

THE HA HA

PRIEST WOOD AND VICAR WOOD KEDLESTON HALL, DERBYSHIRE



Archaeological Evaluation and Walkover Survey on behalf of the National Trust

June 2016

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SUMMARY OF PROJECT DETAILS

OASIS ID:	Thejesso I -255360
TJC Project Code:	KHH16
Project Type(s):	Archaeological Evaluation Walkover survey
National Grid Reference:	SK 3040 4028 (centered)
County:	Derbyshire
District/Unitary Authority:	Amber Valley
Parish:	Kedleston
Elevation (above sea level):	c.125-130m
Designation Status(s):	Registered Park and Garden - Grade I (NHLE No.1311507)
HER Record No(s):	Derbyshire 21905
NT HBSMR	62036*0
Prepared by:	Oliver Jessop MClfA
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NON-TECHNICAL SUMMARY

A scheme of archaeological investigation has been undertaken to provide a greater understanding of the form and condition of the ha ha that forms the western boundary to the Pleasure Ground at the end of the Long Walk at Kedleston Hall in Derbyshire. The property forms part of the Derby Portfolio within the Midlands Region of the National Trust and it is centered on NGR SK 3040 4028.

The ha ha and associated Long Walk was a integral element of the garden and parkland that was conceived by Robert Adam in c.1759, although the scale of his intended design was reduced in size perhaps to fit with the existing form of the landscape. Surrounding this circular walk was a ha ha wall with a ditch, that formed a circuit 3.3km in length. The form of the ha ha still remains relatively intact having undergone extensive restoration by the National Trust between 1994 and 2004.

The western section of the ha ha comprises of a slight ditch and an earthen embankment with only occasional sections of low walling and exposed brickwork. It is this area that has been the focus of the investigations which have comprised of a walkover survey and the excavation of four evaluation trenches with a mechanical excavator. The excavations have revealed evidence for stone walling, foundations and an angled section of embankment faced in brick. Three different forms of construction have been identified, all of which differ from the extant standing sections of ha ha within the parkland at Kedleston Hall. It is possible that this section of the ha ha had an angled profile, although not enough survives to be certain, the stonework has been comprehensively robbed for reuse elsewhere.

To aid interpretation of the excavated features, a walkover survey of the whole of the circuit of the ha ha was undertaken, during which 27 different distinct sections of walling were identified. These demonstrate that the ha ha appears to have been built in a series of phases which is consistent with the documentary accounts and published history for the development of the estate. In addition, it is suggested that sections were constructed with different materials dependent upon how prominent they were within key vistas of the Hall.

It is recommended that, should the ha ha be restored, an intermittent archaeological watching brief is maintained to ensure that the correct alignment and ditch profile is achieved during any ground works.

I INTRODUCTION

BACKGROUND

This document describes a programme of archaeological investigation into the form and extent of the ha ha that surrounds Kedleston Hall and the associated Pleasure Grounds, Derbyshire (**Figure I**). It has been prepared for the National Trust, who own the site. The full length of the ha ha was examined in the form of a walkover survey, and four evaluation trenches were excavated across collapsed sections in the parkland to the west of the house.

AIMS

The aims of these investigations have been to identify and record the structural remains of the ha ha and its boundary ditch, or fosse (**Figure I**). A Conservation Management Plan (HTLA 2015) has examined the historical development of the ha ha, making recommendations for its repair and reinstatement. Collapsed and overgrown sections of the ha ha are poorly understood and this phase of work has focused on these elements of the structure.

PRINCIPAL DELIVERABLES DERIVING FROM THIS WORK:

- To examine the extant sections of the ha ha to enable a comprehensive understanding of the form and size of the structure to act as a baseline for interpreting the collapsed sections;
- To excavate a series of archaeological trenches across the ha ha to establish its original alignment and form of construction;
- To establish the depth of any foundations;
- To establish the width and profile of the ditch/fosse in front of the walling.

DISSEMINATION

Copies of this report will be distributed to the National Trust, the Derbyshire Historic Environment Record (HER), and a digital copy will be uploaded to the OASIS (Online Access to the Index of archaeological investigationS) with the reference number: **thejessoI-255 360**.

MONITORING

Rachael Hall (NT Regional Archaeological Consultant) and Danielle Westerhof (NT Project Manager Kedleston Hall) have acted as monitors for this programme of archaeological investigation.



Figure 1: Location of Kedleston Hall

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2 SITE LOCATION AND BASELINE CONDITION

LOCATION OF SITE AND SETTING

The site is within the grounds and parkland that comprise Kedleston Hall, Derbyshire (**Figure 1**). The ha ha is a stone retaining wall that circumnavigates the gardens and hall, then extends as a double faced terrace on either side of a serpentine terraced walk, known as the Long Walk. At the western end of the Long Walk is an area of woodland known as Priest Wood (or Pleasure Grounds Wood). The walk continues through the woodland towards the south, before continuing along the southern shelter belt of trees, defined as Vicar Wood (**Figure 2**). The length of the ha ha is 3,300m.

In the HTLA Conservation Management Plan (2015) the open parkland is referred to as the Backgrounds (Character Area C), with the Long walk (Character Area B) circumnavigating it to the west and southwest, and the gardens to the south of the Hall are known as the Pleasure Grounds (Character Area A)

The excavation trenches were located in the parkland to the west of the house, centered on NGR SK 3040 4028.

DESIGNATION(S)

- The ha ha falls within the curtilage of both Kedleston Hall (Grade I – NHLE No.1311507) and the Church of All Saints (Grade I – NHLE No.1335331).
- The ha ha is within the boundary of the Registered Park and Garden (Grade I – NHLE No.1000451).

GEOLOGY

The underlying bedrock geology beneath the parkland at Kedleston Hall is the Tarporley Siltstone Formation - Siltstone, Mudstone and Sandstone. No superficial deposits are recorded (BGS Digital data 2016).

