

IN ANOTHER CONTRIBUTION TO this volume, Michael Benedikt argued for a re-evaluation of the notion of value in architectural design, and the development of forms of community activism in design education.

An implicit question, of course, concerns the social spectrum towards which these energies should be directed, and the alliances that should or could be forged in the process.

Unlike architecture, where—for better or for worse—the discussion about values tends to occupy an ethical dimension, the dialectics of construction and other land improvement activities seem to associate value, almost exclusively, to cost and/or price rationales. The way the expression ‘value for money’ is used in construction business parlance, for instance, conjures up images of increased production efficiency—that is, favourable ratios of financial outlay vs return for the economic subjects involved—more than it conveys ambitions of collective betterment or heightened experiential value. In fact, when the Blair Government’s New Construction Research and Innovation Panel, nCRISP, commissioned a report on the generation of value in the UK construction industry, in 2003, it was felt necessary to qualify the noun ‘value’ with two descriptive attributes that could help understand the wider scope of the research: ‘social’ and ‘economic’.<sup>1</sup> As we will see further on in the volume, it is possible that things are indeed changing, and that the understanding of wealth generation in building has come to encompass both the private and the public sphere, exchange value as well as use value.

Yet the cultures of architecture and construction still seem to be worlds apart with regard to the hermeneutics of value, as this is reflected also in the language used and the frame of references adopted. While the debate in architecture can be chastised for being overly and unjustifiably coy about the economic cost of ideas, construction discussion, particularly in recent times, makes no apology for its fervent subscription to the god and the tenets of managerialism.

But can the use of specific jargon or the inclination towards a particular ideology act as guarantees of success? Or do they rather contribute to widening the cleft between otherwise complementary spheres of knowledge?

In order to show the importance of narrowing existing discussion gaps, we enlisted the help of Will Hughes, a critical ally from construction, and the author of a highly cited fable on the state of the built environment professions in the United Kingdom of the 2020s.<sup>2</sup>

<sup>1</sup> David Pearce, *The Social and Economic Value of Construction: The Construction Industry’s Contribution to Sustainable Development*, London: nCRISP, 2003 (available at: <http://www.ncrisp.org.uk>).

<sup>2</sup> Will Hughes, ‘Technological scenario: de-professionalized, automated construction procurement’, in: Simon Foxell (ed.), *The Professionals’ Choice: the Future of the Built Environment Professions*, London: Building Futures (a joint initiative of RIBA and CABE), 2003, pp. 82-98.

## **WILL HUGHES** The future for the construction professions in Australia

### **Introduction**

The Australian construction industry has been preoccupied with workforce relations for many years. Over the last decade or so, there have been government-led changes, including new laws, conceived to bring about the much needed reforms that would render these problems remnants of the past. Since much of Australian policy makers' attention has been focused on responding directly to specific difficulties, strategic issues such as those concerning the development of the role of the professions have been eclipsed, independent of how great an impact some of the solutions envisioned may have on their future in construction. What could be the consequences of this oversight? Let's try and imagine it, starting from the seeds planted a few years ago.

### **A critique of the construction industry reform agenda in Australia**

Like many countries, Australia has embarked on a laudable reform agenda to pursue excellence in construction and to avoid the problems of an adversarial culture, under-capitalisation of firms, low margins, short-termism and fragmentation. In a major policy document produced almost ten years ago, the Australian Procurement and Construction Council (APCC) declared the need to develop a vision for the future development of the construction industry.<sup>1</sup> In the report, it was acknowledged that problems could not be resolved without a proper understanding and agreement between government and industry stakeholders. The importance that industry participants formed a clear idea of where the industry was at the time, and where it was going, was also emphasised. The inclusiveness of this approach had to be welcomed. Yet other things may have been running counter to its effectiveness and stated objectives.

As in other countries, the Australian construction sector is characterised by many small firms and very few large ones. Peculiarly, though, Australian reports on construction seem to intimate, albeit only by association of ideas, that these characteristics are the cause of the problems in the industry. They contain, however, hardly any examination of why the industry should have developed the structure it has. In other words, no economic analysis is used to explain its characteristics: most reports simply reflect a wish for things to be different.

