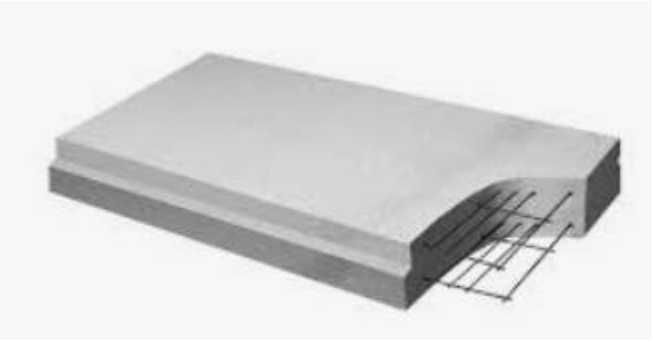
# Overview of RAAC Planks

**What is RAAC?**

Re-inforced Autoclaved Aerated Concrete (RAAC) is a form of lightweight concrete that was used in roof, floor, cladding and wall construction in the UK from the mid-1950s to the early 1980s. It was a popular material at this time due to its low cost and a lightweight alternative to conventional reinforced concrete, making it a preferable choice as a roofing material. Often formed into pre-cast planks, RAAC has a bubbly appearance, creating a material of low density and weight, strengthened from within by steel wire or reinforced metal rods:



The durability and structural integrity of RAAC over time has proven to be limited, with an approximate lifespan of 30 years. The material has a lower structural loading capacity than other concrete materials and is porous, thus prone to moisture absorption. This can lead to cracking and corrosion of the metal reinforcement within, causing it to weaken. Continued deterioration has in some buildings lead to collapse.

**IStructE & Health & Safety Executive guidance on RAAC**

Following instances of roof collapse, with no warning, to buildings containing RAAC this year, IStructE (The Institution of Structural Engineers) and the Health & Safety Executive issued revised guidance for the management of the material. The guidance advises that organisations should identify RAAC in buildings and seek specialist advice to assess it and develop a management plan *(Source: Managing risk from reinforced autoclaved aerated concrete (RAAC) - Education - HSE )* and to refer to further guidance as outlined on the Institution of Structural Engineers website www.istructe.org

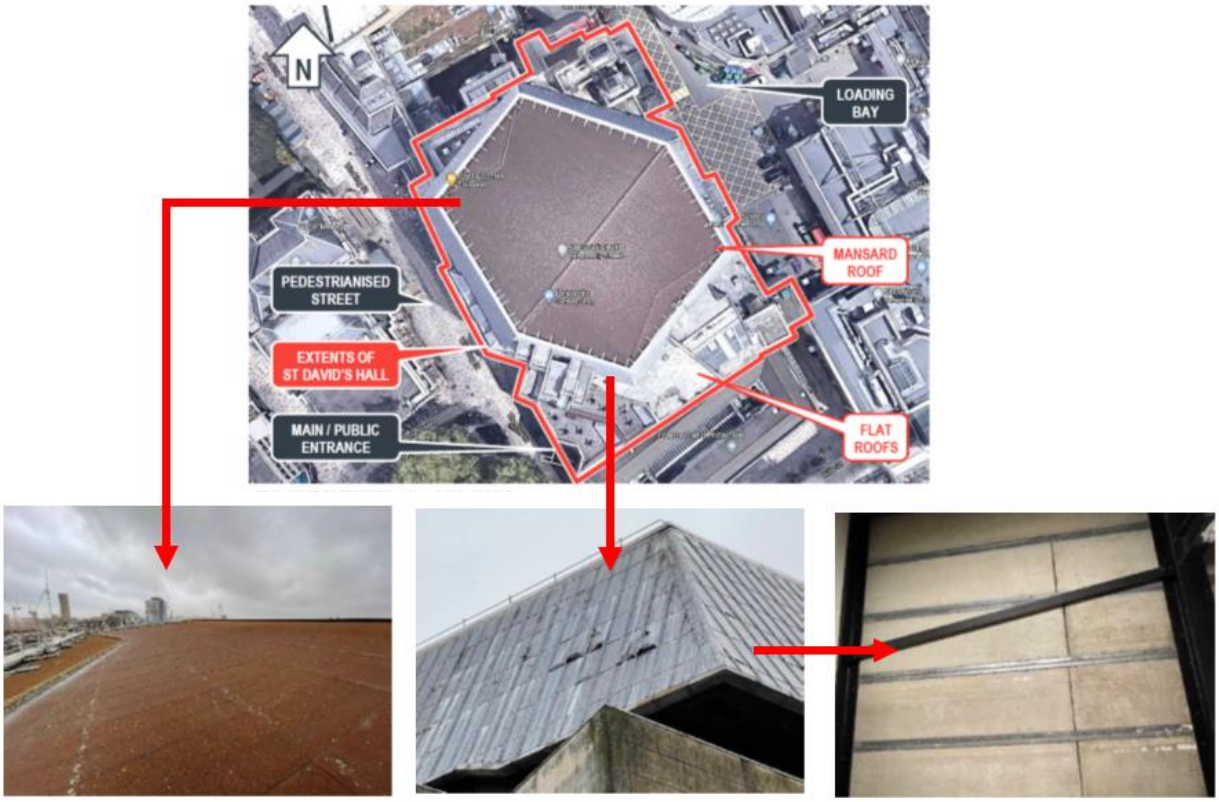
**RAAC deterioration**

Visual inspections may identify cracking and deflections to exposed and visible areas of RAAC, however, an intrusive survey carried out by a professional structural engineer is recommended to be the only effective method of gaining a detailed insight into condition. The following images illustrate deterioration within RAAC planks that would not be identified from a visual inspection from the underside:

***PLEASE NOTE - These are NOT images of RAAC at St. David's Hall***

**RAAC at St. David's Hall**

The roof at St. David's Hall is constructed of a large, clear-span steel framed mansard roof together with terraced flat roofs. This is surrounded by a vertical mansard with a lead cladding.

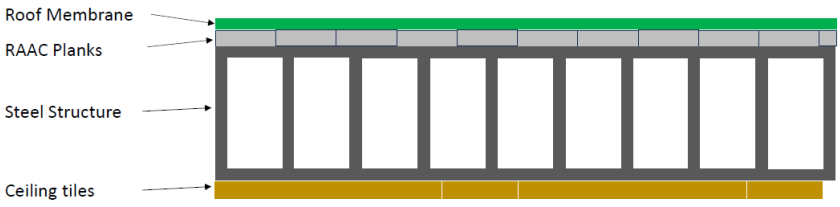



Sloped bitumen covered membrane over the RAAC plank roof

Vertical lead clad mansard surrounding the roof area, visible from street level

Woodwool concrete interior of the vertical lead clad mansard

The below diagram illustrates a cross section of the Mansard roof which contains 938 RAAC planks overlaid with a bitumen covered roof membrane:




The below images show the space between the ceiling and roof at St. David's Hall and a closer view of a section of RAAC planks taken from below looking upwards: