

## **DTI 'Strategy for Sustainable Construction'- consultation events**

### **DESIGN QUALITY**

#### **1 SUMMARY**

The government's overarching planning guidance, *Planning Policy Statement 1: Delivering sustainable development* makes high quality design a key objective of the planning system and suggests there is a link between sustainability and quality. What constitutes good design is held to be capable of being tested through rigorous examination at public inquiry.

In CABE's view, "We should not be afraid to ask about a building: is it beautiful? If it is, then the resulting lifting of the spirits will be as valuable a contribution to public well-being as dealing successfully with the functional requirements of the building's programme." (CABE, 2006) There is also a line of thinking that says we must make buildings both *functional* and *enjoyable* (as well as meeting environmental objectives) to be truly sustainable.

Understanding of design quality is variable across the industry. Naturally, architects are trained to prioritise aesthetics, but for some parts of construction this is less of a priority. It is notoriously difficult to measure design quality, but CABE/CIC's Design Quality Indicators have emerged as a credible way to evaluate buildings more objectively, with support from many quarters. Currently the DQI's are used for only a small minority of projects.

Post-occupancy evaluation has also emerged as a tool to see how well buildings meet occupants' needs. It is commonly accepted as being important, but few projects actually go through POEs. There are different approaches to carrying out POE, and there is no consensus about which is best.

There are no regulations in this area, although planning controls (and planning policy guidance for local authorities) usually emphasise both quality in design and the appearance of projects. CABE also steps in to assess the quality of new building proposals if asked.

#### **2 VISIONS AND METRICS**

To quote CABE again, "Design is a creative activity, and definitions of quality in design are elusive. It cannot be reduced to codes and prescriptions. However, it is possible to distinguish good design from bad design. [Good design] is fit for purpose, sustainable, efficient, coherent, flexible, responsive to context, good looking and a clear expression of the requirements of the brief. We believe that assessing quality is to a large extent an objective process. Ultimately, of course, some questions come down to matters of individual taste and preference. It is not often, however, that questions of this kind are important in deciding whether a project, judged in the round, is a good one. What matters is quality, not style." (CABE, 2006)

##### **2.1 Industry vision**

###### **2.1.1 Published provisional/initial vision and metrics**

Two ideas for moving forward in this area came out of the DTI's Review of Sustainable Construction:

1. Using the Design Quality Indicators (which evaluate buildings in terms of functionality, build quality and impact) to assess a proportion of all publicly-funded projects, and
2. Carrying out post-occupancy reviews for a proportion of these projects, perhaps at five-year intervals.

Briefing – Main criteria in Design Quality Indicators and Post-Occupancy Reviews			
DQIs:	<i>Functionality</i>	<i>Build Quality</i>	<i>Impact</i>
	Access	Performance	Urban & social integration
	Space	Engineering	Internal environment
	Uses	Construction	Form & materials
			Character & innovation
POEs	Summer/winter thermal comfort		
	Air quality		
	Lighting		
	Noise		
	Overall comfort		

The Department of Culture, Media and Sport (DCMS) is currently trying to reinvigorate the role of Design Champion at minister level to promote quality in government buildings. The OGC also says that all government clients must appoint a design champion for projects above a certain threshold and always signal the importance of design

Some local authorities have made a commitment to design quality, and allocated resources to it, but they are not using formal tools to assess quality and aesthetics.

The Home Builders Federation and CABI jointly sponsor 'Building for Life', a national benchmark for well-designed housing and neighbourhoods. It is based on a set of 20 criteria across character; roads, parking and pedestrianisation; design and construction; environment and community; to promote good standards of urban design.

Table 1 Proposed visions and metrics

Proposed vision	Source of vision	Associated metric
Use DQI for all large new buildings (buildings either more than 1000m <sup>2</sup> , or costing more than £1m)	DTI Sustainable construction Review, Oct 06	Percentage of large new buildings assessed using DQI
Carry out post-occupancy evaluation for a proportion of all large new buildings	DTI Sustainable construction Review, Oct 06	Percentage of large new buildings undergoing post-occupancy evaluation

## DISCUSSION

While these visions are achievable, given sufficient time, they do not guarantee any improvement in quality or aesthetics. Rather, they are a step towards measuring quality and usability. It may be more

meaningful to define minimum satisfaction ratings for POEs in large buildings or minimum scores under Building for Life for housing.

Any objectives will also have a greater impact if they apply to medium and small projects too, but it might be asking too much of those working on smaller projects to carry out DQI or POE assessments.

There is another problem in this area too: tastes change over time, and what is aesthetically pleasing today may be unattractive tomorrow. Many projects with high (aesthetic) aspirations built in the 1960s-70s are now unpopular

### 2.1.2. Metrics

#### DQIs

There is no central database of all projects that have used the DQIs. We do not, therefore, have a clear impression of how much progress has been made to date. However, CIC has done some initial analysis of DQIs, and it would be relatively straightforward for the CIC carry out a comprehensive study.

Peter Rogers, chairman of the Strategic Forum for Construction, says the DQIs should be used as one of five headline targets for the industry. The SCF also says that 60% of all publicly-funded projects should use the DQIs.

More than 1000 people have used the DQIs, and a tool for using them is now available on line, managed by the CIC. It costs around £100 per use; facilitation is usually needed, plus an investment of time. (Presumably the CIC records how many projects use this tool, and their results.)

#### POE

Again, there is no central database of POEs. However, the Usable Buildings Trust has its own database, and this database could represent a sizable fraction of all projects that have undergone a POE. There are different approaches to carrying out POE, and no single repository for findings. This means it would be much more difficult to find out whether we are meeting this target.

