



POTTS PARRY
IVES+YOUNG
Chartered Architects

**NEW HALL BARN AND OUTBUILDINGS
NEW HALL FARM
EAST ARDSLEY**

PROPOSED RESTORATION

DESIGN AND ACCESS STATEMENT

2533/SP/KP
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INTRODUCTION

Possibly dating from as early as the 13th Century and now Listed Grade II, New Hall Barn stands to the West side of a complex of buildings that comprise New Hall Farm, a fully operational agricultural holding.

New Hall Farm itself lies to the South of the A635 Barnsley-Doncaster road, between Ardsley and Darfield (Map Ref: SE 394 051).

The building is aligned on a North-South axis and comprises a large, storey height, storage area to the South with a sub-division on the North that encloses a piggery with storage loft above.

The building is largely constructed of local grit stone with stone slate roof. The roof structure retains a substantial quality of original carpentry and the walls bear much evidence of the developments that have taken place in the structure over the centuries.

The building is now in a state of severe dilapidation and no longer wind and weather-tight. The roof covering has deteriorated to such an extent that the well being of the supporting timbers is seriously jeopardised and the walls below are now at risk of greatly accelerated decay.

A range of four small, single storey storage rooms, adjoin the Barn at its South East corner. These are constructed in the same local grit stone and retain much of their original roof carpentry. The original stone slate roof coverings have been replaced some years ago with asbestos cement and profiled metal sheets. Though in better overall condition than the Barn, parts of the fabric are no longer wind and weather-tight and the roof structure of the West room is potentially unsafe.

The project now under consideration will return the structure and fabric of the buildings to a sound state with the minimum of impact upon the important archaeological features. When the work is completed, it is intended that the buildings should be open to visitors and school parties who wish to learn about their history and that of the surrounding area. To this end, it is proposed that the North room of the Barn (the existing piggery) should become a reception space where interpretive information can be displayed and talks can be given, while the main barn space should be reinstated largely to its pre 20th or late 19th Century form. Two of the store rooms will be fitted out to provide toilet facilities.

STATEMENT OF SIGNIFICANCE

Historical Context

The Domesday Survey records that one "Alsi" held lands from the King at Darfield and Ardsley comprising a house with five carucates of land.

By the turn of the 13th Century, New Hall was the centre of a medieval manor under the lordship of Hugh de Darfield. The status of New Hall was greatly increased with the marriage of Hugh de Darfield's daughter, Alice, to Sir John Bosvile whose family were well established in South Yorkshire. By 1435 John Bosvile had amassed a very substantial estate of 1337 acres, centred on New Hall. New Hall itself remained in the Bosvile family until 1813 when it changed hands and was extensively rebuilt and renamed Cranford Hall.

By 1830 the lands belonging to New Hall Farm had reduced to just 130 acres. Since that time, the farm has continued in use, operating a mixed regime of pasture and arable farming.

The Historical Importance of New Barn

The North end of the Barn comprises the remaining two bays of a large cruck framed building of pre 17th Century date. Cruck construction has a long-recognised western and highland distribution; it is particularly well represented in England in the buildings of the upland areas of South Yorkshire. In the Statutory List of Buildings of Special Architectural or Historic Interest forty nine cruck-framed barns are listed in the present day county of South Yorkshire (including Sheffield) and fourteen of them are in Barnsley District. However this rather disguises the interesting and significant fact that all but one of them are in locations well to the West and South of Barnsley such as Cawthorne, Silkstone and Penistone. Only one Listed cruck barn appears to the East of Barnsley and that is the barn at New Hall. This slightly anomalous distribution may be the result of ownership by the Bosvile family who owned property in the upland areas to the West, including a partly surviving cruck-framed barn at Gunthwaite. The ancient timbers of New Hall Barn are currently undergoing dendrochronology and if this places the crucks in the 13th Century it will be possible to confirm more positively the building's direct relationship with Sir John Bosvile's period of ownership.

