

Planning Application Structural Report

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Bird Place
Henley Bridge
Henley-on-Thames
Berkshire
RG9 2LN

Date

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Project No:

25-2795

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SYNOPSIS

This Planning Application Structural Report was instructed by Holland Green on behalf of their client, Mr Adam Fawsitt, to review the current nature and structural condition of Bird Place in relation to proposed alterations, particularly to the basement. Also to note areas where structural movement has occurred on the front elevation.

Bird Place is a large 18th century, three-storey house with basement. It is Grade II Listed and located to the south of Henley Bridge. Attached to the right-hand side and infilling the space to Bird Place Cottage to the west is a two-storey service wing, Rose Cottage.

This report describes observations from a structural inspection together with a review of information provided, comments on the proposed structural alterations together with any structural issues identified and recommendations for future action as appropriate.

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This report shall be regarded as confidential to our client to whom it is addressed and their professional advisors. It is intended for the use of that party only and for the specific purposes referred to. Consequently, no responsibility whatsoever is undertaken or accepted to any third party in respect of any information or advice contained in this report.

1.0 **INTRODUCTION**

- 1.1 This report has been prepared on the instructions of Freddie Frithz of Holland Green on behalf of Mr Adam Fawsitt, the property owner, as part of a review of the proposed alterations for consideration by the Planning Authority.
- 1.2 Bird Place and the attached service wing, Rose Cottage, on its right-hand side, is a large 18th century house with accommodation over three floors together with a basement below the full area of the main house. The main house is Grade II listed.
- 1.3 The proposed alterations to the property include the reinstatement of a boathouse on the River Thames, the utilisation of the basement underneath Bird Place, the addition of a rear extension and the addition of garaging. This structural report relates solely to the proposed works to Bird Place and not the external buildings.
- 1.4 The objectives of this inspection and report on the building are to:
- Visually inspect and report on the nature and present condition of the building and its structural elements.
 - Advise on the suitability of the existing structure for the proposed development.
 - Report on any structural issues that may affect the proposed work.
- 1.5 Comments are made in this report on the condition of structural elements. The condition inspection comprised a non-intrusive visual inspection of the accessible parts of the building generally from ground level, unless specifically noted, and excludes: -
- Any assessment of the capacity of structural elements for either present or future use.
 - Plumbing, mechanical and electrical services installations.
 - Health, safety and fire matters unless these relate to the building condition.
 - Matters relating to the presence or otherwise of asbestos.
- 1.6 The inspection was carried out from ground level although a drone was used to supplement the surveys of the exterior of the building. In the inspection notes descriptions are generally as viewed from the front of the building.
- 1.7 Photographs of the inspection are included in Appendix A. Additional photographs are available.

- 1.8 This Structural Report is based on our inspection of the building to enable us to comment on the specific structural matters on which our opinion has been requested. No attempt has been made to inspect or examine other aspects of the property including the risks of asbestos or asbestos products being present, which are unrelated to the subject of this report and no warranty may be assumed or implied with regard to structural conditions not specifically referred to in this report.
- 1.9 In accordance with our standard practice, we must point out that this report is based upon our inspection of the premises and any information made available to us, both written and oral, which we have assumed to be correct.
- 1.10 The report is for the benefit of Holland Green, their client, Mr Adam Fawsitt, and their professional advisers. Cooper & Withycombe Ltd. cannot accept any liability to any third party for the whole or part of its content.

2.0 **GENERAL DESCRIPTION OF BUILDING, SURROUNDINGS AND GROUND CONDITIONS**

- 2.1 Bird Place is located on the south side of White Hill on the east approach to Henley Bridge over the adjacent River Thames.
- 2.2 The property is effectively part of a terrace of buildings with Bird Place at the east end and Bird Place Cottage at the west end, closer to the Thames, with Rose Cottage described as an infill service wing between Bird Place and Bird Place Cottage.
- 2.3 Bird Place is a Grade II Listed property (List Entry 1319073) and is described in the listing as a large brick house over two storeys with attic accommodation and a basement. Rose Cottage, the infill service wing, is noted as not being of special interest. Beyond and attached to this (but not the subject of this report) is Bird Place Cottage which is also Grade II Listed (List Entry 1154558).
- 2.4 Access to the property is via a gravel drive from White Hill. At the front of the property the ground is level but rises slightly beyond the driveway to the road frontage. There are trees on the north side of the drive providing a screen to the road. These continue down the boundary on the east side of the building.
- 2.5 From the front of the house the ground slopes gently down towards the river bank. The house is effectively part terraced into this slope.
- 2.6 At the front right-hand corner of the main house there is a mature yew tree, 8.0 metres high, located approximately 3.0 metres from the corner.
- 2.7 The main house itself is of solid brick construction set above a rendered plinth beneath hipped tiled roof with parapet wall to the front (north) and left-hand side (east) elevations together with a gable end on the right-hand elevation.
- 2.8 On the rear elevation there are two gables with a valley between them which abuts the front range to the roof.
- 2.9 Rose Cottage, the adjoining service wing, has a dual pitch roof running parallel to the front elevations.
- 2.10 With the setting of the house the ground floor to Bird Place has a finished floor level of 33.91m which is set above the general ground levels of 32.6m at the front and 32.1m at the rear. The basement under the main house is only partially set into the ground with an internal floor level of 31.95m.
- 2.11 The adjoining Rose Cottage, however, has a ground floor internal level of 32.0m next to Bird Place. This then steps up to the west to a finished floor level of 33.35m. Hence, adjacent to Bird Place, this is effectively just above ground level and matches the basement floor level.

- 2.12 Within Bird Place there are solid ground floors to the basement. At the front left, these are clay tiled. The rest of the basement has a York stone flag floor. At the rear of the basement, in the centre, there is a well. This currently has submersible pumps within it. The water level was presently measured at approximately 1.0 metre below surface.
- 2.13 Upper floors are timber. In the original main part of Bird Place these span left-to-right on to the stud walls alongside the staircase and on to beams above the ground floor. The floor in the infill section at the rear right appears to span front-to-rear.
- 2.14 Roofs are of traditional timber construction. Within the attic space there are raised skilling lines to each of the areas. Around the front and the left-hand side there is a parapet gutter behind the parapet which is viewed from the outside.
- 2.15 The predominant trees are around the front and left-hand side of the property beyond the drive and accessway, although these do approach fairly close to the rear left of the corner. Of more significance is a yew tree at the front right-hand side of Bird Place. This is very close to the corner.
- 2.16 With its location close to the River Thames, the property has a high risk of flooding but has a low risk of surface water flooding. This is reflected in the flood map which indicates that it is in Flood Zone 3. Although no specific flood level data is presently available to us for the property, the Government published information suggests that there is high risk of flooding up to 300mm depth and a medium risk of this increasing to 600mm.
- 2.17 The British Geological Survey information for the area indicates that the property is underlain by the Holywell Nodular Chalk Formation and New Pit Chalk Formation which are sedimentary chalk bedrock. Above this there are superficial deposits of alluvium comprising clay, silt and gravel.

3.0 **BUILDING CONDITION**

EXTERNAL

3.1 Refer also to the photographs in Appendix A and Sketch Drawings in Appendix B.

3.2 Front Elevation – Bird Place

See photographs P1, P5, P7, P19, P24-P27, P31, P33-P35

Queen Anne style with sash windows top and bottom and window left to the basement. There is a render course at the internal floor level set above the ground. There are stone access steps leading to the main entrance.

The central window at first floor is a false window. All windows have rubbed brick arches over the windows including brickwork below. There is a parapet wall at the head of the roof.

In relation to this elevation, the following was noted:

- a) At the left-hand end there is a render patch to the corner together with slates along the face of the lower part of this wall suggesting damp penetration which is visible internally.
- b) There is a crack extending from parapet level down the left-hand side of the window reveal increasing upwards from the lower window. This has displaced the plinth and mortar is lost around the window.
- c) The ground floor window arch has displaced outwards by about 10mm. The upper arch is also slightly displaced and there is a gap in the parapet stone.
- d) The yew tree at the front is approximately 8.0 metres tall and 3.0 metre from the corner.
- e) At the right-hand end there is clear settlement underneath the right-hand ground floor window with the windowsill dipping towards the right together with the frame. There is a crack extending from the lower level up to the window and up the left-hand reveal through the arch and continuing up through the upper window.
- f) Below this the brickwork is damp down across to the basement.
- g) At the right-hand corner there is an inclined fracture just above the plinth with the plinth dropping away.

