

# Becoming big things: building events and the architectural geographies of incarceration in England and Wales

Dominique Moran<sup>1</sup>, Jennifer Turner<sup>1,2</sup> and Yvonne Jewkes<sup>2</sup>

This paper advances geographies of architecture beyond frequently studied ‘signature’ buildings by drawing attention to non-iconic, non-utopian, banal counterpoints – in this case, new prisons. It argues that by attending to ‘signature’ buildings, architectural geographies have overlooked the critical and underexplored circumstances and contingencies of more quotidian constructions, neglecting the mundane processes of procurement, commissioning, tendering, project management and bureaucratisation – here termed ‘architectural assembly’. Advancing scholarship in carceral geography by considering the processes and assemblages that shape (what will become) carceral spaces, it focuses on what happens *before* a building takes physical form. The paper draws on a major RCUK-funded study of prison architecture to move architectural geographies more meaningfully towards a consideration of the bureaucratisation of architectural practice, as underexplored aspects of building ‘events’. It calls for geographers to pay greater attention to the banal geographies of architectural assembly, and to the banalities of production more widely.

**Key words** architecture; carceral geography; prison; building events; regulation

<sup>1</sup>School of Geography, Earth and Environmental Sciences, University of Birmingham, Edgbaston, Birmingham B15 2TT  
Email: d.moran@bham.ac.uk

<sup>2</sup>School of Applied Social Science, University of Brighton, Falmer, Brighton BN1 9PH

Revised manuscript received 2 June 2016

## Introduction

Although geographies of architecture are among the most vibrant specialisms in critical human geography, the field is at present limited both by the nature of the buildings and the elements of building ‘biographies’ (McNeill and McNamara 2012) chosen for study. By attending to seductive ‘signature’ buildings, architectural geography overlooks the critical and underexplored circumstances and contingencies of more quotidian constructions, and neglects the mundane processes of procurement, commissioning, tendering, project management and bureaucratisation that can marginalise the role of architects. These lacunae are significant because they contribute to an apparent fixation on the ‘decentring’ of the architect as a building’s prime meaning-maker, which, we argue, is neither necessary nor helpful.

We seek to draw the attention of architectural geographers in two new directions. First, towards what we call ‘architectural assembly’ – aspects of the ‘becoming’ of buildings so far under-researched. Distinct from ‘assemblage’, architectural assembly is what happens between a decision being taken that a new building is required, and ground being broken to create

it. Paying attention to it allows us to uncover the multiple political, affective and material ways in which buildings are designed and constituted. Sage (2013) has suggested that geographical study of the act of building (construction) is distinct from that of design practices. We concur, arguing that between and within design and construction lie myriad processes of commissioning, procurement, tendering, consortia-building and negotiation, which have so far been overlooked as sites of ‘dynamic encounters’ (Jacobs and Merriman 2011). We also contribute to architectural geographies’ understandings of regulation, and deployment of computer-aided-design (CAD); whereas both can stimulate architects’ imaginations (e.g. Imrie 2007; Imrie and Street 2011; Whyte 2015), we argue that in certain contexts they serve to stymie creativity.

Second, we call for greater attention to be paid to the architectural assembly of cost-efficient, robust, unglamorous, ‘non-signature’ buildings constrained by regulation, standardisation, competitive tendering, political contingency and bureaucratic opacity; the kind of buildings so far overlooked by geographies of architecture concerned with the ways in which ‘things and processes become architecture’ (Jacobs 2006, 111). We offer an example, through our investigation of the

The information, practices and views in this article are those of the author(s) and do not necessarily reflect the opinion of the Royal Geographical Society (with IBG). ISSN 0020-2754 Citation: 2016 doi: 10.1111/tran.12140

© 2016 The Authors. *Transactions of the Institute of British Geographers* published by John Wiley & Sons Ltd on behalf of Royal Geographical Society (with The Institute of British Geographers).

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

architectural assembly of new prisons in England and Wales (E&W), which builds on notions of 'building events' and 'inhabitation', but counters recent moves within architectural geographies to de-centre architects from the pre-eminent role they are often assumed to occupy. In our case study, which resonates with much public- and private-sector commissioning and indeed with the managerial processes operating in the private sector that see brand-standards directing the design of prefabricated builds, the figure of the 'designing-architect' is almost unrecognisable. Architectural geography currently does not address this spread of market managerialism and profit-centred instrumental rationality into the realm of architectural practice. Through discussion of 'mundane' buildings, we make a wider call for geographers to focus on the banal geographies of architectural assembly and, perhaps, to pay greater attention to the banalities of production more generally.

The paper unfolds as follows. First we summarise recent academic discourse in architectural geography, architectural theory and the sociology of architecture in relation to the building 'event' and the role of architects. Next we provide the research context and discuss the methodological approach for this study. Then we present our findings, considering the ways in which the commissioning and procurement processes for new prisons – the dual agendas of securitisation and value engineering, and the operation of regulation – separate architect from client and restrict the space for architectural creativity in a context of managerialism and risk regulation (Imrie and Street 2009). Finally, we reflect on the type of architectural materialisation that 'becomes' under these circumstances and the implications for those who will inhabit these buildings.

## Architectural geographies and the de-centring of the architect

Recent commentaries within architectural geographies and cultural geographies of buildings (e.g. Jacobs 2006; Jacobs and Merriman 2011; Kraftl 2010; Kraftl and Adey 2008; Rose *et al.* 2010) have argued for buildings to be considered in a number of connected ways: as everyday spaces in which people spend a significant proportion of their lives; as expressions of political-economic imperatives that code them with 'signs, symbols and referents for dominant socio-cultural discourses or moralities' (Kraftl 2010, 402); and in terms of perspectives that emphasise materiality and affect.

Kraftl's (2010) four-way typology of geographies of architecture distinguished between: a focus on symbolism; 'critical' geographies of architecture; work on the 'form-ing' of architectural artefacts; and buildings' affective and emotional potentialities. We briefly

summarise it here to locate our study in relation to approaches that, rather than focusing on the occupation and experience of *existing* buildings, consider what happens *before* and *as* a building takes physical form.

The longstanding representationalist focus on the symbolism of buildings as sites of meaning and their capacity to be read as 'texts' (Cosgrove 1998) has been displaced by consideration of the

dynamic encounters between buildings, their constituent elements and spaces, inhabitants, visitors, design, ergonomics, workers, planners, cleaners, technicians, materials, performances, events, emotions, affects and more. (Jacobs and Merriman 2011, 213)

Recent critical geographies of architecture have drawn attention to the 'inhabitation' of buildings: an awareness of the situated and everyday practices through which a building is used. Thus seen, buildings are sites in which a myriad of users and things come into contact in numerous, complex, planned, spontaneous and unexpected ways; encounters are embodied and multi-sensory; and resonant of the power structures that exist both within and outwith the building, shaping its inhabitation. Geographies of architecture have also taken an interest in the affects produced and experienced within built spaces, responding to Rose *et al.*'s (2010) appeal to foreground human subjectivity.

