Successful school design

Questions to ask

Introduction

Since starting work in July 2007, CABE's schools design panel has reviewed over 175 schemes. We assess the schemes we see against 10 criteria. These criteria are used to evaluate the quality of both sample and non-sample schemes.

The 10 headline criteria have proved robust and we intend to keep using them. However, we have refined the key questions that we ask under each of the criteria and this clarified list is included in this document. This refinement of the detailed priorities in school design has been based on feedback from all schemes that we have reviewed to date and our aim is to strengthen schemes submitted to the panel in future.

This document will help consortia and design teams to prepare their schemes. Local authorities and head teachers can also use the criteria in the development of their briefs and to evaluate the schemes presented to them by bidding consortia.

It is important to remember that not all criteria will apply equally to all schemes. The appropriate application will vary according to, for example, the type of site, the area in which the school sits and whether the school is new build or refurbishment, amongst others. We are looking for specific design responses for each school.

You will find examples of schemes that did well in each of the criteria at the schools design panel on the CABE website. These illustrate the type of evidence you might prepare to show how a scheme meets each criteria.

Please visit:
www.cabe.org.uk/
design-review/schools

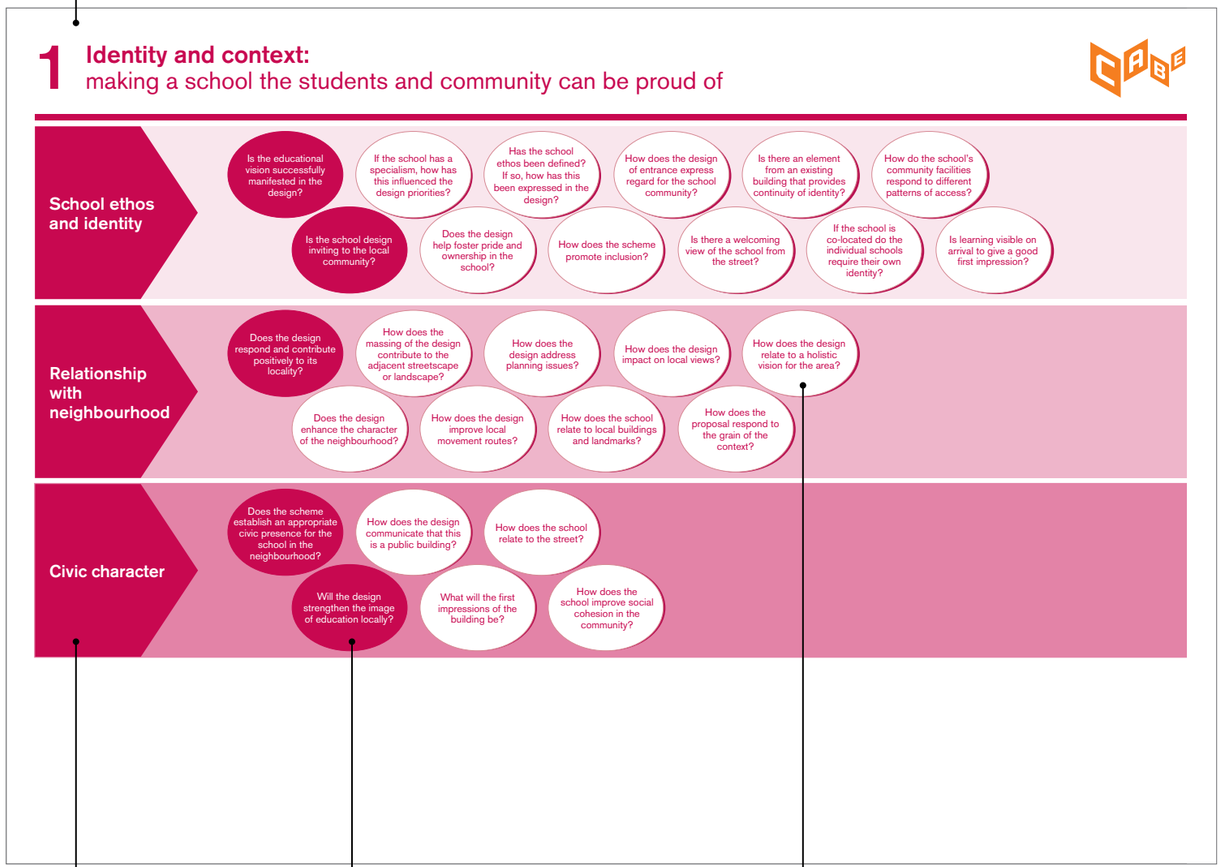
Using this guide

We have defined key strategies for each of the criteria that we would expect consortia and design teams to have addressed when coming into review.
The questions under each strategy include those that will be judged by the panel as well as those that will not. The questions that are not judged are seen as points to be considered by design teams as schemes are developed.
Criteria 10 is a synthesis of all the other points and therefore includes only the questions that will be judged by the panel.

The following pages detail the assessment criteria and other points to consider for the schools design panel and diagram opposite illustrates how to use this document. Please remember that, while checklists have an obvious value, they do not in themselves lead to good design: this is the result of the successful synthesis of these key points.

Key

Criteria heading



Strategy

Schools design panel assessment criteria

Other issues to consider

1 Identity and context:
making a school the students and community can be proud of

School ethos and identity

- Is the educational vision successfully manifested in the design?
- If the school has a specialism, how has this influenced the design priorities?
- Has the school ethos been defined? If so, how has this been expressed in the design?
- How does the design of entrance express regard for the school community?
- Is there an element from an existing building that provides continuity of identity?
- How do the school's community facilities respond to different patterns of access?
- Is the school design inviting to the local community?
- Does the design help foster pride and ownership in the school?
- How does the scheme promote inclusion?
