads*. Stenlake Publishing Ltd, Ayrshire.
- Laing, O. 2011: *To the River, A Journey Beneath the Surface*. Cannongate Books Ltd, Edinburgh.
- Latour, B. 2004: *Politics of Nature: How to Bring the Sciences into Democracy*. Harvard University Press. Cambridge.
- Lavau, S. 2013: 'Going with the flow: sustainable water management as ontological cleaving. *Environment and Planning D: Society and Space*', 31, p416 – 433.
- Lavery, C. and Hassall, L. 2015: 'A Future for Hashima - Pornography, representation and time'. *Performance Research: A Journal of the Performing Arts*, 20(3), p112-125.
- Leyden, J. 1862: *Clyde: A descriptive poem by John Wilson, with life of the author by John Leyden*. Fullarton, London.
- Lingwood, J. (ed) 1990: *TWSA Four Cities Project*. TWSA, Glasgow.
- Livitt, K. 2007: 'Becoming animal in contemporary visual arts'. *Cultural Studies Review*, 13(1), p228-232.
- Lorimer, H. 2003: 'Telling small stories: spaces of knowledge and the practice of geography'. *Transactions of the Institute of British Geographers*, 28(2), p197-217.
- Lorimer, H. 2006: 'Herding memories of humans and animals'. *Environment and Planning D: Society and Space*, 24(4), p497-518.
- Lorimer, H. 2009: 'Caught in the nick of time: archives and fieldwork'. In: DeLyser, D., Aitken, S., Crang, M.A., Herbert, S. and McDowell, L. (eds.) *The SAGE Handbook of Qualitative Research in Human Geography*. SAGE Publications: London.
- Lorimer, H. Murray, S. 2015: 'The Ruin in Question'. *Performance Research: A Journal of the Performing Arts*, 20(3), p58-66.
- Lorimer, J. 2012: 'Multinatural geographies for the Anthropocene'. *Progress in Human Geography*, 36(5), p593-612.

- Mabey, R. 2012: *The Unofficial Countryside*. Little Toller Books, Dorset
- Macfarlane, R. 2016: 'Generation Anthropocene: How humans have altered the planet forever'. *The Guardian*, [online] 1 April. Available at: <https://www.theguardian.com/books/2016/apr/01/generation-anthropocene-altered-planet-for-ever> [Accessed 4 Sept 2016].
- Macpherson, P. 1998: 'Where have all the 'best' flowers gone?'. *BSBI Newsletter*, 2, p45-47.
- Millar, W.J. 1888: *The Clyde from the Source to the Sea*. Fullarton, London.
- M'Ure, J. 1874: *Gasghu Facies: A View of the City of Glasgow*. Unknown, Glasgow.
- McKibben, B. 2006: *The End of Nature*. Random House Trade, New York.
- Murphy, A. and Bruno, N. 2013: *Glasgow*. Footprint, Bath.
- O'Hagan, A. 2008: *The Atlantic Ocean: Essays on Britain and America*. Faber & Faber, London.
- Osbourne, B. Quinn, I. and Robertson, D. 1996: *Glasgow's River*. Lindsay Publications, Glasgow.
- Pacione, M. 2009: 'The View from the Tower: Geographies of Urban Transformation in Glasgow'. *Scottish Geographical Journal*, 125 (2), p127-181.
- Paton, K. 2009. '*We are not removing*': *The everyday experiences of gentrification in Partick*' WestGAP, Glasgow.
- Pearson, M. 2006: *In Comes I: Performance, Memory and Landscape*. University of Exeter Press, Exeter.
- Protevi, J. 2010: *Mind in life, mind in process: towards a new transcendental aesthetic and a new question of Panpsychism*. Available at: <http://www.protevi.com/john/Deleuze-Thompson-web-version.pdf> (Accessed 20 August 2015).
- Riddell, J. 1979: *Clyde Navigation: A History of the Development and Deepening of the Clyde*. John Donald Publishers Ltd, Edinburgh.
- Riddell, J. 1988: *The Clyde: An Illustrated History of the River and its Shipping*. Fairlie Publishing, Ayrshire.
- Roberts, J. 1984: 'Stuart Brisley'. *ICA catalogue*.
- Robertson, D. 1884: 'Glasgow, Past and Present: Illustrated in Dean of Guild Court Reports and in the Reminiscences and Communications of Senex, Aliquis, J.B., Etc, Volume 2'.
- Morton, T. 2013: *Hyperobjects – Philosophy and Ecology after the End of the World*. The University of Minnesota Press, Minnesota.
- Leadbetter, R. and Sibbald, R. 2004: *Times Past: The Story of Glasgow*. Black and White Publishing Ltd, Edinburgh.
- Macdonald, H. 2014: *H is for Hawk*. Jonathan Cape, London.

