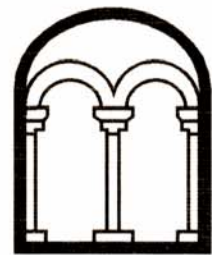


**HOLME MILLS, LANGFORD ROAD
BIGGLESWADE
BEDFORDSHIRE**

**ARCHAEOLOGICAL OBSERVATION
INVESTIGATION, RECORDING
ANALYSIS AND PUBLICATION**

Albion
archaeology



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Preface

Every effort has been made in the preparation of this document to provide as complete an assessment as possible, within the terms of the specification. All statements and opinions in this document are offered in good faith. Albion Archaeology cannot accept responsibility for errors of fact or opinion resulting from data supplied by a third party, or for any loss or other consequence arising from decisions or actions made upon the basis of facts or opinions expressed in this document.

The project was monitored on behalf of the Local Planning Authority by Marin Oake, Central Bedfordshire Council Archaeologist.

The fieldwork was undertaken by David Ingham, Slawomir Utrata and Gary Edmondson. This report has been prepared by Slawomir Utrata and Gary Edmondson. All Albion projects are under the overall management of Drew Shotliff (Operations Manager).

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Key Terms

Throughout this document the following terms or abbreviations are used:

CBC	Central Bedfordshire Council
CDT	Conservation and Design Team
Client	The Jordan Trust & W Jordan Holdings Ltd
DA	Development Area
HER	CBC's Historic Environment Record
IfA	Institute for Archaeologists
NHLE	National Heritage List for England
<i>Procedures Manual</i>	<i>Procedures Manual Volume 1 Fieldwork, 2nd edn, 2001 Albion Archaeology</i>



Non-Technical Summary

Albion Archaeology was commissioned by The Jordan Trust and W Jordan Holdings Ltd, to undertake the archaeological works associated with a condition (no. 6) attached to planning permission (CB/10/02857/FULL), granted by Central Bedfordshire Council for the development of a Heritage Centre at Holme Mills, Biggleswade.

The site lies approximately 900m to the south-west of Biggleswade, straddling both banks of the River Ivel; it is centred on OS grid reference TL (5)18514 (2)42987. The mill is associated with a complex series of leats and channels, with the water flowing from south to north. The site occupies two islands of irregular form in plan.

The Heritage Centre development retains the Miller's House and Mill Building. Later additions to the mill complex in the east were demolished, as were several ancillary buildings to the north and east of the mill. New building work comprised the creation of an external access lift for the Mill Building, and a small Interpretation Centre to the south of the mill, on the Eastern Island. A Mill Store was erected on the Western Island once the standing buildings had been removed. Groundworks associated with these new buildings were monitored between 27th September and 1st December 2011; building works were then interrupted with a final visit on 10th May 2012.

The current Mill Building of white Fletton brick dates to the late 19th century and is the county's longest surviving, industrial-style, corn mill. This building is recorded on the Central Bedfordshire and Luton Historic Environment Record (HER 2499). The earliest documentary evidence for a mill at the site is indirect evidence from the 1639 will of a weaver, who is described as 'of Holme Mills', indicating a mill was already established by this date. The earliest cartographic evidence for a mill is a 1702 map, which is vague, but appears to show the mill on the west bank of the mill race, with the external mill wheel on the eastern gable wall. A plan of 1781 provides a detailed layout of the mill and associated buildings; this seems to be the basic layout which undergoes modification into the 20th century.

Groundworks associated with the Mill Building revealed evidence for several phases of earlier building. On the Eastern Island, below the concrete floor in the eastern bay of the mill, traces of red brick footings may define elements of the mill which burnt down in 1899; photographs taken in 1890 indicate a dark brick building. The plans and photograph indicate a mill of similar dimensions to the standing building. The eastern gable wall was very extensive, with a deep stepped footing of red brick, underpinned by concrete in recent times — indicative of unstable ground. Traces of Ironstone wall footings defined the eastern end of a smaller mill. This was associated with a bypass leat, which was identified in the external lift pit immediately south of the mill. It would appear that the eastern gable of the current mill is within the earlier bypass leat, which may explain the need for the substantial footing. The NW corner of another Ironstone building was revealed immediately SE of the standing mill — presumably on the eastern side of the bypass leat. Traces of another Ironstone structure revealed at the formation level within the Mill Building may define part of an even earlier mill.

On the Western Island, groundworks associated with the Mill Store revealed traces of red brick footings which correlate with buildings shown on the 19th-century maps.



The investigations have provided an insight into the development of the mill site. Despite major redevelopment in modern times, deposits associated with early phases of building survive. However, groundworks associated with the development of the Heritage Centre had limited impact on the deposits, restricting the scope of both the damage and the opportunity to investigate the earlier deposits. No finds were recovered to provide dating of the chronological sequence, though available historical maps provide some corroborating evidence. This report provides a detailed summary of the remains revealed. There is no potential for further analysis and reporting of the remains beyond the scope of this document. However, summaries of the results of the work will be published in South Midlands Archaeology and Post-medieval Archaeology, cross-referenced to this document which will be uploaded onto the OASIS website (ref. albionar1-131901).

The archive will be deposited with Bedford Museum under accession number BEDFM 2010.66.



1. INTRODUCTION

1.1 *Planning Background*

Central Bedfordshire Council granted planning permission (CB/10/02857/FULL) for the development of a Heritage Centre at Holme Mills, Biggleswade. A condition (no. 6) attached to the planning permission required the implementation of a programme of archaeological investigation.

Albion Archaeology was commissioned by The Jordan Trust and W Jordan Holdings Ltd, to undertake the archaeological works required to address the condition. The site contained significant heritage assets, which could have been affected by the development. These comprised archaeological remains relating to the origins and development of milling at the site from the medieval period onwards. The Ivel valley has also been a focus for human habitation and utilisation from prehistoric times; it was possible that deposits associated with this earlier activity might also have survived on the site.

Archaeological monitoring of the construction works took place intermittently between 27th September and 1st December 2011. Building works were then interrupted with a final visit on 10th May 2012. The results are presented in this report.

1.2 *Site Location and Description*

The site lies approximately 900m to the south-west of Biggleswade, straddling both banks of the River Ivel; it is centred on OS grid reference TL (5)18514 (2)42987 (Figure 1). Generally the site is level at *c.* 27m OD. The mill is associated with a complex series of leats and channels, with the water flowing from south to north. The site occupies two islands of irregular form in plan, with a third area to the east extending from the river to an adjacent moated site (Scroup's Moat) (Figure 1).

