
Constructive Change

Proposals from the RIBA Practice Committee for sustained action in response to *Rethinking Construction*, the report of the Government Task Force on Construction

INTRODUCTION

The RIBA welcomed *Rethinking Construction*, the findings of the Construction Task force chaired by Sir John Egan, when it was published a year ago (see RIBA press release 21 July 1998). Since then numerous architects have individually taken part in the ensuing industry wide activities, in particular as part of the Movement for Innovation (M⁴I) launched by the DETR. Their experience has clarified the outlines of effective action on a broad front by the institute as a whole. This report, addressed to Council and members, draws together ideas for such action.

Over the years many architects and other construction professionals, as appalled as the Construction Task Force by the state of affairs, have tried to rethink the way buildings are designed and made. There have been many innovations that would align with the ambitions of *Rethinking Construction*: Multi-disciplinary practice, Local Authority works departments with integrated design and construction¹, systems buildings, prefabrication, standardisation, dimensional/modular co-ordination and many others. However, the culture of the industry and the professions has not fundamentally changed. How much of this was because of a lack of leadership from the professions or other industry groupings, and how much because of social and economic realities, others can debate. What is less open to debate is that real, epochal change in the construction industry is now under way – in large part driven by our larger clients with the support of the Treasury. *Rethinking Construction* is simply the most high level and thereby effective of initiatives to promote and direct change, following closely on the heels of *Constructing the Team*, the report by Sir Michael Latham (1995).

Architects, arguably, have been at the sharp end of these changes. Large sections of the profession have suffered economically as a result of the increasing marginalisation of the architect's role in the last 15 years. *Rethinking Construction* can be read to suggest further such marginalisation. Indeed there are many in the industry who would favour it. However, no acceptable case against this can be made on any basis resembling self-preservation. Our duty as a body of 27,000 people in the UK who spend a large part of their lives thinking about the nature of the built environment is to promote vigorously change which improves its quality and resist that which does not. Our

66 Portland Place
London W1B 1AD UK
Tel +44 (0)20 7580 5533
Fax +44 (0)20 7255 1541
info@inst.riba.org
www.architecture.com

Public Information line
0906 302 0400*

¹ E.g. *PELAW*: Partnership Experiment in Local Authority Works; London Borough of Haringey – mid 1970s in pursuit of the complete integration of design and construction.

focus all the while must be on benefit for society and not, except perhaps in consequence, the profession.

Seen from this point we think it vital that architects engage closely in the challenge of *Rethinking Construction* to promote the core values widely shared by architects and non-architects. This will not be achieved by the RIBA simply producing a policy document in response to *Rethinking Construction*, important though that may be. Far better to get all architects *re-thinking* for themselves in all their myriad circumstances and methods of practice how to improve the quality of design and, crucially, the delivery of the built environment for the benefit of the users - our customers. The subscriptions that members pay can, for example, be directed to assisting this task, to providing tools where necessary and to facilitate information exchange. As importantly, the RIBA can choose to work with other organisations pursuing the same goal to pool effort and avoid its unnecessary duplication.

In other words the best response to the Egan proposals is to *do rethinking*, not simply to act upon, or resist, the recommendations of the task force.

We have to recognise that some of our own professional habits have obscured the significance of the contribution we uniquely can make. First let us bury the still lingering Roarkian idea of the architect (“clients enable me to build, I do not build for clients”)² and restate the ideal that animates most of us – that the client and user are at the centre. ‘Customer Focus’ as advocated in *Rethinking Construction* should be second nature to every architect. But we need to emphasise that our understanding of Customer Focus embraces customers not yet born. ‘Sustainability’ stripped of its voguish overtones and understood in a common-sense way, perfectly summarises the ideal of trusteeship of resources which is one of our core values; not just energy and the eco-system but a wider legacy in which architecture plays a vital part.

The lingering idea of the architect/artist getting his way with clients undermines the real customer focus that most architects subscribe to. In a similar way the ideas of the architect as independent professional advisor detached from the production process confuses and undervalues our relationship with that process. We cannot respond to the challenge of *Rethinking Construction* unless we see ourselves unequivocally as part of the production process of buildings. This seemingly innocuous statement has profound consequences for education and practice. But far from leading to a single and fixed model of architectural practice it opens up great diversity and opens the way for architects to contribute far more effectively to radical improvements in the construction industry.

² Ayn Rand “The Fountainhead”; said by the hero Howard Roark.

