

# ADEPT

CIVIL AND STRUCTURAL CONSULTING ENGINEERS



## STRUCTURAL REPORT ROSE GARDEN CAFÉ, GRAVES PARK, SHEFFIELD S8 8LJ

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**Client:** Sheffield City Council  
**Project Name:** Rose Garden Café, Graves Park, Sheffield S8 8LJ  
**Report Title:** Structural Inspection Report  
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<b>P1</b>	S2	8 August 2022	Initial issue
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## 1. Introduction

- 1.1. Adept Consulting Engineers Limited was instructed by Sheffield City Council to carry out a structural inspection of the Rose Garden Café building following its closure due to structural concern.
- 1.2. Adept have received the report prepared by the Capital Delivery Service department of Sheffield City Council, titled Structural Café Closure Report.
- 1.3. The building was a single storey building with a duo pitched roof with a rear extension with flat roof and a more recent side extension with a similar duo pitched roof.
- 1.4. The inspection was carried out on 4<sup>th</sup> August 2022 with representatives of the Facilities Management and Parks departments of Sheffield City Council present.
- 1.5. The weather was dry and sunny.
- 1.6. Photographs of the building are given in Appendix A

## 2. Limitations of Report

- 2.1. The limitations of our structural inspection report are included in the text at the end of this report.

### 3. Description of Structure

- 3.1. The previous report notes that the café building was built in 1927, an old photo is given in photo 8.
- 3.2. The main open plan café area would appear to be a load bearing masonry structure,
- 3.3. The front wall is noted as a timber frame in the closure report and it would appear that timber cladding is fixed to the face of the front elevation to give a mock Tudor appearance, photo 7. Some intrusive investigation would be required to confirm the existing wall construction.
- 3.4. The main roof structure was partially visible below ceiling level showing raised collar tie timber trusses with a ceiling installed at roof truss tie level.
- 3.5. The gable feature above eaves level to the centre of the front elevation could be built with timber framing.
- 3.6. Section 2 of the Structural Café Closure Report, referred to in paragraph 1.2 above notes the building being subject to historic and significant distortion.
- 3.7. We understand that the café has recently been repainted internally.
- 3.8. Our observations are noted from ground level access.

## 4. Observations

- 4.1. The front wall of the café was leaning outwards at eaves level. The amount of lean varied along the length of the wall with the maximum amount of lean to the second window position in from each of the gable wall returns. The lean was in the order of up to 150mm at this position over the single storey height of approx. 3300mm, photo 1 & 2.
- 4.2. The leaning movement was reflected along the wall internally, photo 3 & 4.
- 4.3. The wall appeared to be masonry, an approx. 325mm thick pier at roof truss positions with an approx. 225mm thick infill wall between piers.
- 4.4. This movement is considered to be severe in structural terms for the wall thickness and could lead to instability of the wall.
- 4.5. 2 no. original French door openings to the front elevation have been bricked up at low level with what looks like a single skin of masonry and timber to inside.
- 4.6. There was evidence of sag and distortions in the roof, with some missing tiles and rotten fascia boards.
- 4.7. The dormer windows to the front elevation framed between roof trusses were leaning back into the building.
- 4.8. Some smaller opening up of timber joints to the roof trusses was noted at ceiling level, photo 5.
- 4.9. This would suggest some structural defects may be present to the timber roof trusses, such as splitting, opening of joints, rotten timber or movement of the roof associated with the movement of the front wall, or both.
- 4.10. Some gaps between the timber finishes to the top of the wall internally were noted, photo 6.

## 5. Conclusions/Recommendations

- 5.1. The structural form of the original building with raised tie trusses will result in some horizontal thrusting on the support walls and given the buttressing provided by the rear extension walls this movement would appear to have happened to the front wall which is not sufficiently stiff to resist these actions.
- 5.2. The building is thought to be nearly 100 years old and would be beyond its intended design life.
- 5.3. The front wall of the building which supports the roof trusses was noted to lean outwards excessively to the point that this could cause instability and collapse of the wall.
- 5.4. The front wall supports the roof trusses and there is a risk that the bearing for the roof trusses along the front wall has been significantly reduced due to the outward lean of the wall.
- 5.5. With the defects noted above we cannot say there is no risk of collapse although we cannot predict a time frame should this occur,
- 5.6. We would agree with the recommendation to temporarily close the café from members of the public on safety grounds.
- 5.7. We would recommend some temporary propping is installed to maintain support to the roof and the front wall to make the building safe to allow for further detailed surveys to be carried out. We also understand that a temporary propping scheme to allow some use of the café area by the public would be considered by SCC, which we suggest would involve propping to each end of the roof trusses with raking props to the external front wall at each pier position.
- 5.8. To provide a more informed opinion of the structural issues we would recommend
  - A measured survey of the façade to accurately plot the position of the façade and allow a structural assessment of this lean to be carried out such as undertaking a point cloud survey.
  - Determine wall construction and thickness and foundation to front wall.
  - Providing access to allow close up inspection of the condition of the roof trusses in the ceiling space and the truss bearings, this could involve removing roof coverings locally. The CDS SCC report also refers to evidence of pigeon entry to the roof space.
  - Carry out a specialist timber and damp survey of the roof structure.
- 5.9. It is likely that a detailed structural assessment of the front wall will show it to be unsatisfactory in structural terms and require rebuilding or permanently buttressed and/ or replacement with a framed structure and require new foundations.



