

The tortoise, the scorpion and the horse – partial notes on architectural research/teaching/practice

Mark Dorrian, Adrian Hawker

Metis and Department of Architecture, University of Edinburgh, UK

1. Introduction

Any discussion of design as research must begin by locating it within the broader context in which it operates. Architectural research is rarely, if ever, pursued in isolation: rather it is developed in the complex environment of the institutions of higher education and the offices and studios of the profession. The definition of the term 'research' within architecture is notoriously problematic, and its relationship to 'teaching' and 'practice' apparently ill-fitting and awkward, particularly when judged by the templates of other academic disciplines. Yet, equally, schools of architecture are at present experiencing increasing pressure, exerted by internal and external bodies (research assessment panels, professional validation boards, quality assurance inspectors, etc.) whose individual fields of concern relate primarily to only one of these strands, to clarify their differences, outline their structural procedures, and measure and assess their output in terms of levels of achievement under each heading. In identifying and articulating the issues that now face the context in which design as research takes place, we will put forward the view that what is of key importance in the acknowledgement of the three terms is not the legislation of their differences, but an appreciation of the complex and reflexive relationships between them, for these give rise to a variety of fluctuating conditions that are crucial sites for

architectural thought and production. Our view is a partial one, and is related to our perspective as founders of Metis – an art, architecture and urbanism practice situated at the intersection of the research/teaching/practice complex – that we founded at the University of Edinburgh in 1997. In what follows, our remarks on design as research are intended to address only those situations in which the 'research output' is an architectural project that is to be judged in qualitative terms. We are not here concerned with research of the 'building science' type, or with written output, such as that of architectural history: both of these are, in terms of research recognition at least, relatively unproblematic.

2. Research/theory

Contemporary demands placed upon the academy have resulted in a situation in which the question of the status and meaning of the term 'research' has, in many regards, replaced the same question as directed toward 'theory' as a major problematic within schools of architecture. If, fifteen years ago, the familiar question was 'What is architectural theory?', it is now 'What is architectural research?' Certainly the current debate seems to reproduce the old dilemmas. Architectural theory was always perceived to have a difficult relationship with its discipline, certainly when compared to the role of theory in the natural sciences (alongside which it

has often appeared inadequate). Whereas in science, theory is expected to produce propositions that are falsifiable through experimentation carried out in controlled environments whose results are subject to scrutiny by repetition, in architecture none of this holds (except, perhaps, in the most trivial way). In science, this process seeks to transmute 'theory' into 'knowledge', the ultimate regulative ideal being an overcoming of theory *per se*. From this perspective, a theory (such as architectural theory) that can never surpass its own status as theory is questionable, to say the least; and while its detractors might acknowledge architectural theory to be in some sense enabling, it is normally argued to be merely a vehicle for ideological commitments. The response of its proponents, of course, is that theory is precisely what permits the problematisation and exposure of those commitments and so offers openings onto alternative ways of working.

3. Boundaries

The enforcement of clear distinctions between the terms in the research/teaching/practice complex serves administrative, judicial and legal interests. These distinctions – which are grounded in a logic of mutual exclusion – become the basis for the establishment of criteria for assessment, protocols for action, and rights and duties exercised within the fields to which terms point, and are cemented within institutions which represent, direct, and facilitate the various activities that are carried out under their sign (the funding body, the university, the professional institute, etc.). However it seems to us that these distinctions, if rigidly construed, are

highly problematic, indeed not least because of the institutional and organisational forms and practices they authorise. Instead of attempting a purification of the terms (which serves the institutionalisation, but rarely the pursuit, of architecture), it is better to be attentive to the specific conditions of architectural inquiry which show their relationships to be more complex and pliant than at first appeared. An appreciation of the mutual imbrication of the fields and of the dynamism and mobility of their transactions is crucial, not least because it counteracts the familiar tendency to privilege one term which is then conferred with 'authenticity' and gains a legislative function with respect to the others (the 'reality' of architectural practice – as currently configured – against the activities pursued within the academy; the primacy of the exploratory work developed in the academy over that fettered by commercial demands and interests, etc).

