IStructE ANDREWS NEWBY PARTNERSHIP

STRUCTURAL & CIVIL CONSULTING ENGINEERS

SECOND STAGE APPRAISAL

ADDENDUM TO FIRST STAGE APPRAISAL 2844

DATED 6th AUGUST 2009

To

86 WEST STREET

HAVANT

HAMPSHIRE

PO9 1LN

For

DAVID WILLETTS AND SARAH BUTTERFIELD

84 WEST STREET

HAVANT

HAMPSHIRE

PO9 1LN

HAVANT BOROUGH COUNCIL
24 MAR 2011
RECEIVED

Job No: 2844

Dated: 5th November 2009

Revised: 30th November 2009

9.0 BUILDING STATUS.

Second Stage Appraisal undertaken:- 30th September 2009.

- Front south elevation has temporary shoring over abutting pavement in West Street.
- Majority of plasterwork to ceilings has been stripped to expose the structure and the debris removed.
- The plasterwork has been stripped on most of the internal wall faces.

10.0 FURTHER OBSERVATIONS.

10.1 Roof (See ANP Sketch No. 2844/SK/03A).

Removal of the first floor ceiling throughout has confirmed:-

Front (South) Pitched Roof.

There is considerable deflection in the south pitch, decay and insect infestation in the timbers, evidence of crude strengthening and badly repaired openings.

The northern pitches of the front roof have been used to support the 2 No. incoming rear roofs from lay boards.

The supportwork is totally inadequate and has failed in several places and shows considerable distress.

Rear (Northern) Pitches.

The rafters to these pitches have been renewed in the past, but spring from the original timber eaves plates at the east and west, which all show signs of decay.

10.0 FURTHER OBSERVATIONS (Cont'd).

The centre valley support springs from a new pole plate bearing on the remains of the earlier rafter feet.

The original rafters and head plate in the load bearing partition are seriously decayed.

The new rafters to both pitches are inadequately supported and/or strutted and the ceiling joists are decayed/insect infested and cannot be retained.

The complete roof structure is beyond repair and will require replacement in new works.

10.2 FIRST FLOOR (SEE ANP SKETCH 2884/SK/02A).

10.2.1 Bedroom 1.

- First floor has been over-boarded (east/west) in the same direction as the original decayed boarding beneath.

- The floor joists are now exposed within the Study below and span north/south from the front (south) wall to the 230 x 200 wide carriage beam towards the rear of the Study.

- The floor joists are broken/decayed and crudely repaired and no longer have a bearing on the front wall. (See Photo Nos. 28, 47, 48, 49 & 51.)

  Temporary propping has been introduced to provide a bearing at the south end of this floor.

- The separation of the south wall at floor level and at the intersecting Study and Party Wall, clearly show the outward lean in the front elevation and total lack of lateral restraint in this level.

- The window lintel shows pronounced deflection on centre.

10.0 FURTHER OBSERVATIONS (Cont'd).

- There is a straight joint between the large western chimney stack and the party wall suggesting the stack may be an addition.

- The main rafter on the north pitch against this stack supports the 2 No. incoming broken purlins, but has no support against the stack at its top end.

- 80mm Timber wall plates are built into the first floor Party Wall construction at approximately 1.2m and 2.0m above first floor level.

10.2.2 Corridor.

- The considerable bow in the ceiling local to Party Wall relates to totally inadequate support to the old valley board and north pitch rafters to the front roof.

- First floor over-boarded, because earlier boarding decayed.

- Bathroom/Corridor load bearing wall has a vertical timber stud at the west showing insect infestation and decay.

  A horizontal plate at mid-height extends to a vertical stud at the Bathroom door reveal.

10.2.3 Bathroom.

- Decay in eaves wall plate in Party Wall.

- Vertical fracture in Party Wall approx 600mm from southwest corner.

- Tendrils evident over Party Wall suggesting possible dry rot. (Timber Preservation Specialist to examine.)

- Floor boarding rotted through completely where bath was located.

10.0 FURTHER OBSERVATIONS (Cont'd).

- Bathroom/Bedroom 3 partition shows headers in the brickwork on Bedroom 3 side and therefore may be 215 thick.

  The timber head plates and old valley remains show considerable decay.

  The plaster needs to be removed from the Bathroom face of the wall to allow further examination.

10.2.4 Bedroom 2.

- Second floor joisting above is 80 x 120 deep at 440 centres spanning north/south from front at (south) wall to Bedroom 3/Stair wall.

  Whilst timbers appear in reasonable condition they are deflecting and are grossly over-spanned.

  In addition, many of the bearings on the south wall are inadequate.

- 125 deep timber eaves plate showing deflection over window.

- Outward lean evident in front (south) wall.

- Floor has been over-boarded due to previous decay.

- Floor joists span east/west and offer no restraint to front elevation.

- Considerable section of loose masonry is evident below the window just above first floor.

- The large chimney stack on the east is straight jointed at the junction with the Party Wall to No. 84 and decorated plaster is apparent behind the stack. This would suggest that the chimney may be an addition or has been rebuilt.

10.0 FURTHER OBSERVATIONS (Cont'd).

10.2.5 Bedroom 3.

- Ceiling joists span east/west to a central carriage beam.

  The joists are in very poor condition and have fallen away from the bearings in many instances.

  This explains the previous bulge in the ceiling at the east. (See Photo No 11.)

- The eaves plates all show evidence of decay.

- The ceiling joists and central carriage beam are not connected to the rafter feet and therefore provide no lateral tie.

  The load bearing wall between the Stair and Bedroom 3 is early timber frame with brick infill and the timbers show evidence of insect infestation and decay.

  The bulge in the infill brickwork is indicative of the distress in the timber studs. (See Photo No. 41.)

- Plaster extends behind the northeast chimney breast, which suggest this stack is an addition.

  There is a vertical separation at the junction with the east Party Wall and the internal Stair wall where a cupboard doorway exists.

