



The professionals' choice

The future of the
built environment
professions

Building Futures was established in April 2002 as a joint initiative between CABI and RIBA to create space for discussion about the needs of society from our built environment and, consequently, the built environment professions in twenty years and beyond.

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The professionals' choice

What role will construction industry professionals have in twenty years time? Although the professions are generally under challenge, their services will still no doubt be required in the future. But will the current institutional structures be maintained, or will new arrangements develop, possibly in response to commercial or managerial requirements? Will the professions designing and building the built environment become more adept at responding to the demands of society, and in the process increase the public's trust?

This collection of papers by a range of authors examines the pressures facing the professions and investigates possible alternative futures. The concluding paper draws together the themes and sets out the challenges, both to professionals working today, to the organisations and institutes that represent them and to the educators training the next generation.

The beginning of the 21st century is a challenging time for the professional ideal. The professions face choices. They need to look to the future to be able to make those choices.

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Edited by Simon Foxell
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Foreword
John Worthington

Making the future work
John Worthington
Chair, Building Futures

Futures studies fall into two distinct arenas. Those studies that aim to predict a holistic vision of a future state and those which scan over the horizon to search out opportunities and potential barriers to help us formulate current policy. Building Futures, a joint initiative between CABE and the RIBA, is in the latter camp. It aims to present glimpses of the potential terrain ahead to government policymakers and to the built environment professions and clients, in order to fuel the current debate on policy, education and how the professions might respond today to better position themselves for the future.

Recent projects have addressed issues as varied as design value, digital futures and, with the Nuffield Trust, a 2020 vision for future healthcare. Current themes cover schooling, housing and an overarching series on the drivers of change influencing the built environment. To maximise limited resources and cover a broad field, we aim to collaborate with others who may be following similar themes, and to create partnerships with groups who can draw on our studies to influence current policy. With this project, in addition to the authors of the various papers, we have worked closely with the Exploring Professional Values initiative, by the Royal Society for the encouragement of Arts, Manufactures and Commerce (RSA), which has provided an invaluable wider context.

The professions are at a watershed. It is timely to set out the background to the origins of professionalism and, within the current social, economic and political context, explore alternative scenarios for the future. The professions were traditionally based on unique knowledge, integrity and independence, which was reflected in the trust of the client and society. In architecture the professional acted as the independent agent between the client (demand) and the contractor (supply), while balancing the particular client interest with the wider interests of the community.

Today trust has frequently been replaced by a proliferation of box-ticking audits, the professional is often a subcontractor to the supplier and with the internet, new forms of information have become available to all. How will the built environment professions develop in response?

The Professionals' Choice – by setting out future scenarios – will, I hope, stimulate a debate about the way ahead and help us chart a path forward by grasping the opportunities and bypassing the pitfalls. The future scenarios presented, though each very different, suggest there will still be a demand for creativity applied with integrity and judgement born out of experience and underpinned by a body of accepted and tested knowledge. The challenge for the building professions is clearly set out in the last chapter. I hope the government, professional and educational institutions and, above all, each of us as professionals can absorb the telltale signs of what might lie ahead and reflect and respond.

John Worthington
Founder DEGW
July 2003

Introduction
Simon Foxell

Introduction
 Simon Foxell
 Vice-chair, Building Futures

The idea of the ‘professional’ is a topical issue. Widely discussed under headings such as ‘the crisis of trust’, ‘the culture of accountability’ or ‘the death of deference’ it is assumed that the role of the professional is undergoing radical change, if not an early demise. This is just as true for doctors and lawyers as for the construction industry professionals – architects, engineers, surveyors, construction managers and their colleagues. Yet as Onora O’Neill suggested in her Reith lectures of 2002: “Professionals and institutions doing trustworthy work today may find that the public say that they do not trust them – but... their services are still demanded.”¹ If we are undergoing change now, then how will things look in 20 years time?

There can be no doubt that, as O’Neill suggests, building and environmental designers will still be required for the foreseeable future. But how will the market, government and society require them to deliver their services? Will professional values play a part, or will commercial, technological and managerial forces provide other solutions? This study attempts to explore some answers to these questions.

The idea of the ‘professions’ was developed in the 19th century to achieve a simple purpose – to make a high-quality and consistent service generally available to the public. This had two considerable benefits: it ensured that society (rather than just the paying customer) was provided with high standards of performance and behaviour, and it allowed members of the professions to promote themselves only against the limited competition of their fellows, all offering a similar range and level of services. This required controlling entry to the professions and maintaining standards of behaviour and conduct, which in turn generated trust in the advice and conduct of professionals. Professionals were obliged to take the greater good of society into account and to act as

impartial arbiters of interests. However it also, and unfortunately, led to the professions appearing self-serving and largely unaccountable to the society they sought to serve.

This perception, that the professions were a ‘self-serving’ and self-perpetuating oligarchy, meant that they came under significant and sustained attack in the 1980s and 90s, with the result that their status and influence have subsequently much declined. In part this has been in response to a very welcome shift to a more open, less deferential society, but it has also brought into question the role that the professions and their institutional bodies should play in the future. Is there a continued need for self-regulating ethical and standard-setting bodies, or can a combination of market forces and government regulation deliver the services required?

If there is to be such a role, then professional organisations must question the future, and examine the responsibilities that professional status brings and the benefits to the economy and to society. Can the current model be expanded and made relevant to 21st-century conditions, or is a new structure required? Is there a need to invigorate or re-invent ethical standards? Can the public’s trust in what is offered be rebuilt? What value is generated from espousing clear sets of values?

This study does not attempt to provide definitive answers to such questions – rather it posits alternative possible futures and uses them to examine the demands that society may place on the built environmental professionals. The technique used to do this is a modified version of the scenario method originally developed by the RAND Corporation and Royal Dutch Shell in the 1970s, which has since become one of the most frequently used ways of interrogating the medium-term future.

¹ Onora O’Neill *A Question of Trust: The BBC Reith Lectures* (Cambridge University Press, 2002)

Initial preparatory work by the Building Futures group led to the identification of a series of driving forces of change – each encapsulated by a single descriptive sentence. These drivers were intended to set up divergent, but not necessarily exclusive, scenarios for 2023. A group of very different authors were each assigned one of the scenarios to explore using a narrative approach, back-casting from 2023, to examine a plausible sequence of events leading to their ‘future’ from the present day. None of the resulting scenarios is in itself a definite prediction of the future, but as a group they are intended to circumscribe a possibility space, within which the future is likely to unfold.

To assist the authors a context-setting paper was prepared by John Knell and William Davies of the Work Foundation – ‘The Context and Future of the Professions’ [page 17] and three seminars were held in early 2003 to discuss the development of the papers and propositions: firstly with the authors; then an invited expert group; and finally with the Building Futures group. The Work Foundation has also provided a concluding paper [page 131] that draws together themes and lessons from all the papers.

The results have deliberately provided a diverse set of possibilities for the future, in very differing styles. None of them is prescriptive, they all challenge policy makers to make decisions now regarding their plans for the future and the direction in which the professions can be helped to develop. They also challenge educators to ensure that the professionals being educated today are focusing on the needs of the future and not just those of the present.

All the papers have also been presented to a further group of expert commentators, some of whose responses are included here, interspersed with the longer studies.

The papers reveal that we are in changing times, even accounting for the dystopic tendency of future-gazing. The role for the policy makers must be to understand and respond to those changes to enable society to imagine, achieve and enjoy a high-quality, sustainable environment. This is most likely to continue to require professional ‘experts’, but it will also need trust, openness and good governance. The next stage in this debate will be for professionals, their leaders, regulators and educators to examine the choices that need to be made and which will shape the future of the built environment professions in 2023 and beyond.

I am very grateful for all the work put into this study by all our authors and contributors and in particular The Work Foundation, which was involved in preliminary conversations in its earlier incarnation as the Industrial Society. The RSA, and especially Susie Harries, has also provided invaluable help and support and we have gained hugely from running this study in parallel with its separate investigation into the future of both old and new professions. The members of RIBA Future Studies and its successor, the joint RIBA/CABE Building Futures group, have also provided essential input, support and guidance. Special thanks are due to John Worthington, chair of Building Futures, for all his encouragement and assistance. Finally I would like to thank Sarah Carmona and Debbie Mathieson, at CABE and the RIBA respectively, for all their work in making this study happen. It wouldn’t have without them.

Simon Foxell
Principal, The Architects Practice
July 2003

Context

William Davies + John Knell

The context and future of the professions
William Davies + John Knell
The Work Foundation

The ethics of the market, or a market for ethics?

The increased power of market forces that has been unleashed over the past 25 years has been felt across the gamut of both our public and our private institutions. Heightened competition and a reorientation of corporate behaviour around shareholder interests have created immediate ruptures in our business environment, and the social, cultural and political knock-on effects have been felt far and wide. The legitimacy of public sector organisations has required that they demonstrate an unerring pursuit of finely honed ‘targets’; the public spaces which we inhabit are often perceived to be little more than commercial opportunities for the multinationals which pepper them; while increasing commercialism and ‘short-termism’ seem to threaten our ability to hold honest conversations with one another in and around our institutions.

This is a culture to which the professions are falling victim. Commercial pressure to assist clients in their pursuit of profit is combined with the endemic ‘managerialism’ of targets, audits and box-ticking. This creates a growing sense both within the professions and among the public that these associations have lost the vocational purpose which originally shaped and legitimated them. Professional associations have always been characterised by a fine balancing act between performing the tasks which the market demands, and maintaining a publicly accountable conduct that is immune to market forces. But from a purely market perspective, a profession can appear to be nothing more than a cartel, and as the market perspective has become more ingrained so the respect for professions has deteriorated.

Professions have rightly started to ask themselves some fundamental questions. Can they still rightly justify their self-regulatory status? Are they primarily accountable to their clients or to the public? How can they

take a lead in constructing a more intelligent variant of managerialism? How can the management and networking skills that are essential to the modern workplace be incorporated into the traditional professions? Should they be engaged in PR campaigns, or does this cheapen their long-standing reputation further? How these questions are answered will shape the next 20 years for professional associations.

Yet perversely, the need for trusted expert advice seems more widely appreciated than ever, both from commercial and ethical perspectives. It has become a truism that we live in an ever more knowledge-based economy, and in a society overwhelmed by information. Where only 50 years ago, the majority of the UK workforce was engaged in producing things in one way or another, today the majority serve other people with their ideas, their skills and their care. Quasi-professional work is everywhere, and the need to ensure that it is done with integrity is a commercial concern as much as a public one. Anxieties about our health, our homes, our legal and financial liability, and a plethora of other risks place huge demands on doctors, lawyers, architects and so on. In many respects, the market is making a sincere ethical demand, and yet professions are meant to be above market demands.

Why should constructing future scenarios help the professions at this time? Sure, the future seems uncertain, but of course it does – the future is uncertain, uncertainty is the future’s trademark. Normally, when people say ‘the future seems uncertain’ what they actually mean is ‘the present is confusing’, so let’s be honest about this. The benefit of scenario-building in this context is that it offers us a means of deciding what is essential and what is dispensable to the identity of the professions. Professional associations are suffering an identity crisis in 2003, and to help them steer through this, this collection asks them to consider what they think they might wish to look like in 2023. The present is assessed, threats and opportunities are specified, and the future scenario then posits what would still remain if those given threats and opportunities were realised. The purpose of this context paper is chiefly to perform the first half of this – to describe the present situation of the built environment professions, and to outline threats, opportunities and where these might lead.

Origins and characteristics

It is doubtful that professional associations have ever felt wholly self-confident about their future. As market traders selling a product that is beyond market valuation, they are defined by tension and criticism. The 'learned professions' – clergy, medics and lawyers – of the early modern period drew their ethical motivation from a religious vocation, yet they still existed to perform everyday jobs that needed doing. As early as the 16th century, critics harped that professions were subjugating their nobler purpose, but this is part and parcel of a profession. The mundane demands placed upon professions will always be in some tension with the loftier ideals of learning, the public interest and ethical integrity. And consequently, the survival of professional associations has always required them to adapt their day-to-day responsibilities according to the new practicalities that society has thrown at them, allowing demand to shape them to the extent that their relevance and usefulness are assured. See for instance how the accountancy profession incorporated consultancy activities, regardless of whether consultancy fitted into the original vocational vision of the association. Bottom-up pressures have to be accommodated in some form, without this affecting the top-down ethical purpose.

The great wave of modern professional association in Britain occurred through the 19th century. By 1880 there were 27 professional associations, although seven of these were in law and medicine alone. Between 1880 and 1911, the membership of the largest professions – medicine, law, architecture, education, the clergy – rose by 50%. This, Harold Perkin argues, marked the dawn of professional society – a new era that would displace an industrial society organised chiefly around economic class, with a new order organised under the values of “trained expertise and selection by merit”.¹ The religious professional ideal of the early modern period was resuscitated and secularised at the height of the industrial age, as the entrepreneur started to be denigrated. The status of the latter had been built on capital ownership alone, something which the upper middle classes set about usurping with a political and cultural campaign, fought from left and right simultaneously. One way or another, professional associations had to persuade society that their

services were of such public significance that they should not be left to the vagaries of the market, but should be safeguarded in publicly accountable monopolies. In the late 19th century, an individual making a living from their own expertise was still comparatively rare – industrial capital and labour appeared pre-eminent. Thus, the entrenchment of the professions required a protracted propaganda campaign that sought to elevate the professional ideal. This secular professional ideal – of the dignity of learning, the nobility of public service, and the relative lowliness of entrepreneurship – was diffused via public schools, Oxbridge and the rest of the British establishment through a celebration of ‘gentlemanly conduct’.

The most frantic period of industrialisation in the UK was thus sandwiched by two eras of professional idealism that tempered the social power of the market. “Professional people,” Perkin writes, “rightly or wrongly, see themselves as above the main economic battle, at once privileged observers and benevolent neutrals since, whichever side wins, they believe that their services will still be necessary and properly rewarded”.² The problems faced by professions today may stem from the fact that major economic battles are re-shaping our social fabric once more, much as they did through the early industrial era, creating a new opportunity for capital to warp our social values. But where land and hard capital may have granted status in the early industrial period, it is *human* capital that grants status in this early post-industrial era. Professionals, whether they like it or not, are now wealthy capitalists – human capitalists – and this calls into question their defining values. Entrepreneurship is in vogue once more, viewed as both exciting and morally decent – sometimes even as charitable – and yet the new entrepreneur owns and borrows *intellectual* capital, the very stuff which the professions once used to distinguish themselves from the marketplace. In a sense, then, the professions have been the victim of their own success: having been born as a self-righteous minority, they struggle to keep sight of their identity as they slip towards being a financially bloated majority.

Social and economic circumstances have changed since the birth of professional associations, but we can still extract some defining features of the professions. We pick out four guiding principles.

¹ H Perkin, *The Rise of Professional Society: England Since 1880* (Routledge, 2002), p3

² *Ibid*, p117

The development of a body of knowledge

All work involves the implementation of knowledge of some sort or other. But professions develop knowledge that hovers between workplace skills and academia. This body of knowledge is a defining feature of professions. Only thanks to the quality of this knowledge can professions keep competitors at bay, and only by maintaining an overarching vocation towards the furthering of this knowledge can the professions sustain a principle of marketplace neutrality.

And yet knowledge in general doesn't pin-point the specific character of a profession. Knowledge can be contained in books, files and computers, and transferred with relative ease, if what we mean by knowledge is 'facts'. We have to be more specific. Michael Polanyi makes the famous distinction between 'codified knowledge' and 'tacit knowledge', echoed in Gilbert Ryle's distinction between 'knowing that' and 'knowing how'. Codified knowledge is a body of information which we can store, transfer, then refer to. It gets researched, codified in some way, and sometimes published. Professions are unable to distinguish themselves via the quality of their codified knowledge, as there is very little of this that citizens themselves cannot discover from public libraries and the media. What professions can do is offer a unique supply of *tacit* knowledge 'that which we know but cannot tell'; the knowledge that is not consciously on our minds, but acts as an indispensable resource for getting things done.³ It is knowledge lodged deep into our personalities and our social relationships that can't be simply produced, but built up through trial and error, and is drawn on as we act towards solving problems. This know-how and experience provides professions with their best defence against market competition.

Trustworthiness

It is not enough, however, that professions have a unique and high quality body of knowledge – they need a reputation that broadcasts this. Markets for knowledge demonstrate an extreme case of what economists call 'informational asymmetries'. When a buyer and a seller negotiate over price, the seller very often knows far more about the product than the buyer, the classic example being markets for used cars. The asymmetry can not be over-come except through trust: that is, the buyer must simply

believe that he is not being ripped off. Professions operate in markets with extreme informational asymmetries: by definition, the client comes to the professional out of ignorance. But clients have to believe not only that professionals will supply high quality advice, but equally that the fee will be set fairly. Ultimately, professionals must promise to act in the clients' interests, not their own.

The concept of trust has generated growing interest over the 1990s, with Francis Fukuyama, Robert Putnam and Onora O'Neill being the more prominent contributors to a burgeoning debate on the topic.⁴ But much of the American debate has focused on the informal infrastructure of trust – namely, the social networks and social capital which enable people to rely upon one another. Social capital – the set of social relationships which we can draw on to help us get things done – is one means of overcoming informational asymmetries. For instance, if my neighbour is a lawyer, I can be reasonably assured that I can trust her, not because she is a member of a profession, but because she will suffer obvious consequences if she treats me wrongly. The ability to get people to do you favours is a major asset and an unevenly distributed one at that, which is why one theorist in this area defines social capital as "a metaphor for advantage".⁵

It must surely be another defining principle of a profession that it sustains trust without conferring advantage. The trust bestowed upon a profession owes nothing to the characters, informal relationships or luck connecting the professional and the client, but everything to the institution of the profession itself. The concept of social capital blurs two important distinctions which we believe professions need to defend, namely the distinction between informal and formal association, and that between public and private accountability.

Formal association

In the early 1990s, Frank Duffy wrote that:

"What stands out is that the only lasting and sound justification for a profession is no longer exclusivism, essential as it was in the 19th century – but knowledge."⁶

³ M Polanyi *The Tacit Dimension* (Doubleday, 1967)

⁴ See F Fukuyama *Trust: The Social Foundations of Economic Life* (Hamish Hamilton, 1995); R Putnam *Bowling Alone: The Collapse and Revival of American Community* (Simon & Schuster, 2000); O O'Neill *A Question of Trust: The BBC Reith Lectures 2002* (Cambridge University Press, 2002)

⁵ R Burt 'The Network of Social Capital' (University of Chicago, 2000)

⁶ F Duffy *Architectural Knowledge: The Idea of a Profession* (Taylor & Francis Books, 1998), p139

But exclusivism can't be neglected altogether. Professions are formal membership associations, and the quality of their output depends on their ability to filter members and, ultimately, to discipline and exclude members. These are not loose networks of like-minded people sharing ideas, but clearly demarcated associations, with strict and transparent criteria for membership. Only by maintaining high barriers to entry can professions ensure that both their body of knowledge and their reputation are secure. Furthermore, the very idea of a professional association has to be carefully controlled, so as to limit the number of trades permitted to call themselves professions. In general, associations only win the right to call themselves professions when formally recognised by other professions because there is a collective interest in sustaining an exclusivity around the moniker 'profession'.

Professions aim to be self-regulating, requiring (or allowing) neither government nor market forces to dictate the quality of their services, and this requires a balancing act between protecting the interests of members and protecting the interests of clients. The exclusivity of a profession, and of professions in general, is an important mechanism for upholding both standards and fees. There is a robust economic argument for a trusted, independent source of expertise, but this can swiftly begin to look like a cartel if the value-for-money equation becomes doubtful. To prevent this, professions must not become so exclusive that their fees become unaffordable, while at the same time they must remain sufficiently elitist that their standards are as high as possible. Professions lose reputation when their association appears to be more a force for financial exclusion of clients than for meritocratic exclusion of members.

The public interest

The governing ideal of a profession is the serving of the public interest. This is what marks a profession out from an academic school on the one hand and a profit-seeking business on the other. But the notion is a cloudy one, and can be manipulated to various ends. After all, professionals do not work for their professions, they work for their employers, and occasionally conflicts of interest will arise between the interest of their client and the interest of the public. They charge fees – high ones at that – for their expertise, and exploit its rarity for the benefit

of their company and personal income. The notion that top solicitors, for example, have entered their profession for the good of the public, while hospital cleaners are simply doing a job, seems laughable.

The public-oriented ethos of a profession certainly runs in tension to the market forces of supply and demand. But a member of a profession is expected to remain unswayed by these forces, neither chasing extortionate profits on the supply-side, nor pandering to consumer whims on the demand-side. So it is not so much that the profession positively defends the interest of the public, as that it does *not* defend the interest of any particular private stakeholder. A professional, we might more accurately say, is disinterested. The pursuit and exercise of knowledge, as outlined earlier, makes this disinterestedness possible, allowing the profession to be blinkered amidst competing demands. But an ethical code of conduct is also an important factor in the relationship between the profession and the public, laying out a set of core values that motivate members in spite of whatever financial opportunities may arise.

These four principles lead us to define a profession as a formal association which exists to support and publicly guarantee the expertise and motives of its members. We now need to survey briefly the particular context of the construction industry, to assess how these principles might manifest themselves.

The construction industry

Compared with the operations of many professions, the processes and relationships which go towards constructing a building are hugely complex. Leaving aside the difficulty of individual tasks or the sophistication of given skills, construction relies on a denser web of inter-professional networks than will be seen nearly anywhere else. Among the professions involved are architects, civil engineers, mechanical engineers, electrical engineers, structural engineers, building service engineers, chartered surveyors, (including valuers, quantity surveyors and building surveyors) planners, construction managers and of course the various other professions which have a stake in corporate real estate, such as

lawyers and accountants. These have been joined in recent years by a crop of new professions such as project managers, planning supervisors and chartered builders.

This huge diversity of skills has to be integrated and mobilised for one-off projects, creating a “temporary multi-organisation”.⁷ But beyond this, there is a diversity of interests to be factored in. Until the early 19th century, a building’s owner, financier and prospective user all tended to be the same person. But the split between these three roles means that divergent and competing interests arise, complicating the construction process further. Today, it is a common complaint within the industry that clients demand the cheapest possible building, under pressure to pay a return on the financier’s investment, regardless of the fact that this may not substantially reduce the cost of using the building, but will certainly harm its quality. The construction industry comes under heavy financial pressures, for not only does it play a key role as an investment opportunity for the financial economy, it carries a heavy burden in the generation of real economic growth as the producer of 10% of global goods and services.

