## 1.0 Introduction

1.1 The Red House is located at the north west corner of the historic village of Dunstable adjacent to The Green, Houghton Regis, Dunstable, LU5 5DY.

1.2 The Red House is a two and a half storey Grade II listed detached property dating from the 17th Century.

1.3 The property has a pitched and tiled roof and central chimney stack.

1.4 This property comprises of timber frame construction with two floors and an attic space.

1.5 The external envelope of the building is a mixture of facing brickwork and painted render, timber framing with brick infill panels, together with knapped flint walls to the rear single storey annex.

1.6 The property has been subject to later extensions and alterations in 18th, 19th and 20th century's; with a two storey rear extension and a single storey rear annex.

1.7 The property has more recently been converted in to two flats with modern internal repairs and alterations.

1.8 The existing plain tile roof coverings have already been stripped / removed and stored within the building for re-use, together with the erection of fixed scaffolding structures and temporary metal sheet roof cover.

1.9 Heras safety fencing has been erected to the open site boundaries, together with metal security shutters having been installed to all of the windows and doors.

1.10 Note: A full description of The Red House's construction is outlined within Albion Archaeology 'Historic Building Assessment Report (Reference: C02821-216-147-Version1)'.

## 2.0 Building Analysis

2.1 An extract of the 'Building Analysis' from Albion Archaeology 'Historic Building Assessment Report (Reference: C02821-216-147 Version 1)' is outlined below:

2.2 *17th Century*

2.2.1 *"The primary range dates from the 17th century. This was a timber framed building of 2½ bays with two floors and an attic storey. A stack with an axial chimney occupies the central half-bay. The southern bay is slightly longer than the northern bay. Some timber frame survives in the rear wall of the ground floor room in the southern bay (Room G2). This consists of studs and a post on a low sill wall. A horizontal timber and the post have assembly marks on the external face of the wall. Lightweight timber frame in the northern gable of the primary range is filled with brick nogging. The ceilings are supported by axial spine beams. Much of the timber is irregular, waney-edged material. The spine beams in the ground and first-floor rooms in the southern bay are made from larger sections with a squared finish. The roof has very steep pitch. It has straight braces which are visible in the attic rooms. A collar and the end of a clasped purlin are visible in the northern gable end.*

2.2.2 *Later changes have obscured the original form of the entrance and stairs but it is likely that these would have been arranged around the central stack with a lobby entrance and stairs on the rear side of the stack. The evidence is unclear but it is likely that the building would have had a single-storey outshot at the rear to accommodate the stairs and service rooms. The brickwork in the north-west elevation indicates a single-storey brick outshot at the rear that may have replaced an earlier timber framed structure.*

2.2.3 *No internal fittings such as doors or panelling survive from this period. There is some evidence for the relative status of the rooms, suggesting that the southern bay contained the best rooms. This bay is slightly longer and the main ceiling beams in its ground and first-floor rooms (G2 and F2) have a better finish than those in the northern bay (G1 and F1)."*

2.3 *18th Century*

2.3.1 *"In this period the house was re-fronted in red brick. The brickwork is butted up to modern cement strips on the corners of the frontage marking the position of the original timber corner posts. The windows in the ground and first floors in the frontage are sash windows with squat proportions with flush-fitted sash boxes. The symmetrical arrangement of the brick front obscures the unequal bays in the primary range."*

2.4 *Late 19th Century*

2.4.1 *"The main part of the building from this phase is the single-story range at the rear of the house in flint with brick dressings. It appears to have had a row of doors or openings facing onto the yard at the rear of the house. It could have contained service or storage rooms and possibly stables, judging from the arrangement of blocked openings.*

2.4.2 *Little evidence survives in the primary range from this period, possibly some of the door frames and casement windows in the southern gable end. The dormer windows in the front of the attic rooms, although much repaired, could date from this phase."*

2.5 *Later 20th Century*

2.5.1 *"The building has undergone significant alterations and repairs in the modern period.*

2.5.2 *Much of the work appears to date from the mid-20th century. A first floor was added to the extension at the back of the primary range. This contains stairs to the first floor and a bathroom. Other work done at this time includes the addition of the porch at front of the building and the replacement of many of the windows. The cement strips on the front corners of the building may have been done at this time.*

2.5.3 *The ground floor room in the rear extension has been extended into the northern bay of the primary range. The open partition in this room has been constructed on the line of the original back wall of the building to support the first floor. The use of machine-sawn timber for the studs and modern brick in the sill wall suggests this partition has been largely rebuilt during the 20th century; however, it appears to include some elements of the primary timber frame, particularly at ceiling level.*

2.5.4 *The latest works to the building comprised the rebuilding of the central panels in the northern gable wall, the insertion of additional beams above the floor in the northern attic room and various works related to the conversion into two rented residential properties."*

## 3.0 Heritage Values

3.1 Albion Archaeology 'Historic Building Assessment Report (Reference: C02821-216-147 Version 1)' identifies the 'Heritage Values' of the building as follows:

3.2 Evidential Value:

*"The primary range of the building dates from the 17th century. Although subject to later alterations, the original plan from this period remains largely intact and readable. It also retains historic building fabric with elements of the timber frame in the walls and ceilings being visible inside the building.*

*Changes made to the house during the 18th century are evident in the façade, which was replaced in brick with sash windows. It is quite likely that other alterations would have been made at this time but no evidence remains for this.*

*The most significant 19th century feature of the building is the outbuilding that forms the present southern range. Apart from its plan form and much-altered openings, nothing remains to indicate its original internal layout and function. The flint and brick construction is typical of the late 19th century when its use was revived during the vernacular revival.*

