

Structural Inspection Report

Rose Café, Graves Park, Sheffield
S8 8LJ

PC06414

V0_02

28/06/22

Capital Delivery Service



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Document Controls

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Introduction

1 Introduction

A request was made by Senior Architect, Capital Delivery Service for a structural appraisal with a view to options available for the refurbishment of Rose Cafe, Graves Park. A joint inspection was carried out by the Author on the 20th of June 2022. At the time of the inspection the weather was sunny, dry and hot.

Description of the Property

2 Description of the Property

The Rose Garden Café is located in Graves Park off Hemsworth Road in the Norton area of Sheffield S8 8LJ. The Park contains several unique features and facilities such as Norton Hall [1795], St James Church, an animal farm, children's playgrounds, boating lake and fish ponds, tennis courts, parklands, woodlands, and a public pay and display car park to the east of the cafe. The proposal is to refurbish the Rose Garden Café and improve the external circulation, steps and pathways to the Rose Garden and the surrounding landscaping beyond.

The Rose Garden Café was built in 1927 and is a detached single storey timber framed structure with a brick built flat roof extension (formerly toilets) now used as a kitchen and store. A toilet block extension was added at a later date. The main roofs are pitched and finished in plain clay tiles. The gable walls are solid masonry.

The timber frame has been subject to historic and significant distortion. The last Building Defects Survey, undertaken in 2018 lists the overall condition of the Cafe as '**Poor**' and recommended major repair works to roofs, external walls, windows and building services. The report also highlighted that '*the timber framed structure forming the Rose Garden café has been subject to historic and significant distortion. Whilst no evidence of recent instability was apparent, prior to recovering the main roof, further investigation required by Structural Engineer to ensure all movement is complete*'

This report contains the findings and recommendations following the joint site visit.

Results of the Inspection

3 Results of the Inspection

3.1 Roof

- 3.1.1 Bulging of the soffit beam both sides of the main entrance door, front elevation, to the gable ends – see Photo 1.
- 3.1.2 Roof sag both elevations – see Photos 2 and 3.
- 3.1.3 Dormer windows leaning backwards both sides – see Photos 4 and 3.
- 3.1.4 Bird entry where soffits missing to rear of café – see Photo 5.
- 3.1.5 Poor detailing box end/soffit front elevation where it meets toilet block gable wall – see LHS Photo 6.
- 3.1.6 Roof leaks in various locations internally during periods of heavy rain (which is why ceiling is painted black) – as noted by the café operator.
- 3.1.7 Gutters in a poor state and sections to the rear elevation of the building keep falling off as noted by the café. A section was missing from the rear of the toilet block extension at the time of the inspection – see Photo 7.
- 3.1.8 Removal of the clock face from clock tower as it was leaning backwards (thought to have been taken to Staniforth Road Depot) – as noted by the café operator – see Photo 2.
- 3.1.9 The extension to the rear has a flat roof. Tree saplings and vegetation could be seen growing on this roof. It's condition could not be established due to a low level parapet wall around the flat roof – see Photo 7.

3.2 Front elevation

- 3.2.1 Leaning of the window frames to the front elevation outwards – obvious visually externally and internally – see Photos 1 and 8.
- 3.2.2 All window frames rotten and rot accelerated by fixing Perspex externally in front of the windows – see Photo 9.

3.3 Rear elevation

- 3.3.1 Rats had been gaining entry into the cafe through air bricks and vents on the rear elevation. Was resolved by addition of expandable foam in air bricks and service entry points – see Photo 10.
- 3.3.2 Blocked drains to the rear – usually happens every winter – as noted by the Café operator.

3.3.3 Note that the rear elevation internally does not show any signs of deformation or lean. Possibly as a result of the buttressing effect of the flat roof extension.

3.4 Generally

3.4.1 Very poor ventilation inside the café and in the kitchen as no openable windows. Propped open doors are the only means of ventilation.

3.4.2 The internal layout of the café does not work and will need remodelling.

3.4.3 The building is 100 years old and thereby coming to the end of its design life.

3.4.4 The acoustics inside the café are not great.

3.4.5 The gables are solid brick construction which will not meet current thermal requirements.

3.4.6 The heating system is gas fired boiler and is outdated.

3.4.7 The rear flat roof extension has a skin of brickwork in 2 locations. One skin does not adequately disguise an outside urinal – see Photo 11. This extension is a mismatch of brickwork where doors and windows have been infilled but not using the same colour bricks – see Photos 3 and 12.

3.4.8 No refurbishment works can be carried out while the café remains operational. Whether the café is refurbished, or demolished and replaced, there will still be an alternative temporary café facility required to be put in place.

