



Structural Report

Project: 2-8 Huddersfield Road
Birstall
Batley
WF17 9AA

Client: Wharfedale Finance Company

Reference: B24431-JNP-XX-XX-RP-S-0001 P01

Date: 09 February 2021

DOCUMENT CONTROL SHEET

REDACTED

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FOR AND ON BEHALF OF JNP GROUP

Date: February 2021

Document Issue Record

Rev	Date	Description	Prepared	Checked	Approved
P01	11/2/2021	First Issue			

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1 INTRODUCTION AND SCOPE

- 1.1.1 This report was commissioned by Wharfedale Finance Company, the owners of the property, on the 28 May 2012.
- 1.1.2 The scope of the report was to comment upon the general structural condition of the four properties to determine whether the properties are beyond economical repair.
- 1.1.3 JNPGROUP inspected these properties in 2012, this report is an update.

2 SUMMARY

- 2.1.1 The properties (four in total) are suffering from common defects which have been highlighted in Section 7. In addition to this, the properties have reached a stage where their structural integrity is now in question. Failure of all the roofs has already occurred. Upper floors are suffering from timber decay, particularly due to damp ingress. There are indications of downward movement, particularly to the front of property No. 8 and to the rear elevations of properties 2, 4 and 6, with additional failure of the front elevation at upper levels at properties 2 and 8. There are also indications of progressive movement when compared to our survey of 2012.
- 2.1.2 Due to the advanced structural problems associated with the 4 properties I am of the opinion that they are not economically viable for repairs and demolition of the properties should be considered. In the meantime, the properties should be kept sealed to prevent public access due to their dangerous condition. Should the stone slabs over the cellars to the front yard fail, then additional protection will be required as there would be a significant drop from the pavement level to cellar level.

3 GENERAL DESCRIPTION

- 3.1.1 The properties are located at the junction of the A62 and A643 Huddersfield Road/Leeds Road.
- 3.1.2 The front elevation faces Northwest.
- 3.1.3 The site slopes down towards the rear; with the rear of the properties three storeys high.
- 3.1.4 The Geological Solid and Drift indicates the subsoils to be Lower Coal Measures. No drift deposits are indicated on the map.
- 3.1.5 The property is sited on the eastern side of Birstall centre facing the very busy A62 road. This is now a mixed commercial and residential area.
- 3.1.6 The estimated age of the properties are 130 years.
- 3.1.7 The property is constructed as follows: -
 - 3.1.7.1 The properties consist of a row of four terrace dwellings, over three floors. Property 2 appears to have been a shop and property 4 may have been the living area of the shop as the two properties were connected via door openings.
 - 3.1.7.2 The roofs are generally dual pitched spanning front to rear, with the two end properties (No. 2 and No. 8) having hipped ends. The roofs are clad with natural stone slates.
 - 3.1.7.3 The external walls are of natural stone construction and are approximately 480mm wide.

- 3.1.7.4 Internally, the ground floor and first floor are of suspended timber construction spanning front to rear. The ground floor joists support York stone flags. Floor joists take additional support off timber beams spanning parallel with the front elevation. These beams are generally to the front and the rear of the chimney breasts.
- 3.1.7.5 There is generally one internal wall which runs front to rear to the side of the stone steps which rise to the first-floor level and from ground floor to the basement directly underneath these. There are no other internal walls at ground floor level and the properties were originally 'one up one down' with the addition of a further room to the basement. The first floors in some of the properties have been sub-divided using stud partitions.
- 3.1.7.6 The cellar floor is of ground bearing York stone construction.
- 3.1.7.7 Externally, to the front there are small yards. These generally consist of stone slabs which are approximately 2.5m x 1.5m on plan and are approximately 100mm thick. The internal inspection shows that the cellars to the properties extend underneath this area.
- 3.1.7.8 There are small gardens to the rear of the properties.

