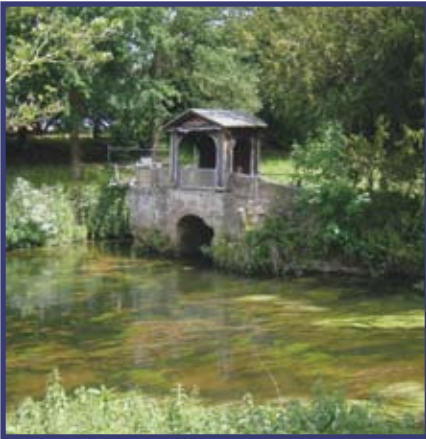


Stoneleigh Abbey River Landscape Warwickshire



**Archaeological Recording and
Investigation of River Structures**



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Prepared by: Jonathan Gill
Position: Project Manager (Historic Buildings)
Checked by: Julian Munby
Position: Head of Historic Buildings Department
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Oxford Archaeology

Janus House

Osney Mead

Oxford OX2 0ES

t: (0044) 01865 263800

e: oasouth@oxfordarch.co.uk

f: (0044) 01865 793496

w: www.thehumanjourney.net

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Stoneleigh Abbey River Landscape, Warwickshire

Archaeological Building Recording and Investigation

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Stoneleigh Abbey River Landscape, Warwickshire

Building Recording and investigation

Summary

Stoneleigh Abbey is a site with a wealth of heritage interest from its history as an early Cistercian monastery converted to a country house in the post-medieval period, to its architectural significance and its collection of nationally important buildings. Among the key interests however is its magnificent landscape which is particularly associated with the great landscape gardener Humphry Repton who established a design framework for the grounds in the early 19th century and much of his proposals were either implemented directly under his control or subsequently by others using his ideas. The gardens were also enhanced in the mid 19th century by another eminent landscape designer, WA Nesfield and in the 20th century by Percy Cane.

One of the central focuses of Repton's proposals was the area to the south of the house and particularly the river landscape as the Avon passes the Abbey. The previous meandering streams and narrow channels were replaced by a larger lake for boating and to provide a reflection of the house when viewed from the woodland to the south.

In the 20th century this river landscape suffered extensively through lack of maintenance leading to catastrophic failure of key structures and in recent decades it has become a pale shadow of its historic form.

A major project to restore this element of the landscape has recently been undertaken with the conservation or reconstruction of a number of features or structures which together form this centrepiece of Repton's landscape. These structures have included the West Park Weir, the Island Weir, the Gazebo Bridge and the Abbey Mill Bridge.

The collapsing (or partially collapsed) condition of some of these structures meant that it was necessary for many areas to be extensively rebuilt, using stonework to match the original, rather than merely being conserved with a light touch. This is particularly due to the tremendous force of the river that they will have to withstand and the fact that they will be functional structures, acting exactly as they did in the 19th century. The work has not just conserved the individual structures but also the landscape and the setting for the abbey itself.

A programme of archaeological recording has been undertaken during the conservation work and this has enhanced our understanding of these features. The work at the West Park Weir has helped us to understand the evolution of this structure, which existed in 1749 but which appears to have had many phases of rebuilding including the construction of a long retaining wall dating from 1883. Similarly to the West Park Weir the Island Weir also included very high quality masons work in the fine-jointed dam and spillway and the work has revealed a large lower spillway which may pre-date the main weir structure. The Island Weir is thought to date from Repton's period (or immediately after it) and to be contemporary with the original part of the Gazebo Bridge and sluice. The work here has revealed evidence to suggest that there was formerly a large platform across the rear of the structure together with former grilles and previous sluice gates. This platform appears to have been a secondary addition of possibly mid 19th-century date and it appears to have been removed between 1887 and 1905.



1 INTRODUCTION

1.1 Background

1.1.1 Stoneleigh Abbey in Warwickshire is a site of national significance both for its collection of 29 listed buildings (7 at Grade I or II*) in the main complex and park but also for its landscape which is a Grade II* Registered Park and Garden. It has a very rich history having originally been established as a Cistercian monastery and then developed in the post-medieval period as a great house together with a designed landscape created by major figures including Humphry Repton.

1.1.2 In the 20th century the historic landscape has suffered, most dramatically through the creation of the National Agricultural Centre (now Stoneleigh Park) which cuts a swathe through the park, dividing it in two but also through the neglect of individual landscape components. Among these neglected elements were a number of weirs and other structures that formed part of the celebrated river landscape which passes to the south of the house at Stoneleigh.

1.1.3 In recent years conservation and repair works to these structures or features have started and the river landscape is being restored. Previous phases have included the repair and reconstruction of an elegant iron bridge and in 2011 a major phase of works was undertaken by PJM Associates on five distinct structures or features. The main site work was undertaken between March and December 2011 and the work was part funded by Natural England through a Higher Level Stewardship Agreement. Oxford Archaeology were commissioned by CGMS, acting on behalf of Patrick McIlroy of PJM Associates, to undertake a programme of archaeological recording during the works. The structures covered were:

- The West Park Weir
- The Island Weir
- The Gazebo Bridge (Grade II listed)
- The Abbey Mill Bridge (Grade II listed)
- The lake/river

1.1.4 In 2007 CGMS had issued a feasibility study with desk-based assessment of the site and in 2010 this was followed by a Project Design detailing the required recording works. In response to the CGMS brief Oxford Archaeology produced a Written Scheme of Investigation.

1.1.5 It is anticipated that the current conservation works will be followed by further phases of landscape restoration at Stoneleigh. In addition the house was also extensively restored at the end of the 20th century.

1.1.6 The overall Stoneleigh Abbey site, particularly the house, is well documented and relatively well understood but it is noticeable that the structures in the current project are far less clearly documented. There are various studies of the house and gardens but although the structures in the current work are sometimes mentioned they have not previously been investigated in detail.

1.2 Aims and objectives

1.2.1 The main aims of the investigation were:



- To record for posterity the form of the structures prior to the start of the current repair works;
- To monitor archaeologically the intrusive parts of the conservation works and to record features or areas which were being removed, obscured or temporarily exposed;
- To investigate the structures and attempt to better understand them in terms of their construction, date, evolution and alteration;
- To provide a record of the current repair works themselves;
- To make the record publicly accessible (ie produce this report and to deposit the project archive in a publicly accessible repository).

1.3 Methodology

- 1.3.1 The current recording project has utilised three principal survey techniques: a photographic record, a drawn record and a descriptive textual record.
- 1.3.2 The *photographic record* comprised archivally stable black and white prints as well as images taken with a digital camera. The photographs included general views of the structures, specific features of interest and images showing the general setting or context of the features.
- 1.3.3 The *drawn record* included scaled drawings of principal areas and features of interest. It particularly concentrated on structures which were being removed in the project.
- 1.3.4 The *descriptive survey* comprised making general notes to help explain and interpret the structures in terms of their structure, construction, use, evolution and alteration.
- 1.3.5 The recording was undertaken both prior to the start of the main conservation works as well as during it in the form of a watching brief. Notes were also made and photographs taken after the completion of the conservation work as one of the aims of the project was to provide an archive record of the conservation programme itself. Recording of a number of individual ex-situ stones dredged out of the pool beneath the West Park Weir was also undertaken.
- 1.3.6 All the notes, photographs and drawings will be labelled and formally deposited as a project archive.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 Introduction

- 2.1.1 Stoneleigh Abbey is a large site with a complex history, many aspects of which have been thoroughly researched previously. It is not intended to here repeat this research and provide a full account of the Abbey but a summary of the development of the abbey and park would be of value here to place the works in context.

2.2 The abbey

- 2.2.1 The origins of Stoneleigh Abbey lie in the mid 12th century when Henry II granted his royal estate at Stoneleigh to a Cistercian Abbey which had previously been established in Radmore in Staffordshire at a site which had been deemed to be unsuitable. The foundation stone of the new church was laid in 1155 by the river next to a wood called *Eacheles* and a small remnant from this woodland (Echills Wood) survives today.



- 2.2.2 The abbey was moderately prosperous, and undertook further building works in the 13th and 14th centuries, and still had an abbot and 16 monks when it surrendered to the Crown in 1535. It was sold to Sir Thomas Leigh in 1561, and has subsequently remained in the same family. The relatively few surviving elements from the medieval abbey include parts of the church (consisting of the south wall of the nave south aisle, and the whole of the south transept), the east side of the cloister (incorporated in the house), and the free-standing gatehouse.
- 2.2.3 After the dissolution the monastic buildings were converted to a house, and while this may have included much of the cloister, it is only the north and east ranges that survived the subsequent rebuilding in the 18th century. The 1597 estate map seems to show a large, probably courtyard plan, building on the site of the abbey, standing in an area enclosed by a road on the north and west (and with no other buildings to the east).
- 2.2.4 In 1710 Edward, the third Lord Leigh (1683- 1738) inherited the estate and the following year embarked on a Grand Tour of Europe that had a profound influence on Stoneleigh. A local architect, Francis Smith of Warwick, was commissioned to improve the house and over the following decade the great West Wing of Stoneleigh was constructed.

2.3 The development of the Stoneleigh Landscape

- 2.3.1 Documentary evidence and previous investigations have suggested that there were a series of water mills in the vicinity of Stoneleigh Abbey since the monastic period and that various associated alterations were undertaken to the course of the river Avon. Indeed two mills are recorded in the Domesday Survey from before the Abbey's foundation. The Abbey Mill was located in the area of the current investigation to the south of the Abbey and although the date of its construction is uncertain there is known to have been a fulling mill at the abbey by 1376 (CGMS study). It is believed that the river was diverted by the monks as part of the construction of the mill and the channel that extends from the West Park Weir to the mill sluice is believed to be the head race from these alterations. An estate map from 1597 shows the river separating to create two channels in the current area of the West Park Weir. There is also evidence for another mill site c.48 m east of the West Park Weir (CGMS).
- 2.3.2 Documentary evidence suggests that the landscape and grounds around Stoneleigh were not significantly aggrandised in tandem with the house during the 18th century. Thomas Wilke's south-west prospect of the Abbey from 1749 appears to demonstrate this with the new dominant wing hemmed in by an irregular wall separating the house from several clusters of agricultural buildings. The view depicts the road in the foreground continuing round to the west beyond the gatehouse, towards the bridge, dovecote and mill (in the area of the Abbey Mill Bridge in the current study), and enclosing a large outer courtyard lined by buildings which seem to include stables.
- 2.3.3 Plans for improvements to the gardens were prepared in the second half of the 18th century under Edward the fifth Lord Leigh who came of age in 1763 but it appears that although considerable works to the house were undertaken the proposals for the grounds were only partially fulfilled. Accounts suggest that many new trees were introduced and there was new planting but the landscape was not redesigned in the style of other great houses from this period. Edward was declared insane and placed under the care of his sister Mary Leigh. Relatively little expenditure is thought to have been made on either grounds or the house either while Edward was under Mary's care or following Edward's death in 1786 when Mary inherited the estate (Parklands Consortium). Another view



from the south-west from 1795 still shows the wall enclosing the west front and the meandering river in the foreground.

- 2.3.4 In 1806 Stoneleigh passed to the Rev Thomas Leigh and having already employed Humphry Repton at his house at Adlestrop he commissioned the great landscape gardener to prepare designs for Stoneleigh. Repton first visited in 1808 and produced a plan and a Red Book showing views of how the landscape could be improved.
- 2.3.5 Among the key proposals were: to greatly expand the deer park so that it extended southwards to take in the abbey and surrounding area; to improve access by creating a main new east-to west route passing to the north of the house replacing the previous circuitous route to the south; and improving the southern aspect of the house by creating a great new reflective lake.
- 2.3.6 As part of the improvements to the southern aspect Repton advocated removing the peripheral buildings which had hemmed in the house as well as the formal gardens and courts to be replaced by grass and shrubberies and formal terraces. Improvements appear to have commenced in 1808, even before the Red Book was produced, and there is a report of a flood in January 1809 which swept away a large quantity of earth which formed part of a new dam which was being constructed but which had not yet been secured. The improvements outlined in the Red Book continued over the coming years, albeit not fully completed or entirely following the detailed proposals, even after Repton's direct involvement ceased in 1813 following the death of Rev Thomas Leigh.
- 2.3.7 Towards the middle of the century the great Victorian landscape gardener WA Nesfield advised on the Stoneleigh landscape and undertook some improvements. The full scope of these is uncertain but it is believed he designed the Orangery/ Conservatory at the south end of the east wing.
- 2.3.8 In the 20th century the landscape was further enhanced by the designer Percy Cane but in the 1950s the Island Weir, which had created Repton's lake, was breached and this not only devastated a key aspect of Repton's design but also swept away much of Cane's work.

2.4 Evidence of the Stoneleigh Abbey Archive

- 2.4.1 We are fortunate that the very detailed Stoneleigh Abbey Archive, held by the Shakespeare Birthplace Trust, is catalogued and the basic details of each item is available on-line. A rapid search has been made for entries most clearly relating to the current project (ie weirs, dams, mills, bridges) and tabulated below. There are numerous entries for bridges but those which clearly relate to the construction of the New Bridge in 1812-14 have been excluded as have those where there is no suggestion that it was a bridge in our study area.

Items within the Stoneleigh Abbey Archive relating to river landscape		
Reference	Date	Details
DR18/3/47/51/14 DR18/3/47/51/13	1778	Masons estimates for widening the bridge at the mill
DR18/3/47/51/15	Sept 1779	Estimates for various things including a bridge over the new cut
DR/18/5/3895	Oct 1760	Bill for 9s for repairs to dam (<i>very small bill</i>)



DR18/17/15/54	1781	Carpenter's accounts for floodgates
DR18/17/15/55	1781	Rebuilding stone abutments to bridge
DR18/17/15/93	1784	Mason work to enlarge bridge by the mill at Stoneleigh Abbey
DR18/5/5573	June 1784	Bill to Lord Leigh from various labourers for £8 for working on dam
DR18/17/15/93	1784	Account for mason work to enlarging the bridge by the mill at Stoneleigh Abbey
DR18/17/15/102	March 1785	Bill for stone and mason work at Stoneleigh Abbey 1784-5 excluding pigstyes, yard, and bridge by the mill
DR18/5/5622	Sept 1785	Bill to Lord Leigh for £1 16s for removing dam
DR18/17/15/102	1785	Similar accounts to that above relating to enlargement of bridge by mill
DR18/17/15/110	1785	Bill for stone and mason work 'for the new weir across the river at Stoneleigh Abbey'
DR18/5/5637	30 December 1785	Bill to Rt Hon Lord Leigh from Michael Clarke for £9 17s in respect of stone for the weir at Stoneleigh
DR18/5/6905	12 August 1809	Bill to Rev Thomas Leigh from Thomas Phillips for £741 in respect of making a new cut at the weir (<i>A lot of money</i>)
DR18/17/38/11	25 February 1812	Bill from William Clark, mason to Rev Thomas Leigh for work to floodgates adjoining the Upper Weir near Stoneleigh Abbey
DR18/17/38/39	Aug 1812	Bill from William Clark, mason, to Rev Thomas Leigh for Mason's work to mill, floodgates, dam and bridges at Stoneleigh.

2.4.2 It is interesting to note the cluster of entries from the 1780s, suggesting that considerable improvements were undertaken in this period although it may be that these were just routine repairs, the type of which were always undertaken but where for some reason the accounts do not normally survive. Those bills where the invoicing sum is shown would suggest these were relatively minor works but there are some where the sum is not shown and this includes an entry from 1785 for stone and mason work 'for the new weir across the river at Stoneleigh Abbey'. This is clearly potentially of interest although it could well relate to a small weir which no longer survives or one outside our study. The use of the term 'across the river' may suggest the the weir was across the main river channel, rather than a diversion from the channel as is the West Park Weir, so it may have been a structure closer to the Island Weir, although we know with some certainty that this did not pre-date Repton as the lake was not created before the 19th century.

3 CURRENT SITE DESCRIPTION

3.1 Overall site description

3.1.1 The current project on the Stoneleigh Abbey River Landscape focuses on a number of structures and areas to the south of the house. They stretch from the West Park Weir, c.450 m to the west of the Abbey, to the island weir c.300 m to the south-east of it. The West Park Weir splits the River Avon into two main channels to the south-west of the abbey and these re-connect at a confluence below the Abbey Mill Bridge to form a lake as the river passes to the south of the house. This lake was a key element of Repton's proposals for the landscape and was created by the removal of a section of ham land between two former channels. A small rump of the ham land survives as an island to the



south of the house. The lake was particularly intended to enhance views of the house from the Grove woodland to the south, and also from across the water meadows. The raised water level which created the lake was controlled by the Island Weir and sluices at the Gazebo Bridge but in the 20th century each of these failed and prior to the current project the water course to the south of the house had returned to a narrow channel rather than the dramatic reflective lake.

- 3.1.2 The Grove woodland is reached by a iron bridge which spans over the lower channel below the West Park Weir and this bridge has been restored in recent years. A short distance to the west of the iron bridge is a rusticated stone portal with small cascade forming the southern end of a brick lined north to south culvert. This culvert extends between the two main east to west river channels linking the West Park Weir and the lake to the east. This portal has a tall arched opening and it is likely to be a Victorian addition.

4 WEST PARK WEIR

4.1 Introduction

- 4.1.1 The West Park Weir is located c.450 m to the west of the Abbey and it forms the upstream end of a channel of the River Avon. This channel passes south, diverting from the higher east-to-west channel, and enters a large pool immediately below the West Park Weir from where it continues east before reconnecting with the other channel just below the Abbey Mill Bridge. The structural condition of almost all parts of the weir was poor prior to the current conservation with many areas having collapsed in recent decades or having been dislodged, moved or greatly eroded by the force of the channel. Other parts were also in a perilous condition and threatened further collapse. Unlike the Island Weir (detailed below), the West Park Weir remained functional in maintaining the level of the higher channel but its historic form had been substantially altered and prior to the current conservation work its character was one of extreme (albeit picturesque) decay.

4.2 Historical background

- 4.2.1 As outlined above documentary evidence suggests that there have been a series of water mill sites in the vicinity of Stoneleigh Abbey, including one c.48 m east of the West Park Weir, and that the channel which extends from the West Park Weir to the mill sluice represents part of river diversion works undertaken by the monks to create a mill head race. A map of 1749 by William Wilkes appears to show a stepped structure at the point where the mill race diverts from the main river and this may well be the West Park Weir which survives today, albeit probably with various elements rebuilt. The structure shown on the 1749 plan does appear to be a substantial structure which corresponds well with the West Park Weir.
- 4.2.2 The three 25 inch Ordnance Survey maps from the later 19th and early 20th century (1887, 1905, 1925) provide very little evidence of alteration at this time or significant differences with the layout today.

4.3 Overall description

- 4.3.1 The West Park Weir is located at a junction of the River Avon where a channel is diverted south towards a lower course, from the higher section of the river which extends directly east towards the Abbey Mill Bridge. It is formed by a group of principal structures or features which will be described individually in the current report. These are:
- the sloped spillway itself over which water flows towards the pool beneath the weir



- the stone walls to either side of the spillway and above it (ie immediately to the north of it),
- the return wall at the south-west corner of the spillway
- the long retaining wall which flanks the east side of the pool below the weir.

4.3.2 In the current project a water-filled coffer dam was set immediately above the spillway to raise the barrier and divert the entire river channel towards the east. The pool beneath the West Park Weir was then dewatered and this revealed the dramatic extent of the West Park Weir's various stages of collapse. Vast numbers of loose stones (facing and core) were cast around the bottom of the pool from the spillway and sections of former wall.

4.4 Stone-faced spillway

4.4.1 The sloped spillway, down which water overflows from the higher channel, is the central focus of the West Park Weir, both functionally and visually, and its conservation has been one of the key issues of the current project at Stoneleigh Abbey. The spillway is an elegantly constructed structure with an upper face of fine-jointed interlocking sandstone blocks (c.25-40 cm deep) but its condition had deteriorated greatly prior to the current project (probably gradually throughout the second half of the 20th century) to the extent that many facing stones had been lost and much of the eastern half of the spillway had collapsed.

4.4.2 The stones within the surviving part of the spillway face largely appear to be from the same phase and they assumed to be original (18th-century). They are generally between c.50 -70 cm long (E-W) by between c.25 cm and 40 cm tall (N-S) and generally c.20 cm deep. Each stone was originally cut with had a 5 cm² lip projecting from one upper edge and a 5 cm rebate to the opposite upper edge thus allowing the upper face of each course to interlock with the adjacent one and greatly add to the strength of the overall structure. In parts of the spillway the upper 5 cm of the stone had been worn away so that the interlocking 'step' element had been entirely lost. The depth of the stones was less regular, presumably to integrate the face into the substructure and there were occasional very deep keystones (at least 60 cm deep) to bond the structure together. The uneven weathering of the stones gave the spillway something of a contoured appearance with particular dips towards the western edge.

4.4.3 The one clear area of significant previous repair to the spillway was towards the upper part of the centre where there is a large section of facing stones (c.4 m x 90 cm) which have been replaced with cruder non-interlocking stonework with a character similar to that used in the walls and possibly of a later 19th-century date. This central area may have seen particularly heavy erosion thus necessitating its replacement.

4.4.4 When it was originally fully intact the sloped spillway would have been c.9.3 m wide (between the two side walls) and c.5 m long from the crest to the lower edge. The section of the upper face which remained largely intact when the recording was undertaken was c.6 m by c.4.4 m and formed what would have been the westernmost two-thirds of the original weir. The fall of the spillway from its upper to its lower edge would have been c.1.5 m.

4.4.5 The eastern edge of the surviving spillway face had an irregular form and in many areas the substructure immediately beneath was visible. Further to the east the substructure had also largely collapsed and been worn away by the flow of water although the wall to the east partially survived. The substructure construction was of interest and was largely

formed from limecrete with a base of larger stone blocks below this which appear to be set horizontally in contrast to the limecrete structure and facing stones which are set at the angle of the spillway. There were patches of clay roofing tiles set in lime mortar added on the top of the limecrete but this was clearly a levelling device to fill gaps rather than a full layer of tiles beneath the main stones. The use of these was inconsistent and in parts there were a number of tiles on top of each other. A similar use of tiles in this way was also noted in the Island Weir.

