

DASH

Structural Engineer's Report



64 The Green

Twickenham TW2 5AG

Elstree Land Ltd

April 2024

Contents

| | | |
|----|--|----|
| | Guidance notes for Structural Engineer's Inspection of Domestic Properties | 3 |
| 1. | Introduction..... | 5 |
| 2. | Executive Summary | 6 |
| 3. | Background Information..... | 8 |
| 4. | Site Observations..... | 9 |
| | 4.1 Corner House (Main Building) | 9 |
| | 4.2 Two-Storey Extension Along May Road..... | 11 |
| | 4.3 Single Story Extension Along Car Park | 12 |
| | 4.4 Workshop and Garage..... | 18 |
| 5. | Conclusions and Recommendations..... | 30 |
| 6. | Photo Record | 31 |

Annex:

Demolition Markup

| Project No | Report No | Revision | Prepared by | Checked by | Approved by | Date |
|---------------|---------------|----------|---|------------|---|-----------------|
| JF-166 | Rep.01 | A | Jonathan Fashanu BEng (Hons) MSc (S.Eng) CEng MICE | - | Jonathan Fashanu BEng (Hons) MSc (S.Eng) CEng MICE | 25/04/24 |

Guidance notes for Structural Engineer's Inspection of Domestic Properties

These notes are to be read in conjunction with any report to which they are appended.

1. Our report is confidential to our clients and Dash House Group Ltd and we do not accept responsibility to third parties to whom our report, or any part thereof, is made known, without formal agreement beforehand. Any third party to whom the report is passed should take their own steps to ensure the accuracy of its contents. Acceptance of our report will imply an acceptance and understanding of these notes.

2. A Structural Engineer's inspection of a property is intended to provide the information set out in either paragraphs (a) or (b) below. Our reports will indicate the exact nature of our brief.

(a) Specific advice on any structural problems which have been brought to the attention of the Engineer and which may be the sole basis for commissioning the report. Examples of this are fractures to walls, previous repairs etc, or

(b) To provide a general overview of the condition of the principal structural elements of the property with a view to advising whether the property is suffering from deficiencies such as subsidence, heave, landslip, structural instability or failure of structural components.

3. The inspection is not a full "Building Survey" as defined by the Royal Institution of Chartered Surveyors, this type of survey deals with many of the non-structural aspects of property condition. Other than general comments, the inspection has not included the testing of any services to the property. Neither will it consider the presence of any hazardous or deleterious materials such as asbestos nor any invasive vegetation such as Japanese knotweed etc.

4. Inspections can only be made of those areas which are freely accessible. Unless arrangements have been made beforehand no inspection can be made of foundations or areas buried beneath the structure or behind cladding, neither can any comment be made upon areas that are obscured by fitted carpets or fixed coverings. In the event that such further inspection is advisable then this will be referred to in the report. However, there is always the possibility that there are hidden defects which cannot reasonably be established from a standard Structural Engineer's inspection.

5. Our report is based on a non-intrusive visual investigation of the property.

6. The report should not be construed as an implied warranty in relation to the structure. JF Project Consulting will not be liable to any third parties for any loss, consequential or otherwise, as a result of information given in the report.

7. Clients should always obtain legal advice on matters involving the sale or purchase of property, our reports do not address legal issues.

8. It must be remembered that the condition of any property is a constantly changing variable, with the passage of time new defects can arise and existing ones worsen. The report should only be taken as a record of the condition of the property at the time of the inspection.

9. As a general rule, it is recommended that a re-inspection is undertaken every two years, in this way the early warning signs of any recurrence of a problem or the onset of new problems can be given. Advice given as a result should in general terms lead to an overall cost saving providing the remedial works or maintenance items recommended are carried out.
10. All material and labour costs noted in this report are approximations and are provided for guidance only. Quotes should be secured from professional tradesmen should a greater degree of accuracy be required.
11. Our quotation fee is for attending site, inspection of property under the conditions as set out above, consideration of findings and reporting thereon. This fee is based on the initial instruction received. Any further involvement required if the property is found to be of a more complex nature, additional site visits and further correspondence, will be charged at our standard hourly rate, which is currently £150.00 plus VAT.
12. All rates quoted are exclusive of VAT.
13. The financial liability Dash House Group under the terms of these conditions is limited to losses only incurred to the value of the Professional Indemnity Insurance available and in force at the time of this report.
14. The client shall pay the fees in full without deduction by way of set off, counterclaim, discount, abatement, retention or otherwise.