While these approaches primarily consider already-constructed buildings, work on their 'form-ing' includes interest in 'the ways in which architectural forms come to be, in certain places' (Jacobs 2006, 3; Jacobs *et al.* 2007). Jacobs uses 'building event' to describe the ways in which things and processes 'become' architecture. This notion of the 'event' arises from a fundamentally relational materialist approach, in which poststructuralism has arguably sought to dematerialise objects and focus instead on relationality to recognise and emphasise their ephemeral and ever-changing nature. This way of seeing/knowing resonates with materialisms advocated through ANT by Latour (e.g. 2005), and by Deleuze and Guattari (1987 1994), and has recently been critiqued by 'speculative realists' questioning the meta-narrative describing objects as cultural constructions or effects of social discourse little more than the result of their relations (Hale 2015, 172).

Pre-dating these critiques, the relational approach characterises much architectural geography, with Jacobs *et al.* proposing that

architectural materialisations are the consequence of socio-technical gatherings or assemblages and that such assemblages or gatherings are contingently formed and necessarily unstable. (2012, 128)

Latour and Yaneva saw the building as a moving project rather than a static object, and challenged architectural theorists to do justice to its 'thingly' nature (2008, 89). Accordingly, Jacobs *et al.* argued

that the materiality of a building is a relational affect; its 'thing-ness' an 'achievement of a diverse gathering of contingently formed associates and associations' (2012, 128).

This notion of contingency enables the deployment of the term 'event' and, like the 'Building Schools for the Future' (BSF) policy (den Besten *et al.* 2011), the construction of new prisons in E&W could be described as a national architectural event, 'drawn up' into discourses around economic and social 'needs' as a 'major, ongoing social-political-architectural event' (2011, 13). However, while BSF was intended to be architecturally visionary and inspirational (den Besten *et al.* 2011; Kraftl 2012), 'negotiated and (re)claimed at a local level by architects, teachers, private-finance partners and – ideally – pupils' (den Besten *et al.* 2011, 17; den Besten *et al.* 2008), the building event of new prisons encompasses neither this visionary architectural potential, nor 'ownership' by either those who live and work in them or, as we will show, by the architects involved in their architectural assembly.

Architectural geography follows architectural theory and the sociology of architecture, both in arguing that architecture is socially constructed and in critiquing the figure of the 'starchitect'. Cuff (1991) argued that, through its emphasis on the creative individual, the profession of architecture masks the growing significance of collective action in that the individual acts in the context of a larger and increasingly significant social environment. She described the idea of the primacy of an independent architect, working with relative autonomy, as a propagandist myth (1991, 250). Imrie and Street also debated architecture and autonomy, amplifying a concept of 'relational autonomy' distancing the notion of autonomy from 'individualistic, under-socialised, accounts of architects and their practices' (2014, 723). They emphasised the potential of a relational account to uncover the 'co-constructed and conjoined nature of design practice' (2014, 735), and deployed the term 'designs-in-practice' to specify

the ordinariness of designing, the multiplicity of those involved in it and the crafting of the architects' autonomy, or sense of self, as part of a dynamic of situated and contingent practice. (2014, 727)

The 'traditional' role of the architect, assumed to create from a blank slate an imaginative design concept to meet a client's requirements, has been described as an 'illusory, or at best partial' representation of the nature of architectural practice (Imrie and Street 2014, 737); Whyte has described the misplaced 'romance of the architect as a sole practitioner' (2015, 265). This role – and the associated term 'designer/designing-architect' (Jacobs and Merriman 2011, 215; Jacobs *et al.* 2012, 136) – has been critiqued at some length in architectural geographies, particularly in relation to

'signature' buildings such as Norman Foster's Gherkin in London, Frank Gehry's Bilbao Guggenheim (Jacobs and Merriman 2011; McNeill 2009) and other pieces of 'iconic', 'designed architecture' (e.g. Kaika 2010; Knox 2009). Jacobs and Merriman noted that 'the prominent role of the architect as designer is immediately complicated and disseminated' (2011, 215) once architecture is considered as practice.

However, thus far, this type of complication and dissemination has arguably only been achieved through study of what we would argue are still architect-led projects, such as Rem Koolhaas' extension to the Whitney Museum (in Yaneva 2009), where a designing-architect communicated a vision through performances of persuasion, while 'depending' (Till 2009) on a range of others. The case studies selected in recent geographical scholarship concerned with the creation of buildings largely conform to this model of the pre-eminent role of the architect; for example, the eponymous Hundertwasser-Haus in Vienna (Kraftl 2010), Safdie's new Vancouver Public Library (Lees 2001), skyscrapers (McNeill 2005) and the Beijing Olympic stadium (Ren 2008). Architectural geographers seem more inclined to research one-off, 'interesting' buildings such as these, rather than, say, utilitarian, prototypical supermarkets, warehouses, retail parks – or indeed, prisons. In essence, architectural geography is yet to consider the type of buildings in whose becoming the architect is *not* a pre-eminent figure in need of decentring, and where their role does not merit the 'designer/designing' preface that, while not always used, is often implicit.

Individual building projects always vary in the extent of architects' involvement beyond the initial design concept. As Sage (2013) observed, the bureaucratisation of project management in the UK construction industry, driven by the spread of market managerialism and its profit-centred instrumental rationality, means that architects are commonly separated from the construction process, and their physical engagement with building sites inhibited. Latour and Yaneva's account of architects constantly moving 'back and forth between the building-in-construction and its numerous models and drawings', 'in front of the eyes of astonished workers and engineers' (2008, 85) seems rather fanciful in this context. Sage (2013) argues that the effect of this bureaucratisation on the building-in-construction has been largely overlooked by architectural geographers; we further posit that, perhaps because of the tendency to focus on 'signature' buildings, it has been similarly neglected in relation to the building-in-design.

### Prisons as *big things*

Rose *et al.* (2010) argued that emotional and affectual geographies have permeated geographies of 'big things'

(Jacobs 2006) such as airports, tower blocks, office blocks, shopping malls, libraries and ships. Prisons might also be labelled ‘big things’, but little attention has been paid to their emotional or affective geographies; or indeed to the individuals, policies, processes and technologies that enable them to come into being. Recent work in geography has addressed the significance of carceral space (Moran 2013). The three emergent themes within carceral geography – the nature and experience of carceral spaces, the geographies of carceral systems, and the relationship between the carceral and an increasingly punitive state (Moran 2013) – all tend to focus on the prison (building) as it already exists and operates (e.g. Mitchelson (2014) on bedspace; Morin (2013) on safety; Moran (2013) on visiting spaces; Baer (2005) on the personalisation of cells; and Sibley and van Hoven (2009) on personal space). Critically, carceral geography is yet to explore how and why prison buildings *come to be as they are*, in order to be experienced by those who live and work in them. We address this question by considering the construction of new prisons in the light of the approaches developed within geographies of architecture.

