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What Markets Could Learn

Makeshift is an experimental fanzine about architecture and its alternatives. Where current architectural journalism continues to celebrate the built, the photogenic, the 'well-detailed'- with successful professionals writing wry critiques on a minority of 'nice Buildings', Makeshift is an attempt to go where architecture is not yet; to bring together a wealth of IDEAS that are currently disconnected by professional categorisations, geography, or un-fame.

WikiHouse

Towards an open source construction system

// Alastair Parvin Nick Ierodionou

WikiHouse is an open source construction set. Its aim is to allow anyone to design, download and print CNC cut plywood houses and components, which can be assembled with minimal formal skill or training. In short, to put the capability of designing and building your own house into the public domain. It is being led by Architecture 00/, Espians and Momentum Engineering.

It was John Maynard Keynes who once pointed out the simple fact that "it is easier to ship recipes than cakes and biscuits". Yet, of course, the industrial economy of the 20th century was shaped by the opposite philosophy: carefully guarded intellectual property, factory mass-production, and the shipping of goods over vast distances, in search of artificially cheap labour.

Design now finds itself on the edge of a new industrial revolution.

It is a revolution which can trace its origins back over fifteen years ago, to the software industry, and the open source design movement. As the web grew, groups of programmers began to do something which, on the face of it, made no business sense: they started sharing their code — seemingly for free. Ostensibly, the principle was simply one of effectiveness: with more team members, development can progress more quickly and with more 'eyeballs', 'bugs' are quickly found and solved. But open source design became much more than that, it became a philosophy, a culture; whereby users can download software for free, adapt it and improve it. In return, they share their improvements with everyone else. Open source products are now a major part of the software landscape. For almost every proprietary piece of software, there is now an open source equivalent: for Windows, there is Linux; for Internet Explorer, there is Firefox, for Office,

there is OpenOffice. What is perhaps even more fascinating is that many of the tools web developers use to collaborate, down to the very languages they work with, are themselves open.

Software is much easier to share than hardware. Only now, years later, are we beginning to see the full emergence of an open source movement for the design of physical, material objects; often referred to as the 'maker' movement. The driver for this is not just the web making design-sharing more global, but also a string of manufacturing technologies which are making automated manufacturing more and more local. High-fidelity manufacturing processes such as laser cutting, CNC-machining and 3D printing are becoming ever more accessible and more affordable. We can guess where this might lead and how radically it might re-shape our idea of industry; beyond the mass-production lines and supply chains of the 20th

century consumer economy. Where the politics of the last century were driven by the democratisation of consumption (Henry Ford, Coca cola, Tesco etc), the politics of this one, it might be hoped, will be shaped by something far more liberating and far more ecologically compatible with the planet: the democratisation of production.

The factory of the 21st century might well be everywhere, and the design team, everyone.

It is not so much the technology of this revolution that should interest us, but the social forms of production that come with it. More and more, design will be something done not just by teams of professionals, but by open communities of user-makers, designing and making for themselves. Contrary to popular belief, these open communities are not working for 'free' – they are not altruistic amateurs. They are participants in a kind of social, peer-to-peer economy which produces work and

exchanges value outside the traditional 'firm' or the monetary economy.

As professional designers, working within that economy has been as much an experiment for us as the project itself – a seeming contradiction, but an enjoyable one: WikiHouse has been the chance to scratch a long-held itch. It is an opportunity to apply open design thinking to one of the oldest problems there is. We are offering WikiHouse only as a window onto a wider movement, and the next logical step in a long line of architectural experiments aimed at lowering the social and economic threshold for making architecture; from Walter Segal to Hexayurt. What we find compelling about the WikiHouse system is its directness, the power to be able to turn design information into solid, buildable structures with such little effort. The first prototype, a 0.6m thick section of a house, went from CAD drawings to completion in less than 24 hours. It was

erected in only 2 hours. Despite the complexity of the technology behind it, the assembly process itself feels oddly simple and traditional: 'barn-raising' each section by hand, and malleting pegs into the connections.

It is also wonderfully sociable. The project itself has begun to gather a growing circle of friends and collaborators from a wide spread of disciplines. Herein lies the lesson for us. Every line of code, every detail must be dedicated to one clear aim: not complexity of form, but simplicity of process. The goal is to establish design 'standards', rules which allow the work of one person to be useful to someone else. It's not easy, but if it can be achieved, that is how projects like this will move from straightforward collaboration to full, powerful, open mass-collaboration.

The inevitable question will be, as it

always is, what does open source hardware design mean for professional designers and architects? Is it a threat? The answer is: probably not. After all, the home printer is effectively a desktop printing press, but it has not made the professional print shop obsolete. In fact, as strange as it might seem, open design might well represent a form of salvation for the struggling design professions.

Firstly, because open design represents a liberation from the persistent myth of solitary authorship. One of the maxims of the open source movement is 'be lazy like a fox' – don't reinvent anything from scratch, take what has already been done and tweak it slightly until it works better. Then share it and attribute the previous authors. It is a far cry from an architecture profession, where all too often unpaid interns will find themselves working into the night, solving construction details which have been solved thousands of times before, or that someone is also solving at the

same moment. There is an economy of effort in mass-collaboration which architecture has never achieved.