*A single storey outshot would have stood at the rear of the building and is indicated in the continuation of the brickwork in the north-west elevation. However, later alteration and extension has removed most of the historic fabric in this part of the building."*

3.3 Historical Illustrative Value: *"The earliest surviving parts of the building are an example of a type of house that developed during this period. It has a central fireplace and similar-sized bays to either side, producing a near symmetrical plan. The clasped purlin roof over the primary range appears to form part of its 17th century construction and is an interesting example partly due to its unusually steep pitch.*

*The re-fronting of the house in brick during the 18th century is an example of how buildings were updated in accordance with the aesthetic tastes of the period."*

3.4 Historical Associative Value: *"It is clear from the design of the building with 2½ stories and its high roof line that it would have been a building of some standing when it was built."*

3.5 Aesthetic Value: *"The Red House forms a very significant element in the character and aesthetic value of the historic village green. It is the only surviving historic building on this side of the Green. The front of the building survives largely intact with the mid-20th-century porch respecting the character of the building."*

3.6 Setting: *"The primary objectives of the present report were to assess the development and historical significance of the fabric of the building. The impact of development on the setting of the Red House and other designated heritage assets outside of the development is evaluated in the separate Heritage Statement (Albion Archaeology 2016a)."*

## 4.0 The Refurbishment Works

4.1 The works comprise of the refurbishment of The Red House in order to bring the building back up to a suitable standard of repair and in so doing protecting the heritage asset from falling in to further disrepair; taking due regard of the aforementioned 'Heritage Values'.

4.2 The Phase 1A refurbishment works to The Red House are intended to be carried out in advance / concurrently with the Phase 1 and Phase 2 works in connection with Central Bedfordshire Council's HRC Redevelopment Scheme (refer to the HRC Redevelopment Phasing Plan); whereby a separate contractor is to construct a new glazed link building between the new development and The Red House, together with the construction of a new glazed single storey extension with flat roof to the rear of the building.

4.3 The construction of the new glazed link building, steps, ramp and/or access lift between the HRC Redevelopment Scheme and The Red House (as highlighted on Kyle Smart Associates drawings) are not within the scope of the Phase 1A refurbishment works to The Red House.

4.4 The construction of the new glazed single storey extension / conservatory with flat roof to the rear of The Red House (as highlighted on Kyle Smart Associates drawings) are not within the scope of the Phase 1A refurbishment works to The Red House.

4.5 The construction of the new Baby Change and Accessible Toilet to the ground floor rear annex building, together with forming or blocking up the associated window and door openings (as highlighted on Kyle Smart Associates drawings) are not within the scope of the Phase 1A refurbishment works to The Red House.

4.6 In pursuance of 'Conditions'; 3, 4, 6, 7 & 8 and 'Notes to Applicant' 4 of the Notice of Grant of Listed Buildings Consent (CB/16/03379/LB) dated the 11th November 2016; this Design & Access Statement relates to the following additional Listed Building Applications:

- Works to the timber framed structure to the main building and attached single storey outbuilding to be retained (including roof works).
- Works to chimney structure to be retained.
- Works to staircases to be retained.
- Works to windows and external doors to be retained (including joinery structure and glazing repairs).
- Damp proofing works.

4.7 The works are to be carried out in accordance with the following documents and drawings:

Albion Archaeology 'Historic Building Assessment Report (Reference: C02821-216-147 Version 1)'
Summers-Inman 'Design & Access Statement (Version 2)'
Summers-Inman 'Works Schedule (Version 3)'
Summers-Inman drawing no. LE18001-01
Summers-Inman drawing no. LE18001-02
Summers-Inman drawing no. LE18001-03
Summers-Inman drawing no. LE18001-04
Summers-Inman drawing no. LE18001-05
Summers-Inman drawing no. LE18001-06
Summers-Inman drawing no. LE18001-07 Rev A
Glasspool & Thaiss drawing no. 17106-01
Glasspool & Thaiss drawing no. 1880-B02 Rev B
Glasspool & Thaiss drawing no. 1880-B03 Rev D
Glasspool & Thaiss drawing no. 1880-B04 Rev C
Glasspool & Thaiss drawing no. 1880-B05 Rev D
Glasspool & Thaiss drawing no. 1880-B07 Rev A
Glasspool & Thaiss drawing no. 1880-B08 Rev A
Glasspool & Thaiss drawing no. 1880-B09 Rev A
Glasspool & Thaiss drawing no. 1880-B010 Rev B
Glasspool & Thaiss drawing no. 1880-B011 Rev B
Glasspool & Thaiss drawing no. 1880-B015 Rev C
Glasspool & Thaiss drawing no. 1880-D21 Rev B
Glasspool & Thaiss drawing no. 1880-D22 Rev B
Kyle Smart Associates drawing no. 14065wd2.053 Rev A
Kyle Smart Associates drawing no. 14065wd2.057 Rev A
Kyle Smart Associates drawing no. 14065wd2.058 Rev A
Kyle Smart Associates drawing no. 14065wd2.059 Rev A
Kyle Smart Associates drawing no. 14065wd3.003 Rev C

## 5.0 Design

5.1 The refurbishment works are intended to sympathetically restore the internal and external fabric of the building; taking due care and attention to repairing the historical features of the building with traditional materials and repair techniques, as in accordance with English Heritage and Historic England 'Practical Building Conservation' publications and guidance notes.