3.3 Front Right-Hand Side Elevation to Bird Place

See photographs P6 and P29-P31

In relation to this elevation, the following was noted:

- a) This is of solid brickwork at the rear in English bond and at the front in Flemish bond. The transition appears to coincide with the crack line below the first floor window.
- b) There is virtually vertical crack extending from just about the basement window up the right-hand side of the ground floor continuing up to the sill at first floor and then above this are two parallel inclined fractures to the top window, which has moved out, and then continues to eaves level where there is displaced brickwork.
- c) There is a drainpipe at the front left of the elevation which discharges directly on to the ground.
- d) There are three steps down into the basement from ground level.

3.4 Front Elevation – Rose Cottage

See photographs P9-P10

In relation to this elevation, the following was noted:

- a) At the left-hand end there is timber framing up to first floor level with infill brickwork. This also tallies in with the window framing above. There appears to have been repair work to this.
- b) Above this there is solid Flemish bond brickwork. There is brick infill over one of the windows suggesting there use to be a doorway at the upper level.
- c) At the left end of this window there is some displacement of the brickwork over the window head.
- d) The brickwork continues to the other side of the rainwater pipe where there appears to be more modern repointed brickwork.
- e) The window head arch appears to have been re-built and there is some render around it which has fallen away.
- f) Adjacent to this there is an 'S' tie this corresponds with an 'S' tie on the rear which has been partly concealed by the modern conservatory addition.

3.5 Left-Hand Elevation

See photographs P11, P12, P36-P39

In relation to this elevation, the following was noted:

- a) The ground slopes away around the side.
- b) There is vegetation close to this elevation, particularly the bay window.
- c) At the front right-hand corner there appears to be a crack above the ground floor window, which is a false window, up to the first floor. This appears to be slightly displaced outwards.
- d) There is ivy growth on this elevation which has been killed off.
- e) The bay window is supported on corbelled piers which are assumed to be rendered brickwork.
- f) There are stone staircases leading up to the bay. This appears to have embedded steelwork as part of the structure which is corroding.

3.6 Rear Elevation

See photographs P2, P3, P13-P17, P22, P23, P40-P48

In relation to this elevation, the following was noted:

- a) The left-hand (viewed from the front) bay is a later addition. This is supported on a timber frame on two piers. The timber frame appears to have some metal reinforcement which has decayed. The condition of the timber is not known.
- b) Above this, from the corner, there is an inclined crack extending from the floor level up to the window.
- c) There are vertical cracks beneath the window reveal.
- d) Beneath the corner of this floor level there is a vertical crack extending from ground level increasing in width to approximately 3mm.
- e) The first floor bay appears to be a later addition as it is in different brickwork and there are brick headers around the top of the lower window. This has a flat roof and drainage.
- f) In the middle rear section of the wall behind the staircase there is a vertical crack to the left of the doorway. The doorway appears to be displaced slightly. This crack coincides with the wall internally and appears to increase down towards the door. The brickwork adjacent to this drops down towards the window. The window head itself appears to drop to the centre of the door and the sill is fractured.

- g) At high level there is some displacement to the arch. This is probably an explanation for the damage internally.
- h) There is a vertical joint on the valley line between the hallway and the next section.
- i) The original rear of the property at the rear of the staircase appears to be a mixture of bonds with Flemish and header bond.
- j) The gable bay extension appears to be a different brick and is generally in Flemish bond.
- k) The ground floor bay window is supported on timber brackets. Beneath this there is a new modern black painted metal beam across the window to the basement. This is 150mm deep and is in good condition.
- l) On the other side of the gable (right-hand side as viewed from the front) there is an inclined crack extending from the window on the junction through the brick arch up to the roof level. This appears to be old. There also appears to have been some re-pointing above.
- m) In the doorway to the junction between the two buildings there is lead flashing implying there used to be a roof covering here. The brickwork beneath this is slightly loose.
- n) The window above this is slightly displaced in the frame.
- o) The ground floor window opening between the doorway and the conservatory is supported on the timber frame to the window.
- p) The brick conservatory appears to be relatively modern. On the right-hand side this conceals the tie bar to the inside.
- q) Above the conservatory the window appears to be displaced in the frame. It is not certain whether these are sliding windows or whether they are badly fitted.
- r) Above the bay to the kitchen the brickwork has been re-pointed.
- s) There is a slight outstand to the corner. Beneath this there is a brick wall presumed to belong to next door. However, it is noted there is a fracture in this wall.

INTERNAL

3.7 Basement

See photographs P47, P49-P57

In relation to the basement, the following was noted:

- a) The basement is accessed directly off the adjacent cottage with one step down on to a stone flag floor.
- b) The basement appears to be well ventilated but there are areas of damp affecting the bottom six courses at least of masonry in the ante-room.
- c) The walls are generally of solid brickwork varying from 215mm to 330mm. These are 330mm walls are underneath the main staircase.
- d) There is also a small area of infill brickwork.
- e) The exposed timber joists span generally left-to-right on to the walls in the original part of the basement. These are generally 130mm x 75mm at 400mm centres. These span on to 175mm deep timbers over the walls.
- f) Most of the timber joists are exposed but, beneath the rear gable section, there is a plastered ceiling. Joists span front-to-rear after this section.
- g) The present height available is approximately 1.8 metres.
- h) There is a well in the front rear left-hand corner of the first room in from the cottage. This has a submersible pump. The water level in this is approximately 1.0 metre below the floor level.
- i) Also in this room there is an old pump on the right-hand side. It is believed this was originally used as a well to extract water.
- j) Generally the brickwork is painted white.
- k) There is a band of flint at the bottom principally of the crosswalls running front-to-rear and the external wall running front-to-rear with some stonework on the left-hand wall beneath the brickwork above. The exposed flint appeared to be slightly damp on the surface.
- l) The floor joists above have been previously painted. Some appear to have been painted with a limewash. Other parts appear to be more recently painted with a yellow paint.
- m) At the front, external ground levels appear to be approximately 600mm below the external ground level. This has not been measured accurately.
- n) The floor in the front left-hand room has a clay tile finish as opposed to the slates in the rear. This has more undulations in it than the other areas.

- o) The timbers of this appear to be in a poor condition with evidence of some frass.
- p) On the right-hand side at the front there is an access door to the front corner. This was locked.

3.8 Ground Floor

See photographs P58-P71

This has a high ceiling height. All walls, as at first floor, are generally timber panelled apart from the rear right-hand living room which has painted walls.

In relation to this, the following was noted:

- a) On the line of the crosswalls to the staircase there are downstand beams together with a further downstand beam across the staircase opening and underneath the corridor line to the front right-hand bedroom above.
- b) The solid wall above to the corridor appears to coincide with the rear of the fireplace.
- c) There are two fireplaces in this open area.
- d) The floor over the basement below appears in good condition but there is a slight slope away from the central beams that are visible below.
- e) Except at the front right-hand corner there are no obvious signs of distortion.
- f) At the front right-hand corner there is clear displacement of the corner downwards reflected in the windowsills to the adjacent windows and also cracking in the panelling.
- g) There are steps down into the adjacent Rose Cottage and the basement access.
- h) In the rear, left-hand room, there are two bay windows; one on the left-hand flank elevation and the other, which is a bow window, on the rear. At the junction between the rear bow window and the floor there was clear settlement evident between the bow window and the floor. Although this was clear this is not significant but probably related also to the cracking externally. There is also a part loss of the ceiling over the bow window.
- i) In the hallway, it was clear there had been settlement on the left-hand side to the rear hall/stair window. There is also cracking in the panelling to the right-hand side of this. This cracking coincides also with damp penetration in the room beyond.

