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Rethinking architectural education at a time of rapid change

Increasing intellectual capacity in practice

Education for an even smarter profession

Gordon Murray

All major changes in our visual environment are signs of a concomitant change in our technical, economic and scientific paradigms.[1]

The foundations for today's profession were laid by Brunelleschi when he sought to differentiate, purely by ability, the architect from the artisan or craftsman. The realisation of architecture became a mathematical construct involving geometry, perspective, and the innovative orthogonal projection of the plan. In his essay 'Do You Remember Counter-Revolution?: The Politics of Filippo Brunelleschi's Architecture', Pier Vittorio Aureli writes that architecture 'is not just shelter but the representation of an idea of order and the systems that institutions impose so as to avoid disruption to that order'.[2] This is the counter-revolution, the early fifteenth century, consolidating its authority. In this regard, Florence then was little different from Frankfurt or London today. Thus, Brunelleschi was arguably the first architect in the sense of being a clearly recognisable professional figure whose agency was independent from that of the builder. He disempowered the collective nature of building by reducing it to a singular set of ideas: the principles established by the architect.

The plan, underlining the architect's authority, also helped the administration of public works by permitting assessments of costs and programme, whilst imposing on the city a common rational system of measurement. This was no small detail in a city such as Florence and could also be argued to mark the beginning of urban planning as we now know it. This separation of artist from artisan has gone full circle, not returning to a renaissance ideal – those days of the architect as master are long gone – but understanding craftsmanship as a fundamental in creative thought. Consequently, I would argue that we need to return to basics or to a set of basic precepts.

Profession and pedagogy

In 2012, **arq** published my 'perspective' article 'Education for a Smarter Profession' (16.4, pp. 281–4), which was followed by the presentation of an edited version at the Royal Incorporation of Architects in Scotland (RIAS) Convention itself published as an RIAS Practice Paper titled 'The Profession and Pedagogy'. It set out some ideas about how, as an advanced profession, we could respond to shifts in society – in the economy, in construction industry and thus in the profession, to make it more effective; and in education to better support a wider view. Assuming this change was ours to make, that it was within our gift, that all we had to do was to reinforce its urgency was completely erroneous.

I believe the last time our profession had a truly proactive opportunity to change its engagement with society in the UK was in 1946, with William Beveridge, Clement Attlee, and the new postwar state. The condition was recognised by that new generation of architects, William Holford, Berthold Lubetkin, Leslie Martin, and Robert Matthew among them. By the time of the Martin-inspired RIBA Oxford Conference on architectural education in 1958, this was consolidated into a fully professionalised education system. This served us well for perhaps twenty-five years. However, we must now ask a question about who will deliver the built environment of the future? The next generation of graduates are more savvy, have a strong moral compass, and are agile in digital networks. They are reinventing the profession of architecture in a way maybe not seen since Brunelleschi, underlining that there are as many architectures as there are architects. Yet, in the UK, they remain nearly all served by that single educational model.

Politics and entrepreneurships

Since the days of an architecture and a profession in service of the state, we in the UK have seldom been more than bystanders. Change is happening with or without us: in terms of procurement, the digital movement, big data, and now Britain's exit from the European Union. Rather than knee jerk short-term responses to these shifts, we need to differentiate between these and the root of architecture, to agree some common ground. A Cambridge conference of April 1970 attempted this and began to

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question our changed position. Ove Arup's paper on the education of architects was written just two years after the events of 1968. To quote M. J. Long and Peter Carolin's 'leader' in **arq** (2:2, 1996), 'In Paris, where architecture students helped rip up the streets, the last vestiges of the Beaux Arts system collapsed, while in New Haven, where Paul Rudolph's Yale architecture school was set on fire, advocacy planning took over.'[3] When they returned to the studios and lecture rooms it was, to quote Arup, 'sociology and the rest' that the students wanted to learn about, 'Today's students are deeply conscious of the ills of society – but sociology hardly features on their list of priorities. New enthusiasms – poetics, materiality and prosthetic machines – have emerged.' It offers a glimpse of an unrecognisably distant future.