Architects have a great deal to be effective with. Often they are the only part of the supply chain able to see the whole picture: from identification of customer need to the lifecycle of the finished building. They have a broad knowledge base. They are trained in lateral thinking. Problem solving is one of their core skills. All these qualities perfectly serve the principles of lean thinking, which forms the intellectual context for the proposals in *Rethinking Construction*.

What we need to do is to strip away the confusing and obscuring parts of our professional image, to form new alliances, to develop some new tools, to give different weightings to our stock of skills, to learn some new ones and, vitally, to measure our performance. We need to do these things throughout the profession from education and training through to practice, research and consultancy, and to do them with our other partners in the construction industry.

EXECUTIVE SUMMARY

The ideas for action gathered in this report are of many kinds. Some can be implemented straightaway. Some are modest. Some are ambitious. Some are speculative and will need more work to determine whether they are appropriate or indeed viable. Many overlap with what the RIBA is already doing in various areas of its operation. For some there are clear implementation routes. Others will need to be considered further by the new M4I Subcommittee.

Key Ideas and Proposals:

- Work to **integrate design and construction**; for example by promoting and developing Partnering or the principle of ‘the virtual company’. The Practice Department to point members to ideas such as these.
- Initiate and support **evidence based promotion of the value of design**. RIBA Future Studies has already commissioned a scoping paper on this subject. Many other organisations are undertaking research on parallel and overlapping lines. The RIBA to host a **conference** on this key topic. **Sustainability** will be central to the argument for the value of design.
- **KPIs for Design**. Develop Key Performance Indicators to enable demonstration projects and others to be evaluated in terms of design to broaden the current process dominated agenda of the M4I.
- Develop ways of applying **lean thinking** to design and construction.
- Make **process mapping** a part of professional practice. Project process protocols are already in existence and development but tend to be geared to large jobs. The next revision of the Job Book could be a vehicle for the Practice Department to help develop some simpler process maps for all scales of architectural design and

delivery. This is needed to improve processes within architectural practice as well as to help align and co-ordinate better inter-disciplinary work.

- Develop and promote the use of appropriate **benchmarking** tools to measure our performance as regards the quality of service delivery, predictability and profitability.
- Move towards the implementation of **post occupancy evaluation** as a standard service. Explore how this might be linked to RIBA awards.
- Identify potential changes in **education and training**, for example to raise the status of the skills required for the delivery as well as the design of projects. The RIBA could host a **conference** on the relationship between architectural education and the gathering pace of change in the construction industry. Revisions to the Outline Syllabus could be a vehicle for change.
- **Re-focus the way the RIBA advises potential clients:** From ‘how to appoint an architect’ to ‘how to get the building you need’. The Clients Advisory Service, already committed to the idea of customer focus, could consider further how to help people who are considering building as a solution to their needs, for examples through guidance in the basics of procurement.
- Encourage a **greater involvement of architects in the M⁴i** (Movement for Innovation) in all its workings – any further Demonstration Projects, the Housing Forum, the Knowledge Exchange, the Construction Best Practice Programme and the provisionally titled ‘Supporters Club’ which will provide intellectual and research support.
- **Broadcast and advertise** what architects are already doing in innovative projects and initiatives. Perhaps help the formation of local and national networks of members interested in change.
- Open up **RIBA Events’** exhibitions and talks to include more construction themes.
- Strengthen links and increase information exchange with **other professional and construction industry bodies**, in particular the Construction Industry Council. Identify joint initiatives.

Some of the above can be implemented by the Practice Department, for example by expanding the ‘toolkit’ available to members. Improvements in the internal processes of architectural practices are particularly good targets for this as are improvements in the quality of interface between the architect, other professionals and construction organisations.

At the same time the above ideas indicate action by all RIBA departments as well as the institute as whole. Only by such a collective effort will we be able to justify a claim to be amongst the leaders of the construction industry. What is at stake is the ideal of a sustainable built environment of high architectural quality that exceeds the best expectations of clients, customers and users alike.

IDEAS AND PROPOSALS

We have found it useful to consider the profession's response to the *Rethinking Construction* in the following three parts:

If we are committed to

- 1 **giving the best value to our customers** (the clients and the present *and* future users of what we create) then we must improve greatly the coherence of the industry – to build more effective teams, which will require
- 2 **better interfaces** between the members of the whole supply chain, and very probably some fusion of its parts. This is a task in itself but a pre-requisite is that we as architects must ensure that
- 3 **our own skills, knowledge and methods** are in peak condition and continuously improving.

