

# Completed Project

## West Lothian Council Early Years Centres

### Blackridge & St Mary's, Bathgate



The West Lothian Council Early Years Centres project is a £2.7m investment in two nursery buildings in Bathgate and Blackridge, developed in response to Scottish Government's commitment to increase funded childcare to 1140 hours per year. Each nursery provides up to 64 spaces for early learning and childcare for 2, 3 and 4 year olds, including enhanced outdoor playscapes.

Uniquely, this project, whilst delivering high quality indoor and outdoor learning spaces for young children in line with the Learning Estate Strategy, is a first in Scotland! The opportunity was taken to deliver a Passivhaus Certified building in Blackridge – the first non-domestic public building of its kind in the country, providing an innovative new approach to sustainability.

At the same time, an identical building of current best-practice specification was built nearby at St Mary's. This approach allows West Lothian Council to compare the outcomes from both buildings over time to fully understand the benefits, costs and performance of different building standards. This innovative project seeks to address the role that non-domestic buildings have in meeting existing net-zero carbon targets set by the Scottish Government by 2045 and will inform future learning estate design.

The buildings were completed in November 2020 (St Mary's) and January 2021 (Blackridge) and monitoring is being undertaken. The preliminary results are consistent with the performance forecasts. In comparing the two buildings, Passivhaus is leading to less CO2 emissions and heating demand and in terms of whole life costing over 40 years, the Passivhaus model will deliver significant savings.



<b>Development Partner</b> Hub South East	<b>Client</b> West Lothian Council	<b>Main Contractor</b> Morrison Construction
<b>Project Value</b> £2.7m	<b>Architect</b> Scott Brownrigg	<b>Project Type</b> Design & Build

## PASSIVHAUS

Passivhaus buildings provide a high level of occupant comfort while using very little energy for heating and cooling. They are built with meticulous attention to detail and rigorous design and construction according to principles developed by the Passivhaus Institute in Germany, and are certified through an exacting quality assurance process (which Blackridge recently passed).

To achieve the Passivhaus Standard in the UK typically involves:

- Accurate design modelling using the Passive House Planning Package (PHPP)
- Very high levels of insulation   ▪ Airtight building fabric
- Extremely high performance windows with insulated frames   ▪ ‘thermal bridge free’ construction
- A mechanical ventilation system with highly efficient heat recovery.

The predicted benefits of Passivhaus are:

- Up to 75% reduction in space heating requirements compared to standard build
- Lower carbon emissions   ▪ Increased comfort levels for building users
- Improved CO2 levels   ▪ Buildings perform as designed.

When reviewing case studies during the development stage of the project, internal comfort is also highlighted, with teaching staff noting that ‘children are more alert in the afternoon and more attentive because the air is so fresh and comfortable’. Societal impacts are also noted in relation to wellbeing and improved user driven sustainable behaviour. These are the type of results expected and will be monitored through the life of the new builds.



*“Blackridge Early Learning Centre is a fantastic new facility that will provide an ideal learning environment for local children.*

*“We welcome the Passivhaus accreditation, with the pioneering design delivering a number of potential benefits, such as reducing energy use and increasing comfort for staff and children.”*

**Executive councillor for education,  
West Lothian Council,  
David Dodds**



*“We’re incredibly proud to have delivered another successful learning space in partnership with West Lothian Council, further demonstrable evidence of Hub South East’s capacity for quality, innovation and sustainability.*

*“We’re delighted to have assisted our client in meeting progressive Scottish Government environmental targets, as well as helping influence next-generation design proposals for Scotland’s learning estate.*

*“This has been an excellent partnership project, with a forward-thinking client and a supply chain dedicated to the Passivhaus principles. We look forward to taking lessons from the design, construction and performance of this exciting facility onto future developments.”*

**Roddy Clark, Operations Director, Hub South East**