4 STRUCTURAL CONDITION - EXTERNAL

- 4.1.1 Inspection of the exterior of the property revealed the following: -

4.2 Front Elevation

- 4.2.1 This is the left property. There is a timber beam at lintel level spanning the full width of the property. There are two window openings at either side of the centre door that have been partially filled and smaller windows installed. The timber beam is suffering from decay. A crack approximately 40mm wide has developed to the left side of the lintel which extends up to the sill above. This crack has significantly opened over the last 8 years. Photograph 1 shows the elevation and photograph 2 is a close-up of the crack. The left corner of the elevation leans out by approximately 30mm over the first 2.4m.

4.2.2 *Property No. 2*

This is the left property. There is a timber beam at lintel level spanning the full width of the property. There are two window openings at either side of the centre door that have been partially filled and smaller windows installed. The timber beam is suffering from decay. A crack approximately 40mm wide has developed to the left side of the lintel which extends up to the sill above. This crack has significantly opened over the last 8 years. Photograph 1 shows the elevation and photograph 2 is a close-up of the crack. The left corner of the elevation leans out by approximately 30mm over the first 2.4m.

The sill to the left window slopes down slightly to the right. The cellars to this property extend over half the width of the front yard (which is triangular shape). The remainder of the yard appears to be natural ground/backfill to the cellars, and this has settled. The gutter has rotted, and water has been allowed to pour down the front elevation washing out mortar.

4.2.3 *Property No. 4*

The front elevation is shown on photograph 3. The ground floor sill was found to be horizontal. The wall is reasonably plumb. The property has been repointed in the past and most of the pointing is intact. Apart from the top three courses of stonework which appear to lean into the property, the elevation is in reasonable condition.

4.2.4 **Property No. 6**

See photograph 4. There is patch pointing around the lintel; however, the majority of the pointing appears to be relatively old. There are no significant open joints, and the wall is reasonably plumb and the sill reasonably horizontal. The jamb stones to the right side of the entrance are damaged where metal inserts holding a doorframe in place have corroded blowing off the face of the stones. There are a few open joints between this property and No. 8.

4.2.4 **Property No. 8**

See photograph 5. At lower level, the elevation was found to be reasonably plumb, and the sill is horizontal. At first floor level there is a crack from the left corner of the lintel to the door which radiates up to the right corner of the sill to the first-floor window. There is a further crack which appears to be relatively recent, radiating down from the right corner of the first-floor window to the right corner of the door below. This is shown in photograph 6. The lintel over the front door slopes down to the left by approximately 30mm. The lintel is also cracked where it bears onto the wall at the right side. The door threshold also leans down towards the left. This indicates significant downward movement to the left of the door. The wall below the crack that runs from the corner of the first-floor lintel leans inwards by approximately 40mm from first floor level to the underside of the first-floor lintel. The front right corner leans out towards the right.

4.3 **Right Gable Wall**

4.3.1 From ground floor level down to basement level, the gable wall has been rendered. See photograph 7. It is noted internally that there is significant damp inside the property along this wall. There is a rainwater pipe at the front right corner which enters straight into the ground. This is possibly connected to a drain along the side of the property, which may be damaged. The elevation has been repointed many years ago; however, the face of the stones is weathered. The wall is uneven; however, there is no sign of significant bulging or leaning. The gutter has fallen away.

4.4 **Left Hand Gable Wall**

4.4.1 See photograph 8. Two shop windows have been infilled. The gutter along this elevation has rotted over most of its length. The sills to these blocked up windows are reasonably horizontal. The wall appears to be reasonably plumb although the mullions lean outwards.

4.5 **Rear Elevation**

4.5.1 **Property No. 2**

This property has a small window at first floor level and one at ground floor level (photograph 11). These are a later addition and have precast concrete lintels. The gutter along the rear elevation of all the properties is in poor condition or fallen off. The elevation has not been repointed and there is loose pointing and gaps around the jambs to the windows and doors.

4.5.2 **Property No. 4**

There is cracking radiating from the right side of the lintel to the window when viewing the property from the rear (photograph 10). There is a further crack which has split the stone, going up the property centrally.

There is an original window directly above the ground floor door at first floor level (see photograph 11). The crack that runs between the door at ground floor level and this window is an old crack has been filled in in the past, however, has reopened over the last 8 years. The crack may have been up to 40mm wide. The lintel to the door falls down to the right by approximately 10mm, and the lintel to the window falls down to the right by approximately 15mm. There is indication therefore that some differential movement has taken place to the property.

4.5.3 **Property No. 6**

The first floor and ground floor windows have been formed in this elevation using precast concrete lintels over. A soil and vent pipe exists the rear elevation and a large hole has been formed in the wall at this location (photograph 15). The wall has not been rebuilt around this opening. Where the rear wall has been broken through to form the windows, bricks have been inserted and the window openings poorly formed. The lintel to the cellar window is cracked, and the crack is radiating up from this point up to the new window at ground floor level). The sill to this basement window is also cracked on the left side. The lintel over the door has cracked, and a crack radiates up the rear wall from this point (photograph 9).

4.5.4 **Property No. 8**

The rear elevation of this property appears to have been repointed, possibly in excess of 20 years ago. Two windows have been formed at first floor level, and these have no sills or lintels that are visible. The gutter also appears to be in better condition. There is no indication of significant structural movement to this elevation.

To the rear of this property is a more recent flat roof extension. The flat roof is in poor condition. This forms a room at basement level now containing the bathroom. There are no signs of significant movement (see photograph 13 and 14).

5 **STRUCTURAL CONDITION – INTERNAL**

5.1 **Property No 2**

- 5.1.1 This property, as noted earlier, was possibly a shop. The stairs running to first floor level, unlike the other properties, are timber, and the stairs running down to the cellar are timber, suggesting that these are a later addition and that this shop unit was later converted into a

domestic dwelling. The floor to ceiling height in this property at ground floor level is 2.9m compared to 2.7 in the other properties. There is a resulting loss of head height at first floor level.

5.1.2 ***Basement Level***

The timber stairs down into the cellar are in a dangerous condition. The timber cladding to the underside of the ground floor has fallen away in places, and the ends of the joists appear to be suffering from decay. Timber lintels are present internally to the external walls, and the lintel over the rear door appears to have failed. There is significant damp in the cellar. A door into the area under the front yard has been bricked up, therefore access could not be gained into this area. There are no signs of significant structural movement.

5.1.3 ***Ground Floor Level***

There is damp noted at the top of the stairs in the gable wall. There is cracking in the party wall behind the chimney stack towards the rear; however, this appears to be where a door has been blocked up in the past. The lathe and plaster ceiling are failing away, particularly close to the front elevation, and damp has entered the floor in this area. The floor joists appear to span in the opposite direction to the other properties, and this property has three beams spanning front to rear. The ends of the beams may be suspect where they are seated into the front and rear walls, and particularly the front wall where damp is noted. There are indications of opening up of the joint between the left gable wall and the front elevation.

5.1.4 ***First Floor Level***

There are no internal walls in this area. The floorboards are saturated due to failure of the roof and flashings and the ceiling has failed in a number of places revealing the lathes behind. Although in a dilapidated condition, there is no indication of significant structural movement to the walls. There is cracking in the rear wall to about 1mm wide. It may, however, be at the location of old cracks. There is cracking to the side of the lintel to the small window in the rear elevation; this is a later addition to the property and the window opening has been poorly formed.

5.2 ***Property No 4***

5.2.1 ***Basement Level***

There is a crack running vertically in the party wall between this property and the property to the left. There is a crack in the right party wall close to the rear elevation suggesting some parting of the rear wall away from the party wall. The underside of the ground floor is timber, and these appear to be in poor condition. There is significant damp in the property.

The two rooms to the extension of the cellar under the front yard has wide stone slabs spanning across to walls and there are no beams. There are open gaps between the slabs, allowing water into this area. There are no signs of significant structural movement.

5.2.2 ***Ground Floor Level***

There is a crack at the junction of the rear wall with the party wall, suggesting movement of the rear wall away from the right party wall. There is a further crack at the junction of the front wall with the right party wall. This suggests the party walls are not securely bonded to the front and rear elevations.

