

Safety and the built environment

(RAAC, Asbestos, and other building related hazards in the workplace)

Pinnacle role of a Safety Reps

“It shall be the duty of every employer to consult any such representatives with a view to the making and maintenance of arrangements which will enable him and his employees to co-operate effectively in promoting and developing measures to ensure the health and safety at work of the employees, and in checking the effectiveness of such measures.”

Health and safety legislation and building safety legislation



- Health and Safety Legislation
- Approved Codes of Practice and Guidance
- Building Legislation
- Approved Documents
- British Standards

Issues effecting workplace of built environments

Construction

- Standard and Non-standard construction
- What materials were used ?
- How was it constructed ?
- What was its intended use and design life span ?

Building Usage

- How has it been maintained
- What changes / adaptations have been made
- Environmental Factors



Reinforced autoclaved aerated concrete (RAAC)



Light weight concrete used in roof, floor, cladding and wall construction in the UK from the mid-1950s to 1990.

Precast planks produced away from the building site.

Example of RAAC in walls



Example of RAAC on internal wall face



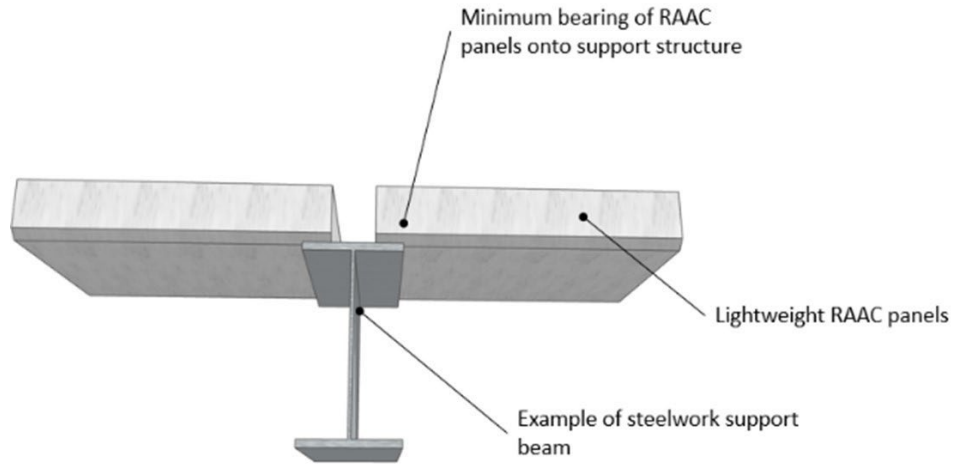
Example of RAAC in flat roofs and floors



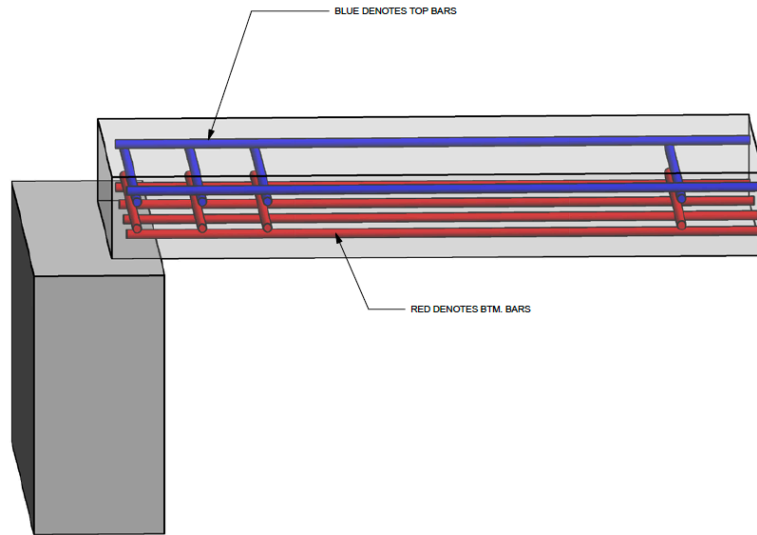
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Images of Reinforced autoclaved aerated concrete (RAAC) © Crown copyright 2022/ 2023, Contains public sector information licensed under the Open Government Licence v3.0.