- Matless, D. and Pearson, M. 2012: 'A regional conversation'. *Cultural Geographies*, 19(1), p123–129.
- Mitchell, I. 2005: *Walking Through Glasgow's Industrial Past*. Luath Press Ltd, Edinburgh.
- Munteán, L. 2014: 'The Remains of the Day: The Afterlife of the Ruins of the World Trade Center'. In: Douglas, C. and Monacella, R. (eds) *Places and Spaces of Monstrosity*. Inter-Disciplinary Press, Oxford.
- Sinclair, I. 2012: 'Introduction'. In: Mabey, R. (author) *The Unofficial Countryside*. Little Toller Books, Dorset.
- Solnit, R. 2006: *A Field Guide to Getting Lost*. Canongate Books Ltd, Edinburgh.
- Solnit, R. 2013: *The Faraway Nearby*. Granta Publications, London.
- Swanson, H. Bubandt, N. and Tsing, A. 2016: 'Less Than One But More Than Many Anthropocene as Science Fiction and Scholarship-in-the-Making'. *Environment and Society: Advances in Research*, 6, p149–166.
- Taussig, M. 2011: *I swear I saw this: Drawings in Fieldwork Notebooks, Namely my own*. The University of Chicago Press, New York.
- Tsing, A. 2012: 'Unruly Edges: Mushrooms as Companion Species'. *Environmental Humanities*, 1, p141-154.
- Tsing, A. 2015: *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*. Princeton University Press, Princeton.
- Tsing, A. Lien, M. and Swanson, H. 2014: *More Than Human: AURA Working Papers Vol. 1*. Available at: http://anthropocene.au.dk/fileadmin/Anthropocene/Workingpapers/AURA_workingpaperVol1_01.pdf (Accessed 14 August 2015).
- Tsing, A. Lien, M. and Swanson, H. 2015: *Wreckage and Recovery: Exploring the Nature of nature: AURA Working Papers Vol. 2*. Available at: http://anthropocene.au.dk/fileadmin/Anthropocene/Workingpapers/AURA_workingpaperVol2.pdf (Accessed 14 August 2015).
- Weizman, E. 2012: *Forensic Architecture: Architecture Notes from Fields and Forums: 100 Notes, 100 Thoughts: Documenta Series 000*. Hatje Cantz, Berlin.
- Whatmore, S. 2006: 'Materialist returns: practising cultural geography in and for a more-than human world'. *Cultural Geographies*, 13(4), p600-609.
- Wylie, J. 2002: 'An essay on ascending Glastonbury Tor'. *Geoforum*, 33, p441–454
- Wylie, J. 2005: 'A Single Day's Walking: Narrating Self and Landscape on the South West Coast Path'. *Transactions of the Institute of British Geographers*, 30(2), p234-247.
- Wylie, J. 2007: *Landscape*. Routledge, London.

Van Wyck, P. 2013: 'Footbridge at Atwater: A Chorographic Inventory of Effects'. In: Chen, C. MacLeod, J. and Neimanis, A. (eds) *Thinking with Water*. McGill-Queen's University Press, Canada.

