GUARD ARCHAEOLOGY

Newhailes Nurseries: Geophysical Survey
Data Structure Report
Project 3699

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Newhailes Nurseries: Geophysical Survey

Data Structure Report

On behalf of:	National Trust for Scotland
NGR:	NT 3256 7257
Project Number:	3699
Report by:	Christine Rennie
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Project Manager:	Bob Will
Approved by:	
Date:	17/01/2014

This document has been prepared in accordance with GUARD Archaeology Limited standard operating procedures.

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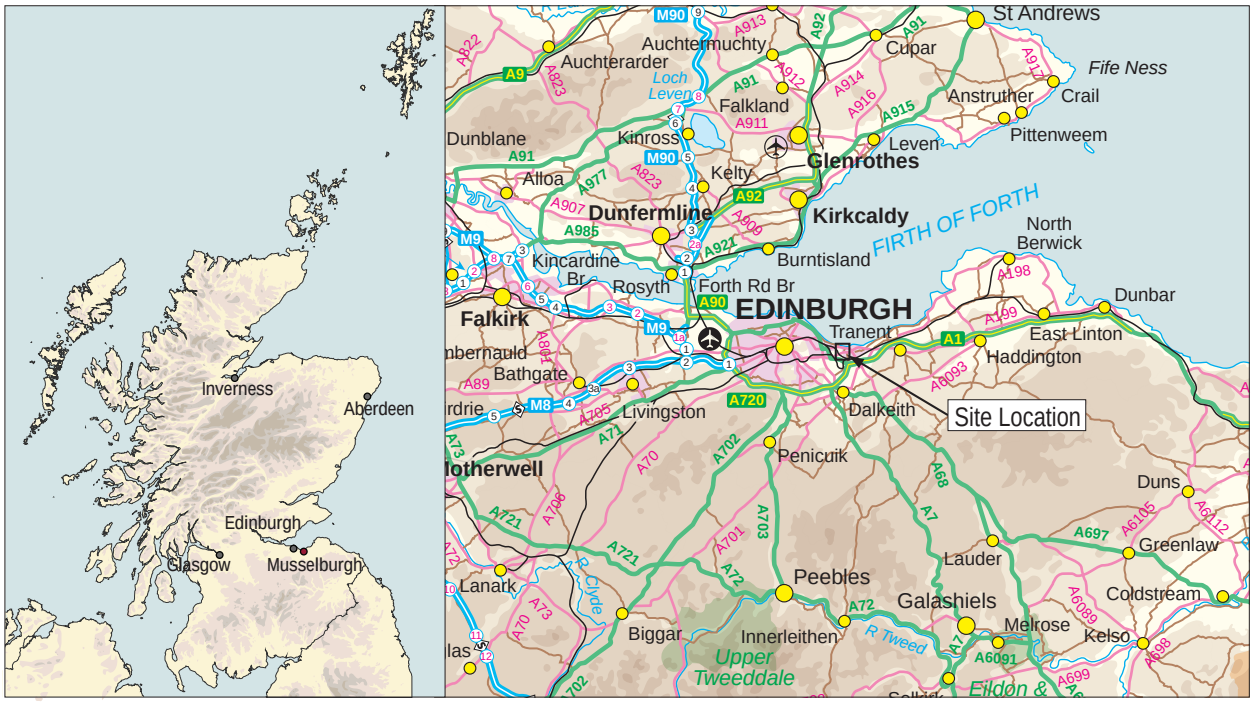

