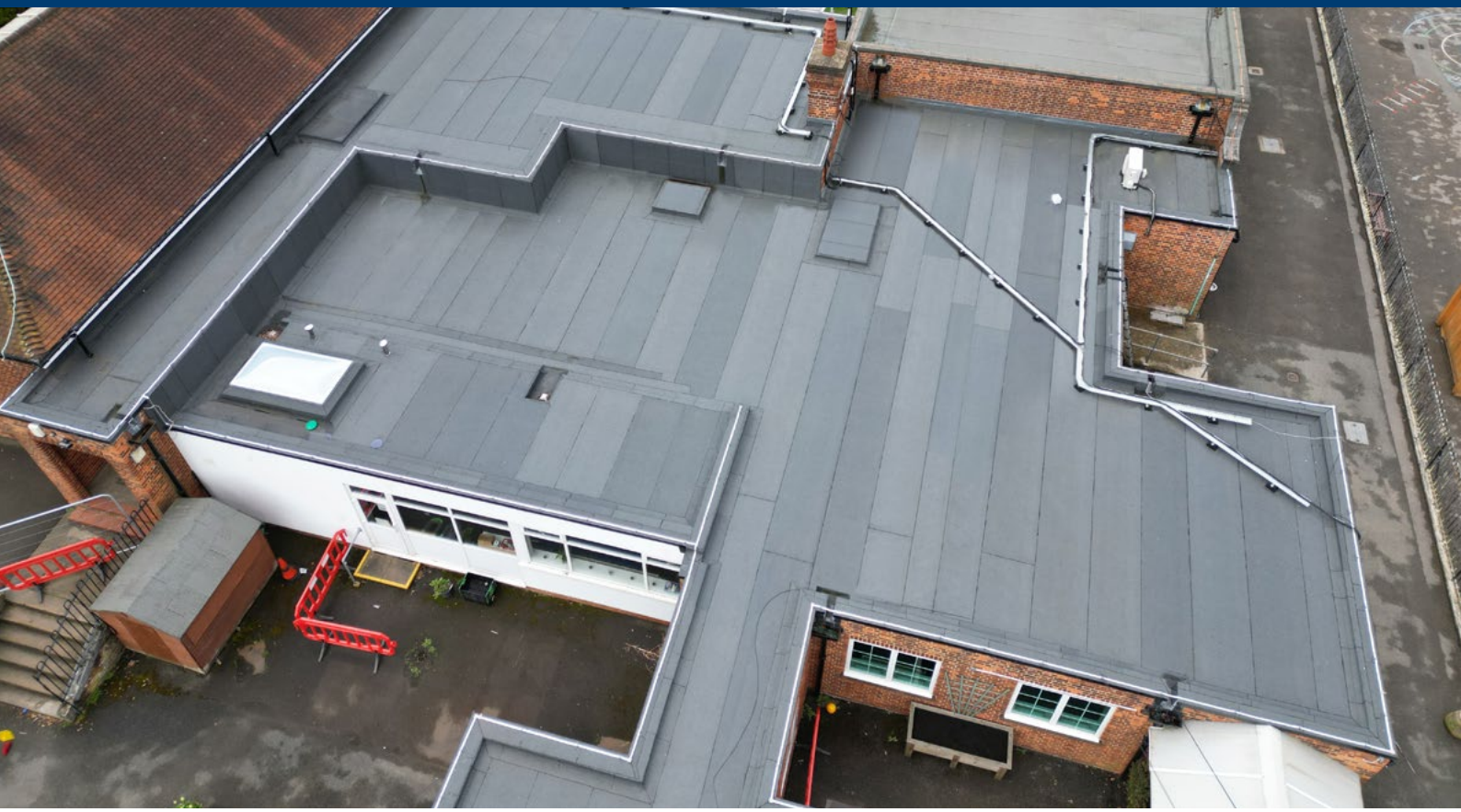
Case study

West Ewell Primary School



West Ewell Primary School, part of the Bourne Education Trust, is a thriving community school and nursery in Surrey that includes a specialist centre for children with communication and interaction needs.