4. The siege machine

The title of this paper refers to three zoomorphic siege machines that operate upon and transform border conditions. They are introduced at the outset as architectural tropes for the various breachings of the distinction between research, teaching and practice (and their concomitant institutions) that these notes argue are necessary. The first two, the Tortoise and the Scorpion, are drawn from the tenth book of Vitruvius, in which their construction is carefully documented. The Tortoise, made with a thick skin of 'rawhide sewed together double and stuffed with seaweed or straw soaked in vinegar', is a tank-like assemblage that allows a defended boundary to be approached (Vitruvius, 1960,

p. 312). By means of the Tortoise, defensive ditches surrounding a city can be filled in, thereby allowing the passage of the machine right up to the city wall itself, which it then attacks by means of a battering ram or by excavation. The Scorpion, on the other hand, is a catapult strung and tuned with 'twisted hair, generally women's, or . . . sinew', a machine which itself might be mounted upon a Tortoise (Vitruvius, 1960, p.306). Both of these are emblematic apparatuses which work violently upon the boundary: they stand beyond, on the outside, and break it down. But there is another, very different kind of siege machine, which Vitruvius does not mention. In contrast to the mechanisms that he discusses, the wooden horse of Troy is a subterfuge. A product of *metis* (see below), it is a boundary apparatus that operates through smuggling, displaying by turns contrary characteristics, first this and then the other. Our interest in it as a trope in the present context, lies in its character as a mechanism that produces certain reversals across the structural divide of interior and exterior. It is a medium through which something from the other side is transported across boundaries in such a way as radically to transform the character of what lies within.

5. Teaching

What is it to 'teach' architectural design today? Clearly, in a period that has been characterised as one in which the universal has failed (Lyotard, 1986, p. 30), it can no longer be presumed to be about the transmission of a set of truths. Consequently, we must recognise that the role of the tutor is primarily that of a participant in the architectural

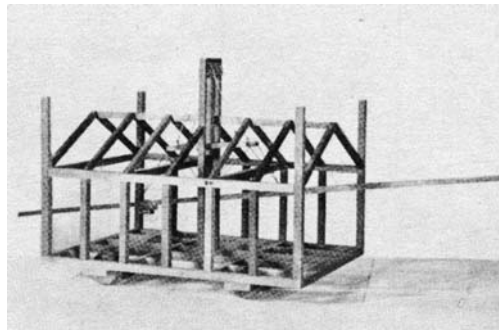


Figure 1. Hegetor's Ram and Tortoise, from a model by A.A. Howard.

process: the way that s/he operates – through experience, guesswork and anticipation – is not different in kind from the way that the student works, and so starts to look less dissociable from it and also from the situation of the practitioner, than it otherwise seemed. Furthermore, in the absence of a teleology or destination for the project beyond the architectural problematic set out in the initial 'brief', its pursuit enters into a condition of inquiry, an inquiry which constantly redirects questions back to its own grounding as constituted by the 'brief' or