1 Giving Best Value

1.1 *Evidence of the Value of Design:*

We need to demonstrate factually the value that good design can add. This is one of the most important areas for the RIBA to address immediately. The Future Studies scoping paper on research on the 'Value of Design' appears very much to be going along these lines and the RIBA Client Forums (formerly Design Quality Forums) are dedicated to the same purpose. At the same time great deal of work is being carried out or contemplated in various arenas on tracking the value of design which we could help co-ordinate. For example:

- CRISP has identified Design as a strategic priority for 1999 and is actively pursuing how to capture its value.
- The Society for the Advancement of Architectural Management (SAAM) has a project called 'Value through Design'.
- MARU at South Bank University is looking at Design Quality in PFI Hospital Projects
- Sheffield University has a project to show links between design and patient outcomes.
- Reading Construction Forum's 1996 report by Colin Gray - "Value for Money- Helping the UK Afford the Buildings it Likes"
- Design-Council sponsored programme "Designing the Customer Experience" - Caroline Cole

One method of harnessing some of this energy and knowledge would be for the RIBA to host a conference on the value of design. We believe there will be

strong interest in such a conference and it would be a very efficient way of both exchanging information and raising profile.

1.2 *Sustainability*

Central to the demonstration of the value of design is the argument of Sustainability. Trends in the M4i and in many other construction industry forums could lead to a narrow definition of customer focus. The belief appears to be that legislation can be left to safeguard the longer-term collective interest. We need to point out repeatedly that as far as buildings are concerned many of the customers are not yet born and that legislation invariably trails best practice. The idea of Sustainability, as it has evolved and matured, offers an embracing creative and critical tool for the design of the built environment. No amount of process based thinking can replace design as the means of achieving sustainability. Arguably, the fusion of design and the process of its delivery are inherent in the idea of sustainability.

1.3 *Key Performance Indicators*

The notion of KPIs is an ideal vehicle for establishing tangible measures of design quality. Currently the KPIs used by the Movement for Innovation are heavily dominated by process. We need to urgently develop KPIs for the product.

1.4 *Client Focus*

Exceeding client expectations is a basic ambition of architects. However this is not the general public's perception. We clearly need to pursue this ambition with greater vigour and rigour. Identifying the prime needs of the client or customer and making them the principal reference point for our work needs to be done more explicitly and evidently. This suggests, for example, a subtle re-focusing of advice to putative clients so that the whole process from inception to operation and maintenance is sketched out and only then the architect's potential role elaborated. The CAS has already highlighted the need for better client focus. All RIBA literature directed towards clients should be aligned with such a focus.

1.5 Other topics to explore:

- Post occupancy evaluation
- Harmonisation of consultant appointments
- Grasping the nettle of single point appointments

2 Better Interfaces

The other professions

2.1 *Design Co-ordination*

We know that poor co-ordination between design and production information from various members of the design team is one of the biggest causes of waste and inefficiency in the construction process with adverse effects on all involved. Inter-disciplinary working is the backbone of the design effort extending from quite small projects to the largest. The RIBA could work with the Construction Industry Council to seek specific methods of improving efficient Inter-disciplinary working.

2.2 *Process Mapping*

One of the barriers to better inter-disciplinary working is the opacity of the work processes as far as outsiders are concerned. We have been impressed by the ambition of the 'Generic Design and Construction Process Protocol' developed by the Universities of Salford and Loughborough together with a number of large private clients to tackle just this problem. This method enables the team as a whole to track what everyone else is doing and how their efforts fit into the whole. It is amazing that most projects manage without such an obvious pre-requisite of efficient teamwork. The RIBA could join with the other institutes to investigate ways of building on the work mentioned above.

2.3 *Alliances*

The moves already being made to seek alliances with other professional institutes, both nationally and regionally, are very much in line with *Rethinking Construction*. In the longer term we could explore common elements in the education and training of engineers, architects, quantity surveyors while speculating about a future Institute of the Built Environment (by a better name hopefully). One result of such integration may be a looser demarcation generally in the task/profession fit. However this will need to be allied to tools to enable a precise definition of tasks within a project.

2.4 *Costing at the point of design*

A key element of integration must be directed to improving the quality of the cost picture at the point of design. Developments in information technology are likely to make this more and more viable and promise to remove what must be one of the major causes of waste in design and construction.

