

# **‘Barn 3’ at Bower Hall Pentlow, Essex**

## **Historic Building Record ECC Site Code PLBHb21**



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**October 2021**

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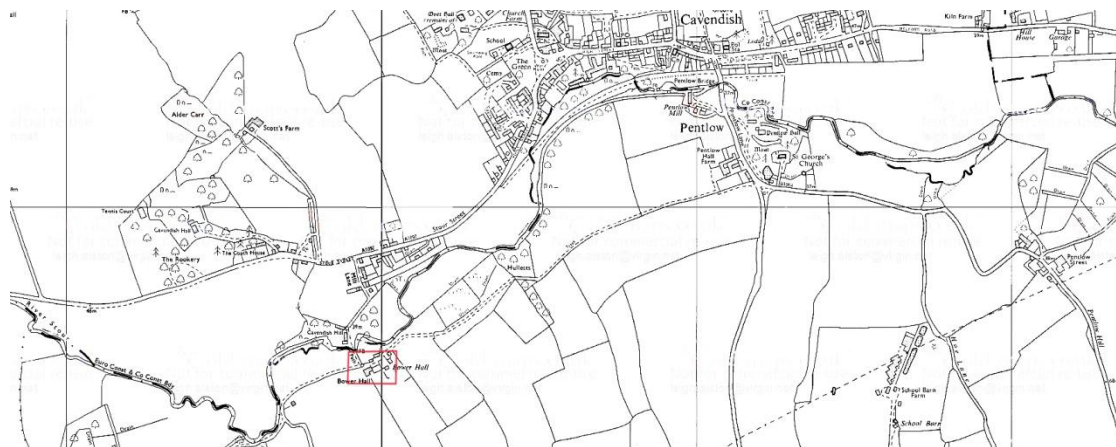
# **‘Barn 3’ at Bower Hall, Bower Hall Lane, Pentlow, Essex**

## **Historic Building Record**

*This report provides an historic analysis and record at Historic England (2016) Level 3 of a grade II-listed redundant farm building at TL 80021 45538 and is intended to fulfil a condition of planning permission for conversion (BDC Application no. 20/00480FUL). It respects a brief prepared by Teresa O’Connor of Place Services. The text is accompanied by a CD containing a full photographic record in the form of 40 Canon 5D digital images of 21 megapixels (Appendix 1), but the report also includes 20 photographs of key features to illustrate the text (Appendix 2). Each image is described in a separate schedule and wherever possible shows a scale rod with half-metre divisions in red and white. The site was inspected on 12 August 2021.*

### **Summary**

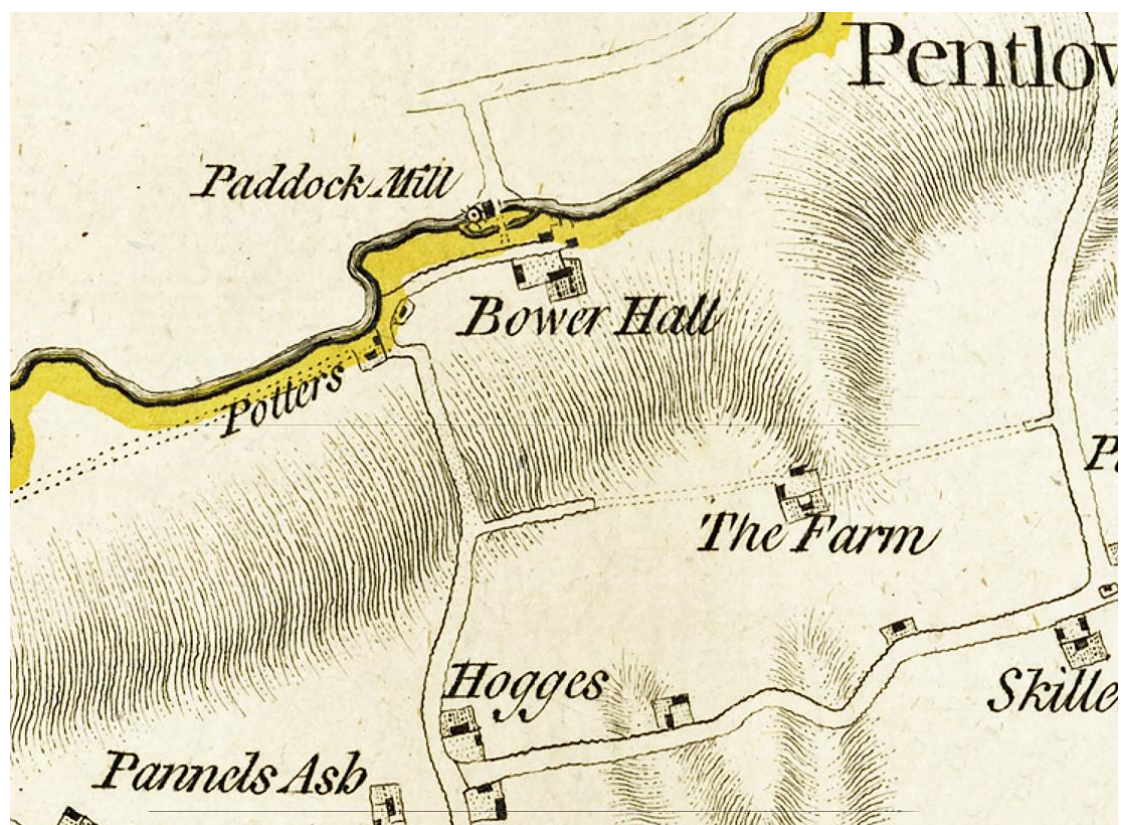
Bower Hall is documented as a medieval manor and lies in open countryside on the southern bank of the River Stour. The present farmhouse dates from *circa* 1600 and a cropmark some 200 m to the north-east shows what appears to be a large moat that may indicate the original position of the manor. At the time of the tithe survey in 1838 it was a substantial tenanted farm of 170 acres on the extensive estate of John Sperling of Dynes Hall in Halstead. The farmhouse and three farm buildings are individually listed at grade II, including a late-medieval threshing barn opposite the house. ‘Barn 3’ to the east of the site is described in Historic England’s schedule as an 18<sup>th</sup> century timber-framed and weatherboarded ‘outbuilding’, but its framing is in fact typical of the mid-19<sup>th</sup> century with original bolted knee-braces to its tie-beams and narrow-sectioned studs interrupted by nailed primary braces. Its three narrow bays represent only a truncated fragment of a larger building that extended further to the east as shown on late-19<sup>th</sup> century maps, and its eastern gable is open-framed. It had been reduced to its present length by 1958. There is no evidence of original doors in its side walls, and at the time of listing in 1982 it was entered from its western gable. It is unclear whether it was designed as part of a traditional threshing barn with an entrance bay in the missing section or as a grain store and feed preparation shed for an adjoining cattle yard. The building was much altered in 2003 when it was converted into a stable by adding an entrance porch and a rear lean-to. As a much altered fragment of a Victorian farm building it does not meet Historic England’s current guidelines for listing.



