

London 2012 project: keywords, thoughts

The usual keywords one would deploy in contemporary projects:

responsive, real-time, open, pervasive, physical vs. digital, distributed, top-down vs. bottom-up, data-rich, iterative, user-centred, user-generated, renewable, participatory, malleable etc.

We need to move beyond this. We also need to deal with the physically monumental and symbolically iconic, both of which are out of kilter with this list, and arguably, the times. The **'bread and circuses'** aspect of developments in London over the last 20 years is well-understood, and something we need to take care with.

Below, a series of somewhat connected thoughts about themes, possibilities.

In terms of the landscape and history, JMW Turner's paintings *'Rain Steam and Speed'* (1844) and *'Rockets and Blue Lights (Close at Hand) to Warn Steamboats of Shoal Water'* (1840) [right] may be particularly evocative. Dealing with the sublime (and monumental) yet through the **ethereal, ephemeral** and environmental, these paintings suggest **light, pale and wan with sudden shards of gold, swollen clouds, billowing steam and fierce winds, engineering and technology, harnessing energy, event, spectacle**. They are **deeply rooted in the English landscape**.

(Also, the English obsession with weather.)

The landscape here is unique: **flat, wet**, crushed under **vast clouded skies**. The Thames Estuary in particular is astonishingly beautiful, in a Northern European sense.

The environmental characteristics are rich too: **cloud, storms, spray, mist, smoke, fog**. Again, Turner's paintings spring to mind.

The history is rich and evocative. This area arises as a key component of London in its pomp, as the **'workshop of the world'**, when the city was the last European iteration of Jacques Attali's nine 'core' post-Enlightenment mercantile cities. He describes London from 1788-1890 as powered by **steam**, the empire massively expanded by **energy, speed, industry and innovation**, exploiting foreign inventions such as the steam engine and paddle steamer such that the "world's leading naval power revolutionises land transport", while deploying the **telegraph** to speed up the transmission of information. London is connected to the world; some say its centre. He notes how **"scarcities are a blessing for the ambitious"** – Britain's lack of natural resources prompted innovative technological and social development.

All this centred on London, once Manchester had missed its brief opportunity, and east London in particular was the primary site of industry throughout the 19thC. Those developments in transport – aircraft, engines, buses – were centred on Stratford and Walthamstow. Interestingly, there is strong communications heritage: the **diode** was invented here; the first **radio valves and television tubes** were developed here. The River Lea itself was key infrastructure.

Forget nostalgia.

And how not to be dated? Then again, perhaps we can't help that. The Eiffel Tower and London Eye are both **'temporary projects'**. Both have

lasted longer than they were intended.

The Games themselves are **universal, modern, international**, creating a **temporary ecology based around event**, which then attempts to leave a **productive legacy** (Barcelona rather than Sydney).

During games, this attraction may help create a **heightened sense of drama from afar**. This could be via **physical effect** - sound and vision - or presumably via broadcasting, or by **casting a long digital 'shadow'**.

Tangling these threads of industry, innovation, energy and connection, can an attraction augment the **inherent drama of the Games**, whilst highlighting the patterns of activity around it?

Can we create a **spectacle which deflates the sense of static icon by inflating the patterns of everyday activity?**

Can we draw data from the Games in real-time that tells particular stories – again, of **industry, energy, innovation and connection** – as well as of the basic facets of the Games themselves.

Can we tell this story, create this ambiguous, generated spectacle, using the **materials and effects most redolent of the landscape and locale?** (*cloud, smoke, steam, fog, mist, water, wind, mechanical engineering, data*)

Can we create a closed-loop, in terms of energy, such that **life-cycle** is addressed (sourcing and recycling) as well as harnessing energy from renewable sources? To do this in the context of a space shaped by 'the age of steam' has a certain irony yet could be a powerful idea.

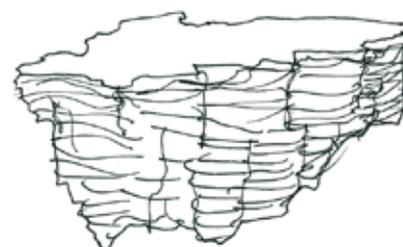
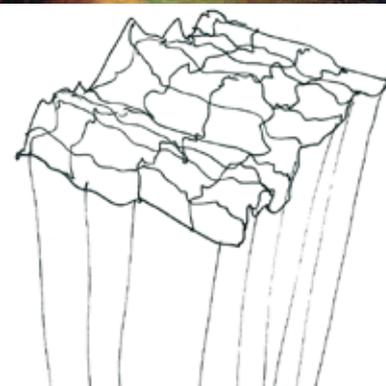
Some hasty thoughts and sketches, leaving aside such practicalities as low-flying aircraft &:

An array of **wind energy-extracting high-altitude kites** (see makanipower.com). These feed energy to the Games, and the City after, whilst accreting data on the energy generated in real-time. This data is played out on giant floating structures hoisted below the kites, and connected by guylines to structures on the ground.

This forms a **3-level structure** – 1) kites at high-altitude; 2) a floating responsive structure, which moves and is lit in response to patterns of data, and 3) a structure on the ground which mimics the activity above whilst hosting detail and enabling interaction.

This mid-level is the primary interface: a **glowing net-like structure held aloft on diaphanous threads**, as if streams of data, gently floating and swaying in the wind. LED twine forming guy-lines and connecting the data to earth and to the kites above. Possibly inflatable, from earth it looks like cloud-like (here, the opportunity for a nod to the idea of cloud computing, though this may date it somewhat.)

