

WATER AS CATALYST

Int

Interventions

AR

Adaptive Reuse

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Interventions | Adaptive Reuse

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THE EDGE CONDITION

RE-USE OF INDUSTRIAL HERITAGE ON
URBAN WATERFRONTS: A CASE OF LONDON'S SECOND RIVER

by GRAEME EVANS & NAOMI HOUSE

Introduction

The beginning of the twenty-first century has seen growing interest in how industrial heritage is considered — its contribution to our understanding of the past and its place in the evolution of landscapes and societies. Waterside architecture has a special place in cultural heritage, and in industrial heritage in particular. It offers an entry point to the waterways that fuelled both production and early mass transportation, as well as essential infrastructure to support the growth of urban populations through the provision of drinking water, sewage disposal and human-nature ecosystems. Buildings that originated as mills, pumping stations and factories have been gradually transformed into studios for artists, designers and digital industries, into arts centres and museums, as well as private residences, waterside restaurants and leisure facilities, as these previously 'private' industrial waterways open up for recreation, dwelling and commercial use.

The phenomenon of waterfront architecture has, since the 1980s, focused on high profile port, dock and lake/riverside cities — from Barcelona, Liverpool, London and Venice, to Boston, Baltimore, Toronto and Montreal¹, whilst these and cities such as 'Guggenheim Bilbao' also look to iconic new buildings to reimagine their post-industrial futures. More prosaic and everyday waterside sites seldom attract this attention and investment, as either visitor attractions or as 'aesthetic anchors' to larger redevelopment projects, whether commercial, housing or culture-based. However, huge tracts of riverside industrial sites lay largely undeveloped and/or under-appreciated — from central and





Millstones and wheels, House Mill at Three Mills Island

eastern Europe, North America, mainland China, to the 'hidden' rivers and canals which serve major cities such as London. However, continued population growth and demand for land and brownfield development for housing have started to make those waterfront areas that are more connected to major cities, more attractive for residential, culture-led regeneration and mixed-use development. These heritage buildings and sites also provide an important legacy of their industrial and cultural production past.² Their re-use nonetheless presents a challenge to viable redevelopment given the high costs of conversion — often listed historic buildings in conservation areas — the particular risks (and costs) associated with their waterside location, notably flood prevention and subsidence, and the limited options for re-use required in order to justify the capital investment and ongoing revenue support.

This article offers an investigation of the lower Lee Valley and the re-use of selected waterfront industrial heritage buildings. As an indication of the Lee Valley's amenity value and industrial heritage, over thirty mills are located on the river and Lee Navigation Canal, which today represent an important physical legacy and cultural heritage, alongside a network of locks and bridges. The river creates an edge condition, simultaneously linking and separating the surrounding landscape and framing our experience of this obsolescent infrastructure. These watery fragments of the past slip into view as you descend into the valley towards the River Thames, offering a glimpse of London's pasts, presents and possible futures. How might we identify an after-life for this strange environment? And what narratives can be suggested through the adaptive re-use of the waterfront architecture that persists? Water provides a medium for land and buildings, and mediates both as it flows over time and space, eroding and reshaping the built and natural environment as it goes.

Rewriting cultural identity

'If an original building is considered as a first discourse that conditions future formal discourses to be inscribed upon it, then remodeling can be conceived of as rewriting. . . as writing over, as underlining, as partially erasing, as interstitial writing (writing between the lines), as a way of qualifying, accentuating, quoting, commenting upon, as digression, interlude, or interval, as a way of writing parenthetically, of setting off by punctuation, as a new form for an old story.'³ Within the context of urban regeneration and re-use it is useful to understand the Lee Valley as a palimpsest landscape both in terms of its topography and with regards to the architectural heritage that punctuates it — '...palimpsest landscapes...are not only the material expressions of physical and human processes at work over different spatial and temporal scales, they also capture aspects of the nonmaterial expressions of cultural identity and sense-of-place.'⁴

This intersection of landscape and architecture creates a complex and layered environment that is obsolete as a space of industry, yet vibrant as a place. The watery nature of this peculiar urbanity sustains it in a desirable continuum between past and present. The three sites that we encounter here all demonstrate a capacity to be rewritten, offering themselves up as spaces of intervention and re-use. Engaging with the material condition of the architecture, is it possible to isolate fragments that persist into the next iterations of use and inhabitation? The remnants of the erased, which are still visible here as traces, become clues — evidence perhaps of existing or passing design precedents; or clues to more traces as yet un-covered. In engaging with these sites forensically we operate as detectives, revealing the extraordinary instability, and potency of spaces and things.

