

DYDDIAD Y CYFARFOD: DATE OF MEETING:	27 September 2023
CYFARFOD O: MEETING OF:	Public Board
TEITL YR ADRODDIAD: TITLE OF REPORT:	Outcome of Survey - Reinforced Autoclaved Aeriaded Concrete (RAAC)
CYFARWYDDWR ARWEINIOL: LEAD DIRECTOR:	Leanne Watkins - Chief Operating Officer Hannah Evans – Executive Director- Strategy, Planning and Partnerships
SWYDDOG ADRODD: REPORTING OFFICER:	Hannah Capel – Associate Director Strategic Capital Jamie Marchant – Divisional Director Estates and Facilities

Pwrpas yr Adroddiad **Purpose of the Report**

Ar Gyfer Trafodaeth/For Discussion

The purpose of this paper is to:

- Update the Board on the outcome of the recent surveys into Reinforced Autoclaved Aeriaded Concrete (RAAC) prevalence, with particular focus on the Nevil Hall Hospital site,
- Outline proposed next steps in terms development of a service and site plan that responds to the presence of RAAC.

ADRODDIAD SCAA **SBAR REPORT**

Sefyllfa / Situation

An alert was received from Welsh Government in February 2022 in relation to Reinforced Autoclaved Aeriaded Concrete (RAAC), requesting that all Health Boards undertake a desktop review to determine if there is any RAAC present within the Health Board's estate.

Following the desktop review, it was concluded that a further level of investigation was required to provide health organisations and Welsh Government with assurances that the extent of RAAC is fully understood and that appropriate measures are in place to manage the issue and risks in the short, medium and longer term.

In February 2023, the Health Board was requested by Welsh Government and Shared Services to undertake the following:

Desktop Review

- Appoint a Structural Engineer to undertake a desktop review of all Health Board premises which were constructed between 1960-1995.
- Provide a summary of findings and evidence that any recommendations made have been addressed.

Surveys and Risk Management Plans

For any premises which have been identified as containing RAAC:

- Appoint a Structural Engineer to complete a detailed survey,
- Identify requirements for intervention (stating period for implementation),
- Confirm requirements for future monitoring and inspection,
- Provide projections on the potential lifespan of the RAAC, and
- Address any immediate urgent actions.

The above actions have been completed and the findings show that in Aneurin Bevan Health Board area, Nevill Hall Hospital (NHH) is the only site within the health board estate found to have RAAC some of which has been identified as "high critical".

Legal advice has been sought on the level of risk posed to the Health Board given its duties under the Health and Safety at Work Act (1974) and the Corporate Manslaughter and Corporate Homicide Act 2007. The corporate Health and Safety Team is actively engaged to ensure any risks or remediation works do not compromise the health and safety of staff, patients or visitors.

This paper sets out the findings of the survey, updates on urgent remedial action and presents the approach to developing a medium to longer term strategy for the NHH site.

Cefndir / Background

Reinforced Autoclaved Aerated Concrete (RAAC) panels are a form of pre-cast, off-site construction widely used between the 1950's – 1990's as a material for lightweight wall, flooring and roofing solutions. This construction method was used in schools, hospitals and many other structures in UK. Following incidents in 2017 and 2018, it was highlighted that the material only has a design life of 30 years and, if in poor condition, and/ or if poorly constructed, is liable to failure.

In February 2022, Welsh Government requested that all Health Boards undertake a desk top exercise to determine whether its sites had any RAAC presence. Consequently, it was identified that NHH site has a significant presence of RAAC. The desktop review confirmed that there are no further sites which are Health Board owned which contain RAAC.

A subsequent instruction was given to all Health Boards in February 2023 by Welsh Government to appoint Structural Engineers and to refresh the desktop review as it had been identified that there is evidence of RAAC in buildings constructed up to 1995. There was also an instruction to undertake in-depth surveys where a presence of RAAC was identified.

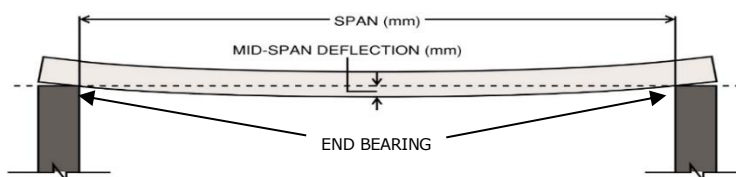
Mott MacDonald was appointed as the Structural Engineer on behalf of the Health Board to undertake both surveys, and work commenced in March 2023 and completed in July 2023.