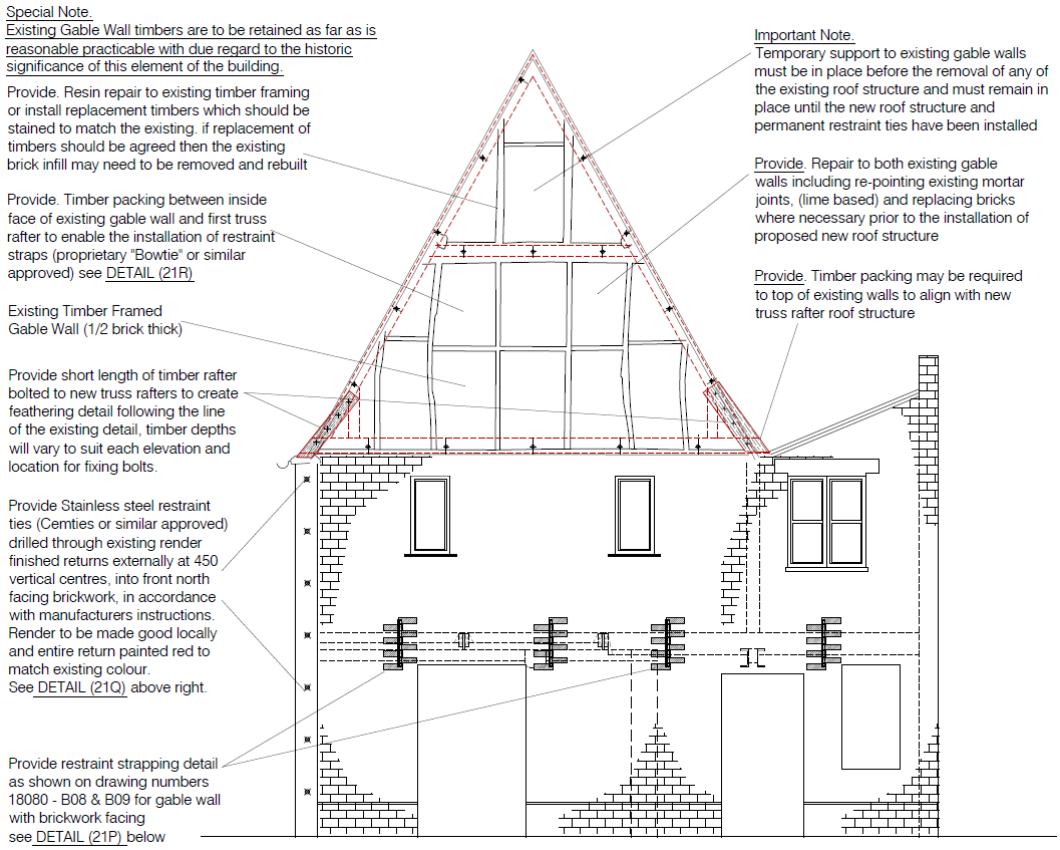
5.2 As part of the design process several site meetings and discussions have been held with Jonathan Prosser (Conservation Officer) of Central Bedfordshire Council; including the submission of draft details for his consideration / comment.

5.3 Roof

5.3.1 The existing timber pitched roof structures (including dormer windows, purlins, rafters, ridge beams, collars, weatherboarding, valley boards, tile battens, wall plates, timber studding, lath & plaster dwarf walls, fascia boards and insulation, etc) have lost their structural integrity and support and are therefore proposed to be demolished and replaced with new timber attic trusses, timber trussed rafters and cut timber roofs (including re-fixing the existing plain tile roof covering; supplemented with reclaimed tiles).

Note: 3D laser scanning of the roof structure and building has been carried out, in order to accurately record the existing construction and details.

5.3.2 The pitch and profile of the existing roof structures and dormer windows, etc are to be directly replicated; including the installation of timber sprocket joists, in order to mirror the profile of the existing sprocket joists that extend the plain tiles over the wall plates and in to the gutters (as highlighted within the following photograph and Glasspool & Thaiss Consulting Structural Engineers drawing extract 18080-D21 Rev B):

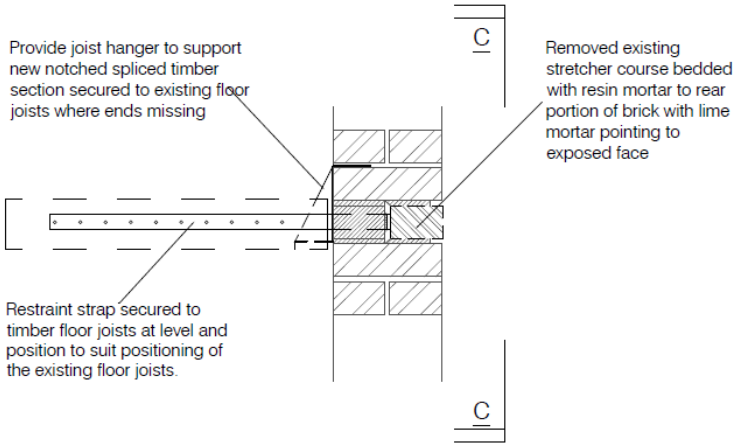


5.4 External Walls / Lateral Restraint Scheme

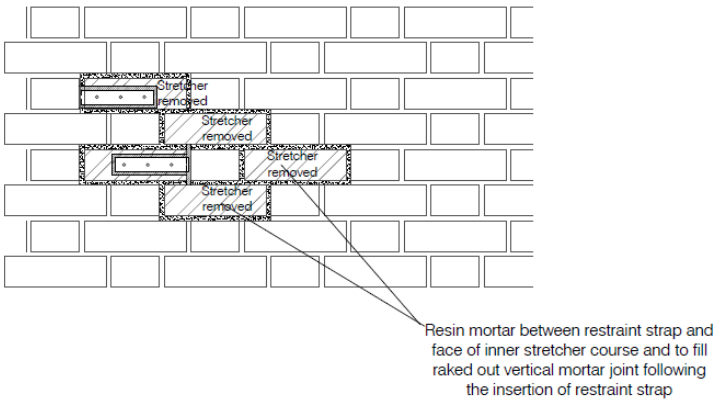
5.4.1 Lateral restraint has been lost to some sections of the external walls to the building (arising in part from the ends of the floor joists becoming rotten); with areas of the inner leaf and outer leaf brickwork having de-bonded.

