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STRUCTURAL STATEMENT

STANDEN HOUSE
CHUTE STANDEN, WILTSHIRE SP11 9EE

22114-SYM-XX-XX-RPT-S-0001 REV A

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REVISION HISTORY

Revision	Description	Date	By	Checked
P1	First draft	07.07.2023	SB	VP
P2	Second draft	12.07.2023	SB	VP
A	First Issue	21.07.2023	SB	VP

1.0 Introduction

1.1 Symmetrys have been appointed as structural engineers for the proposed works at Standen House, Chute Standen, Wiltshire, SP11 9EE . Our brief is to minimise the extent of intervention whilst maintaining the structural integrity and minimising disturbance to the existing fabric of the building.

1.2 A walk over of the site was carried out by Simone Boncio BSc MSc, Senior Structural Engineer from Symmetrys, and comprised a superficial visual examination of the exterior and interior of the property, excluding concealed areas within the roof space. External inspections were carried out from ground level, and no scaffolding was used. Due to the height and design of the roof, only a limited inspection was achievable of these areas.

1.3 This report is commissioned for the benefit of the Client only, and is confidential to the Client and his professional advisers. It should not be reproduced, in whole or in part, nor relied upon by any other party without the agreement in writing of Symmetrys Limited.

1.4 While Standen House comprises a number of outbuilding located within the property boundary, this report focuses on the main building and adjacent coach house.

1.5 At the time of the inspection, the property was furnished and maintained by the housekeeping team.

2.0 Description of the property

2.1 Standen House is a country mansion built from 18th to mid-19th century, located in the village of Chute Standen in east Wiltshire. The building is Grade II listed since 1952.

2.2 The external walls of the main building and adjacent coach house are constructed in English cross-bonded clay bricks on lime mortar on all elevations extept on the north elevation of the main building, where the wall consists of a combination of clay and stone units on lime mortar.

2.3 At the time of the inspection, no intrusive works were carried out. Exposed oak beams were visible in the entrance hall at ground floor level. Based on historic drawings and the age of the property, all floors can be assumed of timber construction.

2.4 All stairs are of timber construction.

2.5 The roof of the main property consists of pitched roofs supporting tiles. Based on historic drawings and the age of the property, the roof structure can be assumed of timber construction.

2.6 The geological survey map of the area indicates that the underlying subsoil is Lewes Nodular Chalk Formation.

3.0 Recent history of the property

3.1 Based on the information provided by Heritage Consultants, Worlledge Associates, the house underwent various alteration works over the last centuries.

3.2 Construction works carried out between 1879 and 1899 resulted in the main building being extended to include a north-west wing, and the coach house. While the north-west extension and the coach house have been retained since their construction, additions to the north of the building between the north-west wing and the coach house built in the same period were consequently demolished during the last century.

4.0 Structural defects

4.1 It is clear that the structure of the building has been locally altered in the past without the proper consideration of the impact these alterations may have on the structural integrity of the building, as well as the serviceability.

4.2 Exposed structure is visible at ground floor level in the reception room. The structural elements consist of timber columns supporting timber beams. Splitting is visible in the timber columns, while sagging and splitting is visible in a number of timber beams at ceiling level. According to the drawings from Frank T. Verity dated 1897, the reception room was then divided in three separate rooms. These walls have since been removed. Excessive loading as well as moisture and drying conditions are likely to be concurring reasons of the occurred damage.

4.3 At ground floor level, the wall that abuts the kitchen bay window appears not bonded to the bay structure. Equally, no movement joint between the walls is visible. This is likely due to poor workmanship during the construction of the wall, which is a later addition to the building.

5.0 Remedial strategy

5.1 To maintain the structural integrity of Standen House, the following measures are recommended.

5.2 The timber columns and timber beams, visible at ground floor level in the reception room, should be surveyed to confirm the nature of the defect and to ascertain the residual strength of the structural elements in the long term. Should the structural elements require intervention, like-for-like replacement or structural stenghtening using scarf joints or steel plate/rods are recommended to minimise disturbance to the existing fabric of the building while reinstating the structural integrity.

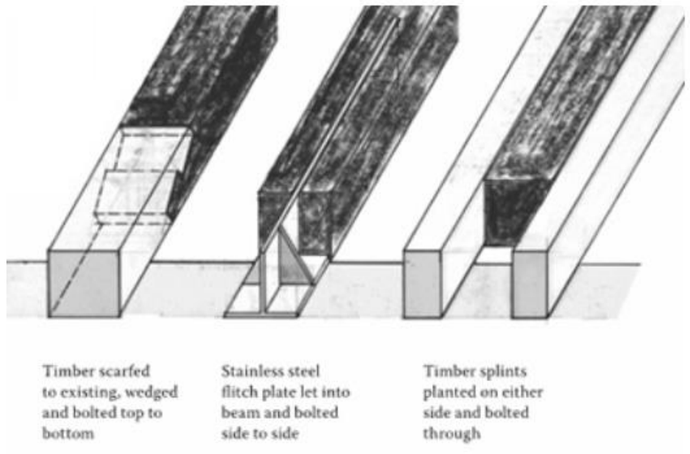

Figure 1. Typical solutions for repair of damaged timber beams in historic buildings.

5.3 At ground floor level, the south side wall of the rear hall might experience cracking due to differential movements as a result of poor connection between the wall and the main building. The wall is proposed to be demolished, therefore no remediation work is required.

6.0 Structural works

6.1 The area at north side of the coach house is proposed to be demolished. This was heavily altered in the past, with the loss of the entire first floor structure.

6.2 At ground floor level, the wall that abuts the kitchen bay window is proposed to be demolished. Based on historic evidence, the wall is likely to be a later addition, therefore it is not part of the original fabric.