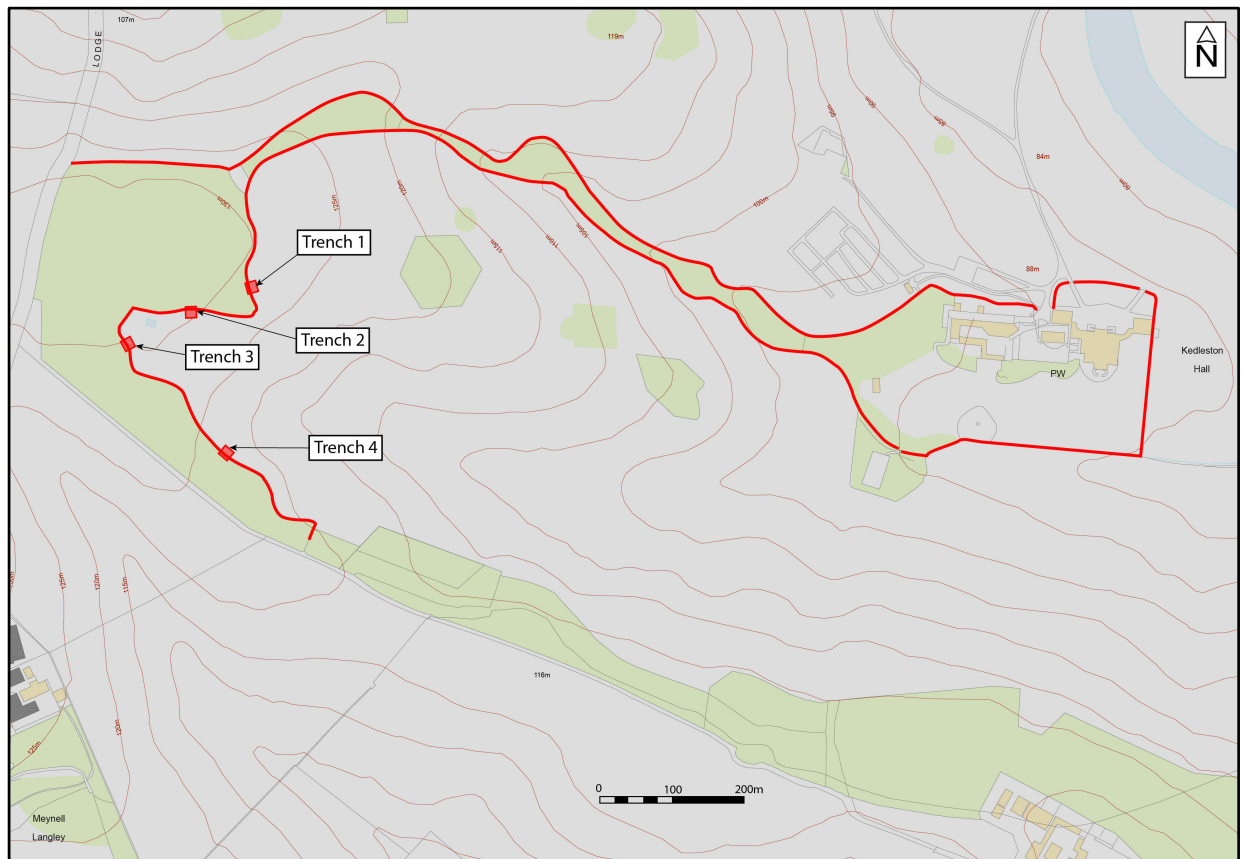


Figure 2: Extent of ha ha (red line) and location of excavation trenches

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3 METHODOLOGY

INTRODUCTION

This programme of archaeological investigation has comprised of three elements, which are detailed below:

- Review of previous work, research and analysis;
- A walkover survey of the extant fabric that comprises the ha ha to understand its form and method of construction - documented as a gazetteer **Appendix 4** and with digital photography **Appendix 3**;
- The excavation of four evaluation trenches across collapsed sections of ha ha to the west of the hall (see **Figure 2**).

LIMITATIONS

The scope of this report has principally focused upon the collapsed sections of the ha ha, which represents only a very small section of the structure. It should be noted that it was originally intended to excavate five trenches, however due to the proximity of badger activity a trench in the southwest of the Pleasure Grounds was abandoned and not excavated.

The scope of the report is limited to:

- Review of relevant archive and documentary material;
- An overview of previous surveys of the ha ha by Nick Cox Architects and HTLA;
- A visual inspection of the complete length of the ha ha (apart from an area marked 'Private' to the southwest of the hall);
- The excavation of four evaluation trenches with a small mechanical excavator;
- The preparation of this report.

NOMENCLATURE

The terminology used throughout this document has been derived from existing names and descriptions associated with Kedleston Hall. Additional descriptions are based upon an assessment of the current and historic character of the site.

FIELDWORK

The excavation of the archaeological trenches was undertaken on the 4th May 2016, followed by an inspection of the remaining sections of the ha ha on the 13th May 2016 by Oliver Jessop MCIfA.

ARCHAEOLOGICAL METHODOLOGY – EVALUATION TRENCHES

All fieldwork has been undertaken in accordance with a guidance prepared the Chartered Institute for Archaeologists (CIfA 2014).

The trenches were photographed prior to any excavation commencing, following removal of the stock fencing by the Ranger team at Kedleston Hall. Each trench was cut with the aid of a mechanical excavator with a toothless ditching bucket (1m in width). The trenches were numbered consequently from **Tr1** to **Tr4**.

A standard single context recording sequence was adopted within each trench (see Appendix 1).

Once the upper level of any archaeological, or structural remains were identified, the area was cleaned by hand to expose the form and extent of any walling associated with the ha ha.

Site records comprised of individual trench records sheets, accompanied by digital photographs (captured as both .jpeg – c.2 megapixel size, and .Raw files – c.18 to 20 megapixel size). The photography allowed for a general record of each area of the ha ha to be documented, along with detailed record shots of the completed excavation.

Additional site records produced as written observations, sketches and notes are incorporated within the site archive deposited with the NT Midlands Region.

4 UNDERSTANDING THE SITE - HISTORY

INTRODUCTION

This section of the report presents a summary history of the development of the ha ha at Kedleston. It has been compiled from a variety of sources, in particular the Conservation Management Plan prepared by Hillary Taylor (HTLA 2015) and the archaeological survey of the parkland by ArcHeritage (2013). Copies of relevant historical sources are included as **Appendix 2**.

HISTORICAL SUMMARY

The parkland that surrounds Kedleston Hall had its origins in a design by Charles Bridgman, the King's Gardener. In the 1740s the landscape was adapted from the formality of the early 18th century layout in a Picturesque style, with broad lawns and a ha ha to the south. Following the inheritance of the estate by Nathaniel Curzon in 1758, Robert Adam was taken on in 1759-60 to complete the rebuilding of the Mansion which had been started by the architect James Paine. Adam also appeared to have continued to adapt the setting to this new house, demonstrated by a sketch for a new pleasure ground, c.1759 (**Appendix 2.1**).

The first stretch of the Long Walk, comprising the retaining walls (ha ha) and embankment, is assumed to have been built by c.1760, possibly as far as the south-western extent of the path in Priest Wood (near the modern reservoir) (**Appendix 2.2**; HTLA (2015, 113). The sketch by Adam was never fully realised as a design, however it is clear that the function of the walls was to lift and separate the walk from the pastures to north and south. The building accounts from 1760 detail that work was being undertaken to cut and lay turf, dig a fosse (ditch) and walling with copings laid, mostly likely associated with the construction of the Long Walk.

A second survey of the estate by George Ingman, dated 1764 (**Appendix 2.3**), illustrates the basic layout of the landscape which exists today, and represents landscape features that were already implemented and projected elements incorporating elements of the Long Walk as envisaged by Robert Adam.

The walk was intended to be interspersed with ornamental garden buildings, seats and views out into the surrounding landscape down to the hall and over the lakes to the north, although not all of these 'incidents' were implemented on the ground. The form of the Long Walk has been maintained by successive owners of Kedleston Hall, as illustrated on the 1881 OS map (**Appendix 1.4**). Interestingly, the continuation of the path through Priest Wood is not depicted, possibly indicating that by this date a circular walk was either no longer maintained, or that it was a meandering woodland path.

5 UNDERSTANDING THE SITE – EXCAVATION TRENCHES

INTRODUCTION

This section of the report presents the results of the four archaeological excavation trenches. To accompany the written description a series of drawings have been prepared (**Figure 3**) and colour photographs are included as **Appendix 3**.

TRENCH 1 (NGR SK 30342 40360)

Tr1 measured 1m x 6m and was orientated west-east (**Figure 2**). Prior to the excavation, no traces of any masonry were visible and the course of the ha ha was denoted by an earthen bank c.1.5m in height and with a gently curved profile (**Appendix 3.1**).

Following removal of the topsoil **I01** a section of revetment stonework **I03** was exposed c.0.6m in height that continued across the width of the trench (**Appendix 3.2**). Above this walling no traces of stonework were noted. It is suggested that any upper stone is likely to have been removed for re-use elsewhere as only a small amount of loose stone was recorded at the base of **I03**. The wall comprised of roughly coursed stones, or irregularly cut blocks, forming a slightly angled or battered face. No traces of bonding material such as mortar were noted. Occasional fragments of red brick were inserted in the stonework (**Appendix 3.3**). This section of the ha ha had no foundation, with the lowest courses embedded directly into the clay bank **I02** to the rear.