**Figure 1. Location plan based on the 1989 Ordnance Survey highlighting Bower Hall to the south-west of Pentlow parish church and the Suffolk village of Cavendish.**

## Documentary Evidence and Map Regression

Bower Hall lies in open countryside on the southern bank of the River Stour approximately 1.5 km south-west of Pentlow parish church and the Suffolk village of Cavendish. The isolated site is reached by a dedicated narrow lane from the south and contains no fewer than four individually grade II-listed timber-framed buildings: the jettied farmhouse of *circa* 1600 which faces north towards the river, a threshing barn of *circa* 1500 immediately opposite with a supposed 16<sup>th</sup> century ‘byre’ to the west and a supposedly 18<sup>th</sup> century ‘outbuilding’ to the east (as dated in Historic England’s schedule). This report focuses on the eastern outbuilding which is known for planning purposes as ‘Barn 3’ to distinguish it from the other two listed farm buildings. Bower Hall is recorded as a medieval manor, and in his will of 1495 the wealthy Melford clothier John Hill gave his quit-rents and woods in the manor of Bower Hall in Pentlow to the town’s poor (PCC will, PROB 11/10/435). They were still yielding an income of £12s 4s per year in 1844 (White’s Directory of Suffolk). Hill gave the manor itself to a priest, ‘Sir’ William Hodgeson, to establish a chantry for the benefit of his soul in Melford church. Thomas Wright notes that the manor appears by the name of ‘the fee of Bourhall’ in the manorial records of Foxearth Hall (History and Topography of the County of Essex, 1842). It was confiscated by the Crown at the Reformation and in 1548 granted to Sir Thomas Paston, eventually passing to the Goodday family. A George Goodday ‘of Bower Hall and Grays Inn’ died in 1652, and in the 18<sup>th</sup> century the estate was bought by the wealthy Sperling family of Dynes Hall in Halstead. At the time of the Pentlow tithe survey in 1838 it was a large tenanted farm of just under 170 acres occupied by William Orbell senior on the Sperling estate which retained it until the beginning of the 20<sup>th</sup> century and would have been responsible for building Barn 3. The Sperlings also owned Ropers and Pannels Ash Farms in Pentlow.



**Figure 2.** Chapman & André’s map of Essex published in 1777. Although depicted in a stylised manner the site layout appears reasonably accurate with an outbuilding shown on the approximate site of Barn 3 at the eastern end of the track. This must represent a predecessor of the existing structure.



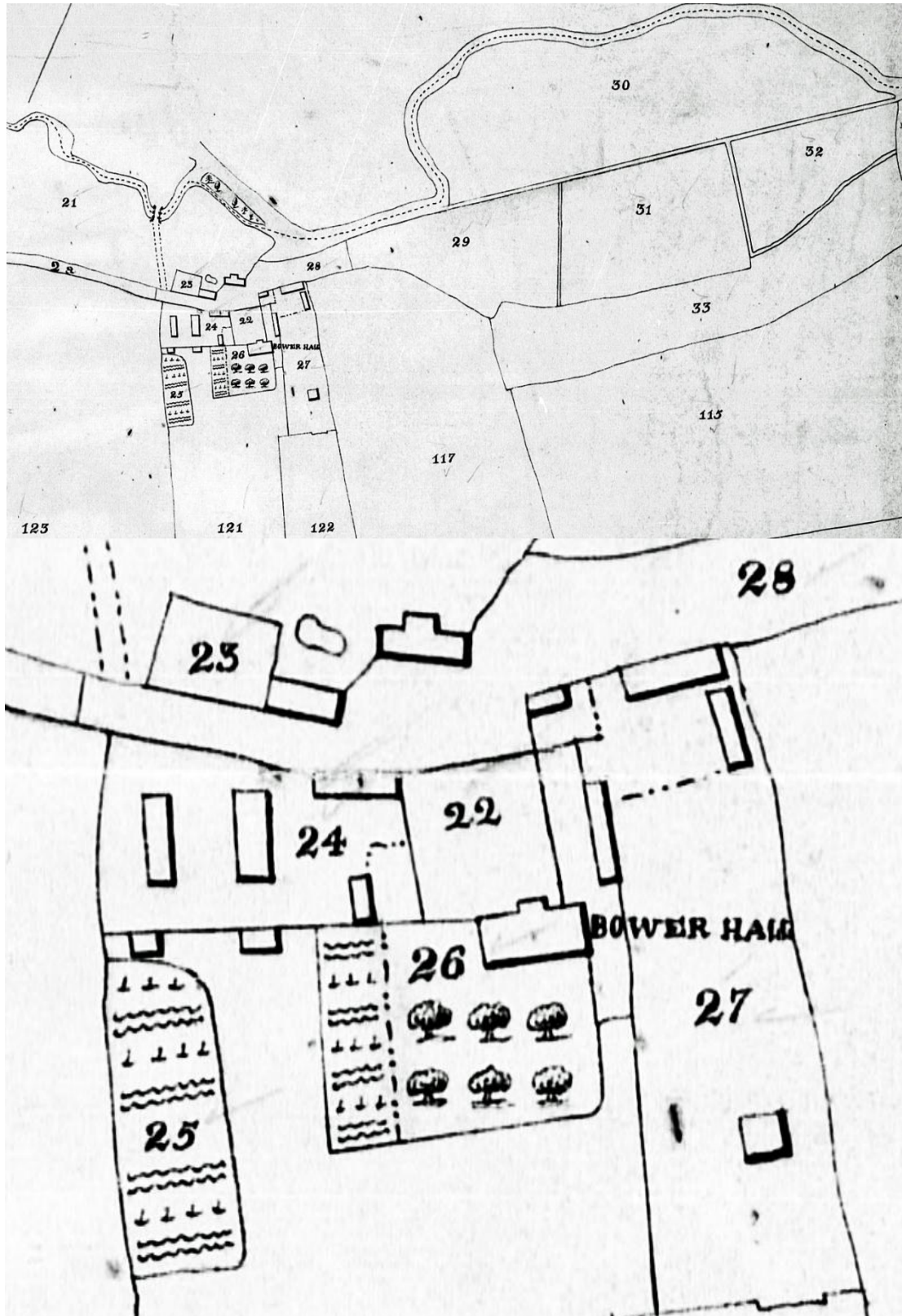


Figure 3. The Pentlow tithe map of 1838, with a detail below. Barn 3 at the north-eastern corner of the complex is depicted as a long, rectangular structure that extends almost to the eastern boundary of the ‘stack yard’ which adjoins to the rear (plot 27). If this included the present much smaller structure it must have been newly built at the time. Plots 22-26 were respectively a ‘yard’, ‘yard and buildings’, ‘homestead and buildings’, ‘garden, and ‘orchard and garden’, with plot 28 a ‘drift’ (i.e. farm track).