The APCC report also highlighted a trend in construction purchasing that suggested the market was moving away from buying construction products and towards buying packaged construction services. This way, it was put, clients could concentrate on their 'core business'. Yet there was— and there still is—little evidence for this trend, and no quantification of it. Is this something that applies to certain client types? Is it universal? Does it apply to all projects or just some? The situation we are moving away from involves the supply side of the industry in the supply of materials and labour to meet a design and specification produced by an architect or engineer. Construction firms are paid for their services on the basis of a monthly regime related to work-in-progress. The situation we are allegedly moving towards is seen as the provision of a service, in which the design and construction of the buildings is subsumed somehow into a service provision company, which would have to invest in the capital facilities before receiving any income stream from the service. Are we to expect that construction contractors will become service providers? Or should we look for intermediaries sitting between service procurers and the construction sector? If the latter is the case, why should we expect the structure of the economic institutions of the construction sector to change?

Bearing in mind its declared intention to include all stakeholders in the reform process, the most remarkable thing about the APCC report was that the word 'architect' occurred only once in the document, in reference to their offshore earnings. Architecture, as a topic, was simply not considered. Design, by contrast, was mentioned in a fascinating vision of the future:

'Advanced design systems will allow 'virtual' analysis and scheme presentation. The 'virtual' design process will enable clients to 'walk through' a design, minimise or even eliminate documentation, avoid conflicts and coordination problems and provide a real time interface between the design and construction phases. The resolution of complex

design and production problems, paperless plans and construction accompanied by increased off-site component production will be commonplace.<sup>1</sup>

The report clearly reflected a purely technological view of design. While the industry was seen as the creator of the built environment, the role of architects was simply not perceived to be significant in the process. Similarly, the role of contracts, drawings and specifications must have appeared superfluous within such a vision.

One of the most startling assertions contained in the vision was that 70 per cent of the new products and services required in the next ten years had yet to be invented. Why not 80 per cent? Why not two years or 12? How does anyone know what is required in the next 10 years, or when it is going to be invented? Clearly, assertions as arbitrary as these are not intended to be scrutinised, and have the hallmarks of throwaway conversational lines. However, we should start worrying the moment they form the basis for a developmental policy for a whole industry. Interestingly, much of the report's focus on innovation seemed preoccupied with tendering, commerce and business practice rather than the development of the built environment. This should perhaps have been expected, since the political context within which the report was developed had been defined by 'corrupt and difficult business practices'.

Yet it seems clear from subsequent APCC reports, such as a 2002 survey of CEOs' perceptions on progress towards the vision,<sup>2</sup> that there is an acceptance of performance indicators, and metrics such as economic key performance indicators (KPIs), based on certain people's perceptions about what is happening and what is likely to happen in the near future. In the specific case, the aim of these perception surveys is to assess the extent to which the industry is moving towards the Construction Australia vision. But whilst the information may be interesting and fairly straightforward to produce, it does not constitute data about actual performance, only a collection of mere impressions from people whose views are seen as important. This is not to denigrate the value of being able to understand where decision makers perceive the industry is headed, but there is a danger that such KPIs are sometimes perceived as facts rather than impressions and views. Interestingly, 38 per cent of the respondents to the perception survey were consultancy or professional services firms. In the report, however, there is no analysis of whether the issues facing professional services firms are any different from

those facing contractors or trade contractors. Given the fundamentally different nature of their businesses, this seems odd. Yet the most worrying thing about perception surveys such as this, which proclaim to monitor progress towards a target based vision, is the very use of targets to control performance. Partly, perhaps, because of the resonance with the language and value systems so articulately portrayed in George Orwell's novel, *1984*. The announcement is made, without a hint of irony, that targets are 'once again being exceeded'.

All things considered, Australia's reform agenda seems to be based on a narrow view of the construction sector and its role in society. The profound problems rooted in workplace relations, eventually leading to a Royal Commission,<sup>3</sup> may have been cause for such a view, and it was probably inevitable that this produced an essentially inward-looking focus based on the need to tackle certain issues. But the downside of situations such as these is that the construction sector is only seen as a means to produce facilities in which economic activity takes place. Architects have little role in this vision of the future, which involves only transactions between businesses for the purposes of increasing the profitability and effectiveness of those businesses. Consultants are mentioned as potential members of consortia while, only in some reports, there are slight acknowledgments of their role in the process.<sup>4</sup> But the overall thrust of these studies is consistent. The focus is on the flow of new orders, which is to be focused towards those businesses, or consortia, that conform to the commercial targets in the vision. The targets for developing the industry towards this vision are couched in a way that makes them achievable, especially as the measures used to gauge success appear to be the impressions of the people whose representative associations framed them in the first place. In this kind of situation, we may expect all the targets to be achieved. Can we expect effective improvements in reality, though?