In front of the ha ha the ground level gently sloped to form a ditch c.3.2m in length, with a 0.65m flat bottom **I04** (**Appendix 3.4**).

TRENCH 2 (NGR SK 30277 40338)

Tr2 measured 1m x 5m and was orientated north-south (**Figure 2**). Prior to the excavation sections of brickwork **203** (**Appendix 3.5**) were recorded that formed an external face to the ha ha that was 1.3m in height with an angled profile.

Once the vegetation from the brickwork had been cleaned back and the topsoil **201** within the ditch excavated, the ha ha was found to comprise of an angled brick wall **203** (**Appendix 3.6**), with a vertical face 1.05m in height. The brickwork was not bonded with mortar and appeared to be set within the clay bank **202**, with a random pattern mainly comprising of stretcher courses. The bricks were handmade and orange in colour, each measuring 23-24cm x 11cm x 6cm. No foundation course, or footings were recorded.

At the base of the brick walling the ground level gently sloped to form a ditch **204** c.4m in length, **204** (**Appendix 3.7**).

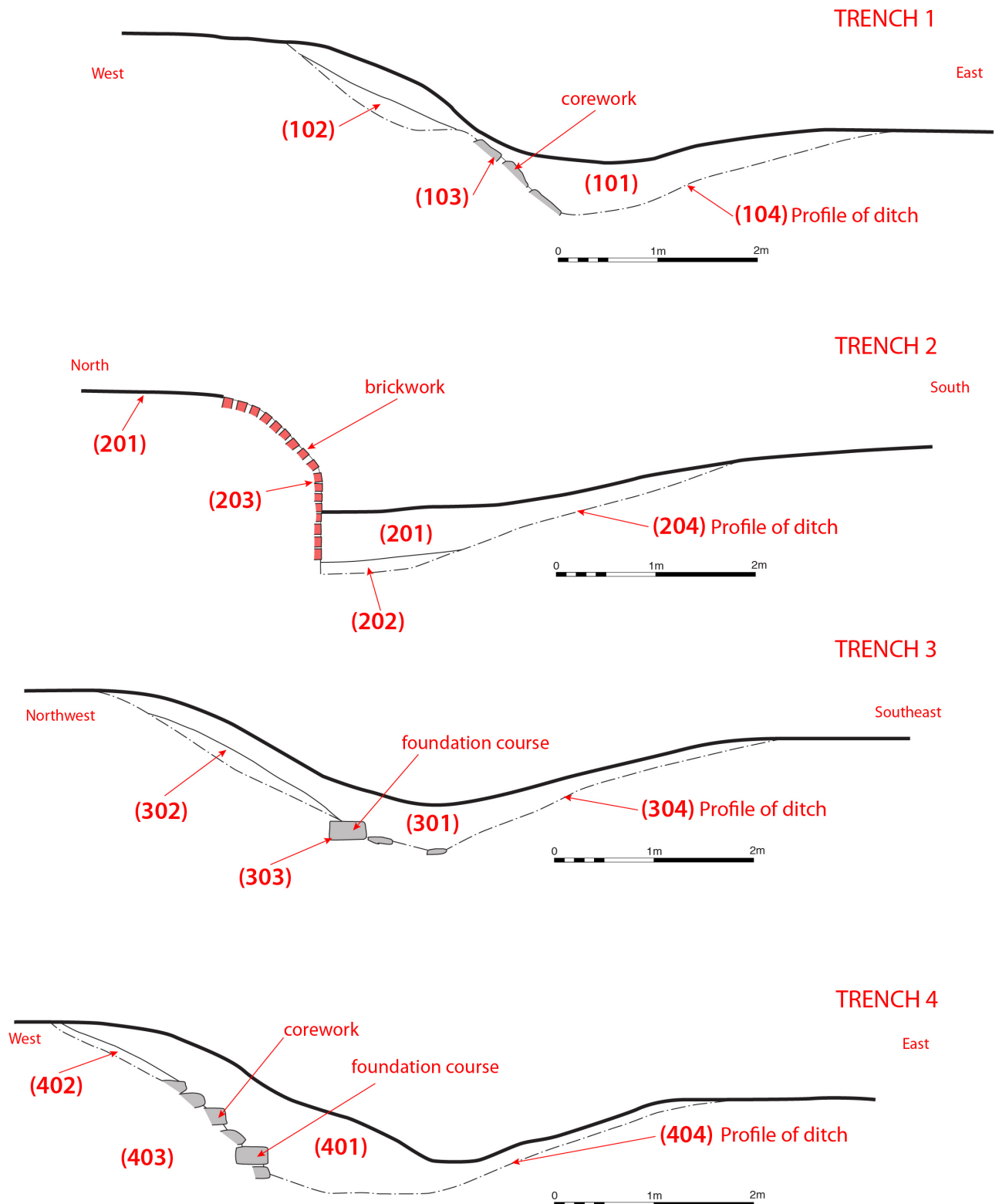


Figure 3: Profiles of excavated sections of ha ha (Tr1-Tr4)

TRENCH 3 (NGR SK 30205 40305)

Tr3 measured 1m x 6m and was orientated northwest-southeast (**Figure 2**). Prior to the excavation no traces of any masonry were visible and the course of the ha ha was denoted by heavily vegetated earthen bank c.1.7m in height, with a steeply angled profile (**Appendix 3.8**).

Following removal of the topsoil **301** only a single course of stone was found at the base of the trench **303** (**Appendix 3.9**). This course is interpreted as a wall foundation, however very few traces of stone, or brick were noted during the excavation and it is assumed that the former wall face of the ha ha has been completely removed for use elsewhere. The foundation course was set within the clay bank **302** (**Appendix 3.10**), and no bonding material was present.

In front of the ha ha the ground level sloped upwards to form a ditch **304** c.3.5m in length, with a slightly angled base 0.4m in width (**Appendix 2.11**).

TRENCH 4 (NGR SK 30301 40195)

Tr4 measured 1.8m x 6.6m and was orientated west-east (**Figure 2**). Prior to the excavation, a small area of masonry was visible, obscured partially by vegetation. The ha ha comprised of a steep bank c.1.8m in height, with a steeply angled profile (**Appendix 3.12**). The initial cut of the trench (southern side) contained no stonework, nor was any evidence for the ha ha observed, so the trench was extended 0.9m to the north (**Appendix 3.13**).

Following removal of the topsoil **401** in the northern half of the trench, two offset foundation courses of horizontally bedded stone were exposed **403** (**Appendix 3.14**), with an angled section of corework above, approximately 0.8m in height. It is suggested that there was originally a stone wall face above this corework, although this has been removed. The stonework was set within the clay bank **402** and no bonding material was present.

In front of the ha ha the ground level sloped upwards to form a ditch **404** c.3.9m in length, with a flat bottomed base 1.1m in width (**Appendix 3.15**).

MATERIAL CULTURE

During the excavations no items of discarded material culture were observed. Built elements comprised of roughly worked blocks of squared sandstone masonry and handmade 'frog-less' bricks, indicative of an 18th century date.

6 UNDERSTANDING THE SITE – EXTANT SECTIONS OF HA HA

INTRODUCTION

This section of the report presents a summary overview of the whole of the ha ha that circumnavigates Kedleston Hall, the gardens and Pleasure Grounds. The wall was examined in the form of walkover survey, the results of which are presented as a gazetteer as **Appendix 4** and on **Figure 5**.

