

SB11 Keynote 40:40 Looking back and looking forward (part 5 of 5)

Built environment professionals in the UK: 40 years back, 40 years on?



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1. Forty years ago

Exactly forty years ago, I moved from science research into a multi-disciplinary building design practice, RMJM - although my association with RMJM ended in 1984. This puts me perhaps in a useful position to reflect on what it means to be a practitioner, how the concept of professionalism has changed, and to speculate on how it might develop in the future. We had just emerged from the 1960s, a euphoric, idealistic and busy time for the industry: the UK had been building record numbers of houses, not to mention new roads, public buildings, and universities. Energy supplies were going to be abundant: we had coal, the promise of abundant North Sea gas, and nuclear electricity “too cheap to meter”, in the words of Lewis Strauss, head of the US Atomic Energy Commission. The nature of professional practice was also being examined. For example, the Oxford Conference in 1958 created an impetus to take architectural education and practice from an arts- to a science-base. It also led to the seminal study ‘The architect and his office’ [1]. This was followed by the RIBA Plan of Work [2], which provided a logical structure for creating a building, with the architect seen as the natural leader of the team. Its sequential process included ‘Stage M - Feedback’, in which architects would re-visit their projects and capture the lessons.

The UK also had great hopes for prefabrication and for computer-assisted numerate rationality in planning and design. It was the time of the professional, the technologist, the meritocrat, and the public development corporation, starting things off and capturing the increases in land value for the benefit of the community. The new universities received quinquennial funding, which allowed their designers to plan five years ahead. This continuity of work under architectural leadership allowed RMJM to employ its own planners, civil, structural and services engineers, landscape architects, industrial designers and cost consultants. We could build multi-skilled project teams, and keep them together – the sort of thing we can only dream about today.

In the late 1960s, things started to go sour, e.g. with analysis shown to have been lacking in imagination, technical failures, the destruction of town centres, and social problems in the heroic comprehensive redevelopment schemes. Industrialised construction got a bad press with the structural collapse in 1969 of Ronan Point, a system-built apartment block. The god of rationality had failed.

In the seminal book, *Building Performance*, Markus et al [3] demonstrated the need for building professionals to obtain feedback from their completed buildings. Sadly, its publication was closely followed by the second edition of the RIBA Plan of Work [4], which omitted ‘Stage M – Feedback’, apparently because clients did not want to pay for it; and architects did not want to take the

responsibility unless they did. Stage M was replaced by a note in Stage L, passing the buck firmly over to the client by warning them that teething problems were not unlikely, and that mechanical systems might need considerable tuning.

In 1973-74 the international situation got worse, with the global oil crisis; while in the UK we had the miners' strike and three-day week (on the other two, we worked in mittens, without heat or light). How did all this affect building professionals? There was less work, and more fragmented, both in place (with more overseas work) and in time, with many stops and starts. Quinquennial funding disappeared. At RMJM, these changes made it difficult to hold integrated project teams physically together and to share tasks, so people aggregated more into skill groups (e.g. electrical engineers), losing some of the close, informal integration we had previously enjoyed.

There were also positive aspects, including working with different people, in different countries, coming to terms with greater constraints, and developing energy-conscious designs¹. Interesting solutions began to emerge, for example, "mixed mode" buildings, that combined natural and mechanical ventilation and cooling systems, not only to save energy, but so clients did not need to send staff home in a power cut. The second oil shock in 1979 made energy-saving yet more a priority. We prepared for a new era of long life, loose fit, low-energy buildings, assisted by government-funded research including monitoring of performance in use.

2. The 1980s

Some major buildings completed in the early 1980s reveal innovative responses to the new constraints. For example, Arup Associates' Gateway Two naturally-ventilated atrium office, (e.g. [5]) and RMJM's mixed-mode NFU Mutual and Avon Insurance HQ (e.g. [6]) showed how integrated professional teams could bring together the science of passive design with the engineering of mechanical and electrical systems to produce low-energy buildings of high quality. We thought we had glimpsed the future, but the world changed again. Politics had swung to the right, in 1979 with Margaret Thatcher's government in the UK and then in 1980 with Ronald Reagan in the US. It was all about free markets, not public services, with geopolitics and debt loosening the constraints on oil supplies and Britain itself becoming an oil-exporting nation. The 1980s office buildings the UK market sought to emulate proved not to be Gateway Two and NFU², but the American-inspired air-conditioned Broadgate and Stockley Park. Out-of-town supermarkets, retail and business parks also flourished, increasing car-dependency.