Defining the Edge Condition

The River Lee, also known as London's 'hidden' or 'second river', originates in Marsh Farm in the Chiltern Hills north of London and flows for 50 miles south where it meets the River Thames at Bow Creek. With tributaries such as the 'New' River (constructed in 1613) 20 miles in length, or the Lee Navigation Canal a further 28 miles, the river feeds into 13 major reservoirs, which provide drinking water for a catchment area that extends over 500 square miles of flood plain. Several of these man-made reservoir areas are in the process of conversion to wetland 'nature' reserves incorporating visitor and interpretive education centres, making them open to the public for the first time.

The River Lee also provides a litmus test of London's industrial history and growth. Much of the City's manufacturing history is located here, plus agricultural production, which still serves London's population today. Industries such as gravel and mineral extraction, metalwork, ordnance (weaponry, e.g. Lee-Enfield rifle), early TV set production, the first plastic (Parkene), brewing, sweets factories, furniture-making, textiles, were all served by the working river transport system, the legacy of which is visible in wharf, mill and dockside buildings.⁵ The Lee Valley has therefore been a source of innovation and industrial production throughout this time, now represented by creative industries, new housing and leisure developments on the revalorised waterfronts. Since the 1980s, an increasing number of artists have worked from studios along the river, attracted by their low cost, large loft style spaces and the promise of an alternative lifestyle/environment, as well as the inspiration derived from this watery post-industrial landscape.

The Lee Valley is also significant within the topography of London. Once the border between Viking and Saxon Kingdoms, today borough boundaries are drawn down the middle of the river with the left bank in a separate jurisdiction from the right. As a flaw in the urban landscape it separates and divides much of the



eastern reaches of the city from the rest of London. As an extended threshold, the Lee Valley is a place of otherness, where the water operates as an acoustic buffer zone, softening the edges of urbanity, and operating as a portal into another world. This liminal landscape represents what Solà-Morales describes as 'terrain vague' - 'strange places (that) exist outside the city's effective circuits and productive structures'⁶— a concept that Barron and Mariani extend — 'terrain vagues act variously as refuges, mirrors, and memento mori... As counter-spaces, terrain vagues are also containers of a fragmented shared history, illuminating the imperfect process of memory that constantly attempts to recall and reconstruct the past.'⁷ Employing this metaphor we suggest that the Lee Valley is itself a terrain vague, simultaneously of London yet apart from it. Here the presence of the past is experienced as a heightening of the senses — a tuning in to the uncanny quality of place.

Towards a meaning of place

Norberg-Schulz describes the genius loci as the sense that people have for a place, while he considers the

traditional form of buildings and cities as the basis for understanding this symbolic value.⁸ As he later observes: 'the structure of a place is not a fixed, eternal state. As a rule places change, sometimes rapidly. [A]ny place ought to have the 'capacity' of receiving different 'contents'. . . A place which is only fitted for one particular purpose would soon become useless.'⁹ Indeed the meaning of places should not reside with professionals alone, but with the people who have used, occupied and constructed their own meanings from them. As Bluestone maintains, 'we need a system for taking measure of and working with the reception side of cultural heritage . . . conservators can take an active role, however they also need to be open to the possibility that the places they conserve for one purpose may take on very different meanings over time.'¹⁰

In *The Secret Lives of Buildings*, Hollis suggests that 'The life of [a] building is both perpetuated and transformed by the repeated act of alteration and re-use.'¹¹ In practice, this alteration can be gradual or punctuate long periods of sustained single use (e.g. milling, pumping). In the waterside architectural re-use

case studies reviewed here, the intermediate and planned adaptations have been conceived and executed with the input of former workers, such as retired dockworkers, millwrights (originally a specialized carpenter with knowledge of gear ratios, driveshaft speeds etc.), local historians, water utility workers and heritage volunteers who act as the stewards of, and interface with, the public over access to the sites. New occupants, notably practicing artists and architects, have also played an important role in the adaptation and usage of these buildings, particularly in the 'meanwhile' and self-build stage of their reincarnation and in the reinterpretation of their past. Students of Interior Architecture also provide a speculative insight into the possibilities of context-driven design projects, and this article incorporates schemes developed as part of final year work sited in these waterside heritage buildings.