5.2.3 ***First Floor Level***

There is significant damp at first floor level due to failure of the roof. The first floor has been subdivided, to form a bathroom and two bedrooms. The ceilings are uneven, suggesting failure of the lathe and plaster. In the bathroom to the front there is a slight crack at the junction of the party wall with the front elevation. There is damp ingress through the ceiling in the rear bedroom close to the chimney stack, and the ceiling has failed locally. There is damp staining on the rear wall. The doorframe to the top of the stairs is lozenge shaped, suggesting downward movement of the wall between the stairs and the ground floor room. There is recent cracking over the rear window suggesting failure of the roof truss at its support.

5.3 ***Property No 6***

5.3.1 ***Basement Level***

There is no plaster on the rear wall and polythene has been installed underneath the timber cladding to the ground floor joists. The inner lintels to the property are timber, and these would have to be removed during any renovation works. The ground-floor timbers are suffering from rot and should be replaced. The stone floor is damp. The left room in the basement that extends in front of the properties is also damp, and the timber beams running front to rear have collapsed. The stone flags are spanning between the two side walls without any intermediate support. The slabs have not cracked. In the right extension to the cellar under the front yard, the timber beams have collapsed due to decay. Daylight can be seen through the slabs allowing water to enter this part of the building. There are indications of settlement to the party walls.

5.3.2 ***Ground Floor Level***

There are no indications of significant, recent structural movement.

5.3.3 ***First Floor Level***

This property has a bathroom to the rear and a bedroom to the front. The lathe and plaster ceilings are cracked and falling away. There is a gap where the rear wall meets the party wall, and there is vertical cracking in the rear wall at the top of the stairs.

Front bedroom – There is significant damp staining in the ceiling around the chimney and to the front elevation. Wallpaper is peeling away and there is damp on the floor. Ceilings are cracked due to the lathe and plaster becoming loose. There is significant recent structural cracking to the left party wall to 6mm width. These were not present 8 years ago. There is further cracking to the right party wall and slight bulging to the front elevation. There are tension cracks in the ceiling suggesting settlement of walls.

5.4 ***Property No 8***

5.4.1 The property consists of two bedrooms at first floor level, lounge at ground floor level, and a kitchen, bathroom plus additional cellars at lower ground floor level.

5.4.2 ***Lower Ground Floor Level***

At lower ground floor level there is significant damp on all surfaces and dampness coming through the gable, party, rear and internal wall directly underneath the front elevation. The

floor is wet and there is staining to the walls. The ceiling above the basement level is uneven. Two cellars are reached underneath the front elevation. The underside of the stone flags can be seen from within this area. There are two timber beams running front to rear to support the stone flags, and these are in poor condition, suffering from decay. A 9" square brick column has been built to help support one of these beams. The floor is very wet. The walls are extremely damp. The right cellar is also damp, and again contains beams to help support the stone flags over. These beams have been replaced by precast concrete lintels. Again, a 9" stone pier has been constructed to help support this lintel, and an additional 440 x 215 blockwork pier against the front elevation to support the end of the new lintel. There is no sign of significant structural movement at this level.

The bathroom in the single storey offshoot at the rear of this property has tiles walls on all four walls to the full height. The tiling appears to be 20-25 years old and shows no signs of cracks or movement.

5.4.3 **Ground floor Level**

At the top of the stairs that lead down to the basement, there is damp staining and further signs of damp at this level. The ground floor is uneven. There are gaps between the ceiling and the front and rear elevations.

5.4.4 **First Floor Level**

5.4.5 *Rear Bedroom* – This has been papered and shows very little sign of damp, nor any sign of significant structural movement.

Front Bedroom – This has been papered and there are indications of damp staining around the chimney stack in the ceiling. There is some unevenness of the first-floor structure. There is an inclined crack in the front elevation that suggests downward movement of the elevation. There is also a crack in the party wall, seen also from number 6. Tension cracks in the ceiling also indicate downward movement of the elevation.

6 **STRUCTURAL CONDITION – ROOF**

6.1 **External Inspection**

6.1.1 From street level the ridge and hip tiles can be seen to be broken and loose (photograph 16). The stone slates to the front and rear roof slopes show signs of movement and there is dipping and hogging of the roof structure in general across the four properties. Flashings around the chimney stacks require repairs and the mortar on top of the chimneys also require inspection. There are clear indications of movement over the last 8 years particularly to property 2.