- 4.4.6 It was useful to note that in the largely collapsed eastern part of the spillway it was apparent that the construction of the spillway substructure was separate from the coursed stone construction of the adjacent side wall as if the wall had been constructed first and then the spillway substructure filled in afterwards (even if they were essentially part of the same phase).
- 4.4.7 As stated above once the pool below the West Park Weir was dewatered this revealed the extent of the collapse of the spillway and the huge number of individual ex-situ stones lying below the structure. The partial destruction of the spillway exposed features that would have been entirely obscured if it had remained fully intact and it allowed a close examination of these areas. Among the large masses of dislodged masonry revealed by the de-watering was what appeared to be the lowest 2-3 courses of the spillway which had snapped off and slipped down slightly together with what appeared to be a large, somewhat crude concrete apron which must have been added in the early 20th-century to lengthen the life of the weir. This concrete appeared to be set on the partially surviving remains of an earlier apron formed from a series of long 'piano key' stones. These stones were largely obscured by the concrete but they were long horizontally set 'keys' set in a clear line adjacent to each other.
- 4.4.8 The head of the sloped spillway was marked by a large timber bearer set into the surface. This was c.26 cm by 30 cm and extended across the full width of the spillway, extending at least 40 cm into the east wall. Immediately north of the timber bearer was a c.8 m long section which essentially formed the junction where the weir connected to the higher east-to-west channel. This section had a horizontal, concrete surface and retained the higher water level. This area has not needed conservation in the current project
- 4.4.9 **Current works:** Due to the partially collapsed nature of the weir and the necessity to return it to being a fully functioning river structure, it was ultimately decided that the entire spillway would have to be taken up and replaced by a matching structure in the current conservation project. The limecrete base was left in-situ and built-up by adding a new similarly constructed base in the areas which had been previously lost. The profile of the new facing stones matched the original stepped profile of the old stones but clearly the new structure lacks the patina of age and historic character of the previous spillway. In the current works concrete was also poured to form a buttress in front of the spillway and stretching around the base of the east wall.

4.5 Walls to either side of spillway and above

- 4.5.1 To the *east side* of the sloped spillway the facing wall had fully collapsed, probably some years prior to the current recording, and been replaced by large modern gabion cages used to temporarily retain the bank. The section of historic wall to the north of this, adjacent to the flat-based channel above the spillway, did survive when the recording was undertaken although it was in very poor condition having been penetrated by extensive roots, and it has been rebuilt in the current project.



- 4.5.2 This surviving section of wall was c.8 m wide and constructed from coursed stone. The southern half was older (possibly 18th century) and comprised stones with a rough but distinct herringbone type of tooling to the face while the northern half of this wall had been rebuilt with grey bullnose type stones. These bullnose stones were the same as those in a larger section further south in the same wall which is known to have been built in 1883 (detailed further below). The largest cracks in this wall were within the 1883 section.
- 4.5.3 There was a pebbly limecrete observed within the east wall behind the facing stones and there was a clear difference between the limecrete in the upper 40 cm to that below. The upper section of limecrete was a pink colour whereas that below was a whiter colour. The lower half of the visible section of exposed wall core was of coursed stonework with lime mortar while towards the top of the wall there is pebbly limecrete to the core.
- 4.5.4 The **west wall** by the channel above the spillway was in better condition than the east wall with less cracks and movement and only the southern section towards the sloped spillway and the rebuilt C-shaped retaining abutment has this wall been reconstructed in the current project.
- 4.5.5 The main wall was constructed of coursed stone, including various sections with distinct types of tooling strongly suggesting various phases of rebuild. The blocks towards the northern end tended to have a rough herringbone tooling similar to some found on the corresponding wall to the east, while further to the south and along the coping the stones tended to have a dimpled face. At the southern end, adjacent to the section where the wall has been rebuilt in the current project the stones tend to have a vertical-line tooling.
- 4.5.6 It strongly appeared however that the lower part of the wall incorporated the remains of an older wall. These remains formed what appeared to be part of a heavily eroded, consolidated mass of masonry which had lost its face but where some coursing remained visible. It first appeared that this mass of masonry was constructed against the later wall which rises above but further investigation suggested it was an irregular base and that the later wall was constructed on to of it. At the northern end it was apparent that this masonry extended around the corner into the main east-to-west channel and here it particularly appeared to be a sloped plinth.

4.6 Long retaining wall to east side of weir

- 4.6.1 The long retaining wall which extends to the south-east of the weir divides into several distinct sections. The northernmost section (c.8 m long), close to the spillway, had collapsed prior to the current investigation and when the recording was undertaken it had been replaced by temporary modern gabion blocks. Immediately to the south of this is a distinct section (4.9 m long) constructed using old (possibly 18th-century stones) but which showed evidence of secondary rebuild and appeared to post-date the footings at the base of this wall.
- 4.6.2 To the south of this (and separated by a clear straight joint) was the longest part of the eastern wall which was constructed in 1883 with rusticated blocks, on an earlier base. We know the age of this section due to a date stone close to the centre of the wall with a flattened face and the initials 'CL' beneath the date 1883. It may be that the 'L' in the initials stands for Leigh and that the work was overseen by a member of the family. In



1883 William Henry Leigh was the 2nd Baron Leigh so it was clearly not his initials but it could have another.

4.6.3 The 1883 section was 2.3 m tall and was constructed with a consistent character using rusticated blocks similar to many used in the later 19th century on engineering structures such as bridge piers etc. The earlier foundations on which the 1883 stonework was constructed was from inconsistent stonework with various tooling marks and they show clear evidence of distortion and the collapse which presumably resulted in its rebuilding. Towards the central area this part of the early wall had largely collapsed and a concrete shelf added, probably in the early 20th-century, to prop up the wall. These footings had a pebbly limecrete layer at the base, beneath the coursed stonework and the very foot of the wall footings had two steps. This limecrete appeared very similar to the limecrete further to the north beneath the area with the gabion blocks although it was noted that the straight joint between the 1883 section and the section immediately to the north continued down below the horizon between the 1883 rebuilding and the earlier foundations on which it rests.

4.6.4 Towards the southern end the foundation beneath the 1883 wall was observed to curve slight towards the west, diverging from the line of the 1883 wall above. This section of the wall footings was constructed from generally long thin stones mixed in with wider, narrower ones to key them into the main wall behind. The southern end of the 1883 wall appeared to end with a clear return to the corner

4.6.5 As mentioned above the northern end of the east wall, adjacent to the spillway, is constructed from the same rusticated stones as those found further to the south and presumably also date from a phase from c.1883.

4.6.6 *Wall footings by east wall exposed by de-watering*

4.6.7 The work to dredge the pool beneath the weir removed a number of individual stones (some moulded) as well as blocks of joined stones or collapsed sections of wall and it also exposed several sections of footings from previous walls.

4.6.8 One of these was located adjacent to the east wall in front of the collapsed section which was supported by gabion blocks. This exposed fragment was formed from good dressed stone with tight joints but it had a slight step and appeared to be a footing which had slipped slightly out of its original location rather than a collapsed section of wall. The exposed wall appeared to be of probable 18th century date

4.6.9 The main foundation exposed was c.7.5 m long and was constructed with large stones to the former west face. Another section of the former wall was c.3.3 m long, with four courses, each one of which is deeper than the course below, and towards its south end it was c.95 cm deep. The block tapered towards the north end but this may have been due to it being truncated to allow for a 20th-century concrete foundation to be added.

4.7 Retaining abutment wall at south-west corner of spillway

4.7.1 As mentioned above, on the western side of the spillway the flanking retaining wall would originally have returned to the west immediately beyond the southern edge of the spillway. This C-plan retaining abutment would have supported the ground level to the western side of the spillway and formed part of the northern edge of the pool beneath the West Park Weir.



- 4.7.2 This structure had become dislocated from the rest of the main weir, apparently many years prior to the current recording and the base had slipped forward dramatically by over 2 metres with the upper part leaning backwards. This dislocation may originally have occurred in a single main slip but it was probably exacerbated by the water flow from the spillway continuing to penetrate and erode behind the masonry block.
- 4.7.3 The main southern face of the block was c.5 m long by c.3.5 m tall, it was constructed from regular coursed stonework and many of the stones had distinctive tooling marks (vertical grooves) found widely at Stoneleigh. Similar stones were used in works to the abbey mill bridge in the 1780s. The size of the coursing was irregular from c.19 cm tall to 36 cm tall and the stones are largely c.70 – 80 cm wide, although there is considerable variety in this and the different depths helped key/lock the structure together. During the dismantling of the wall it was observed that every third stone or so is a deeper 'bedding' stone which is approximately twice as deep as the rest of the facing stones.
- 4.7.4 The surviving section of wall was 15 courses tall and it was a curiosity of the construction that the courses in the bottom half were noticeably thinner than those in the top half, whereas structurally it would be more usual for it to be the other way around. In fact the thinnest course in the whole block (19 cm) was directly beneath the thickest (36 cm). The wall appeared to be single phased however. Another feature was a clear horizontal line at c.1.7 m above the existing base where there was a considerably higher level of wear and presumably this marked the usual water line.
- 4.7.5 It was interesting to note that there is apparent evidence of some errors in how the block was originally set out which had to be corrected as the wall rose. The south face of the block was flush at the south-east corner but the lower five stones stepped out slightly at the south-west corner (each step c.5-7 cm). This step gradually tapers away across the elevation (west to east) and there is also a similar step at the south end of the east wall. Presumably this was also part of the same correction.
- 4.7.6 The inner core of the abutment was also formed from large stone blocks but these were of a rougher character being neither coursed nor dressed. Behind the core a series of temporary retaining gabbion blocks had been inserted into the bank to stop further ground slippage.
- 4.7.7 It was remarkable that although the block had slipped considerably it had remained intact and this is testament to the astonishing strength to which the lime mortar used had set. Indeed this strength provided to be a considerable challenge to the masons who have dismantled and rebuilt the wall in the current project using the original stones.
- 4.7.8 Intermittent recording and monitoring was undertaken while the wall was dismantled and this confirmed that the construction was relatively consistent through the structure. However, a very large a step or key was noted in the rear which projected north from the main wall into the main earth bank. Thus the upper third and bottom third of the wall were c.1 m deep whereas the central third was deeper (c.1.75 m deep). Presumably this was intended to key the block into the bank but it appears that in practice it allowed water to get into the pocket at the base so it may have been a cause of weakness.

4.8 West Park Weir Conclusion

- 4.8.1 The West Park Weir is perhaps the most interesting of the structures recorded in the current project at Stoneleigh. It is an impressively constructed piece of engineering and



the current investigation has supported the belief that it is essentially a pre-Repton part of the water control system at Stoneleigh (albeit with various phases of reconstruction) rather than a part of the 19th-century picturesque landscaping works. The power of the river in this area, particularly the sudden surges, is well known and the weir is clearly a feature which is subject to enormous forces. The weir has clearly been subject to numerous phases of patching and partial rebuilding since its original construction, particularly to almost all the flanking walls. Numerous areas of distinct phasing have been identified in these walls and instances where the footings are older than the walls above.

- 4.8.2 A structure is shown on the 1749 plan which appears to correspond well with the current West Park Weir and we can be confident that the weir had been constructed by this date. The character of the stonework in the main weir spillway could survive from this date, being more suggestive of an 18th-century date than one from the 19th century, although it would not suggest a date significantly before 1749.
- 4.8.3 The construction of this large weir, with very fine stonework, would presumably have been a considerable undertaking and it is interesting to note that the Stoneleigh accounts suggest that relatively little expenditure was made on the gardens or grounds prior to Edward the third Lord Leigh in the second half of the 18th century (Parklands Consortium). Secondary sources have suggested that there was investment in the house and gardens in the 1760s but that this was short lived, and as referred to above there are several references to work on weirs in the 1780s. These 1780s entries probably relate to repairs and as previously mentioned the physical evidence also suggests a structure than required intermittent repairs.
- 4.8.4 The Stoneleigh accounts include a bill from 1785 for stone and mason work 'for the new weir across the river at Stoneleigh Abbey' (DR18/17/15/110). The description of this weir as being 'across the river' would imply that it is unlikely to relate to the West Park Weir (possibly closer to the Island Weir) but it could relate to the West Park Weir. This bill, as well as others from the 1780s relating to bridges and floodgates suggest that considerable works were undertaken to the river landscape in this period and even if the 1785 bill does relate to the Island Weir it seems likely that work was also undertaken to the West Park Weir in this period. The nature of the construction investigated would support such a date.
- 4.8.5 It is likely that some of the repairs and rebuild undertaken at the weir used collapsed stones or very similar stones to the original so it is hard to distinguish distinct phases but one exception is the long section of the east wall which was constructed with quite different rusticated stones which can be dated from a datestone to 1883. The northern end of the east wall was similarly rebuilt in this phase.

5 THE ISLAND WEIR

5.1 Introduction

- 5.1.1 The Island Weir spans the River Avon to the south-east of the abbey and it helped to create the higher water level and the lake to the south of the house which was a key element in Stoneleigh's 19th-century landscape. The weir was in a very poor condition prior to the current works, having been breached in the mid 20th century and having gradually deteriorated since then. It has been restored and substantially reconstructed in

the current project so the weir is now functioning again as a key part of the river system at Stoneleigh and of the 19th-century designed landscape.

5.2 Historical background

5.2.1 The Island Weir is assumed to date from Humphry Repton's improvements in the early 19th century, largely because the reflective lake created by the weir to the south of the house was one of Repton's principal proposals for enhancing the Stoneleigh grounds.

5.2.2 The pre-19th-century maps show a confluence of the river some way to the west of the current location of the Island Weir and they do not show a weir or other river structure at the location of the Island Weir. Wilkes' map of 1749 shows two long buildings on the north bank of the river in this area while Baker's plan of 1766 shows the river passing this area but with no features or structures of note. Repton's plan in his red book of 1808 also does not show a weir in this location although his was a design concept plan rather than a construction drawing and it is likely that functional structures such as weirs would not necessarily have been depicted.

5.2.3 As outlined above there is a very useful documentary reference to a flood from January 1809 which swept away an unsecured part of a dam that was being constructed by Repton. This was before the Red Book was produced and it appears the dam and creation of the reflective lake were among the first works undertaken by Repton.

5.2.4 The three 25 inch Ordnance Survey maps from the later 19th and early 20th century (1887, 1905 and 1925) each show the Island Weir with a similar arrangement although an OS map from the second half of the century (1961-71) shows the northern half of the weir as having collapsed and no longer surviving. It is understood that the weir was breached in the 1950s.

5.3 Description

5.3.1 The Island Weir spans between the south bank of the Avon to the thin island which was created by the construction of the eastward channel from the gazebo bridge and sluices.

5.3.2 Prior to the start of the current project the Island Weir was heavily overgrown and largely obscured by thick vegetation. As mentioned above the weir was breached in the mid 20th century and much of the northern half of the weir had collapsed and either been dislodged or swept away by the current that has been flowing through this half of the structure for over 60 years. In addition the roots from a small tree or large bush had penetrated into the main stone barrier and were causing this to slowly diverge from the main structure. The roots from this plant stretched over a large section of the central part of the weir.

5.3.3 The weir divides into a series of distinct elements and each of these will be described separately in the current report:

- Main dam constructed from finely-cut, interlocking sandstone blocks;
- Stone surface to west of barrier (upstream spillway);
- Spillway surface to east of barrier;
- Lower spillway;
- Southern wall;
- Northern wall;



- 5.3.4 The **main dam** of the weir is constructed from sandstone blocks and is 2 m wide by 80 cm tall. It would originally have spanned the full width of the river (c.15 m) but prior to the current project only the southern half survived in-situ. Immediately to the north of the in-situ stonework was a large partially surviving section which had become dislodged from the main dam and had slumped down into the water and into a void created by the strong current flowing through the breach at the northern end of the weir. The northern third of the former weir, in the location of the breach had been more substantially lost although some consolidated lumps of masonry remained within the channel and were exposed by the de-watering. Indeed the de-watering revealed a great mass of dislodged masonry in the northern area which have been permanently under water and were largely covered by a build-up of silt and plant remains.
- 5.3.5 The cross sectional profile through the dam is the same to each side and comprises slightly cambered coping stones and three steps of differing depths to each face. The top step is 10 cm tall while the central one is 25 cm and the bottom one is 35 cm tall. The facing stones, both the slightly cambered coping and the steps to each side are constructed from fine-jointed, red sandstone ashlar and they are designed to interlock with each other. The middle and lower stones each have a sloped shoulder and a lip immediately behind this into which the upper stone is set against. The main part of the inner core of the dam which was visible to the partially collapsed sections towards the north was formed from rougher, rubble stone set in a lime mortar.
- 5.3.6 There was considerable variety in both the width of the facing stones and the depth that they extend into the dam core. The width of the coping stones varied from 20 m to 40 m and similarly the lower stepped stones varied from 20 to 70 cm in length as they entered the wall. The differing depths of stones would increase the overall solidity of the structure.
- 5.3.7 The base of the dam was formed from a large mass of consolidated, pebbly limecrete which also extended beneath the spillways.
- 5.3.8 At the southern end a long section of concrete survived on top of the coping and this was presumably added in the 20th century as a crude repair or protective cap. This has been truncated and would have continued further to the north across the top of the weir.
- 5.3.9 *Current works:* In the current conservation project the surviving southern half of the historic dam has been retained while the northern half has been replaced by a new structure with a reinforced concrete core and interlocking stonework to match the original.
- 5.3.10 The **upstream spillway** to the west side of the dam appeared entirely contemporary with the dam and was again constructed from fine-jointed, partially interlocking sandstone. It comprised three gently sloping sections of similar width (c.1.5 m) with a shallow step between each. The facing stones were set on a base of non-dressed stone as well as rubble and in areas this was levelled with roof tiles set in mortar, a technique also used at the West Park Weir. The two upper sections of the structure each slightly overlie the one directly beneath but the main weir dam does not overlie the spillway surface.
- 5.3.11 The two uppermost sections of the spillway were of similar construction with a set of relatively long 'piano key' type stones orientated east to west above two rows of rectangular stones orientated north to south. The two sets of north to south stones had an



interlocking detail to add strength to the overall structure although this detail was different between the upper set and the lower one. Indeed, although these two upper sections of the spillway surface are of similar construction they were far from identical and there were many differences such as the depth of the stones (20 cm to the upper section, 14 cm to the middle section) and the detail to the edge of the step (curved to the lower one, squared to the upper).

- 5.3.12 The lower section of the spillway was again formed from three rows of stones but these were all rectangular and orientated north to south rather than being east to west 'piano key' stones.
- 5.3.13 The *downstream spillway* to the east side of the dam was wider than that to the upstream and even the surviving section on the southern half of the weir had been substantially altered through the replacement of much of the surface with concrete. The spillway again comprised three gently sloping sections with a step between each but on this side of the weir most of the upper and lower sections of stone had been replaced by a concrete surface. A small number of primary stones did survive within the largely concrete areas to confirm the original construction and other than in the northern area where the whole weir had collapsed the stonework entirely survived in the central part of the spillway. The stonework in this area followed a pattern and there was a slight shoulder where the angle of the slope alters.
- 5.3.14 *Lower spillway*: one of the interesting aspects of the weir that was exposed by the de-watering in the current project was a large lower spillway crossing the channel to the east of the main weir and permanently below the water line. This was c.4 m wide (E-W) and the construction was quite different to that of the main weir with the surface formed from far less regular, non-interlocking stonework. The east and west edges of the lower spillway were generally formed from larger blocks (c.80 x 50 cm) while the main part of the surface is formed from irregular stones which are largely but not entirely squared and with a character very different to the fine-jointed ashlar in the main weir. Clearly the distinct difference in the construction type may simply be due to a rougher stonework being used in the area which would be permanently obscured by water but it could indicate a distinct phase of construction, particularly because parts of the fine-jointed stonework in the main weir would also have been below the waterline.
- 5.3.15 The lower spillway was structurally separate from the downstream spillway of the main weir, with a long timber bearer at the surface, flush with the stone face, and two stone walls adjacent to each other supporting the bottom of the upper spillway and the top of the lower spillway. The timber bearer is set on top of the upper wall and the two walls are c.20 cm apart from each other with a distinct terracotta colour clay set between the walls. This was presumably added as a puddling clay in an attempt to avoid erosion.
- 5.3.16 The *southern river wall* largely survived although it was in poor condition and was largely obscured prior to the current project by vegetation. The wall to the west of the weir dam was constructed from six courses of ashlar although the section closest to the barrier had lost its upper course prior to the current work. Movement was also clearly apparent in the other courses, largely caused by roots penetrating within the wall. The wall extended c.80 cm above the top of the stone coping to the dam and it was apparent that both the main barrier of the weir and spillway were constructed into the wall; it strongly appears that the two elements of the construction were contemporary with each other.



- 5.3.17 A feature of interest in this section of the river wall was a portal from a culvert just to the west of the main upstream spillway. This portal was c.70 cm wide by 1.1 m tall with a square stone lintel and the opening was set within the lower three courses of the stone wall. There was a slight recess to each side of the opening, immediately behind the jamb and here there would have been timber posts from a sluice mechanism which could have been operated from above on the river bank. When the recording was undertaken the culvert was blocked almost immediately behind the opening by detritus and its route could not be ascertained but it is assumed it was the inlet of a short bypass channel around the weir. There was a similar portal just to the east of the weir and this is described below. There is also an identical inlet portal on the north river bank on the upstream side of the weir (detailed further below). It may be that these channels could have been opened periodically to reduce the water flow over the weir and to allow some repair works to the dam structure.
- 5.3.18 The 25 inch Ordnance Survey maps of 1905 and 1925 each mark sluices to the north and south sides of the weir which must relate to these features although it is noticeable that the 1887 OS map does not mark a sluice here. This may suggest that the sluices were a late 19th-century addition to help control the water flow although it is more likely to be a slight cartographic difference in what was shown on the different editions of maps.
- 5.3.19 Towards the eastern end where the wall passed over the weir dam the top of the wall (one course below the presumed coping) became less regular and this merged into a great mass of boulders just beyond the barrier and extending around towards the south to form a slightly wider pool beyond the weir. This irregular pile of boulders was presumably carefully set in their current location to give a natural and slightly wild character to the point where the water would have flowed over the top of the barrier. It was noticeable when the reconstruction of the weir was completed that the effect of the boulders did add a considerable interest to the powerful flow of water over the weir. They add to the contrast between the smooth reflective surface of the water to the west of the weir and the flow which breaks roughly over the weir to the east.
- 5.3.20 The boulders may also have had a further function in diverting the main force of the water away from a culvert portal in the wall just behind the boulders to the south-east of the weir. This culvert exit is largely covered by one of the boulders and hidden from view but the tunnel is c.75 cm wide by 1.1 m tall and it curved sharply towards the south-west as it extends away from the weir. The culvert was brick lined and it had a flat top with large stone slabs covering it over. The top of the culvert appears to be relatively horizontal but the base sloped noticeably upwards towards the south. It was not possible to investigate the culvert to any extent other than looking from the portal but as mentioned above it is assumed that it was simply the exit of a short by-pass channel around the weir extending from the portal referred to above to the west of the weir. The channel would have helped to control the flow of water at the weir.
- 5.3.21 The *northern river wall* included a large scar clearly showing the location of where the weir dam formerly entered this wall. The primary wall to the west of the former barrier essentially survived, albeit in poor condition, and the northernmost stones from this part of the spillway also survived, truncated from the rest of the spillway and partially cantilevering out from the wall. This section of the river wall was very similar to the southern wall to the west of the weir with regular, coursed ashlar and the coping formed from larger blocks than any beneath.