3.9 Rear Right-Hand Room

See photograph P70

It is possible that this was a later addition to the plan area of the building. Floors span front-to-rear in this area. There is also an extended bay window at the rear. In this room part of the ceiling has been lost and there is also severe damp penetration down the left-hand side. This coincides with the valley over and the gutter and hopper at high level which appeared to be blocked.

3.10 First Floor

See photographs P71-P76

In relation to the first floor, the following was noted:

All walls, except for the rear bay window, are panelled with rectangular panelling above and below a dado rail. The internal walls running front-to-rear around the staircase appear to be timber stud construction. The walls are solid where there are fireplaces plus, in some cases, concealed by the timber boarding. Along the corridor to the cottage there is a short section of what appears to be solid wall. The floors appear to generally span left-right except for the first-floor half landing.

3.11 Rear Left Bedroom

See photographs P75 and P76

- a) The bay brickwork has a fine width crack to the right-hand side of the window reveal.
- b) Within the bay there is a straight joint between the timber to the bay and to the main floor.
- c) The floorboards width in the bay also appears to be narrower implying there may have been a change at this point. This reflects the impression that the bow window is a later addition and may have been extended upwards at some point.
- d) The floor generally appears to slope very slightly towards the rear. There is also a slight hogging in the middle.
- e) This has a recessed window on the left-hand side with shutters set into the wall.

3.12 Front Left-Hand Link and Bathroom

- a) The windows are recessed into the external wall sash boxes are set on the inside face together with shutters.
- b) There are no obvious signs of cracking or movement in this room/area.

3.13 Landing

See photographs P71 and P72

- a) The rear window appears to drop slightly towards the left-hand side both at sill level and at the head. This is reflected in cracking in the panelling on the right-hand side together with signs of damp penetration.
- b) There is also cracking on the left-hand side of the panelling.
- c) The first floor landing appears to slope slightly towards the balustrade at first floor level.

3.14 Front Bedroom – Middle

- a) This is set between the bathroom and the staircase to the upper level and has a walk-in cupboard.
- b) There is also a recessed window on the front.
- c) No other comments.

3.15 Rear Bathroom

- a) The walls in here are painted.
- b) There are vertical posts, probably as part of the panelling system to the staircase.
- c) In the rear left-hand corner there is severe damp penetration extending from ceiling level. This coincides with the damp apparent in the landing.
- d) There is a central downstand beam across this room.

3.16 Rear Right-Hand Bedroom

- a) This has painted walls.
- b) The floor perceptibly falls towards the rear left-hand side. It is carpeted.
- c) The recess window has a timber board infill beneath the window on this face.
- d) The slope on the floor appears to relate back to a hard line along the centre that lines up with the rear window.

3.17 Front Right-Hand Bedroom

See photographs P73 and P74

- a) This has two bays.
- b) The right-hand windowsill slopes downwards towards the corner.
- c) The gable wall window also slopes down towards the right-hand corner towards the yew tree externally.

- d) There is cracking in the panelling towards this corner.
- e) It appears that there is a hidden window in the centre of the room above the porch externally.
- f) There appears to be a general slope in the floor towards the front right-hand.
- g) The dado rail also appears to slope down towards the centre of the left-hand reveal of the gable window.
- h) Adjacent to this the panelling also appears to bulge slightly outwards. This may all reflect the position of the tree externally.

Rose Cottage – Internal

Note: Photographs are available but have not been included in the Report as not considered relevant to the Planning Application.

Ground Floor

3.18 General

- a) There are steps up along the wall lines within the cottage as you go from the basement at the left-hand end to the right-hand end.
- b) There appear to be solid masonry crosswalls either side of the central living room which also align with the fireplace on the right-hand side.
- c) There are two steps up to the front driveway suggesting that some of this may be slightly below ground level.

3.19 Utility Room

In relation to this room the following was noted:

This leads to a rear utility room and also a store which is in the basement area next door.

- a) The walls are painted.
- b) There is a crosswall at the bottom on the stairs from next door with a beam over.
- c) The crosswall to the lounge appears to be a mixture of flint with brickwork. The paint is peeling.

3.20 Living Room

In relation to this room the following was noted:

- a) This has white painted walls and carpeted floor.
- b) No obvious issues.

3.21 Bottom of Stairs

In relation to this room the following was noted:

- a) There are two beams across the head of the stairs. The left-hand one is an original beam with signs of previous beetle infestation although this appears to be very dry.
- b) The stairs lead to the first floor.

3.22 Kitchen

In relation to this room the following was noted:

- a) In the kitchen where the staircase opening has been formed there is a modern oak beam with timber post.
- b) There is a vinyl floor.
- c) There are two further beams across it.
- d) There is a bay at the rear.
- e) No obvious comments.

3.23 First Floor

In relation to this area the following was noted:

- a) This has a series of internal partition walls which appear to align with the collar tie to the roof structure above.
- b) There is a raised ceiling.
- c) The purlins appear to be at the top of the skelining.
- d) The corridor wall appears to be of stud but very solid suggesting this may have a brick infill.
- e) The rooms are all decorated and appear to be in reasonable condition.
- f) No obvious signs of cracking except some fine cracking around some of the lintels on the rear but these did appear to be significant.

- g) At the right-hand end the rear bedroom has a central cased beam in it which corresponds to the collar ties visible elsewhere.
- h) The first collar tie from the left-hand end has a metal tie at the end which may imply historic issues with movement.
- i) In the first bedroom on the left-hand side there is a central beam which appears to terminate before the wall. There is some cracking around this.

4.0 **STRUCTURAL REVIEW OF BUILDING CONDITION AND PROPOSALS**

- 4.1 Bird Place is a substantial masonry building. It has been subject to internal alteration, principally with the reorganisation of room spaces at ground floor and the introduction of the attic space areas, together with an infill gable wing on the rear right. In addition, there appears to have been the construction of the infill buildings forming Rose Cottage which acted as a service area for the main house.
- 4.2 The building occupies a prominent position on the area adjacent to the bank of the River Thames which flows beyond the perimeter of the grounds around the property. The ground floor to the main house is approximately 0.3-0.8 metres above ground levels at the front and the rear of the property. However, the basement is set below the external ground levels at 0.6 metres at the front and 0.15 metres at the rear. The adjoining Rose Cottage is at the same level as the basement.
- 4.3 The water levels in the well suggest that ground water levels are approximately 1.0 metre below the floor levels within the basement. This would concur with the Government data that suggests that ground water flooding is not an issue on this site
- 4.4 In relation to the proposed refurbishment of the building and further alterations, this report considers two aspects:
- a) Building condition – where cracking has been noted in the external walls and action that is necessary to alleviate this.
 - b) The feasibility of increasing available headroom within the basement.

External Walls

- 4.5 In relation to the main walls there are three areas of concern:
- a) Cracking at the front, right-hand corner - probably caused by the proximity to the yew tree.
 - b) Cracking at the front, left-hand corner – cause not yet determined.
 - c) Cracking and distortion of the rear window to the rear hallway and stairwell.

In addition, there are further areas of concern:

- 1) Potential movement to the bow window at the rear.
- 2) Corrosion to the supporting structure to the left-hand bay window at ground floor.
- 3) Water penetration at the junction between the roofs extending down the building.

4.6 Front Right-Hand Corner

The yew tree is relatively mature and is classed as a coniferous tree of moderate water demand. The risk of soil shrinkage being caused by the water demand of the tree is dependent upon the shrinkage potential of the soil. Whilst the underlying chalk has a low shrinkage potential, should the overlying superficial soils contain clays and silts, this may represent a high potential for shrinkage. It would also be sensitive to moisture movements. For the proximity of the yew tree to the corner, it is anticipated that a minimum foundation depth of 0.9 metres would be required for the low-moderate shrinkage potential of the soil.

On the front elevation, with the difference between the internal and external levels of approximately 0.6 metres, it is quite likely that the walls have relatively shallow foundations in relation to this and will be close to the foundation depth required.