In his paper, Ove Arup then asked:

> *Who is the client? Why are we building at all? To use the skills we have acquired to make a living by, or to make this planet a better place to live in for ourselves, our children or mankind. There are many of our students who want to stress the second aim.*[4]

Now, as then, students are all globally aware, politically engaged, and can fill in the gaps, responding to individual needs and desired directions. They have become used to that over the last ten years. Students get entrepreneurship – but by osmosis rather than by course direction, due to the attrition they face in continually seeking out ways of funding a quality education programme that they inevitably end up doing for themselves. One way or another, they pay for their education.

Today, I believe, above and beyond all the specialisms, they seek those absolutes – the idea of basic precepts, of history, materials, culture, craftsmanship, making, understanding making – design as a management tool, design as an analytical method of thought. We are no longer sure what is at the core of architectural knowledge but if we try to define it in terms of the absolutes it is surely about climate and history: the physical and the cultural. At its heart, rational thought explored through the art of drawing. Not the hegemony of Brunelleschi's plan but drawing as the generator of the idea. The recognition that the hand guides the brain. The hand creates the space to think.

Again in 1970, Zhou Enlai, the Chinese premier at the time of Richard Nixon's visit to China during the cultural revolution, when asked about the impact of the French Revolution, reputedly replied, 'it's too soon to tell'. Today's post-Brexit students don't have time to wait to assess the longer-term impact; it's a luxury they can't afford. They must act now. This shift in thinking must also impact on the profession. Many schools of architecture are currently reappraising their headcount in the face of an unknown quantity of new overseas students. The loss of that market could be destructive.

Innovative disruption

In 1942 the Austrian, Josef Schumpeter, coined the term 'creative destruction': capital's ability to reshape markets and business models. He wrote of: 'Incessantly revolutionising the economic structure from within, incessantly destroying the old one, incessantly creating a new one.'

In the 1990s, Clayton Christensen, Professor of Economics at Harvard University, framed a new view of creative destruction defining these events as disruptions: a Level One disruption is a firm or practice making improvements to an existing provider or service; at Level Two, it is the creation of a new innovation that supports that market and industry (BIM?); and Level Three disruption is the almost total disappearance of a particular market. Following Christensen, Cliff Moser in the *Disruptive Design Practice Handbook* argues that the architectural profession is facing a Level Three disruption: disruption in the education of architects, disruption in the practice of architecture and disruption in the eco-systems that supply architecture.[5] This, he argues, was wrought by the changes that occurred in the global financial crisis of 2007.

So-called 'big data' marks a major shift in the history of scientific method. In 'Micro-Managing Messiness', Mario Carpo observes:

> *Economists have not failed to recognise that the internet and big data are changing retail by allowing more and more customised pricing aimed at more and more fragmented markets – this just means that transactions and physical items that would profit from being made to measure, now can be, at no extra cost. Standardisation is no longer a money saver and variations no longer a money waster. In fact in a digital techno-cultural environment the opposite is often the case.*[6]

This reality has yet to reach the construction industry. Understanding the phenomenon of big data and disruptive innovation is now being recognised in many professions. It is now a research agenda in many schools of architecture. It is used to analyse the changes affecting the future of journalism. Market forces and emerging technologies now shape the demand for data journalism. The decision-making processes of media organisations, struggling to remain profitable, adapt to changing consumer demands and try to serve a new demographic that is increasingly global, wireless, mobile, and socially networked. Witness the widening impact of social media.

Moser's *Handbook*, based on a foundation of disruptive practices, identifies the architect's value as an innovative disrupter. This is a fundamental shift from the idea of the practitioner as a 'designer of solutions' professional. In reality, building design for construction is a separate specialised activity (not a core activity), which the architect may or may not choose to practice. Thus, we are first designers of solutions, then potentially engaged in the specialised role of designers of buildings. This process is already underway.

