

Our Ref. 4907

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Mr M Lloyd Payne.
Bice Investments Ltd.
7 St Margaret's Road,
Oxford.
OX2 6RU.

28th July 2023.

Dear Mr Lloyd Payne,

Re: Structural Appraisal. 27 Magdalen Road, Oxford. OX4 1RP.

We write following our visit of 30th June 2023 to advise of the findings from our structural appraisal.

General (& exclusions).

All inspections were visual only and carried out externally from ground level and internally from the appropriate floor level. Access was not gained to the north-east neighbouring property and hence the external north-east elevations have not been inspected.

We have not inspected woodwork or other parts of the structure which are covered, unexposed or inaccessible. We are therefore unable to report that any such parts of the property are free from defect.

The inspection of timber in respect of diseases, insect, or vermin infestation is beyond the scope of this report and specialist advice should be sought where appropriate.

The ANP Structural Appraisal does not undertake to identify the presence of all, or any materials made of asbestos nor material containing a proportion of asbestos or the presence of toxic mould. Accordingly, we do not accept any liability for any direct or indirect costs incurred because of the presence of asbestos or toxic mould.

The ANP Structural Appraisal is for our clients use only and no responsibility is accepted to any third party without prior agreement in writing.

Continued,

The Property.

The original property is thought to comprise the two-storey section to the south together with the narrower two storey area at the rear. The third storey is thought an addition, possibly when the ground floor was converted for retail use. The footprint is otherwise like the neighbouring property to the east along Magdalen Road.

A further two storey section adjoins the neighbouring property along Hurst Street, with a single storey infilled section between the higher north and south sections. There is a small outbuilding along the boundary with Hurst Street.

Geology of the area.

Reference to the British Geological Survey on-line viewer shows the site at the junction of the Weymouth Member, mudstone and the Oxford Clay/West Walton Formations, mudstone, overlying superficial deposits of sand and gravel of the Summertown-Radley Sand and Gravel Member.

No intrusive foundation or subsoil excavation has been carried out to confirm the ground conditions, these are beyond the scope of this initial structural appraisal.

Notes of External Inspection.

For the purposes of our appraisal the front of the property faces south east.

South Property (original and including second floor extension).

Front Elevation (south east).

Photograph 1.

The roof ridge line and front roof slope dips significantly to the centre.

The front dormer leans into the roof slope.

The facing brickwork of the chimney stack is weathered and needs re-pointing.

There is a horizontal bow to the upper wall and gutter line.

The shop front sign board is thought to cover the beam support, over the window and entrance door.

Side Gable Elevation (south west).

Photograph 2.

The elevation is rendered throughout, with brick facings to the chimney stack.

The render is cracked and debonding.

The shop side sign board, like the front, is thought to cover the beam support, over the window and entrance door.

Continued,

First Floor Side Elevation of original property (south west).

Photograph 3.

The roof ridge line and slope, undulate slightly over the supporting and end walls.
The elevation is rendered.

First Floor Rear Elevations of original property (north west).

Photograph 4 & 5.

The rear of the three-storey section is rendered.
The ridge line (as seen to the front) dips significantly to the centre.
Like the front, the rear dormer leans into the roof slope.
There is a horizontal bow to the upper wall and gutter line.

Single Storey, Middle Stores.

Side Elevations (south west).

Photograph 3.

To the south, the walls are rendered to the north, facing brickwork.
Like the two-storey section, the ground floor lintels appear a mixture of mild steel and timber, rusting and decayed.

North Property (two storey).

Front Elevation (south east).

Photograph 6.

The elevation has painted brick facings, 215mm solid bond.

Side Elevations (south west).

Photograph 8.

The ridge lines dip significantly between the south external wall, the internal wall, and the junction with the end roof slope. The roof has "Spread" between these points.
The eaves have bowed outwards and the upper walls, between the windows and escape door, lean forward.
The ground floor lintels appear a mixture of mild steel and timber, rusting and decayed.
The elevation has a mixture of facing brickwork due to several alterations to the window and door openings. The bonding and pointing are poor, particularly above and below the window of the gable.
There are straight vertical mortar joints between panels of brickwork.
The north gable first floor window lintel is inadequate.
The north ground floor window brick arch lintel has failed.

Continued,

The north personnel door sits within a reduced structural opening.
The original timber lintels remain sandwiched within the facing brickwork and have decayed.

Outbuilding (internal & external).

Photographs 7, 8, 27 & 28.

The building footprint extends from the single storey middle stores to the boundary wall with Hurst Street.

It has two roof slopes, both clad with corrugated steel sheets.

The south west side comprises the boundary wall, with two brick unbonded return walls, forming part sides.

The remaining sides are open to the north and a timber framed door/windows to the south.

The roof sheets are inadequately supported by few timbers, bowed, and decayed.

Notes of Internal Inspection.

South Property (original and including second floor extension).

Second Floor, Bedroom 3 (no access to roof void).