How did this political change affect UK building professionals? The government saw professions at best just another business and, at worst, a conspiracy against the public - a phrase that Adam Smith actually applied to meetings of tradesmen. Recommended fee scales were abolished, and competition encouraged. This reduced design costs, but also gave less time to explore the brief, design a project and supervise the construction. The architect was no longer seen as the natural leader of the team - a position the profession had perhaps condemned itself to by allowing other consultants to take on the more numerate skills. So design and building teams needed project managers, further diluting the fee, and these people were often more interested in matters of construction cost and time than long-term quality. If in the 1960s, construction professionals had been held in regard for their value added, the 1980s largely failed to appreciate how design and planning could influence quality of life and provide viable long-term buildings and communities, partly of course owing to the earlier disappointments.

With clients seeking competitive bids for individual services, it became difficult to maintain integrated, multi-skilled teams. The quantity surveyors (Qs) at RMJM were early victims, as clients wanted costs policed independently. In my experience, working with an in-house Qs could be challenging and creative, while external Qs either didn't give you enough money to do a proper job, or created a safety net for the design team - neither approach being in a client's true

¹ The UK's first building regulations affecting insulation of non-domestic buildings were introduced as recently as 1976.

² In 2001, Gateway Two was refurbished, sadly with the addition of air-conditioning to meet market criteria. Fortunately, when refurbished in 2005, NFU was not subjected to this indignity, justifying the original mixed-mode design concept.

interest. They also stuck more rigidly to elemental cost plans, making it more difficult to strike an effective balance between the costs of fabric and services in integrated, low-energy designs.

3. The 1990s

The 1980s ended with another financial shock, and another terrible time for the construction industry. The extravagances of 1980s were questioned, and people started talking about “lean and fit” buildings. With the BREEAM environmental assessment system launched in 1990, the Rio conference in 1992 and government research into improving sustainability and reducing carbon emissions, there was hope for a new age of professional services for more sustainable buildings. The UK government report *Constructing the Team* [7] added further encouragement. The low-carbon agenda also led to new government-funded research into building performance, including the Probe (Post-occupancy Review of Buildings and their Engineering) studies that I helped with [8]. On the other hand, privatisation (particularly of the fuel industries and the Building Research Establishment - the UK's national building research organisation) and continued loss of technical expertise within government, meant the construction industry was losing contact with important longer-term public-interest research and feedback about building performance in use.

In 1997, the new UK government commissioned a report, *Rethinking Construction* [9]. This superseded the Latham Report and focused on the contractor and the supply chain. The new report mentioned performance a lot, but largely in relation to speed, cost and reliability of construction, not how well the completed building actually worked. There was also an ascendancy of image over substance, of management skills and contracts over technical skills, and with means (e.g. new, landmark buildings) being confused with ends (what we actually needed these buildings to do). The 1990s also saw the rise of Private Finance Initiative (PFI) projects, where teams bid to finance, design, build, operate and maintain buildings, typically for 30 years. In theory, this gave contractors the incentive to design for good life cycle value, and to innovate in the interests of the user. In practice, it has seldom worked out that way, with many poor-quality buildings, expensively and cumbersomely procured and expensive to run.

4. The past decade

The 2000s started with financial problems and ended with even bigger ones. In between, it saw a building boom in the UK, particularly of health and educational buildings, many funded by PFI mechanisms, and in the commercial, retail and entertainment sectors. Meanwhile, technical skills in government continued to be outsourced, further weakening feedback loops. Research suffered too, with the government report *Rethinking Construction Innovation and Research* [10] seeing the strategic framework for R&D as being owned by the construction industry. This view failed to appreciate that the industry itself had limited understanding of building performance in use - where there is a strong public interest dimension, requiring government-funded research. Fairclough saw performance as being controlled by regulation, while in practice, compliance and performance tend to be two very different things as modern buildings are far from 'fit-and-forget'. Consequently policy measures intended to improve the sustainability of our new and existing buildings (reinforced, of course, by commercial pressures) has tended to require too many things that look good in theory, but are not the most robust and effective improvements in practice. This has made many buildings too complicated and expensive, with shortcomings in performance and high energy, maintenance and management costs; while feedback from buildings in use suggests that a more robust approach is to make things simpler and do them better.