- 5.3.22 This section of the wall also included a culvert portal the same as that in the south bank. This portal is also c.1.1 m tall by 0.7 m wide and although the tunnel behind was largely filled by earth and sediment it was clear that it curved towards the east. The portal had a large stone lintel set on small pads and immediately behind the jambs of the opening there are 15 cm deep recesses within which the severely rotten remains of two posts survived. Between the posts there was a timber sill bolted into place at the base of the opening with a further board directly on top, and together these formed part of the fragmentary remains of a former sluice mechanism. Although only the lower sections of the posts survived and they were heavily rotten it was possible to confirm that they had recesses facing each other within which the sluice gates would presumably have slotted. The gates must have been operated from above with a simple system whereby the gates would have been hauled up and down. Various ex-situ iron fragments remained within the fill including long plates with holes to which the gates would have been bolted and two long thin bars. The inner walls of the tunnel were formed from red brick (6.75 cm deep) the character of which is suggestive of a later 18th or early 19th-century date and the culvert is likely to be original. The recesses for the posts were also formed from the same brickwork (rendered) as the main walls and the floor of the culvert was rendered.
- 5.3.23 The location of the exit portal at the other end of this culvert remains slightly uncertain although what appeared to be a blocked former opening was observed within the retaining wall immediately east of the dam and this was suggestive of a former culvert portal. This section of wall had been rebuilt, other than the bottom two courses, and here none of the spillway survived other than very short truncated stubs. Indeed on this side the lower two surviving primary courses had slumped considerably and presumably the upper part of the wall had collapsed. The rebuilt wall to the east had a different character to the surviving original wall to the west with less regular coursing and heavy pointing. This rebuilt section of wall was c.4 m long and at its eastern end there is a straight joint in the wall which aligned with the lower spillway and the downstream spillway of the main weir.

5.4 Conclusion

- 5.4.1 The Island Weir is assumed to have been constructed by Repton as a key structure to allow the creation of the reflective lake at Stoneleigh and analysis of the fabric in the current investigation would support an early 19th century date.
- 5.4.2 The creation of a dam and the lake is known from documentary evidence to have been one of the first areas on which Repton focused and the weir was probably constructed during the period between 1808 and 1813 when Repton was directly involved in works at Stoneleigh.
- 5.4.3 Both the main dam and the spillways are elaborately and intricately constructed structures incorporating finely-cut, interlocking stones with many different profiles and this must have represented an expensive undertaking. The nature of the fine jointing was similar to the quality of the masons work in the West Park Weir. Other similarities included the use of a limecrete substructure and the use of roofing tiles to level gaps in the limecrete.
- 5.4.4 Among the unexpected features revealed during the current project has been the large lower spillway constructed from much more irregular stonework than the main dam and

there is the possibility that this may survive from a previous weir that Repton raised. The construction of the two sections of stonework are clearly different from each other and although it may simply be that the lower stones were of rougher quality because they would be below the waterline the stones on the upstream (west) side of the weir would also have been permanently below water and they are fine-jointed. It is interesting to note the reference in the accounts from 1785 to 'a new weir across the river at Stoneleigh Abbey'. The reference to a weir 'across the river' would appear to suggest a structure in this location rather than at the West Park Weir and it may be that a weir in the vicinity of the Island Weir was constructed at this time.

- 5.4.5 This possibility would appear to be supported by the fact that the substructures beneath the upper and lower spillways were separate and the presence of a layer of clay puddling clay between the two structures.

6 THE GAZEBO BRIDGE AND SLUICE

6.1 Introduction

- 6.1.1 The Gazebo Bridge and sluice are located to the south-east of the abbey and together they form a Grade II listed building (see *Summerhouse and Sluices at West End of Island* in Appendix B). The bridge is a sandstone structure which spans over a channel which bypasses the Island Weir and it incorporates two openings: a main arched portal and adjacent to this the channel to the former sluice gates (re-instated in the current project).

- 6.1.2 Similarly to the other main structures in the current study the Gazebo Bridge had fallen into a state of considerable disrepair in the later 20th century; the sluice gates appeared to have not been functional for many years and the bridge which crossed over the sluice channel had largely collapsed. New sluice gates have now been reinstated into the structure and it is operating once again as a part of the inter-related features in the Stoneleigh river landscape.

6.2 Historical background

- 6.2.1 Neither Wilkes' map of 1749 nor Baker's of 1766 show structures or features to suggest that any part of the Gazebo Bridge had been constructed at these dates. The design concept plan contained in Repton's Red Book of 1808 also does not show a structure in this area or the distinctive channel which was cut to bypass the island weir. However, as the Red Book plan was intended as a general concept drawing rather than a exact depiction of the landscape this should not be taken as conclusive proof that the cut and Gazebo Bridge had not been constructed at this date. The listed building description (see Appendix B) provides a date of c.1813 for the structure and states that it was based on a design by Repton but it is unclear whether this was speculation or based on firm evidence.

- 6.2.2 The three late 19th and earlier 20th-century Ordnance Survey maps (1887, 1905 and 1925) are of some interest due to differences in the depiction of the structure from the 1887 map to the two early 20th century maps. The cut which forms the long narrow island is shown on each map together with the bridge at either end (including that at the location of the Gazebo Bridge to the west) and the footpath linking them. The 1887 map shows the Gazebo Bridge and structures to the rear as a single entity with a regular outline and the long channel with a distinct squared end where it meets the bridge structure. In contrast the maps from 1905 and 1925 show the structure with a more complicated footprint apparently with distinct channels to the rear and more like what

survives today. This supports physical evidence (detailed below) which suggests that at the time of the 1887 map there may have been a large floor or platform covering over much of the two channels to the rear of the structure.

6.3 Description

6.3.1 The Gazebo Bridge and sluices divided into a series of interconnected but distinct elements that are described separately in this report. There were two sluice channels, the southern one of which had a stone bridge over it and timber gazebo superstructure above this. A softwood timber bridge adjacent to the stone one continued the path over the northern sluice channel. Each of the four walls which formed the two sluice channels were constructed from ashlar stone and they contained evidence of the former alteration and adaptation of the structure. The area was de-watered to allow the conservation works in the current project and this enabled a record to be made of the stone floor in each channel.

6.3.2 *Main bridge portal facing west*

6.3.3 The main sub-structure of the gazebo bridge was constructed from coursed sandstone ashlar and it extended with a segmental arch opening over the southern sluice channel. It was a relatively simple structure, c.9.5 m long by 2.7 m deep with the minimum of decoration or adornment. The arch over the channel was towards the centre and the stone face was c.3.1 m tall above the channel floor. The condition of the bridge was very poor prior to the current project with the eastern stones in the arch dropping slightly and a large crack continuing up from here to the upper deck of the stonework. In addition the stones at the base of the north-western corner had collapsed below the waterline for four courses and similarly the whole south-western corner was sliding into the river, exacerbated by a substantial tree stump which growing out of the bridge. The embankment just to the east of the collapsing south-western corner of the bridge had been temporarily propped up by a series of sandbags, presumably filled with concrete, and this highlights the movement in this area as well as the previously ad-hoc attempts at repair. There was a 20th-century concrete path to the south-east of the bridge, apparently set on roughly stacked bricks (not bonded). The bank and the extent of the bricks was buried

6.3.4 The surviving stonework in the bridge face was relatively featureless but immediately above the crest of the arch was a stone which is much larger than the others in the face.

6.3.5 *Timber gazebo or summerhouse*

6.3.6 On top of the stone bridge was a softwood gazebo which was open-faced to the west, allowing views over the river and parkland, as well as to the north and south along the line of footpath. The character of the timber is suggestive of a early 20th-century date of construction (possibly late 19th) and it is very unlikely to be an original or early 19th-century structure. It could of course however have replaced a previous structure and there must have been some form of rails or parapet to either side. In parts the gazebo structure was carefully and attractively detailed but lack of maintenance meant that its condition was poor, particularly to the base of the posts, and it had an unkempt appearance. Due to its poor condition it has been entirely replaced in the current work with a replica structure.

6.3.7 The structure was the same width as the arched opening in the stone bridge below. It had a pedimented roof to the front (west) with visible flashing, posts to each corner and curved braces between the posts and wall plate. The braces to the end walls are semi-circular and extend between the posts while the braces to the front are a quarter circle.



The corner posts are formed from smaller coupled posts pegged together and with simple vertical bead moulding to the panels. The bases of the posts were found to be particularly rotten and temporary repairs had been roughly undertaken with crude covering boards nailed over.

- 6.3.8 A softwood latticework balustrade with simple hand rail formerly extended across the full length of the bridge (both sides) and to the front of the gazebo although large parts of this had been lost prior to the current recording. The posts between the sections of latticework to the north of the gazebo had pyramidal tops and they sat on softwood plates which projected beyond the face of the wall to each side. Curved buttresses from the outer edge of each cantilevered bearer to the outer face of the corresponding post braced the structure.
- 6.3.9 The former timber bridge from the gazebo to the north bank was comprised of three main north-to-south beams and simple boards over the top but the boards had been lost, apparently many years before the current work was undertaken and a temporary scaffold bridge had been constructed just to the east.
- 6.3.10 The rear wall of the gazebo was formed from vertical matchboarding and at the base it was secured by simple horizontal bearers immediately to the east. The matchboarding continued up to the upper edge of the gabled roof and there was no pediment to this side. The internal ceiling of the gazebo was also constructed from matchboarding and there was a simple bench inside against the rear wall.
- 6.3.11 The floor of the gazebo had a decorative design with stone pavers set diagonally to form a lattice and the panels infilled with concrete and pebbles set into the surface. This is assumed to be contemporary with the gazebo (early 20th century?) although the rustic character could suggest an earlier date and the form of concrete is different to a cruder concrete which is used to form the floor surface (without pebbles) immediately to the north and south of the gazebo.
- 6.3.12 *Northern wall to river and sluices***
- 6.3.13 The northern wall of the main channel was formed from coursed sandstone ashlar with a sloped top towards the eastern end. The ashlar blocks largely had distinctive tooling marks with long ridges across the full width of the stone and short perpendicular ridges at each end. This type of tooling has been noted in parts of each of the other structures in the current study including the west side of the Abbey Mill Bridge which is strongly believed to date from 1784. Clearly stones with similar tooling would almost certainly have been used for long periods and it is not possible to date this wall to the 1780s but it does help to draw parallels between structures and build up an understanding of the development of the site. The character of the stone in this wall is also broadly similar to the original walls at the Island Weir.
- 6.3.14 The condition of the eastern half of the wall was generally relatively sound but the face of the western half was bulging significantly, particularly along the line of a long horizontal crack caused by a tree root which had penetrated and continued between two courses of stone.
- 6.3.15 The lower 3-4 courses of the wall, where it has been below the water line were covered in a thick algae and encrustation which obscured the coursing and possibly other features

but above this there were a number of features which provided evidence of alteration and change of use.

- 6.3.16 Towards the centre of the wall was the full height vertical recess from the sluice gates which remained in-situ until recently (albeit in very poor condition) and which were photographically recorded ex-situ on the bank by the side of the weir. The mechanism for these appeared very similar to the sluice at the Abbey Mill Bridge and they may have been overhauled at the same time. The fragmentary remains from a post survived within the recessed slot together with some iron fixings which secured the base of the post. The surface of the recessed slot had a rough concrete to its rear face. At the top of the slot there survived the two horizontal bearers which spanned the channel and supported the tops of the two sluice gates. These timbers appeared to be of probably early 20th-century in date and it is likely that the sluice was overhauled in this period. Approximately 1.3 m to the east of the main recess slot was another vertical scar (c.2 m tall) from a former post or feature which had been removed and the slot roughly infilled with brick. This scar aligns with both a slot in the corresponding south wall and a slot from a bearer in the channel floor (detailed further below) and it may have related to a previous set of sluice gates. However it is possible that this was from a temporary barrier which could have been inserted to allow the periodic dewatering of the chamber and for maintenance to be undertaken on the main gates. Clearly the water would also have had to be stopped on the west side of the structure and there is less clear evidence for this. It is interesting however that this earlier slot does not respect the stone coursing and it strongly appears to have been a secondary insertion. Similarly the sill from this set of gates was clearly inserted into the floor (detailed below). In contrast the coursing does respect the vertical slot from the later gates suggesting that this was probably the location of the first set of gates. Indeed, one of the interesting aspects of this wall is the fact that the height of the coursing is different to either side of this slot and it could not be that the coursing formerly continued through before the current slot was inserted. It is possible that this indicates that the whole structure to the east of this slot is a secondary extension and that original construction merely comprised the main bridge and little to the rear. This is also tentatively suggested by a distinction in the channel floor layout (discussed further below).
- 6.3.17 The scar from the earlier (eastern) sluice gates did not extend up the full height of the wall, unlike the later one, and above it there is a break in the wall top suggestive of a former walk-way across the channel. Fragments from a crude, probably mid or later 20th-century 'Kee Klamp' railing survived within this break.
- 6.3.18 A row of infilled sockets were visible in the wall from a former platform which would have extended across the channel at a height of c.2.2 m above the channel bed. It appears it would have been just above the top of the earlier sluice gates and would have been at least 5 m long, extending c.3.7 m to the east of the old sluice gates and c.1.3 m to the west of them. The sockets were regular (27 cm tall x 10 cm wide and at c.80 cm centres) and the westernmost one had been partly removed by the slot for the secondary sluice gates. The stone coursing to the west of the secondary sluice gates confirms that the platform did not continue beyond this point. The sockets are not integral with the stone coursing and it strongly appears that they were a secondary addition, inserted after the construction of the wall.
- 6.3.19 As mentioned above there is difference in the way that the Gazebo Bridge is depicted in the 1887 Ordnance Survey map compared to that of 1905 and the differences would



tentatively suggest that the removal of the platform and the replacement of the sluice gates may have taken place between these gates. The earlier map shows the whole Gazebo Bridge, including the rear elements, as a single structure rather than with open channels to the east and this may suggest that there was more of a floor over the whole structure at this date. The physical evidence would also support a late 19th or very early 20th-century date for this work.

- 6.3.20 At the eastern end of the line of the former platform there was a larger socket (c.22 cm wide x 26 cm tall) just below the height of the platform and c.70 cm beyond the edge of the main sockets. This socket was also inserted into the pre-existing wall and it is likely that it was contemporary with the platform forming part of a vertical barrier at this end of the enclosure. The western edge of the socket aligns with a 22 cm wide slot within the floor, spanning across the channel and half way up the wall there is a void which appears to be the outlet of a small, simple drain. This opening leads to a tunnel that extends several metres into the wall and there it connects to a east-west orientated culvert. It is unlikely that there was another set of sluice gates at this location (particularly because there are no tall slots in the wall) but there may well have been an iron grill to catch detritus in the flowing water.
- 6.3.21 The upper socket would have held a head beam securing the tops of the iron bars and the slot in the floor would have held their bases. The drain void would have exited immediately to the west of the grille.
- 6.3.22 There are also several minor pieces of evidence in this part of the wall (ie to the east of the sluice gates) from alterations and former use including a curved scar which was probably accidentally caused during the insertion or removal of sluice gates. Other evidence includes several small inserted holes, apparently relating to each other and to similar sockets in the opposite wall, and truncated ends from iron bars which it also appears would have spanned the channel c.70 cm above the floor level.
- 6.3.23 At the eastern end of the wall (c.9.2 m from current sluice gates) there is a clear straight joint between this phase of the construction and the later wall to the channel. The main walls of the channel extending east beyond the sluice structure are lined in a distinctly different stone to those used in the sluice/bridge structure itself. These channel walls use a more 'rustic' stone which is suggestive of a mid or later 19th century date.
- 6.3.24 The main archaeological features in the wall were concentrated to the east of the sluice gates and the section to the west was relatively featureless. It comprised regular stone coursing and as stated above its condition had deteriorated severely in the later 20th century and its face was bulging and coming away from the core of the wall, particularly either side of a large horizontal crack along a coursing joint caused by tree root penetration. At the eastern end of this section, immediately adjacent to the slots from the sluice gates, was a crude walkway constructed in the later 20th-century from scaffolding while at the western end were three softwood joists from an older timber walkway from the main Gazebo Bridge to the north bank.
- 6.3.25 This section of the north wall from the west end to the scar of the earlier removed sluice gates has been rebuilt in the current project. The work to dismantle this wall revealed that it was constructed with much deeper occasional blocks to anchor the face into the rubble core wall behind. These 'anchor' blocks were every c.3-4 m



- 6.3.26 The *southern wall of the north channel* (ie the north wall of the bridge's triangular plan central pier) divided into two distinct elements: 1) the main 3.1 m tall primary stone wall and at the east end of this a low (70 cm tall) 3.7 m long extension constructed from blue engineering bricks. The blue bricks in this pier extension were suggestive of a later 19th or early 20th century date and it may be that they formed part of the same phase of alterations as the replacement of the sluice gates, possibly undertaken between 1887 and 1905. The blue brickwork was set on a stone plinth and presumably it replaced an earlier pier which supported the large platform across the rear of the structure. The blue brick pier (and stone footings) extend east as far as the edge of the platform indicated by the joist sockets and by the sill slot in the channel floor. The previous pier could have been from full height stonework but the current east end of the pier does not suggest any break or alteration and it may be more likely that there was a timber frame set on a stone plinth.
- 6.3.27 The features in the main stone wall largely corresponded with the matching evidence in the north wall of the channel. The south wall had the same recess and in-situ post from the main sluice gates and c.1 m to the east of this is the lower scar from the previous sluice gates which are thought to have been removed between 1887 and 1905. At the same height as the top of this scar is a line of three joist sockets from the platform which spanned over the channels to the rear of the bridge. The joists in the eastern part of this platform would have been supported by the former structure (probably stone but possibly a timber structure) on the line of the current blue brick pier.
- 6.3.28 Similarly to the north side of the channel there was a break in the wall top, between the scars of the older and newer sluice gates, from a former removed walkway. This would have been higher than the larger platform and it is assumed that it was inserted when the later sluice gates were added.
- 6.3.29 The lower part of the wall was obscured to the east of the former sluice gates by a rough concrete skim and patches where the face of the stones has been lost. There is however a cut off bar c.70 cm above the floor and just to the west of the brick pier, which matches a similar stub from a bar in the north wall.
- 6.3.30 The area to the west of the sluice gates was again relatively featureless with regular coursed ashlar and some minor patching. The remains of the timber footbridge survived to the western end, just to the east of a point where the line of the wall changes slightly, and at the base, this corner of the wall had substantially collapsed prior to the current project.
- 6.3.31 The *north wall of the southern channel* (ie the south wall of the central pier) again contained evidence that corresponded to that in the walls of the north channel and suggest that there was a platform across this area at c.2.3 m above floor as well as an earlier set of sluice gates c.1 m to the east of the later replacement set. The recessed slots from both sets of former gates had been infilled and rendered-over prior to the current project and there were again two slots in the floor from the sills of the former sets of sluice gates. A void was also visible from a former walkway c.2.8 m above floor level between the scars from the two sets of former sluice gates; this walkway would have corresponded with a similar feature over the north channel.
- 6.3.32 The *south wall of the southern channel* also incorporated similar evidence to the other walls relating to the former layout of sluice gates, platforms and walkways. This included a full height infilled scar from the later sluice gates, a lower scar from the earlier gates,



infilled sockets from the former platform and a horizontal void high in the wall from the walkway between the location of the two phases of sluice gate. The lower eastern end of the wall (c.2.3 m long) is at a different angle to the appears to have been rebuilt in the 20th-century with a different type of stone and heavy cement pointing.

6.3.33 The *floor surface* of the two channels was formed from stone paving blocks of various sizes. This extended beneath the bridge and through the areas of the former sluices including the full depth of the former rear platform (ie to the end of the blue-brick pier). There was also a similar area of stone paving in front of the main bridge (to the west of it) but this had largely been dislodged prior to the current restoration project. There were some differences in the sizes and layouts of stones in various areas and this may indicate different constructional phases. In particular the stones in the eastern and western halves of both channels appeared to be different to each other suggesting the possibility that the eastern halves of both channels were secondary extensions.

6.3.34 Those blocks in the eastern half of the north channel were generally c. 50 cm wide by between 60 cm and 130 cm long and they were orientated east to west. In contrast those blocks in the same channel to the west of the sluice gates were smaller (on average c.40 x 60 cm) and were orientated north to south. The stones to the west are also much more worn than those to the east. In the central area, around the two phases of sluice gates the floor has been more disturbed but it is apparent that the change in stone type is aligned with the current (western) sluice gates. The timber sill which relates to the lower set of gates to the east is clearly inserted into the pre-existing stone floor. This sill has an 8cm deep central socket from a former post between the former gates. The sill from the main set of gates did not survive and the paving stones around it were substantially truncated.

6.3.35 It was noted that the stones in the eastern half extended beneath the blue brick pier and at the eastern end of this area of stone flooring there is a trench for a former sill. This would have been at the eastern end of the former platform over the sluice gates.

6.3.36 It is interesting to note that there was a distinct hole in the floor of the northern channel, close to the centre line and c.60 cm to the west of the main sluice gates.

