

Design Review Report

Fitzalan High School,
Cardiff

DCFW Ref: 42

Meeting of 19th June 2014

19th January 2016 – DCFW has learned that this scheme is no longer planned, therefore this report does not relate to the site at present, but to the scheme as it was presented in 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

Issue date

Scheme location

Scheme description

Scheme reference number

Planning status

CONFIDENTIAL

19th June 2014

9th July 2014

Leckwith, Cardiff

New build/internal alterations

42

Pre-application

Declarations of Interest

None declared.

Consultations to Date

There has so far been consultation with the education department, head teacher and science staff.

The Proposals

The scheme is for an extension/new block and remodelling of the existing school, with the key priority being improving the provision of science accommodation and placing it in one location. The proposed new building is single storey arranged around a courtyard. The building must achieve BREEAM Excellent standard. The team aims to have the new building complete by spring 2016, although there is some flexibility in the programme. The budget for the new build is approximately £3.5M.

Summary

- The Design Commission for Wales welcomes the opportunity to review a series of Cardiff school projects, including this at this stage in the design process, when there is opportunity for discussions to add value to the scheme which is delivered. The Commission recommends that the project is reviewed again, prior to a planning application being made.
- The choice of site and the courtyard form is the right approach, but we would encourage the team to simplify the organisational layout in order to get better value from the time and budget available.
- The budget is tight, but enough to allow a good quality scheme to be delivered if the design is refined and simplified.

- It is important that the specification and employer's requirements are detailed and thorough to give a good level of control over what is delivered by the contractors
- Detailed design and testing should be used to ensure that BREEAM Excellent or better is achieved.
- The design of the courtyard space is an opportunity to make this a really special, good quality scheme.

Main Points in Detail

Design progress

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 courtyard form and the chosen location within the school site are both appropriate design decisions. The design of the building needs to be developed and considered in more detail before a planning application is made.

The feasibility design shows a variety of laboratory plan forms, with both pitched and flat roofs. The scheme would benefit from a simpler plan layout, with consistent laboratories, maintaining flexibility of use through standardisation. A standardised classroom size, shape and layout will help flexibility of use, as well as budget, and can be designed really well once.

There is an opportunity to define the space around the secondary entrance to the courtyard more clearly whilst protecting the privacy of the adjacent houses. An L shaped row of labs facing the playing fields and the houses would allow an extended 'leg' to project from the plan to 'direct' users into the secondary entrance (nearest the houses), whilst a simple rectangular row of labs completes the courtyard layout with entrances in gaps between the two main forms.

If the bulk of the building is defined as a series of lab spaces, the secondary uses supporting these classrooms might take on linking functions around the entrances, between the rows of mono-pitched labs, with the flat roofs suggested in the feasibility scheme, creating further clarity in the design.

The pragmatically chamfered corner to one room does not sit comfortably with the rest of the proposal. Considering the flow of pupils and staff, who may be moving equipment, will help with the planning of circulation routes. The funnel shaped entrance may become a bottle-neck when groups of pupils are moving between classrooms. There is a crucial decision to be taken: is circulation an indoor corridor or a sheltered external cloister around the courtyard. This will be fundamental to the architecture and operation of the scheme and should be tied into consideration of space for pupils waiting to enter classrooms.

At this stage, there has been little consideration of the building elevations. The fenestration design will be particularly important as windows will have an impact on environmental conditions, lighting and glare, privacy and relationships between the inside and outside of the building.

Context and Landscape Design

Although this project is focussed on the new science labs, the design team should assess site wide strategic issues, and should have an awareness of the site context. This might identify opportunities to achieve better value. It is positive that a landscape designer is now part of the design team. An integrated approach to building and landscape is strongly encouraged.

The landscape architect is consulting the science teachers on the function and design of the courtyard space. The courtyard provides an exciting opportunity to create a space which adds educational and well-being value to the school. The relationship between the classrooms and the courtyard should be carefully considered, especially in terms of privacy and supervision. Views to the outside from the classrooms might be more important than views into the courtyard.

The relationship between the building and the other external spaces should not be overlooked. There are opportunities to take advantage of views over the playing fields. The edge details, boundary treatments and buffer zones should all be considered in detail and integrated with the building and landscape design.

The landscape architect should advise on the sustainability of any planting proposed for the courtyard area bearing in mind shading and pedestrian traffic. The choice of hard landscape materials should bear in mind that equipment may be moved from room to room on trolleys.

Environmental Design

The environmental strategy should focus on investing in the building fabric and passive solar gains in the first instance, before technologies are considered.

The building form, and roof form in particular, could be designed to provide good ventilation and daylight to the classrooms and circulation spaces, avoid overheating and make use of passive solar gains.

There are several different heating systems currently in existence in the school, although it may prove better to have a separate system for the new building.

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 prior to the planning application being made, to ensure that the building will perform to the levels expected.

Land forms and vegetation have an influence on local temperatures, solar access and air movements. The team should investigate the impact of the buffer space on the environmental conditions inside and around the building.

Revenue funding for renewable energy options might be available through Renewable Heat Incentive (RHI) and Feed in Tariff (FIT) payments, but this should not dictate the design of the environmental strategy. The energy and cost benefits of renewable options should be analysed and compared.

There are opportunities to make the environmental design part of the educational experience, adding further value to the project. The design team, client and school staff could visit Margam Discovery Centre in Margam Park to see how the building's environmental strategies have been interpreted in the visitor exhibition.

Programme

It is positive that the Cardiff design and education teams are looking to learn lessons about timing and programming from past projects. 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.

The programme should allow a really robust brief, design, environmental strategy, specification and cost plan to be produced, giving more 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 and increase the potential for unexpected costs.

Detail and Specification

In order to deliver a good quality building within budget, the building should have a simple efficient shell which avoids awkward geometries and can be easily constructed without specialist skills. Materials should be robust and readily available. There should be elegance in the simplicity of form and detailing.

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

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.

Cost Planning

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. An efficient building footprint will help with this.

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.

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

There should be clarity about who is responsible for each of the tasks required in fitting out the building. It will be useful for the client to have a detailed inventory of existing furniture and equipment which can be reused in the new building. It must be made clear to the contractor from the outset exactly what they will be responsible for, or there is a risk additional costs could be incurred. It is worth remembering that older equipment is not likely to be as energy efficient as new, which may affect energy performance.

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

Attendees

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Architectural/Urban Designer: Gavin Traylor, Cardiff Council
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Local Authority:

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