- Is there a welcoming view of the school from the street?
- If the school is co-located do the individual schools require their own identity?
- Is learning visible on arrival to give a good first impression?

Relationship with neighbourhood

- Does the design respond and contribute positively to its locality?
- How does the massing of the design contribute to the adjacent streetscape or landscape?
- How does the design address planning issues?
- How does the design impact on local views?
- How does the design relate to a holistic vision for the area?
- Does the design enhance the character of the neighbourhood?
- How does the design improve local movement routes?
- How does the school relate to local buildings and landmarks?
- How does the proposal respond to the grain of the context?

Civic character

- Does the scheme establish an appropriate civic presence for the school in the neighbourhood?
- How does the design communicate that this is a public building?
- How does the school relate to the street?
- Will the design strengthen the image of education locally?
- What will the first impressions of the building be?
- How does the school improve social cohesion in the community?

2 Site plan:
making the best use of the site

Enhancing the character of the site

- Does the design foster a sense of place?
- How does the scheme enhance the micro-climate and ecology of the site?
- Does the scheme relate well to buildings outside the site?
- How does the scheme enhance the topography and existing landscape features?
- Does the scheme make the most of its position and views?
- Does the scheme provide shelter from the prevailing wind, rain and sun?

Working with existing site constraints and opportunities

- How well does the design deal with site specific constraints and opportunities?
- How has the design responded to the acoustic constraints of the site?
- Does the phasing allow the school to function during the construction period?
- Are there specific site issues that infringe on the site of the school buildings?
- If the scheme is a refurbishment, what is the rationale for the retention of any existing buildings?
- Does the proposed phasing work sensibly without compromising the final design?
- Does the scheme approach existing services and utilities sensibly?

Strategic site organisation

- Are the buildings, grounds and facilities arranged well on the site?
- Are the external circulation routes clear and do they balance the needs of different users?
- Is there a clear external circulation diagram?
- Are there discrete arrangements for deliveries and refuse collection?
- Is any car parking on the site unobtrusive?
- Have sensible routes to key areas of the grounds been planned to avoid disruption to learning spaces?
- Are the buildings placed to achieve optimum orientation?
- Does the configuration of buildings create positive internal and external spaces?
- Does the design provide safe on-site pedestrian routes?
- What are the entrance sequences for users arriving by different modes of transport?
- Are routes to sports facilities safe throughout the year?
- How does the scheme create identifiable boundaries and security zones?
- Do the entrance routes to the school link to local movement routes?
- Does the strategic vision for the site allow for future development?