Speculative Interventions

Using the lower Lee Valley as a site-specific context for a year-long study of the edge condition, a design brief looked to explore the complex social needs of incoming populations, and long-term inhabitants and businesses. Testing and exploring the potentially divergent needs of these groups, the proposals sought to accommodate either a duality of purpose through meantime projects, or to reconcile differing modes of occupancy and use through more permanent interventions. Testing

the potential for new spatial typologies in this rapidly changing part of London, their attempts to address the edge condition revealed themselves through a range of interventions that often looked to exploit water, either as the focus of the project narrative, or as a contingent part of the urban landscape into which these narratives were inserted.

The three buildings that we focus on here all represent examples of spaces that have endured and experienced intensive historic industrial (including water utility) use, and change of use, followed by significant periods of redundancy and decline, and today, reoccupation and adaptation. And our reading of these places engages the slow look, utilizing peripheral vision to attend to the lost details of these environments. As Pallasmaa suggests, '[t]he very essence of the lived experience is moulded by hapticity and peripheral, unfocussed vision. Focussed vision confronts us with the world, whereas peripheral vision envelops us in the flesh of the world.'¹² Situated within 'an emergent forensic sensibility, an object-oriented juridical culture immersed in matter and materialities',¹³ our analyses encounter the Lee Valley through the following buildings:

- The Marine Engine House at Walthamstow Reservoirs, 'Wetlands'
- The White Building on the Lee Navigation Canal, Hackney Wick
- Three Mills at Bromley-by-Bow on the River Lee



The Sinking Future Post Apocalyptic Flood Survival Centre

Adaptive Practices

The Marine Engine House, located between several Reservoirs at Walthamstow, is an example of Victorian civic utilitarian architecture. Constructed in 1894 as the Ferry Lane Pumping Station, it was designed by East London Waterworks Company's Architect, H. Tooley and Chief Engineer, Sir William Booth Bryan. The building is no longer in use and has been derelict for several years.

Consisting primarily of a two-storey building — the Engine House — with a single storey building attached to its northern side, there is a further parallel single storey building to the west, which includes the base of a now-demolished chimneystack.

Constructed in brick, the Engine House was designed in the simplified Italianate style much used for Victorian industrial buildings, with semi-circular heads to all of the principal door and window openings. There is also a relatively elaborate string course at mid-height and a highly detailed cornice to the two-storey section, with less elaborate details to the single-storey adjacent structures.

The roof of the Engine House is finished in plain clay tiles with extensive use of patent glazed roof-lights and ridge lights in the single storey sections, and is pitched at around 45 degrees, half-hipped at its northern and southern ends. Doors and window frames are in painted softwood. Despite the missing chimney, and some external alterations, the building is still an imposing piece of Victorian industrial architecture. The Engine House, and the Pump Room at the extreme northern end of the building, both have interesting interiors — in the latter case this authenticity is enhanced by the remnants of its utilitarian past, with derelict equipment surviving redundancy prior to conversion.

These silent artefacts represent an important feature of industrial heritage 'consisting of remains of industrial culture which are of historical, technological, social, architectural or scientific value, including machinery, buildings, factories, mills, workshops, sites, mines, warehouses, stores.'¹⁴ The renovation of the Marine Engine House plans to open up this abandoned edifice for the public and other users of the wetlands, transforming the Triple Engine Room, the Boiler House and the Turbine Room into a visitor centre, with exhibition spaces, education facilities and a cafe. The Marine Engine House is located at the centre of a new network of path and walks and the existing reed bed areas are being extended to diversify and increase the habitat, which, it is hoped, will attract a wide variety of new species to the site.

What is curious about the Marine Engine House, and indeed many of the buildings that extend through the Lee Valley, is that they were designed to house machinery and goods, rather than for human

occupation. Adaptive practices read and interpret buildings in order to establish valid modes of intervention, but how can these practices respond to the material fragments of the past if these fragments bear witness to the sentience of objects rather than to the absent presence of human subjectivity?

The 'watery' fragments of the Marine Engine House that are imaged here evidence something akin to the 'vibrancy' of things, rather than human inhabitation, and suggest that objects and buildings have an agency independent of ourselves.

From the expansive reservoir and marshes of the Lee Valley, the river and canal system run south, supporting colonies of canal boats, waterside housing, residual industry, and parks and recreational areas. At Hackney Wick & Fish Island it bounds a long established urban settlement, an edge community descended from the former industrial and working river folk. Here a legacy of industrial buildings, wharfs and warehouses sits amongst largely social housing and new waterfront apartments, which have emerged as the East End docklands regeneration and transport system spread north up the Lee Valley.

The White Building, Hackney Wick, was built in 1897 by Clarnico, the confectioner, as a chocolate factory for the roasting and processing of imported cocoa beans brought from the docks by barge. Today the building serves as a mixed-use 'creative lab' with studio space for practicing artists, a residency space, community meeting room, an event space, and a waterside craft brewery & pizzeria. As Farley and Symmons observe: 'many and varied are the balconied canalside apartments and floating restaurants emerging from dark stretches of urban waterways.'¹⁵

From Fish Island, the canal and river run close together until they reach the tidal zone as the Lee finally flows into the River Thames at Bow. Here, Three Mills Island is located, built to exploit the ebb and flow of the river and driving a series of mills housed in a complex of buildings.

At the Three Mills Bow, the House Mill is a Grade 1-listed eighteenth century tidal mill set on the River Lee at Bromley-By-Bow in east London. The Mill was built on a pre-Domesday site in 1776, replacing an earlier mill located between two houses occupied by the miller and his family. Water mills were known in Roman times and were normally operated by the flow of a river. The Domesday Survey (the Domesday Book is a manuscript record of the "Great Survey" of much of England completed in 1086 by order of King William the Conqueror) recorded eight tidal mills in this area. They provided flour for the bakers of nearby Bow, who supplied bread to the City of London. In 1588, one of the two remaining mills was described as a gunpowder mill.¹⁶ In 1728, Three Mills was bought by Peter Lefevre, a Huguenot, who operated the mills in conjunction with an adjacent distillery. The company also had its own carpenters, coopers and managed a large piggery fed on waste products gleaned from the mills various operations.

Built across the River Lee, the Mill operated by

trapping the sea and river water at high tide to turn the water wheels on the ebb. The outflowing water turned four large wheels driving twelve pairs of millstones. These four wheels and six of the pairs of millstones survive together with other historic machinery inside the building today.

The House Mill is now the oldest surviving and largest tidal mill in the UK and represents the qualities of both pre-industrial and industrial periods. Although milling ceased in 1941 after the area was bombed during the Second World War, the mill today functions as a low-key heritage visitor attraction with adjoining buildings occupied for film, theatre and creative industries — a growing typology of use for larger industrial heritage buildings, otherwise destined for private residential occupancy. A timber framed building, the House Mill, is clad in brick on three sides and has a doubled-ridged, steep roof with 12 dormer windows lighting its two attic storeys.

All buildings on the Three Mills site were partially restored and converted over a ten-year period by Julian Harrap Architects between 1989-1997. Minimal intervention led to sophisticated structural repairs to these timber frames using complex scarf joints and flitch plate reinforcement, including the repair and restoration of the fabric and the waterways below the building. The interior provides an insight to the world of the pre-turbine age of milling.

Water as a medium and mediator

In the three examples of adaptive re-use described, actual and speculative, water is both a medium — historically drawn to pump clean water for consumption, to drive millstones and transport raw materials for manufacture — and also a mediator between land and water, between territories or 'edges', and between time and space. On the one hand, the sense of place that these architectural representations evoke offers an insight to their utilitarian past, whilst their adaptation — pragmatic, functional and speculative — seeks to engage with present and future uses, and the values attached to these waterside structures. These buildings and their locales can be seen as heterotopian,¹⁷ rather than understood in terms of a dialectical utopian/dystopian conflict between nostalgia and sentimentality, and decline through redundancy, neglect and gentrification. In this sense, their flexibility and fluidity, where water again defines their re-use through wetlands nature reserve, mill heritage centre, or post-industrial creative industrial workspace, reveal their palimpsest nature, but this layering leaves enough in each case to detect the traces and meanings from their past purpose and heritage.