In any event, in its earliest form the Barn was clearly a building of some quality within its type, being carefully constructed of high quality timber in massive scantlings; in particular the timber for the cruck blades was precisely sawn to retain symmetry of grain structure across the East and West sides of the building. Remarkably almost every part of the framing of these bays above wall plate level, including relatively ephemeral timber sections such as split oak slating battens, survives virtually intact. If the interpretation of the slating battens offered here turns out to be correct then it also follows that the largely intact, good quality, split stone slates of the roof, and their oak pegs, are also original. This degree of completeness, allied to the evident quality of the original structure, taken together with its location in relating to and possible constructional links with other similar examples of the tradition through common ownership by a notable family, give the building *regional interest*.

The historical link with the well documented New Hall Estate (summarised in the AOC report: Surfield et al 2005) adds considerably to the interest of the building; which now

appears as the principal barn of a manorial estate. Scientific dating may therefore allow the identification of a builder. This aspect of the Barn is considered to be of *local significance*.

There is a moderate likelihood of intact archaeological stratigraphy beneath and around the Barn associated both with the construction and use of the building itself and with the earlier occupation of the site identified from documentary sources. At present these deposits are regarded as being of *local significance* but further investigation may lead to the revision of that judgement.

The Building's Contribution to Local Habitat and Biodiversity

New Hall Barn is located within a mix of arable fields and pastures. The Barn itself is located on the western edge of a courtyard, with the North gable end facing a large, modern grain store. A small woody copse lies to the North-East, together with a small mill pond and associated wetland. Further residual ecological interest resides in the hedgerows and isolated mature trees that occur along some of the nearby field boundaries.

The biodiversity significance of New Hall Barn lies in the fact that such buildings are occasionally used for breeding or sheltering purposes by bats and/or owls, both of which are protected species of high nature conservation importance. Evidence indicates that barn owls are roosting (but not breeding) within New Hall Barn.

Though conclusive evidence is slight, the nature of the building and its setting mean that it has the potential to be a prime site for bat habitation.

A detailed survey has been carried out and a report has been prepared by Madeline Holloway MIEEM of the Ecological Information Network Consultants, based in Bradford. The recommendations given in this report for the safe-guarding of bats and barn owls are to be followed.

APPRAISAL OF CONDITION

A THE BARN

1.0 ROOF

Stone slates laid on oak rafters supported on oak purlins and wall plates, carried on oak trusses.

- 1.1 The roof timbers have been widely affected by wet rot. Decay is most evident in the rafters and wall plates but some of the truss seatings have also been affected.
- 1.2 Beetle infestation is widespread and almost certainly active.
- 1.3 The stability of the North truss (truss A) has been seriously compromised by the trunkating of the crucks at first floor level. This truss now leans to the South and is out of plumb by at least 450mm. The tie beam is also severely decayed at the point where it passes under the gable door.
- 1.4 The tie beam has been cut out of cruck truss B. There is no evidence of severe outward displacement of the crucks as a result of this but the potential for such movement has been greatly increased.
- 1.5 The stone slates are largely unfixed and the slating battens are severely decayed over most of the roof. The slates themselves are not yet all beyond salvage. Decay and delamination is greatest among those of the East slope while those on much of the West still look to be generally serviceable.
- 1.6 Notwithstanding the foregoing the roof structure remains substantially intact and displays no evidence of imminent serious failure. The North truss is braced by the purlins that in turn act on trusses B and C and although the purlin connections have been distorted, there is nothing to indicate that the movement of the truss has not been safely contained.

2.0 WALLS

External walls are built of local sandstone masonry laid in two leaves, in random courses, dressed internally and externally. Overall thickness varies between 520 and 610mm.

Late 19th or 20th Century brickwork quoins have been introduced around most of the major opening using a hard red brick.

An internal cross wall subdivides the building on the line of cruck truss B. This is built of 19th or early 20th Century brickwork at half-brick thickness, on an equally slender plinth of dressed stone. The wall is not tied into the external walls.

- 2.1 The North gable wall reduces in thickness to a single leaf of stone (approximately 225mm thick) above the level of the tie beam. The height of the structure in relation

to its thickness has created inherent instability and in the absence of bracing from the adjacent truss, the gable wall has developed a severe lean to the South.

