

Briefing

Assessing secondary school design quality

The design quality of secondary schools completed over the last five years is not good enough to secure the government's ambition to transform our children's education.

While there are signs that design quality is improving, it is not doing so quickly enough. Too many of the mistakes of the past look like being repeated in the first waves of schools being built under the building schools for the future (BSF) programme.

This presents a major challenge. Everyone involved in the BSF programme needs to recommit themselves to excellence in design and to redouble their efforts to turn aspirations into reality. Standards will need careful monitoring to ensure that children get the schools they deserve.



Introduction

The government is planning to rebuild or renew every secondary school in England by 2020 in the biggest capital investment in education for 50 years. This really is a once-in-a-lifetime opportunity to improve our children's education.

The aim is not just to replace crumbling schools with new ones, but to transform the way we learn. This represents a break with the old way of doing things and should change the whole idea of 'school', from a physical place where children are simply taught to one where a community of individuals can share learning experiences and activities.

The vehicle for this transformation is the government's building schools for the future (BSF) programme. The programme explicitly links the quality of school design to the quality of education. As the prime minister said in 2004: 'Of course, what goes on in a school is far more important than the buildings themselves. But the one contributes to the other, and today we are celebrating a stunning new generation in school

design. Not just new classrooms. But state-of-the-art ICT, whiteboards, sports facilities, community facilities, public space, facilities for out-of-hours activities. All built around the needs of students, teachers, and the wider community. All geared to develop the talents of each individual young person to the fullest extent.'¹

'It is clear that there are not enough schools being built or being designed that are exemplary, inspiring, innovative, or flexibly designed to allow for a diversity of approaches to education in the future'

However, half of the schools completed in the last five years and which CAGE audited have been assessed as 'poor' or 'mediocre'.² CAGE audited 52 of the 124 completed schools. There is some evidence that things were getting better towards the end of the period covered by the survey. But it is clear that there are not enough schools being built or

being designed that are exemplary, inspiring, innovative, or flexibly designed to allow for a diversity of approaches to education in the future.

Although the BSF programme set out to address many of these issues,³ our experience indicates that many of the BSF schools on the drawing board are facing the same problems as previous programmes.

The Department for Education and Skills (DfES) and Partnerships for Schools (PfS) are putting measures in place, such as standardised contractual documentation and exemplar design guidance, to try to ensure that BSF learns from the experiences of recent projects and produces well-designed schools that meet the needs of educational transformation. We still believe that, as a matter of urgency, the government needs to review the BSF programme and ensure that it is fit for purpose. It should renew its commitment to the rapid and continuous improvement that is needed to ensure that we provide schools fit for the 21st rather than the 20th century.

About the research

CABE's research into the quality of new secondary schools was in two parts. In the first, we surveyed the quality of recently completed secondary schools and gathered feedback from our team of 'enablers' – leading professionals employed to offer expert advice on scheme proposals – as well as from clients. In the second, CABE enablers were interviewed to provide a snapshot of the design quality of BSF schemes that are still on the drawing board.

A total of 124 secondary schools were completed between January 2000 and September 2005. CABE assessed the quality of 52 of these, which were selected as a representative sample of schools being built. They were assessed by design experts using a tailored form of the design quality indicator for schools (DQI for schools).⁴ The DQI for schools is designed for groups of people to gauge variation of opinions or form a consensus. Developed by CABE in collaboration with the Construction Industry Council, the adapted version introduced additional

validation and moderation processes to allow an individual expert to use the indicators to measure design quality.

The assessment is based on 111 indicators presented as statements, grouped into three categories: the way the building is designed to be useful as a school (functionality); its build quality; and its ability to create a sense of place and have an uplifting effect on the local community and environment (impact). Each school was then given an overall rating.

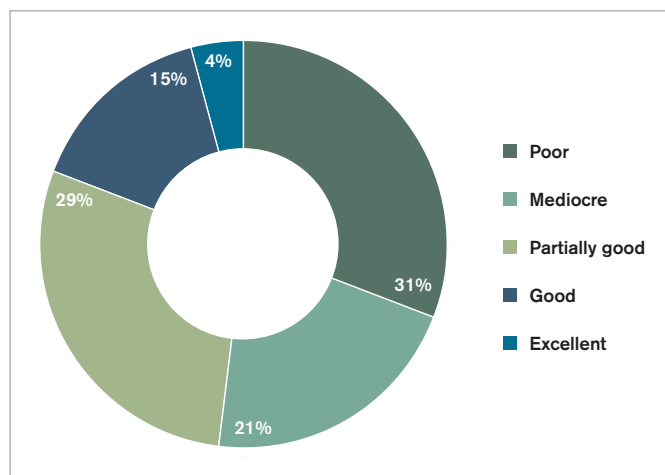
The scope of the audit was necessarily limited and we were not able to include some important factors:

- User perspectives are not explicitly included; rather we have drawn on CABE's expert and professional opinion of the design of school buildings
- We did not gather information on the costs of the schools: accurate breakdowns of figures are not available for PFI schools as this is commercially sensitive information

- We conducted a visual survey of environmental performance and made an assessment of feedback from clients such as facilities managers. The quantitative detail of energy consumption and environmental performance was beyond the scope of our audit.
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Breakdown of schools by quality

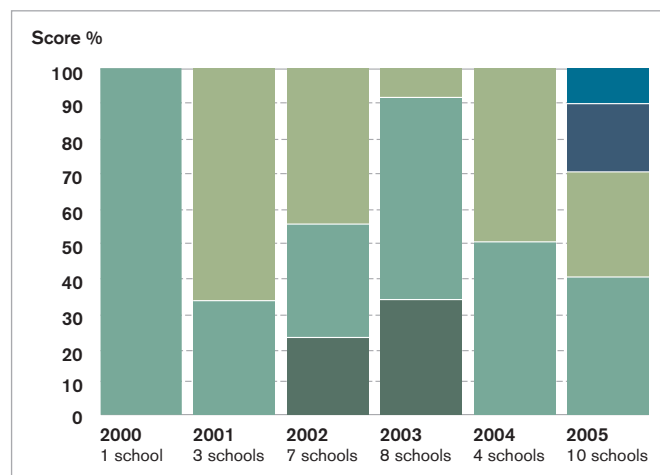
% of all schools visited by category



- **Poor** (0% < Functionality, build quality and impact < 30%)
- **Mediocre** (30% < Functionality, build quality and impact < 50%)
- **Partially good** (50% < Functionality, build quality and impact < 70%)

How good are PFI schools?

% of PFI schools in each quality category by year



- **Good** (70% < Functionality, build quality and impact < 80%)
- **Excellent** (80% < Functionality, build quality and impact < 100%)

Key findings from CABE's audit of recently completed schools

- 31 per cent of schools were classified as 'partially good' and 19 per cent were assessed as 'good' or 'excellent'. Half of the 52 schools reviewed were categorised as 'mediocre' or 'poor'.⁵
- All of the good or excellent schools were completed in 2005, which suggests that overall design quality is getting better.
- Generally, schools performed best on issues of functionality and least well on build quality. Individual schools tended to have similar scores on all three categories so that the better schools were functional, well made and an asset to their locality and poor ones were equally poor across all the categories. The schools that were ranked as poor overall performed particularly badly on providing inspiring educational environments.

- With very few exceptions, schools performed badly on transformational design – design that can bring about change in learning techniques – and on basic issues of environmental sustainability such as having natural daylight and ventilation. They performed well on aspects such as size, safety and accessibility that are subject to regulation.
- Any procurement route can produce a good result, although schools using the private finance initiative (PFI) performed less well than other forms of contract. All but one of the lowest 10 schools were procured using PFI, whereas of the top 10 (all the good and excellent schools) only three were procured using PFI.
- There was little variation in the scores achieved by schools in our sample designed by the same architectural practices but more built by the same contractor. This suggests that local authorities need to be able to select carefully both the contractor and design team and need to have the ability and authority to do this.