Secondly, because the architectural profession represents only a tiny portion of architectural output. It is well known that most buildings have nothing to do with architects. Daniel Dendra estimates that architecture's market share is something like 2%. Embracing open source design confronts not architecture's dominance of the 2%, but architecture's inability to reach the 98% of buildings which have nothing to do with architects, and for which hiring an architect would, realistically, be uneconomic. Rather than consign this 'long tail' of building to the inadequacy and passivity of mass-consumer design, open design suggests an alternative role for architecture. Architecture can be concerned not just with the design of structures, but also the creation of tools and systems which allow others to design and make structures for

themselves beyond architecture's traditional economy.

As experimental as they are, WikiHouse and open hardware experiments like it should be thought of as more than playful geekery. Whether these open source projects survive or are replaced by others, they represent early prototypes for something very powerful: a set of global, public domain design and manufacturing tools for the 99%: industrial infrastructure for a social economy. As one commentator put nicely; "when you break it down, this is just trying to do for buildings and products what YouTube did for broadcasting, or what Wikipedia did for knowledge, lower the threshold for production, share it widely and see what happens."

This article (edited) was first published in *Architecture Today*, November 2011. Go to the WikiHouse website.

Go to the WikiHouse blog

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Education for Architecture's Next Economy

A charter for change

// Makeshift

To download the pdf, [click here](#).

Architecture Schools Should Be Dissolved

* unless...

// Makeshift

Download the pdf [here](#).

This poster was produced by Sam Brown, Tatjana Schneider and Alastair Parvin for a debate organised by Project Context at the University of Sheffield School of Architecture, in response to the motion 'Architecture Schools should be dissolved'. You can watch the recorded video of the event [here](#). Please extend the debate using the comment thread below.

Pylons of Great Britain

The end of one-size-fits-all infrastructure.

// Lukas Barry, Alastair Parvin, Tom Kangro

The challenge of designing a pylon for the 21st century is, in some sense, a trick question. Or rather, it predicates an answer for which there is no clear question. Behind the challenge there lies, nonetheless, an interesting problem. As the UK National Grid faces its transformation over the next few decades of energy revolution, the grid itself will need to be renewed and expanded, with, inevitably, new lines being installed. Many of these will run across rural landscapes. The response is easy to predict: expect protests, local campaigns and acrimonious planning disputes. The existing design of the UK electricity pylon may be deeply-loved by some, but it is deeply reviled by many more. It articulates the contradiction presented by that part of us which protests against a 'blot' upon rural skylines even as we insist upon resilient energy supply, or campaign against the installation of telecommunications masts

near our homes, moments before complaining that we can't get a decent signal on our mobile phone.

It is an intractable problem, and understandably perhaps, the Energy Secretary and the National Grid's have attempted to tackle it through design. The logic goes something along these lines:

1. People think pylons are ugly.
2. Therefore we need to make them less ugly.

Q. Who is good at making things look less ugly?

A. Architects.

Putting aside this painfully reductive view of architecture's role (the persistent, destructive myth that design is concerned only with the cosmetic appearance of physical objects), it is unlikely to succeed even as a strategic response to the dilemma. It is difficult to imagine that a cosmetic makeover alone will be capable of shifting popular perception, however beautifully it might

be executed. Firstly, because citizens are not so stupid that they do not realise that pylons are devices deployed for reasons of economy: being far cheaper than burying power lines underground, and secondly, because health concerns about pylons will always factor equally with aesthetic ones.

Therein lies one trick in the question, but there is another. The problem with introducing a 'new' design for the pylon (even one which is spectacularly beautiful as a sculptural object) is that almost immediately all other pylons will become 'the old one', rendering them either even more unpopular, or possibly, the opposite: suddenly popular — as a sense of nostalgia adds tint to the lenses through which they are viewed.

So the question 'what does the pylon of the future look like?' is one with no correct answers. To really engage with the root of the National Grid's dilemma, we need to change the rules. The

proposal made here is based on two basic principles:

Principle #1: Mass-specialisation

If we reflect upon the technologies which are radically re-shaping design and manufacturing - in particular open, parametric design, and automated manufacturing - we are now able to recognise that the era in which the need for efficiency forced us towards mass-produced, indifferent to their environment, was only a short-term constraint. The pylon of the 21st century will not be a straightforward replacement for the universal pylon of the 20th, but rather a liberation from the monotony of 'one-size-fits-all' design. No two places are the same - there is no longer any reason why any two pylons need to be the same.

We now have the capacity, without any great loss in efficiency or economy, to

allow functional and cultural specificity on a massive-scale. It is, in effect, a form of bio-mimicry, wherein each solution can be thought of a 'species'. Like Darwin's Galapagos finches, each species evolves to be best suited to its local environment, and so becomes embedded in local climates, topographies, eco-systems and cultures. Effectively, the result would be to allow the British pylon to develop local and regional 'accents'.

Principle #2: Infrastructure as Cultural heritage

If you buy a souvenir in Paris, it is more than probable it will depict the Eiffel tower. In New York: the Empire State Building or the Statue of Liberty. In London however, the vast majority of souvenirs - trinketed fragments of cultural identity - depict not individual buildings, but infrastructure: red post boxes, red-buses, tube maps, and the red

K6 telephone box.

Why should this be any less true in rural landscapes? Could pylons become just as much a reflection of cultural identity, such that visitors would be able to 'see' a cultural map of Britain as they drive from one county to another, or walk from one village to the next? Could 'pylon-spotting' become a national pastime?