The in-depth surveys concluded that of the 53,460sqm of Nevill Hall Hospital, approximately 14,472sqms of it has RAAC present, predominantly in the ceilings.

The aim of the survey was to evaluate the current condition of all RAAC panels and assess the associated risks for each one and categorise into one of the four categories in line with the guidance from the Institution of Structural Engineers (IStructE) and summarised in the infographic below:

Element	Discussion
High / Critical	For the High (Red) Risk category, urgent attention may be required such as immediate exclusion zones or the introduction of temporary propping to allow the safe ongoing use of a building. In some instances, this may recommend immediate closure and implementation of temporary accommodation.
High	For the High (Red) Risk category which is considered non-urgent, remedial works would be required as soon as practicable.
Medium	For the Medium (Amber) Risk, regular monitoring on a regular basis is recommended, eg. Six-monthly to Annually
Low	For the Low (Green) Risk, monitoring occasionally, say 3-5 year period, is recommended depending on condition

The panel and associated room risk rating is directly associated with the risk concerns considered for RAAC panels, including reduced end-bearing, poor anchorage, cut-panels, water penetration, excessive deflection (as shown in diagram below) and adverse or modified loading conditions.



The dimension of the supporting elements and the 'end-bearing' of the RAAC panels is critical to the shear strength of each RAAC panel. The steel bars within the RAAC must sit over the supporting end bearings to achieve the full design strength of each panel. It is recommended within the IStructE Guidance that the minimum bearing width for panels to be sat on is 75mm, anything less will compromise the shear strength of each panel. The end bearing is also risk rated in line with the following -

Bearing Risk Rating

- Low risk - Bearing 76mm or greater
- High risk - Bearing between 75 and 50mm
- Critical risk - Bearing less than 50mm

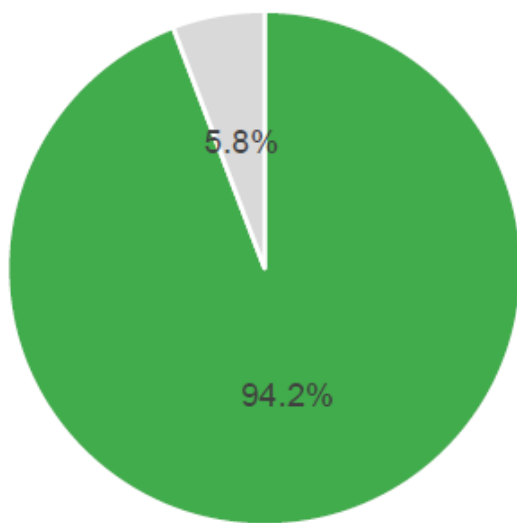
The findings have been mapped by each individual panel and also by the end bearing, giving each panel a specific risk rating, with an overall rating being provided for the impact of the end bearings. This information has informed the action plan in relation to how often each panel needs to be inspected based on their criticality level, in line with the risk table above. For areas identified as high critical, immediate propping is the required course of action.

Asesiad / Assessment

Findings

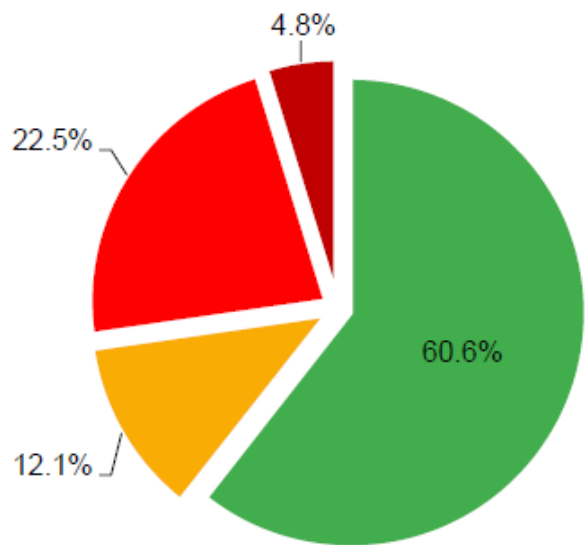
The survey findings have identified that there is approximately 14,472 sqms of RAAC in Nevill Hall Hospital. This is essentially everything of single storey, flat roof structure and equates to 7505 panels. It should be noted that there is a large amount of plant and ductwork on top of the flat roofs, which also compromises the integrity of the panel. The plans in Appendix 1 highlight the areas where RAAC is present and is colour coded according to its room rating. Diagram 1 shows Level 0 and Diagram 2 shows the plans for Level 1. Some areas were not surveyed as they were deemed inaccessible due to levels of asbestos present/ closed off areas, e.g hydrotherapy pool and gym.

