

Design and Access Statement

Royal Berkshire NHS Foundation Trust
North Block East Wing, London Road, Reading

The Buildings

The East Wing of the Royal Berkshire Hospital is an extension to the main hospital that was constructed in 1865. The 3-storey grade 2* listed building is of traditional construction, comprising loadbearing masonry, suspended timber upper floors and a timber roof. The external elevations are clad with Bath Stone. The building has been unoccupied since 2008.

The interior and exterior of the building are currently in poor condition. Much of the upper floors and roof is suffering from wet and dry rot. The main staircase between the ground and first floor has collapsed and areas of the upper floor have been reported as unsafe due to rot. An environmental investigation has highlighted the risk of toxic mould. Rainwater ingress has been halted due to the installation of a temporary roof and weather protection to the elevations.

The building is founded on shallow stepped brick strip footings. Due to localised poor ground conditions (common across the site), the northern end has subsided, evidenced by significant cracking to the walls visible from inside and outside of the building.

Consent was granted in June 2021 for a concrete piled underpinning solution to the subsidence (201826). This was a very intrusive solution and involved the installation of a large volume of concrete. A more recent application has been lodged for a ground stabilisation scheme to reduce the impact of the ground works on the existing structure.

We also attach a full Heritage Report written by Worlledge Associates which gives more detail about the building and its history.

Design

This application seeks approval for repairs and replacement of certain structural elements to follow on from the ground stabilisation works so that the building can be left in a safe, watertight and stable condition while the Royal Berkshire Hospital NHS Trust decide how they wish to use the building in the future and raise the funds for its conversion.

The proposed works are split into several distinct areas and these are detailed as below.

Roof

The roof is of slates nailed to battens on sarking boards. There are areas of flat leadwork in the centre, and parapet lead gutters to the perimeter. The structure is deemed unsafe so has yet to be inspected but is known to have suffered from many years of neglect. Outlets have become blocked due to lack of maintenance, and as a result water has found its way into the building over a long period of time, damaging the fabric and causing damp and rot issues throughout.