2.5 *Alignment of training*

Difficulties of fit between mechanical & electrical service on the one hand and structure and fabric on the other are another familiar cause of inefficiency and

waste. Computer simulations such as Object Oriented CAD promise a partial solution. At present they are available to only large or specialised practices but will become much more widespread shortly. A more fundamental approach to the problem will need to tackle the issue of how architects and engineers are trained and what core skills are essential to deal with today's complex buildings and systems.

The interface with construction and contractors

2.6 The architect's contribution

On the one hand members of the Innovation Group have encountered a widespread feeling that the architect's days are numbered, other than for getting favourable planning permission or adding some style. Specialist subcontractors, who will be key players in an innovative industry, and with whom architects should have the most creative working relationships appear to particularly favour a diminution of the architect's role.

On the other hand whenever we have been in a truly multidisciplinary workshop or other session it has been clear that architects are the only part of the team with a comprehensive and inclusive view of the whole project. Thus they are essential to the intellectual effort that *Rethinking Construction* challenges the industry to undertake. We need to clarify and if necessary redefine according to circumstance what our contribution will be.

2.7 Partnering

With the recent release of the Construction Industry Board's Model Project Pact we now have a standard protocol for partnering that will enable those unfamiliar with it to more confidently take their first steps. The Practice Department is sending the Pact out to every registered practice, but there is the need for the RIBA to provide more information and back up, for example by getting feedback on the use of the pact and on the success, or otherwise, of partnering.

2.8 Innovative Procurement

We should canvass the membership for examples of innovative procurement arrangements, for example where architects and contractors have formed alliances and delivered a building via a single point of responsibility.

2.9 Quality Based Selection

Methods for value based rather than lowest cost sourcing the Construction Industry Council's Quality Based Selection (QBS) system is at present the best method on offer and therefore should be promoted.

2.10 *Specialist subcontractors*

How to get inputs from specialists early while retaining competition and probity? We need to recognise that specialist subcontractors are the most undervalued part of the industry. A failure to engage their expertise early in projects represents a serious waste. The impediments to such engagement – the nature of tendering and contracting - need to be actively tackled.

2.11 *Contracts*

Arguably partnering represents a way making the best of a bad job: a way of getting round the adversarial contract without actually scrapping it. (A 'patch' in computer jargon). In the long run *Rethinking Construction* must have an impact on the construction contract itself.

The workings of the Joint Contracts Tribunal can be frustratingly slow and apparently anachronistic in light of the changes afoot in the industry. However, the JCT is one of the few industry bodies where all the component parts of the building process work together in a consensus manner. In the context of *Rethinking Construction* the RIBA could use its presence to sharpen the JCT's performance.

2.12 *Lean Construction*

So far the thinking about Lean Construction has been dominated by academics, with the exception of a small number of innovative construction companies, mostly in the US. While its principles can be of immediate application in any related organisation, to develop lean construction methods to a point where they may be of general use will require an intellectual effort in which the contributions of architects and other designers is essential. This is potentially one of the most important areas for architects to engage with it, but it is difficult to see an institutional role other than facilitating awareness and information exchange, for example through RIBANet, or through the formation of a forum or Linked Society.

2.13 Other topics for explore:

- Design led construction management / prime contracting

The Movement for Innovation (M4i)

2.14 *Demonstration Projects*

M4i, which is charged with implementing Rethinking Construction, is focused on the Demonstration Projects, all of which have to incorporate the client and the whole supply chain. There are many architects involved and the RIBA should foster a network for them to exchange their experiences and tell other

architects. The demonstration projects are being grouped into clusters which are now meeting; although these were set up by the M4i it is anticipated that they will develop into their own regional centres of innovation – that is the challenge and architects need to be inside not outside looking in.

2.15 *Broadcasting architects' activities*

The RIBA must advertise the role that architects are already playing in the Movement for Innovation. We need to recognise also that large numbers of architects work in contracting and project management organisations – not all as conventional designers of buildings but always bringing a perspective and skills to the projects that only an architectural training and background can enable.

2.16 *CBPP and The Knowledge Exchange*

The government (DETR) established the well-funded construction best practice programme (CBPP) to disseminate best practice from any source. The links to the M4i have now been formulated and the Knowledge Exchange is now on line. So far there has been little engagement of architects with the Construction Best Practice Programme and we need to encourage more.

