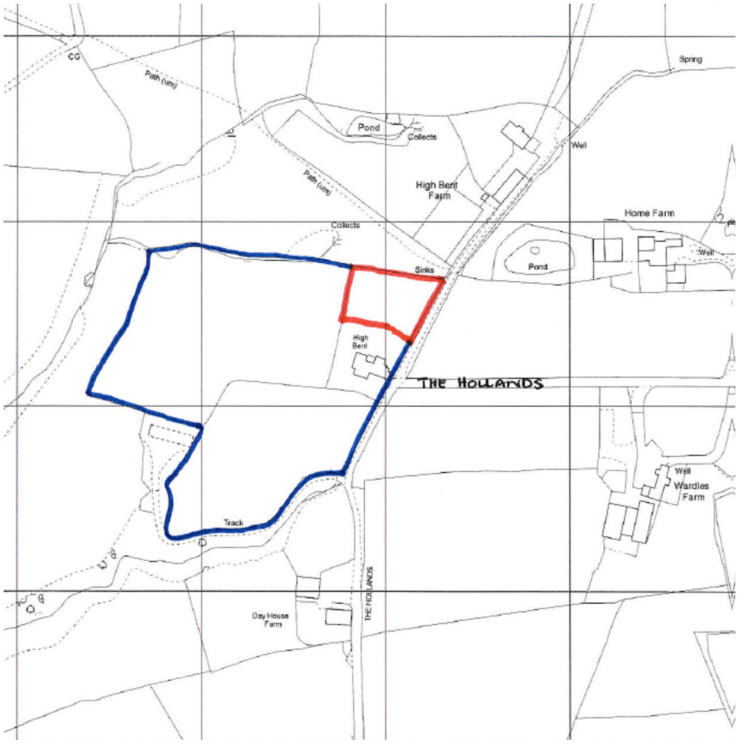
Appendix 3

Structural Method Statement

3906 High Bent

Structural Method Statement

This report has been prepared in support of a full planning application for the conversion of domestic stables to a separate dwelling at High Bent, The Hollands, Biddulph Moor ST8 7LE.



Site Location

Existing Building

The existing building stable building is a timber-framed structure clad in treated vertical timber boards.

The building has a timber frame sat on a raft foundation

The existing timber cladding is in good repair.

The building sits on a concrete raft foundation with a single course of brick to support the structural sole plate. The roof is supported by timber trusses and timber purlins, and clad in corrugated sheeting with integral rooflights along the north and west sections.

The building is weathered due to its exposed position but is in a good state of repair.

Timber trusses and purlins – to be retained

Timber frame and external cladding to be retained and lined internally

Structural Analysis

A Structural Survey has been carried out at the property and the Survey Report is included in this submission.

The report confirms that it would be possible to convert the existing building to residential use without substantial demolition and rebuilding.

Structure

- The proposed dwelling will be accommodated on the existing ground bearing slab and within the existing timber framed building.
- The existing ground bearing slab will be retained and insulated.
- The brick plinth supporting the existing timber frame will be retained. The existing plinth will be augmented by blockwork to support the internal lining and lapping of DPM.
- SIPS will be installed inside the existing timber frame. The existing wall cladding will be retained.
- The existing sheet roof will be replaced by lightweight insulated metal cladding panels to improve the appearance of the building. These will span between the existing purlins.
- No changes to existing openings are required to accommodate the conversion.
- New openings within the external fabric are kept to a minimum. Four new openings are required on the west elevation. These will not affect the stability of the building.
- The proposed window and door frame material is a composite – timber and aluminium - for security and energy-saving purposes.

Structural Method Statement

Pre-Construction Tasks

Structural investigation	Trial holes to be dug at external walls to establish the depth of existing ground bearing foundation. Timber frame and sole plate to be assessed for rot. Timber cladding to be assessed for damage at DPC level.
Structural Design	Establish proposals for insulation and floor screed to identify loads and any requirement for underpinning existing slab or foundations.

	Establish method of carrying weight of two trusses over open-plan living space – following removal of central posts. Flitch beams and timber posts to be considered. Any localized requirement for pad foundation/underpinning for posts to be identified.

Stabilize Existing Construction

Underpin	Underpinning - not anticipated - subject to structural engineer's confirmation.
Rebuild	No rebuilding of existing external envelope required
Remove	No removal of existing external walls/roof/structure required
Tie	No additional ties required - subject to structural engineer's confirmation
Brace	No additional bracing to existing structure anticipated - subject to structural engineer's confirmation

New works

Slabs	Retain existing concrete floor slab. Install damp proof membrane, thermal insulation, separation layer and screed system over existing floor slab. Install localized pad foundations for flitch supports, to structural engineer's design.
Plinth	Build up inner leaf of masonry plinth to support insulated wall lining and lapping of DPM.
Timber frame	If any requirement for remedial work is identified during pre-construction investigation, carry out in accordance with structural engineer's recommendations and treat with protective system. Treat timber with fire protection where required under Building Regulations
Flitch Beams/Posts	Install flitch beams and posts to allow removal of vertical posts in open-plan space.
Timber cladding	Treat existing vertical cladding and splice in new vertical cladding strips if required to address any damage. Install breather membrane on plywood sheathing to interior of timber cladding. Install SIPs panels on masonry plinth to provide continuous insulation internally. Apply insulated plasterboard over vapour barrier internally
Roof	Replace existing roofing sheets with lightweight insulated metal cladding panels finished, with integral roof lights. Review existing timber trusses, purlins for new loading of lightweight roof finish.
Internal Floors	Install lightweight floor screed on vapour barrier on insulation laid over DPM lapped up to DPC level at internal plinth. Screed to include UFH pipes.
Internal walls	Erect non-loadbearing internal partitions as required.

New Openings	Four new openings required on west elevation. Trim timber frame around new openings to support window and door frames. Timber linings to be installed around openings. Install windows and doors in prepared openings.
Existing Openings	No adjustment of existing opening to suit new windows/doors anticipated. Timber frame to be trimmed and linings to be installed around openings. Install windows and doors in prepared openings.