Photographs 9 to 12 inc.

Severe dampness to external walls, and dormer framing.

Likely decay of structural timbers.

South dormer cheek and flat dormer roof timbers separating.

Purlin undersized and deflecting excessively.

Front, south-east wall bows outwards due to roof deflection.

Door frame head to landing, slopes to south west.

Displacement of timber stud wall over masonry wall at first floor and supporting beam below (shared with bedroom 1).

Floor deflecting excessively. Floor joists span front to rear.

Second Floor, Bedroom 1 (no access to roof void).

Photographs 13 to 15 inc.

Severe dampness to external walls, and dormer framing.

Likely decay of structural timbers.

Purlin (encased) undersized but receives support from bedroom/landing stud wall.

Floor deflecting excessively. Floor joists span front to rear.

Continued,

First Floor, Sitting Room (below bedroom 1).

Severe dampness to external walls. Water penetration through ceiling below dormer and down front wall, continues to first floor joist over shop front. Likely decay of structural timbers.

Evidence of downward displacement to south corner where first floor projects over ground floor shop entrance. Diagonal cracking below window sill and vertical dragging of wall paper to corner and along covings.

Door frame head, to landing, slopes to south west. Like Bedroom 3 over.

Masonry dividing wall to landing and bedroom 2.

Floor joists span front to rear.

First Floor, Bedroom 2 (below bedroom 3).

Photograph 16.

Vertical dragging of wall paper to north corner and along covings.

Door frame head to landing, slopes to north.

Floor covered with sheet boarding over floor boards, joist direction unknown.

First Floor, Kitchen, Lobby and Bathroom (no access to roof void).

Vinyl floor coverings, floor joist direction unknown but thought across shorter width.

Separating walls, stud, level door frame heads.

Ground Floor, shop (below bedrooms and sitting room).

Photograph 17.

Cracking through ceiling, diagonal to plan, but parallel to entrance door.

Cracking through ceiling, parallel to side wall, south east elevation.

Central cased beam, below loadbearing wall over.

Screen only to long side of staircase.

Ground Floor, office (below kitchen and bathroom).

Original walls removed and replaced with stud partitions.

Cracking through ceiling in both directions.

Single Storey, Middle Stores.

Ground Floor (flat roof over).

Photograph 18, 19 & 20.

Ceiling is boarded, outside wall of original property, now internal, windows and rendered walls remain. External wall, windows and rendered walls behind storage racking.

Concrete floor slab laid to fall to drain, thought original yard slab. Open gully collects rainwater and sink drain pipes.

Continued,

North Property (two storey).

First Floor Stores.

Photographs 20, 21 & 22.

Access via narrow, steep, staircase, with nominal handrail/balustrade.

Fire escape door, locked, but egress is over steel corrugated roof sheets on minimal timber supports, likely to be “Fragile”.

External walls, brick bonding suggests solid 215mm construction, not cavity.

Minimal timber partitions divide the area into three spaces.

Ceiling is covered with thin “bowing” boards. Unfinished.

North roof has a raised tie structure with the ridge in the south-west, north-east direction.

Middle and south roof has a raised tie structure with the ridge in the north-west, south -east direction. Middle/south ridge board gains partial support from one partition.

South-west wall bows outward at the head, piers either side of the fire escape door lean outwards.

The north floor is raised approx.500mm above the lower. Joist run north-west to south-east and built into party wall.

Central floor joist run north-west to south-east.

The south floor joist run side to side and trimmed across the stair width.

No “down-stand” to stair trimmer.

Ground Floor Stores (internal access).

Photograph 20.

The area is “open plan”, no cross walls, between the original front property and rear most externally accessed store.

Ceiling is covered with unfinished boards and taped joints.

Most side walls covered by shelving/racking.

Floor slab/finishes are uneven and in a poor condition.

Ground Floor Stores (external access).

Treated timber first floor joists exposed.

External and party walls, brick bonding suggests solid 215mm construction, not cavity.

Most side walls covered by shelving/racking.

Floor slab/finishes are uneven and in a poor condition.

Boundary Wall to Hurst Street.

Photographs 29 & 30.

The wall appears constructed of two skins of stretcher bond, therefore unbonded across its width. It is considerably weaker than a bonded wall. This type of construction is prone to freeze-thaw action within the narrow cavity and this can with time cause a failure.

Continued,

Discussion & Conclusions.

South Property (original and including second floor extension).

The second floor is thought an extension, possibly constructed when the ground floor was converted to retail and providing additional domestic accommodation for that lost at ground floor level.

The internal roof void could not be accessed but the distortion and original geometry of the roof suggest the structure comprises cut rafters/ceiling joist spanning onto purlins.

The purlins are undersized and have caused the whole roof structure to deflect excessively, approx. 120mm at mid span of the ridge. This in turn applies a horizontal displacement at the top of the front and rear walls causing them to bow outwards. The weight of the central dormers adds to the deflection and severely over stresses the roof timbers.