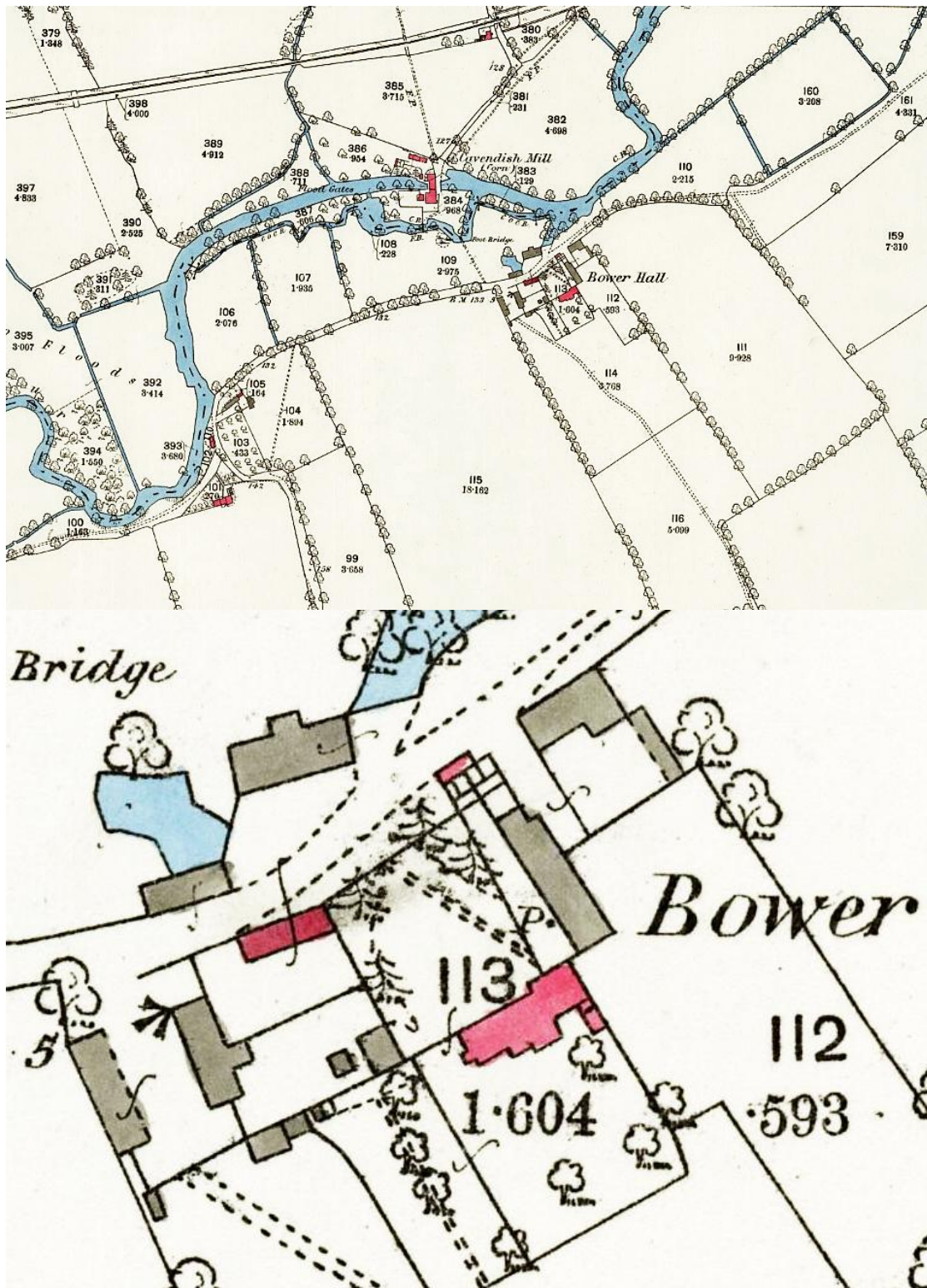


Figure 4. The First Edition 25 inch Ordnance Survey of 1876, with a detail below. Barn 3 had been provided with what may have been a lean-to rear extension to the south which adjoined corner-to-corner with an open-sided shelter-shed that is likely to have served an enclosed cattle yard. The eastern boundary of the 'stack yard' in 1838 had been removed and the barn now adjoined the arable field at plot 117 (Dovehouse Ley). This map suggests its eastern gable lay slightly further to the west than in 1838 and some rebuilding may well have occurred in the interim. The present barn appears to represent only the western section of the building to the left of the possible lean-to.



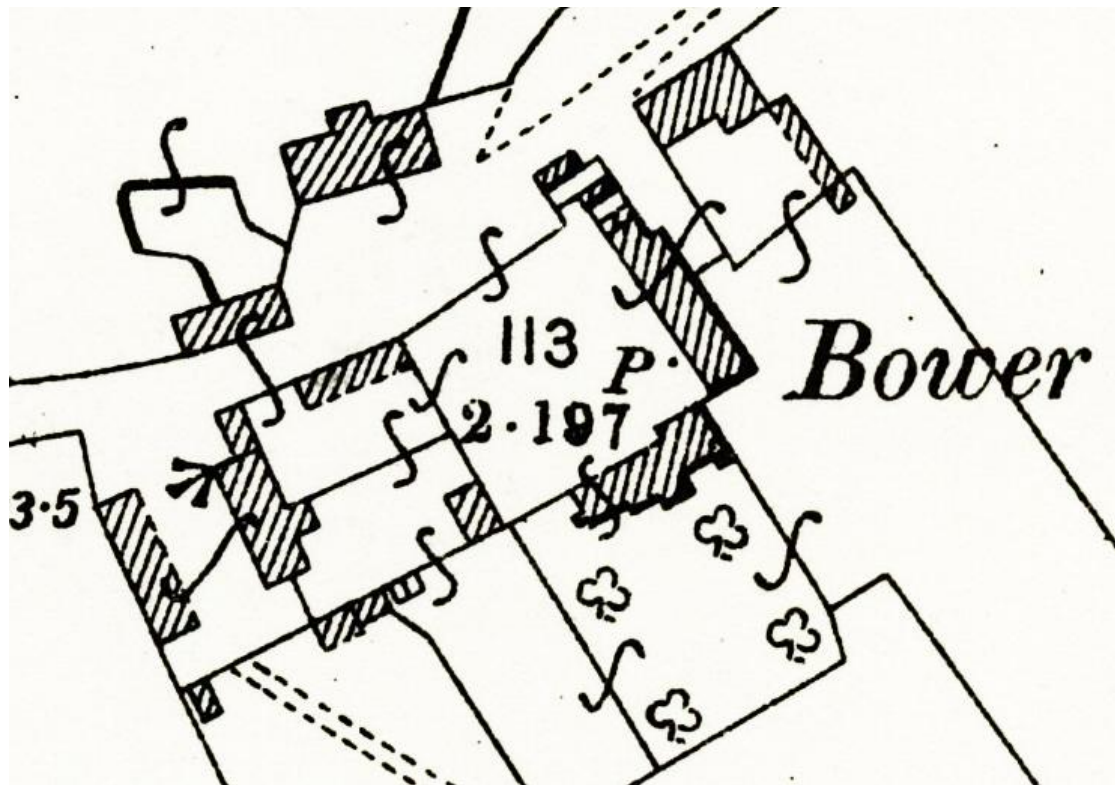


Figure 5  
The 25 inch Ordnance Survey of 1897, showing no relevant change since 1876.

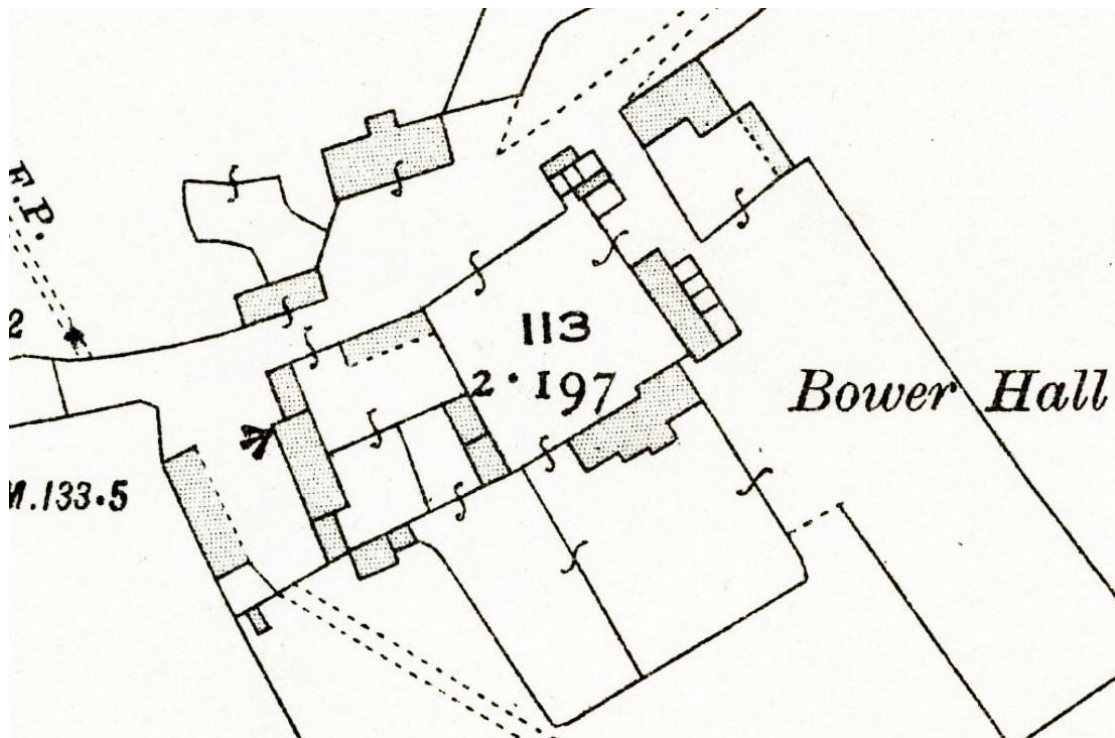


Figure 6  
The 25 inch Ordnance Survey of 1920. The outline of Barn 3 was unaltered since 1876, with the wider eastern section that no longer survives still intact.

