



‘Integration’: Rumford Club speech, Nov 20th 2008.

Integration. By that term I mean the coming together of the client and project team, consultants and constructors, early and with strong teamwork. I want to talk about why it’s a good thing, where its working and why it’s so hard for us in the UK to do it.

Sir John Egan lamented in his 1997 report: “Why will nobody take responsibility for seeing that I, as a client, am satisfied? Why is the construction industry alone in failing to provide an integrated service or product to its customers?”

My background is at BDP, which has long called itself an Integrated Practice. BDP once thought that simply bringing all the consultancy disciplines under one roof was Integration. Up to a point it was, when architects led the team. There is a story that in BDP’s original Preston office, secretaries would swoon as the founder George Grenfell Baines walked by, saying to each other in their Lancashire accents: “I’nt’e great?”

Integration now is seen as that of the whole chain, with a single leader delivering the design and construction, and sometimes the finance and facility management too.

The most integrated industry in the world is in Japan. There have been design-build contractors there for 300 years and some of the big 5 are as big as the whole UK industry. For the last 60 years there have been university courses in ‘kenchiku’ which means built environment. Graduates enter all fields of the industry, as clients, developers, architects, engineers and master builders. Shimizu and Kajima can be described as architect-builders; their owners are architects. There is no class or professional barrier between participants and working relationships can be life-long. Private architectural and engineering firms, set up after the war on the US model, struggle to attract graduate architects in the face of the master builders’ offers. Norman Foster described working with Obiyashi on a tower in Tokyo as ‘like being carried on a magic carpet.’ The Japanese have achieved ‘flow’ in their construction



culture, as they have in manufacturing, by prioritising continuity of workload and relationships.

In the USA there is rising enthusiasm for what the AIA calls Integrated Project Delivery, where the experienced client forms a team of professionals and constructors before designing, using all their skills to achieve best value, speed and quality of product. Standard forms of agreement have been produced for this. Australia is moving in a similar way.

The UK has tried to form long-term supply chains with multi-project partnering. Some contractors have formed partnerships with a drastically reduced supply chain, investing in training and tools to make integration more competitive than conventional tendering. Some clients have framework agreements which allow them to keep a team together. Strategic partnering shows big savings and high performance.

We struggle, however. In our context, where less value seems to be placed on continuity, we have a culture of single-project teams. Any attempt to form long-term integrated arrangements is undermined by:

- Lack of continuity in available work;
- Inexperienced clients in the public and corporate sectors;
- EU procurement rules seeking to block public customer-supplier closeness in the interests of corruption avoidance;
- Risk aversion blocking close working or early team formation;
- Continuation of traditional adversarial practice tending to drag people back to non-collaborative stances even after they experience integration;
- Widespread belief in economics as a zero-sum game where you can't win unless others lose;
- A belief that people will only perform well if they are under market pressure, otherwise reverting to complaisance.



The UK therefore needs to work on integration methods which expect teams to be assembled for each project with only some elements of long term alliance. Partly this will be about technique and partly about fundamental motivation.

The National Platform has identified, after wide consultation, that the future of the industry depends on advances in three, interrelated areas:

1. Converting the industry into a truly client-focussed, value-driven one;
2. Making construction and operation of the built environment sustainable;
3. Using ICT and Automation to achieve these objectives.

These areas are the ones where research is concentrated and where best practice is important to identify.

Integration as a theme is mainly a part of Objective 1 as it is about achieving better project performance for clients. However, systems integration is a vital tool in design and construction for sustainability. Integration is also centrally supported by the application of advanced ICT and automation.

A driver for better integration is the achievement of whole-life value for clients, value which is recognised in all six dimensions identified by CABE: Use, Exchange, Image, Environmental, Social and Cultural.

Clients seeking 'integrated solutions', the provision of DBFO environments, need integrated supply chains to provide the consultancy, finance, system integration and operational support that they require.

Integration now requires a strong Consultancy lead, not in the sense of the present design or management professions but in the sense of advice which identifies the customer's best value proposition, based on knowledge flowing back from schemes in use about their performance for the stakeholders and their cost in use. A full circuit of knowledge must flow to allow integrated thinking.



One key ICT tool is the Building Information Model. BIM allows all team players to coordinate easily, simulate performance and produce a defect-free document from which to build and operate the facility. It will also support automated building construction in due course. The virtual building can become the building's own mental model of how it should work, against which it can run itself.

BIM is powering the US Integrated practice model. Interoperable BIM is being used in Singapore and Norway to run a rapid, rule-based planning and regulation environment. The US General Services Administration, the government client, requires Interoperable BIM because it cuts the cost of owning and operating buildings dramatically and allows open sourcing.

Here in the UK, my current client EC Harris has developed a Value Proposition model which seeks to optimise projects on four levels:

1. Optimise building performance for clients, including use, exchange, image, environmental, social and cultural value;
2. Optimise whole-life operating cost;
3. Optimise capital spend to achieve the above;
4. Optimise ways of holding the asset created.

That is an integrated model, requiring the client and team to work closely together.

Integration is a word you will hear more and more. It can mean many things to many interest groups. From making sure services and structure don't clash to the grand integration of sustainable development, we have to get out of compartmentalised, silo thinking and practice, manage value and risk in the open field and deliver far better results for everyone.

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