From the extent of cracking apparent, it appears that there has been progressive movement at this corner. Where repairs have been carried out, cracks have re-opened. It has also impacted on the internal panelling where there has been opening up to the wall panelling in the vicinity of the corner, together with distortion to the window framing. As the timber panelling would be supported on timber framing behind the wall, this timber framing will be sensitive to any water ingress and the potential for decay.

Also, there is a rainwater gully next to the corner suggesting there may be some rainwater drainage. This may also have been affected by the yew tree.

On this basis, it would appear prudent to investigate the foundation depths together with the extent of tree roots and effect on the underground drainage. Subject to this, it would also be prudent to consider the removal of the yew tree to prevent further movement. Once this mitigation measure has been carried out, further investigation may be necessary regarding the condition of the wall panelling. Subject to this, repairs would need to be undertaken to both the external masonry and also any timber framing internally. Windows would also need to be straightened.

4.7 Front Left-Hand Corner

There is a vertical crack extending from basement level up to parapet level continuing through the windows. On the flank elevation there is indication of movement to one of the arches over the windows although the rest of the wall is not clear to observe due to recent removal of ivy.

Adjacent to this corner there are two manholes. As noted above, the underlying superficial soils would be sensitive to any water movement through them and, should there be any issues with the drainage, this may be influential in the cracking that has occurred. The drainage will need to be investigated further together with an investigation to be carried out regarding the foundation levels for the walls.

4.8 Rear Hallway and External Door to Rear

There appears to be general settlement above the rear access door into the hallway. This has affected both the masonry immediately above the door opening and also the window above up to roof level. It is also close to the area where there has been water penetration down through the building, probably from the valley gutter over.

In relation to this, further investigation will be necessary to determine the cause of the movement and appropriate rectification. It is likely that the lintel may be of timber and this would have been sensitive to moisture causing wet rot decay. The risk in relation to this is water penetration from above together also with the canopy roof over the doorway.

Opening up will be necessary to determine the cause and appropriate measures to be taken.

4.9 Other Structural Elements

The rear bow window is supported on framing at ground floor level which is supported on two brick piers. This is clearly an addition to the building and it appears there has been some settlement down of the piers and also potential corrosion of the steel strapping within the bow window.

The floor within the bow window at both ground and first floors should be opened up to review this further before measures are taken to rectify the issue.

The damp issue in the rear right-hand room extends up to the full height of the building and may be causing part of the issue to the rear hallway. From the high-level photographs taken it appears the issue may emanate from the valley gutter above and the drainage from this area. This will need to be investigated further.

For Rose Cottage, the external elevations also exhibited some settlement along the rear above window openings, principally where masonry is supported over loadbearing window frames. This will need to be reviewed as part of the refurbishment project.

Proposed Basement Extension

4.10 The basement below Bird Place extends for the full plan area of the building with a small part extending into Rose Cottage.

4.11 At this level, there are solid floors throughout although these appear to be slightly different. Internal walls are all generally loadbearing supporting the walls and timber floors over with beams over the openings where needed.

There appears to be only small signs of movement in the basement walls, principally at the front right-hand corner. The space was well ventilated with no evidence of decay.

4.12 The intention is to increase the available headroom from 1.8 metres to 2.1 metres minimum. This will require the excavation of the floors and reconstruction at a lower level to meet current Building Regulation Standards. In addition, subject to investigation, it is likely the walls will need to be underpinned. Also, at present there appear to be only two means of escape on the right-hand side. However, there are window openings which could also be adapted accordingly, subject to the architectural requirements.

4.13 The principal issues in relation to the changes to the basement are:

- a) Foundation level. Almost certainly the walls will need to be underpinned. This will involve all the internal walls together with the external walls and the chimneys.
- b) Excavation below floor level may promote a risk with water subject to the ground water. The stable water level appears to be about 1.0 metre down from the surface so it is hoped this would not be an issue.
- c) Flood potential for the space. As the basement is Flood Zone 3, in accordance with the NPPF it should not be used for most vulnerable or vulnerable uses. However, subject to discussion with the Planning Authority it may be acceptable for recreational use, subject to the provision of appropriate safety measures including warning systems.

It would also be prudent to include some flood barrier measures to secure the building in the event of the risk of flooding.

- d) In relation to the structural design requirements, it will be suggested that any underpinning would be of a water tight or similar concrete construction extending across the floors and up the walls to be underpinned. This would be designed in conjunction with internal lining that will be necessary for the walls for general dampness. It is likely that further sumps would be necessary to remove any water that accumulates within the space.
- e) The external walls are substantial and would be adequate to support moveable flood barriers if required.

- 4.14 Overall, the structural changes to the basement are feasible although the extent of excavation will be extensive. There should not be any impact, unless new openings are formed, to the ground floor structure. However, additional fire protection may be necessary to the exposed timber elements.
- 4.15 All the structural work will be below that existing and generally below ground therefore these works will not affect the building appearance or nature of the superstructure.

5.0 **CONCLUSIONS**

Building Condition

- 5.1 On the front elevation it is likely that the cracking at the corners is as a consequence of sensitivity of the building foundations due to ground movement either caused by the yew tree or the drainage, or a combination of both. Subject to investigation, removal of the yew tree and addressing any issues with the drainage should mitigate the risk of further movement.
- 5.2 Remedial repairs will be necessary to the walls incorporating stainless-steel bedjoint reinforcement which should help to stabilise the walls. However, there is a risk, due to the nature of the internal finishes with the wall panelling and timber studwork behind, that further decay may be found which also need to be addressed as part of the works.

Basement

- 5.3 It is feasible to extend the basement. This should be in a watertight concrete construction due to the proximity to the river and the risk of water penetration. There may be a need to design the slab to cope with the risk of uplift should ground water be an issue in this area. However, it is noted that the existing floor does appear to be stable at the moment but, in lowering the floor depth, this may promote a greater risk.
- 5.4 The underpinning would effectively be a raft slab extending up the walls to provide resistance to any higher ground water levels externally.
- 5.5 This reinforced concrete slab would require the watertight elements of it designed by a specialist and would need to be supplemented by internal waterproofing, probably by a cavity drainage system.
- 5.6 The key issue in relation to the extension to the basement is the vulnerability of it to flood water level and its use. Subject to the view of the Planning Authority, it may be necessary to install flood barriers and flood prevention warning measures in order for the room to be used for recreational purposes.

6.0 **RECOMMENDATIONS**

The following sets out initial recommendations for the work that may be required in relation to that described in this Report.

6.1 Investigations

- a) Trial holes should be excavated around the building and within the basement to determine the levels of the existing foundations.
- b) In addition to this, boreholes should be constructed at front and rear to approximately 5.0 metres depth to determine the ground conditions at depth and particularly ground water levels.
- c) As part of the ground investigations, samples should be taken for testing to establish the waste acceptance criteria as material will need to be disposed of offsite.
- d) Drainage investigations should be undertaken including CCTV to review the condition of the underlying drainage around the building.
- e) In relation the rear hallway, it is recommended that the lintel over the rear doorway be opened-up to check its condition. The floor also may need to be lifted in the landing to check the condition of the wall. It will be prudent to locate a trial hole close to this position.

6.2 Anticipated Remedial Repairs

For the masonry cracks in the external walls, it is anticipated that, subject to the cause of the cracks being mitigated, they should be able to be repaired using bedjoint reinforcement with appropriate mortars to match existing for any repairs. Drainage repairs may also be required.

The mitigation measures will probably be dependent upon the removal of the yew tree which is likely to have been influential in the movement caused at the front.

Basement Extension

- 63 For the extension to the basement, this will need to be designed as a watertight concrete construction supporting the walls. This will also need to incorporate appropriate flood prevention and warning measures.

In addition to this, a sequence of works will need to be established to minimise the risk to the structure over.