Yusoff, K. and Gabrys, J. 2006: 'Time lapses: Robert Smithson's mobile landscape'. *Cultural Geographies*, 13(3), p444-450.

Other Sources

¹ Glasgow Life Media, 2011: 'Riverside Museum Press Pack, Opening 21 June 2011'. [Press pack], 21 June. Available online: <https://www.glasgowlife.org.uk/museums/Documents/RiversidePressPack.pdf> 9 [Accessed 4 Sept 2016].

² Clyde Waterfront, 2004: 'Regeneration Plan: A River Reborn'. Available online: <http://www.clydewaterfront.com/media/5527/clyde%20waterfront%20regeneration%20plan.pdf> [Accessed 11 Aug 2016].

³ Clyde River Foundation, 2014. 'River Clyde fish kill near Glasgow Green'. *Clyde River Foundation*, [blog] 23 July. Available at: <http://www.clyderiverfoundation.org/river-clyde-fish-kill-near-glasgow-green/> [Accessed 23 June 2016].

⁴ Ellis, M. 2013: 'Expert: More Areas of Riverbank at Risk of Collapse'. *Evening Times*, [online], 4 Mar. Available at: http://www.eveningtimes.co.uk/news/13250910.Expert_More_areas_of_riverbank_at_risk_of_collapse/ [Accessed 4 Sept 2016].

⁵ Herald Scotland, 2003: 'Mountains of Refrigerators Found Dumped in the Clyde'. *Herald Scotland*, [online] 29 Dec. Available at: http://www.heraldscotland.com/news/12524202.Mountain_of_refrigerators_found_dumped_in_the_Clyde_Fears_over_danger_posed_by_chemicals/ [Accessed 4 Sept 2016].

⁶ Scottish Water, 2014: 'Appendix 7: Improving the Environment'. In: Scottish Water, 2014: 'Business Plan Appendices 2015 - 2021'. Available at: <http://www.scottishwater.co.uk/about-us/publications/strategic-projections> [Accessed 4 Sept 2016].

⁷ Hetherington, P. 1990: 'The Lament of the Clyde'. *The Guardian*, [online] 8 Aug. Available at: <https://www.theguardian.com/society/1990/aug/08/guardiansocietysupplement> [Accessed 4 Sept 2016].

⁸ Green, N. 2012. 'Shadowlands'. Nic Green, [online]. Available at: http://www.nicgreen.org.uk/#!_shadowlands [Accessed 1 Sept 2016].

Morland, D. 2012: 'Keening Luna'. Douglas Morland, [online]. Available at: <http://www.douglasmorland.com/page4.htm> [Accessed 1 Sept 2016].

