# field:

Ecology

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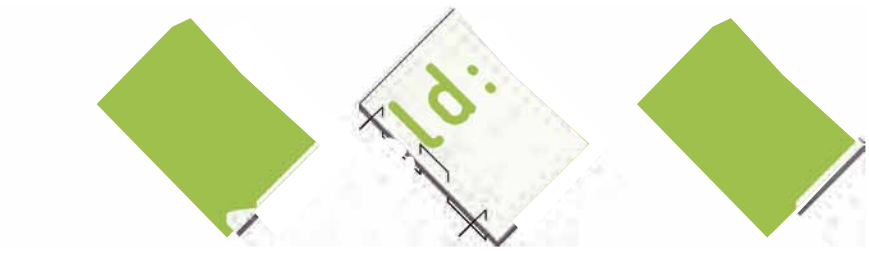

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# Ecology
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## Editorial



## Articles

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## Review Articles:

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# Editorial

Renata Tyszczuk and Stephen Walker

*There is an ecology of bad ideas, just as there is an ecology of weeds, and it is characteristic that basic error propagates itself.* [1]

[1] Gregory Bateson, 'Pathologies of Epistemology' in *Steps to an Ecology of Mind*, cf. Félix Guattari, *The Three Ecologies*, trans. Ian Pindar and Paul Sutton (London: Continnuum, 2008); p. 19.

The epigraph to Guattari's The Three Ecologies was taken from Gregory Bateson's Steps to an Ecology of Mind and draws attention to the narrowing down or pathology of epistemology that acts on the premise: 'what interests me is me, or my organization, or my species'.
Living through uncertainties, geo-political and financial turbulence, climate change, ecological crises, ocean acidification, not least species extinction, has unsettled all the usual claims human beings make to defend, use, or co-exist with, nature and the environment. In short, we are in danger of losing our 'ecological niche'.

For this issue of field: we were interested in exploring the theme of ECOLOGY in relation to architecture: how it is translated from other fields of research; how it can inform ways of reframing issues around sustainability; how it is involved in rethinking ethics, politics and subjectivities; how it is entwined in experiential, creative and exploratory practice.

We invited submissions from a range of disciplines, fields and practices, individuals and groups who were responding to ecology and with renewed interest in the processes and practices generating new ecological models of political philosophy, cultural production and dissemination.

We also felt it was an opportunity to challenge the prevailing acceptance that discussions of 'green building' or 'eco' architecture and urbanism were the only kind of contributions the field of architecture was making to debates around global environmental change. We wanted to move away from approaches that were fostering the 'ecological' as if it were a matter of style or branding, and from those that were in pursuit of an eco-architecture that answered only to laws of energy or biology, or from presentations of an 'urban ecology' in thrall to ideas of metabolism and indeterminable processes. We also wanted to challenge the view that tecno-fixes were capable of steering us away from eco-catastrophe, or that ecological thinking is some kind of moral injunction to change collective behaviour.

We were not interested in drawing ideas together into a singular universal concept of 'ecology', nor in forging some kind of new paradigm— *basic error propagates itself*. Instead we wanted to begin to explore the diversity of contemporary debate about ecology in relation to architecture. All the contributors to this issue take a position on the ecological: its potential for reframing our visions of the future, interrogating the status quo, suggesting innovative ways of inhabiting the world, transforming the languages we use, engaging with human and nonhuman others, and shifting imaginaries.

The essays respond to the plurality of approaches evident in the field of architecture and beyond- these are diverse constellations and synergies of ideas that defy categorization. The collection of essays in this issue acknowledges the fluidity of disciplinary identities characteristic of recent developments in design fields, and the ongoing rapprochement between disciplines as they engage with a broader constellation of thinking, usually generalised as ecological but with varying insights.

Ecological thinking can open up discussions around sustainability, resilience and uncertainty, offering alternatives, to the prevailing cultures of calculation and accountability, to the polarization of nature and culture or nature and society, and to so much hype and hubris. A reference for several of our contributions, Guattari's 'ecosophy', posits an ecological framework which understands the interactions and interdependencies of mind, society and environment but is careful to resist calls for holism, preferring to emphasise heterogeneity and difference. The challenge to think ecologically or transversally, across different meanings, ideas and fields is particularly important at a time when the density of relations between the ecological, the social and the political are increasingly

evident. Moreover, an ecological thinking may have the capacity to extend the notion of responsibility through different scales, geographies, temporalities and ontologies.

This issue draws attention to the critical, potential, practical, ethical, and philosophical implications of ecological thinking, in turn offering creative and alternative understandings of the history, spatiality, materiality, technology of human inhabitation. The contributions to this issue of field: ECOLOGY show that while these debates are far from new they are also far from over.

The opening essay by Irenee Scalbert draws attention to our proclivity for imagining 'perfect worlds'. He suggests that much can be learnt from a human geography that encompasses differing scales of complex inhabitation: from vast geological histories to the intimate detail of human modifications.

David Haley reflects on pedagogy and ecological arts practice as ways of 'keeping the discourse plastic' in the context of social and environmental crisis. He suggests that taking time to engage in dialogue with others and considering a diversity of approaches and futures contributes to ecological resilience.

Jon Goodbun discusses the different ways the 'project of ecology' has been approached and understood in relation to architecture and in particular in the field of urban political ecology. He argues that an engagement with ecological and cybernetic theory as architectural research has the potential to generate 'a new ecology of knowledge'.

Steve Parnell's history of AD between 1965 and 1972 reveals the inherent contradictions in an editorial 'non-policy' that attempted to be at once ethical and ecological. It reveals how for architectural practice in this period, the aesthetic strand of consumer culture came to be more influential than the ethics of ecology.

Amy Kulper's contribution explores the morphological context of ecology through the lens of Banham and Dallegret's 1965 essay 'A Home is not a House'. She presents this as a cautionary tale about advancing a version of 'ecology without the oikos' or of architecture's capitulation to technological imperatives.

Benjamin Morris discusses projects for the 'new new Orleans' in the wake of Katrina. Ecological thinking may inform the way we understand possible inter-relationships; natural environments and social and cultural networks in the continued re-invention of an 'impossible but inevitable city'. Ben's poetry offers another way in which we can engage with the ecologies of our own making.

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Neeraj Bhatia and Maya Przybylski ask what it is possible to learn from ecosystems in the design of physical infrastructures of the 21st century. In recognising the pressing realities of the Arctic regions - a harsh and transforming climate and threatened and fragile Inuit communities - they propose projects and interventions that consider the complex networks they are nested in and learn from existing ecologies.

Lisa Tilder presents a series of projects- both future scenarios and cautionary tales- of the MUTT Collaborative. Her essay sets the scene for reconsidering architecture as a dynamic and projective practice that moves towards an ecological or positive future.

David Cross reveals the process of his thinking around a new art project inspired by a set of solar energy collectors in the French landscape. He takes us on a journey that weaves together personal narrative, history of technology and a questioning of our role in the destruction of the earth's ecosystems.

Katrin Bohn and Andre Viljoen propose their Continuous Productive Urban Landscape (CPUL) strategy as an essential element of the sustainable city. The urban food system presents 'a challenge and an opportunity'. CPUL suggests ways of giving spatial and organizational coherence to the infrastructural and qualitative aspects of urban agriculture.

Catharina Gabriellsson tells the story of the Mayfair Squat of 2008 and the establishment of the 'Temporary School of Thought' by the 'DA! Collective' in the context of a discussion about political occupation and slack space. In so doing she traces an account of architecture's potential 'undoing' – a questioning and shifting of its values. This undoing is a pre-requisite for an understanding of an architectural ecosophy that draws on Guattari' s three ecologies. She urges us also, following Bateson, to consider architecture's 'uncommitted potentiality for change'.

The final section of the journal presents some recent projects that have addressed ecology and ecological thinking, exploring networks of practices and cultural production and instances of resilience. They are notable for questioning existing models of knowledge production and fostering new modes of dissemination.

RHYZOM, an EC programme Culture 2007 project, maps emerging cultural productions related to local contexts (eco-cultures, local skills and alternative economies, traditional practices and cultures of resilience, rural/urban exchanges) and aims to reinforce them through an European interdisciplinary network and collaborative platform. RHYZOM activities have included cross-thematic field trips, immersive workshops and

translocal dissemination. Doina Petrescu charts the process and ambitions of this project and its ecology of reciprocal empowerment.

*Spatial Agency* is a project that presents a new way of looking at how buildings and space can be produced in proposing a much more expansive field of opportunities in which architects and non-architects can operate. It suggests *other ways of doing architecture*. In an edited extract from the book of the project (co-authored by Awan, Schneider and Till, Routledge 2011), the group draw particular attention to a group of practices whose motivation has been 'ecological'. In different ways, they have worked with the environment, acknowledging human impact, and focusing on the interdependence of the environment, economics and the social.

The *Interdependence Day* project is a collaboration between Geography, Open University, **nef**, the new economics foundation and Architecture, University of Sheffield. Contributors to this project are being brought together in the ATLAS web and print publications. Together these map out and probe the demands posed by a dynamic planet and navigate the novel ethical and political questions of our current state of global interdependence: between people, places and things, near and far, in both space and time. The ATLAS aims to provide a rich and stimulating interdisciplinary resource, but with an ironic inflection that plays on the traditional claims of an atlas to be 'capturing the world'.

Juliet Sakyi Ansah and Robert Sharples, MArch students, write a personal account- almost a field diary - of notes and observations on, and discussions that took place at and around, the ECOLOGY Theory Forum they co-organised in November 2009 at the School of Architecture, University of Sheffield. The ECOLOGY Theory Forum provided, as Doina Petrescu observes, 'the expression of a kind of ecology of education'. This innovative student-led event challenged participants to explore the concept of ecology and in the process reframe it as a knowledge that could perhaps be 'more cohesive and less conclusive'.

What these projects and initiatives all reveal is the importance of continued debate on the issues clustered around the term ecology in order to encourage a shared way of making sense of the past and speculating about what might be. It is in discussions between many, between students, staff, colleagues, visitors, practitioners from different disciplines and varying fields of practice that we begin to rethink and remake what ecology can mean for us in the here and now. As we have argued elsewhere, '[the] ecology of the future is an ecology of the subjectivities and responsibilities of the present.'[2]

[2] Cf. Florian Kossak, Doina Petrescu, Tatjana Schneider, Renata Tyszczuk, Stephen Walker (eds.), *Agency: Working with Uncertain Architectures* (Critiques series) (London: Routledge, 2009), p. 17.

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# Essays

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# The perfect worlds of ecology

Irénée Scalbert

The world of ecology is made of many small worlds. These small worlds, these ecosystems, have been studied in a tract of forest, a stretch of sand dunes, or a lake.[1] But the best way, according to a leading ecologist, is to study a small pond,[2] or failing this, a bottle full of pond water. Here, the bond between living organisms and non-living matter is immediately apparent. Producers, mainly plants, feed on non-living substances held in the water. Consumers, like insects and fish, feed on the producers. These are in turn decomposed by bacteria and become non-living or abiotic substances. Thus the circle is closed.

The small worlds of ecology are perfect worlds, or they make spontaneous progress towards perfection – towards what ecologists call a climax. They proceed in orderly "successions" until they settle in stable cycles. They are oblivious to geological time rushing along from Big Bang to entropy. They are lodged instead within the small time span that we associate with life, for which a stretch of dunes, a tract of forest, or a pond each provide in their smallness an adequate simile. They recall 16th century Mannerist landscapes, for instance those painted by Jan Brueghel the Elder. In them, the human figure is so reduced in size as to be on a level with other living creatures, from heron and fish to leopard. These paintings were called "world landscapes", each one holding a mirror to the earth, each one presenting a microcosm of the Creation as if before the Fall, at once calm and teeming with life, like the ecosystem of a pond with its even surface and its superabundance of life half-concealed beneath it.

1 See for instance H. C. Cowles, "The oecological relations of the vegetation on the sand dunes of Lake Michigan", *Botanical Gazette*, Vo.27 (2) (1899): 95-117

2 Eugene P. Odum, *Fundamentals of Ecology* (Philadelphia: W.B. Saunders and Co., 1959)

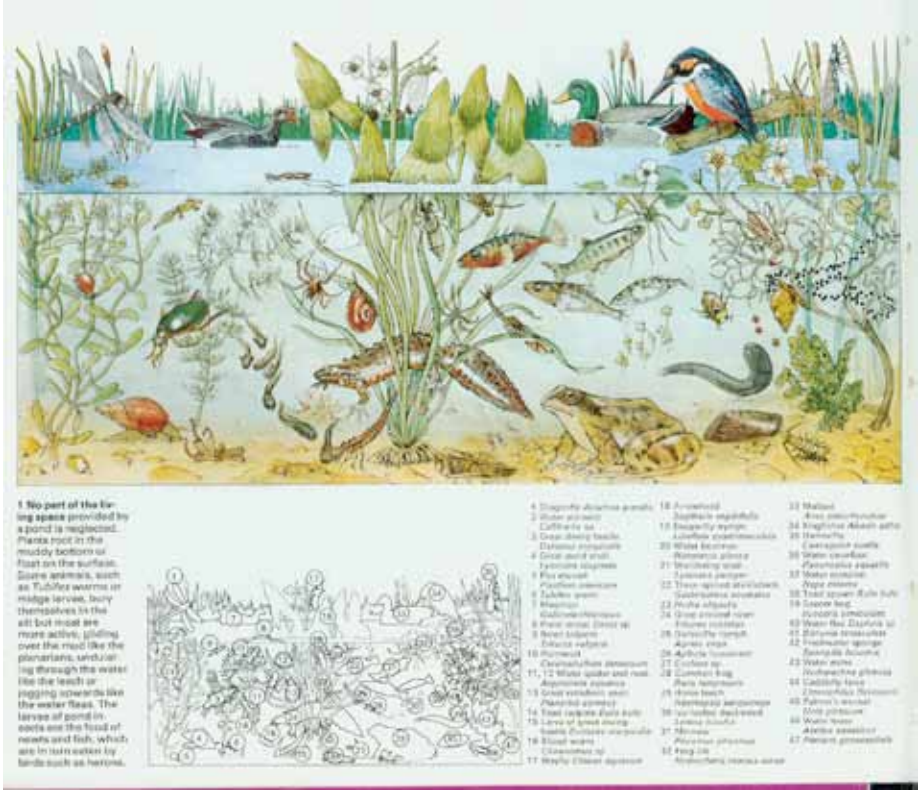

Fig. 1 "A typical pond ecosystem, The Joy of Knowledge Encyclopaedia," 1976, drawing by Brian Hawkes.

To put it succinctly, the problem of ecology is man. Within the cycles described by ecology, man introduces needs that are such as to create a continuous situation of shortages.[3] He disrupts cycles that were otherwise as perfect as the movement of heavenly spheres. Having made them acyclical, his aim is to make them cyclical again. He imagines a perfect world, a greener world in which all living matter can remain within that narrow slice of time associated with life. He envisages his task less as one of invention that one of conservation.

If the problem of nature appears to be man, the problem of man is his consciousness. Consciousness can feel to him like surplus to nature. Imagination can appear more like an embarassment than a gift, more like an inclination to meddle with the natural course of things and to mess them up. Thus the good man for the ecologist tries to write himself, as it were, out of nature. He willingly lowers himself in order to fit in more snugly within tight ecosystems. He commits himself to selfless acts of mimetism, hiding as it were behind the heron, the fish or the leopard.

Such is the attitude for instance of High-Tech architects and of the majority of building professionals. For them, architecture is a simulacrum of nature, matching its advanced technological systems, for instance air flows represented with little red and blue arrows cavorting under a smiling

3 G. Evelyn Hutchinson 'The Biosphere,' *Scientific American*, 223 (3): 45-53

sun, with systems attributed to nature. Alternatively, architects assert a cyclical process that is specifically human, a new vernacular. Architecture shall be like the tells of Mesopotamia, the man-made earthen mounds consisting of layers after layers of human settlements, upon which bricks soon crumble back into dust. Or else, instead of seeking order in time (the cycles), they shall seek order in space and invent small worlds equivalent to the already perfected forests, dunes and ponds, adding a few cycles of their own. Eco-cities for instance.

Where architecture is concerned, the problem with ecology is that it is at its best when describing small-scale environments. Typically, the main instrument of the ecologist is the quadrat, a square meter of ground on which to study plant succession in a particular region. Even with the best intentions, it is difficult to see what Masdar in Abu Dhabi, currently the main flagship for sustainable development, more than 2 miles-square, built with imported expertise, imported materials and imported labour, has in common with the objects and the concepts of ecology.

Ecology has been of great use to man, for instance in the containment of pests dangerous to crops. But it has been less successful in its description of man, a creature too restless and vain to comply with the systems of nature. Human ecology is at its best in the simplest environments, where species are few and where climate imposes strict limits on human populations.[4] It is not surprising, therefore, that some of the best work analyzing the relationship between man and the environment is to be found not in ecology but in human geography. In fact, human geography is at the origin of human ecology.[5] It does not apologize for the place of man on the earth. And it is for this reason a better source from which to build foundations for sustainable design.

The invention of human geography is credited to Friedrich Ratzel and his "Anthropogeographie". But for me the most inspiring human geographer is Paul Vidal de la Blache, founder in 1891 of the *Annales de Géographie,* author of the *Tableau de la Géographie Physique de la France (1903)* – a masterpiece of geographical writing and still one of the best books on France. He was Professor at the Sorbonne, remained the unchallenged reference in human geography well into the 1950s (long after his death), and was the acknowledged source for the historians of the *Ecole des Annales*.[6]

The subject of human geography, Vidal wrote, is the physionomy of the earth as modified by man.[7] This concise definition implies no *a priori* idea of balance, unlike ecology and ecosystems. Vidal does mention "oecology" (recently named but not yet developed into a discipline), and he defines it as "the science of local environments."[8] But – the point merits emphasis - the influence of the local milieu must be corrected by that of human commerce. In Vidal already, there is a hint that commerce is the Janus face

4 See W. E. Ekbaw's pioneering study on polar Eskimos, in *Ecologie*, vol.II. (2), 1921.

5 Pascal Acot, *Histoire de l'Ecologie* (Paris: PUF, 1988).

6 "One of the most fertile oeuvres for history, perhaps even the most fertile of all, has been that of Vidal De la Blache", in Fernand Braudel, *Ecrits sur l'Histoire* (Paris: Flammarion, 1969) p. 31.

7 To this day, the only book by Vidal de la Blache published in English is the posthumous *Principles of Human Geography* (S.I.: Constable, 1926).

of ecology, that what is unique must be complemented by what is generic, what is near by what is distant, what is familiar by what is foreign.

Long before the Earth was sighted from the moon, the perspective had changed. In a movement that seems at first contrary to ecology, we are according to Vidal looking at the relationship between earth and man from a greater distance. To his eyes already, movements in the earth's atmosphere demonstrated that no place can be seen in isolation. With our growing awareness of pollution and climate change, the atmosphere is being revalued as the necessary other half to the earth's crust. It may in fact never have had a greater presence in our lives, climate now competing more equally for our attention with events taking place on the land.

No part of the Earth can exist in isolation; all parts are coordinated. Every local study can be referred to some general law. This fundamental unity of the Earth has been recognized since antiquity, but it is only in the 19th century, in the early stages of globalisation, that it found expression in human experience. Think for instance of Jules Verne's novel *Around the World in 80 Days*. We scarcely realize how thin is the surface that makes this unity perceptible, and how intimate is its bond with human experience. The heat of the sun penetrates no further than a few meters into the ground, and it stays there for no longer than a few hours. Likewise, the events associated with climate – rivers, glaciers, sedimentation, etc. - concentrate their effects upon this veneer alone. So it is, of course, with human life that runs, globalisation helping, into and across almost every nook and cranny of the Earth.

In thrall to the market, only too pleased to comply for a demand for more and more artifice and difference, architects have preferred to ignore this terresterial unity. Seldom has their creativity been more immured from the *zeitgeist*. Buildings, we know, are responsible for some 40% of all $CO_2$ emissions. This fact alone should prompt at least some architects to look beyond the drafting of, and the complying to the appropriate regulations, and to make the general conditions affecting the Earth, especially climate, into a major inspiration in their work. Some have been here before. Buckminster Fuller with his concern with the Earth's resources, Frei Otto with his conception of "natural forms", Le Corbusier with his obsession with the sun, Frank Lloyd Wright with his call for an organic architecture: all founded their designs upon an understanding of nature.

Yet for Vidal de la Blache and other geographers long before him, nature and landscape were not merely abstract concepts. The unity of geography resided in the relationship between general laws and specific, concrete descriptions. Indeed, no-one before Vidal showed more clearly the composite nature of environments in which many dissimilar beings adapted themselves to a common existence. This, certainly, is ecology, but it is ecology on a vast scale and of an immense complexity, ranging

[8] Paul Vidal de la Blache, 'La géographie humaine, ses rapports avec la géographie de la vie', in Revue de Synthese Historique, VII-2, (1903): 219-240.

from geological history to the tilling and the manufacturing of man. In its enormous scope, in its global inclusiveness allied with sensitive observations of local environments, the golden age of human geography offers guidance for architects interested not only in the necessarily detailed, man-made nature of their work, but also in the laws that lay behind it.

It points to an approach that is at once sensitive to the forms of the earth – to its artistry - and informed by the sciences of nature. It proposes a view of the world in which human activities are integrated with the systems of ecology, making ecosystems - the small worlds of ecology - not so much perfect as subject to human maintenance, transformation and improvement. From this perspective, it becomes clear that architects can play a significant role in the politics of ecology, so long as they refrain from making apologies for design (in the way some ecologists make apologies for human presence) and find their voice to speak out on matters that are central to their vocation. Indeed, which discipline but architecture, with its combination of knowledge, imagination and practice, could be better placed to envision viable compacts between humans and nature?

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# Ecology and the Art of Sustainable Living

David Haley

In western culture, the concept of ecology emerged alongside quantum theory, complexity theory, chaos theory, systems theory, cybernetics and psychology. Across disciplines, artists such as Marcel Duchamp, James Joyce and John Cage embraced the theories of physics and the Surrealists, Expressionist and DaDa movements contributed almost as much to psychology as they gained from it. With notable exceptions, until very recently few artists have taken up the issues of ecology. Now, as we face combinations of the most dire social and environmental crises known to our kind, has ecology found its time? How might arts practices address these issues? What can art and ecology contribute to resolving 'the carousel' of challenges?

Using examples of projects by Helen Mayer Harrison, Newton Harrison and myself, this paper considers the concepts, the practices and the teachings of a whole systems approach to ecological art. It further places ecological art in a practical context that offers some tangible approaches to shifting the paradigm from Sustainable Development to 'sustainable living', 'ecological resilience' and 'futures capabilities'. One of the contributions the arts may offer is 'keeping the discourse plastic'.

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# Ecology and the Art of Sustainable Living

*RESILIENCE*

As tipping points pass
Believing what is normal
Grace under pressure

Profound distractions
Vanity of vanities
Left to the Market

On the ship of fools
Singing deaf and dancing blind
Now, we're acting mad
---
Elite ignorance
Inertia from white box brains
Expert arrogance

In a complex world
Leading a child by the hand
Here, under the sun

Not so much knowledge
Living in a quantum world
A shift in thinking
---
Create and destroy
The rhythm of Shiva's drum
Never stop dancing

Richness of life
You to me to them as one
This is all there is

As the globe warms
The other side of collapse
My tears taste of salt

Fig. 1.One Man, One Tree, One River, One Day – River Eden, Carlisle. Photo: David Haley, 2008.

In November 2007 I was invited to lead an Arts and Ecology Master Class for postgraduate arts, design and architecture students at the Guangzou Academy of Fine Art, China. The programme met with much success, so I developed it further, for a 'charrette' with similar students and professors at the National Kaohsiung Normal University, Taiwan, in April 2008.

This paper is a developmental summary of that programme and it continues to evolve each time I present it. Audiences have included artists, earth scientists, hydrologists, engineers, cultural sociologists, fish-farmers, architects, students and educationalists in Plymouth, Ghent, Beijing, Cambridge, Sheffield, Bristol, Budhai (Taiwan), Manchester and Aberdeen. It is a kind of polemic, a discourse, a dialogue and potentially a manifesto for shifting the way we might proceed in the world. For some this attempt at a world-view or broad brushstroke approach may not sit well with analytical forms of academic research and, to some extent this is the crux of the matter, as the arts-led, practice-based research methods offered here consider 'convergent knowledge' from many disciplines to construct situations for new understandings to emerge. Those forms of understanding are sometimes embedded in iterative, intuitive, improvisational, tacit and experiential means of inquiry. George Lakoff and Mark Johnson expand on this idea in their book, Philosophy in the Flesh:

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> 'What fills out embodied realism, permitting us to move far beyond mere observation and manipulation, are several crucial findings about our embodied and imaginative capacities.' The second of these '... is the existence of conceptual metaphor, which allows us to conceptualise one domain of experience in terms of another, preserving in the target domain the inferential structure of the source domain... Such inferences can then be projected onto scientific subject matters to give explanatory accounts for existing data and to make predictions.' ... Each subject matter is thus a test bed for such a theory. We speak of evidence for a scientific theory as being "convergent" when the results all support the same explanatory hypothesis.'[1]

Shifting from a description of the pedagogical process, the paper engages the reader directly in the issues that were generated by the master class, charrette and subsequent presentations, each of which I consider to be performances in their own right, and central to artistic way of knowing, or as social scientist, Hans Dieleman puts it:

> Artful doing/knowing is a way to explore and understand reality, not limiting oneself to scientific methods, theory or scientific language. It uses the whole repertoire of human experiences such as images, ideas and practices gained throughout life. It results in insights, visions and symbolic meaning that is communicated through a range of means of communication such as painting, sculpture, interventions, literature, music and the like.[2]


Fig. 2. Bubble World, Making Our Futures Master Class, Guangzhou Academy of Fine Arts, China. Photo: David Haley, 2007.

[1] George Lakoff and Mark Johnson *Philosophy in the Flesh. The Embodied Mind and Its Challenge to Western Thought* (New York: Basic Books, 1999), p.91.

[2] Hans Dieleman, The Competencies of Artful Doing and Artful Knowing in Higher Education for Sustainability, in 'Agents of Change', http://agentsofchangeproject.blogspot.com/2010_07_01_archive.html (2010)

Fig. 3 Sea Level Rise Tank, Making Our Futures Master Class, Guangzhou Academy of Fine Arts, China. Photo: David Haley, 2007.

Fig. 4 Lagoon Guide, A Dialogue with Oysters: the Art of Facilitation, commissioned by Tropic of Cancer Project, Budhai, Taiwan. Photo: David Haley, 2008.

## The art of making futures

So, to the pedagogical programme itself, and as David Bohm wrote, 'dialogue is not about new knowledge, but new ways of thinking.'[3] I drew upon Paul Klee's Pedagogical Sketchbook as the guiding metaphor. He begins with the words: 'An active line on a walk, moving freely, without a goal'[4] and draws us into a Tantric-like treatise on becoming. Another word for becomingness is grace.

3 David Bohm et al, 'Dialogue: A Proposal' at http://world.std.com/~lo/bohm/0000.html (1991), p.5.

4 Paul Klee, *Pedagogical Sketchbook* (London: Faber and Faber, 1989), p.1.

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## The art of observation

The Master Class and charrette accepted Global Warming and Climate Change as given. We then took on the probabilities of sea level rise, combined with increased storm activity and intensity. This called upon some of the data that had contributed to 'Greenhouse Britain: Losing Ground, Gaining Wisdom,'[5] a project I developed with Helen Mayer Harrison and Newton Harrison. Although the predictions provided by the Tyndall Centre for Climate Change in mid-2007 seem rather conservative now, it was the first time the Tyndall Centre had combined increasing sea level volume with storm surges. Recent information about the acceleration of ice-melt and permafrost thaw, reduce the timescales dramatically.

We then considered species extinction and how, according to some, it has already passed the tipping point towards the Sixth, or Holocene Extinction Event.[6] Related to this, there's the biggest taboo subject of them all, the exponential increase in human population. Donella and Donald Meadows[7] flagged-up the impending catastrophe of exceeding the planet's physical capacity some years ago but few governments apart from the Chinese are willing to even admit it.

I was, in fact, amazed that the students I worked with in Guangzou, China, seemed to have a good awareness of some of these issues and they were certainly aware of the levels of pollution. However, most were sure that the State was in control of the situation and that it would come up with technological solutions. Interestingly, the Kaohsiung, Taiwanese students had similar levels of knowledge, but were less confident of their Government's ability to cope.

Fig 5. Tide Turns, Waters Dance: The Writing on the Wall, commission by Bamboo Culture International, Tamshui, Taiwan. Photo: David Haley, 2007.

5 R. Nicholls, R. & R. Tol, 'Impacts and responses to sea-level rise: a global analysis of the SRES scenarios over the twenty-first century.' Philosophical Transactions of The Royal Society (2006) 364: 1073-1095.

6 Richard Leakey, *The Sixth Extinction: Biodiversity and its Survival.* (Phoenix, London. 1996)

7 Donella Meadows, Dennis Meadows & Jogen Randers, *Beyond the Limits: Global Collapse or Sustainable Future* (London: EarthscanPublications, 1995)

Fig. 6 Kids with Frog Spawn, A Walk On The Wild Side, Manchester. Photo: David Haley, 2007.

## The art of urgency

So, let us, now, consider some of the basic consequences of the Environmental Crisis.

Over the next hundred years, land loss caused by sea level rise (5 to 10 metres) is not that much, maybe 10%, but the land that is lost and the incursion of saline water will have dramatic impacts on land use and the availability of freshwater.[8] As human beings, let alone artists and designers, I believe we need to invent new ways to produce food and generate freshwater, learn how to manage the migration of species and people, design new forms of dwelling and control population, sequester carbon and fulfil energy needs, consume less and produce no waste. We need to devise and implement new economic systems. You don't have to be an economist to see that the global, market-led economy doesn't work – the current depression has evidenced that.

## The art of learning

But why Art? How can art contribute? I think it is true to say that not long ago most people thought that climate change was about science (even if they felt they themselves to be somehow to blame). Then along came Sir Nicholas Stern[9] and the scientific monopoly on Climate Change was broken, as politicians and the general public understood Climate Change to be the main driver of economics... and may even be largely driven by economics. Our guilt, however, was maintained as the economics was supposedly driven by our lifestyle, our culture. So I would say, it is in culture as society, culture as ethos and culture as a creative medium that we may find a role for the arts to address environmental crises.

8 Helen Mayer Harrison & Newton Harrison, D. Haley, *Greenhouse Britain: Losing Ground, Gaining Wisdom, An artwork*. See: http://greenhousebritain.greenmuseum.org/ (2007)

9 Nicholas Stern, The Stern Review' (HM Treasury, UK Government, 2006) at http://www.hm-treasury.gov.uk/stern_review_report.htm

Even in its less esoteric sense, I believe that our society needs the creative thinking that the arts may offer to achieve a more balanced and diverse approach to governance. At the heart of education, at all levels, I believe there is a great imbalance that needs to be redressed towards the serious inclusion of art. So, let us consider some of the things artists and creative people have to offer.

Fig. 7 Greenhouse Britain: Losing Ground Gaining Wisdom, Feldman Fine Arts, New York. Photo: David Haley, 2007.

## The problem with problems

Much education is developed on the premise of 'problem based learning' (PBL). In certain respects, PBL is more appropriate than traditional lecture-based teaching, as it promotes active participation outside of the classroom. However, in the way that is most widely applied it has a fundamental flaw – it assumes that the world is a problematic that needs to be solved. Since the 1960s, generations of medics, economists, architects, engineers, designers and scientists have been trained, using PBL,[10] to believe that they can go into the world with their skills to right all wrongs. One of the difficulties, I understand, that arises from this belief is that they only concern themselves with identified problems – fix the problem and it has gone. The narrow focus required for this approach deals with problems in isolation, as a 'closed system' and deals with neither context nor relationships.

## Making questions

Now let us consider a skill I observed in the students of the Art As Environment course at Manchester Metropolitan University - 'question based learning' (QBL). When it's practiced intuitively by many artists

[10] F. Forsythe, 'Problem Based Learning' in *The Handbook for Economics Lecturers* Higher Education Association, Economics Network. (2002). Chapter 2.1 at http://www.economicsnetwork.ac.uk/handbook/pbl/21.htm

and creative people, this approach opens up situations for exploration in non-linear ways. Problems may be found and resolved, and new questions may be formed in the process. QBL is based on 'whole systems' seeing and thinking to promote wider and deeper learning, rather than solutions. This is potentially an ecological approach to learning; an 'eco-pedagogy,'[11] or 'Eco Literacy'[12] that is generated by the context, relationships and complex systems, not analytical, reductionist methods of understanding the world. In a similar vein, Arne Naes, the founder of the Deep Ecology Movement wrote:

> The essence of deep ecology," he says, "is to ask deeper questions." This is the essence of a paradigm shift. We need to be prepared to question every single aspect of the old paradigm.

He continues:

> It questions this entire paradigm from an ecological perspective: from the perspective of our relationships to one another, to future generations, and to the web of life of which we are a part.[13]

Above all, QBL promotes more questions and these act as feedback loops of creativity and expansive knowledge.

Knowledge, then becomes an 'open' or semi-closed system, permitting outside influences to enter and pass through but without losing the form, or pattern of the entity. Knowledge may be created from the relationship of many parts and the parts may be shared by multiple disciplines; thus knowledge itself can be considered plastic, dynamic and ecological.

We may then move from Modernist, solution driven, reductionist, problem based learning that seeks certainty, beyond the dialectic of Postmodernism, to an expansive, question based learning that accepts uncertainty and on to an indeterminate 'Next Generation' of narratives; moving on to the emergence of diverse and complex, whole systems, operating in 'dynamic equilibrium' – grace in evolution, becoming, or 'ecopoiesis.'[14]

11 David Haley, 'The Limits of Sustainability: The Art of Ecology.' in. S. Kagan & V. Kirchberg, (eds.) Sustainability: *A New Frontier for the Arts and Cultures* (Frankfurt, Germany: VAS-Verlag, 2008), p.5.

12 Fritjof Capra, 'Eco Literacy: The Challenge for Education in the Next Century.' Liverpool Schumacher lectures (Berkley, California, USA: Centre for Ecoliteracy,1999)

13 A. Naes referenced in Fritjof Capra, The Web of Life: *A New Synthesis of Mind and Matter* (London: HarperCollins, 1996), p.162.

14 David Haley, 'Reflections on the Future – "O brave new world": a change in the weather,' in A Remesar (ed.), *Waterfronts of Art I, Art for Social Change* (Spain: University of Barcelona, CER POLIS, 2001) p.3. www.ub.es/escult/1.htm and CD ROM pp. 97-112.

Anthropologist, Tim Ingold argues:

> ... organism plus environment' should denote not a compound of two things, but one indivisible totality. That totality is, in effect, a developmental system (cf. Oyama 1985), and an ecology of life – in my terms – is one that would deal with the dynamics of such systems. Now if this view is accepted – if, that is, we are prepared to treat form as emergent within the life-process – then, I contend, we have no need to appeal to a distinct domain of mind, to creatura rather than pleroma, to account for pattern and meaning in the world. We do not, in other words, have to think of mind or consciousness as a layer of being over and above that of the life of organisms, in order to account for their creative involvement in the world. Rather, what we may call mind is the cutting edge of the life process itself, the ever-moving front of what Alfred North Whitehead (1929: 314) called a 'creative advance into novelty.' [15]

[15] Tim Ingold, *The Perception of the Environment. Essays on livelihood, dwelling and skill* (London: Routledge, 2005), p.19.

Fig. 8 David Haley Performing 350 St John's Street, Liverpool. Photo: M Yates, 2009.

## The ennobling question

Now I would like to introduce a concept developed by Newton Harrison of the 'Ennobling Problem', but I prefer the 'Ennobling Question.'[16] The principle came from discussions we had while on a lecture tours 2006/7, and focuses on the notion of 'post-disciplinarity'. In practical terms, the Ennobling Question may dissolve the old art/science dialectic. If an Ennobling Question is placed at the centre of our collective concerns – in this case Climate Change -, it could promote opportunities for ALL disciplines to engage with it on an equal footing. None of the disciplines would be threatened. All are valued for their particular contribution

[16] David Haley, 'The Limits of Sustainability: The Art of Ecology.' Chapter in S. Kagan & V. Kirchberg (eds.), *Sustainability: A New Frontier for the Arts and Cultures* (Frankfurt, Germany: VAS-Verlag, 2008), p.10.

and thereby increasing the robustness of each discipline, while applying maximum attention to the most urgent issues of our time.

This, in turn, raises questions about education and my opinion that all school and university departments, all funding and research councils need to place Global Warming/Climate Change at the centre of their curriculum. If, indeed, the combined environmental crises of Global Warming, Climate Change, the Sixth Extinction and the human 'population explosion were addressed by an 'eco-centric culture,'[17] operating as a whole system, the interdependence of these issues would be revealed.

I consider this response to be very necessary, as governments, commerce and industry control the Global Warming/Climate Change discourse to maintain the status quo and normative values of our increasingly monocultural society – energy, security, economics. This may then suggest that a role of art is to intervene and 'keep the discourse plastic.'[18]

## How to make an intervention

So, how might the arts engage, or intervene in this discourse? One response is that a person may join a system or a discourse anywhere and at any time.

Then you might ask: 'What needs to be done?' It seems that the dominant culture will always appropriate the discourse for its own ends (for example, the way in which television, radio and newspapers prioritise the news, based on the agenda of proprietary politics, societal norms and belief systems). There's nothing necessarily sinister in this. It's how a culture becomes dominant. However, if society itself is to find new meanings and evolve, it needs to shift the language as a continuing act of creativity – inventing and re-inventing. This, I believe, is another role available to art - flipping the metaphors to gain new attention, new connections and above all, to change the story of the future. As Ilya Prigogine writes:

> The inclusion of irreversibility changes our view of nature. The future is no longer given. Our world is a world of continuous "construction" ruled by probabilistic laws and no longer a kind of automaton.

He continues:

> We are led from a world of "being" to a world of "becoming."[19]

Therefore, another function of art might be for artists and creative people to create the capability to envision many possibilities for many futures, or as Scottish artist Eduardo Paolozzi called for: '... an endless

17 David Haley, 'Reflections on the Future – "O brave new world": a change in the weather,' in A Remesar (ed.), *Waterfronts of Art I, Art for Social Change* (Spain: University of Barcelona, CER POLIS, 2001), p.7. www.ub.es/escult/1.htm and CD ROM pp. 97-112

18 N Harrison, referenced in David Haley, 'The Limits of Sustainability: The Art of Ecology.' Chapter in S. Kagan & V. Kirchberg (eds.), *Sustainability: A New Frontier for the Arts and Cultures* (Frankfurt, Germany: VAS-Verlag, 2008), p.9.

19 Illia Prigogine, *Is Future Given?* (World Scientific Publishing Co. Pte Ltd.London, 2003), p. 39.

set of combinations a new culture in which way problems give way to capabilities.'[20]

## To map a field of play

The questions continue: How may we find our 'field of play' – the place, the timescale and collaborators for a project? And this prompts three questions. Many others may follow, but these may initially help to situate and contextualise a project, set working parameters and define the limits of its concerns. While at first this strategy might sound constraining, I believe it opens-up deeper possibilities by maintaining attention and avoiding what Aldus Huxley referred to as, '... man's almost infinite appetite for distractions.'[21]

The first question is used by The Harrisons in all their works, **"How big is here?"** In landscape terms, it's necessary to find the geophysical forms and eco-systemic character that provide the natural boundaries to which the project may be applied. It may be the watershed, landmass, or coastal form, but until the field of play is established - the place of concern, the theatre of operation – the project will be lost to the whims of others.

Next, **"How long is now?"** This question is derived from 'Integral Futures Studies.'[22] 'How long is now?' considers the timescale for the work in hand. The anecdote from *The Clock of the Long Now* is that many indigenous peoples think of 'now' as being seven generations past and seven generations to the future – about 375 years.[23] Compare this with an electronic nano-second, or a geological event of millennia. What is a temporary artwork? What is a long-term investment? How long will London, Kaohsiung, Guangzou or Liverpool be situated in their current geographical positions?

Finally, **"Who is here now?"** This brings the first two questions together. In time and space, you have to know with whom you will work? Who is the work for (human and non-humans alike)? How will the work impact on those who are here, now?

And this leads us to an extra rhetorical question and guiding principle that Christopher Alexander suggests in his book, *A New Theory of Urban Design:* "What is the most important thing that I can do now, at this moment, to bring the whole to life."[24]

There is an anecdotal truism that, 'artists are like explorers - they are permanently lost'. Not to be confused with being misplaced, or going astray, this state of deliberate 'lostness', or the practice of 'mindfulness/ awareness'[25] is concerned with a realisation of standing at the abyss of now, gazing to the future. This may be unnerving for some people (clients, collaborators, stakeholders, funders, designers, engineers – typically, they

[20] Eduardo Paolozzi, *Lost Magic Kingdoms: and Six Paper Moons from Nahuatl* (British Museum Publications, London, 1985), p. 7.

[21] Aldous Huxley, *Brave New World Revisited* (HarperCollins, London, 2007), p.27.

[22] Richard Slaughter, *Futures Beyond Dystopia: Creating Social Foresight* (RoutledgeFalmer, London, 2004), p.3.

[23] Stewart Brand, *The Clock of the Long Now: Time and Responsibility* (London: Phoenix Paperbacks, 1999), p 163.

[24] Christopher Alexander, et al, *A New Theory of Urban Design* (New York: Oxford University Press, 1987), p 67.

[25] F. Varela, E. Thompson & E. Rosch, *The Embodied Mind: Cognitive Science and Human Experience* (The MIT Press, Cambridge, Massachusetts,1993), p.23.

like a clear brief that delivers predetermined criteria) but this state of being lost, this uncertainty, this realisation of indeterminacy comes with the territory of breaking new ground and seeing into the future. The above questions are like Klee's line, mentioned above, guide the course of action and the process of the work.

Fig. 9 Wild Walk 2, The Three Canals, A Walk On The Wild Side. Manchester. Photo: David Haley, 2005.

## Whole Systems Ecology

I mentioned earlier the term, 'whole systems ecology' and it requires some explanation.

As Fritjof Capra suggests in The Web of Life: a Synthesis of Science,[26] 'systems thinking' may denote the paradigmatic shift in thinking from Cartesian, mechanistic, atomistic, reductionism to an ecological, integrated, contextual, organic understanding of the whole. It emerged simultaneously during the 1920s from several disciplines, particularly quantum physics, Gestalt psychology and the biological sciences. Essentially, the pattern of the whole becomes the focus of attention, rather than an analysis of parts, the form rather than the material or components.

Through quantum physics the shift from objects to relationships goes even further. Capra asserts, "What we call a part is merely a pattern in an inseparable web of relationships." This represents a radical shift in thinking from what is still regarded as the 'norm' of how we perceive the world in contemporary Western culture – the relationship between figure and the ground shift. An object is a pattern of particles within the whole and particles are themselves systems operating at a different systems level.

[26] Fritjof Capra, *The Web of Life: A New Synthesis of Mind and Matter* (London: HarperCollins, 1996), p.36.

Apart from anything else, this 'reality' may be profoundly psychologically disturbing to many people, as "... systems thinking involves a shift from objective to 'epistemic' science; to a framework in which epistemology – 'the method of questioning' – becomes an integral part of the theories."[27] This concept is, of course, central to my development of Question Based Learning.

[27] Ibid, p.36.

As I understand it, three principle properties of 'whole systems ecology' are 'diversity', interconnectedness, and 'finite systems'. If we apply these principles to contemporary environmental crises, new understandings may be deduced.

Diversity – species richness, complexity – is the essence of evolution and the continuing process of life that runs counter to entropy and the loss of energy.

Interconnectedness, or more importantly interdependence, provides a deeper understanding of how the amazing complexity of relationships work, taking the understanding of ecology and ecosystems to an imperative.

And a third principle of whole systems ecology is, finite resources, or as the supermarket sale declares, 'when it's gone, it's gone'. Despite our planet's ability to regenerate itself, there is always loss of energy. 'Non-equilibrium thermodynamics'[28] understands our cosmos to be moving from hot to cold through irreversible time. In the human timescale, the air we breathe, the water we drink the food we eat, the energy we release are all finite resources. We may conserve and care for them, we may pollute and waste them, but this is all there is.

[28] E. Schneider & D. Sagan, Into the Cool: *Energy Flow, Thermodynamics, and Life* (The University of Chicago Press, Chicago, 2005).

It is important to understand that each property - diversity, interconnectedness and finite resources – is integral to whole systems ecology and therefore interdependent. The parts cannot function independently, they are a system. At another level, these properties might also be understood as 'process, pattern and structure'[29] and here we see the possibility for one system to display the properties of another 'emergent' system.

[29] Fritjof Capra, *The Web of Life: A New Synthesis of Mind and Matter* (London: HarperCollins, 1996), P.75

## Forms of resilience

This brings me to the most controversial part of this paper, resilience. With regard to Global Warming and Climate Change, the Intergovernmental Panel on Climate Change got to the concept of resilience in 2001. But it took the UK Government and its agencies a long time to move on from 'awareness' and 'behaviour'[30] as forms of mitigation, to the need for adaptation to the inevitable changes.

[30] Futerra, Recommendations to: UK Communications Strategy on Climate Change – Executive Summary (London: Futerra Communications Ltd. 2005)

For this purpose, it is worth considering two forms of resilience, engineered resilience and ecological resilience. The former takes the notion of duration, sustainability perhaps, and develops ways in which we might prolong the status quo. Retaining what we in the developed world enjoy as a comfortable lifestyle. However, this form of resilience is also akin to slavery and the process of desertification – we may endure them, but they are not very desirable.[31]

Ecological resilience, however, considers the probability of ecological perturbation, or systems collapse. Evolution is not necessarily a long steady process; it is often marked by dramatic shock events with equally dramatic consequences. The dinosaurs, for instance, did not survive the climate change events they experienced. However, once we think of collapse as a likely phenomenon, we are liberated to focus on how to cope, even consider life on the other side of collapse.[32] So, what plans and strategies and skills do we need?

## How will we make our future(s)?

We may then consider the guiding question, 'How will we make our futures?' 'Futures', not future, because we need to include many diverse options. In fact, a diversity of futures should contribute to ecological resilience, because no one knows for sure which strategies will work. Richard Slaughter, President of the World Futures Studies Federation and Director of the Australian Foresight Institute, enforces this imperative:

Rather, it lies in escaping from – or rather, transcending – the 'flatland' imposed on us by three-hundred years of reductionism and epistemological narrowness. It lies in acts of recovery in each and every domain: the recovery of a deeper sense of self, of higher transcendent ways of knowing, of states of social being that go beyond the merely rational and so on. In Wilber's words: 'we cannot build tomorrow on the bruises of yesterday... This means a new form of society will have to evolve that integrates consciousness, culture and nature, and thus finds room for art, morals, and science – for personal values, for collective wisdom, and for technical know how.[33]

Artists and creative people are said to possess certain skills and I wish to leave aside art as a commodity. I believe the objects and products are useful for publics to focus their attention and artists need the craft or artfulness to give form to their processes and stimulate cognition; art may contribute to our very existence.

Finally, I would like to offer another view of futures thinking in ecology, it is an exchange I had with Sven Erik Jorgensen, a world-renowned ecological mathematical systems modeller and Editor-in-Chief of the journal Ecological Modelling. I attended a course he led in 2005 at

[31] See Brian Walker, et al 'Exploring Resilience in Social-Ecological Systems Through Comparative Studies and Theory Development': Introduction to the Special Issue, *Ecology and Society* (2006) 11(1): 12, [online] URL: http://www.ecologyandsociety.org/vol11/iss1/art12/

Brian Walker, et al 'A handful of heuristics and some propositions for understanding resilience in social-ecological systems'. *Ecology and Society* (2006) 11(1): 13. [online] URL: http://www.ecologyandsociety.org/vol11/iss1/art13/

[32] Jared Diamond, *Collapse* (Penguin, London. 2005)

[33] Richard Slaughter, *Futures Beyond Dystopia: Creating Social Foresight* (RoutledgeFalmer, London, 2004)

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the Society for Ecological Restoration World Conference in Zaragoza, Spain. At the end of the course I thanked him and asked, "... does this process of modelling produce any better questions"? He replied, that large corporations, governments and world organisations paid him lots of money to produce the familiar looking flow charts or models that are intended to bring clarity to a problem. But, he said that they never pay him for the essential start of the process – the 'brain-storming', 'think tank', or dialogue – namely, the creative process of forming and framing the questions, engaging with others, and considering many approaches. This taking time must not be underestimated. Together with accurate data collection, this element is the most important part, because as I would say, the whole project flows from making time a matter of urgency.

And if we take the visual form of the mathematical model, we may witness similarities with what all art does – it tells stories. In particular, we may note the function of an icon. Icons are not just the image of something, they are the embodiment of that which they depict – it's not the picture of the Madonna, an icon is the visual metaphor, the 'gate' to pass from earth to heaven to experience the Madonna. But without knowledge of the story, the lady draped in the blue shawl, holding a baby, is just a lady in a blue shawl, holding a baby. This integration of story and image forms the basis of our cultural cognition – our means of understanding the world. This may be the art of bringing the world into being, or the story of the art of becoming?

The final entry in Paul Klee's *Pedagogical Sketchbook:*

> We have arrived at the spectral colour circle where all the arrows are superfluous. Because the question is no longer: "to move there" but to be "everywhere" and consequently also "There!"[34]

[34] Paul Klee, *Pedagogical Sketchbook* (London: Faber and Faber, 1989), p.37.

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# Gregory Bateson's Ecological Aesthetics - an addendum to Urban Political Ecology

Jon Goodbun

In the last decade there has been a shift in our understanding and awareness of the scale and profundity of the global environmental crisis that industrial capitalism, combined with a certain cultural hubris regarding our 'relation to nature' (see below), has instantiated. Ecology, a term that emerged into popular consciousness in the 60's as a byword for radical 'holistic' and 'systemic' thinking, has returned to prominence in recent years across all kinds of fields - once again as a way of signalling an attempt to engage with broader environmental questions.

Within the natural sciences, ecology is above all characterised by a non-reductive holistic approach that focuses on the organisation and internal/external relational dynamics of 'wholes' or 'assemblages' (such as ecosystems). This is in contradistinction to the orthodox ideology of modern scientific practice, which is based upon a reductivist analysis of phenomenal wholes into 'fundamental' parts. Through the twentieth century ecology co-evolved with associated disciplines such as cybernetics and systems theory, and many important theorists - including for example Ludwig von Bertallanfy, Gregory Bateson and James Lovelock - migrated between these different areas, making contributions to all. Outside of the biological sciences, ecology has come to signify something closer to a paradigm rather than a specific discipline, as a culture and holistic science of systemic interconnection in general.

As a discourse, ecology brings together many contradictory roots. It exists as a hard scientific discipline, yet it also has allegiances with the environmental movement and ecocentric theory in a wider sense that gives it an irreducible complexity; combining many of the insights of modern science but mixed together with intellectual, religious and romantic legacies, ideas and practices that are from beyond the enlightenment (either predating it, and/or from remote cultures). For example, ecocentric thinkers might typically assert that the western scientific method and ideology promotes views of the natural world as something to be exploited and experimented upon. They then go on to cite scientific evidence collected as proof of this damage!

Today, ecology as a suffix is frequently used to signify a general systems theory (often combined with environmental awareness) based approach to any complex area. Think for example of the growing plethora of disciplines such as human ecology, social ecology, deep ecology, industrial ecology and political ecology, to name but a few. In architectural theory and in design teaching especially, there have been proposed an ever-expanding series of ecology-based concepts: cybernetic ecologies; machine ecologies; stealth ecologies; performance ecologies and so on. Clearly, the role of ecological analysis in articulating the stresses that contemporary industrial systems are placing upon the biosphere has been a particularly important area of development. Below I focus on two such strands within ecological theory.