DARWIN'S PYLON

What is proposed therefore is not a singular design for the pylon, but rather a generative system; a piece of open, parametric software which allows the distinctive lattice pylon to 'evolve' to its local environment. In each case, a unique structural topology is generated, which is articulated in a structural system of nodes and tubular steel connectors. These parts can be manufactured, shipped and assembled with the same efficiency (but far greater

effectiveness) as a universal solution, but allows structural and programmatic mutations: pylons as landmarks, follies, agricultural hardware, secret bluetooth tags... In Essex, one wildlife conservation group co-design a pylon incorporating a bat habitat. Near the M5 motorway, a parish council commission an artist, who fits fluorescent strip lights to the pylon structure. Unwired, the bulbs cast an eerie glow across the motorway as the magnetic field around the power lines activates the mercury vapour in the tubes. Guidebooks note that they are referred to locally as the 'ghost pylons'.

The question of ugliness? Not solved, but somehow less important than it previously seemed.

'Pylons of Great Britain' was an entry to the 2011 Pylon design competition, organised by the National Grid and the Royal Institution of British Architects (RIBA). It was not selected by the judges. The text and images in

this article are based on excerpts from the submitted proposal. The successful entries can be viewed [here](#).

Shrink

How to double the UK strategic road infrastructure in ten years..

// Alastair Parvin

The next decade will be defined, politicians now tell us, as an 'age of austerity'. As many have countered, this is not an idea we should accept without question: since 2009, the word 'austerity' has taken on a new meaning, associated as it now is with a particular political orthodoxy which assumes that it is legitimate to make society as a whole pay 'in kind' to cover the cost of propping up of shrinking monetary economies. The politics of 'austerity' is the equivalent of a company which avoids bankruptcy only by making its employees work extra hours for no more money, or by turning off the air conditioning. It improves the numbers on the balance sheet, but only by shifting the real cost onto areas where it cannot be quantified or accounted for, and often in ways which will damage the long-term viability of the organisation. Our situation is often described as one in

which 'profits are privatised and losses are socialised'.

Whatever the political controversies or historic causes, it nonetheless seems reasonable to assume that the next decade will be very strongly defined by, if not austerity, then certainly scarcity. Scarcity of resources, time, energy, housing and above all, public spending money.

THE PROGRESSIVE'S PARADOX

The paradox is that this event, whose causes seem to be so obviously external, happens to precisely co-incide with a decade in which a number of long-brewing crises will come to a head (many might justifiably argue that this is not a coincidence at all), and we will finally have to do something about them.

Climate change is the most obvious example, but along with it comes house price inflation, escalating rail fares, rising food costs, peak oil, north / south inequality. In short, we've arrived at a period of time which requires massive,

game-changing investment in infrastructure just at the moment at which most governments have run out of money.

Conventionally, the Keynesian fiscal stimulus is advocated by economists as the perfect response to this paradox — to use massive government investment during a recession to create employment and, in so doing, lay the foundations for the next economy.

Today, 'green industry' is usually cited as the candidate for that stimulus. The problem is that very few governments currently have the political will or credit to seriously invest that kind of money in the face of mounting public debt (with the only possible exception being China).

To the political economist, this might be an intractable dichotomy: the variables are set, and the toolbox is bare. Applying a design lens however, reveals another, perhaps slightly more radical kind of innovation, which alters the

variables in the equation.

As Rory Sutherland argued in his 2009 TED talk, we naturally tend to try to solve big, heavy problems by using big, heavy solutions, often to little or no effect. What if, instead, we were to think laterally, and change the rules – take both the need for financial austerity and the need for progressive investment – and say 'yes' to both?

SHRINK: 3.6m > 1.8m

Shrink is both an illustration, and a serious suggestion. It proposes a strategy to double the capacity of the UK's road infrastructure over 5 years, without spending anything more than the price of... several thousand miles of white paint.

What if the UK parliament were to pass a piece of legislation determining that over five years, lane widths in the UK were going to halve – from around 3.6m to 1.8m, and that by 2016, all new vehicles on sale in the UK (with

some key exceptions) would conform to this gauge. The premise is not as outrageous as it might seem. We have long been aware that car design needs to shift towards a micro eco-car norm, if only based on the illogical tendency in car design towards selling larger and larger vehicles which are used with an average occupancy rate of only 1.58 people. Such a proposal recognises that we have a one-off opportunity to precipitate that change, and in the process to incidentally unleash huge extra capacity in the road network, for roughly no extra cost.

Almost overnight, an individual road would effectively double in width, without a single square metre of additional tarmac being laid beyond normal maintenance. But the legislation would also have a number of simultaneous effects beyond roads themselves. First, the gauge would also have an immediate impact on car parks

and urban spaces. Car parks, particularly those at railway stations, would vastly increase in capacity, supporting a culture of short-range car use, long-range train use by providing cheap parking at railway stations. At the same time, parking capacity in city and town centres would multiply which, rather than being allowed to simply reduce parking costs, would be an opportunity to reclaim street space for pedestrians and create wide, exclusive cycle lanes. This discredits the myth that increasing capacity would necessarily encourage increased car use. In fact, more broadly, the centre-left's habitual stigmatisation of the car as necessarily 'bad' should itself be put under scrutiny. Our objection to the car should not be against the car itself, but against its impact both upon its environment (a function of the fuel it uses), and its tendency to be used as an excuse for poor urban design. It is equally possible for the city to accommodate the car without being

shaped by it as it is for our living rooms to accommodate the television, without being designed around it.