- 2.2 The pointing in the external face of the walls is largely perished. This has been exacerbated by a lack of gutters on the roof, the remnants of which remain only on the West elevation. There is no evidence that gutters have ever been attached to the East elevation.
- 2.3 The pointing to the internal face of the walls in the main area of the Barn is largely perished. That to the North room is generally in better condition.
- 2.4 The South gable wall has suffered severe masonry decay on its external face and some loss of stones in the top of the wall.
- 2.5 Masonry decay in the North, East and West walls is limited to isolated pockets and generally not unduly serious. However, there is evidence of ongoing erosion as a result of rising damp in the lower regions of all the external walls. This is without doubt exacerbated by the high external ground levels on the South and West elevations, coupled with the comparatively recent introduction of concrete floors.
- 2.6 Structural movement has occurred at the base of the North wall at its East and West corners. These locations comprise small areas of infill masonry that were inserted when the crucks of the associated North truss were truncated at the wall plate level. The new work was not bonded to the original and it has gradually become displaced to the point whereby it can no longer be offering any significant support to the ends of the crucks. It is probable that this task is now fulfilled by the tie beam, acting upon the original infill wall below.
- 2.7 Wall top masonry is generally loose and suffering from water ingress in many places. A number of shrubs have taken root and at the SW corner of the building in particular these are now well established.

3.0 **FLOORS**

The stone flagged threshing floor remains in the area between the two principal openings in the East and West walls. Beyond this area concrete has been laid throughout.

A storage floor of comparatively recent date is located above the North room. The timbers are all pine and machine sawn.

- 3.1 The threshing floor remains in sound order. The flagging is slightly uneven in places but otherwise in remarkably good order.
- 3.2 The concrete floors are sound but their impervious nature is encouraging ground moisture to "wick" in the external walls.
- 3.3 The storage floor is severely damaged by wet rot at the NE corner and a principal cross beam has given way against the West wall. The floor is presently unsafe.

4.0 WINDOWS AND DOORS

The West wall contains five windows. Frames and glazing of those to the main area are crudely fitted and of modern date. That to the North room is much smaller and typical of the kind used for such applications in the 18th and 19th centuries, comprising a glazed light above an openable timber shutter.

The only remaining personnel door on the buildings hangs in the external entrance to the North room and comprise a boarded leaf set within a heavy timber frame containing a four-pane fanlight. The remnants of a small loading door hang in the North gable.

- 4.1 The windows in the main area of the building are in very poor condition and unfit for salvage.
- 4.2 The window to the North room is affected by wet rot and probably beyond repair. However, what remains would serve as a template for a replica.
- 4.3 Of the doorway to the North room, the frame and fanlight remain reasonably sound but the door leaf is falling apart. The strap hinges could probably be salvaged.
- 4.4 The loading door in the North gable is beyond repair but will serve as a pattern for a replica.

5.0 FIXTURES

The North room is fitted out with three pig sties constructed with half-brick walls and metal doors.

- 5.1 Walls are sound but the doors are heavily corroded.

B THE OUTBUILDINGS

1.0 ROOF

Asbestos cement sheets to the western end of the range and profiled metal sheeting to the eastern rooms, all carried on the original spars with the insertion of modern sheeting rails.

- 1.1 Both roof coverings are of very unfortunate appearance and the asbestos cement sheets are no longer water-tight.
- 1.2 There is evidence of beetle infestation in all the roof timbers and in the West room in particular, this is clearly active.
- 1.3 Severe wet rot is affecting the South wall plate and associated rafters in the West room. A principal rafter in this location is fractured and at risk of collapse.

The tie beam in the truss that lies between rooms 1 and 2 is fractured.

- 1.4 Beyond the West room the roof timbers are generally in safe condition but they are not fit to carry the load of a slate roof.

2.0 **WALLS**

External walls are mostly built of local sandstone masonry laid in two leaves, in random courses, roughly dressed internally and externally. Overall thickness varies but is generally around 480mm. The North wall of the West room is constructed in hard red 19th Century bricks and represents an infilling of a frontage that was originally open. The East gable of the East room is modern brickwork and a brick wall, probably of 19th Century date, divides rooms 2 and 3.

- 2.1 The SW corner of the West room is in an unstable condition and requires rebuilding. All remaining walls are largely sound but much in need of repointing externally.
- 2.2 The ground level against the South wall is approximately 1m above floor level. This is causing severe damp decay in the stonework within the building.
- 2.3 Doors and windows, where still in place, look to be original but their condition is poor or very poor.

