

CASE STUDY

A lesson well learned



The new overlaid roof at Layfield Primary

Project: Layfield Primary School

Client: Stockton Borough Council

Roofing contractors: [Roofix Ltd](#)

Membrane: SIGNature Bituminous Membrane

Not long after completion, the Foundation Stage and Children's Centre building at Layfield Primary School in Yarm started leaking. Water ran down internal walls and damp patches spread across ceilings.

"We had problems with water ingress. We had to replace carpets and lots of ceiling tiles," says school business manager Sarah Powell.

Fortunately, the problem has now been solved with the help of SIG Design & Technology, which specified its SIGNature Torch on System to remediate the leaking roofs once and for all. By avoiding complete stripping of the failed roofs, this strategy provided significant cost savings.

The leaking roof area consisted of two pitched oval roofs with a flat roof below. SIG's investigation identified the cause of the problem as the oval roofs, where inadequate detailing around the perimeter upstands and at the intersection with the lower roof had allowed water to ingress and find its way through to beneath the flat roof and down the walls into the school.

"It was a constant battle for the school," says Ian Dryden, SIG National Specification Manager – Bituminous Membranes.

Both flat and pitched roofs needed to be remediated. It was clear that the 450sq m flat roof was damaged beyond repair and needed to be stripped right back to deck.

A new roof was then added using the SIGNature system, specified with the self-adhesive SA VCL Vapour Control Layer, tapered insulation, SIGNature 25 Underlay and SIGNature AA Capsheet.

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However SIG managed to find an economical solution for the 250sq m pitched oval roofs, which enabled the contractor to leave the original single ply roof in situ beneath the overlay rather than stripping and disposing of it, saving an estimated £60+ per metre.

SIG worked with contractor Roofix Ltd to install the SIGnature system as an overlay. To address the issue of potential plasticizer migration between the old and new roofs, a 300g separation fleece was fitted on the original roof followed by a mechanically fixed SIGnature25 underlay and a fully-torch bonded layer of underlay and cap sheet.

The second, crucial phase of the work was the correct detailing of the junctions with the flat roof and the upstands around the roof perimeter. Roofix Ltd found a way to close mitre cut and bend the GRP trim insitu to fully encapsulate the upstand as an alternative to the original failed metal capping.

“Good tradespeople come up with good solutions,” says Ian Dryden, who praised the time and care that went into the detailing. Thanks to the craftsmanship of the contractor, the repairs were completed over the summer holidays in an aesthetically pleasing manner that came in under budget and – importantly – fully warranted.



A crucial phase of the work was the correct detailing of the junctions with the flat roof.

“This ticked all the boxes from the client and the local authority’s points of view,” says Dryden. The proof has been 18 leak-free months since the repairs.

“We’ve had no problems whatsoever ever since, says the school’s Sarah Powell. “It’s a massive relief to have had no further disruption caused by the numerous water leaks to providing our services.”

SIGnature Torch on System

Designed for new work or overlays, this bituminous roofing system comprises fire rated torch-on cap

How to avoid failed roofs

Following best practice can avoid costly repairs to failed roofing:

- Consult a waterproofing specialist as early as possible during the design stage.
- Specify a roofing system that is fire-rated and CE marked.
- Ensure design details and execution are undertaken by a company that is competent, experienced with a proven track record and are covered by PI insurance.
- Spend time getting the interfaces detailed correctly, particularly those between different materials and around perimeter upstands
- Make sure all the products and the installation are covered by warranty
- Use approved contractors who are reputable and solvent (warrantees depend on the company being in business)
- Ensure manufacturer’s inspection of the installation - even the best products can fail with poor installation and detailing

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sheet, underlay and vapour control layer and is suitable for warm or cold roofs.

There are three underlay options with the potential for either 20 or 25 year warranties:

- SIGNature Underlay25 – polyester carrier, reinforced, SBS, torch applied intermediate or base layer. Twenty five year warranty when used with the SIGNature Fire Rated Cap Sheet.
- SIGNature Underlay20 - A glass tissue carrier, reinforced, SBS, torch applied intermediate or base layer. Twenty year warranty when used with the SIGNature Fire Rated Cap Sheet.
- SIGNature UnderlaySA (Self Adhesive) - An elastomeric self-adhesive, polyester fabric reinforced underlay, coated with SBS modified

bitumen. Twenty five year warranty when used with the SIGNature Fire Rated Cap Sheet.

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More information

- Learn more about the 8 steps to the #PerfectRoof: <http://www.singleply.co.uk/perfectroof/>
- To find out more about SIGNature Torch on System call SIG Design & Technology on 01509 505714 or visit www.singleply.co.uk