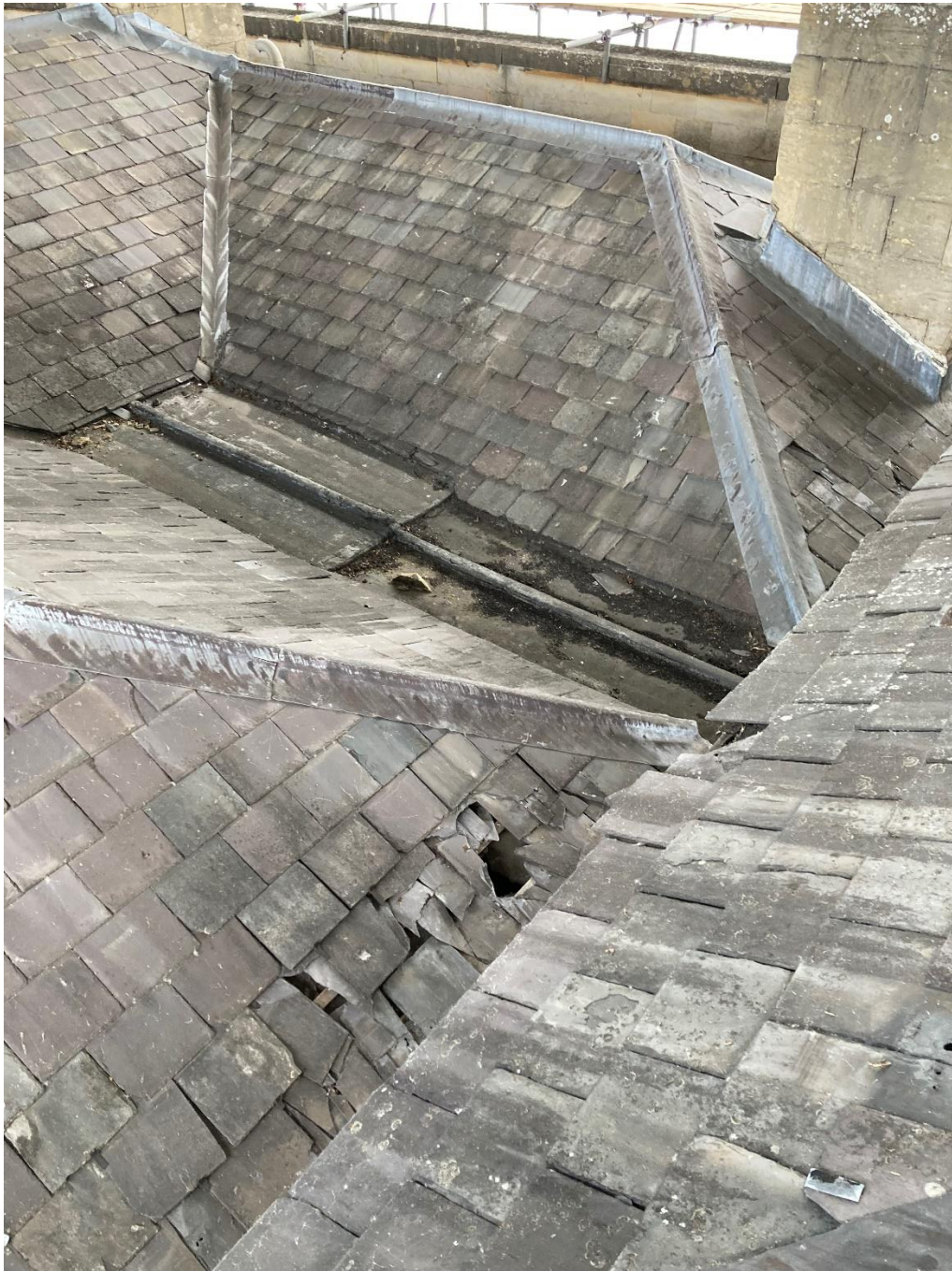
The proposals for the roof repairs are shown on drawing 6947.211 and are summarised as follows:

- Provide scaffold inside building to create safety crash deck to allow works on the roof
- Strip slates, battens and sarking to expose roof structure
- Inspect structure including wallplates and replace timbers as necessary and spray treat the timber to remain.