I am asking this question because, officially, the overarching aim is to establish co-operative goals for the industry; but these goals appear to have been established either without the participation of professional consultants or with their silent and tacit approval. Their voice is not evident in the reform agenda.

There can be, perhaps, a cynical interpretation of such agenda, which can be levelled also at other countries developing such policies, in that successful business consortia provide an answer to the unspoken question: how can we ensure that our firms dominate the domestic market in the face of

increasing international competition? This may be one way, but is this kind of protectionism the best way of developing a competitive, vibrant, corruption-free industry?

Regardless of the answer, the rhetoric is powerful. After such considerable amounts of time and effort were spent dealing with the problems of workplace relations and corruption, the structure of the construction industry may indeed have changed and developed. Indeed, according to the same narrative, the roles of skilled and specialised professionals seem to be quietly transforming into just another supplier of services to contractors and clients.

Yet, contrary to the impression given in and by the reports, whole teams of professionals are still appointed by commercial clients at the outset of each project. They work to produce complicated and interlocking sets of documentation to record their many decisions. These documents describe a project so that it can be procured from dozens, if not hundreds of different specialised trade contractors and suppliers. This should not come as a surprise. Until recently, in fact, professional institutions proliferated healthily, as each newly explained problem was matched with a new set of skills. Everyone wanted to be a professional, and there were plenty of professional institutions to choose from. However many complementary roles there are, they are usually appointed by main contractors who deal with all of the resources on site and receive payment each month for work in progress. In many projects, the main contractors have little direct involvement other than placing and managing contracts. What expertise do they bring to this venture? Why are so many construction firms small and specialised? If we were to follow the logic of the vision for the Australian construction industry, all of this would be destined to change. And by the time change happened, all the workforce problems and the corruption would be eliminated. But what if this meant the end for traditional building contractors, architects, engineers, quantity surveyors, project managers and so on?

### **The decline of the professions**

The professions have been fighting a battle for survival for decades. This is not just a problem in the construction sector and has been well articulated elsewhere.<sup>5</sup> In recent times, however, things have got worse. When they emerged at the dawn of the industrial revolution, professions were underpinned not by commercial values, but by values of public service.

The notion was of learned people developing their skills to deal with new materials and technologies, but with an overriding value system that put public service before profit. With the rise to prominence of commercial pressures, the landscape of work has changed dramatically.

Professionals can now undercut each other and bid competitively for work. Clients have realised that they could pit the hungry ones against each other and drive down the fees. Those who are unlucky enough to lose too many of their bids go out of business. Those who are unlucky enough to win, have to cut back the services they offer as there is often simply not enough money in the job to permit them to undertake their traditional role. This is making it progressively more difficult for professionals to subscribe to the notion of public service.

In order to compete for work, consultants must offer just those services that a client is willing to pay for, and nothing else. Within an industrial policy-making context defined by measurable targets, why would a client opt to pay the consultant to take account of non-commercial factors such as social responsibility and a sense of the aesthetic?

Despite any grand statements about impartiality and public service, the rhetoric of performance indicators and reward systems eventually displaces all notions of professionalism in the traditional sense. Indeed, some construction scholars carried out a survey that revealed how the adoption of quality assurance practices in construction firms brought about not only unnecessary bureaucracy but also increased costs and stifled innovation.<sup>6</sup>

The situation is even worse for professional consultancies, because the exercise of judgment based upon experience cannot be based upon mechanical notions of production. The reforms for the construction industry in Australia play directly into this agenda with their key performance indicators and focus on procurement and commercialism. The professional institutions have little choice but to go along with this, and help their members offer more tailored services. Adapt or perish.