6.2 **Internal Inspection**

6.2.1 **Property No. 2**

There are two king post trusses running across, with the one to the left side supporting the apex to the hips. There are gaps along the ridge with daylight coming through, and the timbers have split in a few places. The trusses have moved over to the right and the support to the hips have been compromised. This roof will eventually collapse.

6.2.2 **Property No. 4**

There is one king post truss across this roof and the purlins span a greater distance to the left party wall. The roof has failed in this area, and temporary props have been installed. Rafters have moved away from the ridge-board and the ridge-board has rotted and collapsed. There are open joints and gaps in the roof allowing rain into the property. The roof to this property has suffered significant structural movement.

6.2.3 **Property No. 6**

This has two king post trusses running front to rear. There are two lines of purlins to each roof slope, and the ceiling joists run parallel with the front elevation taking support of the king post trusses. Daylight can be seen, particularly under the ridges, and there are gaps around the chimney stack. Timbers are saturated and softened including the ends of purlins and the truss.

6.2.4 **Property No. 8**

There is no indication of significant structural movement to the roof. Daylight could be seen through the felt along the front of the property close to eaves level. There is one king post truss running front to rear which is located directly underneath the apex to the hips. The party walls do not extend through between the properties, which is a fire hazard.

7 **COMMENTS**

7.1.1 The four properties have a number of common problems which would have to be addressed should the properties be renovated. These are listed below: -

- i. The roofs to all the properties are in poor condition and would require reroofing. Ridge tiles are poor or broken, battens are undersized and there are a number of principle structural timbers such as rafters and purlins that will require replacing.
- ii. Flashings to all the chimneys are in poor condition.
- iii. Rainwater gutters and downpipes to the properties require replacing.
- iv. Roofing insulation would be required to all the properties.
- v. New doors and windows would be required to all the properties.
- vi. There is significant damp in the properties, both penetration damp and rising damp. This would be a significant task to deal with, particularly as the walls are of significant thickness and difficult to affect a suitable damp course. Tanking will be required at basement level to all the properties.
- vii. Drainage around the properties would need to be thoroughly investigated and renewed where necessary. We suspect that some of the drains are broken and causing discharge of water into the ground which would be adding to the damp problem experienced by the properties. These may be having an effect on the foundations.
- viii. Plaster to all walls in the property has become damaged over the years due to lack of use, and the property that was currently being vacated appears to be suffering to a greater extent

than the properties that have been left derelict. Damp penetration will probably not only affect the plaster but also may have weakened the mortar to the walls.

- ix. There is movement of the front and rear walls away from party walls, and the walls would have to be tied into a scheme prepared by a structural engineer.
- x. All internal lintels would have to be replaced as these are currently timber. We suggest that these are replaced using precast concrete lintels.
- xi. The cellars beneath the front yards are effectively open to the elements as the roofs to these cellars are significant size stone slabs with open joints. These areas also contain the electric and gas meters and cannot be simply filled in. To waterproof these areas would not only be difficult to achieve but would also be of significant cost and would not have any significant effect on return value for renting or selling the properties.
- xii. Plumbing, electrics and other services, including internal drainage, waste pipes, etc. would be required to all the properties.
- xiii. All properties will require redecoration, kitchens, and bathrooms.

