IStructE - RAAC Q&A

What is RAAC?

RAAC is a material used in some buildings to form roof planks, wall panels, and sometimes floor planks, between the mid-1950's and mid-1990's.

It is a highly aerated, lightweight, concrete based material, with different material properties than conventional concrete.

Why was RAAC originally specified?

RAAC was seen as a lightweight, robust and cost-effective material. This made it particularly attractive for public sector buildings where it could be quickly manufactured and installed, to bring critical infrastructure (e.g., schools and hospitals) online sooner.

It also possessed better thermal performance when compared to traditional concrete, which created further economies during the construction of the building.

Why has RAAC become a risk within the built environment?

RAAC has been found to creep and deflect over time, particularly if thinner units were installed. The panels are porous and if they are subjected to water penetration they can deflect further. Water penetration can also cause the reinforcement to corrode, compromising the material and causing it to spall and break apart.

It has also been found that if panels have insufficient bearing and their structural integrity is compromised, they can collapse with little or no warning. This may occur where the internal reinforcement stopped short of the load-bearing point. This is difficult to detect without intrusive investigation.

Does this mean all the concrete in the building is at risk?

No, traditional concrete is a highly reliable material with high compressive strength. When combined with steel reinforcement it becomes 'reinforced concrete'.

What measures are currently being taken?

The UK Government is aware of the issues, particularly across its own assets and the wider public sector, and has introduced a programme to remove or strengthen RAAC where necessary.

Other official bodies, in particular, the NHS, have committed to a full eradication agenda, which is already well underway.

However, RAAC also exists within the private sector. As such, it is advised that any private asset owner, with properties constructed between the mid-1950's and mid-1990's conduct a survey of the building to identify or eliminate the possibility of RAAC within the fabric where necessary.

What guidance is IStructE providing to support the identification, removal or strengthening of existing RAAC?

IStructE has issued guidance about RAAC to enable building managers and their consultants to manage the situation and established a RAAC working study group, to help provide up-to-date guidance on this issue.

What measures should be taken if we suspect, or are unsure, that RAAC is present within our building?

Our advice, alongside that of Collaborative Reporting for Safer Structures UK (CROSS-UK), is that if a building owner or manager has a building from the affected period and is unsure of the form of construction, they should carry out an inspection and a risk assessment. If RAAC planks are present, their structural condition will need to be determined by a Chartered or Incorporated Structural Engineer.

The IStructE has provided guidance on this investigation and assessment:

- March 2022: Reinforced Autoclaved Aerated Concrete (RAAC) panels: Investigation and assessment
- April 2023: Reinforced Autoclaved Aerated Concrete (RAAC) Investigation and Assessment – Further Guidance

Subject to the Chartered or Incorporated Structural Engineer's findings, a process of ongoing monitoring and/or remedial propping or strengthening works may be needed. In some instances, it may be necessary to remove or replace RAAC planks.

Who do I contact for further information on this subject?

For media enquires please contact Helen Thompson, PR&Marketing@istructe.org .