1. Introduction

1.1 On the 5th April 2024, Jonathan Fashanu CEng MICE CEPH FRSA visited 64 The Green, Twickenham TW2 5AG to carry out a visual inspection of the property at 11:30 AM.

1.2 This site inspection and corresponding report were requested by Daniel Bradbury, Elstree Land Ltd who was present during the inspection.

1.3 The purpose of the visit was to undertake a Structural Engineers Inspection of the property with regard to the current structural integrity of the building, and to understand if the existing structure is fit for retention with regards to the proposed building.

1.4 Following the initial site visit the following information was provided for review:

Asbestos Management Survey

Southern Asbestos Solutions

Ref: AS-23-11639-RE

Date: 18th December 2023

1.5 A comparison of previous reports is beyond the scope of this report.

1.6 The property was not occupied at the time of the visit and furnished.

1.7 All references to the left and right are taken looking towards the front elevation of the property from the Green, unless otherwise stated.

1.8 This report is prepared for the benefit of Elstree Land. It should not be relied upon by any other party without the written consent of Dash House Group Ltd.

2. Executive Summary

Please read our guidance notes for Structural Engineer's Inspection of Domestic Properties in line with our executive summary.

2.1 The original corner building seems to be in satisfactory structural condition. There were no large cracks, floor variations or visible movement that was observed on the visual inspection. The roof seemed to dip slightly and will need to be investigated with further detail to ensure the integrity of the roof. The newer extensions and additions to the original building along the street also seemed to be in satisfactory structural condition.