It should be noted that a detailed analysis of the overall condition of the ha ha has been previously undertaken by Nick Cox Architects in 2008 as part of their Quinquennial inspection of Kedleston Hall. A summary of the results of this survey are incorporated within the Conservation Management Plan (HTLA 2015, section 5.222 (pp349-361) and section 5.3.2.1 (pp410-428) to which reference should be made. Nick Cox Architects divided the ha ha into sections to specify appropriate repairs, making use of a consecutive numerical sequence. For ease of reference and in order to prevent duplication or confusion, during this examination of the ha ha the wall has been subdivided into constructional segments with the identifiers **A-AA**. Within the gazetteer in **Appendix 4**, cross reference is also made to the numbers adopted by Nick Cox Architects.

It should also be noted that the extant masonry and brick sections of the ha ha have previously undergone a programme of maintenance and rebuilding as appropriate. This work was initially undertaken between 1994 and 2004 by the National Trust (see **Figure 4**), with subsequent repairs still in progress following the 2008 Quinquennial Inspection.

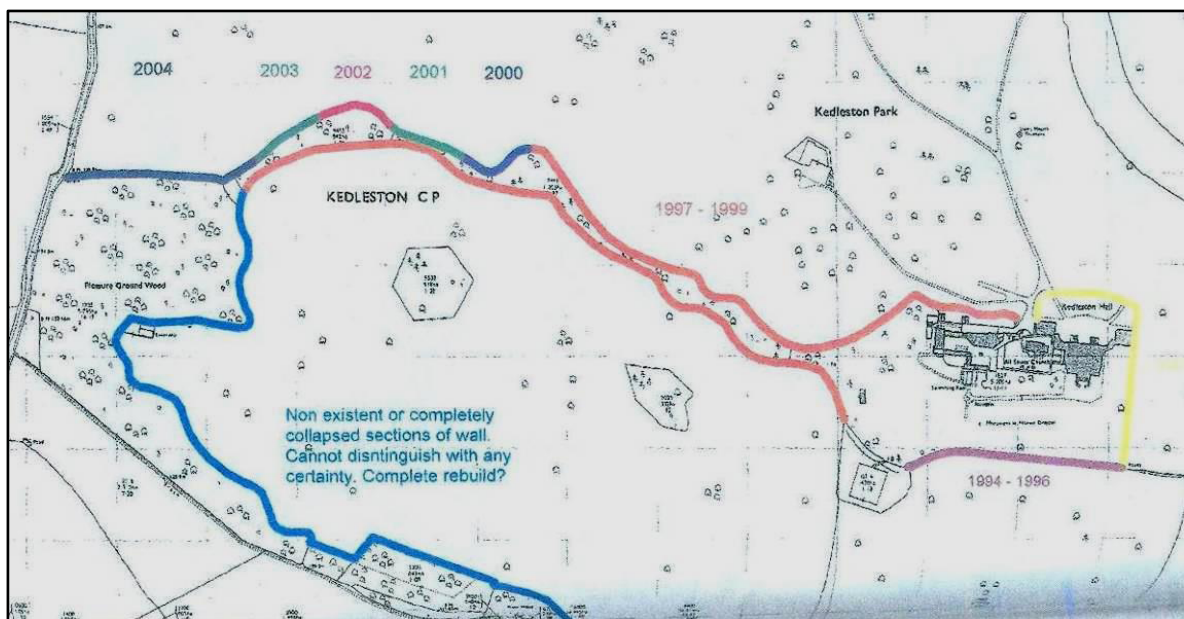


Figure 4: Location of repairs undertaken by the National Trust (after HTLA 2015, Fig.5/48)

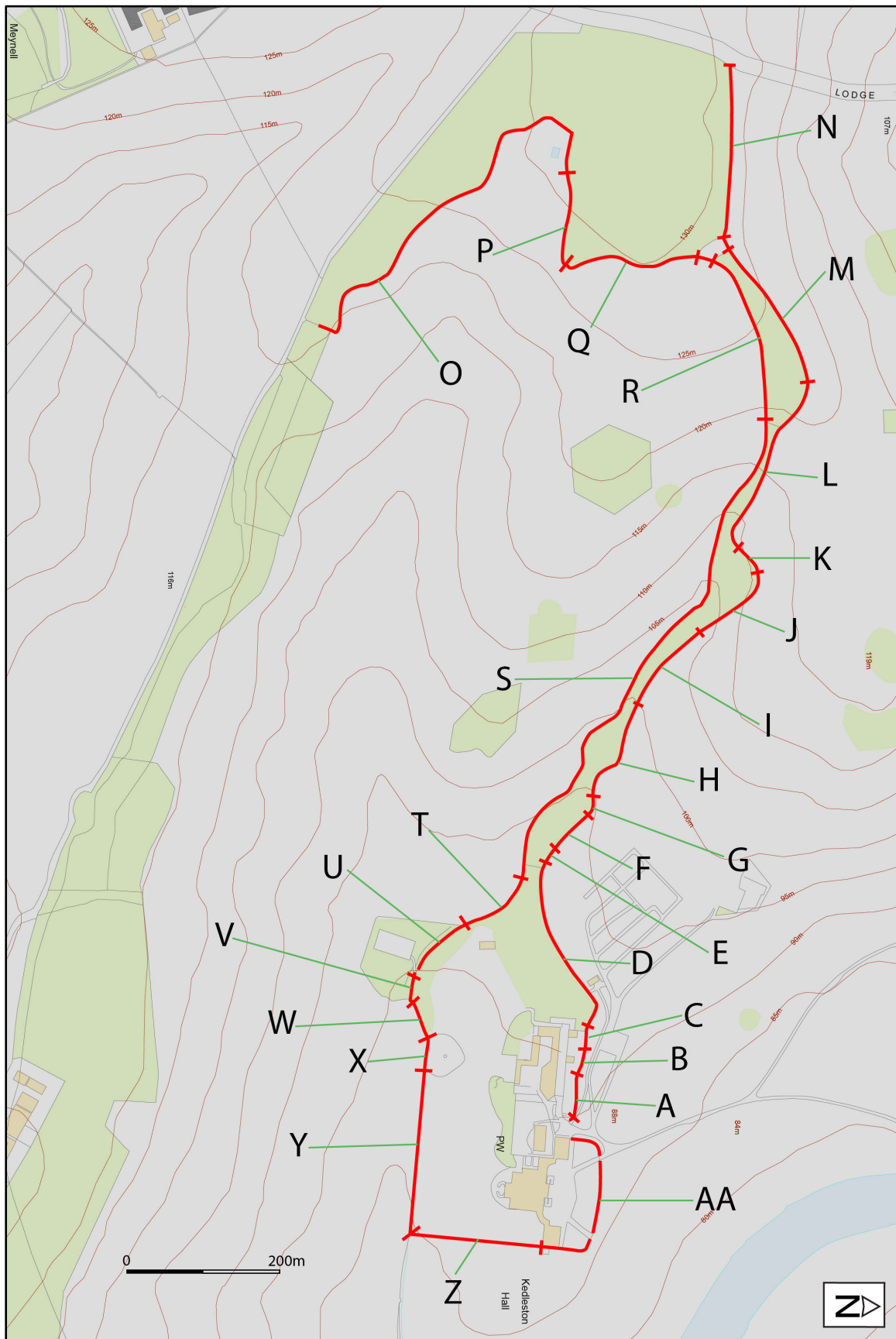


Figure 5: Location of constructional segments of ha ha (A-AA)

CONSTRUCTIONAL SEGMENTS

This survey has identified a total of 27 individual phases, or elements of construction. Some are likely to reflect stages in the rebuilding programme of the ha ha undertaken by the National Trust between 1994 and 2004. It is assumed that, where walling had collapsed, it was rebuilt into the ha ha and thus the current appearance does reflect elements of the former character of the structure.