Considering prisons as ‘big things’ offers a useful counterpoint to architectural geographies of utopia, which see geographers frequently (although by no means exclusively) studying buildings imbued in some way with a sense of utopianism and/or iconicism. Kraftl’s studies of the Hundertwasser-Haus (2010) and school design in the UK (2012, also den Besten *et al.* 2011) and the utopian ideals expressed in modernist residential high-rises (e.g. Jacobs 2006) are just some of the examples within architectural geography where designers strive towards some higher purpose or aspirational outcome.

Although carceral regimes *may* articulate high-minded visions for prison systems, Her Majesty’s Prison Service’s mission statement is ‘We keep those sentenced to prison in custody, helping them lead law-abiding and useful lives, both while they are in prison and after they are released’ (HMPS no date), very little of this intention is translated into built form, with prison buildings positioned as neither utopian nor ‘signature’. Historically, prison design has been inflected with quasi-utopian ideals of reform and rehabilitation, famously in Bentham’s Panopticon that inspired Foucault’s (1977) *Discipline and Punish*. Here, a drum-shaped prison with a single central watchtower had cells lining the outer wall to enable constant surveillance. This design was premised on a belief that architecture could affect human behaviour and that a building could enable moral reform. Similarly, Eastern State Penitentiary (Philadelphia, USA, built 1829) was the physical manifestation of an ‘evangelical’ rational and humanistic reformatory mind-set, promoting

physical separation to enable reflection, solitude and prayer (Haviland 1999). Criticised for its damaging psychological impacts, this ‘separate’ system was later abandoned. Although such ideals have (sometimes misguidedly) informed the history of prison design, there is very little room for utopian thinking in the ‘building events’ of new prisons today, and few would view them as emblematic, spectacular or signature architecture.

## Research context and methodology

In the austerity following the 2008 global financial crisis, the UK coalition government embarked on a ‘modernisation’ of the penal estate in E&W<sup>1</sup> through a ‘new for old’ policy that entailed the closure of 13 ‘unstrategic and uneconomic’ prisons (MoJ 2013, np). The prisons replacing them include a 2100-bed facility in North Wales (opening 2017) constructed to the same design as HMP Oakwood in Wolverhampton (opened 2012).

In E&W, prisons have arguably been designed and built to contain offenders as cheaply and securely as possible, in living standards that meet minimum legislative requirements but whose potential to re-socialise and resettle inmates post-release is questionable. The modernisation programme is justified by the economic ‘inefficiencies’ of smaller, older prisons for a government committed to reducing the ‘cost of prison to taxpayers by more than £500m’ (MoJ 2013, np). It is argued that significant savings can only be made by concentrating larger numbers of inmates in fewer, more economical prisons.

Another justification for ‘modernisation’ is an inmate population that has doubled over the last 35 years and is held in variable conditions. New prisons must comply with HMPS Instructions about prison accommodation; ‘measurable standards’ applied across the estate (HMPS 2001, 1). These include parameters for cell size and capacity, heating, lighting and ventilation, ergonomics, and space and privacy requirements within both ‘normal’ and ‘crowded’ conditions (‘crowded’ being when a prison contains more prisoners than the establishment’s ‘certified normal accommodation’; often manifested in the ‘doubling-up’ of cells intended for single occupancy). Such consistency is intended to ensure that prisoners and staff experience the same ‘decent’ living and working conditions in any institution.

While scholars and activists have opposed prisoner ‘warehousing’ in large establishments (e.g. Wright and Herivel 2013), prison design and construction has been relatively overlooked, even in criminological scholarship. The limited published work is mainly historical (Brodie *et al.* 1999 2002; Evans 1982; Fairweather and McConville 2000; Jewkes and Johnston 2007; Johnston

2000; Spens 1994) and its publication largely pre-dates the current commissioning and design processes giving rise to new prisons (though see Jewkes and Moran forthcoming).

This paper therefore draws on data generated with architecture practices, engineering firms and construction companies involved in recent prison new-builds in E&W (undertaken since private prison funding in 1997). Extensive in-depth interviews were carried out in 2014–15 with key personnel including contractors, buildings engineers and consultants who have worked on new prisons in E&W, as well as with senior sources at the UK Ministry of Justice (MoJ) Estates Directorate and the National Offender Management Service (NOMS is an executive agency within MoJ responsible for running prisons in E&W, and for managing public-sector prisons through HMPS). Interviews were audio-recorded, transcribed and analysed. All respondents and (private-sector) employers are anonymised, as are specific prison sites, to respect both professional and commercial sensitivity.

## The architectural assembly of new prisons in England and Wales

We explain here the specific nature of the commissioning and tendering process for prison-building in E&W and the ways in which it generates prison buildings of a certain type. First, we provide context by summarising government policy and legislation impacting the commissioning of, and tendering for, new prisons. We outline the construction and sub-contracting practices and the limitations these place on the architectural assembly process. Having described the current commissioning context and the parties to the dynamic encounters that shape prison-building events, we then detail the ways in which these encounters shape the ‘becoming’ of prisons.

### *Commissioning and tendering, and the separation of architect from client*

The process of producing a prison in E&W depends on whether its ownership, operation and maintenance will be publicly or privately funded – a distinction that originates in the Private Finance Initiative (PFI) introduced in 1992. The initial decision to allow privatisation in the prison estate rested on reducing operational costs (Shefer and Liebling 2008), together with the need to execute a large programme of construction to reduce overcrowding given continually rising prisoner numbers – a widely emergent trend in Anglophone countries (Harding 2001). Private-sector management is controversial, dividing advocates of a cheaper, more innovative approach to incarceration that outperforms the public sector from those who contest the morality of profit-from-punishment and the

practical application of prioritising ‘efficiencies’ over ‘effectiveness’.

Although initiated by a right-wing Conservative administration, the centre-left New Labour Government adopted PFI in 1997 and in that year HMP Parc in Bridgend, Wales became the first PFI build. Now usually known as Design, Construct, Manage and Finance (DCMF) contracts, PFI requires a private company to fund the construction of a new prison and provide ongoing custodial services. A consortium of financiers, constructors and the proposed facility operator form a ‘special purpose vehicle’ (SPV), which carries the profit or loss from the venture. The Secretary of State contracts the SPV, which then subcontracts construction to a Design and Build Contractor, and operation to a Buildings and Facilities Management company. PFI also encompasses public–private partnerships (PPPs), whereby ‘public sector organisations commission and pay for services, but do not directly provide them’ (Taylor and Cooper 2008, 4). PPPs are based on the notion of ‘best value’, transferring expenditure from the public budget but allocating risk via fixed contracts where longitudinal over-spending is managed by the partner, rather than by the government (Parker and Hartley 2003).

Under this system, new prisons are produced by complex consortia comprising main building contractors, engineers, architects and numerous subcontractors providing specific specialist services (e.g. locks and flooring). As an indicative example, at HMP Oakwood (Figure 1), Kier Build was the main contractor; Pick Everard were the architect partners; Balfour Beatty delivered prefabricated service modules; WSP were among the subcontracted engineers, and six other companies delivered pre-casted walling products, organised by a further company coordinating logistics.