The Western Island is the larger, defined by the Ivel Navigation to the west and the main channel of the river to the east. It contains the Mill Cottages in the west, with elements of the mill complex occupying the eastern margin of the island, adjacent to the main channel or mill race. The complex comprises the Miller's House and part of the mill building, with ancillary buildings to the north. The Eastern Island is defined by the main channel in the west, with bypass leats defining the other sides. It contains the continuation of the mill building and ancillary buildings. Most of the area south of the mill is *c.* 1m above the ground level of the southern tip of the island, and adjacent areas beyond the river. This indicates a significant raising of the ground level. A smaller island to the south is occupied by the continuation of the Broom Road, which dog-legs around the site.

The mill site is within the alluvial band associated with the current course of the River Ivel, with 1st and 2nd river terraces deposits composed of silt, sand and gravel, extending over 600m to the east. The area to the west consists of an extensive roughly north-south linear band of glacio-fluvial deposits of the Lowestoft Formation, comprising undifferentiated chalky sand and gravel (British Geological



Survey, Sheet 204, Solid and Drift, 1:50 000). It would appear that the current course of the river occupies the western margin of the post-glacial river channel.

The current mill building dates to the late 19th century and is the county's longest surviving, industrial-style, corn mill. This building is recorded on the Central Bedfordshire and Luton Historic Environment Record (HER 2499). Constructed of white Fletton brick (sometime having a yellowish hue) and originally of three storeys and attic, the building has undergone significant changes to keep pace with changing requirements; however, the contemporary roller mills are retained. This building is not listed. There have also been changes to incorporate new power technology, such as the replacement of the two overshot waterwheels with a 20 hp Gilbert and Gilkes turbine.

The adjacent red brick Miller's House (HER 7773) is earlier, dating to the 18th century; this building is not listed.

Throughout its history, the mill complex has undergone change, although the most significant changes occurred following a period of abandonment in the mid 1940s. After several years the flour mill was restarted and production at the site was diversified — feed milling was undertaken, requiring additional buildings. The feed mill was attached to the eastern elevation of the mill; this has since been demolished, although the engine room remains. The construction and subsequent demolition of the feed mill have resulted in some alteration to the eastern elevation of the mill building. Other 20th-century alterations comprise the addition of a stairwell on the southern side of the mill and alterations to the roof. A number of modern storage sheds occupy the yard to the east of the mill. The flour mill is no longer operational.

The Heritage Centre development retains the Miller's House and Mill Building. Later additions to the Mill Building in the east were demolished, as were several ancillary buildings to the north and east of the mill. New buildings comprise a Mill Store on the Western Island, with a small Interpretation Centre to the south of the mill, on the Eastern Island, with the addition of an external lift on the southern wall of the mill in the east.

1.3 Archaeological Background

Although few archaeological investigations have been conducted in the vicinity of the site, evidence from the wider area indicates that the valley of the River Ivel has been an important focus of activity from the Palaeolithic period (Old Stone Age), with extensive activity from the Neolithic period onwards. In the medieval period, the landscape was intensively utilised; the available evidence indicates that milling was established on the site from at least the 1630s.

A search of the HER and National Monuments Record (NMR) for an archaeological desk-based assessment (Albion 2010) identified 25 previously recorded sites within approximately 500m of the site. The results are summarised here. A significant number of the sites were undated as they had not been subject to investigation. However, the form of several of the cropmark sites indicates multi-period activity, including ring ditches, which are likely to be the remains of Neolithic – early Bronze Age burial monuments. A variety of isolated enclosures as well as more regularly



laid out enclosure systems with trackways were also identified; elsewhere in the area such features are typically of Iron Age to Roman date.

The site is on the margins of the medieval settlement of Holme, with Scroup's Moat being located a short distance to the NE. The cast iron bridge spanning the Ivel Navigation, located immediately to the west of the site is of national importance, being designated as a Scheduled Monument (SAM 87 on Figure 1).

A series of historical maps of the site are available; they provide an insight into the development of the area (Figure 2). Early maps of 1702 (Figure 2: Map 1) and of 1730s-1740s are stylised, though the 1702 map suggests that the mill was on the west bank of the mill race, with an external undershot mill wheel on the eastern gable wall. The first useful map is the 1781 Plan and Survey of Holme Estate, which shows the mill and associated buildings, as well as water courses (Figure 2: Map 2). The 1838 Map of Titheable lands in the Parish of Biggleswade is the next useful map. Subsequently the 25 inch OS maps of 1884 (Figure 2: Map 3), 1901 and 1926 (Figure 2: Map 4) illuminate a crucial period in the history of the mill (see Albion 2010 for further details).

Old photographs reproduced in Howes (2009) provide additional information on the mill. A photograph of the mill in 1890 (Howes 2009, 92) corresponds to the mill depicted on the 1884 first edition Ordnance Survey map. This shows the northern elevation of the mill, prior to the fire, being taken from the area of the 'indent' on the western side of the main channel. This indicates a dark brick building of three storeys with pitched roof, the hoist being off-centre to the east of the building. A third component of the mill is of mixed construction. The ground floor is timber-framed with brick infill, whilst the upper storey is of horizontal lap timber construction. The pitched slate roof is hipped. There are two channels visible emerging from beneath the mill; a wide squared one in the foreground corresponds to the current one. This façade masks two convergent arched channels. A much smaller arched channel appears further to the east; it is no longer visible. The ancillary building on the west bank appears to be of horizontal timber lap construction. This is possibly associated with the coal landed at the small 'indent' dock (*pers. comm.* John Barker).

A second image reproduced in Howes (2009, 15) is taken after the fire of 1899 and clearly indicates a new building. It was taken from the weir near the northern side of the bypass leat and shows the mill contrasting with the darker brick of the Miller's House. The façade indicates that since the image was taken the mill has undergone changes, particularly to the roof line and also to the hoist area. The ancillary buildings on the eastern gable end of the mill (nearest the viewer) are not seen on the 1901 second edition Ordnance Survey map, but correspond to the off-set buildings depicted on the 1926 map, indicating that they were erected between 1901 and 1910. The nearest building is an insubstantial lean-to with open eastern side, whilst the larger building to the south is of single-storey brick construction. The lean-to overlaps a door at first floor level in the gable of the mill, indicating changes to work processes.



1.4 Project Objectives

The site had the potential to reveal information on a number of research objectives identified in the research framework for Bedfordshire (Oake *et al* 2007).