The ha ha is built in a range of styles, but characteristic features comprise of a vertical, or near-vertical wall face c.1-1.9m in height (see **Segments A, D, G, K, S**); although the majority of the ha ha is between 1.1m to 1.5m (see **Segments L, T, U, W**). The wall is constructed from a mixture of sandstone blocks of differing size, some being cut ashlar (**Segments B, S**), whilst others are irregular and unworked (**Segment I, R**). Handmade brick is also used in places along the length of the ha ha (**Segments U, V, X, Y**). Perhaps some being re-used after the demolition of the earlier house and ancillary buildings at Kedleston. The treatment of the top of the wall also varies, making use of rounded copings (**Segments A, B, V**), long flat copings (**Segments D, E, S**), bricks laid as a soldier course (**Segment M, Y**), or no copings at all (**Segment I, R, W**).

The exact nature of construction of the Long Walk is unknown, but the detail depicted on the c.1759 illustration (**Appendix 1.2**) does indicate that a raised embankment was the intended design of the walks as sketched by Robert Adam. The area of walling to the southwest of the Hermitage, approximately midway along the Long Walk, is undergoing rebuilding work which has provided the opportunity to examine the construction of the ha ha in this location (**Segment S**). Interestingly the wall is only one stone thick, with no obvious means of securing, or tying the fabric back into the earth embankment. There is no substantial foundation, but the slight angled face may have been intended to counteract the outward thrust of the earth.

The general character of the ha ha is such that brick is used in proximity of the Pleasure Gardens to the south and east of the Hall, with ashlar walling being used for extensive sections of the Long Walk, in particular along the south edge, and more random rubble mixed with brick in the far western areas. This choice of different materials is likely to be as a result of different dates of construction, and the associated costs. During the late 18th century brick was cheaper than cut stone. The use of closely jointed ashlar walling would have demonstrated the wealth and status of the family and may have been deliberately used in those areas where it would have been most visible to visitors. Examples are along the north section of the stable yard (leading towards the current car-park), in front of the entrance forecourt to the Hall and also along the south elevation of the Long Walk. It is suggested that with some of the principal vistas of the Hall being from Vicar

Wood, there may have been a deliberate desire to create an impressive looking ha ha along this stretch of the Long Walk, which is 540m in length (**Segment S**).

The brick walling to the south and east of the Hall is good quality workmanship (**Segments Y, Z**), but does appear to be extensively rebuilt at various stages throughout the 20th century. It is also along this part of the Pleasure Gardens that the grass lawn is cut to form a tight edge with the ha ha. In contrast, along the Long Walk shrubbery has made the ground surface uneven, creating a different effect within the garden landscape. Along the stretch to the edge of the flower garden (**Segments V**) rounded ashlar copings have been used, similar to those along the northeast section (**Segments A, B, C**), which may be indicative of a phase of development or alteration of the garden area.

There are two sections of the ha ha that are notably different in character; the north boundary to Priest's Wood and the eastern edges that continue along Vicar Wood to the south. The northern section of ha ha has the general appearance of a drystone field wall built in a traditional style, but in the form of a retaining wall. The ditch along this section is deep and cut at a gradient where the wall is obscured when viewed from further down the slope to the north. It can therefore be suggested when the wall was constructed, it was considered to be important that the wall should blend into the parkland becoming invisible from the entrance gate to the north.

The section of ha ha that has been examined by the excavation of the archaeological evaluation trenches is perhaps the most poorly understood in terms of the development of the Long Walk. The existing edge to the woodland is defined by a steep bank, c.1.3-1.6m in height with only occasional sections of brickwork, or stone walling (**Appendices 3.1, 3.5, 3.8, 3.12**). Interestingly, although archaeological excavation has identified extant sections of stone or brick facing (**Appendices 3.3, 3.6**) and a foundation course of stone (**Appendices 3.10, 3.14**), it remains unclear whether this section was ever completed once the embankment and foundations were in place; or if it was completed in stages reflecting the three different constructional styles recorded in the excavations, after which the stonework, or brick facings were almost completely removed (robbed) for use elsewhere.

It has been discussed earlier in this report that the existing angled slope that defines the ha ha may have resulted from the gradual collapse of the earth bank following the removal of stone that formed a vertical wall. However, it may be the case that, as the brick section of the ha ha in **Tr2** has an angled profile (**Appendix 3.7**) and that the section of in-situ walling in **Tr1** (**Appendix 3.4**) follows the angle of slope, it is possible that this section of ha ha was also intended to have an angled profile. Whilst highly unusual as a design of ha ha, this may be linked to the earthwork ditch in adjacent woodland (**Appendix 2.5**). This ditch forms the north edge to

the Long Walk, which indicates that the treatment of this part of the Long Walk was notably different from the outset when compared to the raised terrace leading westwards from the Pleasure Gardens around the Hall.

7 CONCLUSION AND RECOMMENDATIONS

SUMMARY OF RESULTS

This programme of archaeological investigation of the ha ha that circumnavigates Kedleston Hall and the Pleasure Grounds has established that the ha ha has a total of 27 different distinct sections of walling (**Figure 5**).

The excavation of the western part of the ha ha in four locations (**Tr1-Tr4**) has successfully identified three different methods of construction. The two trenches along the southwestern edge of the Pleasure Grounds (**Tr3-Tr4**) were of a similar construction, with a stone foundation course set into the natural clay ground surface (**Appendices 3.9, 3.13**), and which had been re-profiled to form an embankment, or terrace walk. The lack of substantial amounts of facing stones is indicative of stone robbing. It is however, unclear whether the ha ha had a vertical face along this section, although once the walling had been removed the effect of natural erosion on any unsupported earth face would have gradually collapsed into the ditch. The construction of the ha ha along the northwest part of the ha ha (**Tr2**) is unlike any other section at Kedleston, which has an angled profile formed from handmade bricks (**Appendix 3.7**).

The ditch or fosse at the base of this eastern section of ha ha has an angled profile 3.5-4m in length, that appears to incorporate a flat base, c.0.4-0.6m wide.

Resulting from this archaeological investigation of the ha ha, it would appear that there is no single style of walling technique. The use of both irregular and ashlar cut blocks of sandstone, with and without flat copings and the intermittent use of brick, demonstrates that the ha ha was built over numerous phases which is consistent with the documentary accounts and published history for the development of the estate.

RECOMMENDATIONS

It is recommended that, should the ha ha be restored, an intermittent archaeological watching brief should be maintained to ensure that the correct alignment and ditch profile is achieved during any ground works.

8 SUPPORTING INFORMATION

AUTHORSHIP

This report has been prepared by Oliver Jessop MClfA. Editing has been provided by Manda Forster PhD MClfA.

ACKNOWLEDGEMENTS

Danielle Westerhof, Rachael Hall, Simon McCormack and the Kedleston Ranger Team are thanked for arranging access, and for providing background information regarding the ha ha.

