

Design Review Report

Gabalfa Primary/Ysgol Glan Ceubal,
Cardiff

DCFW Ref: 45

Meeting of 19th June 2014



Declarations of Interest

Panel members, observers and other relevant parties are required to declare *in advance* any interests they may have in relation to the Design Review Agenda items. Any such declarations are recorded here and in DCFW's central records.

Review Status

Meeting date	19 th June 2014
Issue date	9 th July 2014
Scheme location	Gabalfa, Cardiff
Scheme description	Extension/refurbishment
Scheme reference number	45
Planning status	Pre-application

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Declarations of Interest

None declared.

Consultations to Date

Statutory consultation is currently in progress. There have been meetings with the client and end-user.

The Proposals

The client brief requires an increase in primary school capacity to meet anticipated demand for both Welsh speaking and English speaking pupils at Ysgol Glan Ceubal and Gabalfa Primary School. The same site currently accommodates both of these primary education facilities. It is intended that the schools will eventually be served by separate buildings on the same site, by extending each of the two existing buildings. Some refurbishment and internal alterations may also be necessary. A phased approach to building is being considered. The new build areas will be BREEAM Excellent and will require sprinklers.

Summary

- The Design Commission welcomes the opportunity to review a series of Cardiff school projects, including this scheme which is at an early stage in the design process. Few design decisions have been made so far, and therefore the Commission recommends that the project is reviewed again, prior to a planning application being made. The nature of the Commission's comments, at this stage, will be about the processes to be undertaken to get the best building result.
- In brief, the process should involve the following stages: analysis; setting clear objectives and a comprehensive design brief; developing an architectural vision; design iterations and testing; detailed design and specification.

- Analysis of the brief and how it can be accommodated on the site should inform a rethink of the initial IDA design.
- The requirement for the site to be occupied during construction will be a key driver. A simple proposal which minimises disruption to the existing buildings might be best.
- The new building will be there for a long time, so it is important that it has good environmental performance and flexibility to provide for current and future teaching functions.
- A strategy for connecting the new buildings to the old should be developed with long term issues and flexibility in mind.
- The Design Commission encourages the team to appoint a landscape architect as soon as possible, who will explore opportunities to add educational value through the landscape design.
- In terms of the programme and budget, it is beneficial to invest design time at the early stages of a project, so that clear and detailed information can be delivered to the contractor.
- Early engagement of building services engineers to work closely with the architectural team on the project is encouraged.

Main Points in Detail

Consultation and Analysis

Analysis and consultation can be used to inform the design to create an efficient, functional, and delightful place for children to learn in. Proper consultation should be well managed, and ask appropriate questions which lay people can respond to.

The team should draw on the value of staff knowledge, but bear in mind that the building will be in place longer than current staff and existing school community, and that teaching practices change with time. In particular, the school caretaker will have detailed knowledge of the existing site, the condition of the existing buildings and will know of problem areas that may need remediation.

Analysis should include a thorough appraisal of the site and surroundings, as well as a study of activities and movements throughout the school day. Ecological assessments, acoustic assessments and arboriculture surveys will all have an impact on design strategies. Environmental analysis will also be important to achieving a BREEAM Excellent rating.

Architectural Vision and Brief

The current plans, produced for the IDA, are largely logistical. It would be beneficial for the team to develop an architectural vision and brief which go beyond the purely functional aspects of the scheme.

It might be appropriate for the two schools to have distinct identities to better differentiate them. Character and identity, including Welsh language, could be considered as part of the vision.

Although the physical function of the school is important, the team should give thought to the experience of the children who will grow up in it. The school should provide a comfortable, inspiring environment for learning, teaching and nurturing. The provision of comfort will be closely linked to environmental performance. There is potential to add value by improving the educational performance of the school.

The team must consider what the best way of using the budget on this site will be. There may be greater value in focusing on delivering a good quality, clearly new building which signals future direction.

Site Layout, Building Form and Landscape

In this scheme, it is particularly important that any new building relates well to the rest of the site and the existing buildings. The generous green space offers many opportunities which the building design could take advantage of. Analysis of the site should inform these relationships. The qualities of all spaces inside the old and new buildings and in between them should be carefully considered.

