26 Rosslyn Hill London – NW3

Structural Survey

Report Prepared For:

Simat Properties Limited 2nd Floor – Hygeia House 66 College Road Harrow HA1 1BE

Date:	04/02/2025	Prepared by:	TS	
Reference:	1031-rep-003	Checked by:		
Filename:	1031-rep-002-P1-visual survey.docx			
Revision:	P1	Status:	PRELIMINARY	
Revision Date:	04/02/2025			
Revision:				
Revision Date:				
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Contents

Introduction	5
The Site	6
Existing Building	6
Ground Conditions	6
Findings	7
Discussions – Recommendations	11
Appendices	13
Appendix 1: Plans	13
Appendix 2: Foundations – Trial Pit Findings	17
Photos	21

Introduction

At the request of Simat Properties Limited a structural engineer from Kiosque Ltd visited the property 13 January 2025 and carried out a structural survey of the property.

This structural survey has been conducted to assess the condition of the property located at No 26 Rosslyn Hill, London NW3.

The purpose of the survey is to identify any structural defects, potential issues, and necessary repairs or maintenance. Equally, this report comments on the building structural adequacy for the proposed future redevelopment of the building.

The survey is based on a visual inspection of accessible areas and does not include invasive investigations unless explicitly stated

Trial pits were dug prior to the survey to ascertain the foundations profile and depth, the findings are described in Appendix 2 of this report.

Local opening ups of floor and ceilings were carried out prior to the survey exposing floor construction and condition.

The Site

Rosslyn Hill in Hampstead connect the south end of Hampstead High Street and the north end of Haverstock Hill (A502).

No 26 Rosslyn Hill front elevation is facing southwest and is adjacent to Hampstead Police station on its North boundary. On the South side of the site a brick retaining wall separates No 26 and Nos 22-24 properties.

There is a difference in levels between the front of the site at pavement level and the rear of the garden of approximately 3.20 m.

Consequently, access to the existing house lower ground floor from pavement level is through steps and a sloping footpath.

Existing Building

The existing building is a three-storey detached property comprising accommodation on the lower ground floor, upper ground floor and first floor.

Access from the pavement at higher level to the main house lower ground front and side entrance is via a series of steps and a sloping footpath to cater with the difference in levels between the lower ground floor and pavement at the front of the site.

The structural fabric of the building is typical of buildings of this type and period. It consists of solid load bearing masonry walls supporting internal suspended timber floors. The roofs over the main house are duo pitch timber frames roof with a mono pitch roof to the rear single storey part of the house. We expect these roofs to be timber cut rafters with timber purlins and struts supported on the front and rear elevation walls and on the internal loadbearing masonry walls.

Ground Conditions

No geotechnical investigation has been carried out to date, and this will be commissioned in the next phases of the project.

However, the British Geological Survey maps and historical borehole records in the area reveal that the site geological strata consist of made ground over London Clay with the Woolwich and Reading Beds and Thanet Sand at greater depth (approximately 70.0 m below ground).

Findings

All room notation, trial pits and locations of structural defects are shown on the plans in Appendix 1 of this report

Lower Ground Floor

Foundations

- Trial pits were dug prior to the survey in rooms LG #1 and LG #2 to ascertain the depth and profile of the foundations. The findings are described in Appendix 2 of this report.
- Water was present at the bottom of trial pit 1.
- The foundations typically consist of the brick wall sitting on a concrete footing bearing on a clay sub-strata.
- Foundations to the side external wall in room LG #1 are only 800 mm deep.
- To the rear of the property the external wall foundations in the toilet area consists of the brick wall bearing directly onto the sub-soil with no concrete footing at the depth of 0.5 m. At this location, locally, a 900 mm void under the wall was noted. This void could be an underground cistern, well or chamber. No lintels or concrete beams were installed, and the external wall was bearing directly above this void with no apparent support locally.

Floors

- The floors in the front of the property consists of a suspended timber floor with the floor joists spanning front to back.
- The void under the floor joists is inadequate as being too shallow and poorly vented.
- Some joists are built into the brick wall with no damp proof course (DPC) on the vertical faces of the timber protecting the timber from water ingress.
- Some local staining and decayed of the timber subfloor and timber sole plates were noted.
- Notches have been cut in some joists to accommodate for services and pipes. These notches, sizes and locations are beyond the recommended minimum sizes, locations and limitations as per the Building Regulations Part A.
- To the rear of the property, in the lower part of the building the floors construction is ground bearing solid concrete slabs measured at 200 mm thick in one location. It is unclear whether adequate insulation and a damp proof membrane (DPM) have been installed under these floors.

