Maybury Primary School and Health Centre

Application of the Net Zero Public Sector Buildings Standard (the Standard)

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Primary School, Nursery and Healthcare Centre

Application of the Standard

Project details

Building type
Combined Primary School, Nursery and Healthcare Facility

Standard review stage
Detailed design

Area
4,981 m² (GIA)

Project background

Maybury School and Health Centre is a new build to the north West of Edinburgh. The scheme will include a number of functional areas to include primary school, nursery and health centre. This development follows the City of Edinburgh Council's declaration of a climate emergency on 7th February 2019 and commitment to reach net zero carbon by 2030.

This scheme is distinctive as it will have no car parking provided. The surrounding landscape and access around the building has been designed to improve connection to the community and encourage the use of active travel.

The scheme has been designed to achieve the Passivhaus certification and has already developed ambitious energy targets at design stage.

The new voluntary Standard supported City of Edinburgh Council to understand its net zero commitments for the new Maybury School and Health Centre, influencing the project from detailed design stage.

> "The Standard Pathfinder process was helpful in understanding how well our own approach is aligned to net zero and where we are making the right steps towards this."
>
> **Patrick Brown, City of Edinburgh Council**

Reduction in climate impacts

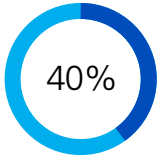
Typical Health Centre energy use
225 kWh/m²/year

Typical Primary School energy use
194 kWh/m²/year

↓ 86%

Predicted energy use
60 kWh/m²/year

The Standard saves an average of 40% embodied carbon



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Place

The need for a new school was agreed within Edinburgh City Council's Wave 4 schools programme. Stakeholders were engaged to understand different views and clients visited exemplar schools to help shape the design brief. The detailed design review and community engagement carried out by the Council directly aligned with the requirements of Objective 1 of the Standard.

A transport assessment was carried out to maximise active travel and discourage carbon intensive transport.

The development has also been assessed to compliment the green space surrounding the area and maximise green infrastructure and facilitate pedestrian routes as well as increase inclusivity.

Carbon

Digital modelling and assessment against the Chartered Institution of Building Services Engineers (CIBSE) professional standards on energy use has been carried out together with end-user consultation to more accurately forecast energy consumption.

A matrix tool has been developed to appraise building materials based on factors including sustainability, volatile organic compounds (VOCs), carbon impact and end-of-life replacement.

The concrete foundations and timber frame have been selected based on a high-level embodied carbon assessment of sub-structure materials. Recycled insulation has been assessed against fire safety compliance requirements.

Edinburgh City Council is also committed to achieving the Passivhaus certification and are targeting operational energy use of 60kWh/m^2/year.

A building management system strategy has been developed to facilitate the design and simplify the metering strategy.

An assessment against Objective 3 reveals near-complete compliance with the Standard.

Internal and external environment

The building has been designed to meet Indoor Air Quality standards set out by Building Bulletin 101 (indoor environmental quality in schools) and TM52 (thermal comfort). The Standard requirements for indoor environmental quality have been met in full.

Dynamic modelling for heat and daylight were carried out to inform design as well as acoustic assessment in line with the relevant standard.

A materials handbook has been developed to assess the safety of materials with regards to toxicity and volatile organic compounds (VOCs). The feedback from multiple stakeholders including end-users has been gathered to inform the detailed design with regard to the internal environment.

Externally the site has been assessed to understand the impact and development on the local ecology, flood risk, soil quality and ground conditions. It has been designed to be car-free to improve external air quality, safety and encouraging low carbon, active transport.