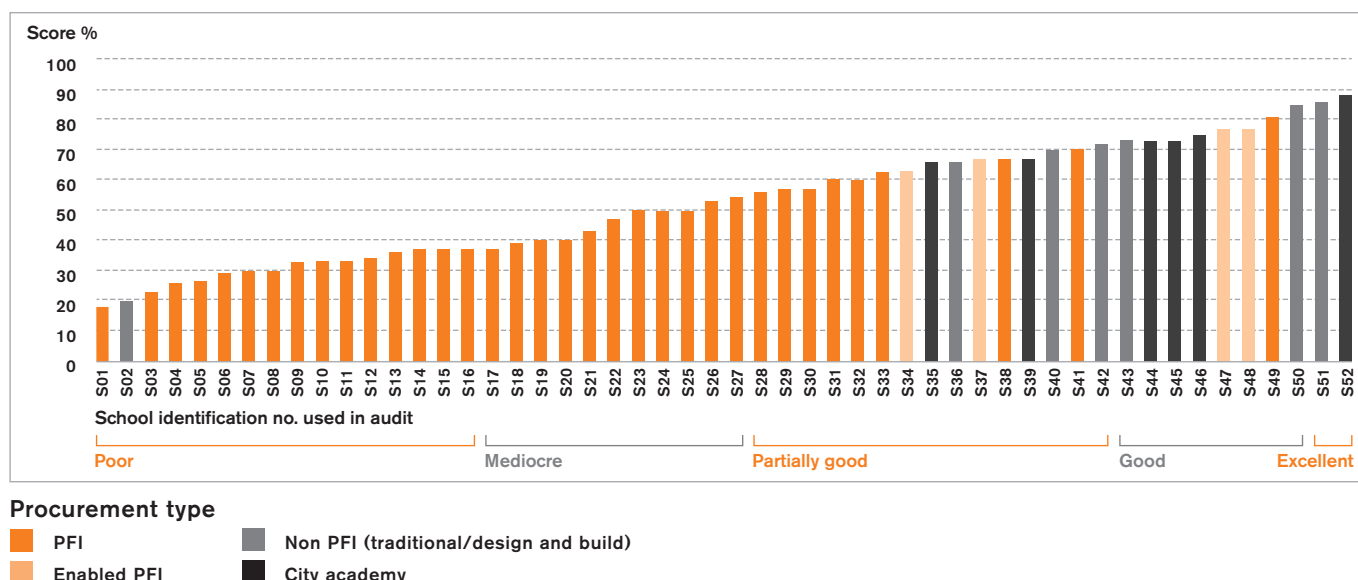
- Clients that had received practical advice from CABE provided positive feedback. In the majority of cases, the CABE enabler was recognised as an invaluable partner in the preparation stage of the school building process.

Key findings from CABE's survey of BSF pathfinder and wave one schemes

There is some evidence, based on the qualitative feedback reports from enablers, that designers, contractors and local authorities are rising to the challenge of the BSF programme, with a few promising schemes at design stage. It is worth noting, however, that only a small number of BSF projects have reached 'preferred bidder' status so far. As time goes on, the number of BSF school designs will increase, more new and refurbished buildings will appear, and it will then be possible to make judgements on the design quality with more certainty and assess trends more accurately.

How good are new schools?

Average % score for 52 schools visited



However, on the evidence available, enablers have expressed concern about the design quality of a significant proportion of schemes that are reaching the invitation to negotiate (ITN) or preferred bidder stage. The new Competitive Dialogue Procedure replaces the Competitive Negotiated Procedure under new EU procurement regulations from January 2006. The incentive to produce high-quality designs will be at its peak during the competitive stage of the procurement process. Post-LEP (Local Education Partnership), subsequent projects will be subject to the risk of design quality being watered down, as the drive for efficiency takes place.

According to Partnership for Schools (PfS), 90 per cent of schools will be designed after the competitive sample scheme for a LEP has been decided. For this reason, the importance of achieving outstanding sample scheme designs cannot be overstated – these will set the standard.

LEP formation is by no means the only procurement and delivery model applied in BSF. In fact, 42

per cent of pathfinder and wave one local authorities are choosing not to form a LEP, despite the guidance from PfS specifying this as their preferred approach. Typically, this is due to a combination of factors including the scale of the BSF investment in the area, existing commitments (such as PFI facilities management), or local preference for an alternative approach.

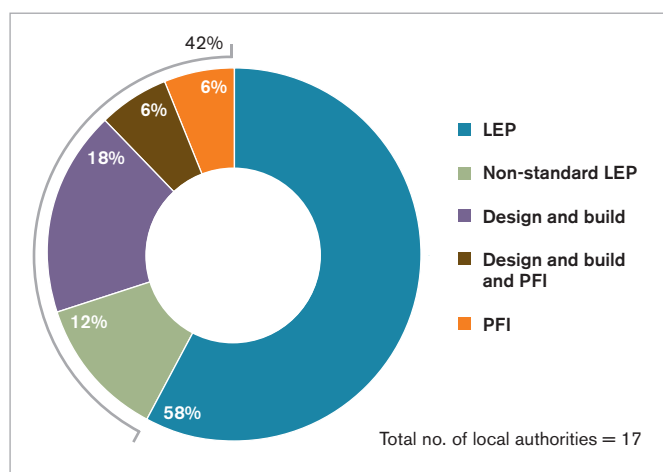
‘The importance of achieving outstanding sample scheme designs cannot be overstated – these will set the standard’

A key strength of BSF is considered to be the efficiency created by the use of standard procurement and delivery contracts and documentation. It is crucial, therefore, that local authorities are supported in applying non-LEP procurement approaches and that the lessons learned by authorities pursuing alternative procurement approaches are extracted and fed into the procurement advice given to future waves of BSF.

