# Hudds Design

**Structural & Architectural Engineering**
**DESIGN CONSULTANTS**

PLANNING AND BUILDING CONTROL; CALCULATIONS & DRAWINGS


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# STRUCTURAL SURVEY REPORT

**PRIVATE AND CONFIDENTIAL**

## FOR

## PAUL
## @
## WESTFIELD FARM, 2 BARNSLEY ROAD, FLOCKTON, WAKEFIELD, WF4 4DW

**ISSUED FOR CLIENT:**
**HUDDS DESIGN**

**20th May 2022**
**Ref: HD-S22-0506**

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## 1.0 GENERAL INFORMATION

### 1.1 Instructions
We are instructed by Paul to prepare a structural survey report in regard to the farmhouse building at the property known as Westfield Farm, 2 Barnsley Road, Flockton, Wakefield, WF4 4DW

### 1.2 Date of Inspection
The inspection was carried out on the morning of Monday 9th May 2022 at around 10am.

### 1.3 Weather
The weather conditions were dry and sunny with cloudy over spells.

### 1.4 Orientation
All directions are given as if facing the front entrance of the property (perpendicular to Barnsley road) and looking towards the rear.

### 1.5 Level of inspection
The inspection was carried out both externally and internally at all levels. The inspection was visual and non-destructive. No opening up works were carried out and we were unable to inspect woodwork or other parts of the structure which were covered, unexposed or inaccessible and are therefore unable to report such parts are free from defects.

### 1.6 Exclusions
This report does not tell you if concealed elements of the structure are free from defects. This report does not tell you if any other parts or elements of the property, other than the area inspected are free from defects.

This report is not an Expert Witness Report suitable for legal purposes or a full building survey report. The report only advises upon any structural defects or remedial repairs which may be required. It does not provide detailed method statements, or procedures to follow, to rectify any defective work.

The foundations were not exposed during this survey, and we cannot say they are free from defect or repair.

### 1.7 Purpose
This report is prepared solely for the benefit of the client stated in Section 1.1, their contractor, valuer and or lenders, and no liability is accepted to any third parties. This survey cannot be copied or disclosed to any third party without the expressed agreement with Hudds Design Ltd. This survey may not be divulged, copied, quoted or otherwise reproduced, and/or altered without Hudds Design Ltd's expressed consent, and any request for such consent must be in writing. For the avoidance of doubt and for your information such consent is unlikely to be given, due to the confidential nature of this survey.

This report does not guarantee that work carried out in the past have been carried out to statutory/mandatory regulations or to competent manufacturers' recommendations or to British Standards, Codes of Practice, Agreement Certificates, etc

You are reminded of the general limitations of the inspection described in the Limitations Section at back of this report.

## 2.0 GENERAL DESCRIPTION

### 2.1 Description of the property

The site comprises a former farmstead with a farmhouse and several stone barns and outbuildings and steel framed sheds. This report is for the existing farmhouse located to the east of the site. The farmhouse is most likely constructed mid-late 1800's. The site is no longer used for farming activities and the farmhouse itself was occupied as a residential unit in the past but is now vacant and dilapidated.

### 2.2 General Framing

The farmhouse is of traditional masonry 2 Storey construction with stone/rendered elevations surmounted with duo-pitched tiled roof. There are two additional later added single storey extensions to the front left and right of the main building. The left add on looks to be similar to a vehicular garage with a lean-to roof, and the right side being a brick constructed outbuilding with a matching duo-pitch roof to the main farmhouse.