5.4.2 Whilst it was originally considered by Glasspool & Thaiss Consulting Structural Engineers to install Helifix Ltd 'Retro Ties', 'Cem Ties' and 'Bow Ties' throughout all elevations of the two and a half storey building; having consulted with Jonathan Prosser (Conservation Officer) of Central Bedfordshire Council the following lateral restraint scheme in now proposed to be installed, in order to limit the visual impact of the works and in so doing retaining the historic character of the building:

5.4.3
- Front Elevation: Isolated stretcher bricks are to be carefully set-aside, in order to enable restraint straps to be secured to the new spliced timber sections / floor joists and then the existing stretcher brick to be bedded in resin and pointed with NHL3.5 natural hydraulic lime mortar to the exposed face to match the existing (as highlighted on the following Glasspool & Thaiss Consulting Structural Engineers drawing extracts 18080-B07 Rev A):

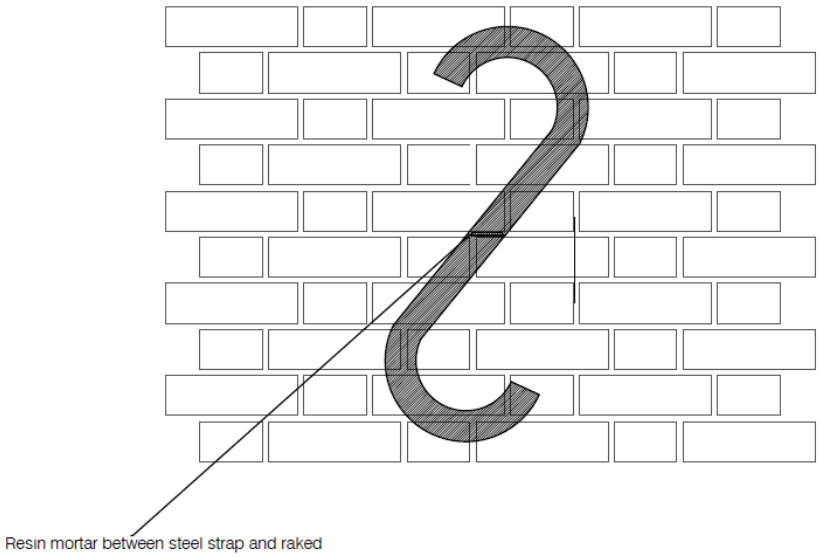



Proposed Fabricated Restraint Strap showing side fixing od strap to existing joist and restraint to Existing Bowing Brickwork DETAIL (22U)

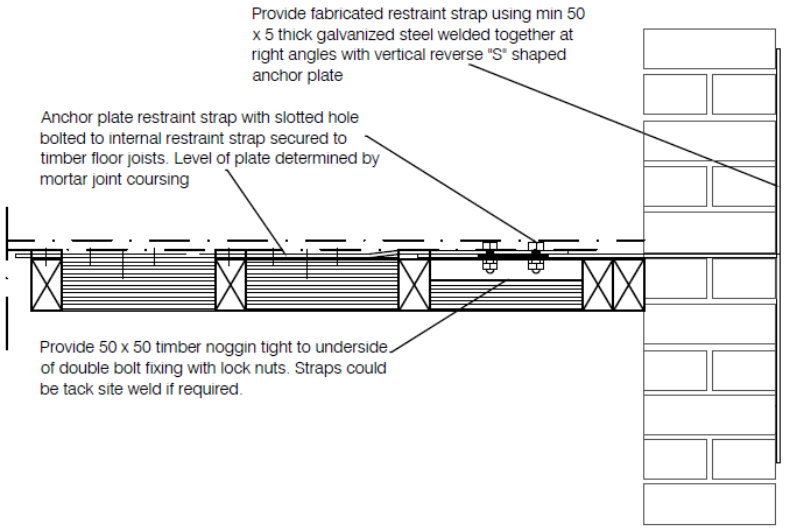



Elevation C - C
Part of Existing Brickwork Panel
(Flemish bond)

5.4.4 • Front Elevation: Alternatively should the detail outlined in item 5.4.3 be found not able to be implemented then as a last resort S shaped anchor plates and welded restraint straps to be resin bonded within the brickwork and bolted to the internal restraint strap secured to the timber floor joists (as highlighted on the following Glasspool & Thaiss Consulting Structural Engineers drawing extracts 18080-B09 Rev A):