CABE enablers have identified a number of areas of concern where they think the process or ethos of a project is already affecting the potential outcome. Among their concerns are:

- **Getting the initial preparation wrong** In several cases the message about transformational design is getting lost in a procurement process that is more concerned with cost and time. In most cases feasibility studies are not being done properly.
- **Failure to involve the right team** On some projects local authority design champions are ineffective, client design advisors are not acting independently enough and CABE enablers are not being involved early enough.
- **Inadequate procedures for evaluating bids** Our evidence strongly indicates that there is not enough weighting placed on design quality in the guideline PfS scoring system for assessing bidders and that their use and interpretation varies significantly across local authority BSF projects. All bids should go to design review for approval.
- **Failure to apply best practice** The best projects give designers time to work creatively and also prepare the best value bid, not the cheapest. The weakest have bidding periods that are too short and leave themselves vulnerable to a bid that superficially looks quite good but is in fact a weak scheme.

Which procurement approach are local authorities taking for BSF and wave one projects?



Recommendations

This report's recommendations pose a challenge for everyone involved in the new schools capital programme, from DfES to individual local authorities and schools, and from PfS to CABE itself.

1 Invest in preparation

A good building starts with a good brief. A good brief comes from a thorough understanding of the programme, the aspirations of the client and all stakeholders, local constraints such as site conditions and buildings to be retained, and a rigorous testing of possible solutions. Preparation work for BSF projects will need to be even more extensive as schools and local authorities must consider how learning will be transformed, including the massive impact of ICT, and the influence that the extended schools agenda may have on the school buildings and grounds.

- **The educational vision and transformational design**
DfES should fund the review and analysis of school design briefs as a matter of urgency. They have hardly changed in the last 20 years. They need to reflect new ideas about learning and the demands of transformational design.
- **Feasibility studies**
Local authorities should undertake mandatory feasibility studies to a consistent, high standard for all sites in a BSF project. This should be part of the strategic business case and outline business case and pre-invitation to negotiate requirements.

Consortia should undertake a mandatory pre-project evaluation of existing or similar schools prior to commencing design work on a project.

2 Involve the right team

Our research has shown that a skilled project team significantly impacts on the design quality of a school. Local authorities must ensure that they appoint the highest calibre teams who can champion design quality from the start to the end of the process.

- **Local authority experience**
Local authorities should make a clear assessment of in-house skills and use outside expertise where necessary.
- **Design champions**
Local authorities should value and promote the role of design champions, drawing upon the guidance produced by CABE.⁶
- **Client design advisor (CDA) involvement**
PfS should define a compulsory minimum duration and clear scope of work for CDA involvement in BSF projects. CABE's guidance on the CDA provides further details.⁷
- **CABE enabler involvement**
DfES should make it mandatory to appoint a CABE enabler at the outset of a BSF project so that they are able to influence key decision-making.
- **Schools' involvement**
Local authorities should engage with all representatives of potential users in the community in order to assess local and individual needs.

DfES should ensure that practical, individual support is made available to headteachers so that they are familiar with the changing agenda of transformational design, the procurement process, and are aware of the assistance that is available.

- **Design team selection**
PfS should revise the standard

Official Journal of the European Union (OJEU) notice award criteria to state that design teams must have a demonstrable track record of design excellence in complex building projects or the education sector.

- **Provider support**

DfES should fund the provision of expert seminars, workshops and tours of inspirational school buildings to disseminate best practice to all parties involved in BSF.

3 Evaluate proposals

Public money should not be spent on schools that are inadequate. The quality of proposals should be signed off by DfES before the decision to invest is confirmed.

- **Design weighting**
PfS should change the mandatory criteria upon which bidders are selected to ensure that adequate weighting is given to design quality.
- **Bid information**
PfS should prepare guidance that lists the mandatory minimum range of necessary drawings and documents required as part of a bidder's submissions to demonstrate that design work is of good quality.
- **DfES-led schools review panel**
All feasibility work prepared by the local authority and all design proposals prepared by the private sector partner or LEP should be submitted to a DfES-led schools review panel for approval. If the review panel considers a submission unacceptable, DfES should withhold funding.

