# Renfrewshire Council RAAC *(Reinforced Autoclaved Aerated Concrete)* Roof Strengthening Works

## PROJECT DETAILS

CLIENT Renfrewshire Council

PROJECT Castlehead High School

LOCATION Paisley, Renfrewshire

DURATION 5 months

END DATE October 2024

VALUE £825k

## PROJECT BACKGROUND

McConnell was appointed by Renfrewshire Council to carry out RAAC Roof Strengthening Works to four gym halls within Castlehead High School, following an open competitive tender exercise where, we came first on quality and price. The school is a stand-alone building situated within a busy residential area. The school remained open, fully occupied, live and operational throughout all works.

## SUMMARY OF WORKS

The safety of the pupils and staff were our number one priority, especially as the site remained open and live. We established several methods and procedures including a contractor's compound to isolate the PE block from the rest of the school and a method for marshalling deliveries. The methods we implemented with all suppliers were, deliveries were only permitted between 9:15am-12:15pm and 1pm–3pm, this was to avoid start of the day, lunchtime and end of the day. We insisted delivery drivers call 30 minutes before arrival to ensure our banksman was prepared and finally, when entering site, a traffic management, one-way system was in place to ensure vehicles were separated from school traffic.

The works comprised of the installation of additional steel columns, beams and angles within all four gym halls to provide additional support to the existing RAAC panels and roof deck. All existing mechanical and electrical services, including, lighting, ventilation, heating and water services were stripped out to enable the works to be undertaken, new lighting was installed as part of the project

To protect the existing flooring at each entrance and other areas where there would be repeated movement of heavy equipment, we laid one layer of Proplex Twinwall FR Protection Sheet directly on top of the gym floors with joints taped and sealed across the full floor area. In the areas where any machinery were tracked, an additional layer of 25mm plywood was laid on top to provide support for all plant & equipment. We engaged with our Structural Engineer to assess the suitability of the suspended timber floor to withstand the loadings from the plant and equipment prior to commencement. No materials ever came in direct contact with the timber floor.

We isolated, drained and removed the radiant heating panels in the gyms and games hall all as per the mechanical engineer's proposals and stored the units for re-use/ reinstatement. We then did the same for the 13 main school heating pipes running across one of the gym's ceiling, in strict accordance with mechanical engineer's proposals and lay aside for re-use/reinstatement

As per the structural engineer's proposals, we installed strengthening steelwork to all four halls, working on two halls at any one time:

- 178UB Span Breaker Beams / 152UC23 Beams and Pack
- 150 x 75 x 10RS to Each Side of Existing 178UB's & Dry Pack

Priority was to be given to the girl's gym to ensure the main school heating pipes could be reinstated at the earliest opportunity. Where working from mobile access platforms, we established procedures to install the steelwork and then have it signed off prior to the mobile access being moved:

- Reinstate and recommission radiant heating panels and air handling equipment as each area of strengthening work is completed
- Fit new lighting fixtures as per the electrical engineer's proposals
- Lighting installation
- Finalisation of all recommissioning and sign-off.

High level protection measures were implemented to ensure safety, segregation and no unauthorised access to the work areas. Careful consideration was given to traffic management, public protection, access/egress/fire escape routes together with close liaison of the school caretaker and head teacher to ensure they were aware of the works on a daily basis, and that our works did not interfere with planned school activities.

Scaffolding was erected in accordance with NASC best practice procedures with lift/hoist access to enable the roof works to take place.

The works were completed on time, safely and to budget by McConnell's directly employed skilled and trained operatives, supplemented by our specialist supply chain partners.

# Renfrewshire Council RAAC (Reinforced Autoclaved Aerated Concrete) Roof Strengthening Works

## CRITICAL SUCCESS FACTORS

- Strong working relationships between the project, client and other key stakeholders resulting in quick and decisive decision making
- Frequent contract monitoring resulting in any contingency plans being implemented immediately ensuring the project was delivered on time
- Approved, reliable supply chain
- Excellent project and commercial management from our team who created a clear vision of delivery
- Clear scope of works and associated design package.

## SCOPE OF WORKS:

- Roof strengthening works to four gym halls
- Scaffolding and appropriate protection installed
- Installation of new steel breaker beams
- M&E works
- Recommission of existing ductwork, plenums and AHU's
- Recommission existing heating pipework and existing radiant heat panels
- Install and commission new lighting and emergency lighting

*"We are very satisfied with the works McConnell undertook and would describe them as co-operative, diligent and adaptable."*

*- Frank Farrell, Technical Unit Programme Manager*