SOURCES AND REFERENCES CONSULTED

PRIMARY SOURCES CONSULTED: VISUAL RECORDS

- c.1759: Sketch for the Pleasure Gardens, sepia ink and watercolour, (attrib.) Robert Adam
- 1764: George Ingman, Survey of Kedleston Estate
- c.1920s: Plan of curvilinear fosse to the west of ha ha in Priest Wood
- Ordnance Survey map editions: 1881, 1914
- British Geological Map of Britain (digital data), 2016

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INTERNET RESOURCES

- ADS: www.archaeologydataservice.ac.uk
- British Geological Survey: www.bgs.ac.uk
- Heritage Gateway: www.heritagegateway.org.uk
- National Archives: www.discovery.nationalarchives.gov.uk
- National Heritage List: www.english-eritage.org.uk/professional/protection/process/national-heritage-list-for-england/

Appendix I: Summary of Archaeological Contexts

INTRODUCTION

During the excavation of the four trenches separate context numbers were allocated for exposed features, layers and deposits. A description of the excavation is discussed in **Section 5** of this report and their context summaries are listed below:

CONTEXT SUMMARY

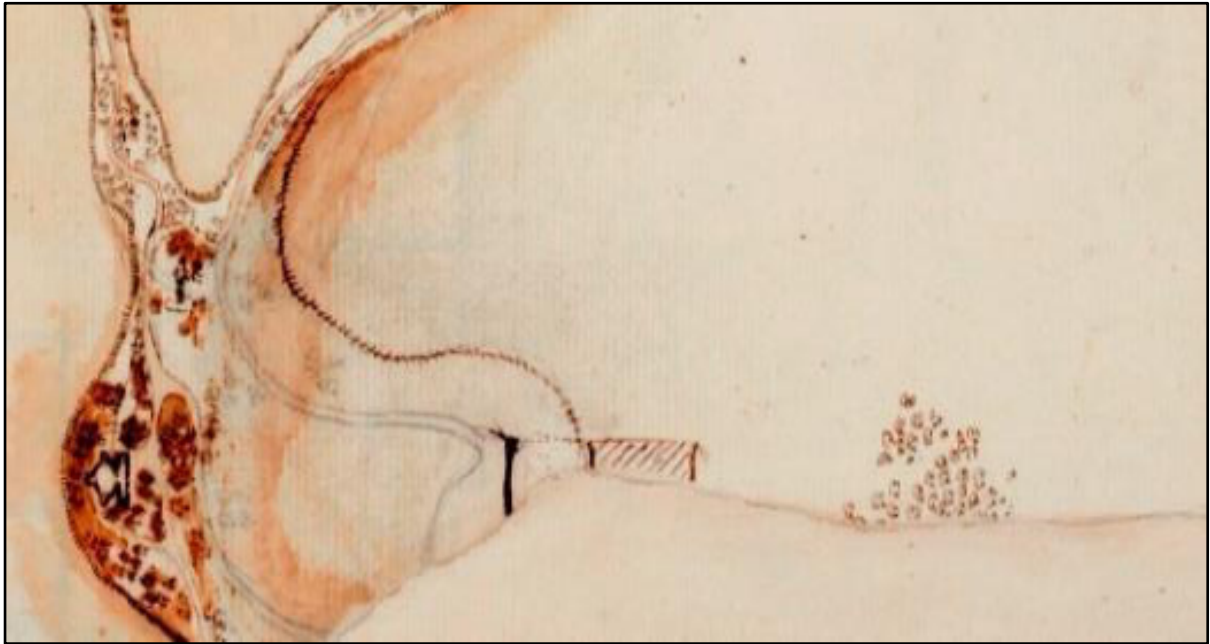
Context	Type	Description	Material Culture
		TRENCH 1 (west - east)	
101	Layer	Topsoil and general vegetation	n/a
102	Layer	Red clay embankment	n/a
103	Structure	Revetment wall (mainly stone, with occ. brick)	n/a
104	Feature	Sloping ditch below 101	n/a
		TRENCH 2 (north - south)	
201	Layer	Topsoil and vegetation	n/a
202	Layer	Clay embankment	n/a
203	Structure	Revetment wall face comprised of bricks	n/a
204	Feature	Sloping ditch below 201	n/a
		TRENCH 3 (northwest - southeast)	
301	Layer	Topsoil and vegetation	n/a
302	Layer	Red clay embankment	n/a
303	Structure	Horizontal coursed foundation of wall	n/a
304	Feature	Sloping ditch below 301	n/a
		TRENCH 4 (west – east)	
401	Layer	Topsoil and general vegetation	n/a
402	Layer	Red clay embankment	n/a
403	Structure	Revetment wall face comprising of irregular stones	n/a
404	Feature	Sloping ditch below 401	n/a

Appendix 2: Historic Mapping



Appendix 2.1: Extract from Sketch for the Pleasure Gardens, sepia ink and watercolour, c.1759 (attrib.) Robert Adam

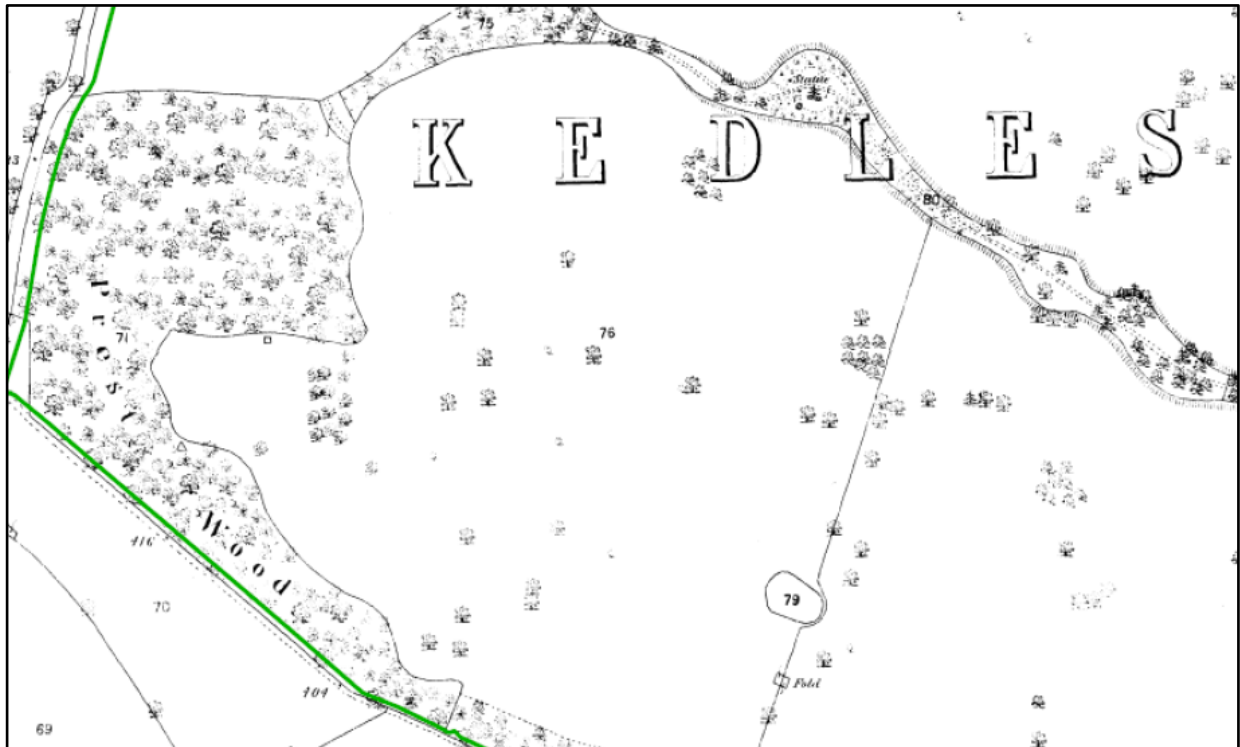
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Appendix 2.2: Detail of Adam's Sketch of the Pleasure Gardens, with cross-section showing ha ha
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Appendix 2.3: Extract from George Ingman's plan, 1764, the western half of the southern parkland
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Appendix 2.4: Extract from 1881 (1st Edition) OS map, 25"

OS map reproduced under Licence No.100056148. Ordnance Survey © Crown Copyright ©



Appendix 2.5: Plan c.1920s of curvilinear fosse to the west of ha ha in Priest Wood