Sample or significant projects should be submitted to CABE's design review panel as the

'national centre of excellence for design review' for quality monitoring purposes.

■ **Whole-life design**

DfES should change funding mechanisms through the use of devolved capital sinking funds, to make lowest whole-life cost mandatory, rather than lowest capital cost.

PfS should develop a core set of mandatory criteria upon which bidders are selected to ensure they demonstrate compliance with building bulletins or best practice and the provision of specific design information regarding issues such as daylighting, glare and acoustics.

The OJEU notice criteria should state that the contract will be given to 'the most economically advantageous tender on a whole-life basis'.

DfES should investigate the robustness of the 'BREEAM' environmental rating system for schools. A similar tool should be developed for use on all refurbished and remodelled schools.

PfS should develop standard output specifications to ensure that schools are designed to minimise energy consumption (which includes provision of controls that are easy to use). Where energy is required, this should be derived from on-site renewables. Given the land and assets schools often possess, they should seek where possible to be net exporters of energy to their local communities.

4 Mainstream best practice

Approximately 3,800 new schools will be built through BSF. It is important that a mechanism is established for systematic learning from early projects to ensure the

continuous improvement of those in later waves. This applies to both the buildings themselves and the processes used to realise them.

■ **Procurement and delivery model**

PfS should carry out an analysis of emerging delivery and procurement models (those that vary from the standard LEP, PFI or design and build) and commit to using this information to inform continuous improvement of the BSF process.

■ **Industry capacity**

PfS should investigate ways to raise the capacity of private sector partners to deliver education projects by encouraging partnering between organisations with different skills.

PfS should investigate ways of involving small construction companies and localised supply chains to broaden the supply side and develop a local skills base.

■ **Programme**

PfS should define the minimum time periods which local authorities should allow for in their project programmes for feasibility work for all sites in a BSF project – both prior to release to the market and for key bidder design stages.

■ **Affordability**

DfES should make it mandatory to use good-quality reference schemes to ensure that local authority cost estimates are more accurate.

DfES should work with architects and quantity surveyors with experience in schools projects to develop a method for comparing costs within BSF that accounts for design quality.

■ **Extended services**

DfES should ensure it is mandatory to involve other

local authority departments and local agencies in early dialogue as a means of co-ordinating and masterplanning the wider agenda of extended services.

DfES should provide further funding guidance linking up regeneration funding, extended services and the 14–19 education agenda.

■ **Schools database**

DfES should fund the setting up and maintenance of a database on all built or remodelled schools.

■ **Post-occupancy evaluation**

Every BSF project should include a compulsory post-occupancy evaluation. Results of these should be linked to the award of subsequent contracts.

■ **Research collaboration**

DfES, CABE and PfS should continue to work together to undertake more in-depth studies of the school building programme when pathfinder and wave one BSF programmes are operational.

- 1 Blair, T, Speech to opening of Capital City Academy, London, on building schools for the future, 2004. Available at: www.number10.gov.uk/output/Page5353.asp
- 2 *Assessing secondary school design quality*, CABE, 2006, Appendix D: audit of completed secondary schools: classification into quality bands. Available at: www.cabe.org.uk
- 3 *Assessing secondary school design quality*, *ibid*
- 4 The design quality indicator (DQI) is a pioneering process for evaluating design quality of buildings. It can be used by everyone involved in the development process to contribute to improving the quality of our built environment. There is also a version specifically aimed at school buildings, the DQI for Schools (DQIfs) Available at: www.dqi.org.uk/Schools/default.htm
- 5 *Assessing secondary school design quality*, *ibid*
- 6 *Local authority design champions*, CABE, 2005, available at www.cabe.org.uk Further information regarding the design champion's role in BSF is available from CABE.
- 7 *Building schools for the future: the client design advisor*. CABE/Royal Institute of British Architects, 2005. Available at www.cabe.org.uk Further information regarding the client design advisor's role in BSF is available from CABE.

Just how well designed are the new secondary schools being built in England today? With the country in the midst of the most ambitious schools construction programme in 50 years, it's a vital question. This once-in-a-lifetime opportunity is seeing every secondary school in the country being renewed or rebuilt. Responding to concerns, CABI and its team of expert enablers audited the quality of new secondary school design – with some startling results. This briefing paper offers a summary of the findings of that research – and sets out some clear recommendations for change.

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