3 School grounds:
making assets of the outdoor spaces

Relationship between the grounds and building

- Do the grounds and planting contribute to creating a sense of place?
- Have the outside spaces been designed in conjunction with the building form?
- Do the grounds support a sustainability strategy?
- Will the school grounds change with the seasons?
- Have the maintenance and management implications of the design been considered?
- Are external shelters well-incorporated with the design to provide robust and practical transitions?
- Does the design respond to the existing topography, climate and ecology of the site?
- Is there strong structural planting with a coherent hierarchy?
- Does the scheme provide a rich sensory environment?
- Does the planting enhance the micro-climate to create habitable spaces?
- Are there views out over the surrounding landscape?

Social spaces and play

- Are outdoor spaces provided for a variety of different student social activities, interest ranges and group sizes?
- Are some social spaces sheltered from wind, rain and sun?
- Does the design provide outdoor dining both formally and informally?
- Are there spaces which allow imaginative and creative play?
- Are social spaces safe?
- Is external seating and storage provided?

Outdoor learning

- Are there provisions for outdoor learning?
- How do the learning spaces support the school's pedagogy?
- Can food be grown in the grounds?
- How do the outdoor learning spaces support the curriculum?
- Are there clear links between the indoor and outdoor learning environments?

Physical activity

- Are there opportunities for a wide range of physical activities?
- Are sports facilities integrated into the overall landscape strategy?
- Has access to other local facilities been considered?
- Can the areas for physical activity be easily used during the winter months?
- Are there opportunities for challenge and risk taking in the grounds?
- Does the design maximise the area for sports pitches?
- Do the grounds facilitate community use?

4 Organisation:
creating a clear diagram for the buildings

Accommodating the educational agenda

- Is this successfully accommodated in the internal arrangement of spaces?
- Will the design allow the delivery of the curriculum when the school opens?
- Does the design identify the main social spaces?
- How does the design encourage a healthy food agenda?
- Is there a clear understanding of the school's educational agenda and its organisational implications?
- What are the aspirations of the pastoral system?
- What is the role of ICT in the educational agenda?

Spatial organisation

- Is there a clear spatial diagram for the building?
- Does the design provide opportunities for cross-curricular learning?
- Does the spatial arrangement allow for natural ventilation and daylighting to the majority of spaces?
- Is the plan legible for users?
- Does the design provide opportunities for social interaction?
- Are the learning spaces arranged well across the school?
- Is there a diagram showing which of the spaces will be timetabled?
- Does the location on specialist facilities allow the design to accommodate different pedagogies?
- Are the positions of key roof lights shown on the plan?

Movement routes

- Is there a clear hierarchy of circulation routes?
- Is there a clear movement and connection diagram?
- Has the vertical circulation been designed to avoid congestion and encourage positive behaviour?
- Can vertical and horizontal links be made between clusters?
- Does the circulation allow for short travel times between key spaces?
- Are links between indoor and outdoor spaces optimised?
- Is there a variety of circulation spaces which respond intelligently to any changes in level?
- Do movement routes into the school depend on signage?
- Does the internal circulation fit with the school's proposed timetabling?
- Are circulation routes accessible for all users?

5 Buildings:
making form, massing and appearance work together

Concept

- Is there a coherent design idea that relates plans, sections and elevations?
- In refurbishment schemes, do the new elements relate well to existing buildings and make the school into a coherent whole?
- Has the organisation diagram been convincingly translated into a coherent building?

Form and massing

- Are the building's form and massing appropriate to the site?
- How does the massing support the daylighting strategy?
- How do the buildings on the site relate to one another?
- Does the building create well proportioned internal and external spaces?
- Has the height of the building been considered from educational and massing perspectives?