Given the location of the site, there was a strong possibility that remains relating to medieval and post-medieval milling survived. Several aspects of the groundworks had the potential to impact any surviving, below ground, archaeological deposits. Accordingly, the specific aims of the fieldwork were to:

- Investigate and record the construction works and any archaeological deposits encountered within them, in order to understand the site in relation to its cultural and environmental setting.
- Determine if any deposits or structures associated with medieval or post-medieval mills survived.
- Determine if any earlier forms of the water management system, such as leats, survived.
- Relate the standing structures to any buried remains to determine how the utilisation of the site changed over time.
- Determine if there was any evidence for medieval or earlier utilisation of the site.
- Recover artefacts and ecofacts from post-medieval and earlier deposits to assist in the understanding of the cultural and environmental landscape.

The site had the potential to address several research themes relating to the development of the rural economy, particularly in the post-medieval period, as framed in county and regional research frameworks (Edgeworth 2007, 102, 123; Brown and Glazebrook 2000).

Both within Bedfordshire and the wider region several authors (Edgeworth 2007, 123; Medlycott and Brown 2008, 108) have commented on the need for investigation and greater understanding of watermills, which were a significant element in the rural economy. The site had the potential to shed light on this facet of the post-medieval and possibly medieval agrarian landscape.

The broader objectives of the project were to add to the knowledge and understanding of the archaeology of Bedfordshire (*e.g.* artefact type series and palaeoenvironmental background) and to produce a report and archive that fully described the archaeological works.



2. METHODOLOGY

All groundworks were either undertaken by hand or excavated with a mini-digger driven by an experienced operator. They were observed, inspected and recorded by Albion Archaeology staff.

Throughout the project the standards set out in the following documents were adhered to:

- IfA's *Code of Conduct* (2010);
- IfA's *Standards and Guidance for Archaeological Watching Briefs and Field Excavations* (updated 2008) and *finds* (updated 2008);
- Albion Archaeology's *Procedures Manual for Archaeological Fieldwork and the Analysis of Fieldwork Records* (2001);
- English Heritage's *Management of Archaeological Projects* (1991).



3. RESULTS

Two areas were the focus of ground disturbance associated with the development:

- the eastern end of the Mill Building and the adjacent area to the south, in the vicinity of the external lift and a small interpretation centre on the Eastern Island (Figure 1 - 1).
- the Western Island where a new Mill Store was erected (Figure 1 - 2).

The development scheme underwent modification, with the associated scheme for services being revised. Those services that were required did not penetrate into archaeological deposits. The scale of the Interpretation Centre was also revised from the original proposal, with the smaller timber structure not penetrating below the level of modern disturbance.

The results will be discussed according to area and where possible stratigraphically from latest to earliest. No artefacts were recovered during the work, so sequence is based on stratigraphic observations. Associated illustrations are bound at the back of the report.

3.1 *Eastern Island*

3.1.1 **The Mill Building**

Interior

The eastern bay of the current mill building, which had internal dimensions of *c.* 7.7m (25' 6") long E-W by 6.1m (20' 4") wide, was stripped of fittings, floors and associated timber supports. This left an open area comprising external walls open to the roof. Groundworks in this area comprised the excavation of a test pit against the eastern gable wall. Subsequently, the remainder of the modern concrete floor was removed in a series of stages. This work was monitored allowing a plan of the exposed earlier deposits to be compiled (Figure 3). This has been colour-coded for clarity. Archaeological investigation and recording did not extend below the formation level for the current works.

Features associated with the standing mill

A series of features located towards the eastern end of the mill are thought to define modifications associated with the standing mill (Figure 3 – dark yellow features and Figure 5: images 3 and 4). These consist of a concrete raft underpinning the part of the eastern gable wall exposed in the test pit. This underpinning, in conjunction with the earlier stepped footing, would appear to be attempts to stabilise soft ground in this area. The fragmentary remains of a possible plinth base were identified roughly centrally along the southern wall of the mill (Figure 3 – light yellow feature and Figure 6: image 6). This had been carefully constructed on Fletton bricks to form a rough square 0.5m (1'8") across. This was the only feature of this type exposed and its function is uncertain, although the fracturing of the bricks would suggest that it supported a load-bearing timber upright.

A series of rectangular brick plinths, revealed below the modern floor towards the eastern end of the mill, would appear to be a modern addition, presumably to provide a firm base for a timber superstructure. This area was enclosed by timber



panelling during the initial site visit in March 2010, during the initial stage of the project, prior to construction works.

The initial test pit also revealed a single wall composed of Fletton bricks (Figure 3: light yellow feature and Figure 4: image 2). The footing was aligned N-S and was formed of a single brick, at least two courses deep; the bricks measured 216mm by 108mm (8½” by 4¼”). This was perpendicular to the standing walls of the mill, with the two other walls of contrasting materials on a divergent alignment. The narrow wall would appear to be a minor partition; though the use of Fletton bricks indicates that the builder would use these for below ground footings.

Earlier brick footings

Beneath the walls of the current mill, which are composed of White ‘Fletton’ bricks (often with a slightly yellowish hue), footings of red brick were revealed. These bricks were of a similar size to the Fletton bricks — 216mm by 108mm (8½” by 4¼”). Extending to the internal face of the eastern gable wall of the mill, the test pit exposed a substantial red brick footing. This comprised six courses with a vertical face, which was off-set from the current mill wall. Below this were at least four stepped courses; later concrete underpinning obscured the area below this (Figure 3: dark yellow feature and Figure 4: image 1). A series of N-S cross-wall stubs also composed of red brick were revealed extending between the buttress bases (Figure 3 – pale red features, Figure 4: image 2). The cross-walls showed evidence of later demolition and robbing. The internal buttress bases resulted in an irregular form to the inner face of the mill walls (the external face being flush). These bases had red brick lower portions with off-set Fletton brick continuations, suggesting that the red brick footings had been reused in a later rebuild, rather than cheaper bricks being used for the below ground footings, whilst white bricks were used for the visible portion of the mill. Several cross-walls showed dark discolouration, possible due to burning. It is thought that the red bricks relate to an earlier form of the mill, which was destroyed by fire in 1899. The later mill did not require the cross-walls.

Ironstone mill

The investigation appears to have revealed elements of two phases of Ironstone walling, mostly relating to the later phase (Figure 3 – solid brown features). Only a fragment of a possibly earlier Ironstone structure was exposed (Figure 3 – brown hatched feature).