Understanding socio-economic-ecological systems in relation to social justice has become a key task of urban political ecology - perhaps the most important extension to ecological theory to emerge in recent years. In this paper I will explore some of the precursors of contemporary urban political ecology (UPE) in the basic relations between ecology, economics and the architectural-urban. In particular, I will turn to consider the thinking of the British post-war anthropologist, cybernetician and ecologist Gregory Bateson. In Bateson's work we can find one the most innovative and important re-conceptions of the overall project of ecology - and I suggest that the work of this maverick thinker might have some important contributions to make to the development of urban political ecology today.

## Ecology and Economy

First coined in print by Ernst Haeckel, who defined it as "the relations of living organisms to their surroundings,"[1] ecology questions our definitions of what is an *organism*, and what is an *environment*, questions that are not as straight forward as common sense definitions might suggest. Alan Watts noted that "the boundary of the organism is also the boundary of its environment,"[2] and James J. Gibson similarly observed that "it is often neglected that the words animal and environment make an inseparable

[1] Ernst Haeckle, cited in Reiner Grundmann, *Marxism and Ecology*, (Oxford: Clarendon, 1991), p.1. In fact, the complexity of any critical and ideological understanding of ecological thought is soon revealed through a consideration of the work of its nominal 'founder,' Ernst Haeckel. One of the most important scientists of the late nineteenth/early twentieth century period, he is still well known still today on account of his extraordinary drawings of plants and organisms. He was an early (holistic-organic) systems thinker in biology, and helped to develop the concept of an environment. Marx and Engels considered his early scientific work favourably.

Later in his career, Hackael, like some in England, began to adopt social Darwinian positions. However, whereas social Darwinism expressed an individualist libertarianism (Spencer's 'survival of the fittest') in England, Haeckel's took a decidedly nationalist-collectivist turn. Hackael actually denied the validity of the concept of humanity altogether, claiming that it was a internationalising socialist fiction and that actually so-called humanity was a mix of distinct species (some closer to the animal world than others), and that these were further determined by their environmental regions into national races. It was the combination of race plus region that defined the nation as an organism, competing for Lebensraum. Needless to say, Haeckel's version of organicism proved all too useful to fascist ideologues.

[2] Alan Watts, cited in Douglas G Flemons, *Completing Distinctions - Interweaving the Ideas of Gregory Bateson and Taoism into a unique approach to Therapy* (Boston: Shambala, 1991) p.31

pair. Each term implies the other."[3] Gregory Bateson, drawing upon Alfred North Whitehead, noted that the fundamental unit of evolution was not the organism, but rather the organism *plus* environment, whilst fellow cybernetic biologists Humberto Maturana and Fransisco Varela similarly noted that organisms are 'structurally coupled' to and 'co-evolving' with their environments. The 'relations' that Haeckel refers to then are in complex ways, networks of internal and external flows that operate at multiple organisational scales or orders. In the case of the human, they describe a set of organism-environment relations that must include social, cultural and economic agents. Nonetheless, the basic definition of ecology as the study of organism-environment relations, clearly gives it some shared concerns with architecture and urbanism, which might themselves be broadly defined as the production of the environment of the human organism, and the study of the relations between individual and collective human entities and their environments.

Different forms of ecological theory typically work through and define different conceptions of nature. In, for example, the various forms of deep ecology, there is paradoxically a very distinct and thoroughly cultural conception of nature as that which entirely other to and opposed to human culture, a nature that always "knows best." Adrian Forty has noted that "the distinction between the world created by man – 'culture' - and the world in which man exists – 'nature' - has been perhaps the single most important mental category ever conceived."[4] Certainly in ecological discourse, the tension between a conception of nature in opposition to culture (like deep ecology), and a conception of culture as a part of nature (like urban political ecology), defines some of the clearest distinctions between different ecological traditions. Increasingly, some theorists suggest that ecological thought needs to move beyond the concept of nature entirely.[5]

Nonetheless, both of the strands that I am considering here (UPE and Bateson) do continue to use the term nature, but in both cases see human culture (or second nature) dialectically, as a part of nature. David Harvey has developed Marx's conception of a human 'relation to nature' in his analysis of Capital, to describe the sum of both our metabolic interaction with the wider non-human world that we find ourselves in, and our mental conceptions of this relation. Harvey states that

3 James J. Gibson, *The Ecological Approach to Visual Perception* (Boston: Houghton Mifflin, 1979) p.8.

4 Adrian Forty, Words and Buildings: *A Vocabulary of Modern Architecture* (London: Thames and Hudson, 2000) p.220. Forty does in fact refer to both Smith and Harvey in this chapter ('Nature').

5 See Timothy Morton, *The Ecological Thought* (Cambridge, MA and London: Harvard University Press, 2010), and Timothy Morton, *Ecology without Nature: Rethinking Environmental Aesthetics* (Cambridge, MA.: Harvard University Press, 2007).

> 'Construing the relation to nature as inherently dialectical indicates a range of possible transformations in human relations as well as a possible process of natural evolution, including the human production of nature itself, that renders this relation dynamic and perpetually open. While on the one hand such a formulation would appear to deny the possibility of any out-and-out or prolonged, let alone 'final', environmental crisis, it also carries within it the prospect for cascading unintended consequences and widespread disruptive effects for the continuity of daily life as we know it.'[6]

Harvey's conception of our relation to nature must be understood within the context of an associated group of neo-Marxist theorists (others would include Neil Smith, John Bellamy Foster and Ted Benton), all of whom have consistently argued that there can be found in Marx the conceptual framework of a modern ecological theory, and that we need to understand Marx as a fundamentally ecological thinker. Foster in particular has attempted to reveal Marx's ecology, noting that

> 'A thoroughgoing ecological analysis requires a standpoint that is both materialist and dialectical ... [A] materialist sees evolution as an open-ended process of natural history, governed by contingency, but open to rational explanation. A materialist viewpoint that is also dialectical in nature (that is, a non mechanistic materialism) sees this as a process of transmutation of forms in a context of interrelatedness that excludes all absolute distinctions .... A dialectical approach forces us to recognise that organisms in general do not simply adapt to their environment; they also affect that environment in various ways by affecting change in it.'[7]

These texts have provided an important part of the critical canon of the discourse of urban political ecology. In a key paper, in which he draws heavily upon Foster, Erik Swyngedouw has argued that "'metabolism' is the central metaphor for Marx's definition of labour and for analysing the relationship between human and nature,"[8] and proposes that "historical materialism has been among the first social theories to embrace and mobilise 'metabolism' and 'circulation' as entry-points in undertaking [Jameson's] 'ontologies of the present that demand archaeologies of the future'."[9]

Although UPE represents a distinct, contemporary attempt to think ecology as an urban and economic concept, this is by no means an entirely novel move. The word ecology is derived from Greek oikos meaning household, and it might be translated as both the science of running a home and the science of running an economy. Ecology shares

6 David Harvey, *The Enigma of Capital - and the Crises of Capital* (London: Profile Books, 2010) p.74.

7 John Bellamy Foster, *Marx's Ecology* (New York: Monthly Review Press, 2000) pp.15-16.

8 Erik Swyngedouw 'Metabolic Urbanisation - The making of cyborg cities' in Nik Heynen, Maria Kaika and Erik Swyngedouw (eds.), *In the Nature of Cities - Urban Political Ecology and the politics of Urban Metabolism* (London: Routledge, 2006) p.26.

9 ibid., p.22.

with architecture this relation of dwelling and economics. In fact, it also internalises many of the same complex contradictions that characterise modern architectural knowledge and practice. The seam that ecology shares with the economic is much more that a shared etymology. In important ways much ecological theory can be thought of as quite simply as an economics of nature, as indeed is suggested in one of the early proto-ecological texts, Linnaeus' 1749 Oeconomy of Nature, and confirmed in Haeckel, who stated in his initial definition that "by ecology we mean the body of knowledge concerning the economy of nature."[10]

Not surprisingly then, there are a series of key concepts common to both ecology and economy, most notably growth, and circulation.[11] And as we have seen, Marx introduced some more process-organicist concepts into political economy. For Marx metabolism was an extraordinarily significant concept, in that it described the fundamental process that labour was involved in, the moment of interface between the human organism and the broader web of life. He stated that

> 'Labour, as the creator of use values, as useful labour, is a condition of human existence which is independent of all forms of society; it is an eternal natural necessity which mediates the metabolism between man and nature, and therefore human life itself.'[12]

However, if a radical socio-political form of ecology was set out by Marx in the nineteenth century, and has been developed further in recent years, the mainstream of ecological discourse has unsurprisingly been shaped more directly by the concerns of capital. Ecology did not only transmit metaphors back and forth between the analysis of economic networks, and the analysis of non-human living systems. It was in addition, and right from the start, a body of knowledge that developed in an applied sense, as the means of managing the integration and expansion of the human economy into non-human economies. Ecology as a profession was one of a series of disciplines that co-emerged at the metabolic interface of capitalist production and the planet in the eighteenth and nineteenth centuries. Donald Worster has suggested that ecology has both arcadian and imperialist roots, a double lineage that characterises many individual thinkers (such as Charles Darwin) as well as ecological thought as a whole. For example, amongst the first scientists to be employed in an ecological capacity were those of the Dutch and English East India companies from the late eighteenth century. These companies, which encompassed everything from colonial government, to managing both local landscapes and global material flows, meant that they consciously confronted a need for systems thinking at the leading edge of capitalist development at the time.

Ecology continued to theorise an economics of nature based primarily in the study of how energy and matter flow through organisms and networks

[10] Ernst Haeckel, General Morphology of Organisms; General Outlines of the Science of Organic Forms based on Mechanical Principles through the Theory of Descent as reformed by Charles Darwin (Berlin). Quoted in Frank Benjamin Golley, *A History of the Ecosystem Concept in Ecology* (New Haven, Conn.: Yale University Press, 1993) p.207.

[11] Circulation was coined as a concept by the physician William Harvey, in his research on blood flow in the body, in the early seventeenth century. It was, as Adrian Forty has observed, soon adopted into architectural thinking (as circulation through buildings), and later political economy, as the circulation of money and goods. For a discussion of the conceptual history of circulation and metabolism (and in relation to Marxian political ecology) see Eric Swyngedouw 'Metabolic Urbanisation: The making of Cyborg Cities' in Nik Heynen, Maria Kaika and Eric Swyngedouw (eds.), *In the Nature of Cities: Urban Political Ecology and the politics of Urban Metabolism* (London: Routledge, 2006), pp.25-33. Adam Smith of course saw the free market economy as akin to an organism - a spectral entity whose "invisible hand' would emerge as a higher level of rational organisation.

[12] Karl Marx, *Capital vol.1* (London: Penguin, 1990) p.133.

of organisms. In the post war period Eugene Odum adopted the term 'ecosystem',[13] and, in the 1953 Fundamentals of Ecology written with his brother Howard T. Odum, they started to describe and analyse flows of matter and energy through ecosystems as simple flow diagrams. As Pepper notes

> Energy and matter flow along pathways within a system before leaving it, and for an open system there is much exchange of matter between it and the environment, whereas a closed system is characterised by maximum recycling of material ... Mature ecosystems (e.g. Appalachian forests) display high organisation (i.e. minimal entropy) because they are more diverse than immature ecosystems. They have more species and more niches are filled, and they are able to capture more matter and slow down energy dissipation.[14]

H. T. Odum especially pioneered theories and practices around systems ecology and ecological energetics, which included studies of human-natural systems economics.[15] This later developed into the concept of 'emergy', which studies the role that embodied energy plays in systems. H.T. Odum himself noted that "the study of energy in nature does not necessarily imply an economic framework. But that is the way it is has been assimilated."[16]

Odum's post-war attempts to generate out of ecology a universal systems language paralleled broader developments. Increasingly, similar methods of analysis and representation were developed to try to grasp human ecologies, and statistical and conceptual tools migrated between economics, ecology, cybernetics and general systems theory. In several cases architectural thought played important roles in helping to conceive of and represent global systems, with significant contributions from thinkers such as Buckminster Fuller, Doxiades, and Charles and Ray Eames, for example.[17] Increasingly through the post-war period, ecological systems analysis fed into long term policy studies in multinational corporations as much as national governments. At the same research such as the influential 1972 Club of Rome "Limits to Growth"[18] report, modelled future scenarios for natural and human ecosystems under continuing growth of the industrial economy, and fed into the environmental justice movement.[19]

[13] The term 'Ecosystem' was first coined by Roy Clapham in 1930, although its modern sense derives from Arthur Tansley (1935). Tansley replaced American plant ecologist, Frederic Clements' concept of 'super-organism' with 'ecosystem', which he defined as "a community of organisms and their physical environment interacting as an ecological unit." The term biosphere was introduced by Austrian geologist Eduard Suess in 1875 to describe the layer of life surrounding the earth. The term 'biosphere' was however popularised and given its full current meaning - the ecosystem of ecosystems - by Russian geochemist Vladimir Vernadsky. In 1926 Vernadsky - synthesising Goethe, Humboldt, and Suess, and anticipating Margulis and Lovelock - described the biosphere, and the life of which it was composed, as a 'geological force.' He was among the first to realise the full extent that life had shaped the planet geologically and compositionally, and anticipated much that James Lovelock would later describe in Gaia theory. For Vernadsky, the biosphere was not only a description of the site of life on Earth, it also classified an historical epoch in the planet's development. The biosphere was the second stage in the evolution of the planet. The first stage he called the geosphere, and this described the planet before life (and of which there are of course substantial remaining legacies in non organic rocks, mantel, core etc.). The third stage, which he termed noosphere, was the stage of human mind. For Vernadsky, just as the biosphere transformed the geosphere, the noosphere is transforming the biosphere. Variations of Vernadsky's concept of noosphere include the sense of an emergent collective consciousness by Pierre Teilhard de Chardin.

[14] David Pepper, *The Roots of Modern Environmentalism* (London: Croom Helm, 1984), p.103-4.

[15] See for example Howard T. Odum, 'Energy, Ecology and Economics', *AMBIO A Journal of the Human Environment*. The Royal Swedish Academy of Science 2 (6), (1973): 220-227.

[16] Eugene Odum, cited in David Pepper, *Modern Environmentalism - An Introduction* (London: Routledge, 1996), p.283-4.

[17] For a discussion of these see for example Mark Wigley, 'Network Fever,' *Grey Room* 4 (2001): 82-122.

[18] Donella Meadows, Dennis Meadows, Jørgen Randers, and William W. Behrens III *The Limits To Growth: A Report For The Club of Rome On The Predicament of Mankind* (New York: Universe Books, 1972)

[19] One of the most significant examples of an ecological systems analysis of the interaction of human and natural ecosystems was the seminal environmental 1972 Club of Rome 'Limits to Growth' report, produced by Jay Forrester and the Systems Dynamics group at MIT. Forrester and his group were amongst the first to use computers to model systems dynamics, and their focus was the analysis of human ecologies, and their interaction with natural ecosystems. The Systems Dynamics group produced three global socio-economic resource flow models (WORLD1, 2 and 3). Famously and somewhat unexpectedly, all models predicted resource depletion/ pollution based socio-economic collapse early in the 21st century.

## Gregory Bateson and the Ecology of Mind

Perhaps the single most innovative and important re-conception of the project of ecology emerged in the work of Gregory Bateson.[20] For Bateson the tendency of ecological and systems thinkers, such as the Odum brothers, and Forrester's MIT research group, to focus primarily on quantitative energy and material flows in ecological science was problematic, and for two reasons. Firstly, he considered that ecosystems had to be considered to be communicating and informational systems, and even as mental systems, as minds, not just as material and energetic systems. Ecologists were "overemphasising energy exchange and attending insufficiently to information exchange,"[21] he argued. Secondly, he emphasised that to properly understand ecosystems, we need to find ways to think ecologically, recognising ourselves as a part of the system being observed or interacted with.

Bateson is not simply referring to information systems that might sit 'on top' of more fundamental mater and energy flows, but is rather emphasising that 'information' is immanent with the relations of all of these flows. It is a description of how in networks of interdependent energetic circuits (such as an ecosystem) some circuits will act in informational ways, changing other flows (which might also be acting in informational ways with respect to other flows etc). Bateson notes for example that "in life and its affairs there are normally two energetic systems in interdependence: one is the system that uses its energy to open or close a faucet or gate or relay; the other is the system whose energy flows through the gate when open"[22]

In line with his broader critique of science, he argued that these errors were compounded within even more erroneous instrumentalising tendencies, repeatedly emphasising that ecology was taking on the task of managing planetary systems on behalf of capital, but that this task, according to ecological systems theory itself, was impossible (setting aside for the moment questions regarding the desirability of such tasks). Bateson frequently refers to Ross Ashby's Law of Requisite Variety to describe how ultimately in complex systems a part can never control (or know) the whole without damaging reduction. As Harries-Jones has noted

> 'Bateson realised far ahead of his contemporaries that the primary source of error in ecological science lay in false presumptions of an ability to 'control' and 'manage' ecosystems through quantitative measurement.'[23]

Like many other cyberneticians, Bateson's research focused around the question of how organised material, biological and social systems display mental characteristics. This research led him through a broad range of disciplines and practices: working with social form in Bali, cybernetics

at Macy, family and individual therapy in Palo Alto, dolphins in Hawaii, or the environmental question in general. Bateson argued that the nature/culture dualism was a special form of the mind/matter dualism, and he developed an ecological theory of mind, which in his words is "neither supernatural nor mechanical".[24] The key to Bateson's model is a conception of 'mental process' in matter that is based upon responses to information, which he defines as any "difference that makes a difference."[25]

For Bateson, the ecology of the living world is full of mind. They are minds that are constituted relationally, in networks, through their activity, their actual life-process. Bateson sees ecosystems as ecologies of mind. He also sees organisms as ecologies of mind. Today we might call much of what Bateson meant by mind as 'agency'.

Human consciousness for Bateson is extended, across and within these and social and cultural ecologies (such as language), as an ecological condition itself, and is not in any simple way solely located in the individual brain. Bateson's work anticipated by decades the recent turn in the cognitive sciences towards various conceptions of embodied and extended mind. For Bateson, we are constantly participating in cognitive systems that extend throughout our environment. He stated (dramatically prefiguring Lovelock's Gaia hypothesis) that

> 'The individual mind is immanent but not only in the body. It is immanent also in the pathways and messages outside of the body; and there is a larger Mind of which the individual mind is only a subsystem... immanent in the total interconnected social system and planetary ecology.'[26]

For Bateson, the fact that our minds are ecologically extended allows him to propose a powerful thesis regarding the effects of environmental damage upon the human psyche, and a radical reformulation of environmental damage as a form of mental illness. Using the example of Lake Erie, whose ecosystem was in a state of collapse as Bateson wrote, he suggested that

> 'You decide that that you want to get rid of the by-products of human life and that Lake Erie will be a good place to put them. You forget that the eco-mental system called Lake Erie is a part of your wider eco-mental system - and that if Lake Erie is driven insane, its insanity is incorporated in the larger system of your thought and experience.'[27]

Bateson argues then that there are major conceptual errors in our *conception* of our *relation to nature*. We totally mis-comprehend *the form*

[20] Bateson was arguably one of the most interesting figures to emerge from the seminal series of Macy cybernetics conferences that ran from 1947-53, and the various second order cybernetics discourses that followed. Bateson moved through an extraordinary range of disciplines in his colourful career. Starting in biology, he made important contributions to anthropology, psychiatry, ecology, aesthetics and media studies, and of course cybernetics and systems thinking in general. He was adopted as something of a guru by the counter culture in the sixties - having broadly argued that "the point is that the ways of nineteenth century thinking are becoming rapidly bankrupt, and new ways are growing out of cybernetics, systems theory, ecology, meditation, psychoanalysis, and psychedelic experience." Bateson can properly be described, as Andrew Pickering has usefully suggested, as the practitioner of a nomadic science, in the sense of Deleuze and Guattari. Indeed, Bateson's work had an important though widely under acknowledged influence upon Deleuze and Guattari, and indeed much French post-structuralist thought more broadly. Notably of course, Guattari directly takes up Bateson's conception of ecology in his later work such as 'The Three Ecologies' and 'Ecosophy'.

[21] Gregory Bateson and Mary Catherine Bateson, *Angels Fear - Towards an Epistemology of the Sacred* (Cresskill: Hampton Press, 2005) p.208

[22] Gregory Bateson, *Mind and Nature - A Necessary Unity* (Cresskill, NJ: Hampton Press, 2002) p.95.

[23] Peter Harries-Jones, *A Recursive Vision: Ecological Understanding and Gregory Bateson* (Toronto: University of Toronto Press, 1995), p.117

[24] Bateson uses ' Neither Supernatural nor Mechanical' as the title of a paper in Gregory Bateson and Mary Catherine Bateson, *Angels Fear - Towards an Epistemology of the Sacred* (Cresskill: Hampton Press, 2005) pp 50-64

*of the relationality*. Whilst his position is broadly in line with standard ecocentric and to a lesser extent romantic critiques of the 'Promethean' attitude of western science towards a nature that is treated as if there to exploit, control and dominate, Bateson's critique is distinct from deep ecology positions which might argue that to conceive of ourselves in opposition to nature is simply morally wrong. It is also distinct from a standard Marxian position which would describe the opposition to nature, or our alienation from nature, as a historical condition, related today solely to capitalist conditions of production. For Bateson, the situation is more complex, in that whilst his position encompasses a recognition of the specific socio-historical form of our relation to nature (i.e. the Marxian position), and the ethics of it (the ecocentric position), he argues that the primary problem is *epistemological,* a systemic false consciousness of our relation to nature, that is itself now a part of our ecological condition:

> 'You and I are so deeply acculturated to the idea of 'self' and organisation and species that it is hard to believe that man might view his relations with the environment in any other way.'[28]

To what extent should Bateson's critique of the post-war ecological focus upon managing matter and energy flows be asked again today? Urban political ecology has by definition been sensitive to the crucial question of 'in whose interests are these metabolic flows organised, managed and indeed owned?' Questions which Bateson never really approached. Nonetheless, his concern with describing the informational character of relational agency, and his reminder that we can never control and manage the totality of non-human agencies, but should only aim to couple and co-evolve in a radically open ended aesthetics, might well be capable of extending UPE.

## Ecology and the Concept of the Metropolis

Mark Wigley has suggested that "ecology is, from the beginning, a certain kind of thinking about or from architecture,"[29] and indeed, as has already been noted, the root of ecology - oikos - suggests something like a *knowledge of dwelling*. What though, is it that ecology qua ecology might grasp with regard to dwelling? We need to approach this question, I propose, through the concept of the metropolis. David Cunningham has suggested that "the philosophical interest of the concept of metropolis lies in its presentation as a determinate negation of the city as a historically specific form of the urban."[30] That is to say, metropolis describes both an entirely new concrete urban condition that emerges within capitalism, and at the same time, describes the processes that give rise to it. The concept of metropolis describes a distinct condition, in that the metropolis is both the "the primary space 'in' which exchange happens", even whilst

25 Gregory Bateson, 'Form, Substance and Difference' *in Steps to an Ecology of Mind* (Chicago: University of Chicago Press, 2000) p.468.

26 Ibid., p.467.

27 Gregory Bateson, 'Pathologies of Epistemology ' in *Steps to an Ecology of Mind* (Chicago: University of Chicago Press, 2000) p.492.

28 Ibid.

29 Mark Wigley, 'Recycling Recycling' in Amerigo Marras (ed.), *Eco-Tec, Architecture of the In-Between* (New York: Princeton Architectural Press, 1999) p.42.

30 David Cunningham, *'The Concept of Metropolis: Philosophy and Urban Form' in Radical Philosophy,* 133 (2005) p.13.

31 Ibid., p.20.

32 Relational space-time in this context is part of a set of terms that David Harvey has developed, largely out of Henri Lefebvre. In Harvey's terms, in my example here, the primary space 'in' which exchange happens, would be absolute space and relative space-time.

it "designates the general processes by which space itself is formed or produced by exchange,"[31] in relational spacetime.[32]

We can always find in architectural and urban design, and in spatial environments more broadly, conceptual statements regarding human 'relations to nature.' This can often be read as an opposition between city and country. In the form of Carcassonne, for example, this city/country opposition can be clearly described within an absolute spatial framework: there is city on one side of the wall, and country on the other. The metropolis however, is not defined in any simple way in opposition to 'country', in the way that the town or city was. In absolute space, metropolitan nature and culture, are co-extensive: the metropolis understood in this way, is planetary, by definition. The city/country opposition is not resolved however - it clearly persists - rather, the metropolis is a concept operating at another (global) level of abstraction. There is a sense in which we might conclude that the metropolitan stands in the same relation to city, as the ecological does to the country. This does not however quite capture it though. Cunningham, in response to Lefebvre's 'theoretical need' to think about the urban, suggests that the kind of trans-disciplinary 'post-philosophy' that can think the metropolis, would necessarily share something of the pattern-form of the metropolis itself. In fact, I wonder whether the kind of knowledge that a theoretical account of the metropolis would produce - knowledge that would surely be shaped by our complex metabolic relations to nature to an extent not appreciated by Lefebvre - might take the name of *ecology?* I do not of course refer here to the semi-dismal bourgeois form of ecology, but rather the aesthetically re-conceived ecology proposed by Bateson.

Bateson argued that it was necessary to transform not just ecological knowledge, but the very basis of science in general, with an aesthetic dimension, a recognition that *ecological patterns are minds*, and that this was the only way to grasp the interconnectedness of environmental entities and relations. He stated that

> 'So by 'aesthetics' I mean responsiveness to the pattern which connects. The pattern which connects is a meta-pattern. It is a pattern of patterns. It is that meta-pattern which defines the vast generalisation that indeed it is patterns which connect.'[33]

This suggests I think an additional and necessary dimension to the conception of the metropolitan mediation: the metropolis is *the pattern that connects nature and culture.*[34] Writing forty years after Bateson's meeting with the New York planners, David Harvey has increasingly come to promote an associated re-reading of Lefebvre's Right to the City, stating that

33 Gregory Bateson, Box 6 Manuscripts 'Mind in Nature', Nov. 17th 1977 (unpublished), quoted in Peter Harries-Jones, 'Gregory Bateson's 'Uncovery' of Ecological Aesthetics' in Jesper Hoffmeyer (Ed.), *A Legacy for Living Systems - Gregory Bateson as a Precursor to Biosemiotics* (Copenhagen: Springer, 2008) p. 158. There is a published though slightly different version of this in Gregory Bateson, Mind and Nature p. 10

34 I suggest that an ecological conception of metropolis can properly describe "transformations within the relations between urban and rural, as well as, with increasing importance, within and between different urban forms and processes of urbanization and the heterogeneous forces which generate them. The potential generalization of social, cultural and technological productive logics at a planetary scale, and the 'concrete' networks of exchange and interaction that increasingly bind non-contiguous urban spaces together within the differential unity of a global economy, open up a historically new set of relations between universal and particular, concentration and dispersal, that clearly demand new conceptions of mediation." David Cunningham, 'The Concept of Metropolis', p. 13

35 David Harvey, 'The Right to the City' (David Harvey responding to the *Ecotopedia enquete* via e-mail from New York City, USA, on the 6th August 2008.), accessed at http://sustainablecities.dk/en/actions/interviews/david-harvey-the-right-to-the-city

> 'The city has to be viewed as a metabolic and ecological system in its own right and therefore as a vibrant and increasingly dominant part of the natural world we inhabit. While there is, in my view, nothing unnatural about New York City, the qualities of the urban environments we create are a major concern and those qualities are not confined to what humans need but also to preserving the whole life-system upon which we ultimately depend.'[35]

Mark Wigley reminds us that our very conceptions of dwelling necessarily contain suppressed relations of 'domestic' violence, and that this is just as true of houses conceived at a planetary scale. He suggests that "rather than simply reapplying ecological discourse to design, some of the perennial enigmas of the house that architects explore could be used to rethink ecology. The discourse can be rewired"[36]

In conclusion, I suggest that some moves have been made in this direction by David Harvey, who has in several recent lectures suggested that a key task for architectural researchers is to explore new forms of our relation to nature. More generally, Harvey has been exemplary in engaging with ecological discourse, being critical of those aspects of ecocentric thought that are reactionary and nostalgic. He also acknowledges that there is much in the traditions of organic and ecological philosophy which, through its emphasis on process and relational thinking, shares something with Marxian dialectical theory that he suggests might

> 'learn a great deal from trying to understand ecocentric lines of thought ... They help concentrate my mind on the qualitative as well as the quantitative conditions of our metabolic relation to the world and raise important issues about the manner of relating across species and ecological boundaries that have traditionally been left on one side in many Marxist accounts.'[37]

Harvey goes on to set out a clear project for a contemporary progressive politics, arguing that

[36] Mark Wigley, 'Recycling Recycling' in Amerigo Marras (Ed.), *Eco-Tec, Architecture of the In-Between* (NY: Princeton Architectural Press, 1999) p.48.

[37] David Harvey, 'Marxism, Metaphors, and Ecological Politics' in *Monthly Review*, 49 (11) (1998) at http://www.monthlyreview.org/498harve.htm.

[38] David Harvey, *Justice, Nature, and the Geography of Difference* (Malden, MA: Blackwell, 1996), p.198

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> 'for Marxists, there can be no going back, as many ecologists seem to propose, to an unmediated relation to nature (or a world built solely on face to face relations), to a pre-capitalist and communitarian world of non-scientific understandings with limited divisions of labour. The only path is to seek political, cultural and intellectual means that 'go beyond'... The emancipatory potential of modern society, founded on alienation, must continue to be explored. But this cannot be, as it so often is, an end in itself, for that is to treat alienation as the end point, the goal. The ecologists' and the early Marx's concern to recuperate 'in higher form' the alienation from nature (as well as from others) that modern day capitalism instantiates must be a fundamental goal of any ecosocialist project. The idea of 're-enchantment' with the sensuous world through a more sensitive science, more sensitive social relations and material practices, through meaningful labour processes, provides a better language than that of alienation with all of its essentialist overtones.'[38] [My emphasis]

Architecture has, as a body of knowledge, consistently reflected upon and expressed, or put into relation, the human and the natural, the material and the mental, the local and the global, albeit often in highly problematic ways. A critical engagement with ecological and cybernetic theory as architectural research has the potential to generate an entirely new ecology of knowledge. Spatial environments are one of the primary ways by which we have socially extended our organs and minds. Today, we need to re-conceive of what we understand by nature, and what we understand as our relationship to it. We need to propose new formations and new metabolisms of country and city, we need to re-theorise alienation, health and well-being, as part of a bigger attempt to, as Fuller suggested, make existing models obsolete.

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# Ethics VS Aesthetics Architectural Design 1965-1972

Steve Parnell

In the 1960s and '70s, Architectural Design was the most influential architectural magazine in the UK, if not the world. Under the direction of Technical Editor Robin Middleton, AD published extensive articles on ecological issues such as Martin Pawley's 'Garbage Housing' and ongoing columns like 'Recycling' and 'Eco-tech'. A year before the oil crisis shocked the world, the July 1972 issue was even themed 'Designing for survival'. This can be seen as the ethical face of AD.

Middleton steered the magazine away from architecture-as-building towards architecture-as-concept and the Brutalists were exchanged for Archigram. In July 1965, Middleton introduced a section called Cosmorama as 'a commentary on buildings or on events throughout the world that impinge upon architecture'. It featured products and processes that were to challenge the accepted nature of architecture and promoted the kind of throw-away culture of consumption that Archigram were advocating. This can be seen as the aesthetic face of AD.

By examining the content and context of AD during this period, the following paper discusses the themes of ethics and aesthetics manifested by these two avant-garde movements and argues that for architectural practice, the aesthetic strand of consumerism ultimately became more influential than the ethics of ecology.

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## Introduction

Reyner Banham introduced the dualism “ethic or aesthetic” to the architectural world in the subtitle of his 1966 book, The New Brutalism. In it, he asked whether the post-war neo-avant-garde movement, the New Brutalism was a moral crusade for the reform of architecture, or simply another style. The use of the word 'or' in the phrase implies that the movement was either one or the other, whereas in actual fact the two terms are not mutually exclusive: it is, of course, entirely possible for architecture to be simultaneously ethical and aesthetic, depending on the definitions of the two terms. However, Banham constructed the argument based on the rhetoric of the New Brutalists themselves and decided in the end that the movement was about aesthetics after all: 'For all its brave talk of “an ethic, not an aesthetic”, Brutalism never quite broke out of the aesthetic frame of reference,'[1] he wrote in the book's envoi.

The New Brutalism was the neo-avant-garde movement of the British architectural scene in the 1950s and was published widely in the architectural press, particularly in Architectural Design and the Architectural Review. The vanguard that succeeded it was the Brutalists' natural heirs, Archigram, who were to dominate the pages of Architectural Design for a decade from 1965. It is worth noting in passing that the Architectural Review would leave them well alone, at least until they had passed as the avant-garde of the day. These two movements bracket the beginning and end of the magazine Architectural Design's heyday, viz. circa 1955 to circa 1972. In fact, it could be argued that the increasing success of Architectural Design during this period was partly due to its close association and promotion of these vanguards.

While Archigram may have been a continuation of the New Brutalism, they had the opposite attitude to uniting art and life, a key characteristic that Peter Bürger, in Theory of the Avant-Garde, maintained drove all avant-garde art.[2] Richard Murphy builds on this in Theorizing the Avant-Garde by suggesting that art can serve as an ideal model, or utopia, for life to aspire to (sublimation) or alternatively, art and life can be brought together by a shift in the opposite direction by bringing art down to the banal level of mundane reality (what he calls “sublation”).[3] The attitude of the proponents of the New Brutalism would be that of sublation, with its promotion of the ‘ordinary’, the ‘as found’ and foundations in the 1953 Parallel of Life and Art exhibition, which questioned traditional notions of beauty in favour of ugliness. In contrast, Archigram's attitude would be categorised as that of “sublimation”, as their unification of life and art occurred only in the worlds constructed in their fantasy drawings. These ideas will be expanded briefly below. However, it is the contrasting and contradictory editorial policies of AD during the period 1965-72 – a period that coincides with Robin Middleton's Technical Editorship[4] and in which

1 Reyner Banham, *The New Brutalism: Ethic or Aesthetic?* (London: The Architectural Press, 1966), p. 134.

2 Peter Bürger, Theory of the Avant-Garde, trans. by Michael Shaw, *Theory and History of Literature* (Minneapolis: University of Minnesota Press, 1984).

3 Richard Murphy, *Theorizing the Avant-Garde: Modernism, Expressionism, and the Problem of Postmodernity*, 1st edn (Cambridge University Press, 1999), p. 11.

4 Robin Middleton was Technical Editor of AD December 1964 - July 1972.

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Archigram were published heavily – that will highlight the difference of attitude to the twin rhyming themes of ethics and aesthetics. Architectural Design was already successful and widely read by the time Robin Middleton took over as Technical Editor in December 1964[5] but under his direction, it was to become the architectural magazine that defined the period. By looking at the content of the architectural press, it is possible to glimpse the discourse of the architectural profession at that time. So an examination of AD's pages will help illuminate the key arguments and issues that highlighted the architectural debate of the day.

AD was not solely reliant on Archigram during this time, of course, but the group was heavily influential in the magazine and at the Architectural Association where they taught, with the two (the Architectural Association and AD ) closely related through the personal relationships of editors and contributors alike. Their ideas and aesthetics were transported via AD to the architectural profession at large, but the ethical aspect of the magazine was to come largely from the ecological movement – something that Archigram only reluctantly started to acknowledge at the end of their avant-garde status.

This paper will explore these issues in the post-war architectural neo-avant-garde and the running themes of ethics and aesthetics. In particular, I examine the content and context of the magazine Architectural Design during Robin Middleton's time as Technical Editor in order to understand why it is that we are still discussing exactly the same ethical issues today, while the aesthetics have been implemented and progressed. I am using the term 'ethical' to refer predominantly to ecology, although AD at the time was also concerned with other issues that could easily be considered ethical.

## The New Brutalism

Theo Crosby, Technical Editor of Architectural Design from 1953 to 1962[6] , used the magazine to promote architecture-as-building, and especially the ideas and interests of Alison and Peter Smithson – the Independent Group, the New Brutalist movement and Team X. Crosby had a particularly close relationship with the Smithsons, having shared a house with them when they first married and moved to London.[7]

1955 was a key year for the New Brutalism in the architectural trade rags: The Smithson's manifesto was published on page 1 of January's AD and in December of that year, Banham published his apologia of the movement in the *Architectural Review*.[8] This pattern continued up until Banham's canonical work documenting the movement was published in 1966, once the movement had expired. The content of *The New Brutalism: Ethic or Aesthetic?* was based heavily on articles from each of the *Architectural Review* and *Architectural Design*.[9] In it, Banham documented his search

5 The issue he was first responsible for as technical editor was March 1965.

6 Theo Crosby was Technical Editor of AD November 1953 - May 1962

7 See Theo Crosby, "Night Thoughts of a Faded Utopia" in David Robbins (ed), The Independent Group: Postwar Britain and the Aesthetics of Plenty (London: MIT Press, 1992), pp. 197-199.

8 Reyner Banham, 'The New Brutalism', The Architectural Review, 1955, 354-361.

9 The book refers to ten issues of AD and twelve of AR, as well as several other architectural journals.

for 'une architecture autre', a phrase that echoed Michel Taipé's book Un Art Autre that introduced an anti-art of the day through the work of Jean Dubuffet, Jackson Pollock and Eduardo Paolozzi among others.

For the Brutalists, ethics meant honesty of materials and structure – showing what the building was made of and how it was constructed. Their aesthetics followed that of the Parallel of Life and Art exhibition and the 'art brut' of Jean Dubuffet. To borrow Banham's words, 'the exploitation of these visual qualities [of grain, and 'chiaroscuro'] to enhance the impact of subject matter that flouted humanistic conventions of beauty in order to emphasis violence, distortion, obscurity and a certain amount of "humeur noir", was a subversive innovation whose importance was not missed.'[10]

[10] Reyner Banham, 'The New Brutalism', The Architectural Review, 1955, 354-361 (pp. 61-62).

Brutalist architecture was a reaction to the white cube functionalist architecture of the pre-war heroes of the modern movement. Where their bricks were rendered and painted white to look like a machine finished concrete surface, the Brutalists wanted to be honest about the material surfaces, to leave brick unpainted and unplastered, and the shutter-work exposed on concrete. Even the services were to be surface mounted and on display, as were the joints between materials, wherever possible. This was all documented in Banham's book, beginning with the Smithson's Hunstanton School (published in AD in September 1953).[11]

[11] *Architectural Design* 23 (9) (1953): 238-48.

Brutalism promised 'une architecture autre' of ethics rather than aesthetics, but ultimately Banham was disappointed. He transferred his attention in the mid-sixties to Brutalism's heirs, Archigram, who were also to promise 'une architecture autre' in a very different way. The New Brutalism and Archigram were more than simply two separate architectural vanguards: as different as they were, the latter was a direct development of the former.[12] Peter Cook was attracted to London in the first place by the Independent Group and a desire to mimic its success.[13] He was to be taught at the AA by Peter Smithson. Many of the architect members of the Independent Group and the initial originators of the New Brutalism were one and the same people: Colin St John Wilson, James Stirling, John Voelcker and, of course, Peter and Alison Smithson. Additionally, half of the Archigram group (Dennis Crompton, Warren Chalk and Ron Herron) had already been working on the Brutalist structure of the South Bank Centre for the London County Council and they joined the other half (Peter Cook, Michael Webb and David Greene) at Taylor Woodrow Construction working on the Euston station redevelopment under the supervision of former AD technical editor Theo Crosby and alongside future AD technical editor, Robin Middleton.

[12] This has been explored thoroughly in Simon Sadler, 'The Brutal Birth of Archigram', in *The Sixties, Twentieth Century Architecture* 6, 2002, pp. 119-128.

[13] Mary Banham, interview with author, 1st July 2008.

## Archigram

Although Archigram as a 'fanzine' had been going since 1961, the group behind the fanzine wasn't published in the mainstream British architectural press – the 'trade rags' – until 1965. In December 1964, Robin Middleton had become technical editor of AD and by this time, Archigram were on to number six with a circulation of 2,500 themselves.[14] In November 1965, Architectural Design was the first British architectural magazine to publish Archigram's work with Reyner Banham's two-page article called "A Clip-on architecture"[15] and a 15 page chronological survey later in the same issue. From that point onwards and for the next ten years, Archigram as a group and as individuals were to dominate the pages of AD.

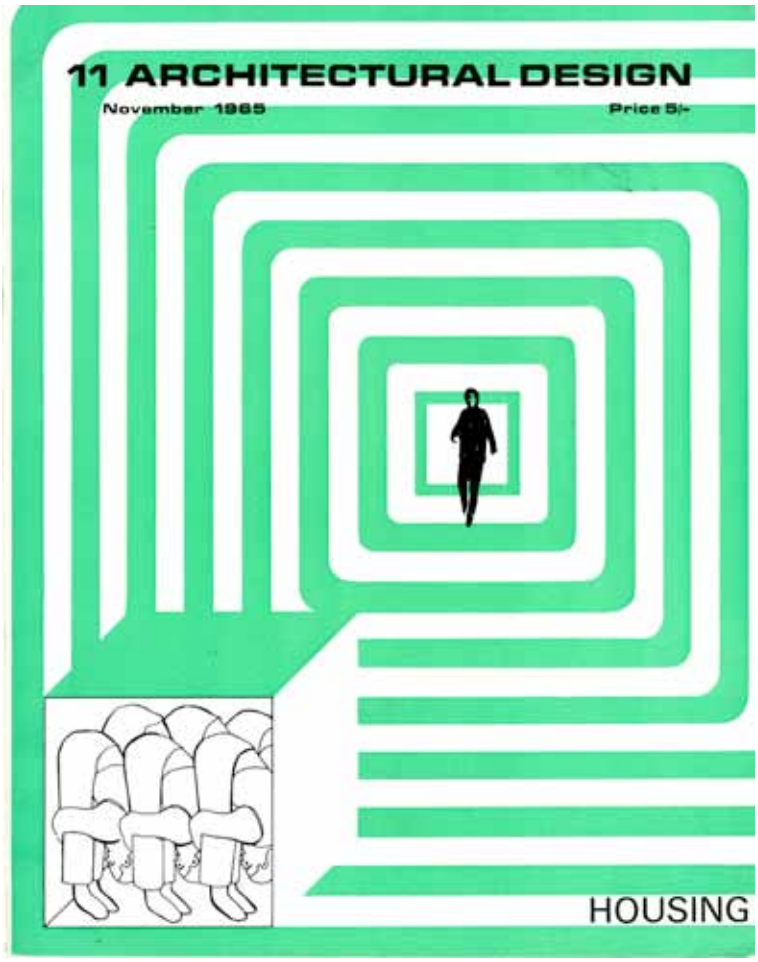


Fig 1. *Architecture Design* issue no. 11 November 1965

While the Brutalists were primarily concerned with ethics ostensibly at the expense of aesthetics, Archigram were all about the aesthetic and were entirely unconcerned with ethics. This reflects each movement's underlying attitude to the unification of life and art as mentioned above. Archigram's aesthetics are legendary and were aptly summarised by Banham: "Archigram is short on theory, long on draughtsmanship and

[14] The circulation of Archigram 1 is noted as "around 400" on the official archive web site, and as 300 on http://designmuseum.org/design/archigram [accessed 5 May 2010] and by Archigram 3, there were "three or four hundred people who were on the mailing list" (Dennis Crompton, interview with Kester Rattenbury, http://archigram.westminster.ac.uk/magazine.php?id=96 and http://archigram.westminster.ac.uk/magazine.php?id=98, accessed [28 April 2010]). However, Simon Sadler in *Archigram: Architecture without Architecture* (Cambridge. Mass. And London: MIT Press, 2001), p.149 quotes a number of about 200 for issue 1 (1961), then 1,000 for Archigram 4 (1964), 1,500 for Archigram 5 (1964) (noted as 1,250 on the Archigram archive site, http://archigram.westminster.ac.uk/magazine.php?id=100 [accessed 28 April 2010]), 2,500 for Archigram 6 (1965), 4,000 for Archigram 7 (1966), 5,000 for Archigram 8 (1968). It is worth comparing this with the circulation of AD at this time, which was around 10,000 in the mid 1960s (Ken Frampton, interview with author, 23 November 2009).

[15] Reyner Banham, 'A clip-on architecture', Architectural Design, 1965.

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craftsmanship. They're in the image business and they have been blessed with the power to create some of the most compelling images of our time."[16] Like their Independent Group forebears, they used magazines and adverts as source material for their collages and as Sadler concludes, "Archigram sought a constituency of young, liberated, high-libido consumers – male and female... Mostly absent was anybody working, elderly, ordinary ... or non-Caucasian."[17] As Banham's quote suggests, there is no doubting that Archigram's influence was almost entirely due to their aesthetic. Whereas the New Brutalists sought to drag art down to the level of life, Archigram wanted to raise life to the level of art. Rather than addressing existing society's problems, they chose to envision exciting new worlds and solve problems of their own creation, viewing the user as consumer and turning architecture into another product of consumption. As Banham wrote, in his 'Clip-on' article, "Archigram can't tell you for certain whether Plug-in City can be made to work, but it can tell you what it might look like."[18]

It would be unfair to claim that Archigram were not concerned with ethics, but they certainly belonged to the libertarian 'zoom-wave' portion of the Architectural Association, which during the late 1960s remained amoral and apolitical. Fred Scott recalled that "Designing was considered to be an activity freed from preconceptions of form, style or morality ... The main energy that sustained this period stemmed, of course, from Archigram."[19] This, in the face of the "antiwar, anticapitalist, feminist, ecological, and race emancipation movements"[20] of the time.[21]

Archigram's lack of interest in politics, or morals, was exposed and recorded in AD in 1968. They came face to face with student unrest at the Milan Triennale in 1968[22] where they were exhibiting the "Milanogram" (Archigram 8)[23]. No sooner had the exhibition opened than it was occupied by students for ten days[24]. Then, at a 1969 conference in Turin, Hubert Tonkin recalled,

> At a colloquium called "Utopia or Revolution" we wrapped a number of shitheads in toilet paper. We held the whole conference hostage for several hours with a leftist group called the Vikings. The cops showed up with submachine guns, etc. Oh, yes, "Utopia or Revolution," that was a bad scene...Archigram [as well as Superstudio and Archizoom] was there; Archigram was on the wrong side, that of the hostages, not of the hostage-takers.[25]

Although Archigram talked of "direct action" they didn't mean political action. The month May 1968, of course, is equated with political unrest in Paris and beyond, a topic taken up by historian Eric Hobsbawm later that year in AD when he wrote about "Cities and Insurrection" in an issue called "Metaphoropolis" dedicated to a socio-political study of the city.[26]

16 Reyner Banham in Peter Cook and Michael Webb, *Archigram* (Princeton Architectural Press, 1999), p. 5.

17 Reyner Banham in Peter Cook and Michael Webb, *Archigram* (Princeton Architectural Press, 1999), p. 5.

18 Simon Sadler, Archigram: Architecture without Architecture (Cambridge. Mass.: MIT Press, 2001), p. 183.

19 Fred Scott, 'Myth, Misses, and Mr Architecture', in *A Continuing Experiment: Learning and Teaching at the Architectural Association*, ed. by James Gowan (London: The Architectural Press, 1975), pp. 167-172 (pp. 168-169).

20 Sadler, p. 177.

21 Simon Sadler covers Archigram's apolitical attitude in Sadler, pp. 177-187.

22 30 May to 10 July 1968.

23 Anonymous, "Milanogram", *Architectural Design*, 38 (4) (1968): 152.

24 See Martin Pawley, "Miscarriage", *Architectural Design*, 38 (7) (1968): 298.

25 Interview with Hubert Tonkin, January 1997, cited in Marc Dessauce, *The Inflatable Moment - Pneumatics and Protest in' 68* (Princeton Architectural Press, 1999), p. 49.

26 Eric Hobsbawm, "Cities and Insurrection", *Architectural Design*, 38 (12) (1968): 581-588.

Anti-establishment reaction had been rising in young people throughout the sixties and while the shift in editorial direction of an architectural publication and riots on the streets of Europe's capital cities and sit-ins in the universities are poles apart in terms of scale, they can both be seen as symptomatic of a tectonic shift in underlying thinking and attitude, especially amongst students.

It is entirely coincidental that May 1968 was the month that Architectural Design decided to become simply AD due to a new design (i.e. aesthetic). It is symbolic, however, and echoes the shift of the magazine's policy for promoting architecture-as-building to architecture-as-concept. Even though Monica Pidgeon remained Editor throughout this time, this shift can be directly attributed to the tendencies of Technical Editors Theo Crosby until 1962 and Robin Middleton thereafter, and specifically their relationships with the personalities of the avant-garde movements of the time, as opposed to any specific and purposeful editorial policy per se. In fact, there never was a deliberate editorial policy at this time, just an instinct about what was interesting for architects and architecture, as confirmed by Middleton: “There were editorial ‘interests’. Let's put it that way. Monica and I could never produce a concerted policy together, we wouldn't have done ... we couldn't have.”[27]

[27] Robin Middleton, interview with author, 4 March 2010. Sadler, Ibid. p. 149.

Eventually, at least some members of Archigram conceded to the ecological wave. Archigram 9 included a packet of seeds and its cover of an allotment was inspired by David Greene's Bottery (“a fully serviced natural landscape”) and the disappearance of architecture completely into the landscape. It is worth noting that the previous eight issues were “completely sold out until the ninth edition, which suddenly saw Archigram remaindered.”[28] Greene published his LAWUN (Locally Available World Unseen Networks) project number one in AD in 1970, where he explained:

[28] Sadler, Ibid. p. 149.

> “Lawun means the striving after basic objectives – doing your own thing without disturbing the events of the existing scene and in a way which is invisible because it involves no formal statement, and because it is related to time, may or may not be there at any given point in time.”[29]

[29] David Greene, “L.A.W.U.N. Project Number One”, *Architectural Design*, 40 (8) (1970): 385.

Lawun project two, published in AD the following year[30] utilises Greene's earlier Rokplug and Logplug designs ostensibly to promote mobile architecture. However, this is an Archigram losing confidence, one that's less discussed and less famous, representing the opposite pole of their thinking, striving for the complete dissolution of building and reluctantly coming to terms with the ground swell of ecological thinking that was happening at the time.

[30] David Greene, “Lawun Project Two”, *Architectural Design*, 41 (4) (1971): 200.

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At the end of Archigram's status as the architectural avant-garde even they acknowledged, somewhat reluctantly, the ecological movement. The following quote is from Warren Chalk, delivered at the AA Summer School in 1970 and published in AD in April 1971. It also formed the last piece in the 1972 Archigram book that essentially became their monograph. In other words, this quote represents their final words while still – just about – being part of the avant-garde:

> Ecology - there, I've said that word - is a social problem. We have been told so by Time, Life, Newsweek, Look and the Nixon administration. Pollution is insidiously growing. Either the environment goes or we go. And you all know what will happen if the environment goes. We have produced a society with production for the sake of production. The city has become a market place, every human being a commodity. Nature is a resource. Human beings are a resource. Well. Our very survival depends on an ecological utopia, otherwise we will be destroyed.