6.3.37 The blocks in the western half of the southern channel (beneath the bridge) were orientated east-to-west and are largely c.50 cm by 35 cm although there was some variation in size and in a number of areas the floor slabs had been previously removed or were obscured. There was particularly a void towards the centre in the area where the sluice gates had been removed and part of this area had been replaced by brick pavers. The timber sill to the east survived in-situ from the former lower gates and similarly to the corresponding feature in the north channel this timber had a central mortice which would have held the former central post. This sill was clearly inserted into the pre-existing layout of stone paving slabs. The stone in this area is regular and less worn than that beneath the bridge to the west. They vary in size from c.70 cm² to c.65 cm x 35 cm and at the eastern end there is a trench for a former timber sill at the eastern end of the former platform.

6.4 Conclusion

6.4.1 The Gazebo Bridge is an attractive and interesting structure which is Grade II listed and enhances the river landscape at Stoneleigh.



- 6.4.2 The list description suggests a date of c.1813 for the structure, based on a design by Repton, and although it is not known how speculative that claim is it does appear from the stonework that an earlier 19th-century date of construction for the main bridge is likely. The current investigation has identified various pieces of evidence to suggest a number of phases of alteration, including the possibility that the original structure was merely the depth of the stone bridge itself and that it was then considerably extended eastwards with a later structure. This is partly suggested by distinctions in the stone flooring between east and west but also some differences in the stone coursing either side of the sluice gates.
- 6.4.3 Other evidence also suggests that there was formerly a large floor or platform which would have covered over the rear parts of the structure. Physical evidence shows that this was a secondary insertion, possibly undertaken in the mid 19th century (by Nesfield?) and map evidence suggests it was dismantled sometime between 1887 and 1905. There is also evidence for a slightly lower set of gates across each channel c.1 m to the east of the current set of sluice gates. The lower gates were a secondary insertion into the wall but the current (later) gates used what appears to have been primary slots in the wall. It may also be that these gates were not functional sluice gates but were instead to allow the temporary dewatering of the chamber and maintenance to be carried out on the main gates.
- 6.4.4 The timberwork in the gazebo structure does not appear to be particularly old and is more suggestive of an early 20th century date (or possibly late 19th) rather than the mid or early 19th century. The stonework in the bridge itself however, and main side walls, is more suggestive of a late 18th or early 19th century date, similar to that in the Island Weir and West Park Weir with distinctive tooling marks to both floor and walls. It may be that there was an earlier structure on top of the bridge but the current timber frame strongly appears to be a secondary addition.
- 6.4.5 It is interesting to note an estimate in the Stoneleigh accounts for various works including a bridge over the new cut from 1779 and carpenters accounts for floodgates from 1781. It is uncertain if the estimate for the bridge was over a cut that had already been made or for a proposed cut but it could be that this is gazebo bridge and that the cut is the bypass channel. As outlined above there is also evidence to suggest that may have been a weir constructed in this period in the area of the Island Weir so this would correspond with the possible necessity to create the bypass channel.
- 6.4.6 It is also interesting to note that once the Island Weir had been fully rebuilt and the water level raised the Gazebo Bridge appeared slightly awkward and low in the water suggesting the possibility that when it was first constructed the usual water level was lower. This would correspond with the possibility that the bridge pre-dated the Island Weir and Repton's creation of the lake.

7 THE ABBEY MILL BRIDGE

7.1 Introduction

- 7.1.1 The Abbey Mill Bridge is a Grade II listed building (see Appendix B) located to the south-west of the Abbey. Masonry repairs to the bridge were included in the original scheme of archaeological works but due to the unexpectedly complex works required by the other structures these repairs to the bridge were postponed to a later phase. The only conservation works undertaken to the Abbey Mill Bridge were the replacement of the



sluice gates on the west side. These gates had previously been lost and the timber structure largely collapsed. As the planned repair works have not been undertaken to the Abbey Mill Bridge the associated recording has been limited. Photographs were taken of the bridge and descriptive observations made but drawings of the stonework. Scaled record drawings were made of the fragmentary remains of the timber sluice gate structure.

7.1.2 The Abbey Mill Bridge is a Grade II listed building (see Appendix B).

7.2 Historical background

7.2.1 The bridge is assumed to date from 1704, shown by a clear date stone between the arches on the east face, and a similar structure is shown on Wilke's South Prospect of Stoneleigh Abbey from 1749. The South Prospect is supported by a map of Stoneleigh Abbey, also from 1749 and when considering the two pieces of evidence together we can map the layout of structures around the Abbey Mill.

7.2.2

7.2.3 In 1749 the route of the main channel between the West Park Weir and the Abbey Mill Bridge appears to have been little different to that surviving today and the map shows that it divided Floodgate Meadows to the south from what appears to have been paddocks to the north. On the 1749 map the channel is shown to split in two, immediately to the west of the current location of the Abbey Mill Bridge, with one channel continuing north-east and then curving around the south front of the house, and the other channel continuing south-east for a short distance before running parallel with the other channel and rejoining it to the south-east of the house. The current bridge crosses over what was the southern of the two channels, onto was an island and then there was a second bridge which crossed over the northern channel. This second bridge and the northern of the two channels no longer survive. Immediately to the west of the northern bridge the map shows a broadly square plan building which must have been the dovecote also shown on the South Prospect drawing and to the east of this bridge there was a group of structures apparently constructed over the northern channel. These structures must have been the mill itself although they no longer survive. Immediately to the east of the southern (surviving) bridge the 1749 map shows another structure by the waters edge but this also no longer survives. Immediately to the west of the southern bridge there is a further feature shown and this was presumably a platform over the sluice gates similar to the one which survived in a very fragmentary state prior to the current repair works. The one in the current works was clearly later in date than the mid 18th century however.

7.2.4 Mathias Baker's survey plan of Stoneleigh from 1766 shows a similar layout to the 1749 plan with regard to this area while Repton's Red Book appears to show a single larger bridge, and no mill buildings, which it was presumably intended would replace the previous layout. This larger bridge which would have formed part of the key approach to the house from the south was not constructed. As detailed above Repton's wider proposals for the riverine landscape to the south of the house were largely implemented however and this would have included the removal (or the culverting) of the distinct northern channel together show on 18th-century maps together with the mill which was located on it.

7.2.5 The 1887 25 inch OS map confirms that the mill no longer survives and that there is no longer a visible northern channel. It does however show a small boat house on the south bank of the surviving channel immediately to the west of the Abbey Mill Bridge. The



same boat house is also shown on the 1905 and 1925 OS maps but it appears to have been lost by the map of 1961-71.

- 7.2.6 There are at least two bills of interest from the Stoneleigh archive dated 1784 and 1785 which appear to relate to the widening of this bridge (discussed further below).

7.3 Description

- 7.3.1 The Abbey Mill Bridge is a sluice, with bridge over, in which the sluice had clearly not functioned for many years (or decades) prior to the current works. There was a timber platform over the western side of the channel, adjacent to the former sluice gates, but this had largely collapsed and was heavily overgrown.

7.3.2 *The Bridge*

- 7.3.3 The Abbey Mill Bridge is a plain structure passing over this branch of the River Avon with a 4.4 m wide deck and ashlar parapet walls to each side which fan out to each end of the bridge. There were sluice gates on the west side (detailed further below) while the east side forms an attractive prominent face with a central buttressed pier and two arches through which the water flows. This eastern face would have been visible from some distance and would have been an important feature in the early 19th-century landscape although it likely that its prominence in its current form (prior to the current conservation) has been increased by the lower water level in the lake to the south of the house. Since the breaching of the Island Weir in the mid 20th century there has been a lower water level across this area and this has increased the cascade effect on the eastern side of the Abbey Mill Bridge.

- 7.3.4 On the eastern face of the central buttress is a date stone showing 1704 and although it is likely that there was an older bridge in this vicinity this must be the date of the main current structure. However, it is interesting to note that the stonework in the two faces (and parapets) of the bridge are slightly different and evidence suggests that the bridge was widened after its initial construction. The stones to the east (ie the wall which includes the 1704 date) show no clear tooling marks to their face whereas those to the west parapet almost all have the distinctive tooling found on other structures including the West Park Weir. This distinctive tooling has long transverse stripes across the stone for most of its length but then shorter longitudinal stripes at each end. In addition the coping on the two sides is a slightly different height (20 cm to west, 28 cm to east) and whereas on the west side the parapet is formed from three larger blocks (average 24 cm tall) on the east side it is formed from four smaller blocks (average 16 cm tall).

- 7.3.5 This corresponds well with at least two bills from the Stoneleigh archive from 1784 and 1785 relating to works to enlarge the bridge by the mill. Presumably the bridge was widened in 1784/5 by adding a western extension to the existing (1704) eastern bridge. This is of wider interest due to the presumed 1780s stones having the distinctive tooling marks which are also found at other structures, and the accounts suggest that other works to weirs were undertaken in the 1780s.

7.3.6 *Sluice gates and timber platform*

- 7.3.7 When the current structure at Abbey Mill Bridge was constructed it would have formed a sluice to control the water flow to the adjacent mill. As stated above it has not operated as a functioning sluice for many years and the gates themselves had been entirely lost long before the current project. However, fragments did survive from the supporting structure, as well as an adjacent platform over the channel, so we do have a good understanding of



the structure's form. The remains were removed in the current works and a drawn record made of them ex-situ.

- 7.3.8 The remains of the sluice gates structure span the river channel (6.75 m at this point) and comprise three fixed, free-standing timber posts (possibly Baltic pine) together with a further similar post recessed within each river wall. Each of the five posts is c.50 cm deep by c.20 cm wide and at the front edge of each is rebated to both sides to allow the former gates to butt-up against the post. Four of the five posts are heavily worn but the northernmost one, which would have been within a recess is remarkably well preserved, probably having been sunken within mud, and from this we know the depth of the posts. Two of the other posts survives for approximately three quarters of their full length while little survives from the final two. At their base the posts would have been tenoned into a sill beam although this lower section only survives to the northern post. Each of the posts is bolted to a pair of head beams which are set c.20 cm apart from each other and would have spanned above the river with each post projecting c.20 cm above it. The front head beam is set on a curved bracket on the face of the post while the larger rear beam is set on a ledge created towards the top of the main posts.
- 7.3.9 There would have been four sluice gates, one within each of the openings between the five fixed posts, and they would have been raised or lowered on a cast iron ratchet mechanism set on the two head beams. Each gate comprised a spine post with a series of cast-iron teeth in the rear which would have engaged with the ratchet fixed to the top of the two head beams. Poles to lever the gates up and down would have been inserted into the mechanism. Thus the gates would slide up and down between the two head beams and within the rebates at the sides of the main fixed posts. When the gates were down (closed) they would have been pushed against the rebated main posts.
- 7.3.10 The platform or deck across the river from where the sluice gates would have been operated was c.2.5 m deep and was located between the gates and the western bridge portal. It was supported by two I-section steel joists (20 cm tall) which spanned the river channel and had clearly been inserted into the stonework within the two river banks. The steel joists support either end of five east to west timber binders (21 cm x 15 cm) together with seven north to south common joists (13 x 8 cm). Above the common joists were simple boards although barely any of these survived when the current recording was undertaken. The binders are set on small pads on top of the steel joists.
- 7.3.11 The structure supporting the deck was structurally independent from the sluice gates so it may be the two elements were not contemporary with each other. They do however appear to be of similar date and were probably constructed in the earlier 20th century. As referred to elsewhere the water level can rise very rapidly around Stoneleigh, generating considerable forces on structures along the river and it is likely that features such as the sluice gates at Abbey Mill Bridge would have had to be replaced regularly. The deck was clearly structurally independent from the western face of the bridge and is clearly later than it.
- 7.3.12 ***River walls and wing walls adjacent to the bridge***
- 7.3.13 To the west of the bridge both banks of the river are of ashlar stonework for several metres as the channel approaches the bridge although parts are obscured by vegetation.
- 7.3.14 The main feature on the northern river bank is a semi circular arched portal to a culvert or tunnel which appears primary with this section of wall (18th or 19th-century?). The portal



now has a secondary, possibly late 19th-century iron grille (removed in current works) crudely fixed over it to stop debris entering the tunnel but the opening has a rebate around the full arch presumably from a primary gate or grille which was flush with the main wall. The tunnel is now blocked c.1m behind the entrance so it difficult to know where it leads but it strongly appears to extend in a north-north-west orientation rather than forming an overflow channel extending eastwards around the sluice gates. However it may be that it connects with further culverts which do extend eastwards and both the current grille and the rebate from a possible former gate would suggest that water was flowing into this tunnel rather than from the tunnel into the channel by the sluice gates.

- 7.3.15 On the southern bank to the west of the bridge the main ashlar wall extends c. 6 m to a point where there is a clear step and to the west of this the channel continues with a slightly different alignment. (WSW rather than directly W). The stonework to either side of this step appears to be from different phases and it is interesting to note that the western edge of the boathouse shown on the 1887 OS map is aligned with a step such as this. The step also marks the western edge of a stone platform on the bank with a curved coping. The exact form of this platform is somewhat obscured but it is 2.8 m wide (E-W) and 2.1 m deep (N-S).
- 7.3.16 The walls flanking the channel to the east side of the bridge are of ashlar and there are various cracks or substantial areas of missing stones. On the north bank the channel fans gently out towards the lake whereas on the south side it takes two clear steps to form the wider channel. There is a substantial area where the stonework on the south side has collapsed and it appears that this was due to a long timber bearer having been built into the wall but rotting

8 THE LAKE/RIVER AND DIVERSION CHANNEL WATCHING BRIEF

8.1 Introduction

- 8.1.1 The current project has included an intermittent archaeological watching brief undertaken during extensive ground works associated with the re-creation of the lake to the south of the house and also during the excavation of a large channel which diverted the river to the south of its usual course. This channel allowed the dewatering of the area around the Island Weir and Gazebo Bridge and the conservation of these structures.

8.2 Diversion channel

- 8.2.1 The diversion channel took the river from a point to the south-east of the house (a short distance to the east of the surviving rump of the former ham island) and diverted it in a arc across the field to the south of the Island Weir. A dam was built across the river at the mouth of the new channel to allow the area around the Island Weir and Gazebo Bridge to be fully de-watered. The channel was almost 150 m long and re-connected with the main river well to the east of the Island Weir.
- 8.2.2 The central part of the channel was excavated to a depth of 3 m and the sides of the channel were stepped and sloped so the width of the excavation increased towards the surface. Approximately 30-40 cm of top soil was stripped for a width of c.20 m and then below this the top of the main excavation was c.10 m wide.



8.2.3 The nature of the excavated area was very consistent and there were no archaeological remains exposed other than an ex-situ concrete stump and a small patch of dumped hard core. The main channel (the uppermost 2.5 m) was a brown clay then below this towards the base was a blue clay (largely hidden by water but partially dredged out) and then at the base of the channel was gravel.

8.3 Lake/River watching brief

8.3.1 The southern bank of the river was re-profiled as it passed the house to re-create the lake which was a key element of the Repton proposals. In addition the lake was dredged to remove silt.

8.3.2 The re-profiling work included clearing trees and vegetation and then slightly pulling back the bank. There was very little real excavation and the work largely comprised scraping the surface. No archaeological remains of interest were exposed. There was a brownish soil towards the surface and a reddish/ochre brown soil beneath this. There were a number of isolated 20th-century bricks and small lumps of dumped concrete mixed into the soil but no features of interest.

9 CONCLUSION

9.1.1 Stoneleigh Abbey is a site of considerable historic significance and one of the key areas of interest is its river landscape to the south of the house and particularly the improvements made during the 19th century by Humphry Repton and other landscape designers.

9.1.2 This river landscape was severely degraded by lack of maintenance and major structural failures during the 20th century but it has now been magnificently restored through a major programme of conservation works. This conservation has principally focused on a series of weirs (West Park Weir and Island Weir), bridges and sluices and this has allowed the recreation of a large lake to the south of the house which had been one of Repton's main proposals for the site but which had returned to being a silted-up set of narrow channels. Due to the state of dilapidation of the structures and the need to return them to a functional state, the conservation programme has necessitated a high level of rebuilding but this has been based closely on historical precedent from the structures dismantled.

9.1.3 The conservation has included a programme of archaeological recording and this has been of value in a number of ways. Firstly it has provided a detailed record of the form of these structures prior to their recent large-scale restoration and partial rebuilding. Secondly the fact that the work was undertaken in the form of an intermittent watching brief over the course of many months means that there is a record of the 2011 restoration works themselves which now form part of the ongoing evolution of this nationally important site. Thirdly the investigation has enhanced understanding of the construction and chronology of these features. To some extent the works have confirmed the previous assumptions about the date of the structures but some further clarity and confidence has been provided to some of the dates. This has been provided by both the physical investigation of the structures and an assessment of the accounts held in the Stoneleigh Abbey Archive.

9.1.4 The Abbey Mill Bridge is shown from a date stone to have been constructed in 1704 but the western half of the structure is of slightly different stonework and the bridge must have been widened, almost certainly in 1784/5 when there are two accounts in the archive relating to the widening of the bridge by the mill. This is of interest both for what it



shows about the bridge itself but also because very similar stonework to that in the western (1784/5) side of the bridge is also found in the West Park Weir and other structures. This also corresponds with other bills and accounts in the archives to work on weirs from the 1780s.

- 9.1.5 The West Park Weir is believed to pre-date Wilke's map of 1749, but that it was probably a relatively new structure at this date, and that it has clearly undergone several phases of repair and partial rebuilding. This may have included work in the 1780s (possibly suggested by evidence in the accounts) and definitely included work from 1883 when a major section of wall was rebuilt. It is interesting to note that each of these dates (pre-1749, 1883 and 1780s) are within periods when the existing accounts of the development of the Stoneleigh landscape suggest that only relatively modest improvement works were being undertaken.
- 9.1.6 The Island Weir is thought to have been constructed in the early 19th century under Repton when the water level was raised and the reflective lake was created. However the current project has exposed a large lower spillway formed from distinctly different stonework to the upper structure and evidence suggests that may survive from an earlier weir. This could be the 'new weir across the River Avon at Stoneleigh Abbey' which is referred to in a invoice/account from 1785. Alternatively it is possible that the lower spillway is part of Repton's weir and the main dam is actually a later addition. The stonework in the main weir is more suggestive of an earlier 19th century date rather than one from later in the century but there is the possibility that it is from a later phase such as from Nesfield's work.
- 9.1.7 The Gazebo bridge is a stone built structure where the main stonework is suggestive of a later 18th or early 19th century date with a later timber superstructure which appears clearly later, possibly added in the early 20th century. There are accounts in the Stoneleigh archives of an estimate for a bridge over a new cut (in 1779) and carpenters works to a set of floodgates (from 1781) so it may be that the bridge was constructed in this period. However, there is also evidence to suggest that the structure to the rear of the bridge was a later addition (particularly differences in the floor to each side) and the structure may have been enlarged in the mid 19th century. Evidence strongly suggests that there was formerly a large platform across the rear of the structure, possibly a large enclosed building to the rear over the two channels and that this was removed between 1887 and 1905.

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APPENDIX B. LISTED BUILDING DESCRIPTIONS

SUMMERHOUSE AND SLUICES AT WEST END OF ISLAND, 240 METRES SOUTH-EAST OF ABBEY

STONELEIGH

List entry Number: 1096007

Grade: II

Date first listed: 26-Nov-2002

SP32067106 Summerhouse and sluices at west end of island, 240m south-east of Abbey 1827/0/10017 II Sluices and summerhouse. Built c1813 for Thomas or James Henry Leigh, and based on a design by Humphrey Repton. Repaired late C20 and early C21. Ashlar and timber. The building comprises ashlar walling carrying a walkway. Slightly convex on the upstream side, with central round-arched opening through which water flows freely. To the left, a plain opening with the remains of double sluices in wood with iron fittings. Above the central opening, a wooden summerhouse in Classical style, with fluted pilasters, pedimented gable and on 3 sides, arch-braced openings giving the impression of round arches. Fronting and flanking the summerhouse, a wooden diamond-lattice railing. INTERIOR: The summerhouse contains a wooden bench, and is floored with pebbles set in diamond patterns.

1827/0/10028 Mill Bridge c200 metres south-west of the Abbey

Stoneleigh

Date first listed: 26-Nov-2002

Grade II

Bridge and sluices. Bridge dated 1704, with C19 sluices and alterations. Ashlar and wood, with iron fittings. 2 round arches with cascades, divided by a central stepped buttress on the downstream side. Splayed balustrade walls with rounded coping. On the upstream side, 4 sluices, the gates now missing.



APPENDIX C. STONELEIGH ABBEY: REGISTERED PARK AND GARDEN DESCRIPTION

Name: STONELEIGH ABBEY

Registered Park and Garden entry Number: 1000377

Details

Early C19 gardens and park for which Humphry Repton produced a Red Book in 1809, together with a C17 detached deer park which was also landscaped in the early C19.

HISTORIC DEVELOPMENT

Stoneleigh Abbey, a Cistercian foundation, was founded in 1154. At the Dissolution it was purchased by Charles Brandon, Duke of Suffolk. In the mid C16 it was let to a farmer, Thomas Dadley, who lived in a house on the site of the present east range, which incorporates remains of the monastic buildings. In 1561 the estate was sold to two London merchants, Sir Rowland Hill and Sir Thomas Leigh, who was married to Hill's daughter and heiress. At Sir Thomas' death in 1571 Stoneleigh passed to his middle son, Thomas, who was created a baronet in 1611. Sir Thomas rebuilt the north and east ranges of the house c 1603 and this work was completed by his grandson, another Sir Thomas Leigh, who inherited in 1626 and was created Baron Leigh in 1643. The third Lord Leigh, who inherited in 1710, visited Italy in 1711, and on his return in 1714, commissioned alterations to the house. Work continued under the fourth Lord Leigh who died in 1749, leaving a son who was still a minor. Edward, fifth Lord Leigh, came of age in 1763, and began an ambitious programme of improvements which are shown on a plan (1766-7) by Matthias Baker. Lord Leigh lapsed into insanity in 1767, and was confined at Stoneleigh until his death in 1786. He was succeeded by his spinster sister, the Hon Mary Leigh, a reclusive lady who made only modest changes to the park. At her death in 1806, Mary Leigh left Stoneleigh to her relative, James Henry Leigh of Adlestrop, Gloucestershire (qv), direct descendent of the eldest son of the first Sir Thomas Leigh (d 1571), with a life interest to his uncle, the Rev Thomas Leigh, also of Adlestrop. When the Rev Thomas heard of his inheritance, his cousin Cassandra Austen and her daughter, the novelist Jane Austen, were staying with him; together they visited Stoneleigh. Mrs Austen described the grounds with 'the Avon near the house amidst green meadows bounded by large and beautiful woods full of delightful walks' (quoted in Batey and Lambert 1990). In 1808, the Rev Thomas Leigh invited Humphry Repton (1752-1818), who had previously worked for him at Adlestrop, to visit Stoneleigh and make recommendations for the improvement of the estate. These were presented in 1809 in a large-format Red Book, with proposals laid out in the manner of several artists including Claude, Watteau and Ruysdael. The architectural elements of Repton's scheme have been attributed to his son, John Adey Repton (1775-1860) (Parklands 1997). Repton's work at Stoneleigh was known to Jane Austen, and informed her novel *Mansfield Park* (1814) (Batey and Lambert 1990; Batey 1996). Repton continued to work at Stoneleigh until the death of the Rev Thomas Leigh in 1813, but his commission was not continued under James Henry Leigh. Instead, improvements in a picturesque style continued into the 1830s, with advice from the Leamington architect C S Smith.