### **Impact of managerialism**

The decline of professionals in construction has not been helped by a global shortage of skilled workers, widespread low-tech attitudes, prejudice and the ubiquitous workforce problems that prompted a decade of industry reform. But, again, we should not underestimate the growing and malignant force

of managerialism. No walk of life is safe from target-setting, performance evaluation, excessive documentation and objective yardsticks against which output can be measured. This is evident in teaching, medicine, and even the police–public work areas where concerns about the distracting impact of managerialism over the provision of the original service and the application of specific training are being increasingly voiced. But we don't listen. Most of us shrug it off with a 'Who do they think they are, pleading immunity from having to account for their actions?' As I see it, there are two problems with this excessive accountability: 1) it makes professionals focus on their objective knowledge rather than their judgmental skills; 2) it makes them accountable to the wrong people: regulators and bureaucrats instead of the public.

It is not easy for those in positions of power to resist the temptation to wield their power for the purposes of central control over the activities they oversee. Government could help rebalance the focus, but the trend towards managerialism is seen as an opportunity to develop policies more likely to appeal to the widest possible range of voters. By using performance indicators and conforming to over-simplified measures of output, we can prove that we have done a good job, despite a growing dissatisfaction with our work.

A couple of decades ago, Kanter was warning us about this problem:

'... the aspect of productivity that needs serious attention is not the mechanical output of a production facility; it is, rather, the capacity of the organisation to satisfy customer needs most fully with whatever resources it has at its disposal ... But mechanical notions of productivity lead often to product that meet ever more refined minimum standards, frequently resulting in a decline in customer satisfaction with them. The former thrust calls out for innovation—indeed, for innovative thinking on every level of the organisation's affairs—while the latter confines innovation to a marginal and unexciting role.'<sup>7</sup>

This encapsulates the problem very well. The mechanical notion reflects the idea that the organisation's activities can be disaggregated, simplified and sequenced so that the room for human error is all but eliminated. But this also eliminates the need for discretion or judgment from the worker—ironically one of the strongest human attributes, by contrast with machines. By concentrating on the connection between what customers want and what each of us can do, the organisation can be much more confident about quality, and therefore

about success. But this notion should concern industrial manufacturing; the possibility of it being applied, even indirectly, to a professional field like architecture is frightening. One would stumble at the first hurdle, just by having to identify who the customer is. In all the writings about the development of the Australian construction industry, the problem of identifying the customer does not warrant a mention.

### **The role of judgment**

Those who are aware of what is happening are worried by popular misconceptions of the purposes and value systems of the professions in general. Arditi and Lee explain and test a systematic method for evaluating the output of a design-and-build contractor, showing how the provision of a service in a building can be dealt with on the same basis as any other kind of commodity.<sup>8</sup> This illustrates an increasingly commoditised view of what the professionals are selling—a problem possibly exacerbated by their inability to explain clearly to the public what is that they do. After all, professionals never had to explain themselves before, at least to the same extent. Of course, while it is difficult to articulate the power and value of judgment, it is much easier to show potential customers, and the public at large, the possession of a certain ‘knowledge’ not possessed by others: knowledge borne of education, training and experience.

Unfortunately knowledge is increasingly more widely available, particularly through the internet. Whole universities are placing their knowledge base on-line, free for anyone to access, proving the point that their capital is not knowledge but people with their individual expertise. Yet too few in society appreciate this. In some universities, for example, it is understood that students pay for access to the academic staff and the opportunity to rub shoulders with like-minded peers, not simply access to knowledge. America’s MIT, one of the world’s leading universities, has placed its entire teaching material on the world-wide web, free for all.<sup>9</sup> In the meantime, lesser universities are busy trying to tie down their teaching materials in legal agreements that prevent even the staff who developed the material from using it outside their own university. The gulf between those who realise what professional work is all about and those who do not is growing ever wider.

In the health sector, doctors have been noticing that patients are becoming better informed about their illnesses, because of widespread access to medical

knowledge on the internet. But the judgment of doctors is still needed to make diagnoses and recommend cures. By contrast, the construction professions hold on to their knowledge whenever they can, and prize their distinctive competence in terms of what they know, rather than how they exercise their judgment. This is underlined by their habit of selling their basic knowledge rather than making it freely available.