3.0 **FLOORS**

Situ cast concrete has been laid throughout all rooms in recent times.

- 3.1 The floors are serviceable for present purposes.

PROPOSED REPAIRS

A THE BARN

1.0 ROOF

- 1.1 The slates are to be carefully removed and sorted. All sound items will be set aside for reuse.
- 1.2 The remnants of the slating battens will be removed. If any sound sections of early (possibly original) materials can be found, they will be set aside for possible display later.
- 1.3 The corrugated iron sheeting on the SE bay of the roof will be stripped and the modern purlins will be removed.
- 1.4 The rafters will be numbered and recorded before being lifted down and placed in a tank of permethrin based preservative for 48 hours.

- 1.5 Once the rafters have been removed, the trusses, purlins and wall plates will all be examined in close detail. Allowances for anticipated repairs will already have been made in the contract specification and these will now be verified or varied. The method of repair will be selected for each condition to achieve the required reinforcement with the minimum of intervention. Flitch plating and splicing are likely to be used in preference to fish plating or resin replacement systems. Polyester resin consolidation may be used as a means of retaining historic fabric that has been severely weakened by beetle infestation.
- 1.6 Live beetle infestation in any of the larger timbers will be treated in situ with preservative. It is likely that such infestations will not extend much beyond the sap wood.
- 1.7 The North truss will not be realigned unless it transpires that this can be achieved with ease.
- 1.8 The missing tie beam in cruck truss B will be reinstated in the form of a stainless steel tie rod mounted into stainless steel girdles at each cruck blade.
- 1.9 New oak purlins will be installed in the SE bay of the roof, sized and shaped to match the dimensions of those in the adjoining bay.
- 1.10 As far as possible, all the rafters will be returned to the roof and refixed with oak pegs in their original location. Those that are too badly decayed to attach by pegging will be fixed with stainless steel screws and, if necessary, one or more discretely sited stainless steel cleats. With the use of polyester resin consolidants it is hoped that even the most severely decayed rafters can be returned to the roof albeit that they may be incapable of offering support to the slates.
- 1.11 Where necessary, supplementary rafters of sawn oak would be placed alongside any existing items that were considered to be unfit for load carrying duty.
- 1.12 New slating battens would be fixed to the rafters without use of sarking felt. In view of the uneven nature of the rafters, it will probably be necessary to fix the battens with stainless steel screws rather than nails.
- 1.13 The sound slates removed previously would be reinstated and supplemented with first quality second-hand items to make up the shortfall. Large head alloy pegs would be used for attachment.
- 1.14 150mm half round cast iron gutters set on rise and fall brackets, matching those that remain at the NW corner of the building, will be installed to the eaves on both sides of the building. Cast iron fallpipes and associated drainage will be added at each corner.

2.0 WALLS

- 2.1 Wall tops will be consolidated and rebuilt where necessary using a feeble hydraulic lime mortar. All vegetation will be removed and the walls will be taken down as necessary to remove all roots and built back in their original form.
- 2.2 Only the most severely decayed stones will be replaced. For the most part these will be found in the South elevation, where approximately 3m² of facework is now beyond salvage and more may be uncovered behind cement pargings. New stones will be sourced to match the colour, texture, permeability and porosity of the existing. The services of a specialist stone analyst will be used in this connection.
- 2.3 The exterior of the building will be fully repointed and those areas of wall that contain voids will be deep packed and tamped. (This will apply in particular to much of the South wall and parts of the West wall where saturation from wall top exposure has been greatest). The mortar used will be a feeble hydraulic lime and sand mix. The sands will be selected to match the existing as closely as possible and thereby retain the evidence of the various different periods of the construction.
- 2.4 The North gable will be recorded using rectified photography and dismantled down to the level of the tie beam. The wall will then be rebuilt plumb with each stone being reinstated in its original position. The wall would be given added stability through the introduction of new ties between the verge and the roof structure. Missing stones in the lower wall area will be reinstated in clamp brickwork in order to improve the structural condition of the wall while retaining the archaeological evidence provided by the openings.
- 2.5 The NW and NE corners of the North wall would be recorded, taken down and rebuilt incorporating stainless steel stitches to achieve a bond with the adjoining masonry. The stones would be replaced in their original positions and the existing “straight joints” that express the original cruck lines would remain. In view of the extent of decay in the tie beam of truss A, steps will be taken to make sure that the feet of the cruck are firmly sealed onto the rebuilt masonry.
- 2.6 The ground level on the West and South sides of the building would be lowered to match the internal floor level of the building leaving a flat margin around the building of approximately 1500mm before banking back up to the existing levels. The exposed areas of wall would be repaired and repointed as noted above. As part of this exercise it will be necessary to take down and rebuild the West wall of the lean-to building that adjoins the South wall of the Barn. An archaeological watching brief would be advisable during the works to alter ground levels.
- 2.7 The internal faces of the external walls surrounding the main area of the building will be fully repointed using the same feeble hydraulic lime mortar as that to be specified externally. Again, aggregates will be selected to match as closely as possible with the existing in order to preserve the evidence of the phased development of the building. Deep voids will be packed with fresh mortar by ramming and tamping, extensive grouting is not (at this stage) considered to be

