



Garland UK support the RAAC remediation and roof replacement works at Sir Thomas Boughey Academy

Since the 1980s, the main hall at Sir Thomas Boughey Academy has remained an essential building for students and staff, hosting formal exams and assemblies throughout the year.

In response to the DfE questionnaire asking academies to review their buildings for RAAC, a Reinforced Autoclave Aerated Concrete (RAAC) deck was discovered in the main hall, resulting in the building's immediate closure until United Endeavour Trust were able to financially fund the project to resolve the issue.

RAAC products debuted in the UK market during the 1950s and quickly gained popularity in the construction industry until the mid-1980s for their lightweight composition, fire resistance, and thermal performance. RAAC was used extensively in both commercial buildings and, particularly, in public sector buildings such as schools, colleges and hospitals.

Unfortunately, RAAC's lightweight properties came at the cost of its structural strength. With a lifespan of just 30 years, the complete removal and replacement of a new roof deck is required to ensure the continued safety of buildings.

Quick Facts

Project
Sir Thomas Boughey Academy

Location
Staffordshire

Garland System
StressPly Flex

Sector
Education

Garland Technical Manager
Chris Evans

Approved Contractor
Alsager Roofing



Challenge

A structural engineer at [Entrust Education Services](#) identified the RAAC panels in the main hall and instructed Garland UK technical manager Chris Evans to develop an efficient plan to support the RAAC deck removal and determine the optimum high-performance roof system for the Academy.

The Academy faced significant disruption to students and staff with the main hall's immediate closure, and every step was taken to ensure that the RAAC remediation works were planned efficiently and completed as quickly as possible once on site. Safely removing the RAAC panels and roof replacement required meticulous planning and collaboration from the project managers at Entrust Education Services, main contractor [R A Edwards and Partners](#) and Garland UK.

The project was scheduled to be completed within 12 weeks. Given the project's urgency, it was agreed that the RAAC removal should begin as soon as possible, bridging term time and into the holidays to ensure the new roof was ready for when the students return after the holidays.

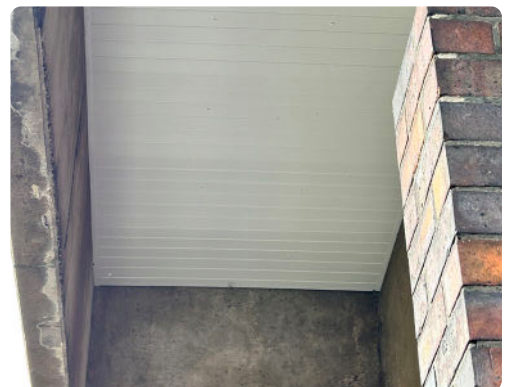
Solution

In preparation for the works, a full scaffold was erected internally to create a secure working platform underneath the deck to ensure safety and efficiency during each stage of the RAAC removal. In addition, a temporary roof scaffold was installed to protect the building from any adverse weather conditions during the deck removal process.

The 800 sqm project was overseen by the main contractor, RA Edwards & Partners, and Chris Evans assigned the Garland UK Approved Contractor, [Alsager Roofing](#), to perform the roof replacement works once the RAAC was successfully removed. Meticulous care was taken during the removal of the RAAC deck, working in sections to ensure a smooth transition for the new joists and the installation of the OSB timber deck.

For the roof replacement, Chris Evans proposed the high-performance two-layer bituminous membrane system, StressPly Flex, with a tapered insulation design to improve the thermal efficiency of the building and mitigate the risk of ponding water in the future. StressPly Flex is BBA certified, fully compliant with UK building regulations and assessed for its waterproofing and service life in excess of 30 years.

The new OSB timber deck would not allow for an open flame torch-on product, so Garland's Self-Adhesive VCL was used to





encapsulate the deck, fully conforming to the NFRC's Safe2Torch guidance. Once in place, the Garland Ultra-Vent underlay was installed, followed by the StressPly Flex cap sheet.

Outcome

During the works, Chris Evans visited the site twice weekly to monitor the project progress and quality of the waterproofing system installation. Weekly reports were shared with all stakeholders via Garland's Roof Asset Management Programme (RAMP), providing round-the-clock access and transparency to the roof project details.

With careful design and planning, the main hall at Sir Thomas Boughey Academy is now 100% RAAC-free. In addition, the main hall now has a 0.18 W/m²K u-value, where the increased thermal performance of the roof will realise cost savings on energy bills in the future and meets current building regulation. On project completion, Chris Evans supplied the Trust with Garland's industry-leading 25 year Single-Point Guarantee, which protects the design, waterproofing system and installation.

Vickie Keeling, Trust Director at United Endeavour Trust, is delighted with the end result. *'The technical expertise that Garland provided has been invaluable to us. They worked exceptionally well with our advisors, Entrust Education and main contractor, RA Edwards and Partners. We had excellent communication throughout the project; the monitoring reports were detailed and helped in ensuring quality and progress to completion were well documented. The RAAC was safely removed, and we now have a full new roof that we can rely on to keep our facilities safe, dry and warm for all stakeholders to benefit from.'*



Garland UK

Second Way Centre, Second Way, Avonmouth, Bristol, BS11 8DF



contact@garlanduk.com



01174 401 050



garlanduk.com