  The timber lintel over the doorway appears to be an extension of the head plate in the wall and is showing considerable decay. (See Photo No. 38.)

  There is a noticeable drop within the first floor towards the north.

- There is considerable fracturing and loose brickwork evident in the Bathroom/Bedroom 3 wall, just above floor level.

10.0 FURTHER OBSERVATIONS (Cont'd).

10.3 GROUND FLOOR (SEE ANP SKETCH 2844/SK/01A).

10.3.1 Lounge.

- First floor joists show signs of insect infestation and decay and are over-spanned.
- There is a straight vertical joint in the Party Wall local to the southeast corner.
- The western post introduced at the south wall suggests the timber carriage beam bearing to be suspect.
- Earlier infilled doorway evident in the southwest corner at the front elevation. Timber plates within the infill are decayed.
- Load bearing timber framed Corridor/Lounge wall no longer has a sole plate and the studs are decayed at the bottom.

Note:- *Trial pitting was not conducted at the south wall at this Second Stage Appraisal due to particularly sensitive nature of the front elevation.*

10.3.2 Corridor.

- First floor joists span north/south.

  Joists between south wall and Kitchen trimmer beam are in poor condition due to insect infestation and decay.

  Rear 120 x 70 joists adjacent the Dining Room are in better condition.

10.0 FURTHER OBSERVATIONS (Cont'd).

10.3.3 Study.

- Severe vertical separation of the Party Wall and Corridor wall with south wall is evident.

  First floor unsupported at south and structurally unsound.

- Straight vertical joints evident either side of the front window indicating an earlier, wider opening. (See Photo No. June 005 and September 051.)

- North wall shows a straight vertical joint at the junction with the Party Wall and a 25 thick horizontal plate at approx mid-height.

  Plaster is apparent between the wall and joists west of the old original infilled Staircase suggesting part of the wall to be infilled.

- Corridor/stud wall is considered to be timber framed and requires plaster to be removed to allow further examination.

10.3.3 Kitchen.

- 75 x 125 First floor joists span north/south from 75 deep timber plate in north wall through to 210 x 200 wide carriage beam across Kitchen.

  Carriage beam shows insect infestation and decay and western bearing on pier appears to be separating from the Party Wall.

- Timber wall plate below window in north wall exhibits decay.

- Considerable distortion of the Kitchen door frame downwards at the south reveal. Subsidence of the wall under the carriage beam is suspected.

10.0 FURTHER OBSERVATIONS (Cont'd).

10.3.4 Dining Room.

- Corridor wall sole plate completely decayed within Corridor.

- 125 x 75 joist span east/west over a centre 210 x 220 wide carriage beam. There is considerable evidence of insect infestation and decay.

  Joists bear on 50mm timber plate in Corridor wall, which is suspect.

- Deflection and distortion is evident in door frame and the brickwork is loose above.

- Diagonal framing supporting the northeast chimney has rotted away and is causing local deflection in the first floor joisting.

11.0 CONCLUSIONS.

11.1 Roof Structure and Second Floor.

Unworthy of retention and requires replacement in total.

11.2 First Floor.

- Floor boarding requires replacement throughout.

- Floor joisting to the Study and front Corridor requires replacement.

- Floor joisting to the Lounge is over-spanned and if re-useable requires strengthening.

- The carriage beams may be re-useable subject to new support positions, loading and condition of timber.

- The carriage beam over the Kitchen is in poor condition and will no longer have support at the eastern bearing in the final scheme and is very unlikely to be suitable for retention.

11.0 CONCLUSIONS (Cont'd).

- Floor joisting over the Kitchen and Dining Room may be acceptable subject to conditions, but will require strengthening to support the first floor partitions.

  Bearings into existing walls are prone to decay and are therefore suspect.

11.3 Front (South) External Wall.

- The front 215 thick bonded brick wall is not connected to the first floor and separated from the intersecting cross walls and Party Walls over the full height of the building.

  i.e. The wall is "free-standing" from foundation to roof and horizontal restraint at roof level is only achieved from the dead weight of the second floor and roof.

  The roofs to the front pitches are in very poor condition, particularly that to the southwest, which is seriously distressed and lacks effective ceiling ties. (See Photo No. 012.)

- The wall leans outwards at first floor by approx 100mm and exhibits a horizontal bow in its length.

  The outward lean can be expected to extend to roof plate level and will obviously show an even greater lack of plumb.

  A precise measurement of the lack of plumb will be needed to consider the restraint options for the complete front elevation.

- The proposed conversion of the building back to 2 No. dwellings, dictates the re-opening of a former infilled doorway adjacent to the existing entrance. (See Photo No. 06/005.)

  This will further weaken this already unsound construction.

11.0 CONCLUSIONS (Cont'd).

Additionally, to the west of the existing entrance, straight vertical joints clearly indicate an earlier infilled entrance or shop front encompassing the present Study window.

This again weakens the structure by reducing the ground floor wall to a series of small vertical piers.

- Trial pits have not been introduced beyond that undertaken at the Stage 1 Appraisal due to the fragility of the wall, but it is considered that the foundations to the front elevation will be minimal (possibly the width of the wall only) and shallow.

  They will certainly be unsuitable by current standards.

11.4 INTERNAL LOAD BEARING WALLS.

11.4.1 Existing Division Wall between Lounge, Dining Room and the Eastern Corridor. (i.e. New Party Wall Line.)

- This wall is 100mm thick timber framed with brick infill.

  There is separation from the front (south) elevation and evidence of insect infestation and decay in the timbers.

  At ground floor level, the sole plates have completely decayed as have several of the vertical studs.

  There is no evidence to suggest any foundation exists.

- In the conversion back to two dwellings this wall requires to become a fire-proof, sound-proof load bearing Party Wall and if the front elevation is to be retained, may require to act as a major restraint mechanism through the centre of the building.

11.0 CONCLUSIONS (Cont'd).

- The wall should be replaced in a 215 thick solid Party Wall construction on new foundations.