MoJ procurement of new complete prisons now involves a formal compulsory competitive tendering (CCT) process. During CCT, the MoJ produces a Design Intent, which states the requirements of the job for a bidding process. As Taylor and Cooper explained, this is not an unregulated free competition ‘since the size of the custodial “market”, the nature of terms of services supplied, and even the identities of these “players” are determined by the state’, and contracts are distributed between only a handful of global companies (2008, 10). In the case of new-prison-building in E&W, main contractors leading consortia seeking permission to bid for future tenders must be pre-qualified, in part according to size, experience and turnover. As one custodial architect told us, the necessity to partner with a main contractor in this process can have a significant impact on architects’ scope for creativity, since there may be little, if any, direct dialogue between the client commissioners of a new prison (MoJ) and the architects partnering with



**Figure 1** HMP Oakwood (image reproduced with permission from Pick Everard)

the main contractor leading the SPV bidding to deliver it:

the only way we could get at a reasonable chunk of design was to partner with a contractor and to ... win the work ... that way, in a design and build situation. And that's where we have done the majority of our work. We've delivered over 500 million pounds' worth of prison work in the UK over a ten year period. So in that respect, it's been very successful for us, we've had a major input into that side. But of course, it is one step removed. We're working for a contractor, we're not working for the Ministry of Justice, albeit that we're all in contract together.

This one-step removal has implications for the dialogue between architect and client, since all communication is strictly regulated by the terms of the commissioning process. An indicative example is the process of pre-qualification, where consortia submit, through their lead contractor partner, designs for a hypothetical prison houseblock. As a senior architect explained,

[T]hey [the MoJ] give you a 90-bed accommodation block in the Design Intent. The design comes out from [MoJ] as a 90-bed two storey house-block and [says] 'We'd like one of those. Please tell us what the cost is and some more detail behind the design'. So, you've got to write that as your base compliant tender. What you do have the opportunity to do as well is to give an alternative tender proposal, which says 'Well this is complete compliance, but however, have you considered this?' And that's where you can push the boundaries and say, 'Well, this is an alternative design. It looks like this with steel and glass, however, it compromises this aspect of security but it gives you this added benefit.' Or it may still be compliant in security terms but it has this added cost ticket. Or, all manner of pros and cons. But you compare it back again to this base compliant bid because that's seen to be the one that they've asked for and the one they want.

This would seem, at first glance, to be the opportunity for architect partners to exercise their design creativity to deviate from the 'base compliant tender' and produce an alternative design that might appeal to the client. However, the dialogue is effectively only two pieces of communication: the brief from the client to the consortia and the tender from each consortium back to the client. With the time spent in bid-writing unlikely to be recompensed, lead contractors are reluctant to invest in potentially-futile designs and have learned through experience that reducing build cost is the client's bottom-line. Regardless of its other qualities, a design that requires extra capital expenditure is unlikely to be considered:

We pushed the boat out as far as we could do, but you're always pressed for time in a tendering situation and you're pressed in terms of your resources and the money you have to spend because it's all at risk, basically. It's all costs that you have to recuperate. So I'm not saying that's a reason for stifling innovation but there's a limit to how far you push the boat out because you know the MoJ might just turn around and say 'Well we don't want that. It's not what we asked for.' And over the years, their tolerance to more alternative design has varied. So, sometimes they'll be very straight-down-the-line on a given project or at a given time and they'll say 'This is what we asked for. Thank you for all the alternatives, but this is what we asked for in the Design Intent, this is why we've given it to you. We're not going to consider any others'.

Although main contractors can make specific formal enquiries about the brief their architects address, in the interests of transparency, any client responses must be circulated to all bidding consortia. Questions that risk disclosing details of draft bids to competitors will simply not be asked; hence the opportunity for dialogue

between architect and client, via the contractor leading a proposed SPV, is further restricted.

Another proxy for the usual conversations between architect and client surrounds the issue of ‘derogations’ – exemptions from regulatory standards granted on a one-off basis. A buildings engineer explained this process:

Well, this is always hard because every time we bid on a project, it’s always a question of ‘Right, how far do we go with derogations?’ We could reel off, and we do, on every job we bid, reams and reams, hundreds and hundreds of where we think you can save money if you don’t do this but probably all but ten or fifteen are going to be struck off as unacceptable. So yeah, we have that battle on every job. I think the derogations issue at that contractor level is to try and save money so it’s purely ‘what can we take out of our bid to (a) give us an advantage and (b) means that you, Mr Client or Mrs Client, don’t have to spend the money?’

By deviating from the regulations based on prior experience, architects make suggestions to the client about what a building *could* be like. But several steps removed from the procurement decision, rather than conducting a two-way discussion with the client, they must judge ‘blind’ which economising derogations to include prior to tender submission. And this dialogue, rather than focusing on architectural merit or quality of finish, is largely about reducing the cost of the project to make a bid more competitive. Given Jacobs *et al.*’s (2012, 128) description of ‘architectural materialisations’ being the consequence of contingently formed and unstable socio-technical gatherings, we can see the unpredictable tolerance of ‘alternative’ designs, the uncertainty over derogations, the constant risk of over-investment of resource, the opacity of the procurement process and the distance between client and architect as indicative of the innate contingency of the ‘becoming’ of a prison building.

In short, the nature of the commissioning process for new prisons in E&W separates architect from client, minimises direct dialogue and thereby restricts the role of the architect in interpreting the client’s needs and designing a building to fulfil the brief. In these interview extracts, there is very little sense of the role of the architect being one in which design is even significant. The architect’s role is neither ‘prominent’ nor, it could be argued, much of that of a ‘designer’, to paraphrase Jacobs and Merriman (2011, 215). It is, however, disseminated and fragmented by both the regulatory framework and technological context within which new prisons are constructed. It is to the architects’ role that we now turn.

### *Regulation, standardisation and securitisation*

Imrie (2007) argued that regulation is more than a technical process; it is intertwined with, and constitutive of, architects’ practices (also Imrie and Street

2011). A future research agenda ought, he argued, to treat building regulation much more seriously as a subject of scholarly enquiry. Although this baton has been taken up (e.g. Faulconbridge 2009; Nord 2013; Van der Heijden and De Jong 2013), including by those who stress the ‘unwritten’ building conventions operating in certain contested sites (Brand 2009), there is still scope within architectural geographies – espousing the significance of human and nonhuman actors, material and immaterial things in the becoming of buildings – to pay much greater attention to technical standards and regulations, and to the critical role they play in the ‘becoming’ of buildings.

New prisons must comply with HMPS Instructions intended to ensure consistent living and working conditions. This uniformity also extends to layout and security: all new prisons are built to a similar external and internal design and to a standard high-security classification. A senior architect explained the MoJ’s approach:

[They] want consistency and commonality ... right across the estate. So, when they designed the building and they’ve got it right, that building can be replicated all over the country. As prisoners move around, as staff move around, there’s familiarity walking into that building. All the designs currently now are designed to Cat B standard, which actually in construction standards is the most secure because ... You can add additional operation restrictions to a Cat B building and it can become a Cat A ... Then, what they allow is derogations to reduce the specifications of some of the materials if they were going to Cat C or Cat D.

