

Social relations in building as a value-producing process

The production of architecture in wider contexts

What can, and what cannot, building documents tell us?

While it is commendable to explore what contracts, specifications and technical literature can tell us about buildings or building process (arq 16.3), it is also perhaps important to consider what they do not and cannot tell us. How far do they really provide insights into the social relations of production, given that they inevitably refer not to these but to a physical object? Can we assume a relation between things, as specified in building contracts (unless of course we are referring to a labour contract or contract of employment), as also a relation between the people making, changing and using these things? Such an assumption has the effect of maintaining a fixed spatial object against which analysis is measured – whether the site of production, the building product, or the individual confronting nature – with the result that building production is regarded as a physical rather than a social process and social relations of production are obscured.

True, Nick Beech in his article (pp. 245–52) maintains that the contracts he discusses represent a medium by which the demolition industry was being transformed. But can this really be understood from the evidence presented, which is largely drawn from a section of Marx's *Capital Volume 1*, written 150 years ago and inspired by Adam Smith's treatise on the division of labour?¹ Though Braverman (1974) revived this notion of an ever more fragmented division of labour reduced, as described by Beech, 'to certain fixed forms dictated by the operation of the machine' whereby the labourer's skills and knowledge 'shift from a conventional to a technical knowledge', there is little

evidence to support it.² Indeed all the research work myself and others have carried out on the building process over a period of thirty years presents a rather different picture.

Through mechanisation, the demolition process has become highly skilled, crying out for a comprehensive scheme of training, as the National Federation of Demolition Contractors will attest. In a country such as the Netherlands, those involved in such work are likely to have gone through a comprehensive programme of training extending over up to three years, learning how to operate different machines in different circumstances and to apply knowledge of building physics and engineering.³ Britain remains primitive in this respect, with the demolition worker, while highly skilled, relying for the past thirty years or so on different schemes of training for operating different plant.⁴ This can hardly be

termed 'technical knowledge'; it is very much more than this as the process has become more abstract, requiring less manual skill and a wider range of competences.

The same can be said of the construction process as a whole. Britain's vocational education and training (VET) system for construction is weak compared with those in other leading European countries and has become increasingly dependent on migrant labour trained elsewhere. But in other leading countries such as Germany, the Netherlands or Denmark, it is almost impossible to work on a building site without at least a Level 3 qualification, involving a comprehensive VET programme and representing a far cry from Braverman's deskilling thesis.⁵ Indeed, with today's energy targets, an ever more integrated and less divided process is required to eliminate the heat loss which can occur at interfaces between different trades, such as between



1 Traditional brick housing



2 Barbican Tower under construction

the wall and the window, the work of the bricklaying and carpentry subcontractor respectively.

That we can look at a building, such as a traditional house [1], and gain an idea of the division of labour associated with its production from the different elements and the divides between these, whether the roof (roofer), door (carpenter) or brick wall (bricklayer), does not mean that the physical object itself directly mirrors the social division of labour. Rather the other way round; our knowledge of the social relations of production gives us an insight into the nature of the building form produced. But how can we gain an understanding of these social relations, if not from the built product itself or from the technical specifications, contracts and drawings that prescribe and describe this? Construction history is largely reliant on these, as key remaining sources of evidence.

There are, however, other sources. Visual material, in particular photos, as wonderfully shown in Nick Beech's article depicting the 'topman' and the 'mattockman', can give us considerable insight into the social relations of production. So too can documents such as site diaries, recording labour on site, which we have used to great effect to understand the input of different occupations and to measure productivity (Clarke and Herrmann, 2004).⁶ But there is no better source for understanding social relations of building production, changes in these and the problems involved in translating a design into a product, a concept into reality, than the building workers themselves.

Take the construction of the Barbican [2], where it is impossible to read-off from the actual building the labour process involved in producing it, especially the complex shuttering work involved. This was not easily priced work and no wage sheet will ever tell us about the disputes and even the work involved for the carpenter, as described by Noel Clarke, a shuttering carpenter:

I think I was on the third floor for Laing's and then, this is where all the trouble started about bonuses, some of the workers was getting gang bonus [...] somebody else was getting the individual bonus. [...] Then, if you put up a load of columns in the day, they'd start pouring concrete about four o'clock, so again, you got to acro it up and plumb them all up and then, and then they'd put the staging in, and there was a bloke up there in the crane would come around, and you were on stand-by then. Now, it might not finish pouring till about half-past five, six o'clock, but then, what you'd put up in the day time, you had the opportunity of staying back to plumb them up, check them to make sure that they were all plumb. They might need a tighten of the acro here and there. They might have got a knock with the bucket and knocked them out of plumb and things like that, but that's what you were there for, and then the row started there because, when you stayed back for plumbing up the shuttering, you might be there till eight o'clock, half-past eight, maybe nine o'clock of a night-time, with halogen lamps and everything like that. Then, when you got your bonus, your bonus was the same as the person that left at six o'clock, and then there was a row over that.⁷

Far from representing purely 'technical knowledge' 'objectified in the machine', the mechanisation of the construction process and the use of machinery has required new skill and a great degree of precision. For instance, Vic Longhurst, an excavator driver on the M1 Motorway in the 1960s, shows that he is in complete command of the machine, not the other way round, and able to achieve accuracy to a fraction of an inch:

Then you get where you've got a bank to cut through for what they call the batter, and then the verge at the bottom, and then you've got your piece between that and where your actual motorway starts. If you're going through a bank of muck, you would have a batter that side and a batter that side, and then you'd have your verge and then your road surface, outside, and then your actual motorway would start. So when you went along, it was all fenced off, and

your pegs would be inside, and then you'd scrape the topsoil off that, and then you'd come in so many metres, and then you'd have what they called your verge, and then you'd start your edge of your motorway, and work in then to your centre, reservation, right, and then, on the other side [...] you just put it 20 or 30 yards just off the side of your motorway, up on top of the banks [...] And then you had your next piece, which came up to the edge of your motorway [...] your motorway was cut lower because it'd got to get gravel, concrete, and all that stuff for your base.⁸

The advantage of looking at the social relations involved in the building production process is that this is a value-producing process, whereas the social relations associated with, for instance, consuming the building product, as described by Anne Bottomley and Nathan Moore in relation to Highsett covenants (pp. 261–68), are not. And it is this value-producing process which gives us an insight into the dynamic of change in the built environment. At the core of the production process, its active and subjective agent, is the labour process, the process whereby labour is appropriated, subsumed and consumed. And, however hard we may look, technical building documents will not reveal this to us.

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Notes

1. Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, 1 (London: Methuen, 1776).
2. Harry Braverman, *Labor and Monopoly Capitalism: The Degradation of Work in the Twentieth Century* (New York: Monthly Review Press, 1974).
3. Linda Clarke and Christine Wall, *Skills and the Construction Process: A Comparative Study of Vocational Training and Quality in Social Housebuilding* (Bristol: Policy Press in association with Joseph Rowntree Foundation, 1996).
4. Linda Clarke, *The Building Labour Process: Problems of Skills, Training and Employment in the British Construction Industry in the 1980s* (London: The Chartered Institute of Building, 1992).
5. J. Janssen and W. Richter, *Arbeitsbedingungen der Bararbeiter* (Frankfurt-am-Main: Campus Verlag, 1983).
6. Linda Clarke and Georg Herrmann,

'Cost vs. Production: Labour Deployment and Productivity in Social Housing Construction in England, Scotland, Denmark and Germany', *Construction Management and Economics*, 22.10 (2004), 1057–66.

7. C. Wall, L. Clarke, C. McGuire and O. Muñoz-Rojas, *Building the Barbican 1962-1982: Taking the Industry out of the Dark Ages* (London: ProBE, 2012), p. 29.
8. C. Wall, L. Clarke, C. McGuire and O. Muñoz-Rojas, *Building the M1 Motorway* (London: ProBE, 2012), p. 11.

Documents – where the building becomes architecture?

Lawyers Anne Bottomley and Nathan Moore provocatively ask the fundamental question, 'what is a building?' (arq 16.3, pp. 261–68). In their paper, they suggest that a building comprises more than the brick-and-mortar material and spatial reality left out in the rain, but that fragments of it also exist in documentary form, located safely in various files elsewhere, each reflecting a small aspect of the whole like a piece of shattered mirror. The building, in other words, exists beyond its bounded site, and even beyond its temporal existence; both before its constructed reality and possibly after its demolition. Bottomley and Moore concentrate on the contractual aspects of a building's existence, not only between client, architect, contractor, component manufacturer et al. during its construction, but also between owner, user and general public during its life. The contracts describe the obligations of and relationships between the people involved in the building and as such they augment the building's sphere of influence and notion of what it comprises. Bottomley and Moore use the idea of the diagram to describe this augmented version of the building and in this way consider the material realisation as just one residue of what constitutes 'the building'.