necessary to appropriate. Unless otherwise noted below, all existing features will be retained including the inbuilt sections of timber.

- 2.8 Limited repointing only will be carried out in the North room where the condition of masonry is generally much better than elsewhere. The existing dado plastering will be retained as far as possible.

- 2.9 Only very limited stone renewal will be necessary in the internal faces of the external walls. New stones will be sourced as noted at Item 2.2.

3.0 **FLOORS**

- 3.1 The concrete floors will be broken up and removed. The sty enclosures in the North room will be recorded and removed as part of this exercise. New Limecrete floors will be laid in both parts of the building.

- 3.2 The threshing floor will be recorded and carefully lifted and stored before any of the restoration works start on the building. It will then be relaid on completion.

- 3.3 The storage floor above the North room will be retained and repaired or renewed in replica, subject to a more detailed assessment of its structural condition.

- 3.4 An archaeological watching brief will be required during the works to the ground floors.

4.0 **DOORS AND WINDOWS**

- 4.1 The West window in the North room and the North gable loading door will be removed and replaced with new replicas in Douglas fir.

- 4.2 The doorway to the North room will be taken out. The frame will be overhauled and reinstated, complete with fanlight. A new boarded door, matching the original, will be installed. If sound, the existing strap hinges will be reinstated. The existing steel lintel will be removed and replaced in oak of the correct size (the masonry sockets are still visible).

B **THE OUTBUILDINGS**

1.0 **ROOF**

- 1.1 The modern sheet roofing is to be removed.

- 1.2 The rafters will be numbered and recorded before being lifted down and placed in a tank of permethrin based preservative for 48 hours.

- 1.3 The severely decayed section of wall plate on the South wall, West end, will be replaced. All other timbers will be treated insitu with preservative.

- 1.4 The rafters will be reinstated following treatment. Those on the South side of the West room will be cut at the purlin line and new sections of oak will be introduced to span from purlins to wall plate.
- 1.5 The fractured tie beam and principal rafter at the West end of the building will be repaired with fitch plates.
- 1.6 A new load bearing roof structure will be installed over the existing roof spars, comprising small section steel principal rafters and purlins, supporting 100 x 50 timber jack-rafters. The wall lines will be raised by approximately 150mm, using stone to match existing, in order to provide seating for a new wall plate. New oak lintels will be installed over the existing at openings in walls.
- 1.7 A new roof covering of second hand natural stone slates will be laid throughout the whole of the roof, with reconstructed stone ridge pieces.
- 1.8 Cast iron guttering will be added to both sides of the building, set on rise and fall drive-in brackets.

2.0 WALLS

- 2.1 External wall faces are to be fully repointed using a feeble hydraulic lime mortar.
- 2.2 Ground level against the South side of the building will be reduced to match the internal floor level, leaving a level margin of at least 600mm against the wall.
- 2.3 The SW corner of the West room will be taken down and rebuilt, reusing all sound stone, supplemented as necessary with salvaged matching material that is stored elsewhere on the site. Hydraulic lime:sand mortar will be used throughout.
- 2.4 Internal wall faces will be repointed in a feeble hydraulic lime mortar only where joints are found to be perished.
- 2.5 Any areas of missing stonework in the external walls will be replaced as Item 2.3.
- 2.6 Window and doors are to be retained or replaced in replica (see below).

