



National  
Operational  
Learning

## Action note

**Action note - 20211122-3347 - A**

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**NFCC**  
National Fire  
Chiefs Council

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## Contents

Action note - 20211122-3347 - A ..... 3

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### Overview of event

The submitting service report that a hospital in their service area was built with a material called Reinforced Autoclave Aerated Concrete (RAAC).

The Standing Committee on Structural Safety (SCOSS) article estimates the useful lifespan of this material to be approximately 30 years. The building in question was built in 1974 so is now significantly past its lifespan.

The material is predominately used in the flat roofs of properties, but has also been found in walls and floors. RAAC was used in predominately public sector buildings, such as schools and offices built from the mid 1950s to 1980. It is also possible that RAAC was used in buildings beyond 1980.

Nationally it is unknown how many buildings that have used this material however, 48 hospitals were identified to have used it.

Since the identification of this hazard, organisations have started a scheme of remedial works to prolong the life of the beams until they can be replaced. These works include using props to support beams, adding wood or steel beams to support the originals, and bearing extensions. However, there may be buildings where this hazard is present but has not yet been identified by the responsible person.

There has been little research carried out into how RAAC beams behave when affected by fire; however, thermal radiation or the application of water increase the risk of structural collapse.

The collapse of these beams may also cause significant damage to hospital utilities which are piped around the building through false ceilings. This includes the hospital's oxygen supplies, which if interrupted may have an impact on patients who are not directly affected by the a structural collapse or fire and may affect fire development.

Asbestos was common during the period RAAC was used, and may also be present

Work is ongoing within the NFCC Protection Policy and Reform Unit (PPRU) to raise awareness to fire protection teams of RAAC components.

[An article was published by the Standing Committee on Structural Safety highlighting this issue.](#)

[A report was produced by the Local Government Association, with the support of the Building Research Establishment, about the presence of RAAC in public sector offices and schools.](#)

## Summary of learning

There may be a risk of sudden full or partial structural collapse due to instability of the material. Fire and rescue services may be called to these types of incidents and should be aware of the risk of further collapse when attending.

Although there has been little research into how this material would behave involved in fire, it is thought that thermal radiation may cause it to collapse. Likewise, if water was applied this may trigger a structural collapse.

## NOLUG Recommendations

National Operational Learning User Group recommends that fire and rescue services should:

- Identify the risk of this material in the building stock of their area
- Provide Site-Specific Risk Information for personnel on identified risk sites
- Provide training and awareness to personnel on the hazards presented by RAAC and what control measures to implement to prevent a structural collapse

## Contact information

NOL would like to hear of any further associated learning identified by fire and rescue services as a result of this Note. Please contact: [NOLmail@ukfrs.com](mailto:NOLmail@ukfrs.com)