### 2.3 External Gardens

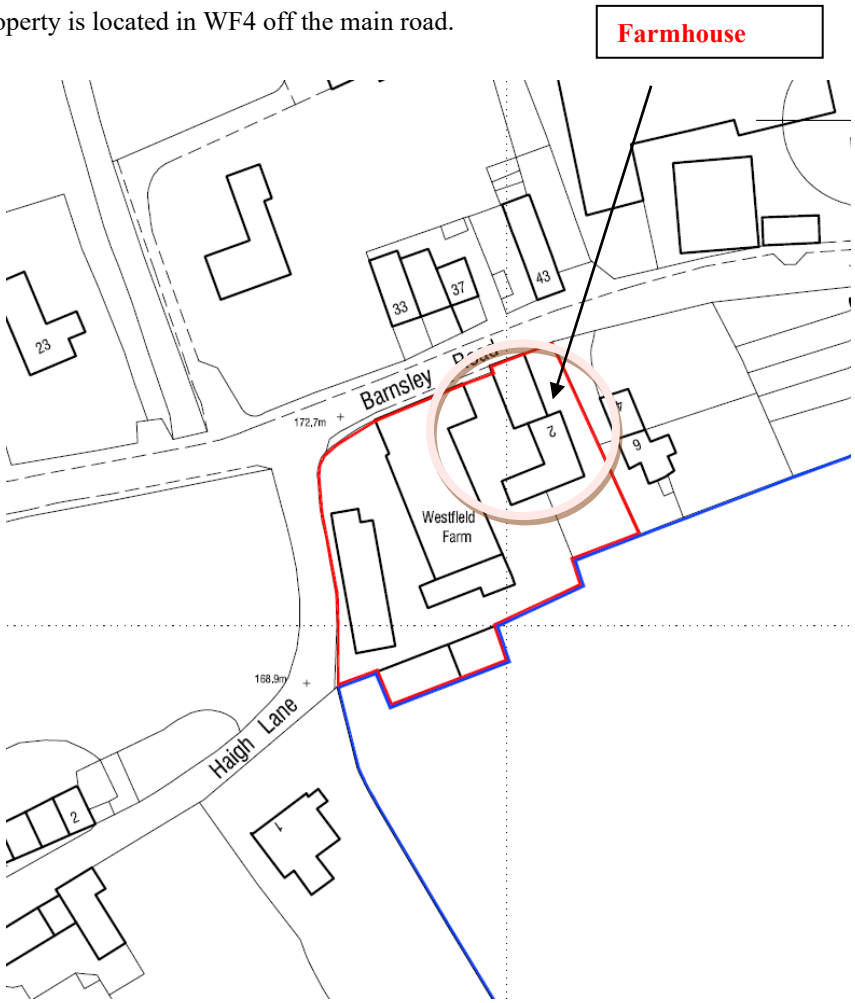
Farmland and stone outbuildings and steel framed

### 2.4 Services

Not applicable to this specific structural survey report.

### 2.5 Location

The property is located in WF4 off the main road.



## 3.0 PURPOSE OF INSPECTION

The general overall purpose of the inspection is to provide a visual structural survey report of the main structural framing members internally and externally and report any visual damage, and check and advice for any signs of subsidence, movement, major alterations with advice on structural remedial works that may be required.

## 4.0 STRUCTURE OBSERVATIONS AND COMMENTS

### 4.1 Chimney Stacks, Flashings and Soakers

There are two chimney stacks which seem to have been re-built at some point again using red-brick construction as the flashings seem of modern lead construction and appear to be in a fair state.

### 4.2 External Roofs and Valleys

The main roof seems to have been upgraded in concrete tiles at some point in the past and similar construction to the later added single storey brick constructed extension. This may have been done when the farmhouse was utilised as a residential dwelling. The roof structure has undulation and slopes in several different locations, due to excessive deflection in the roof timbers, timber failure, operational cause, and historical subsidence of the overall structure. The roof structure given the defects and undulation in several locations, requires a full new engineered roof structure to current building regulations to prevent future movement and cracking internally and most importantly to ensure the building is safely habitable.

### 4.3 External Walls and Elevations

Measurements taken at the recesses and visual inspection indicate that main walls are typical masonry cavity rubble fill construction with external stone/render finish of approximately 400-500mm thick total for the main farmhouse. The later added extensions have been added with a typical 200-300mm solid masonry wall construction.

The farmhouse and extensions have suffered significant structural movement in the form of subsidence in the past due to operational cause and the shallow coal mining voids below. There is significant structural masonry cracking and separation throughout the building.

The main farmhouse has been re-paired in the form of repointing and re-render it seems, without success. There has been water ingress into the property due to the state of the roof structure as well as significant damp issues throughout. The first-floor timber structure has significant slope due to the subsidence and most likely has been further compromised due to the water ingress.

**4.4 Floors**
All floors were covered with carpets or other fixed coverings which were not lifted. Consequently, floor surfaces and sub-floor areas could not be inspected. All floors are assumed of suspended timber construction with a concrete slab for the ground floor.

Please see comments in section 4.3/4.6.

**4.5 Damp Proof Course**
Not applicable to this specific structural survey report.

**4.6 Internal**
The property has suffered major internal hairline cracks at each floor level in relation to the movement noted externally. The floors have bowed due to the subsidence and foundation failure.

**4.7 Fireplaces, Flues and Chimney Breasts**
Not applicable to this specific structural survey report.

**4.8 Roof Void/Loft**
The roof structure has major undulation, and many cracked timbers were noted along with partial separation in places to connecting members. The timbers have been further weakened due to long term water ingress.

**4.9 Thermal Insulation**
Not applicable to this specific structural survey report.

**4.10 Timber Decay and Infestation**
Not applicable to this specific structural survey report.

**4.11 General Matters**
Any further upgrade plans should go through the standard planning and building regulations approval process.