<u>Walls</u>

- As the property has been unoccupied and unheated for a long period of time there is a high level of dampness within the solid brick walls especially around the bay windows. Defective paster finishes were noted throughout this floor.
- Cracks in the brick wall were noted internally in room LG #1 in the rear wall adjacent to the window. This crack is reflected externally at the same location and would indicate local movement in this area.
- Cracks in the hallway between rooms LG #1 and LG #2 adjacent to the window was noted. This crack appears at this location on the upper levels.

Ceiling & Roof Above

- Mould growth was noted to the ceiling of the rear toilets.
- Sign of dampness and water staining could be seen in the ceiling of room LG-#3.
- The mono pitch roof timber structure above room LG-#4 was locally exposed. Some timber rafters appeared to be stained and water ingress within the roof space was noted probably from failing flashings.

Ground Floor

<u>Floors</u>

- The floors are typically suspended timber floor with floor joists at 400 mm c/c.
- In room G #2 the joists are spanning from the side wall to the internal wall adjacent to the stair and are only 100 deep by 50 at a closer centre. The floor is very lively when carrying out a drop heel test. These joists sizes are usually used for ceiling joists not floor joists.
- The rear of the property joists are deeper joists typically 225 x 50 and appears to be more recent construction.
- The original joists and timber joist plate are built in the wall.
- Fungal growth was noted on the joists with sign of local decay to some of them.
- Notching and drilling for services were noted in some joists exceeding the recommended maximum depth and locations.

<u>Walls</u>

- Damp walls with defective paster finishes were noted throughout this floor.
- Cracks in the brick wall were noted internally in room G #2 adjacent to the door.
- Cracks in the hallway between rooms G #1 and G #2 adjacent to the window was noted. This crack appears at this location on the first floor.
- Cracks to the underside of the window in room G-#3 was noted. This crack appeared at the same location at first floor level above.

<u>First Floor</u>

Floors

- In room 1-#2 the joists are spanning from the side wall to the internal wall adjacent to the stair and are only 100 deep by 50 at a closer centre. The floor is very lively when carrying out a drop heel test. These joists sizes are usually used for ceiling joists not floor joists.
- Extensive fungal growth observed from the ground floor ceiling was noted on the floor joists of the rear toilets and shower room.
- Notches have been cut in some joists to accommodate for services and pipes. These notches, sizes and locations are beyond the recommended minimum sizes, locations and limitations as per the Building Regulations Part A.

<u>Walls</u>

- Damp walls with defective paster finishes were noted throughout this floor.
- Cracks in the wall along the stair was noted. This crack appears at this location on the first floor.
- Cracks in the hallway between rooms 1-#1 and 1-#2 adjacent to the window was noted. This crack appears at this location on the ground floor.
- Cracks to the underside of the window in room 1-#3 was noted. This crack appeared at the same location at first floor level above.

<u>Roof</u>

- No access to the roof space was provided. However, the roof timber was observed through an opening in the ceiling on the first-floor stair landing.
- The roof rafters appeared wet with mould growth locally.

Externally

- Vegetation growth to roof parapet, blocked gutters with debris and vegetation were present throughout.
- Decayed timber windows and failing window cills were noted.
- Moss growth to the face of walls were noted locally due to leaking rain water goods.
- Brick pointing was defective in some locations on the side and front elevations.