-
- Tuulikki, H. 2012: '*Just as the Tide was Flowing*'. Hanna Tuulikki, [online]. Available at: <http://www.hannatuulikki.org/portfolio/high-slack-low-slack-high/> [Accessed 1 Sept 2016].
- Beall, T. and Baker, M. 2012: '*A Stone's Throw Away*'. A Stones Throw Away, [online]. Available at: <http://www.astonesthrowaway.com> [Accessed 10 July 2016].
- ⁹ Clyde Waterfront, n.d. 'Govan Graving Docks'. *Clyde Waterfront*, [online]. Available at: <http://www.clydewaterfront.com/clyde-heritage/prince's-dock/govan-graving-docks> [Accessed 10 July 2016].
- ¹⁰ Rivers, B. 2010. '*Slow action*'. You Tube, [film online]. Available at: <https://youtu.be/FVruPaRsWRs> [Accessed 10 July 2016].
- ¹¹ Scottish Branch of the Paddle Steamer Preservation Society (n.d.): '*Waverley – The Only Way to See the Clyde*'. Visitor guide, issued on Paddle Steamer Waverley's 'Firth of Clyde - North' sailing 2014.
- West Dunbartonshire Libraries and Cultural Services, 2000: '*Shipbuilding*'. Clydebank Museum and Art Gallery, [Exhibition].
- ¹² Patchett, M. 2010. '*What is Cultural Geography?*' Experimental Geography in Practice [blog]. Available at: <https://merlepatchett.wordpress.com/2010/09/03/cultural-geography/> [Accessed 7 January 2016]
- ¹³ Ordnance Survey, 1860. '*Govan and Barony Parishes*'. Lanarkshire sheet VI 9, 25.344 inches to a mile. Ordnance Survey, Edinburgh.
- ¹⁴ 'Mekle Govan and Water Inch Island', 1654 [hand drawn map]. In: Brotchie, T.C.F. 1905: *The History of Govan: Burgh and Parish: Historical, Ecclesiastical, Traditional and Municipal*. John Cossar, Govan, p20.
- ¹⁵ Clyde Navigation, 1854. '*Report by Mr. John F. Ure on Graving Docks for The Port of Glasgow*'. Clyde Navigation, Glasgow.
- ¹⁶ The Glasgow Herald, 1875: 'Opening of the Graving Dock at Govan'. *The Glasgow Herald*, 5th Nov, p56c.
- ¹⁷ The Glasgow Herald, 1875: 'Salterscroft Graving Dock'. *The Glasgow Herald*, 13th Dec, p33a.
- ¹⁸ 'Dock 1 Cross Section 2-2' n.d. Hidden Glasgow, [image online]. Available at: http://www.hiddenglasgow.com/GovanGravingDocks/engineering/images/Dock1_CrossSection_2-2.jpg [Accessed 4 Sept 2016].
- ¹⁹ The Glasgow Herald, 1898: 'The New Harbour Works at Glasgow: Description of No.3 Graving Dock'. *The Glasgow Herald*, 27th Apr, p64-c.
- ²⁰ 'Buckets in Graving Dock No.3', n.d. [photograph]. In: Rountree, G. 2003: *Bygone Govan*. Stenlake Publishing, Ayrshire, p11.
- ²¹ 2013: '*City Dock*'. [image online] Available at: http://www.futureglasgow.co.uk/Residential/Graving_model_day.jpg [Accessed 4 Sept 2016].
- ²² 2015: '*Open Art, Master Rock*'. [Radio programme] BBC, BBC Radio 4 FM, 17 Oct 2015, 14:15.