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- 2 Graeme Evans, "The Lee Valley: an industrial river system and heritage landscape". In *Patrimoine Paesaggi : Costruiti Dall'acqua*. Edited by Margherita Vanore, Milano: Mim Edizioni Srl-Udine, 2016, (90-101).
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- 11 Ed Hollis, *The Secret Lives of Buildings: From the Parthenon to the Vegas Strip in Thirteen Stories* (London: Portobello Books), 2010.
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- 17 Michael Foucault, "Of Other Spaces: Utopias and Heterotopias", *Architecture, Mouvement, Continuité*, 5, 1984: 46-49.

PROJECT CREDITS, INFORMATION AND BIBLIOGRAPHIES

EDITORIAL

Project Name_ Projecting Change

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BREATHE, LOOK, STAND UP

Project Name 01_ DC ExchangeProject_Site_ McMillan Slow Sand Filtration site_ Location_ Washington DC_ New use 01_ Community center, marketplace, performance_ Project Name 02_ People's Liberation Army No. 1102_ Location_ Shenyang China_ Original architect_ Communist Party China_ Rehabilitation architect_ META-Project_ New use 02_ Exhibition space, mini theatre

Image Credits_ Figure 01,02, 08_ McMillan slow sand filtration site, Washington, DC, Lewis Francis; Figure 03 –07_ Public Folly, Shenyang, China, META-Project; Figure 09_ Courtesy of Lindsay Winstead

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THE TEARS OF THE U.S.S. ARIZONA

Project Name_ A tomb that lives; Location_ Pearl Harbor, Hawaii

Image Credits_ Figure 01_ View of USS ARIZONA taken from Manhattan Bridge on the East River in New York City on its way back from sea trials. December 25, 1916, Library of Congress Prints and Photographs Division Washington, D.C. 20540 USA http://hdl.loc.gov/loc.pnp/pp.print;photographer_EnriqueMuller,Jr./E.Muller;1916;Wikimedia; Figure 02_ A TOMB THAT LIVES Monument proposal, illustration by author; Figure 03_ An aerial view of the USS Arizona Memorial, U.S. Navy photo by Photographer's Mate 3rd Class Jayme Pastoric, Wikimedia

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THE EDGE OF CONDITION

Project Name 01_ Three Mills_ Bromley-by-Bow_ River Lee_ London, England_ Project Name 02_ The White Building_ Lee Navigation Canal_ Hackney Wick_ Stratford, England_ Project Name 03_ The Marine Engine House_ Walthamstow Reservoirs

Image Credits_ All images courtesy of the authors; Figure 01, 02_ Three Mills Island, London_ Figure 03_ White Building_ Hackney Centre Wick_ Stratford_ Figure 04_ The Sinking Future Post Apocalyptic Flood Survival Centre.

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BACK TO THE FUTURE

Image Credits_ Figure 01_ The Big U, Courtesy of Bjarke Ingels Group; Figure 02, 03, 05) by Julia Casol; Figure 04_ Courtesy of H+N+S Landscape Architects; Figure 06_ Dijkdoorbraak bij Bommel, 1799, Christiaan Josi, naar Jacob Cats (1741 – 1799), 1802, source: Rijksmuseum, Amsterdam

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THE OYSTER BLOCKS PROJECT

Project Name_ The Oyster Blocks Project

Image Credits_ Figure 01 – 07_ courtesy of the author

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THE HAMMAM OF ERBIL CITADEL

Project Name_ Hammam of Erbil; Location_ Erbil, Iraq

Image Credits_ Figure 01 – 04_ courtesy of the authors

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(re)MADE BY WATER

Project Name_ New World Mall, Bangkok, Thailand

Image Credits_ All images courtesy of the author; Figure 01_ Mall; central court, Photograph by Perfect Lazybones; Figure 02_ Floating market in Bangkok, Photograph by Georgie Pauwels; Figure 03_ Mall, escalators, Photograph by Olga Saliy; Figure 04_ Mall, koi, Photograph by Olga Saliy; Figure 05_ Mall, escalators, Photograph by Olga Saliy.

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T-HOUSE

Project Name_ T-HOUSE, theoretical project; Location_ Hains Point, Washington, D.C.