As illustrated in the chart below, 4.8% has been identified as "high critical" and it has been necessary to undertake immediate propping, or in some instances where there is a compromise to service, remediation works have been required and planking (additional timber support which then negates the need for props) has been established.



■ Yes ■ No

Panel Inspection



■ Low Risk ■ Medium ■ High ■ High Critical

Panel Risk Rating

Although the inspections show that 60% of the RAAC panels are at low risk, the overall risk rating has increased to 'High' due to the findings in relation to the end bearing. This however is predominantly down to original design methodology of the hospital and not as a result of the presence of RAAC.

The cost of work to date has been approximately £250k in relation to surveying, installing props and planks and remediation work. In order to undertake the next level of remediation work (e.g. timber support, etc), as determined by the IStructE Guidance, the areas highlighted as "high critical" and "high" now need to be addressed within 12 months in line with the report from appointed Structural Engineers. High level estimates are of circa £5m capital required to further remediate in the medium term these areas, notwithstanding the estimated £35m backlog maintenance for the site (approx. £15m for the areas identified with RAAC), as identified in the latest 6 Facet Survey (circa 2017). There is currently no identified funding stream for this quantum of capital and the working assumption is the Welsh Government will fund the required works. This work will need to be undertaken whilst determining the long-term solution to eradicate RAAC.

The RAAC position in Nevill Hall needs to now be considered in the context of the Clinical Futures strategic vision for NHH as an eLGH as well as:

- The development of the Satellite Radiotherapy Centre
- The emerging work on the configuration of Stroke rehabilitation services (paper to Board on July 23),
- Developing thinking on piloting a place-based care model in Blaenau Gwent
- The Health Board's estates strategic priorities

Following a meeting and walkaround regarding RAAC with Welsh Government and Shared Services in NHH on 27th June, the Health Board has now been requested to assess what the longer-term plans are from the site in relation to services which need to be delivered from Nevill Hall Hospital, including any rationalisation of estate which can be achieved so that this can then be factored into the All-Wales Capital Plan.

Actions and Next Steps

Based on the outcomes of the report, the 'high critical' areas identified have been addressed as follows, in line with IStructE guidance and the advice of the appointed structural engineers, Mott MacDonald:

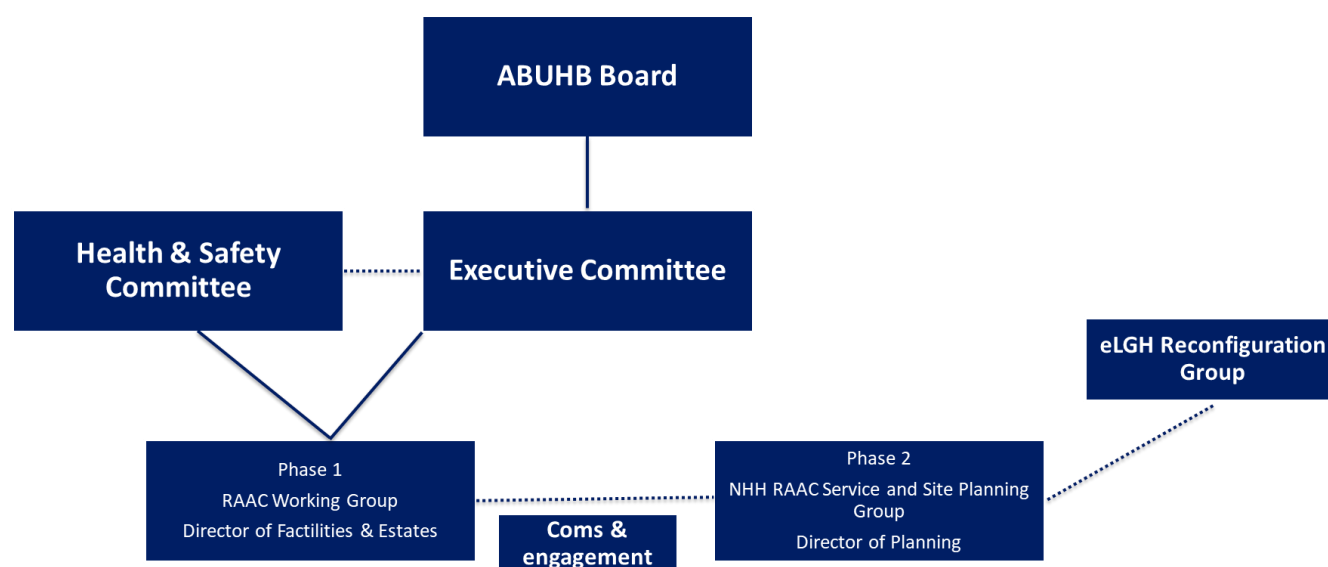
- Props have been put in place in the 'high critical risk' areas (400 props across the entire site),
- 'Planking' (additional timber support which then negates the need for props) has been put in places in some high critical areas where the presence of props would have left the service or area unworkable,
- 4 offices, 1 room have been closed since November 2022 and more recently the hospital Chapel was temporarily closed for further surveying work,
- Regular communications with staff on the developing position.