James Henry Leigh died in 1823, and was succeeded by his son, Chandos, created Baron Leigh of Stoneleigh in 1839; his widowed mother remained actively involved in the management of the estate until her death in 1843. Chandos Leigh died in 1850, and was succeeded as second Lord Leigh by his son, William Henry. In the mid C19 formal terraced gardens were laid out to the design of W A Nesfield (1793-1881) which provided the setting for a visit by Queen Victoria and Prince Albert in 1858. In the late C19 and early C20 the park and gardens were widely described (CL 1899, 1901, 1906). The third Lord Leigh succeeded in 1905, and died childless in 1938, when the estate passed to his nephew, the fifth Lord Leigh. In the 1930s Percy Cane (1881-1976) was commissioned to alter the formal terraced gardens. During the Second World War a temporary hospital was established in the Deer Park, and agricultural experiments were carried out. After the war the Deer Park was sold to Massey Ferguson Ltd, and in the late C20 part of the Deer Park was developed as a golf course. In 1963 an area of the New Park north of the Abbey was leased to the Royal Agricultural Society of England for use as a permanent show ground. Fire damaged the west range of the Abbey in 1960, but following repair the house continued to be occupied by the Leigh family until 1992. Stoneleigh Abbey was vested in the Stoneleigh Abbey Preservation Trust by the sixth Lord Leigh in 1988, while in 1993 the Abbey and immediate grounds were transferred to the Stoneleigh Abbey Trust. A major programme of restoration has been undertaken in the house and grounds from 1997.

DESCRIPTION

LOCATION, AREA, BOUNDARIES, LANDFORM, SETTING Stoneleigh Abbey is situated c 5.5km north of Royal Leamington Spa and c 2.5km east of Kenilworth. The A444 road passes from south to north through the site separating the Deer Park from the Abbey and New Park to the west. The c 365ha site comprises some 7ha of gardens and pleasure grounds adjacent to the Abbey, c 213ha of parkland and ornamental plantations, and c 145ha in the Deer Park to the north-east of the A444 road. The New Park to the west of the A444 road is bounded to the north by the National Agricultural Centre and to the north-west by the B4115 road. The west boundary is formed by the late C20 A46 road, while to the south the New Park adjoins agricultural land and to the south-east the boundary is formed by the A444 road. The ornamental landscape formerly extended west to Glasshouse Spinney c 350m west of the mid C20 A46 road but this land (outside the site here registered) has been developed with late C20 playing fields. The Deer Park is bounded to the south by a minor road, Stareton Lane, and by domestic properties in the hamlet of Stareton, while to the east and north the boundary is formed by Coventry Road. This road is carried across the River Avon on the early C19 Cloud Bridge (listed grade II), which features in views from within the park. The west boundary is formed by the A444 Stoneleigh Road. The east, north and north-west boundaries of the Deer Park are marked by late C20 timber pales which replace earlier park paling and traces of boundary ditches also survive. The River Avon flows in an S-shaped course from east to south through the New Park, while the River Sowe enters the site from the north, joining the River Avon c 1.3km north-east of the Abbey. The New Park is generally level adjoining the Avon, but to the south of the river the ground rises steeply within woodland known as The Grove. There are significant views north from The Grove across the park to the Abbey, the bridge and the west or Grecian lodges which were refined by Repton in the early C19. There are also views to the south-east and south from a shrubbery at the south-east end of The Grove, which encompass agricultural land south of The Grove and ornamental woodland, Bericote Wood, to the south-east of the site. The River Avon flows from north-east to south-west through the Deer Park, with areas of level ground to the east and south-east, and wooded slopes to the north and south-west.

ENTRANCES AND APPROACHES Stoneleigh Abbey is approached from the B4115 road to the west. The entrance is marked by a pair of single-storey, stone, neo-classical lodges, known as the Grecian Lodges (listed grade II), which each comprise a square block surmounted by a shallow pitched roof, with an inner canted bay facing the drive. The architect of the lodges is unknown: Repton's plan (1809) which included a range of half-timbered cottages on the west side of the road opposite the entrance, was not implemented, and neo-classical designs by William Porden produced in 1813 do not correspond to the lodges as built. The entrance leads to an avenue of limes which lines a tarmac drive extending c 320m south-east across the park to cross the River Avon on a bridge (listed grade II*) comprising a wide central arch crossing the river, flanked by a pair of smaller arches which are in turn flanked by pairs of arched niches set in rusticated stonework. The bridge, known as the 'Grecian' or 'Rennie' Bridge, was designed in 1812 by John Rennie, and was completed c 1814. Repton's proposal for a triple-arched stone bridge modelled on that at Llanwrst (Red Book) was not implemented. Beyond the bridge, the drive continues south-east through an avenue of limes for c 350m to approach the Abbey from the north-west. The drive passes beneath the mid C14 Abbey Gatehouse (listed grade I) which comprises a gabled entrance arch to the west and a two-storey wing to the east, and sweeps c 80m south-east to the north-west corner of the west range. A late C20 drive leads north parallel to the north range, giving access to parking areas and garages c 50m north of the house. To the west of the Gatehouse late C20 car parks enclosed by hedges give access to a further late C20 drive which leads to the west facade of the house. East of the Gatehouse, the drive gives access to the Tudor-gothic stables and riding school (all listed grade II*) c 100m north-east of the Abbey which were built in 1815(20) to the design of C S Smith. The stables and riding school are now (2000) being converted to commercial use. The west approach was developed in the early C19, following Repton's advice in 1809. As implemented, the west drive follows a more direct route to the north of the serpentine course advocated by Repton. The drive assumed its final form in 1814 when a public road crossing the park from north to south c 600m west of the Abbey was diverted to the line of the B4115 road.

The west drive continues west of the B4115 road, formerly leading c 1km south-west through Thickthorn Wood, a C19 ornamental plantation, to join the A452 road south-east of Kenilworth. The drive is today truncated by the late C20 A46 road which passes within the western boundary of the plantation, and survives in part as a track and in part as a footpath leading to Kenilworth. Some 1.3km south-west of the Abbey the drive is carried over a minor road, Rocky Lane, on an early C19 single-arched, rusticated stone bridge (listed grade II). To the north of the bridge and on a level with the drive stands an early C19 single-storey lodge. This drive

was developed by James Henry Leigh after 1813.

A further drive approaches the Abbey from the A444 road to the south-east, the entrance being marked by a single-storey early C19 stone lodge known as Mary Lodge (listed grade II). The tarmac drive extends c 800m north-west through an irregularly spaced avenue of mature oaks, and is separated by hedges from the National Agricultural Centre to the north, and meadows, some of which are used as occasional car parks, to the south. The C18 Kennels and associated cottage (all listed grade II) immediately south of Mary Lodge and the drive have been converted in the late C20 to residential use, and substantial detached late C20 houses have been constructed in the adjoining spinney. Planning permission for further residential development has been granted (2000) for The Cunnery, a meadow adjoining the south-east drive c 300m south-east of the Abbey. Some 250m south-east of the Abbey the drive passes north of the Home Farm, the buildings of which have recently been converted to residential use. The drive sweeps north and north-west round the north side of the stables, to reach the entrance to the stable court and the Abbey Gatehouse. Before the early C19, the south-east approach was the principal access to Stoneleigh Abbey.

The east or London Drive which formerly approached the Abbey through the Deer Park is now disused. The entrance to the Deer Park is marked by Tantara Lodge, also known as Bubbenhall or London Lodge (listed grade II), an early C19, stone, gabled, gothic structure built to the design of C S Smith in 1818. The lodge is today set in late C20 domestic gardens separated from the park by conifer hedges and fences. The drive, surviving partly as a track marked by the remains of an avenue of mature oaks, extends c 400m west-south-west through the park on a ridge of high ground, with views north across the River Avon to the Deer Keeper's Lodge. The course of the drive is interrupted by the buildings of the late C20 business centre. The drive formerly continued for c 1km south-west through the park before crossing the A444 road adjacent to East Lodge (listed grade II), a single-storey, early C19 stone lodge constructed in a Tudor-gothic style designed by C S Smith. From East Lodge the drive swept west for c 950m across New Park to reach the stables and Abbey. This latter section of drive, with the exception of a final c 80m, is today used as one of the principal avenues in the National Agricultural Centre show ground (outside the site here registered). The east drive was improved and extended from an existing route by James Henry Leigh in the early C19.

Two further early C19 lodges mark points of access to the Deer Park. North Lodge (listed grade II) stands adjacent to an entrance from Coventry Road to the north, opposite a minor road leading to Baginton. The stone lodge, designed c 1820 by C S Smith, comprises a single storey and attic and is built in a picturesque Tudor-gothic style with ornamental bargeboards and gabled facades. To the south, Stareton Lodge, also known as Park Lodge and The Beehive, stands immediately to the west of a gate which today leads into the grounds of the late C20 business centre, but which formerly led to a footpath (OS 1886). Stareton Lodge comprises a single storey and attic with a half-octagon bay to the south incorporating the front door and a small Diocletian window set in the roof; the lodge is constructed in brick which was originally limewashed (Parklands 1997). A lithograph of 1825 shows the lodge with a thatched roof and a rustic verandah supported on tree-trunk pillars; these do not survive, and the house has been re-roofed with C20 shingles. The design of Stareton Lodge has been attributed to Repton (Parklands 1997).

PRINCIPAL BUILDING Stoneleigh Abbey (listed grade I) stands on a terrace to the north and east of the River Avon. The mansion incorporates remains of a Cistercian abbey founded in 1154. The house comprises four ranges built around a central court, roughly corresponding to the monastic cloister; the north range of the house is built on the site of the south aisle of the abbey church. The north range, containing the long gallery, and the east range, formerly containing offices, were rebuilt in the early C17 and today (2000) retain gables and mullion and transom windows. The north range was originally entered by a double staircase leading to a door on the first floor. The staircase protected a small grotto which was praised by Repton (1809). The staircase was removed and replaced by the 'Gothic Porch' by C S Smith in 1836. The west range was rebuilt between 1714 and 1726 in a monumental Classical style by Francis Smith of Warwick. The west range returns to the north and south for four bays, which are of plainer construction. The west range contains early C18 state apartments with significant rococo interiors created between 1726 and c 1765. In 1809 Repton proposed the construction of a central portico but this was not adopted. The south range comprises the four-bay return of the west range, a recessed central section, and to the east a hip-roofed late C17 kitchen. Repton proposed (1809) the addition of a loggia, conservatory and first-floor colonnade but again these were not implemented. The west range was damaged by fire in 1960, but was subsequently restored. The house is currently the subject of a major programme of works which includes the vertical division of the house into apartments, and the restoration of the state apartments.

GARDENS AND PLEASURE GROUNDS The formal terraces and informal pleasure grounds lie principally to the north, west and south of the Abbey. The central court of the Abbey is laid out with a late C20 knot garden. To the north of the house an approximately rectangular area is laid out with lawns planted with specimen trees. This area is bounded to the north by a stone wall screened by mature evergreen shrubbery; late C20 garages have been built adjacent to this wall. The garden is separated from the drive to the west by young yew hedges, while a drive, approximately following the course of a C19 drive (OS 1886), sweeps from south-west to north-east through the garden. The north garden was described by Repton as the Bowling Green Garden (1809), and corresponds to a walled enclosure shown on plans of 1749 and 1766, the garden occupying the site of the monastic church. To the north-east of the Bowling Green Garden a pair of elaborate early C18 wrought-iron gates surmounted by an overthrow containing a coronet and monogram (all listed grade II) lead to the drive west of the stables. The gates are supported on rebuilt square brick piers surmounted by C18 lead urns (all listed grade II). A drive leads south from the gates to the service quarters south-east of the Abbey. Some 50m south of the gates the drive passes through an early C19, stone, Tudor-gothic archway designed by C S Smith. To the east the arch connects with the Garden Lodge, while an arched opening to the west leads to gardens below the east facade comprising an area of lawn planted with mature specimen trees. The lawn has been divided into two unequal areas by a late C20 yew hedge running from west to east.

A partly stone-flagged and tarmac terrace and areas of lawn below the west facade extend c 30m to the remains of a mid C19 stone balustrade which separates the terrace from an area of level mown grass used in the C20 as a cricket ground. A mid C20 timber pavilion stands to the south. Repton advised the construction of a terrace below the west front in 1809, but the terrace as constructed in 1814 does not correspond to his proposal. The terrace was developed as a formal garden with geometric parterre beds designed by W A Nesfield in the mid C19; these were simplified by Percy Cane in the 1930s and do not visibly survive. The terrace replaced an early C18 walled bowling green which is shown in a view from the south-west (1749), and on surveys of 1749 and 1766. Farm buildings to the north-west and west of the Abbey were removed by the early C19 when the Home Lawn, an area for sheep grazing roughly corresponding to the cricket ground, was created (Red Book).

The slope descending from the south facade to the River Avon is terraced to provide a wide lawn and a riverside walk. Stone steps aligned on the axis of the west terrace descend to a gravelled upper walk. At the east and west ends of this walk further steps descend a grass slope to reach the wide central terrace, which is today (2000) laid to grass with the remains of late C19 pedestals standing adjacent to gravel walks to the west and east of the lawn. The west walk continues the axis of the west terrace to the riverside walk which is reached by further east and west flights of stone steps which descend a grass bank. The riverside walk is retained by a stone balustrade (restored 1999, listed grade II) which breaks forward to east and west in square bastions. A central flight of stone steps descends to the water. The south terraces were developed by W A Nesfield in the mid C19 with a scheme comprising geometric beds for seasonal planting and Irish yews which does not survive. To the south-east, a mid C19 conservatory (listed grade II*) overlooks a similar lawn, where again the mid C19 formal scheme does not survive. The conservatory was built to the designs of William Burn in 1851 (Tyack 1994).

A gravel walk south of the conservatory sweeps south-east below a curved brick wall which screens the service yard, and continues east, parallel to the south wall of the kitchen garden (listed grade II) for c 80m, to reach the Rose Garden. Some 50m south-east of the orangery, a flight of stone steps ascends from the walk to a pair of ornate C18 wrought-iron gates with an armorial overthrow which are supported by a pair of square-section stone piers set in the kitchen garden wall (all listed grade II). A further pair of gates and piers (listed grade II) is set in the garden wall c 80m south-east of the orangery, at the north-west corner of the Rose Garden. The Rose Garden comprises a level rectangular terrace which is laid to lawn and planted with mid C20 specimen conifers. At the centre of the lawn an elaborate, early C19, four-tier Coade stone fountain is supported on a pedestal cast to resemble entwined branches. The fountain stands in a circular pool, the raised edge of which is also constructed in Coade stone cast to resemble rocks with planting pockets and images of a variety of animals. The Rose Garden is enclosed to the north and east by brick kitchen garden walls, near the angle of which stands an early C19 circular, thatched rustic summerhouse (listed grade II) supported by tree trunks.

From the Rose Garden a walk descends south-east through an area of informal shrubbery for c 30m to reach a timber footbridge with lattice balustrades which crosses a stone-lined water channel to reach an early C19 timber summerhouse (restored early C20). This is situated at the west end of a long narrow island, facing along an artificially widened stretch of the River Avon to the south of the Abbey. The summerhouse has arched



openings to the north, south and west, and a panelled interior with a simple bench seat. The opening to the south leads to a further riverside shrubbery walk extending c 100m south-east along the island; the stone-lined water channel extends along the north side of the island and was formerly crossed by a footbridge at the north-east end of the island. The River Avon was widened in 1809 as part of Repton's improvements by laying together the river and an adjacent mill stream. Repton's lake was retained by a stone weir c 300m south-east of the house; this dam was raised during the C19 to obscure silting and was breached by floods in the mid C20. The lake to the south of the Abbey was partially reinstated in 1999(2000). The shrubbery walk continues to the south-east of the summerhouse on the north side of the stone-lined channel, leading c 160m to an approximately circular area enclosed to the north by a bank retained by rockwork and planted with evergreen shrubbery. A semicircular drystone-lined alcove is set into this bank, while a stone-kerbed octagonal shallow fountain basin occupies the centre of the level ground to the south. Above the alcove, among mature evergreen shrubs, a stone pedestal with a low pyramid cap dated 1839 commemorates three family dogs, while to the east a further group of late C19 and early C20 dogs' headstones stand within a low, green-painted timber pale fence. The early C19 sunken garden and dogs' cemetery terminate the pleasure grounds to the south-east; a gate c 30m east of the dogs' cemetery leads to the park, while a walk returns north-west to the Rose Garden. The pleasure grounds are separated from the Cunnery to the north by a mixed hedge and timber fence.

A walk leads south-west from the south terraces through an area of shrubbery and mature trees. Some 80m south-west of the house a C19 water engine is housed in an early C19, single-storey, Tudor-gothic stone pavilion attributed to C S Smith (Parklands 1997). The walk continues c 50m south-west to a two-arched stone bridge dated 1704 (datestone) which crosses a cascade. Beyond the bridge, the walk passes through a late C20 timber gate to enter the park. The cascade is associated with the site of a medieval mill which was demolished in 1812 as part of Repton's improvements. An early C19 stone weir in the park c 500m west-north-west of the Abbey allows water to flow into the lower river, while the former mill race is retained at a higher level by the mill island to the south. Repton used the mill cascade as a feature at the west end of the lake created to the south of the house in 1809.

PARK The park comprises two distinct areas: the New Park to the west and south of the Abbey, and the Deer Park to the north-east of the A444 road. The New Park remains pasture with scattered mature trees and significant areas of woodland on the north-facing slope to the south of the River Avon. The river and the watercourses associated with the medieval mill and the early C19 lake to the south of the Abbey flow in an S-shaped course from north-west to south-east through the New Park. An area of mid C20 plantation adjoins the river to the north-east of the Rennie Bridge, while to the south of the river, The Grove is an extensive area of mixed woodland which is shown on a survey of 1597. The Grove is approached by a walk which leads south-west from the mill bridge across the mill island to cross the River Avon on an early C19 footbridge with classically inspired cast-iron balustrades and hand rails (rails removed, 2000). The bridge is supported on a rectangular stone pier set in the centre of the river and has stone abutments to the north and south. In 1809 Repton proposed a bridge on a site to the east of the present footbridge, but the scheme was not implemented and the footbridge was built after 1813 to replace an earlier bridge serving a road to Ashow. Some 10m north-west of the bridge a culvert conveying water from the mill race discharges from a rusticated stone arch in a small cascade; these features formed part of Repton's early C19 alterations to the watercourses. South of the footbridge a series of walks extends north-west and south-east through The Grove. An early C19 icehouse of domed brick construction (dome partly collapsed, 2000) is built into the steep, north-facing hillside c 20m south of the bridge. Ascending the slope in a series of sweeping curves, the south-east walk passes a deep cutting c 450m south-west of the Abbey which survives from a road which formerly crossed the park from north to south, leading to the village of Ashow c 550m south of The Grove. Some 300m south-east of the footbridge the south-east walk passes through an open, north-facing glade, known as The View, which allows a panoramic vista from north-west to north-east encompassing the park, Grecian Lodges, Rennie Bridge, Abbey and the pleasure grounds, with a water meadow, How Meadow, in the foreground. The south-east walk continues for c 450m to reach the eastern boundary of the woodland; further walks pass through the woodland to reach a walk which follows its southern boundary. At the south-east corner an area of mature ornamental shrubbery adjoins a gate leading to adjacent meadows, from where there are views south-east across the River Avon to Bericote Wood, and west along the southern boundary of The Grove. The south-east walk passes across the south-east end of How Meadow before crossing the river on a bridge of C20 timber construction but which stands on older stone abutments (Parklands 1997). Some 80m north of the bridge, two pools and a water channel to the east separate a triangular area of meadow from the park to the north. Known as Home Grange Green, this was the site of a medieval monastic grange and a fulling mill which ceased to operate in the early C17 (ibid).

A further area of the New Park lies to the north-east of the National Agricultural Centre c 1km north-east of the Abbey. This area, which remains pasture with scattered mature trees, is bounded to the west by the River Avon, and to the north by the River Sowe. It is separated from the Deer Park to the east by the A444 road. The road was diverted to the east at the southern end of the park in the mid C20, leaving the late C15 Stare Bridge (scheduled ancient monument; listed grade II*) isolated in the park. The park rises to the north of Stare Bridge with a group of earthworks at Motslow Hill, an ancient Hundred meeting place overlooking the River Sowe and Stoneleigh village. This area was taken into the park in the 1820s.

