Case Study

St Teilos School

Client: Cardiff City Council

Facilities: 1440 place 11-18 yrs High School

Completed: August 2013

Cost: £20m

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Key Facts

- Delivered through the SEWSCAP Framework.
- Single Stage Tender: NEC Option A
- The scheme comprises of 12,660m2 new build
- Fast track procurement and construction programmes
- Ambient site acoustic challenges and a sloping site with high water table
- The adjacent high school remained operational at all times
- BREEAM Excellent and EPC A rated requirements

Introduction

Cardiff City Council required a new 1,440 pupil 11-18 year high school – including sixth form - together with all necessary external works, playing fields, drainage, incoming service mains and the demolition of the existing adjacent Llanedeyrn High School.

The project establishes a new build, Community Focussed School reflecting the Christian values of a Church in Wales High School, for young people and families in the areas. Cardiff City Council sought to provide the best possible quality of education for pupils through the creation of a consistent, sustainable, 'fit for purpose' school which will provide opportunities for all learners to achieve high standards and contribute to community development, social inclusion and economic prosperity across the city.

The school and outdoor learning spaces stimulate the mind and emotional response, building confidence and creating a welcoming school with a clear identity that the pupils are proud to belong to that serves the local community.

Collaborative Design

The design team worked in close collaboration with Cardiff City Council and Church in Wales representatives. By working in this collaborative way the team have achieved an integrated and high quality design proposal. The design has benefitted from workshops with Cardiff City Council's educational team and with representatives from St. Teilo's High School and its Governors. The project has also benefitted from workshops with project Stakeholders including Governors, parents and teachers from the existing St.Teilo's High School.

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Community Engagement

St Teilo's is a high achieving school where staff and students alike are enthusiastic about and involved in the learning where success is the expectation and the norm. The Church in Wales Schools vision statement focuses on providing a caring and happy community that allows the individual, and enables growth of the whole person in a Christian environment.

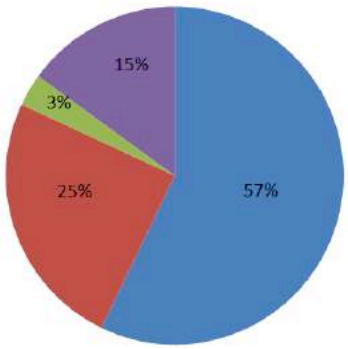
The school is located close to the heart of the community with a clearly identified heart entrance area that is outwardly welcoming and friendly to use through the extended school day and all year round. The internal and external integrated design has been developed to allow for community access in a secure and manageable way.

A key feature to the success of the project was the approach to community engagement. The collaborative ethos within the client and delivery teams has ensured that the project leaves a lasting legacy for the school and local community.

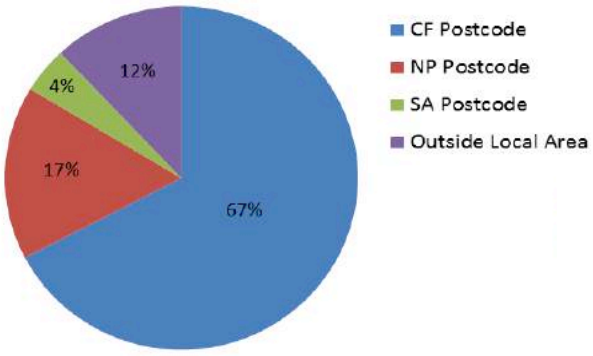
The construction project has provided in excess of 10,000 local labour hours for unemployed people in the local area. Four of the previously unemployed labourers have also secured full employment following the experience gained with Willmott Dixon.

Features of the Community Engagement include:

Proportion of Local Supplier Spend



Proportion of Local Labour on Site



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Sustainable Design

Sustainability is a key feature in the design. The solution has been to adopt the passive principles of environmental design. The strategy was to use orientation, natural ventilation and natural light as much as possible. The design serves to protect the learning cluster areas from the high levels of noise pollution from the A48 corridor running parallel to the site, whilst still maintaining an open and healthily ventilated and lit space.

Environmental Success

The scheme has acheived BRE BREEAM Excellent status. The building has successfully been designed to have a very low energy demand as reflected in the achieved EPC A certification.

The scheme incorporates a passive design approach including natural daylight and ventilation. Additional energy credits are achieved through the use of renewable technologies including; a large array of photovoltaic panels located on the school roof and biomass boiler.

The heating demand will be met by twin 500kW biomass chip/pellet boiler set located in the plantroom in the south-east corner of the building. This will operate during a defined heating season with a summer shut-down between May and September. Throughout the year the balance of heating and hot water demand will be met by high efficiency condensing gas boilers.

Lighting controls can dramatically effect the amount of energy used as well as the range of the classroom uses. With audio visual use now a primary teaching aid it is important that the lighting and lighting controls, were sympathetic to this scenario.

Classrooms which have audio visual requirements and also have a large amount of daylighting are provided with both automatic and manual lighting controls. The manual control, in the form of a traditional light switch, will be able to turn the lights on and off regardless of the presence of automatic controls. The automatic lighting controls will control high frequency DALI dimmable ballasts within the luminaires which will allow the luminaires to be dimmed in response to sufficient daylight being present, and deactivation should the classroom become unoccupied.

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Material Selection and Site Efficiency

Materials within the build have been carefully selected; low impact materials have been specified with product lifespan and maintenance impacts included in the decision making process.

Over 19% of all materials used are recycled, as measured by the WRAP toolkit.

By embracing a rigorous system for site recycling the operations team were able to divert over 95% of all construction waste from landfill.

Testimonial

"...I have been exceptionally pleased with Willmott Dixon's performance during this project. I am particularly grateful to the site team that has always gone the 'extra mile' to ensure project success."

Ian Loynd. Deputy Headteacher, St Teilos.

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