Appearance

- Do the elevations reflect the design concept to create an inspiring building?
- How is the spatial organisation of the school expressed in the elevations?
- How is the fenestration designed and detailed?
- Does the roof plan support the resources strategy?
- How do the elevations respond to orientation and site constraints?
- How are colour, pattern, graphics and texture integrated?
- Is the building good architecture in its own right?
- How is any exposed structure detailed?
- How have the entrances been defined through the building design?
- Is there elevational co-ordination of services and lighting?
- How do the elevation help deliver a low-energy internal environment?

Construction and materials

- Do the materials contribute positively to the quality of the scheme?
- Which details give the design value?
- Has the maintenance strategy been addressed?
- How do the materials used support the sustainability strategy?
- Will the fabric of the buildings be durable and easy to maintain?
- Are any modern methods of construction used?
- How do the materials contribute to the character of the scheme?

6 Interiors:
creating excellent spaces for learning and teaching

Variety and delight

- Will occupants experience variety and delight as they move around the school?
- How will the school stamp its identity on the building?
- Is dining seen as a social activity?
- Are circulation and social areas inviting to students?
- Is there a well considered strategy for the use of colour, pattern, graphics and texture?
- Do circulation and social spaces benefit from daylight and views?

High quality

- Will the internal environment help students and staff feel valued and motivated?
- Does the quality of the space encourage good behaviour?
- Will the users be aware of the external environment throughout the day?
- Is the incorporation of storage well-considered?
- Are learning spaces well proportioned and pleasant?
- Are internal materials demonstrably robust?
- Is the furniture of high quality and robust?

The building in use

- Will the building work well in full use?
- Is the ability to display students work incorporated into the design?
- Does the building enable staff to respond to the differing needs of the range of age groups?
- Will the use of outdoor courtyards cause disturbance to adjacent class spaces?
- Have the acoustic requirements of different spaces been dealt with?
- Are the acoustics appropriate in all spaces not just the classrooms?
- Will there be glimpses of the range of learning activities happening in the school to inspire pupils?
- Will the use of outdoor courtyards cause disturbance to adjacent class spaces?

7 Resources:
deploying convincing environmental strategies

Orientation

- Has the optimum orientation for different types of spaces been considered?
- Does the building form allow daylight into all spaces?
- Has the orientation informed the choice of materials or detailing of elevations?
- Does the design of the elevations respond to different orientations?
- Do the room proportions allow good daylight and ventilation?

Ventilation

- Does the ventilation strategy provide a comfortable environment in which to learn in all seasons?
- Are mixed mode systems proposed? If so, where and why?
- How, if applicable, is night time ventilation achieved securely?
- Is the environmental strategy resilient to increased heat gain or the effects of climate change?
- How is the ventilation controlled, especially in the design of window openings?
- How will the ventilation strategy function if different plan layouts or pedagogies are adopted?
- Where possible, are spaces naturally ventilated?
- Is ventilation maintained when blinds are in use?
- How is summer time overheating avoided?
- How are the effects of external noise dealt with?
- Are opportunities for cross-ventilation exploited?

Daylighting

- Are key spaces daylit for most of the year?
- Are solar glare and solar gain well controlled?
- Are halls and circulation areas well day-lit?
- How will the day-lighting and solar control strategy be affected if different layouts are adopted?
- Is there an imaginative use of daylight to create uplifting spaces?
- Are opportunities for roof-lights utilised?
- Are rooms located to maximise appropriate use of available daylight? (eg. art rooms on top floor or making use of rooflights)

Energy and services strategies

- Does the whole design help to minimise energy use and carbon emissions?
- Will the design provide an environment with a comfortable temperature for learning throughout the year?
- How, if applicable, will biomass be delivered and handled?
- Is there a clear strategy for reduction of energy use and CO_2 emissions?
- Does the services strategy allow effective zoning for out of hours use?
- How does the services strategy support flexible ICT and specialist spaces?
- Is any on-site energy generation appropriate and meaningful?
- How can CO_2 emissions and water saving be used in the curriculum and community engagement?
- How is waste reduction approached on a whole life basis?
- How are energy, water and waste minimised, particularly from out of hours and equipment use?
- How does the heating and ventilation strategy allow for the expected use of the building? And what are the implications on flexibility?
- How are plant areas and main services routes accessed for maintenance?