RAAC in the workplace



RAAC in the workplace



CORRECTLY POSITIONED REINFORCEMENT

Example of bowing (deflection) in RAAC panel

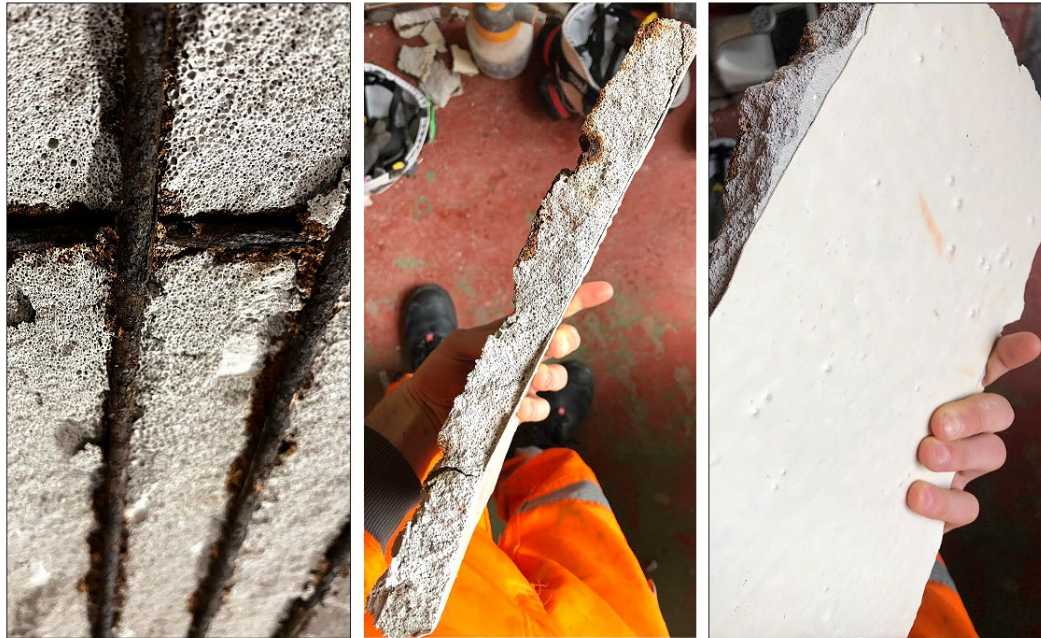




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Picture : <https://www.hta-building-investigations-scotland.co.uk/building-investigations/raac-assessments/>

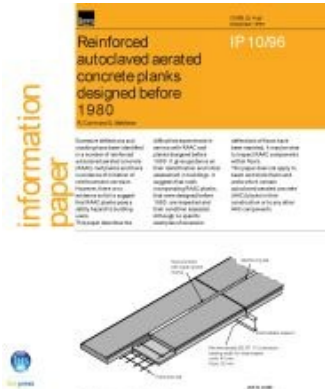
RAAC in the workplace



RAAC in the workplace

- In 1994, the Department of Education asked Building Research Establishment (BRE) BRE to inspect a number of school roofs in Essex.
- In 1996 The results of this were reported in BRE Information Paper IP10/961- Reinforced autoclaved aerated concrete planks designed before 1980
- 1999 Standing Committee on Structural Safety (SCOSS) also warned of the problem in their twelfth report.
- July 2018 – the ceiling of the staff room at Singlewell Primary School collapsed on a Saturday having shown no previous signs of structural stress.
- May 2019 – SCOSS issued an alert for all government departments, councils, NHS leaders and building professionals highlighting the “significant risk” of structural failure due to RAAC.
- In September 2022, the Office of Government Property sent a ‘Safety Briefing Notice’ to all Property Leaders, regarding the dangers of Reinforced Autoclaved Aerated Concrete (RAAC). It states that “RAAC is now life-expired and liable to collapse”

30 Years of WARNINGS !



Structural-Safety
SCOSS and CHOS

SCOSS
Structural Collapse Observation and Surveying System

SCOSS Alert | May 2019

FAILURE OF REINFORCED AUTOCLAVED AERATED CONCRETE (RAAC) PLANKS

In late 2018, the Local Government Association (LGA) and the Department for Education (DfE) contacted all school building owners to draw attention to a recent failure involving a flat roof constructed using Reinforced Autoclaved Aerated Concrete (RAAC) planks. There was little warning of the sudden collapse.