11.4.2 Existing First Floor Internal Load Bearing Wall.

- The Bathroom/Corridor wall and the Bedroom 3/Stair wall are in very poor condition, but both are removed in the conversion.

  Steel beams will be required to support the new roof reactions at this point and may be further needed as restraints to the front wall at eaves level.

11.4.3 Existing Ground Floor Internal Load Bearing Walls.

- The Study/Corridor wall and Study/Kitchen wall will be required to support the existing timber carriage beam (if it can be retained, subject to condition) and the new Stair wall and part first floor respectively.

  The timber framing to the Study/Corridor wall is expected to exhibit insect infestation and decay and the Study/Kitchen wall contains a horizontal 25mm thick timber plate at mid-height.

  Neither wall can be expected to have suitable foundations for load bearing walls.

  The first floor is to be replaced in this area and consequently, it would be preferable to replace the walls in new work from new foundations.

  The Study/Corridor wall may then be able to provide some vertical restraint to the distressed front elevation.

  The Dining/Stair wall at conversion will only support the Dining Room210 x 220 wide first floor carriage beam (if it can be retained) because the first floor load bearing wall is removed.

  The wall is to be extended to the east and a new opening formed at the west.

11.0 CONCLUSIONS (Cont'd).

It would be preferable to replace this wall completely in new work on new foundations.

11.5 Existing Party Walls.

- There is a vertical separation at the junction with the south elevation on both Party Walls, which requires to be made good.

- There are timber eaves plates in poor condition at the rear on both Party Walls, which will require to be removed and made good.

- There are buried timbers in both walls, which will require examination by a Timber Preservation Specialist if they are to be retained or require to be cut out and made good, if appropriate.

- Complete removal of all plasterwork finishes will be required in order to make a more thorough examination.

12.0 THE APPROVED CONVERSION WORKS. (CHANGES TO EXISTING STRUCTURE).

12.1 Second Floor and Roof (See ANP Sketch 2844/SK/102).

A new fire-proof, sound-proof Party Wall is required to extend to the roof pitch.
New "Space Saver" Stairs formed first to second.
Existing internal load bearing walls removed (i.e. Bathroom/Corridor and Bedroom 3/Stairs).

Note:- Re-roofing could give option for increased area of second floor accommodation.

12.0 THE APPROVED CONVERSION WORKS (Cont'd).

12.2 First Floor (See ANP Sketch 2844/SK/101).

New Party Wall required.

New Stair introduced into previous location in 86A.

Existing Stair removed/replaced and reversed.

Existing internal load bearing walls removed. (i.e. Bathroom/Corridor and Bedroom 3/Staircase.)

Rear (north) wall modified to suit rear extensions.

New internal partitions added.

12.3 Ground Floor (See ANP Sketch 2844/SK/100).

New Party Wall required.

New Stair introduced in 86A.

Existing Stair removed/replaced and reversed.

Load bearing Kitchen/Corridor wall removed. (Removes support from Kitchen carriage beam east bearing.)

New Kitchen and WC partitions added.

New load bearing wall added Lounge/Stair.

New opening in Dining/Stair wall.

Rear (north) wall modified to suit new rear extensions.

Only the internal Study walls and part Dining/Stair wall are unaffected by the conversion.

13.0 DISCUSSION OF CONCLUSIONS WITH CONSIDERATION TO APPROVED CONVERSION.

13.1 Roof and Second Floor Structure.

Remove and replace.

13.2 First Floor.

Remove and replace boarding throughout.

Study/Corridor joists beyond repair:- remove and replace.

Lounge joists over-spanned:- inspect for condition by a Timber Preservation Specialist. Treat and strengthen as necessary or remove and replace.

Kitchen and Dining Room:- Timber Preservation Specialist to check condition and if acceptable, strengthen to support new partitions or remove and replace.

Note:- ***It may be logical to replace all the floor joists in new work, possibly reversing the span over the Dining Room.***

This would guarantee the quality of materials, establish level floors and allow better access for cutting out and pinning up brickwork as necessary where timber bearing plates have been used within an existing wall and for the inclusion of new steelwork to restrain the front elevation.

13.3 Front (South) External Wall.

215 Thick bonded brickwork is unrestrained between foundation and roof and has no effective buttressing cross walls.

The wall has an outward lean of 100mm at first floor, which is expected to worsen towards the roof.

Several vertical joints at ground floor are further weakening an already sensitive wall, which in addition is not expected to have much by way of foundations. The wall is attractive externally from West Street and does not presently exhibit stress despite its fragility.

It is anticipated that the Local Authority will wish to retain this street scene elevation as a minimum:- if possible.

13.0 DISCUSSION OF CONCLUSIONS WITH CONSIDERATION TO APPROVED CONVERSION (Cont'd).

Strengthening works will also be required to engage all new cross walls and to mechanically tie existing vertical joints.

In any event, the capacity for the temporary works at the frontage to West Street must be checked and confirmed as suitable by the Contractor/Scaffolding Engineer to support the wall as a totally "free-standing" element.

This is particularly crucial when considering the wall's fragile state, outward lean and the need to underpin in due course.

13.4 *Central (North/South) Party Wall:-*

Existing wall inadequate for sound and fire and incorporates decayed and insect infested timber.

In addition, foundations if existing will prove unsuitable.

Remove and replace in new 215 thick dense masonry construction from new foundation to profile to new roof.

13.5 Existing and Internal Load Bearing Walls.

Several are to be removed in the final scheme and the remainder lack foundations and contain decayed and insect infested timbers.

Remove and replace in new 100mm load bearing concrete blockwork from new foundations.

13.0 DISCUSSION OF CONCLUSIONS WITH CONSIDERATION TO APPROVED CONVERSION.

13.6 Existing Party Walls.

The exact construction of the Party Walls with 84 and Jacobs Court is currently unknown.