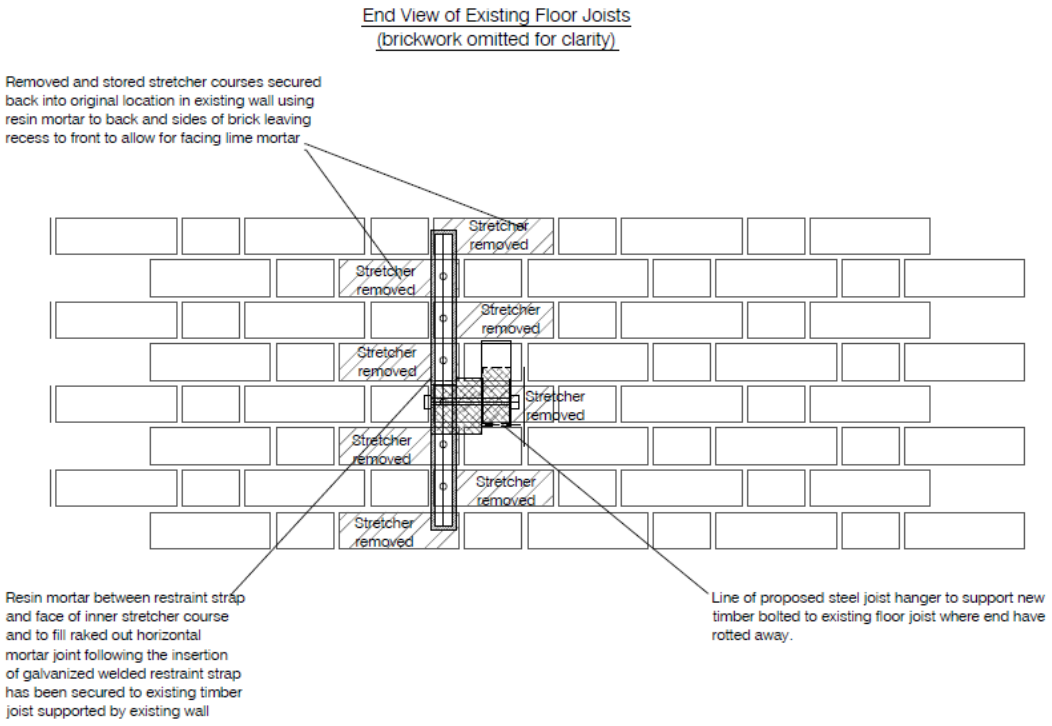


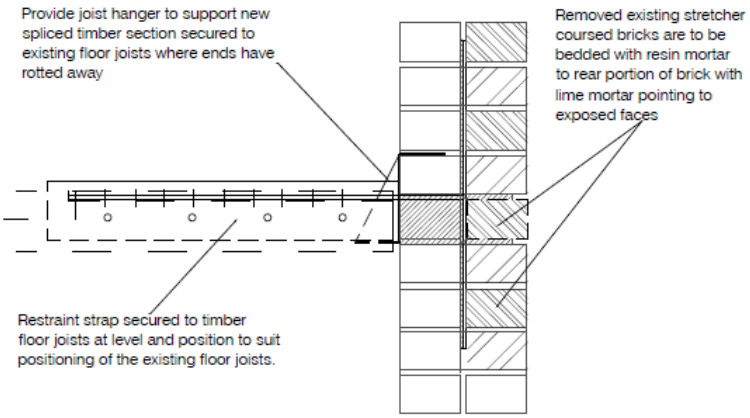

Part Elevation of Existing Brickwork Panel (Flemish bond) with "S" shaped anchor plate.



5.4.5

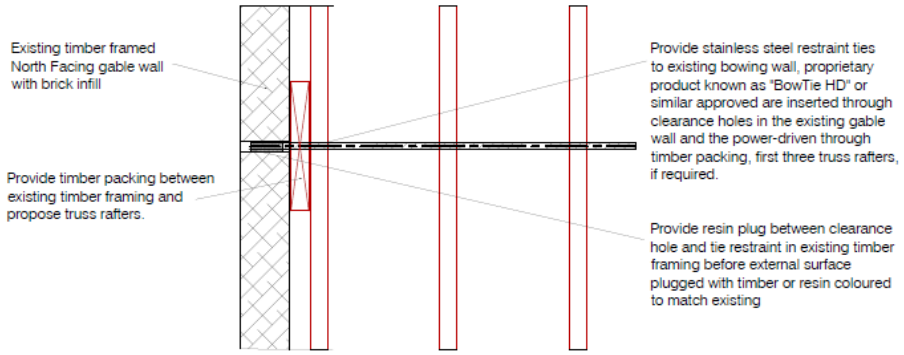
- Right Hand Side Elevation: Isolated stretcher bricks are to be carefully set-aside, in order to enable vertical restraint straps to be secured to the new spliced timber sections / floor joists and then the existing stretcher brick to be bedded in resin and pointed with NHL3.5 natural hydraulic lime mortar to the exposed face to match the existing (as highlighted on the following Glasspool & Thaiss Consulting Structural Engineers drawing extracts 18080-B08 Rev A):