The technological backlash we are experiencing must be fought with a more sophisticated technology, a more sophisticated science [...] But if we are to prevent eco-catastrophe it can only be done by more sophisticated environmental systems, not by dropping out. Nor the hippy type philosophy. Did you see Drop City in Easy Rider? [...] Let's face it, total dispersal won't work economically any more than total centralisation. Apart from being a head-in-the-sand attitude, we need to fight technology with technology, to produce David Greene's cybernetic forest [...] What we look for is technological play, so that individuals can create an even greater environmental stimulation. A person switched on to the electric tomato, or the proud possessor of the personalised robot like Manzak, can extend an existing situation, and a new man/machine [relationship] be established getting people, through their extension with a machine, into action. Experiments such as these could achieve a people-oriented technology of human liberation, directed towards pleasure, enjoyment, experimentation: a try-it-and-see attitude [...] Hopefully some environmental magic will then prevail and we will again think up the impossible in order to be realistic.[31]

[31] Warren Chalk, "Touch not...", Architectural Design, 41 (4) (1971): 238.

While Chalk acknowledges the environmental problem, he still frames the solution technologically, 'directed towards pleasure'. Ethics may not be mutually exclusive with aesthetics, but in the case of Archigram, they seemed to be incompatible. It was the 'soft-tech' counter-culture from West Coast America that AD would turn to next for inspiration.

## The Whole Earth Catalog

If Archigram represented the aesthetics of *AD* during this period, the ethics appeared through the pervading preoccupation of ecological issues that were emanating from the US, such as in Stewart Brand's *Whole Earth Catalog*. This first appeared in the Autumn of 1968 and was published regularly for only three years. In contrast to the European model of insurrection of the time, the *Whole Earth Catalog* encouraged an American counter-culture of grass-roots radicalism. As the review in AD's Cosmorama put it, "the Whole Earth Catalog is a unique compendium of the hip and the home-spun, of far-out technology and down-home atavism, dedicated to the proposition that 'we are as Gods – and might as well get [good] at it,' and to the assumption that anything practical, cheap, of high quality and easy availability can serve as a tool towards that end."[32]

The *Whole Earth Catalog* was a compendium of tools aimed at those who wanted to challenge conventional lifestyles. The word 'tools' included books, of course, and many of the entries were book reviews. Architectural Design itself made it into the first number, featuring the *Architecture of Democracy* issue[33] with the comments 'This is the only architectural magazine we've seen that consistently carries substantial new information, as distinct from the stylistic eye-wash characteristic of most architecture journals."[34] But the *Whole Earth Catalog* did more than simply promote counter-culture products and processes; it actually funded research into the ecological colonisation of outer space.[35]

Peculiarly, even Archigram made it into The Last *Whole Earth Catalog* (right above the feature called 'You'll Build Your Next House of Molasses'). Of it, they say, "Archigram is the 'Captain Billy's Whiz Bang' of architecture, with lots of imitators by now and still no equals. Dream architecture, joke architecture, blasphemy architecture, science fiction architecture, adolescent wet dream architecture, leather architecture. Sin. Fun. For a while."[36]

The *Whole Earth Catalog* supported hippie, artistic communities like Drop City, mentioned in Warren Chalk's quote above, and inspired other publications such as the Domebooks. Domebook number one was featured on the first page of September 1970's AD and was sold through the magazine from then on: "a practical account of the construction of ten different domes built at an experimental high school in the California hills within a period of four months."[37] Domes were everywhere on the pages of the leading magazines of the time and some were even being built. While it couldn't claim to save the world in itself, it could at least represent an aesthetic of a new way of ethical thinking – that of Buckminster-Fuller's ethos of doing more with less.

32 Anonymous, "Whole Earth Catalog", *Architectural Design*, 40 (4) (1970): 169.

33 Robin Middleton admitted to writing most of the anonymous piece in AD, interview with author, 4 March 2010. *Architectural Design* 38 (8) (1968).

34 Stewart Brand, "Architectural Design", *Whole Earth Catalog* Fall 1968: 17.

35 Peder Anker, 'The Closed World of Ecological Architecture', *Journal of Architecture* 10 (2005): 530.

36 Stewart Brand, "Archigram", *The Last Whole Earth Catalog* June 1971: 89.

37 Archigram (number 8) was first mentioned in the Spring 1969 issue of the *Whole Earth Catalog* on p.20, opposite the Architectural Design entry and below Bernard Rudofsky's "Architecture without Architects."

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## Buckminster-Fuller

Richard Buckminster-Fuller can, in fact, be considered the spiritual father of both sides of AD's duality of aesthetic and ethic. He was Archigram's hero, largely due to his technological aesthetic and futuristic ideas. Simon Sadler points out that whereas Fuller espoused the economics of lightweight component architecture, Archigram pursued its pleasures.[38] Fuller is, of course, most famous for his geodesic dome – a structure that envelops maximum volume with minimum material. This found its way into the Taylor Woodrow Design Group's (which employed the Archigram members) Fulham Study of 1963 and Montreal Expo '67 Tower of the following year. Subsequently, the geodesic dome's triangular steel struts were the substructure for Peter Cook's megastructural Plug-In City of 1964 and many other projects beyond. Fuller epitomised the 'technology is the answer, what's the question?' stance of twentieth century modernism and Archigram adopted and adapted this for their hedonistic 'zoom-wave' designs. Whereas Fuller's world assumed plentiful provision for a limited population, Archigram's assumed infinite resources for infinite pleasure for infinite people.

On winning the RIBA Gold Medal in 1968, AD published an abbreviated version of his 16,500 word acceptance speech containing a paragraph on politics: "I am transcendental to all political thinking. I am utterly convinced that the world can be made to work and I'm convinced that all the politicians of both sides have really an extraordinary sense of responsibility to their people. I don't question their integrity as human beings; I'm sorry for them, however, because nothing in their particular art can ever help man to be a success."[39] Archigram may have been apolitical, but Fuller was "transcendental to all political thinking", suggesting that the world could be made to work better through technology alone, without the need for political will.

Monica Pidgeon, editor of Architectural Design 1946-1975, was quite taken with Buckminster-Fuller, whom she met while helping organise the VIIth congress of the UIA held in London in July 1961. Although not architecturally trained himself, Fuller believed that the world could be saved by designers – and architects in particular. During the UIA Congress, Pidgeon invited him to contribute his views on the role of the architect in the present world situation and published his call to arms the following month as "The Architect as World Planner"[40] declaration of intent. It starts, "I propose that the architectural departments of all the universities around the world be encouraged by the UIA to invest the next ten years in a continuing problem of how to make the total world's resources serve 100 per cent of humanity through competent design." (In 1961, it served only 40%)[41]. He goes on to claim, "It is clearly manifest ... that the architects are able to think regarding such world

[38] Anonymous, "Domebook", *Architectural Design* 40 (9) (1970): 431.

[39] Simon Sadler, *Archigram: Architecture without Architecture* (Cambridge. Mass. And London: MIT Press, 2001).

[40] Richard Buckminster Fuller, "The Architect as World Planner"

[41] *Architectural Design*, 31 (8) (1961): 336 http://www.bfi.org/our_programs/who_is_buckminster_fuller/design_science/design_science_decade [accessed 28 April 2009].

planning in a manner transcendental to any political bias."[42] Fuller's vision was implemented as the 'World Design Science Decade' starting in 1965. AD continued to publish Fuller's ideas throughout the 1960s as it complemented AD's international perspective and target student audience; the December 1972 issue was dedicated to a Buckminster-Fuller retrospective. The outcome of the World Design Science Decade was six verbose documents of ideas, research and tools on resource planning for use by architectural schools worldwide in the pursuit of Fuller's initial declaration. The last document, "The Ecological Context, Energy and Materials", was published in 1967 by Fuller and his associate, former Independent Group member, John McHale.

## Ecology in AD

While Archigram took Buckminster-Fuller's faith in technology to an aesthetic conclusion, AD was looking all over for inspiration for architects. The New Scientist magazine was a favourite and features from this popular science magazine often became topics for publication in the Cosmorama section, fuelled by the excitement of the moon landings and questions of where humans would inhabit – and therefore architects build – next. NASA's space exploration programme generated technological spin-offs that 'high-tech' architects would later incorporate into their buildings and AD was keen to promote such futurist thinking and disciplinary cross-over. The 2000+ issue of February 1967, with the astronaut's helmet on the front cover was edited by John McHale and became a precursor to his 1969 book, The Future of the Future.

[42] Richard Buckminster Fuller, "The Architect as World Planner", *Architectural Design*, 31 (8) (1961): 336.


Fig 2. Architecture Design February 1967: 2000+

In contrast to this 'high-tech' editorial approach, AD's editors were simultaneously publishing 'low-tech' features similar to those espoused by the Whole Earth Catalog. During this period, features appeared on shantytowns, squatting[43] and ecology, with columns called Eco-tech and Recycling, looking at wind and solar power[44], by Colin Moorcraft, then still a student at the AA. July 1972's issue – a year before the oil crisis – was concerned with "designing for survival" which introduced the 'Carbon Dioxide debate' to its audience: "There is much conjecture among scientists about the possible effects of a continuing increase in the amount of carbon dioxide introduced by man into the atmosphere. Short-term effects could include climatalogical changes (droughts, changes in temperature and rainfall) that would make currently habitable areas of the earth's surface less habitable or completely uninhabitable."[45] Reading this almost 40 years later cannot fail to shock, given that so little action has been taken in the meantime. The article continues to discuss consumption and waste in terms that remain highly relevant, yet unresolved, today.
A year earlier, they published Martin Pawley's Garbage Housing[46] and extracts from Victor Papanek's Design for the Real World[47] that was anti-good taste and pro-social responsibilities for designers. This book was almost universally derided by design professionals at the time of the first edition in 1971, but it demonstrated a radical alternative to design practice that Pidgeon was looking to promote, especially to the students

43 Geoffrey Payne, "Squatting in India", *Architectural Design* 43 (8) (1973): 494-503 and John Pollard, "Squatting in the city", Architectural Design, 43 (8) (1973): 504-506.

44 Colin Moorcraft, "Solar Energy in Housing" *Architectural Design* 43 (10) (1973): 634-643.

45 Colin Moorcraft, "Designing for Survival", *Architectural Design* 42 (7) (1972): 418.

46 Martin Pawley, "Garbage Housing", *Architectural Design* 41 (2) (1971): 86-94.

47 Viktor Papanek, "Think again", *Architectural Design* 42 (5) (1972): 269-272.

and young architects who were her main target audience at this time. AD had transformed into “little magazine” mode by this time, using the “book economy” whereby subscriptions were the magazine's main income rather than advertising. AD was therefore free to explore the very fringes of acceptability to architects and enter into whatever agenda they chose to be important.


Fig 3. *Architecture Design* July 1972: Designing for Survival Piano+ Rogers

While the 'ethic or aesthetic' split remained a subtitle throughout the years of the New Brutalism, it was to become a more obvious dichotomy in the early seventies. This was clearly seen on the pages of AD and didn't escape the attention of the readers, as exemplified in letters such as the following:

*The Little World*

> Sir, Your magazine is becoming a big internal postal system from Peter Cook to Warren Chalk to Cedric Price to god knows who else. And how can you make such a big deal out of plastics & expendables and then run a page on re-cycling? And when you and Archigram realise that we don't all have to be tearing all over the place on a perpetual mobility trip, and interacting all the time, then maybe you'll see that technology is destroying this world and we've got to start pushing for something real.[48]

The question "how can you make such a big deal out of plastics & expendables and then run a page on re-cycling?" highlights the contradictions that resulted from AD's 'non-policy' of publishing articles based on their interest, regardless of opinion, rather than concentrating on a single issue with a unified voice. For example, the January 1973 issue contains a ten page feature on squatters in Zambia[49] immediately preceding an eight page catalogue of the "cheer up it's Archigram!" exhibition[50], which itself immediately preceded an Eco-tech column on "building with stabilised earth".[51] This schizophrenic tendency continued through to the end of Monica Pidgeon's editorship in 1975 and while it alienated the old guard, it clearly energised the vanguard.

## Summary

Banham's The New Brutalism: Ethic or Aesthetic actually marked the end of the movement, at the same time high modernism was itself coming to an end. Using the disjunctive between the two themes of ethics and aesthetics implies they are mutually exclusive and therefore incompatible, when in fact this clearly does not have to be the case. Rhetoric about honesty of structure and materials does not amount to an ethic, hence perhaps why Banham concluded that the movement was only ever an aesthetic. Nevertheless, the motivation behind the Smithsons' rhetoric of generating an architecture of ordinariness, essentially dragging art down to the level of life, can be viewed as ethical and in stark contrast to that of their heirs, Archigram. Despite their Brutalist beginnings, the latter group's motivation was initially that of protestation and reaction, sharing Robin Middleton's view that they "ceased believing in most of the architecture going around because it was so bad and was so horrible."[52] As Middleton himself wrote, "There was, at the time, a distinct loss of faith in all new buildings; each one, no matter the architect, seemed to make the world less rather than more pleasant."[53] The Archigram group sidestepped such criticism by not building at all[54] and therefore remaining able to attempt to raise life to the level of art. Their architecture was pure aesthetic and their rhetoric, that of fairy tales[55]. Archigram promoted a consumerist, throw-away architecture that contrasted with, and even contradicted, the

[48] Adrian Jones, "The little world", *Architectural Design*, 42 (2) (1972): 117.

[49] Paul Andrews, Malcolm Christie, Richard Martin, "Squatters and the evolution of a lifestyle", *Architectural Design*, 43 (1) (1973): 16-25.

[50] Archigram, "Cheer up it's Archigram!", *Architectural Design*, 43 (1) (1973): 26-29, 38-41.

[51] Colin Moorcraft, "Building with stabilised earth", *Architectural Design*, 43 (1) (1973): 42-43.

[52] Interview with author, 4 March 2010.

[53] Robin Middleton, 'Working for Monica', AA files 60 (2010): 26.

[54] They only ever built a playground in Milton Keynes and a swimming pool for Rod Stewart.

[55] See Warren Chalk, "Hypertech to Bio-tech", Architectural Design 46 (3) (1976): 154-155 for the most literal example of this.

more ethical and ecological editorial direction of *Architectural Design* at the time.

This period, coinciding almost exactly with Robin Middleton's time as Technical Editor, witnesses the editorial 'policy' of AD, such as it was, shifting from promoting architecture-as-building to architecture-as-concept. This is as much to do with the Technical Editors' interests and contacts as with the climate of architectural culture of the time. At this time, due to a disillusionment with modernism in general, and a very real harsh financial climate that reduced the magazine's advertising to almost nothing[56], AD was keen to engage students and young architects and become a radical mouthpiece for an alternative architectural culture. This didn't stop at a de-politicised aesthetic, but followed through with Fuller's more ethical ideas and the counter-culture of the US, looking at how to save a doomed planet with finite resources. While the neo-avant-garde architectural movements failed to unite ethics and aesthetics, they could at least be juxtaposed on the pages of AD. But while technology may have been able to implement the aesthetic ideas from this period, without the political will, it has proved impotent in implementing the ethical, and ecological, initiatives.

[56] The advertisement manager last appeared in the masthead in March 1970.

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# Ecology without the Oikos: Banham, Dallegret and the Morphological Context of Environmental Architecture

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This paper makes the argument that architectural discourse should engage in a recovery of ecology in its original framing in the context of morphology. A history of architecture's conceptual engagement with morphology, through Arnheim, d'Arcy Thompson, and Berson, and its subsequent forays into morphological practices including parametrics, versioning and digital form-finding reveals a consistent tendency of morphology to eschew its ecological foundations. Why is the rhetoric on morphological change so consistently forgetful of its ecological origins? Why is a formalist monologue embraced at the expense of a situated dialogue between morphology and ecology? Specifically implicated in this imbalance is the question of ecology without the oikos – a term that articulates this forgetfulness as a willful omission of the paradigmatic situation of dwelling. Reyner Banham and François Dallegret's collaborative effort in the 1965 Art in America article, "A Home Is Not a House," is the lens through which these questions are considered. This paper challenges the perception of Dallegret as a mere illustrator of Banham's ideas, and posits the notion that his oeuvre produced the morphological context for Banham's ecological thinking.

'Nothing is constant but change! All existence is a perpetual flux of 'being and becoming!' That is the broad lesson of the evolution of the world.'[1]
**-Ernst Haeckel**

'... the form of an object is a 'diagram of forces'...'[2]
**-D'Arcy Wentworth Thompson**

'... form is only a snapshot view of a transition...'[3]
**- Henri Bergson**

1 Ernst Haeckel, *The Wonders of Life: A Popular Study of Biological Philosophy* trans. Joseph McCabe (New York: Harper & Brothers, 1905): p. 197.

2 D'Arcy Wentworth Thompson, *On Growth and Form* (Cambridge: Cambridge University Press, 1961), p.11.

3 Henri Bergson, *Creative Evolution* trans. Arthur Mitchell (New York: Henry Holt & Co., 1913), p.302.

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## The Morphological Context of Ecology

The German biologist and naturalist, Ernst Haeckel, in his 1866 text Generelle Morphologie der Organismen, first coined the term 'ecology.' Derived from the Greek word 'oikos,' meaning household, Haeckel framed ecology as the economy of nature, and described it as follows:

> 'By ecology, we mean the whole science of the relations of the organisms to the environment including, in the broad sense, all the conditions of existence. These are partly organic, partly inorganic in nature; both, as we have shown, are of the greatest significance for the form of organisms, for they force them to become adapted.'[4]

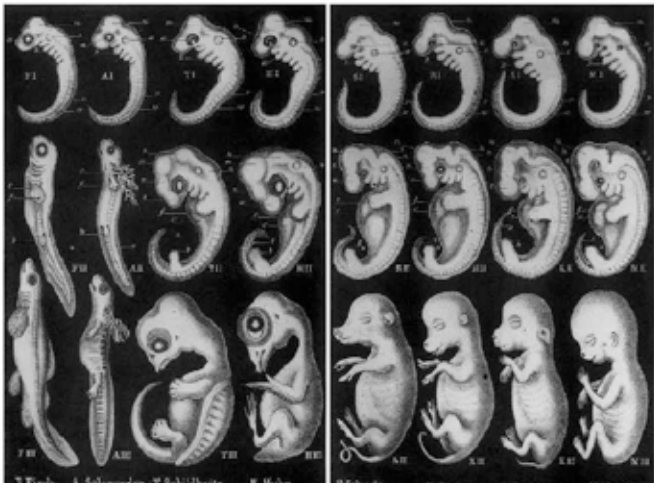

Fig.1 Ernst Haeckel, Drawing of Vertebrate Embryos, 1874.

Critical to Haeckel's framing of ecology is its emergence from the context of morphology. Biology, the science of life, emerged at the inception of the nineteenth century as a vehicle to reorient the interests of those who studied living things from outward appearance to performance, or from form to function. By 1830, morphology developed as the branch of this discipline that would take up the forms of animals and plants, and the structures, homologies and metamorphoses that govern and influence these forms. By the turn of the twentieth century, morphology was a firmly established science for the study of the history of variation of form. Haeckel's most well known foray into morphology resulted in the formulation of his recapitulation theory. He asserted that phylogeny recapitulates ontogeny, or more simply stated, that the embryological development of organisms reflects the evolutionary descent of the species. Though controversial for reasons that are outside the scope of this essay, Haeckel's morphological thinking is a critical context for his theorization

4 Ernst Haeckel, *Generelle Morphologie Der Organismen* (Berlin: G. Reimer, 1866), pp.286-87. Haeckel was originally trained as a painter, though strongly encouraged by his father to pursue scientific research. Thus the images he produced as a scientific illustrator are also germane to this discussion, though outside of its scope. In their seminal book, Objectivity, Lorraine Daston and Peter Galison describe the controversy between Haeckel and Wilhelm His, who accused Haeckel of smuggling subjective interpretations into his illustrations. This debate may have relevance to the question of why Banham and Dallegret chose to include images of themselves in their article. See also: Lorraine Daston and Peter Galison, Objectivity (New York: Zone Books, 2007)

of ecology: first, because morphology is a relational and situational field attentive to the small changes that constitute development; second, this attentiveness to change privileges communicative exchanges between the organism and its environment; third, the debate over Haeckel's recapitulation theory articulated the subsequent stakes for his ecological thinking – that is, whether ecologies would be understood as situations or systems; and fourth, placing ecology within the milieu of morphological change ensured that it could not be oikos-centric, nor in this context could morphology be organism-centric, but rather, a co-evolutionary model emerged. This essay will consider whether recovering the morphological context of ecology might contribute to a more precise understanding of environmental architecture. This will be explored through the lens of Reyner Banham and François Dallegret's collaborative essay, "A Home Is Not a House" (1965).[5]

## Morphology's Architectural Influence

Architecture and morphology have a long and complex history that brings a scientific discipline, focused exclusively on the study of the variation of form, into historical proximity with late nineteenth-century architectural discourse, which was in the process of actively suppressing its own history of forms in the wake of the historicist debate over style. Contemporary interests in parametrics, versioning and digital form finding are part of this legacy of architecture and morphology, participating in a discourse that is inundated by scientism and that has all but forgotten the former reciprocity of ecology and morphology. If scientism adheres to the conventions of science without any demonstration of epistemological rigor, then one of the clear indicators of an operative ethos of scientism in contemporary architectural practice is the adaptation of the representational conventions of morphology in the ever-present iterative image. Pick up any architectural journal or magazine today, and be prepared to be confronted with what, at first glance, appears to be serialized imagery. This pseudo-morphology of small changes that rarely connote architectural adaptation, but rather are preoccupied with formal agility and acts of spatial contortionism, looks like morphology, but lacks the situational structure of ecology and its attendant relationships. These iterative representations promise to deliver to architecture a mechanism through which form-in-time can be explicitly and intelligibly represented. Under the guise of scientism, previous signifiers of spatial temporality like the subtle effects of weathering or the ephemeral manifestation of material decay are diverted into more didactic and explicitly formal venues for the exploration of architectural change. Influential in this shift is D'Arcy Wentworth Thompson's seminal text On Growth and Form of 1942, a book that found a new audience of architects with the advent of digital fabrication. Thompson's aphorism that the form of an object is a "diagram of forces" was a familiar operation to a generation of architects trained to

5 Perhaps more should be said about the precise nature of Banham and Dallegret's collaboration. Jean Lipman, the editor-in-chief of Art in America from 1930-70, introduced the two men. Lipman, an avid collector and patron of the arts, was quite knowledgeable about Dallegret's oeuvre, having published his work in previous issues of the journal. Through this introduction, I will argue, Lipman occasioned a dialogue between Dallegret's morphological work and Banham's ecological thinking.

achieve formal invention through the application of fictionalized forces on primitives or NURBS (Non-uniform rational B-splines).[6]

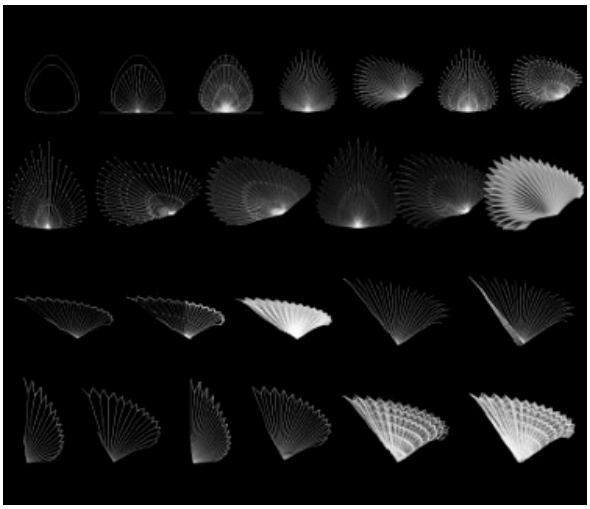

Fig 2. From AD: Techniques and Technologies of Morphogenetic Design (2006)

Just twelve years after the publication of On Growth and Form, Rudolph Arnheim would make an almost identical claim to Thompson's in Art and Visual Perception (1954). In a section of the text entitled 'A Diagram of Forces,' Arnheim adapts D'Arcy Thompson's aphorism, applying it to our perception of natural forms, when he writes: "Natural objects often possess strong visual dynamics because their shapes are the traces of the physical forces that created the objects."[7] Arnheim's desire to analogically extend the diagram of forces to include visual perception is not unlike appropriating the logic for explorations in contemporary digital form-finding. However, the crucial question for this investigation is why the rhetoric on morphological change is so consistently forgetful of its ecological origins? Why is a formalist monologue embraced at the expense of a situated dialogue between morphology and ecology?

Henri Bergson's Creative Evolution (1913) begins to elucidate these questions. Aphoristically, this text is often associated with the statement: "... form is only a snapshot view of a transition..." but in its original context, Bergson writes:

6 D'Arcy Wentworth Thompson, On Growth and Form (Cambridge: Cambridge University Press, 1961), p.11. This moment in which digital architectural practices rediscovered the work of D'Arcy Thompson importantly coincided with Gilles Deleuze's evocation of the end of representation and the subsequent rise of diagrammatic practices in architecture.

7 Rudolph Arnheim, Art and Visual Perception: A Psychology of the Creative Eye (Berkeley: The University of California Press, 1954), p.416.

> 'What is real is the continual change of form: form is only a snapshot view of a transition. Therefore, here again, our perception manages to solidify into discontinuous images the fluid continuity of the real. When the successive images do not differ from each other too much, we consider them all as the waxing and waning of a single mean image, or as the deformation of this image in different directions. And to this mean we really allude when we speak of the essence of a thing, or of the thing itself.'[8]

[8] Henri Bergson, *Creative Evolution* trans. Arthur Mitchell (New York: Henry Holt & Co., 1913), p.302.

Bergson's reference to the essence of a thing places his morphological insight into the context of ontology, and suggests that the constantly evolving nature of form is always to be situated in the life of that form, including the situation from which it emerges.

Returning to the earliest usage of 'morphology' in Goethe's introduction to his botanical writings (published in 1817), we can locate some salient characteristics of the morphological that preface its ongoing dialogue with the ecological. In these writings, Goethe draws a sharp distinction between Gestalt and Bildung, which is critical to his burgeoning morphological practices:

> 'This is why German frequently and fittingly makes use of the word Bildung (formation) to describe the end product and what is in process of production as well. Thus in setting forth a morphology we should not speak of Gestalt, or if we use the term we should at least do so in reference to the idea, the concept, or to an empirical element held fast for a moment in time. When something has acquired a form it metamorphoses immediately to a new one. If we wish to arrive at some living perception of Nature we ourselves must remain as quick and flexible as Nature and follow the example she gives.'[9]

[9] Jeremy Naydler (ed.), Goethe on Science: An Anthology of Goethe's Scientific Writings (Edinburgh: Floris Books, 1996), p.50.

Goethe's distinction here between Gestalt and Bildung, between that which is fixed and that which is simultaneously emerging and emerged, is critical in framing morphological pursuits and their interest in both the product and process of production. Goethe also draws attention to the situation of morphology and the fact that it is never an isolated endeavour, when he writes:

> "Above all we must remember that nothing that exists or comes into being, lasts or passes, can be thought of as entirely unadulterated. One thing is always permeated, accompanied, covered, or enveloped by another; it produces effects and endures them."[10]

[10] Ibid. p.60.

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The explicit language of environing and enveloping that Goethe deploys already anticipates Haeckel's coining of 'ecology,' and emphasizes his belief that forms come to being both relationally and situationally.[11] Finally, Goethe anticipates the sequential and iterative tendencies of morphology as a kind of logic of development, when he writes: "Whatever Nature undertakes, she can only accomplish it in a sequence. She never makes a leap."[12] For Goethe, nature's incremental adaptations and minute transformations form a seamless logic that is visually intelligible. This last point in all likelihood gives rise to subsequent formalist morphologies, but also establishes an environmental relationship among developing forms.

## Ecology in the Context of Banham's Body of Work

Critics who deride Reyner Banham's writing on ecology for its lack of relevant ecological insight miss the point. Banham's Los Angeles: The Architecture of Four Ecologies (1971) is not about ecology; rather, it is ecological. Banham recognized that to make ecology the subject of his ruminations would be to objectify and artificially stabilize urban relationships in such a way as to distort the nature of the interactions, by forcing intelligibility upon them through an exaggerated emphasis on a singular moment. Borrowing Bergson's aphorism, Banham would be telling the story of the ecology of Los Angeles by describing a snapshot of a transition. Rather than capitulate to some operative definition of 'ecology,' imposing science's epistemological strictures on the discipline of architecture from without, Banham appropriates the term, making it architecture's own, and proceeds to enact ecological operations upon architecture from within. In the introduction Banham writes:

> 'What I have aimed to do is to present the architecture (in a fairly conventional sense of the word) within the topographical and historical context of the total artefact that constitutes Greater Los Angeles, because it is this double context that binds the polymorphous architectures into a comprehensible unity that cannot often be discerned by comparing monument with monument out of context.'[13]

Here, Banham establishes this pursuit as one of relational contexts, or ecologies, that environ polymorphous architectures, or morphologies. However, Banham's desire to think Los Angeles ecologically soon surpasses the double context of topography and history. Thus 'Surfurbia', the first of the four ecologies, is discussed according to: its geological context that emerges from below the sea in the Jurassic period; the historical context of the railways that made it possible for people to live at the beach and work elsewhere; and the psychological and physiological contexts of the health and pleasure associated with the beach. This then

[11] In order to be consistent with Goethe's evocation of Bildung as both one who is cultured and the continuous process of enculturation, I am using the term 'environing.' While 'environment' connotes a reified condition and is exclusively deployed as a noun, 'environing' preserves both the active condition of becoming and the final product of that process simultaneously.

[12] Ibid.

[13] Reyner Banham, Los Angeles: The Architecture of Four Ecologies (London: Penguin Books, 1971), p.23.

becomes the ecology in which Banham situates Craig Ellwood's Hunt House (1955) and Rudolf Schindler's Lovell House in Newport Beach (1923-36), iconic mid-century modernist and modernist projects wrenched from their traditional historical moorings and set adrift amidst the burgeoning cottage industry of the surf board.

The most vitriolic attacks on Banham's conception of ecology are typically reserved for his fourth ecology – 'Autotopia', yet nowhere in the writing does Banham espouse the Los Angeles freeways as exemplars of sound ecological thinking. Rather, the freeways are dubbed ecological because 'Autotopia' designates a lived environment. Banham writes: "The freeway is where the Angelenos live a large part of their lives."[14] Banham even goes so far as to say that the freeway conditions its inhabitants and "prints itself deeply on the conscious mind and unthinking reflexes."[15] In Banham's capable hands, the ecologies of Los Angeles are explored from without, as a constellation of possible contexts, and from within, as they are lived by their various inhabitants. This reciprocity is not perfect, because as Banham openly admits, the system can fail – accidents, traffic jams, and rush-hour congestion abound, yet these things are merely more accrued evidence of 'Autotopia's' status as a lived environment. When Banham does explicitly address the issue of smog, he does so through its psychological, rather than its ecological, context:

> 'To make matters worse, analysis showed that a large part of the smog (though not all, one must emphasize) is due to effluents from the automobile. Angelenos were shocked to discover that it was their favorite toy that was fouling up their greatest asset.'[16]

This contention, that the scientific analysis of air pollution quite literally hit Angelenos where they live, could in fact be more salient to the ecological well being of the city than any mere reckoning with the data itself. Banham actively eschews 'systems-thinking,' a scientific world view that would isolate the freeway as a toxic condition and then proceed to 'solve' its problem, in favour of a more synthetic approach that frames 'Autotopia' as a lived environment and understands that any changes can potentially impact both the psychology and the lifestyle within any given ecology.

## Morphology in the Context of Dallegret's Work

If morphology is a science that studies the history of variation of forms, then François Dallegret's work is an ideal repository for such metamorphic contemplation.[17] His architecture, drawings, installations, furniture and product designs all betray an elastic imagination and a tacit interest in the morphological. Goethe's morphology and his invocation of the German concept of Bildung cultivates a notion of form that is simultaneously

14 Ibid. p.213.

15 Ibid. p.214. Banham continues, "As you acquire the special skills involved, the Los Angeles freeways become a special way of being alive, which can be duplicated, in part, on other systems (England would be a much safer place if those skills could be inculcated on our motorways) but not with this totality and extremity."

16 Ibid. p.216.

17 Here, I use the term 'metamorphic contemplation' in reference to Dallegret's work because I believe that due to the serial or iterative nature of his work, form is never definitive, but rather in constant negotiation. It is important, however, to differentiate this claim from the formal gymnastics of contemporary parametrics, versioning, and digital form finding. What is unique to Dallegret's oeuvre is that the possibility for change resides in the dialogue between the form and its environment - it is not given as an a priori condition or algorithm. Thus, metamorphic contemplation in Dallegret's work involves the imagined changes in form born of its dialogue with its situation, and may paradoxically mean that the form itself does not change.

product and process of production, and Dallegret's work subtly mines the tension between emerging and emerged forms. Dallegret's 1965 project Le Drug, a commission to retrofit a typical Montreal house to accommodate a drugstore above and a restaurant below, reveals an early interest in this sort of variation of forms. The high-gloss, sinuous forms of the restaurant, like Haeckel's recapitulation theory, seem to capture the very evolution of something as quotidian as a table. Dallegret describes the fabrication process as follows:

> "... in terms of the design of the restaurant at Le Drug everything was made of regular stuff – standard tables and chairs – but I wrapped this furniture with wire mesh and then sprayed it with cement. It was then polished and epoxyed. The same process was used on the walls."[18]

[18] Alessandra Ponte, "François Dallegret: In Conversation with Alessandra Ponte," AA Files, 58 (2009): 35.

Fig 3. François Dallegret, Le Drug, 1965

Beneath the accretions of wire mesh, sprayed cement and epoxy lurks a generic table, and the amorphous formal language simultaneously evokes and denies this categorization. If Dallegret's table is a snapshot of a transition, then even without explicit knowledge of its fabrication process, the form conveys a sense of equipoise: that it has stabilized as a table (as indicated by all of the usual detritus – salt, pepper, sugar, ash tray and occupant), but that it might just as easily have transformed into something else.

In 1966, Dallegret's project 'Art Fiction' was featured on the cover of Art in America. This futuristic speculative project with science fiction overtones imagines the artist of the future as the creator of atmospheres. This is achieved by "electric emanations" from the artist's body, which is morphologically augmented by adaptive prosthetic devices. Such morphological adaptations include a comically protracted cranium, dubbed the 'Expanded Encephalic Creativity Locus (Matière Grise)' by Dallegret. Sensory supplementation in the form of the 'cosmic vision

penetrator,' the 'auricular flip-flop sonic drum,' the 'auto-bucal taste maintenance tabulator,' and the 'olifactive mnemonic inhaler device' represent mechanical bodily enhancements that frame the morphological variation of forms as a hybrid prospect. In the series of drawings that comprises 'Art Fiction,' Dallegret casts the nets of human morphology more broadly, encompassing the space the body occupies, the atmospheres it engages, the extended realm of sensory perception and the very possibility of mechanical metonymic extensions. In this sense, the work posits an ecological situation for morphology in which the small adaptive changes and variations of form are situated within environments and potentially predictive of the atmospheres these incremental changes will produce.

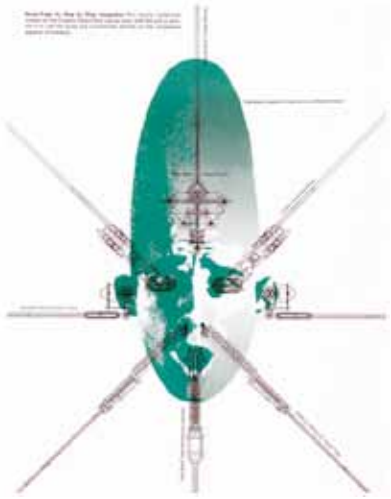


Fig 4. François Dallegret, Art Fiction, 1966

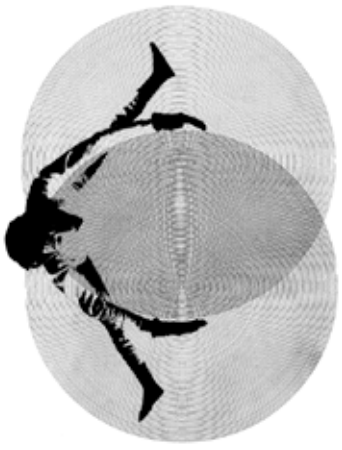


Fig 5. François Dallegret, Art Fiction, 1966

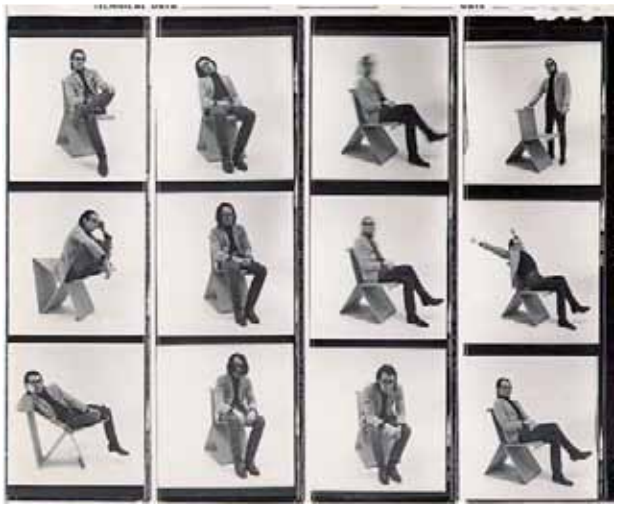


Fig 6 & 7. François Dallegret, Spring Chair 1967

In one image, François Dallegret is photographed sitting in his 1967 project, Spring Chair, and while the chair appears to be static, the upper half of his body reveals the blur of a stop-motion photograph and the suggestion that the chair's occupant has been arrested while moving. It is as if this single image and the motion it captures anticipate the subsequent serialized photographs of the project. Utilizing the convention of the contact sheet and the attendant connotation that no single image captures the story of the project, Dallegret produced a serialized documentation that all but exhausts possible modes of inhabiting the chair. These representations are morphological in their nature, iteratively documenting minute variations in form; however, the form that is constantly changing is the chair's occupant and not the chair. Here, Dallegret's morphology is born of the constancy of the chair's form and the variations in his own comportment. Even the choice to chronicle the chair through the

genre of self-portraiture, which is repeated elsewhere in Dallegret's work, can be characterized as a morphological tendency, as a nod to his ever-evolving artistic self and a confirmation that each of us is a work in progress adapting to our respective environments. Interestingly, when captured in profile, this project is not readily identifiable as a "chair" - the seamless piece of undulating metal is without scale or signifier and posits itself as abstraction in the extreme. It is as if occupying the chair becomes a compensatory act of signification, connoting function, scale and potential modes of inhabitation. Dallegret thus places a premium on the relational and the interactive. Through the very act of inhabiting the chair, a relationship is catalyzed in which the morphological variations of Dallegret's comportment enter into a dialogue with the ecologies of function, scale and inhabitation.

Fig 8. François Dallegret, Spring Chair 1967

Fig 9. Marc-Antoine Laugier,
Essai sur l'Architecture,
Frontispiece (1753).

Fig 10. Eugène Viollet-le-Duc,
Habitations of Man in All Ages,
(1875).

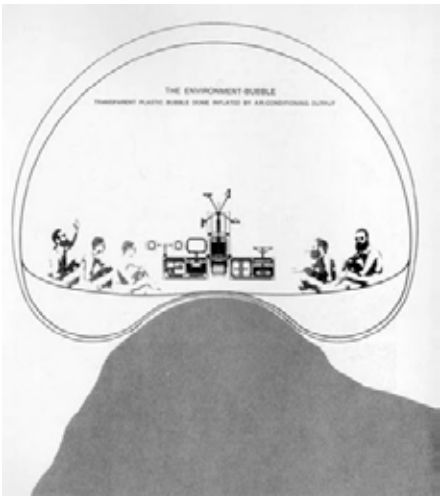


Fig 11. Reyner Banham + François Dallegret, "A Home Is Not a House," The Environment Bubble (1965).

## Architecture's Primitive Hut Reconsidered

Historically, the primitive hut has constituted a litmus test for the discipline of architecture. As readymade narratives on the origins of architecture, these images distil historical biases and proclivities and often tell us as much about where architectural practice is destined to go, based upon the revisionary tale of where it is purported to have come from. Abbé Laugier's rendition of the hut firmly establishes ancient Greek architecture as the origin of building practices, reflecting his affinities with the ancients in the Querelle des Anciennes et des Modernes, and anticipating the historical eclecticism of the nineteenth century. Eugène Viollet-le-Duc's hut of 1875 suggests a utilitarian bent in which being sheltered from the elements is a primary concern, prefiguring the ensuing functionalist doctrines of the twentieth century. Though Reyner Banham and François Dallegret never explicitly posit their environment bubble as a primitive hut, the text and images are full of allusions to the campfire and the paradigmatic nature of dwelling. Banham's speculations on architecture's origins are primarily concerned with controlling the environment:

> 'Man started with two basic ways of controlling the environment: one by avoiding the issue and hiding under a rock, tree, tent or roof (this ultimately led to architecture as we know it) and the other by actually interfering with the local meteorology, usually by means of a campfire, which, in a more polished form, might lead to the kind of situation under discussion. Unlike the living space trapped with our forebears under a rock or roof, the space around a campfire has many unique qualities which architecture cannot hope to equal, above all, its freedom and variability.'[19]

Though this reference to the campfire could be dismissed as nostalgic, Banham's use of the imagery seems more concerned with its unexploited potential than its status as origin. Cleverly, Banham utilizes the conceit of origin to undermine and question the contemporary practice of architecture. Anticipating the book he will write in four years, Architecture of the Well-Tempered Environment, Banham diverts our attention from architectural form and typology, in order to imagine an alternative history or future of architecture seen through the lens of environmental control. This is where Banham locates the untapped potential of architecture captured so beautifully in Dallegret's now canonical image of the environment bubble, and this is where architectural freedom and variability resides for them. Banham's teacher, Sir Nikolaus Pevsner famously wrote, "A bicycle shed is a building; Lincoln Cathedral is a piece of architecture."[20] In one fell swoop, Banham and Dallegret's environment bubble calls this pronouncement into question, locating architecture's agility in the prosaic realm of building systems.

[19] Reyner Banham, "A Home Is not a House," illustrated by François Dallegret, Art in America, 2 (1965): 75.

[20] Nikolaus Pevsner, An Outline of European Architecture (Hamondsworth: Penguin, 1958): p. 23.

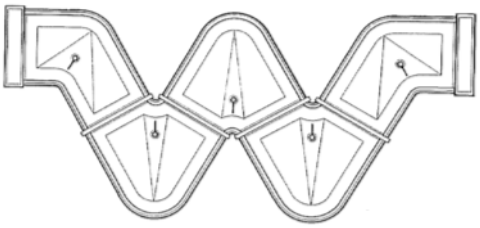


Fig 12. François Dallegret, Illuminated 'W' (1965).

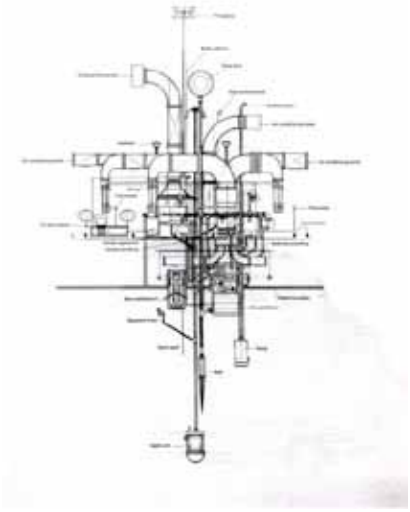
## What Should Dallegret Draw?

François Dallegret's drawings are often framed as illustrations of Banham's environmental or ecological ruminations; however, the question of ecology's morphological context may facilitate a repositioning of this work. When Banham compares architecture's capacities to those of the campfire, architecture comes up short, disparagingly described as the trapped space under the roof. In the opening lines of the essay, Banham opines:

> 'When your house contains such a complex of piping, flues, ducts, wires, lights, inlets, outlets, ovens, sinks, refuse disposers, hi-fi reverberators, antennae, conduits, freezers, heaters – when it contains so many services that the hardware could stand up without any assistance from the house, why have a house to hold it up?'[21]

It should be noted that the 'W' with which Banham's diatribe begins is rendered by Dallegret as an illuminated letter in the form of an HVAC duct. The content of the essay speaks to an inversion of architectural priority in which form is supplanted as a primary ordering device by prosaic systems. Thus, what Dallegret is representing is the demise of the architectural envelope and the triumph of technology as a more agile delivery system of creature comforts. Fetishized ductwork is just the beginning. In an image entitled, 'Anatomy of a Dwelling,' all connotations of shelter are removed - the predominating axis mundi of the dwelling is plumbing, culminating in the humorously anticlimactic omphalos of the septic tank.

[21] Reyner Banham, "A Home Is not a House," illustrated by François Dallegret, Art in America, 2 (1965):.70.



François Dallegret, Anatomy of Dwelling, 1965

Banham's caption to this image reads:

> 'With very little exaggeration, this baroque ensemble of domestic gadgetry epitomizes the intestinal complexity of gracious living – in other words, this is the junk that keeps the pad swinging. The house itself has been omitted from the drawing, but if mechanical services continue to accumulate at this rate it may be possible to omit the house in fact.'[22]

[22] Ibid. p.71.

Banham and Dallegret consistently operate upon the conventions and the norms of the discipline to formulate a critique of architectural agency and the discipline's misplaced priorities.

If Dallegret's role in this collaboration supersedes the task of mere illustration, then what did he draw, and how can we position this effort with respect to both ecology and morphology? What Banham and Dallegret jointly explore in this article is the role of criticism as a visual and discursive practice. Giving visual expression to the architectural task of environing is no easy feat. Given that the conditioning of space eschews both visual and verbal representation, Banham and Dallegret leverage their roles as critics to push the boundaries of disciplinary conventions and influence architectural discourse on the environment. In an essay on the failure of criticism, Bruno Latour articulates the role of the critic as forging a dialogue between 'matters of fact' and 'matters of concern.'[23] Banham and Dallegret's polemic adeptly maps the matters of cultural concern of the mid 1960's: the environment, the anti-establishment sentiments of the counter culture and the collective desire for mobility and other forms of inhabitation that touch lightly on the earth. The salience of their collective effort resides in the positing of a hypothetical matter of fact – an *environment bubble* – that actively engages these matters of concern and

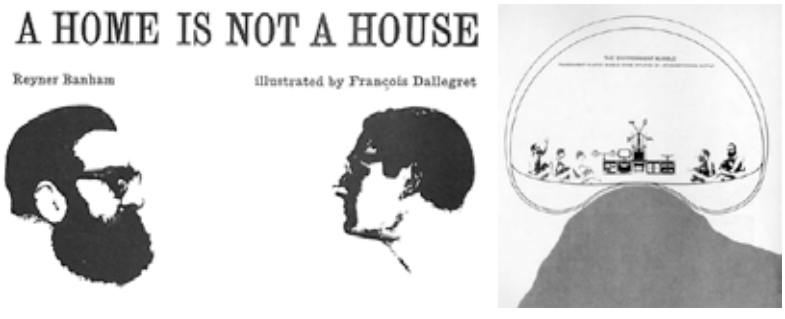
[23] Bruno Latour, 'Why Has Critique Run Out of Steam? From Matters of Fact to Matters of Concern,' *Critical Inquiry*, 30 (2) (2004): 246. Latour appropriates this terminology from Heidegger's contemplation of the thing. This is how he summarizes the role of the critic: "The critic is not the one who debunks, but the one who assembles. The critic is not the one who lifts the rugs from under the feet of naïve believers, but the one who offers participants arenas in which to gather. The critic is not the one who alternates haphazardly between antifetishism and positivism like the drunk iconoclast drawn by Goya, but the one for whom, if something is constructed, then it means it is fragile and thus in great need of care and caution."

constructs a forum for future discourse and experimentation. In this sense, Dallegret's drawings are not illustrative; rather they perform architectural criticism through the lens of the speculative project.

## In the Context of Morphology

Fig 14. Bubble Morphology from Fuller (1960), to Archigram (1968), and Hans Hollein (1969)

In order to establish that the *environment bubble* represents a dialogue between Banham's ecological thinking and Dallegret's morphological thinking, it is critical to locate the morphological contexts of the work. Perhaps the most obvious of these is the morphological context of the 'bubble.' A cursory examination of experimental uses of the bubble morphology in the 1960s, suggests that the potential elasticity of bubbles facilitated anything from the individual abode to the annexation of large portions of the city. So whether we consider Buckminster Fuller's Manhattan Dome of 1960, or Archigram's Suitaloon at the 1968 Venice Triennale or Hans Hollein's Mobile Office of 1969, the seduction of the bubble is predicated upon its very ability to adapt to a multitude of contexts and conditions. Banham's preoccupation with building systems in general, and heating, ventilation and air conditioning in particular, made the pneumatic structure of the *environment bubble* irresistible to him. Here was a structure that owed its very existence to an infusion of air, and whether this occurred through the prowess of the human lungs (Archigram) or the quotidian efficiency of the household vacuum (Hollein), for Banham the pneumatic bubble pushed the conditioning of air to the forefront of architectural discourse.[24]




Reyner Banham + François Dallegret, Title Page and Environment Bubble, 1965.

[24] Dallegret also came to this collaboration with a well-honed interest in pneumatics, given his friendship with Bernard Quentin, an artist who experimented on pneumatic sculpture with electronically induced respiration that mimicked the organic process. See Alessandra Ponte, "François Dallegret: In Conversation with Alessandra Ponte," AA Files, 58 (2009): 34.

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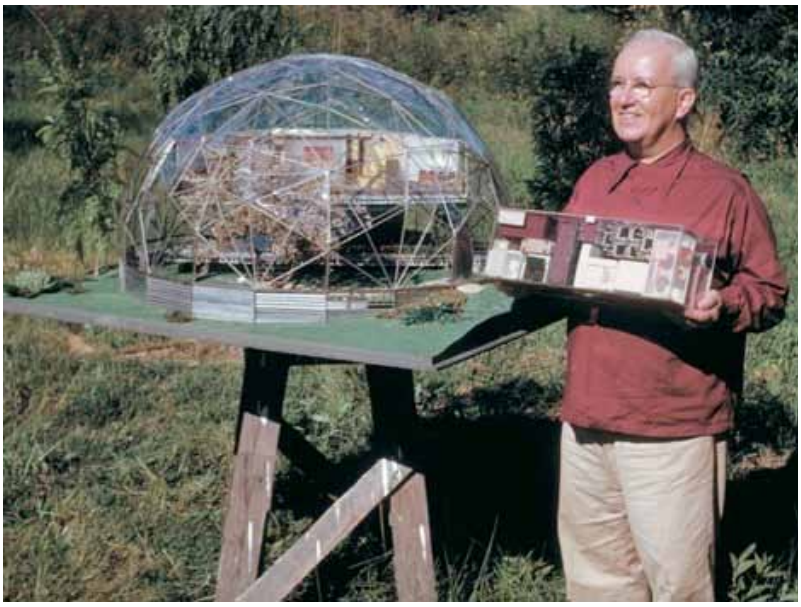

Fig 15. Buckminster Fuller, Standard-of-Living-Package (1949)

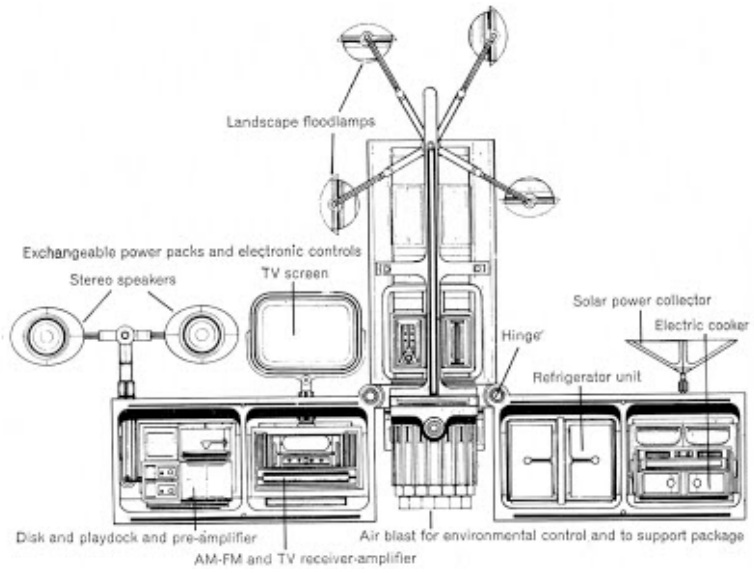


Fig 16. Banham + Dallegret, Standard-of-Living-Package (1965)

The environment bubble can also be considered with respect to the morphological context of the standard-of-living-package. In “A Home Is Not a House,” Banham credits Buckminster Fuller with coining both of the operative terms of his argument: the environment bubble, and the standard-of-living-package. Fuller’s standard-of-living-package consisted of a set of portable furniture and appliances for a family of six that could be unpacked in a climate-controlled geodesic dome; it was his answer to the post-war housing shortage. Less survivalism and more elementarism, Fuller’s package included the basic building blocks of domestic habitation.

