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Eco- by design, eco- by practice? Urban development and the making of sustainable communities

Throughout the rapidly urbanising world, increasing numbers of developments are being authorised, promoted and sold on the basis of their 'eco' credentials. This phenomenon is not restricted to the developed world, and in fact some of the most audacious examples of eco-planning come from countries experiencing rapid development and the urban growth that accompanies this. Among these is the Sino-Singapore city of Tianjin, which arguably sets the template for a new kind of 'eco-city' (Moore, 2012).

Such developments draw on an impressive array of design and engineering expertise to deliver putatively eco-efficient developments in often the most unexpected environments. Tianjin, for example, was "one of the most polluted places in China" and the location for the eco-city within this setting was "about the most polluted location in Tianjin" (Hall, 2009: 14). The Emirati city of Masdar, on the other hand, will occupy an Arabian desert location where the idea of creating hospitable living conditions in a sustainable way was dismissed even half a decade ago (Ouroussoff, 2010).

At the other end of the urban planning spectrum, numerous dedicated home-owners have sought to convert their homes into paragons of sustainable design, or to build them from scratch. Such is the interest in domestic eco-design that dedicated manuals for their design have been published (e.g. Vale and Vale, 2000), as well as accounts of individual homes and the particular sustainable design solutions they comprise (e.g. Mobbs, 2010).

For the most part, however, the collective resources and political will required to build an eco-city, or the means required to build an eco-house, are out of reach for most planning authorities or (potential) home-owners. This leaves it to down to a combination of financiers, developers and planning authorities to realise ecologically sustainable places for people to live – places that have been termed 'eco-developments,' but which are increasingly referred to more holistically as 'sustainable communities' (e.g. Clark II, 2010).

These developments and, at least rhetorically, communities are for the most part masterplanned parcels of land freed-up within, or at the edge of, an existing urban agglomeration (e.g. Yeang, 2009). They can range in size from a single residential block of apartments to the large-scale regeneration of a brownfield or greenfield site. In the Australian context, perhaps the most well-known development of this kind is still under construction, namely the 'Barangaroo' development (Barangaroo Development Authority/Lend Lease) on Sydney Harbour.

Barangaroo has been identified as a 'once in 200 hundred years' opportunity to redevelop 22 hectares of disused container wharves on the western edge of downtown Sydney (Lend Lease, 2012). It is a mixed-use development, the vision being to create a distinctive place or precinct rather than simply an appendage to the existing urban form. To this end the project comprises three distinctive morphological elements – the Headland Park (public realm), Barangaroo South (commercial and residential functions), and Barangaroo Central (a cultural and civic focal point for recreation, events and entertainment). Critically, it has been asserted that "[w]hen complete,

Barangaroo will showcase how city populations can live sustainably" (Barangaroo Delivery Authority, 2012a).

To this end, Barangaroo is one of 18 urban developments globally to be included in the Clinton Climate Initiative 'Climate Positive Development Program' (CPDP). As part of this program, "CPDP developers seek to meet a 'climate positive' emissions target of net-negative on-site, operational greenhouse gas (GHG) emissions" (Clinton Foundation, 2012). In short, those delivering developments accepted into CPDP are "striving for the ambitious goal of lowering their operational GHG emissions below zero" (ibid 2012).

Barangaroo site under construction (photo by author, 07/03/2012)

This is an ambitious goal indeed, to be achieved, it is reported, through a number of means pertaining not only to how energy will be generated for the development (on-site and off-site solar energy primarily) and offset elsewhere, but also to recycling (of water and waste), transport, construction and on-site planting among other things. Most intriguingly, plans for the sustainability of the site also include some regulatory provisions. Thus, it is reported that 'external agencies, contractors and organisations at the site' will:

- Require "tenants to have their air-conditioning just 2 degrees warmer in summer and 2 degrees cooler in winter to save energy," and;
- Ensure that "retailers and suppliers avoid packaging, reduce waste and offer healthy food choices from locally and sustainably produced food" (Barangaroo Delivery Authority, 2012b).

These stated intentions for how the site will be used by tenants and retailers as yet unknown are not only quite novel, but also rather revealing. They reflect the often sidelined point in 'eco-development' discourse that developments or communities are not and cannot be inherently sustainable, and they constitute an acknowledgement that the 'carbon positivity' of Barangaroo ultimately derives from 'the way we organise our lives' as the Clinton Climate Initiative tagline asserts (Clinton Foundation, 2012). They reflect how while there are manifold standards and benchmarks of sustainable development in relation to the built environment (carbon neutrality, carbon positivity, ecologically sustainable design, passive design etc.), understandings of how these efficiencies will be met are much less clearly articulated and attainable.