Social complexity and economic weightiness are the twin sources of pressure for the industry, and the story of recent change in the industry has been the exacerbation of both these pressures. As demand for profit has risen in the industry, so this has been carried through to the minutiae of project management, such that relationship networks have to be managed with ever greater scrutiny and delicacy. But an additional defining characteristic of the industry – and the cause for greatest hope for its professions, perhaps – is the specific nature of the vocation to build. Where other professions (like accountancy or law) allow regulation and policy to steer them towards the public interest, those who enter the professions of the construction industry generally do so in order to shape the built environment for the better. The ethics of construction have this political dimension, the public built environment can be improved for all by high-quality professional work. The anxiety felt by the industry today stems from the perception that managerial complexity and financial pressure are thwarting the vocational yearning to make great public spaces.

⁷ J Murdoch and W Hughes *Construction Contracts: Law and Management* (Spon Press, 2000)

Coping with complex organisation

Organisational structures have become flatter in many parts of the economy, and this is certainly true in construction. The rise of ‘partnering’ over the 1980s and 90s was seen as a way of generating greater trust and informal negotiation between potentially conflicting stakeholders and co-workers. Partnering has meant that the various parties involved in a construction project get around the table from a much earlier stage, in order to generate teamwork and achieve a more efficient form of negotiation than constant resort to price and contract. Mutual objectives are outlined, and collective forms of problem-solving developed.

In one sense, partnering demonstrates that the industry was alert very early on to the importance of sustaining trust, but it also raises problems for the construction industry’s professions. The flatter structure poses a challenge to traditional professions, shifting power away from the learned expert and towards the human resources manager. For partnering to work, old hierarchies, which traditionally granted the old professionals (especially architects) considerable authority and freedom to manoeuvre, have to be collapsed, and they become just one voice at the table. At the same time, traditionally less skilled crafts start to associate as professions in order to fulfil the requirements of this new organisational landscape. And all the while, the most prized skill is the ability to manage relationships and work across a range of disciplines.

Softer skills – creating better teams, better networks and a better shared vision – have become indispensable across an industry previously segmented into discrete specialisms, but anxieties have arisen as to how this will affect those old specialisms. Professions can cope with this pressure in a number of ways. One reaction is sheer resistance, that is, to view management skills and professional qualifications as anathema to one another. But more constructively, professions may need to decide whether they wish to create stronger institutional alliances between one another, and encourage an inter-disciplinary notion of professionalism. Clear delineation of disciplines may need to be ditched, or at least management skills may need to be integrated into training. An example

of the latter can be seen with the recent announcement by the Royal Institute of Chartered Surveyors that members will need to take a management and business postgraduate programme (a CMS) as part of their training. Whatever happens, it is clear that all construction professions are having to pay greater and greater heed to the interests and practices of their partners and stakeholders, a drift that requires acknowledging in one way or another in training practices. An uncompromising commitment to the core vocation of a given profession may end up being self-destructive in the medium to long term.

Coping with financial pressures

Partnering hasn't simply been about creating a win-win working culture, however, but equally about making efficiency savings. The industry experiences considerable pressure to return profits to investors: for example the architecture profession feels itself dragged towards supply-side interests, away from its traditionally neutral role. Performance targets and 'managerialism' have become the bane of many professions, all of which are the knock-on effect of financial pressure. The professions which had traditionally viewed themselves as publicly accountable and disinterested are being pressured into being privately accountable and in lieu to private client interests. The financial deregulation which unleashed a wave of capital into the industry over the 1980s and 90s has, perversely enough, created a new culture of micro-regulation which strips architects and other professionals of the responsibility which they feel ought to define their role.

Managerialism attempts to build trust by nailing down guarantees and finding hard proof of competence. A narrow sense of accountability is achieved, but the public responsibility of professions is threatened, and if anything, trust becomes crowded out by cynicism. The climate currently afflicting the construction industry runs counter to the ethical and cultural reasons that lead many young people to pursue a vocation in the first place. The joy of creativity and the political responsibilities of transforming the environment are subjugated to rituals of box-ticking and liability-covering. But once again, ignoring or resisting this trend may make it worse. If the built environment is of public significance, if there is demand for responsible public behaviour in the industry, the

challenge for its professions is not to pour further scorn on managerialism, but to take charge of it, to make procedures and tests produce a better reflection of genuine achievement. Those within the industry face the challenge of projecting their criteria for what counts as a successful building beyond their associations, and out to a broader public that will no doubt share their distaste for supply-side driven buildings.

Drivers of future change

Winning this argument about the significance of the built environment will come about less through averting economic and organisational trends, and more through a canner understanding of how public conversations and audiences are changing. Commercial pressures and the working practices they engender look set to remain for the foreseeable future: harder economic times around the corner can only entrench the quest for efficiency. But this new economic reality cannot be allowed to depress the professions. In any case, markets are not the only driver of change: social, cultural and technological factors also come into play, which may be just as transformative over the next 20 years as the laws of the market. We pick out three.

Changes in the nature of work

The service sector in the UK now employs close to three quarters of working people in this country. The acquisition and implementation of knowledge is seen as rudimentary to all forms of competitive advantage, not just in services, but in manufacturing as well. This is a change that has been occurring over the past 40 years or so, but there are several unresolved questions as to where the trend is leading us next. The signs are confusing. The government has announced that it wishes to see the proportion of UK pupils going on to higher education to rise from a little over 30% to around 50%. Yet there is evidence to suggest that many top graduates are looking beyond structured, professional work, towards more creative or entrepreneurial or informal work. Meanwhile, many industries are creating large numbers of jobs which require fairly sophisticated skills but to be exercised in a routine manner.

How professions respond to these changes will be critical. The construction industry currently displays recruitment eccentricities: the ranks of architects are happily swelling, while certain engineering professions suffer acute shortages. The nature of work itself is splintering into a range of service and knowledge-based activities, and the character of work will change in unforeseeable ways over the coming years. On one level, professional identity is threatened by the mainstreaming of knowledge-based work. But the market *does* demand the kind of ethics and accountability which the professions may be uniquely placed to supply.

Technological change

The rapid diffusion of new ICTs over the 1980s and 90s has made information drastically more available. As with the spread of knowledge-based work, knowledge-processing technologies erode the distinction of being a useful source of information. If professions are to distinguish themselves on the basis of their body of knowledge, this can not be the type of codified knowledge that ICTs are capable of handling and distributing at zero marginal cost. Instead, as we have already discussed, tacit knowledge or judgement must become the hallmark of professional associations – that is, the knowledge which computers can not deal with. As the famous US sociologist, Manuel Castells has argued, ICTs “replace work that can be encoded in a programmable sequence and enhance work that requires analysis, decision, and reprogramming capabilities in real time at a level that only the human brain can master”.⁸

If professions are to cope with this change in the future, they will have to gain a clearer understanding of what role the trusted expert plays in an information society. It is surely hopeless for professional associations to attempt to privatise their information resources, but distributing free intellectual property on the web is an important means of reputation management. The ‘information asymmetries’ we discussed earlier can be overcome where the salesman hands out a sample to the customer for free – this is the opportunity provided by the internet. Where information is in abundance, professions can enhance their reputation for public service and honesty by becoming the best source of free trustworthy information, and consequently bolstering their reputation for offering a unique form of know-how, creativity and judgement to their clients.

⁸ M Castells *The Rise of the Network Society* (Blackwell, 1996), p242

Public and media suspicion

The nature of public accountability is changing as the media plays an ever more important role in scrutinising and regulating public bodies. Even those bodies which do not consider themselves to be public-facing become so in this new climate. The Corporate Social Responsibility (CSR) movement applies ethical standards to the private sector whether it likes it or not, and it does not distinguish between professions and non-professions. The ethical vocation of professional associations is not necessarily acknowledged by these self-appointed media and NGO regulators.

Meanwhile, the nature of this new scrutiny, combined with various attempts to prove ethical standards, may produce greater cynicism. The power of the media, and the need for organisations to manage their media reputation, may only lead to the suspicion that ethical behaviour in the private sector is some sort of ‘greenwashing’, a carefully managed veneer to enhance a brand. Ironically, the CSR movement tends to favour market mechanisms to apply pressure on companies, such as consumer activism, ethical indices, and triple-bottom-line accounting. This demand that ethics be proved is not so very different from the managerialist injunction that competence be constantly proved, and leaves companies desperately chasing individual targets and measurements.

A snowballing culture of suspicion results. Recorded levels of trust in the UK held reasonably steady between the 1960s and 90s, but then dropped off markedly through the early 90s. This indicates nothing about risk itself, but represents a failure of public bodies to communicate properly or be judged intelligently. The rise of a DIY culture, where people attempt to bypass traditional sources of expertise and solve problems on their own, is one side-effect. Professions are too often viewed as being driven by greed, if not their own then their clients’, and a property boom only contributes to this perception of the construction professions. Engineers or architects too often seek approval only from other engineers or architects, failing to communicate their vision and public ethos to the public, perhaps feeling that they’re fighting a losing battle. But professions will have to engage with this new culture and attempt to forge themselves a wholly new form of public legitimacy if they’re to carry their founding principles through the next 20 years.

The hope must be that professions can not only survive in this developing climate, but can perhaps, by offering an antidote to it, thrive in it. If new relationships and new forms of communication can be developed, then these, in tandem with such an established history, ought to provide the basis for a form of accountability that is richer either than simplistic managerialist box-ticking, or canny media manipulation. If this were done, professions would stand out once more from the rest of the market, and build a 21st century notion of ethical vocation that may be closer to what the public expects of professions and to what inspires graduates to join the professions.

Where next?

The commercial pressures and social changes which we identify could play out in all manner of ways. The scenarios in the coming chapters give widely diverging perspectives on the future, but emerge from the same set of problems and challenges. Before we turn to those scenarios, it's worth considering some of the dominant axes upon which any future scenario will depend. We pick out three here – a global/local axis, a public/private axis and a diffusion/closure axis. The professions currently hold an ambiguous status in regard of each of these, but the next 20 years may challenge them to adopt a new and bolder model of association. They need to anticipate which way this might lead.

Global/local

Global: Each profession consolidates into between two and five vast global conglomerates, building reputation via sheer brand scale. This way they benefit from distinguishing themselves from less expert competitors, and gain unquestionable market exposure. But they suffer from a lack of intimacy with particular cultural mores and come to be seen as distant. The public's DIY mentality is not assuaged, although the media is at least able to keep perpetual pressure on such a small number of big names.

Local: Professions splinter into networks of small firms, closely tapped into their localities. They exploit word-of-mouth and social capital, and see themselves more as facilitators than experts. They coach clients, rather

than teach them. The professions benefit from greater client intimacy and, possibly greater trust; but they have effectively lost any distinction from other small knowledge-based businesses, such as aromatherapists and counsellors.

Public/private

Public: The government, at both a UK and an EU level, starts to take a stronger role in regulating professions and setting minimum requirements. Professional exams are more closely linked to national requirements, which in turn are linked in to the requirements of the UK and EU economies. Private professions are drawn into the public services, as PPPs, at the same time as public services are increasingly supplied by private companies. The government creates safety nets and under the whole of the expanding private sector; the professions are treated no differently.

Private: The market comes to predominate. Winner-take-all markets arise, which ensure that the very best experts clean-up the majority of the profits, while other professionals start to suffer visibly. This has already occurred in professional football. The benefit is that the market becomes a reasonable indication of quality; the disadvantage is that the public interest is lost altogether.

Diffusion/closure

Diffusion: Professional associations expand massively into new industries. They merge with unions, beginning to include all forms of service industries, such as plumbers, designers or chefs. There is a recognised need for reputation systems across the whole of the (now universal service) sector, and professions recognise that they are not especially different from other industries. CSR campaigners and the media can therefore have a constant dialogue with these professional associations in whichever sector they like, and independent watchdogs over-see all operations. Professions survive, indeed they boom; but there is nothing distinct about their ethos any longer.

Closure: Struggling to distinguish themselves from the rest of the marketplace, professions take a conservative tack. Like city guilds, they batten down the hatches, and reduce their membership to a trickle. With

strict cultural and educational criteria for entry, professions maintain their reputation as something apart from the rest of the marketplace, and benefit from the fact that their expertise is still recognised as second-to-none; but their fees spiral, resulting in a new crop of alternative types of expert, and a sense across the public that their services are ‘not for you and me’.

This chapter has outlined a variety of possible drivers of change, and a variety of possible future directions. Some are more significant than others, some will of course be proved plain wrong, but all need to be accounted for. An infinite variety of possible futures are available to the professions, because decision-making remains in their hands. The context laid out here provides a basis for decision-making to begin. Meanwhile, the scenario papers offer a menu of available destinations, and it’s to these that we now turn.

“ ...Half a century ago, my father trained and qualified as a chartered quantity surveyor. He then elected to become a contractor, and one consequence of that was a summons to RICS headquarters, where he was required to forego not just the designation of chartered surveyor, but even the certificate confirming that he had once possessed it.

For me, this story serves as a warning of the capacity for arrogance that lies within the concept of institutionalised professionalism. It is, of course, a capacity that is not always realised, and there is much good in the concept; but something of it persists – at least in those who seek to find what it means to be a member of a profession in a claim to some superior code of ethics, or to a uniquely altruistic interest in the welfare of their fellow beings.

Instead, the value that can be placed on the professions is best judged by those who employ them – their clients, and by the extent to which the promises made to clients are distinct from those made by others. Where this distinctiveness resides is still the subject of exploration and debate, and these papers are a valuable guide in that continuing journey. ”

Paul Morrell

Partner, Davis Langdon & Everest

“ ...We are on the verge of a thought revolution. Ideas are the key to the future.

Twenty years ago it was common for engineers to spend long tedious hours working out the way in which a two-storey building frame worked, long-hand, on paper. Three-dimensional structures were even worse unless they fitted into a pre-ordained form, or could be approximated by a 2D version. Because of this, many engineers didn't even attempt to work in 3D, and retreated into codes of practice and rules whose purpose they had long forgotten. Sometimes, ideas were incidental to the process. Thankfully, those days are past.

From now on, creative people should have a great time. Before building anything we will be able to frolic in a virtual world: there is no risk in ideas... if a virtual idea falls down, we can learn from it and try something else. Ideas will be tested in a series of 'what-if' scenarios on a palmtop, and soon on an ear-mounted brain sensor, then in a holographic force-field. The arrival of interactive design software has revolutionised the way we design things... it means that engineering has become more of an art, architecture more of a science, and all design more intuitive. This crossover is at the heart of some of the most innovative design thinking today. We need more free thinkers to take advantage of all the possibilities. Many of them may be pursuing arts careers right now, happily oblivious to their future. We need lots of them for cross-pollination. ”

Chris Wise

Professor of Engineering Design, Imperial College
Director, Expedition Engineering

Regulatory scenario

Andy Jobling

A day in the life of...

Andy Jobling

Levitt Bernstein

Scenario: “The construction industry has become highly regulated by government and the insurance industry.”

‘Beep’... Gareth glanced up at the screen. ‘Non-compliance – error code 375668 - door width too narrow... Click here for regulation’. Casually he clicked on the options button and chose from a short list of compliant options. He could also have selected the relevant door and changed its parameters long hand. Either way he now knew that this part of his design met all current legislation and good practice.

Gareth leant back in his chair, turned to look out of his large study window across luscious green rolling countryside. Lunchtime, he thought, and headed off to the kitchen.

Gareth was an architect who completed his Part III and registered in 2009, one of a growing band whose designs inspired awe and wonder. This group had become able to meet not only the explicit and tacit needs and aspirations of the users but also to provide the wider community with enhanced urban space in exciting and innovative ways. They had also regained the respect of the public at large, who valued their contribution to the built environment, the context of everyone’s life work and play.

Gareth remembered the start of his working career, a time when the legislation and regulation of building had become so complex that it had overwhelmed architects in practice. As a consequence designers and architects had relied heavily on a plethora of sub-consultants and co-consultants, each with specialist knowledge of one small area of building design or regulation. It had been a nightmare to organise and co-ordinate and the courts had had a field day sorting out the disputes over who was responsible for what.

He had left college and joined a medium-sized architectural practice located in a rather grubby corner of the metropolis and had been allocated to a team working on the refurbishment and extension of a grade I-listed theatre in the North of England. It was on site visits here that he had first discovered the wide, open countryside that was now his home. His boss was a stocky man named Sergei, who had taken him on his second day to a design team meeting for the project. There were a staggering number of people sitting round the table – so many in fact that they had to form an inner and outer circle. The meeting started with introductions round the table...

Stuart Cameron	Theatre Company Manager
Mat Davies	Structural Engineer
Patrick O’Hendry	Urban Designer
Peter Smith	Planning Consultant
Graham Harper	Theatre Planning Consultant
David Green	Fire Engineer
Robin Draper	Quantity Surveyor
Austin Long	Access Consultant
Kalim Kaziki	Building Services Engineer
Trevor Higginbottom	Theatre Lighting Specialist
Sergei Antonov	Architect
Louis Chantier	Acoustician
Roger Gardener	Crowd Dynamics Specialist
Elaine Carver	Client’s Representative
Suzanne Cooper	Project Manager
Paul Saville	Party Wall Surveyor
Grant Lombard	Planning Supervisor
Fran Lambini	Artist
Mark Jones	Landscape Architect
Geraldine Kauffman	Interior Designer
Dick Hardy	Modelmaker
Claire Sandy	Archaeologist

And of course Gareth himself.

With so many parties involved it was easy to think that all aspects of the design were covered, but Sergei knew from experience that this was not always so. On one project, he told Gareth, the below-ground drainage had been designed by the structural engineer, the above-ground drainage by the architect; and the water supply was wholly the responsibility of the building services engineer. The overflows from the water tanks were missed because the building services engineer thought they were in the architect's scope and vice versa. Such oversights were common. Sergei's practice had used a responsibilities matrix – a checking form that helped to ensure that every aspect of the design was allocated to one of the consultants. This had been one of the items on the agenda for that design team meeting.

The plethora of design 'professionals' provided comfort to the architects, as responsibility for complex detailed design issues was delegated. However, the payback had been that architects rapidly lost control of the design with the involvement of specialist subcontractors and suppliers further eroding their role. Gareth and his college mates had spent many late nights over coffee wondering why they were spending seven years becoming architects, seven years incurring ever-increasing debts, to join a profession that looked to be on its last legs. How could it be that he was now a member of a well respected, well paid profession? What had changed?

Refreshed and invigorated by lunch and just a quick (well, not so quick really) play on his virtual Playstation, Gareth returned to his study to the serious business of completing the design of his current project. It was not really so different to his Playstation, the building model on the computer was as real as you could get – it looked and behaved as a real building. His task for the afternoon was to do an energy audit on his latest design. Following the Baghdad Protocol of 2014, the Building Regulations had tightened considerably. Climate change was no longer speculation and governments had reacted belatedly and strongly with very prescriptive regulations in respect of energy use and CO₂ production.

'www.RIBAServe.com'... Gareth logged on remotely to the RIBA server to load his building model into the energy calculation software. The calculation involved some pretty heavy number-crunching to work out

the dynamic heat flows through the building elements, and was particularly complex at the junction of different elements and around cold bridges. The regulations had long recognised the significant impact of cold bridges on the thermal performance of buildings. Gareth knew that he was lucky to have access to such sophisticated software. Time was when only the larger practices had been able to afford the software necessary to show compliance with current regulations and standards – the age of the one- and two-man architectural practice had looked truly over. Then, to the astonishment of everyone, both inside and outside the profession, an enterprising president of the RIBA, one James Kennedy, negotiated a favourable deal with the software companies and established the RIBA central server. All the necessary software was now available to its members as part of the services covered by the annual subscription. It had revolutionised life for small and large practices alike.

Gareth made regular use of the structural, costing and environmental design packages, and many others. Only that morning he had run the dynamic structural analysis to check whether the additional shear wall had provided sufficient bracing against wind loads. Anticipated wind loadings had recently been increased in the regulations to reflect the increased frequency of extreme weather events. A few extra clicks of the mouse sent the output from the analysis direct to the approved inspector for 'rubber stamping'. The inspectors' role now was to verify that new releases of software were robust and did not produce erroneous results. For the project, all that was necessary was to register that an analysis had been carried out and that a compliant result had emerged from the analysis software.

So much legislation, and of such complexity, had been introduced both through its own programmes and also in response to EU directives that the government could no longer afford to police its implementation. The end of the 20th century had seen the introduction of private police in the form of 'approved inspectors'. However, this was very costly and was still largely funded from central government. The RIBA now felt that the re-establishment of trust in the professions had reached a point where it made sense to introduce self-regulation and was lobbying the government to review the system.

Gareth thought back to his early days in practice. There had been the incipient signs of compliance software but it had been clumsy, difficult to use and very expensive. Parameters had to be measured off CAD drawings and fed manually into the calculation programmes. Very few practices were using intelligent building models so there was little incentive for software developers... and anyway, software writers were reluctant to invest much effort as all the indications were that prescriptive regulations were to be replaced by risk-based assessment and compliance.

A ring at the doorbell brought Gareth's thoughts back to the present. He pushed his chair back, spun a quarter turn and jumped up to answer the door. "Good afternoon, Mr Gupta". Mr Gupta, a developer, had come to talk to him about a new commission for a group of live/work units. Sitting down at a small meeting table in a room that doubled as a dining room, he spoke excitedly. "That site you found is ideal for live/work units... it's close to local shops and the tram link is only round the corner. We've made an offer for the site, subject to sustainable development consent." "Great," interjected Gareth. "Your preliminary assessment of its development potential was invaluable," continued Mr Gupta. "We used to go direct to contractors... never employed a design team – too many consultants, fees too expensive – couldn't see the added value." "And now?" asked Gareth. "Well," Gupta continued, "we now recognise an architect can add value to a site or building, find innovative and economic solutions within the constraints of the regulations, and, importantly, provide a building that delivers more than was detailed in the brief – you know, the sorts of quality things that we all appreciate but can't define."