In Dallegret and Banham's vision, we see Fuller's assemblage of discrete objects transformed into a system with the capacity to control the environment while sustaining the desired lifestyle. Banham writes,

> 'But a properly set-up standard-of-living package, breathing out warm air along the ground (instead of sucking in cold along the ground like a campfire), radiating soft light and Dionne Warwick in heart-warming stereo, with well-aged protein turning in an infrared glow in the rotisserie, and the ice maker discretely coughing cubes into glasses on the swing-out bar – this could do something for a woodland glade or creek-side rock that Playboy could never do for its penthouse.'[25]

Embedded within the morphology of both standard-of-living-packages is the conceit of adaptability, though in Fuller's case this is object-centric, whereas with Banham and Dallegret it is located within a system with the nascent capacity to recede from our notice.

Finally, the environment bubble as it is depicted in "A Home Is not a House," is positioned within the dual contexts of the morphology of the self and the morphology of representation. An odd detail of the essay that few scholars comment upon is the inclusion of both men's profiles under the title of the essay. Closer scrutiny of the inhabitants of the environment bubble reveals five nude figures – two images of Dallegret in exactly the same pose, and three images of Banham adopting three different poses. Though it was commonplace in Dallegret's work to include himself in the documentation of his projects, and though images of Banham perched upon his fold-up bike abound, why did the collaborators choose to include labelled profiles and nude depictions in this project? As an architect, and as a historian and critic, Dallegret and Banham were no doubt cognizant of the continuous development of their creative selves. However, if the environment bubble is a cautionary tale for the discipline of architecture, then why would its authors implicate themselves in this way? Their story is an evolutionary tale about the prowess and agility of technology, the sluggish and deliberate nature of architecture and a decisive cultural moment in which the former threatens to overtake the latter. Dallegret populated the bubble with a montage of figures created from the repetitive images of his body with Banham's head grafted on top. As these figures huddle around the standard-of-living-package, the themes of the essay can be extracted from the image. The nude figures in their back-to-nature postures around the metaphoric campfire allude to the burgeoning environmentalism among the youth culture of the 1960s. The snarky substitution of the standard-of-living-package for the fire, references technological prowess and the lifestyle it can deliver. Dallegret and Banham's presence implicates the role of the architect, historian and critic in this moment of disciplinary crisis, while creating a space for this sort

[25] Reyner Banham, "A Home Is not a House," illustrated by François Dallegret, *Art in America*, 2 (1965): 75. Banham's evocation of Dionne Warwick is also a sardonic nod to her 1964 song entitled 'A House is not a Home' from which he gleaned the title of the essay. This popular culture reference situates questions of ecology squarely within the purview of lifestyle, which is one of the essays prescient themes.

of debate. The bubble's tenuous connection to the earth as it teeters upon its inhospitable site alludes to the ecological desire to touch down lightly and leave as small an imprint as possible. Finally, the multiple iterations of Banham and Dallegret speak to the need to preserve the dialogue between morphology and ecology. Cumulatively, the morphology of the self, the morphology of the standard of living, and the morphology of the bubble, depict both architecture and architect as products and continuously evolving processes. By preserving the dialogue between morphology and ecology, Banham and Dallegret teach us that an environment is never a reified entity, but rather, it is a complex network of relationships exchanging with and adapting to their situation.

## Ecology without the Oikos

Why do Banham and Dallegret so persistently eschew the house? Why do they advance a version of ecology without the oikos? In their essay, the paradigmatic dwelling is transformed, for habitation is no longer a question of shelter, but rather, of conditioning. Though Banham sardonically quips, "surely this is not a home, you can't bring up a family in a polythene bag," the environment bubble and the standard-of-living-package shift architectural priorities from enclosure to building systems, from the monumental to the temporary, and from the discipline's long held aspiration for permanence to a new environmentally-conscious agenda of touching down lightly.[26] In this sense, the environment-bubble embodies a diagram of architecture's capitulation to technological imperatives, its envelope or skin reduced to a token gesture of enclosure, nearing invisibility, and quite literally stretched to both its material and disciplinary limits. For Banham and Dallegret, this repeated questioning of the efficacy of the house plays a rhetorical function in their collaborative essay. Though the terms of architecture's engagement with the domestic may have radically shifted through their concerted efforts, the reappearance of this question in its many guises functions like a recurring chorus – a duet of the ecological and morphological – that continuously and harmoniously asserts their belonging together. What the author hypothetically withholds, namely the house, the illustrator compensates for with images in which practices and styles of inhabitation assert the dogged persistence of domestic life. Banham and Dallegret may be promiscuously dangling the possibility of ecology without the oikos in front of the discipline of architecture, but only to demonstrate how untenable morphological changes can be in the absence of a profound consideration of inhabitation and lived experience. In this moment of global ecological crisis Banham and Dallegret's cautionary tale about the technological imperative and architecture's response or capitulation to it, is a salient reminder. Will architecture experimentally explore the subtle relationships between ecology, morphology and technology, or will it realize this dystopian vision of ecology without the oikos?

[26] Reyner Banham, "A Home Is not a House," illustrated by François Dallegret, *Art in America, 2* (1965): 76.

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# Cultural Ecology in the New New Orleans

Benjamin Morris

This article considers the renewed relationship between architecture, environmentalism and ecology in the context of the post-Katrina rebuilding process of New Orleans. After introducing the city's pre-Katrina architectural history, the analysis examines three interventions at varying levels of scale (single block, larger neighbourhood and entire city). Having concluded this analysis it then argues that the recent trend towards environmental considerations in architectural design runs the risk of remaining cosmetic if fundamental relationships to landscape, place and community are not adequately incorporated into design.

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## Introduction

Five years after the storm, we are now in the 'New' New Orleans, but the old nickname bestowed nearly forty years ago still wears well: "the impossible but inevitable city." Peirce Lewis' famous characterisation of New Orleans has served to illuminate nearly every aspect about it: its location, its history, its geography, its culture, its governance, in short, its very identity. A city enduring disease, war, coastal erosion, hurricanes, floods, economic depression, segregation, and social unrest: impossible. But a port at the mouth of the largest river on the continent: inevitable. As Paleo[1] has noted, other cities have enjoyed like assessments in the face of challenges presented by their local environments. But unlike other cities which have overcome their respective crises (Prague, Kobe, Florence) this discourse of the unnatural city—this idea of unorthodox settlement, of perilous, tangential existence—continues to define New Orleans, even in the post-Katrina era. With further disasters such as the BP oil spill and the heightened degradation of the coastal wetlands having freshly struck the region, the relevance of the nickname only grows.

This is not to say that New Orleanians feel themselves to be at the mercy of their local environment: on the contrary, a point of local pride is the way in which architects, builders, and craftsmen have adapted over the city's history to live with their environment, rather than against it. Specific features recur throughout New Orleans' built environment, as Colten, Kelman and Kingsley[2] have all detailed: many structures are built on raised foundations to mitigate against potential flood impacts, building materials frequently make use of locally-sourced river cypress to combat moisture absorption, and the historic housing stock often features exceedingly high ceilings and large windows to naturally dissipate the oppressive, semi-permanent heat. In short, the popularised litany of disaster in the city belies the longer and more intricate relationship it bears towards its unique physical landscape and the ways in which architectures have responded to it. Curtis notes that:

> 'New Orleans can offer plenty of lessons in green living, and it could have before the storm, had anyone asked. How to build small and beautiful houses on narrow lots. How to built compact, walk able neighborhoods. How to adapt buildings to the environment, with deep porches and high ceilings and small, leafy yards.'[3]

Such features, he concludes, are "...the things that people loved about New Orleans—and they're the things that architects interested in sustainable design most want to build right now."[4] Curtis' observation, however, is not limited just to the Crescent City. In the wake of global attention to climate

1 Urbano Fra Paleo, 'Site and Situation: Impossible but Inevitable Cities.' *Space and Culture* 9 (1) (2006): 20-22.

2 Craig Colten, Craig, *Unnatural Metropolis* (Baton Rouge: Louisiana State University Press, 2004). Ari Kelman, Ari *A River and Its City: The Nature of Landscape in New Orleans* (Berkeley: University of California Press, 2003). Kingsley2007 ref?

3 Wayne Curtis, 'Houses of the Future.' The Atlantic Monthly, November 2009 at: http://www.theatlantic.com/doc/200911/curtis-architecture-new-orleans. [accessed 30 November 2009].

4 Ibid.

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change and the need for communities to develop means of adaptation and mitigation to adverse environmental impacts, the present generation of architectural theory and practice has signalled a renewed interest in green design— even though, as Dummett[5] has argued, those practices in fact have roots in deeply historical, and in some cases, surprising places (for example Le Corbusier). Part of this return has been driven by internal forces within the field, whilst another part has been spurred on by external forces from commerce, industry, and government, such as LEED certifications in the USA, and the 10:10 campaign in the UK, but in either case the shift has been fundamental. It is now inconceivable to propose carbon-intensive (or more accurately put, carbon-insensitive) interventions into the built environment without the surety of a backlash if not outright rejection of the bid.

5 Emma Dummett, 'Green Space and Cosmic Order: Le Corbusier's Understanding of Nature.' Unpublished Ph.D. thesis (Edinburgh: University of Edinburgh, 2008).

This is undoubtedly a step in the right direction but simple approbation is not enough. How, then, to understand this turn to environmentalism in architecture and the impacts that it will have not just on the built environment broadly and individual sites specifically, but on our understanding of ecology and ecological thought? In what follows I take three interventions in New Orleans as cases to consider these questions more closely. I raise issues that, in a century in which increased climatic and environmental changes pose considerable challenges to cities across the world, will characterise not just the impossible cities but the extant and probable ones too. I consider the iciNola development in the Bywater neighbourhood, the Make It Right Foundation houses in the Lower Ninth Ward, and the 'Reinventing the Crescent' suite of interventions across the city, three cases that in their various scales (single block, entire neighbourhood and the whole city) help to further illuminate these issues.

## iciNola

The idea, on paper, had much going for it. It was originally billed as a new mixed-use housing and commercial development in the historic Bywater neighbourhood, a neighbourhood east (downriver, in local terms) of the city's famous French Quarter, situated between the Faubourg Marigny and the Lower Ninth Ward. The Bywater was where, as Campanella has noted, many of the early immigrants to New Orleans settled[6] and has traditionally been home to lower-income families and modest local architectural styles: single- and double-shotgun houses and Creole Cottages. Due to its proximity to the levee along the Mississippi River, the natural high ground, it suffered comparatively less during the flood, indeed, the blocks closest to the levee took on no floodwater at all. Despite this lack of major structural damage, the depopulation and the inability of displaced residents to return from distant cities had begun to take its toll.

6 Campanella 2006

Fig 1 & 2. Undated design rendering of ICInola development, Wayne Troyer Architects.

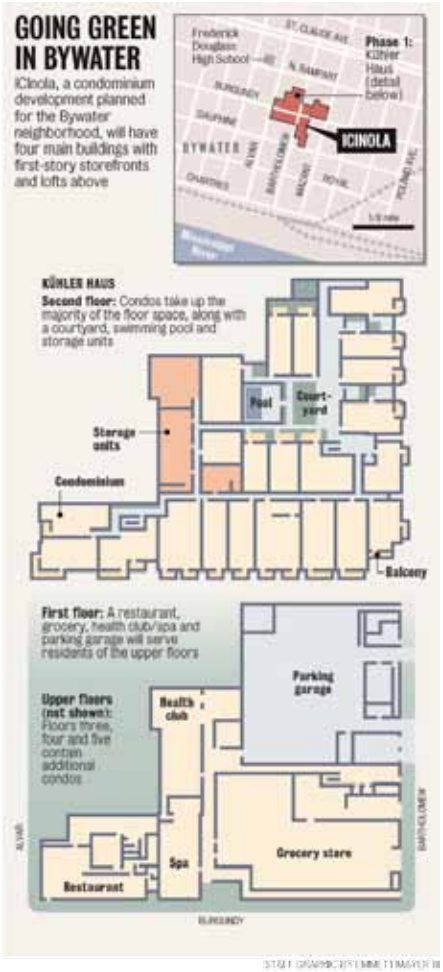


Fig 3. Map of ICInola development. New Orleans Times-Picayune, February 2008. http://blog.nola.com/graphics/2008/02/icinola_development.html

The iciNola development, as it was called, aimed to redress this imbalance, proposing to redevelop four largely vacant city blocks into a unified, sustainably-designed complex featuring loft residences, shops and other small businesses, and a supermarket (Figures 1, 2, 3). Its design elements included such modern green-technological features as solar roofs, green walls, passive lighting and heating elements, and hurricane-proof building standards. But despite these admirable intentions towards low-impact, sustainable dwelling (especially the supermarket, as the Bywater had no adequate local market or point of access to fresh food at that time in early 2007) its designers and developers Shea Embry and Cam Mangham, faced immediate and vociferous resistance. Green-technology alone could not sell the project. Upon the presentation of the design, Bywater residents became furious about the potential impacts on the neighbourhood, such as: dramatically increased property values, disruption of the traditional architectural character, the introduction of moneyed outsiders into a

neighbourhood with which they had no prior connection, and especially, the forced relocation of residents who owned historic homes in the path of the development to elsewhere in the neighbourhood, with no stated mechanism for doing so.[7]

The issue swiftly metastasised, with proponents and opponents taking to the local news and media outlets in force to voice advocacy and objections, raise amendments and counter-proposals, and lambaste overaggressive protectionism or the thinly veiled onset of gentrification. One local writer summed up the debate by noting that:

> 'To opponents, it's an unsightly, out-of-scale behemoth that would wreak havoc on Bywater's traffic, parking and drainage and threaten the neighborhood's somewhat raffish, unconventional character. To supporters, it's an environmentally sensitive, neighborhood-friendly engine for economic development that could be the catalyst for a dying district's rebirth.'[8]

Part of the controversy stemmed from local contestation over the ownership of history, this debate raised the question of what constituted acceptable New Orleans architecture. Embry and Mangham had hired respected local firms to execute the designs, and had insisted in their advertisements and printed ephemera that at no point were the proposed structures seeking to replicate historic New Orleans styles. On the contrary, they argued "Designing for conformity does not respect historic architecture, and indeed decreases the social and architectural value of structures that are actually historic, as opposed to just appearing to be so."[9] Yet the designs for the residential complexes failed on other grounds: they exceeded the height of the majority of the housing stock in the neighbourhood (primarily single and double shotguns), drawing fire from residents and preservationists, and the lack of iconic local features such as stoops, galleries, balconies and shutters suggested that there was little New Orleanian about the project, despite the designation of French, German, Italian and Spanish names for the buildings.[10] (Interestingly, Caribbean, West African, or Native American names—names which would have also paid homage to local history—did not appear in the design.)

7 Helen Krieger, 'BNA Letter to HDLC re: ICInola project.' Bywater News 33 (4) (2007): 6-7 at: http://www.bywaternola.com/ [accessed 23 July 2007].

8 Bruce Eggler, 'Planning panel backs Bywater condos.' New Orleans Times-Picayune, 9 May 2007: B1-B3.

9 iciNola. Design outline and schematics document, distributed 20 April 2007 at: http://www.ICInola.com. [accessed 22 April 2007].

10 Sue Hobbs, 'Developers and Residents Grapple Over Future of Bywater.' Preservation in Print 34 (3) (2007): 29-30.


Fig 4. Icky-nola campaign poster, Bywater neighbourhood, 9 July 2007. Photo by author.

While revised designs presented at charrettes in the spring of 2007 did allay some residents' fears, a committed core of opponents nevertheless severed itself from the Bywater Neighborhood Association to form the Bywater Civic Association, a rival community organisation that took defeating the iciNola project as its chief aim (Fig 4.). Ultimately, however, these efforts proved unfruitful: citing the potential positive long-term economic impacts on the neighbourhood, the City Planning Commission voted to approve the project in May 2007. While construction has begun on the first phase, it has since been delayed in part due to the national recession still extant as of this writing.[11] The first two building complexes, the 'Kuhler Haus' (formerly the historic Frey warehouse, dating to 1865) and the 'Maison du Soleil', are presently under construction, whereas the second phase of the 'Casa Verde' and 'Casa del Viento' buildings await groundbreaking—for how long, it remains to be seen.

## Make It Right

At the same time, east of the Bywater and the iciNola development, across the Industrial Canal another vision for a transformed, revitalised neighbourhood was taking shape. In early 2008, commuters driving across the Claiborne Avenue bridge to the Lower Ninth Ward, one of the most devastated neighbourhoods in the city, began to see an unusual

[11] Kate Moran and Katy Reckdahl, 'Credit crisis squeezes local developments.' New Orleans Times-Picayune, 19 September 2008: C8-C10.

sight: hundreds of enormous pink cubes and triangles strewn across the ravaged city blocks, some lying by themselves and others placed in odd juxtapositions to one another, still more forming the stylised semblances of houses, with square fronts and triangular pitched roofs, as in a child's drawing (Figures 5, 6) When viewed at night, when the frames were lit from within, it appeared as though an entire fleet of ghostly, ethereal homes had suddenly repopulated the ruined neighbourhood.

Figures 5 & 6: Make It Right Foundation "Pink Project", Lower Ninth Ward. 22 December 2007. Photos by author.

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This was precisely the point. In late 2006, the actor Brad Pitt had announced the work of the Make It Right Foundation, a non-profit institution dedicated to rebuilding homes for homeowners in the Lower Ninth Ward who had lost everything during the storm. The Pink Project, as it was called, remained in place for approximately one month and was the first signifier of this work: simultaneously a publicity stunt and an argument, a protest against what had been allowed to happen, and a form of visual promise-making to those individuals with whom it was in contract. “Right now there are scattered blocks, like they were scattered like fate’s hand, symbolic of the aftermath of the storm,” Pitt said. “But we will be flipping the homes, essentially righting the wrong.”[12]

[12] Brad Pitt quoted in Michelle Krupa, ‘Brad Pitt wants effort to go beyond the Lower 9.’ New Orleans Times-Picayune, 3 December 2007: A1-A7.

Fig 7. , 8. & 9. Digital renderings of design sketch for Make It Right Foundation house. Images from Architectural Record magazine. http://archrecord.construction.com/news/daily/archives/071210Pitt/1.asp.

Unlike the iciNola development, the vision put forth by the Make It Right Foundation received immediate and lasting approbation. Two aspects have conditioned the difference: firstly, the Make It Right Foundation's focus on homeowner restitution and social justice rather than profit making (the iciNola enterprise was a private enterprise, owned and operated by Embry and Mangham, and was widely seen to profit them more than any other entity). Secondly, the scale of its ambition put paid to its focus—the Foundation aimed to restore an entire neighbourhood, rather than just one building or suite of buildings. The Lower Ninth Ward had been a cultural epicentre in New Orleans prior to Katrina and was a known incubator neighbourhood of many of the city's most celebrated traditions. That the return of residents to that neighbourhood would catalyse cultural recovery in the city, only bolstered the welcome reception that the Foundation received.

A central dimension of the new houses' construction—each of which was estimated to cost about $150,000, financed partly by the Foundation and partly by other public and private donors—was the emphasis on sustainable and renewable materials and design elements (Figures 7, 8, 9). Each of the 150 homes (designed by different local, national and international architectural firms) was designed to reduce energy consumption, invoke passive features such as natural lighting and ventilation, and respect the morphology of the landscape by building with the floodplain, on elevated foundations, rather than against it. The designs thus acknowledged the inevitable risk of another flood event, but had already adapted to it. In an extreme form, the proposal by Thom Mayne of Morphosis (the firm which had designed the proposed National Jazz Center in the Central Business District, never executed), for instance, called for the house to be built on a floating foundation tethered to two piers. "It's a boat," he said.[13]

Though not all of the house designs have received equal praise among observers and critics, the debate about what constituted traditional New Orleans architecture did not ignite as it had over iciNola. The iciNola project was demonised not just for its infidelity in local architectural terms, but more importantly because it would have displaced the residents of the Bywater through the slow, intangible process of gentrification, as well as the neighbourhood feel which gives it its character (the subsequent economic arguments about increased rent, cost of living, and property taxes notwithstanding—entry-level costs for a loft in the iciNola development began around $250,000-300,000, or at the time, roughly £125,000-150,000).

By contrast, the Make It Right Foundation had instructed architects to author their designs with an underlying respect for the local culture in mind, wherein the material aspect of the homes was understood to dwell in the service of a larger purpose. The architects—and Pitt—were widely

[13] Thom Mayne quoted in Robin Pogrebin, 'Brad Pitt Commissions Designs for New Orleans.' New York Times, 3 December 2007 at: http://www.nytimes.com/2007/12/03/arts/design/03pitt.html. [accessed 5 December 2007].

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understood to be rebuilding an intangible culture and way of life, which spoke louder than any individual cornice, shingle, or (in this case) solar panel. Illustrating the perpetual adaptability of New Orleans architecture thus entailed allowing, rather than forcing, its evolution into a new ecological paradigm and a ground-level process of recapitulation. Whereas iciNola had assumed that style could be imposed independently of local culture, the Make It Right Foundation had assumed from the start that style was achieved in concert with a culture that could not be found in a pattern book or design encyclopaedia. By late 2010, nearly one-third of the 150 homes had been completed.

## Reinventing the Crescent

As Oliver-Smith has noted, any natural disaster prompts a widespread reassessment of the specific landscape feature, set of features or practice of use that gives rise to it.[14] Whether after a volcano, an earthquake, or a landslide, communities that recover from disaster re-evaluate their relationship with their environment as part of the adaptation process to that revised environment. In New Orleans, the primary element subject to that reappraisal has been water. Since Katrina the surrounding natural environment, the Mississippi River, the lakes surrounding the city (Lake Pontchartrain and Lake Borgne), the coastal wetlands and the Gulf of Mexico itself have been re-examined with a view towards strengthening civil defence infrastructure as well as decision-making about the extent of future urban layouts. The Mississippi River in particular, for which the 'Crescent City' takes its name, has been the site of special consideration, becoming (or rather re-becoming, after Kelman[15]) simultaneously a continuous physical site used for recreational, commercial, and aesthetic purposes, and a distributed symbolic site sharing multiple meanings for multiple stakeholders across lines of race, class, occupation and use. It has also become a site for development: a site of potential capital and a resource to be exploited, as plans unveiled by the New Orleans Building Corporation (NOBC) in late 2006 began to reveal.

Shortly after the one-year anniversary of Katrina the NOBC announced a competition open to teams of national and international architectural firms to submit proposals for projects entertaining new visions for the Mississippi River. Called 'Reinventing the Crescent,' the competition was intended, as NOBC head Sean Cummings frequently put it at planning charrettes, to 'invite New Orleans and New Orleanians to reinvent their relationship to the river.' In its original incarnation (Figures 10, 11), the framework envisioned as many as seventeen potential interlinked 'interventions' along the Mississippi River, from Jackson Avenue uptown in the Garden District to Caffin Avenue in the Lower Ninth Ward. The interventions' unifying themes would be to achieve five goals: to celebrate 'places of distinct character and civic energy at the river's edge,' to 'break

[14] Anthony Oliver-Smith, The Martyred City: Death and Rebirth in the Andes. (Albuquerque: University of New Mexico Press, 1986)

[15] Ari Kelman, A River and Its City: The Nature of Landscape in New Orleans. (Berkeley: University of California Press, 2003).

down barriers and gain access to the river's edge,' to ensure 'continuous access along a great public open space network,' to promote 'building and sustaining great places to live near the water's edge,' and finally to create 'new icons and social landmarks at the water's edge.'[16] The designs of five different teams of architects were short listed, and the winning team of five local, national, and internationally represented architects for the first phase of the project was announced in May 2008.

[16] New Orleans Building Corporation (NOBC). New Orleans Riverfront: Reinventing the Crescent. Preliminary Framework and Concepts. 2007. Originally available (since removed): http://www.neworiverfront.com. [accessed 29 June 2007].

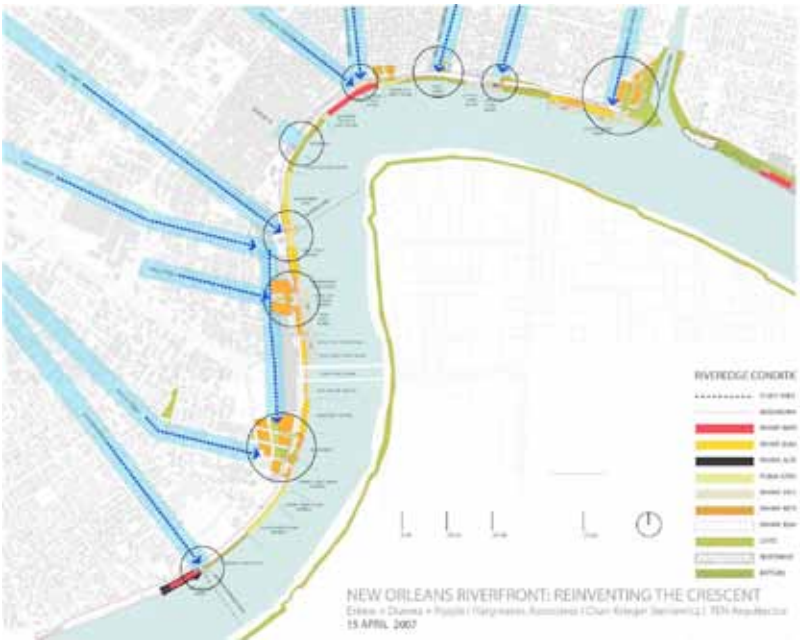


Fig 10. New Orleans Building Corporation schema, "Reinventing the Crescent," 15 April 2007. http://www.noriverfront.com. Accessed 20 July 2007. (now http://www.reinventingthecrescent.org.)

Fig 11. Photograph of maquette of 'Reinventing the Crescent', 28 July 2007. Photo by author.

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The concept, generally welcomed within the larger narrative of ongoing rebuilding efforts, quickly ran aground of two complications.[17] The first was local public reaction at the planning charrettes held across the city, which—while warm to less intrusive interventions, such as expanding public access at selected sites in the French Quarter (Woldenberg Park and the Moonwalk)—for the more ambitious designs was mixed at best and openly hostile at worst. The conversion of Bywater Point (Figures L,M) was one of the most hotly contested. The original design proposed the refurbishment of the block, the expansion of the streets, the construction of new hotels and a luxury high-rise condominium (unsurprising, given Cummings' other career as a hotelier), and the development of a secondary cruise ship terminal downriver from the primary terminal near the Convention Center in the Central Business District. These were all interventions that would spoil the traditional character of the neighbourhood (the same criticisms were made against the iciNola project earlier that month, as I detailed earlier in this paper). As the report of one charrette in the Bywater noted, omitting the obscenities that frequently graced public discussion of the 'Point Park',

Fig 12. Digital rendering of design for proposed conversion of Bywater Point, "Reinventing the Crescent." Hargreaves Architects. http://www.hargreaves.com/projects/Waterfronts/NOLACrescent/NOLA_1.jpg

17 Bruce Eggler, 'Reinventing the crescent.' New Orleans Times-Picayune, 13 November 2006: A1-A4.

Fig 13. Photograph of original design specification for Bywater Point, 28 July 2007. Photo by author.

> 'The question/answer session was lively. Many questions involved the traffic congestion that would be created by Reinventing the Crescent developments coupled with cruise ship activity. There were no real answers. ... In general, the public seemed pleased at the idea of being able to access the river, but extremely concerned about problems of traffic, density, and the 'touristification' of the neighborhood.'[18]

This particular intervention was eventually scaled down, but it remains exemplary of the facility with which corporate interests were able to inflame a community that already enjoyed a relationship with the Mississippi River scarcely in need of revision or reinvention. As one Bywater resident complained, "We've got people from all over the world deciding what should happen to the New Orleans riverfront"[19] Behind these protests, however, was the recognition of a heritage of control of the riverfront not by insiders or by outsiders per se, but instead by a class of elites. As Kelman argued, prior to Katrina the river has long been a site of economic development as much as symbolic or aesthetic appreciation: "New Orleanians have used history, scrubbed of its unseemly elements, as an anchor store in a preservation mall. In this way the waterfront again has become what the city's commercial elites have always wanted: a landscape of power, order, and discipline, a tableau of progress."[20]

[18] Julie Jones, 'Reinventing the Crescent: Meeting with Downriver Districts.' Bywater News 33 (4) (2007): 4 at: http://www.bywaternola.com/. [accessed 23 July 2007].

[19] (Eggler 2007b, MacCash 2007).

[20] Ari Kelman, A River and Its City: The Nature of Landscape in New Orleans. (Berkeley: University of California Press, 2003), p.216.

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This description of a 'tableau of progress' mirrors the language used for the contemporary vision of the 'Reinventing the Crescent' programme. Not all of the interventions (like the development of Bywater Point) have survived their encounters with the public, wholly or partially. Nor have they survived the second complication signalled above, financing the project, an effort that has required a wide variety of local, state, federal, and private sources, and which since has met resistance from other stakeholders such as the Port of New Orleans.[21] But the vision nevertheless still draws on a specific, selective vision of the culture of New Orleans in order to advance its agenda. "While cherishing its past and remaining protective of its heritage," they argue,

> New Orleans can only prosper by embracing a future with the same passion it has always brought to innovations in music, literature, cuisine, the arts and maritime industry. As New Orleans rebuilds its neighborhoods, the opportunity to add to the variety of environments, institutions, and dwelling places that will characterize the next New Orleans lie primarily near the river's edge.[22]

Which, if any, of the remaining interventions will be executed remains to be seen. The estimated completion date of the proposals is the tercentenary of the founding of the city in 2018. In what form they ultimately appear and the impacts they make upon their local sites and neighbourhoods must also await examination. But the extent of these impacts cannot be ignored. The reshaping of the environment specifically for economic development will bring an estimated impact of $1.6b in spending, $526m in earnings, approximately 24,000 new jobs, and $34.8m in state tax revenues.[23] Yet it remains unclear how this vision for reinvention will respect local character, urban density and form, and the use of public space, much less mitigate against the gentrification and 'Disneyfication' that local residents now routinely expect as a by-product of architectural interventions post-Katrina. If individuals and communities are priced out of the market by rising real estate costs due to artificially inflated property values (an intangible wrecking ball swung by developers rather than demolishers), the impacts on the city's culture will be far greater than any dollar sign could measure.

## Cultural Ecology in the New New Orleans

These proposals illustrate a range of lessons about architecture and ecology, the most important of which is seen most clearly in the tensions nurtured and given form over the course of the rebuilding process. The technological developments that have served to make the rebuilding process in New Orleans 'greener' are, without a doubt, to be lauded, especially if they raise awareness about the wider environmental issues

[21] Bruce Eggler, 'Reclaiming the River.' New Orleans Times-Picayune, 6 April 2008: A1-A10.

[22] New Orleans Building Corporation New Orleans Riverfront: Reinventing the Crescent. Development Plan 2008 at http://www.reinventingthecrescent.org/. [accessed 1 October 2009]. p.7.

[23] New Orleans Building Corporation New Orleans Riverfront: Reinventing the Crescent. Development Plan 2008 at http://www.reinventingthecrescent.org/. [accessed 1 October 2009]. p.62.

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at stake throughout the region: the combined impacts of coastal land loss and rising sea levels especially. All politics begins at home: my next-door neighbour has just finished installing solar panels on his roof, an undeniably welcome sign, and made possible in part by progressive tax incentives promoted by city and state leaders.

But solar panels alone are insufficient to establish an environmentally engaged architecture: the truest form of architecture is found in mindsets, ways of life, deep, rooted histories and in communities where knowledge and understanding are shared within and across generations. The case of iciNola illustrates this point by showing us the wrong way to approach the subject—by making it difficult, if not impossible, for those communities to live in their own neighbourhood. The case of the Make It Right Foundation shows us, if not the best way, at the very least a way to start—by bringing those communities back to that neighbourhood, even if its loss was near-total. Ecologically sensitive architecture does not necessarily establish a sensitive architectural ecology: architectural ecology, and cultural ecology more broadly, is located within the dwelling, not as it. If all politics begins at home, then all architectural sensibility does as well, in the context of heightened opportunities to educate members of one's family, local community and social groups to develop a sense of deep history and rootedness, a sense of concomitant memory and identity that, when disaster strikes, can be drawn upon as an aid in rebuilding and reconstruction.

Two other proposals deserve brief mention in the context of future developments that have the potential to advance just this kind of ecological thought. The first is a proposal entitled "Dutch Dialogues" by the firm of Waggoner and Ball[24], calling for the gradual reintroduction of water into the cityscape. The proposal claims that the exclusion and forced containment of the major bodies of water in the city has led not only to a debilitated civic relation to the very idea of natural elements, but has led to needless complications in city planning and zoning. Other cities in similar physical landscapes such as Rotterdam and Venice, the proposal argues, have successfully integrated water into their urban form. For a city that is surrounded by water on three sides, it is surprising that we have not yet learned the lessons of caging an untameable element, as opposed to learning to live with it. (Some of these lessons may be heeded by the 'Reinventing the Crescent' program, but again, it is too soon to say.)

[24] Waggoner & Ball Architects. 'Dutch Dialogues' at http://www.wbarchitects.com/research/dutch_dialogues/ [accessed 1 September 2010].

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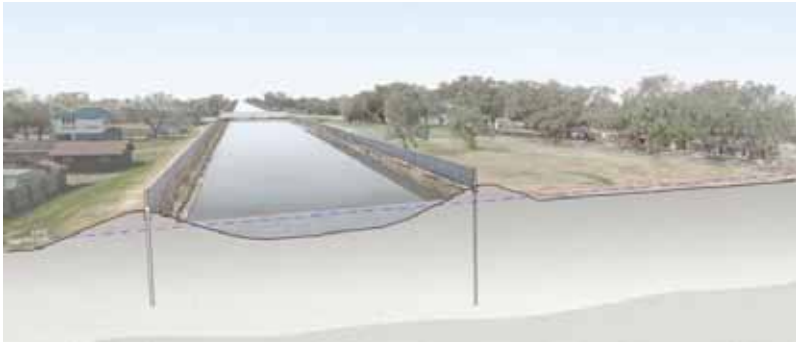

Fig 15. & 16. Waggoner & Ball, "Dutch Dialogues" project: outfall canals widened when possible to create public space and water storage.

The second proposal advanced by the Claiborne Corridor Improvement Coalition, calls for the demolition of the raised I-10 expressway through downtown New Orleans and the reconfiguration of public transport to surface streets. The construction of this interstate in the late 1960's destroyed the historic Claiborne Avenue, a hub of the African-American community and one of the most vibrant and beautiful streets in the city. Over subsequent years it has displaced residents and businesses across its entire path.[25] The areas underneath the overpass have suffered from severe social and economic decline, a condition that the coalition seeks to redress by the removal of the overpass and the rehabilitation of the urban corridor. Though still in the planning phases, the proposal has received support from private citizens and public officials alike. It has been incorporated into the city's master plan and has the potential to knit back together a social and physical fabric torn by the forces of economic development and race- and class-based control (the Interstate was built over Claiborne Avenue in order to spare the predominantly white, affluent French Quarter).

These two initiatives—despite being some years away from completion—point to the kind of architectural thought that the city has increasingly embraced after Hurricane Katrina, and the kind that has the potential to shift public understanding of the natural environment away from an adversarial, confrontational relationship with it to a more integrated and fluid one. This shift has the potential in turn to reawaken a public consciousness of the fragility of the landscape; a reawakening whose impacts would do well to extend far past the city's borders. Katrina is now a touchstone, like so many other disasters, for a renewed relationship to the natural world and a harbinger and an omen of what could and will happen elsewhere. As Curtis noted, "The past here has much to inform the future, not just for New Orleans, but for an entire country that needs to rethink the way it designs cities and homes."[26]

25 Robert Baumbach, Robert and William Borah,. The Second Battle of New Orleans: A History of the Vieux Carré Riverfront Expressway. (Tuscaloosa: University of Alabama Press, 1981).

Lolis Eric Elie , Lolis Eric and Dawn Logsdon,. Faubourg Tremé: The Untold Story of Black New Orleans. DVD film. 68 minutes. Serendipity Films, 2008.

26 Wayne Curtis, 'Houses of the Future.' The Atlantic Monthly, November 2009 at: http://www.theatlantic.com/doc/200911/curtis-architecture-new-orleans. [accessed 30 November 2009].

Whether this intangible process of reconsideration or indeed any of the tangible interventions detailed above would have occurred had the levees not failed and the flood not come—whether the city would have simply shrugged off yet another hurricane and continued on its way on 29 August 2005—is a tantalising question, and belongs as much to the realm of counterfactual history as it does the ways in which we now articulate sustainability in the 21st century. We now live in the 'new' New Orleans, but what would the old New Orleans left uninterrupted have looked like? To ask this question is to see the ways in which ecology informs not just architectural theory and practice, but historical thought as well. If ecology is understood as an approach whereby webs and fabrics of relationships are better illuminated, then it may be used productively to investigate the modes of thought we use to investigate those relationships just as much as those relationships themselves. As a mode, ecological thinking enables us to re-examine the fields, texts, grounds, buildings and sites with a view both towards maintaining sustainable ecologies—the natural environments themselves—and to the social and cultural networks in and around which they adhere. Considering these networks more fully, and their futures well within our envisioning and our grasp, will thus provide the ground for a continued reinvention of the city, ensuring and securing its impossibility for years to come.

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## Highway 90 (to Waveland)

*from the Mississippi Highway Sonnets*

Tell me what you know of north and south.
I've never heard of any other road
but me, connecting the dark tannin mouth
of the Pascagoula to the darker wood
of Bois Sauvage to the west. Or so they say.
All I see is water, anymore. Water foaming in
forty feet tall, blending the noonday
beach into a filthy gumbo of roof tin,
light pole, drywall, corpses later found
spiked with nails and rebar, and the bridge
over the bay fallen like a matchstick house.
The gifts of latitude: a broken ridge
of salted bones of the coast's live oaks,
concrete slabs of homes, my compass, smoke.

## The Lost Road

You could have seen rubies in the grass,
gold in the gutters, or jade upon the roofs.
Men could have stood bleeding out the ass
and lawyers could have been telling the truth.
The sun could have stopped off for a drink
and the moon could have taken its place;
the river could have run red with ink
and kids could have laughed without a face.
Tell me. Did any of these things happen
this morning on your walk into work?
You wouldn't know—so lost in thought,
so lost upon the way you like to take,
you didn't leave the path, you left the map.
And solved your little problem—but for what?

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# Learning from Ecosystems: The Deployment of Soft Systems in the Canadian Arctic

Neeraj Bhatia and Maya Przybylski

The physical infrastructures of the twentieth century – those of roads, rail, air, data, sewage, and water amongst others – have tended to operate as singular and independent systems. The infrastructures of the twenty-first century, if they are to respond to impending urgencies with respect to resources and climate change, must investigate efficiencies and symbiotic relationships; to the pairing of infrastructure and landscape, infrastructure and public amenities, infrastructure and architecture. The pressure of urbanization in the Arctic provides an ideal site to test intelligent and soft systems that learn from ecosystems.

The thawing Arctic Ice Shelf is ironically yielding the same resources that evoked its depletion – massive oil and gas deposits that suggest the impending urbanization of the North. Once inaccessible, the Arctic is now under investigation to understand exactly how many resources were once trapped below the polar cap. According to estimates by the US Geological Survey and Norwegian company StatoilHydro, the Arctic contains twenty-five percent of the remaining oil and gas deposits of the world, equating to 90 billion barrels of oil, which are accompanied by 44 billion barrels of natural gas liquids and 1,670 trillion cubic feet of natural gas.[1] Further, the thawing ice is opening new shipping routes to export these resources to international markets. This has quickly incited economic interest in the north and perhaps the most critical territorial disputes of the past century. Eight countries including the US, Russia, Canada, Denmark, Norway, Sweden, Finland and Iceland are vying for territorial claims on these increasingly precious resources. In 2007, a Russian submarine planted a Russian flag 4,200 metres below the water on the site of the North Pole to declare their symbolic presence in the Arctic. Simultaneously, these resources sit below one of the most fragile and pristine ecosystems in the world and a richly diverse set of indigenous settlements. In fact, in Canada alone, over 18,500 people live above the Arctic Circle in approximately twenty-four settlements. In the longer term, as the effects of global warming take on their full impact, scientists

[1] Jessica Robertson, '90 Billion Barrels of Oil and 1,670 Trillion Cubic Feet of Natural Gas Assessed in the Arctic.' USGS: United States Geological Survey. 23 July 2008 at http://www.usgs.gov/corecast/details.asp?ID=87 [accessed: 12 November 2009].

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predict that northern countries and regions will see the greatest migration patterns. Indeed today, Iqaluit in northern Canada is the fastest growing city in the country.[2] While it is unknown exactly when port, drilling and mining infrastructure will colonize the arctic, it is now understood as an inevitable outcome of thawing.

While Petropolises – cities born from resource extraction – such as Yellowknife and Fort McMurray in the Canadian north, continue to expand under the pressures of diamond and oil extraction, they have done so haphazardly with little concern for public infrastructure. The unveiling potential of resources in the North has incited the Canadian Government to plan[3] deep-sea ports, military bases and new infrastructures in an effort to establish 'Arctic sovereignty'. However, with the urgency to service new Petropolises, there has been little thought afforded to development beyond economic efficiency and expediency. While territorial claims of this 'New Cold War' are being negotiated, they offer a unique moment to question how to build both ecologically and culturally sustainable settlements and infrastructure in the Arctic. Key to sustainable progress in the Arctic is in addressing existing issues, such as transportation and education, within current settlements to provide a functional infrastructure for future growth.

Creating a network of hard infrastructure in the Canadian North, however, has been difficult due to the harsh climate, immense scale, and remoteness of the region. Presently, the North is scattered with loose and fragmented systems of infrastructure and settlements that include defence networks (Distant Early Warning (DEW) Line, military bases and ports), research stations, oil rigs, mines, airports and roads amongst others. These developments have taken their cues from infrastructure of the south – designed as hard, permanent and independent systems that are difficult to upgrade or alter. The characteristic of ecosystems – as non-linear, self-organizing and complex feedback systems that are able to juggle various forms of hierarchies and scales – however, provides a more sensitive template to design new infrastructure in the Arctic. Learning from Ecosystems has incited the role of 'soft infrastructures' in the Arctic. That is, infrastructure that is adaptable, responsive, immaterial, temporary and/or small-scaled interventions that operate across a massive territory. Easily replaced or upgraded, these infrastructures double as landscape life support, creating new sites for production and recreation. The ambition of deploying soft infrastructures is to meld existing landscapes with emergent systems to catalyze a network of ecologies and economies for a new public realm in the Arctic. The two projects presented here focus on the critical issues of transport and education in the Canadian Arctic and utilize a series of soft systems that respond to climatic variation, programmatic needs, flexibility, and cultural diversity.

[2] Government of Canada, Invest In Canada: Iqualuit Quick Facts at http://investincanada.gc.ca/eng/explore-our-regions/northern-canada/nunavut/iqaluit.aspx [accessed: 23 February 2010].

[3] Hints of such projects and research are already underway. Port and military infrastructure were announced by Prime Minister Stephen Harper in 2007. Harper stated a new army training facility in Resolute Bay and refurbishment to an existing deep water port in Nanisivik would assert Canadian sovereignty (see: CBC News. Harper Announces Northern Deep-Sea port, training site 11 August 2007 at http://www.cbc.ca/canada/story/2007/08/10/port-north.html [accessed: 28 July 2010]. Upgrades are also planned in the Churchill Port in Manitoba, which holds a strategic location as it is connected into existing rail infrastructure. Other proposals currently underway include a resurgence of interest in the Mackenzie Valley Pipeline, which would connect the Beaufort Sea to markets in Southern Ontario and increased security measures (including new polar icebreakers and patrol ships) as recommended by the Standing Committee on National Defence. See Maxime Bernier, Canada's Arctic Sovereignty. Standing Committee on National Defence, (40th Parliament, 3rd Session: June 2010) at http://www.scribd.com/doc/33202297/Report-of-the-Standing-Committee-on-National-Defence [accessed: 28 July 2010].

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## Liquid Commons

A functional democracy requires the active participation of all individuals. Participation is dependent, however, on free access to information. Without this basic necessity, polarities in education emerge and the system of active participation finds itself in peril. The issue of how to educate the native Inuit in northern Canada emerged in 1939 when the Supreme Court of Canada ruled that the Inuit people would be a Federal responsibility.[4] Following WWII, in 1955, the Cabinet submission suggested a general system of education for northern Canada, which took its cues from established southern models. Before this moment, the traditional educational techniques amongst the Inuit population consisted of observation and practice via an oral tradition that was delivered in family groups. This methodology of teaching had occurred for centuries and was calibrated to the skills deemed necessary and important for the Inuit culture. A recent report[5] by The Royal Commission on Aboriginal Peoples suggested that the Canadian government's goal of formal educational strategies during the 1950s and earlier, was to assimilate Inuit populations. This project of assimilation in education was running concurrently with a Canadian Government housing programme, which introduced 'fixed' housing in the Arctic that eradicated the previously nomadic lifestyle of the Inuit. The assimilation-strategy and general interest in the Arctic was undoubtedly linked to the Arctic's strategic position during the Cold War, which resulted in the line of DEW radar stations. The introduction of a formalized 'southern' teaching system focused on assimilation however, was not only undemocratic, it had vast repercussions to the various Inuit communities that still linger today.

4 Gordan Robertson,, To Educate or Not Educate, CBC News Magazine. Original Broadcast 20 January 1957, at http://archives.cbc.ca/society/education/topics/529/ [accessed: 24 March 2010].

5 Inuit Tapiriit Kanatami. 'Backgrounder on Inuit and Education. For Discussion at Life Long Learning Sectoral Meetings, November 13th and 14th in Winnipeg and November 18th and 19th in Ottowa.' (Ottowa, 2004) at http://www.aboriginalroundtable.ca/sect/lrng/bckpr/ITK_BgPaper_LLL1_2_e.pdf [accessed: 24 March 2010].

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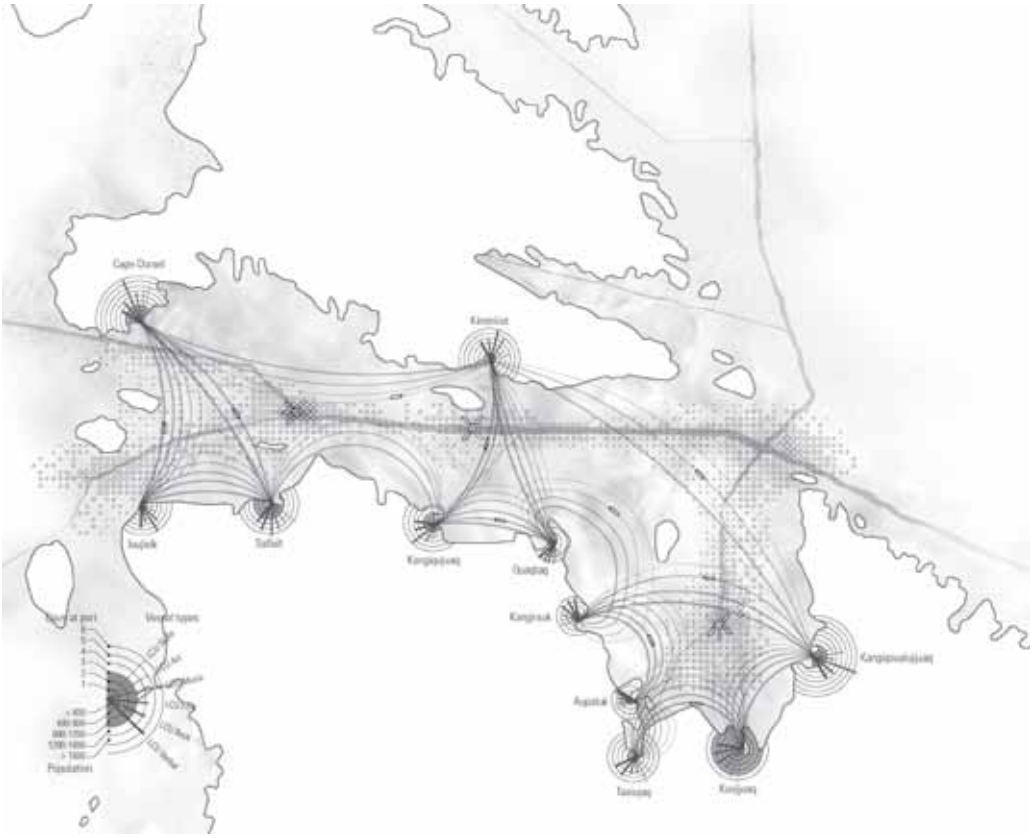

Fig 1. Liquid Routes: Map showing the network of boats travelling between settlements.

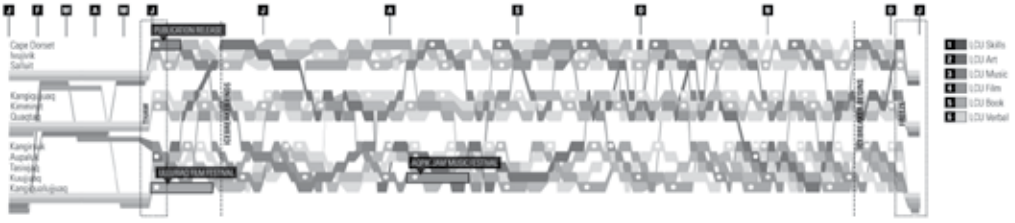

Fig 2. Soft Programming: Schedule of educational infrastructural network over one year, accounting for freeze/ thaw dates and festivals/ cultural events.

While it is difficult to deem exactly how far the ramifications of such an educational strategy spread, there are several statistics that reveal a general pattern. Recent studies[6] have found that more than half of Nunavut's working-age population and 80% of youth (age 16-25) struggle with literacy. More specifically, 88% of Inuit scored below level 3, which is considered the minimum skill level necessary to meet today's societal challenges, compared to 40% in the rest of Canada.[7] While Nunavut's population density is the lowest in Canada, it is also one of the fastest growing regions. Not only is the Inuit population growing at twice the rate of the rest of Canada, its population is young – with a median age of 20.6 years[8] (the rest of Canada's median age is 37.6 years), highlighting the important role education can play in this remote area. The premier of Nunavut, Aariak, goes further to suggest that the lack of education is at

6 See: Nunavut Literacy Council. 'Literacy in Nunavut' at http://www.nunavutliteracy.ca/ [accessed: 24 March 2010]; International Adult Literacy and Kills Survey (IALSS) / Stats Canada (2005), at http://www.statcan.gc.ca/daily-quotidien/051109/dq051109a-eng.htm [accessed: 24 March 24, 2010]; Learning a Living: *First Results of the Adult Literacy and Life Skills Survey*. (Paris: Organization for Economic Cooperation and Development, 2005).