The deflection and displacements are likely to have initially affected the serviceability of the roof, causing flashings and gutters to leak and causing much of the dampness seen internally.

The distortions are such that the roof should be replaced and the upper wall sections, front and rear rebuilt to the correct line and level.

The dividing wall between the bedrooms is displaced and thought due to the deflection of the supporting wall and beam at first floor level. Similarly, the wall between the bedroom and landing.

The second-floor joists have also deflected and “spring” underfoot. They are thought undersized, and/or decayed particularly at the supports. This floor level was possibly the ceiling level of the previous roof structure.

The supporting walls at first floor level are carried by beams over the ground floor shop. Slopes to the head of the door frames within these walls suggest excessive deflection of the supporting beams.

At the same level, cantilever beams are expected to support the corner of the upper walls over the shop entrance. Displacement of the floor towards the corner and cracking through the masonry and ceilings suggest these beams are deflecting excessively, due to their size or decay/corrosion.

The rear two storey section, to the neighbouring northeast side, is thought largely unchanged, except for the position of internal partitions which have not significantly affected the structure.

Single Storey, Middle Stores.

At ground floor level centrally and to the two-storey section, there are few “cross-walls” to provide stability in the south-west to north-east direction. Where internal walls have been removed, they have not been replaced with “rigid” frames, just beams with minimal return walls.

Details of the flat roof joists are unknown, the sizing, and condition of bearings should be checked for adequacy and decay.

Continued,

North Property (two storey).

The small roof void(s) could not be accessed but the distortion and original geometry of the roof suggest the structure comprises a raised tie cut timber roof. The middle and south roofs have “spread” and like the front roof, the ridge lines show excessive deflection together with outward displacement of the eaves to both elevations.

Where fenestrated to the south-west, the isolated masonry piers between the door/window’s lean outwards.

The roof members are undersized and should be replaced with a correctly sized structure, that is the whole roof over the second floor.

The external walls are 215mm solid, not cavity, brick and hence prone to dampness. They have many defects, as listed above (inspection) and those require correction locally at ground floor level and rebuilding to the correct line and level at first floor.

Details of the first-floor joists and staircase trimmers are unknown. Some works should be anticipated, possibly to the stair trimmers, the staircase is unlikely to meet current regulation. Joists, where built into the solid external wall brickwork, are prone to decay, the supports should be examined.

Ground floor and foundations.

Details of the ground slab and foundations are unknown, caution is required where any alteration may increase the foundation loading, such as an increased wall height or creating larger openings which in turn may unacceptably increase the pressure applied to the subsoil. Any works to the ground floor should only follow exploration of the foundations, to ensure they are not undermined by any proposed excavation.

Due to the anticipated nature of the subsoil, surface water should be directed away from the foundations, particularly that from rainwater down pipes.

Boundary wall to Hurst Street.

The wall has poor bonding, exceeds the permitted height, and may fail due to freeze thaw action. The mid-section between the gates leans outwards and there is some local impact damage. Rebuilding of the wall should be considered.

Recommendations.

The areas requiring structural replacement or remediation are summarised below,

South Property (original and including second floor extension).

1. South roof, full replacement structure over the second floor.
2. Rebuild the south-east and north-west walls above second floor to the correct line and level.

Continued,

3. Investigate the first and second floor joisting, possibly undersized and/or decayed.
4. Investigate supporting beams over shop at first floor level, central and to front/side wall. Improve or strengthen beams, correct distorted door framing.

Single Storey, Middle Stores.

5. Investigate the flat roof joisting, possibly undersized and/or decayed.
6. Improve the structural stability in the south-west/north-east direction.

North Property (two storey).

7. North roof, full replacement structure over the first floor.
8. Investigate the first-floor joisting and stair trimmers, possibly undersized and/or decayed.
9. Rebuild the south-west and north east walls above first floor to the correct line and level.
10. Repair the masonry walls at ground floor level, installing new lintels, correcting the areas of poor bonding and vertical jointing.

Outbuilding.

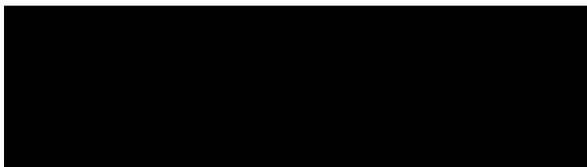
11. Due to its poor construction and deterioration, the outbuilding should be demolished.

Boundary wall with Hurst Street.

12. Due to its poor construction, the boundary wall should be replaced with a new boundary structure.

The above structural recommendations should be considered alongside other improvements (not structural and beyond the scope of this report) to the general building fabric, drainage, mains services, and the upgrading required to meet current building and other statutory regulations.

Yours sincerely,



C. N. Beavis CEng, MIStructE.
On behalf of
ANDREWS NEWBY PARTNERSHIP.

Enc. Appendix A-Photographs.