Different strategies for arranging the new build elements should be assessed, including an option where the new elements are separate buildings connected via a link. The impact of regulations and requirements for upgrades of the existing buildings may be fundamentally different dependent upon whether the new works are defined as extensions or free-standing new buildings. Assessment of options should take into account environmental performance, functional organisation and the life span of the old and new elements.

The appointment of a landscape architect at an early stage, to work alongside the architectural and engineering design team, will encourage integrated design of buildings and the spaces between them. There are opportunities for the landscape design to add educational value to the scheme.

Buildability will be important, especially as the school will be occupied during construction. Refined simplification of the design will help with this.

Environmental Strategy

As well as accommodating the functional requirements, the building form will have an impact on environmental performance. The depth and height of spaces will affect ventilation, daylighting and overheating.

The environmental strategy should focus on investing in the building fabric and passive control of solar gains in the first instance, before add-on technologies such as sun pipes are considered. The strategy should be simple, robust and easy to maintain and operate.

Lessons can be learned from work which has been carried out on the existing buildings, which have reduced daylight and have resulted in overheating of the south facing classrooms.

The BREEAM pre-assessment will be important in establishing how the building will achieve the Excellent rating. Other modelling can be used to test and improve the design to optimise environmental performance. Significant analysis will be required to assess performance of the different spaces prior to the planning application being made, to ensure that the building performs to the levels expected.

As well as testing for carbon emissions, the design should be tested for comfort conditions. For example, will the classrooms overheat in summer? Experienced engineering consultants will be needed for this work. They should be fully responsible for all of the environmental and building services elements as an integrated design service, working closely with the architectural team. The Commission would encourage the team to hold BREEAM assessment workshops and for engineers to review the ventilation and temperature control strategy.

Passive, natural daylight strategies, such as windows and rooflights should be considered before sun pipes and electric lighting. The roof form can also be used to encourage natural ventilation. Low angle sun from east and west poses a risk to overheating. It may be necessary to provide some solar shading to windows on these elevations.

The employer's requirements should be clear and comprehensive in what is to be provided in terms of environmental performance. It may be necessary to push the contractor to deliver better than normal airtightness and insulation. Onsite testing, inspection and monitoring should be properly planned and specified. The team should consider inclusion of damages for the contractor in the contract if the specified environmental performance is not achieved, recognising the additional long term running costs to the local authority if the building underperforms.

Programme, Cost and Procurement

The level of detail required for a planning application is not sufficient to control design quality in a design and build construction contract. Drawings to RIBA Stage D+, including key details, and a full specifications should be included in the employer's requirements so that the client gets the building they want from the Design and Build contractor. This will require additional design time after the planning application is submitted.

The employer's requirements should be clear about operational performance, in order that the building delivered performs to the standards required.

The scheme presented is at RIBA Stage A (feasibility study). Sufficient time should be allowed for proper briefing (Stage B, in the order of 2 months) and design (around 4 months) prior to a planning application being made.

The programme should allow a robust brief, design, environmental strategy, specification and cost plan to be produced, providing greater certainty over costs and the quality of building that will be delivered. A compressed programme for design is likely to increase risk, reduce the client's ability to control quality, increase the potential for unexpected costs and reduce value overall.

The procurement route should be mapped out in detail, and should form part of the overall project programme. The procurement strategy should not control the programme to the detriment of design quality.

Robust and timely cost planning is important in reducing risk and improving predictability. This will depend on a good level of detail being made available by the design team.

It is important that the team has an up to date idea of the cost per square metre, so that they can help keep the design within budget.

The team should be clear about allocation of the budget, setting out what is intended for the new build and what is to fund maintenance and internal alterations. Focusing funds on the new build has the potential to make the biggest difference to the school. However, it may be economical for the same contractor to carry out repair/upgrade works to the existing building at the same time.

Sufficient funds should be allocated for design work, including engineering. Cutting costs at the design stage could prove more costly later on and will reduce value.

Whole life costs should be considered alongside capital costs. Energy efficiency, passive design and low-maintenance building fabric and mechanical services will reduce whole life costs.

The cost of drainage from wet areas of new build could be significant. Integration of new building services and structure with old, will add cost, as will phasing the construction. These aspects of the scheme should be included in the cost plan. Early discussion with potential contractors about phasing will be useful to gauge their thoughts, but the design should not be driven by them.

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A Welsh language copy of this report is available upon request.

Attendees

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