### **Professional cover and professional twilight**

This is where part of the problem may lie. In Australia, unlike Japan for example, designers have independent liability for their decisions. But liability is useless without indemnity insurance; and, since the emphasis on liability forces premiums to go up, professional consultants are forced either to seek increased fees or to reduce their theoretical exposure. Indeed, in some cases, insurers have refused to provide cover for risky work. The logical extension of all this is that professionals may simply refuse, or tone down, commissions where they have to express a view or make decisions that are out of the ordinary—simply because this is the only way to reduce their liability and keep the fees within an acceptable range. Paradoxically, professionals' forced defensiveness may increase dissatisfaction among the very clients demanding the indemnity cover, who could legitimately wonder why they employ consultants who do not express a view. Yet those who find themselves sued for negligent acts or omissions have learned that the test used by the courts is reasonable competence, a concept that involves large numbers of expert witnesses—that is, other professionals—testifying that they would have done the same thing in that situation. In accounting for their decisions, that is, professionals can only call upon two things: a rational explanation for every decision and judgment, and a statistical recurrence of that decision in the industry. This way, reasonable competence leads to immense pressure to conform to routines and, by extension, to the minimum standards laid down by the institutions or the market. Like all minimum standards, these become the accepted standard, progressively reducing expectations and inhibiting innovation.

Is the fabric of professionalism consequently under threat? The professions are certainly in danger of ceasing to be learned societies, and ceasing to be self-regulating bodies based on codes of ethics. As transparent, objective explanations have to be developed for every aspect of decision making—then

to be embodied in the staple diet of service standards and codes of practice—professions are increasingly at risk to be reduced to qualifying bodies and suppliers of professional training. And some quarters of the industry see this is an improvement.

### **The end of capital acquisition**

The future of professionalism could also be affected by the evolution of the investment nature of construction. As pointed out earlier, a change captured in the vision for the Australian construction industry was the move from capital acquisition to service acquisition. This is not limited to Australia. Governments all over the world are realising that property development and major capital acquisitions need not involve public investment. By getting the private sector to invest in these developments, and then leasing the completed facility from them, the public sector can greatly reduce its borrowing needs. By reducing public expenditure in the short term, the taxation burden can be temporarily reduced and voters kept happy. But once everything is procured in this way, public services are bought through service charges and rental to the private sector. And since private finance is more expensive than public, the savings are ephemeral; in the long run, public services will cost more. Catch-22 notwithstanding, the concept of service rental replacing capital acquisition is spreading rapidly from central government to local government. It is now conceivable that municipalities will no longer own the buildings they occupy even though, eventually, service charges will catch up with temporary surpluses.

The push towards private finance and public/private partnerships creates a very convincing case for major capital infrastructure to be provided through private sector investment underwritten by government money. In most cases the joint ventures or special-purpose vehicles set up for these deals will eventually sell the completed facilities to pension funds. This is because no other kind of firm can carry that kind of capital investment on its books for long—certainly not the firms based on construction contracting, which is a cash business rather than an investment business. Either these firms have to transform completely, or other firms will occupy the position of service provider. While this is likely to insert another layer into the supply chain of construction, there is still no concomitant change to the small, fragmented, cash-flow firms supplying the parts.

## **Re-engineering the construction process**

This does not mean that things won't move. There is a widely held perception that builders generally carry out poor quality work. It is useful, and certainly easy, to blame the way the process is organised, because this helps to fuel calls for new ways of working, from buyers of construction as well as the supply side. It is, after all, more convenient to apportion responsibility with something as impersonal as the structure of the industry, rather than the behaviour of specific firms or organisations. Yet by constantly stressing the failures of a fragmented process populated by under-resourced opportunistic contractors, those who are pushing for change will end up building a momentum fed by popular fears of being ripped off by cowboy builders and a plethora of consultants adding little value to the process. Reorganising the process has already become very popular: aligning business needs, making the business case for change, learning from other sectors. The calls for change are echoed in government.

Successive government reports have in fact called for major structural changes to the industry, as well as cultural changes in its workforce at all levels. The customary contractual disputes centred on payment problems have led to legislation to eliminate the bad behaviour of contractors to their sub-contractors. Local and central government are busy developing procurement systems that call for main contractors to pay attention to their suppliers and subs. Everyone is getting enthusiastic about integration, supply chain management, transparency and accountability. Still, we should also ask ourselves whether the solutions proposed fit the problem.

