



**Acle Nursery
Fletcher Room
Fletcher Way
Acle**

Structural Inspection Report

DOCUMENT CONTROL

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1.0 BRIEF

- 1.1 J P Chick and Partners Limited was appointed to undertake a visual structural inspection of the nursery building on Fletcher Way following an issue with sagging of the ceiling. We were also asked to comment on the wider condition of the building and our inspection and report have therefore been limited accordingly.

2.0 DATE OF INSPECTION

- 2.1 The inspection was undertaken on 30th November 2023 in cold but dry weather.

3.0 BACKGROUND

- 3.1 The nursery building is located on Fletcher Way on the site of Acle St Edmund Primary School. The building is broadly orientated on a north south axis and is approximately 11m long x 9.5m wide. The single storey building is modular, comprising four full width elements, each approximately 2.7m wide. The ground floor, roof and ceiling are of timber construction with principal steel support beams towards the edge of each modular element at floor and roof levels. The structure is raised slightly above ground level with a wire mesh 'skirt' enclosing the void.



Photograph 1

- 3.2 Photograph 1 shows a general view of the north and west elevations of the building where the junctions between each modular element is expressed externally with a cover strip to the western wall. The site generally falls to the playing fields to the north and the ground has been banked up to the extent of the building.

4.0 OBSERVATIONS

- 4.1 The primary purpose of our investigation was to consider a very significant sag to the ceiling within the main nursery space. The southernmost module is divided to form a store, kitchen, toilet and cloakroom / foyer. The main nursery room comprises the three modules to the north of the building and the significant sag to the ceiling was positioned in the central bay towards the western side.



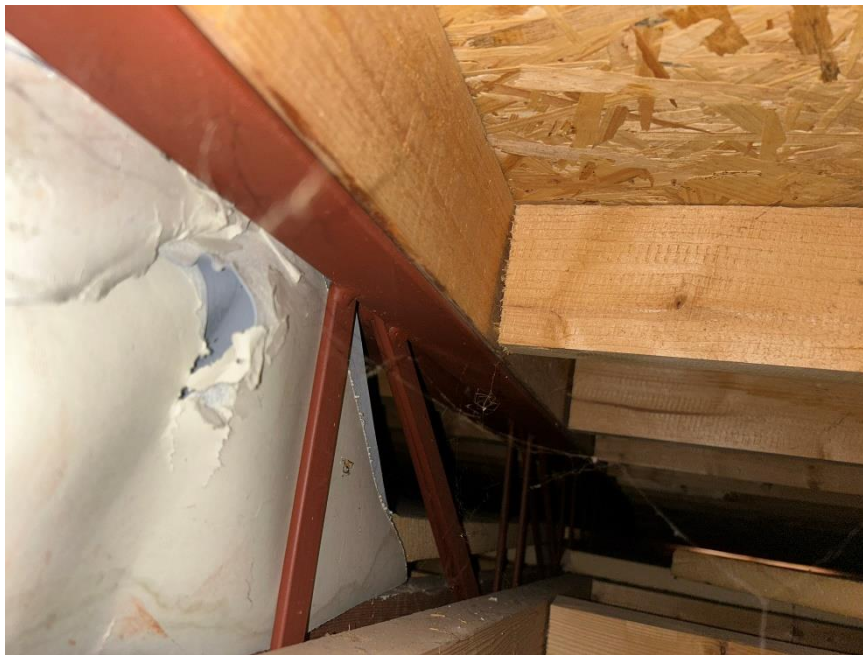
Photograph 2

- 4.2 Access to the roof construction was limited to small hatches along the western elevation, but from within the hatch closest to the damaged ceiling area, the roof construction was visible.
- 4.3 Photograph 2 shows a general view from the hatch position. The primary support across the width of the building is a pair of lightweight steel truss sections formed from flat plate, assumed to be one to the edge of each module.
- 4.4 Both roof and ceiling structure are supported on the trusses, via timber plates supported on the truss flanges. Both roof and ceiling timbers measured approximately 45mm x 97mm deep.



Photograph 3

- 4.5 There was no significant visible sagging to the roof or ceiling joists and as such, it was concluded that the issue with the sagging ceiling beneath related to inadequate fixings of the plastic-coated ceiling panelling between supports.
- 4.6 This was very crudely rectified on site by Ovamill's operative, by connecting a series of timber battens up to the ceiling joists and sandwiching the sagging ceiling between the batten and ceiling joist. (See photograph 3).
- 4.7 If the building is to remain in situ you may wish to seek a more permanent solution, which would be replacement of the ceiling panelling and improved fixings up into the ceiling joists above. The current ceiling panel cannot be reused as this has become brittle and has been damaged slightly by the repair.



Photograph 4

- 4.8 In terms of the roof construction, whilst significant deflections were not apparent in the structural elements, some gaps were noted between the ceiling joists and edge member they are connected to. Photograph 4 shows a series of gaps between the roof joists and the edge timber.
- 4.9 The timber fixings were not visible from our vantage point at the loft hatch, but it is assumed that the joints are either skew nails fixed from the opposite side or fixed into the end grain of the roof joists from the far side of the edge timber. For permanent construction we would typically expect to see either the joists run onto the bearing or a proper joist hanger at the connection. Although these appear to have performed adequately to date, these connections do not appear to be particularly robust.