- 7.1.2 In addition to the common defects noted in 5.1., each of the properties has specific defects.
- 7.1.3 Property No. 2 - The timber beam to the front elevation would require removal. This would involve taking down the front elevation.
- 7.1.4 The ground floor joists in most of the properties are suffering from damp, and the ends of floor joists are showing signs of decay. This defect is common to many of the properties. The ground floor joists support stone slabs, which prevents close inspection of the timbers. We suspect, therefore, that all of the ground floors to the four properties would have to be replaced. Failure of the floors would result in instability of the external walls.
- 7.1.5 First floor timbers are also suspect, and again this is something that is common to most of the properties. All the properties have lathe and plaster ceilings with the ceilings falling away due to damp ingress through openings in the roof letting in the rain. Again, failure of the floors may cause instability of the external walls.
- 7.1.6 Property No. 4 – The top three courses of stone to the front elevation appear to have moved. In 5.1. we have recognised that the properties will require new roofs, and the top stone courses on this property and others may be loose and will require taking down and rebuilding.
- 7.1.7 There are signs of settlement to the property, particularly to the rear elevation. Trial pits would be required to determine the ground condition and depth of existing foundations to ensure that these are adequate for the long-term stability of the properties.
- 7.1.8 There are a number of cracked lintels and sills to the rear of the properties, and particularly to the rear of property No. 6 due to settlement. A number of stone lintels and sills would have to be replaced during any renovation works.
- 7.1.9 There is movement of the front elevation to property No. 8. There are signs of downward movement of this property at the front, and the front elevation would have to be rebuilt from first floor level upwards. The movement at ground floor level may be exacerbated by

failure of timber lintels at basement level. There is evidence to suggest that the movement to the properties is progressive.

- 7.1.10 The timber flat roof to the bathroom at the rear of property No. 8 would require replacing.

8 RECOMMENDATIONS

- 8.1.1 Having considered the defects that are common to all the properties, and the significant additional structural problems noted to specific properties, I am of the opinion that the properties are not economic for repair. The movement to the properties since our first inspection in 2012, indicate that the movement is progressive and indicates significant costs will be required for investigations and a scheme of repairs required above those noted in section 7.
- 8.1.2 The structural movement to the properties, the dangerous state of the upper floors and roof, and the damp damage, which no doubt will have affected other parts of the structure which were inaccessible indicate that the buildings will become a danger risk and demolition of the buildings will be required in the near future.
- 8.1.3 It should be noted that the cellars to the properties extend up to the back line of the pavement, and that if the properties are to be demolished that there will be a retaining structure to the highway along the front of the property. We have no information on how this wall is constructed; however, it is unlikely to have been constructed to highway standards. If the properties are to be demolished, we would recommend that the cross-walls to the basements are left in place to act as buttresses to this retaining wall, and that material is compacted against the walls to provide some additional buttressing.

APPENDIX A: LIMITATIONS

- 1.1.1 This report does not comprise a full structural or any other form of survey of the property but is a specialist structural report on the items listed therein. Therefore, no responsibility can be accepted for any other defects which are found in the property.
- 1.1.2 This report is required by Wharfedale Finance Company the prospective purchaser, and a copy of this report may be given to his/her Building Society, Insurance Company, Bank, or other financial advisors. No other person may receive a copy of this report without first obtaining our permission in writing.
- 1.1.3 We have not inspected woodwork or other parts of the structure which are covered, unexposed or inaccessible and we are therefore unable to report that any such part of the property is free from defect.
- 1.1.4 The copyright at all times remains with JNP Group Consulting Engineers Ltd.

APPENDIX B: PHOTOGRAPHS



Photo 1- Property 2



Photo 2-Crack



Photo 3-Property 4



Photo 4-Property 6



Photo 5-Property 8



Photo 6-Crack to No 8



Photo 7-Right wall



Photo 8- Left Wall



Photo 9-Rear No 8



Photo 10-Rear No 4



Photo 11-Rear No 2



Photo 12-View to rear of the terrace

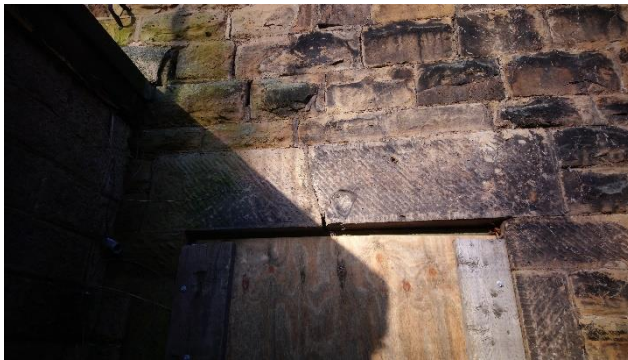


Photo 13-Cracked lintel



Photo 14-Vertical crack No 4



Photo 15-Rear No 4 showing hole



Photo 16-View to front of terrace



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