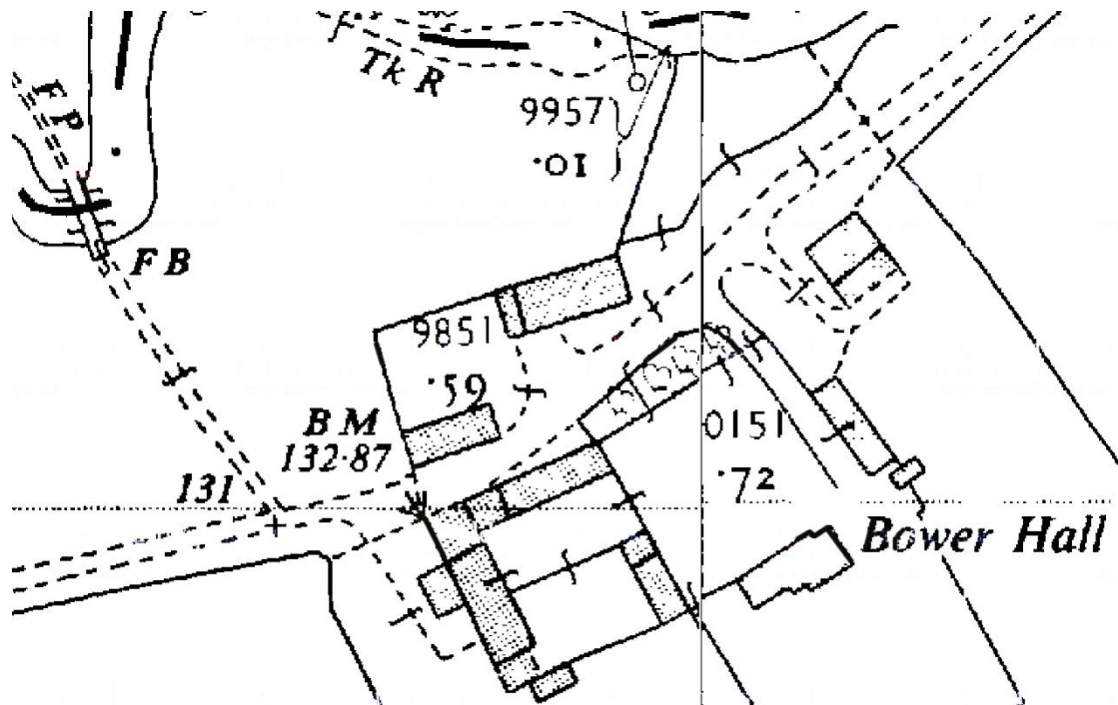


Figure 7. The 25 inch Ordnance Survey of 1958. Barn 3 had been significantly altered since 1920 with its wider eastern section demolished along with the detached shelter-shed. It no longer adjoined an enclosed cattle yard and the new open-sided shed that had been added to the rear of its surviving eastern section was reached by a path from the farm track – suggesting it was a cart lodge (possibly for farm implements or tractors). The new eastern gable lay much further from the restored field boundary of 1838 than hitherto.



Figure 8. A dramatic cropmark in the loop of the river 200 m to the north-east reveals what appears to be a substantial moat in the field called Thorn Pasture in 1838 (plot 31 in figure 3), and may indicate the original site of the manor. Many low-lying early sites near the Stour were moved when it was dammed to power mills in the late Middle Ages.



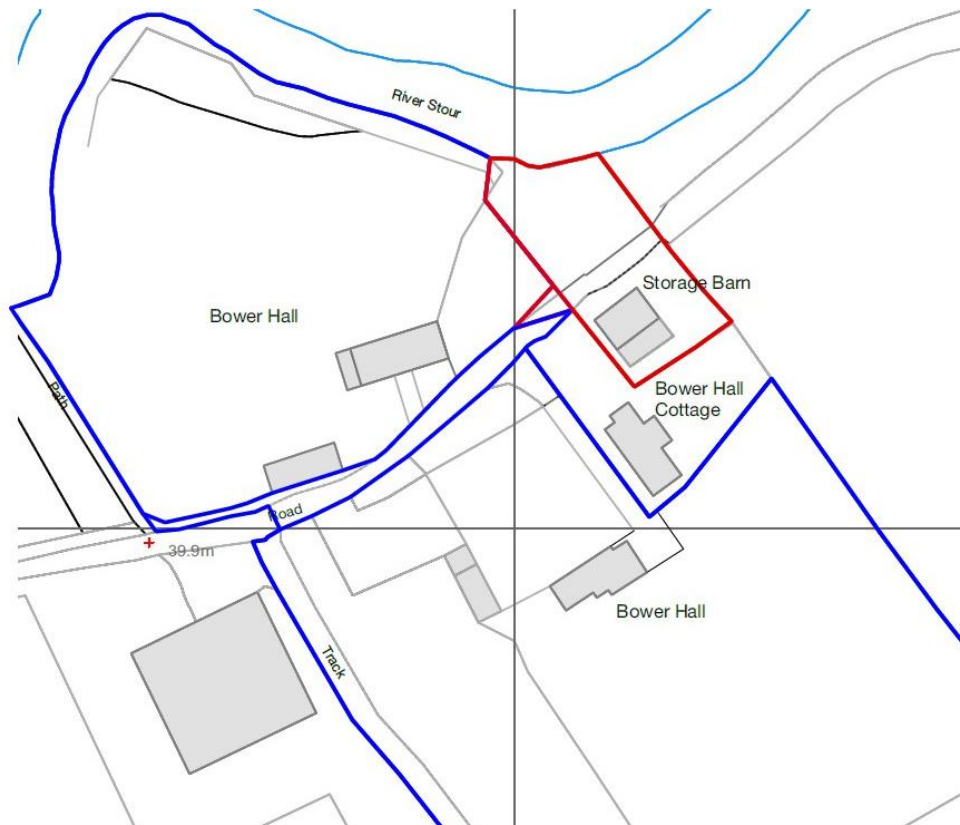


**Figure 9. An aerial view of *circa* 1970 from the north-west showing Barn 3 to the extreme left with a new roof of corrugated iron matching those of the other farm buildings. The adjoining shed to the rear appears to have an almost flat roof several feet below the barn's eaves and the outline of a red central door is just visible in the western gable. The latter corresponds with the reference to a western entrance in the listing description of 1984.**



**Figure 10. The building in 2004 as its conversion into a stable was nearing completion.**

## Building Analysis



**Figure 11**  
**A current site plan by Evans Kivotos Architects outlining Barn 3 and its conversion plot as 'Storage Barn'.**

## Listing Entry

The barn is listed at grade II with the following entry in Historic England's schedule, which was last revised in 1984 (no. 1277156:

TL 84 NW PENTLOW BOWER HALL 2/182 Outbuilding approx 40 metres East of Bower Hall GV II Outbuilding. C18 timber framed and weatherboarded with brick and flint plinth. Side purlin corrugated iron clad roof. 3 bays. Hanging knees to tie beams. Doorway to gable end.

This description pre-dates the addition of the northern porch in 2003 and other alterations including the blocking of the 'doorway to gable end' (i.e. the narrow red door shown in figure 9). The brick and flint plinth now survives only to the rear (southern) elevation and probably in part to the west but has been rebuilt elsewhere in English Bond brickwork integral with the plinths of the new porch and rear lean-to of 2003. The inspector was clearly unfamiliar with timber framing as the carpentry is in fact typical of the mid- and late-19<sup>th</sup> century and very different to anything found in the 18<sup>th</sup> century, as discussed further below. The barn has also been truncated on the east, as demonstrated by the open frame of the eastern gable, and as only a fragment of a mid-19<sup>th</sup> century barn the structure fails to meet Historic England's current guidelines for listing in its own right. However it lies in close proximity to three other listed buildings on the site and even without an individual entry in the schedule would be regarded as curtilage-listed for planning purposes.