Clients had come to rely on architects and building professionals because so much of the legislation was risk-based and required the value judgement of a professional. But, Gareth wondered, did they appreciate the skill of the architect? Or were they only responding to pressure from the insurance companies, who pretty much insisted that clients employ an architect so they could be confident the risks had been properly addressed? Mr Gupta's voice was heard once again. "We get a good discount on the building's insurance if it is architect-designed." Gareth nodded in confirmation: "One of the architect's strengths is to assess risks

associated with a building and its use and to put in place appropriate measures." He added: "You will recall this is all inter-linked with the management of the building after completion. When we designed your office building last year, we discussed and recorded your operational procedures as part of the briefing." Mr Gupta nodded his head in acknowledgement.

Prescriptive regulations had been the norm for most of the 20th century, but as lifestyles and technology developed and changed, the regulations lagged behind, becoming inappropriate and difficult to apply. New building types, multi-use buildings such as shopping centres and leisure complexes, were emerging and prescriptive measures were just not able to deal with these projects. The move to a risk-based approach encouraged the building designers/owners/managers to work together in assessing the main hazards and finding innovative ways of controlling them so that the risks to building users were kept to acceptable levels. The government had intended all its building legislation to permit the risk-based approach, but it had been thwarted by the continual bombardment of directives from the European Union that required a prescriptive response. The devolved regions had also produced their own regulations – much as the local authorities had done in the mid-20th century, with bylaws like the Surrey Acts.

Gareth glanced up at his award certificates projected on to the dining room wall and wondered why it was that the government didn't appreciate the added value provided by architects. The control of architects had remained little changed since the Registration Act of the 1930s. In essence anyone could design and put up a building and call themselves an architectural designer, but only someone on the register was able to use the title 'architect'. Spain had seen the folly of this long ago and as a consequence a building owner could not get the necessary building licences and consents unless an architect was employed. Many attempts had failed to persuade the British government of the merits of this scheme. The Architects' Registration Board (ARB) remained resolutely in place as a consumer protection organisation, handling complaints from dissatisfied clients (or 'customers' as they were now known): a kind of 'Which Architect'.

Twenty five years ago there had been a debate as to whether the professions could be left to set their own standards and deal with the consequences themselves if their members did not meet the expected standards of behaviour and competence. But although self-regulation was well suited to the Victorian moral ethic, it did not sit so well with the consumerist society of the last half-century. The privatisation of public utilities in the Thatcherite era had been undertaken in an atmosphere of mistrust and it had been necessary to set up watchdog organisations – OFWAT, OFGAS, etc – to see ‘fair play’. The financial services industry had then fallen under the influence of consumerist regulation. It was inevitable that the professions would follow, and one by one this had happened. Architects had been one of the first – the Architects Act of 1997 put laymen in charge of the conduct of architects. Since then the consumers’ interests had become ever more dominant, and the resultant ‘code of conduct’ ever more lengthy. Gareth was well aware that his annual licence to practise as an architect was dependent on the continued satisfaction of his customers.

There followed a detailed discussion of fees and scope of work. Gareth was able to offer a ‘full’ service in the true sense of the word: no sub-consultants no co-consultants, a fully integrated design service offered by an architect. How things had changed! A fleeting image of piles of back-to-back consultancy agreements passed through his mind. Today there would be a single agreement. Gareth was going to do what he was trained to do – synthesise complex and often conflicting requirements from brief, environment and legislation into a built form. An attempt to get this service properly regulated so that only licensed architects were permitted to offer design services in relation to buildings was rejected in the 2009 parliamentary session – some things never seemed to change.

The men shook hands and Gareth held the door wide for Mr Gupta to pass out into the soft late afternoon sunshine. Gareth pushed the door shut and began to mull over the appointment he had just discussed. The very first task before any other was to set up the project insurance. Paragraph 7.2 of the ARB Code of Conduct required the insurance to be in place before design work commenced. The scope of the project was set down on the application form by the architect, the fee was paid direct by

the client and then the insurance company would issue a ‘certificate to proceed with the design’. This always arrived from the insurance company with a lengthy list of requirements and a reminder in the form of a boldly coloured banner that the insurance was invalid if the design or technical requirements were breached.

Gareth had almost become used to the threatening quality of this warning, as it was never quite as frightening as it sounded. All the insurance companies undertook regular audits of their projects and a copy of the intelligent building model was downloaded to the insurance company server at the required audit stages. A report sheet with recommended changes was then dispatched in response. These were normally fairly brief, and once they were complied with, a ‘certificate to proceed to stage x’ was issued. This was comforting not only for the insurance company but also for the architect. The audit process was in place so that the insurance company had no hesitation in accepting full responsibility for the building in terms of design, materials and workmanship on completion.

In a world of litigation, where adverts on television and in the papers encouraged people to seek monetary compensation every time things did not go quite as expected, it had taken a long hard campaign to get the world at large not to be greedy, to accept that to err is human, that mistakes do happen and that a no-blame, cover-all, insurance was far more satisfactory than trying to pin responsibility and costs on particular individuals or companies. Gareth knew of recent instances where a defect had been notified to the insurance company on a Monday and the remedial work had been agreed and carried out by the Friday. He and his fellow professionals had noted a marked improvement in the clients’ view of the architects since project insurance was introduced in 2015, for, when the odd mistake did occur, it was quickly resolved. Thinking back to his practical training experience, Gareth recalled sitting next to a young architect, Ian, with bushy ginger hair and a beard to match, who was sorting out a leaking roof on a building that had been completed two years earlier. The problem had arisen before Gareth arrived and was still unresolved when he left. That was at least one year during which the client continued to be rained on while the contractor, client and architect

argued over who was responsible, what should be done and who was going to pay. No wonder everyone had such a low opinion of architects: after all, the architects claimed to be in charge, leaders of the team etc.

The 'no-blame' project insurance concept had liberated all construction professionals allowing them time to concentrate on best practice rather than just covering their backs.

When Gareth first qualified there had been a phenomenon known as professional indemnity insurance – where each consultant had to pay for his own insurance cover. That cover had to continue long after the building was finished and long after the consultant retired – you never knew when a defect might appear and hence a claim be brought against you. Insurance premiums were expensive and substantial discounts had been offered to firms that practised 'safe architecture'. It had stifled innovation and led to a mass of cloned buildings that made use of the robust 'safe' details. It had been a lean time for architects as their traditional skill of ensuring the details of a building worked well had been downgraded and other professionals in the construction field were as able as anyone to assemble buildings from sets of standard details.

Project insurance had changed that. A number of architects were now employed directly by insurance companies to review project details and identify areas of risk. These 'high technical skill' architects worked with individual project architects offering advice and assistance. This role had formerly been carried out by technical representatives from manufacturers and suppliers. However, although their advice was generally good, it was always partial, unlike the independent technical advice from the insurance companies.

Gareth could have worked for one of the large practices located in the local business centres, but preferred to wrestle with design problems in the comfort of his own home. Dinner parties often turned into informal crits when Gareth projected images of his latest project on the dining room wall. He and his friends would have passionate debates about whether the tacit brief had been met – the needs of the users, the community at large and the environment. Was the development sustainable, in all senses? What was it giving to its environment and

community? His friends came from all walks of life and their comments were invaluable. If he became self indulgent they soon told him.

The webcam winked signalling an incoming link, and milliseconds later a video image of Gareth's wife appeared on the screen. He could see some of the site she was inspecting behind her. Victoria was also in the construction industry – an independent safety and health advisor/inspector for a firm of approved inspectors licensed by the Department for the Holistic Built Environment – a ministry set up by the Gaia Party after its election victory in 2018. At the turn of the century the Health & Safety Executive had been the main agency for policing health and safety, but a lack of knowledge of the construction industry left it woefully ill-equipped to cope with the implementation of the CDM Regulations. This had resulted in the appointment of the independent approved inspectors of whom Victoria was one.

In the mid 20th century, construction safety had been entirely the responsibility of the constructors. Some were responsible – most were not. By the end of the century, construction safety had embedded itself into the culture of most construction companies. The governments of the day were thus at a loss to understand why construction remained one of the most dangerous occupations.

An analysis of the accidents showed that the 'design' of buildings, in the broadest sense, increased the likelihood of accidents occurring. This led to the introduction of the CDM Regulations in 1994, placing the onus on clients and designers for the first time to consider the safety of the ways in which their buildings were constructed, cleaned, repaired, maintained and demolished. A harsh reminder for the need for health and safety in construction continued to be the still increasing number of mesothelioma cases resulting from the widespread use of asbestos materials in the 1970s. But the safety culture was slow to transfer to design professionals and the government had felt the need to make the regulations more robust and the penalties more severe. Hence the amendments in 2004, 2011 and most recently in 2019. As failure under the regulations was a criminal offence, this was one area where project insurance could give no comfort to the client, architect or contractor. Gareth considered himself lucky to be able

to rely on the advice of his partner to stay out of trouble. Not all construction professionals were so fortunate. Victoria had had a wry smile on her face when she told Gareth that a number of the clients and design consultants of the PFI projects built at the turn of the century were now languishing in their own PFI prisons.

At the start of the century PFI, PPP and its other manifestations had seemed an excellent way of absorbing private funds into public services and their buildings, but it had transferred design responsibility to the firms who were both funding and constructing the facilities. Naturally, their emphasis had been on making the financial aspects of the project work, and initially, although the buildings were functional and technically robust, they lacked design quality, or 'delight'. Architects employed by the consortia were frustrated but powerless – innovation was stifled as the funders sought to minimise their risk. However, projects were often high-profile public buildings and it soon became evident that design quality was lacking. Indeed, this was highlighted repeatedly in the government's audit office reports issued in the early years of the century. Since then the government had sought to address design quality in its procurement of public buildings, and this was now firmly embedded in the selection criteria for private finance partners and in procurement agreements.

Gareth had kept in touch with many of his year group from college, and most of them were pursuing fulfilling careers within service providers' organisations. Their skills were adding value to their employer's organisations, enabling them to win projects as diverse as hospitals, schools, transport nodes, public housing and government offices – providing that elusive design quality that was widely appreciated but only obtainable by employing appropriately trained professionals.

One of his college friends was now an advisor to the Treasury. Gareth's latest commission would require him to consider carefully the impact of Treasury rules and guidance on the development. Gareth knew that the government's desire to see innovation in construction procurement and the implementation of energy-saving measures had led it to devise complicated taxation concessions, mainly through VAT and enhanced capital allowances (ECAs). Taking advantage of these was a crucial part

of the budgetary considerations for the project. Gareth called up the Treasury website dedicated to ECAs and scrolled down the current list looking for items relevant to his project. He would discuss these at his next meeting with Mr Gupta. The government's taxation policy had thrown up some strange anomalies. A prime example being the prefabricated building module that was regarded as a piece of 'energy-saving equipment' and thus eligible for 100% allowances in the first year. A similar building constructed on site attracted no taxation concessions. This had been a deliberate move on the part of the government, in 2012, to encourage the industry to develop and implement prefabricated techniques.

Prefabrication and system building had been investigated by each generation of construction professionals in turn, each believing it to be the way forward. Each system was launched in a blaze of publicity only to be forgotten a few years later as volume of orders failed to materialise and the companies who had invested heavily in the development of the products and the factories to produce them crashed out of existence. It had not been an area to invest your pension in. The government's targets for prefabrication were not being met. The only answer seemed to be intervention and, as with emerging technologies, the government devised a complex system of grants and taxation concessions to stimulate demand. This was a new area of expertise for architects and the successful practitioner could save his client a considerable amount of money in both the short and long term. Gareth knew where he could find the information he needed on the web and settled down to write a report for his client.

The remainder of the afternoon passed quickly and Gareth was soon aware of Victoria's presence in the house. His day had no formal start or end so it was only the return of his wife that signalled that his work should be wrapped up for the day. He emailed the final draft of his report. Three more clicks and his PC had changed the lighting to evening mode and strains of their favourite jazz tracks filled the room.

After a leisurely meal during which they both offloaded the events of the day, Gareth joined Victoria in the multi-media room and sank deep into

the Selinski style sofa. “Video wall,” he spoke quietly into the headrest of the sofa. The wall opposite bathed the room in a bluish light. “Channel 16...” An authoritative voice spoke about the newly completed sports stadium in Belfast. This was the architectural channel and Gareth had tuned in at the tail-end of one of the news programmes. Strangely, it had been the media’s obsession with DIY back in the 00s that had led to the re-establishment of the worth of the professions. There had been a number of high-profile cock-ups where, in their rush to make good television, the programme-makers had ignored all planning and building regulations and every other sort of relevant legislation. The message to the viewers had been that you could do anything you fancied and that you didn’t need professionals to help you. The most famous instance was a programme showing the interior of a grade I-listed Chiswick Villa being completely gutted to make way for a swimming pool for the new owner. The ensuing enforcement action and court case had bankrupted the television production company. This was one where a retrospective planning application was not going to be enough to sort things out. Suddenly the public had had their eyes opened and realised the labyrinth of legislation and regulation relating to construction was not something that they could easily find their way around.

At 19.30 Gareth returned to his computer and logged on to the council website. One of his projects was going before the Sustainable Development Committee for an approval and he wanted to watch the meeting live via the web. ‘Town planning’ was regarded as too narrow a title for a process that embodied the consideration of a wide range of issues covering economic, social, and environmental concerns. The government had redrafted the legislation, and the Sustainable Development and Communities Act of 2017 had entered the statute books. There was no longer any exempt development – allowing market forces free rein had shown time and time again that any short term gains for the community were outweighed by the long term disbenefits. The legislation had been a reaction to the relaxations in controls that had been allowed at the beginning of the century to encourage private money into public projects and spur economic growth. The Gaia Party had gained government because people realised that there is only one Earth that had

to be shared and it was no longer acceptable for people to ‘do their own thing’ regardless of everyone else. Gareth’s scheme was passed by 12 votes to three. He turned off the web link and headed back to the multimedia room to join the interactive sports quiz show. The rest of the evening was quickly gone.

At the end of an unexceptional day Gareth retired to his sleeping quarters to read – bedtime reading of paper books was something the IT revolution had not managed to crack. It was not a novel that gripped Gareth’s attention this evening but an early 20th century book on architectural philosophy. Architecture had long been defined as ‘commodity, firmness and delight’. Gareth pondered on the changes of the last two decades. Whilst it was reasonable to assume that stringent regulation could ensure ‘commodity and firmness’, there was the added dimension of ‘delight’ where the architect could show his true skill. The mission statement for the 21st century had been to educate consumers to appreciate the value of delight in the built environment, to convince them that this could enrich everyone’s daily lives and that its creation was worth paying for.

We were winning! Gareth put down his book and turned out the lights.

“...The professions in the sector often fall short of the definition of the 1971 Ormrod Committee – they do not always serve their client before they serve themselves.

The professions

- ♦ allow the quality of their service to reflect the size of their fee
- ♦ defend outdated practices and form a barrier to innovation
- ♦ are often sector focused to the disadvantage of potential clients and consequently add less value than they could.

Construction clients need objective bespoke advice because most of them by number are inexperienced. The source of this advice is unknown to them and the construction professions cannot be relied upon if current performance is any evidence.”

Roy Morledge

Professor of Construction Procurement
The Nottingham Trent University

“...The theme of professional futures encompasses the whole range of professionals, extending beyond the engineering to include law and medicine.

The distinction between codified as opposed to tacit knowledge is important. Members of a professional institution are repositories of experience or tacit knowledge. But until the tacit knowledge has been codified it cannot be shared with society at large and the benefits made generally available. The professional institutions have a duty on them to do this, but there is bound to be a time lag. Thus the holders of tacit knowledge should not be ignored, as new research does not easily supersede the fruits of experience.

It has long been understood that the immediate aims of individuals can be in conflict with the long-term aims of society. The constitution writers of the 19th century included responsibility to society as a whole amongst the aims of professional institutions. It is now clear that issues like global warming will increase this conflict. The duties of architects and engineers to design for sustainability and for the whole community are being perceived with increasing force. Now is the time to strengthen the professionals' duty to improve on current best practice.

The registration of professionals could easily be used to raise the standard of construction. The institutions have to make difficult decisions so that there is a proper supply of registered professionals while the standard of registration is kept up. The old fashioned idea that a professional cannot serve in a servant relationship with an employer may even have to be re-examined.

Thus the modern world is opening up a new range of issues that need the concept of professionalism for their resolution.”

Max Fordham

Partner, Max Fordham LLP

Economic scenario

Andrew Curry + Larissa Howard

From services to sustainability
 Andrew Curry + Larissa Howard
 The Henley Centre

Scenario: 'Professional building design consultancy is largely provided by service delivery companies reporting to shareholder interests.'

"It may be that one has to choose between ethics and aesthetics, but whichever one chooses, one will always find the other at the end of the road." (Jean-Luc Godard)¹

Scenario summary

In this scenario, the organisational landscape of the built environment professions is dominated by a small number of large service-delivery companies driven by their shareholders and shareholder value. However, both commercial interest and regulation drive environmental sustainability in new and refurbished buildings, and these two factors combine to generate new financial models built around lifetime values of properties, and new operational models based on 'whole service management'. The savings to be made from sustainable design are well known, even to accountants. The skills most valued in this scenario are, first, the deal-making skills needed to design the financial vehicles which underwrite developments, and fund them; and second, service innovation skills which identify new income streams for the developer/owner. Relationship management also emerges as an area in which expertise is an advantage.

Investment in property as such has all but disappeared from the public sector paradigm. Most public buildings are leased from private companies which are responsible for managing them, and construction is only a small part of the total cost. And having seen that this model worked in the public sector, many private sector companies have chosen to follow it.

The value attached to design consultancy increases over time, driven by

its value in reducing the lifetime costs of the building. From the perspective of the building professions, the story is mixed. Those whose training has included systems thinking and financial impact studies, and who can identify and sell innovative approaches to delivering sustainability, are able to make a lucrative living. Those who can not do less well.

The companies that prosper are those which adopt a 'whole systems approach', in which one firm is responsible for managing the whole property value chain. When this works, everybody wins. The developer has a stake in the lifetime costs of the building; the occupier gets the liabilities of long-term leases off their balance sheet; and employees, usually, get better working environments. When it doesn't work, the result is litigation.

Introduction

This paper is structured in four parts. The first part takes a view from 2003 of the main drivers of the scenario. The second tells a story, with the benefit of hindsight, from the year 2020, of how the property and property services sector unfolded as a result of these drivers. The third reviews the consequences for the education, training and development of building professionals in the face of the possible future represented by this scenario. And the final part is a short narrative, told of a day in 2020, about the pressures on a specific individual when professional ethics collided with corporate duty.

There are three principal drivers, and two secondary drivers, informing this scenario. The principal drivers are:

- ◆ The rise of the services-based economy.
- ◆ The development of the digitally networked company.
- ◆ Increasing importance attached to environmental sustainability in both the private and the public sector. (This is a weak driver initially, having a significant impact only in the later stages of the evolution of the scenario).

¹ Quoted in Victor Papanek, 'The coming of a new aesthetic: eco-logic, etho-logic, bio-logic', in Jeremy Myerson (ed), *Design Renaissance* (Horsham: Open Eye, 1994)

The secondary drivers are:

- ♦ The development of a preference for leasing rather than owning, exemplified in the public sector by the development of the private finance initiative as a way of financing infrastructure.
- ♦ Relative weakness of the capital markets as a source of funding for property development projects, which leads to innovation around financing mechanisms.

The drivers of the scenario

The rise of service

The rise of the service sector at the expense of manufacturing was one of the strongest trends of the second half of the 20th century; an inevitable result of a steady increase in affluence which shows little sign of abating in the 21st century, short-term economic effects notwithstanding. Richer consumers prefer to pay for experiences rather than acquiring more things, even though plummeting manufacturing costs mean that things are cheaper than ever, certainly relative to income.

Increasingly, profits are to be found in the service sector, not least because – even with manufactured goods – the majority of costs associated with the product, and therefore revenues, are maintenance or service-based costs. For example, in 1997, *The Economist* estimated that the purchasing price of a personal computer was only 5% of the total cost related to the lifetime use of that computer. Inevitably, in the face of low inflation and widespread commoditisation, companies have begun to look at the broader value chain, moving away from a narrow focus on manufacturing and sales.

This is the journey which IT companies such as IBM, EDS, and Unisys took in the 1990s after Microsoft had carved up the software market. Similar trajectories can be identified in the airline industry and the logistics business.² As Daniel T Jones observes: “The emphasis is moving away from purchase to ongoing support of use of these products over time.”³

² For an analysis of the development of the logistics company Ryder System, see Richard Normann and Rafael Ramirez *Designing Interactive Strategy* (Chichester: John Wiley & Sons, 1998)

³ Daniel T Jones, ‘Thinking outside the box’, *ECR Journal*, Vol 1 No 1, Summer 2001

The wider principle has been captured by Jeremy Rifkin in his book *The Age of Access*: instead of buying an object and having the use of it (but also needing to learn a set of skills to get the most from it) one instead acquires the rights to a set of services which deliver the skills bundled with the object, and upgrade and improve the object when you need to.⁴ While this transaction is not as unproblematic as it appears on paper, when it works it has significant benefits.

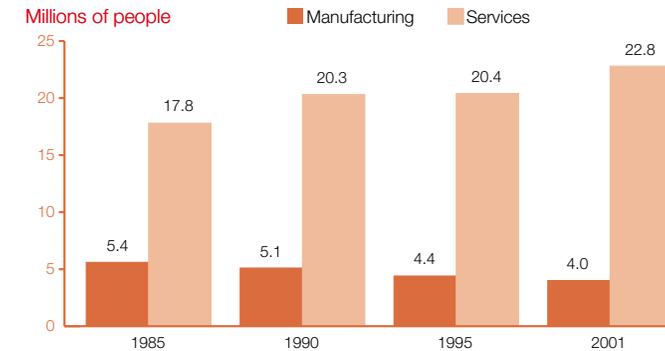


Figure 1: The shift in employment from manufacturing to services
Source: Office of National Statistics

The rise of the digitally networked company

The dominant business model of the 20th century was the so-called ‘Fordist’ model, in which vertically integrated companies managed assembly line-based production processes. The boom in ‘business process engineering’ in the 1990s was a final attempt to make such supply-driven models work.⁵ But the emergence of ubiquitous digital networks spurred the decline of the ‘Fordist’ model just as it became clear that such models were poor at delivering quality or process improvement; that the control they delivered over the staff on the line was expensively bought in terms of the number of vehicles which had to be fixed before they left the

⁴ Jeremy Rifkin *The Age of Access* (London: Penguin Books, 2001)

⁵ The business process engineering boom was stimulated by the publication of *Re-engineering the Corporation*, by James Champy and Michael Hammer in 1993. UK edition published in London by Nicholas Brealey Books. James Champy now estimates that 70% of BPR initiatives failed, while Michael Hammer puts the failure rate at 50%.

plant, or the damage to corporate reputation from those unnoticed by the quality inspectors which found their way to customers.⁶

Capturing the value to be found in service, however, requires different approaches, even different metaphors, from the traditional value chain model. (See Figures 2 and 3).