Although the failure was in a school, it is believed that RAAC planks are present in many types of buildings. This Alert is to emphasise the potential risks from such construction, most of which dates back to between the 1960-80s. Although called "concreta", it is very different from traditional concrete and, because of the way it was made, much weaker. The useful life of such planks has been estimated to be around 30 years.

Pre-1980 RAAC planks are now past their expected service life and it is recommended that consideration is given to their replacement.

1. Who should read this Alert?

Owners of schools and other buildings made from the 1960-80s. In the UK, Government Departments and Local Authorities who have schools and other buildings in their care portfolio, including: Home Office, Ministry of Defence, building inspectors, architects, structure engineers, fire life marshals and maintenance organisations may also be interested.

2. Background

In the 1960s, there were many instances of failure of RAAC roof slabs installed during the mid-1960s and 1970s. A number of such failures were investigated and reported in a series of publications. The investigation of 17 different case studies revealed some primary deficiencies as mentioned in the banner above and the depth into the underlying problem of measures for providing a bridge to the original steel frame to performance of roof ventilation and light transmission of local construction.

SCOSS
www.structuralsafety.org | scoss@structuralsafety.org

SCOSS Alert Failure RAAC News May 2019



5 Steps for Reps

- Identify
- Isolate
- Mitigate
- Manage
- Remove



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Asbestos in the workplace



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Asbestos in the workplace

The HSE estimates that asbestos is still present in over 300,000 non-domestic buildings.

It remains the single biggest cause of workplace fatalities in the UK



Occupational lung disease

12,000

Lung disease deaths each year estimated to be linked to past exposures at work

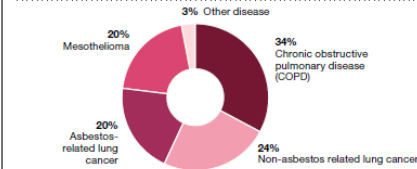
2,268

Mesothelioma deaths in 2021, with a similar number of lung cancer deaths linked to past exposures to asbestos

19,000

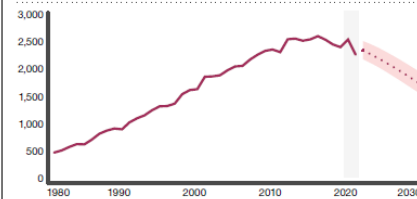
Estimated new cases of breathing or lung problems caused or made worse by work each year on average over the last three years according to self-reports from the Labour Force Survey

Lung diseases contributing to estimated current annual deaths



Percentages shown have been rounded so do not sum to 100%

Annual mesothelioma deaths and future projections to 2030



The data for 2020 to 2021 includes the effects of the coronavirus pandemic, shown inside the grey shaded column

— Mesothelioma deaths Projected deaths
 Shaded area represents 95% confidence level

Change over time

Annual mesothelioma deaths are expected to reduce over the period 2022 to 2030.

Prior to the coronavirus pandemic, the rate of annual new cases of occupational asthma seen by chest physicians had been increasing.

Occupational lung diseases account for around 12,000 of the 13,000 total deaths estimated to be linked to past exposures at work.

To find out the story behind the key figures, visit www.hse.gov.uk/statistics/causdis/index.htm

Asbestos in the workplace

Over 5,000

Asbestos-related disease deaths per year currently, including mesothelioma, lung cancer and asbestosis

2,268

Mesothelioma deaths in 2021, with a similar number of lung cancer deaths linked to past exposures to asbestos

537

Deaths in 2021 mentioning asbestosis on the death certificate*

*Excluding deaths that also mention mesothelioma

Duty to manage Asbestos in the workplace

- **Assess** if there are asbestos-containing materials (ACMs) present, the amount, where they are and their condition
- **Presume materials contain asbestos** unless there is strong evidence that they do not
- **Make, and keep up to date, a record or register** of the location and condition of the ACMs or presumed ACMs
- **Assess the risk** of anyone being exposed to airborne fibres from the ACMs
- **Write an asbestos management plan** to manage the risk, put the plan into action, monitor it and review it every 12 months or sooner if necessary
- **Monitor** the condition of any ACMs or suspected ACMs
- **Provide information** on the location and condition of the ACMs to anyone who may work on or disturb them, including the emergency services