Image Credits_ Figure 01 – 08_ courtesy of the authors

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THE BLUE LINE

Project Name_ blue developments; Location_ Battir, Palestine; Qeparo, Albania

Image Credits_ Figure 01- illustration by author

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ENVIRONMENTAL IDENTITY

Project Name 01_ Caiaques kayaks; Location_ Pinheiros River, São Paulo, Brazil; Artist_ Eduardo Srur; Project Name 02_ Pets; Location_ Tietê River in São Paulo, Brazil; Artist_ Eduardo Srur

Image Credits_ All photos courtesy of Eduardo Srur; Figure 01_ Caiaques, kayaks, Pinheiros River, photo_ Eduardo Nicolau; Figure 02_ Caiaques, kayaks, Pinheiros River, photo_ Alexandre Schneider; Figure 03_ Pets, Tietê River, photo_ Eduardo Srur; Figure 04_ Pets, Tietê River, photo_ Almeida Rocha

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A METROPOLITAN PARK OF WATER

Project Name_ Metropolitan Water Park project, Location_ Saragossa, Spain

Image Credits_ Figure 01_ Bridge Pavilion & Third Millennium Bridge, Río Ebro, Zaragoza, España, Source_Pabellón Puente y Puente del Tercer Milenio, Author_ Juan E De Cristofaro from Zaragoza, España, CC-BY-SA-2.0; Figure 02_ Google Earth aerial view of Zaragoza, Spain; Figure 03_ Plano topográfico de la ciudad de Zaragoza del siglo XVIII, Wikimedia;

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BETWEEN RESILIENCY AND ADAPTATION

Image Credits_ All images courtesy of the author; Figure 01_ by author, background_ by Aleks Dahlberg at www.unsplash.com; Figure 02_ by author; Figure 03, 04_ graphic by author, background_ by Frantzou Fleurine; www.unsplash.com

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WATER AS MEDIUM

Project Name 01_ Water tower in Delft, Architect_ Rocha Tombal; Location_ Delft, NL; Project name 02_ Water tower in Brasschaat, Architect_ Crepain-Binst Architects; Location_ Brasschaat, Belgium; Project name 3_ Water tower Sint-Jans convent, Overijssel; Architect_ Zecc Architects; Location_ Overijssel, NL

Image Credits_ All images courtesy of the authors_ Figure 01_ typological evolution of the water tower, Source: Ingeonné; Figure 02_ Water tower in Delft (NL), photo by Christiaan Richters; Figure 03, 04, 05_ Water tower in Brasschaat (BE), Crepain-Binst Architects, photo_ Crepain Binst; Figure 06, 07_ Water tower Sint-Jans convent, Overijssel (NL), Zecc Architects, photo_ Stijn Poelstra, <http://www.stijnstijl.nl/>;

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Michael Leighton Beaman is the founding principal of Beta-field, a design/research office run with Landscape Architect and educator Zaneta Hong. Michael is also a co-founding member of the design nonprofit GA Collaborative. Michael currently teaches at the University of Virginia where he is an Assistant Professor in Architecture and at the Rhode Island School of Design, where he is a critic in the Interior Architecture Dept. In addition to teaching and practice, Michael is a writer for *Architectural Record* focusing on design technologies and techno-centric design practices.

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Dr Graeme Evans is Professor of Urban Design at Middlesex University, Department of Design and Director of the Art & Design Research Institute. He has been leading a research project in the Lee Valley as part of a 3 year Arts & Humanities Research Council-funded project: Towards Hydrocitizenship, exploring the changing relationships between people, ecosystems and urban water landscapes, and the legacy of waterside architecture and heritage. In June 2015 he curated the Hackney Wick & Fish Island Connecting Communities Festival including an exhibition of site-based design schemes including BA Interior Architecture student work, as part of the London Festival of Architecture. Graeme is also Professor

of Culture & Urban Development at Maastricht University, The Netherlands where he has been working on several industrial heritage re-use schemes.

Alexander Ford earned a B.S. in Architecture from the University of Arizona in 2014, and an M.S. in Historic Preservation from Columbia University in 2016. Ford currently works for Daniel Libeskind in New York. His architectural work has been published internationally.

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EDITORS

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