7 Nunavut Literacy Council. 'Literacy in Nunavut' at http://www.nunavutliteracy.ca/ [accessed: 24 March 2010];

the root of poor housing conditions, high suicide rates, domestic violence, poverty and lack of job skills in the Inuit communities[9]. One of the largest challenges to providing education and knowledge in the Arctic is the geographic dispersal of many small settlements over a large landscape. If there was a soft system to provide knowledge, however, that was able to bridge the divide of small core populations and spatial distances, these remote areas could gain access to knowledge and more importantly to democracy.

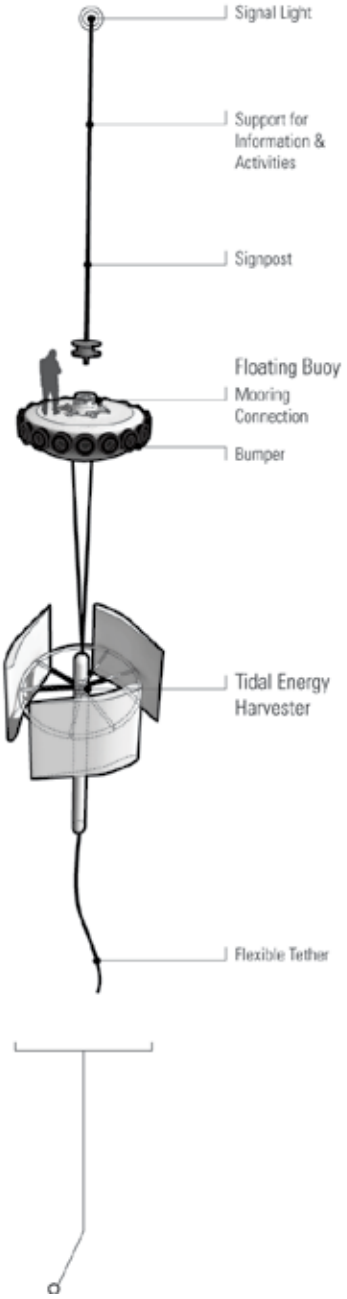


Fig. 3: Soft Mooring: A grid of floating buoys is flexibly tethered to the seabed.Equipped with tidal generators, these buoys also act as ice mooring locations for the nodal arrangement of boats.

8 Inuit Tapiriit Kanatami. 'Backgrounder on Inuit and Education. For Discussion at Life Long Learning Sectoral Meetings, November 13th and 14th in Winnipeg and November 18th and 19th in Ottowa.' (Ottowa, 2004) at http://www.aboriginalroundtable.ca/sect/lrng/bckpr/ITK_BgPaper_LLL1_2_e.pdf [accessed: 24 March 2010].

9 Bob Weber, 'Nunavut Premier Says focus should be on Education.' The Toronto Star, 31 March 2009 at http://www.thestar.com/news/%20anada/article/611147 [accessed: 24 March 2010].

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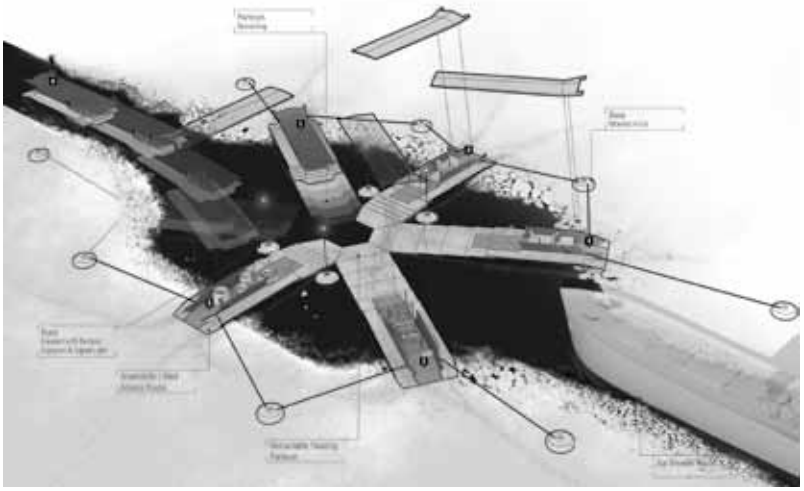

Fig. 4: Axonometric of Scheme in 'frozen state' showing flexible mooring, retractable floating pontoons and bridge configuration creating a crossroads.

The *Liquid Commons* aims to promote literacy, in official and recognized regional languages, by creating a malleable educational infrastructure in the form of community learning centres and libraries. By promoting action, speech and participation - the basic ingredients of a functioning democratic society – this growing region will strengthen its foundational populace. The proposed 'Hudson-Ungava' Library utilizes a series of 'knowledge boats' that travel between Northern Quebec and Nunavut to connect the harbours of: Cape Dorset; Kimmirut; Ivujivik; Salluit; Kangiqsujuaq; Quaqtaq; Kangirsu; Aupaluk; Tasiujaq; Kuujjuaq and Kangiqsualujjuaq during the summer months. Currently, the area and number of books in a library is dictated by Capital Planning guidelines based on population. By having mobile libraries, smaller settlements in close proximity can consolidate their collections and share a larger selection of books. In these settlements alone a core population of 7,500 inhabitants is formed, which also allows for other educational spaces such as internet cafes, community rooms and areas to exhibit traditional culture through practice and art. Thus these boats allow for both the dissemination and creation of knowledge, which feeds back into the networked settlements. Various boat hierarchies tied to differential schedules allows for a dynamic system that is easily adaptable and conducive to expansion or contraction. During the fall season, before the Hudson Straight and Ungava Bay freezes, the boats dock at a series of flexible nodes, positioned at the junction of several winter ice trails. During the winter the anchored boats effectively transform the libraries into a central hub, located between the settlements, allowing communities to interact as well as harkening back to a traditional nomadic winter lifestyle. In the summer, this nodal meeting point serves as a habitat for native birds and a harvester of tidal energy. By utilizing water as a shared

connective platform in the winter and as a distributor and energy harvester during the summer the *Liquid Commons* becomes both a unifying network and node. More importantly, by creating a network of knowledge through liberating the static nature of educational typologies, a system of both disseminating and creating knowledge occurs that connects the surrounding settlements.

Fig 5. Grouping of boats in the Liquid Commons produces a new flexible crossroads where a public sphere emerges between the boats and between the settlements.

## Soft Stations

North of 60o latitude, a combination of factors including the landscape pockmarked with boggy muskeg, lakes and ponds, a sparsely distributed population and a harsh environment, make building permanent all-season roads economically unfeasible.[10] This reality, however, does not preclude the necessity of transportation routes to penetrate the arctic tundra, as increased mining activity in Canada's North requires overland transportation options to service their operations. As a result, the arctic landscape, especially in the Northwest Territories has expanded its road system to move beyond paved and gravel highways to include roads made of ice. Primarily comprised of the naturally frozen lake surfaces that cover almost half of the landscape, these winter roads are made passable by the construction of portages linking one frozen lake to the next. The use of winter roads as part of the highway-network effectively doubles the amount of roadway available.[11] In addition to the increased length, the winter roads extend the network up towards the Arctic Circle and beyond – servicing industrial operations and native communities along the way.

[10] Canada. National Round Table on the Environment and the Economy, True North: Adapting Infrastructure to Climate Change in Northern Canada. (Ottawa: NRTEE, 2009).

[11] The Northwest Territories' highway network expands by 100% with the winter road season. The 2000km of paved and gravel roads are complemented with 2033km of ice roads.

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Fig 6. The Contwoyto Winter Road: First constructed in 1982 to offer access to remote mining sites, the road is almost 600km long with about 87% of its surface built on frozen lakes.

The *Tibbitt to Contwoyto Winter Road* (TCWR) is Canada's longest and most heavily used ice road. This seasonal transportation system has been the sole supply channel for Canada's active mining industry. Following historic trappers' lines, TCWR begins 70 km east of Yellowknife and extends more than 600km northeast to reach the north end of Contwoyto Lake in Nunavut. The road is built by a joint venture of mining companies operating in the area, and shared by many users, from exploration companies to tourism outfitters and Aboriginal hunters of the region. This seasonal winter road is only open for eight to nine weeks each year, from February to the beginning of April (depending on weather and the season's load requirements), and it must be re-constructed each year to service mines in the area. Along the way the route services *Snap Lake Diamond Mine Project* (264km), *Gahcho Kue Diamond Mine Project*, Diavik Diamond Mine (373 km), *Etaki Diamond Mine* (405km), *Lupin Gold Mine* (568km) and *Jericho Diamond Mine* (600km). Because of the relative ease with which vehicles move across the mostly flat, smooth and unobstructed frozen water, the organization and routing of ice roads

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privileges frozen water over permafrost. As a result 85% of TCWR lies on lake ice with the remaining portions of the route accounting for the 64 land portages between lakes.

Unsurprisingly, driving an 18-wheel tractor-trailer, hauling 64 tonne load, over 42-inch thick ice comes with certain risks.[12] To mitigate these risks several strategies with respect to construction, maintenance and operating procedures are put in place. During the construction phase, which involves first surveying the ice formation and thickness, then clearing the surface of its insulating snow, the type of vehicle used is calibrated to ice safety; starting first with helicopters monitoring and progressing through reconnaissance vehicles such as the buoyant *Hägglund* and snow-managers such as *Sno-Cats*. This process reveals a 50m wide swath of ice that, during cold temperatures, provides drivers with as much traction as a concrete tarmac. After this initial construction, the road is continually monitored for ice thickness; if the depth is insufficient or if wet cracks are identified, maintenance crews are called in to flood problematic zones in order increase the ice's integrity.

12 Don Hayley and Sam Proskin 'Managing the Safety of Ice Covers Used For Transportation in an Environment of Climate Warming', paper presented at 4th Canadian Conference of Geohazards, (May, Laval University, Canada, 2008).

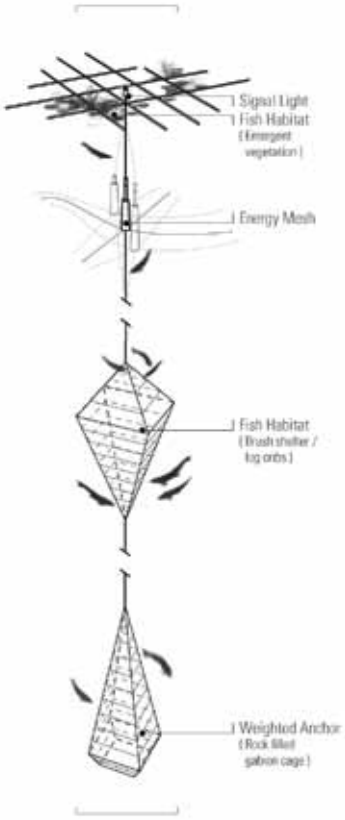


Fig 7. Productive Buoys: As trucks travel over the ice road, a hydrodynamic wave is created below the ice, which the mesh captures and converts to energy through a proposed buoy network.

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Another critical factor in mitigating risk is the speed with which trucks move across the ice. While carrying a heavy load, trucks are limited to a maximum speed of 35km/h but often encounter limits of only 15km/hr. A one-way trip along the TCWR can take as long as 3 days and, as a result, a series of stations is distributed along the route. While some of these stations, like the Lockhart Rest Stop (170km) offer drivers a wide range of services including overnight accommodations, food, showers and laundry, others, like Lac de Gras Rest Stop (350km), are reserved for maintenance crews and emergency services.

Through continuous accumulation, the ice can be more than 60 inches thick at the end of the two-month operating season. Ironically, the end of the season has less to do with thinning ice and more to do with the degradation of the conditions of the land portions of the road. The heavy trucks moving across the portages melt the snow and soften the earth leaving an impassable mess. It is the road's interface with land that is most problematic during the operating season as well. Since the water around the rugged shore topography is typically warmer and with shallower depths, the distribution of the moving vehicle's load is further complicated, and given the sub surface waves its movement generates the approach and transition from water to land is identified as the moment of highest risk.

The winter road network is an inherently soft infrastructural system. Embedded in its construction, operation, and lifespan are notions of emergence, responsiveness, and flexibility. In fact using the term construction in describing how the network materializes is not entirely appropriate. While human agency does play a role in ensuring minimized levels of risk, the roads effectively emerge out of existing materials, namely the water, and changing environmental factors, namely declining temperatures. Thus the role of the, at least human-based, construction has less to do with assembling materials into a tectonic and more to do with marking and organizing the already existing assembly of frozen lake water and permafrost. This phase too is soft. The over-ice selection, choosing the specific route the road will take, is a process cantered on responsiveness. Recognizing the frontier nature of the enterprise, additional data is collected with respect to localized ice behaviour and formation, lake bathymetry and climatic conditions. Taking this feedback into consideration, routes are refined to trace the most durable and safest path each season. Further, morphological changes have also been made to the design of the roadway. For example: over time the basic organization of the network has expanded to include express-lanes allowing returning, empty trucks to travel the return trip at higher speeds. The softness of the system is also leveraged within a single operating season. The route established during construction is subject to change over the course of the road's two-month lifespan as, on some lakes, traffic is re-routed to new

lanes to avoid damaged or rough sections of ice. Day to day, season to season, the winter road network is continually in flux as it tunes itself to numerous sets of inputs.

Unlike the roads, the service stations and occupying populations are presently operating in a much more predetermined, fixed fashion. Focusing primarily on the mining operations, the supporting infrastructure along the road has little relationship with other potential occupants. Emerging tourism and nearby native communities have little to do with the logic and services currently embedded in the system that privileges a predominantly industrial workforce. Further, the scattered service stations are not capable of responding to changing conditions, as they are permanently located on the permafrost portions of the route. This, in turn, limits the degree of flexibility in the roads themselves as the path is forced to travel through these fixed points. The unilateral relationship that these stations have with the ice roads is also limiting. While the roadways do disappear for most of the year, there exists a potential for these stations to remain active, albeit in different ways, throughout the year. Recognizing the need for the winter-focused stations, is it possible to dualize this infrastructure in order to be useful throughout the year? Is it possible to learn from the softness of the roads themselves in order to strategize a more complex interplay of forces and occupants for these stations?

The proposed series of Soft Stations leverages the soft logics of the already existing ice roads in order to extend the winter road's operating season – a necessity as activity increases. Recognizing the network's weak moments at the transitions from frozen lake to land, the new stations straddle this condition creating a multilateral interface tuned to the complex interplay of forces at work. On the one hand, the stations maintain their traditional role with respect to providing drivers and maintenance crews with essential services. On the other hand, their shoreline orientation allows the stations to themselves become agents in the integrity of the road: by absorbing the sub surface waves generated by the trucks' movement and converting them into useable energy, the stations reduce the waves' reflection and thus reduce the stresses on the ice surface.

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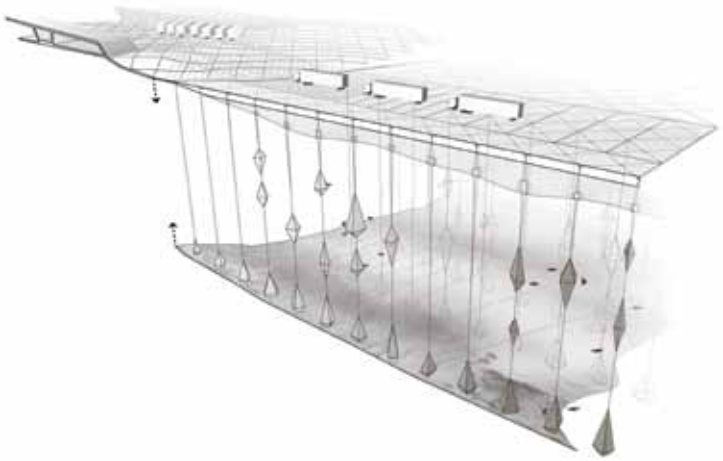

Fig 8. Dualized Reinforcement: The reinforcement meshes are installed at critical shorelines just below the water surface and serve to reinforce ice roads during the winter and lake ecologies during the warmer seasons.

The key element in this conversion is a series of intersecting meshes that serve not only as energy collectors but also as road reinforcement and ecological support. The mesh is installed along the approach vectors to the land-based stations, just below the water's surface, to reinforce the ice road during the winter, and lake ecologies during the warmer seasons. As trucks travel over the ice road, a hydrodynamic wave is created below the ice that is captured by the mesh and converted to energy through a proposed buoy network. These same buoys are also outfitted with flooding nozzles at the water surface and artificial reefs along the cable, and at the lakebed. As the mesh transitions from water to land it fills in to form a lattice for the primary shell of the winter station, allowing the stations themselves to be constructed of soft materials such as ice. The stations are further tuned to the environment as the orientation of the shell calibrates the emergent ice walls to use snowdrift and other forms of accumulation as a productive building tool. By focusing on the interface of land and water, these stations liberate the rest of the road network to further soften, dynamically situating itself in the most opportune locations from season to season. Ultimately, the softening of the system enables complete opportunism for it to dynamically adapt to emerging and unforeseen conditions.

The Canadian Arctic is defined by its extreme climate – from long to short days and freeze to thaw cycles. Architecture and infrastructure operating in such a context is typically designed for the most extreme of such annual conditions, creating a built form that is often permanent, static and imbued with high capital costs. Soft systems typically leverage an existing condition and find opportunities to engage in malleable relationships. These relationships are manifold – from existing ecologies,

government and economic systems to the actors of such systems and their individual perspectives. The complex feedback loops in such systems, and the ability to dynamically update the system as events unfold, allows for a designed openness. We have witnessed the failure of hard infrastructure throughout the 20th century – from the WPA (Works Progress Administration) projects to the 1960s mega projects – due to their inability to accommodate flexibility. Ultimately, the project of soft systems requires the designer to consider the complex networks that their intervention exists within, and position architecture and infrastructure within such networks to create systemic symbiosis, nested hierarchies and feedback loops.

Fig 9. Extended Season: The reinforcement meshes solidify the weakest moments of the network extending the operating period of the ice roads.

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# The Lost Decade?

Lisa Tilder

The first decade of the 21st century will be remembered for a series of losses, failures and catastrophes. The potentially infinite postponement of Calatrava's Chicago Spire, amongst other unbuilt icons, should be considered a cautionary tale, which serves as an allegorical frame for the discipline of Architecture and its position within the larger cultural milieu of our time. What is left for Architecture in a period of absent possibilities–symbolized by the negation of this iconographic spire? Should architecture now look toward the time in which it will celebrate the gap, the void and the absence of its own presence as its new dominant mode of operation? Can the void itself now represent a positive future?

When confronted with the possibility of the void, we are faced with a sense of anxiety for the potential death of architecture; its limitations pronounced by gaping foundation holes and abandoned construction cranes. From this gap we might look instead toward the positive aspects of the void, considering loss as a productive strategy that embraces the possibility of design over the mind-numbing pragmatism and neo-conservatism that is often born of crisis.

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## The Void

The void, or gap, has always been Architecture's primary terrain but somehow this has been forgotten. Imagination takes root in detritus, finding opportunity within compromised no-man's lands and forgotten landscapes. The recent increase in the prominence of the discipline of Landscape Urbanism, which reclaims the potential of abandoned territory and turns what had been previously considered wastelands into productive and active ecologies, is a case in point.[1] Buildings and landscapes turn away from the picturesque in favour of the performative, emphasizing systemic relationships over iconic symbolism.

The problem of the (lost) icon is symbolic of Architecture's crisis of representation that has defined the past century. As we turn now from the symbolic to the performative, we attempt to escape from the tyranny of the visual, through projections of possible futures. Our modern conception of the scenario as a speculative device derives from ancient Italian plays, where actors improvised from plot summaries that were literally pinned to a background scene or sketch.[2] This notion of the dynamic play or scenario projection, repositions architecture within the realm of the imaginary, where architecture's role is not that of simply providing shelter but that of evoking worlds.

The consideration of the void as a zero-point of mythic origin has moved past its tabula rasa beginnings in modernism to an anxious realm defined by a spectrum of crises (whether social, political, environmental or economic) ultimately producing what American architecture critic Albert Pope has described as "the zero effect."[3] He considers the prospect of a "degree-zero urbanism" wherein crises are reduced to their root cause and shaped into a singular quality, "the zero effect," in order to see past a crisis mentality. Pope argues that it is possible to redefine crisis as a symptom of larger trends whose logic is revealed only when judgment is suspended:

> For all that global warming and global terrorism create crises, the zero effect does not. The zero effect is not a symptom; it is a quality. The zero effect is a quality that exists in phenomena that are both good and bad, providing professional detachment where it is most urgently needed.[4]

Slovenian philosopher Slavoj Žižek moves beyond Pope's call for suspension to one of acceptance. Žižek has proposed that the global capitalist system is approaching an apocalyptic 'zero-point.' This is a combinatory effect of the convergence of ecological crisis, the consequences of the biogenetic revolution, global imbalances including intellectual property and forthcoming struggles over raw materials, food and water, and the explosive growth of social divisions and exclusions.[5]

1 The term Landscape Urbanism is often attributed to Charles Waldheim, editor of The Landscape Urbanism Reader, and Chair of Landscape Architecture at Harvard University Graduate School of Design. Charles Waldheim (ed.) The Landscape Urbanism Reader (New York: Princeton Architectural Press, 2006).

2 Wikipedia: (2010) http://en.wikipedia.org/wiki/Scenario [accessed 1 May 2010].

3 Albert Pope, "Ex Nihilo Urbanism" in *New Geographies 1: AFTER ZERO* (Cambridge: Harvard University Press, 2009), p. 12.

4 Ibid., p. 12.

5 Slavoj Žižek, *Living in the End Times* (London/New York: Verso, 2010), p.x.

Far from an argument for sustainability, Žižek instead considers the 'zero-point' as an opportunity to embrace our uncertain existence, arguing against Hegelian notions of progress by positioning catastrophes and broken equilibriums as a part of natural history. He reminds us that oil, our main source of energy, is the result of a past catastrophe of unimaginable dimensions.[6] Catastrophe may, after all, be tomorrow's opportunity.

Žižek argues compellingly for the acceptance of nature as an ongoing and transmuting phenomenon, by insisting that our conception of nature is an idealization that in fact does not exist:

> 'The 'nature' qua the domain of balanced reproduction, of organic deployment into which humanity intervenes, with its hubris, brutally throwing off the rails its circular motion, is man's fantasy; nature is already in itself 'second nature,' its balance is always secondary, an attempt to negotiate a 'habit' that would restore some order after catastrophic interruptions.'[7]

In contemporary architectural discourse, the notion of sustainability carries an assumption that we can situate nature within measurable limits– of resources, of efficiency, of performance. Here, the design act is one of regulation– mediating the boundary between architecture and nature. While ecological limits are based in science, more often than not the notion of sustainability carries with it a moral exactitude that implies that design (and architecture as an aesthetic project) is frivolous.

Thus the term sustainability reduces architectural imagination to problem solving rooted in empirical limits, promoting a condition of stasis that automatically dismisses the potential of digression from its calculated equilibrium. With sustainability we are doomed to tread water indefinitely. If we are not sustaining, then might we not be projecting into the (ecological) void? Instead of sustaining, we might consider the 'zero-point' as an opportunity to move from the anthropological to the ecological, where we permanently and perpetually lose our place at the centre of the universe. We must first set a course to reconsider architecture as a dynamic and projective practice that reflects a more sophisticated understanding of the potential for the ecological.

## Projecting into the Void: 12 Scenarios

The Lost Decade, a term borrowed from the 1990's, alludes to the Japanese asset bubble that triggered a decade of stasis in Japan. Many critics and politicians, including American economist Paul Krugman, have invoked reference to Japan's earlier crisis as a means of positioning our

6 Slavoj Žižek, "Censorship Today: Violence or ecology as a new opium for the masses?" in Volume 18: *After Zero* (The Netherlands: Stichting Archis, 2008), p.42.

7 Ibid.,p. 42.

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current confrontation with the void. Today's world economic crisis has driven us closer to the abyss, radiating far beyond its fiscal origin. We are challenged, however, to find opportunity within the reverberation of the Lost Decade and its resulting wave of interrelated economic, social, political, and ecological crises.

A recent proposal by MUTT Collaborative, "Lost Decade: The Lost Oughts, or 12 Scenarios for Maximizing the Void," posits a return to the power of the void, a void pregnant with the potential to ignite the imagination. MUTT offers a series of productive possibilities that consider opportunities presented by "The Lost Oughts" in order to overcome the apparent failure of Architecture to prepare itself for an imminent period of scarcity. Indeed, the delay of the Chicago Spire, amongst other unbuilt icons, registers the effects of larger economic, ecological, political and ultimately ethical failures within the broader cultural sphere. Here, MUTT explores opportunities presented within such limitations, through design proposals culled from twelve possible scenarios. Each scenario deploys design strategies to cultivate opportunity from loss.

"12 Scenarios for Maximizing the Void" finds possibility in the multiple, rejecting the notion of an ultimate solution in favour of a series of scenarios that explore the latent potential of the void. Originally conceived as an entry to the Chicago Architectural Club's MINE THE GAP competition, "Lost Decade" literally explores the void left by the Chicago Spire tower, whose foundation sits idle as a negative reminder of the ghost that might have been (see Figs. 1 and 2).[8] Twelve scenarios propose a myriad of ways the negative can become the positive once again. In an attempt to move beyond zero, each of the schemes finds potential in the social, environmental, economic and political crises of the Lost Decade (see Fig. 3).

[8] "Lost Decade" was one of twenty projects featured in the MINE THE GAP exhibition at the John David Mooney Foundation Gallery, Chicago, Illinois, USA, May 15-21, 2010.

Fig. 1 (left): The abandoned foundation cavity of the Chicago Spire tower.
Fig. 2 (right): The site of the unbuilt Chicago Spire tower. Photos: MUTT, 2010.

"Lost Decade" looks to confront the rapid transformations in contemporary culture that have taken place over the past decade and that have contributed to the crisis of the void, represented by the unbuilt icon. One might consider the void as a symptom of the acceleration of globalization. How might we transform the negation of what was once considered individual and unique in contemporary culture, now supplanted by the global and generic?
Looking to a sample of possible scenarios, [Scenario 1] Lost Energy: Barrels to Biofuel considers the void as a potential algae-to-biofuel production farm. One that replaces global oil dependence with a symbiotic system of urban grazing and alternative fuel cultivation, converting the site to an urban prairie and grazing field (see Fig. 4). Optimizing the crises of global food production and energy reliance, "Lost Energy" empowers the city of Chicago, re-establishing local energy systems and food sources. [Scenario 2] Lost Species: Biodiversity Regeneration addresses similar issues of globalization, contemplating the void as an urban agricultural system that grows vanishing crop species for dissemination. The homogenization of corporate agriculture is displaced through the cultivation, distribution and perpetuation of diverse biological systems. Additionally, [Scenario 3] Lost H20: Private to Public addresses the very serious issue of the increasing privatization of natural resources through the creation of a series of publicly accessible water follies. Public citizens confront the void by considering the global privatization of water and an individual's rights within that system.


Fig. 3. Lost Decade: The Lost Oughts, or 12 Scenarios for Maximizing the Void. MUTT, 2010.

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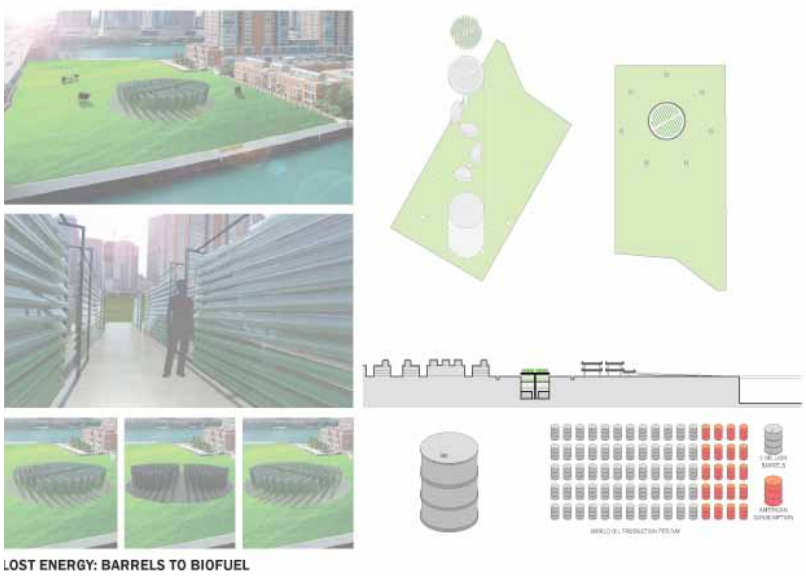


Fig. 4. [Scenario 1] Lost Energy: Barrels to Biofuel, and for Maximizing the Void.

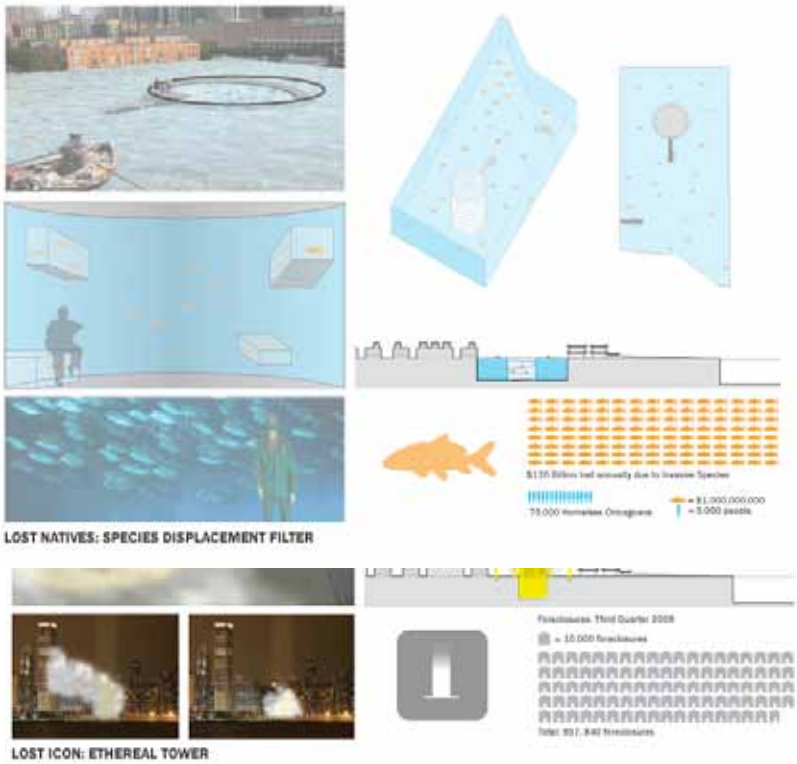


Fig. 6. [Scenario 5] Lost Icon: Ethereal Tower.

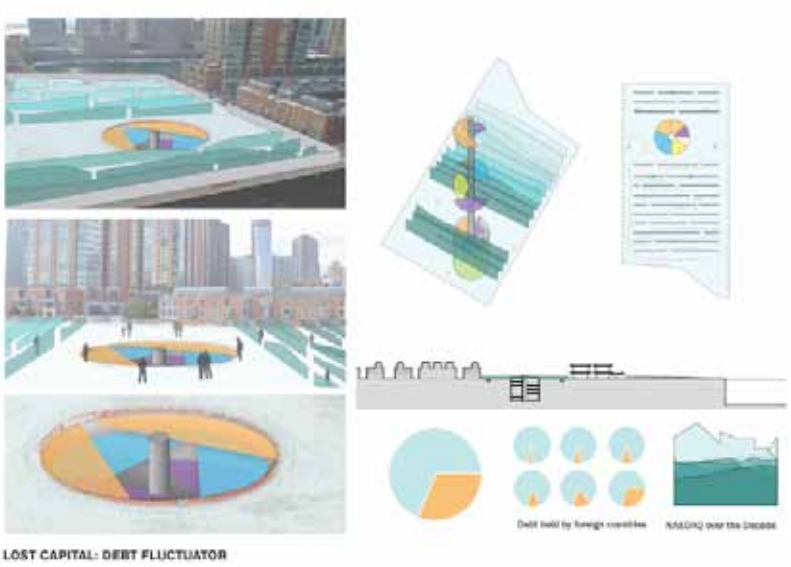


Fig 7. [Scenario 6] Lost Capital: Debt Fluctuator. MUTT, 2010.

"Lost Decade" Scenarios 9-12 address the social crises unique to our mediated decade, wherein issues of identity, experience, community and ethics are considered relative to the void. [Scenario 9] Lost Place: Virtual Monument Simulator examines the crises of identity brought about by globalization and media technologies by transforming the void into an immersive virtual environment. Within the void, a live-feed cyclorama collapses spatial distance between observer and place, traveller and icon, questioning the relevance of representation and the authenticity of experience in contemporary society (see Fig 8.).

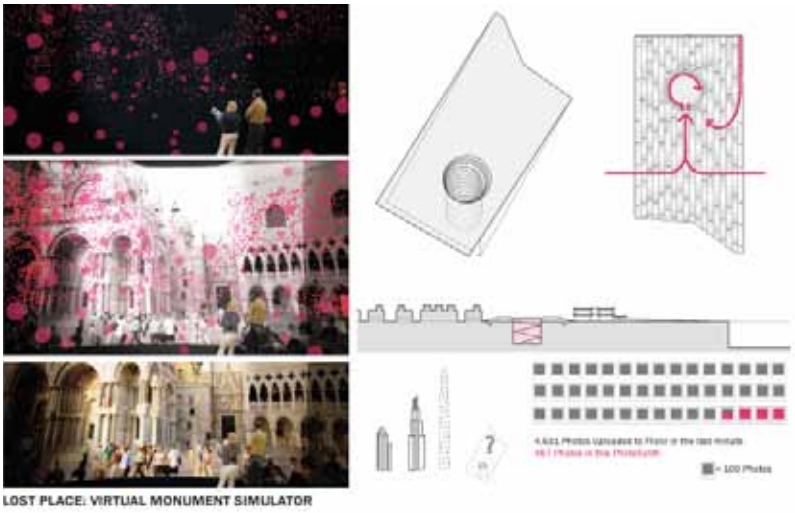


Fig 8. [Scenario 9] Lost Place: Virtual Monument Simulator, MUTT, 2010.

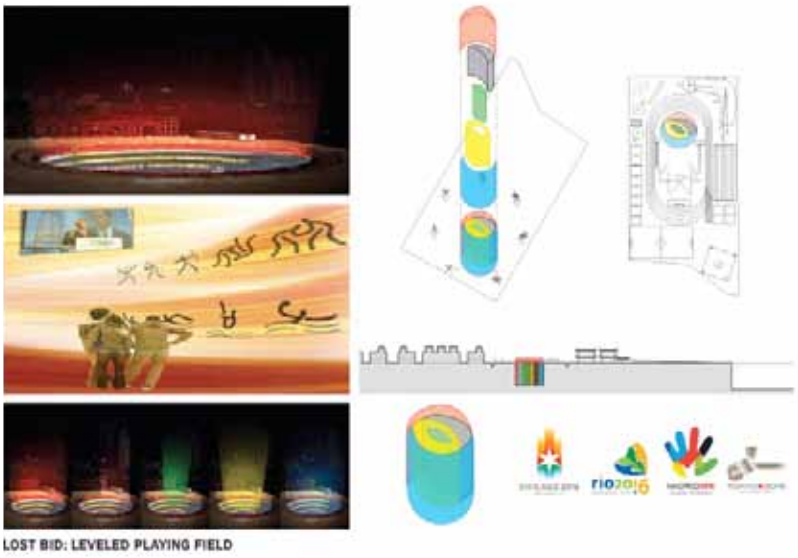


Fig 9. [Scenario 10] Lost Bid: Levelled Playing Field.

[Scenario 10] Lost Bid: Levelled Playing Field considers the gap as a museum dedicated to the loss of the 2016 Chicago Olympic bid. With the onset of globalization, the void is considered relative to the (declining) status of the US within an emergent global society (see Fig.9). Other scenarios address social crises, including [Scenario 11] Lost Contact: Face-to-Face Friend Finder, which proposes a spatialized network of physical social relationships that challenge the role of distant mediation and community in our contemporary society (see Fig. 10).

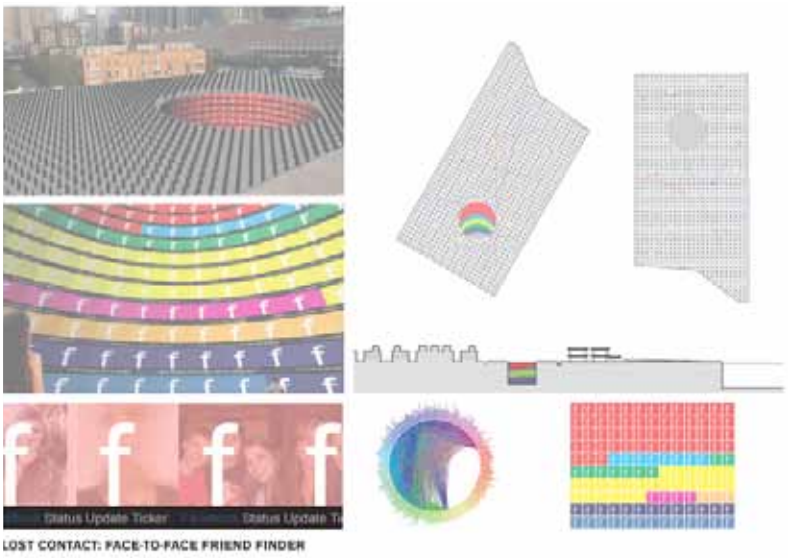


Fig 10. [Scenario 11] Lost Contact: Face-to-Face Friend Finder. MUTT, 2010.

The scenarios explored in MUTT's proposal offer a means of escaping stasis. They are tools of play and projection that enable us to reinvent the void, and in turn, restore architecture to the realm of the imaginary. "Lost Decade" imagines scenarios that explore the potential of the void as a means to accept and embrace possible futures for architectural design.

Essentially, we must consider the void as an effect of globalization, a symbol of a paradigmatic shift from the anthropomorphic to the ecological. The void, symbolic of our new 'ground-zero,' has moved past the 'zero-effect' of suspension to one of acceptance, a 'zero-point' that fosters future potential. Whatever what may follow, we must embrace the void as an opportunity, instead of perpetuating crisis.

Whilst we could consider the ruin of the Chicago Spire tower a romantic allegory or an emotional depiction of the decline of an idealized natural world, our contemporary disenchantment with materialistic society has not given rise to the metaphysical (as imagined in the 19th-century romantic paintings of Caspar David Friedrich and William Turner) nor to the dystopic (as vividly portrayed by novelists Philip K. Dick and J. G. Ballard and played out within the architectural fantasies of Lebbeus Woods). As our forsaken icons lead the way to abandoned cities like Detroit, threatened by an overwhelming expanse of desertion and decay, we have become increasingly anxious about our real-world ruins.[9] None-the-less, cities like Detroit can act as models, large-scale experimental tableaux, for artists and other innovators actively seeking their positive transformation.

[9] Detroit's decline is so extreme that a large portion of the city is planned for demolition, with relocation of its residents to a central area. See, Susan Saulny, "Razing the City to Save the City", New York Times, 20 June 2010.

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If we return to Žižek's conception of nature as an artificial construct, we might extend his argument to include that of the beautiful. If we consider the conception of nature as something uncontrollable and undefined, aren't we likewise obligated to modify our notion of the sublime? According to French philosopher Jean-François Lyotard, the sublime, a condition of pleasurable anxiety that we experience when confronting nature's wildness, was the founding principal of the Modernist period.[10] Lyotard argued that the modern art movement attempted to replace visual concepts of beauty with intellectual constructs, challenging conceptual limits as a means to reveal the ambiguity and unpredictability of the postmodern world. As we move now from an anthropocentric to an ecological world-view, we move from a place of anxious distance from nature, to a state of absorption within it – our pleasurable anxiety is now replaced by the simultaneous joy and horror that "we" are finally "it." As Architecture attempts to invent new ways of confronting the sublime, we might consider its turn to the ecological as an extension of its search for meaning; only now through architectural performance and productive relationships in place of visual aesthetics. We might argue, like Lyotard's conceptual artists, that beauty itself is deeply rooted in the imaginary. Our methods of conceptualization may differ, but the sublime's ability to confront the multiplicity and instability of the world continues to confound us.

[10] Jean-François Lyotard, Lessons on the Analytic of the Sublime. Trans. Elizabeth Rottenberg. (Stanford, CA: Stanford University Press, 1994).

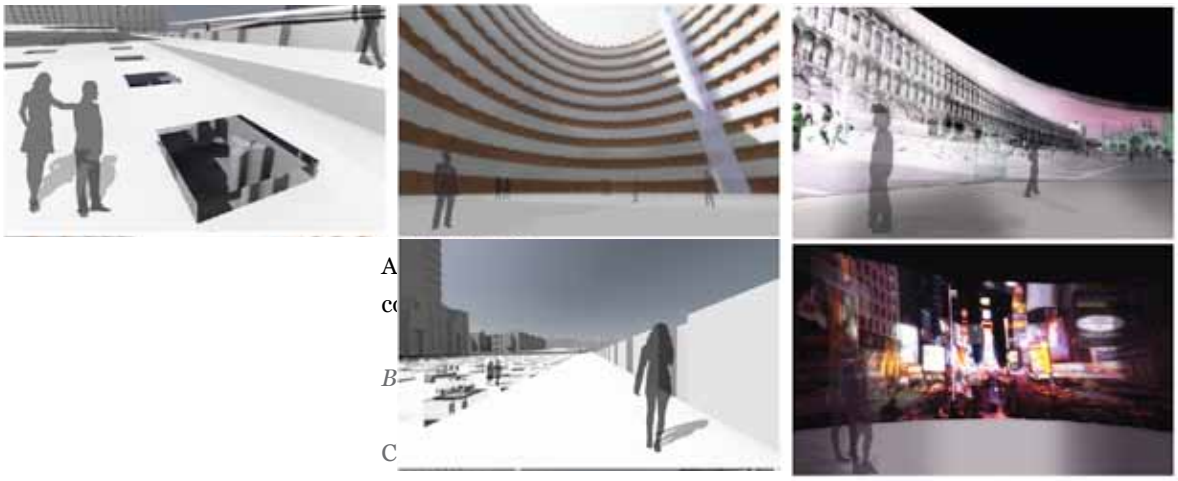

Fig.11. Descent into the Void. [Scenario 9] Lost Place: Virtual Monument Simulator. MUTT, 2010.

http://www.chicagoarchitecturalclub.org/competitions/competitions.aspx, [accessed 20 May 2010].

Jean-François Lyotard, Lessons on the Analytic of the Sublime, trans. Elizabeth Rottenberg (Stanford, CA: Stanford University Press, 1994).

Albert Pope, "Ex Nihilo Urbanism" in New Geographies 1: AFTER ZERO (Cambridge: Harvard University Press, 2009) p. 12.

Susan Saulny, "Razing the City to Save the City," New York Times, 20 June 2010.
Wikipedia: (2010) http://en.wikipedia.org/wiki/Scenario [accessed 29 May 2010].

Slavoj Žižek, Living in the End Times (London/New York: Verso, 2010) p. x.

Slavoj Žižek, "Censorship Today: Violence or ecology as a new opium for the masses?" in Volume 18: After Zero (The Netherlands: Stichting Archis, 2008) p. 42.

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# Bonjour Tristesse: Study for an art project. Cerdagne, France 2010

David Cross

While cycling in the Pyrenees near the border between France and Spain, I came across three different solar energy collectors located close to each other, aligned from East to West in the chronological order of their construction.

It seems to me that these elegant structures signal a route away from consumer society's dependency on destructive sources of energy, and so embody the possibility of retrieving a modernity that is coherent, progressive and more sustainable. Yet they have been overshadowed by the overwhelming predominance of the nuclear industry in France and the fossil fuel industry worldwide.

With energy depletion and climate damage increasingly threatening the bases of society and culture, the marginalization of a peaceful, non-polluting technology cannot be accounted for in purely rational terms. Of course, political and economic decisions support particular ideological positions. But it is as an artist that I am interested in these solar furnaces and my aim here is to sketch out an idea for a new art work that offers an aesthetic experience as an invitation to consider how scientific reason relates to hidden phobias and unspoken desires.

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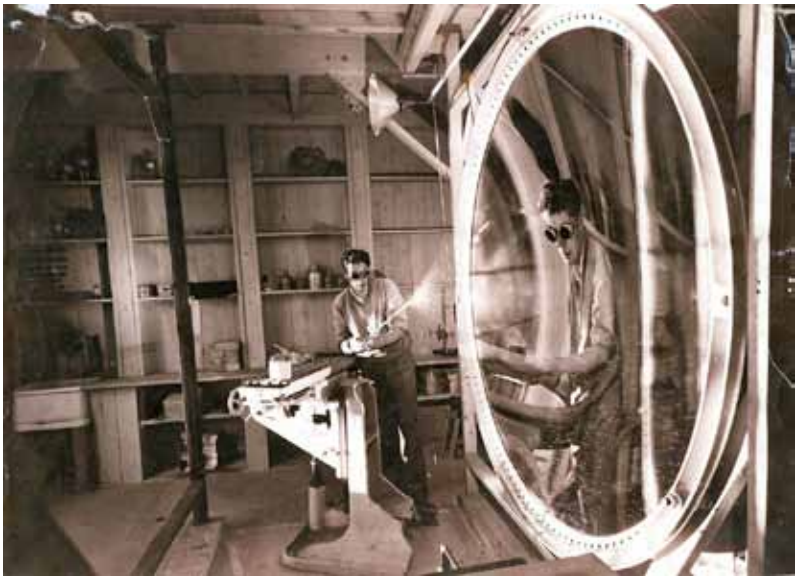

Fig1 1. Félix Trombe, Mont Louis, France, circa 1949. Photograph courtesy of Four Solaire Developpement. The world's first double reflection solar furnace was built in 1952 at Mont Louis, France by Professor Félix Trombe, Director of Research, Centre National de la Recherche Scientifique (CNRS, or National Centre for Scientific Research), Paris, in collaboration with Albert Le Phat Vinh and Marc Foëx.[1]

Artist and critic Victor Burgin has traced a lineage of pictorial convention from photography back to architecture, observing that the edge or frame of the photograph refers directly to the camera viewfinder, which in turn derives from the picture plane of the easel painting, and ultimately to the post and lintel construction of windows and doors in buildings. But while the idea of photography as an aperture or 'window on the world' does not mean that the photograph is a simple or objective record of events, the connection and analogy between photography and architecture opens up the interpretation of images as constructions that frame events as views from particular positions.

I remembered Burgin's essay, 'Looking at Photographs', in which he draws on film theory to

> 'identify four basic types of look in the photograph: the look of the camera as it photographs the 'pro-photographic' event; the look of the viewer as he or she looks at the photograph; the 'intra-diegetic' looks exchanged between people (actors) depicted in the photograph (and/or looks from actors towards objects) and the look the actor may direct towards the camera.'[2]

In this photograph, Professor Trombe demonstrates the parabolic mirror focusing the sun's rays to a burning point. But the mirror also doubles and reverses, enlarges and distorts the scientist's image, which the camera

[1] Felix Trombe and Albert Le Phat Vinh, 'Thousand KW Solar furnace, built by the National Center of Scientific Research, in Odeillo (France)', Solar Energy 15 (1973): 57-61.

[2] Victor Burgin, 'Looking at Photographs', in Victor Burgin (ed.) Thinking Photography (London: Macmillan, 1982): 142-153.

renders in perspective as an ellipse, like a cameo. This transformation of his image is an incidental by-product of the scientific research with light and mirrors, and if Trombe sees it, he does not acknowledge it. His protective goggles attract the viewer's attention to his face, which is expressionless, fixated on the point of light where the sun's rays converge. Nor does Trombe acknowledge the camera or photographer, but (despite the intense heat of his experiment) he seems cool and indifferent to his photographic image.

Similarly, the camera itself records an image of the optical processes of reflection, focus and exposure without acknowledging its own relationship to the situation. Yet this photograph is clearly staged and carefully composed to combine the functions of factual document and publicity image. Already separated from the mesmerizing scene by the passage of time, the viewer is positioned by the photograph as a detached spectator rather than someone who might affect, or be affected by the event.

Fig 2. Solar Furnace, Mont Louis, France, 2009. Photograph courtesy of Visocrea SARL, France.

This photograph shows a fully functional reconstruction of Félix Trombe's double reflection solar furnace at Mont Louis. The furnace is the centrepiece of a visitor attraction established and directed by Denis Eudeline, an engineer and committed advocate of solar energy technology for developing countries. At Mont Louis, the sun's rays are directed by a single flat mirror or 'heliostat' onto a convex parabolic mirror, which concentrates an image of the sun into a focal point, instantaneously producing temperatures in excess of 3000 degrees Celsius with zero emissions of carbon dioxide or other pollutants.

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As the high temperature solar energy research conducted by Trombe and his colleagues related to materials research around nuclear energy and atomic warfare, it was considered to be of military importance. Consequently, the experimental furnace was installed within the ramparts of the 17th century fort at Mont Louis, which still serves as a military base. The fort was designed by Vauban and has been designated a UNESCO World Heritage Site. (Paradoxically, the World Heritage status of the fort is given as a reason to prevent the use of solar panels on the buildings nearby, as these would be seen to interfere with the visual amenity of the fort.)

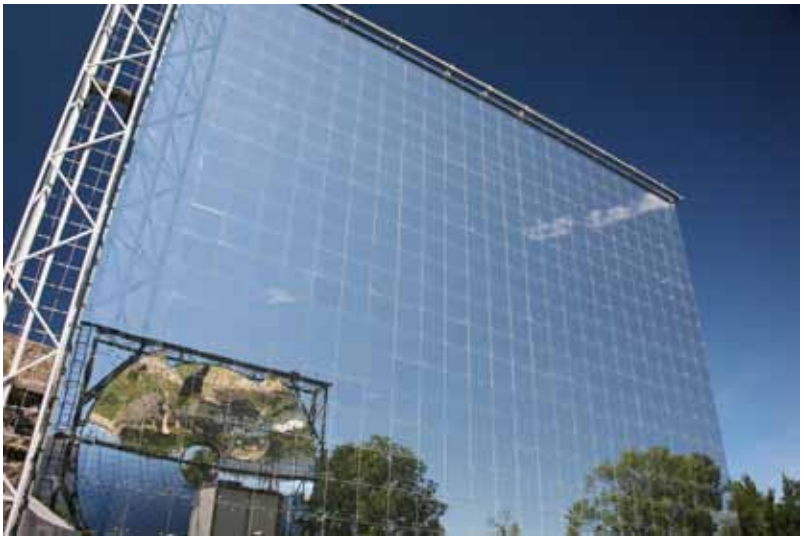

Fig 3. Heliostat facing parabolic reflector. Solar Furnace, Mont Louis, France, 2010.

The use of two mirrors facing each other might seem to be a relatively straightforward matter when viewed in terms of physics and optics. Yet an image within an image also has cultural connotations of the mise en abîme, of infinite repetition and connection.
In psychological terms, these ideas might resonate with how personal identity forms in reciprocal relation to the others around us, from the family to community and outwards into society. From this springs the possibility of apperception: a heightened self-awareness or reflective apprehension in which who we are and what we know are seen as inseparable.