The Ironstone footings indicate that the mill had a similar width to the current building, though of shorter length; the eastern gable wall was exposed during ground reduction (Figure 5: images 3 and 4). Traces of the Ironstone footings were exposed beneath both the northern and southern walls of the standing mill (Figure 6: images 5 and 7 and Figure 7: images 8 and 10). The gable wall was substantial, 0.7m wide with no interruptions in it. It would appear that this also defined the western side of a bypass leat (see below). No material was recovered to date these footings. However, a smaller mill is shown on the 1781 map (Figure 2: Map 2), with the mill race running centrally through the building, indicating an internal wheel.



Earlier Ironstone structure

Traces of another segment of Ironstone structure were revealed towards the SE corner of the Ironstone mill (Figure 3: brown hatched feature). This was badly disturbed by elements of the later brick mills including the stub of one of the cross-walls and associated buttress bases, as well as the eastern gable wall of the Ironstone mill (Figure 6: images 5-7). Investigation was limited, as it was only exposed at the formation level. However, the apparent truncation by the eastern gable wall of the Ironstone mill together with the close proximity to the southern Ironstone wall of the mill would suggest that it was not associated. An intriguing feature of this structure was the apparent curve visible to the western extent (Figure 6: image 7). However, it is not clear if this was an original part of this structure or the results of later truncation. No dateable material was recovered from the part of the structure exposed.

Bypass leat

Excavation of the lift pit located immediately to the south of the Mill Building revealed a substantial Ironstone wall, 0.75m (2'6") thick, aligned NE-SW though curving in the north to link to the eastern gable wall of the Ironstone mill (Figure 3 and Figure 7: images 8 and 9). The Ironstone was bonded with a thin band of white mortar. The form of the wall suggests that it was the western side of a water channel. As this angled diversion would have caused the water to lose valuable energy, this is interpreted as a bypass leat rather than the mill race to feed the waterwheel. The bypass leat would have taken excess water from the mill race and diverted it around the eastern side of the mill. This would suggest that the mill wheel was located to the west, though it is not clear if the wheel was an internal feature or whether the wheel extended from the western gable of the building

Associated deposits to the east of this wall, which filled the leat, were distinctive and organic. Contamination by fuel which had escaped from the engine house, formerly located immediately to the east of the mill, prevented investigation or sampling of these deposits. The opposed eastern side of the leat was not exposed during the groundworks. However, ground reductions in a small area of the lift pit west of the wall revealed the Ironstone footings for the southern wall of the mill (Figure 3 – brown feature and Figure 7: image 10). No Ironstone footings were revealed east of the bypass leat wall, confirming that this was contemporary with the Ironstone mill. Whilst a shorter mill building is depicted on the 1781 map, there is no sign of a bypass leat to the east of the mill race. Given the proximity to the gable wall of the mill, this is unlikely to have been sealed by capping slabs, which may have otherwise hidden it from the map-makers.

It would appear that the eastern gable wall of the later brick mills, which were located further to the east, were possibly dug into soft ground associated with this leat, requiring stepped footings and subsequently underpinning with concrete to try to stabilise the wall.

Ancillary building

Ground disturbance on the site of the former engine house, located immediately to the SE of the Mill Building to remove the substantial concrete slab on which the engine had been mounted, mainly revealed modern disturbance. However, adjacent



to the SE corner of the Mill Building, traces of substantial Ironstone footings were revealed (Figure 3 – solid brown features and Figure 8: images 11 and 12). The perpendicular wall footings were at least 0.7m and 1.65m long, being lost to modern disturbance, by at least 0.45m wide and at least 0.35m deep, continuing below the level of machining. The Ironstone was bonded with a thin band of white mortar similar to that used on the bypass leat wall to the west. The N-S footing would appear to be straight, suggesting that it was not defining the eastern side of the leat, which presumably would have been in the area not investigated to the west (Figure 3). The size and form of this ancillary building, situated to the east of the leat is unknown, with the continuation being lost to later buildings with deep foundations.

3.2 Western Island

Construction of the Mill Store required extensive ground disturbance following clearance of the modern buildings. As the building required piled footings, initially a series of small pits 1.1m square were dug on the sites of the individual piles to ensure there were no obstructions. However, due to an extensive layer of brick rubble, probably associated with construction of the modern surface, together with the presence of numerous concrete foundations and services larger areas had to be opened. The revision to the work programme were discussed with the Central Bedfordshire Council Archaeologist and it was determined that continued observation of this work was the best strategy. These groundworks revealed traces of wall footings of a brick building, with sequential floor to the east (Figure 9 and Figure 10: images 13-15).

At a depth of 0.6m below the present ground level, a series of red brick wall footings for a range of buildings aligned N-S were revealed in the NE corner of the footprint of the Mill Store (Figure 10: images 13 and 14). These extended at least 5.1m N-S with two perpendicular walls heading to the west and continuing beyond the area of investigation. These walls defined a room some 2.2m long N-S. To the east of this, traces of sequential internal floors were identified 0.3m below the present ground level, extending up to 7m to the east. In some areas two superimposed internal surfaces were revealed (Figure 10: image 15). Set on a very thin bed of mortar, the lower brick surface was composed of pale, possibly Fletton bricks. Above this was a band of off-white mortar, which incorporated roofing slate fragments. Set into this was the upper floor, comprising modern black rectangular tiles with a pattern of diamond-shaped grooves moulded into the surface. The form of the bricks suggests that they were not directly associated with the red brick wall footings to the west.

It is likely that the identified wall footings relate to an L-shaped range of buildings shown to the NW of the mill on the 1884 1st edition Ordnance Survey map (Figure 2: Map 3) and still present, though modified on the 1926 map (Figure 2: Map 4). The area to the east was occupied by buildings in more recent times.



4. CONCLUSIONS

Only small areas were affected by groundworks associated with the project to convert the former mill into a Heritage Centre. However, they have provided a tantalising glimpse into the earlier history of the site. No dateable finds were recovered from these earlier phases to provide a chronological framework, though a series of maps dating back to 1781 provide some corroborating evidence.

Groundworks associated with the Mill Building revealed evidence for several phases of earlier building in the eastern part of the standing building on the Eastern Island. Below the concrete floor, traces of red brick footings may define elements of the mill which burnt down in 1899; photographs taken in 1890 indicate a dark brick building. The eastern gable wall was very extensive with a deep stepped footing of red brick, underpinned by concrete in recent times, indicating unstable ground.