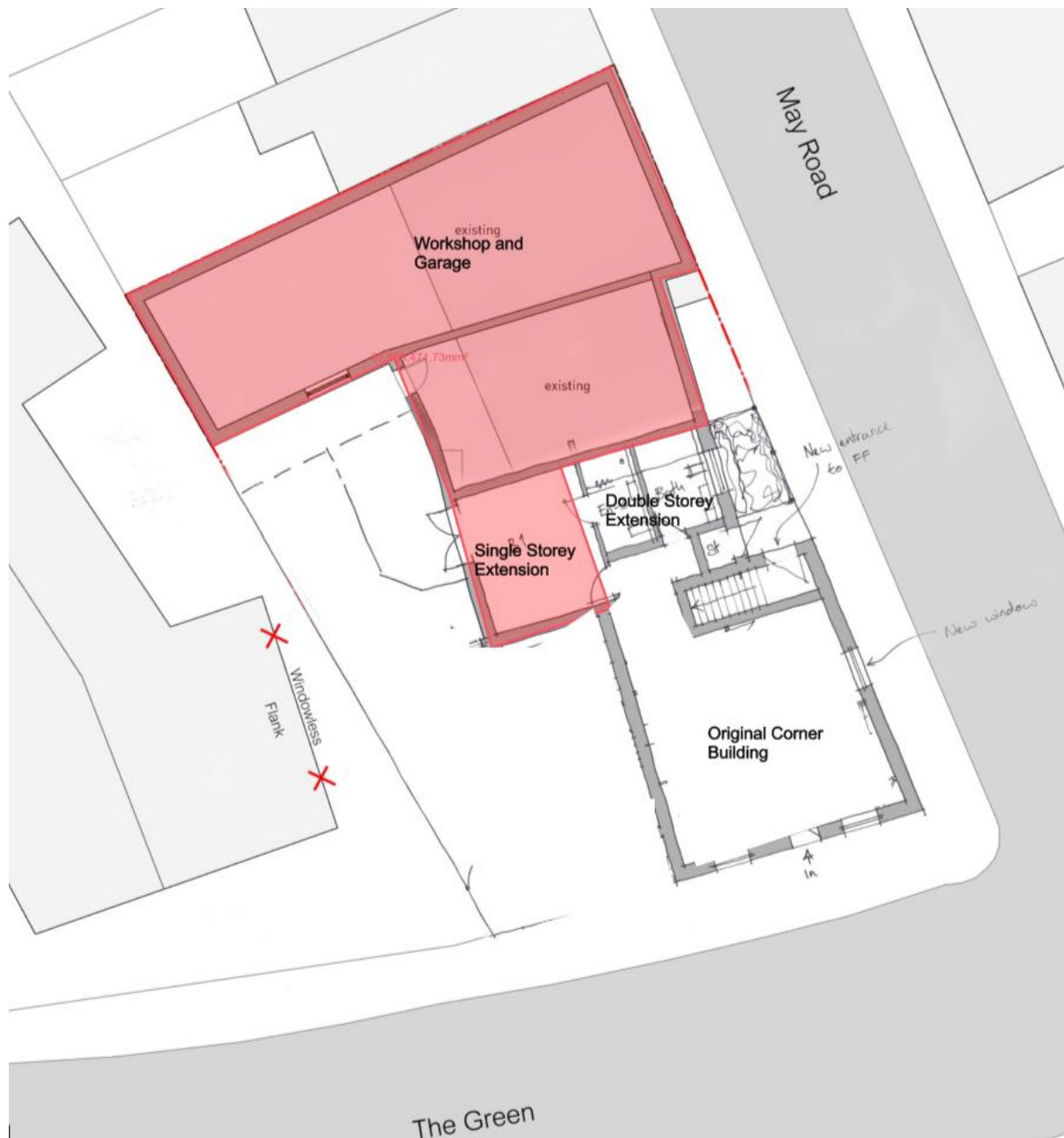


Figure 1 Extent of proposed demolition shown in red

2.2 The existing structure of the side extension next to the carpark and the workshop are not in satisfactory structural condition and it would be safer and more efficient to demolish and re-build them. The roof members are failing, masonry walls out of alignment, floors and foundations are not fit for purpose and are inadequate for the new loads of the proposed scheme. There has also been asbestos found in many areas of the existing building which would need to be safely removed and taken away from the building.

2.3 Our visual inspection has highlighted a few areas of concern for the property. The most significant are the single storey extension and the dilapidated workshops and garages to the rear. The workshops appear to be abandoned and left in disuse. The masonry walls are failing and not fit for purpose, the floors are cracked and need to be replaced and the roofs contain asbestos and are not of sound construction. The most significant crack is located at the side of the building towards the west elevation. This may constitute as Category 3 ((BRE Digest 251) damage and can be taken to represent 'serviceability' damage, their assessment is due to different causes until further investigation, and they have been discounted. Most of the cracks internally and externally can be easily filled and external repointing may be required to ensure weather-tightness.

2.4 There is evidence to suggest that there is possible movement of the structure. This could be mainly due to the multiple defects around the construction and the drainage system. Much of the external fabric of the single storey extension and workshop is compromised and is allowing damp and moisture through. There are cracks, floor and roof undulations. It is also unclear where the rainwater and surface water drainage is discharged to. There is also evidence to suggest that the trees may be affecting part of the foundations and need further investigation.

2.5 Apart from the original corner building, the other areas of the property are not fit for structural use and should be demolished and re-built with current regulations for a safe and compliant building.

2.6 There is a markup in the Annex which shows the extent of the proposed demolition. These areas can be rebuilt like for like in a sound construction compliant with current building regulations.

3. Background Information

3.1 64 The Green, Twickenham TW2 5AG is an early 19th century corner house with two bay windows to The Green. The roof is hipped with end stacks. The ground floor has been converted into commercial space while there is a residential flat above. There is a car park to the west.

3.2 There has been a two storey extension that was added at a later date to the original building with the roof integrated to the main roof. There is also a single storey extension next to the car park.

3.3 There is a dilapidated set of workshops and garages with a mezzanine to the rear of the property.

3.4 The external masonry walls of the corner house are of solid (assumed 260mm) brickwork construction that have been painted. The internal walls to the property are solid brick and timber stud partition. The upper floor has been refurbished relatively recently.

3.5 The main extensions to the rear are also of solid wall construction similar to the corner house. The single storey extension has a wall tie supporting it along with infills of concrete blockwork. There are missing bricks along the wall make up.

3.6 The walls of the workshops and garages are an ad hoc mix of masonry brickwork and blockwork at various junctions and intersections which seem to be added at different points of time to the property.

3.7 The ground floor of the corner building and the extensions are a mix of ground bearing slabs and suspended timber floors. The first floor is of suspended timber construction. The ground floor along the workshops are ground bearing concrete slabs.