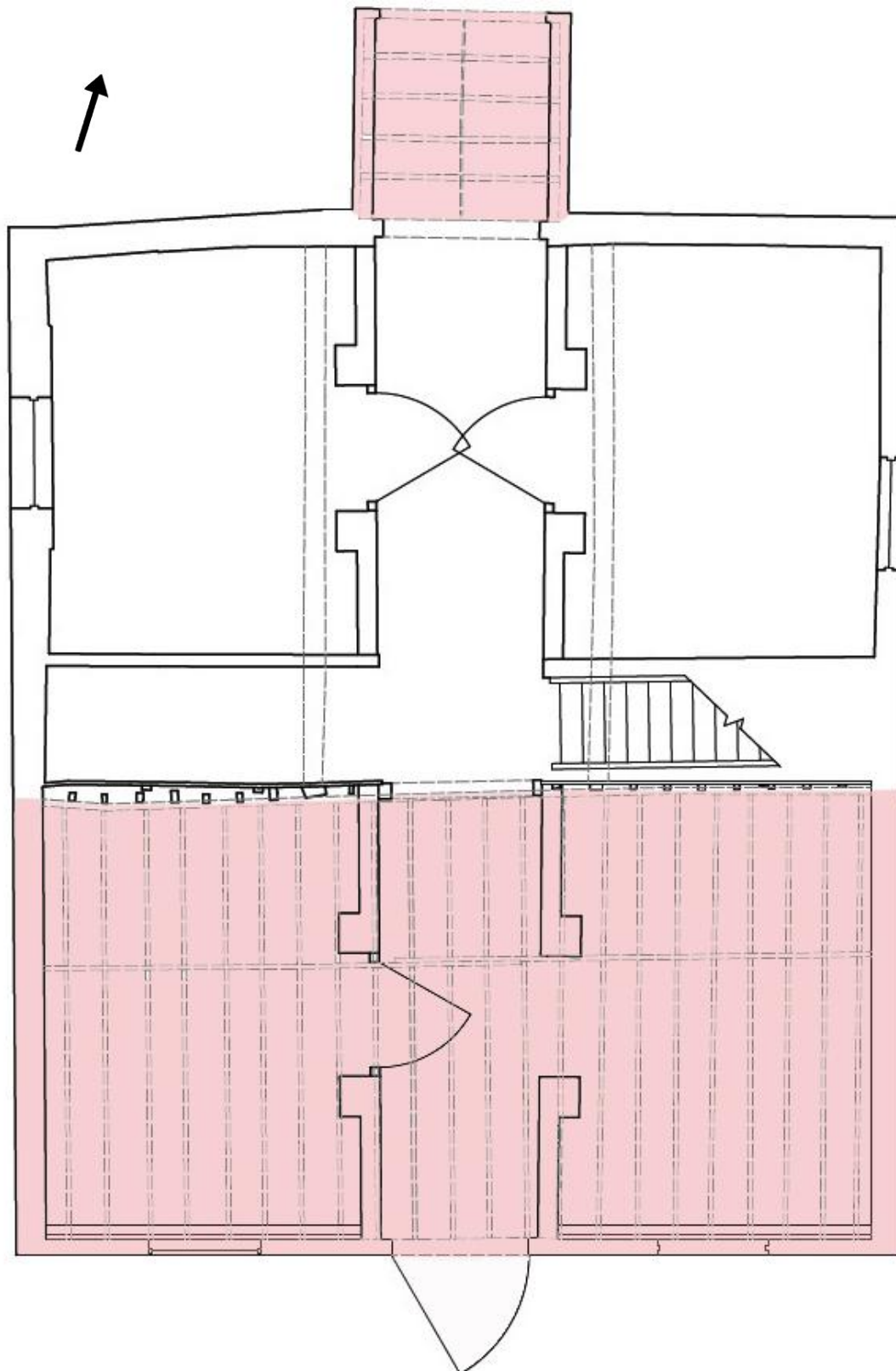


Figure 12. A ground plan of the barn by Evans Kivotos Architects highlighting the lean-to extension and porch of 2003 in pink. The tie-beams of the original structure are indicated by broken lines flanking the modern stable partitions. The almost square proportions of the original three-bay structure differ significantly from the long rectangular building depicted on 19<sup>th</sup> century maps. Scale in metres.



## Proportions and Structure

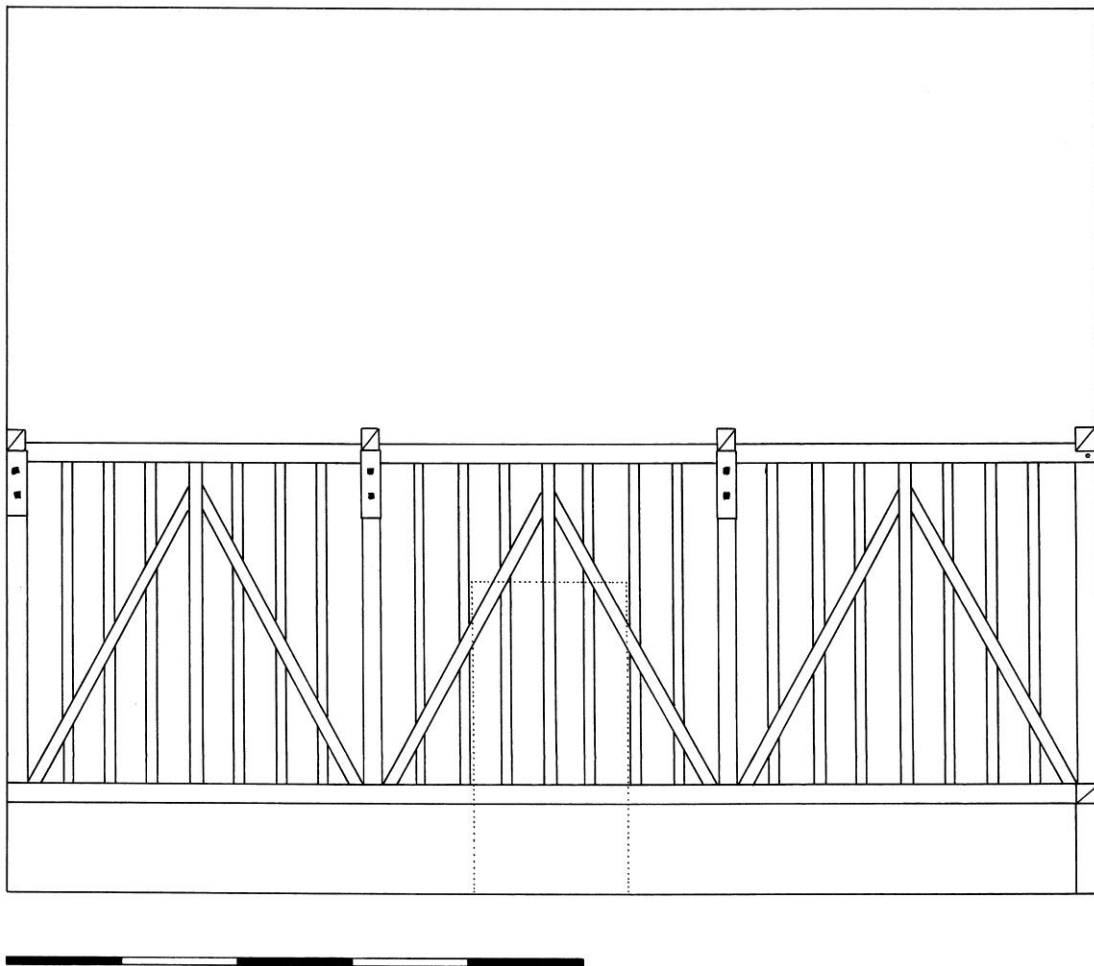
The original timber-framed and weatherboarded structure extends to 6.3 m in total width by 9.4 m in length on an approximately ENE/WSW axis that is simplified to east/west for the purpose of this report (31 ft by 20.75 ft). As part of a major remodelling in 2003 when the building was converted into a stable a lean-to extension of 5 m in width (16.5 ft) was added to the rear (southern) wall along with a central northern entrance porch of 2.4 m by 2.3 m (8 ft by 7.5). The internal walls of the original building rise to 3.7 m at their roof-plates (12.25ft) including a tall plinth of 1 m consisting of flint rubble with red-brick dressing where it survives unaltered in the rear (southern) wall. They are framed in three identical bays of 2.9 m or 9.5 ft, each initially containing 7 narrow-sectioned studs interrupted by straight, diagonal braces rising to the central stud as shown in illus. 14. The studs are tenoned to the roof-plates and sills but not pegged, and the braces are nailed. The roof remains largely intact and consists of narrow sectioned clasped-purlins with a ridge-board and collars secured by nails and a single peg to common rafters in the absence of principal rafters (illus. 11). The storey posts lack jowls and are linked to the tie-beams by original bolted knee-braces, although the westernmost brace in the northern wall has been replaced by twin planks (illus. 14). There is some evidence of re-used material including both tie-beams flanking the central bay, which contain arch-brace mortices with no equivalents in the posts, and the western tie-beam with a variety of pegged stud mortices that bear no relationship to the present framing.