**APPENDIX A
PHOTOGRAPHS**



P1 Bird Place – front elevation



P2 Bird Place – rear elevation



P3 Bird Place – setting at rear



P4 Bird Place – setting at front

Basement
window



P5 Bird Place – front elevation



P6 Bird Place – west elevation



P7 Front right corner – proximity to yew tree



P8 Linked service wing – Rose Cottage



P9 Junction Rose Cottage/Bird Place



P10 West end – Rose Cottage front



P11 Left-hand elevation – front



P12 Left-hand elevation - rear



P13 View west along rear



P14 Rear elevation Bird Place and Roe Cottage



P15 Rear elevation Bird Place



P16 Rear elevation – Rose Cottage



P17 Rear elevation – Rose Cottage (west)



P18 Roof - general



P19 Roof – view front



P20 Roof – left-hand elevation



P21 Parapet gutters front and side



P22 Rear roof



P23 Rose Cottage roof – rear



P24 Front – adjacent yew



P25 Front right-hand corner – cracking



P26 Displacement to corner



P27 Crack in front elevation continues to eaves



P28 Displacement to render course at basement door



P29 Right-hand elevation – re-pointed brick to front



Crack
continues from
basement to
roof

P30 Right-hand gable



P31 Cracking to gable wall although previously repaired, continues to roof



P31 Front steps – failed render



P33 Left-hand end – front elevation



P34 Left-hand corner – note slope



P35 Left-hand corner - movement above basement window



P36 Crack above window



P37 Note displacement to arch



P38 Rear left-hand steps



P39 Corroding steel below steps



P40 Rear bay window ground floor – crack above ring beam



P41 Corroding steel in bay window support

Downward movement



P42 Rear elevation



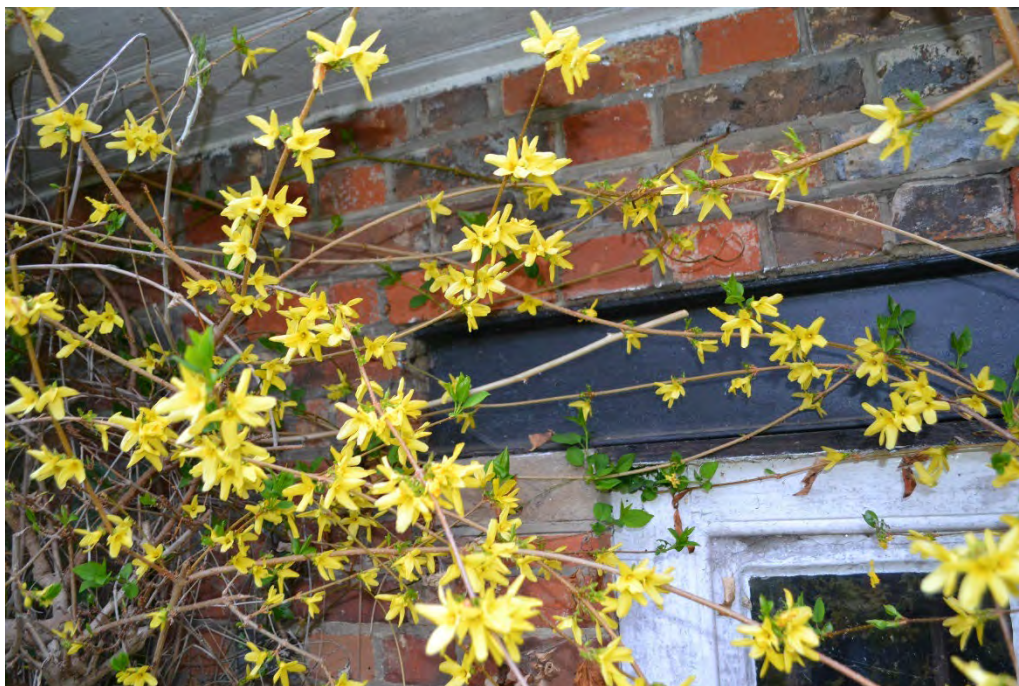
P43 Displaced brickwork above door



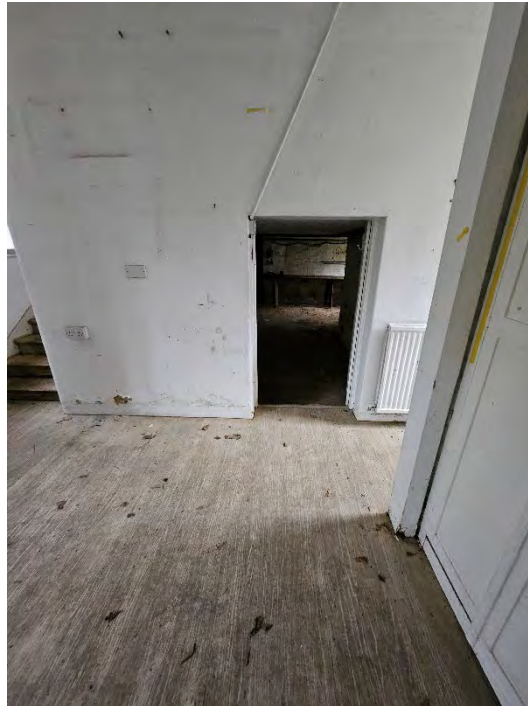
P44 Bay window – rear (See also P45)



**P45 Rose Cottage – rear.
Displaced brickwork above window.**



P46 Replacement steel lintel above rear window below bay



P47 Access to basement from Rose Cottage hallway



P48 Eroded and displaced brickwork



P49 External door – front right-hand flank wall into basement – note cracking



P50 Basement – front right-hand room

Stairs



P51 Basement central area



P52 View to front wall in centre of basement

Well and pump

Old pump



P53 View to rear wall – center of basement



P54 Front left-hand basement room



P53 Rear left-hand basement wall

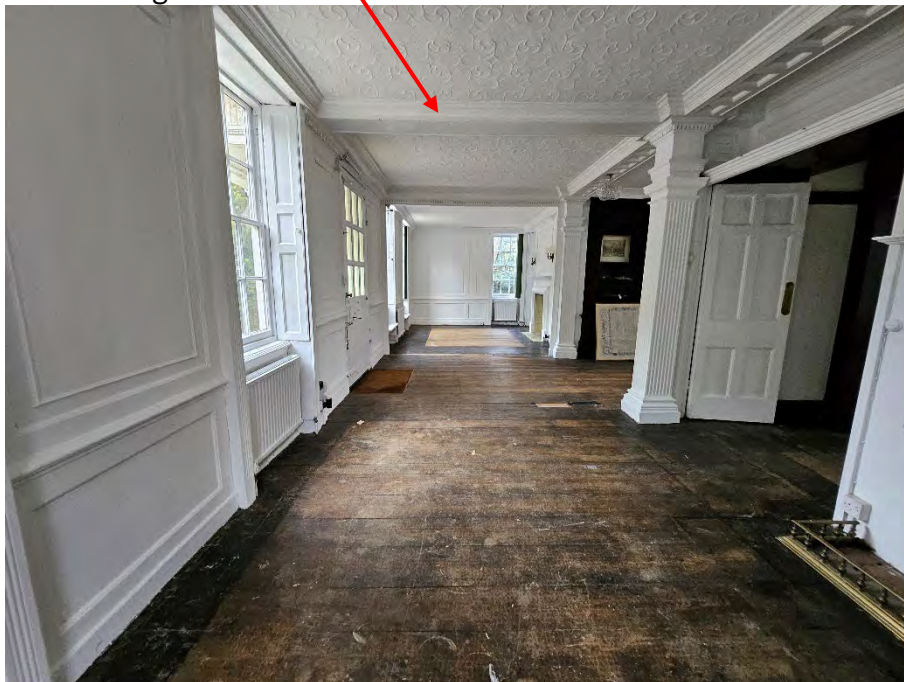


P56 Central base to chimney



P57 Stairs down from hallway to rear

Beams to loadbearing walls over



P58 Ground floor – front room



P59 Link access to Rose Cottage – stairs beyond



P60 Encased framing to beams



P61 Central hallway – view to rear stairs



P62 Front right-hand corner – crack in panelling coincident with crack externally



P63 Flank wall – front right-hand – cracking to panelling and distortion to window