Photograph 5

- 4.10 The nursery staff who are familiar with the building noted that when the building was re-carpeted recently, significant gaps were evident at the junctions of each module. In particular, between the northern and north central modules below the carpeted section. There was also a downward slope to the floor present in the northernmost section.
- 4.11 A limited inspection of the ground floor construction was possible externally by looking through the steel mesh skirt around the perimeter of the building. Photograph 5 shows a general view of one of the steel skids supporting the floor joists.
- 4.12 The skids are set slightly in from the edges of the module with the joists cantilevering past to an edge timber. The joists are of adequate dimension to accommodate the modest cantilever, and as such any gap between the main modules is more likely to be attributable to minor movements between each module due to ground movement rather than inadequacy of the structural fabric.
- 4.13 Also evident in photograph 5 is the support to the steel skids, which comprises a series of adjustable feet onto pad, possibly block foundations. The extent of the foundation was not exposed as part of our inspection but is unlikely to be substantial for this lightweight temporary structure. Also of note is that the general topography of the site slopes down towards the north end of the playing field beyond. The ground has been banked up below the building so it is possible that the north end foundations have been taken onto made ground only. This may be leading to differential

settlement and potentially the gap between the north and north central modules of the building, as noted by nursery staff.

- 4.14 Intrusive investigation to ascertain the wall construction was not undertaken as part of our inspection, but it is assumed that these are also of lightweight timber frame construction, possibly with steel elements linking the steel roof and floor beams. There was no obvious signs that this assembly was not performing adequately at the time of our inspection.

5.0 LIMITATIONS

- 5.1 The structural inspection is a specialist survey, whose purpose is to enquire into the structural stability of the building.
- 5.2 The work of a structural inspection consists of a visual inspection of all accessible parts of the building, assisted by a check for abnormal distortions where practicable. Reference may be made to local geological conditions, and to records of structural damage to other houses in the vicinity.
- 5.3 The limitations of structural inspections are similar to those of most other domestic surveys. We are not permitted to dig trial holes, lift floor coverings or remove decorations. We will therefore remain unaware of hidden defects or unusual construction details. In most cases, these limitations are not important, because structural problems are usually evident on the surface (walls, ceilings, door openings) before they become severe. But it does mean that we cannot detect problems that are latent or concealed. We always recommend, regardless of the structural condition of the building, that the owners maintain cover for all insurable perils, as these are never 100% predictable.
- 5.4 Except where specifically noted otherwise, our advice is concerned solely with current structural performance, and we do not report on the condition of finishes, waterproofing, damp penetration or timbers.
- 5.5 We recommend carrying out structural maintenance as part of good housekeeping, the most important tasks being:
- Ensuring drains remain free flowing and watertight

- Ensuring vegetation does not grow uncontrolled close to the building
- Ensuring the building remains weatherproof
- Repairing or replacing deteriorated materials
- Taking professional advice on any proposed alterations or extensions

5.6 We can provide detailed advice on structural maintenance if requested. We are not able to detect the presence of asbestos materials. We can provide standard literature on the risks associated with asbestos, if requested. This report is for our client's personal use, and is confidential, non-assignable and carries no admission of liability to any third party.

6.0 CONCLUSIONS & RECOMMENDATIONS

- 6.1 As per correspondence issued to you immediately after our inspection, we do not consider that there is a significant structural fault with the roof or ceiling construction, and the sagging ceiling was attributable to inadequate fixings into the plastic-coated ceiling board which has sagged over time. This was addressed by Ovamill's contractor during our inspection by fixing up battens to the underside of the ceiling screwed into the timber joists above. We have undertaken a basic check on screw capacities and were satisfied that the embedment into the ceiling joists is sufficient to hold the ceiling in situ.
- 6.2 If the building is to remain in situ over a longer period you may wish to seek a more permanent and aesthetically pleasing repair, which should incorporate a new ceiling panel and more frequent fixings up to the existing ceiling structure.
- 6.3 It is possible that other ceiling panels are also poorly connected to the structure over and it may be prudent to have a contractor attend and address this to mitigate the need for reactive works should a similar defect become apparent at a later date.
- 6.4 In terms of the building's longevity, we do recognise that it is obviously a temporary structure, which we understand was constructed in 2000 / 2001. We have only been able to inspect limited areas of the building from small loft hatches and below the welded mesh skirt. In those areas however, the structural timber appears to be in reasonably good condition and whilst the roof level connections, between the common joists and the edge members supported on the trusses does not appear to be particularly robust, it is evidently performing adequately currently.

- 6.5 In respect of the gap between the north and north central bays and the slope to the floor construction in the north bay, we consider that this is likely attributable to inadequate foundations, potentially into made ground. At present this is not significantly affecting the building's use and because of the building fabric, significant cracking is not evident either internally or externally, as would likely have manifested with a masonry building. We cannot rule out the possibility that further movement occurs at this end of the building, particularly in light of the unknown nature of the foundations and subsoils.
- 6.6 When we discussed plans for the building, it was indicated to us that its replacement within the next couple of years was proposed and based upon our inspection, there was no obvious significant or imminent risk that requires the building's replacement to be brought forward.