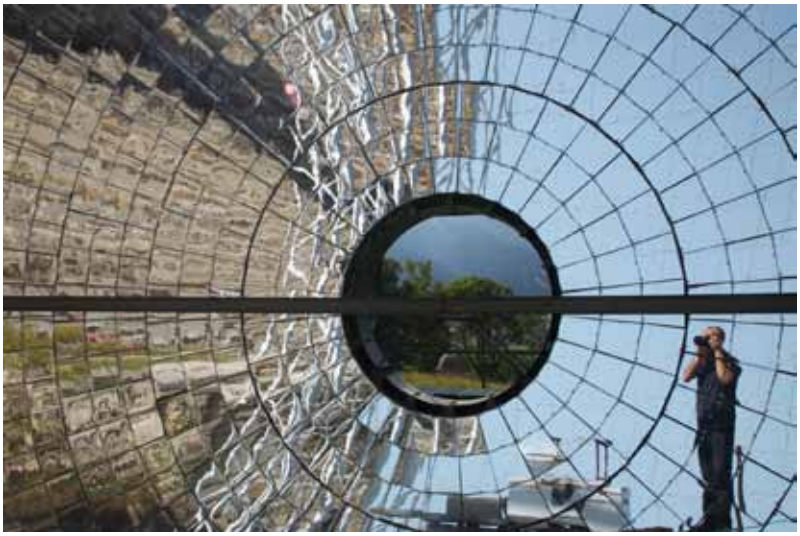

Fig 4. Self-portrait with parabolic reflector. Solar Furnace, Mont Louis, France, 2010.

I love these solar mirrors, though I have to concede that while all technologies are grounded within social relations, none is inherently liberating. Equally, I am seduced by the notion that the camera has the potential to transform thought; though I suspect that within consumer culture, photography is constrained instead to endlessly nuance received ideas.

Facing the parabolic mirror of Mont Louis, I put myself in the picture — an English middle class male in France with a digital camera, my image split into a double mosaic of mirrored reflections rendered in pixel form.

Fig 5. The Félix Trombe Solar Furnace, Odeillo-Font Romeu, France, 2010.

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The success of Trombe's experiments at Mont Louis led to the construction in 1968 of the most powerful solar furnace in the world, the 'Grand Four Solaire' at Odeillo. The furnace is run by the CNRS and is used by the international scientific community as a testing facility for space and industry research. The ultra-high temperatures produced by the furnace enable the study of the fundamental science of energy and matter, the behaviour of materials at high temperature, the development of materials for energy applications and the transformation, storage and transport of energy. The applications of this research include the production of industrial gems, the development of aerospace ceramics, the destruction of asbestos and clinical waste, the containment of nuclear waste, the development of photovoltaic cells and the splitting of water molecules for the production of hydrogen.[3] Such a range of research, as part of the furnace's historic connection with military and space programmes gives the building an ambiguous symbolic identity, poised between hopes for international harmony and fears of nuclear holocaust.

To take this photograph showing the parabolic reflector facing its bank of heliostat mirrors, I used a standard lens and held the camera at eye level from a position beside the road, created specifically as a vantage point for tourists.

Fig 6. The Félix Trombe Solar Furnace, Odeillo-Font Romeu, France, 2010.

At the scale of grand public architecture, the parabolic mirror at Odeillo inverts and magnifies the image of the landscape and sky around it. But rather than being contained within the building, as with a camera obscura, the brilliant image is on the exterior surface of the building, suggesting a camera lucida.

3 Centre National de la Recherche Scientifique Processes, Materials and Energy Laboratory. See www.promes.cnrs.fr [accessed 5 October 2010].

In the clear sunlight of the mountains, the space-age symbolism of the solar furnace seemed to intensify: this building proclaims that science funded by the state and conducted in the public interest (if not actually under democratic control) is not a utopian fantasy to be dismissed as part of the demise of Modernism.

Parabolic reflector and viewing gallery of the solar furnace, Odeillo, France, 2010.

While taking this photograph I paced restlessly back and forth, distracted by a mental image of London's grey skies, flattened by aircraft contrails and coal fired power station emissions. I tried to focus on the pleasure of composing a positive image, but I kept thinking: 'In Britain, the cuts to state funding for research suggest that the result (and maybe the aim) of the banking scandal is permanent damage to the public sphere.'

Because the focal point of the parabolic reflector is between the reflector and the heliostat mirrors that direct the sun's rays onto it, the furnace structure inevitably blocks part of the solar energy. This is known as 'shadow loss'.[4]

In the place where the furnace tower casts a shadow on the parabolic reflector, the mirrored surface is interrupted by an aperture with a viewing gallery. The scientific observer is thereby situated in a way that inversely echoes the moment when the photographer's own shadow is captured within the image.

4 Harald Ries and Markus Schubnell, 'The optics of a two-stage solar furnace', Solar Energy Materials 21 (1990): 213-217.

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Fig 8. View overlooking Odeillo from Font Romeu, France, 2010.

From up on the hill, I saw the solar furnace juxtaposed with a log cabin. This reminded me of Andrzej Tarkovsky's film Solaris (1972), in which the timber house in the forest represents a connection with the earth that serves as a counterpoint to the disembodied experience of space travel. If chalets like the one in this photograph are constructed with sustainably grown timber and are well insulated, then their individual ecological impact should be far less than their conventional equivalents. But while the space age Solar Furnace is organized around a central principle of focus and concentration, the late growth of suburbs on the hillsides is driven by a private impulse of dispersal and isolation.

Here, ecological style masks a deep dependency on the motorcar, the road network and the oil well: the timber building is an image, a screen to hide the underlying structure.

Fig 9. Thémis solar power station. Targassone, France, 2010.

The successful research at Odeillo led to the construction of a solar power station nearby, at Targassonne. Opening in 1983, the centre generated zero-carbon electricity and provided sustainable employment. It was named Thémis, after the Greek goddess of divine order and justice, who was one of the six sons and six daughters of Gaia.

Thinking about the installation as a figure from classical mythology strengthened its likeness to an amphitheatre; I like the idea of associating the shared infrastructure of power with the public space of democracy and culture.

In choosing my position to take this photograph, I climbed up the hill as though I was scouting for a location shot or re-staging a film still, and I imagined how drama and rhetoric might be refracted through memories of cinematic images.

Yet the French Government policy of prioritizing nuclear energy with state subsidies offered the owners of the centre, Electricité de France (EDF), more attractive returns on their investment. In 1986 EDF declared the centre 'unprofitable' and closed it, with the plant scheduled to be demolished, the machinery sold for scrap, and the site razed.

Fig 10. Abandoned heliostat armature. Thémis centre, Targassone, France, 2010.

When taking this photo, I asked, how does the image of the ruin relate to the idea of progress, if it is the progressive idea that has been ruined?

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Fig 11. Heliostats facing the collector tower. Thémis centre, Targassone, France, 2010.

Fortunately, the decision to destroy Thémis was deferred: although the centre was designed to collect energy by concentrating the image of the sun, by realigning its mirrors to concentrate starlight and electromagnetic radiation it could double as an observatory. An international group of astrophysicists and scientists with the Commissariat à l'Énergie Atomique, CAE (Atomic energy Commission) and the Conseil Européen pour la Recherche Nucléaire, CERN (European Council for Nuclear Research) successfully bid to use the giant apparatus as a space telescope. This capacity for reorientation from day to night, from visible to invisible, saved Thémis long enough for a consortium of partners to be gathered who are now preparing to reinstate it as a power station and centre for research and development on solar energy.

Heliostats of the Thémis centre, Targassone, France, 2010.

Fredric Jameson has developed the work of Ernest Mandel to show that under capitalism, each cultural moment embodies the logic of its technological base. Mandel and Jameson examine a series of fundamental breaks or quantum leaps in technology following the original Industrial Revolution: machine-made steam engines, followed by electric and combustion motors, then electronic and nuclear powered devices.[5]

[5] Fredric Jameson, Postmodernism, Or, The Cultural Logic of Late Capitalism (London: Verso, 1991) p. 35.

Whereas fossil and nuclear fuels made it possible to instigate the standardized, 'international style' of globalization, a new modernity based on renewable energy would have to respond to geology, landscape and the 'bioregional' variations of vegetation and climate. When material conditions reassert the primacy of geographic difference, what might be the effect on cultural difference?

Fig 13. The heat collector from Thémis exhibited in the grounds of the solar furnace at Odeillo, France, 2010.

During the brief period when Thémis was in operation, its heat-collecting unit served as a kind of large format camera, capturing an indexical image of the sun, registered as thermal energy. When Thémis was decommissioned as a power station, the unit was removed from the head of the tower and put on display as a museum exhibit in the grounds of the Great Solar Furnace at Odeillo. Like a sculptural installation or architectural pavilion, this industrial form separated from its function seems to invite a detached, abstracted contemplation from the visitors, which I echoed by using a telephoto lens from a distance.

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Fig 14. Focal point of the solar furnace, Odeillo, France, 2010.

This digital photograph has been manipulated to reduce the contrast between light levels inside and outside, and to show the detail in both shadow and highlight. It shows the view from the solar furnace tower at Odeillo, looking outwards to the parabolic reflector. In a crucible fixed at the circular opening in the screen, scientists subject materials to ultra high temperatures to test their transformation or destruction.

A solar furnace applies the optical phenomena of focus, reflection and magnification to intensify the image of the sun.[6] As with a photographic camera, the result achieved is a function of focal length, aperture and exposure time. My hope is that while optics form the basis for connections between the solar furnace and the photographic camera, so photography and film theory might enhance the understanding of solar furnace technology by situating it within the cultural sphere. In turn, psychoanalytic exploration of the paradigm of scientific objectivity[7] could help relate it to the subjective experience that underlies social trends, such as changing public attitudes to research.

I propose to make a new art work that relates the disinterestedness of pure science to the disengagement of 'art for art's sake'.[8] The work risks a double blow from its audience: while environmentalism is dismissed as reactionary or accused of misanthropy, contemporary art is increasingly vulnerable to the populist charge of irrelevance and waste.

During the time of my visit to the solar furnaces, I was reading Bonjour Tristesse or Hello Sadness (1954), the novel by Françoise Sagan. Set in a luxurious holiday villa on the French Riviera, the story is told by Cécile, a young woman caught between adolescence and adulthood. Since her mother died when she was two years old, Cécile has enjoyed a life of extravagant socializing with her father Raymond, a suave but vacuous advertising executive with a penchant for young and superficial women. Although Cécile has failed her philosophy exam, she is enjoying a long summer holiday in the villa with her father and Elsa, his latest girlfriend.

6 Felix Trombe and Albert Le Phat Vinh, 'Thousand KW Solar furnace, built by the National Center of Scientific Research, in Odeillo (France)', Solar Energy 15 (1973): 57-61. See also Felix Trombe 'High temperature furnaces', Proceedings of the World Symposium on Applied Solar Energy, Phoenix, Arizona, 1955 (Stanford Research Institute, 1956) pp. 63-72.

7 Karl Figlio, 'Knowing, loving and hating nature — a psychoanalytic view', in George Robertson, Melinda Mash, Lisa Tickner, Jon Bird, Barry Curtis and Tim Putnam (eds) Future Natural (London: Routledge, 1996) pp. 72-85.

8 Gisèle Sapiro, 'Responsibility and freedom: the foundations of Sartre's concept of intellectual engagement', Journal of Romance Studies 6: 1 and 2 (2006): 31-48.

But the simple pleasures of days in the sun become complicated when Raymond also invites Anne, whose maturity, creativity and personal integrity give her an authority that Cécile finds both reassuring and oppressive. Raymond makes a surprise decision to reject Elsa and to marry Anne, who then assumes responsibility for Cécile's moral and intellectual development.

Lucid and self-aware, Cécile understands that although the struggle against limitations is a critical aspect of adolescence, the passage to adulthood entails freely chosen responsibility. Torn between enlightened self-interest and self-centred hedonism, she intervenes in the relationships around her. Cécile grasps the psychological dynamics, but underestimates the forces involved. Although the ensuing disaster might have been imagined, it could not have been predicted, lifting the event from a crime to a tragedy.


Fig 15. Bonjour Tristesse Paris: Editions Julliard 1964.

Bonjour Tristesse is an intensely personal narrative, but it can also be read as a microcosm of the historical period when post-war idealism yielded to the consumer society. As such, it raises questions for our own social moment, when the dissolution of the public sphere and the destruction of the earth's ecosystems are emerging from the realm of fantasy to become real possibilities.

*Acknowledgements*

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# The Edible City: Envisioning the Continuous Productive Urban Landscape (CPUL)

Katrin Bohn and André Viljoen

Continuous Productive Urban Landscape (CPUL) proposes a coherent strategy for the introduction of interlinked productive landscapes into cities thereby creating a new sustainable urban infrastructure and supporting a re-definition of open urban space usages.

The paper focuses on the environmental benefits of integrating urban agriculture into CPULs as one of their major spatial and occupational components. Making reference to recent high-profile international exhibitions and publications, the paper also traces urban agriculture's remarkable shift from a fringe interest to one at the centre of contemporary urban and architectural discourse.

The paper concludes that, while urban agriculture is receiving a great deal of attention, the theory underpinning the design of productive landscapes and the rationale for developing policy to support its practice will require sophisticated cross-disciplinary work to articulate the full potential of concepts, such as CPUL, to make essential infrastructure within future sustainable cities.

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## The CPUL City concept

The concept of CPUL City provides a strategic and associative framework for the theoretical and practical exploration of productive landscapes within contemporary urban design. It describes the vision for a sustainable urban future based on the planned physical and societal introduction of continuous productive urban landscape (CPUL) into existing or emerging cities.

Continuous Productive Urban Landscape (CPUL) is a design concept advocating the coherent introduction of interlinked productive landscapes into cities as an essential element of sustainable urban infrastructure. Central to the CPUL concept is the creation of multi-functional open urban space networks that complement and support the built environment (Fig.1)

Fig.1 The CPUL concept. *Green corridors provide a continuous network of productive open space containing footpaths and cycle ways. Fields for urban agriculture and other outdoor work and leisure activities are located within the network and serve adjacent built-up areas.*
Image: Bohn&Viljoen Architects, 2002.

Key features of CPUL space include urban agriculture, outdoor spaces for people (leisure and commercial), natural habitats, ecological corridors and circulation routes for non-vehicular traffic. Its network connects existing open urban spaces, maintaining and, in some cases, modifying their current uses (Fig.2). Within the CPUL concept, urban agriculture refers in the main to fruit and vegetable production, as this provides the highest yields per square metre urban ground. Typical urban agriculture practice range from small-scale *food gardening* to high-yield, space-efficient *market gardening*.

Fig.2 Imagine a CPUL *as an open urban space where intensive urban agriculture and convivial outdoor places for residents compliment each other and are designed and built into a coherent infrastructural landscape. Images: (bottom) Bohn&Viljoen Architects "Cuba: Laboratory for urban* agriculture", 2002, (top) Bohn&Viljoen Architects "The Continuous Picnic", 2008.

CPUL impacts on the city qualitatively with respect to citizens' experience and quantifiably with respect to reduced negative environmental impact.[1] The concept recognises that each site and city will present a unique set of conditions and competing pressures informing the final shape and extent of the CPUL (Fig.3). CPUL City visualises how this productive landscape could enhance a city's social, environmental and economic performance by questioning issues as diverse as urban lifestyles, air quality and agricultural yield.

[1] Viljoen, A. and Bohn, K, 'Continuous Productive Urban Landscapes: urban agriculture as an essential infrastructure,' *The Urban Agriculture Magazine*, 15 (2005): 34-36

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Fig.3: London LeisurEscape. A CPUL proposal connecting public art gallery, the Tate Modern, in central London to the town of East Croydon at the edge of London. The image shows how parts of parks may be given over to productive landscapes including urban agriculture and selected roads be "greened" without compromising other uses.
Image: Bohn&Viljoen Architects, 2003.

The CPUL concept grew out of design research exploring the role of urban agriculture within urban design and was first designed for and then defined by Bohn&Viljoen Architects respectively in 1998 and in 2005.[2]

At the beginning of this work, we made connections between three ideas emerging internationally during the 1990's, all supporting the need for detailed design research into productive landscapes. One was the design debate focusing on infrastructure, exemplified by the notion of *infrastructural urbanism*,[3] the second was an interest in reducing the environmental impact of architecture, influenced by *ecological footprint* research,[4] and the third was the revived discussion about *public open space* which confirmed urban landscape as major contextual and lifestyle component for the design of a sustainable contemporary city.[5]

Our conclusion to this research was that urban agriculture could indeed make a significant contribution to fruit and vegetable requirements, and that a case could be made for considering it as an essential element of sustainable infrastructure in existing and developing cities.[6]

2 André Viljoen (ed.), Continuous Productive Urban Landscapes CPULs: designing urban agriculture for sustainable cities. (Architectural Press: Oxford, 2005)

3 Allen, S. 'Infrastructural Urbanism, Performance Notations: Barcelona ZAL,' *Scroope 9*, (1996): 71-9

4 Mathis Wackernagel, and William Rees, *Our Ecological Footprint: Reducing Human Impact on the Earth*, (Canada: New Society Publishers, 1996).

5 Makoto Yokohari, Process Architecture 127: *Ecological Landscape Planning*, (Tokyo, Japan: Process Architecture Co, 1995).

6 Michael Chisholm, *Rural Settlement and Land Use*, (London:Hutchinson & Co; 1972). André Viljoen, and Katrin Bohn, 'Urban Intensification and the Integration of Productive Landscape.' In Proceedings of the World Renewable Energy Congress VI, Part 1, (Oxford: Pergamon Press; 2000) Department for the environment farming and rural affairs (DEFRA) (UK). The Validity of Food Miles as an Indicator of Sustainable Development, Final Report for DEFRA, ED 56254, Issue 7, (Oxford: AEA Technology; 2005)

This resulted in the CPUL City concept being underpinned by a number of robust and interrelated social, environmental, economic and design arguments, for what would amount to a radical change in the configuration and programming of open urban space within an overarching desire to find more self-sustaining ways of living.[7] (Fig.4, Fig.5).

7 Michael Chisholm, *Rural Settlement and Land Use*, (London:Hutchinson & Co; 1979). André Viljoen, and Katrin Bohn, 'Urban Intensification and the Integration of Productive Landscape.' In Proceedings of the World Renewable Energy Congress VI, Part 1, (Oxford: Pergamon Press; 2000) Department for the environment farming and rural affairs (DEFRA) (UK). The Validity of Food Miles as an Indicator of Sustainable Development, Final Report for DEFRA, ED 56254, Issue 7, (Oxford: AEA Technology; 2005)

Fig.4: The Pragmatic and the Visionary: a (UK-centred) dialogue on our society's relation to food and the city.
Image: Bohn&Viljoen Architects, 2008

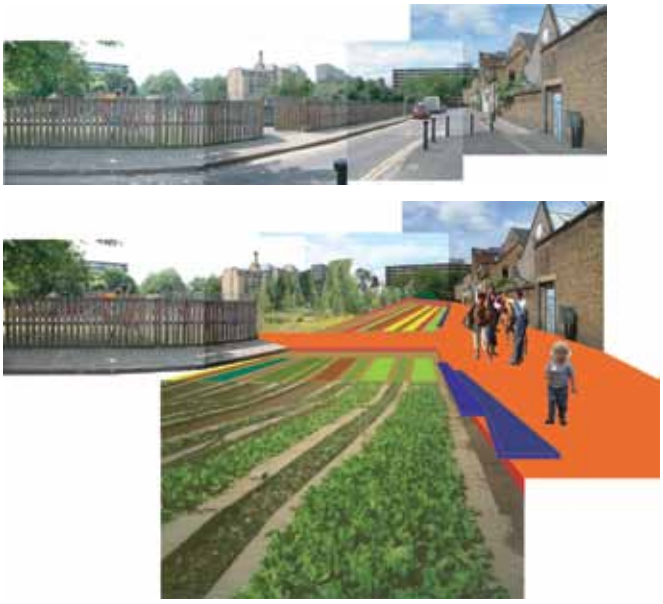

Fig.5: London LeisurEscape. Munton Road, London, before and after implementing a CPUL. In this proposal, the road, which is lightly used by vehicles, would be converted into an urban agricultural field surrounded by cycle and pedestrian ways.
Image: Bohn&Viljoen Architects, 200

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## The environmental case for Productive Urban Landscapes

There are three primary environmental benefits from organic urban agriculture for the urban food system: preserving bio-diversity; closing material/waste cycles and reducing the amount of energy used to produce and distribute food.

One of the most effective ways of assessing the environmental impact of a particular process or product is to find out how much embodied energy (the total amount of non-renewable energy used in production) is required. Embodied energy can be thought of as shorthand for assessing the climate change potential of a process. The energy (mainly non-renewable) currently used for conventional industrialised food production in Europe, for example, exceeds by far the energy received in return from consuming the produced food. This unlimited, daily energy usage contributes significantly to global resource depletion and global warming.

Apart from its conventional production, food is being transported further than ever before, often by air between countries on opposite sides of the world, whilst local crop varieties are replaced by a few commercial types popular with supermarkets.[8] This pattern of growing 'food miles' is far from sustainable, its by-product being increasing air pollution, notably of major greenhouse gases such as carbon dioxide, increasing road congestion and noise and increasing stress.

One might argue that concentrating on the energy consumed by current remote food production does not allow for the future development of environmentally clean energy technologies. But such a position fails to recognise that the inequitable distribution and consumption of resources extends beyond energy usage, i.e. to raw materials, desirable land, water and food. Reducing the energy requirements of goods and processes shrinks the divide between those who have access to abundant energy supplies and those who do not, without limiting the availability of final products.

Productive Urban Landscapes containing urban agriculture and supplying local outlets with the produce would offer an alternative to this environmentally dangerous situation. Our studies have shown that a city like London could produce about 30% of all fruit and vegetable requirements of its population from within the city boundary. It could achieve this by only using currently abandoned, leftover space.

8 Cook, H and Rogers, A 'Community Food Security', *Pesticide Campaigner*, 6 (3) (1996): 7-11

However, issues related to food security and food supply and the potential ways of improving our current modi operandi, are still only just starting to be discussed internationally:

> "Food is a sustaining and enduring necessity. Yet among the basic essentials for life — air, water, shelter, and food — only food has been absent over the years as a focus of serious professional planning interest."[9]

## Designing for Urban Agriculture

In urban agriculture, a solid body of literature exists describing it in relation to food security, to development policy and the positive social impact of urban agriculture in places with high indices of social deprivation.[10] Mostly, this research originates in developing countries and/or uses cases studies situated there. In Western Europe and North America, urban agriculture is looked at in different organisational forms, which include for example urban farms, community gardens or allotments. Whilst the latter concentrates on the social impact of food producing spaces on contemporary cities, the former also explores yields and growing techniques.

Other areas of academic research relevant to Productive Urban Landscapes are just starting to appear, for example research assessing the impact of green and/or productive space in the urban environment with respect to human well-being,[11] research relevant to the *economic viability of urban agriculture*[12] or detailed contemporary studies into the *embodied energy and associated greenhouse gas emissions of foodstuffs*.[13]

However, within design disciplines, the dissemination of new ideas, especially spatial ideas, takes place as much through visual media such as exhibitions, as through the publication of academic papers.[14] In these disciplines, a rapid increase in interest, exploration and dissemination of ideas about designing urban space for productive landscapes / urban agriculture is evident (Fig.6).

9 American Planning Association. 'Policy Guide on Community and Regional Food Planning,' (2007) at http://www.planning.org/policyguides/food.html.

10 Egziabher, A., Lee-Smith, D., Maxwell, D., Mernon, P., Mougeot, L. and Sawio, C. *Cities Feeding People: An Examination of Urban Agriculture in East Africa*, (Ottawa: International Development Research Centre; 1994) Mustafa Koc, Rod Macrae, Luc Mougeot, and Jennifer Welsh (eds.) *For Hunger-proof Cities Sustainable Urban Food Systems,*(Toronto: International Development Research Centre; 1999)

Maria Caridad Cruz and Roberto Sánchez Medina, Agriculture in the City: A key to Sustainability in Havana, Cuba, (Kingston, Jamaica: Ian Randle Publishers; 2003) Luc Mougeot, *Agropolis: The Social, Political and Environmental Dimensions of Urban Agriculture*, (London: Earthscan and the International Development Research Centre (IDRC); 2005)

Veenhuizen, R. van (ed.) *Cities Farming for the Future: Urban Agriculture for Green and Productive Cities,* (Philippines: International Institute of Rural Reconstruction and ETC – Urban Agriculture; 2006)

American Planning Association. 'Policy Guide on Community and Regional Food Planning,' (2007) at http://www.planning.org/policyguides/food.html.

11 The Second International Conference on Urban Landscape and Horticulture (June, Bologna, Italy, 2009).

[12] New Economics Foundation. 2001, nef surveys at http://www.neweconomics.org/gen/m6_i121_news.aspx [accessed 21/11/07].

[13] Brook Lyndhurst. 2008. London's Food Sector: Greenhouse Gas Emissions, Report for the Greater London Authority. See http://www.brooklyndhurst.co.uk/londons-food-sector-greenhouse-gas-emissions-_118?path=,118 European Commission. Environmental Impact of Products (EIPRO): Analysis of the life cycle environmental impacts related to the final consumption of the EU – 25, (2006) at http://ec.europa.eu/environment/ipp/pdf/eipro_report.pdf.

[14] Jac Smit, Annu Ratta and Joe Nasr, Urban Agriculture: Food, Jobs and Sustainable Cities, (New York: UNDP, Habitat II Series; 1996)

[15] André Viljoen (ed.) *Continuous Productive Urban Landscapes CPULs: Designing Urban Agriculture for Sustainable Cities.* (Architectural Press: Oxford, 2005)

[16] BLDGBLOG: (2009) http://bldgblog.blogspot.com/2009/06/london-yields-harvested.html [accessed 22nd June 2009].

[17] Greater London Authority: (2010). http://www.london.gov.uk/who-runs-london/the-london-assembly/publications/housing-planning/cultivating-capital-food-growing-and-planning-system-london [accessed 27th May 2010].

[18] Mark Redwood, *Agriculture in Urban Planning: Gen*erating Livelihoods and Food, (London: Earthscan and the International Development Research Centre (IDRC); 2009).

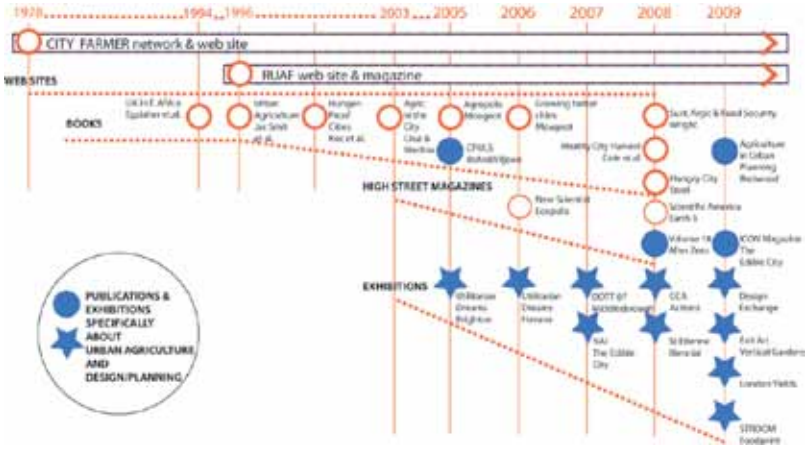


Fig.6: The increasing number of exhibitions about urban agriculture and CPUL hosted by arts and architecture institutions and galleries indicates how these subjects are entering the international architectural and urban design discourse. [The chart is not exhaustive, but reflects trends evident to the authors in their practice.]
Image: Bohn&Viljoen Architects, 2009.

The publication in 1996 of the book "Urban Agriculture: Food, Jobs and Sustainable Cities"[15] was a landmark in defining an international role for urban agriculture and may be considered seminal to a sequence of publications, academic and popular. While planning for urban agriculture has already been on the agenda, the publication in 2005 of "CPULs"[16] was the first time a book was devoted to presenting a design strategy for the coherent integration of urban agriculture into cities.[17]

A further milestone in the exploration of design consequences and possibilities arising from urban agriculture was reached in 2007, when the Netherlands Architecture Institute (NAi) Maastricht curated an exhibition titled "Die Eedbare Stad / The Edible City". For the first time, this brought together an international group of leading architects and artists all exploring urban agriculture within their work. Since then, the number of similar exhibitions and "public works" hosted by leading international design institutions has continued to increase[18] (Fig.7) (Fig.8).

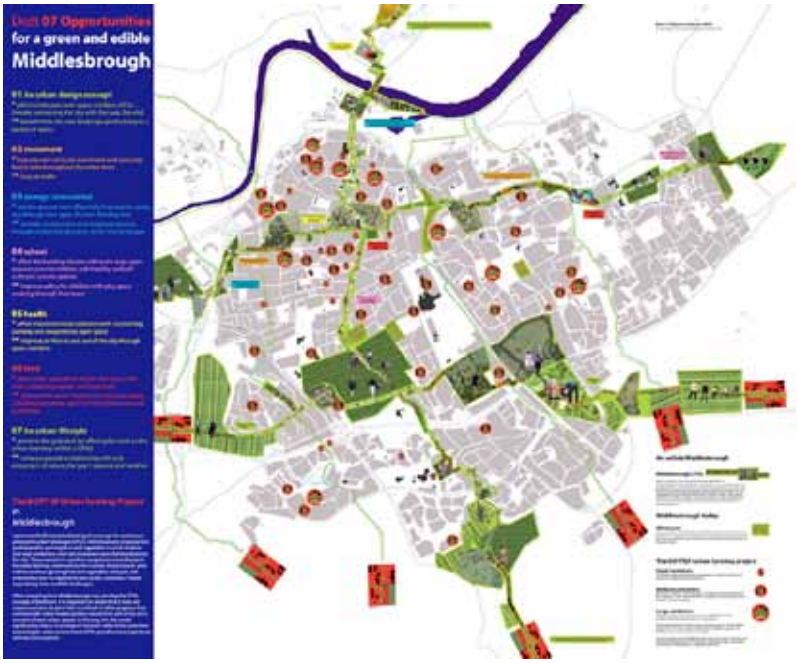


Fig.7: Middlesbrough CPUL. Opportunity Map developed as part of the UK Design Council's Designs of the Time (DOTT07) a 2-year-long urban farming project. During 2007, the population of Middlesbrough, the local authority and community organisations participated in urban agriculture projects across the town. Bohn&Viljoen's proposal for a Middlesbrough CPUL shows the identified network of open spaces and indicates DOTT07 urban farming sites (small square raised elements).
Image: Bohn&Viljoen Architects, 2007.

Fig.8: The Urban Agriculture Curtain. A working prototype for a vertical productive urban landscape as part of the exhibition "London Yields". The system developed with Hadlow College utilizes industry standard hydroponics components and produces fortnightly crops for use in the Building Centre's restaurant.
Image: Bohn&Viljoen Architects, 2009

[19] André Viljoen, Katrin Bohn, Mikey Tomkins and G. Denny, 'Places For People, Places For Plants' keynote paper presented at the Second International Conference on Landscape and Urban Horticulture (June, University of Bologna, Italy, 2009).

[20] Johann H von Thünen, J Der isolirte Staat in Beziehung auf Landwirthschaft und Nationalökonomie, (Hamburg, 1826).

[21] Mark Redwood, Agriculture in Urban Planning: Generating Livelihoods and Food, (London: Earthscan and the International Development Research Centre (IDRC); 2009).

[22] André Viljoen and Katrin Bohn, 'CPUL: Essential Infrastructure and Edible Ornament in: Designing Edible Landscapes' Open House International 34(2). Urban International Press (2009).

In the UK, these activities are likely responsible for productive landscapes beginning to be integrated into planning policy. Evidence for this can be found in the Greater London Authority's / Design for London's proposals for the "Green Grid", a network of open spaces within the city including provision for productive landscapes [19] and the recently published London Assembly report "Cultivating the Capital: Food growing and the planning system in London." [20]

Notwithstanding these developments, the publication, "Agriculture in Urban Planning"[21] concludes that architects and planners require further "awareness of and sensitivity to "green" and agricultural features into the design process".

## The 'behaviour change' potential of urban agriculture

Our own research suggests that this shift in perception is equally necessary for local residents, even in those urban areas where urban agriculture is not only present, but also essential for people's survival[22] (Fig.9).


Fig.9: Finding Parque Lenin. In 2006, Bohn&Viljoen carried out a survey about the perception of urban agriculture amongst local residents in Havana concluding that people do not see productive landscapes as equivalent to more established forms of urban landscapes.
Image: Bohn&Viljoen Architects, 2008.

However, at another scale, that of the individual non-commercial grower, evidence is emerging for a behaviour change related to food growing. In the UK, the allotment has shown itself to be a catalyst for changes related to diet and health. Surveys undertaken within Cambridge and Middlesbrough reveal the allotment's continuing influence across all socio-economic ranges. Most notable are a substantial increase in the quality

and quantity of food being consumed by allotment gardeners during the growing-season, and decreased dependency on grocery stores as a source for fresh produce: 70% in growing-seasons and 24% during the off-season. Changes in 'food-miles' reduced personal carbon emissions by an average of 950 kg CO2/year, even while still predominantly utilizing grocery stores during off-season months and maintaining an overall dependence on fossil fuelled transport year round. Allotment tenants also surpass the recommended 30 minutes/day of daily activity, through time spent within the allotment itself and through active-commuting related to food procurement. Furthermore allotment holders, who ate less than the recommended daily intake of fruit and vegetables before they had an allotment, increased their fruit and vegetable intake once they started growing food, and this increase was reflected in an increased proportion of fruit and vegetables purchased thought the year.[23]

[23] André Viljoen, Katrin Bohn, Mikey Tomkins and G. Denny, 'Places For People, Places For Plants' keynote paper presented at the Second International Conference on Landscape and Urban Horticulture (June, University of Bologna, Italy, 2009)

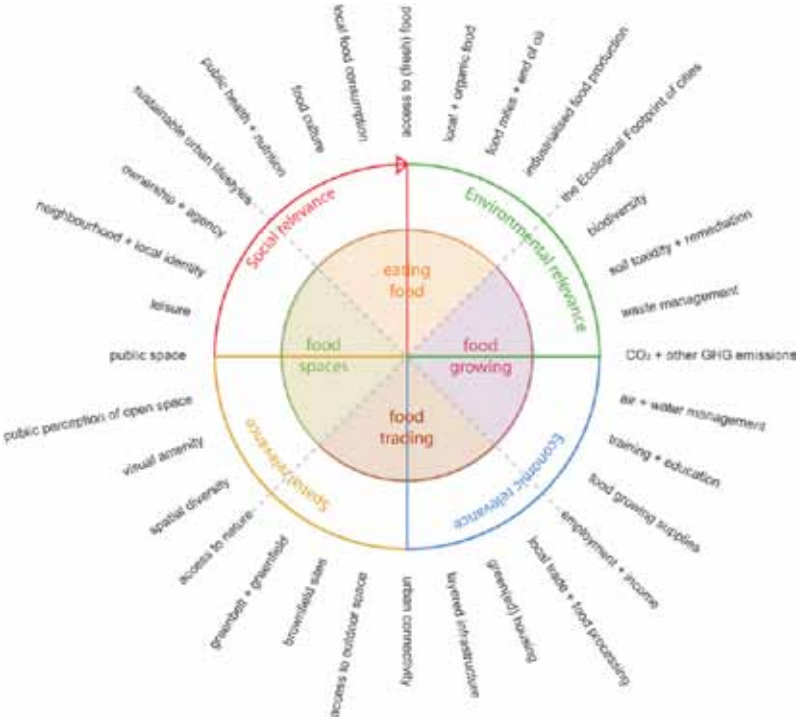


Fig.10: The Urban Food System. Food impacts on more than our personal well being and enjoyment. If we look at it from a sustainable and spatial perspective, we begin to understand the complex nature of its importance for the urban.
Image: Bohn&Viljoen Architects, 2002

If this trend is validated in further research, it will indicate the significant behaviour change impact that may be attributed to even relatively modest urban agriculture interventions.

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## Envisioning the future city (Conclusion)

As cities across the world seek policy guidance and further evidence on the impact of urban agriculture, it is worth noting how rapidly this subject moved from a “fringe interest” into the centre of public attention. While a long established literature documents and advocates urban agriculture in developing countries, the rapid shift of interest in urban agriculture that has taken place in North America, Europe and Australasia, is remarkable.

It appears that urban agriculture could be the term and the vision that holds together many different activities carried out for a variety of reasons in a variety of places by different groups of farming activists. The organisational or spatial details of these activities reflect their national and local context, but include dedicated urban food growing projects as much as allotments, transition town growing schemes, community gardens or urban farms. In Germany and Britain, for example,,Schrebergärten and allotments share similarities as well as Gemeinschaftsgärten and community gardens. Germany adds the Interkulturelle Gärten / intercultural garden movement to the richness of food growing projects (Berlin, Göttingen) and Britain is home to the first “food growing towns” (Todmorden, Middlesbrough). Both countries comprise cities where also larger scale urban farming initiatives are happening because of availability of space and strong stakeholder support (Brighton, Berlin). Across all populations and professions, ideas have taken hold to both, improve on the current urban food system and to use open urban space more productively.

Consequently, we are now talking about something more strategic and infrastructural. Now, the question is how a significant amount of urban agriculture can be *re*/integrated into cities. The term *re*-integration is important here, as cities have included productive spaces in the past, and the economic and agricultural logic for locating fruit and vegetable growing close to the city centre was clearly argued as long ago as the early 19th century in Von Thünen's writing.[24] Whilst historic models should not be romanticised, and by some accounts they were not particularly pleasant places, they do present examples of closed-loop, no-waste and energy efficient systems. Our task now is to rethink and redesign better spaces for urban food systems.

A strong environmental case can be made for the productive landscape as an essential element of sustainable urban infrastructure. Concepts like Continuous Productive Urban Landscape (CPUL) and CPUL City provide design strategies capable of giving spatial and organisational coherence to the infrastructural and qualitative aspects of urban agriculture.
To translate this concept into practice will require further cross-disciplinary work. The design, planning, landscape, horticultural and retail professions will need to relearn old skills and develop new ones

[24] Michael Chisholm, Rural Settlement and Land Use, (London:Hutchinson & Co; 1979).

to support, in particular, the practice of urban agriculture. If urban agriculture is to be widely adopted, its other functions and benefits such as providing social cohesion or urban ornament also require articulation (Fig. 10). The complexity of the urban food system is both a challenge and an opportunity at the same time.

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# Squatting My Mind – Towards an Architectural Ecosophy

Catharina Gabrielsson

Understanding ecology as "a widely-drawn category that encompasses objects and ideas, organic species and their habitats, inseparably linked together",[1] ecology clearly involves architecture on countless levels, by far exceeding the parameters of sustainable building technology that dominate conceptions of this field. Primarily addressing the 'mental ecology' of architecture – that is, how architecture is thought and constructed within the discipline – this article furthers an understanding of how occupancy has the power to undo central architectural concepts. Such an undoing is seen as a prerequisite for what Félix Guattari has denoted ecosophy – the ethico-political articulation between the three, interconnected ecological registers: that of the environment, of social relations and the realm of ideas. Considered within an ecological intellectual framework, notions of resistance, spatial appropriation and indeterminacy in architecture are seen to evolve as steps along the way in the urgent task of re-writing architecture's ontology. It points towards an architecture of shifts and additions, of re-uses and re-inventions; an architecture that generously permits a variety of uses and a continuous production of meaning.

[1] Andrew Ballantyne, *Architecture Theory: a Reader in Philosophy and Culture* (London, New York: Continuum, 2005) p. 36.

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Fig 1. Squatters make the headlines. Catharina Gabrielsson.

Shortly after the financial crisis struck London in the autumn of 2008, newspapers were flooded with reports on how a group of artists had invaded an empty eighteenth century property in Mayfair and had opened it to the public as a "non-hierarchical centre for knowledge and learning", called 'Temporary School of Thought.' During a few winter months, in a neighbourhood dominated by embassies and offices, the house at No. 39 Charles Street became the basis for a social, artistic and institutional experiment. The story of how a group of middle class students opt for voluntary poverty, go skipping for discarded food at night and organise activities devoted to 'a sharing of skills' might at first view seem banal; an act of resistance against mainstream society, centred on coping with self-inflicted difficulties to which a single phone call would put an end (there is always someone's father who is a lawyer). On closer reading, however, it involves a meshwork of meanings at different levels: urban, architectural, political, juridical, social, economical, artistic, institutional and medial. This complexity stands in contrast to the temporal structure of the story, beginning with the encroachment of the building on 29th November 2008 and ending with the group's eviction following a court order on 27th January 2009. Or beginning at the moment of discovery (as their Christmas tree is detected through the window) and reported in the media in late December; or perhaps with the consolidation of this particular group in a previous squat nearby; or with the one prior to that, an alternative exhibition space in Notting Hill – in which case the clear-cut story dissolves into an unfinished process, since 'DA! Collective' continues to run its practice from other sites and outsets.

Fig 2. DA! Collective on the roof. Colin Hampden-White.

Taken as a case in point for urban activism, summed up as the creation of "alternatives in terms of communes, self-managed gardens and city allotments, multifunctional squats, cultural and political ateliers";[2] indicative for the "episodic and discontinuous" nature of these movements, "reflecting a reconfiguration of the 'local' as fugitive, transitory, and migrant ... whose outcomes for emancipation are opaque and uncertain",[3] it is indeed possible to question the relevance of the Mayfair squat within a larger political context. As a theorist of architecture, however, I am not primarily asking whether it had the capacity to change society, but whether it has the capacity to change our conceptions of architecture. Of central importance here is how occupancy and the 'active user'[4] effectively undo central architectural concepts, but also how this undoing is a prerequisite for what Félix Guattari has denoted ecosophy: "the ethico-political articulation" between the three, interconnected ecological registers of the environment, social relations and the realm of ideas.[5] It is necessary to emphasise this three-folded structure, since we are used to thinking ecology as solely having to do with atmospheric, biological and geographical conditions, and even if we perceive it as the relationship between an organism and its habitat, we tend to exclude ourselves from that line of thought. For while current climatic anxieties bear token for an increasing awareness of the profound interdependency between organic and non-organic structures, the epistemological foundations for Western culture – separating subject and object, man and environment, mind and body – seem undisturbed by such concerns. I suggest that it is precisely through their insertion into an 'ecological' framework of ideas that the

2 Antonio Negri, 'On Rem Koolhaas', *Radical Philosophy*, 154 (March/April 2009) at http://www.radicalphilosophy.com/default.asp?channel_id=2188&editorial_id=28050 Discussing the city as a site for resistance, criticizing Koolhaas for his 'postmodern' cynicism, Negri incomprehensibly scorns the various 'alternatives' mentioned here. The full quote reads: "I almost laugh when my closest comrades talk about alternatives in terms of communes, self-managed gardens and city allotments, multifunctional squats, cultural and political ateliers, enterprises of a common Bildung." Interestingly, the 'comrades' might be identified as members of Atelier d'Architecture Autogérée (aaa) – advocators for 'soft' forms of activism who challenge Negri's 'hard' confrontational position through their systematic appropriation of urban space for collective and alternative uses. See Anne Querrien, Doina Petrescu, Constantin Petcou, 'What Makes a Biopolitical Space? A Discussion with Antonio Negri' in aaa (ed.) Urban Act: a Handbook for Alternative Practice (Paris: aaa – PEPRAV, 2007), pp.290-299. I am pointing to this debate as illustrative for important conceptual differences concerning the conditions of change.

3 David Cunningham (quoting Mike Davis), 'The Concept of Metropolis: Philosophy and Urban Form', *Radical Philosophy* 135 (September/October 2005): p. 23

4 Jonathan Hill (ed.) *Occupying architecture: Between the Architect and the User* (London: Routledge, 1998)

5 Félix Guattari, *The Three Ecologies* (New York, London: Continuum, 2005) p. 28, 41

discourses on resistance, spatial appropriation and indeterminacy in architecture – which is what I am addressing here – become possible to identify as steps along the way in the urgent task of re-writing architecture's ontology.

## A multiplicity of sites and narratives

Fig 3. The Chinese Room. Photo: Colin Hampden-White

Fig 4. Detail of the Chinese wallpaper. Photo: Amanda Farah

But let us begin with the house, a Georgian terraced house on a side-street to Berkeley Square, an area with some of the highest property values in London (and thus perhaps in the world). Built on speculation c. 1750-53, without the aid of an architect, it is an anonymous token for the taste and the building techniques of its time. Today, the house carries a Grade

II listing and its assumed market value of £22.5m circulated incessantly in the press during the occupation. By present standards No. 39 Charles Street is considered 'remarkable', not least because of the so-called Chinese room with eighteenth century hand painted wallpaper – a room the squatters conscientiously kept locked. The conflicts concerning the value of this building is a text book example of the distinction between exchange and use value – an object of financial investment vis-à-vis an open free space – but is also a case in point for how shifts in use set forward alternative meanings and experiences.

Fig 5. Getting inside (re-enactment). Photo: Colin Hampden-White

Fig 6. Temporary School of Thought street sign. Photo: Catharina Gabrielsson

Fig 7. The reception desk. Photo: Catharina Gabrielsson

The complexity arises already in the fact that the building has two addresses: there is a front and a back. The collective got in from the mews through an open window and announced its programme within days. Described as a "space where people come together to share knowledge, nondescript skills, tactic imagination, creativity and passive action",[6] the project was already running as launched through postings and fliers, several weeks before it came to the newspapers' notice. But Time Out caught on early with a series of articles; The Guardian, Times and London Evening Standard were surprisingly positive in their reports; one columnist even wrote that "Clarges Mews" reinstalled his hopes concerning alternative lifestyles and activism.[7] The tabloid press made headlines on scavengers and parasites, however, seemingly reflecting a fair part of the general opinion – at least as it appeared though comments on the internet. DA! Collective was furthermore repeatedly mixed up with another squat nearby, the so-called Dog Squat at Park Lane, populated by less scrupulous people. "Why do all squatters these days claim to be artists?", Jim wrote on his blog – he had taken part in establishing the squat in Park Lane but managed to make an escape to Clarges Mews when things went out of hand.[8] Jim's blog on the internet is one of my principle sources for this article. Combining a personal narrative on everyday life with links and uploaded clippings, it is an archive-in-process, a bio-political record of the subcultures of London. The difference in age and background set him apart from the rest of the collective; "they rose to squatting, I sunk to it", as he once told me. It might answer for the distance, at once inside and outside events, that characterizes his writings. Posted on a site for online gambling, the reader comments offer an insight into the scope between hatred and compassion that defines present-day society.

6 Posted on http://www.temporaryschool.org/ (accessed 15th January 2009), website suspended at the time of writing.

7 Richard Godwin, 'The Mayfair squatters', *London Evening Standard*, 13th January.2009

8 Luckyjim, "Posh squat vs Dog squat" http://www.gutshot.com/bforum/blog.php?b=293&goto=prev (posted 24th January 2009; accessed 2nd June 2010)

The issue of time is evidently of importance here, inherent to the story itself, and thus time as indistinguishable from space and experience, merged into "a simultaneity-of-stories-so-far".[9] It goes far beyond the confinements of date and location. The reason why the squat initially went unnoticed, for instance, was because people kept to the back – the full extent of its exposed position at one of the most prestigious addresses in London was only made apparent through the media. The site was thus also a medial one, convoluting the architectural conception of 'site' as bounded by property lines and defined by topography.[10] Similarly, significations emerged through multiple channels – from headlines and blogs, articles, commentaries, photographs, drawings and reports; sources which may be interrelated in different ways, depending on the story to be told. Things evolved through dynamic spatial interactions, centred on the physical space but depending on its connections to spaces and occurrences in other media. The programme of Temporary School of Thought was continually updated on the website; countless visitors were attracted by the press and took part in activities (amongst others a chef from a nearby restaurant, who cooked dinner solely based on 'found' ingredients). Jim relates one of these visits in detail on his blog. He describes how he meets the aged relatives to the last family to live in the house, then owned by the banker and merchant Hugh Owen Smith. They tell him about their memories while being shown around. Saddened by the dry rot and general disrepair, they ask whether the squatters need help with food or books. Later, Jim receives an e-mail that adds details to their story:

> "He [Owen Smith] had two daughters, Faith and Fortune, my grandmother and great aunt. He also adopted one of his orphaned cousins, called Judy. At one of Fortune's birthday parties ponies were brought into the Ball Room and allowed to jump through hoops. Apparently Queen Elizabeth, as a dawdling toddler, was there."[11]

A quick search on the internet confirms that Owen Smith was related to royalty through marriage, and that it must have been he who commissioned the decorations on the façades toward the courtyard: a delicate wooden trellis, probably part of a garden design that never saw execution. It points to the only named architect in the history of the house, Harry Stuart Goodhart Rendel (1887-1959), who refurbished Owen Smith's country estate and designed Hay's Wharf, his warehouse on the Thames. Biographies of buildings quickly fork out into a meshwork of trails involving a multitude of places and people. Serving as a focal point for crossing trajectories, juxtaposing narratives and meanings, architecture's involvement in the construction of subjectivity is necessarily complex; a process in which the border between self and space, perception and imagination, becomes blurred.[12] But if memory plays a crucial part in the construction of identity and in forming a sense of belonging, it also borders

9 Doreen Massey, *For Space* (London, Thousand Oaks, New Dehli: Sage, 2005) p. 9.

10 See Carol J. Burns and Andrea Kahn (ed.), *Site Matters: Design Concepts, Histories and Strategies* (New York, London: Routledge, 2005)

11 Private e-mail 22nd January 2009

12 See Dana Arnold & Joanna Sofaer, *Biographies and Space: Placing the Subject in Art and Architecture* (London: Routledge, 2008)

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to issues concerning ownership. Jim told the visitors that they "had more right to the property than its actual owners, than any investment fund who'd bought it to sit empty and be resold as profit, since their family had actually lived here and it was part of their memories and heritage."[13] Here, the ownership authorized by personal experience is superimposed with the 'adverse possession' of the squatter, both brought into collision with the juridical and financial formulas that identify Timekeeper Ltd as the rightful owner of the house.

Fig. 8. The studio. Photo: Colin Hampden-White

Fig. 9. The workshop. Photo: Colin Hampden-White

[13] luckyjim, "Amongst fallen gentlefolk" http://www.gutshot.com/bforum/blog.php?b=284&goto=prev (posted 18.01.2009; accessed 02.06.2010)

The multiplicity of stories and significations produced by this occupation instantly belie the neatness of how narrative and meaning tend to be interpreted in architecture theory. According to one writer, "narrative enters architecture through the ways in which space is structured to achieve specific effects on our perception. ... The act of perceiving is linked with the sequential unfolding of information as our bodies pass through space".[14] This is a universalistic logic at work, pre-supposing that the perception and experience of a building is determined by the building's design, in line with the architect's intentions. It reflects a predominant conception within the architectural culture – narrative understood in terms of movement in space, the phenomenological experience of strolling through a building – for instance as reflected in Le Corbusier's concept of the promenade architecturale as critically analysed by Beatriz Colomina.[15] Similarly, meaning' in architecture is linked to representation, to the capacity of architecture to be 'read' or to otherwise affect the senses in a controlled and predictable way. Meaning and narrative in architecture have less to do with the reader, and more with the author: there has been no barthesian turn.

## Names, causes and claims for disused space

Yet the case of the Mayfair squat is but part of a much larger political, historical and economical context. For a start, what caused the house to be empty? Empty houses are a well-known phenomenon in London, a city marked by extreme social differences with a desperate shortage of affordable housing. As a materialisation of economical forces and political ideas, empty houses are spreading across the UK, the total number now being reported as close to a million – figures related to homelessness and the impossible long waiting lists for social housing.[16] These are not all derelict or condemned houses, as is commonly presumed: financial speculation, long-drawn planning processes, legal conflicts and the not infrequent occurrence of 'double settlements' cause perfectly sound houses to stand empty. Politically determined conditions concerning mortgage rates and tax allowances are said to be decisive: according to the charity organisation Empty Homes, the present rules work to promote new constructions rather than the restoration of existing ones. In addition, the neoliberal campaign for home ownership launched by Thatcher in the 80's and the consecutive 'buy-to-let' programme (an incentive for private investments in houses and flats) has given rise to a cadre of inexperienced owners, lacking the means and know-how for property maintenance and thus causing houses' abandonment.[17] The occurrence of empty houses is a concrete example of how near and distant forces are made manifest in the street – not least bearing witness to the crisis of the US mortgage market and its repercussions across the world. It proves how the effects of global capitalism are not merely a matter of producing intensities, but a surging-out of rural lands and a creation of urban voids. Situating the empty

14 Sophia Psarra, *Architecture and Narrative; The Formation of Space and Cultural Meaning* (London and New York: Routledge, 2009), first (unnumbered) page.