In fact, riding on this wave of reform, and resonant with what is happening elsewhere in the world, we see the emergence of collaborative working practices, partnering, and a widespread call for mutual trust that fly in the face of transparency and accountability.

These developments fit well with the interests of local big business, and governments can perhaps develop close relationships with it. Certainly, there are mutual benefits in creating agendas for industrial reform that ensure the market base of only specific and large businesses and, consequently, the death of the middle-sized and smaller ones. It may not be a coincidence that the fragmented nature of the industry has, now and again, been highlighted as part of the problem rather than an inevitable result of the economics of construction. Only the bigger businesses have the resources and the capacity

to invest in the development of technological and integrated solutions to complex problems. This is why it is important to understand that, aside from the objective benefits produced by royal commissions exposing the problems inherent in the construction industry, the calls for both integrated solutions and service provision play directly into the agenda of protectionism and big business interests.

### **Integration of the supply chain**

Integrated procurement systems become strategic alliances. Strategic alliances are formed in the name of partnership, mutual trust and collaborative working practices. Loosely based on limited networks of trading partners, they form the basis for more formalised business relationships within groups of companies up and down the supply chain.

It is evident from other industrial sectors' experience that real strategic alliances are merely the first step in moves toward mergers/acquisitions.<sup>10</sup> This is not clear to the early adopters of alliancing in the construction sector: it does not even seem to be on their minds. But with the growing popularity of service provision replacing capital acquisition, only the largest integrated service providers can survive. Whom else can invest that much and absorb the performance risk?

Accordingly, strategic alliances may become mergers and acquisitions, increasing consolidation of the market into a few major conglomerates. These may become large enough to fund integrated service solutions without the support of the banks. But they would need to sell completed schemes to pension funds to provide them with the cash needed to invest in new ones. The consolidation of businesses would influence the whole construction sector. If the trend toward leasing rather than buying gathers pace, most of the smaller firms in construction would lose out unless they joined in strategic alliances. And if these developments ran to their logical conclusion, they would be bought out or simply go insolvent.

### **Technological developments**

Three further developments, touched upon as good things in the various statements about the vision for Australian construction, may cause the industry to transform even further: 1) the application of technological solutions to systematic building design; 2) mass customisation and 3) the development of electronic procurement.

## **System building**

The applicability of technological solutions to what are essentially social problems continues to spread. There have been some spectacular failures in other countries. In particular, social housing and office developments can develop a bad reputation for dreadful internal environments. Global warming and pollution seem set to make the climate increasingly changeable. The control of indoor environments would then become increasingly difficult. If that happens, developments in sensors and control equipment in buildings will lead to the dominance of engineering over architecture.

As Ventre and Groak have shown,<sup>11</sup> the struggle has been running for decades; but, today, is made more extreme by the pressure exerted over professionals by the legal system and burgeoning professional indemnity insurance premiums to behave consistently and routinely, making the automation of their services more plausible, using fuzzy logic, neural networks and other prototypical artificial intelligence (AI) approaches.

Although the dream of AI is as far away as it ever was, attempts at emulating intelligence have led to great progress in codifying and programming complex but routine behaviours. The demand for technical solutions to complex problems might not be met by the traditional professions, especially if there are not enough graduates with sophisticated design and construction knowledge coming into the professions. If this happens, the only solution will be to adopt technological approaches based on standardisation and customisation, which will fit well with the increasing inability of professionals to exercise anything other than a technician role. A gap will then appear in the market: a huge demand for pre-cooked solutions that work. The big companies will mop it up.

## **Mass customisation**

It is also plausible that the mass customisation of building designs will follow earlier developments in the car industry. With a massive program of research and development behind them, Japanese builders can lead the way, encouraged by Americans who were familiar with this way of working and are keen to develop more open trading links with Japan. Mass customisation can start with warehouses, and then spread to housing, multi-storey dwellings, then multi-storey offices, until all but the most unusual structures can be chosen from a catalogue, a kit of parts.