The Categorisation (‘Cat’) scheme derives from the categorisation of the prisoners themselves. Category A prisoners are those whose escape would be highly dangerous to the public or national security.<sup>2</sup> Category B prisoners do not require maximum security, but escape still needs to be made very difficult. Category C prisoners cannot be trusted in open conditions, but are deemed unlikely to try to escape. Category D prisoners can be reasonably trusted not to try to escape and are given the privilege of an open prison.

Building all new prisons to Category B standard is justified by policymakers on the grounds both of minimising risk and ‘future-proofing’. To avoid expensive security retro-fits should a future need arise (i.e. higher numbers of Category B prisoners), a medium-security facility holding Category C prisoners deemed unlikely to try to escape is built to the specification of a high-security Category B institution. The move to build exclusively to Category B standard effectively negates the potential for architectural variety according to Categorisation.

There is some acceptance that this Category B standardisation and the associated compliance with regulations stifles architectural creativity, and may restrict the appeal of justice-sector projects to

professional architects. A senior NOMS source referred to the control of unruly prisoners as a reason for the strict enforcement of regulations:

Most of them [architects] know because they've read the brief and they understand what they're coming to. You know, 'there's a prison'. There are a lot of pre-defined technical standards where people in MoJ state that it has to be like this. A roof pitch has to be like this [to reduce the risk of prisoner escape through climbing on the roof] and here's the good reason why the bars . . . , the cell walls have to be so thick because we have defined periods of control of the prisoner. If a prisoner is locked in an area, we have to know that he's in there and we've got X amount of hours or minutes to deal with that before he can get out and they can get out *en masse* and create mayhem. So we have these standards and architects have to work within those.

While discussing the standard building regulations under which all UK architects operate as a 'burden', Imrie (2007) also reported architects viewing them as 'necessary and worthy' in order to create what they described as a 'good environment'. Further, he argued that 'architects' . . . practices (re)define, in part, the scope and possibilities of regulation' (2007, 941). Although our respondents appreciated the reasons why strict regulations applied to prisons and were keenly aware of their client's risk-averse attitude, whether they would agree that those regulations delivered a 'good' environment is debatable, and speaks to an issue about the purpose of prisons to which we will return later. The scope that Imrie (2007) observed for architectural practice to (re)define regulation seems absent in the custodial sector. Whereas in smaller projects such as domestic dwellings, architects might be able to negotiate with building control surveyors about specific design issues, this opportunity is missing from prison-building. Although the technical standards were described by a senior source at the MoJ as 'continually under review', the mechanisms through which these changes could be suggested and discussed remain opaque.

### *Technologies: 3D modelling and Lego blocks*

Specific technologies, while arguably improving the efficiency of project delivery, also serve to minimise both architectural variety and the role of the architect as designer. The MoJ, alongside other UK public-sector procurers, is moving towards the utilisation of Building Information Modelling (BIM) to inform building design. This complies with the 2011 UK government mandate that by March 2016 all public-sector construction projects would use BIM (Vernikos et al. 2014). BIM is a form of Computer-Aided Design (CAD) defined as

a set of interacting policies, processes and technologies generating a methodology to manage the essential building design and project data in digital format throughout the building's lifecycle. (Succar 2009, 357)

For all new buildings in the public sector, all project information, data and documentation must be contained within a BIM model to enable streamlined interaction between supply chain members, more efficient project management and leaner project delivery. In practice this means producing a three-dimensional geometric model of a building at the design stage, incorporating all physical structures and services (walls, floors, roof, plumbing, wiring, apertures, ventilation etc.). Communication between the different parties involved takes place via this virtual simulation, which can be visualised and 'walked-through' to test fitness for purpose. While academic debate continues surrounding the benefits of BIM for project management (Bryde et al. 2013; Vernikos et al. 2014), it has also been argued that the rise of simulation-based design via CAD and BIM has displaced the representation-based act of drawing within the architecture profession, with negative consequences both for the ways in which architects are trained and the ways in which they think about buildings representationally (Scheer 2014). Conversely, it could be argued that the rise of BIM in fact affirms the role of architects, with the development of the technical skills required to generate simulations replacing the drawing skills that typically only they possessed. While Whyte (2015) argues that BIM can also enhance architectural creativity through enabling dialogue between building partners, its adoption by the MoJ within the procurement environment described earlier arguably results in further standardisation of the penal estate and greater marginalisation of architects.

Senior sources at the MoJ described BIM as a robust means of ensuring that buildings complied in full with stringent sets of regulations, including those imposed by the MoJ itself (prison conditions and security); those which apply to specific areas of prisons (e.g. education blocks or healthcare clinics, which additionally need to conform to UK Departments of Health and Education regulations); and those ensuring compliance with UK Building Standards and Planning Regulations. It was argued that using BIM enabled these overlapping regulatory frameworks to be fully considered at design stage. BIM enables MoJ to construct a 'library' of BIM 'parts' representing the constituent elements of a finished prison – staircases, kitchens, staff offices, segments of houseblocks of cellular accommodation, classrooms, and so on – each adhering to the regulations. Using these pre-approved parts to assemble a full BIM model of a complete new prison eliminates many costly hours of compliance-checking. The role of design is effectively reduced to the efficient arrangement of these pre-existing parts, like intersecting building blocks on a virtual parcel of land. In this respect, the standardisation of Category B construction within the prison estate resembles the brand-standardisation of



some commercial architecture. Supermarket retailer Asda, for example, uses BIM to create UK 'model' stores that are simply modified by architects on a project-by-project basis (Cousins 2014). A senior source at the MoJ described their shift in practice:

Right, well what happened up til now is that we've gone out with a brief and some standards and the brief will say 'we need a new house block'. There, that's your brief and there will be a whole stack of technical standards, which would be very technical things around ... 'the ... walls need to be constructed with this kind of concrete, the bars on the window need to be titanium steel, with that rod so big, and that rod so big'. Traditionally the architect design team will start with a blank piece of paper and would work up a design. So that's how it used to be. Going forward, we'll give them BIM models, a functional diagram, a general narrative description of the thing, and any standards and anything else that they need and say 'get on with it'. The rules of the game are that you can use those parts, but no other parts, but you can use them any way you want.

As this extract shows, although the 'stack' of technical standards may seem a restrictive enough working context for an architect, under this system they were at least expected to draw up a design brief. With the introduction of BIM, their role is to assemble the approved 'parts'. An element of creativity remains in that they could assemble the approved parts into unexpected configurations – i.e. something other than a long, narrow houseblock – but such arrangements would be approved only if implications for functionality and cost were negligible. When asked about the potential to arrange BIM parts into curvaceous rather than linear buildings, the response was: 'if it does the job, serves the need functionally and doesn't introduce extra cost, you can do what you want'. This bottom-line was echoed by architects who discussed their frustration at the ways in which their creativity was already stifled by what they perceived to be the MoJ's tenacious value engineering.