## Original Layout and Purpose

The building resembles a traditional three-bay threshing barn with opposing doors in its central bay, but the original framing indicates both are later insertions. The studwork in the front and rear walls of the central bay was formerly identical to that of the outer bays, with twin primary braces nailed to a central stud: this arrangement survives above the lintel of the rear wall (illus. 12) and while the braces have been removed from the front wall the sides of the central stud above the lintel adjoining the porch retain the unmistakable paint scars and nail holes where they were attached (illus. 9). Braces would not normally be attached to a stud cut by a door lintel as the structure would be weakened as a result, and threshing barns typically possess no studs at all above their main entrance doors which rise to the roof-plates. The listing description of 1982 refers to an entrance in the western gable but makes no mention of a door on the north, suggesting it was inserted along with the porch in 2003. The lintel of this central door still survives, along with that of a much wider entrance as shown in illus. 13. The central lintel interrupts an original brace and the long lintel to the right is nailed rather than tenoned and appears to be re-used as it contains a number of nail holes in its inner surface. These features do not prove it to be a later insertion given the presence of re-used material and nailed joints elsewhere, but an original door lintel of this scale would normally be tenoned to its jambs and the combination of the two anomalies makes an insertion most likely. Unfortunately any evidence of an original break in the plinth was lost when it was rebuilt in 2003. Wide gable doors of this kind were often inserted into threshing barns in the late-19<sup>th</sup> and early-20<sup>th</sup> centuries when they were converted into grain stores or tractor sheds.

The eastern gable was originally open-framed as shown by the presence of original knee-braces at both ends of its tie-beam which lacks the stud mortices seen in the western tie-beam and roof-plates (illus. 15-17). Unlike its western counterpart this tie-beam is not a re-used timber. The absence of an original solid wall in this gable indicates either that the structure formerly continued further to the east or was built against a pre-existing building in this direction. This is confirmed by the cartographic evidence in figures 3-5, all of which depict a much longer building that extended further to the east before being truncated between 1920 and 1958 (figures 6 and 7). The changing proportions suggest that at least two and possibly even three bays were lost. These missing bays may have contained a threshing floor in the bay

adjoining the remaining building to create a relatively standard barn, albeit apparently with more storage bays on the west than the east. Asymmetrical threshing barns of this kind with three bays on one side of the entrance and one or two on the other are known elsewhere but are not common. The rear projection from the missing bays shown in figures 3-5 is consistent with a lean-to rear porch of the kind often seen behind threshing bays and sometimes provided with side-granaries. Alternatively the building may have been designed as a grain and feed shed intended to serve the adjoining cattle yard shown on the historic maps, perhaps with a single original entrance in its western gable in a similar manner to 20<sup>th</sup> century grain stores. Many threshing barns were converted for this purpose as traditional threshing methods were replaced by machines in the mid-19<sup>th</sup> century. Unfortunately, in the absence of the missing bays, any such analysis is inevitably speculative.

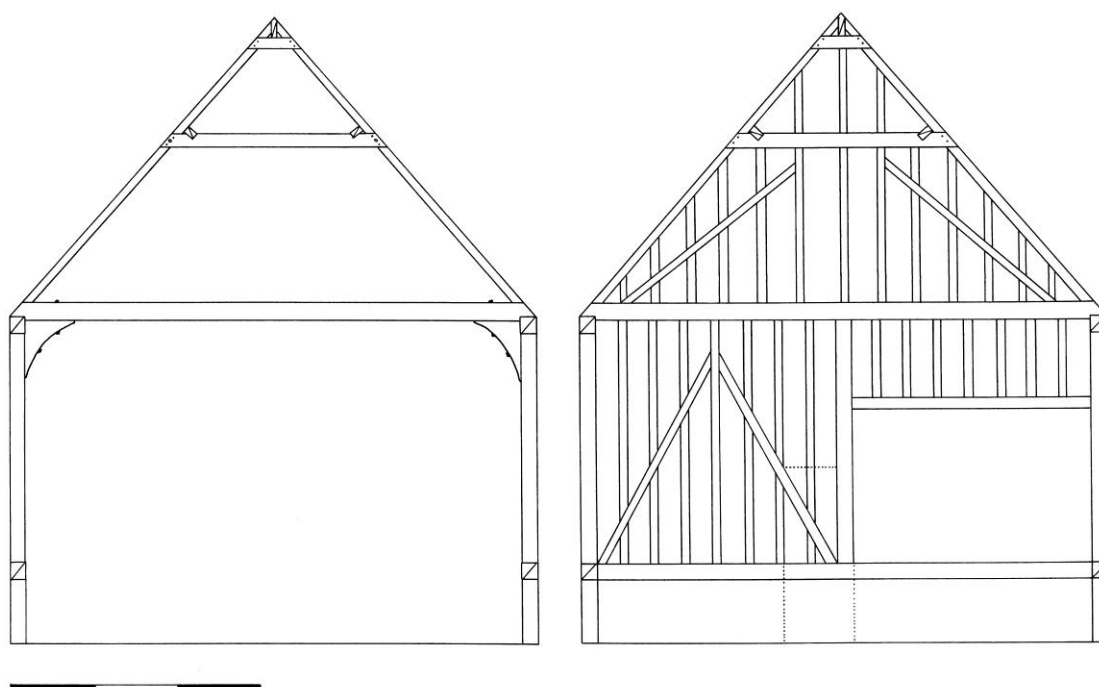


**Figure 13**

**Internal elevation of the rear (southern) wall showing the outline of the inserted connecting door to the lean-to with a dotted line (partial reconstruction). The northern wall was identical initially. The absence of original doors in the side elevations demonstrates that the surviving structure was not a threshing barn in its own right, but may have formed part of one that continued further to the east.**

## Date

Although the 1838 tithe map shows a substantial barn on the same site it is unlikely the present structure belonged to it. The uniformly narrow-sectioned studs interrupted by nailed rather than pegged braces are typical of the middle decades of the 19<sup>th</sup> century, as are the bolted knee-braces instead of the tenoned arch-braces normally found in the initial decades of the same century. The lack of principal rafters in the roof also points to a later date, as does the ridge-board at its apex. Frames of this kind are not usually seen in buildings depicted on the tithe maps of the 1830s and 40s, but were common by the time of the First Edition 25 inch Ordnance Surveys in the 1870s and 80s. Many farm buildings were rebuilt during this hectic period in local agriculture as the yard-based system of mixed animal husbandry known today as Victorian High Farming replaced the more traditional scattered farmsteads of previous centuries. The same period saw the sharp decline of the traditional threshing barn as machinery became more common. A date for the surviving three bays in the third quarter of the 19<sup>th</sup> century is in my view more likely, with the barn shown in 1838 representing the older predecessor shown to the east of the site in 1777 (figure 2). The remaining structure certainly cannot have been built in the 18<sup>th</sup> century as stated in the listing entry.



