

Inside Out
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Hawkins/Brown's design for the new Biochemistry Building at Oxford University takes the usual typology for the university scientific laboratory building and turns it inside out. As discussed elsewhere in this book, the spatial paradigm for such architecture is normally to configure the activities associated with scientific research in the following way: To position the research laboratories where the experimentation is conducted on the inside of the plan, at the interior of the building, and to locate the 'writing-up' spaces where the research team develop their scientific findings for presentation in peer-reviewed journals, on the outside.

This configuration follows a certain functional logic: that since daylight is not a priority and the laboratories need complex sets of technical requirements, it is easiest to locate them close to the service cores of the building, which are themselves usually sited near the centre of the plan. This spatial ordering, although logical from a technical and space-efficiency perspective, has a social impact. By placing the laboratories on the inside of the structure, the work of testing and re-testing that goes on in within them gets perceived as a private space, somehow internal to the discourse of science and not easily available to anyone other than those directly involved in a specific scientific activity related to a particular laboratory. There are also implications for the spatial treatment of the writing-up spaces, which, because they are not often treated as a priority, get positioned on the outside of the building. This means it is often not possible to join them to one another, so they end up being separated in unlinked bays, or, due to other space pressures on the plan, situated inside the laboratories themselves.

Science research has a very particular culture; it is structured around research teams, organized hierarchically with a leading professor at the head, along with co-investigators, post-doctoral research associates and assistants, and doctoral students, who carry out much of the laboratory

work. After the experiments have been conducted and the results recorded, comes the task of interpreting the data and drawing out the potentially new contributions to knowledge to be presented to a more public audience. These research teams compete for funding on an international stage; applications for research projects are assessed by peers, so too are the completed papers, which are ranked according to the status of the journal in which they are published and the number of times they are cited. A cellular model of space which gives each research team a bounded space for conducting experiments, discussing the results and writing up them up, plays into a culture which already has a tendency towards specialism and competition.

We might also understand the processes of scientific research to lend themselves towards a private-public distinction, where private laboratory work and data interpretation is followed by the public dissemination of the results. Such a distinction can get reinforced through the spatial distribution of a design programme, which places the laboratories on the inside of the building and distributes the writing-up spaces separately on the outside.

In order to question this spatial division and explore new architectural possibilities and their connection to the social relations of science research, for the Biochemistry Building at Oxford University, Hawkins\Brown decided to take a different approach to the arrangement of their architectural design. The decision to inverse the usual spatial configuration, to turn things *inside out*, is a challenging one, and has produced exciting results. To place the laboratories on the outside of the building means that the internal processes of scientific research are made visible to others not only from within biochemistry but also, and importantly, to other disciplines within the university, and to those Oxford citizens who might just be passing by. To locate the writing-up spaces on the inside of the building around a central atrium, means that instead of positioning these activities in separate rooms, each next to one another, but looking out at the world, the process of analysis and interpretation is rearranged around a communal space of

potential interaction. The architectural layout encourages interchange and dialogue, the internal four-story atrium makes it possible for the different research groups working in the building on their separate results and papers, to be in contact with one another, to at least see each other, and, if quite close by, to eavesdrop on conversations, and, of course, to choose to discuss projects together and perhaps to collaborate.

Today's research culture is moving towards a greater emphasis on inter- and multi-disciplinary research; we are seeing the emergence of an ever-growing number of networks and clusters, not only across the sciences, but linking into the social sciences, the arts and humanities, and design-led research.ⁱ Attempts to address the social, cultural and environmental challenges we currently face are taking place through the establishment of groups that bring together expertise from a number of different disciplinary backgrounds. Hawkins\Brown's Biochemistry building provides a fascinating living text-case of how an architectural design might operate to enhance collaborative working practices. It is becoming increasingly clear that top-down initiatives do not necessarily spawn the most ground-breaking research, and that the energy required to push through research that challenges existing paradigms needs to be generated through the genuine excitement formulated by chance encounters. In this way an architecture which provides such possibilities – for overlapping conversations and multiple random interactions – stands a much more likely chance of stimulating new ways of approaching given problems than one in which research takes place in unlinked spaces with no visual connection and a lack of shared communal routes and activities.

The 'site-writing' that follows is an attempt to respond to the innovative qualities of this architectural design by performing them textually. Site-writing is a new form of criticism that I have been developing over the past ten years which aims to perform the spatial qualities of an artwork or piece of architecture through textual strategies.ⁱⁱ If, following cultural critic Mieke Bal's definition, 'art-writing' is a mode of criticism, which aims to 'put the art

first',ⁱⁱⁱ then site-writing aims to put the *sites* of the critic's engagement with the work, with art or architecture, first. These include the sites – material, emotional, political and conceptual – of the work's construction, use, exhibition and documentation, as well as those experienced, remembered, dreamed and imagined by the critic and other producers and users.

Site-writing configures what happens when discussions concerning situatedness and site-specificity extend to involve criticism, and the spatial qualities of writing become as important in conveying meaning as the content of the criticism. Site-writing suggests that in operating as mode of a practice in its own right this kind of criticism questions the terms of reference that relate the critic to the work positioned 'under' critique, and instead proposes alternative positions. This process is a textual one which reconfigures the sites between critic, work and essay, and in so doing constructs a space for reading criticism, an activity and place I have referred to as an 'architecture' of criticism.