Beneath the surface, shrink legislation would be an economic intervention as well as a technological one. In effect, it presents the global car manufacturers with a very clear choice. Either they would choose to respond to the new conditions, accelerating their micro eco-car programmes to meet the UK market earlier than planned, or they would decide that this specific UK market is just too small to be worth such effort. In the latter case, Shrink would create a 5 to 10 year constrained window, within which small companies pioneering micro eco-car prototypes (many of which are UK-based, such as Gordon Murray's T25 and T27) have the opportunity to radically grow to scale within the UK before taking on the global market. By that time, the rise of the urban middle classes in the far east might have generated a huge global

market for such vehicles. In effect, Shrink legislation would act as a closet form of protectionism, temporarily sculpting out a market space which might well allow a global British car manufacturing industry to be revived once more. It privatises the cost of investment, but socialises the gains.

(TLV) TWO-LANE VEHICLES

There are, of course, myriad complications, and a number of practical exceptions which would need to be built into the Shrink rule. For one, goods haulage (which itself represents an effective but vastly inefficient transportation system which will find itself in need of radical redesign as oil prices rise) would need to be accommodated as a new class of 'two lane' vehicle. This class might also include (for a while at least) vehicles used by families, vans (particularly quick-hire 'streetvans', used for

occasional journeys with lots of luggage) and vehicles preserved as historic artefacts. All of these exceptions would be subject to variable road tax conditions, making it not impossible – but certainly expensive – to completely ignore the Shrink should you wish to. Thus, it would not be illegal to drive a 2009 Aston Martin as a two-lane vehicle, but it would (until it had reached a certain age at least), be a luxury in tax terms, just as it is a luxury consumer commodity in the first place.

Whether absurd, opportunistic or inevitable, Shrink legislation might well represent one example of a different kind of government intervention, one led not by pure economics but by creative design thinking, one based neither on oppressive regulation, unaccountable spending nor laissez-faire privatisation. This is a kind of anticipatory, design-minded market choreography, which may have applications and

implications far beyond the age-old
problem of getting from A to B.

Drillers

A Planet's Progress

// Alastair Parvin

"I don't know what I am. I know that I am not a category. I am not a thing — a noun. I seem to be a verb, an evolutionary process" R Buckminster Fuller

This is a creation story which should begin with a disclaimer. The worldview it sets out does not (and I hope never will) represent anyone's actual beliefs — that's to say, it is neither fact nor opinion. It is more of a wilfully heretical lens through which to view things for a moment, if only because it will provoke us to think harder about what we see when we look away again.

It has no particular agenda, other than perhaps to challenge the lazy thinking which has shaped, on one hand, our received consensus on 'nature' and environmentalism, and on the other the narrow-minded

philosophies-of-convenience that are created to protect particular short-term financial interests. Imagine James

Lovelock's 'Gaia theory', hijacked and put on speed; or our own logic reflected back at us, unfiltered by ideology, humanity or hope. This is the story of industry, design and progress as it might be told by an absurdly rational (and mildly sociopathic) alien, patiently watching earth through a telescope.

THE SUPER-PROCESS

Of all the many mechanisms into which star dust has formed, planet Earth is one of the most interesting and complex: a self-regulating super system, itself consisting of billions of other sub-systems and sub-sub-systems: climates, ecologies, organisms, metabolisms. The planet is, as 'Gaia' theorists have argued, like a single, complex, self-regulating organism. It is not 'intelligent' in the conventional sense (having, for example, a personality), but nonetheless it is a processor — like a vast computer, constantly writing new processes to regulate its own

internal conditions. The number of possible mechanical functions these systems can evolve to perform seems to be almost unlimited. They range from basic chemical processes to construction, reproduction, environmental sensing, optical effects, self-awareness, logic... In short, Earth is a process worth watching.

THE NATURAL DISASTER

Some time around 3,000,000,000 years ago a species emerged on earth which began to radically alter the composition of the planet's atmosphere. It began to pollute the environment with a gas which was poisonous to many of the native species. The species (or more correctly, phylum) was cyanobacteria, and the poisonous gas: oxygen. Photosynthesis was an ecological disaster which quickly got out of control. From the perspective of a homeostatic atmospheric system (one which is self-regulated by feedback

loops) the problem was that photosynthesising species had too few counter-mechanisms. Even if their explosive colonisation of the biosphere could be slowed by natural disasters such as volcanic eruptions, meteorite strikes or ice ages, the plentiful supply of carbon dioxide in the atmosphere made this exponential growth almost unstoppable. Eventually, counter mechanisms did evolve: sea-creatures and wandering herbivores, which breathed oxygen, exhaled carbon dioxide, and ate photosynthesising plants. They thrived in the oxygen-polluted environment, but there were too few of them to correct the imbalance. To make things worse, the plants, having sequestered carbon from the atmosphere, would then die, and their carbon remains would slowly be buried and compressed into the ground, locked deeper and deeper away in the planet's crust. It was a process with no

counter-process – no homeostatic feedback loop to rebalance its environmental effects. Continuous fossil fuel formation made atmospheric carbon dioxide into a non-renewable resource: one that was slowly running out. To somehow replace this missing carbon dioxide would require massive, seismic events of the sort no mechanism on earth was capable of producing. It took 'Gaia' millions of years to evolve a solution to this dilemma. The cleverness of nature's solution was that it was not a vast, powerful seismic process, but a tiny, elegant malfunction in the brain of one of the oxygen-breathing species. The species, of course, was homo sapiens. The malfunction: status. The beauty of status is, firstly, that it is a psychological phenomenon. To the individual experiencing it, it is deeply real and compelling, but it still does not technically 'exist'. Secondly, status is a phenomenon which is entirely

infra-species. Although a number of related species (chimpanzees, for example), have evolved a similar malfunction, social status within one species does not translate into another. However, within a species almost everything individuals do (besides basic functions, such as eating, moving, sleeping and reproducing) is in some way orientated around gaining, exhibiting or responding to social status, be it individual, familial or tribal. In fact, even those basic functions become opportunities to compete for, and display status. The desire to maintain and increase status drove homo sapiens to extraordinary acts far beyond what was in their own evolutionary self-interest: murder, war, slavery, industry, fashion, ... sometimes they would erect vast, apparently functionless structures, purely to celebrate the status of the dead, even as living populations starved in order to make such constructions

possible.