-
- ²³ 2015: 'Open Art, Inside the Rock'. [Radio programme] BBC, BBC Radio 4 FM, 15 Oct 2015, 11:30.
- ²⁴ The Glasgow Herald, 1875: 'Opening of the Graving Dock at Govan'. *The Glasgow Herald*, 5th Nov, p56c.
- ²⁵ Clydeport Authority Records, Jan 1923 – Aug 1924. 'Register of Vessels Entering Dry Docks: no.9'. T-CN2K/9, Glasgow City Archives.
- ²⁶ Barles, W.D. 1837: 'Map of the Village of Govan'. [Hand drawn map] Glasgow City Archives.
- ²⁷ 2015: 'Open Art, Inside the Rock'. [Radio programme] BBC, BBC Radio 4 FM, 15 Oct 2015, 11:30.
- ²⁸ Ordnance Survey, 1896. 'Second Edition 1896, Glasgow and its Environs'. Lanarkshire sheet VI 9, 25.344 inches to a mile. Ordnance Survey, Edinburgh.
- ²⁹ Despard, E. and Olden, R. 2014: 'Growing North Kelvin Meadow'. *North Kelvinside Meadow*, [blog] 26 Feb. Available at: <https://northkelvinmeadow.com/2014/02/26/growing-north-kelvin-meadow/> [Accessed 10 July 2016].
- ³⁰ Olden, R. 2013: 'Govan Graving Docks LIVE!' [online] Available at www.govangravingdocks.wordpress.com [Accessed 10 July 2016].
- ³¹ Weizman, E. 2012: 'Forensic Architecture'. [lecture online] 3 July, Royal Geographical Society Annual Conference, University of Edinburgh. Available at: <https://www.youtube.com/watch?v=11GjGLoohFk> [Accessed 10 July 2016].
- ³² Jack, I. 2014: 'Demolishing Glasgow's Red Road Flats for the Commonwealth Games Could Leave the City's Reputation in Rubble'. *The Guardian*, [online] 12 Apr. Available at <https://www.theguardian.com/commentisfree/2014/apr/12/demolishing-glasgow-red-road-flats-commonwealth-games> [Accessed 4 Sept 2016].
- ³³ Despard, E. 2014: 'Regarding the Pointless and Photogenic'. *Communicative Landscapes*, [blog] 11 Jan. Available at: <https://communicativelandscapes.wordpress.com/2014/01/11/regarding-the-pointless-and-the-photogenic/> [Accessed 4 Sept 2016].
- ³⁴ Cain, P. 2011: 'Drawing (on) Riverside'. Kelvingrove Art Gallery, [Exhibition]. May-Jun 2011.
- ³⁵ The Scotsman, 2010: 'Flights of fancy: Doo fleein' is more than a sport in Glasgow'. *The Scotsman*, [online] 6 Mar. Available at: <http://www.scotsman.com/lifestyle/flights-of-fancy-doo-fleein-is-more-than-a-sport-in-glasgow-1-474482> [Accessed 4 Sept 2016].
- ³⁶ McCall, C. 2015: 'Hamilton Palace, Scotland's Largest Private Home'. *The Scotsman*, [online] 29 Sept. Available at: <http://www.scotsman.com/heritage/people-places/hamilton-palace-scotland-s-largest-private-home-1-3901831> [Accessed 4 Sept 2016].

-
- ³⁷ McWhinnie, A. 1983: 'Return of the Kings: Silver Salmon Leap Again'. *The Daily Record*, 5th Nov, p13a.
- ³⁸ McCluskey, K. 2013: 'Caught by the Blantyre Weir'. Caught by the River, [blog] 2 Nov. Available at: <http://www.caughtbytheriver.net/2013/11/02/caught-by-2-river-clyde-the-bluebells-salmon/> [Accessed 4 Sept 2016].
- ³⁹ Pool, R. 2014: 'Coming Clean – The Future of Sewage'. *Engineering and Technology Magazine*, 9(12).
- ⁴⁰ Scottish Power, n.d. 'Daldowie Sludge Processing Plant'. *Scottish Power*, [online]. Available at: http://www.scottishpower.com/pages/daldowie_sludge_processing_plant.asp [Accessed 4 Sept 2016].
- ⁴¹ Herald Scotland, 1996: 'Beware a close encounter with alien hogweed'. *Herald Scotland*, [online] 12 Aug. Available at: http://www.eveningtimes.co.uk/news/14661533.Fears_over_dangerous_giant_hogweed_spotted_in_Glasgow/?ref=arc [Accessed 4 Sept 2016].
- ⁴² Summers, L. 2014: 'Glasgow 2014: Margaret Jaconelli's story'. *BBC News*, [online] 26 Mar. Available at: <http://www.bbc.co.uk/news/uk-scotland-glasgow-west-26740648> [Accessed 4 Sept 2016].
- ⁴³ City Legacy Homes, n.d. 'The Lotus, 4 Bed Semi Detached'. *City Legacy Homes*, [online]. Available at: <http://www.citylegacy.co.uk/Lotus> [Accessed 4 Sept 2016].
- ⁴⁴ Almos, I. 2014: 'Chinese mitten crab found in River Clyde'. *The Scotsman*, [online] 12 Sept. Available at: <http://www.scotsman.com/news/environment/chinese-mitten-crab-found-in-river-clyde-1-3540386> [Accessed 4 Sept 2016].
- ⁴⁵ Lowe, S. Browne, M. Boudjelas, S. and De Poorter, M. 2000: '100 of the World's worst invasive alien species'. Available at: http://www.issg.org/pdf/publications/worst_100/english_100_worst.pdf [Accessed 4 Sept 2016].
- ⁴⁶ Clyde River Foundation, 2014: 'Chinese Mitten Crab Found in the River Clyde'. *Clyde River Foundation*, [blog] 12 Sept. Available at: <http://www.clyderiverfoundation.org/chinese-mitten-crab-found-in-the-river-clyde/#more-%27> [Accessed 4 Sept 2016].
- ⁴⁷ Herald Scotland, 2013: 'Water from coal mines could heat our homes'. *Herald Scotland*, [online] 17 Nov. Available at: http://www.heraldscotland.com/news/13132120.Water_from_coal_mines_could_heat_our_homes/ [Accessed 4 Sept 2016].
- ⁴⁸ Owens, C. 2014: 'Preventing suicides through non-clinical methods'. *Exeter University* [online] Available at: <https://www.exeter.ac.uk/ref2014/impact/lifesciences/preventingsuicides/> [Accessed 4 Sept 2016].
- ⁴⁹ Christie & Son, n.d. 'Company: A Reliable and Responsible Business Partner'. *Christie & Sons (Metal Merchants) LTD* [online]. Available at: <http://www.christieandson.com/company.html> [Accessed 4 Sept 2016].