Traces of Ironstone wall footings defined the eastern end of a smaller mill. This was associated with a bypass leat, identified in the external lift pit immediately south of the mill. This may correspond to the smaller mill recorded in 1781. It would appear that the eastern gable of the current mill is within the earlier bypass channel, which may explain the need for the substantial brick footing when the mill was enlarged to the east. The NW corner of another Ironstone building was revealed immediately to the SE of the standing mill — presumably on the eastern side of the bypass leat. The date and function of this building is unknown, with the majority of it being destroyed by modern activity. However, it would appear to be earlier than 1781, based on the available maps. Within the Mill Building, traces of another Ironstone structure, revealed at the formation level, may define part of an even earlier mill.

On the Western Island, groundworks associated with the Mill Store revealed earlier structural remains beneath the modern surface. Traces of red brick footings correspond to buildings shown on 19th-century maps. Internal floors to the east of this would appear to be later, relating to the present mill.

The investigations have provided an insight into the development of the mill site. Despite major redevelopment in modern times deposits associated with early phases of building survive. However, groundworks associated with the development of the Heritage Centre had limited impact on the deposits, restricting the scope of both the damage and the opportunity to investigate the earlier deposits. No finds to provide dating of the structural sequence were obtained and this report provides a detailed summary of the remains revealed. There is no potential for further analysis and reporting of the remains beyond the scope of this document. However, summaries of the results of the work will be published in *South Midlands Archaeology* and *Post-medieval Archaeology*, cross-referenced to this document which will be uploaded onto the OASIS website (ref. albionar1-131901).

The project archive will be deposited with Bedford Museum (accession no. BEDFM: 2010.66).



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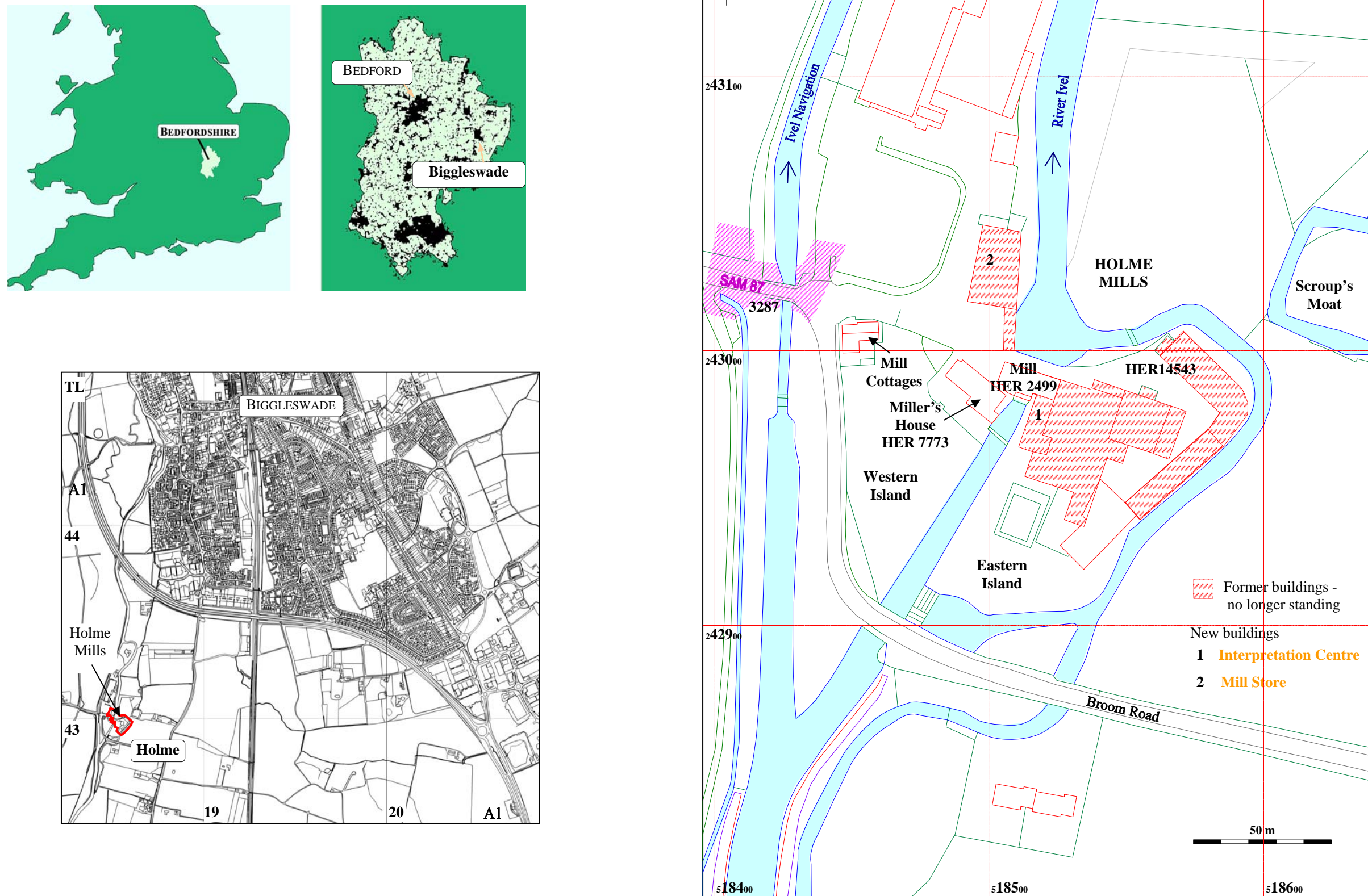
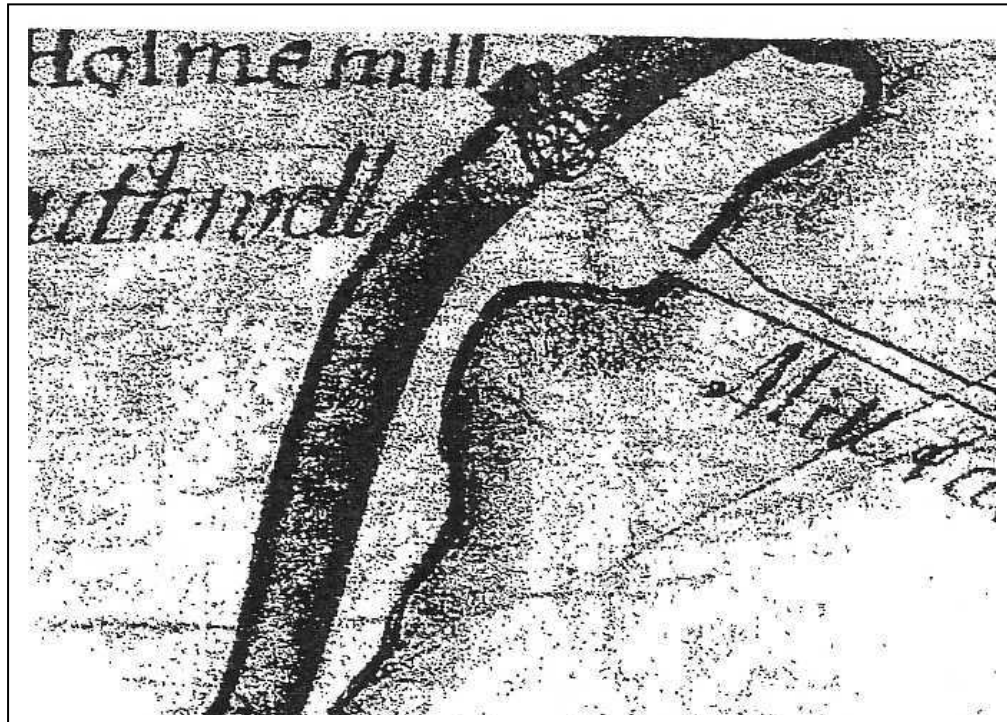