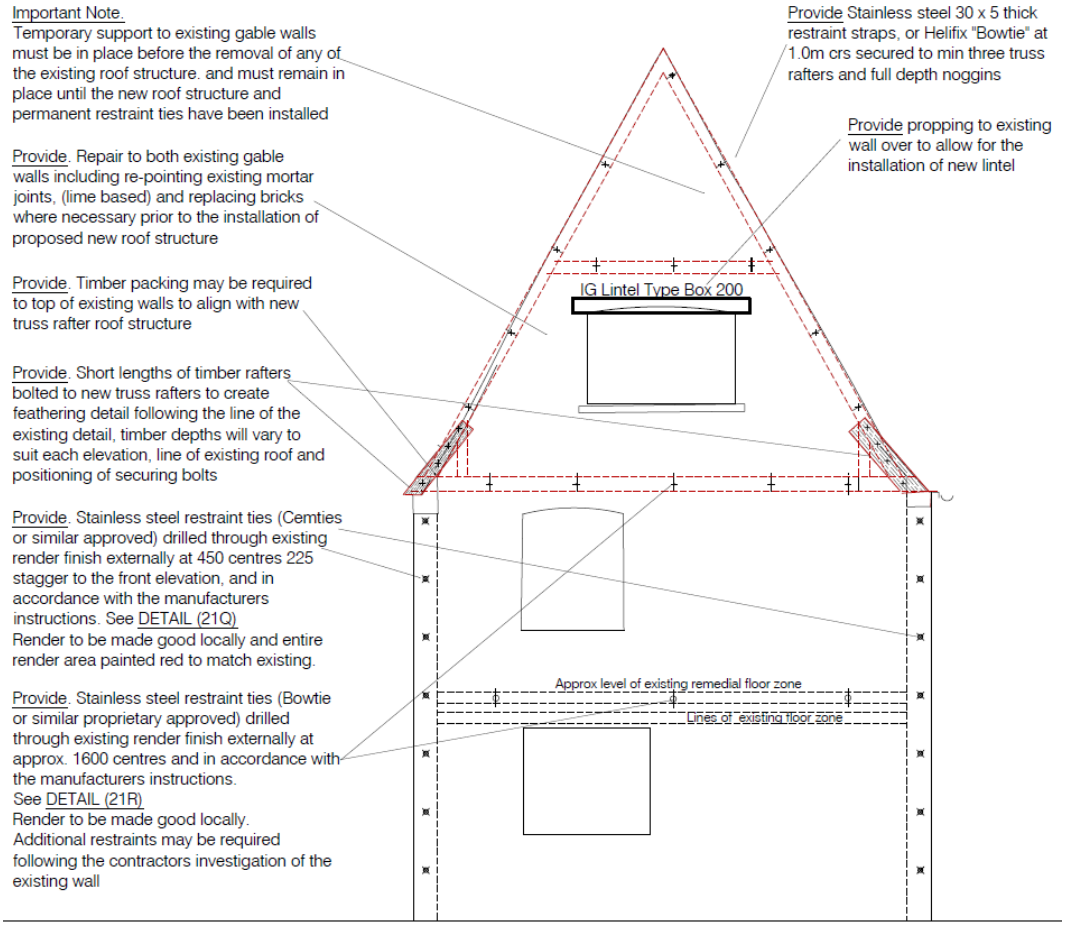




Proposed Fabricated Restraint Strap
Secured to recessed top of existing joist after
strap passed through raked out mortar of existing Brickwork

5.4.6 • Left Hand Side Elevation: Installation of Helifix Ltd 'Bow Ties' or stainless steel restraint straps to the gable wall (as highlighted on the following Glasspool & Thaiss Consulting Structural Engineers drawing extracts 18080-D21 Rev B):




5.4.7 • Left Hand Side & Right Hand Side Elevations: Installation of Helifix Ltd 'Cem Ties' to the left hand side rendered gable wall, together with the render front corner to the right hand side elevation (as highlighted on the following Glasspool & Thais Consulting Structural Engineers drawing extracts 18080-D22 Rev B):



5.5 External Brick Repairs

5.5.1 The brick repairs are to be specifically carried out in accordance with Historic England 'Repointing Brick & Stone Walls (Guidelines for Best Practice)' and English Heritage 'Earth, Brick & Terracotta (Practical Building Conservation)'; with the contractor to provide brick and repointing sample panels for the Conservation Officers consideration / approval in advance of the works being undertaken.

5.5.2 Individual defective bricks are to be cut out and replaced with reclaimed facing bricks bedded in NHL3.5 natural hydraulic lime mortar mixed with sharp sand (mix ratio 3:1 aggregate / binder) to match the existing.

5.5.3 Structural cracks to be repaired by raking out, injecting with cementitious grout and repointing the brickwork in NHL3.5 natural hydraulic lime mortar mixed with sharp sand (mix ratio 3:1 aggregate / binder) to match the existing.

5.5.4 Open jointed brickwork to be repointed with NHL3.5 natural hydraulic lime mortar mixed with sharp sand (mix ratio 3:1 aggregate / binder) to match the existing.

5.6 Knapped Flint Wall Repairs

5.6.1 The knapped flint wall repairs are to be specifically carried out in accordance with SPAB 'Care & Repair of Flint Walls' and repointed with NHL3.5 natural hydraulic lime mortar mixed with sharp sand (mix ratio 3:1 aggregate / binder) to match the existing.

5.7 Render Repairs

5.7.1 Defective / blown sections of the existing sand & cement render to the left hand side and rear elevations of the building are to be repaired, together with making good the holes in connection with the installation of the Helifix Ltd 'Cem Ties'.

5.7.2 Furthermore, a new panel of sand & cement render is to be formed to the rear elevation of the building following the demolition of the non-historic single storey rear porch.

5.8 Timber Frame

5.8.1 The exposed timber frame to the gable walls of the building are to be retained as far as reasonably practical; with any such repair works to be sympathetically carried out by way of carefully removing decayed timber to depth and providing and installing new spliced sections of seasoned Oak to match the existing.

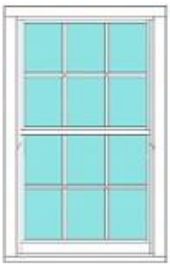
5.8.2 Furthermore, cracks, splits and shakes to the existing timber frame are to be sympathetically repaired by way of removing decayed timber with round cutter back to sound timber, checking for excess moisture and applying Repair Care International Ltd's Dry Fix Wood Stabiliser prior to applying Dry Flex Repair Compound to shape of timber section.

5.9 External Joinery

5.9.1 The 4no. existing sliding sash windows to the front elevation are to be overhauled and repaired utilising Repair Care International Ltd's resin repair system, together with replacing all cracked / defective glazing, in order to retain the character and appearance of the building.