**Figure 14**

**Internal elevations of the eastern (left) and western gables showing the open truss of the former demonstrating that the structure either continued further or adjoined a pre-existing building. It is unclear whether the long lintel in the right-hand (northern) half of the western gable is an original feature or a later insertion as the tie-beam is a re-used timber and both the ground sill and the short studs above have been disturbed. The framing may have been identical to that of the left-hand section initially. The outline of a small central inserted door shown on the aerial photograph is also indicated, the lintel of which cuts an original wall brace.**



## Alterations

After its truncation by at least two bays in the mid-20<sup>th</sup> century the barn was heavily altered in 2003 when converted into a stable. The open-sided cart shed shown to the south in 1958 was entirely replaced by the present timber-framed and weatherboarded lean-to and the northern porch was added – apparently inserting the two connecting doors. The weatherboarding was fully renewed along with the corrugated iron roof covering, and the external flint plinth mentioned in the listing entry was rebuilt in brickwork laid in English Bond. Only the plinth of the southern wall preserved within the lean-to was retained, although the western plinth incorporates some flintwork and diagonal brickwork possibly in an attempt to replicate the original.

## Historic Significance

Barn 3 is listed as an 18<sup>th</sup> century structure but in fact dates from the mid-19<sup>th</sup> century and almost certainly replaced the barn shown on the same site in 1838. It represents only three bays of the five or possibly six bay building depicted on the Ordnance Survey of 1876 having been truncated on the east between 1920 and 1958. Whether this original building formed a traditional threshing barn or a purpose-built grain and feed store associated with an adjoining cattle yard is unclear, although the latter is more likely. The surviving fragment was heavily altered again in 2003 as part of a stable conversion when its weatherboarding was replaced, its plinth rebuilt, and central doors inserted to connect with a new front porch and rear lean-to. As a much altered fragment of a Victorian farm building it does not meet Historic England's current guidelines for listing in its own right, although it is of sufficient age to be regarded as a 'non-designated heritage asset' for planning purposes and is 'curtilage listed' given its proximity to and historic association with the listed farmhouse and the two other listed farm building nearby.

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*Leigh Alston is a building archaeologist and architectural historian who for 20 years lectured on the understanding and recording of timber-framed structures in the Departments of Archaeology and Continuing Education at Cambridge University. He worked as the in-house building archaeologist for Suffolk County Council's Archaeological Service for 10 years and still fulfils this role for its successor, Suffolk Archaeology CIC. He also undertakes commissions on a freelance basis for the National Trust, private clients and various county archaeological units. Leigh co-founded the Suffolk Historic Buildings Group in 1993, serving as Chairman for 13 years, and has been involved in several television programmes including 'Grand Designs' and David Dimbleby's 'How We Built Britain'. Publications include 'Late Medieval Workshops in East Anglia' in 'The Vernacular Workshop' edited by Paul Barnwell & Malcolm Airs (CBA and English Heritage, 2004) and the National Trust guidebook to Lavenham Guildhall.*

## **Appendix 1 (on accompanying CD): Full Photographic Record**

### **Descriptions of Photographs in Appendix 1**

1. A general view of the site from the west showing Barn 3 in the rear with the farmhouse to the right and Barn 2 on the left.
2. A general view of the site from the north showing Barn 3 to the left, Barn 1 in the centre and Barn 2 on the right.
3. Barn 3 from the north-west showing the recently built dwelling known as Bower Hall Cottage to the right.
4. A general view of the site from the east showing Barn 3 on the left with Barn 1 to the right.
5. Barn 3 from the north-west showing recently replaced weatherboarding and corrugated iron roof with the northern porch added in 2003.
6. A detail of the north-western external corner showing the recently repointed and at least partly rebuilt brick and flint plinth.
7. The northern exterior showing the newly added porch of 2003 and the recently replaced corrugated iron roof.
8. A detail of the northern exterior showing its recently renewed weatherboarding and rebuilt brick plinth with the 2003 porch on the right.
9. The external eastern gable showing its renewed weatherboarding and repointed plinth with the lean-to rear addition to the left.
10. A detail of the eastern external gable showing the recent glazed window, recent weatherboarding and rebuilt brick plinth.
11. Barn 3 from the south-east showing its recently rebuilt lean-to rear addition designed as loose boxes for horses.
12. The southern exterior showing the central doorway and windows of the recently rebuilt lean-to addition.
13. The interior from the north of the porch added in 2003 showing its softwood studwork with the original barn in the rear.
14. The eastern interior of the 2003 porch showing its softwood studs and English Bond plinth.
15. The western interior of the northern porch of 2003 showing its softwood studs.
16. The northern interior showing its whitewashed original studwork and diagonal primary bracing with original studs above the modern door frame.
17. The rear (southern) interior of the barn showing the remains of original studs and braces cut by the entrance to the lean-to addition.

18. The original clasped-purlin roof structure from the north showing arch-brace mortices in the re-used tie-beams.
19. The roof structure from the east showing the empty arch-brace mortices in the re-used western tie-beam.
20. The roof structure from the west showing the empty arch-brace mortices in the re-used western tie-beam with the same features in the eastern tie beyond.
21. The roof structure from the west showing the pegged collars and narrow-section rafters with a ridge-board and several recently renewed rafters.
22. A detail of the rear (southern) roof-plate of the central bay showing its original central stud and primary braces with replaced studs on both sides.
23. The western internal gable with the southern wall to the left showing the flint-rubble fabric of the latter's plinth.
24. The northern interior of the western bay showing its narrow-sectioned studs and straight primary braces with a replaced knee-brace to the right.
25. A detail of the original framing of the western bay's northern interior showing the twin braces in lieu of a knee brace to the post on the right.
26. The western interior gable showing the re-used tie-beam and a possible sometime door lintel to the right with recent softwood studs inserted beneath.
27. A detail of the western internal gable showing the re-used tie-beam with mortices for jowled storey posts adjoining the present corner post that lacks a jowl.
28. A detail of the empty pegged stud mortices in the underside of the re-used western tie-beam.
29. The southern interior of the western bay showing its intact diagonal primary braces matching those of the central bay.
30. The northern interior of the eastern bay showing its intact whitewashed framing with original primary braces that were not reflected in the central bay.
31. A detail of the original bolted knee-brace to the tie-beam between the central and eastern bays of the northern interior.
32. The eastern internal gable showing the original knee-braces of an open truss with inserted studs beneath the tie-beam.
33. The original bolted knee-brace in the barn's north-eastern corner with no mortices in the tie-beam proving a fourth bay has been lost.
34. The original bolted knee-brace in the barn's south-eastern corner with no mortices in the tie-beam proving a fourth bay has been lost.
35. A detail of the original southern bolted-knee brace and jowl-less storey post between the central and eastern bays.



36. The southern exterior of the main barn's eastern bay from the modern lean-to showing its intact framing and flint-rubble plinth.
37. The southern exterior of the central bay from the lean-to showing the modern door frame cutting the original central stud and braces.
38. The southern exterior of the main barn's western bay from the modern lean-to showing its intact original framing.
39. The southern lean-to from the west showing its recent softwood fabric and loose boxes with the main barn to the left.
40. The southern lean-to from the east showing its recent softwood fabric and loose boxes with the main barn to the right.