BRE offers POE services. DfES/School Works has piloted POE in schools. Many people in the industry recognise its importance, but few have actually carried out POE. BRE has suggested that POE be used to underpin the Customer Satisfaction KPI for construction.

**Table 2 – Assessment of current awareness and attainment**

Rating 0 (low/non-existent) to 5 (high/mature) (see Appendix 1 for details)	Use DQI for all large new buildings (buildings either more than 1000m2, or costing more than £1m)	Carry out post-occupancy evaluation for a proportion of all large new buildings
1 Established principles / sound science	<b>4</b>	<b>4</b>
2 Widely understood across industry	<b>2</b>	<b>3</b>
3 (Technically) attainable with no risk and no skills shortage	<b>5(3)</b>	<b>5(3)</b>
4 Cost-effective	<b>3</b>	<b>3</b>
5 Compelling business case	<b>2(1)</b>	<b>3(2)</b>
6 Strong Market pull	<b>1</b>	<b>2(1)</b>
7 Established metrics and performance data	<b>4(2)</b>	<b>3</b>
8 Degree of regulation	<b>0</b>	<b>0</b>

### 2.1.3 Current performance and interim targets

Performance on quality and aesthetics is very difficult to judge. Anecdotally, developers put more emphasis on quality and design than they did in the past – possibly because a strong economy means there is a bigger premium on high quality developments. Government clients also often seem to devote more attention to aesthetics than they did in the past. However, this is unmeasured.

DQIs and POE would help to start measurement of these intangible aspects of buildings. But knowing how many buildings have completed either DQIs or POEs does not allow us to say anything useful about quality or aesthetics. The results would need to be collated and analysed.

We might view more projects going through the DQI and POE processes as a step forward – a way to learn from past experience and ultimately raise quality over time. If so, an interim target of, say 50% of all large buildings to undertake a DQI may be useful.

Alternatively, targets themselves and the interim targets may be better expressed as average ‘ratings’ under DQIs or POEs. For example:

DQIs – at least 70% of the maximum possible score for all factors in the DQI, or Building for Life – meeting the ‘Silver’ (70%) or ‘Gold’ (80%) standard for housing  
POEs – scoring ‘good’ or ‘very good’ occupant satisfaction rating for all aspects of the POE. (However, this would require more standardisation in carrying out POEs to allow fair comparisons.)

## **2.2 Published Government targets**

The government does not have explicit targets for quality and aesthetics in construction. However, ‘Achieving Excellence’, which has the support of the Office for Government Commerce, states that government buildings must ensure best whole-life value, which is linked to quality and aesthetics. The Public Sector Construction Clients’ Forum also ‘champions design excellence and sustainability’. However, no specific targets have been set (probably because of the difficulty in measurement discussed above).

## **3 MECHANISMS**

### **3.1 Policy and regulatory responsibility**

It is difficult to see how the government could legislate in this area. Rather, it must take a lead as the largest single client for construction work and insist on good quality and aesthetics (which in theory it is doing through the Office for Government Commerce’s Common Minimum Standards for construction procurement, OGC: 2006a, 2006b). Likewise, other clients need to prioritise quality and aesthetics.

Planning authorities also need to act to ensure that only well-designed projects are granted planning permission. There may be a role here for guidance from central government, perhaps as a Planning Policy Statement.

We are unaware of planned legislation in this area – apart from that driven by sustainability and accessibility concerns.

### **3.2 Industry and market drivers**

There is no question that construction clients have most power to effect change in this area – by prioritising and devoting adequate resources to quality and aesthetics. The CIC/CABE and BRE could also increase support for DQI and POE, respectively.

### 3.2.1 Other possible mechanisms

There could be a simple labelling scheme – perhaps like the A to E energy ratings, or perhaps like BREEAM’s ‘Excellent’ to ‘Poor’ rating – that tells construction clients, home-purchasers and others how well a building scores for quality and aesthetics. The difficulty in measurement (and in particular objectivity) makes this very hard, but if it could be achieved it might help clients to be more discerning.

Otherwise better education for clients (for example, in helping them to interpret drawings and visualise buildings at the design stage) might be helpful.

## APPENDIX 1

### Guidelines for scoring Table 1

SCORE 5	Principles established and practice within reach of most companies	Widespread <b>understanding</b> of principles across most parts of the industry	Technically attainable with little or no <b>risk</b>	<b>Cost effective</b> to implement within present fiscal / regulatory regime	Compelling and well promoted <b>business case</b>	Strong <b>market pull</b> from both public sector and private sector	Published <b>metrics</b> on current performance / benchmarking	Highly regulated, clear signals of future policy / regs
SCORE 0	Gaps in scientific / social / economic principles	Knowledge and understanding across most parts of the industry non-existent	Technical risks / serious skills shortages	Not presently cost effective in competitive market or using conventional business case justification	Little in the form of case studies and evidence of <b>business case</b>	Little market pull beyond regulatory minima	Little in the form of any current openly available data	Largely unregulated and reliant on voluntary action

#### References:

CABE (2006) Design Review: How CABE evaluates quality in architecture & urban design.

OGC (2006a) *Achieving Excellence Guide 9: Design Quality*  
[http://www.ogc.gov.uk/sdtoolkit/reference/ogc\\_library/achievingexcellence/ae9.pdf](http://www.ogc.gov.uk/sdtoolkit/reference/ogc_library/achievingexcellence/ae9.pdf)

OGC (2006a) Common Minimum Standards  
[www.ogc.gov.uk/documents/Common\\_Minimum\\_Standards\\_PDF.pdf](http://www.ogc.gov.uk/documents/Common_Minimum_Standards_PDF.pdf)