86 is vertically jointed at the abutment of both neighbours' properties when viewed from the front and none of the buildings are contemporaneous. However, a steel beam is evident in the Party Wall with Jacobs Court in the front rear roof pitch, which might suggest that the wall is used as a common support.

Further investigation of both walls is required since both require some remediation.

A Party Wall Notice will certainly apply with the adjoining owner of Jacobs Court.

14.0 RECOMMENDATIONS.

Front (South) Walls.

1. Ensure temporary supportwork is checked and confirmed as suitable by Contractor/Specialist Scaffolding Engineer to support the complete elevation as a totally "free-standing" element.
   Engineer to be consulted and advised regarding the proposed scheme for these works.

2. Identify the exact, out of plumb dimensions at eaves and first floor level on centre of the building and at quarter points across the elevation. (i.e. At three internal positions across the elevation.)

14.0 RECOMMENDATIONS (Cont'd).

3. Obtain approvals to remove the roof structure, 1st floor and internal walls as appropriate. (i.e. Planning/conservation, Party Wall agreement.)

4. Rebuild new internal structure on new foundations, all to current standards, including an engineered restraint to the repaired/strengthened and underpinned front elevation.

   Make good Party Wall to No. 84 and Jacobs Court.

Signed .....

H.J. NEWBY, C.Eng., F.I. Struct. E., F.F.B.



Photo No. 5 (June)

Front (South) Elevation

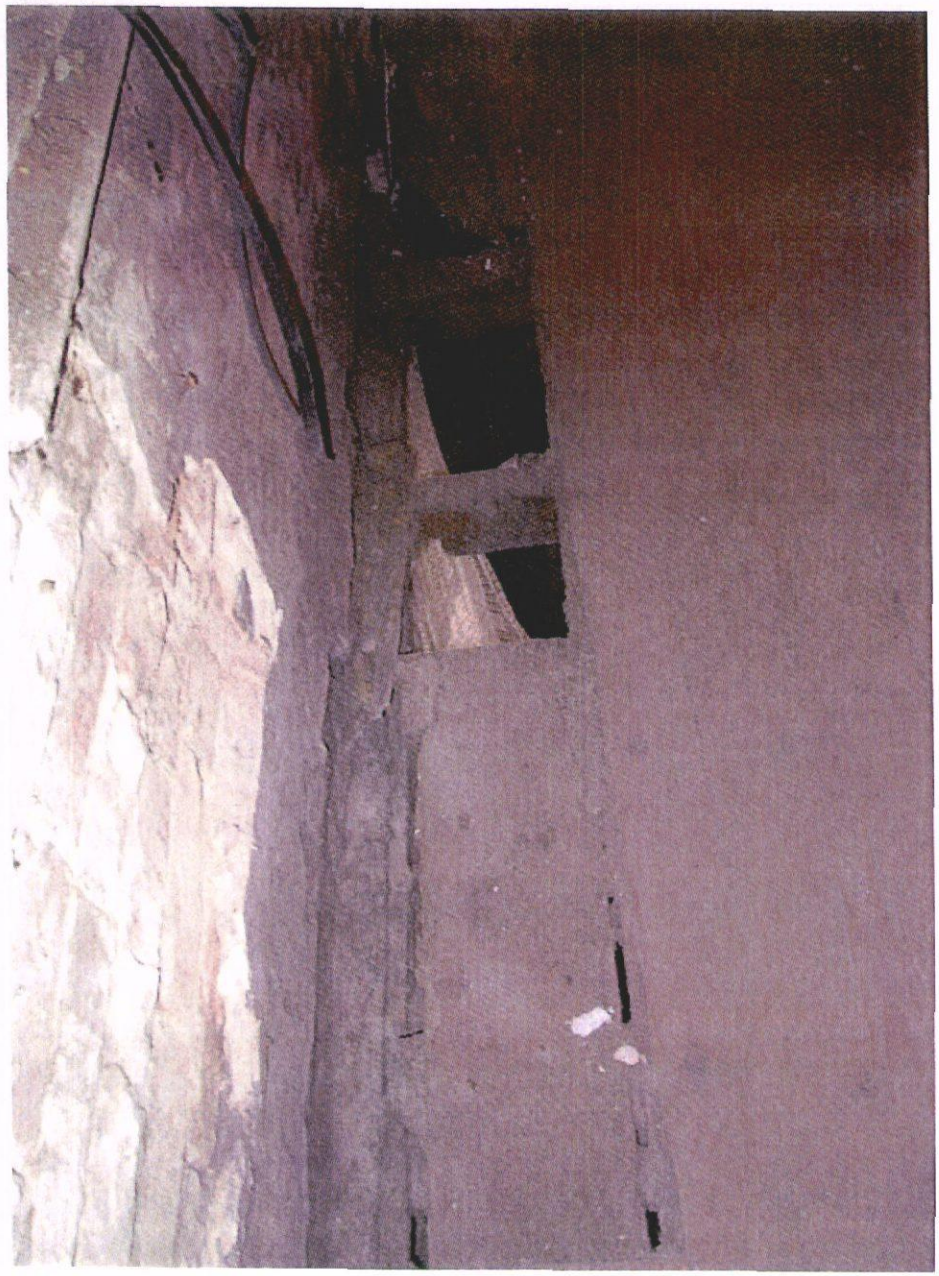


Photo No. 28

Bedroom 1.
1st Floor Junction with Front Wall



Photo No. 47

Study:- 1st Floor Junction with Front Wall.
Separation in Study/Corridor Wall.



Photo No. 48

Study:- 1st Floor Junction with Front Wall.



Photo No. 49

Study:- 1st Floor Junction with Front Wall.
Separation in Party Wall.



Photo No. 51 – Study:- 1st Floor Joists.



Photo No. 11 – Bedroom 3. East Ceiling Joists at Junction with Rafters.



Photo No. 41

Bedroom 3/Stair Load Bearing Wall.



Photo No. 38

Bedroom 3.
Internal Load Bearing Wall Junction with Party Wall at Cupboard Doorway.