5. What next?

There are unprecedented challenges to improve the sustainability of the built environment, now subject to strong financial constraints. For example, UK government policy is for new buildings to be zero-carbon within a decade; and for the energy and carbon efficiency of existing buildings to improve dramatically. To respond effectively, the construction industry needs to provide a very different service. At the moment, designers design (and sometimes inspect), constructors build, and everybody usually disappears as soon as a building is handed over. This makes no sense where all the talk is of innovation, with increasingly complicated mechanical and electrical systems

that usually need explaining carefully to occupiers and tuning-up in operation. The industry needs to follow-through into use, feed back the experience, and learn the lessons of what works in practice and what doesn't.

6. Making building performance evaluation routine

The charity I work with, the Usable Buildings Trust, promotes the evaluation of building performance in use, extracts the lessons, and takes findings to people who can make a difference. One objective has been to make building performance evaluation a routine activity for design and building teams, so they can understand the consequences of their actions; help clients, occupiers and managers to get the most out of their buildings; and carry back the knowledge to the future benefit of their organisations, the industry and the wider community.

It has been surprisingly difficult for designers and contractors to do the follow-through and feedback work required. As in the 1960s and 1970s, although the benefits are clear, nobody wants to pay for it – not even clients and government, who say “why doesn't the industry do this anyway”, without realising that industry, clients and government are lockstepped into a dysfunctional system, from which nobody can readily escape.

7. A new professionalism?

Since markets have been unable to do what is necessary, would a new appeal to professional ethics help? The purpose of any profession is to supply disinterested counsel and service to others, for a direct and definite compensation, wholly apart from expectation of other business gain, in order to protect society's larger interests. This responsibility to do 'the right thing' goes beyond the obligation to the person paying the fee. The idea of professionalism may seem dated, owing to the social and political culture of the past thirty years, at least in the UK and USA. However, professional institutions require their members to understand and practice sustainable development. Surely this must include a focus on outcomes? Otherwise we risk producing buildings that not only fail to perform as intended, but might even prove too complicated and expensive for us to look after.

Frank Duffy [11] summarised the problem: *"...[we] have not developed a tradition of practice-based, user research, preferring to outsource both user research and teaching almost entirely to the universities. This fractured history may be the reason why environmental design has never developed the equivalent of the science of epidemiology – which, in its macabre way, is an essentially user-based, feedback-rich discipline."*

8. Soft Landings

To overcome some of the barriers, we have been helping to develop an approach known as Soft Landings [12], [13]. This helps client, design and building teams to take more account of outcomes. Its activities can run alongside any procurement system, for any project, anywhere, reinforcing the processes at five critical stages:

1. Inception and briefing: setting the tone and establishing a focus on outcomes.
2. Design and construction: maintaining the focus on outcomes and managing expectations.
3. In the weeks before handover: ensuring better operational readiness, and engagement of occupiers.
4. In the first few weeks or months after handover: providing aftercare and fine-tuning.
5. In the first three years of occupation: monitoring, post-occupancy review and feedback.

Soft Landings focuses on users, managers and outcomes. It benefits from champions who can take it forward and essentially help to reinforce the “quality” leg of the quality-cost-time tripod. While cost and time tend to be the immediate concerns for builders and project managers, what endures is the quality of the outcome.

Soft Landings is about changing attitudes of mind, enabling the new professionalism. Case studies are beginning to show that once clients and design and building teams have experience of it, Soft Landings becomes win-win-win and save-save-save. Construction costs are less, because

you don't spend money on things you don't really need and instead get the essentials to work better. Running costs are lower, because buildings can become less complicated, more usable and more manageable. Better-tuned systems use less energy (some case study schools halved their electricity bills) and help occupiers to be more comfortable and productive.

9. In conclusion

My vision for 2050 (and preferably for 2015) is that building professionals are closely and routinely involved with the outcomes after construction or alteration work is completed, base their practices on in-depth understanding of what really happens, and re-engage with their responsibilities to society at large.

Over the past decades, the role of professionals and the meaning of professionalism have diminished. The results from this are deeply problematic. To meet society's challenges and expectations, there is a need to deliver built environments that perform as expected. On a broader canvas, both building professionals and researchers have a central role in society to provide a long-term view, by recognizing the stewardship and guardianship needs of the public interest.

10. References

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