It's all focused on reducing costs. What can you change to reduce costs? Often called value-engineering. I'm sorry, but with the Ministry of Justice it's just a cost-cutting exercise. And that's all it is. It's just reducing costs again and again and again ... [I]t's really sad but we've got to a stage where we're actually stripping back our designs.

When construction of the prison finally begins, work on-site resembles the assembly of BIM elements in the 3D model. Parts incorporating facility for wiring, plumbing and so on, are produced off-site in pre-cast concrete sections for rapid on-site assembly, minimising the subcontractors and trades needed on-site and reducing the build cost. A senior source at NOMS told us:

It's robustness, cost and the speed of construction especially in today's modern industry. Most of these prisons are

pre-cast concrete, moulded off-site, brought to site, assembled in block formation all in a single wall and built like a Lego set. And that's more cost-effective. Pre-cast concrete is ... more construction-led effective and it gives us a shorter time span on programme and we also need less wet trades coming onto site doing all the finishing off, as it were. We cast in all of the cable runs, all of the light fittings, all of the shower fittings. It comes off the back of a lorry, plug a toilet onto it, we plug a sink onto it ... plug and push all the sink joints together and theoretically that's how it is. You don't need lots of those little white vans coming up doing all sorts of niggly, wet trades. You also get more continuity in the build so that the prison cells, 108a is the same as 108c, there's uniformity, the furniture all fits, it's all cost-effective, it all gives us certainty in design and delivery.

The apparent efficiency of these builds – with increased certainty over build time; streamlined delivery using pre-cast components ready to receive standardised fixtures and fittings; the BIM-built-in guarantee of compliance with multiple layers of regulation; the uniformity of the finished product both at the level of the multiply-replicated cell; and the immediately recognisable and navigable prison – is resonant of what Imrie and Street (2009) have called the entwined risk and regulation of buildings.

#### *What type of building 'becomes'?*

Our practice-informed approach has enabled us to explore the processes of commissioning, the role of the architect within a bidding consortium and the regulatory framework within which design takes place. However, in addition to the social dynamics of the *making* process, we are also interested in the architecture that *is made* as a result.

The marginalisation of architects during the construction process has been argued to diminish the 'ability to carefully apply human discretion to the making of a building' (Davies 1999, 200) and to contribute to 'poorly executed' buildings (Sage 2013, 185). We contend that the distance between architect and client and the strict regulation of what is possible or legal in prison building in E&W means that the commissioning and contracting of new prison buildings as prisons also fails in two important and related respects. Containing a myriad of real, flesh-and-blood individuals with a wide range of complex needs, desires and potentials, prisons are arguably much more than buildings in which to contain people categorised by risk. However, there has been little scope to discuss with architects the functions that a prison could deliver *beyond* basic security requirements and minimum standards of living, accommodation, exercise and so on. For example, there have been few opportunities for design features promoting a 'healthy prison' – identified by Liebling (2004) as decency, fairness and trust – to become incorporated. This is not to say that

architecture is the sole determinant of the outcome of incarceration; rather that there has been minimal room for discussion of the likely outcome of the Design Intent in relation to HMPS's mission statement. And although architects' creativity is stifled by the limited opportunities to discuss with the client what it is that they are trying to achieve through the new building, it is arguably even more greatly restrained by the dearth of engagement with other potential 'clients', namely the end users of these buildings. In our research we came across only one example of custodial architects working in E&W consulting prisoners or 'rank-and-file' prison officers.

Returning to the mission statement of HMPS – to keep those sentenced to prison in custody, helping them lead law-abiding and useful lives, both while they are in prison and after they are released – it would seem that alongside preventing escape and preventing prisoners from harming themselves and others, HMPS is also trying to improve outcomes for prisoners after release, i.e. to reduce rates of reoffending. While the aims of security may have been addressed robustly, through the regulatory framework, arguably the intention regarding rehabilitation and reduced reoffending has not. The potential tension behind these two imperatives was not lost on our respondents, including this buildings engineer:

I guess, they're responding to a number of things. I'd like to think that their higher level aspiration is to prevent reoffending but they have a big agenda, don't they, to make sure that we have enough spaces that are operated properly to keep people – inmates – and the public safe. You know, there [are] definitely tensions between doing the right thing from a reoffending point of view and building efficient prisons for keeping people secure.

Although some architects and contractors we spoke to *had* given considerable thought to the type of prisons they designed, and their experience by their occupants – i.e. going beyond security and risk to see prisoners as real people needing a humane environment to enable rehabilitation – the ideals of those professionals were frequently thwarted by risk-averse and fiscally driven attitudes higher up the chain. In other words, the 'human mattering' (Jacobs and Merriman 2011, 217) of architecture – the sense in which architects would conventionally design to cultivate affects by making atmosphere and producing what Thrift (2009, 123) has called 'mood-catching environments' – appears absent from this type of practice. The individuals whose views about a potential new building would usually be considered, i.e. those who will live and work within it, have in this context been specifically excluded from consultation or involvement in the process of design. Through the practices, regulations and technologies of commissioning, the needs of the client are

communicated in such a way as to discourage any meaningful consideration of these end users as anything other than risk-laden items to be properly controlled and accommodated within robust, securitised buildings.

Conversations with senior sources at the MoJ revealed that there *is* an interest in the types of buildings that might engender certain effects that could contribute to reductions in reoffending. However, it also became very clear that, while considerations of this kind preoccupied some of our supply-side respondents, they had rarely featured in the procurement and commissioning process from the client side. In other words, the nature of the process meant that there was no scope for the client to be asked by a potential contractor/architect to justify their brief, to explain what it is that they are seeking to achieve through a building beyond secure accommodation, and therefore to think about what kind of building might deliver the brief, if more broadly conceived. That is, there was no opportunity to explicitly discuss what, as our respondent put it, 'doing the right thing from a reoffending point of view' might look like in built form. For example, in reflecting on a discussion we had just had on the purpose of imprisonment, its manifestation in correctional architecture, and the ways in which that architecture might be experienced through what architectural geographers would call 'inhabitation', an MoJ respondent told us that at the time:

these kinds of conversations *never, never* come up in terms of what we do when we design a prison. No one, I mean *no one*, looks at the architecture or its aesthetics.

We would not claim that a prison could *never* be a 'signature' building or aspire to a utopian vision, or label prison-building in E&W 'dystopian', but our discussions with architects, contractors, engineers and other buildings professionals, and with representatives of the MoJ as the 'client' strongly suggest that, within the dynamic encounters between these different parties, discussion of the logics and philosophies of imprisonment barely featured at all. Concerns for cost and security, regulations and schedules within structures and technologies operating to standardise delivery, to speed up build times and to drive down build costs, marginalised opportunities either for design innovation or for discussion of what it is that the prison *is intended to achieve* as a physical manifestation of a state's punitive philosophy.