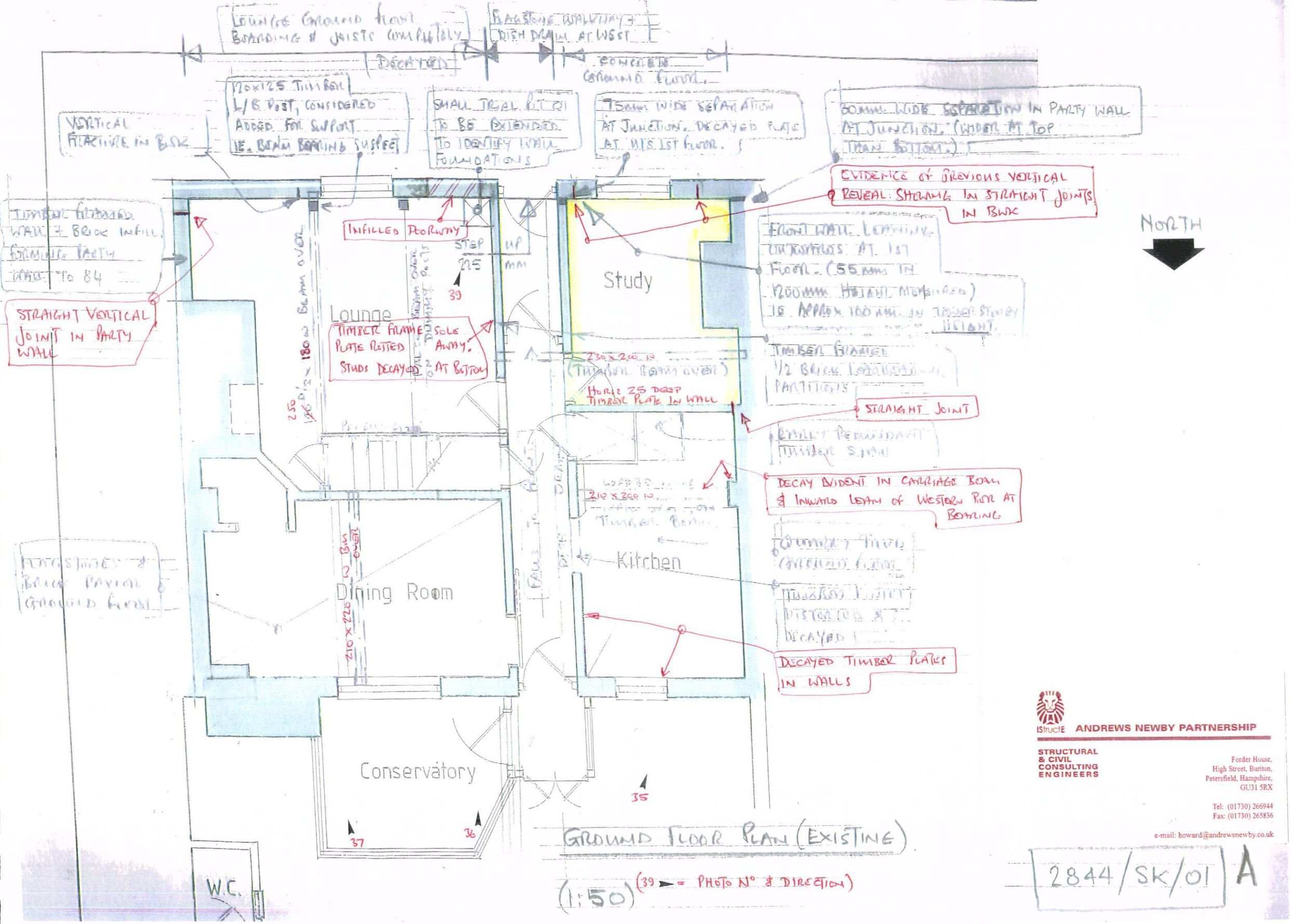
Photo No. 51

Bedroom 3.
Internal Load Bearing Wall Junction with Party Wall at Cupboard Doorway.



Photo No. 12

Front Pitch over Bedroom 1.



