STRUCTURAL REPORT

EVENT
ENGINEERS

MJC 4049
Roof Structure Assessment
The Pavillion,
Meadowcroft Community Centre
Addison Crescent, Swindon,
SN27JX

Revision	Date	Changes
01	18.12.24	Initial Issue
02	19.12.24	Plan view added

1. Structural Inspection Report

Site : The Pavillion, Meadowcroft Community Centre, Addison Crescent, Swindon, SN2 7JX

Client : Edmont Ltd

Date : 9th December 2024

2. Brief

2.1 JMS were instructed by Mr Lee Hargreaves, Edmont Ltd on 9th December 2024 to assess specific areas of the existing roof/s of the property at the above Site to determine if proposed PV panels can be installed.

2.2 A non-intrusive visual inspection of the property was carried out by Mr. Vasant Samudre on the 9th December 2024. Our inspection is limited to the roof structure and not to any other structural elements or building defects found at the site.

2.3 This report is issued subject to our standard limitations of inspection, see Appendix 'A'.

3. Context and Background

3.1 It has been advised from the Client that the standard solar PV panel modules that will be installed however, the type, specifications and weight of the PV panels were not supplied. Therefore, we have presumed for the roof assessment “Hi-Mo 6 Explorer (lr5-54htb) – 415-435M for which the weights will be circa 15-20 kg/m^2. On pitched roofs, these units will be fixed to the structure behind finishes by specialist.

3.2 The following site plan of the roof layout.

3.3 Upon inspection it is evident that the areas proposed for installation extends over the main building. The PV panels proposed to the original main pitched roof of the main building.

4. Observations

4.1 For clarity of discussion each roof type has been detailed separately within this report; please refer to Appendix C for photographic schedule for illustration.

4.2 **Roof type 1 – Roof over the main building – Pitched roof**

The roof structure is formed using standard fink roof trusses as the timber frame with roof space and suspended ceiling. The existing roof structure was noted to be in good condition.

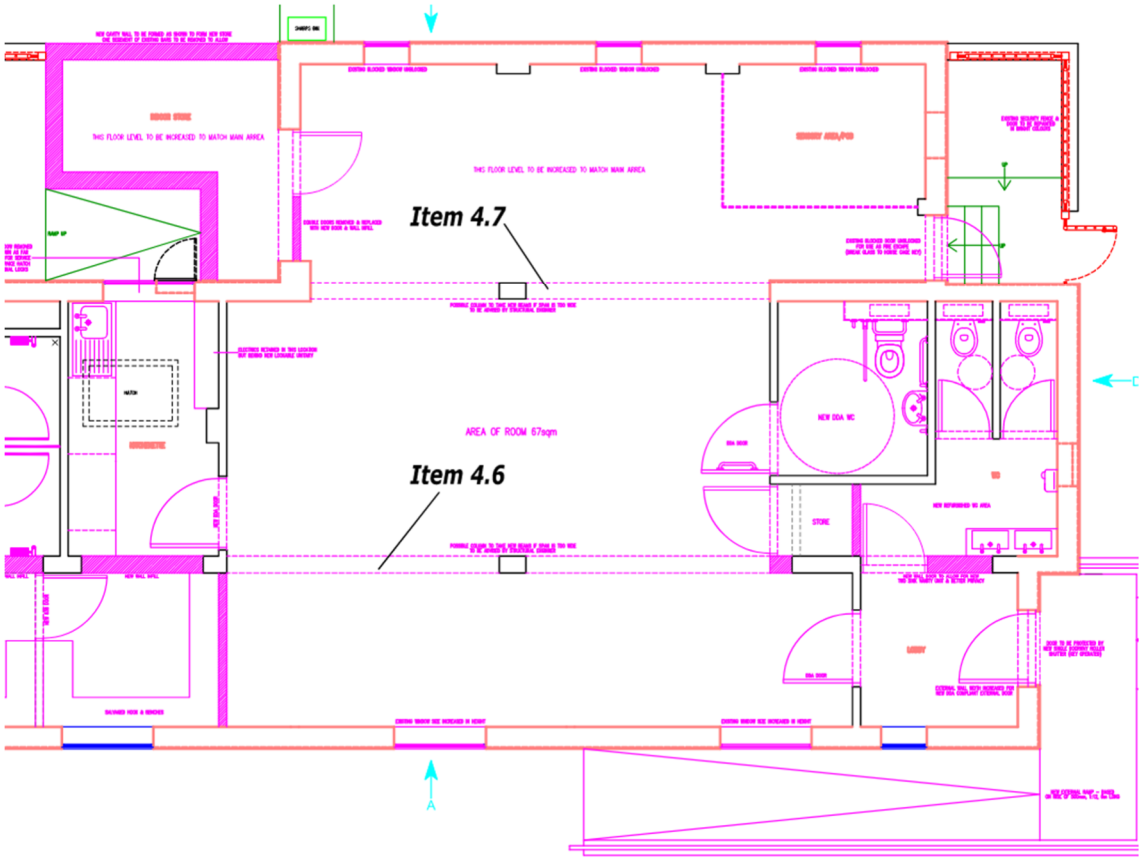
4.3 Typically, 35x145mm soft wood timber trusses at 1080mm centres span between walls supporting, lightweight slate or slate effect tiles over battens. It is also likely that this design will have allowed for PV loading above typical roof-imposed loads.