Another aspect of this wider consideration of the notional building is the set of instructions required to build it – the drawings, schedules, bills of quantities, specifications, consultants' calculations, Architects' Instructions, and so on. While this ideation of the project could be considered the genotype to the realisation's phenotype, the trace of this set of documents provides much more than just instructions to realise an idea. For a start, it demonstrates the increasing fragmentation of the construction

industry's professionalisation and its increasing division of labour: as Jeremy Till has noted, no strong profession wants to be associated with 'things'. For every specialisation, there is a new set of codifications and documents. The range of documents also debunks the myth that a building is the work of a single author: teamwork requires communication, which requires documentation.

If, as Foucault has suggested, 'history is that which transforms documents into monuments', then considering a building's documents rather than the building itself may be a very postmodern way to think about architectural history. However, considering the physical construction as only one of many manifestations of 'the building' in its widest sense can aid the historian. Not only are paper documents easily and cheaply copyable, but they can be stored out of the elements and can therefore often outlast the life of the building itself and furthermore remain closer to the original representation of the architect's intentions. In addition, the communications between the parties involved in the construction process, as well as its intersection with national and local regulations and codifications, add layers of understanding to how and why the edifice is the way that it is. This is all valuable primary material for the future historian to paint a picture of the network clustering around the question of the edifice. The primary output of the architect, like that of the historian, is, after all, documents.

Post construction and hand-over, the final building is then documented once more in another fashion, by the photographers and critics for the magazines, lectures, exhibitions and books. Here the process of turning the building into architecture begins, transferring the original architect's mental image of the building to that of the consumer of the architectural culture industry. And in the process, more material is created for the historian.

Today, of course, documents are being created digitally rather than on paper and BIM is the buzz-acronym of the moment. When I was designing the NavisWorks software at the turn of the millennium, I envisaged a virtual environment where the information about the building and its components would be indivisible from its geometry. The design team would construct a

simulated building – the whole 'diagram' with all its invisible implications – *in silico* before it went on site. In this way, not only could everyone involved in the design and construction access the same information (from the cloud, all revisions fully traceable and managed), but the single building virtual model could be tested for validity *in silico* before it went on site. Its environmental performance could be checked, along with clashes, building regulation compliance, structural stability, scheduling, costing, and so on. The specification would be integral to the design, and contracts linked to it. If architects were canny, they would seize the opportunity to control this process and data and reclaim some semblance of power in the building supply chain. But the contractors and engineers were the early adopters.

The inevitable move to storage on silicon is all very well for the designers and builders, but having turned from architectural software to architectural history, I now have to ask what happens when the data is erased? How will the future historian construct the narrative of the building diagram (in its widest sense) when it only exists as ones and zeros on an unbacked-up hard drive? Either history itself will be forced to change its meaning, or new methods for mining archives will have to be developed.

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Heteronomous design

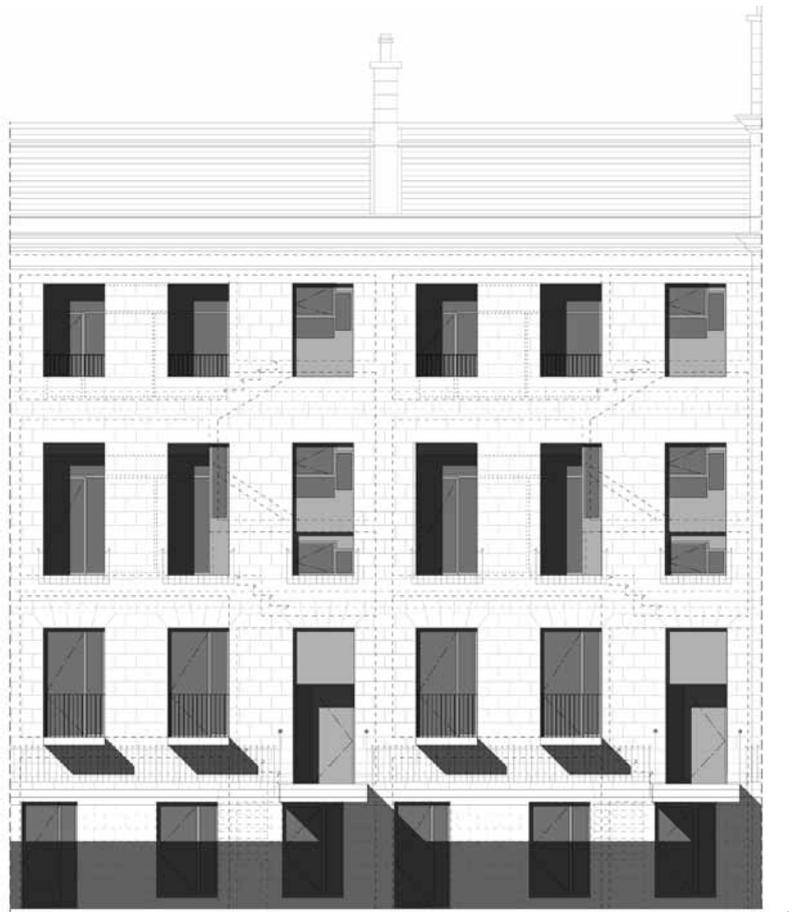
The 'Further Reading Required' symposium, documented in arq 16.3, which considered how building specifications, regulations and contractual arrangements shape architectural practice, seems to be indicative of a wider, reflective, mood in which the social position of architects is being subject to sustained, detailed, and sometimes critical, consideration. Literature documenting the development of architects' professional personas is not new (see for example Eisenman, 1984, Schön, 1984, Stevens, 1998). However, in much of this, and earlier writing, the tendency has been to represent architecture as a culturally distinct practice, in