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Appendix 3: Photographs



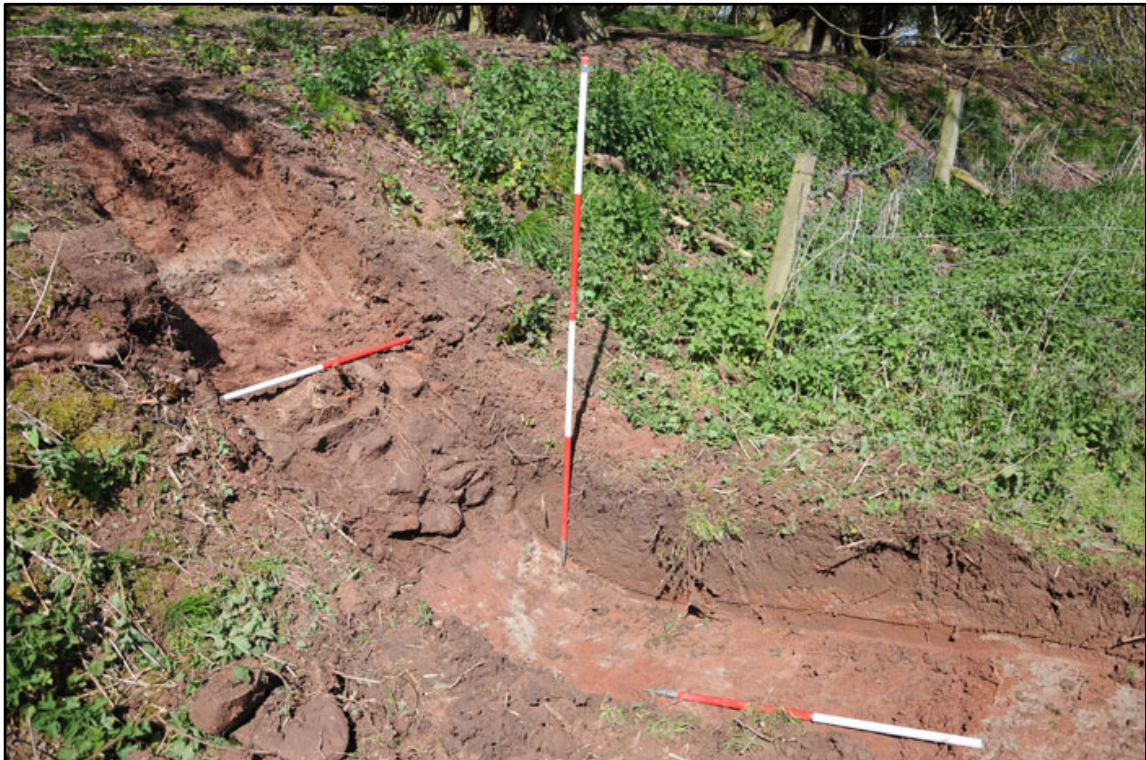
Appendix 3.1: General view of TrI prior to excavation, looking southwest (2m scale).



Appendix 3.2: General view of TrI with exposed ha ha walling, looking west (1m/2m scale).



Appendix 3.3: Detail of exposed ha ha walling in TrI, looking west (1m scale).



Appendix 3.4: General view of ditch profile in TrI, looking north (1m/2m scale).



Appendix 3.5: General view of Tr2 prior to excavation, looking northwest (2m scale).



Appendix 3.6: General view of Tr2 with brick walling of ha ha exposed, looking north (1m/2m scale).



Appendix 3.7: Detail of brickwork and bank profile in Tr1, looking north (1 m/2m scale).



Appendix 3.8: General view of Tr3 prior to excavation, looking southwest (1m/2m scale).



Appendix 3.9: View of excavated Tr3, looking northwest (1m/2m scale)



Appendix 3.10: Detail of single foundation course exposed in **Tr3**, looking south (1m scale).



Appendix 3.11: View of ditch profile in **Tr3**, looking west (1m/2m scale).



Appendix 3.12: General view of Tr4 prior to excavation, looking east (1m/2m scale).



Appendix 3.13: General view of Tr4 following excavation of trench, looking west (1m/2m scale).



Appendix 3.14: Detail of Tr4, looking west; note surviving section of coursed foundation stones (1m/2m scale).





Appendix 3.15: General view of ditch profile in Tr4, looking south (1m/2m scale).


Appendix 4:

Gazetteer of constructional segments of Ha Ha

Segment A	Description	Ditch
<p>Length = c.50m</p> <p>Nick Cox No.28</p> <p>NT repairs 1997-99</p>	<p>Vertical sandstone wall with roughly dressed and squared blocks, with large rounded coping stones with prominent tooling in short sections. c.1.5m high.</p> 	<p>Flat bottom with sloping bank, c.3m wide</p>


Segment B	Description	Ditch
<p>Length = 20m</p> <p>Nick Cox No.28</p> <p>NT repairs 1997-99</p>	<p>Vertical stone wall made from large ashlar cut blocks of sandstone, with long rounded sandstone copings (70-80cm in length). c.1.9m high.</p> 	<p>Flat bottom with sloping bank, c.4m wide</p>


Segment C	Description	Ditch
<p>Length = 21m</p> <p>Nick Cox No.28</p> <p>NT repairs 1997-99</p>	<p>Vertical wall comprising of irregular coursed roughly cut blocks of sandstone. Rounded copings. c.1.5m high. Sections rebuilt.</p> 	<p>Narrow bottom with sloping bank, c.4m wide</p>


Segment D	Description	Ditch
<p>Length = 185m</p> <p>Nick Cox No.27</p> <p>NT repairs 1997-99</p>	<p>Vertical sandstone wall comprising of roughly dressed and squared blocks, laid in irregular courses. Rebuilt central section with large sandstone blocks with modern cement. Similar in character to segment A. c.1.5-1.6m high.</p> 	<p>Flat bottom with rounded bank</p>


Segment E	Description	Ditch
<p>Length = 12m</p> <p>Nick Cox No.26</p> <p>NT repairs 1997-99</p>	<p>Vertical stone wall comprising of large (thick) sandstone blocs with a flat slab as a coping, c.1.45m high. Evidence for rebuilding with cement mortar. Inserted gate and access path and brick culvert.</p> 	<p>Short narrow ditch with sloping profile</p>

Segment F	Description	Ditch
<p>Length = 55m</p> <p>Nick Cox No.26</p> <p>NT repairs 1997-99</p>	<p>Slightly angled stone wall with long (replaced) sandstone copings. Walling stone is roughly coursed, but irregular in form and set in a pink cement mortar. c.1m high.</p> 	<p>Shallow ditch (waterlogged) with a steep bank</p>


Segment G	Description	Ditch
Length = 16m Nick Cox No.26 NT repairs 1997-99	<p>Vertical wall comprising of an irregular sandstone foundation using a mixture of cut and unworked stones. With an upper section formed from 11 courses of handmade brick with a sandstone coping. Rebuilt sections. c.1.2m high.</p> 	Shallow ditch, waterlogged with steep bank


Segment H	Description	Ditch
Length = 100m Nick Cox No.26 NT repairs 1997-99	<p>Vertical stone wall comprising of irregular widths of roughly cut sandstone blocks of differing sizes. Traces of mortar repointing. c.1.1m high. In places larger stone blocks form a top course.</p> 	Flat base with steep sloping bank, c.3m


Segment I	Description	Ditch
<p>Length = 120m</p> <p>Nick Cox No.26</p> <p>NT repairs 1997-99</p>	<p>Vertical stone wall comprising a mixture of cut ashlar blocks and roughly cut stones. c.1.2m high. In places a narrow stone course forms a coping. Rebuilt sections and two vertical joints noted.</p> 	<p>Narrow ditch with sloping bank, c.3.5m</p>