The Deer Park is today in divided use, with land to the south-west, adjacent to the A444 road, remaining as pasture with scattered mature trees and groups of trees on high ground. To the north and north-east the park has been developed in the late C20 as a golf course with a clubhouse and car park c 130m north-west of Cloud Bridge. Mature parkland oaks and other specimen trees remain on the mown grass fairways, together with areas of mixed woodland on the north- and south-facing slopes above the River Avon which flows in an S-shaped course from north-east to south-west through the park. To the south, a late C20 business park in part using mid C20, single-storey, pre-fabricated former hospital buildings occupies the south-east-facing slope above Stareton Lane. Mature parkland trees remain within the business park, together with mid and late C20 ornamental trees and shrubs. Mature trees, including picturesque early C19 groups of pines, remain adjacent to the boundaries of the Deer Park. Within the park remnants of a circuit of carriage drives survive; further, late C20 hard-surfaced paths have been created to serve the golf course and business park. Some 700m north-west of Tantara Lodge a two-arched stone bridge, known as the Coach Bridge (listed grade II), crosses the River Avon to allow access from the former London Drive to the area of the park on the north side of the river. The bridge was constructed in 1679 (datestone) and was subsequently altered in the C18 (listed building description). The early C19 Deer Keeper's Lodge (listed grade II) stands in an area of mixed woodland on a south-east-facing slope above the river c 220m north-west of the Coach Bridge. The Deer Keeper's Lodge comprises a two-storey rendered brick cottage constructed in a Tudor style with a single-storey gabled porch, ornamental bargeboards and leaded windows. Sir Thomas Leigh (d 1626) was granted a license to impark 700 acres (c 291ha) at Fletchampstead and Stoneleigh but the exact location of this park is unknown. In 1640 Thomas, first Baron Leigh, was licensed to impark 800 acres (c 333ha) at Stoneleigh; the creation of this park required the closure of Clowde Lane (on the line of the early C19 London Drive) and Connigray Lane which led from the River Avon to Stoneleigh village. The mid C17 park comprised some 320 acres (c 133ha), and was extended to its present area in the 1820s. Repton (1809) praised the landscape of the Deer Park, but made no recommendations for its improvement. Improvements in a picturesque style were made between 1813 and c 1839 by James Henry Leigh, Julia Leigh and Chandos Leigh with the advice of the local architect C S Smith who, in addition to designing the landscape structures, may have advised on the landscape itself (Parklands 1997).

KITCHEN GARDEN Three walled gardens and orchards are situated to the east of the Abbey beyond a service drive which leads south from the stables to the kitchens south-east of the Abbey. The gardens are enclosed by early C18 brick walls c 3.5m high and surmounted by stone copings (listed grade II). The west garden is entered from the west by a simple timber door, and is today laid to lawn separated from mixed perimeter borders by wide gravel walks. At the south-west corner tall stone piers support a pair of ornamental early C18 wrought-iron gates (all listed grade II) leading to the pleasure grounds. Some 15m east of the gates, an arched stone structure incorporated into the south wall is of uncertain origin, but in the late C19 was used as an aviary (OS 1886). At the north-west corner an C18 single-storey brick gardener's cottage has been extended and is set in late C20 domestic gardens separated from the body of the west garden by a beech hedge. A pair of tall rusticated stone piers surmounted by ball finials (listed grade II) is set in the east wall aligned with the west door. This leads to the east garden which is today planted as an orchard with late C20 standard fruit trees set in grass. A further entrance at the south-east corner of the west garden connects the gardens. At the south-west corner of the east garden stone piers support a further pair of early C18 wrought-iron gates with an armorial overthrow (listed grade II) which lead to the Rose Garden. To the north, and separated by a further late C20 hedge, late C20 domestic gardens surround the octagonal, early C19 single-storey brick bothy which has been extended and converted to domestic use. The bothy was formerly surrounded by the frame yard and several ranges of C19 glasshouses (OS). The west end of a further early C20 glasshouse abuts the south-east corner of the east garden, a gap in the wall leading to the south garden having been filled with late C20 timber fencing. The irregularly shaped south garden lies to the south of Home Farm and is the site of a substantial detached late C20 house.



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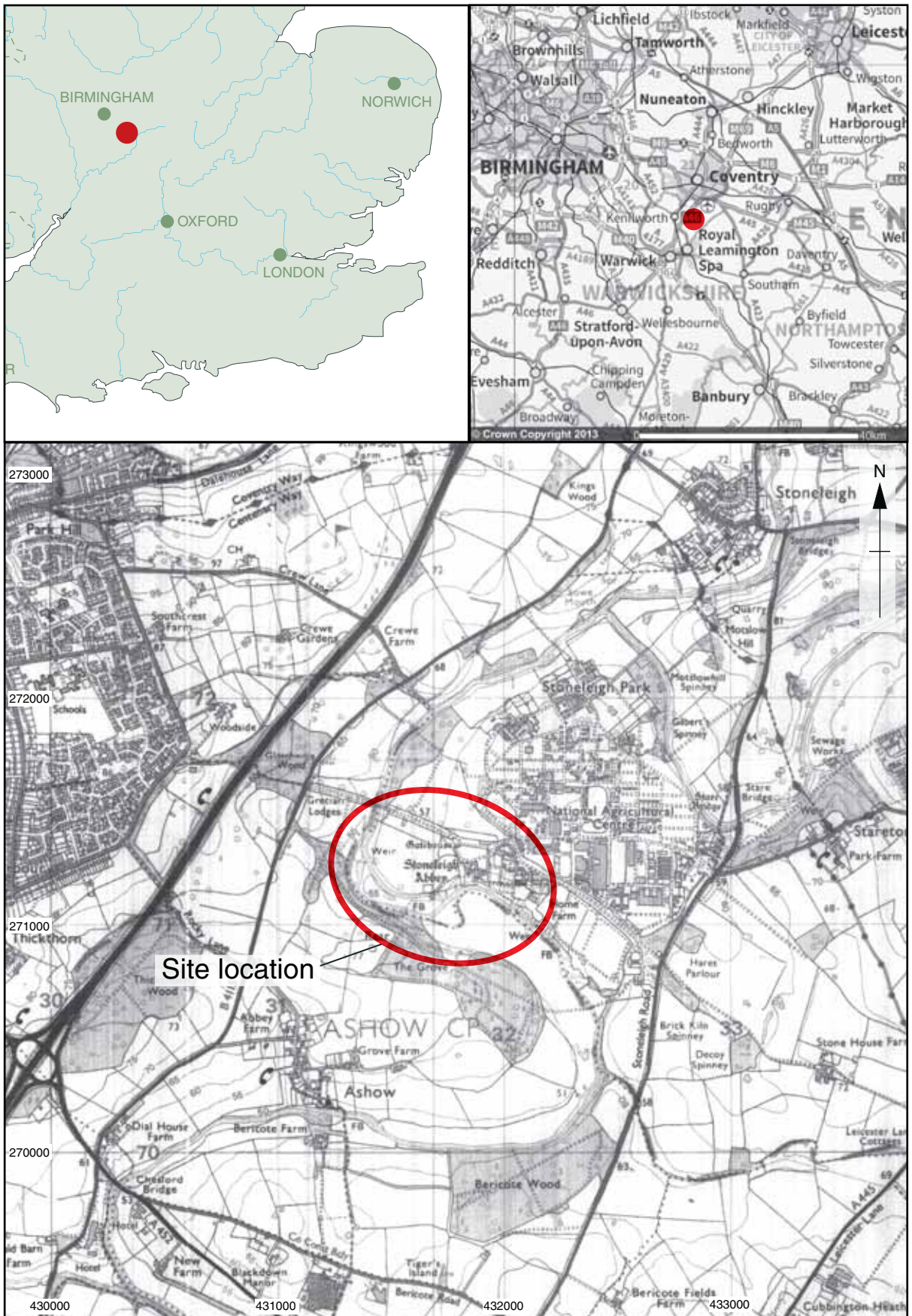
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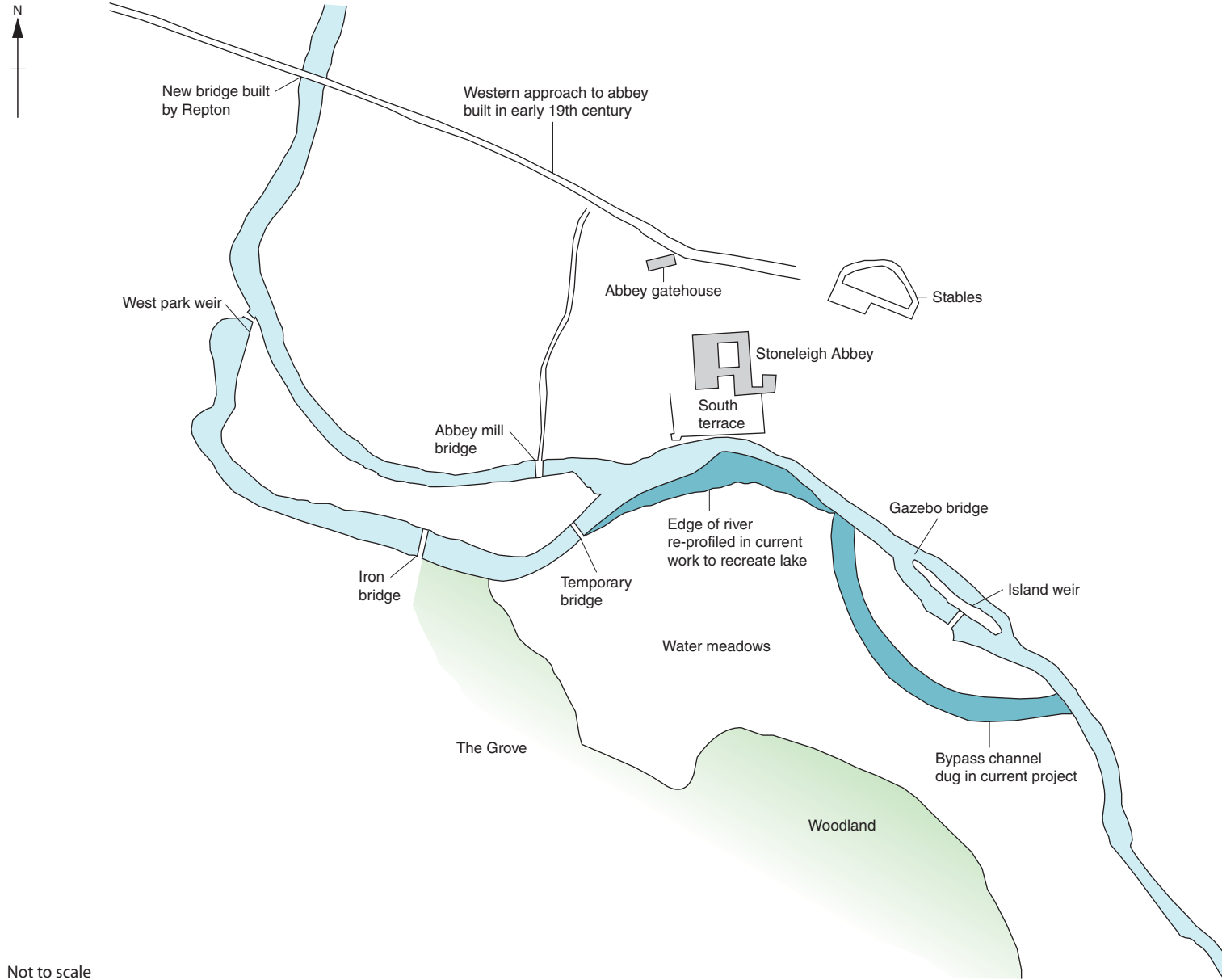
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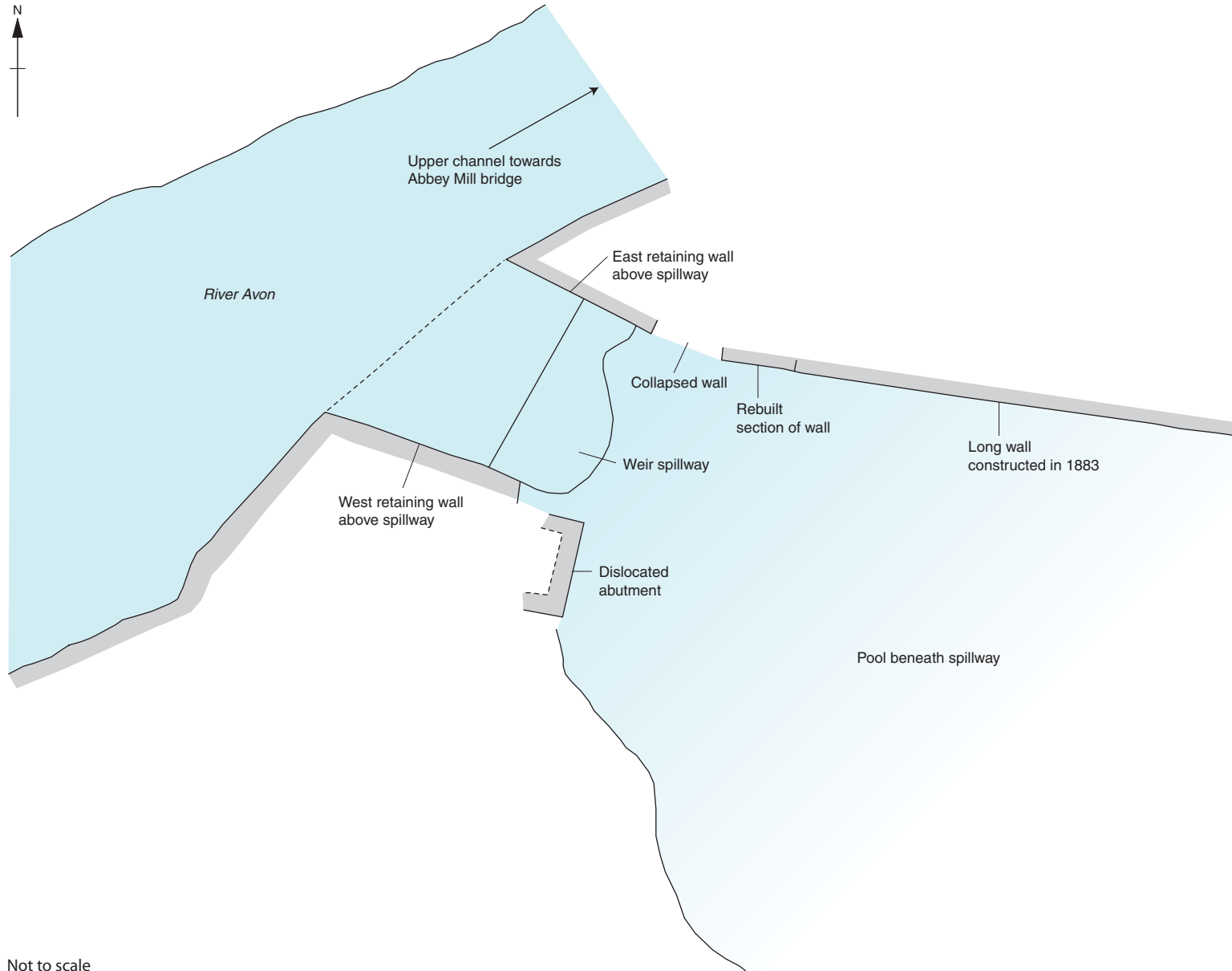
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Figure 1: Site location



Not to scale

Figure 2: Stoneleigh Abbey site plan



Not to scale

Figure 3: West park weir, general plan

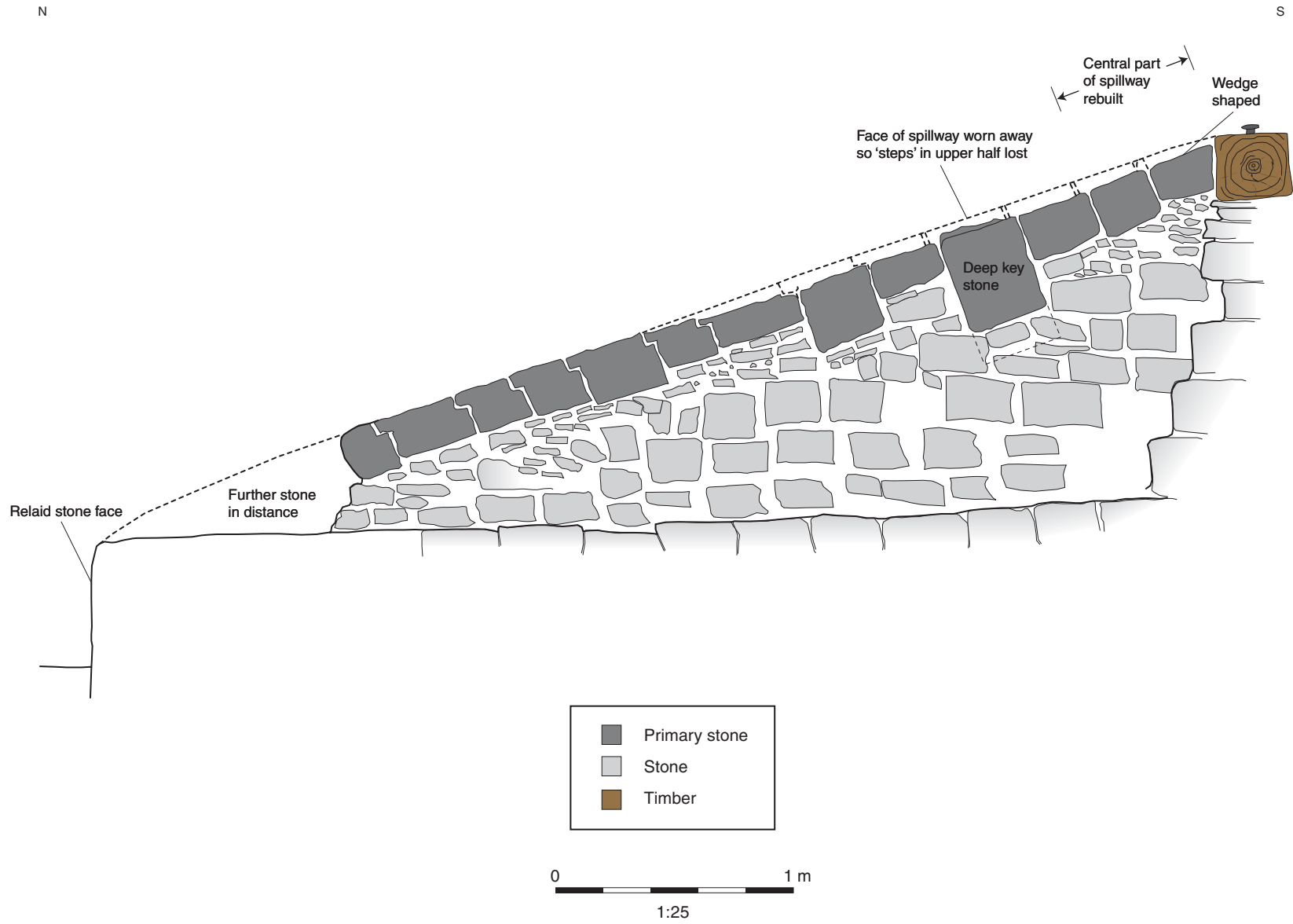
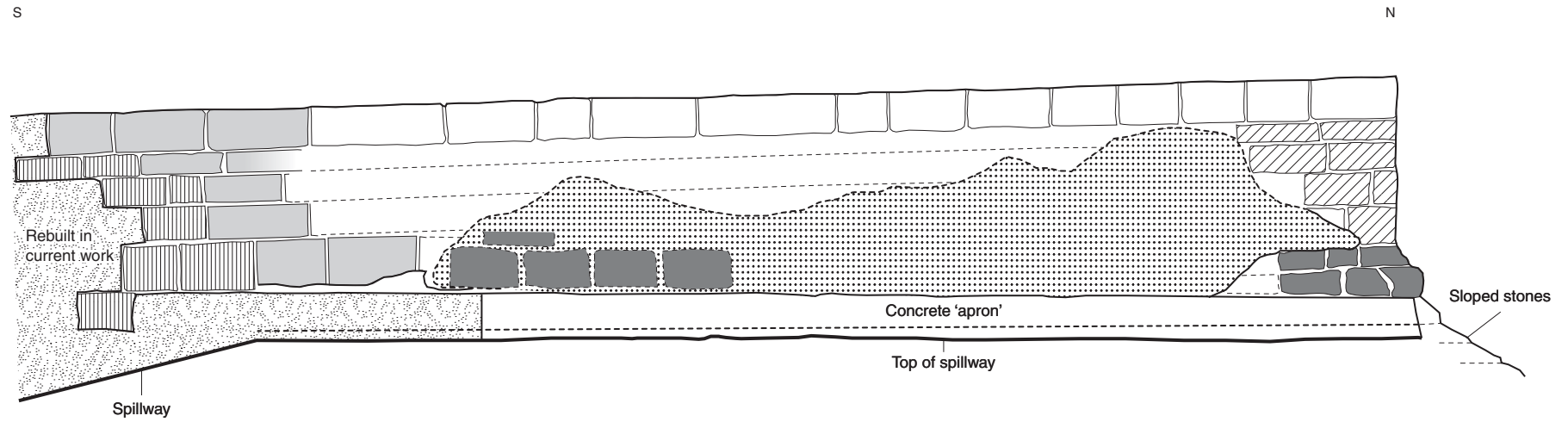


Figure 4: West park weir, exposed section on east side of spillway



- Distinct dimple faced stone
- Apparently remains of earlier phase of wall. Stones at north end appear to be the heavily eroded remains of a sloped plinth around corner.
- ▨ Stones with vertical line tooling
- ▧ Stones with herringbone tooling
- ▤ Large area which appears to be consolidated remains of former wall, partly obscuring later wall on top.