Figure 1: Site location and areas of groundworks

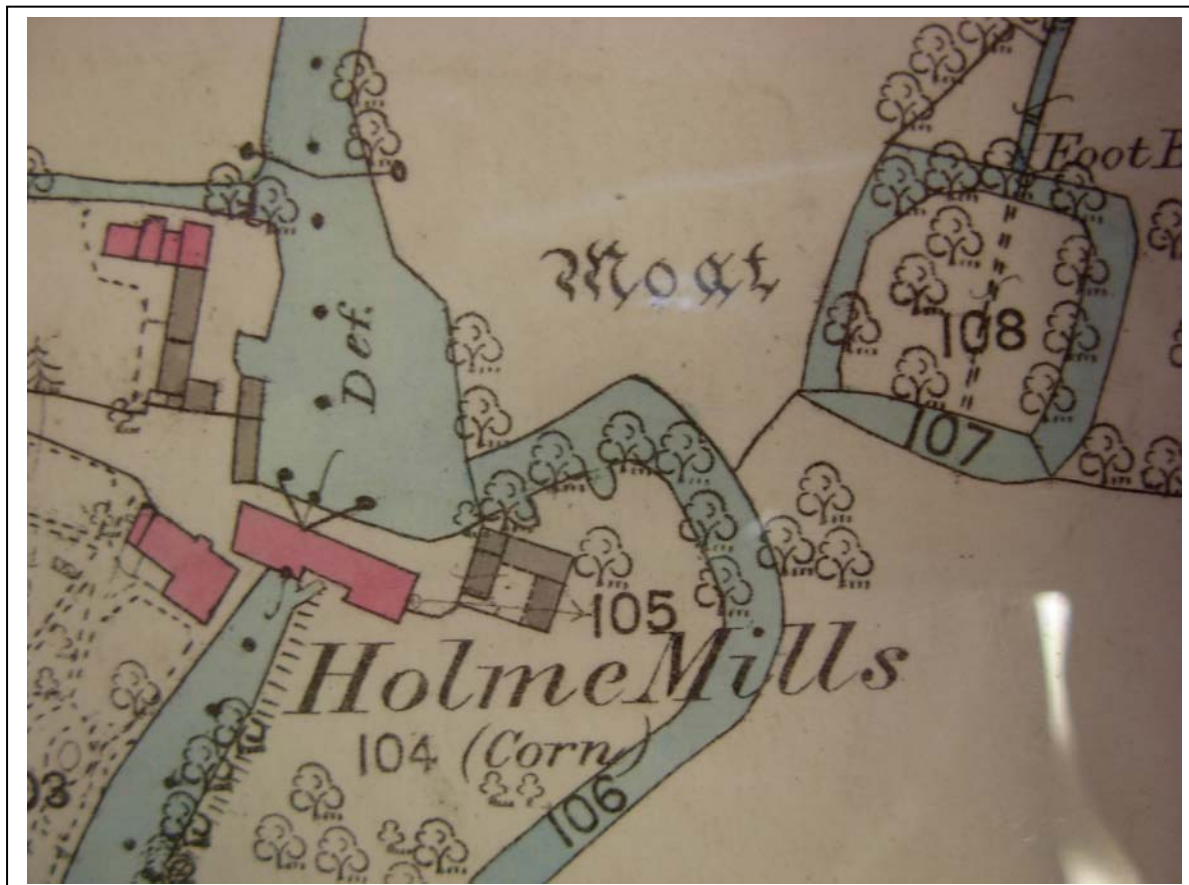
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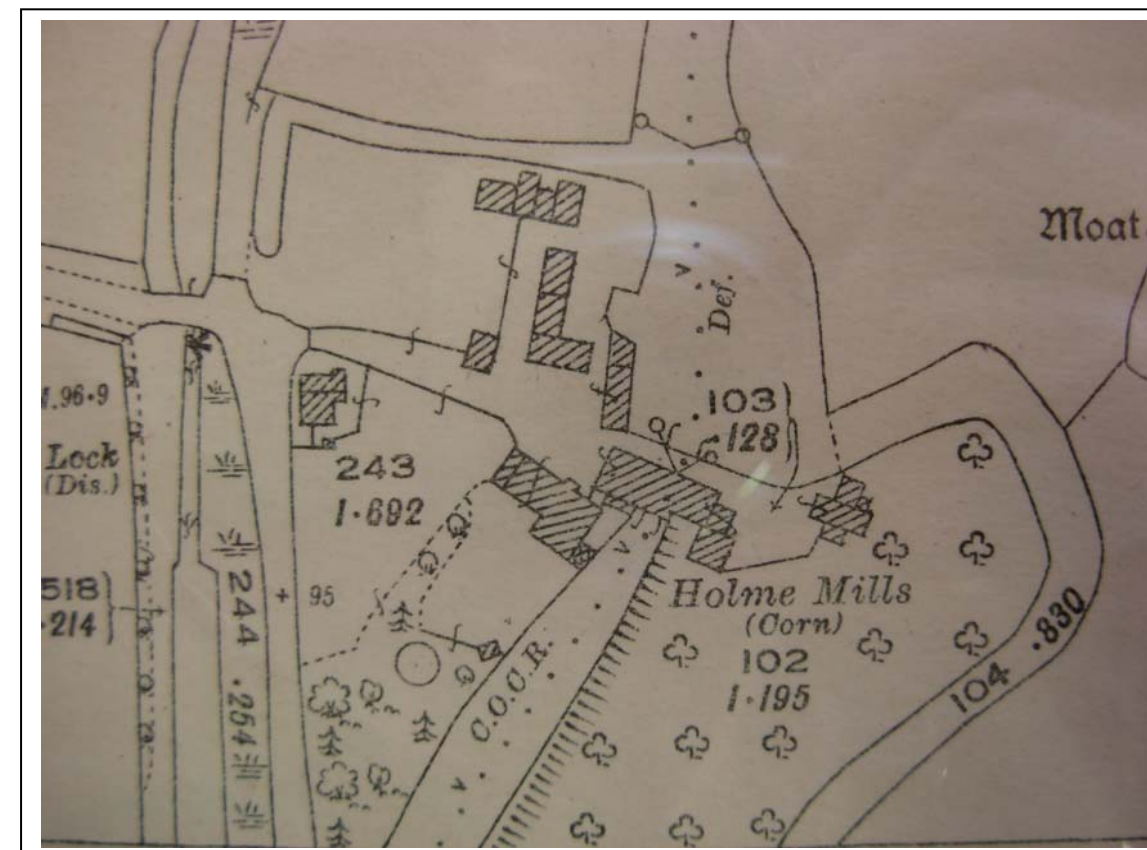
Map 1: Detail of 1702 map showing the external mill wheel with building to the east. Ref PRO E178 6756.