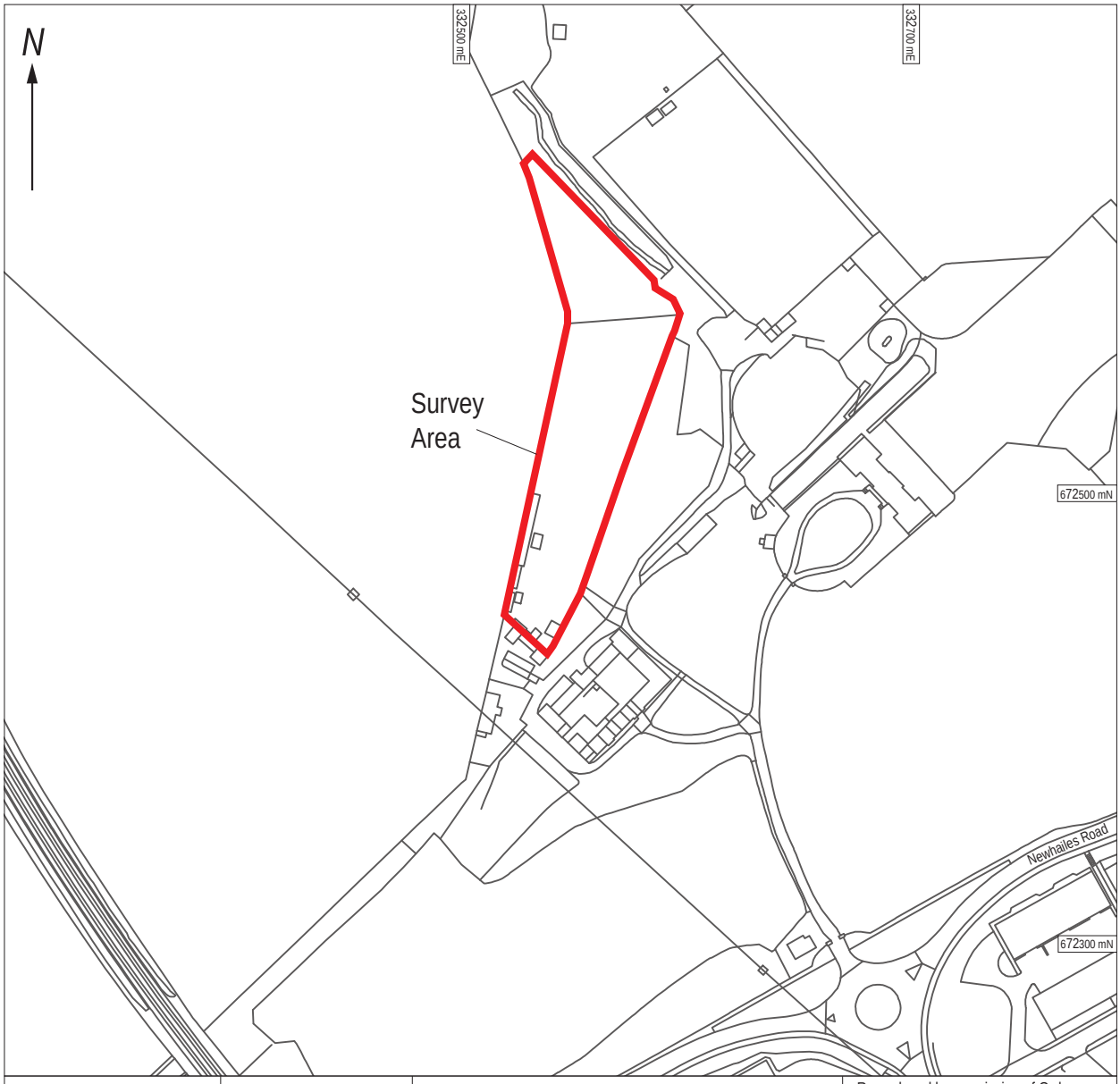

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Figure 1: Site location.

0 100 m

Executive Summary

1.1 In January 2014, GUARD Archaeology Ltd undertook a geophysical survey of the former kitchen garden at Newhailes, East Lothian on behalf of the National Trust for Scotland. The aims were to assess evidence for the past human use of the site, gauge its archaeological sensitivity and the potential impact of future development upon the archaeological resource.

1.2 The survey recorded part of a possible curvilinear enclosure, possible floor deposits of seven structures within the site and identified the location of a boiler house or furnace associated with a heated wall. More recent features relating to the most recent use of the site as a plant nursery were also recorded.

Introduction

2.1 In November 2013, the National Trust for Scotland commissioned GUARD Archaeology Limited to undertake a geophysical survey of the interior of the former kitchen garden of Newhailes Estate, East Lothian.

2.2 The site is located within Newhailes Estate on the western perimeter of Musselburgh (NGR: centred at NT 3256 7257) and comprises two distinct areas. The southern garden was, until very recently, used as a plant nursery and the land included the hard standing for a car park, cinder paths, the locations of buildings and areas of planting, including an extant hedge. The northern garden comprised overgrown vegetation with some tree planting and dumps of garden material. One localised area of recent burning was noted.

2.3 The site is bounded by the perimeter wall to the west and southwest, by a tree-lined fence to the east and northeast and by buildings, including the B Listed dovecote, to the south.

2.4 The bedrock in the walled garden is Scottish Middle Coal Measures formation, a sedimentary rock unit that comprises repeated cycles of sandstone, siltstone and mudstone with seatclay or seatearth and coal forming the upper deposit. The superficial geology is Raised Marine Deposits of variable lithology, often gravel, sand, silt and clay. None of these geological units would be expected to adversely affect with the geophysical survey.