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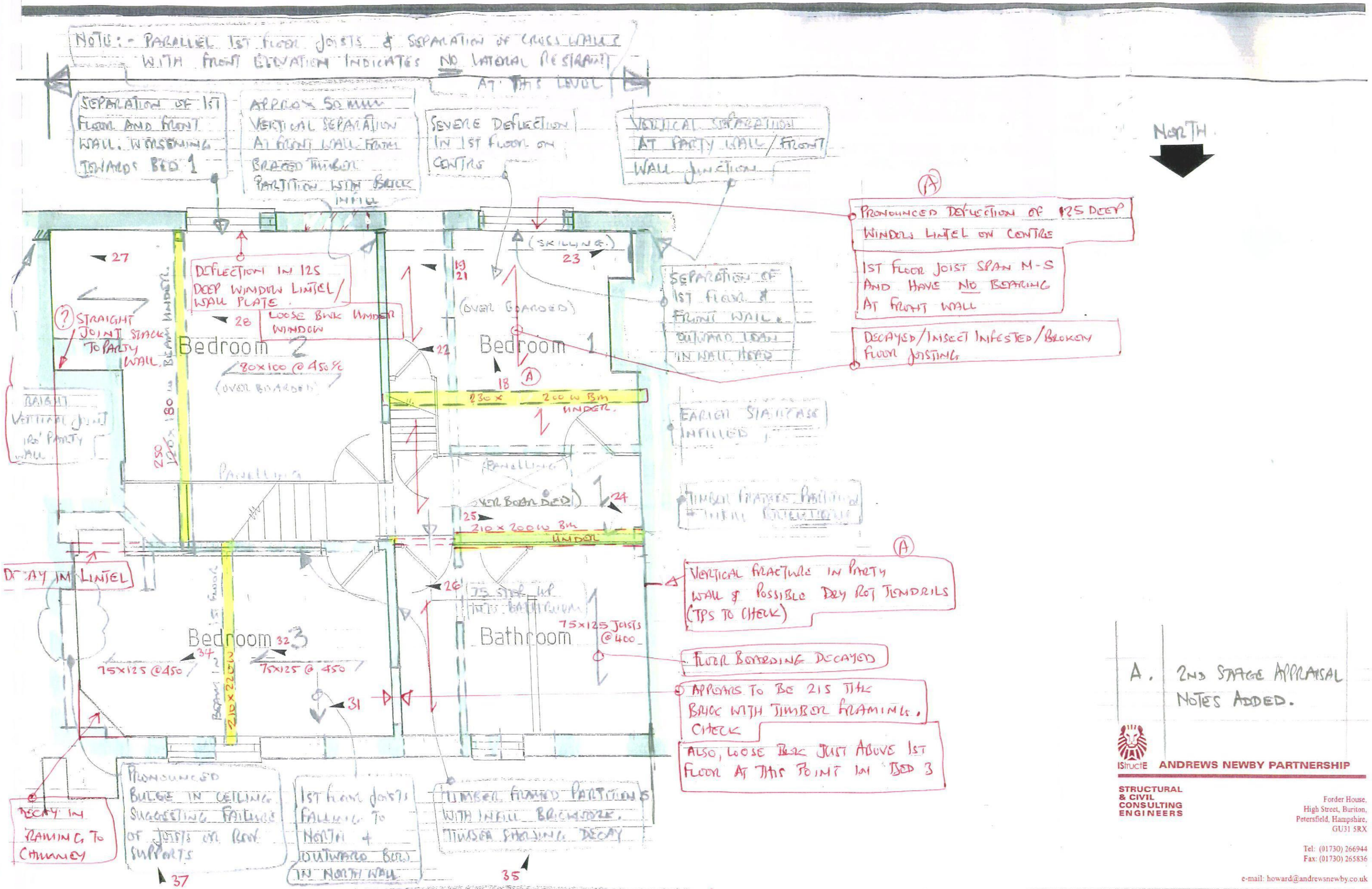

First Floor Plan

SHOWING GROUND FLOOR LOADBEARING WALLS UNDER (1:50)

A. 2ND STAGE APPRAISAL NOTES ADDED.

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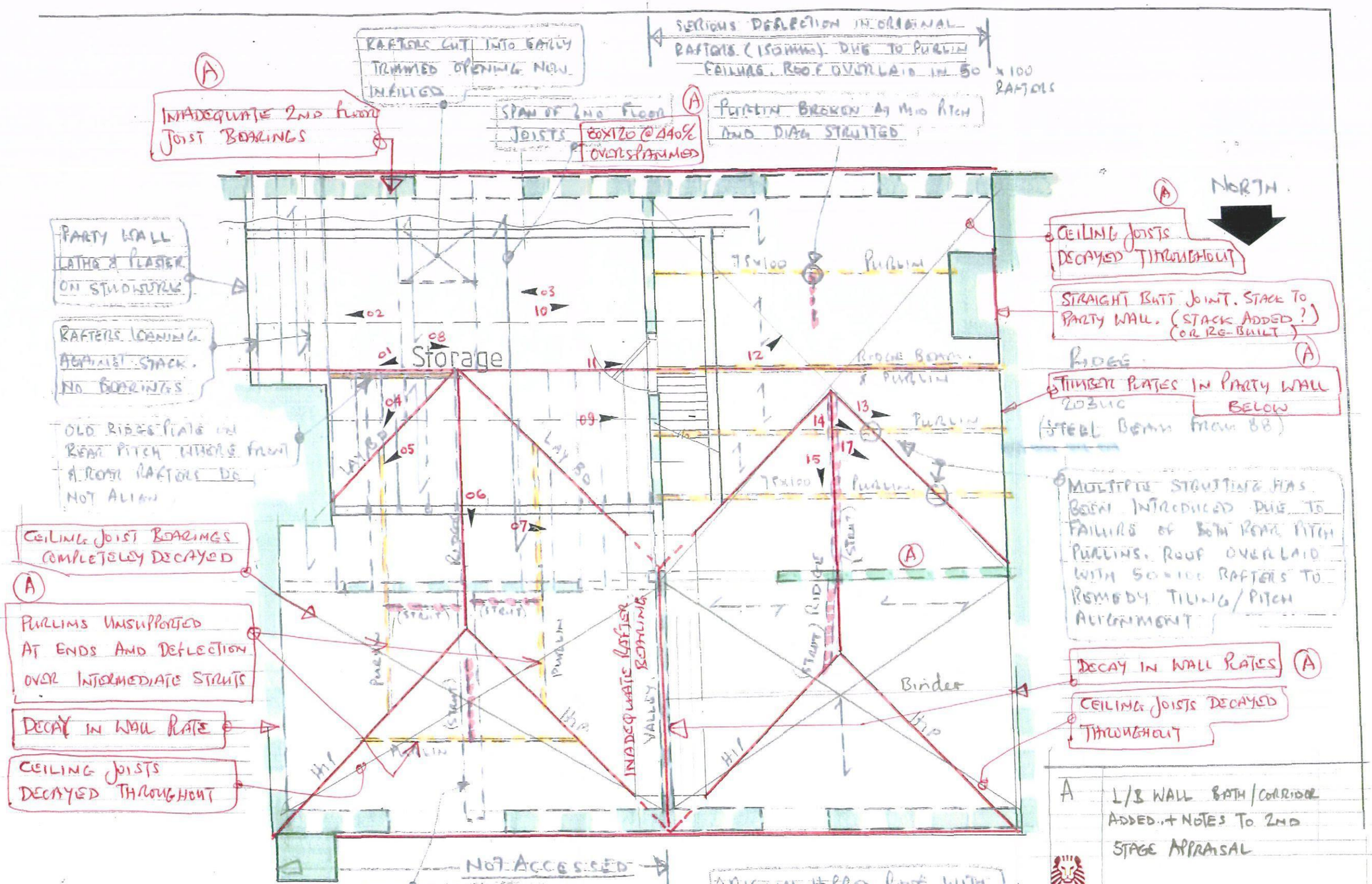