Discussions – Recommendations

Foundations

- The foundations to the bay windows and to the side wall appeared to be shallow and less than 1.0 m deep. This is typical of some properties of this period and type of construction where bay window foundations are shallower than the main foundations. This might lead to differential settlement and cracks appearing around bay window. Consideration for underpinning the bay window as part of the new building redevelopment shall be given.
- Cracks and movement in walls were noted in some external walls (front wall and rear wall). These cracks would indicate that differential movement has occurred at foundation level. In addition to repairs and strengthening the walls (eg installation of Helifix bars in masonry joints to bond walls junction together) local underpinning of the foundation shall be considered.
- The new redevelopment might require lowering the existing floors to achieve better headroom in the lower ground floor rooms. If a new concrete floor is installed including insulation and a screed at a lower level, the new ground bearing slab at a lower level might undermine the existing foundations (particularly in the front bay windows area where the foundations are shallow). Consequently, as part of the redevelopment of the property an allowance shall be made for underpinning some of the retained walls.
- The new development and new internal structural elements to be installed will modify the loading pattern on the existing load bearing walls. Consequently, foundations reinforcement (eg pad footing, local underpinning) might be required under load concentrations arising from new structural beams or columns installed to suit the new layouts and floors.
- A void under the foundations was noted in the rear lower ground floor toilets, with the brick wall bridging over the void with no lintel of reinforced concrete beam. This shall be investigated further. The void shall be filled with concrete and local underpinning of the foundation shall be carried out to ensure the wall above bear on sound ground.

Floors – Lower Ground Floor

- To the front of the property the floors are suspended timber floors with an inadequate vented void under (the void is too shallow with poor or nonexistent cross ventilation). Considering the high level of dampness in the house, it is highly probable that at some locations these joists have decayed with time. Equally, some joists have been extensively notched and are built in the solid brick walls with no DPC to protect them from water ingress through the solid masonry walls. Consequently, we recommend that these floors are removed and replaced with a ground bearing slab with adequate damp proof membrane (DPM) and insulation.
- To the rear of the property, the floor consists of a solid concrete slab. It is unclear at this stage whether a damp proof membrane and insulation has been installed under the slab. It is highly likely that if insulation has been installed it does not comply with the requirements of the latest Building regulations. Consequently, and in the light of a future redevelopment of the property we will recommend removing the existing ground bearing concrete flat throughout the rear of the property to enable the installation of below ground drainage, damp proof membrane and adequate insulation.

Floors – Ground Floor & First Floor

- The floor joists in room G-#2 and 1-#2 consist of 100 deep only joists and the floor appeared to be lively and bouncy under the drop heel test. These joists sizes are usually used for ceiling and shall be replaced by deeper joists to suit the span of the joists.
- A high level of dampness, fungal growth and local decay was noted. We suspect that once all ceilings and floor boards will be removed a more widespread problem of timber dampness and decay will be uncovered. Consequently, we will recommend that during the future development the timber joists are replaced throughout the floor.
- The original timber joists are built in the solid masonry wall. Ingress of water through the wall will lead to the decay of the joists ends. Consequently, any new joists shall be installed on joists hangers fixed to a timber wall plate running along the face of the brick walls. A DPC shall be installed between the new wall plate and solid brick wall to protect the timber from any water ingress.

Floors –Generally

• Floors joists shall be tied to the walls to provide lateral restraints to the walls as specified in the building regulations. This was not the case in the property at any floors. These horizontal ties consist of 30 x 5 galvanised steel straps installed at 1.20 m centres along the length of the wall, built into the wall and screwed down to the joists. The provision of ties will tie wall to floor together and improve the overall robustness and rigidity of the property.

<u>Walls</u>

- High level of dampness was noted throughout the building within the solid brick walls with defective plaster finishes. Consequently, we recommend that the plaster finishes are removed throughout the building exposing the original brick fabric.
- As part of the future development, consideration shall be given to upgrading the damp proof course (DPC) and injecting a new DPC within the walls at lower ground level to enhance the damp protection and stop any rising damp.
- Where structural cracks where observed, local stitching of the walls shall be carried out by inserting stainless steel reinforcement bars (eg Helifix bars) within the brick joints.
- Equally, allowance shall be made for inserting concrete reinforcing elbows in wall corners to provide additional tying support where movement has occurred and improve the overall lateral stability and robustness of the building.
- Externally we will recommend an overall cleaning of the walls to remove any moss growth with repointing carried out.
- Flashing, DPC to parapet coping stones shall be inspected and replaced where necessary.

<u>Roofs</u>

- We have assumed that as part of the future development the roof will be remodelled to accommodate any skylight and extension.
- Consequently, a new roof shall be installed replacing the existing decayed rafters, failing roof covering and flashings.

Appendices

Appendix 1: Plans







Appendix 2: Foundations – Trial Pit Findings







Photos



Trial Pit 2



Trial Pit 3



Void under foundation



Crack in wall adjacent to bay window



Crack adjacent to window in top landing



Crack under window in rear rooms



Crack in wall in rear room at first floor



Fungal growth in timber



Crack in external wall