Map 2: Detail of the 1781 Plan and Survey of Holme Estate, showing the mill and associated buildings. Ref BLARS HF 400/1.



Map 3: Detail of the 1884 1st edition Ordnance Survey map showing the mill and associated buildings.



Map 4: Detail of the 1926 Ordnance Survey map showing the mill and associated buildings.

Figure 2: Historical maps

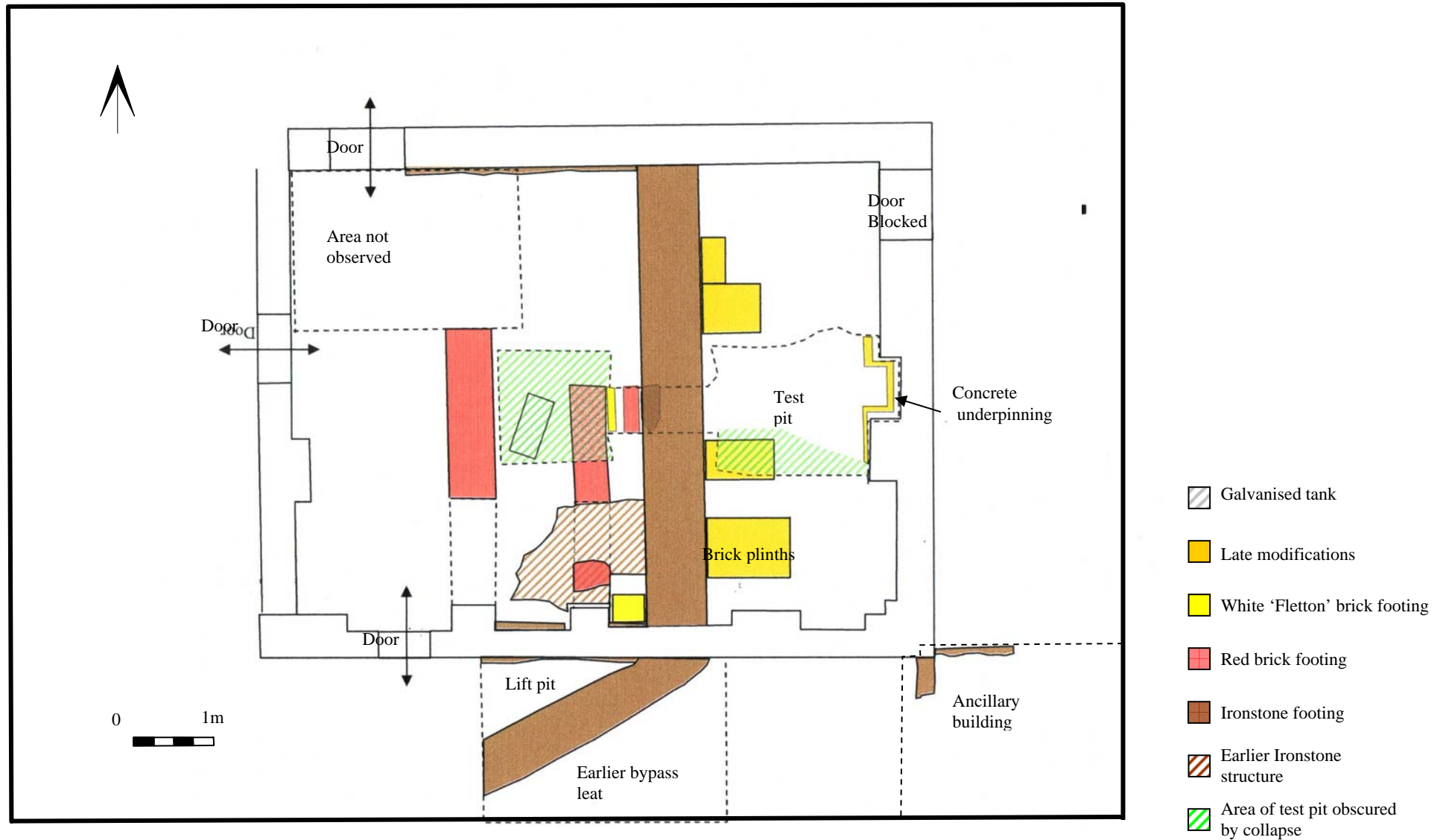


Figure 3: All-features plan of eastern bay of Mill Building



Image 1: Detail of stepped eastern gable wall of Mill Building revealed in the test pit, with Fletton bricks forming the superstructure — grey scar of modern concrete floor visible at top of image. Concrete underpinning is visible at the bottom of the image. Scale 25cm in 5cm divisions.



Image 2: Detail of three walls of contrasting materials, revealed in the narrow part of the test pit. The red brick of the footing beneath the scale shows discoloration due to burning. Scale 25cm in 5cm divisions.

Figure 4: Interior of Mill Building – early red brick footings - Selected images 1 and 2



Image 3: Looking south along possible eastern gable wall of ironstone mill, with plinths to left associated with later mill. At the top of the image an ironstone wall footing can be seen to the right of this (though only brick to the left). Scale 1m in 50cm divisions.