Second Floor Plan

SHOWING ROOF OVER & EXISTING LOADBEARING WALLS. (1:50)

(03 ➤ = PHOTO Nº AND DIRECTION)

A L/B WALL BATH/CORRIDOR ADDED. + NOTES TO 2ND STAGE APPRAISAL

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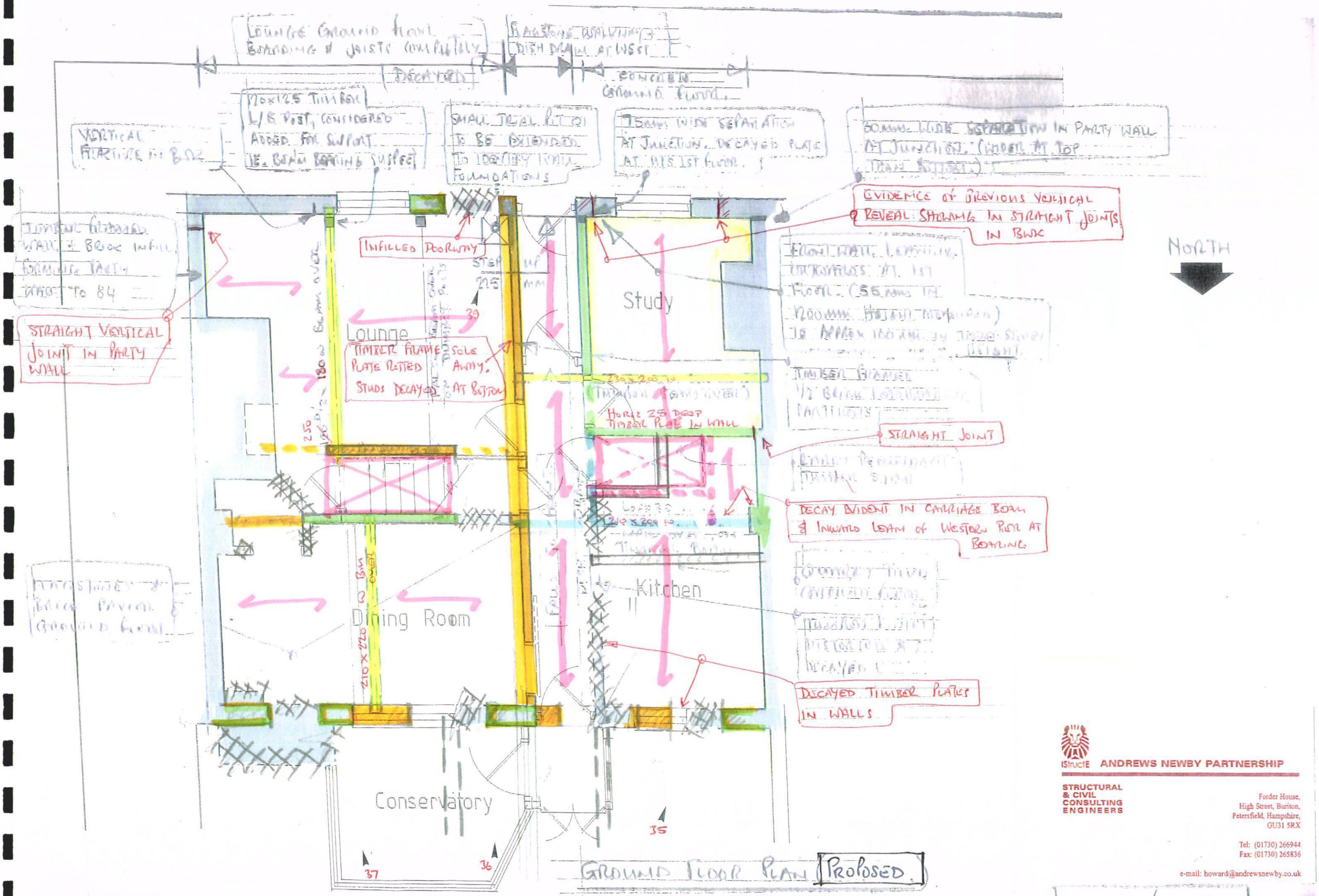

GROUND FLOOR PLAN PROPOSED.

= EXISTING TIMBER
= NEW STEEL
= NEW MASONRY
= EXISTING -"-
(1:50)
(39 ► = PHOTO N° & DIRECTION)
XXXX = REMOVED
= NEW PARTITION

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2844/SK/100

NOTE:- PARALLEL 1ST FLOOR JOISTS & SEPARATION OF CROSS WALLS WITH FRONT ELEVATION INDICATES NO LATERAL RESTRAINT AT THIS LEVEL

SEPARATION OF 1ST FLOOR AND FRONT WALL. INTERNAL INWARDS BED 1

APPROX 50 MM VERTICAL SEPARATION AT FRONT WALL/FRONT BRACED THROUGH PARTITION INTO BEDS 1 INFILL

SEVERE DEFLECTION IN 1ST FLOOR ON CENTRE

VERTICAL SEPARATION AT PARTY WALL/FRONT WALL JUNCTION

NORTH

(A) PRONOUNCED DEFLECTION OF 125 DEEP WINDOW LINTEL ON CENTRE

1ST FLOOR JOIST SPAN N-S AND HAVE NO BEARING AT FRONT WALL

DECAYED/INSECT INFESTED/BROKEN FLOOR JOISTING

SEPARATION OF 1ST FLOOR & FRONT WALL. INTERNAL LOAD BEARING WALL BELOW

DEFLECTION IN 125 DEEP WINDOW LINTEL/ WALL PLATE

LOOSE BRK UNDER WINDOW

(SKETCH) 23

(OVER BOARDED)

Bedroom 2

Bedroom 1

27

28

22

19 21

18

(A)

? STRAIGHT JOINT STACK TO PARTY WALL. BEHIND RENDER.