Going forward, the Health Board is undertaking the following based on the formal recommendations from Mott MacDonald:

- Regular 6-monthly inspections of areas containing RAAC with structural engineers,
- Weekly prop inspections,
- Further in-depth investigations in discussion with structural engineers,
- Address high risk areas over the next 12 months as per report,
- Weekly meetings with Welsh Government and NHS Wales Specialist Estates Services ,
- Engagement has also taken place with NHS England to discuss their approach to RAAC to inform ABUHB planning and response.

The following governance and oversight structure has now been set up in order to manage the ongoing day-to-day management of RAAC and associated works and the future site planning to reconfigure the site.

Diagram 3 – Governance and oversight arrangements



The phases of work have been scoped as follows:

- Phase 1 – Immediate issues and operational management
Fortnightly meetings have been set up to work through and co-ordinate the activities required to address risks posed and ensure appropriate governance is in place
- Phase 2 – Ongoing risk management and mitigation
Fortnightly meetings have been set up to undertake the following –
 - Develop service and site plan to address the medium/longer term risk
 - Development of SOC for phase 3
 - Engage with key partner as this work evolves
- Phase 3 – Longer term strategic configuration for Nevill Hall Hospital
This work will follow on from the Phase 2 work, building on the service changes as a result of the shorter-term site reconfiguration

Argymhelliad / Recommendation

It is recommended that the Board:

- **Note** the update on the outcome of the recent surveys into RAAC prevalence, with particular focus on the Nevill Hall Hospital site,
- **Note** the work which is being undertaken alongside professional advice and guidance
- **Discuss** and support the need to develop a service and cost-effective site plan that respond to the implications and risks set out.

Amcanion: (rhaid cwblhau) Objectives: (must be completed)

Cyfeirnod Cofrestr Risg Datix a Sgôr Cyfredol: Datix Risk Register Reference and Score:	
Safon(au) Gofal ac Iechyd: Health and Care Standard(s):	2.1 Managing Risk and Promoting Health and Safety Choose an item. Choose an item. Choose an item.
Blaenoriaethau CTCI IMTP Priorities Link to IMTP	Choose an item.
Galluogwyr allweddol o fewn y CTCI Key Enablers within the IMTP	Enabling Estate
Amcanion cydraddoldeb strategol Strategic Equality Objectives Strategic Equality Objectives 2020-24	Choose an item. Choose an item. Choose an item. Choose an item.

Gwybodaeth Ychwanegol: Further Information:

Ar sail tystiolaeth: Evidence Base:	
Rhestr Termau: Glossary of Terms:	

Partion / Pwyllgorau â ymgynhorwyd ymlaen llaw y Cyfarfod Bwrdd Iechyd Prifysgol: Parties / Committees consulted prior to University Health Board:	
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Effaith: (rhaid cwblhau) Impact: (must be completed)	
	Is EIA Required and included with this paper
Asesiad Effaith Cydraddoldeb Equality Impact Assessment (EIA) completed	No does not meet requirements An EQIA is required whenever we are developing a policy, strategy, strategic implementation plan or a proposal for a new service or service change. If you require advice on whether an EQIA is required contact ABB.EDI@wales.nhs.uk
Deddf Llesiant Cenedlaethau'r Dyfodol – 5 ffordd o weithio Well Being of Future Generations Act – 5 ways of working https://futuregenerations.wales/about-us/future-generations-act/	Choose an item. Choose an item.

APPENDX 1

Diagram 1 – floor 0



Diagram 2 – Floor 1