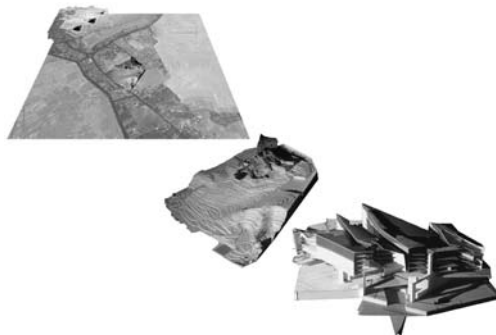
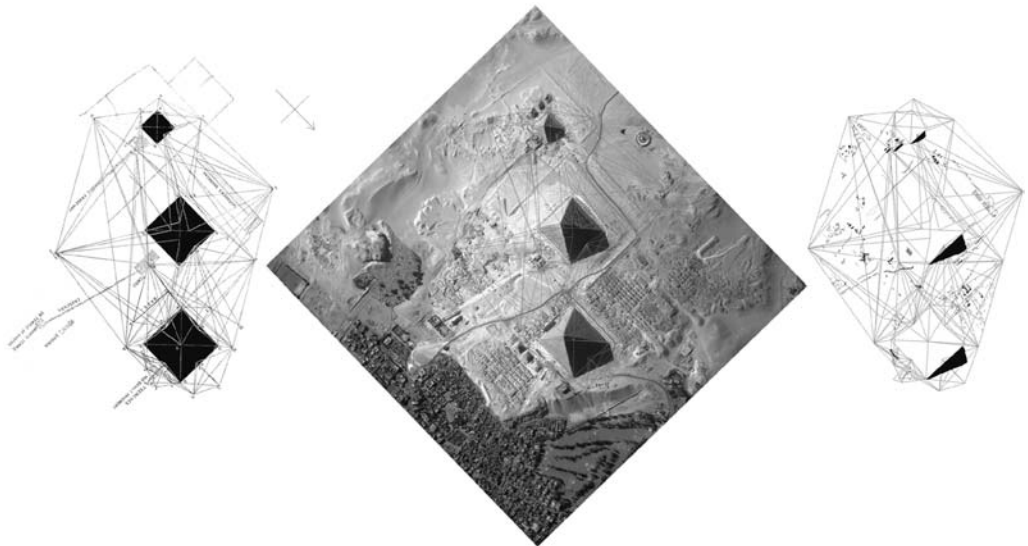


Figure 2. Metis, Egyptian Museum, overview of model in relationship with the Giza Plateau.

Figure 3. Metis, Egyptian Museum, the triangulation survey of the pyramids by Flinders Petrie 1881, the survey overlaid on to the aerial photograph, the shadows caught in the web of survey lines.



originating document, which is now placed under a radical contingency. Thus the activity of the 'taught' design studio inevitably emerges as a kind of research, the kind which develops under the question *What if . . . ?* And this in turn unsettles even those aspects of architectural knowledge that seem most stable and straightforwardly transmissible – techniques – insofar as they are confronted with unexpected and problematic contexts and hence solicited for new performative possibilities.

6. Assessment

If the design work pursued within the academy is inevitably experimental, what does this mean for the status of the results and how they are assessed? Whilst the architectural proposal is necessarily

always judged in terms of the relevance of its responses to the broad field of aesthetic, cultural, economic, environmental, political, and social concerns and ideas that weigh upon it, something that needs to be stressed is that the projects which operate in the way we have in mind construct, in important ways, their own criteria for assessment. As the projects develop, a set of 'internal' demands emerge within them, and this is in fact directly related to their character as research. A key question, in other words, becomes the rigour with which the projects have fully explored and expanded, in the context of the architectural investigation, the opportunities immanent within the approaches from whence they emerge. Thus a relevant question for assessment must be not just the extent to which



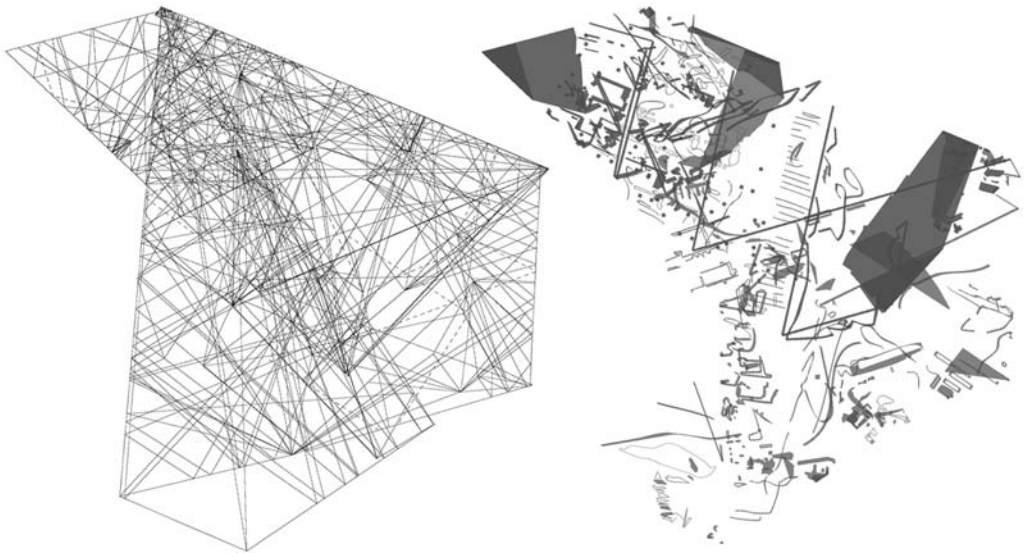
Figure 4. Metis, Egyptian Museum, the folding of the survey lines on to the museum site.

a project has met the demands of the brief, but equally the extent to which it has done so by, apparently paradoxically, contravening them (this last point hinging on a kind of second-level assessment which understands the brief itself as a text that is installed within a broader problematic or poetic which permits its reconfiguration while still being faithful to it).

7. Research

If, as has been claimed above, the activity of the design studio is 'a kind of research', how might one characterise its output and what is the status of its results? Normally 'research' is understood to involve the establishment of a new condition of knowledge. As such it is a discursive phenomenon which is (analytically) concerned with discovery rather than

Figure 5. Metis,
Egyptian Museum, the
folded web of survey
lines and the
consequential folded
shadows of the
pyramids.



(synthetically) with invention. Research, thought in this way, is always capable of being 'written up', and this ensures its communicability and hence the ability of its results to be systematically incorporated, as a new 'ground', into further research programmes. There are clearly difficulties in bringing this logocentric concept into contact with the productions of creative disciplines, architecture being a case in point. The result of an architectural project is the project itself, and this is never, in a straightforward way, identical to any set of statements that might be made about it. Here the inevitable opacity, muteness and intractability of the architectural object makes itself felt: and while analytic and procedural narratives might be woven around it, it is always 'other'. Architectural dis-

course and its objects never sit in an illustrative relationship to one another: the object always says simultaneously much less and much more. Hence, the accounts architectural discourse gives of its objects are always 'partial' in the twin senses of that word: first, they favour and foreground a particular reading of the object in an attempt to bind its material reality to an interpretation which (however reductive the project in question might be) it is always on the point of escaping; and secondly, they are always incomplete and – no matter how persuasive – prove unable to encompass their object. Thus the problem for thinking design as research is not so much that no linguistic formulations are produced, but rather that they appear excessive. Instead of arriving at a statement of fact, we end

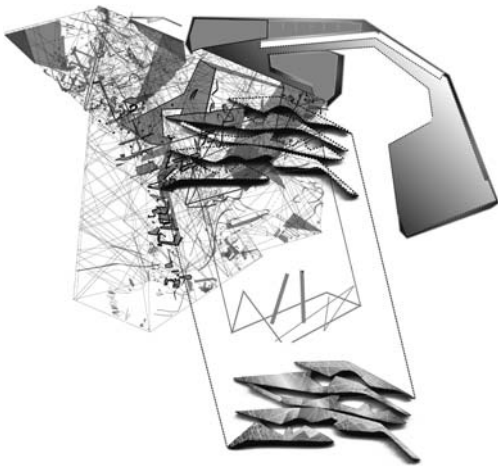


Figure 6. Metis, Egyptian Museum, the vessels of the permanent collection located over the inhabited topography of the folded web.