For many millennia, status was fleeting – its only longevity came through hereditary social institutions – tribal chiefdoms, monarchies and the promise of recorded history. Then, some time around 3000BC, a mechanism emerged which took this intangible, illusory urge and turned it into (what became) the driving organisational force of human society: money. Money was, in many ways the perfect articulation of status, an abstract measure by which to store, exchange and accumulate it; meaningless beyond the species, but inescapable within it.

STATUS STORAGE

Money has two extraordinary characteristics. Firstly, it is impossible to argue with. It turns spurious irrationalities into apparently pragmatic choices, and in so doing disguises them as rational, normal and justifiable. Money is an exclusive paradigm – the longer humans spend

thinking about it, the less they can remember how to measure value by any other means. Within just a few thousand years, money had subsumed almost all social and political discourse – governments professed their loyalty to it, and dedicated their public service to its creation.

The second characteristic of money is that, unlike specific forms of tangible value, it is an abstract, imaginary thing, and therefore theoretically infinite in quantity. The invention of money created an endless scale upon which homo sapiens could compete for status. More and more, humans began to apply their creative and productive capacity to it. Commodities were mined and manufactured not to accommodate the finite appetites of need, but the infinite appetites of status. Where demand for a product was finite, organisations could increase their profits by prodding the tiny status malfunction in their customers' brains. Huge posters were

erected to belittle passers-by. Messages read: “You do not have enough status.” “This product will give you more status.” “Obey your thirst.” The desire to consume escalated – this tiny species of brilliant, irrational, naked apes, its population expanding, began to devise more and more ingenious, powerful mechanisms to consume in greater quantities: food, raw materials, space, energy.

It had taken over 2 million years for the evolutionary process to respond, but homo sapiens, itself over 250,000 thousand years old, ultimately fulfilled its evolutionary purpose in not much more than 200 years. Vast tracts of the landscape were successfully cleared of the photosynthesising species which had been poisoning the atmosphere. Competing to make themselves richer, humans went to extraordinary effort to invent diggers and drills to dig down into the earth's crust, recover the lost

carbon, and burn it, often for no purpose other than to light up their vast mausoleums.

If we can think of Gaia as having some form of 'intelligence', then we'd be forced to admit it had achieved a feat of undeniable genius: it had contrived of a species willing to go out of its way to drill deep into the planet's crust, recover the Lost Carbon, and release it back into the atmosphere.

HOMEOSTASIS ANXIETY

The most elegant characteristic of this carbon-dioxide replacement process was that it was, like all of Gaia's processes, self-regulating. Humans had evolved to survive in the oxygen-poisoned, cooled atmosphere - thus in completing their task with such disproportionate speed, they were conveniently auto-destructive. The ultimate result was homeostasis... not through human knowledge (as some had imagined it might be), but rather through the opposite: a perfectly tuned

combination of human ingenuity and human ignorance. Despite a short burst of resistance from scientists and environmentalists, *Homo sapiens'* natural addiction to status proved to be hard-wired and utterly intractable. Humans continued with their important work, even as they became aware of their role in the process. They had long assumed their own behaviour to be against nature – an aberration – thus they overlooked the more logical interpretation; that they themselves were a natural process.

Within another 200 years, their population had once again shrunk to a size which could produce carbon dioxide only as rapidly as the photosynthesising species could sequester it. *Homo sapiens* was a lasting homeostatic device. As the human species had been decimated by drought, disease, man-made-poverty, war, famine and scarcity, some had escaped northwards in search of more fossil fuels to drill and burn. Centuries

later, colonies of humans still survive there, largely unthreatened but for the occasional storms and, to the amusement of the alien observer who is equipped with a sense of irony, the ever-present risk of being attacked by polar bears.

A Politicians Guide to: Ties

What every MP needs to know in an age of media politics

// Makeshift

These are tough times for MPs. In an era of brutal 24 hour media-politics, it's important to know how to get the most out of one of the most crucial weapons in your opinion poll conquering arsenal: your tie.

To help, Makeshift have designed this handy guide, helping MPs navigate the often confusing world of neckwear-based subliminal communication and ideological cross-dressing.

Click the image above to view the guide

Groundswell

Greenpeace Competition for the 'Airplot' at Heathrow

// Alastair Parvin & Lukas Barry

Heathrow Airplot Competition from Greenpeace UK on Vimeo.

Last year, Greenpeace organised the collective purchase of a plot of land directly in the path of the proposed third runway at Heathrow. The so-called 'Airplot' ended up with 90,000 co-owners named on the deeds of the land, forming a legal obstacle to compulsory purchase, and a symbolic expression of support. At the beginning of 2010, an architectural competition was launched to design a defensible structure which would occupy the airplot site in the event of the plans going ahead, which would serve as a symbolic and physical barrier to compulsory

purchase and the demolition of Sipson village. Groundswell was selected as the winning design by the judges in April, and the design was unveiled as the new government announced plans to scrap the third runway project in May.