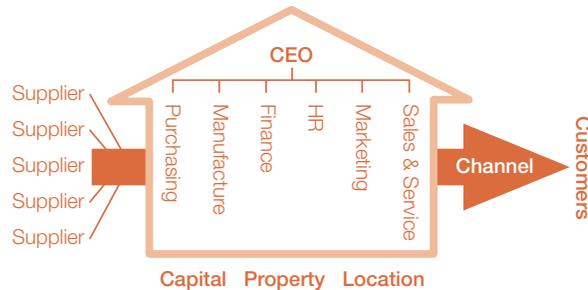


Figure 2: The traditional business
Source: BT/Foresight Task Force on E-commerce

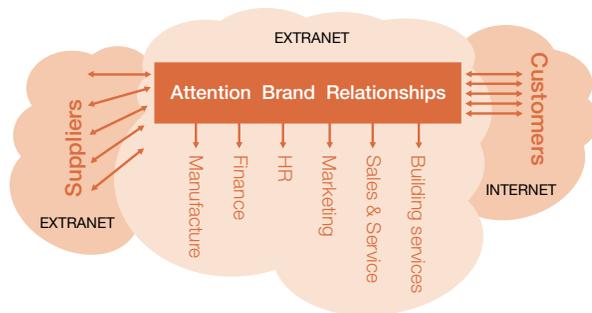


Figure 3: The exploded business
Source: BT/Foresight Task Force on E-commerce

The attraction of the networked economy is that many of the functions which were traditionally regarded as essential, and which took up management time, resources, and attention, can be outsourced, either to third parties or to stand-alone units within the group (which may also take on similar functions for others). Just as valuable is the fact that the networks are, by their nature, two-way channels. Response times are

quicker; the whole system is able to adapt faster to external changes.⁷ All of this allows the business to concentrate on that which is critical to its business success. Nike doesn't have to manage its factories (although it needs to know how they are being managed on its behalf). It can concentrate on design and marketing, which is where its competitive advantage is to be found. Similarly, both Benetton and Dell, and in the B2B sector Cisco, concentrate variously on design, customer relationships, marketing and R&D, while outsourcing manufacturing and logistics. There is no obvious reason why property services should not also be outsourced: indeed, some functions, such as security and catering, frequently are already.

Environmental sustainability

At present the momentum behind the sustainability agenda appears to be relatively weak. Nonetheless, there are multiple drivers of sustainability at different levels and places in the political and financial system, and these are likely to combine within the decade. This has a significant effect on the scenario. At the global level, there is continuing pressure on governments to act in response to commitments made at Kyoto, Johannesburg, and elsewhere. (The current behaviour of the US government will, we believe, be seen in retrospect as a blip caused by sectional conflicts within America). At a commercial level, companies are committing to ethical and environmental programmes both because they save them money, and because their investors and their customers expect them to. It is now a matter of corporate importance for most of the UK's leading companies, for example, that their share price is included in the FTSE4Good index. Consumer attitudes also appear to be increasingly intolerant of companies which do not behave responsibly towards the environment. (See Figure 4). This is even more marked in many European environments. Boycotts and other attacks on companies such as Esso are only the most visible tip of this. More specifically, there is increasing awareness of the political and environmental costs of dependence on oil and fossil fuels as production levels start to decline, and public policy has already started (albeit weakly) to reflect this. At the same time, investment in, and development of, sustainable technologies is reducing their costs rapidly.

⁶ A selection of recent academic writing on 'Fordism' and 'post-Fordism' can be found in Ash Amin (ed) *Post-Fordism* (Oxford: Blackwell, 1994)

⁷ For a fuller discussion of this, see DTI Foresight, 'Smoke on the Water. A Fire in the Sky'. Electronic Commerce Task Force, Report for Consultation, 2000.

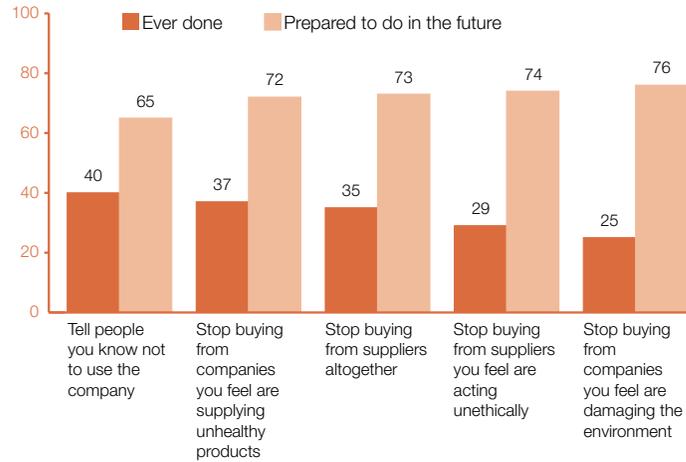


Figure 4: Consumer power
 Source: Planning for Consumer Change, The Henley Centre, 2001
 (Sample: UK adults)

Leasing, not owning

This shift to life-long value makes particular sense for the construction industry, as the initial design stage, and even physical construction, consists of a fraction of the overall value to be extracted over a building's lifetime.

It also makes particular sense given the decreasing interest in owning property that started in the public sector with the PFI initiative in the late 1990s and is spreading from there to the private sector. Leasing will become pre-eminent. Just as it is a distraction from the primary social or commercial purpose of an organisation to manage its building infrastructure, so it also makes little sense to manage the servicing.

The migration towards leasing property instead of owning it, and to outsourcing the construction and the ongoing servicing of the building, is part of a broader shift which has emerged with the network society.

Weaker capital markets

After the boom years of the 1990s, when the amount of capital in the

system fuelled a classic speculative boom, there is less capital around in the 2000s. This is partly due to governments' increasing willingness to borrow to fund deficits. In addition, demand for commercial property has fallen because of the economic climate just as considerable amounts of new space has become available, pushing down returns. Only the very best speculative developments can be sure of attracting funding, some of it diverted from stock market investments. At the same time, it appears that in the face of unreliable returns, more dependable financial vehicles, such as bonds, will become more attractive. Utilities, with their big customer base and steady revenues, have become more attractive. The traditional speculative development model of the property sector will come under pressure to the extent that the economy does.

Divergent business models

The drivers suggest that there are two principal models for the successful property services company in this scenario. They both suggest a world of large businesses, almost certainly operating across national and multi-national markets, drawing on smaller local suppliers when specific expertise is required. The models conflict; they represent divergent sets of skills and a differing set of attitudes to one's customers.

In the first model, the company's core competencies are around deal-making and financial packaging; they are building brokers which fill the gap left by the financial markets. This is a model in which the business culture is about closing deals, not about long-term relationships.

The second model is about long-term service relationships. It is about servicing the varying needs of the occupiers of buildings over time, and responding to how these change. This depends on the existence of a relationship with the client within the building, and the flexibility to adapt service offers to developments in the wider world. The scenario suggests that the second model is more sustainable, although not initially more profitable, than the first. It also suggests that while the services-led company becomes the dominant model for the building sector, over time, there will still be spaces in the market in which deal-based, sales-based companies are able to operate profitably.

Looking back from 2020: the scenario unfolds

The crisis finally came in 2012. A wing on one of the first PFI-funded hospitals, which had already become a by-word for the new dilapidation of the public sector, simply slid down the hill. No-one died, fortunately; this wasn't Ronan Point. There had been arguments between the NHS trust and the structural engineers for weeks beforehand as to the seriousness of the cracks which had developed in the walls and the ceiling. And the engineers made it worse for themselves when they declined to be interviewed for TV and radio news programmes, referring all enquiries to a PR company which was clearly out of its depth.

Suddenly, a whole culture was under attack. The collapse of the hospital wing became a focal point for a wide range of dissatisfaction about public buildings, and about the types of companies which had made money out of them.

The public pressure was entirely deserved. In a cautious economic climate, where most of the new money in property had at least some public stake, the comfortable deals of the PFI had bred a cynicism which was only compounded by the poor quality of many of the buildings, and was not mitigated by the success of some of the flagship projects of the regeneration boom. In a world where commercial negotiators could earn the equivalent of their salary as a bonus when they closed a deal, it was easy to see that the quality of design and the built environment was not a priority. If building professionals had a role, it was to get the paperwork authorised.

The story was a little more complicated. Property services companies had been developing in their range and reputation at the same time, creating businesses which took over the management of buildings when the client moved in and developed revenues from taking responsibility for managing as much of a building as the client wanted. Over the lifetime of a typical building agreement the value of the services supplied would far outstrip the value of the rents. For a company with a good record in delivering services, measured in reduced absenteeism and increased productivity, it was straightforward to extend the range of services being

delivered. While early contracts might have been closely tied to the performance of the building, covering provision of heating, lighting and ground maintenance, it wasn't long before they extended to sanitation and cleaning services. A full service agreement could include everything up to security and surveillance, personal transport, conference and meeting management, catering, gyms, and reception.⁸

Some of these services companies had already moved beyond services. Some of their most advanced deals had detached themselves from individual buildings; instead the company would contract to deliver a minimum and maximum amount of serviced square footage in appropriate locations over a certain period of time. (Such deals could be hedged on the Spatial Futures Market, on which space options were traded).

The problem was that the two business models hadn't been joined up. The services companies inherited the management of buildings which they had not been involved in developing or constructing. At the same time many developers maintained the traditional conservatism of their industry, working on a model of 'build and sell', passing the ownership on to a financial institution once the development was complete and the tenants signed up. A global downturn which also embraced the UK only reinforced the short-termist culture. As times were tight, any initiative which could produce immediate savings was embraced, even at the expense of greater long-run costs.

And as many of their clients were also suffering in the economic climate, they were keen to accept cost savings at the expense of employee comforts or the excellence of design, so both sides combined to diminish the quality of that which was delivered.

Such services companies were, however, limited by the quality of the buildings they were able to manage; in poorly designed buildings the efficiency gains were limited by the quality of the infrastructure. Revenue growth was not always matched by growth in profits.

While the culture of public sector and commercial buildings was dominated by the quality of the deal, and short-term cost savings, there

⁸ For an account of the development and evolution of one such service supplier see Ricardo Semler, 'How we went digital without a strategy', *Harvard Business Review*, September–October 2000.

was little scope for change. But in the face of the slow growth in public concern about the quality of construction, the government had responded with an increasing web of regulations designed to regulate quality and protect end-users. The Building Services Authority's instructions matched those of the Financial Services Authority for both length and complexity. At the same time, guidelines on sustainable design grew increasingly testing, following a change in both the commercial sector and in public opinion. And while initially the impact of the sustainability regulations was ignored beyond the usual small group of innovators, they were to prove the key to unlocking the industry; to enable it to break out of its vicious circle of low quality, low margins, and public disdain. A slight economic upturn also contributed to this change in attitudes.

All change involves pain (see figure 5). Usually, the fear of the pain is sufficiently great to discourage the effort involved. And for change to succeed, it takes more than mere dissatisfaction. It also requires a vision of an alternative and a possible route to get there. The collapse of the hospital at least raised the dissatisfaction levels.

For change to succeed:

D x V x M must be > P

Where

D = the current level of dissatisfaction with the status quo

V = more attractive ideas or a vision of a better future

M = method or some practical first steps towards this future

And for change to happen, the multiplier of D x V x M must be greater than:

P = the pain and cost of change for those concerned

Figure 5: All change involves pain⁹

The vision was already in place, if only to those who had been looking in the right places. All over the developed world there were to be found flagship projects which had used sustainable design principles to reduce maintenance costs and improve working conditions. By the end of the 'noughties' many of these were no longer new; they had proved that they

could deliver the cost savings which were promised in their green world. The story was the same from River Rouge to ING's headquarters in Amsterdam to Mount Cenis in the Ruhr. Now technology and expertise had diffused to the point where it could work for far more mundane developments. And clients had come to expect it. They'd long grown impatient of the fact that while they were judged commercially on ethical and environmental issues, by indices such as the FTSE4Good, and indeed by their customers, the building sector appeared to be oblivious to these. Clients had already found ways to live with corporate responsibility audits and environmental benchmarking, and increasingly expected all of their suppliers to comply with similar standards. The same managers were also increasingly aware of the connection between the quality of the working environment and employee performance and retention, and the impact of the built environment on this. They were also beginning to accept that short-term savings on service agreements that directly affected their employees' well being, whether in buildings already standing or those yet to be constructed, were damaging to their ability to attract and retain the best people, and therefore damaging to their competitiveness. Regulation helped. As in other sectors, companies prospered which went with the flow of regulation, rather than fighting it. The 'California effect', in which that state's progressive environmental legislation had been seen as a curb by US car manufacturers and as an opportunity by their Japanese counterparts, became the subject of public debate around regulation, moving beyond the language about 'burden' routinely deployed by employers' organisations in the 1980s and 1990s.¹⁰

The method came from the chief executive of one of the largest of the property services companies. In the face of plummeting confidence and falling margins, she announced that it would guarantee to its customers the cost savings it would make from the sustainable design of its buildings, and underwrite these, in exchange for a service management contract. In turn, this aligned the interests of the occupiers of the building with those of the developers, so that both looked for further improvements.

Suddenly building design was important; perhaps more important than it had ever been.

⁹ Margaret Attwood et al *Leading Change* (Bristol: The Policy Press, 2003)

¹⁰ For more on the effect of California's environmental legislation, see Charles Leadbeater, 'Britain: The California of Europe? What the UK can learn from the West Coast' *Demos Commentary* (London: Demos, 1997)

Any analysis of the best way to minimise building costs and improve customers' and employees' satisfaction came back again and again to the importance of understanding the process flows in the whole building. These were invariably bound up with sustainable design. (For example, green designs usually decreased construction costs, mainly by saving infrastructure expenses and by using passive heating and cooling techniques that made costly mechanical equipment unnecessary.)¹¹ It often meant a higher level of consultation skills than developers were traditionally used to, as they spoke to potential tenants about what they really hoped to achieve in moving to a new building. And again, developers discovered to their surprise that complying with the spirit as well as the letter of the sustainability regulations led to larger savings, rather than smaller. Some architects proved to have a gift for this type of work; many of these had cut their teeth on the management of complex regeneration projects with their multiple stakeholders, rolling consultation, and the organisational politics needed to align a project around the divergent outcomes sought by the various protagonists. Good design was, once more, both profitable and popular.

At the same time, not all companies are able to make the transition to being customer-led and sustainability-led. In particular, those which continue to have a culture based on deal-making and sales, rather than having a service-led, value-sharing ethos, will continue to have their relationships with customers characterised by conflict and litigation.

Learning, training, and development

Not everyone gets a happy ending

If most of this seems too good to be true, it probably is. The business logic of the scenario is robust enough in terms of the underlying trends to ensure that it could happen, even without regulation on sustainability or depressed economic conditions, although both of these will play their part.

The model of the possible future in this scenario is one in which there are considerable tensions. The skills in designing user-responsive buildings

¹¹ Paul Hawken, Amory B Lovins, L Hunter Lovins *Natural Capitalism* (London: Earthscan, 1999)

are different from those involved in running services-led businesses, where it is important to be able 'to do the right thing first time a thousand times a day'. At the same time, it is also clear that the promoter's role in development does not disappear completely; consortia still need to be managed and deals closed no matter how customer-focused the business.

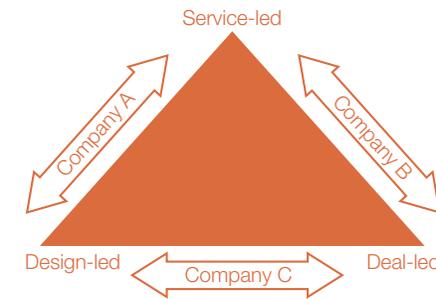


Figure 6: Organisational capabilities and tensions
Source: The Henley Centre

In terms both of skills and of organisational culture, this presents challenges. Some companies will focus only on one set of skills, but this may not enable a firm to operate on the large scale expected by shareholders. It is possible, with care, for a company to stretch manageably across two of these capabilities, but almost impossible to embrace all three for any length of time. In other words a company may well be able to combine being design-oriented and service-oriented (company A), or deal-oriented and design-oriented (company C). (The third option, of being service-oriented and deal-oriented, would generate some spiky cultural conflicts.)

One of the major skills in operating in such environments is the ability to understand the best way to deliver particular services to particular customers. The same model does not fit all. This requires professionals to be able to live with processes and organisational cultures which are not necessarily the way they would choose to do things, or the way they are trained to. A premium is placed on adaptability; the ability to work in 'fuzzy' operating environments.¹²

¹² This is explored more fully in Keith Grint, *Fuzzy Management* (Oxford: Oxford University Press, 1997) and also in recent books on leadership, for example, Steven Sample *The Contrarian's Guide to Leadership* (San Francisco: Jossey-Bass, 2002)

Increasingly, companies had come to learn that the way in which they managed their employees, and their networks of suppliers, was itself a source of competitive advantage. If effective service processes required a traditional approach to organisational structure (see Figure 7), both service innovation and that of client-led sustainable design required companies to have far higher levels of trust in their front-line staff, whether service supervisors or building professionals. Instead of line management, the companies which succeeded concentrated on developing the infrastructure and processes to help them do their jobs

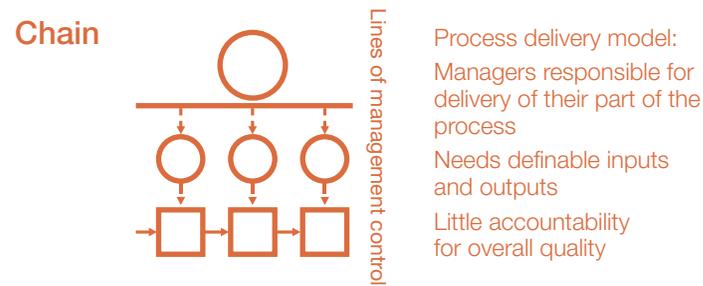


Figure 7: In the chain, managers control
Source: Henry Mintzberg and Ludo van der Heyden

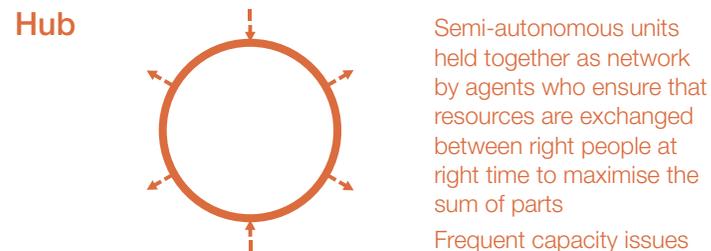


Figure 8: In the hub, they co-ordinate
Source: Henry Mintzberg and Ludo van der Heyden

properly. Management became the art of getting out of the way. Organisations became hubs of expertise, not chains of command.¹³ (See Figure 8). “Organisational architecture”, in John Kay’s phrase, became something which – if managed effectively – was difficult for competitors to replicate.¹⁴

Although design, and the professional skills which it involves, has regained an appropriate significance in this scenario, not all architects benefit. Those who are successful, and who can capture real value, have the following characteristics:

- ♦ They understand the organisational cultures in which they are working, both internally and externally
- ♦ They care about systems and are comfortable with systems thinking
- ♦ They are passionate about technology and its possibilities
- ♦ They care about all of the flows in their buildings, not just the people flows
- ♦ They welcome time spent with their customers and users as a chance to learn
- ♦ They can connect the value captured by design improvement with downstream savings for their customers, and identify who will benefit where in the process.

Building professionals without such skills are better off retraining or moving to the local and residential sector, which will continue to co-exist. Initially, professionals who want to broaden their skills are likely to have to make their own way, picking up understanding of systems thinking, for example, from short courses. Over the life of the scenario, we expect that colleges will start adapting courses so they are more multi-disciplinary, teaching many of the contextual skills necessary to operate in a more complex environment (or partnering with other disciplines which already teach them). There will, however, be a significant challenge in getting the exactness of much engineering-based training to co-exist with the softer, and greyer, social skills required in this future world.

¹³ Henry Mintzberg and Ludo van der Heyden, ‘Organigraphs: Drawing How Companies Really Work’, in *Harvard Business Review, On Organizational Learning* (Boston, Ma: HBS Press, 2001)

¹⁴ John Kay, *Foundations of Corporate Success* (Oxford: Blackwell, 1993)

The profession of the long term view

Professionals portray themselves as being independent, as being bound by their training to do good rather than harm, as holding a wider view than that of their client's self-interest. In recent parlance, this has come to be portrayed as the role of the 'trusted adviser'. It is easy to sympathise with the sceptical view that such portrayal is more about securing and preserving market value for a set of labour skills than any real distinction, even when the professional's differentiation is won through examination and protected by professional associations with the power of sanction. George Bernard Shaw's observation that all professions are a conspiracy against the laity casts a shadow almost a century later. And many jobs which claim the label of 'professional' have no code of ethics, no entry process, and no power over miscreants – management consultancy, for example. Such jobs are left open to David Maister's taunt that "they have never seen a dishonest dollar".¹⁵

The conflict between the long-term view and the short-term view is at the heart of much business practice, especially in the Anglo-Saxon business cultures, where stock market capitalism has been most developed, the US model most influential, and legal interpretation of the board's responsibilities most narrowly interpreted (as being only towards shareholders, at the expense of other stakeholders). Yet such narrow short-termist behaviour is widely understood as being a poor way to achieve long term growth, even when measuring only financial returns. In fields as diverse as economics (Hutton, 1995), management (de Geus, 1997, Collins, 1994), organisational learning (Senge, 1991), and game theory (Dixit and Nalebuff, 1993), the lesson is the same: that taking a long-term view is more likely to produce growth in capital and revenue than by attempting directly to deliver the best short-term gains to shareholders.¹⁶

Nonetheless, organisational cultures continue to emerge, in the public and private sector, in which short-term behaviour is rewarded at the expense of long term. The target-driven measurement culture of much of the UK public sector is a case in point, as is the focus of many PLCs on quarterly or half-yearly figures.