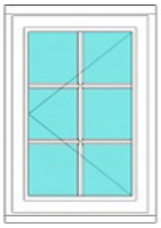
5.9.2 The central stained-glass window to the first floor front elevation of the building that has been damaged / vandalised is to be replaced with a new made-to-measure 'conservation type' timber sliding sash window (16no. lights) to match the existing; with 6mm with single glazed toughened glass:

Window Style D:

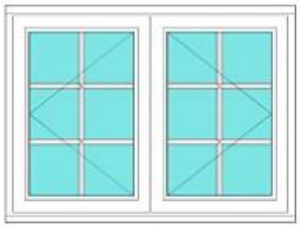


5.9.3 The remaining 'modern' rotten / defective timber windows to the remaining elevations of the building are to be replaced with new made-to-measure 'conservation type' timber flush Georgian 'all bar' casement windows; with 6mm with single glazed toughened glass (6no. lights per casement) in singles, doubles and triples to match the size of the existing openings:

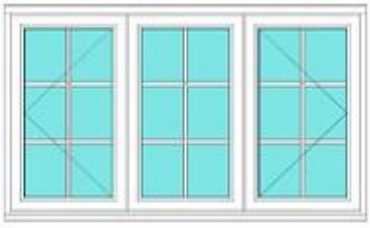
Window Style A:



Window Style B:



Window Style C:



5.9.4 The existing front door is to be sympathetically utilising Repair Care International Ltd's resin repair system.

5.9.5 The existing damaged / defective French door to the right hand side elevation of the building is to be replaced with a new made-to-measure 'conservation type' timber flush Georgian 'all bar' French door and doorframe to match the existing; with 6mm with single glazed toughened glass (10no. lights per door leaf):

Door Type B:

5.9.6 An existing window opening is to be enlarged, in order to form a new door opening to the right hand side elevation of the building and a new Howdens Joinery Ltd 'Dordogne Oak' heavy duty solid core external door and doorframe; with GA4 full height 6mm single glazed toughened vision panel to be installed:

Door Type C:

5.9.7 New Howdens Joinery Ltd 'Dordogne Oak' heavy duty solid core external doors and doorframes are to be installed within the original external door opening to the rear elevation of the building (ie following the demolition of the non-historic single storey rear porch), together with replacing the existing door to the right hand side elevation of the single storey rear annex building:

Door Type D:

5.10 Internal Structural Works

5.10.1 The following new door openings are proposed to be formed within masonry walls, as highlighted on Glasspool & Thaiss Consulting Structural Engineers drawing number 18080-B04 Rev C:

5.10.2
- Door D3: Steel frame to new door opening to support new rear wall support beam 152mm x 89mm UB 16 to inner half of existing wall to support reaction from double PFC beams, together with providing IG lintel type L11 with minimum 200mm bearing (including PS1 215mm x 100mm x 150mm concrete padstones).

5.10.3
- Door D15: IG Lintel Box 200 for external portion of existing wall with 152mm x 89mm UB 16 under inner part of existing wall (including PS1 215mm x 100mm x 150mm concrete padstones).

5.10.4
- Door D24: Steel support beam 152mm x 89mm UB 16 support new wall trimmer (including PS1 215mm x 100mm x 150mm and PS2 550mm x 100mm x 275mm PS2 concrete padstones).

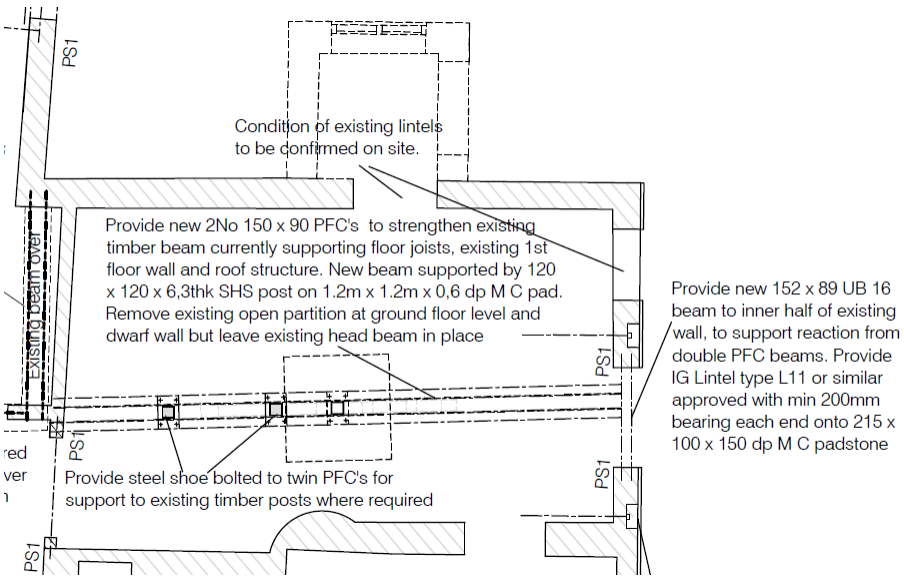
5.10.5 Forming the following new structural openings within masonry walls, in order to connect The Red House to the new HRC Development glazed link building, as highlighted on Glasspool & Thaiss Consulting Structural Engineers drawing number 18080-B04 Rev C:

5.10.6
- Structural Opening SO1: IG Lintel Box 200 for existing wall support over new opening with 152mm x 89mm UB 16 to support timber plate to new roof structure (including PS1 215mm x 100mm x 150mm concrete padstones).