which practitioners work in isolation from broader social, political and environmental contexts. One example of this is the building regulations. These continue to be characterised as something as external or in opposition to creative practice, which remains the preserve of the artist-architect.

The insular nature of the profession has been identified as an issue in a series of industry reports. In 'The Future for Architects?', Robinson observes that architecture is 'peculiarly vulnerable to a nostalgic backward glance at a bygone age in which the architect was the undisputed boss'.¹ While this may be an over-generalisation, the profession's failure to keep pace with new technologies, adapt to new contractual arrangements, as well as respond to more longstanding issues of distrust and poor communication between design and construction professionals, remains of concern. In addition to undermining build efficiency and quality, these factors threaten the long-term viability of the profession given the co-ordinator or managerial role that architects seem likely to move towards.

Reflecting these shifts, the persistent and largely mythical image of the architect as a heroic figure whose craft is the design and production of aesthetic objects has been challenged in recent years. The work of authors such as Jeremy Till and Lee Stickells has highlighted the relational nature of architectural practice, and called for recognition of architects' dependence upon others in producing the built environment.² This includes not just human actors, such as other design and construction professionals and building users – as Sarah Wigglesworth suggests (pp. 210–16) – but also non-human artefacts, including technical knowledges, as well as codes, regulations and legal statutes.³

Indeed, recent interventions have sought to show the potential for regulations, codes and other (quasi) legal apparatus to *enhance*, rather than stifle, the creative autonomy of designers, as Liam Ross shows (pp. 205–09) [3]. This is an argument made in our recent book, which explores the ways in which architects and other industry professionals conceive of, and work with, building regulations.⁴ The research revealed that architects' attitudes towards regulations were complex and



3 Liam Ross, diagram resolving BS8213 and Edinburgh City Local Plan Environment Policy 6, based on the facade of no. 6 Royal Circus in the New Town Conservation Area

ambivalent. Thus, while some practitioners expressed frustration about the way in which regulations foregrounded and/or restricted design solutions, others identified the ways in which regulations and codes could be used, proactively, to co-produce better designs. One example that architects commonly referred to was Part L of the building regulations which, it was felt, had helped to drive forward innovation in facade design.

This underlines how the practices of architects should be seen, not as emerging from a tabula rasa, but instead as heteronomous actions that are defined by the social and cultural contexts in which architecture is manifest. Acknowledging this is important not only for the production of a high quality built environment that is responsive to wider social, environmental and cultural needs, but also for the future relevance and longevity of the architecture profession itself.

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Notes

1. D. Robinson, C. Jamieson, J. Worthington and C. Cole, *The Future for Architects?: Who Will Design our Buildings in 2025?* (London: Building Futures/RIBA, 2011).
2. Jeremy Till, *Architecture Depends* (Cambridge, MA: MIT Press, 2009). Lee Stickells, 'The Right to the City: Rethinking Architecture's Social Significance', *Architectural Theory Review*, 16.3 (2011), 213–27.
3. Rob Imrie and Emma Street, *Architectural Design and Regulation* (Oxford: Wiley & Blackwell, 2011).
4. Ibid.

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