P64 View to front right-hand corner



P65 Stairs to rear over basement



P66 Ground floor – rear left-hand room – view rear



P67 Ground floor – rear left-hand room – view east



P68 Rear left-hand bay – note displacement at floor level



P69 Rear left-hand bay – loss of ceiling finish



P70 Rear right-hand ground floor



Damp
and
cracking

P71 Main stairway – rear elevation



P72 First floor landing – slope to landing



**P73 First floor – right-hand corner – front.
Note settlement to corner area.**



P74 First floor – right-hand gable – settlement to wall

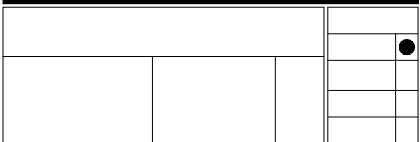


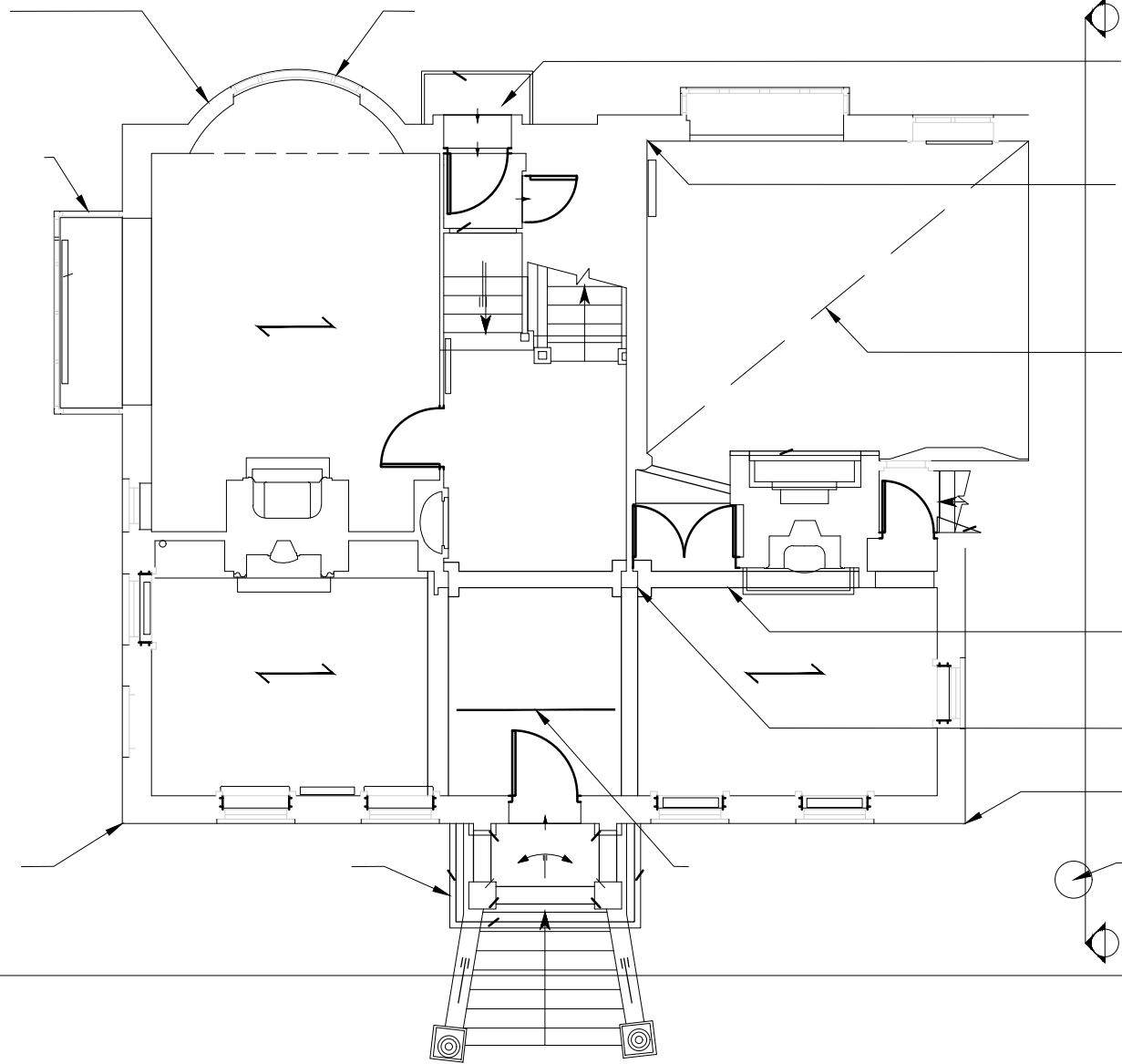
P75 Rear left-hand bedroom – first floor – bay window



P76 Displacement to floor

**APPENDIX B
SKETCH DRAWINGS**

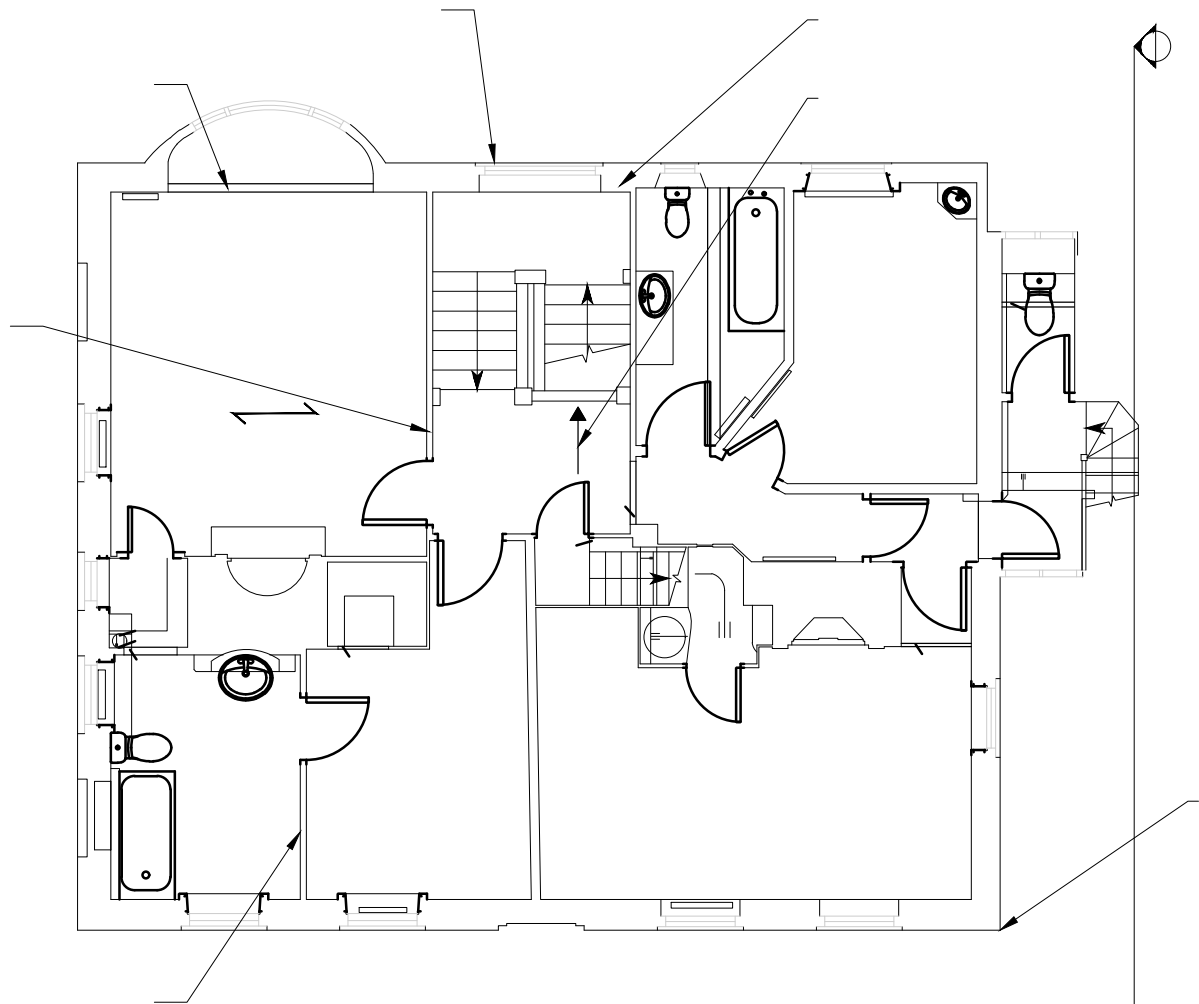
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- Note.
- 1.0 General
 - 1.1 This drawing is to be read in conjunction with all relevant Project drawings together with the Project Specification
 - 1.2 Do not scale off this drawing, work to figured dimensions only.
 - 1.3 Any Discrepancies noted between drawn information are to be reported promptly to the Contract Administrator.
 - 1.4 Temporary works to contractors details