AN ANTI-MONUMENT

What is proposed is, in effect, an 'anti-monument' - an inversion of the traditional architectural symbol. Whereas the conventional monument is a structure built by the few to impress upon the many, this would be the reverse: a structure built by the many to impress upon the few.

Via the Greenpeace website, each supporter would fund 1 (or more) earthbags, which is printed with their name and delivered to the airplot, where it is filled with earth. The structure

which results is not such much a building as a carefully choreographed accumulation - forming a physical and symbolic mass: a literal 'groundswell'.

The final size or budget of the structure may not be known at the outset, but would essentially be a product of the extent of support, which may accelerate once the process has begun.

If it had to go ahead, we think groundswell would be the world's first truly 'crowdfunded' structure: a physical articulation of people-power.

SOFT STRENGTH

Each earthbag is woven through with 4 biodegradable plastic cable-ties, and connected to its neighbours. This means that the structure behaves not just as a heavy compressive mass, but also as a reinforced tensile mesh - making it almost impossible to mechanically dig or bulldoze.

Such a structure can be dismantled, but not quickly, or by using brute force. The harder the attack, the more resilient the structure becomes.

UNCERTAINTY AS A TOOL

Demolition contractors, like all companies, have to manage risk.

During accumulation, a network of tunnels is embedded into the groundswell, comprising re-used LDPE barrels and water tanks.

The actual extent and layout of these tunnels is a closely-guarded secret. Digger operators therefore have no way of knowing where the protestors are hidden, and are therefore forced to assume that any intervention into the structure poses a risk to human life.

During a siege, regular YouTube broadcasts would be made from within the groundswell. Supporters from around the world would be encouraged to mock-up fake 'sets' of the tunnels at home or in their gardens, and replicate

these videos on the internet; making it almost impossible for authorities to know with any certainty how many people are actually within the groundswell at a given time.

EARTHWORKS

What is left behind is, in effect, a man-made hill. Once the earthbags and cable-tie net have degraded, and the hill is overgrown with grass and vegetation - it becomes apparent that very little has actually been brought to the area, or taken away from it. Thousands of people have simply added their names to it.

Airplot Hill is left as a community resource and nature reserve; providing fruit, vegetables, honey and spectacular views of Heathrow and the surrounding landscape.

Groundswell, and other shortlisted entries will be on exhibition at Bargehouse, Oxo Tower Wharf in London from 2nd-6th June. 11am-6pm daily. Admission free. For more information check out Greenpeace's website [here](#).

Server

Plan for a self-sufficient motorway

// Alastair Parvin

Now, perhaps more than ever, architects are compelled by 'The City'; by the global 50% urbanisation threshold reached in 2008, by questions of density, mass, form, 'bigness'. The whole conversation around the design of cities has been based on the idea of cities as objects on a map - surrounded by white space.

But that view of cities is, of course, a myth. What we see as a 'city' is really a stage set: an illusion of stasis created by buildings, institutions and routines. But the reality is that either we move around, or goods move around on our behalf. The survival of that stage set is totally dependent on systems which ensure the continuous supply of food, water, goods, and energy to our cities. Farmland,

motorways, distribution centres, infrastructures, container shipping ports... these 'server' systems are, in a very pragmatic sense, the super-architectures of our time. The engine of a consumer society at its peak.

Yet it's becoming increasingly evident that we can no longer afford to take the smooth operation of those systems for granted. In recent years, the consolidation of the food system, and the shift towards a "just-in-time" logistics model has created a supposedly hyper-efficient food supply, which at the same time is highly vulnerable to shocks - and hugely energy intensive. So fast is the turnover of food-to-waste, that the major supermarket chains report to COBRA that cities contain, at any one time, only about 3 days worth of food.*

Map of the UK Strategic Road Network
Showing the location of the RDC's

(Regional Distribution Centres) of the 'big three': Sainsbury, Tesco and Asda Wal-Mart.

Our food system does make a massive contribution to climate change, loss of biodiversity and global water poverty but the threats we face from it are far more imminent than that. DEFRA estimate that the true cost of food distribution to the UK economy is no less than £9bn per year. Richard Heinberg points out that the perceived 'efficiency' of the modern food system is also mythical - it actually takes 10 calories of oil to produce only 1 calorie of food. So it can only be perceived as efficient while oil remains so cheap.

Many of us have been enthusiastic to join the vilification of intensive farms, supermarket chains and motorways as put forward by many environmentalists, and echoed their call for 'retreat': a 'moral' shift towards local, organic production, without use of fertiliser or pesticides, and an abstinence

from meat. In doing so we have been guilty of a rather modern naivety (and hypocrisy). In reality, most of us wouldn't like to be without bananas, wine or chocolate, and would be unwilling to really live with the social implications of a sudden shift towards totally organic, localised food production, not only in terms of its impact on our own lifestyles, but also on the poorest - who would effectively be priced out of food by such a move.

Our generation faces a massive challenge - and opportunity - to fundamentally redesign our industrial-age system of mining food - towards a resilient, sustainable mode of farming food - all without losing our capacity to produce and distribute food on a massive scale. We need to embark on a series of large scale agricultural and infrastructural experiments in how we feed cities.

Server is one such proposed experiment - based on an almost absurdly simple

proposition: could a motorway be self-sufficient? That is, could we unhook it from oil, and tie it into the surrounding agricultural economy, a belt of farmland whose major crop is .. mobility.