To aim to 'write' a building rather than to 'write about' one, does not simply wish to copy the building in a textual form, to remake an architecture of bricks and mortar, steel and glass, in paper, ink and glue. Rather it is interested in the very act of attempting to reproduce the building in a written form, for it is here that the experience of interpretation central to the work of¹ criticism takes place. It is in considering which aspects of a building are the most interesting to reproduce, and in deciding which processes will best allow one to translate the methods of one discipline or medium into another, that choices are made which are themselves informed by acts of interpretation, of trying to find meaning in an encounter with a specific design process and an engagement with its attendant objects. The task of translation, as cultural critic Walter Benjamin has pointed out, is one of transformation and invention.^{iv}

In this case, my critical take on Hawkins\Brown's Biochemistry building, is that its most original proposition is to invert the normative layout of a biochemistry plan. This site-writing is therefore a performative response to my understanding of the design decision taken to turn the programme inside out. In order to draw attention to this design move, I decided to try and to reproduce the spatial inversion in textual form. My intention was to open up the hidden and more private processes of laboratory experimentation by revealing them through the more public face of the later research phase of writing-up.

There are many ways in which I could have done this. In terms of the public side, things were a bit simpler – it seemed to me that most public face of science research exists in the papers that are published and through which scientists gain their reputations and new knowledge is disseminated to an audience of readers. In terms of the private aspect of the laboratory, my approach was a bit more complicated. I thought initially about using microscope-derived images or data charts, but realized that as these are often already shown in refereed papers, this would not reveal anything unusual or new about the scientific process. So I made a site-visit and in my explorations through the laboratories, I started to wonder whether photographing the paper waste in the dustbins, the notes on the white board and the print on the boxes containing the equipment in store rooms, might draw people's attention to the textual materials that are not usually focused on. I also spent some time snooping around the writing-up spaces looking for notes thrown away, and hours in the café listening to conversations – spoken words – hearing details about holiday plans, visits to the pub, and arguments with family. But all this seemed to me both slightly too obvious but also somehow not pertinent enough to the scientific process or the design-act of inversion.

As part of my research I engaged Professor David Sherratt, a senior scientist and laboratory leader in the Department of Biochemistry, and one of the

commissioners of the new building, in conversation. I asked him to tell me about how contemporary debates around inter-disciplinary research were being played out in biochemistry, the usual methods adopted in scientific research, the set-up of laboratories and their associated research teams, and his own working processes.

Through our conversation it became clear to me that the most interesting private thing about the processes of scientific research to an outsider are the ways in which initial ideas are formulated. I said this much to David, and in response, he found one of his notebooks and flicking through it opened the page on some hand-drawn sketches and diagrams. This is material that rarely gets shown to the public, and as a result it holds remarkable fascination, or at least it did for me! The sketches are very similar to those architects make through the design process. Drawn in biro on lined paper, they are perhaps not quite so visually appealing, but their value is not to be found in the way they look, not in their artistic nature, but rather in the fact they are so seldom, if ever, revealed to an audience beyond the scientist him or herself and perhaps close research associates.

David then went over to the bookcase and took a copy of a refereed journal off the shelf to show me. It contained a paper in which he and his team had published the end results of the project whose early concepts were expressed in the sketches. This text was in formal print, with all the relevant data and interpretative argument carefully laid out. The contrast between these two textual documents provided a precise example of the inversion I was looking for.

So for this piece of site-writing I decided to display the opening and closing pages of the scientific paper from the refereed journal on the outside. When the pages are turned and then opened by the reader, they reveal a series of images hidden within the folds of the book. These are the sketches of a biochemist, diagrams drawn as part of a personal process of concept

development. Looking at them and attempting to decipher what they mean provides a moment for the reader, especially for the non-scientist, where the research process is turned inside out.

Credits

All diagrams are kindly reproduced from the workbook of David Sherratt. The four pages from the referred paper by Jan Lowe, Antti Ellonen, Mark D Allen, Claire Atkinson, David J Sherratt and Iain Grainge, 'Molecular Mechanism of Sequence-Directed DNA Loading and translocation by FtsK', *Molecular Cell*, vol. 31, no. 4, 22 August 2008, pp. 498-509 are reproduced with permission of Elsevier.

ⁱ See for example Jane Rendell, 'Architectural Research and Disciplinarity', *ARQ* (2004) v. 8, n. 4, pp. 141-7.

ⁱⁱ See Jane Rendell, *Site-Writing: The Architecture of Art Criticism*, (London: IB Tauris, forthcoming 2010). Also see Jane Rendell, 'Architecture-Writing', *Journal of Architecture* (June 2005) v. 10. n. 3, pp. 255-64 and Jane Rendell, 'Site-Writing: Enigma and Embellishment', in Jane Rendell, Jonathan Hill, Murray Fraser and Mark Dorrian (eds) *Critical Architecture* (London: Routledge, 2007).

ⁱⁱⁱ Mieke Bal, *Louise Bourgeois' Spider: The Architecture of Art-Writing* (London and Chicago: University of Chicago Press, 2001) p. xii.

^{iv} Walter Benjamin, 'The Task of the Translator' [1923], in *Illuminations*, trans. Harry Zohn, edited and with an introduction by Hannah Arendt (London: Fontana, 1992), pp. 70-82.