Some twenty-something years ago, Tom Wooley suggested:

> *The disciplinary barriers are impenetrable. If these barriers in education were to vanish, the architect as benevolent dictator would vanish too. Instead students could arm themselves with useful tools and knowledge with which they could assist a community.*

I doubt this is a landscape which many in academe would recognise today and nor would our graduates when edges are being blurred by those 'practices' such as Assemble, winners of last year's Turner Prize for a project focused on community participation, who crossover into related fields of landscape, environmental art and crafts.

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Boundaries and flexibility

Which brings us back to the schools and the difference between education and training and to what is at the core of architectural knowledge. From Brunelleschi, it was the production of buildings; then in modernism, the production of space within and around them; then, following Arup's argument, the production of a better developed society. Then following Moser, the production of ideas and futures, policies and systems: the architectures of Yona Friedman and Buckminster Fuller, or of Christopher Alexander, as much as of Mies or Zaha Hadid.

Just as there are as many architectures as there are architects, there is no one profession and certainly no one model of practice. Each model of practice needs to determine its own requirements for new incoming talent. This does not presuppose only one form of foundation degree – architects could begin with architectural engineering or environmental sciences. Rather it provides for greater flexibility for any practice in fine-tuning graduates to its needs. Yet it needs the practitioner to be proactive in assessing that need and to participate in the process. Today, the Master's programme or graduate school is where all architectures are possible. A laboratory for architecture providing an open field for theoretical and technical positions but applied to specific purposes. One route may be to take advantage of this further blurring of edges with the industry PhD programme now offered by some universities.

Attending the RIBA Smart Practice Conference at Nottingham University last autumn, the discussion focused on possible paradigms for more intelligent practice as exemplified by Arup Foresight, Zaha Hadid Architects, Fosters' specialist modelling group and Deborah Saunt; herself a recent doctoral graduate. There was a consensus that raising the bar in intellectual capacity in practice required a fundamental exchange with academe via doctoral or Master's programmes. Academe saw a *quid pro quo* where only practice can provide the focus or direction such research might take. Mark Burry, from the University of Melbourne, cited a number of postgraduate students doing practice-focused (if not practice-based) research before trading that knowledge within cutting edge practices. All of which reminded me that Leslie Martin was among the first architects in Britain to hold a PhD.

It was left to Josef Hardgrave of Arup Foresight to remind us of Charles Darwin's maxim: 'It is not the strongest nor the most intelligent that survive but the most adaptable to change.'

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Notes

1. Mario Carpo, 'Big Data and the End of History', *Perspecta*, 48 (2015).
2. Pier Vittorio Aureli, 'Do You Remember Counter-Revolution?: The Politics of Filippo Brunelleschi's Architecture', *AA Files*, 71 (2016).
3. M. J. Long and Peter Carolin, 'The Whole and the Parts', *arq: Architectual Research Quarterly*, 2:2 (2008), 4–5.
4. Ove Arup, 'The Education of Architects', *arq: Architectual Research Quarterly*, 2:2 (2008), 38–43.
5. Cliff Moser, *Architecture 3.0: The Disruptive Design Practice Handbook* (London: Routledge, 2014).
6. Mario Carpo, 'Micro-Managing Messiness: Pricing and the Cost of a Digital Non-Standard Society', *Perspecta*, 47 (2014).

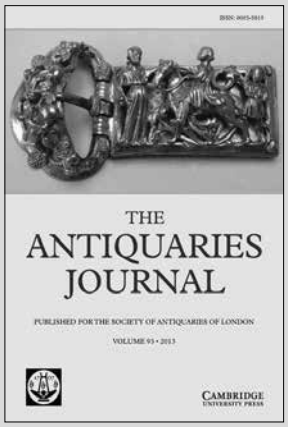
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