Segment J	Description	Ditch
<p>Length = 80m</p> <p>Nick Cox No.25/26</p> <p>NT repairs 1997-99</p>	<p>Vertical wall comprising of random coursed irregular cut sandstones, some roughly cut blocks. No coping. Brick course at base and sections of brick repair at top. c.1.3m.</p> 	<p>Narrow ditch with sloping bank, c.3.5m</p>


Segment K	Description	Ditch
<p>Length = 40m</p> <p>Nick Cox No.25</p> <p>NT repairs 2000</p>	<p>Vertical wall face (repaired) comprising of sections of brick and irregular coursed sandstone blocks. Traces of pink mortar. Reused architectural fragments. Sandstone copings.</p> 	<p>Narrow ditch with steep bank to accommodate hillslope</p>


Segment L	Description	Ditch
<p>Length = 190m</p> <p>Nick Cox No.24/25</p> <p>NT repairs 2001-02</p>	<p>Vertical wall comprising of irregular coursed sandstone blocks with stone copings. Sections of brick repair in upper courses. Sections rebuilt with brick. Lower courses contain narrow stone courses and wall appears to be extensively rebuilt. c.1.2m high. Inserted gate with brick reveals. Collapsed section with corework exposed.</p> 	<p>Narrow ditch with a steep bank c.4m</p>


Segment M	Description	Ditch
Length = 160m Nick Cox No.24 NT repairs 2002-03	<p>Slightly angled wall comprising a mixture of sections with the upper 10 courses of handmade brick, alternating header and stretcher courses. Occasional traces of lime mortar. c.1.3m high. Lower courses c.0.4-0.55m comprise irregular sandstone blocks.</p> 	Shallow bank and gently profiled ditch


Segment N	Description	Ditch
Length = 175m Nick Cox n/a NT repairs 2004	<p>Slightly angled stone wall, comprised of irregular coursed rough cut blocks of sandstone. End on blocks form a coping. The wall has the general appearance of a drystone field wall and is in good condition. c.1.3-1.4m high.</p> 	Steeply sloping bank conceals wall from lower down hillslope

Segment O	Description	Ditch
<p>Length = 410m</p> <p>Nick Cox n/a</p> <p>NT repairs n/a</p>	<p>Slightly curved bank (heavily vegetated), with occasional sections of irregular stone courses visible. c. 1.2-1.6m high (See Tr3, Tr4).</p> 	<p>Shallow base with sloping bank</p>

Segment P	Description	Ditch
<p>Length = 105m</p> <p>Nick Cox n/a</p> <p>NT repairs n/a</p>	<p>Brick faced wall with an angled upper section (heavily overgrown). Hand made brick, although in places the bricks have been removed and laid along the top of the ditch (See Tr2).</p> 	<p>Steeply sloping bank</p>

Segment Q	Description	Ditch
<p>Length = 135m</p> <p>Nick Cox n/a</p> <p>NT repairs n/a</p>	<p>Slightly angled wall comprising of irregular coursed stone and brick in random courses. The northern section has been rebuilt using a mixture of stone blocks, including architectural fragments. The southern section has no wall face and comprises of a steeply sloping bank (See Tr1).</p> 	<p>Gentle sloping bank (overgrown)</p>

Segment R	Description	Ditch
<p>Length = 175m</p> <p>Nick Cox No.23</p> <p>NT repairs 1997-99</p>	<p>Slightly angled stone wall face, c.1.2-1.4m in height. Walling comprises of irregular coursed sandstone with evidence for partial rebuilding with occasional slate packing and brick fragments. No coping stones.</p> 	<p>Narrow ditch and steep angle to bank, c.4m</p>


Segment S	Description	Ditch
<p>Length = 540m</p> <p>Nick Cox No.21-23</p> <p>NT repairs 1997-99</p>	<p>This is the longest and most substantial section of ha ha overlooking southwest parkland. It comprises of a slightly angled stone wall comprising of 5 courses of squared sandstone blocks with thin copings. c.1.4-1.7m high. Eastern section has 4-5 courses of handmade brick at the base acting as a foundation. Evidence for projecting metal fence at top to deter livestock.</p> 	<p>Narrow ditch with steep bank that opens out to a wider ditch in places</p>


Segment S	Description	Ditch
<p>See above</p> <p>See above</p>	<p>The wall is constructed as a single skin of masonry with a vertical earth face packed with loose stone chips.</p> 	<p>See above</p>


Segment T	Description	Ditch
<p>Length = 83m</p> <p>Nick Cox No.20,29</p> <p>NT repairs 1997-99</p>	<p>Almost vertical stone wall face comprising of irregular blocks of sandstone with herringbone surface tooling. Mortar repointing. c.1.1m high. No coping stone. There is an inserted (modern) gateway with stone reveals. Evidence for projecting metal fence stays at top to deter livestock.</p> 	<p>Flat ditch with steep bank</p>

Segment U	Description	Ditch
<p>Length = 66m</p> <p>Nick Cox No.30</p> <p>NT repairs n/a</p>	<p>Angled section of brick ha ha with a ashlar coping. c.1.1m high. Hand made bricks in irregular courses with lime mortar. Evidence for projecting metal fence stays at top to deter livestock (NO ACCESS).</p> 	<p>Broad ditch, gently sloping bank with stone bollards and chains</p>


Segment V	Description	Ditch
<p>Length = 31m</p> <p>Nick Cox No.30</p> <p>NT repairs n/a</p>	<p>Angled section of brick ha ha leading to a low bridge. Rebuilt lower section with stone and cement mortar. Copings are rounded sandstone blocks (NO ACCESS).</p> 	<p>Gently sloping ditch</p>

Segment W	Description	Ditch
<p>Length = 37m</p> <p>Nick Cox No.31</p> <p>NT repairs 1994-96</p>	<p>Vertical stone wall comprising of small block of coursed roughly squared stone. c.1.2m high. No coping stones and cement repairs.</p> 	<p>Gently sloping ditch</p>

Segment X	Description	Ditch
<p>Length = 31m</p> <p>Nick Cox No.31,32</p> <p>NT repairs 1994-96</p>	<p>Vertical brick wall with an offset sandstone coping. C.1.5m high, being raised from c.1.25m with a row of header bricks on edge. Irregular bond with a buff sandy mortar. Contains inserted brick culvert. Rebuilt ashlar section beneath pavilion.</p> 	<p>Narrow ditch with a steep bank</p>

Segment Y	Description	Ditch
<p>Length = 170m</p> <p>Nick Cox No.32</p> <p>NT repairs 1994-96</p>	<p>Ha ha along west side of gardens, forming rear prospect to the Hall. Comprises of a vertical brick wall face with no copings, but a row of header bricks forming an edge level with the grass lawn. c.1.35-1.75m in height towards the centre. Access door at south end and stone culvert. Possibly rebuilt with early 20th century bricks.</p> 	<p>Broad gently sloping ditch</p>

Segment Z	Description	Ditch
Length = 133m Nick Cox No.33 NT repairs n/a	<p>Vertical brick wall forming the southern edge to the gardens. Concrete base and largely rebuilt in mid 20th century bricks. c.2m high.</p> 	Steeply sloping bank, c.4m wide

Segment AA	Description	Ditch
Length = 160m Nick Cox n/a NT repairs n/a	<p>Section of ha ha that defines the principal entrance forecourt Kedleston Hall. Comprises of cut ashlar sandstone blocks with an offset coping forming a vertical face, topped with decorative railings. c.1.4m high.</p> 	Narrow ditch with a steep bank, c.3m wide