

# CASE STUDY

## Thermal Roof Installation

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### PROJECT

Alice House

### STRUCTURE

School

### CLIENT

Solihull Preparatory School

### CONTRACT



Alice House at Solihull Preparatory School faced a critical issue with its flat roof system: **chronic and widespread leaks** that were impacting classrooms and common areas, threatening internal fabric and disrupting the learning environment.

Upon inspection, the roof was found to be structurally deficient and thermally non-compliant:

**Failed Decking:** The existing timber decking was weak and inconsistent, unable to provide a reliable substrate for a new system.

**Zero Thermal Performance:** The roof had minimal to no effective insulation, leading to excessive heat loss and high energy bills.

**System Failure:** The old roof membrane had reached the end of its service life, resulting in water ingress across multiple areas.

The school required a durable, high-performance solution that would bring the building up to modern building regulations for thermal efficiency while minimising disruption during the 6-week summer holiday period.

To address the underlying structural and thermal deficiencies, the project scope involved a complete, multi-stage overhaul of the roof system.

Phase I was a full strip and deck reinforcement - The entire existing roof covering and insulation were fully stripped back to the existing ply timber deck. This allowed for the correction of the most significant deficiency of the existing timber deck which was only 9mm thick. New 18mm OSB boards were secured to the 9mm deck to create a strong, stable and even substrate, providing a robust base for the subsequent layers.

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Before



Before



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During



During



During

Phase II was the thermal upgrade; the school's energy efficiency was drastically improved by installing 130mm of high-performance insulation. This critical step brings the roof's U-value up to today's modern building standards, resulting in significant projected savings on the school's heating and cooling costs.

Phase III was the application of Sika Decothane Liquid Membrane a critical waterproofing layer, the Sika Decothane liquid-applied membrane system was selected for several key benefits of seamless application: Decothane is cold-applied, eliminating the need for hot works and reducing fire risk which is a major advantage when working over an occupied school building.

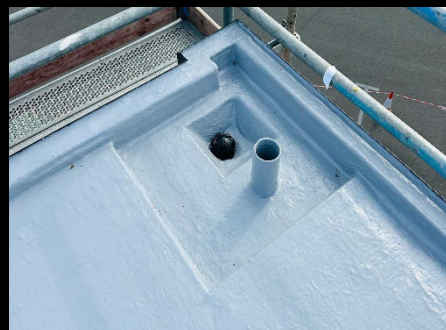
It provides superior adhesion and forms a monolithic, fully adhered, and seamless finish over the new insulation and decking, ensuring zero points of entry for water.

Sika Decothane gives durability and guarantee providing exceptional long-term elasticity and resistance to UV light and weathering, backed by a comprehensive system guarantee.

The comprehensive refurbishment successfully addressed all the school's challenges, delivering immediate and long-term benefits, with 100% watertightness achieved with all persistent leaks permanently eradicated, protecting the internal school assets and eliminating disruption to staff and students.

The school now has modern thermal compliance. The installation of 130mm insulation ensures the school now meets current energy efficiency regulations, leading to a projected reduction in energy consumption and a smaller carbon footprint. The enhanced roof longevity with the combination of structural reinforcement (OSB deck) and the durable liquid membrane provides the school with a high-quality, guaranteed roofing solution for decades to come, deferring future major expenditure.

"By choosing a full strip and replacement, we didn't just fix a leak—we delivered a modern, thermally compliant, and guaranteed asset that will serve the school community for years to come."



Complete



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