Design Commission Enquiry: Design and behaviour in the built environment

Response based on research at Lancaster University and the Demand Centre

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Context

This note comments on research under way at the DEMAND Centre (see www.demand.ac.uk), in particular on commercial offices and their design. A submission from the University of Reading which has been drafted in part by Prof John Connaughton, who is engaged in work associated with the Demand Centre, has outlined the core aspects of the Centre's approach, and here we develop these thoughts and focus on insights drawn from our work on commercial offices.

Our approach

We fully understand that the questions posed in the call for evidence reflect current taken for granted policy framings. However, we suggest approaching the issues of concern slightly differently so as to open-up potentially new avenues of investigation. We focus not on behaviour but on the importance of social practices, these being routinized forms of behaviour engaged in by large numbers of people which structure, and are structured by, the 'material arrangements' of society.

We have adopted this approach in an ongoing study of the design of commercial offices. The study has analysed the design specifications of ten recently constructed office buildings in London. We have interviewed those involved in commissioning, designing and letting the building (architects, engineers, property developers, letting agents) and explored the rationale for the designs chosen and the relationships to the practices of office workers. In doing so have revealed an important set of relationships between what people do in buildings (their practices) and the materiality of the building. Our responses to the three questions are informed by the data collected as part of this research.

Responses to questions

1) Does the built environment affect the behaviour of individuals or communities?

At the most generic level this question can be answered in the affirmative without the need for detailed evidence – the affordances of the materials which surround us in the form of roads, buildings, or specific infrastructures, and the semiotic environment of signs and advertising messages all act to 'script' human action (Akrich 1992). To take the example of transport: infrastructures and spatial planning, roads and the distribution of housing, workplaces, shopping, education and leisure sites have co-evolved along with the rising dominance of car use and the decline in public transport, such that the built environment and road systems presume and

encourage car use (Urry 2004, Geels 2005). However they only do so through the normalisation of specific social practices of family, work, shopping, education and leisure that have similarly co-evolved with driving (Watson 2012).

In the case of buildings, the literature on buildings and energy use suggests that individuals and collectives as 'end users' have their daily actions shaped and prescribed by the buildings and infrastructures of service provision that surround them (Masoso and Grobler 2010, Menezes, Cripps et al. 2014, Tetlow, van Dronkelaar et al. 2015). Yet, energy consumption data and post-occupancy evaluations of energy use and behaviours in offices show that people do not necessarily 'use' the built environment in the ways that they were 'intended' to by design, for example in altering heating and cooling controls, resetting defaults, opening windows or a host of other 'behaviours' that appear to occur despite rather than because of the affordances of the built environment and infrastructures (Better Buildings Partnership 2012, Menezes, Cripps et al. 2012). These in-built infrastructures of energy (and the same applies to water) are conduits through which people accomplish the legitimate performance of 'normal' practices of cooking, showering, leisure, work etc (Shove, Chappells et al. 2008, Shove and Walker 2014, Walker, Shove et al. 2014). However it is important to note that this is a recursive relationship. As widely held understandings of 'normal' practice emerge they create expectations of what the built environment should allow and support. This often leads to upwardly-ratcheting expectations of provision, this provision then helping to hold new practices in place (Shove 2003, Shove, Pantzar et al. 2012).

The working practices of designers, developers, builders and services engineers are of relevance here. Professional practices are strongly shaped by an array of guidance, standards and regulation as well as market norms, networks of procurement, and culturally dispersed understandings of appropriateness. These practices influence the design of the built environment, and in turn as noted above the practices of inhabitants and 'end users'.

This relationship between practices and the built environment has been shown to be of great significance in our study of commercial offices. Those procuring, designing, and letting offices strive to provide buildings that service the practices of future inhabitants. This involves working with particular images of office work and what is needed, necessary, and normal to enable that work to go on. These images and visions partly reflect what people do in offices, and partly reflect what the professionals involved *think* people do or should do in offices, and in turn what is therefore needed in an office. But as we also found, office buildings are also designed around other criteria – including the 'need' to deliver financial profit, to attract tenants and to perform well in a changing market place. The 'needs' that follow are not necessarily related to the types of work or forms of occupancy that in fact occur.

The implications of this are two-fold. At one level, office designs provide what professionals think is needed, holding in place the practices they think are non-negotiable. A good example here is air-conditioning, which many professionals think is needed but is actually more negotiable – with and amongst clients, tenants and occupants - than is generally assumed (Healy 2008, Shove, Chappells et al. 2008, Walker, Shove et al. 2014). At another level, spiralling standards of provision (for instance for small power: LoPinto, Farnfield et al. 1993) emerge as a result of the layering of more and more assumptions about what is needed in an office, and attempts to inspire new practices. Often this

results in over provision (compared to actual use), and the associated cost, redundancy, and excessive energy demand.

2) Are there examples of changes in behaviour on the part of people in the UK in relation to any aspect of the built environment?

The relation between social practices – that is the range of activities which people and social groups enact and reproduce over time – and the intentions and visions of those who design the built environment is complicated and contested. As noted above, the recursive relation between the practices of office life and related material arrangements (including office buildings) is such that changes in what people do and in the nature of office work might be associated with changes in the design of the built environment.

There is constant change in what people do at work, and hence how offices are used and in turn designed. Examples include over a long time frame transitions from office work involving pen and paper, to typewriters, to computers, and the associated evolutions in practices of work (Wit, Ende et al. 2002). Shorter time frames involve change from the desktop computer to laptops to tablets. Such evolutions involve different practices of working within offices, and thus relationships with provision of sockets, raised floors for cabling, and the use of space in buildings. As is obvious, this is not simply a matter of how individual users interact with specific buildings: rather such issues are interwoven with changing histories not only in the character of office work, but also in the economic role of office buildings and their place within the broader field of property development (O'Neill and McGuirk 2003).

3) Are there examples of policy or practices which have affected behaviour?

There are so many examples it is difficult to know where to begin: most standards, policies and regulations which shape the built environment in some small measure also shape and reflect what happens in buildings, what they are 'for' and how they figure in different social, political and economic contexts.

It may be useful to refer to one specific example relating to the use of air conditioning in Japan. In 2005 the Japanese government introduced a programme called Cool Biz (Shove, Pantzar et al. 2012: 149-151). Government buildings were not heated or cooled between 18 and 28 degrees C (Tanabe, Iwahashi et al. 2012). Instead, office workers were expected to adjust their clothing: e.g. by not wearing a jacket and tie. This highly successful initiative is significant because it demonstrates the potential to actively intervene and reconfigure recursive relationships between what people do in offices (how they dress), what is provided in offices (in terms of cooling and environmental conditions), parallel systems of provision (for clothing), and in the long term the design of the built environment (as demand for cooling reduces and, for example, new opportunities emerge for natural ventilation and the different kinds of office space associated with this).

Conclusion

In light of the points made above, our conclusion is that a focus on individual user or occupant behaviour is limited. The relationships between what people do in the built environment (practices), the materiality of that environment, and the practices of those designing built environments are critical but are not revealed by research which focuses solely on 'the building' and 'the user'.

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