Conclusions

4 Conclusions

- 4.1 The £200,000 budget for repairs to the café are not sufficient for the structural repair works involved as discussed in Section 5.
- 4.2 From past experience of working with similar buildings you are looking along the lines of £550,000 at today's prices to repair this building.
- 4.3 Repairing the building will also involve an increased contract duration as most of the repairs are unlikely to become obvious until the building refurbishment starts. There could be contractual delays while bespoke repairs are designed
- 4.4 The building has reached the end of its design life and is not listed.

Recommendations

5 Recommendations

It is not recommended to refurbish the Rose Garden Café unless it is considered to be of sufficient historic interest and additional funding is readily available. Any building can be repaired but at a cost. The café is not listed but the repair details involved would be as if it was listed.

It is recommended that the café and rear kitchen/store extension be demolished and the newer toilet block retained.

For comparison a new build modular of 500 square metres will be circa £425,000. As suggested in Section 4 it is likely that the refurbishment of this building will be in the order of £520,000.

Repairing the building is likely to involve the processes listed below:-

- 5.1** The condition or cause of the roof sag may not be known until the roof is stripped. The roof sag is not localised; it seems to be the whole roof on both elevations. In this instance the rafters and possibly the purlins will have split or deflected and could be rotten as a result of the water leaks noted in heavy rain. There is the likelihood that 4 No. structural steel beams will be required, 1 attached to each purlin and bearing into the gable walls, for strengthening. It is also likely that all the rafters will need replacing. There is also potential for bespoke structural timber splice/connection details of the existing trusses. (It has since been confirmed that a survey has taken place in the roof space by an independent consultant which should determine if any of the roof structure is salvageable or not).
- 5.2** Introduction of tie rods at each truss to control future roof spread if possible. This will be dependent on the condition of the trusses as will have to incorporate a shoe detail at wallplate level if the truss feet are rotten and to take the new tie rod.
- 5.3** A new ceiling cannot be introduced in its current configuration which would have been ideal to prevent future roof spread and heat loss but the spans are too great for timber and steel supports so would be looking into the realms of supporting columns.
- 5.4** There appears to be vegetation growing out of the flat roof extension to the rear which will need further investigation with a view to replacing.
- 5.5** Every truss end to the front elevation would need to be propped and braced before the roof tiles are removed during the re-roof scheme as it could become unstable.
- 5.6** The dormer windows are not accessible and cannot be maintained at present so suggest replacing with rooflights to increase light.

- 5.7** The front elevation requires remodelling to incorporate bi-fold doors and new double-glazed windows which will be formed by a steel skeleton. Nothing to the front elevation is salvageable.
- 5.8** The current flat roof kitchen and store to the rear is unsightly due to the brick infilled windows and doors. It is also questionable as to why a skin of brickwork has been constructed in front of the existing wall at the vent elevation and partially disguising the external urinal and if these have been tied back to the existing structure adequately. This could be disguised by external cladding to increase the thermal values, but this could then create the possibility of a blank canvas for graffiti.
- 5.9** Insulating cladding panels will need to be introduced external or internal to increase the thermal properties of the building.
- 5.10** The internal layout is also not adequate as it is now. Although this is not a structural comment it could have structural implications if the kitchen or toilets are to be remodelled internally.
- 5.11** The drains will need investigating and renewing if they are blocked or broken.
- 5.12** The existing foundations to the front elevation cannot be used as the structure has considerable lean and rebuilding plumb will eccentrically load them. The existing foundations are likely to be 2-3 engineering brick courses and are unlikely to be capable of taking extra loadings from the roof as a result of heavier tiles; new rafters at closer centres and various other repairs. Structural framing of the front elevation for replacement windows and as a result of the deformation will require new foundations in any case. It is also likely that the remainder of the building will require underpinning unless the foundations present are capable of supporting the new loads.
- 5.13** Blocking up of the airbricks to prevent rat entry will cause condensation and damp/mould a few years down the line and the expandable foam will need removing if the building is to be refurbished.

We trust that the above provides you with sufficient information to determine if the repairs should be carried out or not. If you require further assistance, then please contact the author.

Photographs

6 Photographs



Photo 1 – Bulging of soffit beam and forwards movement of front elevation.



Photo 2 – Roof sag front elevation.

Photographs



Photo 3 – Roof sag rear elevation and Dormer Window backwards lean.



Photo 4 – Backwards lean to Dormer windows Front Elevation.

Photographs



Photo 5 – Bird entry/missing soffit rear elevation.



Photo 6 – Poor detailing box end/soffit beam toilet block extension (LHS photo).

Photographs



Photo 7 – Missing gutter section rear elevation toilet block.



Photo 8 – Outwards lean to front elevation window frames.

Photographs



Photo 9 – Rotten window frames exacerbated by fixing of Perspex to front.



Photo 10 – Expandable foam in air bricks and service point entries to prevent rat entry.

Photographs



Photo 11 - External skins of brickwork added at a later stage. Extends ½ wall on RHS covering an outside urinal.



Photo 12 – Infilled windows and doors with different coloured bricks.