6.3 The second floor ceiling of the coach house is proposed to be removed, The existing roof structure, which based on historic drawings consists of Queen Post Trusses, is proposed to be retained maintaining the structural integrity of the roof.

6.4 Following relocation of the staircase within the coach house, the opening will be obtained providing new timber beams trimming the new opening.

6.5 A new kitchen extension is proposed towards the north of the main building at ground floor. A steel box frame will be installed to support the existing and proposed first floor structure as well as the existing rear wall. The box frame will sit on a

concrete strip foundation. The kitchen extension walls will consist of cavity walls, supported on concrete strip foundations. New steel beams and columns will be embedded within the fabric of the new kitchen extension structure to provide loading transfer and lateral stability. Based on historic evidence, the site in the area of the proposed kitchen extension underwent extensive alteration in the past, therefore site investigations are recommended to confirm a suitable substructure solution.

7.0 Conclusions

7.1 While the proposed alterations have been conceived minimising the extent of intervention whilst maintaining the structural integrity and minimising disturbance to the existing fabric of the building, the past refurbishment works have led to the structural integrity of the building becoming compromised due to ill thought during alterations. We therefore recommend that the remedial works outlined in this report are undertaken.

APPENDIX A
PHOTOGRAPHIC SURVEY



Figure 1. Sagging and splitting visible in a number of timber structural elements in the ground floor reception room.



Figure 2. Splitting visible in a timber beam at ceiling level in the ground floor reception room.



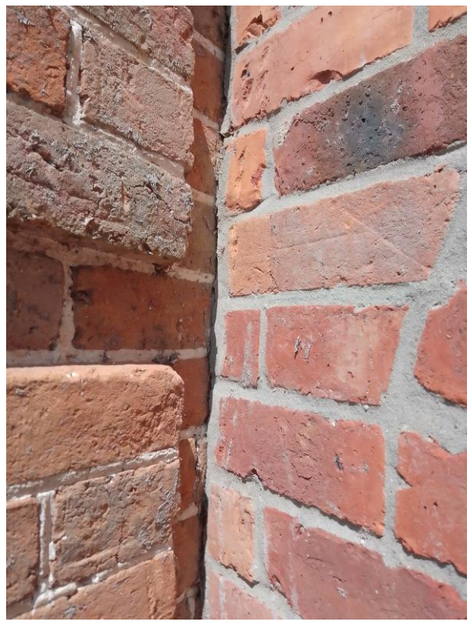

Figure 3 and 4. Wall abutting the kitchen bay window which appears not bonded to the bay wall. A later addition, the wall has been proposed to be demolished.

APPENDIX B
STRUCTURAL DRAWINGS

New window In existing opening
New staircase
New kitchen extension
New landscaping
Existing single storey garage demolished
New staircase
New wc
New garage
New utility
New entrance & boot room
New canopy
LAUNDRY ROOM
WC
STORE
CORRIDOR
GARAGE
UTILITY
STAIR
ENTRANCE / BOOT ROOM
MEDIA / GAMES / MUSIC ROOM
WC
WC
STAIRWAY
BOOT ROOM
STAIRWAY HALL
SNUG
DRAWING ROOM
RECEPTION ROOM
KITCHEN / LIVING
DINING ROOM
PORCH
New mass concrete strip foundation
New steel column
New steel column
New steel beam encased in concrete, and bearing on a new mass concrete strip foundation
New steel column
New steel column
New steel column

Main House Ground Floor Plan
Scale: 1:75

0 5 8 10 13 15 M

Notes

- Do not scale this drawing
- Preliminary scheme for planning

Legend

- Denotes new ground bearing reinforced concrete slab
- Denotes existing timber joists
- Denotes new timber joists
- Denotes new masonry wall
- Denotes new timber beam
- Denotes new steel beam
- Denotes existing beam

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Preliminary scheme for planning
Ground floor
Standen House
SB
12-07-2023

Door relocated
New staircase
New rooflight and roof dovering
New kitchen extension
Door relocated
Ceilings to be removed to add height and utalise eyelid windows
New window in existing opening
New staircase
New gym
New office

Existing ceiling to removed and existing roof structure to be exposed

Glazing by others

New roof light

Steel column below

New steel beam

Steel column below

New steel beam

Existing beams to be retained

New stair core, trimmed by new timber beams

Existing beams to be retained

Existing stair core, trimmed by new timber beams. Void to be infill with new timber joists

New steel beam

Steel column below

Steel column below

Existing beams to be re-supported on new steel frame

Steel column below

Existing beams to be re-supported on new steel frame

BEDROOM 4
BEDROOM 5
BATHROOM
LAUNDRY
VOID
HALLWAY
BATHROOM
AIRING ROOM
MASTER DRESSING ROOM
HALLWAY
STAIRWAY / LANDING
MASTER BEDROOM
MASTER BATHROOM
BATHROOM
DRESSING ROOM
HALLWAY
DRESSING ROOM
BEDROOM 3
BATHROOM
OFFICE
HALLWAY
GYM
STAIRWAY / LANDING
OFFICE
BATHROOM

Main House First Floor Plan
Scale: 1:75

0 5 8 10 13 15 M

Notes

- Do not scale this drawing
- Preliminary scheme for planning

Legend

- Denotes new ground bearing reinforced concrete slab
- Denotes existing timber joists
- Denotes new timber joists
- Denotes new masonry wall
- Denotes new timber beam
- Denotes new steel beam
- Denotes existing beam

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22114-SYM-XX-XX-SK-S-0008-REV P1
Preliminary scheme for planning
First floor
Standen House
SB
12-07-2023



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