As Nick Rowley (advisor to Tony Blair on sustainability and climate change, 2004-6) puts it in a critique of the growing urban development discourse around sustainability (and in particular of claims around carbon neutrality and carbon positivity in development plans):

> *That [carbon neutrality/positivity], is the answer. That's 'what.' But in order to get to get to 'what,' we absolutely need to understand 'how.' And that 'how' question, to me, is where I think we really need to work and do the work that is most required.* (Rowley, 2009)

Professor Michael Neuman, Professor of Sustainable Urbanism at UNSW's 'City Futures' research centre, comes at this same problem from a different starting point in his influential paper 'The Compact City Fallacy.' Questioning a prevailing orthodoxy at the time of writing that "[f]or a city to be sustainable...functions and population must be concentrated at higher densities" (Neuman, 2005: 16), Neuman contends that the emphasis of the planning profession on compact urban form, as a predicator of sustainability, needs to be complimented by closer attention to the sustainability of "the processes of building cities and the processes of living, consuming, and producing in cities" (ibid 2005: 22). This is not to say that compact form is unsustainable, but rather that our focus when interrogating the sustainability of a given settlement should be process as well as form. As Neuman puts it:

> *Form, in and of itself, is not measureable in terms of sustainability. Asking whether a compact city, or any other form of the city, is sustainable is like asking whether the body is sustainable. The proper question is not if the body is sustainable, but rather* ***does the being that inhabits the body live sustainably?*** (Neuman, 2005: 23 [emphasis added])

When it comes to eco-developments, then, the proof is not so much in the pudding as in the living. It is these questions of process, or 'how' communities that are sustainable are achieved, that research being led by the Sustainable Living Partnership (a partnership between the University of Hertfordshire's 'Centre for Sustainable Communities' and Lafarge) is interested in. The research builds on existing analyses of householder behaviour with regard to sustainability (e.g. Dalton et al., 2008, Fielding et al., 2009, Fielding et al., 2010, Moloney et al., 2008, NHBC Foundation, 2012) by focussing on the ways that developments delivered according to principles of ecologically sustainable design are used on a day-to-day basis. In this way the research will shed some light on the sustainability of 'eco-developments' as inhabited forms and will help to address a gap in our understanding of the lived reality of 'eco-developments' recognised by Lane and Gorman-Murray (2011: 10) in their recent edited volume on household sustainability:

> *[T]here is growing interest in understanding how the material and emotional dimensions of embodied domestic practices have repercussions for environmental sustainability. Kersty Hobson's 2006 work, for instance, examines the embodied techno-ethics of sustainable living at home, exploring how people's adoption of domestic eco-efficient technologies and objects co-constructs their users as 'sustainable citizens.' ...This embodied nexus of social and technological change can impart positive outcomes for sustainable living but, as Hobson notes,* ***more work needs to be done to see how sustainable practices are enacted in modern eco-homes. Here, cultural approaches help immensely, through ethnographic work, diaries and in-depth interviews.***

Employing some of the ethnographic methods described above, the Sustainable Living Partnership research is seeking to generate qualitative understandings of the fit between technological and urban design measures implemented to enhance the environmental performance of a given development and the everyday practices of inhabitants of those developments. It is interested in a range of attitudes and behaviours, from the point of purchasing a property on an eco-development

(and the significance of the sustainability credentials of that development to the house-purchase decision-making process), to transport choices in-and-around the development, to the nature of habits oriented towards heating, cooling or ventilating the home.

At its core, this research aims to generate subjective account-based evidence of how urban space is produced as sustainable at the interface of form and process (after Lefebrvre, 1974). The challenge for the study is how to move the debate around sustainable living on, not only so that we can better understand how sustainable communities can actually be achieved in practice, but also how this understanding can inform future practice. Two distinctive features of the research are important here. First, the research moves beyond the bounds of the individual home to consider living practices at the meso-scale of the development or 'community' (see Reid et al., 2010). This recognises that sustainable communities emerge not only from the activities of households in isolation, but also from the interrelationships between householders and their local environment (cf. Lane and Gorman-Murray, 2011: 220-221).

Second, and arguably more significantly, the research builds collaborative working into its very fabric from the outset. This is achieved not only through an inter-disciplinary approach (the research involves academics with backgrounds in urban planning, urban design, geography, sociology and psychology) but also through partnership-working between researchers and industry. This partnership working involves not only the core partners of the Sustainable Living Partnership (the University of Hertfordshire and Lafarge) but also others with significant expertise in urban development (including very senior representatives from planning and house building through a high level steering group, and a wider expert consultative group) brought together to help shape the research and enhance its real-world impact. Given the need for praxis demanded by the urgent threat of climate change, it is perhaps in this collaborative working model that the potential lies for this study to make tangible differences to the sustainability of people's lives.

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