Figure 5: West park weir, west wall above spillway

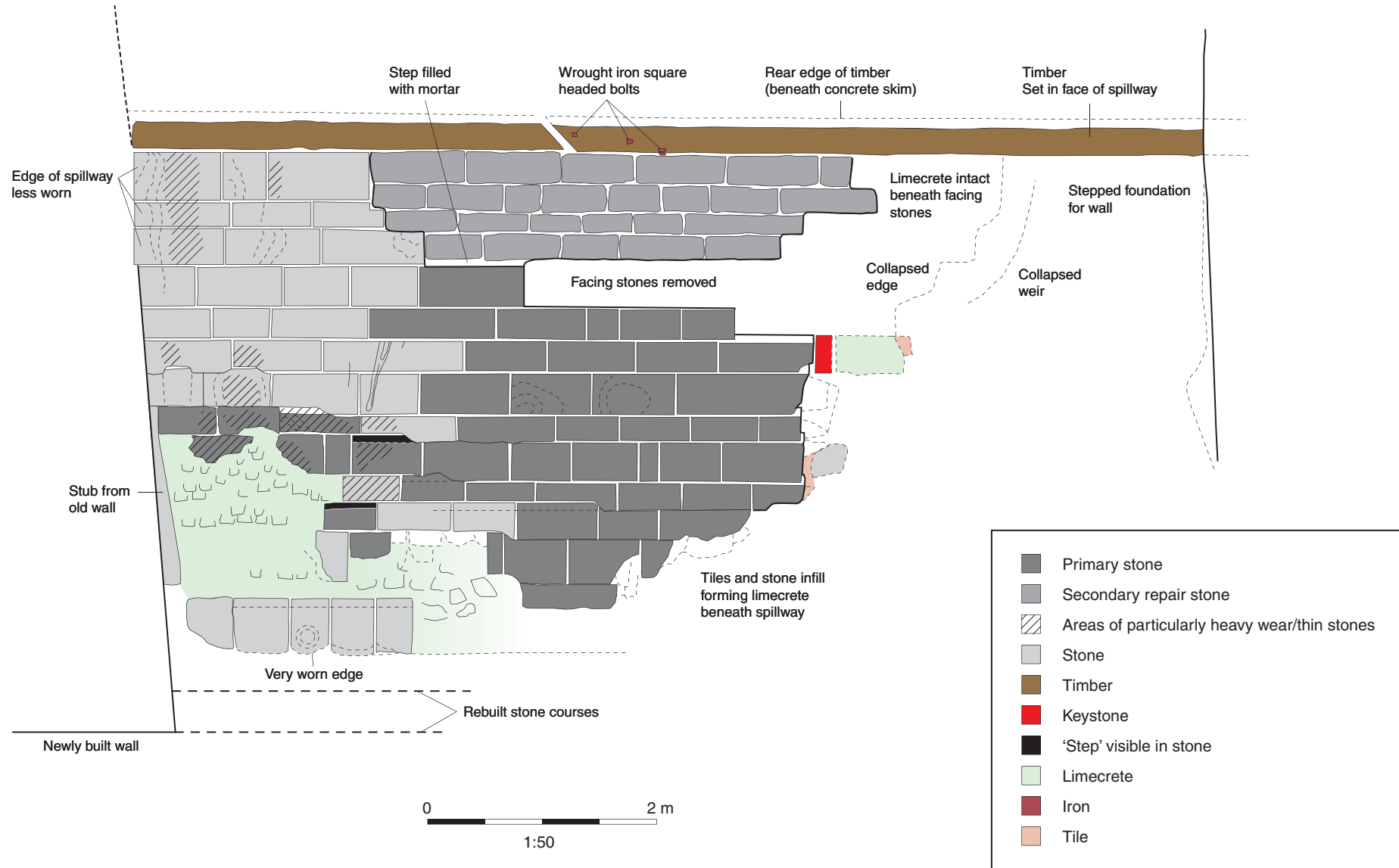
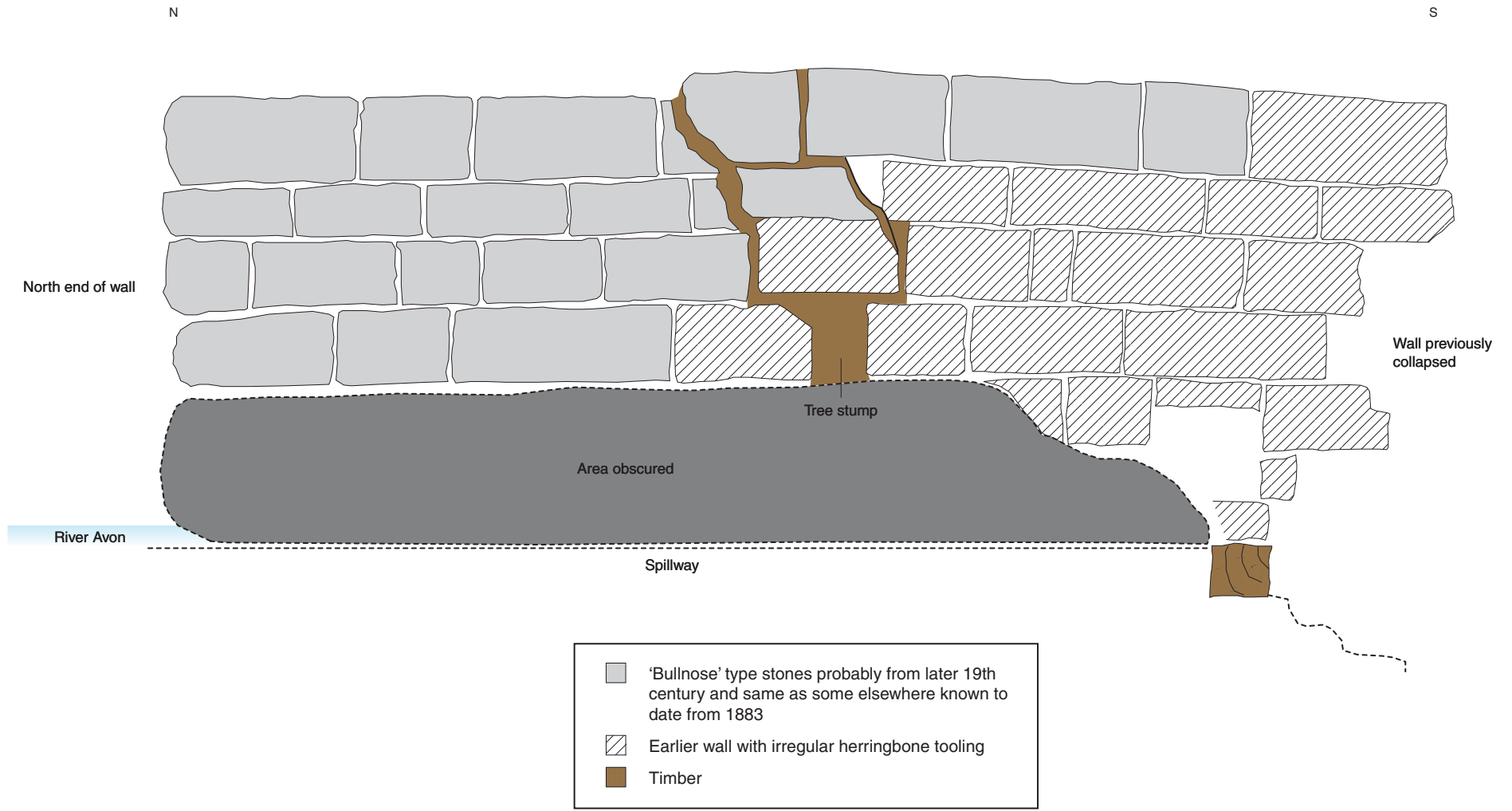


Figure 6: West park weir, plan of spillway



Not to scale

Figure 7: East wall above spillway

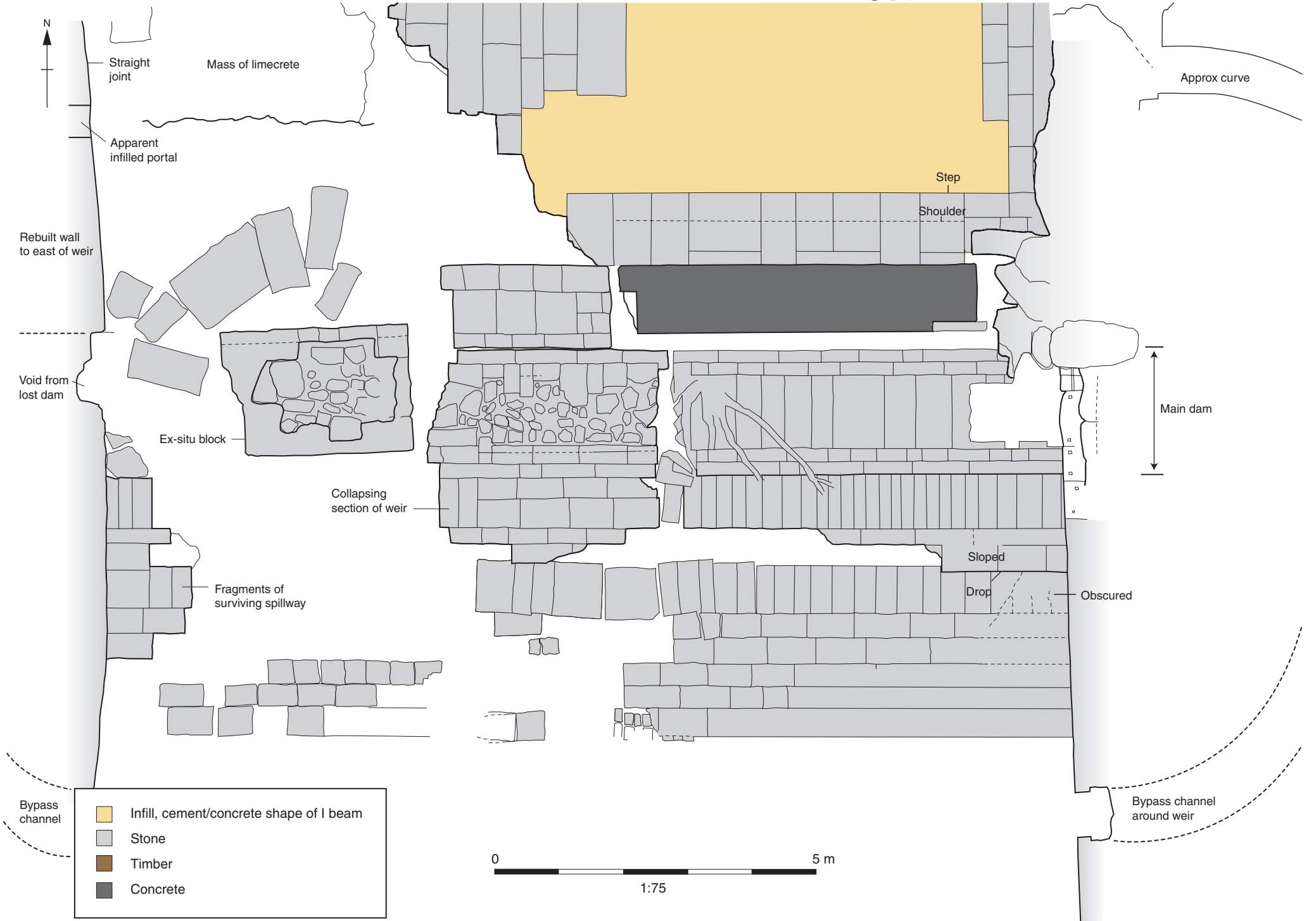


Figure 8: Island weir plan

NW

SE

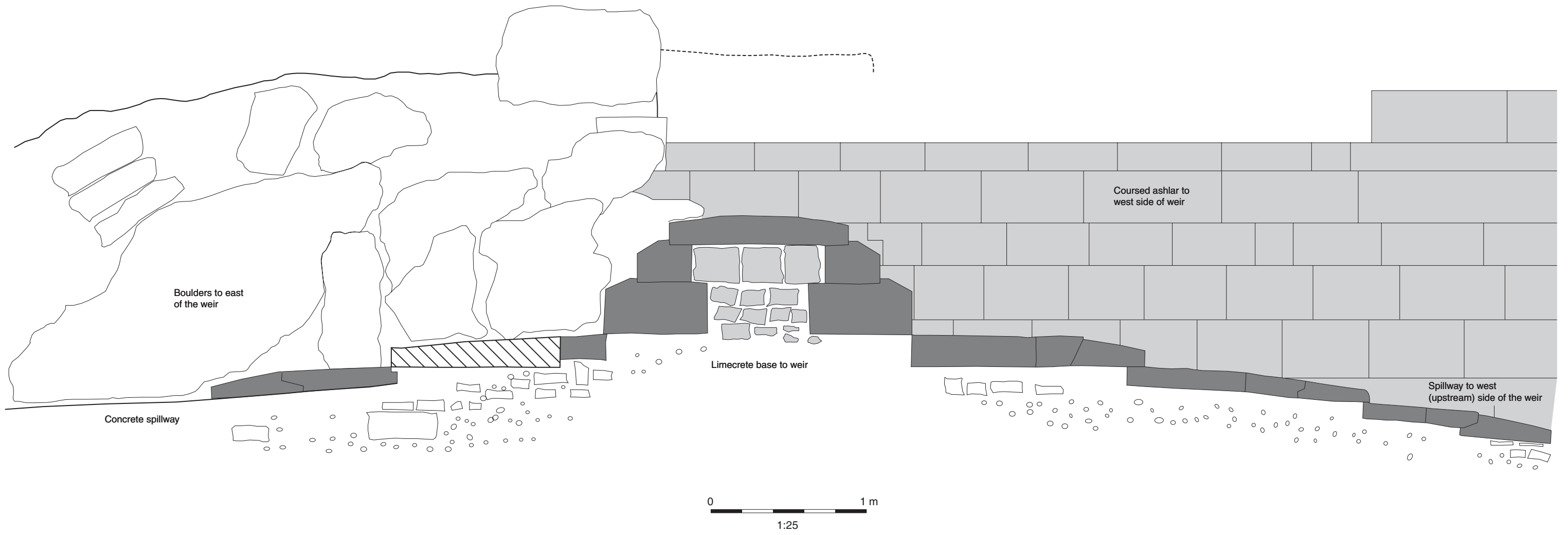


Figure 9: Island weir, section through weir looking to south-west



Figure 10: Island weir, plan of lower spillway



Figure 11: Section detail through spillway on east side of the island weir, looking south

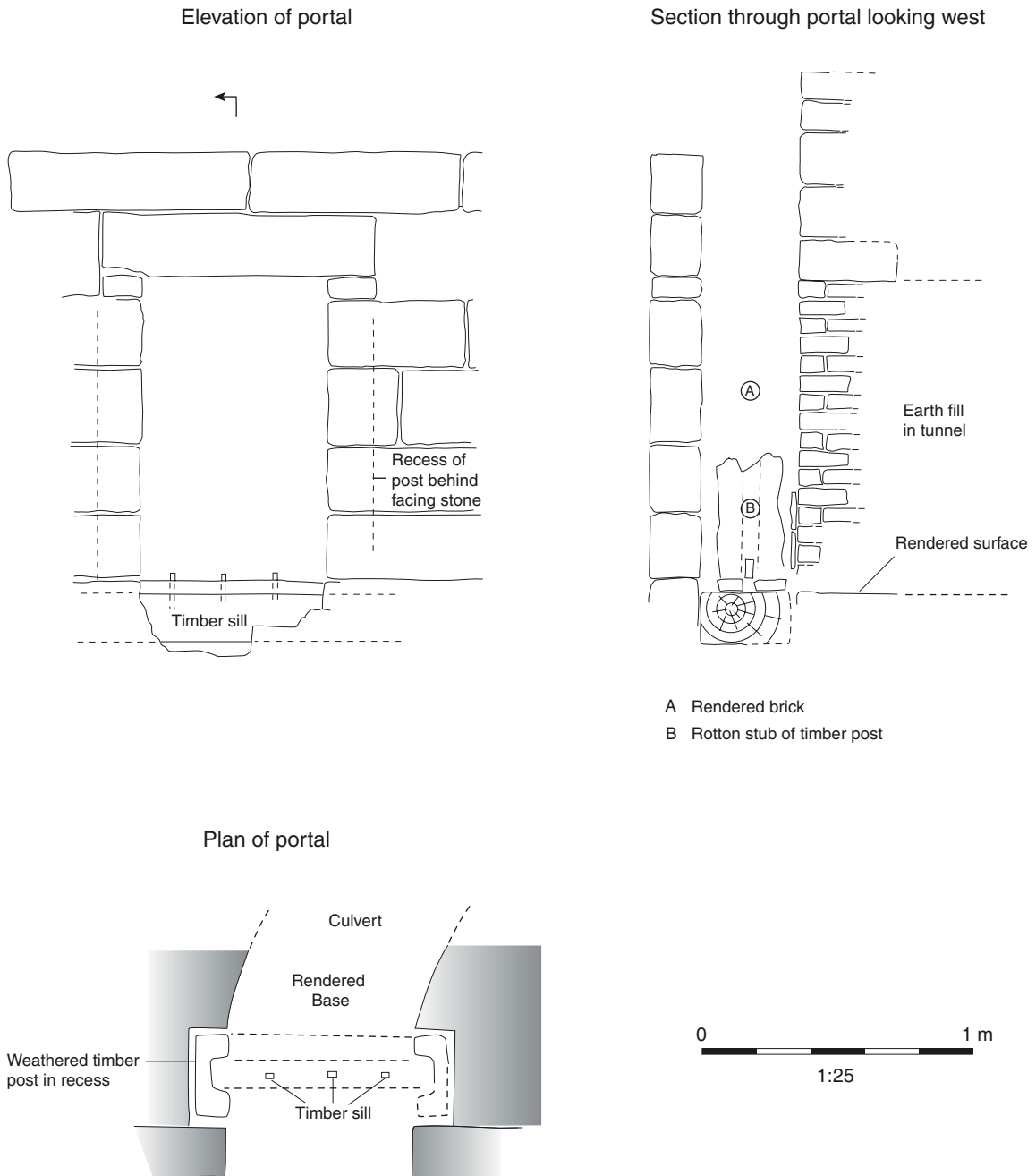


Figure 12: Island weir, detail of culvert portal in north wall to west side of weir

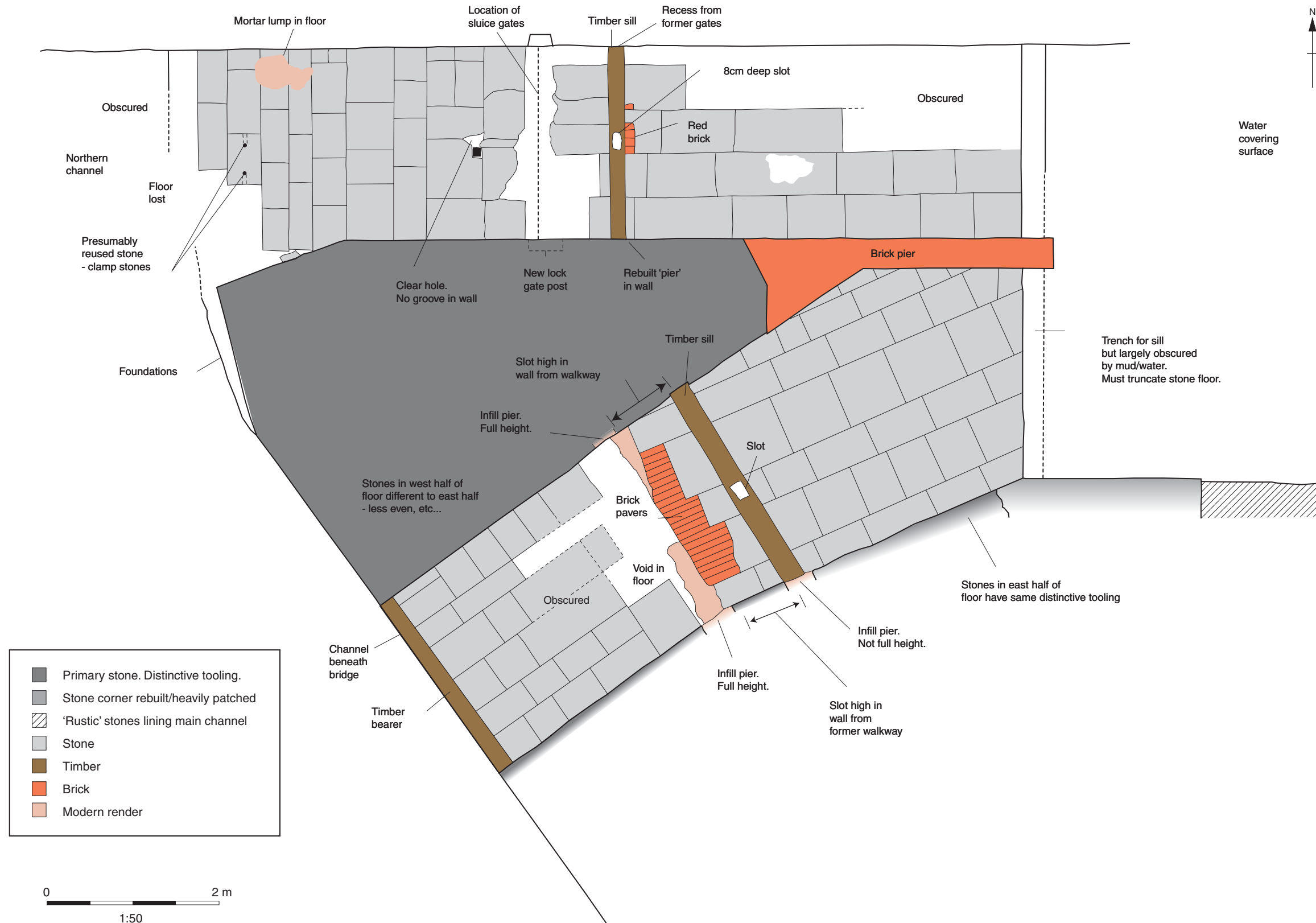


Figure 13: Gazebo bridge plan

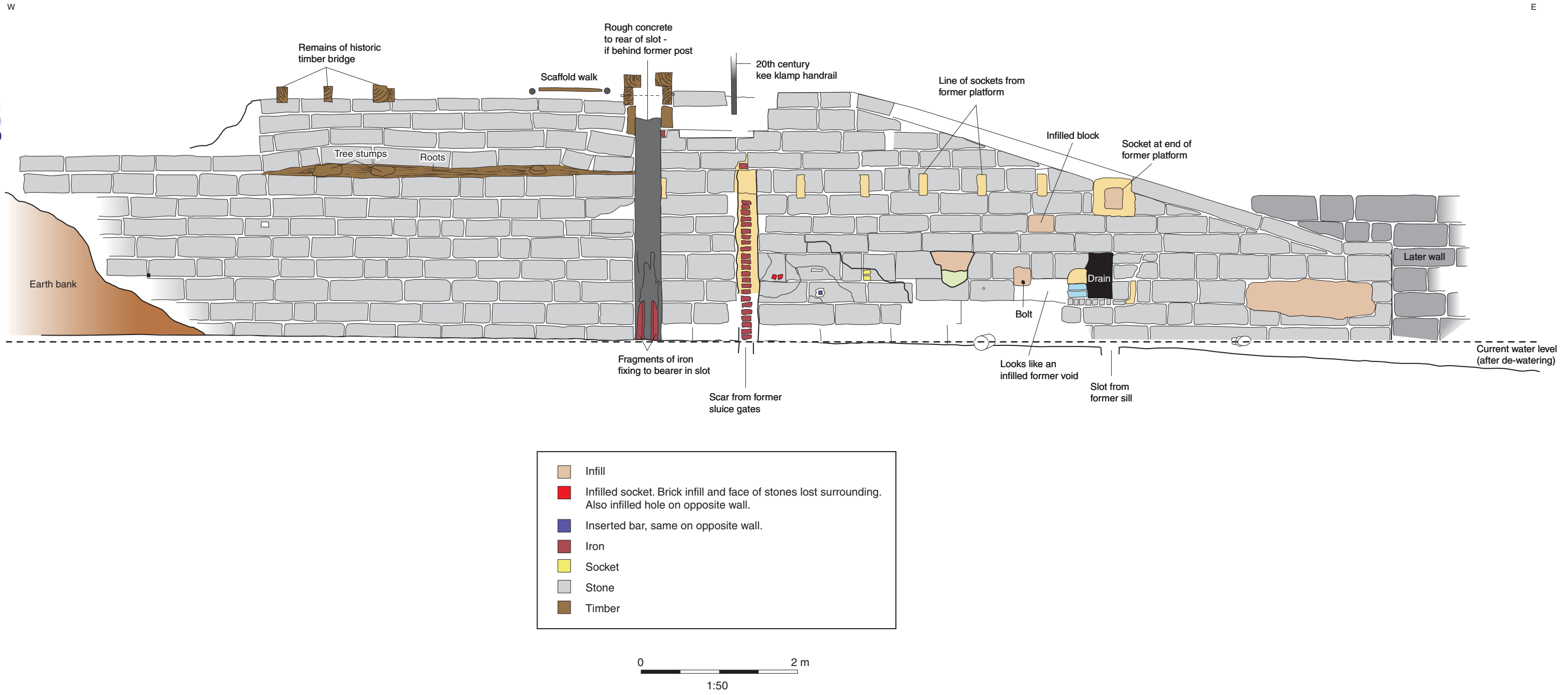


Figure 14: North wall of north channel

- Infill
- Cut off bar
- Iron
- Infill, cement/concrete shape of I beam
- Stone
- Timber
- Concrete skim
- Little slot in stone that seems to have totally lost its face. Slot c.4cm deep and has clay/soil infill.