Figure 9: Conflict between managers and professionals
Source: The Henley Centre

In such a setting, the value of professional behaviour should be that it is more likely to be informed by the long-term view. 'Professionals' are more likely to be closer to the end-users of the system, and (certainly in a public sector environment) more likely to have some visceral sense of the 'social purpose' of the organisation for which they work.¹⁷ In such environments, conflict between professionals and managers is inevitable.

Managers will, inevitably, seek to achieve their targets and budgets because their performance will be judged directly on this. Professionals, whose judgements may be informed by issues such as the quality of care being delivered or appropriate technical standards around safety, are likely to deliver in accordance with their wider judgement even when this negatively affects budgets and targets. They are most likely to make wider judgements about the whole system; for example whether the targets being met are actually likely to increase overall quality of outcome for user groups or clients. And since managers tend to hold the power in the organisation, extending to performance appraisal and disciplinary measures, conflict is unavoidable. At an individual level, this demonstrates itself in conflict over outcomes, ranging all the way to whistle-blowing. At an organisational level, it is seen in the way in which the 'centre of gravity' of organisations shifts between being, at one extreme, over-respectful of the views of professionals (to the point where the organisation is unmanageable) to, at the other, having almost no effective limits on the prerogative of management.

¹⁵ Quoted by Alan M Webber, 'Are All Consultants Corrupt?' *Fast Company* 58 May 2002, <http://www.fastcompany.com/online/58/shortcourse.html>

¹⁶ Will Hutton *The State We're In* (London: Bloomsbury, 1995); Arie de Geus *The Living Company*, (London: Nicholas Brealey Publishing, 1997); Jim Collins *Built to Last* (London: HarperCollins, 1994); Peter Senge *The Fifth Discipline* (London: Random House, 1999); Avinash Dixit and Barry Nalebuff *Thinking Strategically* (London: W W Norton, 1993)

¹⁷ The concept of 'social purpose' of public organisations was developed by Greg Parsten of the Office of Public Management

It happens that in our scenario we have achieved the unlikely feat of aligning the interests of the professionals, the managers, and their customers. What is good for one is good for the others as well. Such an alignment, sadly, is likely to be temporary. Change in the external environment, or in competitor behaviour, is likely to create a change in the ecology which will lead to the re-emergence of conflict. As a society we need to know about the consequences of such conflict, especially where they lead to danger, fraud, or other criminality. Such conflicts are inevitable, and although professionals are not the only people who might identify them, professionals are more likely to do so because of their professional training and the ethical obligations which their professional organisations typically place upon them. The Public Information Disclosure Act (1998) is a tiny step in this direction, enshrining as it does in law for the first time the notion that in certain circumstances an individual has a duty of disclosure to society which over-rules their contractual duty to their employer.¹⁸ The current act gives too little protection to disclosers to be effective in the face of unscrupulous employers. We expect that by 2020, this legislation will have become far more robust. It will represent the full social expression of the idea that there is such a thing as society.

¹⁸ Public Information Disclosure Act, HMSO 1999, www.hmso.gov.uk/acts/acts1998/19980023.htm. See also the commentary provided by the UK Department of Trade and Industry at www.dti.gov.uk/er/individual/pidguide-pi502.htm

One bad day: 27 March 2020

0812

Kiley stared at the blank screen projected onto the wall. And then she stared some more. This was the day of decision. And then she began to speak.

As she did so her words clipped on to the screen like the old vidprinters:

“To: The Office of Public Disclosure. The date is 27 March 2020. My name is Kiley Evans. I am 33 years old. I am employed as a design consultant at NRZ Services Ltd. In sending you this email I am asserting my right under the Disclosure of Public Information (Public Interest) Act as a citizen of the UK to name unlawful practice by my employer to a public body...”

She stopped and the ‘screen’ snapped off. It was a long story. It was difficult enough to start, and she knew only the beginning and the middle. Thirty-three years old, seven years of professional training, paying it back to the state for years to come, and she might now never design another building.

Document #1: Kiley Evans

Kiley Evans. Employment number: 022456 819736 KESB. Employed: NRZ Services, Bristol, since 2014. Grade: Design Consultant. Educated: University of Wales at Cardiff School of Architecture. Repayment of graduate fees 18%. Born Blaenavon, Wales, 1987. Other education information: mislaid. Status: Single.

NRZ, NRZ, NRZ. It had seemed such a great opportunity at the time. One of the larger of the property services companies, and certainly one of the fastest growing. The chief executive had committed that the company would be in the top five in the sector by 2025, and it looked as if he might make it; quarter after quarter, he met his ambitious earnings targets. He was perhaps the most-profiled player in the sector. Time for a cup of coffee.

0945

Kiley had started in the design department, but had moved across into arbitration, which was more challenging, and better paid. She'd end up visiting sites with insurance assessors to agree who was responsible when things went wrong: 30-year returns windows were fine in principle, but they meant that there was endless haggling over maintenance costs. It was the sort of work that women were better at than men – they were less likely to get into disputes for the sake of it, more likely to find a face-saving solution. But her latest project had become a waking nightmare. She turned again to her email:

“It should have been a simple question. The greenroof installed on the site was designed to have a particular runoff rate, but it had flooded the site twice in nine months. Was this a function of the exceptional weather conditions, or was the greenroof under-specified? The cost of rebuilding would run to millions of Euros in construction costs and compensation. And it could mean that NRZ's balance sheet would take a hit in terms of provision against its other sites while they were checked against specifications. And it was coming up to the end of the financial year.”

Document # 2: Short history of the Office of Public Disclosure

Office of Public Disclosure. Founded 2012 as separate compliance office following celebrated court case (Rex vs Hogsback NHS Trust) in which the trust was found repeatedly to have ignored existing legal framework following succession of patient deaths. The 1998 Public Information Disclosure Act was strengthened to require employers and other organisations to be seen to take all reasonable steps to investigate if suspicions of fraud, public safety issues, or criminal activity were identified to them. Replaced previous framework which amounted to self-regulation with limited sanctions against abuse.

Kiley had visited the site four times with the assessor. Her view was that the design was under-specified. Usually these things were judgment calls, usually there were compromises to be made, but not this time. No matter how many times she ran the model, no matter how she tweaked the

variables, the answer was the same. It would have flooded on at least one of the two occasions. It was under-specified. NRZ was liable.

“The report which I sent to my boss for sign-off had been altered before it was sent on, which wasn't usual practice. And when I emailed him about this, the email went missing. It actually disappeared from the system. Just as well that I printed it off. Since then I have been suspended following a complaint about the quality of some work I had done several years ago for NRZ's largest and oldest client”.

1103

Kiley paused for a moment, and as she read back the last sentence, she thought she'd try once more to access the NRZ staff site, flashing her signet ID ring at the scanner on the monitor. “Access unauthorised. No current user,” the screen flashed back at her. She broke off again. This was a big decision. Outside, in the spring sunshine, she knew that she'd never work for NRZ again. And she knew what her family would say without even having to call.

It was noon. Running back up the stairs and into her flat again, she stopped in front of her computer. And then, very carefully, very deliberately, she pressed the 'send' button.

“ ...The future of the professions is a topic of central interest to the Construction Industry Council, with its membership comprised largely of professional institutions.

Major themes that emerged from a recent brainstorming exercise were:

- ◆ an increased emphasis on ICT to improve interaction and two-way information flow with members and their constituencies
- ◆ the need to support the work of the Strategic Forum for Construction in the implementation of Accelerating Change
- ◆ attracting high-calibre graduates into the industry through involvement in the new Sector Skills Council for Construction.

Sustainability in all its aspects is also continuing to grow in importance and our children will no doubt exert increasing pressure in this area in years to come.

Other recent initiatives, which may act as pointers to where the professions are heading, include:

- ◆ a proposal for the professions to work much more closely in what some have called a ‘federal’ arrangement
- ◆ an embryo research idea to examine the role of the individual within construction professions, with particular reference to ethics
- ◆ the structured inter-relationship of professional qualifying systems with feeder academic and vocational programmes.

There have been a number of mergers between professional institutions of late and this may well be indicative of a trend leading eventually perhaps to the emergence of a few very large bodies catering for a number of specialisms. It is even conceivable, if the current spirit of integration and partnership flourishes, that individual professions become subsumed into a single industry body. ”

Richard Biggs

Senior Policy Development Manager
Construction Industry Council

“ ...The one certainty about the future of the architectural profession is that it will remain in a state of flux in its uneasy position within a rapidly evolving building industry and the economy as a whole.

To further the debate, here very briefly, are three more possible scenarios:

- ◆ The makeover movement

Perhaps in reaction to virtual reality, nanotechnology and consumer durable saturation, the general public will take an increasing interest in the physical environment around them. Individuals will feel the need to stamp their mark on the buildings they control. Carried out in the name of self-expression, such instant dilettante makeovers will be prone to the latest fashion swings in direct contradiction to sustainable development.

- ◆ The two-dimensionalisation of architecture

The urge to makeover buildings for the sake of self-expression will come up against the considerable force of building industrialisation and prefabrication, which dictates the three-dimensional form of buildings. Architectural expression may be relegated to the application of wrappings to buildings. Two-dimensional graphics and colours will become more striking to compensate for the increasing superficiality of architectural design. This trend is already in full swing in the Netherlands.

- ◆ Reactionary pendulum swings

Twenty years is ample timespan for architectural and construction panaceas to be over-extended to such an extent that they become discredited and force the pendulum to swing back in the opposite direction. Within the past 30 years, we have seen double swings of the pendulum in matters of prefabrication and housing density. Current panaceas that could provoke opposite reactions might include private finance initiatives. ”

Martin Spring

Architectural Editor, Building

Technological scenario

Will Hughes

De-professionalised, automated construction procurement
Will Hughes
University of Reading

Scenario: “A long-term under supply of construction graduates and trainees is combined with far greater technological capacity.”

Summary

The industry has been completely transformed over the last 20 years. Construction professions and building contractors have changed beyond recognition. The concept of public service has been replaced by a powerful cult of managerialism. Royal charters have been abolished. Knowledge is more important than judgement. Institutionalism has triumphed over professionalism. There is a glut of graduates with knowledge, but no judgement. The institutions now occupy themselves as qualifying bodies, providers of career development courses and writers of standard procedure manuals. At every step, the professional institutions saw these changes as advantageous, and did everything they could to further these developments.

Capital acquisition has been replaced with service rental, and private finance has become the only option for procuring major facilities. Those who build and provide these facilities soon sell them to pension funds, releasing huge quantities of cash for further investment.

The pressure to restructure the business processes in construction has led to the development of collaborative working practices. These practices developed into integrated procurement systems which were firmed up as strategic alliances, followed by vertical integration and consolidation of the market into a few major players with massive investment capability.

The systematic design and delivery of buildings has led to the displacement of architectural design by engineering design. This is a more convenient way for the new conglomerates to serve their clients. The service providers have turned to mass-customisation as an easy way to meet demand for buildings. This industry is dominated by a few major

conglomerates offering a complete service in which the role of the independent professional is simply irrelevant. Electronic procurement and automated contract negotiation enable bargains to be struck quickly, instantly launching a semi-automated procurement process.

Automatic construction procurement is based on system-building coupled with electronic bargaining; multiple-use planning permission on large areas of development land held speculatively by service providers. Their output is evaluated and paid for on the basis of performance. There is no aesthetic requirement and no need for imaginative solutions. Few people have the skill or the money to maintain the old, manually constructed, bespoke buildings. So the stock of old buildings is being quickly replaced by shiny new standardised products that can be maintained by a semi-skilled workforce.

A few highly experienced architects remain. They work on expensive, tailor-made, one-off projects for very rich clients, but they have minimal involvement in the mainstream of the construction sector.

Introduction

Looking back 20 years to the beginning of the 21st century, it is interesting to note how much the structure of the construction industry has changed. Indeed, it is almost unrecognisable. Most of the problems confronting the industry at the turn of the century have disappeared. Few of us can remember what it was like. Once there were tens of thousands of skilled professionals, specialising in hundreds of narrowly defined sub-disciplines, each finely distinguished from the other. Professional institutions proliferated as each newly explained problem was matched with a new set of skills. Everyone wanted to be a professional and there were plenty of institutions to choose from. Whole teams of these professionals were appointed by commercial clients at the outset of each project. They worked to produce hugely complicated and interlocking sets of documentation to record their myriad decisions. The documents described a project so that hundreds of different specialised trade contractors and suppliers could be appointed by main contractors or construction managers who marshalled all the resources on site and

looked after payment for work. The main contractors had little direct involvement other than placing and managing contracts. Now, all of this is gone. Now, there are no contractors, architects, engineers, quantity surveyors, project managers, planning supervisors...

The decline of the professions

The professions knew the game was up in the 1980s. The signs were there. The old values of public service and learned people developing their skills to the full potential were dealt a severe blow by the Restrictive Trade Practices Act of 1982, which outlawed mandatory fee scales. For the first time in living memory, professionals could undercut each other and bid competitively for work. Their clients realised that they could pit hungry professionals against each other and drive down the fees. Those who were unlucky enough to lose too many of their bids went out of business. Those who were unlucky enough to win, had to cut back the services that they offered as there was simply not enough money in the job to permit them to undertake their traditional role. At this point, the professions in the construction industry lost their grip. From that point on, they had to serve those who paid them and could no longer subscribe to the notion of public service. This was because deregulation enabled consultants to offer just those services that a client was willing to pay for, and nothing else. Why, in such a situation, 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 displaced all notions of professionalism in the traditional sense. The professional institutions were complicit in this, as they adapted to deregulation by helping their members to offer more tailored services. Not that they had much choice: adapt or perish.

Impact of managerialism

Meanwhile, the growing disenchantment of professionals in construction coincided with a shortage of skilled workers, widespread low-tech attitudes, unkempt sites, prejudice and the ubiquitous black economy. The misery of managerialism was growing more widespread by the turn

of the century. No walk of life was safe from target-setting, performance evaluation, excessive documentation and objective yardsticks against which output could be measured. By 2003, teachers, doctors and police were only the most obvious professions voicing their concerns about how this managerialism was distracting people from actually providing the service they were trained for. But we didn't listen. Most of us shrugged it off with: 'Who do they think they are, pleading immunity from having to account for their actions?'. The main problems with this excessive accountability were first, that it made professionals focus on their objective knowledge, rather than their judgmental skills, and second, it made them accountable to the wrong people: to regulators and bureaucrats instead of to the public. It was 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 that they were overseeing. Successive governments could have helped, but the trend towards managerialism was seen as an opportunity to develop policies more likely to appeal to the widest possible range of voters.

The role of judgement

Those who were aware of what was happening were worried by popular misconceptions of the purposes and the value systems of the professions in general. There developed a highly commoditised view of what the professionals were selling; a problem exacerbated by their inability to explain clearly to the public what it was that they did. After all, they had never had to explain themselves before. It was difficult to articulate the power and value of judgement, and much easier to show potential customers and the public at large that they had certain 'knowledge' not possessed by others: knowledge borne of education, training and experience. But knowledge was more widely available, particularly through the internet. Even though the internet was still largely hard-wired, unlike today's high-speed, saturation level wireless networks, whole universities were placing their knowledge base on-line free for anyone to access. They were proving their point that their capital was not knowledge, but people. It is now commonly 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. It is difficult to

imagine now what a shock to the system it was when America's MIT, one of the world's leading universities, placed its entire teaching material on the world-wide web, free for all.

In the health sector, doctors were noticing that patients were becoming better informed about their illnesses, because of widespread access to medical knowledge on the internet. But the judgement of doctors was still needed to make diagnoses and to recommend cures. By contrast, the construction professions held on to their knowledge and prized their distinctive competence in terms of what they knew, rather than in terms of how they exercised their judgement. This was underlined by their habit of selling their knowledge, rather than making it freely available.

Institutional survival

The professional institutions could have helped, but they tended to make things worse. After all, there were so many of them. The older and larger ones tended to have royal charters, jealously guarded throwbacks from the 15th century, a device originally invented to enable corporate bodies to have a legal identity. Although commercial law developed to provide other forms of corporatism, these forms were rarely appropriate for non-profit making, public-service organisations, so royal charters perpetuated for 500 years before finally being abolished ten years ago. (Quite apart from the fact that no one could recall what a royal charter really meant, it had grown impossible to distinguish those organisations that had one from those that did not.) In the struggle to defend their status, the fight for supremacy between the institutions became quite ugly. It was clear to everyone that the survival of an institution was much more important to its members and employees than any notion of service to the public. Which of them would dissolve itself for the greater good? None of them.

Under-supply of construction graduates

The gradual decline of the status of professions added more momentum to the under-supply of construction graduates. No one wanted to study for a vocational degree in a job-market subject to wild fluctuations in demand. Worse, who wanted to spend their working life around grubby building sites with their unpleasant workforce and continuous struggles with contractual disputes and claims of negligence? There were many

more interesting careers. It was ironic that access to higher education was increased to 50%. But coupled with reduced public funding for higher education, the pressure to make available shorter degree courses to less-able students drove academic standards down very quickly.

Universities suffered as they struggled to accommodate all these extra students with no extra money or investment from government. 'Invest in your own future!' was the rallying cry, but no one was willing to invest in the infrastructure to provide this level of access to higher education. Coupled with the growing trend to see everything as a commodity to be rationally evaluated, packaged and sold, most of the higher education system was transformed into mass teaching colleges in which students were exposed systematically to the same curriculum as every other one of their peers.

However, despite everyone's best intentions, the government could not resist the temptation to experiment with social engineering on a vast scale. They tampered with curricula, hoping to inculcate their values into the rising middle classes, to ensure that the new voters would continue to vote for them, keeping the opposition out of power forever.

As the universities continued to produce unimaginative knowledge-soaked graduates who were excellent at routine but unable to exercise judgement, the professions struggled to reform themselves. They knew that their members were just not making the kinds of decision that they used to. They knew that debilitating professional indemnity insurance premiums were closing the market off to all but the largest practices that could cross-subsidise various parts of their business and use their construction sector work as an entry in to the market for service provision work. They knew that government interference in curriculum development was preventing the development of free-thinking intellectuals and redefining university education as merely the customary conclusion of a complete education. Initially, they tried to insist on their members acquiring postgraduate qualifications and a plethora of masters' courses emerged, providing a good income for the best universities which were able to deal with the needs of these students in terms of developing self-awareness, judgement, decision-making and transferable skills in an atmosphere free from interference.

Burgeoning professional indemnity insurance premiums

The high premiums for professional indemnity insurance forced consultants to seek increased fees, and reduced liability. It became common practice to simply refuse commissions where they had to express a view or make a decision. This helped to reduce their liability and keep the fees within an acceptable range. But it increased dissatisfaction among clients as they wondered why they were employing consultants who would not express a view. Those who found themselves sued for negligent acts or omissions learned that the test used by the courts was 'reasonable competence', a concept that involved large numbers of 'expert witnesses' testifying that they would have done the same thing in that situation. This led to immense pressure to conform to minimum standards laid down by the institutions. Like all minimum standards, these became the accepted standard, progressively reducing expectations and inhibiting innovation.

Twilight of the construction professions

Professions, as they were once known, have now disappeared. They are no longer learned societies, no longer self-regulating bodies based on codes of ethics. They are not even trade associations, as their members are salaried employees of large conglomerates, and the managers of these institutions are senior directors of the conglomerates, too. Their sole remaining role is as a qualifying body and supplier of CPD. In the rush to achieve transparency at the beginning of the 21st century, something interesting happened in the name of rationality.

In accounting for their decisions, particularly when defending themselves against claims of negligence or incompetence, professionals could only call upon other professionals to state what they would have done in the same situation. The pressure to conform to routines and procedures became immense. Transparency meant having a rational explanation for every decision and judgement. The fabric of professionalism rotted as objective explanations were developed for every aspect of decision-making. These explanations are now embodied in the service standards and codes of practice that have become the staple diet for these institutions.

The end of capital acquisition

Another major change that began to accelerate 20 years ago was that the government realised 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 need for public sector borrowing could be greatly reduced. This rapidly became very popular. All over the world, governments quickly adopted this route to reducing public expenditure in the short term. Now of course, all public services are bought through service charges and rental to the private sector. Even if they want to invest in property, the public sector no longer has the capital and it is politically unacceptable for them to attempt to raise it.

Popularity of service provision

The concept of service rental replacing capital acquisition rapidly spread from central government to local government. By 2010, no local authority owned its buildings. The money that was released could be used to reduce taxation until the service charges caught up with the temporary surpluses. The initial push towards private finance and public/private partnerships had created 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 sold the completed facilities to pension funds, as no other kind of firm could carry that kind of capital investment on its books for long, certainly not firms based on construction contracting, which was a cash business back in the 20th century.

Re-engineering the construction process

The commercial side of the construction sector changed significantly. There was a widely held perception that builders generally carried out poor quality work. It was useful to blame the way that the process was organised, because this helped 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 blame something impersonal, such as the structure of the

industry, rather than the behaviour of particular firms or organisations. By constantly stressing the failures of a fragmented process populated by under-resourced opportunistic contractors, those who were pushing for change could build up a momentum that was 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 became very popular: aligning business needs, making the business case for change, learning from other sectors (namely, the car industry). The calls for change were echoed by government at all levels. Successive government reports called for major structural changes to the industry and cultural changes in its workforce at all levels. The customary contractual disputes, centred on payment problems, led to legislation to eliminate the bad behaviour of contractors to their sub-contractors. Local and central government developed procurement systems that called for main contractors to pay attention to their suppliers and sub-contractors. Everyone was caught on a wave of enthusiasm for partnering, supply chain management, transparency and accountability. The future looked good. Behind this rosy façade, things were getting worse for professionals.

Agenda for change

With such deeply entrenched attitudinal problems, it was a relief when major reports started to highlight the need for change in the construction industry. In the heady days at the turn of the century, a community for change emerged, consisting of the largest contracting and consultancy firms and a few major clients. Although representing only a small proportion of the people involved in the construction industry, they were responsible for the procurement of a large volume of work. We saw the initial emergence of collaborative working practices, partnering, and the need for mutual trust. These developments fitted well with the interests of big business, with whom the government of the day had developed very close relationships in their early years of power. Mutual interests were served by creating agendas for industrial reform that ensured the market base of only the largest businesses and the death of the middle-sized ones. Only big business had the resources and the capacity to invest in the development of technological solutions to complex problems. Construction was a case in point.