3.8 The roof of the main property is covered with plain clay tiles on a pitched timber frame. The hip projections to the front and rear are clad with plain tiles as well. The single storey rear extension and storm porch roof are plain clay tiles on a pitched timber frame.

3.9 The access to the front of property is surfaced with concrete slabs. The carpark is filled with gravel with concrete towards the rear of the property.

3.10 No items of furniture were moved, and no intrusive investigation was undertaken. External inspection took place from ground level without the use of scaffolding or ladders.

4. Site Observations

4.1 Corner House (Main Building)

4.1 External examination of the front and side elevations shows no significant signs of structural concern (see photo record). The elevations appeared to be plumb with no signs of bowing which suggests that there may be adequate restraint between the walls and floors.



4.2 The front elevation and side elevation requires aesthetic works including re-pointing and decoration but nothing major. The peeling paintwork could be a result of moisture and damp issues but a damp specialist would be required to provide a report to that effect.

4.3 The pitched roof to the main house shows signs of undulation and missing tiles. The condition of the rafters could not be inspected due to the underside of roof completely covered by flat ceiling boards viewed from inside.



4.4 There is a visible join along the main building and the extension that was added later. The roofs have also been integrated with the main roof. The wall along the side elevation does not show any significant concerns as well.

4.2 Two-Storey Extension Along May Road



4.5 The two storey extension along May Road also does not raise any significant structural concerns apart from the roof. There seems to be issues of moisture around that elevation which could be due to condensation from internal insulation but a damp specialist will be able to provide more information.

4.6 There are also larger undulations along the roof tiles which would need to be explored. The rafters would need to be checked to see if they are fit for purpose or need replacing.



4.8 A newer extension has been added further along the elevation with a new roof. This roof does not seem to have any structural concerns as well as the masonry structure. The DPC was not evident along the external wall.

4.9 Further along we come to the workshops and garages. The first elevation is set in and appears to be supported by a concrete buttress which indicates structural movement along this wall. There were no cracks present but the wall has been newly decorated. The roof also appears satisfactory from this elevation. The construction has changed to a cavity wall construction with external brickwork and internal blockwork masonry.

4.3 Single Story Extension Along Car Park

4.10 The single storey extension along the car park is of solid wall construction, however, this is where there are structural concerns with the building. The walls highlight structural movement, the most evident sign being the steel tie passing through the building to hold the wall in place. Bricks have come loose and fallen away from the construction and areas have been in-filled with concrete blocks. The mortar has come loose towards the bottom and sides of the construction and moisture has entered which is evident by the growth of plants along the wall. No DPC present in the construction.

4.11 The roof also appears to be undulating and dipping which highlight structural concern with the timber roof members. This was not evident internally due to the ceiling covering but an intrusive investigation would be required to provide advice on the structural integrity of the roof. The wall plates appear to be rotting and coming loose and would need to be addressed.









4.12 The gutters and drains have been blocked for a considerable period and there is vegetation growing in and around the structure. This can cause structural movement and have may an impact on the foundations of the property. The vegetation should be cleared away, the drains unblocked and a CCTV carried out to ensure that there are no cracks within the drainage system.



4.13 The structural concerns with the single storey extension are significant and would require the masonry walls and timber roof structure to be re-built. The foundations do appear to be sufficient to meet the current building regulations requirement and should be investigated. It is our opinion that there is no merit in retaining this structure as it would need significant remediation.

4.4 Workshop and Garage



4.14 The workshop and garage area appear to be run down and dilapidated. The construction seems to be a mix of masonry brickwork and blockwork. There is a large crack coming down the west façade which seem to indicate structural movement. Further investigation is required to understand the cause of the movement.



4.15 Similar to the extension façade, there are issues with moisture and damp. This is evident by the vegetation growing within the structure. The vegetation must be cleared out and the render stripped back to understand the condition of the brickwork. There are more cracks along the wall but these seem to be consistent with thermal and moisture movement.



4.16 The wall is of masonry blockwork construction but there are issues with the quality and workmanship of the blockwork and the mortar. Significant work will need to be done to ensure that it is suitable for the proposed building. There is also damp and mould which may affect the structural integrity of the blocks and these will need to be stripped back and checked.