**5.0 FOUNDATION**
The foundations cannot be inspected without undertaking considerable excavations and causing damages to the adjacent hard landscape surface; however, evidence of significant structural movement in the form of subsidence was noted to the overall main building, and there is enough evidence to suggest the foundations are defective or inadequate given the shallow coal mining works below.

The farmhouse was constructed most likely directly on made ground without any foundations and has most likely exceeded its construction lifespan, further accelerated by the poor ground conditions in the form of coal seams/voids below.

**6.0 GARDENS, WALLS, OUTBUILDING AND TREES**
Not applicable to this specific structural survey report.

**7.0 SERVICES (UTILITIES)**
Not applicable to this specific structural survey report.

**8.0 ASBESTOS ADVICE**
Not applicable to this specific structural survey report.

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## 9.0 BRIEF SUMMARY

The farmhouse is in a dilapidated state and beyond its lifespan, it is constructed of strong masonry construction, but has major signs of damage/movement as noted due to operational cause, neglect and majorly due to the subsidence caused by the coal mining below.

The external and internal damage noted to the main structure and extensions indicates the cost to repair or preserve this structure would be significant and far exceeding a re-build, to the point the structure may still require a re-build in which case it will lose any historical value. The foundations to the structure are not fit for purpose to suit the shallow coal mining/voids below.

We consider the reported damage to be due to active subsidence or progressive foundation failure.

**The below points are summarised:**

1. The roof structure is in a state of disrepair and requires a complete new designed roof structure before it is habitable again.
2. The main structures have suffered from subsidence and this is evident through separation cracks and hairline cracks internally and externally along with sloping floors.
3. The building is most likely constructed directly on to made ground; hence the foundations are not adequate as a long term for the ground conditions below. Underpinning the structure using traditional concrete pour methods would not be an option as any structure on the current grounds would most likely need raft foundations to spread the loading over a wider area. Pile foundations would also be a concern due to loss of piles within the coal seams/voids. In any case the structure would require demolition and re-build on new engineered foundations.
4. There is water ingress into the property which has further comprised the main structural elements, in particular the timbers.
5. The property suffers from damp and requires a separate assessment of this, if the above structural issues were overcome to ensure the space is habitable, along with the overall energy efficiency of the current form of construction.
6. In general, given the roof undulation and sloping floors, the building should be cordoned off until it is safe for habitation again or demolished to repair/re-erect the structure safely.

We estimate the costs to repair in accordance with the above may not be possible at all or would be far in excess of a complete re-construction/demolition scheme, which may be the likely even in the case of a repair option.

It is also recommended that any works only be undertaken by competent contractors experienced in buildings of this nature. Any refurbishment of a building will inevitably expose parts of the structure currently hidden from view and so unseen defects requiring repair may come to light.

You are also recommended to seek professional advice in respect of all planning and building regulations and the supervising of any intended structural alterations, including any local authority approvals.

Prepared By,

**Jwad Ashraf**
B.Eng (Hons), C.Eng MIStructE MIMarEST
**Hudds Design**

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## 10.0 LIMITATIONS

You are reminded that access was limited during the inspection, and it is not possible to confirm that unseen areas are free from defect.

No ladders were raised for close inspection of the upper parts of the building. Our inspection was made entirely from ground level or from upper windows where available.

Our inspection of this property covered all those parts of the building that could be seen either from ground level externally or from the interior including accessible roof spaces.

Many parts of the building such as foundations and sub floor areas are concealed during construction, and we do not disturb these. It follows, for practical reasons, that we have not inspected woodwork or other parts of the structure that are covered, unexposed or inaccessible and we are, therefore, unable to report that any such part of the property is free from defect.

Where a property has extensive floor coverings, this again limits the inspection possible, particularly of floor surfaces.

The calculations of the load bearing capacity of floors have not been carried out and we can give no opinion to their strength or suitability for your purposes.

In drafting this report, we have limited comment to more structural material matters and, in particular, we have not listed individually such minor items as slightly loose door or window fittings or minor decorative blemishes which have no structural significance.

We are not aware of the content of any environmental audit or other environmental investigation or soil survey which may have been carried out on the property and which may draw attention to any contamination or the possibility of any such contamination. In undertaking our work, we have been instructed to assume that no contaminative or potentially contaminative uses have ever been carried out in the property. We have not carried out any investigations into past or present uses, either of the property or any neighbouring land, to establish whether there is any contamination or potential for contamination to the subject property from these uses or sites and have therefore assumed that none exist.

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