4.4 The roof structure is formed using standard fink trusses with roof space and suspended ceiling.

4.5 The suspended ceiling joists typically 50 x 260mm dp spaced at 400mm c/c centres span between the internal wall, appendix D.

4.6 All the internal wall appeared to be solid 100mm thick, supporting the ceiling joists that span form front to back. Therefore, for the new proposal, a trimmer beam or precast lintel will be required to support the opening.

4.7 The internal solid wall approximate 250mm thick located between the store and the changing room appears to be load bearing wall, supporting the roof truss. Based on the proposed layout; to create opening, steel beam and column will be required to support the existing roof structure.



5. Observations

5.1 It is evident from inspection that the respective roofs proposed for PV panel installation are of similar/ comparable construction. There are no visible signs of deformation or distress that would indicate any underlying issue with their structural performance under current loading conditions.

5.2 Given the age of the construction, it is considered that the structures would likely have been designed in accordance with BS5950 (or EC3) for the steelwork and BS5268 (or EC5) or similar code of practice, using standard loading (dead/imposed/wind) derived from BS6248 and BS6399 (or EC1). Consequently, it is expected that each structure would have been designed for a minimum imposed loading of 0.60kN/m^2

5.3 The purpose of designing structures (such as this) for a minimum imposed roof load, is not only to accommodate for snow/ wind but also make an allowance for maintenance/ cleaning. In reality, this rarely occurs and in practice would not occur at the same time as a maximum snow loading is applied. An assessment of the site-specific snow load has therefore been undertaken to establish a more accurate 'design' snow load for the site; see paragraph 5.4.

5.4 A review of site-specific snow loading is detailed below in accordance with EC1

The site is located within zone two as such has a characteristic snow load (S_k) = 0.40kN/m^2.

Based on a 30-degree pitch (worst case), μ_1 = 0.80

Exposure coefficient (C_e) = 1.0

Thermal Coefficient (C_t) = 1.0
Roof Snow Load, S = 0.8 x 1.0 x 1.0 x 0.40kN/m^2 = 0.32kN/m^2

5.5 Based on the above, it is evident that the roof structures, on the balance of probabilities, have a residual or additional capacity of approximately 0.15 to 0.20kN/m^2 or 20kg/m^2, which is not currently utilized. It is proposed to install PV panels with an anticipated unit weight of circa 10-11kg/m^2 (presumed) which is well within the available capacity of the structures original design.

5.6 It is therefore considered that the highlighted roof structures will be able to adequately support the additional load associated with the PV panel installation without the need for structural strengthening, albeit with the following provisors.

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5.8 The client is required to confirm the proposed PV panel layout, specification and loading to JMS engineers for reassessment and confirmation.

5.9 MJC Engineers did not design the proposed steelwork, therefore, further appointment will be required for its design.

5.10 I trust that the above is clear and understandable, should you have any further queries please do not hesitate in contacting the undersigned.

Yours sincerely For and on behalf of JMS Engineers Ltd

V.Samudre BEng(Hons) M.Sc

6. Appendices

APPENDIX 'A'

6.1 During our inspection of the premises as presently existing, which was carried out in a single visit, we shall check all visible exposed and accessible elements of construction in order to identify defects and shortcomings which are likely to adversely affect the use of the property or give rise to expenditure in the foreseeable future. We shall consider the condition and durability of the building fabric in relation to the type and age of the property, the need for repairs or special maintenance and, where appropriate, comment on the suitability of the structure for its proposed use.

6.2 We shall, where possible, lift loose laid floor coverings and inspect cellars and roof voids where appropriate, but we shall not empty the contents of any fitted cupboards, move heavy furniture or lift carpets or floorboards and our report specifically excludes all covered, and unexposed or inaccessible areas and buried elements of construction such as foundations and built-in steels and timbers. Apart from any balconies and roofs to which external access may be available, our external inspection will be carried out from ground level. Unless requested otherwise the main building shall be the form of this report.

In accordance with our professional indemnity insurance cover we must state that "we have not inspected woodwork or other parts of the structure which are covered unexposed or inaccessible and we are therefore, unable to report any such part of the property is free from defect."

6.3 We will not arrange for exposure works to be carried out to the superstructure or below ground, or carry out tests for high alumina cement concrete, calcium chloride, asbestos or the use of woodwool slabs as permanent shuttering, but where appropriate, will seek further instructions for these to be carried out for an additional charge.

6.4 With regard to service installations, incoming mains, waste and drains, we shall report on any matters that come to light during the course of our inspection as requiring further investigation by specialists, but we shall not arrange for tests to be carried out unless specifically instructed.

6.5 Although where appropriate, we will be happy to examine any lease or title documents, planning or any other consents or fire certificates which are made available to us prior to our inspection, we shall assume in such cases that solicitors will be advising in detail upon these matters and that they will also check on the responsibility for the maintenance of all boundaries and rights of way and the existence of any easements or necessary rights of light, drainage etc.

6.6 We require to be informed, prior to the undertaking of any excavation or boring work, of the positions of any underground services or plant beneath the site. Whilst reasonable care will be taken during the execution of field work we cannot accept liability, either direct or consequential, for the damage to any service not clearly identified to us.

6.7 Our written report will be addressed and forwarded to the aforementioned Client. Any liability which may arise from its contents will be specifically restricted to the Client.