15 Beatriz Colomina, *Privacy and Publicity: Modern Architecture as Mass Media* (Cambridge, Mass, London: MIT Press, 1994)

16 Empty Houses: (2010) http://www.emptyhomes.com/ (accessed 13.01.2010)

17 According to interviews with Paul Palmer, Empty Homes Officer, Westminster Council (13th February 2009); David Ireland, Chief Executive for The Empty Homes Agency (29th April 2009) and Dr. Savvas Verdi, architect and economist, LSE (19th May 2009).

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house at Charles Street in an economical, geopolitical field thickens and lengthens its strands of interconnectivity.

But the effects of the financial crisis are also made manifest in language. The expression 'slack space' is picked up by a journalist, who writes an article about empty shops being used by artists as studios, workshops and exhibitions spaces.[18] Soon measures are taken to enable such processes; politicians suggest that £3 million is to be distributed to various schemes that enable a "creative reuse" of vacant shops, advocating a system whereby local planning regulations may temporarily be bypassed. Official sources claim that the number of empty shops in the UK will rise by 70 000 (in total 135 000, which is one in six) thus adding to the many boarded up window fronts that threaten to turn high streets into "ghost towns".[19] In this context, slack space is written into an economic model. It refers to properties that are empty due to bankruptcies and closedowns, supposedly providing a platform for new innovative ideas. In collaboration with local municipalities, artists take on the role as entrepreneurs when standard procedures are exhausted – "as if by magic, a new shopkeeper appears", someone commented sourly in a blog.[20] There is another side to this slack space movement, however, as networks of artists and activists increasingly use squatting as a means to confront the formal economy.[21] Loose affinity groups assemble on the internet, sharing a concern for the taking over of spaces on a collective and non-commercial basis – a movement whose critical and political ambitions are reflected by slogans such as 'Radical Incursions'. Closely aligned with other terms in circulation – such as 'meanwhile spaces' and 'pop-up restaurants', referring to the temporary use of vacant spaces within the formal economy – slack space therefore comes across as a deeply ambiguous concept, pointing to the heterogeneity of language games.[22]

18 Robert Booth, 'Artists' creative use of vacant shops brings life to desolate high streets', The Guardian 19th February 2009

19 Robert Booth, 'MPs plan to let artists take over empty shops to prevent ghost towns,' *The Guardian*, 14th April.2009

20 Anselm, T., "As if by magic, a shopkeeper appeared", http://www.thebeekeepers.com/2009/04/01/as-if-by-magic/ (accessed 20th April 2010)

21 Hermione Hoby, "The artists who are hot to squat...", The Guardian 12th April 2009; http://dev.null.org/blog/item/200904162344_slacspacb (accessed 20th April 2010); "Radical Incursions: Autonomous Occupations & the Slack Space Movement", seminar at St. Martin's School of Art 25th June.2009.

22 Cf. Empty Shops Network (2010): http://www.artistsandmakers.com/staticpages/index.php/emptyshops (accessed 20th April 2010);New Curator (2010): http://newcurator.com/2009/11/slack-space-handbook/ (accessed 20th April 2010);The Null Device, "Slack Space and Global Berlinisation" (2010): http://dev.null.org/blog/item/200904162344_slacspacb (accessed 20th April 2010); Space Makers Agency (2010): http://spacemakers.org.uk/ (accessed 14th April 2010);Slack Space Brighton, (2009) www.facebook.com. [accessed 11th November 2010]

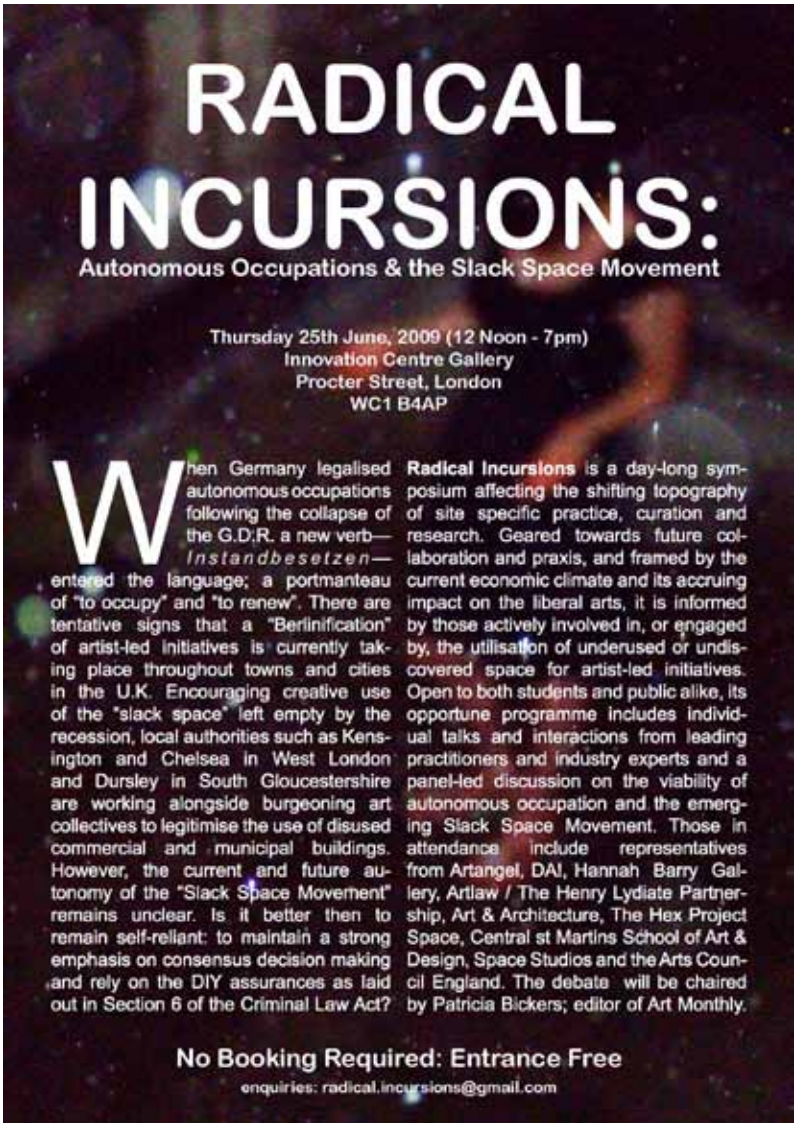

Fig 10. "Radical Incursions" invitation

Nevertheless, it was due to its slackness that the house in Mayfair was possible to squat; was singled out by activists who strategically moved about in search for optimal conditions. Used to promote a fundamental compliance with economical forces, as well as anti-capitalistic resistance, the indecisive ideological status of slack space runs parallel to that of squatting. Although it is "largely absent from policy and academic debate [and] rarely conceptualised, as a problem, as a symptom, or as a social or housing movement", urban squatting in a Western context is generally seen to straddle between opposite poles – motivated by life-style choices on the one side, by material needs and 'the struggle for one's daily bread' on the other.[23] Squatting still has a remarkable strong position in the British system. Its legal foundations stretching as far back as to The Forcible Entry Act of 1381, to occupy a building without permission of the owner is not a criminal act: unlawful, but not illegal, according to the *Squatters Handbook*[24] (now in its 13th edition). Based on the ancient

[23] Kesia Reeve, 'Squatting since 1945: The enduring relevance of material need', in Peter Somerville and Nigel Sprigings (ed.) *Housing and Social Policy: Contemporary Themes and Critical Perspectives*, (London and New York : Routledge, 2005) p. 197.

[24] Advisory Service for Squatters *The Squatters Handbook* (London, Advisory Service for Squatters, 2009).

right of obtaining possession through use, thorough spatial practice sustained over time, squatting may be seen as "the oldest mode of tenure in the world".[25] Its British history is long and politicised, epitomised by the Diggers and the Levellers who in response to the intense land privatizations during the seventeenth century invaded private land and enjoyed a short-lived success by "sowing the ground with parsnips, carrots and beans, with the intention of restoring 'the ancient community of enjoying the fruits of the earth'".[26] As a mode of claiming space through occupancy, however, squatting was always a two-sided phenomenon. Not only did it allow for the medieval poor to settle on wasteland and take over deserted holdings, but it also enabled estate owners in their expansion of territory by fencing in common ground for pasture.[27] After the ideologically inspired wave of urban squatting in the 60's and 70's, and following the largely de-politicised climate since, squatting today is said to have ceased to operate as a collective mobilising force. Current research sees it as a multifaceted phenomenon fraught with ideological tensions, verging between quaint bohemian institutionalisation (in close alignment to artists' roles in gentrification processes) – and a form of anarchistic 'direct action' in confrontation to private property.[28]

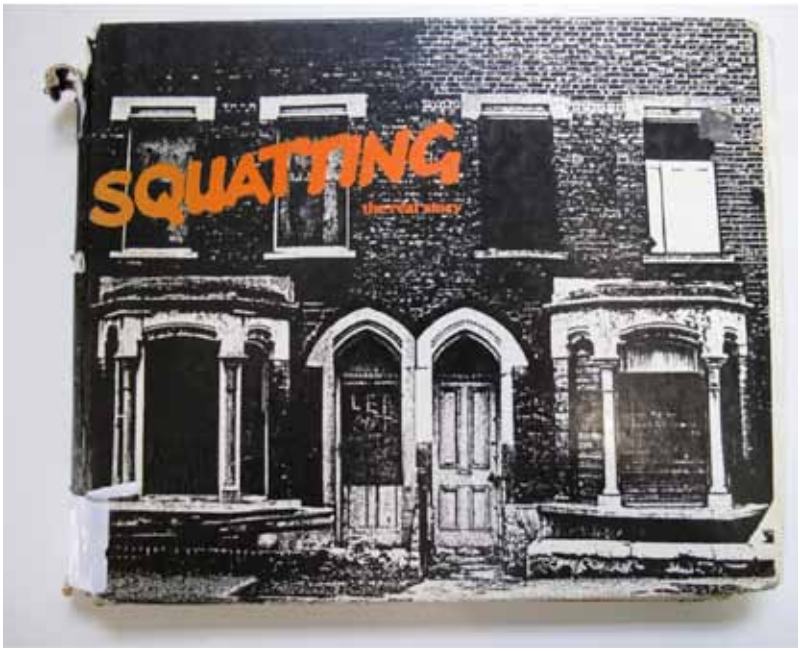


Fig 11. Squatting: the Real Story. (cover)

25 Colin Ward, 'The Early Squatters, in Nick Wates (ed.) *Squatting: the Real Story* (London: Bay Leaves Books, 1980) p. 104.

26 Colin Ward, 'The Early Squatters, in Nick Wates (ed.) *Squatting: the Real Story* (London: Bay Leaves Books, 1980) p. 106.

27 A decisive condition for the English garden movement, frequently overlooked in theories on the picturesque, was the massive privatization of common land made possible through the Enclosure Acts of the Seventeenth to the Nineteenth Centuries.

28 Hans Pruijt, 'Is the institutionalization of urban movements inevitable? A comparison of the opportunities for sustained sqautting in New York City and Amsterdam', International *Journal of Urban and Regional Research*, 27(1) (2003); 133-157.

The theory and practice of squatting disclose it as an intensely real entwinement of time, space and human agency. While the Forcible Entry Act continues to protect squatters from being evicted by force (made manifest by Section 6 of the Criminal Law Act, accessible for downloading in a friendly print-out format), by equally ancient 'common law' squatters may obtain legal ownership to a house providing their occupancy remains uncontested for 12 years.[29] But such conditions are hard to fulfil, and recent changes in the law designed for the protection of private ownership have added to the hardships of squatting. There are agencies for squatting[30] in London – places that provide legal advice and offer practical information on how to come to terms with basic amenities such as water, electricity and sanitation.[31] Squatting is, to a large extent, learnt thorough a 'sharing of skills' where experienced squatters support and initiate younger players to the game. The ethical codex to improve the house, not to destroy it (as conveyed through the Berlin expression Instandbesetzen – a combination of Instandsetzen: to put in order, and Besetzen: to possess or occupy) gives squatting a precarious position vis-à-vis the architectural discipline. Epitomising the figure of the 'active user', the squatter appropriates and transforms existing spaces according to his or her needs and ideas – a heuristic discoverer, inventor and creator of architecture through the autonomous thrust of DIY.

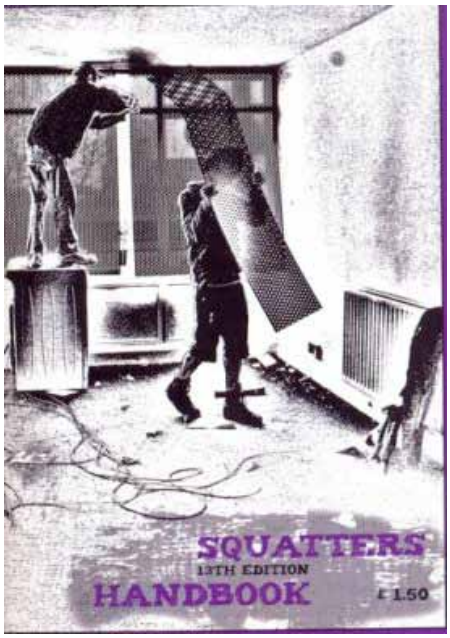


Fig 12. The Squatter's Handbook. (cover)

So while squatting provides a setting for an alternative architectural conception, politically as well as philosophically – legally, it constitutes an infringement of the property owner's rights equal to that of trespassing. Evictions may only be performed by a bailiff following a court order, provided the complainant has been able to prove rightful ownership before a judge. And this is the reason why the Temporary School of Thought

[29] The act of taking possession is crucial to squatting: the building must be entered 'peacefully' without causing damage, and the locks must be changed immediately to prevent anyone else (presumably the owner) from forcing an entry (Advisory Service for Squatters *The Squatters Handbook* (London, Advisory Service for Squatters, 2009).

[30] Neil Cobb and Lorna Fox, 'Living outside the system? The (im)morality of urban squatting after the Land Registration Act 2002', Legal Studies, 27 (2) (2007): 236-260. Reeves also notes that the extensive privatization of municipal social housing has diminished the stock of houses that traditionally have sustained squatters. Arguing against the so-called 'second modernity' and the 'identity politics' promoted by Anthony Giddens and others, Reeves claims that squatting continues to be driven by material needs and that the depolitization shrouds its significance as a symptom for the inadequacies of the welfare state. Kesia Reeve, 'Squatting since 1945: The enduring relevance of material need', in Peter Somerville and Nigel Sprigings (eds.) *Housing and Social Policy: Contemporary Themes and Critical Perspectives*, (London and New York : Routledge, 2005).

[31] Advisory Service for Squatters, Whitechapel (2010) http://www.squatter.org.uk/index.php?option=com_frontpage&Itemid=1; 56A Infoshop, Elephant & Castle (2010) http://www.56a.org.uk/

could remain in Mayfair for so long; the owners' documents were initially dismissed by the civil court. Remarkably, and adding to the complexity of this case, the occupation at Charles street was carried out with the discreet support of Westminster council.[32] Lacking a formal UK address, the owners had hitherto managed to escape the authorities' attempts to track them down and put the property into use. It was only through this turn of events they made themselves known, albeit by proxy.

## In-between specificity and indeterminacy

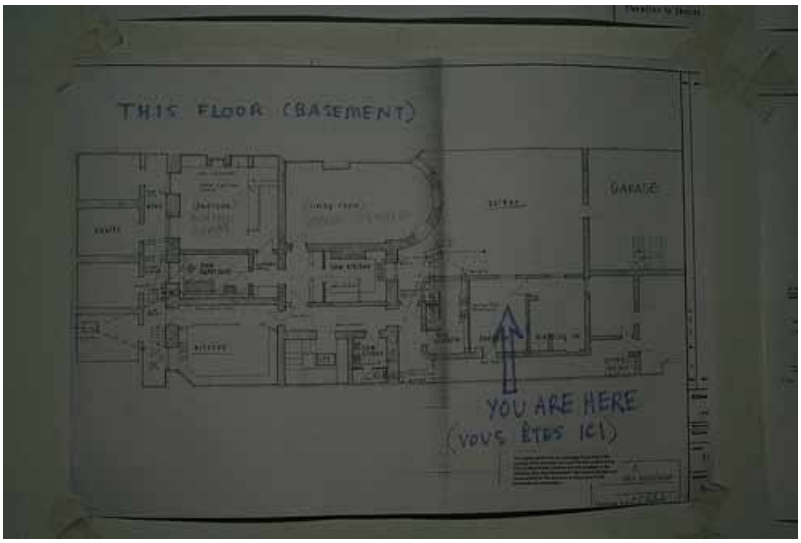


Fig. 13. Floor plan of Charles Street. Photo: Amanda Farah

In its abandoned state, the house in Mayfair was possible to claim for other purposes. Its appropriation by DA! collective brought about a blurring of categories: between exchange and use value, between different forms of ownership, between private and public – it produced a multitude of sites and narratives. The house at Charles Street proved to be exceptionally adequate for sustaining such shifts. Characterised by duality (a Front and a Back; an Upstairs and a Downstairs) and providing a choice of rooms unspecified as to their present use, it allowed for a life-style of comings-and-goings and the multi-programmed array of activities that characterised the Temporary School of Thought. Functions were mapped on plans provided by the council and distributed spatially according to logistics and physical conditions. The reception rooms on the first floor were fitted with rudimental seating and accruements for screenings and a small reception was set up by the entrance from the mews, complete with hosts welcoming visitors.

[32] This differs greatly from the hostility authorities normally show to squatters. "Westminster was terrible at that ... they smashed toilets, poured concrete down the drains, all sorts of stuff"(Squatter in London between 1974–8), Reeve, 'Squatting since 1945: The enduring relevance of material need', p. 205. See also luckyjim, "A trip to the ocean", http://www.gutshot.com/bforum/blog.php?b=440&goto=next (posted 20th .May 2009; accessed 2nd June 2010). There is an explanation for the council's collaboration, however, in the so-called broken windows theory, allegedly coined by the former US minister of housing Henry G. Cisneros in a series of articles entitled Defensible Space: Deterring Crime and Building Community (Washington D.C.: US Department for Housing and Urban Development; 1995). It posits that empty houses encourage vandalism and crime, lead to social disintegration, and diminish the market value of properties in the vicinity.

Fig. 14. Person dressed up as a mouse. Photo: Colin Hampden-White

Fig. 15. Performance in the staircase. Photo: Colin Hampden-White

Given the setting and social history of the house, however, it might be argued that the squat had more akin to restoration than to revolt. In terms of resistance, it was certainly different from, say, the riots in the suburbs of Paris in 2005. The house had been planned for a display of spectacle; the story about the ponies in the first floor reception room shows how a certain eccentricity was maintained well into the twentieth century. Wedging themselves closely to the original ethos of the house, the collective's staging of activities (which included fancy-dress parties and productions of Dorian Grey) held an evident allusion to the building's past. Play may be seen as a particular form of resistance, not one that operates is the face of power – distorting codes, values and uses in a direct and oppositional way – but working at a more insidious level, through ways of doing and forms of expression that are not 'for real' but enacted as if they were.[33] The playful and narcissistic aspects of the collective's enterprises (such as their willingness to pose for photographers), in combination with their

[33] Nigel Thrift, 'The Still Point. Resistance, Expressive Embodiment and Dance', in Steve Pile and Michael Keith (eds.) *Geographies of Resistance* (London and New York: Routledge, 1997) pp. 145-150

dealings with the local authority, disturbs the diagram of power/resistance or tactic/strategy that forms the academic basis for readings of spatial appropriation. And while these kinds of transgressions may be considered a middle class privilege, arguably undermining the political significance of this case, it holds aesthetic and architectural implications that cannot be ignored. Rather than an open act of violation, the occupation constituted a détournement of the building's identity, shifting its significance by changing the context for its interpretation.[34]

Town houses such as this were the pied-à-terre for the "landed gentry" during the Season "while Parliament was sitting", they were designed for maintaining the social life of the ruling classes in England.[35] Space were planned for public rather than domestic use, a life of:

"continual entertaining in drawing-rooms and ante-rooms and 'eating-rooms' where conversation would not be wholly ephemeral, where a sentence might be delivered which would echo round political England, where an introduction might mean the beginning of a career or a deft criticism the dethronement of a policy."[36]

It was an architecture defined by access and entrances, sequences of spaces centred around a hall, where the display of taste and wealth in the interiors (mahogany panel doors, hand-painted wallpapers, silk hangings and marble chimneypieces) stood in contrast to the austerity of the dark brick façades. In a larger version of this architecture, planning for the efficiency and invisibility of servants are said to have been as crucially important as ensuring the lavish decorations.[37] In fact, both were informed by the same rationality. The divide between what Robin Evans calls "an architecture to look through and an architecture to hide" – dividing commodity from delight, utility from beauty, and function from form[38] – may be recognized as an expression of a capitalistic logic already in full swing. Although modelled on such architectural ideals, this kind of separation between 'serving' and 'served' could not be accomplished at No. 39 Charles Street. Restricted by the terraced house plot, 'convenience and comfort' – based on the separation between individuals and classes that Evans sees as constitutive for modern domesticity – could merely be hinted here. According to the historic building report, this particular terraced house is characterised by a dense spatial interconnectivity, dominated by the central staircase, which by only leading up to the first floor, makes a clear distinction between the public and private parts of the house. Yet this difference must once have been between visitors and dwellers, rather than masters and servants, since the generosity of the back staircase implies that it was shared by all members of the household.[39] This detail concerning the inner running of the house may be noted as reflecting a pre-modern spatial regime, based on what Evans defines as 'sociability' rather than 'socialization'. That is to say, as pre-supposing a system of

34 The English translation of 'détournement', roughly corresponding to 'diversion', lacks the nuances encoded in the French original: retouring, hijacking, embezzlement, misappropriation, corruption etc. Simon Sadler writes: "Détournement would permit anyone to take part in the raids on official culture, weakening the polarisation between 'author' and 'reader', nullifying the importance of attribution, originality and intellectual property. ... The experiments in détournement that situationists carried out in literature, political theory, and film ... were intended as just the start." Simon Sadler *The Situationist City*, (London, England, Cambridge, Massachusetts: The MIT Press, 1998) p. 44.

35 Carol Kennedy, *Mayfair: a Social History* (London: Hutchinson, 1986), p.55

36 John Summerson, *Georgian London* (London: Pimlico, 1988) p. 123

37 Such as in nearby Derby House, 26 Grosvenor Square, designed by the Adams brothers. Carol Kennedy, *Mayfair: a Social History* (London: Hutchinson, 1986) p. 56

38 Robin Evans, 'Figures, Doors and Passages', in *Translations from Drawing to Buildings and Other Essays* (London: Architectural Association, 1997) p. 74

39 See the historic building report for Timekeeper Ltd, made by Donald Insall Associates Ltd (March 2009), section 3.2. Accessible through http://www.westminster.gov.uk/services/environment/planning/searchapplications/.

human co-existence with mixed and incidental contacts, rather than that of isolation and separation on which a modern subjectivity is based.

Fig 16. Bed room. Photo: Amanda Farah

Fig 17. Lecture hall. Photo: Amanda Farah

Fig 18. Living room. Photo: Amanda Farah

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The squatters' use of the building activated its potential for social merging, unhinged from the aristocratic codex ("as fixed as if it had been determined by some inimitable law of the Universe") it once used to serve.[40] The interior functioned as a specific framework for new interpretations, alternative uses and other productions of meaning. Everyday life in this self-policing community depended on a system of collaboration, hunting for food in skips and waste-bins at closing time, decision-making as to the run of the programme, assigning chores regarding 'improvements' to the house (such as rickety book shelves for the library, a workshop and storage for bicycles). The collective's refusal to speak to the tabloid press (arguably a maladroit PR strategy) was compensated by the friendliness they showed to anyone interested in the programme: workshops on automatic writing, talks on life as a bicycle courier ("with access to the whole city but without a home"), lectures on art, politics and economics, lessons in yoga and Hungarian folk dances, and so on.

So in comparison to a preceding event in 1969 – a 'sit-in' by protesting hippies at an address associated with the Rothschilds, allegedly flaunting the slogan "we are writing on your walls"[41] – there was very little outward protest at this squat. Although it was neither the first case, nor the last, of spatial re-appropriation in Mayfair (after all, a place where flows of power and money have always materialized in buildings, previously through new constructions, progressively through changes in ownership and use) it answered to a differed logic. Even as compared to other artists' take-overs in prominent places, for a time sweeping in waves across central London (frequently to exhibit very bad art), 'Clarges Mews' seemed driven by another impetus, motivated by a desire to reconfigure the nature of social relationships. For instance, the astonishing experience of being able to walk freely into a space that is normally 'obscene' was noted by several commentators. It is precisely the ordinary character of walls that answers for the power of such transgressions – in defining the limits to property and identity, in disseminating knowledge and information, in materializing concepts of sovereignty and democracy etc. walls take part in structuring self and society.[42] In this regard, the Mayfair squat was substantially different from other cases that merely involve dwelling. Not merely shifting from private to public use (or vice-versa) but in undoing such distinctions, it transformed the real and symbolic values of the house by altering its patterns of accessibility and movement.

## The critical potential of slack space

Judged by how it is represented in history, maintained in education, published and awarded, architecture is defined by criteria linked to building, to a series of 'facts' presumed to be stable and permanent (names, date of completion, style, function, formal execution and so on).

[40] Quote from Jessica Mitford in Oliver Bradbury, *The Lost Mansions of Mayfair* (London: Historical Publications, 2008) p. 13

[41] Quoted from J M Crook, The Rise of the Nouveaux Riches (1999) in Oliver Bradbury, The Lost Mansions of Mayfair (London: Historical Publications, 2008) p. 176 According to another version, the Proudhon quote "Property is Theft" was painted on the façade, and the violence and chaos surrounding the so-called Hippydilly squat are said to have swerved the public opinion against what was then an on-going, legitimate and radical movement throughout London. Steve Platt, 'A Decade of Squatting: the Story of Squatting in Britain since 1968', in Nick Wates (ed.) Squatting: the Real Story, (London: Bay Leaf Books, 1980), p. 23.

[42] On walls, see Robin Evans, 'The Rights of Retreat and the Rights of Exclusion', in *Translations from Drawing to Buildings and Other Essays* (London: Architectural Association, 1997); Eyal Weizman, 'Walking Through Walls: Soldiers as Architects in the Israel-Palestine Conflict', Radical Philosophy 136 (March/April 2006)

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Any uncertainty or change as to these conditions are seen to threaten the building's status as art, as an immaculate 'work' that ultimately depends on the architect's control over complex processes of mediation; from drawing to building, from building to photograph, from programme and designated functions to actual use and inhabitation. Yet buildings change, are given new uses and meanings over time, and even the transitory character of a subjective perception bears witness to the fundamental indeterminacy of architecture. Occupancy bears token for this fragility at the core of the architectural discipline – it situates its object in a wider context where aesthetic values are contested and criteria change.

Considering architecture within a wider framework thus evidently calls for a rethinking of the architectural object and a reconfiguration of its concepts. And while the three ecological registers proposed by Guattari – the environment, society and the realm of ideas – hold countless concerns for architecture on all three levels (as physical materiality, as structuring society, as a disciplinary mind-set, for instance), what I am primarily addressing here is the 'mental ecology' of architecture that aligns with the environmental and social ecology in constituting the Real as three interrelated fields of existence. For architecture has resisted thinking through dependency, contingency and its multifarious influences in a strikingly stubborn manner.[43] Hence ecology in architecture has largely been considered in terms of 'green technology' and carbon dioxide emission levels that leave the body of architecture untouched; as an object designed by the architect, a building whose uses and meanings ultimately depend on the intensions of its maker.

It was explicitly in reference to epistemology – pathological in maintaining the production of a profoundly unsustainable society – that Gregory Bateson remarked: "There is an ecology of bad ideas, just as there is an ecology of weeds, and it is characteristic of the system that basic error propagates itself".[44] Guattari quotes him in Les Trois Ecologies and compares the slime polluting Kaneohe Bay to the effects of Donald Trump, whose activities as a building tycoon results in thousands of homeless people in the streets of New York – thus fore-grounding the ideological implications of Bateson's critique, highlighting the connection between the production of reality as we know it and the mental sphere of ideas.[45] Countering the detrimental nature of 'bad ideas', Guattari urges us to think transversally – to make connections across the registers, to rethink subjectivity, agency and society in order to bring about political change. The theme of resistance is clearly a case for such transversal thinking, and one of urgent importance for architecture if we are follow this trail. It involves, by necessity, the spatiality of resistance and the use of material culture – and it is on this note that Lefebvre writes in the aftermath of 1968:

43 Jeremy Till, *Architecture Depends* (Cambridge, MA, London: The MIT Press, 2008)

44 Gregory Bateson, 'Pathologies of Epistemology',in *Steps to an Ecology of Mind* (Chicago and London: The University of Chicago Press, 2000) p. 492

45 Félix Guattari, *The Three Ecologies* (New York, London: Continuum, 2000) p. 43; I am indebted here to Andrew Ballantyne.

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"The diversion and re-appropriation of space are of great significance, for they teach us much about the production of new spaces. During a period as difficult as the present one is for a (capitalist) mode of production which is threatened by extinction yet struggling to win a new lease on life ... it may even be that such techniques of division have greater import than attempts at creation (production)."[46]

The idea of "greater import" is left undeveloped, however, for Lefebvre is convinced that the spaces produced by a dominant order ultimately hinder new social orders to emerge. It amounts to saying that nothing new can come about within the realm of the existing, which in terms of language, ideas and artistic creation is questionable, if not absurd.[47] But Lefebvre sustains an understanding of architecture as determined (and determinate) form, disregarding how architecture is dependent on discourse; that architecture is in fact produced through experience and use – and is in that sense created continuously. It is by undoing this system of determination in how architecture is perceived – maintained through countless accounts, in political theory as well as in art, where architecture is presumed as 'stable' – a new set of possibilities arise. Understanding the indeterminacy of architecture brings down conventional distinctions between maker and user, between 'new' and 'old' – and this is where the notion of slack space again becomes interesting.

Its use in present speech appears to derive from a digital culture, where slack space is taken to denote an unused memory space delimited by a certain capacity. Its meaning in a transferred sense, in relation to abandoned or disused physical spaces, is thus an inversion of the usual metaphorical passage: if virtual reality, so far, has been identified with physical phenomena (nodes, networks, desk tops, bins, memory notes and so on), the case is now the reverse. It may be noted that the closely related term 'hacker space' – defined as "collective, organised physical spaces where people can meet and work with their projects"[48] – has maintained the connection to its technological background. Hacker space alludes to breaking and entering, to the appropriation of spaces in order to set up digital labs outside the commercial and educational system – hence being little more than a radicalisation of the mode established by Bill Gates' famous garage in California in the 70's. Slack space is much more vague and ambiguous in comparison, but it ultimately points to an understanding of space as a resource.

It is precisely in this way slack space is meaningful in a discourse on resistance. Underlining the complexity of its nuances, Steve Pile has argued that resistance cannot be encompassed in a binary diagram that sets it in opposition to power. There are always other spaces involved, he says, "spaces which are dimly lit, opaque, deliberately hidden, saturated with memories, that echo with lost words and the cracked sounds of

46 Henri Lefebvre, *The Production of Space* (Oxford: Blackwell 2001) p. 167-168

47 Interestingly, Sadler records a split within the Situationist movement between those who advocated the building of a brand new city (such as Constant) and others (among them Guy Debord) who believed that the future was contained through "recycling the old city and existing artistic sources", that is, through détournement. Simon Sadler, *The Situationist City* (London, England, Cambridge, Massachusetts: The MIT Press, 1998) p. 107.

48 http://hackerspaces.org/wiki/Hackerspaces (accessed 2nd June 2010)

pleasure and enjoyment".[49] But if these 'other spaces' are set apart from the dominant culture, if their appropriation for alternative uses and experiences ultimately qualify them as new spaces (countering Lefebvre's thought) – it tends to be the initial slackness of these spaces that allow for such operations. Slack space is always submerged in the existing; it constitutes what is already there. Taken to signify a physical space that is not necessarily vague or informal as such, but that through an array of causes is dislodged from its original bindings; that is indeterminate because its purpose and meaning have weakened; because its original context has ceased to exert control, it provides a setting for new activities, new actions, and new productions of meaning.[50] There is a link here to Simmel's thoughts on the ruin – the idea that "a segment of existence must collapse" before a building becomes accessible for re-imaginations – except that slack space primarily concerns a collapse of values and not of physical structure.[51] It should also be noted that slackness is a temporal as well as spatial condition: it constitutes a lapse in the system of determination that allows for appropriation.

The critical potential of slack space is amplified by Jeremy Till, who has recently characterised it as a space "open to changing use ... providing a frame for life to unfold within ... a space that something will happen in, but exactly what that something might be is not determinedly programmed".[52] Underpinning the argument made throughout his book, Till stresses the need for architecture to encompass the realities of time, society and the human body. He specifically attributes the idea of slack space to the philosophy of Cedric Price, hence making a connection to the reformulations of architecture – bordering to art, technology and environment – during the 60-70's. Indeed, slack space carries a different energy than other terms used in reference to abandoned or disused spaces – 'non-places' for instance that are defined by negation. In implying a momentary loss of control, a slackening of the rigidity of optimizing social forces, slack space therefore holds wider-reaching implications than merely alluding to the re-use of properties for more economically viable purposes. But given that the transformation of closed-down factories and warehouses is an established urban strategy in post-industrial society, the critical potential of slack space ultimately depends on what it inspires and makes possible. Bearing in mind that political struggles are also acted out in language – that 'occupation' is not merely a matter of appropriating space – any conclusive definition of slack space is itself politically charged. So when slack space is used in reference to a 'global movement' evolving from London, Berlin and Amsterdam, soon expected to strike all post-industrial cities by taking over disused buildings, its use as a slogan is also what enables and empowers such moves.[53] Of utmost importance, it seems, are the real and symbolical values produced through the transformation of a building's use; the appropriation of military bastions for peaceful purposes, the take-over of palaces for communitarian ends etc. Such radical reversals go far beyond the efforts of the architect to

[49] Steve Pile, 'Introduction: opposition, political identities and spaces of resistance', in Steve Pile and Michael Keith (eds.) *Geographies of Resistance* (London and New York: Routledge, 1997) p. 16

[50] Note that this definition differs slightly from Douglas Sheridan's "indeterminate territories", indeterminate because "normal forces of control have not shaped how we perceive, use and occupy them." Dougal Sheridan, "The Space of Subculture in the City: Getting Specific about Berlin's Indeterminate Territories", Field: 1(1) 2007.

[51] Georg Simmel, *Essays on Society, Philosophy and Aesthetics* (New York: Harper & Row, 1956) p. 266

[52] Jeremy Till, *Architecture Depends* (Cambridge, MA, London: MIT Press, 2008) p. 134

[53] The Null Device, "Slack Space and Global Berlinisation", http://dev.null.org/blog/item/200904162344_slacspacb (accessed 02.06.2010)

design spaces with general or unspecific uses, allocated for the unexpected. Hence the critical potential of slack space goes far beyond the field of the architect's control – it upsets the architectural project to a greater extent than Till is willing to admit.

## Some notes towards an architectural *ecosophy*

Fig. 20. Piano lesson. Photo: Amanda Farah

Fig 21. Freegan food. Photo: Amanda Farah

Fig. 19. Foyer chess. Photo: Amanda Farah


Fig. 22. Hung teddy (eviction). Photo: Amanda Farah

Clearly, the appropriation of a building built for other purposes is imbued with notions of freedom. Jim wrote:

> "The value of what we've done seems clear to me. We've turned a private space into a public one, bringing a long-dead building back to life, whilst respecting its heritage. We've introduced a free community space to an area which didn't have one, inviting in and seeking the respect of the neighbourhood. We've made people think about communal living and alternatives to wage slavery by showing them it's possible to live off the city's discards. ... Giving people a space to think, learn and perform, we've provided something positive to several hundred people, against an imperceptibly small inconvenience caused to a super-wealthy few."[54]

This form of creation makes use of the existing – it is not a creation out of nothing. In much the same way that freeganism depends on debris and excess, using the surplus of an exceedingly wasteful society,[55] the freedom made manifest by occupation is relative and conditional – and one such condition is architecture. In order to draw the outlines for a theory of architectural ecosophy– striving to connect physical reality, society and the realm of ideas – it is necessary to shift the focus from what buildings supposedly delimit and represent, to what they generate and make possible. It entails a widening of context, transgressing the borders of the architect's field of control – yet dealing with factors that paradoxically arise from architecturally (in)formed decisions. The main contribution that slack space makes to this discussion is that buildings (much like works of art) are merely handed over to the world, and that it is their ability to sustain life in unforeseen ways, to allow for a continuous production of meaning, that is the ultimate proof of their value. The

54 luckyjim, "So we go to court today" http://www.gutshot.com/bforum/blog.php?b=300&goto=next (posted 27th January 2009; accessed 2nd June 2010)

55 For an empirical account of freeganism, see Jake Halpern, "The Freegan Establishment", New York Times http://www.nytimes.com/2010/06/06/magazine/06Squatters-t.html?pagewanted=2 (31st May 2010, accessed 11th June 2010)

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way architecture conditions subjectivity and society – whether as a form of practice, knowledge or material form – is evidently central to this discussion and involves issues of power. But in pointing to space as a resource, to the practice of making do with the means available, and to creation as a continuous process, slack space constitutes one of several possible outsets for more nuanced architectural inquiries.[56] It points to a participatory architecture based on additions and extensions, rather than one residing on authorship and the production of new forms. It points to the re-use and re-cycling of the existing material culture; to 'sustainability' not being restricted to a building's interaction with biological processes, nor to its capacity to adapt to changing needs, but to its power to feed the imagination and become meaningful in new ways.

Throughout there is a link to flexibility and its importance for what Gregory Bateson calls "ecological health". Describing it as an "ongoing complex system, open-ended for slow change of even basic (hard-programmed) characteristics", a "'preadaptation' necessary for unpredictable change", he finally opts for a definition as *"uncommitted potentiality for change"*.[57] Mainly addressing an urban level (exemplifying in terms of "food, new roads, more houses etc.") his wonderful comparison to a man on wire brings the figure of the architect to mind:

"To maintain the ongoing truth of his basic premise ('I am on the Wire'), he must be free to move from one point of instability to he other, i.e. e. certain variables such as the position of his arms and the rate of movement to his arms must have great flexibility, which he uses to maintain the other more fundamental and general characteristics. If his arms are fixed or paralyzed (isolated from communication), he must fall".[58]

Flexibility, here, is not restricted to space or physicality but involves how one thinks. In view of the current crisis, one whose outcomes for society are uncertain, the shaky identity and legitimacy of architecture is perhaps a minor worry. Nevertheless, the flexibility in how the architect thinks, acts and moves has social and spatial repercussions: hence the definition of 'the wire' comes across as an important one. It foregrounds the necessity of disciplinary interrogations; of questioning the basic premises on which the profession resides. Whether architecture continues to be promoted as the construction of 'new form' within the confinements of capitalism, or whether it is re-configured into something else – more sophisticated in an aesthetic sense, more aligned with critical insights – we cannot be sure, but it certainly marks a division line between 'old' and 'new' and is decisive for the wire's capacity to support the architectural profession. For ultimately ecosophy has to do with change, with confronting – not maintaining – the status quo and the stability of values. It constitutes a ground for an open-ended questioning and new experimentation, for making new connections between materiality, agency and ideas. Ecosophy

56 Another such outset in a similar vein is the concept of 'holey space' in Deleuze's and Guattari's philosophy, used to describe the translations between 'smooth' and 'striated' spaces and pointing to the emergence of a sudden freedom within systems of determination. See Gilles Deleuze and Félix Guattari, *A Thousand Plateaus* (London and New York: Continuum, 2009) p. 456-458, 528-532.

57 Gregory Bateson, 'Ecology and Flexibility in Urban Civilization', *Steps to an Ecology of Mind* (Chicago and London: The University of Chicago Press, 2000) p. 502- 505

58 Gregory Bateson, "Ecology and Flexibility in Urban Civilization", *Steps to an Ecology of Mind* (Chicago and London: The University of Chicago Press, 2000) p. 506

differs from the closure that characterises environmental processes, but is similar in its pronunciation of the profound interconnectivity of all things. It forces us forward, urges us to consider how architecture really deals with change.

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# Review Articles

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# Ecology: a student-led theory forum

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Contributors: Steve Parnell, Doina Petrescu

## A Personal Account.

In November 2009 the University of Sheffield School of Architecture (SSoA) annual theory forum took place, this year themed Ecology. A two-day event intended and set to discuss theory and architecture and engage MArch students and school community throughout, with research and areas of interest that surround a theme or topic. Sounds simple enough and not uncommon to any other forum of its type - however this year was different.

Firstly it was hosted in the Crookesmoor Building, Sheffield, the temporary home for both the school of architecture and department of landscape. From the Arts Tower to the leafy former Law Campus, considering the school of architecture's infamous stint in the Tower and the centenary celebration the previous year it surely became something an event can play with. For some it has been an uncomfortable move but for the students it could only be described a positive one.

Secondly and more importantly, it has been a student-led event - delivered from conception to co-ordination and management. But we must clarify, however misleading the title; this was not the entire student-body. Though the proposal to form a core group was opened in June 2009 via e-mail to fifth year Masters of Architecture students transitioning to the sixth, it was a modest three that blindly stepped forward with curiosity and interest in the prospect. For two, with the pressure of other activities of the course including the assessed Dissertation and Live Project, it turned to be a vote of commitment and student empowerment.

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When asked to contribute to field, we wanted to provide an insightful personal account of the event. This will follow as a series of notes, where we uncover key components to overview the process. Including a pictorial description of the event, workshops / seminars with extract from Steve Parnell, comments and retrospective questions answered by Dr Doina Petrescu.

## Note 01. A Pedagogical Test Space

As a student-led event and for any forum for that matter, to follow the previous conjunction with the AHRA International Conference 2008 AGENCY we guessed seemed a degree ludicrous. With such a heavy constitution to the schools acclaimed research, it left in our eyes big shoes to fill. However reassuring the Agency Research Group (ARG), whom of which we owe credit and gratitude for there trust and support, it was nerving in its ambition.

Like the last carried an idea, a theme that had to derive both theory and event, even the idea of it being student-led holds a theoretical strand. A dogma Sheffield as a School holds close, questioning architectural education directly. SSoA known with appeal of student-led efforts and school initiatives such as the Live Projects, plus strongly supporting architectural education with a strong social demeanor, the prospect seemed appropriately interesting and a stretch beyond an offered curriculum. An opportunity to direct the education, manifest something that could only occur from the territory of the students, without a preconceived direction from academia. Well almost. After all, without ARG orchestrating the inception and funding from CILASS, providing valuable advice, and ensuring less grandiose expectations, the process would not have been so rich.

## Note 02. Ecology as Theme

As this contribution unravels the process and delivery of theory forum 09, the theme ‘ecology’ should remain definitive. As students we wished a response to cultural change. Ecology and architecture is often collided in referring the physical and spiritual relationship between societal development and the environment, cultural and natural processes. Of course ‘ecology’ reflects a green agenda for both architect and citizen alike, this is understated, but it wasn’t what was intended. Ecology in a way is relatively non-descript or conceived relative to its discipline. In architecture it can mean to a degree anything. Within academia and particularly as a student exploring theory, perhaps as inspiration, process or context, ecology it is a term thrown around without really understanding it.

How can architecture engage with concepts of ecology? How does it stand once accepting an insecurity of interpretative methodology? Could the ilk surrounding ecology be reframed, knowledge that is more cohesive and less conclusive? These were questions asked, and in beginning this discussion set a condition that we wished the invited speakers, students and event not to resolve, but could potentially concede. The theme became about finding a common language, a means for knowledge to be shared, and the event forming a ground to test the commons. Where we believe actively or collaboratively sharing research is a transformative for imminent progression between fields, taking the discussion beyond architecture, academics and architects in the profession. The theme aimed to reflect similarly with the departmental move, a departure to something more organic and ethically minded, on a level.

## Note 03. Pre-Event Process Overview & Extracts

**Week one:** Composing concept
Independently, the tf09 group developed the theme for the event through discussions and feedback from Agency Research Group.[1] Ecology as a theme was researched through journals and publications, departments outside the architectural field, extended universities, and through research students and scholars of SSoA.

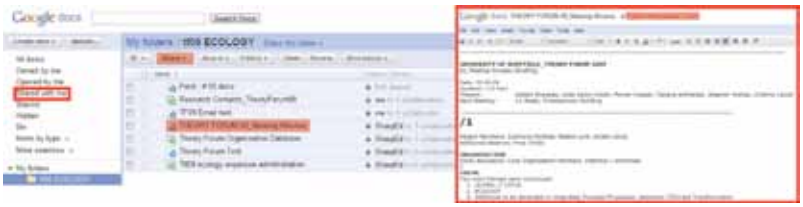

Fig 1. Online database facility from *Google*.

**Week two:** Working Platforms, development
The methods of communication within the tf09 group were critical as the availability of the students proved challenging and initially noncommittal. The use of *Ning*[2] and *Google Docs*[3] were the key tools for collaboration. Online database facility from *Google* was used to record activities, hours of work and became the source of documentation for **tf09**. This would be a means to completing the dissemination and review of the project, thus leaving a legacy.

**Week three:** Call for Papers
The main categories of submission included *talks, workshops, and interventions*. As a protocol for calling for papers, the broad themes of the event were developed along with the formalities of the submissions. The papers were to be peer reviewed so the submission guidelines focused on simplifying the format to abstracts to manage and review the received.

1 ARG: Transformative Research into Architectural Practice and Education, Sheffield School of Architecture.

2 Ning is the leading online platform for the world's organisers, activists and influencers to create social experiences that inspire action. http://about.ning.com [Accessed 02/09/2010]

3 Google Docs allows the creation and sharing of work online. Google at www.google.com is an online search engine that is part of the Google Corporation.

This was achieved in a way that still allowed the presentations to maintain diversity in their format, which met the objectives of the event having an array of activities and methods of learner-educator participation.

**Week four:** Event format
Using the new home of SSoA, the event layout utilised the dynamics of the Crookesmoor Building.[4] The theory forum proposed its activities to be flexible with the building's quirky character, reflecting the theme, and in reference to the habitation of slack spaces. Using the proposed event composition, tf09 group created the learning platform for experimental exchanges to challenge the traditional linear forms adopted by previous theory forums in the school.

4 Crookesmoor Building, Conduit Road is originally one of the university's libraries from the 1970s, the Crookesmoor Building presented dynamic spaces following its refurbishment to accommodate the two departments.

**Week five:** expanding tf09 group
Following conception, the working relationship and ability to collaborate improved amongst the committed members. Being a lack of peer support at this stage, fellow students were invited to join and/or to act as extended members. There were hesitations in acknowledging the benefits and potential of the project to both the school and themselves of participating in the development. So, an incentive was proposed for a portion of the budget to be allocated to 'voluntary' hours. Consequently, the scale of ambition for project was reassessed.

**Week six:** Going Online
A webpage was designed as an online site for the organising group to upload graphically/text-based information for the benefit of extended groups who shared interest in the event and as a platform to direct those within the school. At this point, the forum was also publicised.


Fig 2. Theory forum listed on architectural and humanities websites: SUAS, AJ and AHRA. [Accessed 02.09.20]

**Week seven to Week ten:** reviewing abstracts
There were challenges during the review phase. This included the eventuality of split decisions in the tf09 group on abstract topics and the cost or advances that had to be met to host some guests. Submissions were continuously reviewed with facilitation from ARG.

**Week eleven:** Conference graphics & people skills

"We need graphics for the front page, and a jpeg about the latest news." Sam Vardy. PhD Student and tutor in Architecture, Sheffield School of Architecture.


Fig 3. Event poster options: Mel Bax and Sarah Considine, October 2009.

**Week twelve:** core programme
The three categories of the conference; Talks were scheduled with conventional conference approach that reflected previous theory forums such as Alternative Praxis:[5] speakers present their papers followed by a round of discussions. Workshops were informal and 'hands-on' and required advanced preparation and co-ordination from all cohorts. This began early dialogue and aims to be more democratic with participating students and attempting to make the event more inclusive in decision-making.

[5] Theory Forum held in 2007 at the Sheffield School of Architecture.

**Week Thirteen:** budget, negotiations & incentives
The Teaching Module often has a budget for its speakers. On this occasion, there was an additional budget from CILASS; this funding covered the development, evaluation and dissemination. With international contributors and prestigious academics attending, as there were no registration fees for to partake in the conference, the majority was in agreement that not all expenses could be covered. The general incentive to confirm contributors' attendance was the exposure that they would receive in the UK and the potential for their papers to be published in field: journal. Additional negotiation was needed to justifiably use part of the budget to cover payments of student volunteers.

**Week Fourteen & Fifteen:** Programme outline
The programme for each day of the event was developed and confirmed with the speakers, workshop co-ordinators and those installing the interventions. It was revised several times to suit the guests. The first day of the conference was offered to those who were only present papers. Those running workshops and presenting papers were required to attend both days: the workshops running half a day for diversity in the schedule.

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**Week Sixteen:** Accessible to all
tf09 was designed to be accessible to all students in both university and location. The activities remained flexible in their typologies and time slots, the idea based on theories of ecology. As an example, films were screened for those who wished to engage with familiar concepts on a less academic level.

**Week Seventeen:** More volunteers required

"Dear 5th & 6th year students,
There are a fair number of people who are now involved with the organisation of the event but we would like MORE of you to participate. Please sign up to join the team!! Theory forum 09: ECOLOGY has been student-led from the conception to date and we would like to finish it off as such. The more students involved now the better it is as a 'student-led' event."[6]

[6] Email sent out to MArch Students by tf09 requesting more student volunteers. 26.10.2009.

**Week Eighteen:** Collaborative learning through Workshops

**Week Nineteen:** the office, the teaching, the learning and logistics
tf09 obtained an office in the department in the last few days leading up to the conference. This was a definite bonus, adding another level of moral and professionalism to the organisation. From here we operated logistics and house publicity was produced such as event and activity posters, habitat illustrations and programmes.

"Dear All,
As there are only a few days left before the tf09 days, the organising team has set up a short meeting with all 5th years tomorrow Monday 9th November, in the MArch studio space, at 12h30.

The agenda of this meeting is to finalise the workshop organisations and clarify the last minute details with the forum programme. Also, outline your assessment criteria. [..] The forum will be assessed as part of the ARC 553 module. The submission consists in a 2000-3000wd essay, on a topic related to the workshop in which you have been involved and one or two papers given in the Forum."

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Fig. 4 Theory forum 09 Ecology webpage.


Fig 5. Final event poster: Kathy Wong, 5th Year MArch. Activity Poster Sheffield School of Architecture, October 2009.