With the growth in service provision, the procurement of buildings will become an internal matter for the service provider: a process that excludes the end-user. The design function will become an internal department of the service provider, dominated by the needs for carefully engineered internal environments, flexibility of internal spaces and overall economy of form. In such an environment, the relevance of architecture may decline rapidly. Indeed, the development of technological solutions may drive out the need for people altogether, as this chilling passage highlights:

‘Jobs that require knowledge, creativity, decision-making or other intellectual skills, or almost any manufacturing or manual job are liable to disappear. Only occupations where people are an essential component of the service, such as caring and personal services are really safe.’<sup>12</sup>

The emergence of high-tech and systematic solutions is good for meeting clients’ needs for two reasons. The first one is that, by dealing with a conglomerate, third parties, for example architects, are not needed to specify and mediate complex contractual networks of transactions: there would be only one transaction, between the service provider and the customer. The second reason is that, by mechanising large parts of the process, much of the routine decision making will grow so codified that it can be reduced to a systematic computer decision-making tool. By reducing the variables and the range of options, the need for professional judgment will disappear. This fits well with the popular mood of a lack of trust in the abilities of professionals to make impartial decisions. Professional judgment, at this point, will simply not matter. Members of professional institutions will merely need to follow the rules of their chosen vocation.

In the pursuit of standardisation and routine, we may achieve better public accountability. But the most difficult phenomenon to deal with will be the habit of government and big business interests to keep changing the rules. For example, by constantly re-organising the way in which records are kept and performance evaluated, it will be plausible to make quite arbitrary decisions about where important firms land in so-called league tables. The notion of public accountability becomes ephemeral and self-serving. The main institutions of society, education, police, health, will be accountable only to those who set the targets. Such targets are easily measured, amenable to manipulation and provide a mechanism for a kind of central planning that enables big business interests to manipulate the government in a

symbiotic relationship. The result may be a vast consolidation of markets into conglomerates during the 2010s and the promise of power for the political party that played this particular game. This is a great temptation.

### **Fully automated electronic procurement**

Beside all this, it is also interesting to note the emphasis that the visionary statements about Australian construction place on e-commerce or e-tendering: further developments of automated procurement through the internet will facilitate the bargaining process. What happens if procurement is eventually automated? The technology can already enable deals to be struck quickly and impartially. Big firms with buying power can now source their materials from the cheapest global suppliers and use their economic power to drive prices down in the name of productivity. By organising collection and delivery themselves, they can establish powerful control of the markets they buy from. Expert systems may be developed that design the best combination from a limited range of options. By limiting the possible solutions, buildings can be designed in two stages. The first stage would require creative design effort from the supplier to develop and prototype a base design with various trims, colours and material options. The second stage would require customers to tailor the limited range of options to suit a particular circumstance. Once decisions are made, the building can be delivered and assembled as a kit of parts, commencing the moment the order is placed. This is an exact replica of the way cars are now developed and sold. Housing is not far behind, with customisable standard designs available off the page also in Australia.

As well, the process of automatic construction procurement could become a process of selecting from a limited range of options, and then customising these choices. The deal might be done by computers that are programmed to negotiate risk apportionment as well as price. This would provide a just-in-time management approach where all of the remaining decisions about what to do and how to do it would be taken in-house by the supplier. In this scenario, the suppliers would be large organisations employing technicians: graduates with a highly sophisticated knowledge base, applied in a routine way.

### **Meeting client requirements**

If all this happens, there will be no need for architects to interpret client requirements, since impoverished views of what might be achieved will

produce uniformity of perceived needs. This would be given a further push by the development of KPIs, involving the harmonisation of decision-making criteria such that productivity, economy and other objective measures are the only basis for deciding what to do. Thus, there will be no room for aesthetics, no requirement for imaginative solutions, other than the imaginative selection of customised solutions. As such, there will be no need and no opportunity for imaginative or creative people. Those with any aspirations in that direction would not be the ones who took part in mass higher education and, thus, would not enter the so-called professions. The whole process would be driven by technology rather than professional judgment. True, the cleverest people in the construction sector would design the basic kits of parts from which the customised buildings are assembled; by then, though, only a limited number of these people would be needed.