The high-profile discussion of prison reform in the UK in 2016 (at the time of writing), triggered by appalling levels of violence, self-harm and suicide in custody, signalled a more rehabilitative approach to incarceration. However, the extent to which such a policy shift in emphasis will deliver different kinds of custodial environments remains to be seen.

## Conclusions

Jacobs asked us ‘to think critically and up close about how a professionalised architecture works to sustain itself (or not) as an authoritative practice in relation to building events’ (2006, 11–12). And as Koolhaas put it, in order to enable itself to become, a big building must be ‘an instrument of other forces’. For a building to take form and sustain itself as a big thing, it must ‘surrender to technologies; to engineers, contractors, manufacturers; to politics; to others’ (OMA *et al.* 1995, 497–9). Despite these strong statements, architectural geographies seems yet to fully explore the diversity of architectural practice, and in particular, seems to have tended towards a view of the ‘designing-architect’ that is arguably unrepresentative of a significant proportion of architects’ professional activity – not just in relation to new prisons, but potentially a plethora of public- and private-sector commissions that are similarly heavily regulated and subject either to stringent and bureaucratic procurement processes, or to narrow ‘brand standards’.

It is perhaps the nature of ‘designer/designing-architect’-led buildings previously studied that has led geographers of architecture to strive to ‘de-centre’ the role of the architect as the prime ‘meaning-maker’ of a building (Krafft 2010, 328). In these cases, geographers have felt the need to promote an understanding of architecture that allows ‘for the agency of those *other than* the master architect’ (2010, 330; emphasis in original). As Jacobs and Merriman (2011, 213) have argued, attending to the ways in which the affectual potentialities of (existing) buildings are negotiated in and through practices of inhabitation enables a focus on the ‘dynamic encounters’ between the multiple and diverse parties that characterise them. In our study, while similarly aiming to include a diversity of voices, we find that rather than assuming a pre-eminent position that requires counterbalancing with these other voices, the role of the architect has already been decentred, precisely through the dynamic encounters that occur between the client commissioners of buildings and the consortia that tender to deliver them. In drawing attention to prison-building as an example of a standardised, regulated, competitively procured and frankly rather unglamorous sector of the industry, through attention to what we have called ‘architectural assembly’, we have sought in this paper to ‘decentre’ architectural geography itself from a tendency to see the architect as a dominant figure to be counterbalanced, rather than a marginalised figure at risk of reduction to a technical role within tight regulatory constraints, assembling the Lego blocks of BIM.

The current climate of unprecedented financial instability has enabled the introduction of the UK government’s austerity programme, and swinging cuts

to public expenditure. Although the highest-profile impacts are perhaps on welfare spending, public services across the board have been tasked with reducing spending year-on-year, and public-sector construction has not escaped stringent economising measures. With the drive to reduce capital cost apparently irresistible, architectural geographers could usefully explore those aspects of the ‘becoming’ of a building that pertain to its regulatory framework, financing, procurement processes, commissioning practices, structures of partnership in tenders and bidding, and to the dialogues that these contingencies enable or discourage. This may open up new ways of comprehending the nature of the form-ing or the becoming of a building, notions that have invigorated geographical studies of architecture and buildings but could go further towards advancing understandings of the limits to architects’ creativity and the potentialities of the buildings with which they are associated.

A move in this direction could enable the emergence of a new ‘banal’ geography of architectural assembly, in which the terminology of the banal or mundane, rather than belittling these structures, draws attention to their everyday materialisations. Architectural geographers could focus on logistics warehouses, or retail and commercial parks; buildings arguably more ‘banal’ than the extra/ordinary spaces of prisons. Methodologically, this could open up opportunities for architectural geographers, and geographers interested in the production of urban landscapes more generally, to engage creatively with big data, including BIM and CAD, in interdisciplinary scholarship with architects, buildings engineers and users of buildings. And far beyond the locus for this paper at the intersection of architectural/carceral geographies, the practices of regulation, maintenance, procurement, middle management and negotiation – the everyday materialisations of policy, set within the wider regimes of governance and fiscal austerity, seem poised to enable the development of a timely programme of geographical work on the banalities of production more widely.

## Acknowledgements

The authors would like to acknowledge funding from the Economic and Social Research Council, ES/K011081/1 which supported the research on which this paper is based. They would also like to thank anonymous referees and the Editor for insightful and constructive comments on the paper, and all the participants for generously contributing to the research.

## Notes

- 1 The prison system of England and Wales is run independently of the prison services of Scotland and Northern

Ireland, which are operated by the Scottish Prison Service (SPS) and the Northern Ireland Prison Service (NIPS) respectively. SPS is an Agency of the devolved Scottish Government, and NIPS is an agency within the Northern Ireland Department of Justice, part of the devolved Northern Ireland Assembly.

- Offences that may result in consideration for Category A include (attempted) murder, manslaughter, rape, firearms offences, offences connected with terrorism, and offences under the Official Secrets Act.

