

Reinforced Autoclaved Aerated Concrete (RAAC)

Purpose of Report

For information.

Is this report confidential? No

Summary

The identification, remediation, and management of RAAC has been subject to substantial public and media concern in recent weeks, following the Department for Education's change in risk management approach. This paper outlines the implications for Fire and Rescue Authorities and Fire and Rescue Services.

LGA Plan Theme: **Championing climate change and local environments**

Recommendation(s)

That Fire Services Management Committee notes recent developments pertaining to the identification, remediation, and management of RAAC.

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Reinforced Autoclaved Aerated Concrete (RAAC)

Background

1. Reinforced Autoclaved Aerated Concrete (RAAC) is a lightweight, aerated ('bubbly') concrete that was a commonly used construction method from the 1950s until the mid-1990s, though there have been cases dating back to the 1930s and some into the 1990s.
2. It was predominantly used in precast panels, which are primarily found in flat-roof construction, but has been found less frequently in pitched-roofs, walls, and floors. It is also found more commonly in buildings with large open spaces.
3. RAAC is found in a range of private and public buildings. It is currently thought to be most prevalent in the school estate, but has also been found in a number of local authority-owned settings including theatres, libraries, leisure centres and sports pavilions, as well as in a small amount of social housing.
4. It has also been found in the police estate in Devon and Cornwall (including the police station in Barnstaple) and in Scotland, in the National Health Service where it has been found at 27 sites including seven hospitals which will require full replacement, and in fire stations in Scotland. There is anecdotal evidence to suggest that in a local authority context where it has been used in one type of building, such as schools, it may also be present in other local authority owned premises. It is unclear how often it has been used in private and commercial buildings.
5. The risks associated with RAAC have been known since the 1990s, when the Building Research Establishment (BRE) commented on issues identified with RAAC planks, including progressive and excessive deflections in their surface associated with extensive hairline cracking and corrosion of reinforcements. Importantly, it was previously thought that RAAC planks would give sufficient warning of failure through visual deterioration. A number of notable incidences of RAAC failure – such as [collapses of school roofs](#)- contradicted this understanding. These incidents have suggested that RAAC planks can collapse with little to no visual warning, and therefore that RAAC is a clear and present risk.
6. Since 2018, the LGA has done substantial work to spread awareness on the risks presented by RAAC, which can be found on the [LGA's RAAC webpage](#). The National Fire Chiefs Council (NFCC) also raised awareness of RAAC among Fire and Rescue Services. The Standing Committee on Structural Safety (SCOSS) issued an alert about RAAC in 2019.
7. In 2022, the Department of Education (DfE) started a survey of all schools to raise awareness of RAAC. Responsible bodies, including local authorities, were required to register their schools with DfE, indicate whether they had checked for RAAC, and whether they had discovered any incidences of it.
8. We worked continuously with DfE while the survey was open to raise awareness of it among LGA members, and provided targeted support to those who were having difficulties completing it.

9. This was done concurrently with a number of activities aimed at raising awareness of the risks of RAAC, such as Leadership Essentials courses, webinars, and circulating relevant policy and news developments.
10. We similarly engaged frequently with member councils that had dealt extensively with RAAC in order to gain a fuller understanding of its extent, and any costs or issues associated with its management and remediation.

Recent developments

11. Members will be aware of the substantial public and media attention that is currently being given to the identification, remediation, and risk management of RAAC – particularly in the school estate.
12. DfE's advice to schools changed at the end of August due to three incidents over the summer involving the collapse of RAAC structures without prior warning: two in schools settings and one in a commercial setting. The view of DfE officials was that under previous DfE guidance, as well as the current RAAC guidance from the Institution of Structural Engineers, the planks that collapsed would have been categorised as non-critical and therefore not requiring immediate evacuation. This has led to a shift in DfE's risk management approach whereby any incident of RAAC in a state-funded education setting (community, voluntary-controlled, foundation schools and maintained nursery schools) must be taken out of use until appropriate mitigations are put in place.
13. DfE has put in place a process to support schools where it is suspected there is RAAC present, including access to technical expertise to confirm whether or not there is RAAC present. There is funding available to schools to cover the revenue and capital costs of taking buildings with RAAC out of use and remediating them.
14. Since the DfE announcement there has been nationwide activity to identify RAAC in the public estate. Both the LGA and NFCC have drawn local authorities' attention to the guidance available to assist them in checking whether their estates have RAAC, and this has led to the identification of RAAC in a range of local authority sites outside the school estate.

Guidance and knowledge sharing

15. The Institution of Structural Engineers are presently reviewing [their guidance](#) in light of the three incidents that prompted a change of approach by the DfE. This review process is expected to be completed shortly. For the moment government departments are keen to stress that the Institution of Structural Engineers' guidance should be considered technically sound. Local authorities have already sought clarity however over which approach to take given the current differences in approach.
16. In response to the change in approach from the DfE, the LGA is currently producing a piece of single document guidance for local authorities which sets out the guidance from the Institute of Structural Engineers and from government on identifying and managing cases of RAAC, including key background information and risk profiles. This guide will be published on the LGA's website in due course.