Following years of water ingress issues at the school, **Synergy Construction and Property Consultants** instructed Garland UK Technical Manager, Daniel Sandell, to conduct a detailed roof survey to evaluate the overall condition and remaining life expectancy of the roof areas and make recommendations for repair or replacement.

The existing built-up bituminous membrane system had come to the end of its natural life and was in extremely poor condition, including areas of poor drainage, organic growth, and ponding water. The protective mineral slate on the membrane had washed away over the years, leaving the cap sheet brittle from unprotected sun exposure and less responsive to movement in the building.

Quick Facts

Project
West Ewell Primary School

Location
Surrey

Garland System
StressPly Flex

Sector
Education

Garland Technical Manager
Daniel Sandell

Approved Contractor
Richard Soan Roofing Services

Challenge

The detailed roof condition survey also highlighted that the roof perimeters were at the beginning stages of failure, with debonding upstands and the mortar between the coping stones severely deteriorating. The mortar was no longer keeping the large, heavy stones secure, posing major health and safety risks, where the stones could easily come loose and fall to ground level and potentially injure a staff member or student.

The existing PIR insulation was only 50mm, resulting in a thermally inefficient 0.56 U-Value for the school. The insulation, however, was dry and still useable, making it imperative that it was well protected and avoided saturation throughout the refurbishment project.

By carefully planning the roof refurbishment stages, the school could significantly mitigate material replacement costs and prevent any unnecessary waste to landfill.

Solution

Daniel Sandell identified that whilst the roof was at the end of its natural life, fortunately, it was suitable for an overlay system rather than a costly entire roof strip and replacement. To improve the drainage, the refurbished roof system would also include a tapered warm roof design around the sump outlets.

The StressPly Flex built-up membrane system (BBA-certified) was specified to overlay the 930 sqm roof to deliver a thermally efficient, fully waterproof warm roof refurbishment. StressPly Flex is a high-strength torch-on bituminous waterproofing system designed with superior tensile and tear strength for optimum waterproofing performance.

The Approved Contractor, **Richard Soan Roofing Services**, got to work preparing the roof by removing the hazardous existing coping stones and debris and plywood board capping the parapets. Torch Flex, a high-performance VCL, was installed, and an additional 90mm flat board and drainers were added to bring the total u-value to 0.18 W/m2K.

A Torch Flex Ultra Vent underlayment sheet was installed before finishing with the StressPly Flex 4.2mm bituminous slate finished cap sheet. The parapet walls were encapsulated with the StressPly Flex system and completed with a GRP Trim.

To complete the works, the aged and underperforming rooflights were removed and replaced for improved thermal efficiency, increasing the volume of natural sunlight for the classrooms below.

Outcome

During the works, Daniel Sandell visited the site weekly to assess the quality of the installation and provide regular progress reports to the client and school. On project completion, Sandell supplied West Ewell School with Garland's industry-leading 25 year Single-Point Guarantee, which accepts the full liability for the design, material and quality of the installation workmanship for the project.

Utilising the existing PIR insulation and adopting an overlay waterproofing system resulted in a significant cost saving for the school, mitigating the need for a complete roof replacement and reducing the overall embodied carbon of the project.

The new roof at West Ewell School is now to standard, with a 0.18 U-Value rating, providing an immediate uplift in thermal efficiency for the building. Michael Wedlake, Senior Building Surveyor at Synergy Construction and Property Consultants, adds, "The technical expertise and service from Garland UK has been exceptional, and the client is extremely happy with the system's quality and end result. Most importantly, the school now has a safe and dry learning environment for its students and staff."

Claudio Cutajar, a member of the premises team for West Ewell Primary School, adds, "The early roof investigations from Garland UK meant that we were given clear and detailed information on the building's condition so that we could make the best waterproofing decision for the school. We're delighted with the end result; the school is warm and dry, and through Garland's expertise, we have avoided any unnecessary costs for a full roof replacement."

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>
> **Claudio Cutajar**
> Premises team, West Ewell Primary School

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