SLIGHT VERTICAL JOINT TO PARTY WALL

250 x 180 LINTEL

230 x 200 IN BRK HIDDEN

(OVER BOARDED)

24

25

STEEL OVER

STEEL OVER

DE 47 IN LINTEL

26

75 STEEL UP JOISTS PARTITION

Bedroom 3

Bathroom

75x125 JOISTS @400

34

32

75x125 @450

75x125 @ 450

BEAM 215x225 IN

31

CAV IN CHIMNEY

SLOPING TO CHIMNEY

PLASTERED BULGE IN CEILING SUGGESTING FAILURE OF JOISTS OR BEAM SUPPORTS

37

1ST FLOOR JOISTS FAILING TO NORTH & OUTWARD BOW IN NORTH WALL

35

TIMBER FRAMED PARTITIONS WITH INFILL BRICKWORK. TIMBER SHOWING DECAY

36

SLOPING GROUND FLOOR LOADBEARING & WALLS UNDER

(A) VERTICAL FRACTURE IN PARTY WALL & POSSIBLE DRY ROT TENDRILS (TPS TO CHECK)

FLOOR BOARDING DECAYED

APPEARS TO BE 215 THK BRICK WITH TIMBER FRAMING. CHECK

ALSO, LOOSE BRK JUST ABOVE 1ST FLOOR AT THIS POINT IN BED 3

= EXISTING TIMBER BEAMS

= STEEL BEAMS OVER

= NEW MASONRY

= REMOVED.

(28 ► = PHOTO N° & DIRECTION)

First Floor Plan

(1:50)

PROPOSED

= SPAN OF 1ST FLOOR JOISTS

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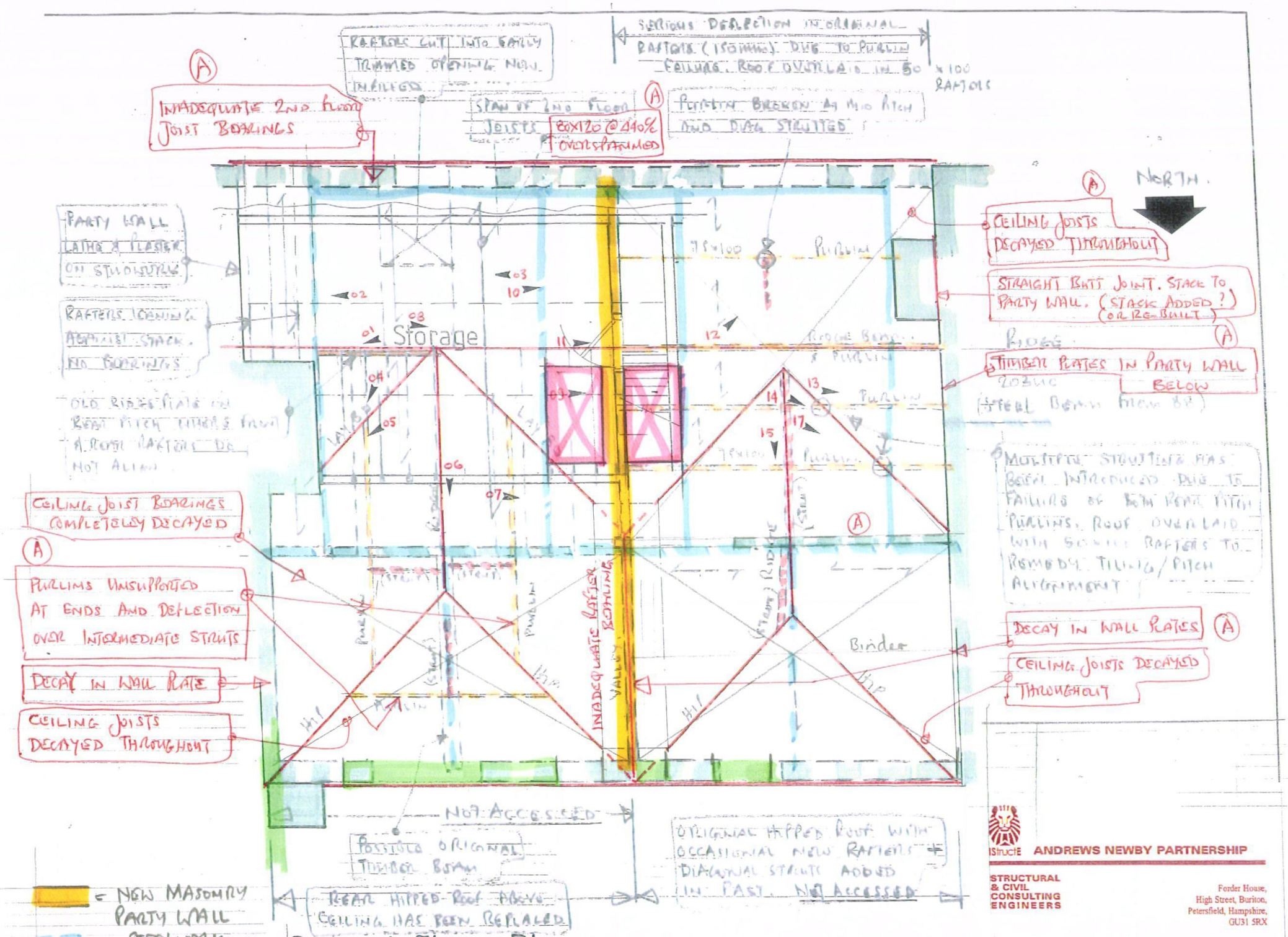

Second Floor Plan

SHOWING ROOF OVER & PROPOSED LOADBEARING WALLS. (1:50)

(03 ► = PHOTO Nº AND DIRECTION)

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