-
- ⁵⁰ BBC News, 2014: 'Govan shipyard likely to close in BAE revamp of Clyde facilities'. *BBC News*, [online] 6 Feb. Available at: <http://www.bbc.co.uk/news/uk-scotland-glasgow-west-26065760> [Accessed 4 Sept 2016].
- ⁵¹ Greenock Telegraph, 2014: 'Iconic Port Tenement Row Will Finally be Demolished'. *Greenock Telegraph*, [online] 19 April. Available at: http://www.greenocktelegraph.co.uk/news/14014757.Iconic_Port_tenement_row_will_finally_be_demolished/ [Accessed 4 Sept 2016].
- ⁵² Baker, M. 2012: 'Sacrificial Materials'. *Sacrificial Materials: Art and Public Space* [online]. Available at: <http://sacrificialmaterials.blogspot.co.uk/search/label/Govan%20Riverside> [Accessed 4 Sept 2016].
- ⁵³ Beall, T. 'Govan's Hidden Histories'. *Govan Hidden Histories* [online]. Available at: <https://govanshidenhistories.wordpress.com/> [Accessed 4 Sept 2016].
- ⁵⁴ McGillivray, I. 2014: 'Restore Govan Graving Docks in Glasgow to create a Shipbuilding Heritage Park #SaveGovanDocks'. *Change.org* [Petition]. Available at: <https://www.change.org/p/glasgow-city-council-restore-govan-graving-docks-in-glasgow-to-create-a-shipbuilding-heritage-park-savegovandocks> [Accessed 4 Sept 2016].
- ⁵⁵ McGillivray, I. 2014: 'Govan Graving Docks Heritage Park – A Conceptual Proposal for the Redevelopment of Govan Graving Docks in Glasgow as a shipbuilding and Maritime Heritage Park'. Available at: <https://shipbuildingheritage.wordpress.com/tag/govan-graving-docks/> [Accessed 4 Sept 2016].
- ⁵⁶ Clyde River Foundation, 2013: 'The River Clyde Fishery Management Plan Review 2013'. Clyde River Foundation, University of Glasgow.
- ⁵⁷ Morland, D. 2012: 'Keening Luna (A Tidal Thredony)'. [essay online] Available at: <http://www.douglasmorland.om/KeeningLuna.pdf> [Accessed 4 Sept 2016].