Tackling Asbestos in the workplace

2021 DWP Select committee's Inquiry Health and Safety Executive's approach to asbestos management submitted 27 recommendation to government in 2022 including;

- A National Asbestos register
- To set a deadline for the removal of asbestos from non-domestic buildings, within 40 years

Tackling Asbestos in the workplace

Rt Hon Sir Stephen Timms MP, Chair of the Work and Pensions Committee, said:

“The Government argues that fixing a deadline for asbestos removal would increase the opportunity for exposure, but the risk is likely to increase anyway with the drive towards retrofitting of buildings to meet net zero aspirations. Setting a clear target should just be one part of a new properly joined-up strategy. This strategy should prioritise the highest-risk buildings and urgently boost the evidence base for the safe removal and disposal of a material that is still the single greatest cause of work-related fatalities in the country.”

The report, published in April, highlighted how despite asbestos being banned more than two decades ago, the material remains in around 300,000 non-domestic buildings. There were more than 5,000 asbestos-related deaths in 2019, including from cancers such as mesothelioma

Evidence that supports the removal of Asbestos now

Latest research also shows that asbestos-related diseases in former school and hospital workers cost the UK economy £1.3 billion per year

This report estimates that in 2023, the total costs to the UK economy and society of asbestos-related diseases for former school and hospital workers were just over £1.3 billion.

The results suggest that removing asbestos from schools and hospitals within the next 10 years would save the UK economy almost £12 billion over 50 years in the reduced economic and social costs of asbestos-related diseases.

The savings to the UK public finances would be around £3.6 billion

<https://www.mesothelioma.uk.com/>

What is the TUC calling for ?

New legal duty needed for asbestos removal

The current legal framework allows for asbestos in buildings to be managed in situ, rather than removed. But this approach was criticised by MPs last year in a report from the Work and Pensions Select Committee, which called for a 40-year deadline to remove all asbestos from public and commercial buildings.

The TUC says that an even faster timetable is needed for the removal of asbestos, and it should be done alongside upgrading buildings for energy efficiency to meet net zero targets.

To make this happen, the TUC is calling for a new legal duty to safely remove asbestos, with a clear timetable for its eradication



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TUC says government must publish national risk register for “all public buildings”

“The RAAC crisis in our schools is just the tip of the iceberg. Across our public estate – including in our hospitals, libraries, community centres and courts - we have buildings at risk from RAAC, asbestos and other severe structural problems.

“That is why today we are calling on the government to urgently publish a national risk register for all public buildings.

TUC General Secretary Paul Nowak (Sept 2023)

What do you think the role of the Safety rep are ?

Were any of the buildings at your workplace, build or refurbished before the year 2000?

Do you know if your employer has an Asbestos management Plan and register?

Is it being managed correctly with “Competent “ advise and guidance ?

Do members know how to report concerns ?

Key Fire Legislation

England and Wales

The Regulatory Reform (Fire Safety) Order 2005

Scotland

The Fire (Scotland) Act 2005

The Fire Safety (Scotland) Regulations 2006

Northern Ireland

The Fire and Rescue Services (Northern Ireland) Order 2006

The Fire Safety Regulations (Northern Ireland) 2010

Fire Triangle

Oxygen

Heat / Ignition



Chemical Reaction

Fuel

Fire Risk assessments





Building Safety Act 2022

Section 62 Meaning of “building safety risk”

(1) In [this Part](#) “building safety risk” means a risk to the safety of people in or about a building arising from any of the following occurring as regards the building—

- (a) the spread of fire;
- (b) structural failure;
- (c) any other prescribed matter.

Section 65 Meaning of “higher-risk buildings”

“higher-risk building” means a building in England that—

- (a) is at least 18 metres in height or has at least 7 storeys, and
- (b) contains at least 2 residential units.