Algaculture producing Biodiesel The annual fuel-demands of the study section of motorway require an oil-field belt 292m wide.

The project takes a 7-mile section of the M1 motorway in the midlands, and investigates its redesign as a self-sufficient farming belt, producing no overall waste and consuming no major external resources. Based on existing processes, prices and capacities, it attempts to choreograph a sort of agricultural ecosystem, in which the waste of one process is seen as the feedstock for the next.

Industrial Ecology In a very straightforward way, this is a replacement for the conventional

'masterplan'. The viability of any given programme is judged more in terms of its compatibility with this map than any spatial one.

Integrating these process, rather than allowing them to be seen as entirely separate industries within an exclusively monetary economy results not just in improved financial viability, but also suggests a kind of ex-urban productive landscape, which generates social and cultural conditions which are beyond the designers control. The shift from linear conveyor-belt industry to a balanced ecology extends beyond simply material processes but to the underlying approach towards knowledge. Effectively the server belt is conceived as producing not just food, but also knowledge - through experimental ('knowledge-intensive') agriculture. Each programme broadcasts information, data and stories on wi-fi and short-range FM broadcasts. In effect, the belt becomes a sort of 1-to-1 museum, where users become citizens

rather than consumers: exposed to a continuous knowledge of the agricultural and rural systems of which they are a part.

The result highlights the extent to which many of our social and cultural norms are actually byproducts of a very crudely designed industrial / economic complex. It constitutes a challenge to some of narrow political dichotomies which currently dominate green politics: negotiating trade offs, trying to persuade consumers to abstain, and investing our effort on what is effectively damage limitation.

A good example of this can be found in a story which broke during the research stages of this project in 2009. The Highways Agency announced that the M4 motorway would switch its lights off in the middle of the night, knowing that statistically this would lead to a greater number of deaths, but justifying this on the basis of reduced carbon: a corrosive political trade-off between one human

life and another. By contrast - the server belt would produce enough energy from CHP (combined heat and power) units burning biogas, that the lighting demands of the motorway would be met using only 10% of it. We need to see our task not so much as a 'green revolution' - as an industrial evolution, designing generous terms of engagement in a smart industrial pattern rather than preaching abstinence from a dumb one. Server, as a planning project would be a massive undertaking. It is hugely speculative - it's riddled with unresolved problems, unintended consequences. At the same time, confronted by the transition to a post-oil society, by the obsolescence of our industrial-age food system: it is beginning to look less like a speculation than a prediction, less inconceivable than inevitable. The big question is: why should we do it now? Surely, one might ask, if oil is going to become an increasingly irrational dependency for the energy market, then

won't the market itself begin to 'correct' itself - in other words as oil becomes more expensive, won't the alternatives become more and more viable, and should we not just wait until that happens? Believe it or not, the broad government policy over the last decades has more or less stuck to this view, often being of accused of a 'let Tesco do it' approach to the food system, and worse, a 'let the market respond' approach to peak oil.

There are 3 reasons why this project, and others like it, should be piloted on a purely anticipatory basis, rather than simply 'allowed to happen' reactively.

First, markets aren't actually as rational as we might assume. We know they tend to take a fairly narrow view of problems - so for example, businesses are more likely to focus on the average price of oil than the full 'domino' effect of sudden shocks. It would be un-viable for them to totally factor the "unknown unknowns" into their everyday industrial

architecture, (that's what insurance companies are for). Unless we take a positive decision to anticipate instability and design-it-out, there's a good chance we will find ourselves in more and more 'too-big-to-fail' scenarios, where government is forced to prop-up unready corporates.

Secondly, to quote Twain: "to a man with a hammer, every problem looks like a nail". Industry, society and the planning system have got used to viewing and operating in a certain way, its very hard to get them to lead on a new paradigm. If we do so, the eventual articulations of this when they do occur are likely to look rather different. The various stages of the ecosystem will be fragmented and separate, with none of the advantages (both economic and social) that accrue from taking an integrated approach.

And thirdly, of course, there is the 'Dubai' argument - building a new roof while the sun shines. While there are

risks and costs to acting ahead of events, there are also quantifiable benefits to being anticipatory: not just in having a resilience to shocks, but also in that by developing knowledge before it is 'viable', the UK and Europe will have scaleable prototypes, developed, tested and ready to export when the first oil shocks roll in.

Cattle Farms The major by-product of the algaculture process can be used as an organic, high-protein cattle feed, supporting 3200 head of cattle.

Biogas Harvesting An average cow may yield 500L of methane through enteric fermentation, and 50kg of slurry per day. The proposal is that as much of this should be harvested as possible (the former through air-controlled environments under the superstructure), yielding a huge amount of biogas, which is burnt to generate heat and electricity.

Programmatic Intensification The Farming superstructure can be modified and rented out as an expandable zone - supporting other server programmes (such as distribution).

Server Planning Agency The belt forms an ex-urban productive landscape. Construction within the belt is not regulated by local planning authorities, but is managed through a unique planning model within the server belt, which can be broadly understood as being more liberal in terms of spatial constraints, but more draconian in terms of waste and consumption.

Experimental Agriculture Zones Along the fringes of the belt, micro-farming areas. These are serviced by 'land-scanners', a plug-and-play operated gantry farming system which enables 'knowledge-intensive' farming:

mixed-cropping, rotation farming, and even mechanical tools such as weeding. In effect: they become laboratories for the principles of permaculture to be applied on a larger scale (acres per farmer).