It **physically twists and ripples in response to data patterns** captured from environmental sensors placed around the grounds, data scraped from web activity, drawn from mobile carriers in real-time, interprets recorded audio to discern the different languages being spoken, acts as a giant scoreboard floating above key events, detects the viewing and listening figures around the games in real-time, explores the environmental behaviour of localised weather systems, projects the global internet traffic to and from the Lea



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Valley, forms a gigantic smart meter for Stratford and surrounds at civic scale, and so on and so on. **Imagine an audit of the data that the Games and the city itself could possibly generate.**

In this way, it takes aggregate individual patterns and reveals them at **civic scale**, thus binding the city's activity together to some degree.

High-altitude kites for wind; giant balloons for solar energy collection. **Balloons as sites for projection.** Balloons hovering over the city; redolent of blimps (though also zeppelins). *The Red Balloon vs. Banksy vs. Instant City.* Fuller's *Geoscope*, with its projections of Earth through data now possible, but at the scale of his *Floating Cloud Structures*.

Alternatively **projections onto artificial clouds generated** as a side-effect of the water processing and energy creation on site. There is a contradiction here in the 'waste' of creating spectacle from otherwise potentially closed loop systems - therefore the spectacle has to be useful; to have an **'enabling effect' of heightening awareness of ecology** elsewhere, such as transmitting the patterns of energy consumption and creation around the Games in real-time. The *Nuages Vert* project in Helsinki indicates the possible effect. For this enabling effect, people need to be able to affect the sculpture locally and from afar through their activity. If someone decides to use their Oyster card rather than driving, can they detect the tiny ripple in the sculpture as a result?

Can people detect and contribute to a rhythm of interaction - **storms of activity contrasted with the gentle ambient drizzle of data. Sound is key here, due to its power** as well as visual expression.

Any such structure needs to create **enlightenment, enchantment and enjoyment at ground plane as well as in the sky.** Can we make a physical structure that also responds to digital patterns? We can argue that a physical realisation is more affecting, more valuable than a simple screen-based version (even given the interactive possibilities of the screen, which cannot be discounted) cf. Zaragoza Water Pavilion et al.

Hence explore materials such as shape memory alloys at this level, which can **physical respond to virtual activity**, providing a translation of the data visible high above the city. Or can the ground plane be a scaled version of that which hovers overhead? A **kinetic net-like structure which twists and responds to patterns** - can this also be a distanced interface for the giant structure floating overhead? A controller responding to patterns of activity amongst crowds in close proximity to clearly marked sensors. Can this be clearly explicable, in order to immediately affect, and enchanting, in order to provide deeper, long-term resonance?

Data must be generated as a side-effect of activity. It's not a separate representational process. It is the activity. It is the new economy, the expression of the new economy ("It is not the economic origins of culture that will be presented, but the expression of the economy in its culture ... the attempt to grasp an economic process as perceptible Ur-phenomenon" Walter Benjamin, *The Arcades Project*). This applies to environmental activity - as Maya Lin says, "What we don't see, we pollute". This attraction

has a responsibility, though that need not be dreary, leaden and earthbound. We can make invisible activity visible to enlighten.

Interaction, however, can be a directed activity.

That is not to say that the Lea Valley can now only be defined by the knowledge-based service sector, though this area of London has been laid bare by the shift from manufacturing to service economy perhaps more than any other. The Olympics themselves are part of this story, part of its **'re-birth'** (though that too is contested fraught terrain). Can we build a platform to continue this story, and perhaps to **enrich the development of this local economy by reintroducing new manufacturing technology**, both in the construction of any attraction but also in the patterns of data in industrial activity? In curating data for the structure/display, we are affecting the stories that a place tells about itself.

Virtually-designed, rapid-prototyped, CNC-based, 3D-printed manufacturing all exemplified locally, which also produces reams of data rather than plumes of smoke. Can we tell this story, amidst the other data emerging from industry, energy and connection? And in doing so, tell a more positive story about the development of the Lea Valley? By highlighting this aspect, can we actually subtly bend the trajectory of London's economy towards a more diversified direction? We could **expose the seams of its design and production**, in order to lead by example.

Can the attraction contribute to a **strategic intervention** at this scale? After the Games can it provide a useful infrastructure which is also beautiful ('**beautilitarian**' in the old *City Beautiful* sense) focused on energy production and industrial activity, harking back to old London's heritage (the whole idea of Britain involves negotiating the past) but also pointing to a new London's future as a global city, in a world where the centre has shifted east and south (or west and north, depending on your point-of-view) yet still be connected to this physical place.

The factories used to be the monuments and attractions of this space - can we make an attraction which becomes a factory afterwards, but a **factory of the new economy and new ecology.**

The smokestacks of tomorrow are in energy production, local food production and light manufacturing, but also in visualising the complex web of interacting ecologies (people, water, food, energy, manufacturing, culture) that comprise our world.

It's not enough to imply a 'continuous monument'; to **score out possible future trajectories** is far braver. Noting Attali's previous observation that London once instinctively understood that "scarcities are a blessing for the ambitious", **what scarcities can we have ambitions for now?**

London is a transformer.

Dan Hill, Arup. Sydney, 10 June 2009.

*NB. In all this, I am nicking ideas (in the time-honoured London fashion) from Yona Friedman's *Ville Spatiale* (1958-59), Buckminster Fuller's *Geoscope* (1952), Fuller and Shoji Sadao's *Project for Floating Cloud Structures* (1960), El Lissitzky's *Wolkenbügel* ('*Cloudhanger*') (1925), Archigram's *Instant City* (1968), Aegis *Hyposurface* (1999-2001) and Maya Lin's *Systematic Landscapes* (2006).*