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# Note 04. Two Day Event – An Evolving Habitat

*Friday 13th November*
08:45 – 09:20 Arrivals [seminar room 3]

Talks [Lecture Theatre 1]
09:15 Introduction (Flora Samuel / Robert Sharples / Juliet )

09:30 Ecologies: limitations and possibilities // Irenee Scalbert SAUL, Ireland
09:50 The Potential of the Empty House // Catharina Gabrielsson / The London School of Economics
10:10 Ecology as Lived // Kush Patel, university of Michigan
10:30 – 11:00 Discussions
---
11:00 – 11:20 BREAK [seminar room 3]
---
[Lecture Theatre 1]
11:20 Ethics vs. Aesthetics // Steve Parnell / The University of Sheffield
11:40 Pictorial Ecology // Nigel Dunnett / University of Sheffield
12:00 Urban homeostasis: Counterbalancing Urban Disruptions // Ruxandra Berinde / Technical University of Cluj – Napoca, Romania
12:20 – 12:40 Discussions
---
12:40 – 13:40 Food Fuddle [White Turret]
---
Keynote Followed by Discussion
13:45 – 14:45 Neeraj Bhatia & Maya Przybylski // Territorial Ecologies / Directors Infranet Lab, Waterloo University; University of Toronto
---
15:00 – 18:00 Workshops [White Turret, Seminar Room 4, Seminar Room 5]
01 Urban Homeostastis: Counterbalancing Urban Disruptions // Ruxandra Berinde
02 Frozen Lakes, Liquid Networks // Neeraj Bhatia & Maya Przybylski
03 Reduce, Reuse, Recycle // Matthew Hesketh & Joanna Langford / SSoA
04 Pictorial Ecology: a social revolution in the urban landscape // Dr Nigel Dunnett
05 Slack Space: the potential of the empty house // Catharina Gabrielsson
06 Synthesis for Design Thinking & City as Orchard // Jordan Lloyd / SSoA alumni
07 Constructing Criticism; the other side of architecture // Steve Parnell
Film Screenings [Lecture Theatre 3]
---
18:00 – 20:00 Evening Social [White Turret] Food | Drink | Live Music | Films |

*Saturday 14th November*
09:00 Arrivals [seminar room 3]
09:30 – 10:10 Experts at Breakfast [SUAS Lecture Space Undergraduate Studio]
---
Talks [Lecture Theatre 1]

10:20 Design Ecologies: Ecologies of Access // Lisa Tilder/ The Ohio State University
10:40 States of Change: Transformative Shanghai // Rosalea Monacella / RMIT University
11:00 Education for Sustainable Architecture: Qualified Architects with insufficient Knowledge? // Bing Chen / University of Sheffield
11:20 – 11:50 Discussions
---
11:50 – 12:10 BREAK [seminar room 3]
---
[Lecture Theatre 1]
12:10 Urban Space and Models of Sustainability // Mick O'Kelly / National College of Art & Design / Dublin
12:30 Ecology and the Art of Sustainable Living // David Haley / Manchester Metropolitan University
12:50 Critical Ecologies // Jon Goodbun / University of Westminster / WAG Architecture
13:10 – 13:40 Discussions
---
13:40 – 14:20 Food Fuddle [White Turret]
---
15:00 – 18:00 Workshops [White Turret, Seminar Room 4, Seminar Room 5]
Continuation of Workshops from Friday

Film Screenings [Lecture Theatre 3]
---
16:00 – 17:00 Workshop presentations and feedback
17:00 Conclusion from tf09 Team

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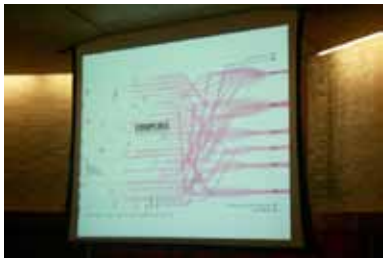
[Top Left] Fig 6. Arrivals and first meetings. [Left] Fig 7&8. Ecology as lived, speaker_Kush Patel. The difficult first Panel set a standard for the remaining discussions, opening ecology to diverse architectural perspectives. [Top Right] Fig 9. Break. [Right] Fig 10,11 & 12. Tea, coffee & homemade treats, cups made from recycled cardboard. Intervention A: Kitset, Artist_Chris Cottrell. A participatory spatial adaptation that progressively evolves.

[Left: above and below] Fig 13&14. Pictorial Ecology, speaker_Nigel Dunnett. A contribution from the Department of Landscape describing green roofs and urban meadows. Another diverse range of speakers for second Discussion Panel. [Middle: above and below] Fig 15&16. Lunch, a Food Fuddle-the idea that everyone contributes a 'dish', round the table, the most collective engagement of tf09. [Right: above and below] Fig 17&18. Intervention B: Three Portraits of Suburbia-Artists/Researchers_Melanie Bax and Sarah Considine. Delivering independent and part funded research project 'We Love Suburbia'.



[Left]Fig 19,20&21. Keynote, Territorial Ecologies. Speakers, InfraNet Lab-Neeraj Bhatia & Maya Przybylski. talking about methodology and various research pursuits. A pen poised & slides from Presentation. [Right] Fig 22,23&24. Evening Entertainment following an afternoon of workshops and spatial transformation - informal exchange over drink, local curry for all and two-piece Jazz.









[Top Left to Right] Fig 25,26&27. Experts at Breakfast, an opportunity for expert / non-expert exchange with coffee and croissants – figurative speed dating. Fig 28. Design Ecologies, speaker_Lisa Tilder, talked about the content of her forthcoming book of the same title. Fig 29. Education for Sustainable Architecture, speaker_Bing Chen-Highlighting the hypocrisy of architects living 2.5 planets. [Bottom Left to Right] Fig 30,31&32. Urban Space and Models of sustainability, speaker_Mick O'Kelly, Ecology and the Art of sustainable Living, speaker_David Haley. A relaxed final Discussion Panel. Fig 33. Group Workshop Feedback/presentations followed by tf09 team conclusion and thanks.














[Top Left to Right] Fig 34. Workshop #01 Urban Homeostastis: Counterbalancing Urban Disruptions // Ruxandra Berinde – preparatory work for presentation. Fig 35&36. Workshop #02 Frozen Lakes, Liquid Networks // Neeraj Bhatia & Maya Przybylski – group proposals for depleting ice and open transport routes. Fig 37, 38 & 39.Workshop #03 Reduce, Reuse, Recycle // Matthew Hesketh & Joanna Langford / SSoA – the Love Seat built from reclaimed materials. Fig 40,41&42. Workshop #04 Pictorial Ecology: a social revolution in the urban landscape // Dr Nigel Dunnett – proposals for 'greening' Crookesmoor Campus. Fig 43,44,45&46. Workshop #05 Slack Space: the potential of the empty house // Catharina Gabrielsson – testing slack space and social rituals. Fig 47. Workshop #06 Synthesis for Design Thinking & City as Orchard // Jordan Lloyd / SSoA alumni – overall presentation of contemporary issues, personal research and methodologies, plus, allotment visit with Grow Sheffield.

Fig 48. Workshop #07 The other side of Architecture// Steve Parnell - Day One Group discussion.

## Note 05. Workshops & Seminars
## 07 Constructing Criticism; the other side of architecture
## Steve Parnell University of Sheffield

As a speaker at the conference, I was invited to lead a workshop. Given that my talk was about ecology in architectural magazines, and my overarching interest in architectural journalism and criticism, I elected to conduct the workshops in a way that would enable the students to write critically about what was happening in the conference around them: to put it in some kind of context for dissemination. As the students were to write a longer essay, the motivation was to engage with a more critical aptitude and to practice writing with a shorter piece in blog format. Each student was then encouraged to read the other work and comment.

On the first day, the discussion focused around what criticism was, and how it might be constructed in theory. The second day built on this theory and involved the students, in pairs, working with the other workshops and reporting on them. This second day was more directly relevant to the theme of ecology, whereas the first day was more generally applicable to an architectural education. The practices of design and criticism are not so different. The main difference is that criticism doesn't have to solve a problem, whereas design does. Criticism doesn't have to be written (it can be *designed*), but at the same time, design can be written: many of the same critical faculties are employed in each.

Examples of the results of this exercise are presented here.

http://arc573.blogspot.com/

## Note 06. Teaching Theory & Research

Dr. Doina Petrescu, former Theory and Research Module Leader and member of AGENCY, answers retrospectively questions regarding the Theory Forum as a method for education.

**Question 1**

**Composing part of the MArch course structure, it is fair to say the theory and research module seems enlightenment for students in the relationship and role of theory and research within architectural discourse, particularly within academia.**

**a) How important do you feel is that role and how do you feel it has changed/developed in the education of the course since the initial intentions of the theory forum?**

The Theory Forum was designed as a format for teaching and learning theory at the Postgraduate level. This involved high standing lectures given, in some years, by invited lecturers and in others, by people selected through calls for papers. We had the concern of opening up the Forum to people we don't necessary know, but who might have done research on the topic. The proposals coming through the call for papers were peer-reviewed and selected (i.e. TF Architecture and Indeterminacy in 2006), we had also the concern that the Theory Forum should be related research conducted in the school. In 2007, The Alternate Currents TF became an international conference connected with Till and Schneider's AHRC research project. Also we were concerned with raising the profile of the TF as research event and developed it as an AHRA international conference – Agency- involving hundred of participants in 2009. In all these configurations, the students were exposed to a research community in the area of humanities and they were invited to take active positions: interviewing participants, preparing questions, organizing parts of the event. With Ecology, we tried to involve students not only in organizing but also in conceiving the Theory Forum, in choosing the topic, selecting the participants, deciding about the structure of the event, communicating. This is the expression of a kind of ecology of education...

**b) Subsequently, what was the intention and inspiration for theory forum 09 to be a student-led event?**

As you might know we had an IBL GRANT, Cilass. to support this initiative into inquiry based learning. This built on existing innovative practice within the school to promote and support student-led initiatives in the curriculum. We have tried to establish a platform for an empowered

discourse amongst staff and students and to foster better connections between the design studio and lecture-based parts of the course.

**Question 2**

**It is easy to speculate theory forum 09 as a two-day event, we feel when regarded as a process it is important to remember its purpose, origin and importance of its theme - 'ecology', as being contemporary or current.**

**a) How does this process of theory forum 09 of student organization / conception and its outcomes compare to previous?**

**b) Is 'ecology' important and was it insightful? Did the theme and assessment criteria provide scope and diversity for theory and research as a teaching module?**

This was an amazing experiment, an instance of true participation in education. Even if you have done the most, also for us, as mentoring staff, it was a lot of work, as it involved lots of meetings, exchange and advice to help you in the decision taking.

The speakers were a mix, some very good some less, which always happens in a conference based on call for papers. It was maybe more difficult with the workshops which were very different in nature and very unequally conducted. Though, students haven't complained about this.
As a whole, the students have been much more pro-active and receptive and had a very rich experience. Nevertheless, some of them still complained in the feedback about the theory course as 'unclear'. The essays, which is the form of assessment of the theory course, were much better than in the previous years.

It had to do with the topic which was generous in scope, but also with their involvement in preparing it.

Unfortunately, staff was less present during the Forum ... I am wondering if it was because a student led event is perceived as less interesting and lower standing research event... or just because of time, etc... Still work to do on this side!

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**Question 3**

**For the students, participating in the event is something that is not assessed and to become part of the process was always a choice. On one hand, the co-ordination / operation of the event was mostly successful due to voluntary or gift culture. On the other, the students to be assessed and otherwise were provided incentives in order to participate and attempts on our half for it to be more inclusive.**

**a) What could be said about the value of participation without a value of educational necessity?**

This is a good question. I think that one can learn form informal situations too, as always happens in education. We can leave space for informal learning, and can even 'formalise' this space. This happened when we programmed informal events to take place (i.e. food fuddles, conversations.) The learning process is fluid and doesn't stop at the door of the conference room. The exercise of participation was a learning experience too. Was it assessed fairly? Does it need to be assessed? We have the same problem with the live projects. Participation belongs to another type of logic and economy of education than the one which uses marks to assess quality, isn't it? Also, in practice, participative work is very often not rewarded financially – but affectively, symbolically. Maybe we have just to recognize this other kind of economy.

**b) Based upon this in the future, is it realistic to think the process could be more inclusive? Could / should the format or ideal of the event change?**

I think we should continue to experiment with it. Not necessarily trying always to 'improve' it in the sense of best practice in education, but continuing to take risks, try new formats, set new agencies.

## Note 07. Comments & Feedback

“tf09 was highly innovative on several counts. It is a well known irony of education that teachers learn far more in putting together a teaching event than the students who are supposed to do the learning. The students who set up tf09 showed that they were more than equal to the task of running an international conference and taught us a great deal in the process. The proceedings opened with a most intriguing paper by Irenee Scalbert before moving on into a varied and inspirational diet of papers. In doing so they brought together a diverse group of architectural thinkers into open and relaxed dialogue with their fellow students on the pressing and critical issue of Ecology.’

**—Professor Flora Samuel, Head of School, University of Sheffield**

'The scope of ecology was revealed through the lectures, but importantly, it was the interaction and investigation of the themes in the workshops that really opened up discussion and their potential application, this being far more valuable and memorable than lectures alone. The social aspect of the forum was really good, encouraging time for wider discussion in and around more planned events. This enabled learning and experiences from workshops to be shared, and also made the event more enjoyable. The forum has plainly had implications for me; many of the topics within the theme that were touched upon I have gone on to investigate further and interrogate /integrate into my thinking and subsequently my work.’

**—Jonathan Millard MArch student**

‘From the starting point of ecology the discussions ranged from the organic and at times political appropriation of space, to the social and environmental role of nature in our urban environment. It was hard to keep up, as the subjects moved quickly from the local to the global, and from the theoretical to the practical, but at the end of the two days we were able to take away new ideas to explore and research, and possible directions for practice.’

**—Sarah Ernst MArch student**

‘I took part in the Theory Forum: Ecology last year by doing a brief presentation and a hastily organised workshop. The event is emblematic of the serious stance that the School of Architecture at Sheffield takes to architecture's role in society. It's an attitude that permeates everything from the content of courses and programmes to organisation and research, and the non-hierarchical format of the student-led theory forum is clearly part of this institutional culture. For me, currently mostly involved in research, it was a very inspiring experience. It offered a rare occasion to bring academic concerns into effect - out in "the open", where they belong - in conversation with colleagues and students. Since it was student-led, there was a sense of urgency to the event that is rare to find within the

research seminar culture. Organising seminars takes a lot of effort and the outcome is always varying, depending on lots of different factors. I'm impressed by the fact that this mode of exchange is practiced already at this level —it's significant in several respects, not merely in terms of bridging research to education but also in putting research issues before the critical eyes of the next generation.'
**—Catherina Gabrielsson, LSE, Speaker**

## Note 08. tf09 ECOLOGY >> Accounting for Criticism.

It is important not to forget the purpose of the Theory Forum, to provide students with a platform to participate and formulate an essay to be assessed as part of a theory and research module. We were of course inspired by TED[4] , pursuing the mantra of 'ideas worth spreading', but it was key for the debate to have a relationship to architecture and return to something tangible.

Ecology emerged from a feeling within the student body that this issue needed to be addressed rigorously, to explore and understand more extensively the relationship between ecologies and architecture. Nevertheless, the potential of the ambiguous definition of ecology was consciously used as the initial intention of the event and theme. As a process initiated by ARC as a pedagogical opportunity or an act of spatial politics, supported by a limited budget, tf09 enjoyed a position where increased speculation and critique could take place. This should be considered a reflection of architectural education. In propositioning such collective student involvement as an all-too-frequently untapped group, it raised questions regarding what it is to be a student or aspiring architect or academic. The value of education beyond acquiring the skills needed to practice architecture is always an open question: though bold, the process of tf09 taught us active negotiation, the struggle to offer inclusivity of approach and relevance of concept, and taught us not to try and change the world in two days.

At the heart of it, the value of tf09 was only as extensive as the collective student participation empowered by the opportunity presented. As a core team we operated as an active, responsible conduit encouraging and testing critical pedagogy. Regardless of internal difficulties and difference, and despite teething troubles we acknowledge that without the student-body's involvement and contribution, working in part by gift culture, the event would not have been possible. Tf09 offered an engaging environment for anyone reluctant to participate, where the peripheral moments of exchange were a comfort only a student-led event could offer.

Finally, we would like to thank the Agency Research Centre for the opportunity, participating speakers, the intervention and workshop co-coordinators and the students, those that contributed to its documentation and organization, and also those who helped us write this account.

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# Rhyzom: Local Cultural Production, Translocal Dissemination: Review of an European networked project

Doina Petrescu

We live in a moment of re-assessment of cultural practice and redefinition of the role of culture in a society which faces a number of economic, social, political and environmental crises. Globalisation has demonstrated its critical effects and localism is becoming a key term for the way we envision the management of the future. We are moving towards 'deglobalisation', to quote French landscape designer and ecologist Gilles Clement, which translates into a localised consumption and production of goods.' What is the role of culture in such a deglobalisation process? How is culture 'produced' and 'consumed' in a 'deglobalised' world? How can local forms of cultural production circulate and be connected through alternative channels? And also, what should be considered 'culture' and what are the criteria to assess it?

These were some of the questions that were addressed by the collaborative project Rhyzom, which was set up between five organisations, within the framework of the EU Culture 2007 programme (www.rhyzom.net). All these organisations had in common an interest in local cultural practice but each of them brought a different perspective and a specific set a questions. atelier d'architecture autogérée were interested in cultures of resilience, Agency in education as cultural practice, PS2 in regional and rural aspects of cultural production, Cultural Agencies in models of cultural collaboration and institutional practice within peripheral contexts, Public Works in methodologies of exchange and networking cultural knowledge, goods, and people.

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Fieldtrips were organised by each of the five organisations to investigate together with other participants their own questions and discover existing practices and initiatives in their field of interest with the idea of setting up connections and networks of production and dissemination. The Rhyzom project tried to literally 'make a rhizome', that is to say, if we quote Anne Querrien, *'going towards the other (...) in the perspective of an alliance and the construction of a temporary micro-territoriality that will soon after be shared with others, by the new offshoots of the rhizome'.*[1]

[1] Gilles Clément, Toujours la vie invente – Réflexions d'un écologiste humaniste, (éd. de l'Aube,: Paris 2008,) p.47

It is this micro-territoriality that we wanted to discover when we visited a series of projects in different European regions that had in common lifestyles that questioned stereotypes and shared authentic values anchored in the local.

In the South of France, we visited a series of self-managed farms (Cravirola, Bauchamp, Caracoles de Suc), eco-villages and intentional communities in Germany (Brodowin, Gut Stolzenhagen and Siebenlinden) as well as traditional forms of self-organised projects in Romania (Obste and Monasteries), emerging eco-networks like Transition Towns in Totnes or rural art networks like myvillages in Höfer Waren. We have also participated in gatherings that addressed the role and necessity of creating new types of organisations or institutions that can stimulate the idea of common knowledge production and dissemination. (i.e. Casa Invisible in Malaga, Grizedale in Cumbria, Mobile Community Centre in Ballykinler Northern Ireland, Organic Centre and Leitrim Sculpture Centre in Ireland).

A number of workshops followed and sometimes overlapped with the fieldtrips. These workshops were moments of collaborative experimentation, fabrication and critical reflection which engaged directly local and trans-local participants. Notably, three workshops related to the projects of the three partners have involved students from Sheffield: aaa, PS2 and Cultural Agencies, addressing issues of pedagogy in relation to differently contextualised local cultural practices. Another workshop in Höfer Waren addressed the idea of the transmission of feminine skills and creativity in rural contexts.

The production of workshops was disseminated locally in different formats (exhibitions, installations, shops, fanzines, etc.) but we have also decided to put together a collective publication in order to reflect on the experience of our networked collaboration and the findings and connections this has facilitated.

These workshops were connected to five projects run by the main partners of Rhyzom: **Cultural Agencies, International Village Shop, Fields, R-Urban, Agencies of Live Projects.**

**Cultural Agencies** is a project initiated by a group of curators, artists, architects, planners and cultural workers during 2009-2010, and seeking to develop contemporary models of cultural collaboration and institutional practice within the context of Gulsuyu-Gulensu, a *gecekondu* neighbourhood in the Asian outskirts of Istanbul. The project attempts to forge a trust-based relationship with selected local communities, conducts field surveys involving local residents, and draws participatory mapping of existing forms of agency.

**International Village Shop** project by public works, explores 'trade' as a methodology for exchanging and networking cultural knowledge, goods, producers, consumers and users. The trade is not driven by commercial interest but by a shared interest in contemporary cultural production and value systems. It is set up as a pan-national platform to include and connect producers and audiences across cultural, geographical and language barriers, and uses formal and informal networks to grow and operate, engaging with grass-roots economic models. The International Village Shop works as a dispersed network of temporary and permanent production and trading places.

**Fields** investigates regional and rural aspects of cultural production. PS² collective from Belfast invited artists, architects, a geographer and a gardener from north and south of Ireland to work around the theme of cultural production in small towns and villages of the border regions between the Republic of Ireland and Northern Ireland. One island, similar in landscape and population, both nations developed politically and culturally different, especially between the 1970's and early 1990's during the political troubles in Northern Ireland. The collaboration questioned to what extent the rural is integrated in the provision of cultural centres and what alternatives it generates.

[i] Anne Querrien, 'Les Cartes et les ritournelles d'une panthère en ciel, Multitudes 34 (2008).

Fig 1. Rhyzom workshop at Ballykinler, Northern Ireland
photo credit: Peter Mutschler

Fig 2. Rhyzom fieldtrip at Siebenlinden, Germany
photo credit: C. Petcou

**R-Urban** project developed by atelier d'architecture autogérée in Paris and its outskirts, explores the ecological, economic and social complementarities between four types of local territories, spaces and activities: collective housing, ethical economy, urban organic agriculture and local cultural production. What is at stake is how to re-assemble economic, temporal, social and ecological bottom up initiatives into new agencies and collective processes that will facilitate the emergence of another political space and a new politics of the common(s).

**Agencies of Live Projects** is a critical reflection by Agency, a Research Centre on Transformative Research into Architectural Practice and Education. Agency has been involved in the Rhyzom project through three live projects at the School of Architecture, the University of Sheffield. Live projects are student led projects in a real context, happening in real time with real people and clients. In these instances the clients were three of the partners of the Rhyzom network: PS2 in Belfast, Cultural Agencies in Istanbul and aaa in Paris.

All three live projects were specifically concerned with a local cultural production, addressing the issues through different methodologies: exploratory mapping, consultation and construction work. They also questioned whether architectural education can take the form of a local cultural practice, and if new forms of pedagogy can be a vehicle for trans-local production and exchange.

These five projects are true experiences of collective production, representation, negotiation and networking within their local contexts, which have also developed collaborations using the Rhyzom network. They were as such ways of testing and demonstrating the possibilities of a trans-local organisation.

The main project outcome is a book called **Trans-Local-Act: Cultural Practices Within and Across** which addresses ways of framing cultural acting through trans-local networks and agencies that connect without hierarchy and ideological limitation across heterogeneous locations (rural and urban), following very specific affinities between local practices of all kind: practices which create collaborations between existing and newly invented formal and informal cultural institutions - in rural areas, at the peripheries of cities or at the border between different kinds of identitarian systems (political regimes, disciplines, territories, etc.)-, practices which activate new type of socialites, alternative economies and ecologies, practices that are concerned with commons and communality, with the collective production of knowledge, etc...

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Fig 3. Trans-Local-Act book, Paris: aaa/peprav, 2010

*Rhyzom* is a manifestation of cultural biodiversity brought into existence by architects, artists, activists, curators, cultural workers, educators, sociologists, geographers and local residents who have authored the projects or the texts included in the book. It is a temporary network made up of many other collaborative local networks that pre-existed or formed through it, at the same time as being sites of local creativity and sites of life. In these times of crisis and uncertainty, in which cultural and artistic production, social science and humanities research in Europe is under threat by the serious cuts in funding decided at national and European levels, we hope that this network will continue to make its way, by connecting and disconnecting within and across, like a rhizome.

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# Instances of ecological motivations in the production and use of space An edited extract from *Spatial Agency: Other Ways of Doing Architecture*

Nishat Awan, Tatjana Schneider and Jeremy Till

Too often in mainstream architecture, environmental issues are directly attached to the building, in terms of control and mitigation. Buildings are treated as technical devices, and design for sustainability is focussed on the optimisation of systems to reduce energy use and in the choice of materials to reduce embodied energy, both in a move towards "low carbon" solutions. Clearly these are important issues, but this limiting of environmental understanding to the technical realm alone tends to treat it as an isolated system that can be dealt with on its own terms, typically those of efficiency and control. This leads to a sense that environmental issues can be dealt with through technical fixes, but this is in fact a false sense of security because it is clear that the environment is tied into much wider networks. Ecology, in relation to spatial agency, the environment is not isolated to matters of energy reduction and efficiency, but has to be understood in relation to the social, the global and virtual realms. In their important manifesto for an *Urban Political Ecology*, Nik Heynen, Maria Kaika, and Erik Swyngedouw note that "environmental and social changes co-determine each other."[1] In this light, acting motivated by ecological concerns means that one has to deal with the interchange of the social and the environmental – with how social conditions are linked with ecological conditions, as is most clearly identified in books such as Mike Davis's *Ecology of Fear*. The authors of the manifesto talk of this relationship in terms of a metabolisms, recognizing the cause and effect that is built into all systems, so that "while environmental (both social and physical) qualities may be enhanced in some places and for some humans and non-humans, they often lead to a deterioration of social, physical and/or ecological conditions elsewhere."[2] It is an awareness of this interdependency of systems that the ecological spatial agent brings to the table.

[1] *In the nature of cities: urban political ecology and the politics of urban metabolism*, ed. by Nikolas C. Heynen, Maria Kaika and Erik Swyngedouw (London: Routledge, 2006), 11.

[2] Heynen, Kaika and Swyngedouw, 13.

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Given the very recent interest in ecology, it is all too easy to forget that a significant number of individuals and groups throughout the C20 and C21 have worked with the environment, have acknowledged human impact on the environment or focused on the interdependence of the environment, economics and the social. Many of the examples that follow have done that well before the time when global warming was an accepted term or phenomenon, and are instructive for their prescience in the way that they responded to the early signals of environmental stress.

This short illustrated text aims to acknowledge ecology as a main motivation for an individual's or group's action and is based on work conducted as part of the AHRC funded research project Alternative Architectural Praxis / Spatial Agency (Tatjana Schneider, Jeremy Till and Nishat Awan). Further information on each project can be found on www.spatialagency.net; a book with the title '*Spatial Agency. Other Ways of Doing Architecture*' (Routledge, March 2011) will expand the presented arguments.

***2012 Architecten.*** *The practice was set up around a desire to reduce the use of natural resources through innovation and clever design. Inspiration for their work comes from the creative use of waste material that occurs every day in conditions of scarcity across the global South, and place themselves within the self-help, DIY tradition of 1970's US and in particular the use of waste materials and ecological practices developed in building the Earthships.*

Fig 1. A pavilion in Dordrecht made from kitchen sinks. Photo: John Bosma. http://www.flickr.com/photos/15262666@N05/4178972681/)

***Architype.*** *Architype are committed to using locally sourced materials and designing buildings that lower energy consumption, often pioneering new techniques. Their Genesis project for Somerset College of Arts and Technology also leads by example, using construction techniques such as cob walls, rammed earth walls, straw bales and clay blocks, as well as including a biomass boiler that runs on waste wood shavings and saw dust from the college.*

Fig 2. Self-build house in Islington. Photo: Architype

***Centre for Alternative Technology (CAT).*** *CAT started in 1973 as an experimental community working towards self-sufficiency and later became an educational and information resource centre open to the public. It promoted a lifestyle away from urban centres and without a dependence on industrial production systems demonstrating alternative technologies and ecological lifestyles, and set up a cyclical system where waste from people, animals and crops was recycled using composting toilets and reed beds.*

Fig 3. Caravans sprayed with insulation serving as site offices. Photo: Courtesy: CAT

***Counter Communities.*** *Influenced by Puritan settlers arriving in the 'New World, many counter communities, such as* ***Arcosanti,*** *the* ***Earthships,*** *the* ***New Alchemy Institute, The Lama Foundation, Drop City*** *and the* ***Dome Village,*** *were set up as alternatives to socially and ecologically damaging lifestyles during the 1960s in the hot arid desert landscapes of California and Arizona. Some are still operating today in different guises, for example* ***Nader Khalili's*** *vision of low-impact adobe building is still being promoted and researched by the* ***Cal-Earth Institute.***

Fig 5. Corner Cottage Earthship at Taos, New Mexico. Photo: Kirsten Jacobsen

Fig 6. Dome Village, LA (circa. 1994). Photo: Craig Chamberlain

***Ecosistema Urbano.*** *Ecosistema Urbano combine expertise in architecture, civil engineering and landscape architecture, focusing on designing sustainable urban environments and increasing biodiversity. Their EcoBoulevard project in a Madrid suburb was designed to mitigate the effects of rampant urban development with little concern for environmental and social conditions.*

Fig 7. Urban voids, Philadelphia. Strategy for the self reparation of the urban tissue. Image: Ecosistema Urbano

***Ecovillages.*** *Ecovillages are intentional communities that strive for a degree of self-sufficiency and a low environmental impact, often motivated by the desire to find a sustainable alternative to capitalist society. Many are part of the Global Ecovillages Network and vary in size from 50-500 members. Some have a strong spiritual dimension, for example the Findhorn Community in Scotland and Auroville in India, whilst others focus on collaborative and egalitarian social structures. Ecovillages often experiment in social organisation, operating alternative education and social welfare systems, forms of consensus democracy, or alternative economies.*

Fig 8. Solar House at **Crystal Waters**. Photo: Max O Lindegger

***Buckminster Fuller.*** *One of the first to recognise the finite nature of natural resources, Fuller was convinced that design and technology could offer solutions to the problems of the management of resources, especially with regard to transportation and building. Fuller popularised and appropriated the phrase Spaceship Earth to describe the finite and unreplenishable resources of the planet and its interdependent nature. This was the basis for his systems thinking and the emphasis on access to and invention of tools to enhance living, concepts that were to prove a major inspiration for* ***Stewart Brand****, the co-founder of the* ***Whole Earth Catalog.***

***Victor Papanek*** *(1927–1999) was a designer and educator who promoted ethical design that was socially and ecologically responsible and was also a vocal critic of multi-national corporations and the consumer culture that was causing large-scale damage to the environment, calling for an increased awareness of environmental issues in industrial design practices and construction. His highly influential publications on the topic include Design for the Real World: Human Ecology and Social Change (1971) and The Green Imperative (1995).*

Fig 8. Fuller's geodesic domes inspired a whole host of architects and designers, including the use and adaptation of the domes at **Drop City**. Photo: Ryan Mallard.

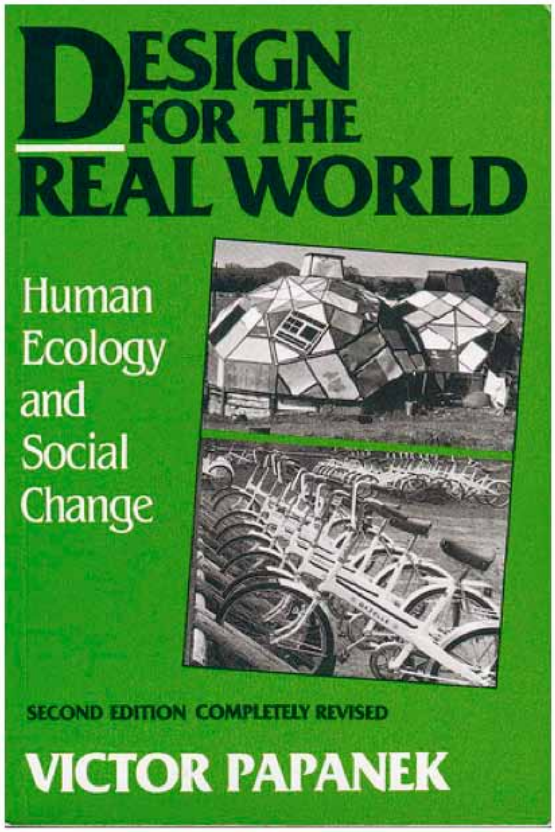


Fig 9. Design for the Real World (1971). Photo: Spatial Agency

***Urban Farming.*** *The practice of cultivating food and raising animals in an urban environment is referred as urban farming or urban agriculture. Whilst small-scale and localised food production has a long history, including individual* ***allotments****, popular in Europe since the late C18, it is the integration of such farming practices within the economic and ecological system of towns and cities that is a newer development. The recent of example of* ***Cuba*** *has proven the effectiveness of urban agriculture. The Cuban government – following the collapse of the Soviet Union - promoted urban agriculture at various scales, including food grown in private gardens, state-owned research gardens, and the most successful model, the popular gardens on state-owned land open to the public. Architects,* ***Bohn and Viljoen*** *based in London, have adapted the Cuban model to suit landscaping proposals in European cities. They call on ordinary people to appropriate leftover spaces such as grass verges, as do* ***guerrilla gardeners,*** *but with the specific intent to cultivate food. A town that followed this course is Todmorden with their* ***Increbible Edible*** *project. In the UK* ***city farms****, the emphasis is not only on growing crops but also on raising animals. One of the earliest of these is* ***Mudchute Park and Farm*** *on the Isle of Dogs in London, established in 1977 and still operating. The desire for local food production in urban areas is also reaching a global* scale *with the* ***Transition Town*** *movement developed to equip towns and also villages, neighbourhoods etc. to deal with the changes that peak oil would bring.*

Fig 10. Rotonda de Cojimar, Havana, Cuba. Photo: Jennifer Cockrall-King

***Whole Earth Catalog.*** *Published regularly between 1968 and 1972, the Whole Earth Catalog was essentially a handbook for those wanting to live self-sufficiently, full of tips and suggestions. Today, its name is synonymous with the American counter-cultural scene of the late 1960s. The Whole Earth Catalog embraced systems theory and cybernetic evolutionism; its conceptual stance of a holistic model for society was inspired by the works of the anthropologist Gregory Bateson, the theorist Marshall McLuhan, architect Buckminster Fuller and the mathematician Nobert Wiener. The Whole Earth endeavour became a way of researching how a grass-roots movement could be furnished with information and energy, of how it could become a reality. The Catalog's sister organisation, the Farallones Institute, which was funded by the same non-profit educational institution, the Portola Institute in Menlo Park, California, concentrated on developing alternative technology solutions.*

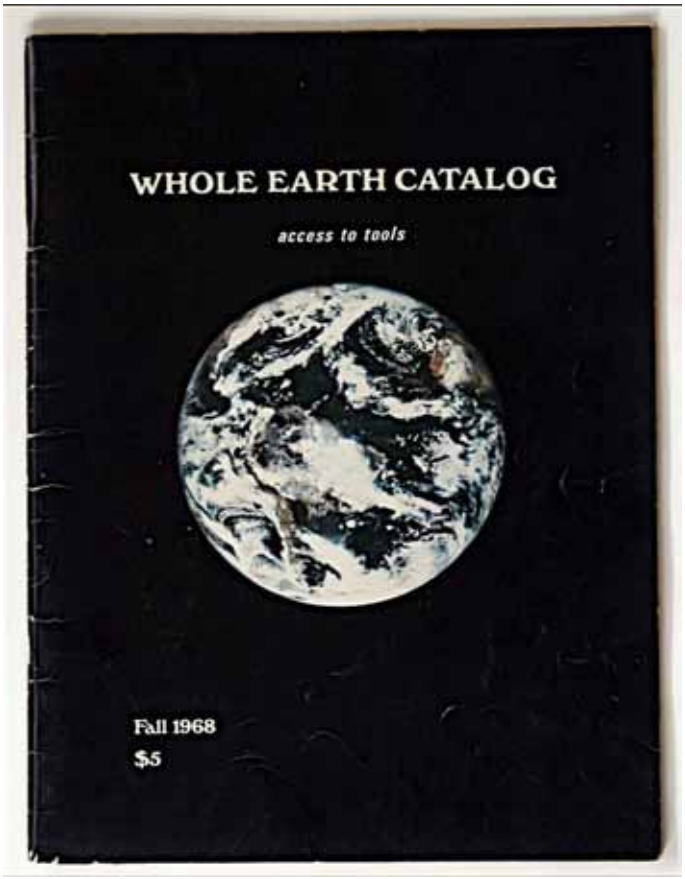


Fig 11. Whole Earth Catalog. Access to Tools, Fall 1968. Photo: Spatial Agency

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# ATLAS of Interdependence

Joe Smith and Renata Tyszczuk

Interdependence Day (ID) is a research, communications and participation project centred on taking a fresh tone and approach to issues around environment, development and globalization. ID is politically explicit, but frank about its experimental and uncertain status. It has revolved around a distinctive mix of public events, publications, art practice and academic/policy seminars. These activities have started to probe the potency of the concept of interdependence for public understanding of – and responses to – environmental change at a moment when the density of relations between the ecological, the social and the political are so evident.[1]

The scale and complexity of the challenges facing us today can seem beyond the reach of everyday life. The intersection of bio-geo-physical changes and economic and cultural globalization provokes us to prepare ourselves both practically and imaginatively for changes of state that are inherently unpredictable. Over the next century we are likely to see even more rapid physical change, displacement of people and other living things than we have ever seen before in the history of settled human habitation.[2]

There is therefore a need for responses to environmental change, development and globalisation that give attention to issues of participation, decision-making, and the hospitality that this demands on a volatile planet. The ID project has been informed by work in human geography that addresses the ethical and political implications of 'thinking space relationally'.[3] Considering the geographies of responsibility along with the ecologies of architectural thinking and practice has prompted inquiry into the existing categories, assumptions and systems of the way we live. In the current context in which the social economic and ecological, or more broadly, the ethical impacts of the development of cities are under question the ID project has identified the more provisional projects that have been able to test larger themes through a more immediate engagement with intentions, desires, site and audience.

1 See Renata Tyszczuk and Joe Smith, 'The Interdependence Day Project: Mediating Environmental Change' The International Journal of the Arts in Society, Common Ground Publishing May 2009 (volume 3, issue 6): 37– 42.

2 Joe Smith, Nigel Clark and Kathryn Yusoff, 'Interdependence', Geography Compass 1 (3) 2007: 340-359.

3 Doreen Massey, 'Geographies of Responsibility', Geografiska Annaler Series B: Human Geography 86B (1) 2004: 5-18.

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The ID project has purposefully sought a tone that turns away from a disempowering litany of impending disaster that 'knowing about climate change' tends to carry with it, or the often technocratic drive of sustainable development literature and instead represents an invitation to participate in 'making new maps for a mobile planet'. This strapline for the Interdependence day project invites participants to explore the current state of global interdependence and the demands of dwelling on a dynamic planet with an air of experiment and creativity and to contribute to a politics of change.

The ATLAS of Interdependence will be generated over the next two years as both an evolving web presence and a book publication (Renata Tyszczuk, Joe Smith, Melissa Butcher and Nigel Clark, eds., Black Dog, 2012). It will continue the work of the ID project and bring together the various components of ID events in forms that will allow further exploration of the overriding themes of the project. The ATLAS aims to provide a rich and stimulating interdisciplinary resource, but with an ironic inflection, that plays on the traditional claims of an atlas to be 'capturing the world'.


Fig 1. The ATLAS of Interdependence website

The ATLAS is characterised by thinking across scales: planetary, urban, human. It comprises a collage of ideas, art based projects, expert witness, stories and scientific responses to global environmental change, settling somewhere between the Whole Earth Catalog's unruly mix of local and global ecological fixes and Borges' Atlas of the Impossible. It does not attempt to compete with more recent inheritors of the Whole Earth's mantle or to act as a comprehensive or exhaustive reference guide to environmental change. Instead it asks afresh what 'tools for access' might be needed by diverse groups with completely different means of participation in the issues.

The ATLAS maps out and probes the demands posed by a dynamic planet for those people tasked with designing, constructing and maintaining relatively enduring structures on the earth's surface. These are challenges that include but also exceed the scope of projects of sustainability and development, by putting the stress on transformations whose contours, direction and magnitude defy prediction. Serving as a kind of *Whole Earth Catalog* for an unprecedented present and an unpredictable future, the ATLAS aims to pre-empt desperate or survivalist measures by exploring creative, experimental and ethical responses attuned to rapidly changing terrestrial conditions.

One characteristic of the invited contributors is a commitment to practically relevant but critically and theoretically informed research. In different ways they have engaged directly and collectively with the activities pursued during the last five years of the Interdependence Day project, have encouraged new contributions to the project and have helped to foster new networks of cultural knowledge and dissemination. The ATLAS will therefore continue to offer a selection of propositions that act as guides to, and prerequisites of, social change. The ID project seeks to both make and map the world differently.

*Acknowledgements*

The Interdependence Day (ID) project has arisen out of an extended programme of action research on media and environmental change by Joe Smith, and the architectural design teaching, research and art practice of Renata Tyszczuk. Project partners in the ID project are The Open University (Geography), University of Sheffield (Architecture) and the new economics foundation (nef). The ID project has been supported by funding from ESRC/NERC. The Open Space Research Centre at the Open University has supported the development of the web and print ATLAS.

ATLAS: http://www.atlas-id.org
The Interdependence Day project: http://www.interdependenceday.co.uk
The Bigger Picture: http://thebiggerpicture2009.org
nef, the new economics foundation: http://www.neweconomics.org
Open Space Research Centre: http://www8.open.ac.uk/researchcentres/osrc/

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# Notes on Contributors

**Neeraj Bhatia** received his Masters of Architecture + Urban Design from MIT. He has worked for Eisenman Architects, Coop Himmelblau, Bruce Mau Design, OMA, ORG and Lateral Office. He has taught at the University of Waterloo, the University of Toronto and was awarded the Wortham Teaching Fellowship at Rice University (2010-2011). His research has been published in Volume/Archis, Thresholds, Footprint, Onsite Review, brkt, and Yale Perspecta. He is co-editor of 'Arium: Weather + Architecture' (with Jürgen Mayer H., Hatje Cantz Publishing, 2009), which examines the relationship of building and weather. In 2008, Neeraj became a co-director of InfraNet Lab, a non-profit research collective probing the spatial by-products of contemporary resource logistics. The Lab's research into urban infrastructures will be published in Pamphlet Architecture 30 (Princeton Architectural Press, 2010). Neeraj received the 2010 Lawrence B. Anderson Award to document traditional and contemporary housing in the Canadian Arctic.

**Katrin Bohn** is Professor at the IAULP (Institut für Landschaftsarchitektur und Umweltplanun), Technische Universität Berlin. Together with Andre Viljoen, she runs Bohn&Viljoen Architects, an architectural practice and environmental consultancy based in London. Bohn&Viljoen Architects have taught, lectured, published and exhibited widely on the design concept of CPUL (Continuous Productive Urban Landscape).

**David Cross** is an artist and Reader in Art and Design at the University of the Arts, London. He has a particular interest in the relationship between visual culture and the contested ideal of 'sustainable development', particularly how art and design might help build social resilience in anticipation of energy depletion and climate damage. He has collaborated as an artist with Matthew Cornford since graduating from the Royal College of Art in 1991. Their book Cornford & Cross includes critical essays by John Roberts and Rachel Withers, and highlights the aesthetic and political concerns of their sculptural installations, in relation to conceptualism and site specificity. Involving photography, sculptural installation and performance, the projects of Cornford & Cross make

an intense engagement with their context, understood as an interplay between the physical, temporal and social aspects of particular places. The help and involvement of different groups of people is central to realizing the projects, which bring a critical or satirical impulse to discussion on matters of public concern, including environment, development and social justice.

**Catharina Gabrielsson** received her diploma in Architecture in 1992 and her PhD in 2007, both at the School of Architecture, KTH Stockholm. She has organised numerous art-and-architecture collaborations in Sweden on behalf of the National Public Art Council (1997-2004) and, as a member of the editorial board of MAMA, was curator for the exhibition "Revision: MAMA Rewrites History" at the Architectural Museum of Stockholm in 2004. As a cultural critic and senior lecturer, she has published and lectured extensively at sites of higher education and in different media since the mid 90's. Bridging between art theory, philosophy and human geography, her research focuses on architecture's entanglements with urban and social life, time and the human body; understanding architecture as a performative and generative force rather than a system of determination. She was a Visiting Fellow at the Cities Programme, London School of Economics and Political Science in 2008-2010 and is presently working in Istanbul and Stockholm.

**Jon Goodbun** is Senior Lecturer in Architecture at the University of Westminster. He co-founded the practice WAG in 2002, which has completed a series of small research, competition and building projects, often focussing on ideas around ecological design and spatial interface. His PhD research draws together material from ecology, cybernetics, cognitive science and extended mind theory.

**David Haley** is an ecological artist, he believes our ability to survive Climate Change is the enactment of an evolutionary narrative. As the dance of creation and destruction, also, demand new opportunities and meanings for the other side of collapse, his inquiries into the nature of water, whole systems ecology and integral critical futures thinking inform his arts practice, education and community developments. As Senior Research Fellow in MIRIAD at Manchester Metropolitan University, Haley is Director of the A&E [art&ecology] research unit, and leads the award winning MA Art As Environment programme. Among his other affiliations, he is Vice Chair of The Chartered Institution for Water and Environmental Management, Art & Environment Network and a Member of the Peer Review College, Arts & Humanities Research Council, Director, Board of Trustees, INIFAE [International Institute For Art and the Environment], and editor for Cultura21, MAiA journal and Public Art & Urban Design Observatory.

**Amy Catania Kulper** is an Assistant Professor of Architecture at the University of Michigan's Taubman College of Architecture and Urban Planning. For the 2010-2011 academic year, she is the Steelcase Research professor at the University's Humanities Instititute where she is working on the manuscript for a book entitled Immanent Natures: The Laboratory as Metaphor for Architectural Production. Amy serves on the editorial board for the Journal of Architectural Education, where she is also a member of the Design Committee. Her publications have appeared as chapters in the forthcoming Experiments: Architecture Between Sciences and the Arts edited by Ákos Morávansky and Albert Kirchengast; Intimate Metropolis: Urban Subjects in the Modern City edited by Diana Periton and Vittoria di Palma; and Visions of the Industrial Age: Modernity and the Anxiety of Representation in European Culture, 1830-1914, edited by Amy Woodson-Boulton and Minsoo Kang. Her articles appear in Journal of Architecture and Candide: Journal of Architectural Knowledge. Amy is a three-time recipient of the Donna M. Salzer Award for teaching excellence at the University of Michigan. Her current research explores the conceptualization of the natural world in the context of a discipline whose divided institutional legacy frames the natural either as an applied science or a fine art. Her questions are lodged in this artificial distinction, and emanate from a desire to craft alternative narratives for the influences of science and scientism on architectural discourse.

**Benjamin Morris** recently completed a PhD in Archaeology at the University of Cambridge, examining the role of cultural heritage in the rebuilding of New Orleans after Hurricane Katrina. He is an Affiliate Member of the OpenSpace Research Centre at the Open University. His creative work (poetry, fiction, non-fiction, and plays) has been published widely in both the US and the UK, and received an Artist Development Fellowship from the Mississippi Arts Council. He lives in New Orleans, where he is a contributing writer for the Uptown Messenger news site.

**Steve Parnell** used to be an architect and is currently a PhD candidate at the Sheffield school of architecture, researching Architectural Design magazine (1954-1972).

**Doina Petrescu** is an architect and activist, co-founder of atelier d'architecture autogeree (aaa) in Paris and Professor in Architecture at the University of Sheffield where she is also a founding member of the Agency Research Centre. She is the editor of Altering Practices: Feminist Politics and the Poetics of Space (Routledge 2007) and co-editor of Architecture and Participation (Spon Press 2005), Urban/ACT (aaa-PEPRAV, 2007) Une Micro-politique de la Ville: L'Agir urbain/Multitudes 21 (2008) and Agency: Working with Uncertain Architectures (Routledge, 2009). Together with Renata Tyszczuk she is the founding editor of *field:*

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**Maya Przybylski** is a Toronto based designer and educator. She is a graduate of the Faculty of Architecture, Landscape and Design at the University of Toronto (M.Arch. 2007) where she was awarded the Royal Architectural Institute Medal for her thesis work on post-oil opportunities for the Caspian Sea. Maya previously earned a degree with a specialization in Software Engineering at the Department of Computer Science at the University of Toronto (B.Sc.Hon. 2003). Maya has taught at the University of Toronto, Ryerson University and the School of Architecture at the University of Waterloo. Through her own practice, Maya has collaborated with a range of design practices including: RVTR, Lateral Office, WilliamsonWilliamson, and Bruce Mau Design. In 2008, Maya became a director of InfraNet Lab, a non-profit research collective probing the spatial by-products of contemporary resource logistics. The Lab's research into urban infrastructures will be published in Pamphlet Architecture 30 (2010). Maya is co-editor of Bracket 1 (Actar, 2010).

**Irénée Scalbert** is an architecture critic based in London. He has contributed articles and essays to most European magazines on a wide range of historical and contemporary issues. He is the author of *A Right to Difference: The Architecture of Jean Renaudie *(2004). He has taught at the Architectural Association for many years and is a member of the editorial board of AA Files. He was Visiting Design Critic in 2006 and 2007 at the Graduate School of Design, Harvard. He currently teaches at SAUL in Ireland. In addition to his teaching, he is a regular guest lecturer.

**Joe Smith** is Senior Lecturer in Environment in the Geography Department, The Open University, and consults on media and environmental change. He is a social scientist specialising in environmental policy and politics and has written books on climate change (with Stephen Peake, Oxford University Press, 2009), quality of life (as co-ed, Constable Robinson 2008), the green movement (Granta, 2006) and the media and global environmental issues (Earthscan, 2000). He is Co-Director of the Cambridge Media and Environment Programme which, since 1996, has run seminars on environmental change and development issues for senior media decision makers. Joe is the initiator of Interdependence Day, a communications and research project that takes a fresh look at global environmental change issues. He is currently leading an ambitious OU/BBC media and research project Creative Climate, which will capture human stories of ingenuity and imagination in response to environmental change 2010-2020.

**Spatial Agency** is a research project by Nishat Awan, Tatjana Schneider - both School of Architecture, The University of Sheffield - and Jeremy Till - University of Westminster. The conference 'Alternate Currents', which took place in Sheffield in 2007 and marked the first phase of this project, was covered in field 2(1) and arq 12(2). The contribution for this issue of field is an edited extract of ecological examples of Spatial Agency from the forthcoming book 'Spatial Agency. Other Ways of Doing Architecture' (Routledge, 2011). Further examples can also be found on www.spatialagency.net.

**Lisa Tilder** is an Architect and Associate Professor at the Knowlton School of Architecture, The Ohio State University, USA, where she teaches design, theory, and representation. Her work explores relationships between design and popular culture, with particular emphasis on media, consumerism, and environmentalism. She is Principal and co-founder of MUTT with Stephen Turk, a collective whose work explores experimental and underrepresented ideas in architecture. MUTT Collective/MINE THE GAP is Jeffrey Anderson, Tony Caicco, Ryan Connolly, Ross Hamilton, Hyeun J. Lee, Robert Scott, Sameer Sharif, Lisa Tilder (Principal), and Stephen Turk (Principal). Tilder is co-editor of Design Ecologies: Essays on the Nature of Design, published by Princeton Architectural Press. She is the recipient of the Young Architect's Award of the Architectural League of New York and the Far Eastern International Digital Architectural Design Merit Award among others. She has been supported by The Graham Foundation, The National Endowment for the Arts, The US Department of Energy, and is a two-time fellow of The Ohio Arts Council.

**Renata Tyszczuk** is Senior Lecturer in Architecture at the University of Sheffield where she is also a founding member of the Agency Research Centre. Her current research explores questions concerning global environmental change and provisionality in architectural thinking and practice. This links to her involvement in the development of the Interdependence Day project. She is the author of *The Story of an Architect King: Stanislas Leszczynski in Lorraine 1737-1766* (Oxford: Peter Lang, 2006) and co-editor of *Agency: Working with Uncertain Architectures* (London: Routledge, 2009). Together with Doina Petrescu she is the founding editor of *field:*

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