Integration of the supply chain

Integrated procurement systems became strategic alliances. Strategic alliances were formed in the name of partnership, mutual trust and collaborative working practices. Loosely based on limited networks of trading partners, they formed the basis for more formalised business relationships within groups of companies up and down the supply chain. It was clear that in commercial organisations outside the construction sector, real strategic alliances were merely the first step in moves toward mergers/acquisitions. This was never clear to the early adopters of alliancing in the construction sector – it was not even on their minds. But with the growing popularity of service provision replacing capital acquisition, only the largest integrated service providers could survive.

Strategic alliances became mergers and acquisitions, increasing consolidation of the market into a few major conglomerates. These became so large that they were capable of funding PFI and PPP projects without the support of the banks, and selling completed schemes to pension funds provided them with the cash that they needed to invest in new ones. The consolidation of businesses affected the whole construction sector. As the trend toward leasing rather than buying gathered pace, most of the SMEs in the sector found that work dried up unless they joined in a strategic alliance. Eventually they were bought out or simply went insolvent.

Technological developments

Three further developments helped to transform the industry into its modern form: the application of technological solutions to systematic building design; mass customisation; and the development of electronic procurement.

System-building

The applicability of technological solutions to essentially social problems continued to spread. There were some spectacular failures in the second decade of the 21st century. In particular, social housing and office developments developed an awful reputation for their dreadful internal

environments as global warming and pollution made climate increasingly changeable. The control of indoor environments became increasingly difficult. Developments in sensors and control equipment in buildings finally led to the dominance of engineering over architecture, a struggle that had been running for decades. (Early signs of this struggle were the Lloyd's Building in London and the Pompidou Centre in Paris.) The legal system and burgeoning professional indemnity insurance premiums pressurised professionals to behave consistently and routinely, making the automation of their services more plausible, using fuzzy logic, neural networks and other prototypical artificial intelligence approaches. Although the dream of AI was finally dropped from any serious research agenda, the 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 could not be met by the traditional professions, as there were simply not enough construction graduates coming into the professions. The only solution was to adopt technological approaches based on standardisation and customisation. This fitted well with the increasing inability of professionals to exercise anything other than a technician role. A gap appeared in the market: a huge demand for pre-cooked solutions that work. The big companies moved in.

Mass-customisation

The mass-customisation of building designs followed earlier developments in the car industry. With a massive programme of research and development behind them, the Japanese builders could lead the way, encouraged by Americans who were familiar with this way of working and were keen to develop more open trading links with Japan. Mass-customisation started with warehouses, and then spread to housing, then multi-storey dwellings, then multi-storey offices, until all but the most unusual structures could be chosen from a catalogue, a kit of parts. The vision was realised.

With the growth in service provision, the procurement of buildings has become an internal matter for the service provider: a process that excludes the end-user. The design function is now 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 has declined rapidly.

Professional work replaced by technical work

The emergence of high-tech and systematic solutions was perfect for meeting clients' needs for two reasons. First, by dealing with a conglomerate, third parties are not needed to specify and mediate complex contractual networks of transactions – there is only one transaction now, between the supplier and the customer. Second, by mechanising vast parts of the process, much of the routine decision-making has grown 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 judgement was simply disinvented. This fitted well with the popular mood of a lack of trust in the abilities of professionals to make impartial decisions. Now it simply does not matter. Members of professional institutions are no longer required to use their judgement. They merely follow the rules of their chosen vocation. The trend at the end of the 20th century was to standardise and routinise everything, in the name of public accountability. But the most difficult phenomenon to deal with was the habit of government and big business to keep changing the rules. By constantly re-organising the way in which records were kept, and performance evaluated, the powers-that-be were able to make quite arbitrary decisions about where the important players came in the so-called league tables. The notion of public accountability became ephemeral. The main institutions of society (education, police, health) were accountable only to those who set the targets. The targets were easily measured, amenable to manipulation and a mechanism for a kind of central planning that enabled big business interests to manipulate the government in a symbiotic relationship. The result was the vast consolidation of markets into conglomerates during the 2010s and perpetual power for the political party that played this particular game.

Fully automated electronic procurement

Further developments of automated procurement, through the internet, facilitated the bargaining process and eventually automated it. This technology enabled deals to be struck quickly and impartially. The

conglomerates could now source their materials from the cheapest global suppliers and use their buying power to drive prices down in the name of productivity. By organising collection and delivery, they established powerful control of prices, wherever material were bought from. Expert systems are used to design the best combination from a limited range of options. By limiting the possible solutions, buildings can be 'designed' in two stages. First, the creative design goes into developing and prototyping a base design and the various trims, colours and material options. Second, the customer tailors the limited range of options to suit a particular circumstance. Once the 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 that cars have been developed and sold since the end of the 20th century.

Now, of course, it is second nature. We go on to the web-site of one of the three great construction conglomerates. Choose the building type, choose the amount of space, choose from a range of configurations and shapes, move a few customisable elements around with a cursor, input the details of special spaces and functional areas, specify the location and the degree of flexibility permitted, check out the bank balance, enter the details of where the money is coming from and how it will be paid, then click 'go' and the design and construction process starts. Within 10 seconds, the trucks start rolling from their distribution headquarters towards a site, and the building is commenced. The traditional funders of the speculative development process were long ago absorbed into these conglomerates who are now the major speculative developers, predicting trends in demand and holding large areas of land with multiple outline planning permissions ready for 'click-and-go' construction to take place.

The process of automatic construction procurement is a process of selecting from a limited range of options, and then customising these choices. The deal is done by computers that are programmed to negotiate risk apportionment as well as price. This provides a 'just-in-time' management approach where all of the remaining decisions about what to do and how to do it are taken in-house by the supplier. These suppliers are large organisations which employ technicians, graduates with highly sophisticated knowledge-base, but who apply this in a routine nature.

Meeting client requirements

There is no need for architects to interpret client requirements, as the impoverished imagination that has resulted from the standardised mass education to degree level means that there is tremendous uniformity in client requirements. This is given a further push by 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 is no requirement for aesthetics, other than the conservative constraints imposed by town planners.

There is no requirement for imaginative solutions, other than the imaginative selection of customised solutions. There is no need and no opportunity for imaginative or creative people. Those with any aspirations in that direction are not the ones who take part in mass higher education. They do not enter the so-called professions. The whole process is driven by technology, not by professional judgement. The cleverest people in the construction sector design the basic kits of parts from which the customised buildings are assembled.

Elimination of transactions from the supply chain

The consolidation of the market for construction supplies into conglomerates removed the need for architects, surveyors and specialist construction contract lawyers as there are now no contractual networks to administer, no intermediate deals to document and only standard contracts for the supply of goods and materials. All other services are provided in-house. Only accountants are needed for auditing purposes, and their role is largely automated anyway.

The final step in the automation of the construction process is push-button lease negotiation over the internet. These days, no property is owned by its occupiers, all of it is owned by the pension funds who are the landlords for the whole country, using the rental income to pay the pensions to the increasing number of people of a pensionable age. The ideal solution as far as the government is concerned as there is no dependence on government money, ie taxation, just one government ideology permitting the interests of big business to take precedence over everything else.

2023: This is what we have become

Once we were a proud, property-owning democracy. As soon as the investment companies got into the swing of major capital ownership used for leasing, to generate a steady stream of income to pay the increasing pensions bill, they started to cash in on the millions of property owners who wanted to liquidate their assets and increase their disposable income. Now no one owns the buildings they occupy, everything is leased.

Of course, there are some beautiful remnants of the old ways. The few architects/artists who saw their role as something more than merely aiding productivity in a deterministic manner held out and we can still see them offering a unique and bespoke service to occasional clients who want a crafted, designed building. This is really nothing new. In the 20th century in America, Japan and Australia, houses were already provided by builders selling from catalogues. Architects were rarely encountered in housing, but they were there, building very special things for the wealthy – works of art for living in. Now that offices, warehouses and retail outlets are bought from catalogues, the occasional wealthy client who wishes to make a statement, or provide some very special space, can still find artists with the skills necessary to interpret needs and to craft a design which can be built by the rare specialists who produce hand-made bespoke work. These artists are a long way from the artisans who provide a technician role in the mainstream. And the things that they do are very special indeed.

“...Futurology is, by definition, an imprecise art. The contribution of these papers is not to provide definitive predictions but to shake us out of a complacent acceptance of the status quo. The only common lesson that the papers affirm is the radical contingency of architectural practice. Clearly we are heading for an uncertain future, buffeted by forces beyond our control. The question then is how to educate for this very contingency. As Will Hughes notes, what we need to do in education is to develop judgement rather than to package up knowledge in neatly assessable chunks. More specifically for architectural education, what is crucial is to encourage multiple modes of thinking rather than specific methods of doing. However, it is difficult to assess, let alone legislate, judgement, whereas one can ‘benchmark’ knowledge.

Architectural education has the potential to be a role model in how to educate students to face a contingent future. The defining feature of architectural education – namely the synthesis of conflicting demands through the design process – is exemplary in developing judgement and multiple ways of thinking. But it can only be an exemplar if we are allowed to concentrate on research into the issues at stake and analysis of the processes of design, and not just the delivery of competent product prescribed by the miserable obsession with the lowest pass portfolio. Unless the watchdogs withdraw from the micro-management of educational curriculum in the construction sector, we will indeed be heading for Will Hughes’ vision, which brilliantly manages to be both the most depressing and the most convincing of the scenarios. ”

Jeremy Till

Professor of Architecture, University of Sheffield
Partner, Sarah Wigglesworth Architects

“ ...Looking 20 years ahead, it is tempting to imagine that the architect's sphere of influence may diminish beyond recognition, especially when there are so many perceived threats to our existence, but the optimist in me suggests that the more likely scenario will see the role of the architect better-defined and more secure than it has been for several decades.

The current shake-down in the construction industry seems to require a design infrastructure where specialists proliferate and the need for a few broadly trained generalists to orchestrate the whole process is gradually becoming evident. This is where the architect can demonstrate the pivotal importance of creativity, combined with collaborative leadership that allows the focus to remain on the product and not solely on the process.

Compared to a few years ago, it is clear that the increasing public demand for better buildings and higher standards of professionalism has been the principle catalyst for the architect's rehabilitation. In consequence, to consolidate their central position in the design and construction process, architects will continue to depend upon public support in future. This will reinforce the independence of organisations such as ARB and CABE, but calls into question the role of membership bodies like the RIBA. ”

Rab Bennetts

Director, Bennetts Associates

Social scenario
Ziona Strelitz

2023: Opportunities for built environment professionals
Ziona Strelitz
ZZA

Scenario: “Quality of life has become a key issue, with emphasis on the sustainable and cultural values of buildings.”

Vantage point

This scenario emerges from an analysis of trends, all of which were observable at the turn of the millennium – although some of them were then quite new – but whose cumulative impact has not been fully recognised until recently.

Defining quality of life

What is meant by ‘quality of life’? Across the population as a whole, the term frequently means ‘standard of living’. But this is not enough. Even twenty years ago in 2003, the findings of the study ‘Changing Britain, Changing Lives’ were reported under the headline: ‘Affluent but anxious and alienated’, with the introductory statement: “Far-reaching survey over decades finds Britons better off but more unhappy.”¹

‘Quality of life’, as used in this paper, is material and physical on the one hand, and emotional, cultural and spiritual on the other. The physical encompasses buildings, infrastructure and the spaces between. The socio-cultural encompasses meanings and emotional reactions associated with people’s interpretive experience of the built environment.

This paper takes it as a given that people expect fulfillment in both the physical and socio-cultural domains. Expectations of personal fulfillment have increased greatly since a sense of individualism first became strongly apparent in the UK in the 1980s. On a wide range of indices this became even more identifiable after 2000, and has risen ever since.

What is meant by sustainability

The term ‘sustainability’ is used here in its essential meaning as a measured sense that something can ‘go on’; that the inputs required to make things durable and capable of continuity over time do not outweigh

the outputs. The term is well established in relation to non-renewable physical assets, such as fuel and other natural resources. But it is also relevant to human assets, be they social capital, people’s emotional resources, or the energy which individuals require to live their lives, as they straddle the spheres of work, family and leisure.

Reactions such as: ‘I can’t go on’, ‘The experience was deadening’, and ‘Something just had to change’ became familiar in newspapers of any subcultural cast in the early 2000s. Initially, such cries were frequently dismissed as the self-indulgent psychobabble of a society that had become narcissistic and gone ‘too soft’, but now, on the 100th anniversary of Freud’s publication of *The Ego and the Id* in 1923, these concerns have proved to be deeply embedded.

However the converse to this attitude also warrants reference. For centuries, before the prevalent expectation that our emotional and cultural experience should meet our desires, the positive capacity of the physical environment – natural and built – to nourish people spiritually and emotionally was accepted. It is important to emphasise the acknowledged potential of the built environment to affirm, to inspire and to delight.

Scope of the scenario

The above outlines the social, cultural and physical terrain of this essay and the aspirations for quality of life that the built environment can either frustrate or meet. What follows identifies the tools, knowledge, skills, judgement and institutional capacity that are required to meet people’s needs in the built environment, both proactively and responsively.

The language of values

The topic set for this paper is in the realm of values. This necessitates the use of value-laden language. Practitioners have tended to be more comfortable with physical descriptors which could objectively measure agreed parameters. Examples are dimensions, quantities, timescales, contract values and rent. Despite an enduring interest in benchmarking and monitoring, the language of values has now come to be appreciated as being no less reliable and valid.

¹ *The Guardian* (February 22, 2003), p3

Social context

Increase in personal autonomy

The marked rise in individualism has generated a culture of 'What I want, where I want, when I want'. This is observable in food, dress, language, manners and protocol; the means, mode, content and style of communication, access to and use of computers; how we structure and restructure our life cycle careers, our households, our families, our work and leisure. This trend is well substantiated by social monitoring data.

Dissemination of, and via, new media

Information technology has, over recent decades, democratised access to information and tools. Its advent heralded widespread access to specialist information. As a result, people have learned to research the information they require, challenging experts' opinion, and trusting their own judgement. Accentuated individualism in combination with disseminated information has resulted in reduced deference to experts – across all knowledge domains. The outcome has realised Illich's vision of society 'deschooled'.²

The widespread dissemination of mobile audio-visual telephony and ubiquitous fast wireless networking has further promoted personal empowerment. People are no longer locked incommunicado within their various roles. Children at school, employees at work, or passengers in a taxi connect to the people, information and music that they want, wherever they are. This access to, and control over, connectivity to their personal network also affords emotional support. If they are feeling bored, threatened, let down, deceived or otherwise frustrated by teacher, employer or cab driver, people can connect to their own, alternative sources of authority or support. This enhanced personal access via ICT has resulted in both the perception and the actuality of personal empowerment.

In the particular context of the built environment, there has been a proliferation of enabling tools. Everyone can be a designer now. From the early applied toolkits, whether for colour selection or kitchen planning, people now have rapid access to many aids for expressing their design intentions.

² | D Illich *Deschooling Society* (New York: Harper & Row, 1971)

In practice, most individuals' opportunity to design built space is within their own domestic interiors. The scope for this has expanded with the massive increase in home-ownership experienced in the UK, combined with the increase in the number of households and in the real prosperity enjoyed by most of the population. As design activity in individuals' homes is not generally publicly visible, it has little external impact. However, it has had a significant social impact resulting from the cumulative experience of the domestic design quality that it generates.

Decline in traditional learning

The proliferation of tools and information sources described above has been accompanied by a simultaneous decline in traditional education. The 19th and 20th centuries' focus on classical, literary, historical, philosophical subjects has been de-emphasised in the more vocationally-orientated curriculum content that has formed the rump of higher education expansion since the late 20th century. This has had implications for design literacy. The more traditional educational content that formerly predominated provided the background, contextual appreciation, vocabulary and insight associated with much design referencing. This knowledge has now grown relatively scarce.

The pattern is clear in the field of graphic design. The experience in this area readily illustrates the difference between having the available tools and the background knowledge. Everyone has been able to produce graphic design outputs for many years now. They can select and manipulate type from a digital font gallery – indeed never has so much choice been available at the touch of a key. But on what basis are choices made? Does universal instant access to a font library bring an educated appreciation of type alternatives?

Perhaps there were only ever a few people at any one time who understood the development and differential effectiveness of alternative type styles. The pool of trained graphic designers, typographers and typesetters who were active before the craft was reorchestrated by the advent of electronic desktop publishing in the 1980s, was a much valued and consulted specialist knowledge base. However, with everyone an instant designer, the relative importance of that resource declined.

Knowledge-based discretion in the design of the vast volume of graphic material that is now produced is lacking. The reduced quality of amateur material in circulation is clearly evident.

Gap for specialists

Everyone can be an 'expert' now, self-empowered through access to tools such as accounting packages, graphic design programmes and diagnostic guides, coupled with a heightened sense of personal autonomy. But at the same time, people are disempowered through relative ignorance of history, context, complexity and depth. With knowledge of the more allusory aspects of design lacking, a gap has developed for specialists who are able to provide it.

Cultural sustainability

What is the social relevance for expert knowledge in allusion and referencing? Does it have a role beyond fulfilling the personal interests of its exponents? Does it have an audience beyond a few wealthy and discerning clients?

The way new and adapted buildings, roads, communications infrastructure and transport termini fit into cityscapes and townscapes has important *social* meaning. These elements announce themselves as of an age. They displace or complement existing elements of other ages. They herald the future. Insertions in the built environment are physical expressions of cultural linkage. They are also places and markers, offering loci of identity and meaning. They provide the 'character' and symbolic connection.

Symbolic relevance

People's wish to make emotional attachments to physical places, has social as well as individual relevance. The collective need to sustain existing shared meanings and to create new, shared attachments applies beyond the boundaries of individuals' private space. This need is now intense, given the rise of affluence and individualism that has been described: "Prosperity and privatisation broke up what poverty and collectivity in the public place had welded together."³

³ E Hobsbawm *Age of Extremes* (London: Abacus, 1995) pp306-7

Skills required

Given people's need to relate their lives to a historical continuum and the emotional attachments which we want with physical places, individual projects – to the extent that they affect the appearance and symbolism of the public realm – have wider impact. Therefore skilled connection and translation, both in defining and in guiding what is replaced and built, are socially relevant. In periods of rapid change, and especially where built elements of large scale are involved, the skill to recognise and mediate the significant symbolic changes that are usually implied by evolution of the built environment is important.

For building interiors, skills in cultural expression and translation are significant to the expanded proportion of the population who now have the affluence to spend it in this way. This has long been the case with the bespoke architecture and interior design created for wealthy individuals and deep-pocketed corporate organisations. But in externally facing design, people *at large* depend on skill in cultural and symbolic linkage, particularly in appropriate 'placemaking'.

These externally focused needs require strong practitioner abilities. Meshing newly built elements into existing contexts calls for capability in urban analysis and skill in urban design. Appropriate placemaking requires cultural sensitivity and design talent. Servicing these needs makes demands on practitioners that are distinct from the production of object-oriented 'buildings as sculpture' – no matter how beautiful. There is a social need to plan, design and build with symbolic and social meanings that are relevant and accessible to wider constituencies than the design community alone.

Whose meaning?

If building identities are to connect to the reference frameworks of a broader range of people than those involved in originating, designing and delivering projects, then skilled facilitation is needed.

How are people to have their aspirant meanings invested in identities of building and place, and how is the evolution of the built environment to provide relevant cultural and symbolic linkage, if people at large are not referenced in the development process? Limited design literacy makes

facilitation all the more necessary. In the public realm – with the public interest more diffuse – the work of representative brief formulation is challenging.

Specific skills

Forging symbolic and practicable visions to give designers a social charter requires skills of leadership, co-ordination, listening, explication and creative synthesis. The necessary skills to invest design charters with representative meaning derive from social research.

These are not the core skills of building design and production. The roles of brief-writing and the design of physical solutions are distinct. Good brief-writing is key to built environment relevance. Good physical design skills are key to an environment that performs well, technically as well as culturally. Effective technical performance and cultural relevance are both key to sustainability. Each of these areas of expertise is associated with a distinct corpus of learning. To promote sustainability with respect to the cultural meaning which people place on buildings, and to promote the technical performance of the built environment, recognition of the distinct practitioner contributions is important.

The conception, location, brief formulation, and design of the new South African Constitutional Court in the early 2000s provides an instructive and forward-looking exemplar of attainable benefits where the constituent processes are distinguished and intelligently related. The building had both to acknowledge the memories of repression, which many people had experienced prior to South Africa's liberation, and to celebrate the protection of the population by the post-liberation constitution. The resulting building effectively emphasises ease of access to the administration of justice without diminishing the authority of the law.

Mutual understanding of different contributors' roles is required. On briefing work, practitioners' effectiveness is enhanced where they understand the physical potentials of built environment design and delivery to meet cultural objectives. Common ground is needed between practitioners with distinctive knowledge and skill bases in order to optimise their individual contributions to productive cross-disciplinary work.

Personal sustainability

Integrated lifestyles

While the 20th century may be characterised as an era of sharp differentiation between the domains of work, family and leisure, the beginning of the 21st century has seen their integration. The shift became perceptible in the late 1990s when the phrase 'work-life balance' entered mainstream discourse with attention from both government and corporate employers. To an extent, in noting this they were recognising the inevitable. Observation at that time revealed considerable grass-roots evidence both in individuals' employment behaviour and in their use of ICT, of personal discretion in the structuring of work, family and leisure commitments.

Except for those for whom high rewards continue to make an overriding commitment to any one strand compelling even now – and for the sizable minority who still have relatively little choice in designing their lives – the trend has been to reduce conflict between life strands so as to ease their inter-weaving.

Increasingly people have sought sustainable lifestyles. This has meant easing the interfaces between home and work ('live-work'), between work and leisure ('enjoy work'), and between home and leisure ('family fun'; home as entertainment centre/playground). With people living longer, working in fixed career paths for shorter periods than formerly, realigning personal partnerships, family relationships and household structures more extensively than before, and pursuing learning and leisure on a more active and continuous basis, the expectation of synergy between life strands has become established.

Implications for the built environment

There are significant implications for the built environment in providing for new complexities of design and use. Both at the urban and the building scales, mixed use is wanted. Having entered the millennium with a heritage of building stock that was substantially mono-functional, many of the large tracts of residential development, swathes of office buildings and concentrated retail settings are still with us.