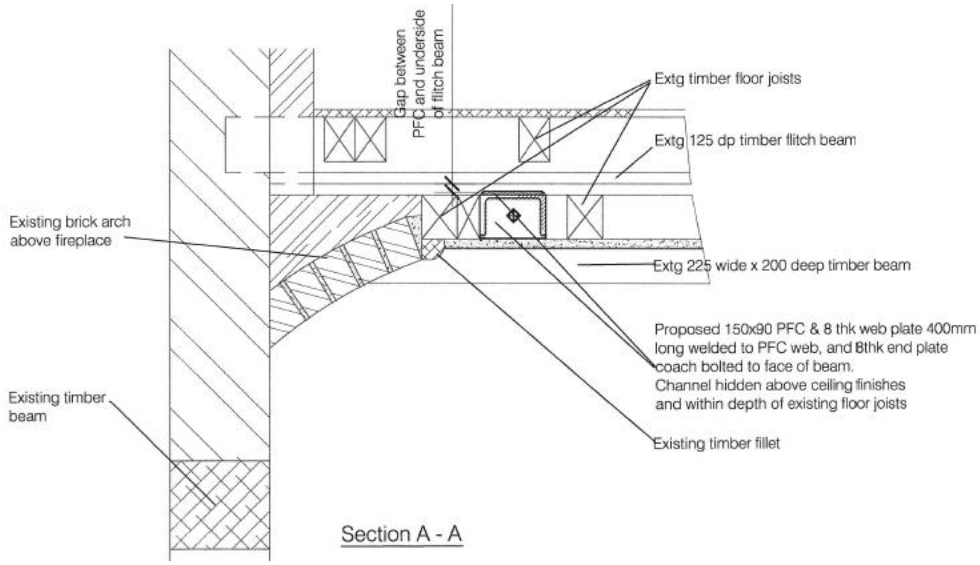
5.10.7
- Structural Opening SO2: IG Lintel Box 200 for existing wall support over new opening with 152mm x 89mm UB 16 to support timber plate to new roof structure (including PS1 215mm x 100mm x 150mm concrete padstones).

5.10.8 Installing 152mm x 89mm UB 16 roof support beam (including PS1 215mm x 100mm x 150mm concrete padstones) to the single storey rear annex building, as highlighted on Glasspool & Thaiss Consulting Structural Engineers drawing 18080-B04 Rev C.

5.10.9 Taking down and removing the non-historic open timber stud wall / partition to the ground floor rear right hand side room G3 (as highlighted within the following photograph) and installing 2no. 150mm x 90mm PFC support beams (including PS2 550mm x 100mm x 275mm PS2 concrete padstones) to strengthen / support the existing first floor wall and roof structure; with the beams to be supported by new 2no. 200mm x 200mm SHS posts supported by new 1.2m x 1.2m x 0.6m deep GEN20 concrete pad foundations (as highlighted within the following photograph and Glasspool & Thais Consulting Structural Engineers drawing extract 18080-B04 Rev C):



5.10.10 Installing a 150mm x 90mm PFC and 8mm thick web plate 400mm long welded to PFC web and 8mm thick end plate coach bolted to the face of the beam (channel to be hidden above ceiling finishes and within depth of existing floor joists), in order to support the existing brick arch detail above the fire place to the ground floor front right hand side room G1 (as highlighted within the following photograph and Glasspool & Thaiss Consulting Structural Engineers drawing extract 18080-B15 Rev C):




5.11 <u>New Suspended Timber Floors</u>

5.11.1 Following further investigation of the existing structure by Glasspool & Thais Consulting Structural Engineers the existing first floor timber joists are to be retained throughout to the first floor, which are supported off the existing timber 'flitch beams'.

5.11.2 Furthermore, the existing second floor timber floor joists are also to be retained throughout, which are to be strapped / supported off the new attic trusses.

5.12 Other Works

5.12.1 A summary of the other works that are proposed to be carried out are outlined below (refer to Summers-Inman Works Schedule LE18001 Version 2 – Section 3):

- Demolishing the existing single storey rear porch.
- Taking down and removing some of the internal walls to the single storey rear annex building.
- Forming new internal and external door openings.
- Strengthening the existing first and second floor suspended timber floors.
- Removing the existing 'modern' internal doorframes and installing new fire doors and doorframes.
- Retaining and repairing the existing 'historic' doorframes.
- Removing and reinstating defective plaster wall finishes (including associated crack repairs).
- Removing and reinstating defective plaster ceiling finishes.
- Removing and reinstating damaged / defective chipboard floorboards.
- Repairing existing 'historic' square edge timber floorboards.
- Repairing the existing timber staircase.
- Repairing the existing timber frame.
- Timber treatment and damp repairs.
- Repairing and reinstating the existing fireplaces.
- Fire compartmentation works.
- Internal redecoration works.
- Installing a new WC and wash hand basin within the first floor bathroom.
- Insulating the new roof structures.
- Installing ‘heritage' cast aluminium half round gutters, downpipes and soil vent pipes.
- Chimney repairs.
- External joinery repairs.
- External redecorations works.
- Mechanical and electrical works.
- Reducing the external ground levels and landscaping around the perimeter of the building, in order to ensure that the ground levels are a minimum of 100mm below damp proof course level.
- Installing a new interceptor surface water drainage channel system around the perimeter of the building.

- Laying concrete paving slabs, in order to provide a walkway / hardstanding between the external walls of the building and the new perimeter interceptor surface water drainage channel system.

## 6.0 Access

6.1 On account of the end use / tenant not yet having been agreed for the building it is not intended to improve the access to the building as part of the Phase 1A refurbishment works.

6.2 However, as part of the Phase 2 HRC Redevelopment Scheme a new glazed link building is to be constructed between the new development and The Red House, which will include the provision of new steps, ramp and/or access lift.