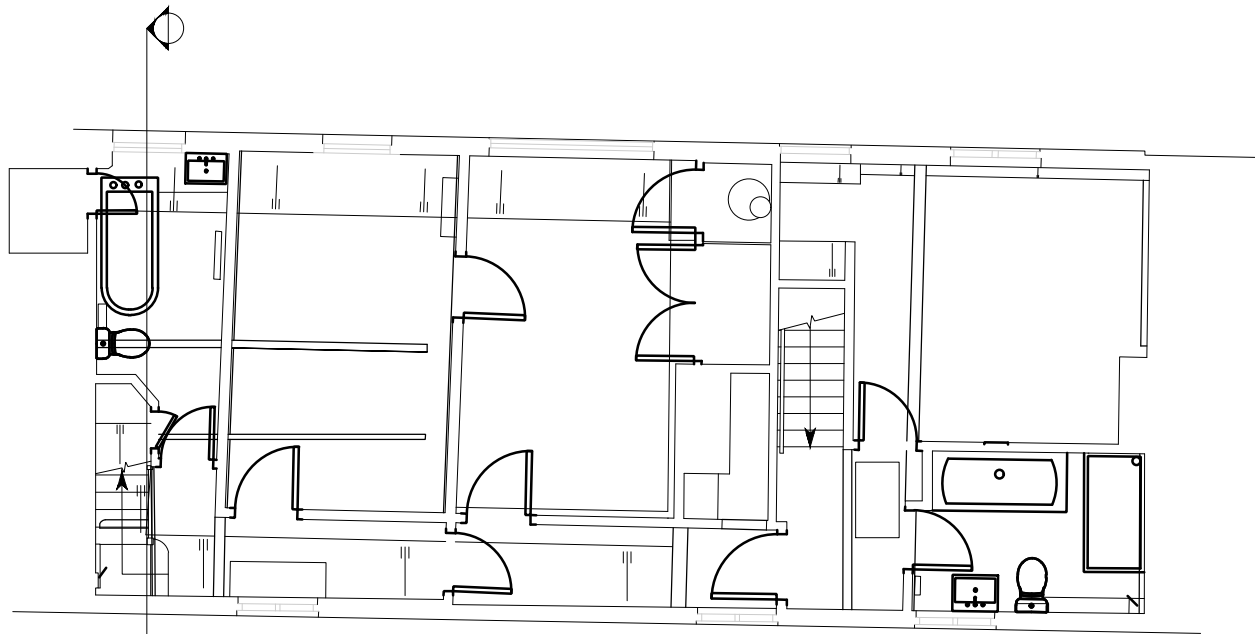
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- Note.
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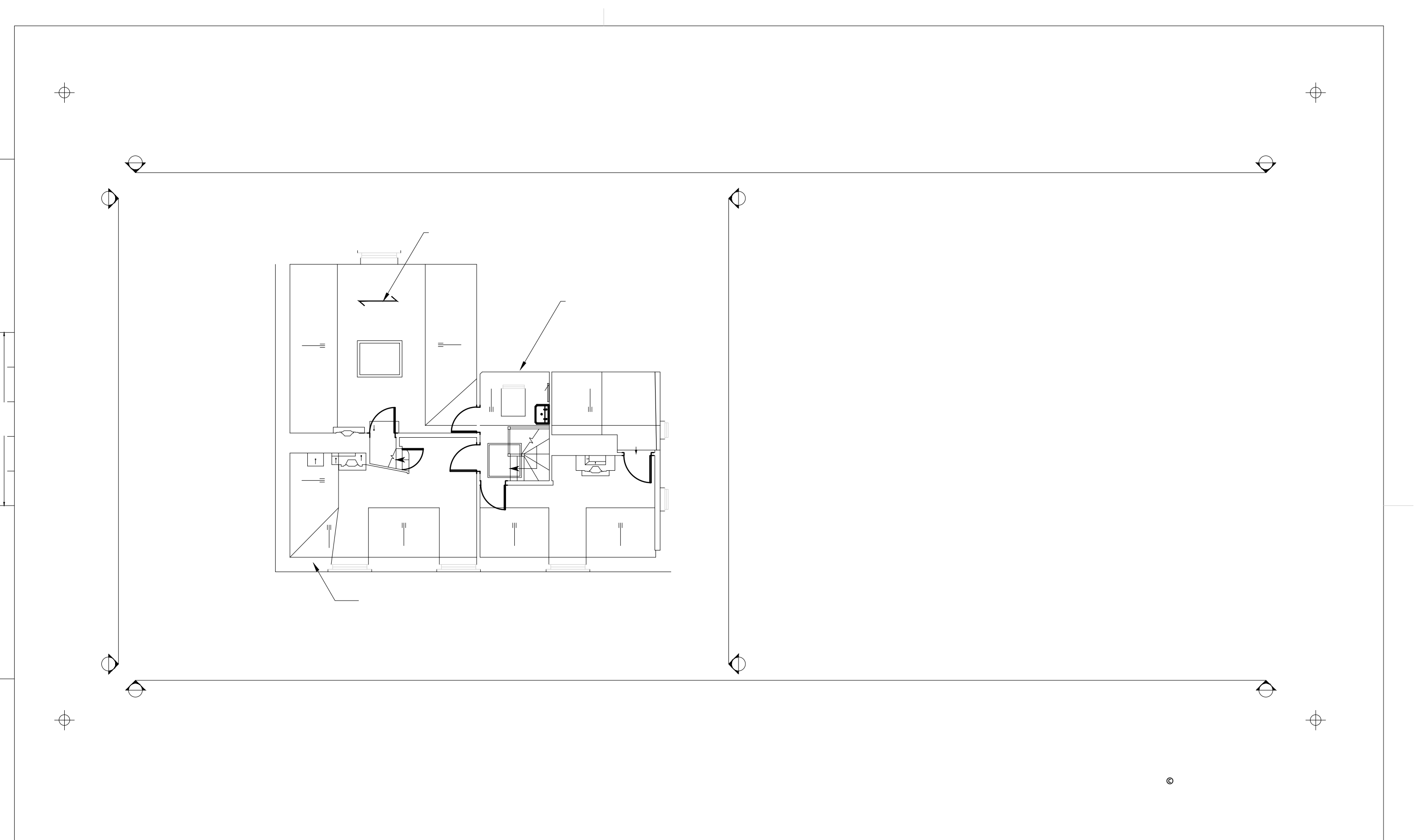