The key driver currently is the widespread desire for co-location of

different functions. There is strong demand for spatial proximity of a wide variety of facilities that people can use at the times and on schedules of their own choice. This, in turn, has a critical bearing on the planning of cities, towns, out-of-town and edge-of-town settings, as well as on the spectrum of uses that are provided within individual buildings

Built environment practitioners in the UK entered the 21st century with a weak repertoire of formulae for mixed-use, and with low levels of confidence in its provision. This was associated with severe resistance to producing mixed-use in the UK, from both ends of the delivery process – from funding at the front end and from estates management following development completion. There was also restraint from other loci on the delivery side of the built environment, notably the different forms of tenure and the different building regulations which governed alternative uses.

Although definitive exemplar projects demonstrated both the viability of mixed use and its popularity some time ago, the tide in delivery has been slow to turn. Culturally, mixed use buildings such as London's Oxo Tower Wharf and the Mailbox in Birmingham captured evolving social aspirations. They also offered 'proofs of concept', demonstrating the viability of mixed use design. The Oxo Tower included an upmarket restaurant on top of five floors of social housing, art and craft studios and shops, and a second restaurant. An especially distinctive feature centred on free public access to an external viewing gallery, reached through the restaurant and adjacent to the restaurant's outdoor terraces. The Mailbox successfully combined shopping, restaurants, bars, housing, hotels, offices and broadcast facilities within a single physical matrix of horizontal and vertical layers.

Other degrees of mixed-use are less intensive, involving a mixture of uses on a site – albeit in discrete buildings, or the design of buildings for a predominant function, but including secondary uses as well. Examples of the latter include workplace buildings that also accommodate elements like gyms and restaurants. While such buildings may or may not contribute variety in the public realm, they do increase the range of functions and uses available in one place for the people who use them.

Now in 2023 there still remains a vast backlog of mono-functional provision to convert even to this modest degree of mixed use.

Scope for practitioners

The manifest change in social preference has given built environment practitioners great scope for re-invention. Building types require rethinking, as do building servicing solutions, to support new combinations of use. Upstream, the development process requires rethinking in terms of both funding approaches and mechanisms to finance projects. Downstream, estates management strategies call for open-minded and inventive rethinking. Knowledge of new facilities management solutions is needed to guide new design strategies at project conception. This is a significant opportunity to be creative and to cross the boundaries of hitherto limited and separate bodies of knowledge. There is great scope to make a positive contribution, given both the continued under-development of appropriate approaches and methods that this generation of practitioners has inherited, and the quantum of mono-functional built stock that still requires adaptation.

Product sustainability

Buildings that work effectively

In this assertive era of individual prosperity, choice, consumerism and expected personal and customer satisfaction, people want buildings that work. Users want healthcare settings that offer positive therapeutic experiences, education buildings that inspire high standards and workplaces that foster engagement and support workers in comfortable and attractive settings. These requirements are for both technical performance, especially in respect of internal environmental conditions, and the built environment's expressive potential – its 'look and feel'.

Individuals now apply their increased sense of autonomy and personal empowerment to decide whether they wish to use certain buildings. Employers respond by offering more appealing work environments to differentiate their organisations. With the 'de-institutionalisation' of the workplace that has arisen through 'portfolio work' and other modes of

flexible working facilitated by ICT, choice about where people work has become widespread. Organisations see provision of effective workplace settings as levers of corporate survival in this elective and virtual era. Places need to perform as attractive focal points, assuring that members of organisations convene face-to-face, to interchange knowledge with one another and to affirm their connection with the corporate entity.

Delivering buildings which users judge to work effectively requires robust approaches to meeting user expectations, rather than hoping that built outcomes 'will be alright on the night'. There is a lingering climate of public suspicion surrounding architecture, stemming from a belief that architects design self-referentially. Users feel a breach of trust, especially when a building by a celebrated architect is disappointing in use. A priority in new built environment projects needs to be the future experience of building users. This will counter doubt that the project driver is an architect's desire to express a personal vision in the public realm and/or to make a statement to his or her peer group.

Ensuring effective outcomes

The need to produce buildings that are consistently reliable for building users has placed a premium on the skills to model and pre-test proposed design solutions. This applies especially to aspects such as air quality and lighting that have taken longer to meet the mark in user experience, while many other aspects of users' built environment experience have come closer to their target. The effective outcomes required for users will necessitate critical review – of depth, core location and design, clear height, edge treatments and solar protection – within the holistic context of the overall design. Assuring satisfying outcomes also requires continued post occupancy research for empirical evaluation of design and implementation. This continues to be the only structured way to establish comparative design effectiveness from users' vantage points.

Environmental sustainability

Concern for higher order goals

The combination of individualism and affluence promotes consumption and wastage. This conflicts with the restrained consumption modes

which promote environmental sustainability. Nevertheless, there is sufficient social concern to support a regulatory framework that both penalises harmful emissions from travel to work and limits emissions from building use. Consumption levels associated with the production and use of the UK's built environment are still high by global standards. To win user support for less resource consumption, practitioners must offer relevant leadership.

Practical leadership

The first point of intervention in respect of resource-saving approaches must be locational. The professions can jointly resist delivering workplace facilities in locations that are inaccessible by public or clean transportation, on the basis that collective action is necessary to advance environmental goals. This would create a level playing field for practitioners, thereby avoiding a parallel with the international predicament, where other countries' motivation to restrain their resource use was dissipated by US neglect to ratify the Kyoto Protocol.

To a considerable extent, the initial UK lead on positive strategies for environmental sustainability was led by individual clients. An early exemplar was the competition brief for 'Designing the 21st Century Office', drawn up by the Joseph Rowntree Foundation for a canalside site in York. Other early examples include the Murray Grove apartments and the 'Inhabited Bridge' – both for the Peabody Trust. In all of these cases an environmentally concerned and forward-looking client enlisted the services of self-starting architects who had already carried out speculative research and development on sustainable built environment solutions.

Some practitioners have shown proactive leadership, by formulating generic solutions to given opportunities or problems on which to interest clients. The London Eye still stands out still as a remarkably successful speculative project that can serve as a beacon for architect-led innovation.

In addition to user feedback to guide design evolution in general, specific feedback on innovation which offers environmental benefits is needed. Ambitious pioneering designs, such as the environmentally responsive Sainsbury supermarket at Greenwich Peninsula, need to be more widely

considered for their holistic innovation. Users' responses to integral design features such as strong reliance on natural daylight needs to be separated from their reactions to the use of particular components. Floor covering from recycled tyres and WC splashbacks from recycled yoghurt pots may have a significant symbolic impact in expressing sustainable environmental aspirations, without being integral to the essential design.

Lack of greenfield land

Given that the main development agenda is urban and that densities are increasing, the focus of built environment development is on replacement and repair. The adaptation, redevelopment and intensification of townscapes and cityscapes heightens the requirement for fluency in new versus the existing symbolism; for good judgement on alternative stylistic renditions; and for design innovation to deliver user comfort and appeal at higher densities.

Procurement and delivery

New construction technology and economics

Given the developments in construction materials and processes and the economics of building, replacing like with like in the built environment is not feasible. Practitioners require a strong grasp of evolving technologies relative to aspirations and budgets, with expertise and imagination in contemporary building forms. They need a strong ability for cross-disciplinary work in design, construction and procurement.

The Abbey Mills Pumping Station, built in the late 1990s, illustrated the positive potential of these capacities when used in combination. The project's design harnessed new technology and construction modes. It translated the visual reference conveyed by its neighbouring Victorian buildings into a compatible, but contemporarily expressed, allusion.

Brand in the figure-field

A particular challenge is 'signature' or 'trophy' architecture. Trophy design exerts differential appeal. People love it and hate it. This duality is

made more complex by the widespread deference to brand identity – whether this involves footwear, cuisine or buildings. The ambivalence has associated risks.

The influence of strongly branded design firms has been and remains strong on the delivery side – with considerable deference to celebrated architects. Clients often defer to 'big names'. Again when signature architects are involved, the role of the brief-writer can be eclipsed more easily. Maintaining distinct responsibility to formulate a user or social charter for design lies at the heart of public trust in architects as specialist contributors to built environment development, especially on projects in the public realm. Where a designer originates both the vision and the solution of iconic projects, trust is prone to erosion, especially when the outcome proves unpopular.

Within the construction community, there is particular ambivalence to signature design. On the positive side there is referred glory from projects that attract extensive publicity through their brand value. These may also offer special potential for specialist contractors to stretch and innovate. The flip side sees contractors and other consultants feeling intimidated by the perceived power of the branded practice. This can deter them from contributing early or forcefully enough on other aspects of sustainability – lean construction, 'right first time' and maintainability.

Affordable, reliable implementation

Too often lip service is paid to open dialogue to promote buildability at the early stage of procurement, while real scope to collaborate is not unleashed, and scope to simplify or otherwise improve design and construction interfaces is lost.

Conversely, the record of designers feeling betrayed by poor implementation in the construction of their visions has left its own scars in eroded trust. Capturing the potential benefits of earlier collaboration requires skill and sensitive translation by construction practitioners. Success stories such as the coffee bar at Brindleyplace serve as markers across time for the positive results that can be achieved by respectful collaboration between specialist contractors and well-known architects.

Procuring what people need and want

Who are today's clients? What objectives, visions, remit, accountability and skills do they have? Despite the increase in affluence experienced by the majority in the population, a significant proportion – many from ethnic minorities – still live in poverty, associated with lack of paid employment and other causes. They too have needs from the built environment.

Meanwhile, the trend of attrition in public procurement at local level that began in the milestone Thatcher era 40 years ago has continued. How much built fabric to cover the necessary range of social provision can be expected to be delivered by the market now? Are alternative client models available?

Back-casting over the past 40 years, the maturation and success of development trusts and other not-for-profit client organisations offer viable models to supplement needed procurement. These clients have demonstrated special relevance: in the comprehensive scope of the provision which they procure and manage; in the imaginative, good design of much of their built product; and in the access to their estate by people whom the market typically excludes from finely built facilities.

Is the development of this client sector a separate industry? Or is fostering social enterprise in built environment development yet another role for built environment practitioners?

Carpe Diem

Much to be done

In meeting the current sustainability and social agenda, there is plenty of work. New locational concepts need to be formulated, urban analysis undertaken, and urban design services provided.

Structured facilitation with users and members of the public is required to produce shared visions for built settings and to formulate representative briefs. This needs knowledge of traditional references, sensitivity to evolving social needs, skills in cultural translation and knowledge of design potential.

There is scope to rethink building types and building servicing solutions – to provide for new integrations of use and to meet the aims of environmental sustainability. There is scope for imagination in building form to meet evolving cultural modes. There are opportunities to grasp the benefits of developments in product and building technology – to meet design aims and to facilitate better, leaner and more sustainable construction.

There are requirements for better processes, involving intelligent collaboration between specialist contractors and designers – to implement design visions feasibly and faithfully. There is need for innovation in project funding and management.

Across this spectrum of necessary work and practitioner opportunity, cross-disciplinary work to develop and procure the built environment is required. This in itself calls for a *lingua franca* between participants, and frameworks to get the best from teams without blurring the distinct responsibilities of the respective contributors.

On what basis?

That there are significant opportunities for built environment practitioners to respond to social needs is not in doubt. Whether or not we mobilise as collectively organised professions or work as laissez-faire practitioners is another choice.

The widespread concern about built environment externalities has resulted in a degree of additional regulation. The former seesaw of planning regulation, with architects playing for the consents they can get in their clients' self-interest, has been superseded by genuine collaboration between practitioners to sustain shared and valued cultural meaning in the public realm. Effective self-regulation is now applied to external project impacts. Educated skills and cross-disciplinary trust are in operation across the public, private and not-for-profit sectors, delivering design and construction quality and meeting the public interest.

People's social meanings are articulated and respected as design charters for development. Practitioner judgements, both on cultural relevance

and its expression in design proposals, are open to challenge.

Effective technical performance of built products has become the norm. This draws on the respective specialisms of the relevant skill bases, which are now enhanced. There is no hiding by restricting the evaluation of outcomes to practitioner peers. User involvement in the evaluation of technical performance has become standard.

Collaboration between specialisms and with clients and users has become integral to practice. An active, comprehensive, multi-discipline, built environment association with specialist chapters now provides the milieu and credentials for all serious practitioners. It is based on a holistic core platform and sets high technical standards. It is socially responsive and proactive in devising and providing education. This is offered at practitioner entry level; for the public, and on a continuing basis for its members – both within and across the chapters. Its *modus operandi* is self-regulating, but it invites challenge from within and beyond the practitioner community. The spirit of open inquiry and respect for specialist roles – with no specialism being viewed as *primus inter pares* – has generated a high level of trust.

“ ...There is clearly a movement towards larger practices and integrated working and our profession must continue to evolve if it is to contribute, as it must, to better buildings, towns and cities through better architecture. The changes to which we must respond affect the very foundation of our society.

We have a new and still evolving social, political and economic context in which to operate. Even a Labour government now calls for its built infrastructure to be delivered and retained by the private sector for lease back to the state.

We live in a market-based economy where output and production are focused towards consumer demand. It is a very imperfect system, the consumer is king and consumers in aggregate produce a regime of destruction. Their legacy will be of dumbed-down design and dysfunctional eco-systems, for the modern citizen is a voracious consumer and a serial polluter.

The dream and hope and, I believe, the eventual outcome is for a modern market-based democracy where the electorate is ‘informed’ and the consumer is ‘enlightened’. An *informed* electorate will enable, and indeed encourage, governments to legislate and regulate for a new and sustainable architecture. *Informed* consumers will produce market demand for facilities which are designed and managed to standards which can bear the scrutiny of an ecologically responsible agenda.

I believe that this industry will eventually shape both new forms of procurement and its operations to meet such an agenda. Then perhaps we will see circumstances in which technology is used to advance the social condition as opposed to compromising and ultimately destroying not only the quality of our life, but life itself.

Today more and more people are living in cities where the air is unbreathable, the water undrinkable and the waste is unmanageable. We must respond effectively and we must do it through an intelligent and integrated industry. That is our challenge. ”

Paul Hyett

President, Royal Institute of British Architects, 2001 – 2003
Chairman, Ryder HKS

“ ...The design process is the fulcrum of our material world, and is essential to delivering a sustainable built and human environment. The challenge for the design profession is ‘leadership’. Design will remain a multi-discipline, multi-organisation/stakeholder activity, certainly with more co-ordination but still a challenge for architects. There are a number of future scenarios for architectural designers:

- ◆ *Design technicians* – a complex support role, operating sophisticated software, sculpting the product and conducting informed ‘what if scenarios’ for a multitude of regulatory, political, social, environmental and economic conditions.
- ◆ *Product developers* – mainstream design and manufacture of the built environment, managed by the design ‘conductor’ who has the skills to co-ordinate and translate stakeholder requirements into the design concept and produce the design using standard yet customised components.
- ◆ *Design Leaders* – design is about understanding the total experience, in this role architects are the built environment ‘knowledge holders’. They are able to deconstruct and reconstruct future experience through visualising the ‘intangible’ desires and values of society and individuals. However, they will need to work collaboratively with ethnographers, anthropologists, psychologists, criminologists, environmentalists and the whole gamut of experts in order to understand human behaviour and desires and technological opportunities. They will need a much greater level of skill in people and knowledge management.

The options are there for the profession. Many architects will probably move into category two, working for or outsourced to by global conglomerates. Some will become design leaders by adopting the role of purveyor of the design experience. Is the profession ready? Is our education ready? That is still up for debate. ”

Rachel Cooper

Professor of Design Management
University of Salford

Managerial scenario

Simon Foxell

Redirection
Simon Foxell
The Architects Practice

Scenario: “The qualification and accreditation system develops to allow high levels of skill mobility across the construction professions, possibly leading to a combined Construction Consultants’ Institute.”

“The greatest improvement in the productive powers of labour and the greatest part of the skill, dexterity, and judgement with which it is anywhere directed, or applied, seem to have been the effects of the division of labour.” (Adam Smith) ¹

“One of the most powerful social groups created by the knowledge economy are so-called ‘knowledge workers’: mobile, skilled affluent, independent, hard-working ambitious, environmentally conscious, people who can trade on their skill, expertise and intellectual capital.” (Charles Leadbeater) ²

“How can mutual loyalties and commitments be sustained in institutions which are constantly breaking apart or continually being redesigned? These are the questions about character posed by the new, flexible capitalism.” (Richard Sennett) ³

March 2023

At 10.00 the computer reminded Hal that she should book in for retraining. This happened every five years, and always as she was reaching out for her morning shot of caffeine. Previously it had been a pleasant surprise – she’d felt she’d really made progress with the new skill set and was ready to move on and take on a fresh challenge. This time she felt like carrying on. The illumination design work she’d been doing gave her all the challenges she felt she needed and there was more she wanted to contribute.

Mobility had been a great idea, freeing all those who had signed up for a vocational profession as the result of a single careers interview at school and because it sounded like a fun course at university, from the narrow

corridor that each vocation had become. The investment in training, a seven-year course and massive debts at the end, had meant there were few alternatives on qualification to trying to make a career out of it.

This had been wildly out of step with the rest of the white-collar world, even then at the start of the century. The vogue was for ‘portfolio careers’, what Charles Handy had labelled ‘the new flexibility’. Every worker was to be a business of one, making themselves available for hire to the highest bidder or the most interesting project. The idea of a fixed and predictable career had gone, but no-one had told the traditional professions.

Hal had picked her subject and with it her career for the allure of design creativity and the promise of an all-encompassing vision. She had loved the course despite the numbers that the university had packed on to it and the limited access that meant to tutors. On graduation she had immediately set up a consultancy with a group of friends and they had had several years of impecunious fun: making off-the-wall proposals for projects large and small, building several of the tiniest, doing a bit of teaching, and even winning an award for most promising practice. But financial reality eventually hit home. All of them had massive graduate repayments hanging over them as well as large overdrafts. They needed to earn a living wage, and more, to get a start in life.

It was then that her position had seemed most intractable. Through the late 1990s and into the early years of the 21st century design courses had been immensely popular both with students and colleges. Unlike resource-heavy courses such as engineering they were relatively cheap to run and made a profit for the universities. The government at the turn of the century had heavily touted the creative industries as the future business of UK plc. Simultaneously there was public appetite for the designer lifestyle and thousands of students had been processed through universities on ITC, multi-media, media studies and design courses on the expectation of rewarding careers. The market became heavily over-saturated with designers. Hal had been lucky to have a traditional professional qualification, which marked her out from some of the crowd, but the competition for the few jobs available in her discipline was still intense.

¹ Adam Smith *The Wealth of Nations* (1776), book I

² Charles Leadbeater *Living on Thin Air* (1999) p228

³ Richard Sennett *The Corrosion of Character* (1998) p10

While the creative design careers had been becoming more popular, other courses had declined radically. Service engineering had failed to attract enough students and many courses were closed. The number of other engineering and construction management graduates had also declined heavily and many of those who did graduate were tempted away to consultancy roles elsewhere. The construction industry rapidly reached a crisis of capacity and recruitment. As with similar crises in other industries, in sectors such as health and education, the first reaction had been to recruit from overseas. That had allowed the industry to hold the ring for a while, but the situation was unsustainable and eventually a more radical solution was adopted.

The number of construction graduates was not, in fact, inappropriate for the needs of the industry. It was just that the balance of skills was badly weighted in favour of the softer 'creative' style and design skills and away from the harder engineering and management disciplines. Hal, who had been struggling to find a job that matched her ambition, drive and desire for independence, was, along with many of her contemporaries, offered a new career option.

Proven graduates and qualified professionals were given the opportunity to become Accredited Construction Professionals (ACPs), able to develop skills and qualifications that would be transferable across the construction industry and beyond. The conditions were onerous, highly monitored CPD (or 'compulsory professional direction' as it later became) and the decision as to which skills you needed to learn for the next stage of your development was no longer yours. But with it came a highly prized 'licence to practice' and the opportunity to become part of the accredited supply chain able to bid for public sector and the majority of significant private sector works.

The original intention had been two-fold: firstly to provide a way out of the graduate supply problem by freeing the professionals from their institutional silos and giving them greater lateral career mobility; and secondly to finally rid the industry of the age-old adversarial attitudes between the supply and demand sides. If everyone, over their career, moved regularly between roles, it was argued, then there would be far

greater synergy and understanding in the supply chain and a real ability to work together and collaborate. This would be to the overall benefit of both the end result and everyone working to achieve it. It was a road paved with good intentions.

The idea for the ACP had originally emerged from a radical construction industry think-tank. It had immediately been embraced by some of the more expansionist institutions and chartered bodies. The more threatened disciplines had reluctantly accepted it as necessary but painful, and the end of their separate status, but did not rush to adopt it. The prouder, traditional institutes first ignored the pressure and then fought against it tooth and nail, citing their important cultural differences and their roles within the industry. Their initial aloofness and then the attrition of the fighting almost destroyed them entirely. Demoralised, these professions only joined in when it became European Community policy and a necessary qualification for participation in any works involving public sector money.

Several of the old institutions survived, albeit in a much diminished form. They became cultural and historical bodies or took charge of the administration and accreditation of training course modules. One or two became service organisations providing ACPs with support and advice, but they had little public voice. Two large super-institutions emerged in their place. The OFT had required there to be a least two in order to retain choice and variety. One was significantly larger than the other, and many ACPs belonged to both. The smaller was already being seen more of a club and talking shop for industry leaders and it wasn't anticipated that it would last for much longer in its present form.

The new institutions were there to represent their members and maintain the strict educational and regulatory framework. They tried hard not to have a view of the world beyond that, and any hint of meddling in politics or ethical arguments was strongly disapproved of. Hal had little to do with her institute, members had only a small role to play in any case. It provided her with her accreditation and was a constant source of advice and strictures. There was a regular e-zine. That was enough for her.

The new arrangements had suited Hal fine. As part of the agreement to retrain as an ACP the government wrote off her graduate loan and provided a lump sum to repay other accumulated debts. She took the first in a series of training modules in value engineering and was recruited to work in a multi-disciplinary organisation with long-term contracts for provision and operation of educational buildings. Almost everyone was her age and they worked out of a cheerful converted office space in the centre of town. She now had the security to get a mortgage and buy a flat and when she decided to have children that fitted well too. Since everyone was shifting jobs and tasks regularly, with accompanying retraining, it was another career module, taking a few years, and it was easy to get back into work when she wanted to. Others in her cohort had also taken time away to go travelling or to do voluntary work.

Stepping out of her original discipline had been liberating. Despite its claims for breadth and overview, she had rapidly seen it was only one strand of a much larger industry. Opportunities for career development had opened up, which she hadn't realised were possible and she had relished the years ahead. In her mid-30s she became site manager for a major new university building and then went on to do research on the training-orientation-years-systems programme for primary schools. She felt that her talents had been recognised and that she had been rewarded accordingly.