The consolidation of the market for construction supplies into integrated conglomerates providing services would remove not only the need for architects, but also the need for surveyors and specialist construction contract lawyers, as there would be no contractual networks to administer, no intermediate deals to document, and only standard contracts for the supply of goods and materials. All other services would be provided in-house or sub-contracted on highly standardised terms. Only accountants will be needed for auditing purposes, and their role would be largely automated anyway. The final step in the automation of the construction process would be push-button lease negotiation over the internet. Property would not be owned by its occupiers, but by the pension funds that would become landlords for the whole country, using the rental income to pay the pensions to the increasing number of people of a pensionable age. Perhaps this would be an ideal solution for government as there would be no dependence on government money, and vastly reduced direct taxation.

Of course buildings have a role to play as an investment, not just mere spaces for carrying out activity. If they were, we would have no need to own them, or to invest in them. Yet the narrow view of buildings as commodities would inevitably lead to a situation where investment companies would be their prevalent owners. Buildings would be leased to their users to generate a steady stream of income to pay the increasing pensions bill. All of us would cash in to liquidate our assets and increase our disposable income. No one would need to own the buildings they occupy, everything would be leased.

## Plus ça change

In the end, however, even if this strange scenario came to pass, I believe there would remain some aspects of the old ways. The few architects/artists who saw their role as something more than merely aiding productivity in a deterministic manner would survive somehow, and we would see them offering a unique and bespoke service to those occasional clients wanting a crafted, in the sense of designed, building.

On second thoughts, we may already be there. In today's America, Japan and Australia, architects are rarely encountered in mainstream housing; but they are present, building very special things for living in. And even when offices, warehouses and retail outlets will be bought from catalogues, the occasional client who wishes to make a statement, or provide some very special space, will still find artists with the skills necessary to interpret needs and to craft a design that could be built by the rare production specialists. These artists will be a long way from the artisans who provide a technician role in the mainstream. But, at that point, it will be the 'specialness' of the thing they produce that may make the work resonate, and possibly start a new cycle for the profession.

<sup>1</sup> APCC, *Construct Australia: Building a Better Construction Industry in Australia*, Australian Procurement and Construction Council Inc., Deakin West, 1997, p.6.

<sup>2</sup> APCC, *Perceptions of the Construction Industry in Australia: CEO Survey 2002*, Australian Procurement and Construction Council, 2002. <http://www.apcc.gov.au/publications.asp> [Accessed 10 May 2006].

<sup>3</sup> T.R.H. Cole, *Final Report of the Royal Commission into the Building and Construction Industry*, Canberra, ACT: Commonwealth of Australia, 2003.

<sup>4</sup> See, for example, DITR, *Building for Growth: An Analysis of the Australian Building and Construction Industries*. Department of Industry, Tourism and Resources, Canberra, ACT: Commonwealth of Australia, 1999.

<sup>5</sup> O. O'Neill, *A Question of Trust: the BBC Reith Lectures 2002*, Cambridge: Cambridge University Press, 2002.

<sup>6</sup> R. Moatazed-Keivani, A.R. Ghanbari-Parsa, and S. Kagaya, 'ISO 9000 standards: perceptions and experiences in the UK construction industry', *Construction Management and Economics*, 17, 1 (1999): pp. 107-119.

<sup>7</sup> R.M. Kanter, *The Change Masters*, New York: Simon & Schuster, 1983, p. 22.

<sup>8</sup> D. Arditi and D. Lee, 'Assessing the corporate service quality performance of design-build contractors using quality function deployment', *Construction Management and Economics*. 21, 2 (2003): pp. 175-185.

<sup>9</sup> A. Anderson, 'Free for all', *New Scientist*, 14 Apr 2001, 170, 2286, p. 3.

- <sup>10</sup> J. Bleeke and D. Ernst, 'Is your strategic alliance really a sale?' *Harvard Business Review*, 73, 1 (1995): pp. 97-105.
- <sup>11</sup> Francis Ventre, 'Building in eclipse, architecture in secession', *Progressive Architecture*, 63, 12 (1982), pp. 58-61; Steven Groak, 'The decline of robust technologies in the building industry', *Building Research and Practice*, 3 (1990), pp. 162-168.
- <sup>12</sup> I. Pearson and C. Winter, *Where's IT going? Prospects for Tomorrow*, London: Thames and Hudson, 1999.