3 Our own skills, knowledge and methods

Architectural Practice

3.1 *Size of practice*

The construction industry shortcomings identified in *Rethinking Construction* apply at all scales of project. The marginalisation of architects is also happening at all scales of practice. We believe that there are many architects in all sizes of practice who are capable of innovation in methods of designing and delivering built solutions that respond to the Egan criticisms. A most potent achievement would be to facilitating such rethinking amongst RIBA members generally whether from small or large practices

There is an understandable feeling amongst smaller practices that the Movement for Innovation has nothing to do with them. The language of *Rethinking Construction*, and the tenor and scale of the Demonstration Projects so far do not readily encourage participation from small and medium sized enterprises. But we should leapfrog all that and do our own rethinking. Innovations and responses will be different for different size and scope of project. For example partnering is may not be appropriate for Small Works.

3.2 *The Toolkit*

The paradigm of the *toolkit* is useful in thinking about the outputs of the RIBA Practice Department, which sees one of its principal tasks as making tools available to assist members in their practice. Its remit is to continually improve these and to keep abreast of developments generally. There are a number of ways we could add to this toolkit as part of the effort of changing the way buildings are designed and delivered. Some of these are cited below.

3.3 *Process Mapping Toolkit*

There is an increasing awareness that there is a lack of a commonly understood and shared understanding of the architectural design process. We know that a great deal of waste can be generated if the process from briefing to production information is chaotic, which it often is. Architects are often involved in a great deal of unpaid rework as a result of others', as well their own, actions and omissions. Elsewhere people have devised more and less complex process maps or process protocols to make explicit what it is that they are doing and to clearly identify each participant's role in the whole effort. These range from the simple process maps developed by various lean construction theorists to the highly refined Generic Design and Construction Process mentioned in 2.2 above.

The nearest the architectural profession as whole has come to drawing up a shared process map is perhaps the Plan of Work which, though useful, has now become a very rough analysis of the architectural design task and probably nearing the end of its useful life. We believe that there is scope for developing guidelines that will help practices to be more explicit about the design task and enable them to identify blockages, resource allocation priorities and enable co-ordination more effectively. The forthcoming task of revising the Architects Job Book and making it available electronically presents a good opportunity for developing a generic process map. The tenor of such guidance does not have to be prescriptive. It is best targeted to assisting practices to develop awareness of their own processes and to make them explicit.

3.4 *The QA Toolkit*

For most architects the image of Quality Management and QA remains characterised by bureaucracy rather than any by any real effect on the quality of what they produce or the efficiency with which they produce it. The Practice Department has made available a simple to follow QA Toolkit on RIBANet specifically tailored to the needs of architectural practice. We should promote this as part of encouraging a change of culture in architectural practice that will help greater sureness of delivery.

3.5 Other topics to explore:

- Benchmarking and sharing information between practices as already being done via the Business Management for Architects sessions

Education and Research

3.6 Education and training is almost by definition the most fertile ground for cultivating the culture change signalled by *Rethinking Construction*. We can urge a new focus on, and engagement with, the entire process of making the built environment; but translating this into curriculum and course structure will be a longer task needing a significant intellectual effort. Eventually the results may be incorporated in the Outline Syllabus.

There are two distinct areas for the RIBA's actions:

- Architectural education and training, which is already being subjected to fundamental review; the review needs to explicitly place architectural education in the context of a changing construction industry.
- Training and education in the construction professions as a whole and in the rest of the industry, for which the obvious way is to work with the CIC.

3.7 *The CIC's initiatives*

The Construction Industry Council was set up to bring the professionals in construction closer together. In 1993 they published the seminal report "Crossing Boundaries: A Report On The State Of Commonality In Education And Training For The Construction Professions" by John Andrews and Andrew Derbyshire. The CIC has a standing education and training forum, which aims to keep the professions in touch and campaigns on issues e.g. the undertaking by schools of architecture to implement part of the Latham Report's recommendations in their curriculae. There are a number of developments including the establishment of TOPIC (Training of Professionals in Construction) as a government supported NTO (National Training Organisation). There is a dormant proposal to establish a construction development centre with Cranfield University for mid-career professionals. The CIC holds an annual heads of schools conference for all its members.

M4i has an education training and research working group, which is still trying to find appropriate links into the existing education, training and research frameworks in order to affect change.

3.8 *Research Links*

Whilst Future Studies will rightly spearhead the RIBA's research agenda, it is essential for us to maintain and strengthen our links with the wider research

effort in architecture and construction. This will be vital to the provision of the intellectual underpinning for our contribution

3.9 *A Conference*

As a first step to consider the potential effect of a changing construction industry on architectural education and training we suggest that the RIBA hosts a conference on the subject. This will also offer a new climate for the old debate on the relationship between practice and education about which each side has such strong views.

Sunand Prasad

July 1999

Revised September 1999