With the new way of working alternative means of dealing with the risks and responsibilities had also become necessary. At the turn of the century professional indemnity insurance had been identified by both business and government as the ultimate repository for off-setting risk. In-house services, whether maintenance or professional teams, could not offer insurance for their employers against error and accident, so these services were outsourced. The companies that took on these services also sought to offset the risk and passed it on until the buck stopped at the usefully available PII. This was, inevitably, very expensive and caused some spectacular casualties of valuable and significant companies.

The case for a return to risk-retention by the public sector and the benefit of mutual risk taking across a large property portfolio became compelling, and elsewhere European-style project insurance became the

norm. This freed individual professionals and companies from the lock of being obliged to carry on regardless in order to maintain cover for past projects. It also freed Hal from the possibility of being prosecuted for a decision she had made years before that had subsequently resulted in a loss. There had been several cases against individual professionals, even though they had been working for larger companies at the time, which had given everyone in the construction professions pause for thought. With recruitment into the industry fragile and the encouragement of career-mobility a priority, the government had acted surprisingly quickly to deal with the issue.

At the same time rigorous and obligatory procedures were put into place to ensure that risk management and avoidance were enmeshed within project procurement. A lot of this initially took the form of form-filling and box-ticking, with risk reports and updates having to be posted on the web-sites of all projects. The computer systems developed to run the technical aspects of construction incorporated all the risk-management routines, but there remained large numbers of professional workers dealing with risk-associated decisions, sometimes at micro-level, on all projects. Hal was deeply grateful that she had never been assigned to the sector.

Hal had her doubts, of course she had doubts. The work she was doing was mechanistic rather than creative and she longed to see the bigger picture. Often the first time she got any real insight into one of the projects that she'd been working on was when it was published in the company e-letter or it cropped up on the news. She now very rarely visited a building or saw her work in use. She relied on research feedback for that. Hal had been hired for her judgement, not her expertise. The necessary know-how had been codified in the expert systems that she used to inform her of the issues or choices before her. She made the final call, and didn't have to worry about the creative inputs.

Building and environmental design was divided into innumerable discrete tasks, each demanding skilled but fairly short term inputs. Each task was a problem to be solved, usually by application of one of number of standard solutions but occasionally demanding something more complex and bespoke. However, if that happened, the job was again usually

subcontracted to another group who broke down the higher-level problem into a series of sub-problems before sending it back for re-analysis, decision making and re-insertion into the main routine. Computers handled the interfaces between all the individual decisions made and processed the instruction set necessary for the ordering of components and assembly in factories or on site.

At the top of the organisations Hal had worked for were the creatives, lauded in press releases for their vision, for their cultural contribution and their originality. Hal was aware that they were largely PR fictions, far too busy selling and presenting to have had the opportunity to be truly creative: some of them *had* actually been fictional. The company did employ ideas people to generate concepts and possibilities but these were not for specific projects. These were researched and market tested and then with their relevant scores and profiles filed into the archive to become the raw material for the iterative decision making process that led to the building designs. The company recognised the need for novelty and freshness and the research and developments teams were prolific and rigorous in developing new solutions to issues arising from post-occupancy evaluation of their products, consumer demand, new materials and technologies coming to market etc. Some of Hal's best time had been spent in development work, though the pressure to meet the targets for ideas-per-week had been stressful and relentless.

With the move over to long-term build-and-service contracts the construction industry had become a far more stable economic sector, able to smooth out some of the peaks and troughs of the boom-and-bust cycle. Subsequently the old hire-and-fire employment practices had diminished. You might not be able to predict what job you would be doing in the next five-year period but there was reasonable job security. As a result construction professionals had become a steadier bunch and were seen as reliable managers, expected as a matter of course to deliver on time and budget. The media was kinder if more dismissive. Hal found she was a trusted member of society; a school governor and on the board of her local civic forum. Working a standard 40-hour week she had the time to contribute and gratifyingly her advice was frequently sought on a range of issues.

Her working conditions had varied wildly over the succession of jobs she'd done. R&D had been in a suitably creative office with few workstations but plenty of creativity zones, areas for interaction with her colleagues and places to perch her mobile office communicator. At another time she had worked in an out-of-town industrial park among regimented rows of workstations; monitored and exhorted to ever greater performance and seriously admonished for lapses. Recently, and to her relief, she'd been permitted to distance work. In reality this meant largely working from home, logged in to the company's system, but it gave her the flexibility to choose which 40 hours in the week she worked. If she performed to the required standards, protocols and targets she was free to do all the work straight through from 06.00 Monday morning to 22.00 on Tuesday evening, if she so chose, with the rest of the week off. But although they were the sort of hours she'd thrived on at college she was unlikely to attempt it again.

Looking back on 20 years of work Hal felt she'd done all right. Some of her friends had moved into the not-for-profit sector while others had decided to stay independent and ran small specialist firms working on private projects for the more demanding sort of clients. They might have cleaner consciences or greater control over their lives, both of which she envied, but they hadn't worked on the size and range of projects that she had. Admittedly the quality of those projects could frequently have been better. They performed well against the requirements of the output specifications, but that was it. At the beginning of her career there had been a debate as to whether what they did was science, art or business. Well it was definitely business now. She wasn't sure if there was much interest in the UK in the kind of the more cerebral and artistically justified works that she saw in the international web-journals she subscribed to. But then if people weren't offered the choice how could they make one?

Had the UK been short-changed by the buildings that had been delivered during the first decades of the 21st century? The build quality had been getting better and better; they were reliable, consistent and affordable. There had been real achievements in making the whole building stock more sustainable and energy efficient. Maybe they were dull and it was

always more fun to holiday abroad, exploring and discovering real architecture, but because of the work of the ACP programme everyone, but everyone, was now properly housed, the schools and hospitals were clean and efficient and the transport system worked well. Had they been short-changed? No, she didn't think so.

Hal glanced down at her computer and took a slug of coffee – her retraining instructions has flashed up. Her next five years would be spent on Hazard Assessment, Risk Management and Education Directorate business.

“...In their introductory paper, Davies and Knell suggest that “knowledge is a defining feature of professions” and that this knowledge is used, by implication negatively, “to keep competitors at bay”. They then quote Frank Duffy’s more optimistic perspective that “the only lasting and sound justification for a profession is... knowledge.”

It is disappointing that the question of knowledge plays little part in the explorations of the scenario papers. One of the significant developments in all the built environment professions in the last decades of the 20th century, as the industry has moved from craft to technology, has been the emergence of a significant research activity, in both industry and the academic world. It is research that generates the critical knowledge that, as Duffy argued, defines the professions and gives them substance. It is knowledge that provides the basis for effective education and training and equips practice with the understanding to serve society effectively.

The philosopher of science, P B Medawar, defined the maturity of a discipline as occurring when it was “relieved of the burden of singular instances, the tyranny of the particular... (when) we need no longer record the fall of every apple”.¹ ”

Dean Hawkes

Fellow and Director of Studies in Architecture
Darwin College, Cambridge University

¹ P B Medawar 'Two Conceptions of Science', *The Art of the Soluble* (London: Methuen, 1967)

“ ...*Summer 2006* Beijing global summit confirms pressures on the urban habitat – environmental destruction, population growth, migration into cities and a widening poverty gap.

November 2010 Self-inflicted wounds incurred by the architectural profession will not heal: it continues to devalue its services, shun risk, ignore the need to innovate, under-invest in R&D and maintain little regard for future generations.

March 2015 The global institutes of architects gathers in Cairo for the symbolic burial of what is left of their profession. Courses of study in architecture abandoned

A new breed of individuals and practices begins to appear. Lacking an ‘official’ institution they brand themselves ‘Designers of the Built Environment’. They have in common:

- ♦ a willingness to embed themselves into the complex issues confronting urban life
- ♦ a belief in the imperative to fulfil a societal need that architects once provided
- ♦ optimism and most of all a passion for what they do.

They collaborate with environmentalists, physicists, nano-technologists, micro-biologists, material engineers and futurists to play a major role in shaping solutions for the urban habitat.

August 2017, London Major contractors establish global think tank for materials and methods and set minimum standards for skills within the industry.

June 2020, Zurich Universities and colleges recognise a gap in the market and form multidisciplinary institutes for a new professional degree in ‘architecture’. The ‘new collaborators’ are invited to join faculties worldwide.

Anytime 2025 The Playstation generation of 2000 are now commissioning building projects. Knowledgeable, environmentally and socially aware, they seek out the new architecture graduates.

May 2030, Prague The European Commission for Architecture and the Built Environment (ECABE) convenes a symposium to examine the history of the practice of architecture. Experts from 30 countries agree that little has changed in the past 100 years. ”

Lee Polisano

President, Kohn Pedersen Fox Associates

Conclusion

William Davies + John Knell

A professional future
William Davies + John Knell
The Work Foundation

Security and creativity: a trade-off?

These five scenario papers are written from a broad variety of perspectives, both from inside and outside the construction industry. The authors' differences of perspective and focus are matched by fairly divergent conclusions. But the value in this method is clear: out of this diversity, certain key issues have emerged. We think that these issues can be classified into two broad areas of major concern for construction professions: the need for better risk management, and the need to facilitate better forms of cultural expression.

Risk management encompasses a variety of instruments and institutions, be they political, economic or technological. The industry has a number of pressure points through which risk can be managed, all of which look like candidates for change over the coming 20 years. 'Managerialism', auditing, government regulation, shareholder pressure, media pressure, technological standardisation, consumer activism and of course the very existence of professional associations – all of these phenomena are attempts to control and assess the complex variety of risks that are encountered in construction. The scenario papers inevitably disagree on which of these instruments and institutions are to become more powerful and sophisticated over the next 20 years, but the requirement for a more sophisticated handling of risk is clear.

The second concept that we believe unites the five papers, the need for better cultural expression, is harder to pin down. It affects the broad variety of parties affected by the quality of the built environment. Most users of buildings want those buildings to give a more profound voice to their cultural identity; makers of buildings want to give a freer rein to the creative impulses which initially attracted them to their professions, while there is clearly a public demand, and possibly a market demand, for the built environment to promote a more artistic and humane social vision than the one currently being offered by many developers.

These twin issues wind their way through all five papers like a double helix, raising profound questions at every turn. Andrew Curry and Larissa Howard's 'economic scenario' displays a strong sense that relationships with investors will have to get smarter and more intimate, but suggests that this will be to the benefit of the industry because quality and sustainability of construction should ultimately prove a better investment proposition.

No less optimistic is Ziona Strelitz, whose 'social scenario' imagines that the industry will be granted the important cultural responsibility of expressing local identity or 'placemaking'. Meanwhile, Andy Jobling's 'regulatory scenario' proposes that a more sophisticated regulatory and insurance culture may be the lesser of two evils, when compared with a culture of chronic litigation. Displaying a similar pragmatism, Simon Foxell's 'managerial scenario' anticipates that construction qualifications will eventually merge in response to a blurring between creative with routinised work.

Finally, and most bleakly, Will Hughes's 'technological scenario' posits a chilling vision of how advances in technology may make possible an industry that is addicted to minimising risk, at the expense of anything unusual or creative.

What is the relationship between risk management and creativity? The five papers make different assumptions about this, and could be split as follows:

Win-win outcomes

Both the 'economic scenario' and the 'social scenario' assume that risk mitigation and creativity do not need to be traded off against one another, that is, they assume that 'win-win' outcomes are very real possibilities.

As Andrew Curry and Larissa Howard write: "Any analysis of the best way to minimise building costs and improve customers' and employee satisfaction came back again and again to the importance of understanding the process flows in the whole building. This was invariably found to be intertwined with sustainable design".

Ziona Strelitz echoes this: "In periods of rapid change, and especially where built elements of large scale are involved, the skill to recognise and

mediate the significant *symbolic* changes that are frequently implied by evolution of the built environment is important.” [Our italics]

For these authors, the future is relatively straightforward: the best way to mitigate risk will be to give the public the types of buildings they will increasingly demand, namely those which are attractive, expressive and sustainable. These scenarios undoubtedly challenge the professions to adapt to a changing environment, but they don't sound a death-knell for the professions, instead suggesting that a new equilibrium can be found.

Workable compromises

The managerial and regulatory scenarios take a slightly different view. They propose that the next 20 years will be a story of compromises. Trade-offs will need to be made between the expressive desires of construction professionals and citizens, and the demand for greater financial and managerial certainty on the part of suppliers, investors and governments. Negotiation will characterise the coming 20 years, but the professions themselves will gain in security what they lose in autonomy. Simon Foxell imagines that: “With the move over to long-term build and service contracts the construction industry had become a far more stable economic sector, able to smooth out some of the peaks and troughs of the boom-and-bust cycle.”

The regulatory future outlined by Andy Jobling may be primarily an exercise in risk reduction for insurance companies, but this “was comforting not only for the insurance company but also for the architect. The audit process was there so that on completion the insurance company had no hesitation in accepting full responsibility for the building in terms of design and workmanship issues.”

Such a future prioritises predictability and safety over idealism and creativity. But the authors encourage us to consider whether this is automatically a bad thing for the professions. Traditional conceptions of a profession – built purely upon values, independence, and a body of knowledge – may lead some of us to shudder at these prospects. Yet these scenarios suggest that dogmatism may not be the best strategy in the face of the future.

The zero-sum game

Finally there is the ‘technological scenario’, the most pessimistic of the five. This pessimism is driven by the view that creativity is intrinsically risky, and will be quashed as commercial pressures and technological standardisation increase in tandem. A gain for the investor or insurance company is a loss for the integrity of the construction professions, and the latter will have to decide whether they are more interested in protecting the positions of members, or defending the ethic of the profession. Will Hughes invites us to imagine the former: “It was clear to everyone that the survival of an institution was much more important to its members and employees than any notion of service to the public.”

According to this paper, such stark choices will dominate the coming 20 years, as construction professions have to decide whether they are tools to defend the financial and legal interests of developers, or independent authorities and campaigners for a high-quality built environment.

These three philosophies provide a neat menu of the different attitudes that construction professions might hold towards the future. From optimism, via pragmatism, to pessimism, we will all be able to place ourselves somewhere on this spectrum of views. But what are the details and the mechanisms which our authors believe will prove decisive over the next 20 years?

The institutional infrastructure

Professions still hold a unique status in our contemporary institutional landscape, but an unwieldy one. They are notionally self-regulating and independent, yet influenced by market demand and government requirements. At the end of our context paper, we asked whether the biggest challenge to the independence of the professions would come from the public or from the private sector. Aspects of the scenario papers raise additional questions – to what extent will the public and private sectors start overlapping? Which institutions will provide the most eloquent and honest voices for public demand? The answers to these questions are changing.

However, other than perhaps the social scenario, none of the papers envisage much change in the chief organising principles of our key public and private institutions. Two dominant cultural or intellectual threads will continue to dominate. The pursuit of shareholder value will continue to be the key goal for the private sector, while forms of managerialism will remain the basis for how the public sector structures and measures itself. What the authors disagree on is whether or not the professions can exploit and influence these forces to their own benefit, or whether they should be viewed as inherent threats to any sense of vocation.

For and against shareholder value

None of the scenarios seriously imagines that there will be a challenge to the dominance of investor interests in corporate governance. If the values of construction professions are to be upheld in an era of rampant shareholder power, this may involve engaging with investors, and welcoming in an era of more immediate shareholder voice. But the necessary complement to this would be better indices of intangible value, so that companies can become more sympathetically understood and valued, and sustainable investment become a more lucrative financial proposition. Investors themselves may start demanding more sustainable buildings, eventually aligning their interests to those of the public.

The alternative prospect is not a happy one. If financial markets continue to pursue short-term profits, created by asset-sweating and cost-cutting, then construction professions will be faced with a very hard choice. In order to survive, they will lose much of what they hope defines them – their independence, their judgement, their creativity. They will become technicians and deal-brokers. The professional association itself may be able to give voice to the public outrage that the environment is becoming increasingly staid as a result, but if its role were reduced to sheer resistance, the profession would become little more than an anti-capitalist pressure group.

For and against managerialism

The demand for public accountability in both private and public sectors is now mainly satisfied through the cultural mind-set of managerialism. Only the social scenario imagines that there could be any serious rival to

this technique of upholding the public interest. The professions require a response. New cross-cutting management and accounting skills are being thrust upon the professions whether they like it or not. They feel they are being judged according to tiresome targets and standards that don't reflect genuine merit, when what they want is the freedom to set their own standards and judge one another against them. One option that the professions have before them is to resist managerialism, withhold co-operation, and hope to undermine its legitimacy.

But the scenarios suggest that managerialism is not going to go away. So the professions should seek to play a role in target-setting, and accept that they need to demonstrate competence clearly to the public, to government and to investors. They will lose freedom in the process, and their work will change. Yet the ethical purpose of managerialism – creating transparency and trust – is not at odds with that of the professions. The problem is not the goal, but the naiveté of certain methods. Combating this naiveté, and opening up new spheres of autonomous accountability, is the challenge.

The human infrastructure

One of the great strengths which professional associations possess is their attractiveness to many of the best graduates and to consumers. Although recorded levels of trust declined sharply in the 1990s in the UK, the unique institutional status of professions remains a source of trust, giving them advantages in attracting the best recruits, and safe-guarding market share. They need to develop an authoritative and legitimate influence over both the financing and the regulation of the construction industry, and doing this will require that they draw on good-will, and effectively marshal their supporters and members. The scenario papers indicate that they need to better understand why people want to be professionals, and to use professionals.

Studies such as the 'World Value Survey' show that values change rather slowly. The productive base of an economy can change in a matter of years, while technological possibilities are expanding every few months.

Meanwhile core human values – individuals’ commitment to their health, families, financial security and cultural vitality – are relatively constant, even while their forms of expression change with their environment. Professions tap in to the enduring human needs for trust, fairness and a public ethos, and would wither away if they did not. The question is not what values will motivate people in 20 years’ time, but how the economic and technological context will have affected their ability to pursue them.

Jobs people want

As we outlined in our context paper, the nature of work is changing. Advances in ICTs are creating new types of work, both of a routinised and a non-routinised nature. Marshalling human capital is now viewed as the prime driver of economic competitiveness, and the result is that professional and non-professional work are beginning to look rather like one another. While some professional work is becoming more routinised, service industries are placing greater emphasis on customer care and integrity.

The work carried out by construction professions over the next 20 years looks set to follow existing trends. Creative aspects will be enhanced, but only insofar as they enhance competitive advantage. Meanwhile routinised tasks will also be on the rise, as software packages develop to account for an increasingly complex regulatory and technological culture. Professions will have to integrate both types of work.

There seems to be consensus that what graduates want when they enter a profession is the ability to exercise judgement and self-expression. There also seems to be a problem for the construction professions here, as supply of graduates (weighted towards design and architecture, and away from engineering) ceases to match demands from the industry. How, our various scenarios ask, can the original vocation of new entrants to the professions be resuscitated in a mechanistic climate? How can professions reorient themselves around the skills on which graduates pride themselves? The answer is, of course, that they can’t entirely. Technological advances and economic pressures mean that creative and non-creative work are merging inexorably. The most

lauded design will often be a form of service innovation, a source of efficiency.

At the same time, even the most autonomous types of work will go on in the shadow of ICTs that will trace and measure that work in a way that both improves the effectiveness of work, but potentially removes responsibility. If graduates want total autonomy and responsibility for their work, they will be disappointed. But human judgement remains irreplaceable, and professions require a means of pushing it to the forefront of their identity in a new climate.

Buildings people want

Of all the scenario papers, only the technological scenario suggests that anyone actually benefits from the production of poor buildings (in this case, the investor). The rest make the assumption that there will remain adequate market and public demand for a high quality built environment, delivered through the unique expertise of professions. The peculiarity of a professional association – at once independent authority and supplier to a market – means that it cannot survive if the market entirely ceases to demand services of quality and integrity. What the scenario papers ask is how the nature of this demand will change, and what will be its mouthpieces in the future.

As ever, it is the market that places the primary demand on professions, and this will clearly remain the case. According to certain scenarios, however, the market demand could shift towards sustainable, and culturally unique forms of building, something that would clearly be in the interests of the professions. The alternative is that a ‘low-road’ commercialism predominates, and poor relationships between investors, contractors, regulators and designers mean that buildings are produced that harm the reputations of all these stakeholders. To achieve the former, then, the professions can not turn their backs on the skills which would enable them to communicate effectively between sectors and between separate stakeholders.

Ability to manage and exploit social networks and supply-chains will be one important determinant of whether professions are able to make high-quality building seem commercially attractive.

A new public voice

The challenge for construction professions is clear. They need to take ownership of a range of managerial and financial techniques that they have traditionally viewed as threatening, so that they restore their members to positions of independent authority in their industry. The industry will continue to grow more complex, and the twin pressures of shareholder value and managerialism will continue to loom over construction professions, challenging the latter to demonstrate why independence and creativity are beneficial to the market.

All professions have been asked this question before, and no doubt they will find themselves asked it again over the coming 20 years. But construction professions need to take advantage of something that makes them unlike many rival associations, such as legal or accountancy professions: the fact that the quality of their work is nearly always of public significance. No matter how contracts and private deals change, how the managerial process and technology develops, these professional associations will continue to carry a public responsibility to create the best possible heritage for the future. If they can convince the public that this is their priority, then their future is secure.

This is because the public interest doesn't disappear, it just gets channelled via different mechanisms. This could happen in all manner of ways over the next 20 years. The market itself may end up demanding more sustainable, higher-quality buildings; investors may discover the long-term value in construction companies that sustain social capital; management techniques may develop to create the basis for intelligent devolution, so as to create new semi-autonomous spheres of judgement; a more aggressive media may lead corporations to do more to protect their public reputation; or government may intervene to shift the balance of power away from supply-side interests. The call made by the social scenario that professions act as cultural mediators should be listened to, although the question of how the public interest will be represented remains open.

The priority is to win public support and to offer leadership. Achieving this goal will restore the sense of ethical purpose to professions, and in

doing so, dampen a number of threats. Everything which professions fear – the routinisation of work, the recruitment dilemmas, the pressure to return quick profits, the soul-sapping tick-boxes and so on – can all be tolerated and improved, so long as these processes exist for the sake of some higher end. That higher end is – and should remain – at the heart of professions' existence.

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