*Photographic Appendix 2 follows on pp. 17-26*

**Appendix 2 (pp. 17-26): Selected Photographs to Illustrate the Text**



**Illus. 1. A general view of the site from the west showing Barn 3 in the rear with the farmhouse to the right and Barn 2 on the left. All three are listed at grade II along with Barn 1 to the north.**



**Illus. 2. A general view of the site from the north showing Barn 3 to the left, Barn 1 in the centre and Barn 2 on the right. Barn 2 appears to have been built as a cart lodge in the 18<sup>th</sup> century but is listed as 16<sup>th</sup> century and consists largely of re-used timber of that period. Barn 1 is a late medieval threshing barn of three bays truncated on the west (just as Barn 3 has been truncated on the east).**





**Illus. 3. Barn 3 from the north-west showing its close proximity to the recently built dwelling known as Bower Hall Cottage on the right. The listing description of 1983 refers to an entrance in the western gable but there is no longer any trace of this in the weatherboarding or plinth which have since been renewed (see illus. 13)**



**Illus. 4. A general view of the site from the east showing Barn 3 on the left with Barn 1 to the right.**





**Illus. 5. The northern exterior of Barn 3 showing the newly added porch of 2003 and the replaced corrugated iron roof of the same date.**



**Illus. 6. The external eastern gable with the lean-to rear extension of 2003 on the left. The English Bond brick plinth of the main barn is integral to that of the lean-to, evidently having been replaced when the latter was built, and the weatherboarding of both structures is also identical. The original gable is open-framed and the remaining building either continued into the foreground or adjoined an earlier structure in this position as shown on 19<sup>th</sup> century maps.**





**Illus. 7. Barn 3 from the south-east showing its recently built lean-to rear addition designed as loose boxes for horses. The plinth and cladding of the new structure are identical to those of the barn which was extensively renovated and altered at the same time.**

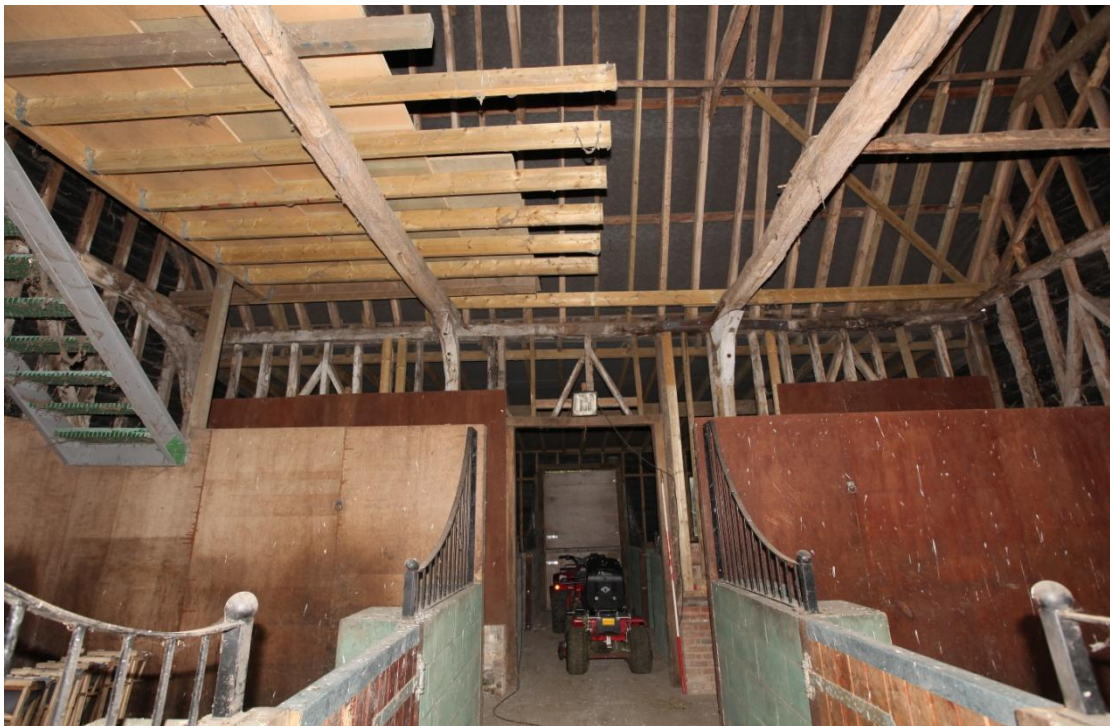


**Illus. 8. The western interior of the northern porch of 2003 showing its modern softwood studs and brick plinth laid in traditional English Bond. The listing description refers only an entrance in the western gable and the surviving framing above suggests that no doorway existed in this position when the barn was first built (illus. 9).**





**Illus. 9.** The northern interior showing its whitewashed original studwork which originally consisted of three bays of identical length with symmetrical framing and no evidence of an entrance. The jambs and lintels of the present porch are insertions of 2003. The short studs above the lintel have been altered, and the central stud bears paint scars and nails for missing diagonal primary braces identical to those of the end bays.



**Illus. 10.** The rear (southern) interior of the barn showing identical framing to the northern wall, with seven studs interrupted by diagonal primary braces in each bay. The studs of the central bay have been cut by the entrance to the modern lean-to addition. The braces are highly unlikely to have been nailed to a central stud that was original cut by a door lintel, indicating that no doors existed in this bay initially.





**Illus. 11. The roof structure from the west showing the empty arch-brace mortices in the re-used western tie-beam with the same features in the eastern tie beam beyond. The collars of the clasped-purlin structure are both pegged and nailed in an apparently original arrangement and the purlins are narrow-sectioned. Some rafters were re-used when new while others are modern replacements but the ridge-board is original.**



**Illus. 12. A detail of the rear (southern) roof-plate of the central bay showing its original central stud and primary braces with replaced studs on both sides. The knee-braced tie-beams are original to the structure but re-used as they contain pegged mortices for arch-braces while the posts lack both jowls and arch-brace mortices.**





**Illus. 13. The western internal gable showing the re-used tie-beam with empty pegged mortices for substantial flat-sectioned studs in the manner of the 17<sup>th</sup> century and before. The short horizontal lintel ostensibly of the gable door mentioned in the 1984 listing survives to the left of the central post while the lintel of a tall, wide entrance lies to the right. The nails in the latter indicate it too was re-used and as the plinth has been rebuilt it is impossible to establish whether this entrance was original or an insertion.**



**Illus. 14. A detail of the original framing of the western bay's northern interior showing its narrow-sectioned timbers and nailed braces along with the twin plank-sectioned braces that replaced an original knee-brace to the wall post on the right.**





**Illus. 15. The eastern internal gable showing the original knee-braces of an open truss with inserted studs beneath the tie-beam. Most of these studs consist of modern softwood but some appear older and *in situ* so the truncation occurred before the barn was refurbished in 2003 – as confirmed by the 1984 listing description which refers to the present three bays.**



**Illus. 16. The original bolted knee-brace in the barn's north-eastern corner with no stud mortices in the tie-beam, proving that either a fourth bay has been lost or the present three-bay structure was designed as an extension to a pre-existing building on the east. The unpainted studs to the right date only from 2003.**





**Illus. 17. The original bolted knee-brace in the barn's south-eastern corner with no mortices in the tie-beam. With its counterpart on the north (illus. 16) this demonstrates that the structure lacked a solid wall on the east and either continued or was designed as an extension to an older building.**



**Illus. 18. The southern exterior of the main barn's eastern bay from the modern lean-to extension showing its intact framing and flint-rubble plinth. This feature is mentioned in the listing description but the plinth has since been largely rebuilt in brick. Combinations of flint and diagonal brickwork of this kind are typical of Victorian rather than Georgian work.**





**Illus. 19. The southern exterior of the central bay from the lean-to showing the modern door frame cutting the original central stud and braces with the intact studs and diagonal primary bracing of the outer bays on each side.**



**Illus. 20. The southern lean-to of 2003 from the east showing its recent softwood fabric and loose boxes with the exposed framing of the main barn to the right. This lean-to replaced but replicated the open-sided lean-to shelter or cart lodge shown on the Ordnance Survey of 1958 and the aerial image of circa 1970 (figures 7 and 9).**