1-1 Museum All programmes broadcast on short-range FM. These frequencies can be tuned according to users' level of expertise.

Watford Gap Service Area The ability to farm mobility rather than mine it, essentially debunks the idea of 'food miles' - allowing us to redefine what we mean by 'local'.

Generosity Since programme is generated by available resources, industrial, culture and leisure programmes become indistinguishable. In this case, excess heat from CHP units provides enough heat for indoor

growing, palm houses and a swimming pool on the fuel field.

Shoot The field is designed to absorb, rather than destroy ground-conditions. Shooting posts above the field are designed such that steps can be easily negotiated by gundogs.

To download a pdf of the project from Building Design Magazine, [click here](#).

* For more about the food system, check out Hungry City, by Carolyn Steel.

What Markets Could Learn from Vinyl

Charting the rise of niche experience

// Jay Lloyd

Technological advancement today has reached unprecedented speed. Increased performance and physical shrinking of everything from computers to music players cater for the mass market in terms of sheer convenience.

Nothing could be more true than sales of music over the last three decades. Vinyl sales have declined steadily since the introduction of physically smaller mediums the 1970's, the 8 track followed by the audiocassette in the 1980's. The apparent death knell for vinyl struck during the 1990's, with the rise of compact disc and finally online music, with digital music sales from Apple's iTunes store alone selling 8.5 billion songs since 2003.

Shifts in music format market ultimately come down to a form of convenience.

Vinyl was replaced by the portable walkman that played cassettes, which in turn was superseded by compact disc - although larger played audio at a

noticeably higher quality. The rise of Mp3 in the late 1990's presents an interesting paradox; in terms of audio quality it wasn't great; but its compression allowed it to be shared easily and is small enough so that you can now fit thousands of songs on one player makes it more convenient for the average consumer to buy digital. In other words, Mp3 wasn't technically very good, but it was good enough to the point where the music industry did a 180-degree turn and inaugurated the digital music revolution.

Now let's look at the steady decline of the traditional market in the same period. Until the 1950's, the traditional market model has been the basis for economic growth the world over, and certainly for urban growth in the UK. Chesterfield market in Derbyshire, for example, has been in operation since 1165. However, the rise of the supermarket and the convenience

it afforded the average consumer has been fundamental to its growth. This coupled with ever-sophisticated volume distribution has allowed supermarkets to out-price its competitors in the traditional open-air market. Throw in the fact that supermarkets house most goods the average consumer needs in a controlled environment; and its little wonder why consumers choose to shop at Tesco over the open air market in the middle of a British winter.

Competition from supermarkets has not been helped by poor planning choices by councils over the country. A lack of investment in covered market halls, in addition to absurd planning regulations that discourage market traders yet favour the supermarket have all contributed to the decline of the market. Furthermore, out of town shopping centres now compete with high street discount retailers for a portion of the market share in consumer goods.

It is hardly surprising then to learn that the total revenue generated by all the independent traders in every market in the UK accounts for just between £1-3 billion pounds a year, contrasting with Tesco's 2008 annual sales revenue figure of £41.5 billion. The increasing market share provided by online shopping (of which major supermarkets generate a great deal of income as well) does not bode well for traditional market stallholders without the resources to provide convenience for their customers.

But let's return to vinyl. Vinyl sales from the music major labels although a fraction of what they were three decades ago have actually remained steady. Even stranger is the spiralling growth of vinyl sales for independent labels and artists. There are many factors contributing towards this resurgence: nostalgia, a cult following from audiophiles, collectability, the popularity of the DJ revolution,

large-scale artwork and detailed liner notes, etc. Vinyl has a number of unique selling points that appeal to consumers who want a flavour of authenticity to their musical purchase, now largely devoid of character when lost in a seeming plethora of 'homogenised' digital music.

This unique niche overcomes convenience in favour of experience. The experience of concentrating on the record, as there is less choice and more attention involved in playing the music, in addition to time spent admiring the artwork. Here then lies the potential for the future of the market; a unique shopping opportunity made up of a community of traders and consumers, which celebrates speciality goods and regionalism in a way that supermarkets and chain stores can't. Local traders selling local products makes one market in one part of Britain completely different from another, and therefore makes it worth visiting.

There is a real sense of place about markets that is entwined with our nations culture. It supports local businesses and encourages spending in the local economy and can reduce our environmental impact by buying local products. Often, products ranging from fresh fish to fishing tackle can be bought cheaper than everywhere else. The spaces of markets themselves are flexible to offer added value, such as live music, artworks, ethnic food; the list goes on. All these 'added value' programmes, just like vinyl records, offer an experience, over convenience. Farmers markets in the UK and successful markets such as Queen Victoria Market in Melbourne offer a unique experience to visitors, combining a vibrant day and nightly events that effectively tie together the idea of markets with all of its independent restaurants, bars, and entertainers through careful management

and promotion for the benefit of all.

have to offer us.

The market of the future offers more than just buying and selling. One idea is to propose a 'shared stall' scheme, where traders specialising in wool for example, share stall space (or two stalls) with the local knitting group, advertising free knitting lessons to the general public, with supply within arms reach. The same can be said of cooking classes next to fresh produce. How about kids toys next to a managed 'kids corner'?

The future growth of markets lies here: it is about experience. Just like the experience that vinyl records give for music lovers can be applied to a thriving market community that offers culture, leisure, and education in addition to simply buying and selling. It is time we pushed what makes markets great and celebrate the unique place that markets