8 Feeling safe:
creating a secure and welcoming place

External environment

- Are external routes and boundaries clear and well defined?
- Can all users access the site safely?
- How does the boundary treatment facilitate the school's approach to security?
- Can boundaries between zones change to suit activities?
- Is the security strategy balanced with openness?
- Is it clear which areas are open to the community and which are not?
- Are entrances welcoming for all users of the building, well located and capable of passive surveillance?
- Are pedestrian routes overlooked and safe throughout the day and evenings?

Internal environment

- Are there opportunities for passive surveillance throughout the school?
- Are teachers' work rooms and administration staff's offices in key positions for overlooking?
- Do stairwells benefit from some passive supervision?
- Is the reception desk well located and obvious on arrival?
- Are any proposed access control systems appropriate and integrated into the design?
- Does the design of toilets, staircases and circulation areas allow for visibility so users feel safe?
- Have dead-end corridors been avoided in the design?
- Does the design of lockers areas limit opportunities for bullying?
- Are the toilets easily supervised and in easy reach of learning spaces?

9 Long life, loose fit:
creating a school that can adapt and evolve in the future

Day-to-day flexibility

- Does the design provide day-to-day flexibility for different types of learning and teaching?
- Does the design encourage social learning throughout the school and its grounds?
- How does the design support community use and out of hours use?
- Is there a range of spaces available for widely different group sizes?
- Can spaces be reconfigured easily?
- Are the spaces suitable for a variety of uses?

Adaptability

- Is the building able to accommodate different organisational structures or pedagogies over time?
- What impact will alternative layouts have on the circulation?
- Do the building services allow for adaptation of the plan?
- Does the design make provision for future change if required?
- Can circulation routes be extended for future additions?
- How well does the design allow for future expansion of the school?
- Which pastoral / curriculum groupings can the plan accommodate?
- If the layout changes, what will be the impact on the daylighting of the space? On acoustics? On ICT?
- How will the school respond if pupil numbers increase?

Furniture & Equipment

- Can a good range of layouts be made using the proposed furniture?
- Where will furniture be stored when not in use?
- Is there a variety of furniture provided?
- Will the proposed furniture and equipment allow changes to be made easily?
- How will the furniture and equipment be integrated with ICT?
- What external furniture will be provided?

10 Successful whole:
making a design that works in the round

Appropriateness

- Does this design as a whole offer a thoughtful, coherent and convincing response to the key issues of the site and brief?
- Does the whole design add up to more than a sum of its parts?

Delight

- Will it be a pleasure to work, eat, learn, play, teach and socialise in this school?

Timelessness

- Is this school set to become a cherished part of its locality?

Fulfilling user intentions

- Does the architectural approach successfully meet the aspirations of the client and community?
- Will the school's design help to deliver educational transformation?

Acknowledgements

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Successful school design: questions to ask has been produced to help bidders and designers prepare their schemes. It is also for local authority clients when developing their briefs and evaluating the schemes presented to them by consortia. It sets out the key issues to consider when designing secondary schools. It highlights the key strategies for each of the criteria that CABE expects consortia and design teams to have addressed when coming into review. The document is part of a suite of publishing by CABE, called *Successful school design*, downloadable from www.cabe.org.uk/design-review/schools.

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CABE is the government's advisor on architecture, urban design and public space. As a public body, we encourage policymakers to create places that work for people. We help local planners apply national design policy and advise developers and architects, persuading them to put people's needs first. We show public sector clients how to commission projects that meet the needs of their users. And we seek to inspire the public to demand more from their buildings and spaces. Advising, influencing and inspiring, we work to create well-designed, welcoming places.

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