4.17 The timber along the existing roof structure needs replacing as well as the cement roof sheets which have been flagged to contain asbestos and are a hazard. Therefore, it would be recommended to replace the full extent of the roof of the workshop and garage.



4.18 The roof has been additionally supported in several areas but without adequate wall plates which would need to be added to them. The ah hoc placement of roof supporting members would not be fit for purpose and would need to be altered or re-designed and placed appropriately within the roof space.



4.19 While the roof would need to be replaced, the floor too does not appear to have been built with sound construction. There is a concrete slab which is cracked in several places that appears to have moved. The floor look damaged and appear to have had some chemical reactions from interactions with different materials. A trail pit will have to be carried out to determine the suitability of the floor. The floor would be best demolished and re-laid to maintain the current building regulations.



4.20 The makeshift mezzanine layer of the workshop appears to have been built without a consideration for modern load requirements. While the timbers are relatively newer than most of the roof structure, they are smaller in size and would not be compliant for a residential floor due to strength and vibration.



4.21 The front of the workshop along May Road appears cleaner than the back of the site but the concrete slab on the floor needs to be investigated for its structural integrity. There are cracks and depressions which highlight movement and it would need to be investigated, reduced in level and re-cast as a residential structural floor.



4.22 As we have seen the roof timbers are not fit for purpose and would need to be replaced. The connections to the masonry are poor and there is moisture and damp that has penetrated into the building.



4.23 The steel structures supporting the openings are corroded and full of rust. While they may be able to be salvaged and restored, testing must be done to ensure that they can support the loads intended. The padstones also do not seem to be compliant and must be cast properly. The condition of the masonry pier would need to be assessed with the missing bricks and damaged bricks.



4.24 Highlighting the poor condition of the floor and the roof. There is a new masonry wall in blockwork that has been constructed. It may be supporting a wall that is failing and that should be investigated.



4.25 The view of the makeshift roofs from the top are also of structural concern. They appear to be undulating and sinking in several areas. The mechanisms to keep moisture and damp out are failing. They are full of debris and many of the roofing materials contain asbestos which need to be removed. It would be our recommendation that the entire roof is demolished and replaced.

5. Conclusions and Recommendations

5.1 Our visual inspection has highlighted a few areas of concern for the property. The most significant are the single storey extension and the dilapidated workshops and garages to the rear. The workshops appear to be abandoned and left in disuse. The masonry walls are failing and not fit for purpose, the floors are cracked and need to be replaced and the roofs contain asbestos and are not of sound construction. The most significant crack is located at the side of the building towards the west elevation. This may constitute as Category 3 ((BRE Digest 251) damage and can be taken to represent 'serviceability' damage, their assessment is due to different causes until further investigation, and they have been discounted. Most of the cracks internally and externally can be easily filled and external repointing may be required to ensure weather-tightness.

5.2 There is evidence to suggest that there is possible movement of the structure. This could be mainly due to the multiple defects around the construction and the drainage system. Much of the external fabric of the single storey extension and workshop is compromised and is allowing damp and moisture through. There are cracks, floor and roof undulations. It is also unclear where the rainwater and surface water drainage is discharged to. There is also evidence to suggest that the trees may be affecting part of the foundations and need further investigation.

5.3 Typically, we will recommend movement monitoring to ascertain if the cracking is progressive and to further understand the type of movement that the structure is undergoing. However, due to the client taking on refurbishment works on planning permission, a further intrusive structural and geotechnical investigation can take place prior to any construction to rule out any further concerns.

5.4 It would be recommended for a timber specialist to check the condition of any timber structures that require keeping. Any defective timber should be replaced (like for like). A damp or water proofing specialist should advise on any matters relating to moisture or damp that have been raised in this report.

5.5 The various minor internal hairline cracks throughout the property are consistent with thermal shrinkage and are not of structural significance. Cosmetic repairs should be undertaken as part of the normal maintenance and redecoration regime once movement has been arrested.

5.6 Due to the significant structural concerns identified among many of the elements of the single storey extension and the dilapidated workshop and garage spaces, we highly recommend demolishing parts of the structure and rebuilding them in sound construction to current building regulations. This would not only create a more efficient use of materials but allow for a more energy efficient building in line with modern standards.

6. Photo Record









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