3.0 FLOORS

- 3.1 The existing concrete floors are to be retained in room 1 and 4. The floors in rooms 2 and 3 will be renewed (see below).

PROPOSED ALTERATIONS

A. THE BARN

- 1.0 The original large doorway on the West side of the threshing area is to be reinstated. This will involve the following works:-

- 1.1 Removal of the existing brick infilling of the original structural opening.
- 1.2 Reinstatement of the masonry quoins where toothed out, using stone to match existing.
- 1.3 Installation of a pair of new oak door frames and a pair of boarded oak doors.
- 2.0 A pair of doors are to be hung in the door opening on the East side of the threshing floor. This will involve the following works:-
 - 2.1 The removal of the existing brick piers that flank the present opening.
 - 2.2 Reinstatement and repair of reveal masonry using stonework to match existing.
 - 2.3 Installation of an oak frame and pair of doors to match those proposed for the West side. Note: The oak frame will be designed to offer additional support to the wall plate as well as providing a hanging point for the new doors.
- 3.0 Existing cross wall is to be repositioned to expose cruck truss 2 to full view from the South side. This work will involve the following:-
 - 3.1 Demolition of the existing wall.
 - 3.2 Installation of a new foundation. (For which an archaeological watching brief will be required).
 - 3.3 Building of a new wall using either the existing stonework and bricks if fit for salvage, or second hand clam bricks sourced from elsewhere. The new wall will extend only to the height of the storage floor above the North room, therefore leaving an uninterrupted view of the whole roof from within the main area of the Barn.
 - 3.4 The new wall will be 225mm thick and pointed on both faces. Stainless steel ties set into masonry joints will anchor the new work to the existing external walls. The new wall will incorporate a doorway to link the North room with the main space of the Barn.
- 4.0 Existing openings in the South wall will become windows. This will involve the following works:-
 - 4.1 The masonry infilling of the lower opening will be removed.
 - 4.2 The iron rail that has been used as a repair lintel over the lower opening will be removed and replaced with an oak lintel of the correct size (the masonry sockets are still visible).
 - 4.3 The timber lintel of the upper opening will be replaced in oak of the correct size. Again, the outline of the original sockets is still visible in the wall.

- 4.4 New oak framed fixed light windows will be installed in both openings.
- 5.0 The West windows in the main area of the Barn will be remade. This will involve the following work:-
 - 5.1 The masonry infilling will be removed from the southern window and the brick quoin work will be taken out and replaced in stone to match existing.
 - 5.2 The existing window frames and brick quoining will be removed from the northern window and new stone quoins will be introduced to re-establish the shape of the original opening.
 - 5.3 The cills and lintels of both opening will remain in situ.
 - 5.4 New oak framed windows will be introduced, incorporating one or more side hung casements in each.
- 6.0 The storage floor will be upgraded to provide a degree of thermal insulation to the North room. This will involve the following work:-
 - 6.1 A layer of mineral wool insulation will be packed between the joists.
 - 6.2 A traditional lath and plaster ceiling will be installed.

B THE OUTBUILDINGS

- 1.0 In order to conceal the new roof structure from view within each room, sawn plastering laths will be installed to the upper surface of the original rafters, in the traditional method of under-drawing the roofs of agricultural buildings.
- 2.0 Rooms 2 and 3 are to be fitted out to provide toilet accommodation for visitors to the Barn. This will involve the following works:-
 - 2.1 Lime plaster will be applied to the ceiling laths to which reference is made at Item 1.0 above.
 - 2.2 The windows and doors will be renewed in replica of the existing.
 - 2.3 The brick cross-wall will be removed.
 - 2.4 The concrete floors will be taken out and replaced with a new 150mm Limecrete slab finished with natural stone paving.
 - 2.5 Cubicles and sanitary ware will be installed as illustrated on the drawings. Cubicles will extend in height only to wall plate level, in order to leave the ancient roof timbers fully exposed to view.