Image 4: Eastern face of ironstone wall with later plinths butting-up. Scale 1m in 50cm divisions.

Figure 5: Interior of Mill Building – Ironstone mill walls - Selected images 3 and 4



Image 5: Complex structural remains revealed beneath the modern mill floor. Evidence for possibly two phases of Ironstone wall footings was revealed. The earlier is visible underneath the photo scale — partly obscured by the stub of a later red brick E-W cross-wall, extending to the off-set buttress. Ironstone footings are visible beneath the brick walls of the standing mill, with the Ironstone eastern gable wall just visible at the limit of stripping — see image 6. Scale 1m in 50cm divisions.



Image 6: The interior (western face) of the eastern gable of the Ironstone mill is just visible extending from the section. Beyond the buttress are the damaged remains of a Fletton brick plinth base, with the partially robbed out footing of an Ironstone wall in the foreground — this is possibly an earlier phase of Ironstone mill. Scale 40cm in 10cm divisions.



Image 7: General view of area looking west from location of Ironstone eastern gable wall, with traces of earlier Ironstone wall exposed in foreground, with curving face in the middle distance. Scale 1m in 50cm divisions.

Figure 6: Interior of Mill Building - Selected images 5, 6 and 7



Image 8: General view of substantial Ironstone wall of the bypass leat, extending into southern elevation of the mill. Part of the Ironstone mill footing can be seen to the top left of the image — see image 10 below.

Image 9: Detail of the intersection of the Ironstone wall and the mill. The red bricks appear to define a blocking of the channel, prior to the current mill (white bricks). Scale 25cm in 5cm divisions.



Image 10: Detail of the Ironstone footing seen in the top left corner of image 8. Scale 25cm in 5cm divisions.

Figure 7: Area immediately to the south of the Mill Building - Selected images 8, 9 and 10



Image 11: Ironstone wall footings of ancillary building, exposed beneath later brick walls situated at SE corner of the Mill Building. Scale 25cm in 5cm divisions.



Image 12: Detail of the Ironstone footings of the ancillary building. Scale 25cm in 5cm divisions.

Figure 8: Area immediately to the south of the Mill Building - Selected images 11 and 12

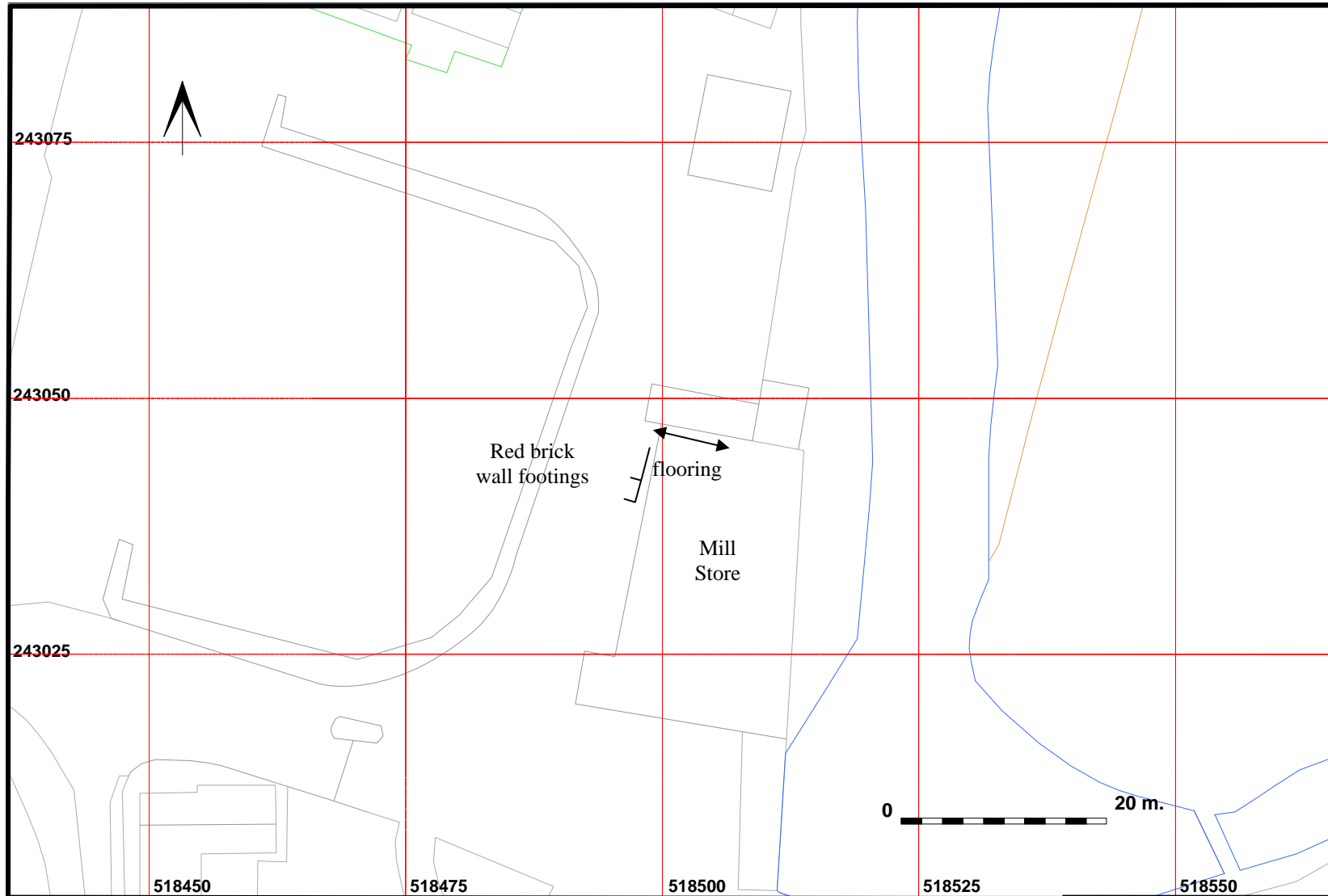


Figure 9: All-features plan of the Mill Store area

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Image 13: Piling pit revealing earlier brick wall beneath the modern surface.



Image 14: Continuation of brick wall beneath the modern surface in an adjacent piling pit.



Image 15: Detail of section through sequential surfaces to the east of the red brick building. Scale 25cm in 5cm divisions.

Figure 10: Mill Store: earlier building remains - Selected images 13, 14 and 15

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