## References

- Baer L D** 2005 Visual imprints on the prison landscape: a study on the decorations in prison cells *Tijdschrift voor Economische en Sociale Geografie* 96 209–17
- Brand R** 2009 Written and unwritten building conventions in a contested city: the case of Belfast *Urban Studies* 46 2669–89
- Brodie A, Croom J and Davies J O** 1999 *Behind bars: the hidden architecture of England's prisons* English Heritage, Swindon
- Brodie A, Croom J and Davies J O** 2002 *English prisons: an architectural history* English Heritage, Swindon
- Bryde D, Broquetas M and Volm J M** 2013 The project benefits of building information modelling (BIM) *International Journal of Project Management* 31 971–80
- Cosgrove D E** 1998 *Social formation and symbolic landscape* University of Wisconsin Press, Madison WI
- Cousins S** 2014 Interview: Peter Clark. ASDA backs BIM in the retail sector (<http://www.bimplus.co.uk/people/interview-peter-clark-asda-walmart/>) Accessed 15 January 2016
- Cuff D** 1991 *Architecture: the story of practice* MIT Press, Cambridge MA
- Davies H** 1999 *The culture of building* Oxford University Press, New York NY
- Deleuze G and Guattari F** 1987 *A thousand plateaus: capitalism and schizophrenia* University of Minnesota Press, Minneapolis MN
- Deleuze G and Guattari F** 1994 *What is philosophy?* Verso, London
- den Besten O, Horton J and Kraftl P** 2008 Pupil involvement in school (re)design: participation in policy and practice *Co-Design* 4 197–210
- den Besten O, Horton J and Kraftl P** 2011 Claiming events of school (re)design: materialising the promise of Building Schools for the Future *Social & Cultural Geography* 12 9–26
- Evans R** 1982 *The fabrication of virtue: English prison architecture, 1750–1840* Cambridge University Press, Cambridge
- Fairweather L and McConville S** eds 2000 *Prison architecture: policy, design, and experience* Elsevier, Oxford
- Faulconbridge J R** 2009 The regulation of design in global architecture firms: embedding and emplacing buildings *Urban Studies* 46 2537–54
- Foucault M** 1977 *Discipline and punish: The birth of the prison* Random House, New York
- Hale J** 2015 Found spaces and material memory: remarks on the thickness of time in architecture in **Mindrup M** ed *The material imagination: reveries on architecture and matter* Ashgate, Farnham 169–80
- Harding R** 2001 Private prisons *Crime and Justice* 28 265–346
- Haviland J** 1999 *Eastern State Penitentiary* University of Georgia Libraries, Athens GA
- HMPS** 2001 *Prison service order 1900: certified prisoner accommodation* Her Majesty's Prison Service, London
- HMPS** no date About us Her Majesty's Prison Service, London (<https://www.gov.uk/government/organisations/hm-prison-service/about>) Accessed 31 March 2015
- Imrie R** 2007 The interrelationships between building regulations and architects' practices *Environment and Planning B: Planning and Design* 34 925–43
- Imrie R and Street E** 2009 Risk, regulation and the practices of architects *Urban Studies* 46 2555–76
- Imrie R and Street E** 2011 *Architectural design and regulation* Wiley, Chichester
- Imrie R and Street E** 2014 Autonomy and the socialisation of architects *The Journal of Architecture* 19 723–39
- Jacobs J M** 2006 A geography of big things *Cultural Geographies* 13 1–27
- Jacobs J M and Merriman P** 2011 Practising architectures *Social & Cultural Geography* 12 211–22
- Jacobs J M, Cairns S and Strebel I** 2007 'A tall storey... but, a fact just the same': the Red Road high-rise as a black box *Urban Studies* 44 609–29
- Jacobs J M, Cairns S and Strebel I** 2012 Doing building work: methods at the interface of geography and architecture *Geographical Research* 50 126–40
- Jewkes Y and Johnston H** 2007 The evolution of prison architecture in **Jewkes Y** ed *Handbook on prisons* Willan, Cullompton 174–96
- Jewkes Y and Moran D** forthcoming Prison architecture and design: perspectives from criminology and carceral geography in **Liebling A, McAra L and Maruna S** eds *Oxford handbook of criminology* 6th edn Oxford University Press, Oxford
- Johnston N** 2000 *Forms of constraint: a history of prison architecture* University of Illinois Press, Chicago IL
- Kaika M** 2010 Architecture and crisis: re-inventing the icon, re-imag(in)ing London and re-branding the city *Transactions of the Institute of British Geographers* 35 453–74
- Knox P L** 2009 *Cities and design* Taylor & Francis, Oxford
- Kraftl P** 2010 Architectural movements, utopian moments: (in)coherent renderings of the Hundertwasser-Haus, Vienna *Geografiska Annaler: Series B, Human Geography* 92 327–45
- Kraftl P** 2012 Utopian promise or burdensome responsibility? A critical analysis of the UK Government's Building Schools for the Future Policy *Antipode* 44 847–70
- Kraftl P and Adey P** 2008 Architecture/affect/inhabitation: geographies of being-in buildings *Annals of the Association of American Geographers* 98 213–31
- Latour B** 2005 *Reassembling the social: an introduction to Actor-Network-Theory* Oxford University Press, Oxford
- Latour B and Yaneva A** 2008 'Give me a gun and I will make all buildings move': an ANT's view of architecture in **Geiser R** ed *Explorations in architecture* Birkhäuser, Basel 80–9
- Lees L** 2001 Towards a critical geography of architecture: the case of an ersatz Colosseum *Cultural Geographies* 8 51–86
- Liebling A** 2004 *Prisons and their moral performance: a study of values, quality, and prison life* Oxford University Press, Oxford
- McNeill D** 2005 Skyscraper geography *Progress in Human Geography* 29 41–55

- McNeill D** 2009 *The global architect: firms, fame and urban form* Routledge, Abingdon
- McNeill D and McNamara K** 2012 The life and death of great hotels: a building biography of Sydney's 'The Australia' *Transactions of the Institute of British Geographers* 37 149–63
- MoJ (Ministry of Justice)** 2013 *Freedom of information request no. 82754* Home Office, London
- Mitchelson M L** 2014 The production of bedspace: prison privatization and abstract space *Geographica Helvetica* 69 325–33
- Moran D** 2013 Carceral geography and the spatialities of prison visiting: visitation, recidivism, and hyperincarceration *Environment and Planning D: Society and Space* 31 174–90
- Morin K M** 2013 'Security here is not safe': violence, punishment, and space in the contemporary US penitentiary *Environment and Planning D: Society and Space* 31 381–99
- Nord C** 2013 Design according to the law: juridical dimensions of architecture for assisted living in Sweden *Journal of Housing and the Built Environment* 28 147–55
- OMA, Koolhaas R and Mau B** 1995 *S.M.L.X.L.* 010 Publishers, Rotterdam
- Parker D and Hartley K** 2003 Transaction costs, relational contracting and public private partnerships: a case study of UK defence *Journal of Purchasing and Supply Management* 9 97–108
- Ren X** 2008 Architecture and nation building in the age of globalization: construction of the National Stadium of Beijing for the 2008 Olympics *Journal of Urban Affairs* 30 175–90
- Rose G, Degen M and Basdas B** 2010 More on 'big things': building events and feelings *Transactions of the Institute of British Geographers* 35 334–49
- Sage D** 2013 'Danger building site – keep out!?!': a critical agenda for geographical engagement with contemporary construction industries *Social & Cultural Geography* 14 168–91
- Scheer D R** 2014 *The death of drawing: architecture in the age of simulation* Routledge, Abingdon
- Shefer G and Liebling A** 2008 Prison privatization: in search of a business-like atmosphere? *Criminology and Criminal Justice* 8 261–78
- Sibley D and Van Hoven B** 2009 The contamination of personal space: boundary construction in a prison environment *Area* 41 198–206
- Spens I** 1994 *Architecture of incarceration* Academy, London
- Succar B** 2009 Building information modelling framework: a research and delivery foundation for industry stakeholders *Automation in Construction* 18 357–75
- Taylor P and Cooper C** 2008 'It was absolute hell': inside the private prison *Capital & Class* 32 3–30
- Thrift N** 2009 Different atmospheres: of Sloterdijk, China, and site *Environment and Planning D: Society and Space* 27 119–38
- Till J** 2009 *Architecture depends* MIT Press, Cambridge MA
- Van der Heijden J and De Jong J** 2013 Towards a better understanding of building regulation *Environment and Planning B: Planning and Design* 36 1038–52
- Vernikos V K, Goodier C I, Broyd T W, Robery P C and Gibb A G** 2014 Building information modelling and its effect on off-site construction in UK civil engineering *Proceedings of the ICE-Management, Procurement and Law* 167 152–9
- Whyte J** 2015 Towards a new craft of architecture *Building Research & Information* 43 263–5
- Wright P and Herivel T** eds 2013 *Prison nation: the warehousing of America's poor* Routledge, Abingdon
- Yaneva A** 2009 *The making of a building: a pragmatist approach to architecture* Peter Lang, Oxford