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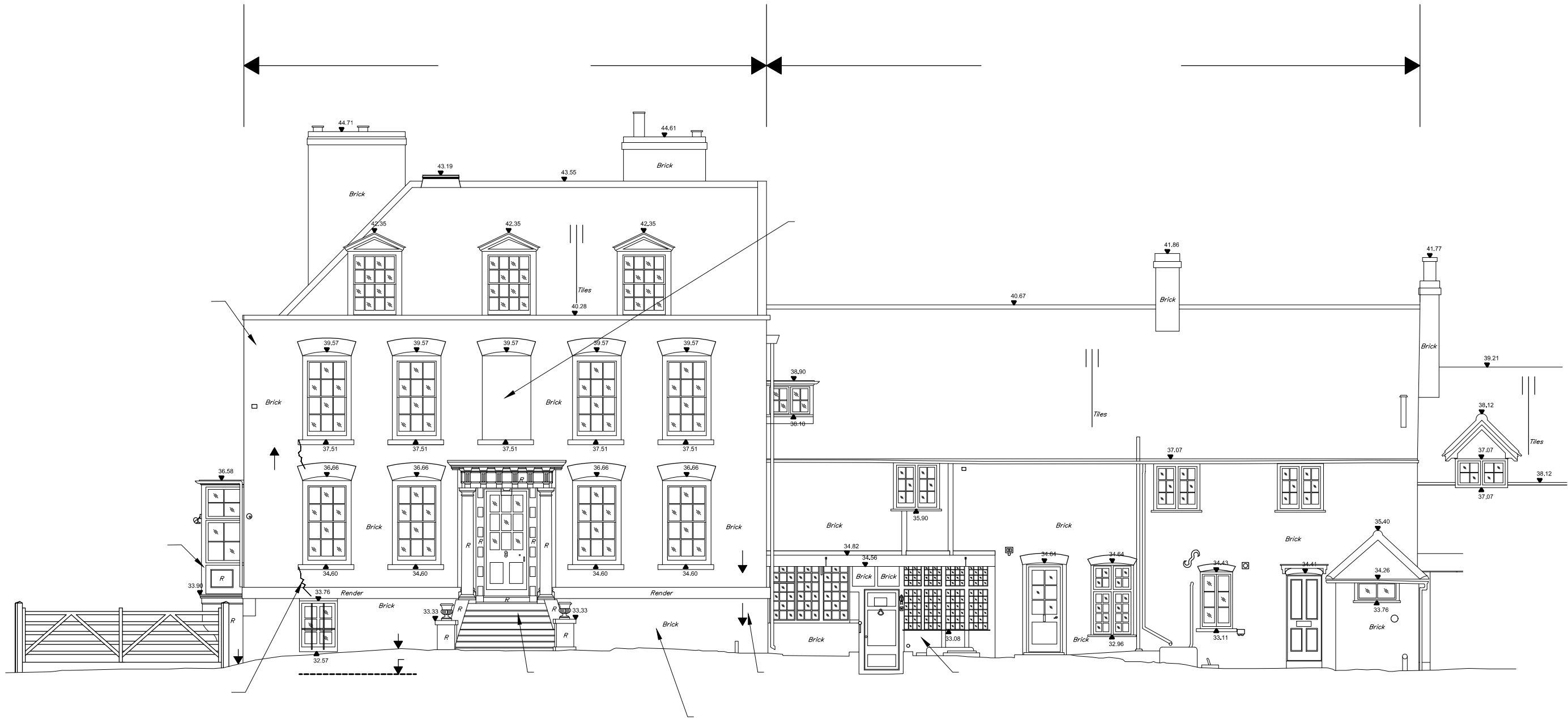






Age Group	Percentage
18-24	~10%
25-34	~15%
35-44	~25%
45-54	~35%
55-64	~45%
65-74	~55%
75-84	~65%
85+	~75%



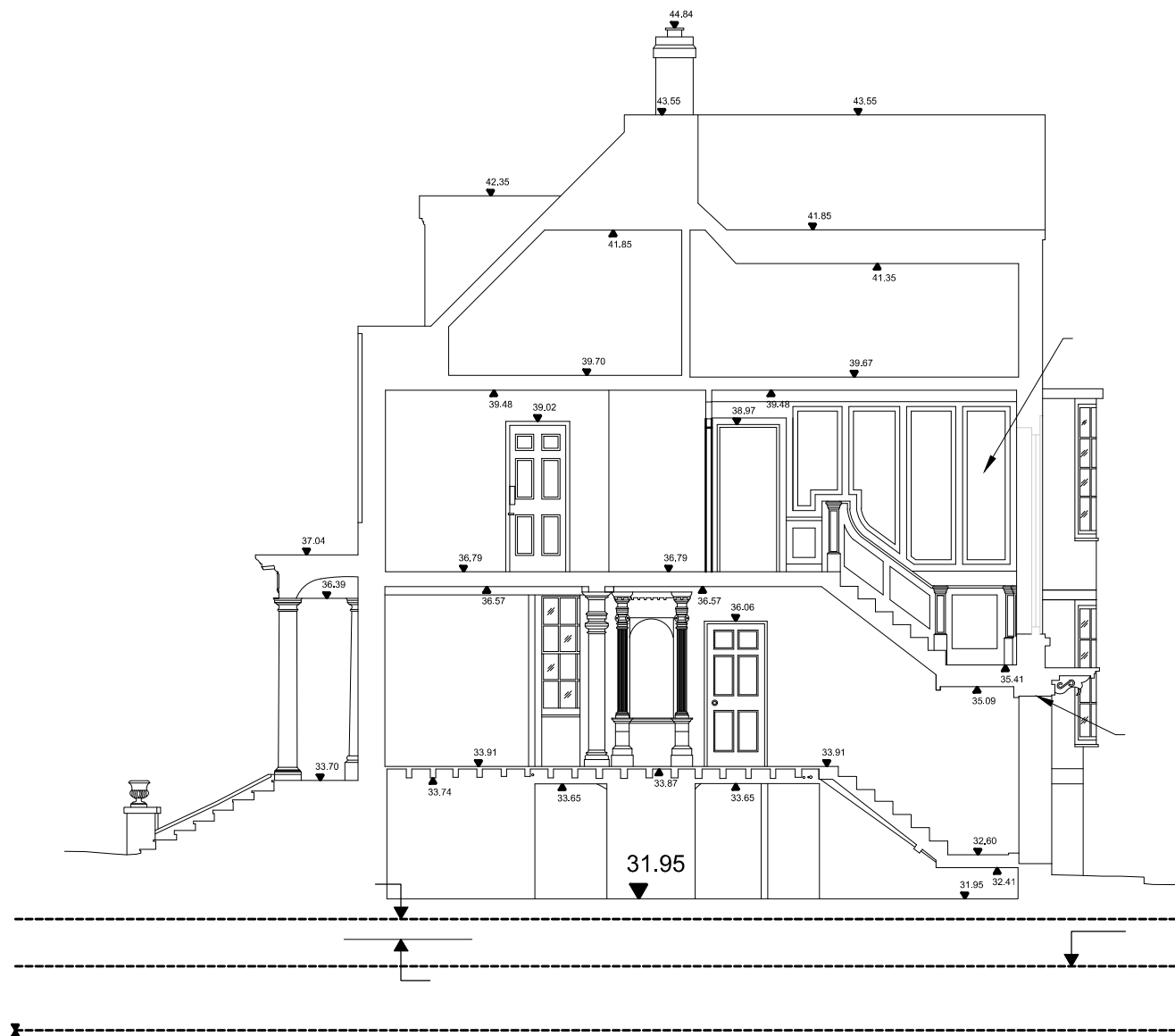


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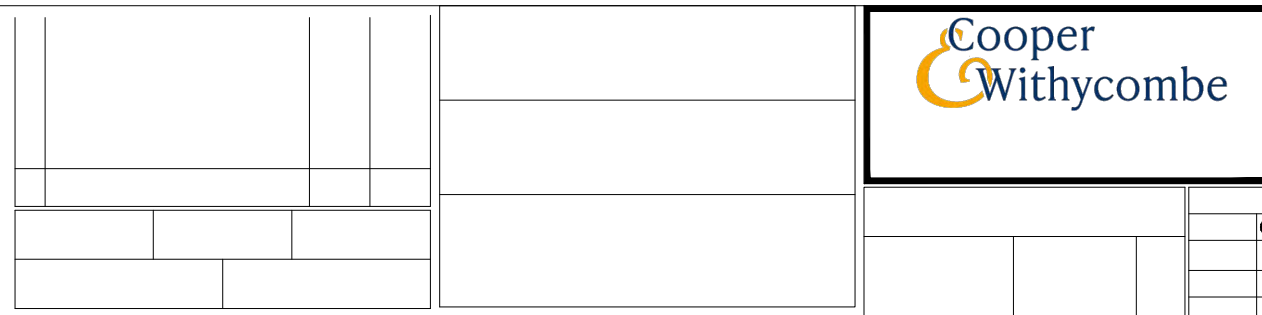


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