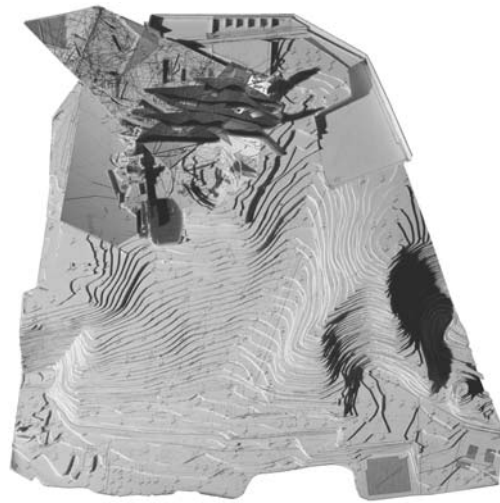
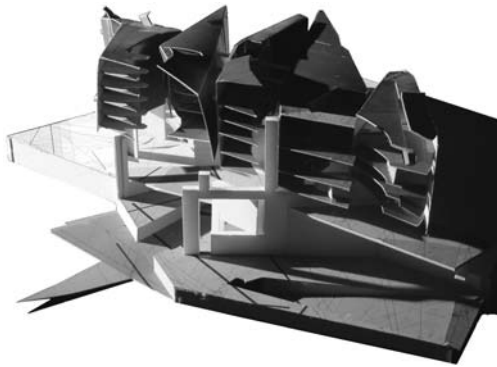


Figure 7. Metis, Egyptian Museum, site model of the museum on the desert escarpment.

up with a kind of heteroglossia that circulates around the object. Where research, as normally thought, aims to arrive at a result that is 'beyond' interpretation, the output of design as research is necessarily delivered, in important ways, *prior to* interpretation. Given that, what claim can it have actually to be research? On one hand, in the way – and to the degree – that it inaugurates the new: and this will be related precisely to the pertinence and productivity of what interpretation unfolds from it, and the way in which its results prove, in architectural terms, compelling and 'good to think'. And although, given the contingencies of the process of architectural design (which always develops as a singular and never simply repeatable 'event' in a context of shifting multiple informants), no formulae can be thoroughly tested or convincingly drawn from design as research (or if they can, they result from a drastic flattening-out of the architec-

tural problematic), that certainly does not mean that nothing is carried on or extracted from it. Something that is developed, on which we want to insist, is a sort of canniness, an increased sense of the performative and productive possibilities of the approaches to architecture being examined. This is a much looser, ambiguous, and unquantifiable kind of knowledge than that normally presumed to be gained through research. In speaking of this, we like to invoke Marcel Detienne and Jean-Pierre Vernant's brilliant discussion of *metis* in Greek thought (Detienne and Vernant, 1991).¹ They describe it as a kind of craftsmanly knowledge or cunning deployed in complex and mobile contexts that are unamenable to logic. Alien to all that is absolute and determinate, *metis* is exercised from situations positioned within the milieu with which it seeks to work. Resolutely anti-ideal, it claims no

Figure 8. Metis,
Egyptian Museum,
sectional study model
of the vessels of the
permanent collection.



transcendental authority: rather it draws upon a sort of foresight, a constantly shifting sense of possible outcomes and how to grasp them through the fluctuating material medium of the world. It is this kind of foresight that design as research serves. Moreover, it seems to us that, generally, these terms offer one of the most convincing ways of thinking about the pursuit of architecture today and, more specifically, the value of architectural education and, indeed, design as research.

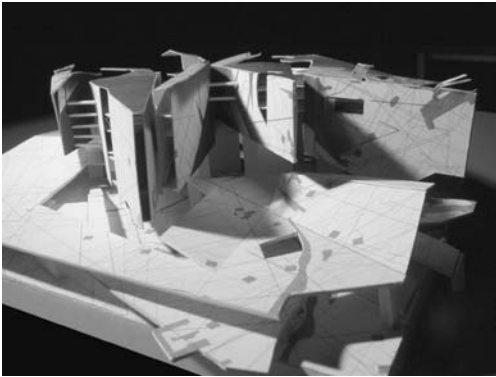
8. In defence of the obsessive character

As opposed to arenas in which the starting-point or research programme is drawn out in advance and receives collective agreement (by, for example, a scientific committee), when design is pursued as research it often emerges from the preoccupations of an individual: that is, it springs from a point of departure that receives limited or even no social recognition and that appears to be inordinately and incomprehensibly fixed upon something that it shouldn't be. (While the story of the genius who is