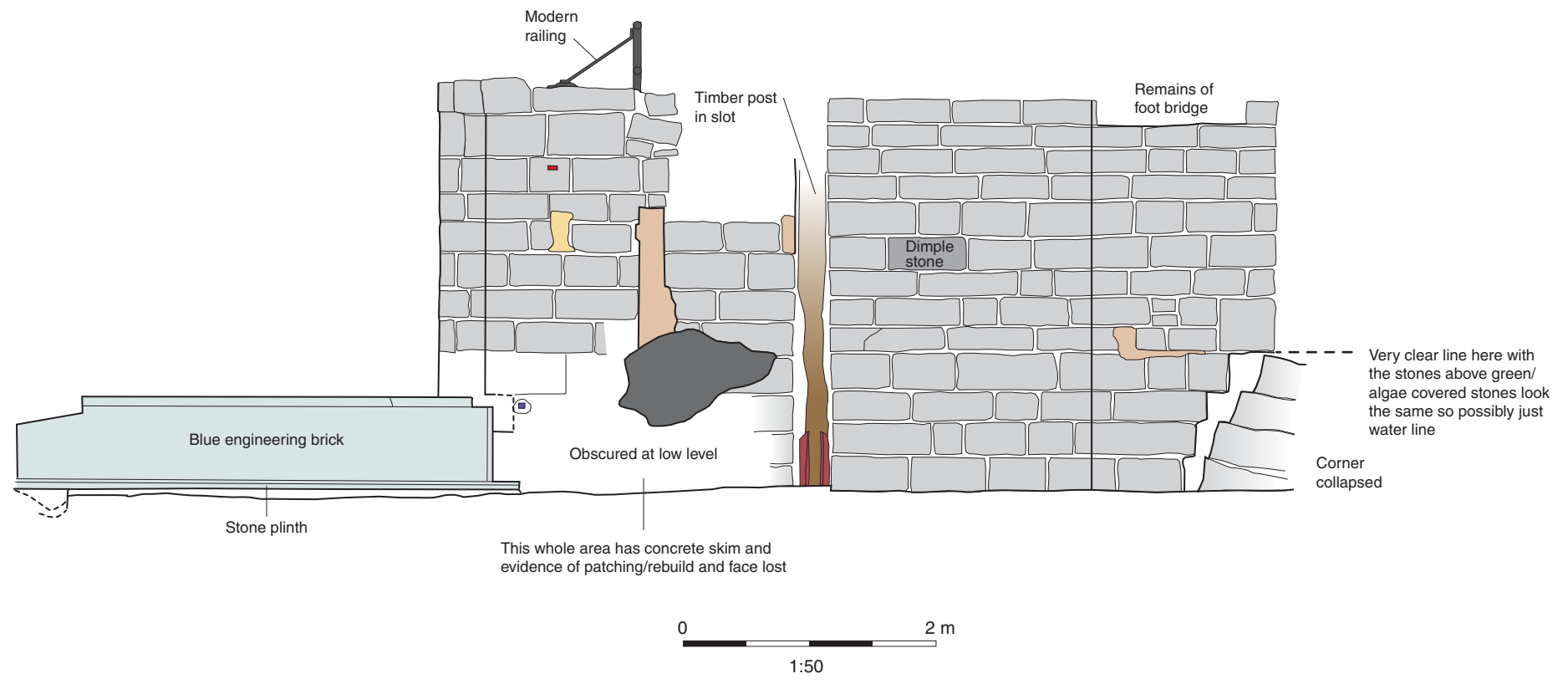
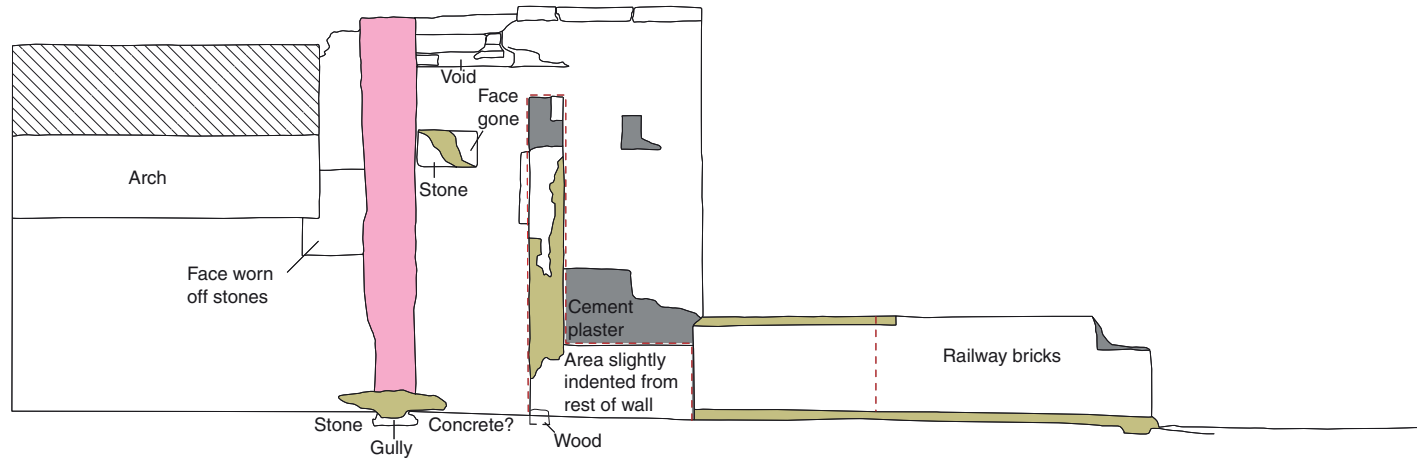


Figure 15: Gazebo bridge, south elevation of north channel








	Section through arch
	Reddish cement (Roman cement scored to match coursing)
	Concrete
	Wall changes at Oblique angle
	Cement infill



Figure 16: Gazebo bridge, north elevation of south channel

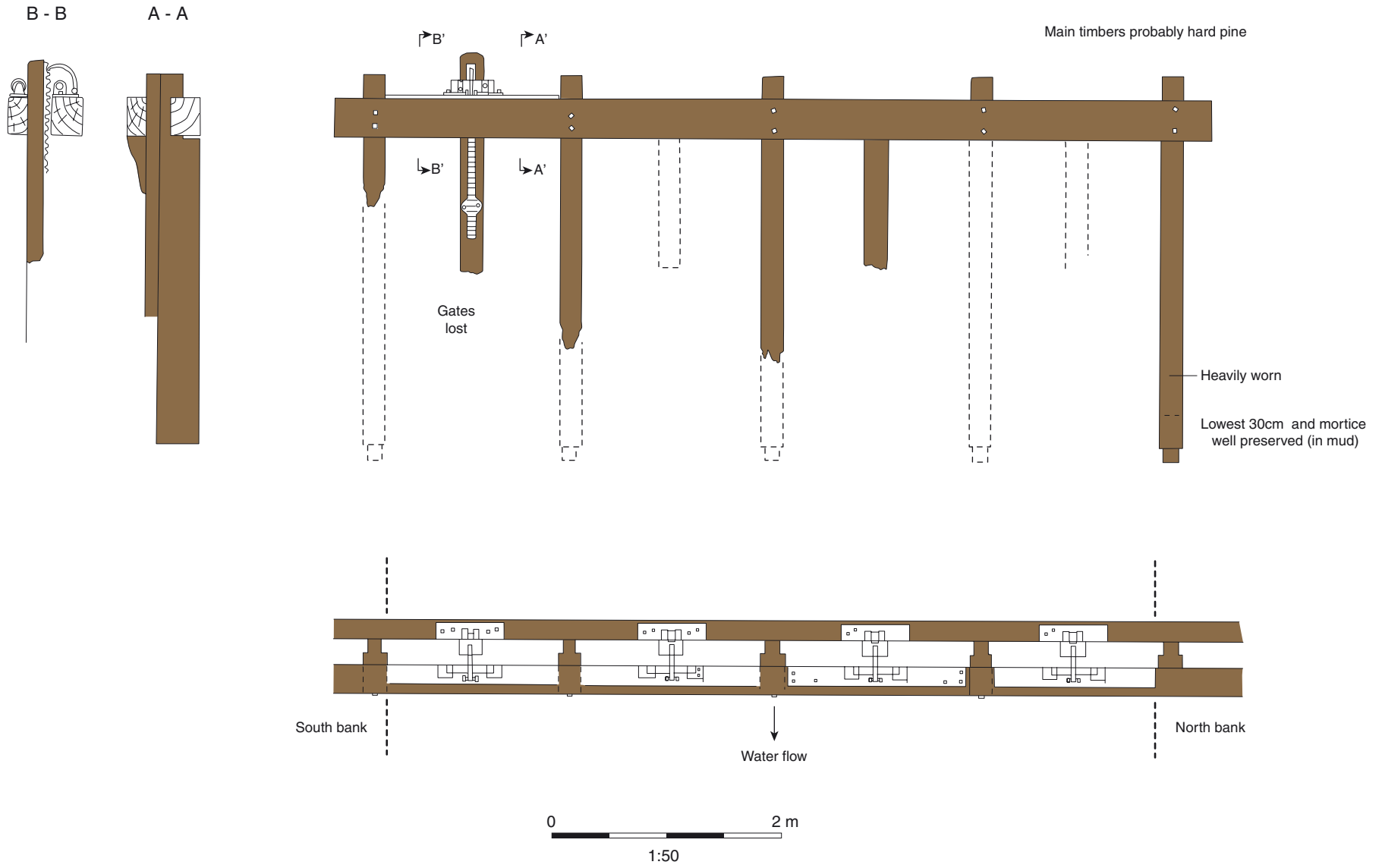


Figure 17: Abbey Mill bridge, ex-situ remains of sluice gates

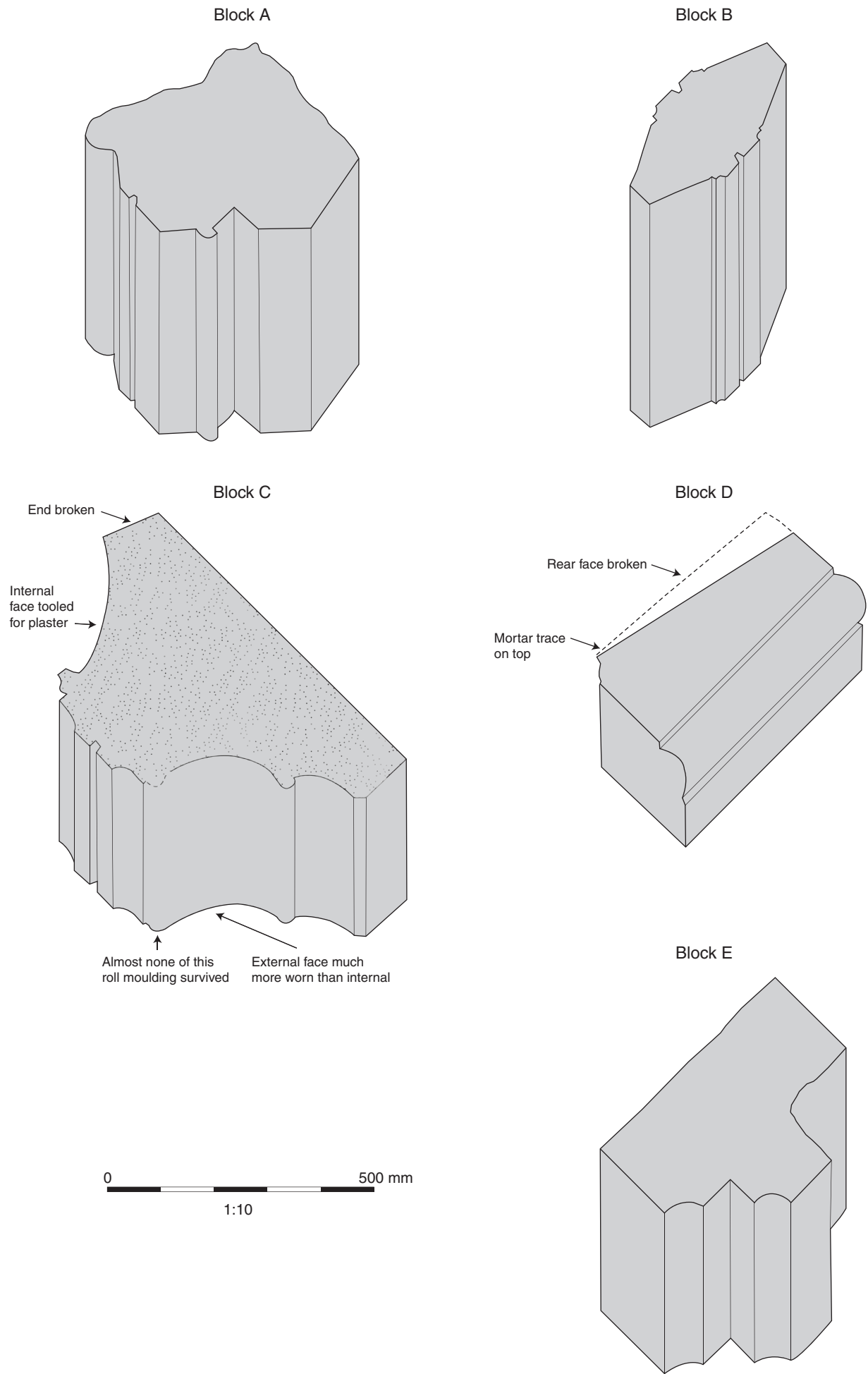


Figure 18: Ex-situ moulded stones recovered from pool beneath west park weir



Plate 1: West Park Weir general view prior to works



Plate 2: West Park Weir general view from south prior to works



Plate 3: West Park Weir general view from south prior to works



Plate 4: West Park Weir general view prior to works



Plate 5: West Park Weir general view prior to works



Plate 6: West Park Weir spillway detail prior to works



Plate 7: West Park Weir, detail of stonework to east of weir



Plate 8: West Park Weir detail of spillway before works



Plate 9: West Park Weir spillway before start of conservation works



Plate 10: West Park Weir top of wall to west of weir during dismantling



Plate 11: West Park Weir exposed masonry on east side of weir



Plate 12: West Park Weir exposed masonry on east side of weir



Plate 13: West Park Weir during works



Plate 14: West Park Weir, long east wall stretching south from weir



Plate 15: West Park Weir section of east wall



Plate 16: West Park Weir, east wall during works showing surviving block at base



Plate 17: West Park Weir base from earlier wall along east side



Plate 18: West Park Weir west wall during reconstruction with new concrete apron



Plate 19: West Park Weir spillway before reconstruction



Plate 20: West Park Weir, spillway and rebuilt west wing wall



Plate 21: West Park Weir, 1883 date stone on east wall



Plate 22: West Park Weir at end of conservation works



Plate 23: Island Weir, general view from SE prior to works



Plate 24: Island Weir, general view from SW prior to works



Plate 25: Island Weir, stonework at SE corner of weir



Plate 26: Island Weir, surviving stonework



Plate 27: Island Weir, surviving stonework looking south



Plate 28: Island Weir, detail of truncated weir prior to works



Plate 29: Island Weir, collapsed section of weir prior to works



Plate 30: Island Weir, general view looking north prior to work



Plate 31: Island Weir, lower spillway looking north



Plate 32: Island Weir, detail of stonework on west side of weir



Plate 33: Island Weir, scar on north wall from lost weir



Plate 34: Island Weir, surviving fragments of spillway against north wall



Plate 35: Island Weir, culvert by south-east corner of weir



Plate 36: Island Weir, view of north wall to west of weir



Plate 37: Island Weir, view of north wall



Plate 38: Island Weir, collapsed weir between upper and lower spillway



Plate 39: Island Weir, clay puddling between the upper and lower spillways



Plate 40: Island Weir, lower spillway



Plate 41: Island Weir, general view to north during works



Plate 42: Island Weir, general view to south during works



Plate 43: Island Weir, culvert portal in north wall



Plate 44: Island Weir, general view of rebuilt weir looking north-east



Plate 45: Island Weir, rebuilt weir from south-east



Plate 46: Island Weir, rebuilt weir from north-east



Plate 47: Gazebo Bridge, general view prior to works



Plate 48: Gazebo Bridge, view of channel to east



Plate 49: Gazebo Bridge, north wall



Plate 50: Gazebo Bridge, general view from north prior to work



Plate 51: Gazebo Bridge, ex-situ sluice gates



Plate 52: Gazebo Bridge, east end of north wall



Plate 53: Gazebo Bridge, central pier



Plate 54: Gazebo Bridge, southern wall



Plate 55: Gazebo Bridge, eastern part of southern wall



Plate 56: Gazebo Bridge, northern wall



Plate 57: Gazebo Bridge, general view from south-east



Plate 58: Gazebo Bridge, view of gazebo



Plate 59: Gazebo Bridge, floor detail within summer house



Plate 60: Gazebo Bridge, detail of summer house roof



Plate 61: Gazebo Bridge, bridge floor detail



Plate 62: Gazebo Bridge, decayed remains of sluice gates



Plate 63: Gazebo Bridge, general view after de-watering



Plate 64: Gazebo Bridge, north wall prior to works



Plate 65: Gazebo Bridge, general view prior to main work



Plate 66: Gazebo Bridge, general view from east prior to work



Plate 67: Gazebo Bridge, view from west during repairs



Plate 68: Gazebo Bridge, general view during conservation



Plate 69: Gazebo Bridge, detail of summer house corner



Plate 70: Gazebo Bridge, north wall during rebuilding



Plate 71: Gazebo Bridge, floor at SE corner



Plate 72: Gazebo Bridge, floor in southern channel beneath bridge



Plate 73: Gazebo Bridge, floor in northern channel beneath bridge



Plate 74: Gazebo Bridge, general view during works



Plate 75: Gazebo Bridge, view after conservation works



Plate 76: Gazebo Bridge, floor detail after removal of summer house



Plate 77: Abbey Mill Bridge, remains of deck to west of bridge



Plate 78: Abbey Mill Bridge, west parapet



Plate 79: Abbey Mill Bridge, date stone in butters on east face of bridge



Plate 80: Abbey Mill Bridge, south wall to east of bridge



Plate 81: Abbey Mill Bridge, east portals



Plate 82: Abbey Mill Bridge, ex-situ sluice gate structure



Plate 83: Abbey Mill Bridge, detail of ex-situ sluice gate structure



Plate 84: Abbey Mill Bridge, north wall to west of bridge



Plate 85: Abbey Mill Bridge, general view to south prior to works



Plate 86: Abbey Mill Bridge, north wall to east of bridge



Plate 87: Abbey Mill Bridge, new replica sluice gates installed



Plate 88: Abbey Mill Bridge, view from bridge after lake works



Plate 89: General view during top soil stripping for new channel



Plate 90: View of bypass channel looking east



Plate 91: View during construction of bypass channel looking west



Plate 92: South-eastern end of bypass channel



Plate 93: General view during re-profiling of river bank



Plate 94: General view during re-profiling of river bank



Plate 95: General view during re-profiling of river bank



Plate 96: Moulded stone retrieved from West Park Weir pool



Plate 97: Former section of wall retrieved from West Park Weir pool



Plate 98: Moulded stone retrieved from West Park Weir pool



Plate 99: Former section of wall retrieved from West Park Weir pool



Plate 100: Stone retrieved from Island Weir heavily worn by water flow



**Head Office/Registered Office/
OA South**

Janus House
Osney Mead
Oxford OX2 0ES

t: +44 (0) 1865 263 800
f: +44 (0) 1865 793 496
e: info@oxfordarch.co.uk
w: <http://thehumanjourney.net>

OA North

Mill 3
Moor Lane
Lancaster LA1 1GF

t: +44 (0) 1524 541 000
f: +44 (0) 1524 848 606
e: oanorth@thehumanjourney.net
w: <http://thehumanjourney.net>

OA East

15 Trafalgar Way
Bar Hill
Cambridgeshire
CB23 8SQ

t: +44 (0) 1223 850500
f: +44 (0) 1223 850599
e: oaeast@thehumanjourney.net
w: <http://thehumanjourney.net>



Director: David Jennings, BA MIFA FSA

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