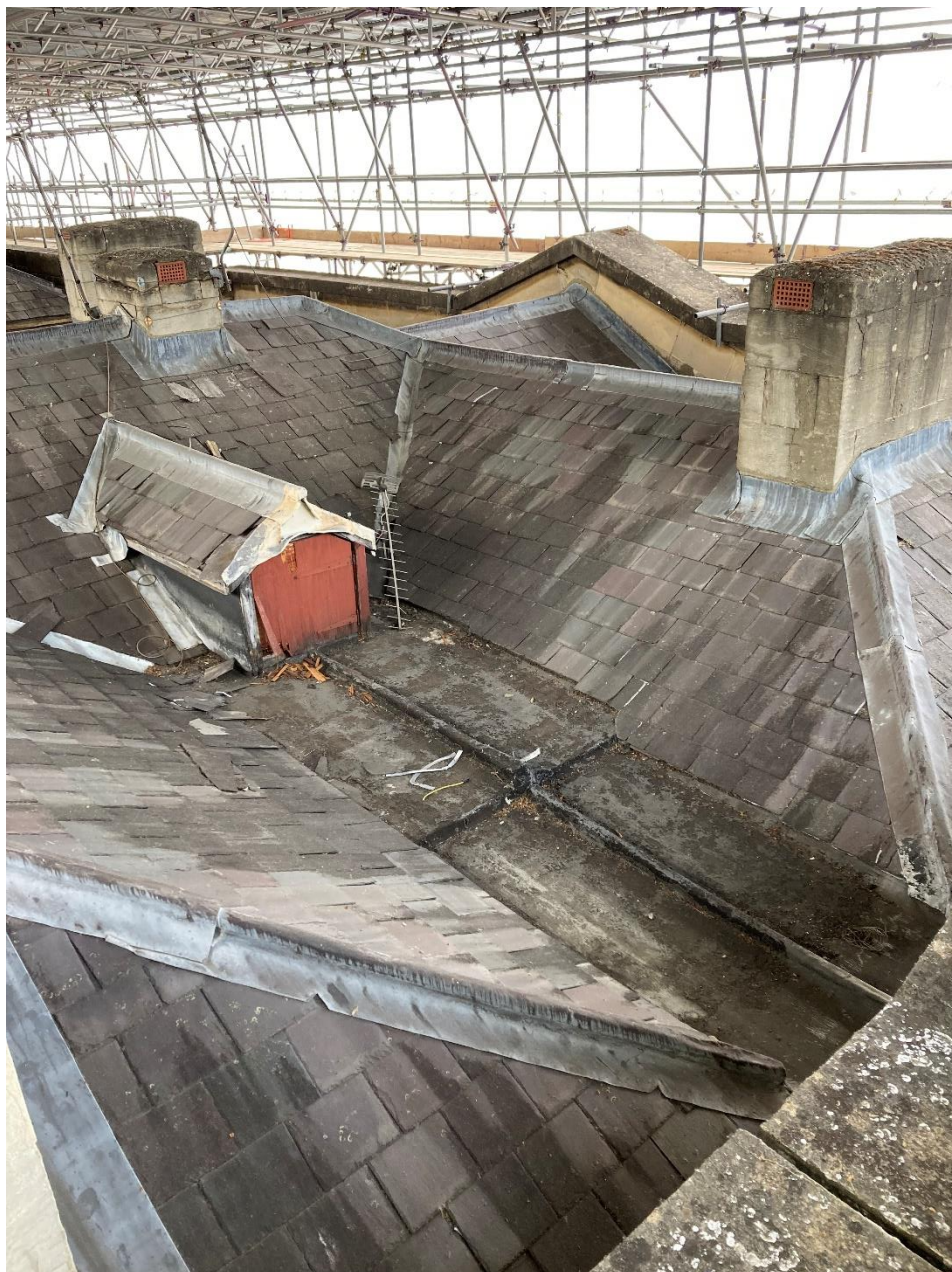
- Fix new sarking boards, Tyvek membrane, battens and slates
- Re-form all flat roof areas and gutters with new timber and renew all leadwork
- Make sure rainwater outlets work correctly
- Provide lead overflow pipes through parapet to prevent build up of standing water
- Clear out loftspace and insulate



General view of the roof



Roof damage has caused water ingress



Flat lead areas and roof access

Stonework

Poor ground conditions that are common across the Royal Berkshire Hospital site have led to subsidence of the building, principally in the north-east corner but noticeable elsewhere too.

We have attached a report and quotation prepared by PAYE Stonework and Restoration Limited which details the areas of concern and the proposals for repair or localised rebuilding of the stone façade to be carried out once the ground stabilisation works have been completed.

Windows

Whilst in generally reasonable condition, the aim of this exercise is to repair and conserve the whole of the building's external envelope, and this includes the windows.

Our drawings 6947.261-264 show the typical sash windows and the proposal to repair and refurbish them.

The windows will be subject to closer inspection once the works commence, but initial surveys suggest that none need to be replaced and a thorough refurbishment with new spliced-in timber where required, new sash cords and weights, new ironmongery and some draught stripping should be sufficient to allow the existing windows to give many more years of service. There are some broken panes of glass that will also need to be replaced.

Floors

Drawing 6947.271 shows the different floor types in the building.

The southern end of East wing retains its cellular layout with a central corridor, and the floors here are timber joists and boards, suspended on the ground floor.

The northern end of the building was radically altered many years ago for use as a renal unit for the hospital. Some of the floors here are timber, but the majority has been replaced with a solid concrete floor.

On the first and second floors, the floor structure is timber joists spanning from the external walls to the east and west to the central corridor spine walls. The floor to the first floor at the northern end has not been inspected because access here is not possible due to the condition of the staircase.