- 5.10. The surveys of the roof trusses and bearings could show the need for structural repairs to the roof timbers.
- 5.11. It is possible that the roof structure has also suffered from water ingress.
- 5.12. Some alteration/ adaption of the roof trusses could be required to take support off a new front elevation wall rebuilt in the original vertical position.
- 5.13. Installing new steel rod ties to each truss at eaves level could reduce future spread of the trusses
- 5.14. It is possible that the roof structure will need replacement.
- 5.15. We would anticipate that some of the movement noted is relatively long standing given the nature of the original construction, however, from a single visit we are unable to comment if some of this movement is more recent and ongoing,
- 5.16. It is possible the gaps visible to some of the timber finishes were just recently painted and not filled.

Report prepared for and on behalf of Adept Consulting Engineers Limited  
8<sup>th</sup> August 2022

## Limitations of Report

- a) Adept Consulting Engineers Ltd have prepared this report for the sole use and benefit of the client and/or his appointed agent only and no liability is accepted to any third party who may seek to rely on the whole or any part of this report. Should the client not act upon specific reasonable advice contained in the report, no responsibility is accepted for the consequences.
- b) Comments are restricted to those elements of the structure which are loadbearing and/or provide stability to the buildings, and to the external envelope. Non-structural items of interior or exterior fabric are excluded, except where deterioration or damage to such items may have caused or may in the future cause, damage to or loss of integrity of the structure.
- c) Comments are restricted to those elements of the structure which were readily available for visual inspection and exclude all items or elements which were covered in any way by, for example, fittings, fixtures, carpets, floor coverings, furniture, stored goods or plaster/finishes etc. or any items which are buried. No "opening up" of the structure or exposure of foundations took place and none of the above items were moved or disturbed.
- d) The external inspection of the roof, chimneys and rainwater goods, was made from ground floor level. It should be noted that the efficiency of rainwater goods, which may appear in good condition, can only be assessed if there is heavy rain falling during the inspection.
- e) Roof voids were not inspected.
- f) Should it be felt necessary to make a more detailed inspection and walkways or light are not available, suitable access arrangements may need to be made, the costs of which would be the responsibility of the client.
- g) Similarly, basements or under floor voids will only be inspected if adequate light and safe access are available.
- h) It is not practical to itemise every defect and minor defects which are obvious to the layman are not generally noted unless they are symptomatic of a more serious underlying structural fault.
- i) The inspection does not include any services in or to the building and the services of appropriate experts should be sought if deemed necessary.
- j) The detection and eradication of timber infestation and rising damp are specialist matters and as such are outside the scope of this report. We would, nevertheless, recommend that a firm of appropriate experts should be employed to carry out an independent survey and prepare a report.
- k) Although mention may be made in this report, we have not carried out an exhaustive survey as to whether hazardous or deleterious materials such as asbestos is used in the construction of the buildings, neither have we carried out any tests or other investigation to determine the presence or otherwise of methane gases or other noxious substances of any kind whatsoever on the site. Appropriate experts should be consulted if deemed necessary.
- l) It should be noted that further deterioration of existing defects, or the presence of any defects undetectable at the time of the inspection, cannot be ruled out.

## Appendix A Photographs



Photo 1  
Front elevation looking east



Photo 2  
Front elevation looking west



Photo 3  
Internal view to east



Photo 4  
Internal view to west



Photo 5  
Typical roof truss detail to ceiling level



Photo 6  
Opening of timber finishes attached to bowing wall, with electric cable in gap



Photo 7  
Timber cladding fixed to front wall



Photo 8  
Historic view of the café building