'ahead of his time' – and therefore out of joint with it, and at odds with the social consensus – tends also to be initially framed in these terms, it is narrativised in a very different way. The actions of the genius are secured under the sign of his superior authority; and time, thought in terms of progression, comes to reveal their truth and meaning. With the obsessive, however, this aspect of command and control is missing: the obsessive is transported, compelled by his/her object, and is less authoring of it than authored by it.) Rather than the object of the obsession playing a due part in the overall field of architecture, architecture becomes – to the contrary – diverted and forced to flow through the object. Thus the obsessive constantly poses the question to architecture, *What if . . .?*; and it is this reason why s/he is an exemplary researcher.

9. Researcher as practitioner

Why is the obsessive so disturbing? Because the obsession threatens our own stability. The obsessive's relationship with the world appears out of joint due to his/her unreasonable fixation, the extremity of the pathology deriving from the degree to which it departs from the understandable. The obsessive provokes the anxiety that the obsession could become ours: that as our attention is forced onto objects and we are led to consider them in a way that is 'unnatural', we start to participate in the obsession and by doing so lose ourselves. Is this not the lesson of that epitome of an architectural research culture before the 'era of research', the Architectural Association in the 1970s and 1980s? The productivity of the teaching units was built upon an isolation of themes which architecture was



then forced to flow through. It was fuelled by the extremity of the propositions and not by briefs which sought a 'balanced' design. Through the dissemination of the work produced (by books, exhibitions, catalogues, etc.) a culture of reception for it was cultivated. The common wisdom elsewhere had it that the projects being done in the school at the time were completely alienated from the conditions of practice; that they were purely 'theoretical', driven by impossible scenarios, programmes, obsessions. Yet these obsessions spread and eventually became society's as well, and the 'theoreticians' turned out to be the exemplary practitioners.

10. Practices

At present we are in a period of increasing pressure to instrumentalise architectural design teaching under the banner of a greater responsibility to the profession. The argument runs that the didactic environment should more accurately mirror the

professional one in order to train students to operate efficiently and capably within an office environment. It seems to us, however, that education most faithfully responds to the profession not by mimicking its structures (which are in any case fluid), but by setting up a context within which it can be constantly reimagined, and which provides an arena for the development of ideas and approaches which challenge and nourish it in multiple ways. It is important to avoid thinking in mutually exclusive binaries: architectural projects pursued in the academy are often most productive when architectural speculation emerges in view of and strategically interacts with the institutional structures within which the profession is pursued. In conclusion, the term 'practice' in architecture has become virtually synonymous with the profession and its legislative codes; it is therefore now difficult to use it in its wider sense which slips less easily into the familiar dualities. We have to be prepared to think of practices rather than a singular practice which is identical to the profession as legally defined; and, further, to consider architecture as a broad performative field within which multiple practices are pursued and interact, including practices of teaching and research.

Note

1. One of the reasons why *metis* seemed interesting to us – and we first used it in an educational context – is that it showed a way of talking about craftsmanship that maintained an emphasis on material possibilities yet, at the same time, was far removed from the idealities of beauty and 'truth to materials', and more generally, from the theology of craft that is so strong in

Figure 9. *Metis*, Egyptian Museum, the vessels and the inhabited topography of the folded web.

anglophone architectural education (Dorrian and Hawker, 2002).

References

- Detienne, M. and Vernant, J-P. (1991) *Cunning Intelligence in Greek Culture and Society*, trans. J. Lloyd (Chicago, University of Chicago Press).
- Dorrian, M. and Hawker, A. (2002) 'Introduction: Postscript as Pretext', *Metis: Urban Cartographies* (London, Black Dog), pp. 8–11.
- Lyotard, J-F. (1986), 'Response to Kenneth Frampton', *ICA Documents 4: Postmodernism*, ed. L. Appignanesi (London, ICA), pp. 30–31.
- Vitruvius (1960), *The Ten Books on Architecture*, trans. M. H. Morgan (New York, Dover).