In order to safely access the roof to repair and make it weathertight, we need to introduce a temporary scaffold through the building to facilitate this. All boards will be removed, marked and recorded so that they can be replaced in their original locations, and then treated for reuse. Any boards that have perished due to rot and damp, and areas that have in the past been replaced with OSB or plywood, will have new boards supplied and fitted in their place.

All floor joists will be inspected from our scaffold as it is erected from the ground floor upwards.

Due to defective roof coverings excess moisture has been allowed to penetrate the building fabric. This has been absorbed by the adjacent timbers raising their moisture content to above 20% of their oven dry weight. These conditions have resulted in the germination of the spores of the true Dry Rot fungus (*Serpula lacrymans*) bringing about the breakdown of the timbers.

Dry Rot spores are ubiquitous and there is no environment free of them. Spores will germinate and grow in timber with a moisture content of between 20 and 30 per cent. The fine fungal thread (hypha) digests the cellulose and hemicellulose fractions of the wood, but is unable to attack the structural lignin.

These remain as a brittle matrix which cracks into cubes under differential stresses. Cuboidal cracking is also a characteristic of many wet rots and does not automatically indicate the presence of Dry Rot. Fungal hyphae may clump together into a variety of structures known as mycelia which takes various forms depending on the surrounding conditions.

They may fill a humid cavity as a cotton wool-like mass or grow across the surface of the timber as grey-white skin. Active Dry Rot has a fresh white or greyish appearance. Some hyphae group together to form conducting strands. Their main function is the conduction of nutrients through inert non-nutrient materials (stonework etc.) to permit eventual colonisation of other timbers. Their relatively impervious outer layer, together with an unusual alkaline tolerance, allows them to survive in the mortar layers within masonry and walls and an infested area may be full of Dry Rot strands. The Dry Rot fungus may tolerate relatively lower moisture contents and, through this and other quirks in its biology, is potentially capable of considerable destruction.

All defective timbers will be replaced, ensuring that all contact surfaces are coated with Timber Water Repellent fungicidal fluid and wrapped/capped or laid on PVC DPC membrane. All exposed timber used will be treated with a Fungicide fluid.



Typical boards on the second floor



Timber suspended ground floor and concrete beyond

Ceilings and cornice

The ceilings and cornices are shown on drawing 6947.272. Much of the original lath and plaster has been removed and replaced with two layers of fireline plasterboard during the time this building was used as a clinical area. Only small areas of cornice remain.

In order to install a scaffold, most if not all of these ceilings will be removed. Areas of cornice that can remain will do so, but casts will be made of all areas so that replacement matching cornice can be manufactured.

It is planned to replace all of the ceilings with lath and plaster as specified on the drawing.



Lath and plaster ceilings are generally damaged



Cornice remains in a few locations on the second floor

Plaster

It is anticipated that areas of plaster have been damaged by the water ingress and the damp. In order to leave the building in a dry, stable and safe condition, all areas of damaged plaster will be removed.

It is not proposed to replace the plaster as part of these works, in order to allow the structure to dry out completely. Temporary heating will be provided in the building to facilitate this.



Plaster damage in the ground floor at the north end

Doors

All internal doors have been removed off site and will be assessed for their suitability for re-hanging.



Staircase

The main staircase has been destroyed by the dry rot fungus and needs to be replaced. We propose to remove this staircase and put it into safe dry storage so that a skilled joiner can create a new stair incorporating the details, and any salvageable parts of the original stair.



General view of the staircase at ground floor



First floor landing (inaccessible)



Ceiling over main stair

Drainage

It is proposed to renew or repair the external drainage around the building which has been subject to a CCTV survey. Rainwater goods will be refurbished to allow them to function correctly and the drainage repaired to allow rainwater to be disposed of correctly.

No internal drainage alterations are proposed as part of these works.

Access

These works are fabric repairs so access issues will be considered in any further Listed Building Consent applications for the conversion to another use.