17. The LGA also sits on and represents the local government sector to the Office for Government Property's (OGP) RAAC Working Group. This is the cross-Whitehall group established to coordinate the approach across government departments to identifying and remediating RAAC, as well as creating a collective understanding and approach to RAAC across the public sector estates. In addition, the LGA has been invited to participate in the Construction Leadership Council RAAC Industry Response Group which brings together leading organisations and individuals in the construction sector and academia to coordinate activity, share knowledge and experience and make recommendations to government.
18. Finally, we have opened a RAAC e-mail inbox (raac@local.gov.uk) to provide support and guidance to members and officers in managing RAAC in their estates.

Implications for Fire and Rescue Services (FRS)

19. NFCC are working with FRSs and partners to raise awareness of the issues associated with RAAC, providing advice for interactions with local communities on the considerations for premises that have confirmed its presence in their buildings, specifically schools and hospitals.
20. In relation to operational FRS implications of RAAC, there is a risk of sudden full or partial structural collapse due to instability of the material. FRSs 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 if 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.
21. Knowing which buildings contain RAAC is crucial; as such, local FRS crews should be advised of any changes to the use of buildings such as schools, including information about any newly vacant buildings, to inform their Site-Specific Risk Information.

National Fire Chiefs Council (NFCC) has undertaken significant work to highlight and address concerns, including:

- 21.1. Developing an e-learning training module entitled Safety Concerns with RAAC to support UK FRSs around the risks posed by RAAC, the safety concerns, including the risk of structural failure, as well as information on the appropriate actions for consideration in fire risk assessments and the operational response to an incident at buildings where RAAC is present or suspected.
- 21.2. Releasing an action note to UK FRSs to raise awareness of the Standing Committee on Structural Safety's (SCOSS) published findings on the risks surrounding RAAC in February 2022 – A revised note was issued 20 September 2023.
- 21.3. Distributing Local Government Association (LGA) guidance to Estates leads in all UK FRSs, highlighting the need to identify any properties constructed using RAAC and review the potential risks appropriately.

FRSs can provide crucial support with fire protection and prevention considerations in buildings containing RAAC, for example through effective targeted messaging and

support measures for vulnerable occupants. There are several considerations that are particularly urgent in the case of schools:

- 21.4. The need to review their fire risk assessment to ensure the means of escape are satisfactory for the parts of the premises that remain in use.
 - 21.5. Schools that are taking on pupils from other RAAC-affected schools will also need to review their fire risk assessment. With a higher number of pupils, and potentially different occupancy characteristics, these schools will need to ensure the fire safety measures and arrangements remain suitable.
 - 21.6. Schools should undertake fire drills early in the school term; it will be important to consider vulnerable groups within this planning.
 - 21.7. Any buildings that have been decanted and will remain vacant due to structural safety issues will need to be adequately secured to prevent the risk of arson.
22. NFCC has sought ministerial support in encouraging the Government to produce a list of all buildings where RAAC is present or suspected and to share this with NFCC or publish the list in full to enable a more targeted approach for FRS support and interventions to RAAC-related safety issues across the built environment.
23. FRSs are working hard to provide the Home Office with a comprehensive overview of the extent to which England's FRS estate is affected by this issue. Fire headline figures are returned to the Home Office daily and as of 21 September, show that 25 per cent of FRSs have confirmed no RAAC within their estate, whilst 75 per cent of FRS need to undergo more intrusive investigation to determine the method and materials used in construction.

Implications for Wales

24. The Welsh government has been working in Wales to identify and remediate RAAC since 2019, when SCOSS issued their alert and the WLGA notified Welsh local authorities about RAAC following the SCOSS alert in 2020. There has been a programme of work in Wales to identify RAAC in the public estate, but following the DfE decision at the end of August to change their approach the Welsh government has commissioned further surveys of public buildings in Wales.

Financial Implications

25. The costs of remediating RAAC will vary for building owners depending on the extent of its use, but in some cases these will be substantial. The NHS has allocated £698 million between 2021 and 2025 to remediate and put in fail safe measures. It is not currently clear what the costs of remediating RAAC outside of the school estate might cost local authorities, and we are in the process of gathering information on this.

Equalities implications

26. Given the range and type of buildings identified with RAAC, and what appears to be a very limited presence in social housing and other residential settings, it does not appear

at this stage there are any particular equalities implications arising from the presence of RAAC.

Next steps

27. The LGA and NFCC will continue to highlight to building owners the need to check for RAAC, raise awareness of premises owners with RAAC of the need to review their fire risk assessments and for the sharing of data around which buildings have RAAC.