

Case study

Music school hits strict sound targets with ROCKWOOL®

The Royal Academy of Music, London

Client:
The Royal Academy of Music

Architect:
Ian Ritchie Architects

Main contractor:
All Metal Roofing - Richard Shanahan





The project

To achieve the very best performance demands commitment, skill, and passion. The team behind the recent reinvention of the Royal Academy of Music in Regent's Park, London called on all three qualities in creating stunningly beautiful, acoustically brilliant, and inspiring spaces for staff and students.

The Royal Academy of Music has completely refurbished the 309-seat Susie Sainsbury Theatre and created the new 100-seat rooftop Angela Burgess Recital Hall. Alongside these impressive spaces, the Royal Academy of Music has also renovated 14 practice and dressing rooms, developed five new percussion studios, a large refurbished jazz room and a new control suite for its audio-visual recordings department.

The project marks one of the most significant building and renovation projects in the Academy's near-200-year history.





"Sound quality was of absolute importance within the performance spaces themselves, but we also had to limit its travel around the building and externally."

Richard Shanahan
Director
All Metal Roofing



The challenge

Creating impeccable acoustic environments and ensuring control, not only of how sound travelled around the spaces, as well as ensuring effective isolation from other spaces within the building proved a key challenge of the project.

The new performance spaces are hidden behind the listed façade of the Royal Academy of Music's Edwardian premises, surrounded by Grade I and Grade II listed buildings and located within the Regent's Park conservation area. The architects, Ian Ritchie, Architects, had to be careful when designing the new spaces that they would seamlessly blend into the historic site.

The new Angela Burgess Recital Hall actually sits above the Susie Sainsbury Theatre and needs to be acoustically isolated from what was below as well as the other buildings in the vicinity.



The solution

As part of the redevelopment of the building, the Royal Academy of Music worked with engineering consultancy Arup to create spaces that were completely isolated in terms of acoustics and noise transfer. This included looking at external noise such as the nearby underground and, as the various concert spaces are so tightly intertwined, the sound coming from the individual rooms.

Arup, Ian Ritchie Architects and The Royal Academy of Music teams thus created spaces that were structurally isolated from each other to minimise sound transfer and the Recital Hall itself is actually built as a self-supporting space placed on top of the existing building.

In order to complement the structure of the building and ensure each space was acoustically isolated, All Metal Roofing specified insulation from ROCKWOOL® for the Royal Academy of Music project.

Richard continues, "We created a multi-layered approach to the installation, which included installing plywood with vapour and acoustic barrier insulation on both the floors and walls."

All Metal Roofing supplied a unique thickness ROCKWOOL HardRock® Multi-Fix (DD) insulation board at the Royal Academy of Music. ROCKWOOL worked with the team at All Metal Roofing to specially create a 50mm version of the HardRock Multi-Fix solution.

Its unique Dual Density stone wool composition is why HardRock Multi-Fix (DD) is renowned for its excellent acoustic reduction, absorption and impact performance, whether from people, machinery or rain on the roof.

HardRock Multi-Fix (DD) is dimensionally stable and will provide long term consistent thermal performance over its lifetime. It is also non-combustible and is classified with a reaction to fire rating of Euroclass A2, s1-d0 and LPCB approval (LPS 1181 Part 1, BS 476: Part 21, EN 13501-1)

All Metal Roofing also installed ROCKWOOL RWA45 100mm and 50mm insulation. ROCKWOOL RWA45 has been developed for thermal, acoustic, and fire performance in a range of construction types. RWA45 is made up of high-quality resin bonded slabs in a variety of thicknesses. Specialist facings are available to order to meet the specifications of unique projects.

The ROCKWOOL slabs can be applied to an array of general building applications for acoustic and thermal insulation of partition walls, ceilings, floors and roofs. The multi-use solution is well suited for easy application throughout constructions.



"We knew we could trust the ROCKWOOL insulation for its performance and acoustics properties. We worked with the ROCKWOOL team closely during the specification stage to evaluate the acoustics properties of the insulation to ensure it met the strict criteria of the Royal Academy of Music."

Richard Shanahan
Director
All Metal Roofing

Importantly for the Royal Academy of Music project, ROCKWOOL RWA45 insulation is both water repellent and vapour permeable, which helps to prevent moisture build up, damp and rot; condensation was a particular concern due to the type and age of the building.

Where the roof deck interfaced with the heads of internal compartmentation walls, ROCKWOOL Trapezoidal Firestop Systems were installed.



The result

The renovation project was a huge success for the Royal Academy, they now have more space to hold concerts and events.

The project won the RIBA London Building of the Year and the AJ Retrofit of the Year Award as well others since its completion in 2018.

“We are delighted with the finished result. Working with ROCKWOOL to understand and guarantee the sound performance of the insulation was a crucial part of the project. We have estimated the performance of the roof at 58dB and the wall at upwards of Rw 65dB meaning we met the criteria the Royal Academy of Music required.”

Richard Shanahan
Director
All Metal Roofing



All photographs are courtesy of Adam Scott Images