Aims and Objectives

3.1 The aims of this study were to identify geophysical evidence of any previously unrecorded archaeological or historical features within the kitchen garden of Newhailes Estate, to assess the likely impact of any future development on the archaeological resource, and to recommend a strategy for mitigating this impact upon any known or potential archaeological remains.

3.2 The specific objectives of the assessment were:

- to survey the interior of the southern and northern kitchen gardens using gradiometry and resistivity;
- to report on the results of the investigations; and
- to utilise the information from these surveys to define areas that may require further archaeological investigation.

Methodology

4.1 The survey comprised a gradiometry survey and a resistivity survey. The gradiometry survey was carried out using a Geoscan FM256 Fluxgate Gradiometer and the resistivity survey was carried out using a Geoscan RM15 Resistivity meter with a twin-probe array and a probe separation of 0.5m.

4.2 For both geophysical techniques, readings were taken at a 0.5 m sample interval and a 1 m traverse interval, giving 800 survey points per 20 x 20 m grid. This survey frequency allowed a good resolution of detail with the minimum impact in terms of the time required to complete the survey.

4.3 The data was downloaded into Geoplot v3 for analysis and plot production. The resulting plots were overlaid onto the existing plan of the site, showing where any anomalies lay in relation to the surface features. The location of the geophysical survey was recorded using a Leica Smart Rover sub-centimetre DGPS. This creates fully geo-referenced information for each grid point for the accurate placement of the geophysics results within the Ordnance Survey national grid, allowing for the ease of relocating areas identified for further assessment.

4.4 Gradiometers are very sensitive to the presence of metal and to building materials that have been subjected to heat, and will produce anomalous readings if used in their proximity. Some such obstacles were found at Newhailes, with the result that no readings could be taken within about 3 m of the following:-

- the metal fence on the eastern side of the kitchen gardens;
- the Heras fencing at the west of the south garden;
- the visible water pipes on the west side of the south garden; and
- the door between the north and south gardens.

Small pieces of metal debris were additionally noted throughout the south kitchen. These consisted of nails, tacks, hinges and fixing pins and, although many of these were removed, it is inevitable that some will have been inadvertently recorded during the survey.

4.5 The resistivity survey relies on being able to create a current and due to the heavily compacted stony surface of the former car park at the southern end of the site; this area was surveyed using only gradiometry.

Archaeological Background

5.1 Newhailes kitchen gardens (NMRS: NT37NW 168.07; HER MEL 2448) lie wholly within Historic Scotland's Inventory Boundary of Newhailes Historic Garden and Designed Landscape. In addition to the kitchen garden, dovecot at the south of the site (NMRS: NT37SW 52; HER: MEL 256) is a category B Listed Building that may date to the late 17th or early 18th century.

5.2 A brief map regression exercise, comprising a search of the on-line map collection held by the National Library of Scotland, was undertaken in advance of the survey.

5.3 The earliest of the consulted maps to show Newhailes is Roy's 1747-55 map, where the country estate, including the kitchen garden, is already in situ. Laurie's 1763 map shows three buildings at Newhailes, with presumably the largest of these being the country house. The two smaller buildings may be the dovecot and fruit store. Laurie's 1766 and 1786 maps show only one building, although this is most probably due to the scale of the maps, rather than any changes within the estate. On Knox's 1816 map, the kitchen garden appears to be wooded with little indication of the formal layout often associated with these features. Kirkwood's 1817 map and Thomson's 1821 map add no new details, and depict only New Hailes house, at that time owned by Miss Dalrymple. By 1828, the north kitchen garden is mapped.

5.4 The earliest map to show Newhailes estate in any detail is the 1st Edition Ordnance Survey map of 1854, where the kitchen gardens (Site 2) have a formal layout. The estate (Site 1) now has a lodge and paths/roads cross the land. By 1895, the northern portion of the kitchen garden and some of the eastern perimeter have been planted with trees, although these are not recorded on the 1909 map. No further changes are noted on subsequent editions of Ordnance Survey maps.

5.5 Readily accessible documentary sources provide some additional information about the estate, although these do not give any further details of the kitchen garden. The 1791-99 Statistical Account of the Parish of Inveresk notes that:-

> *Miss Dalrymple of Hailes, the daughter of the late Lord Hailes, has her family seat in this parish, called New Hailes; one of the first houses whose park was laid out and adorned with all the elegance of modern taste.* (Carlyle 1791-99 11)

5.6 The 1834-45 Statistical Account of the parish of Inveresk includes the following information about New Hailes:-

> *The grounds are beautifully laid out, and near the house is a column, erected to the memory of the great Earl of Stair. The ruins of the chapel of St Magdalene were at the north-west extremity of this estate; but, save an occasional tombstone that has been dug up, no vestige of its site remains*. (Moodie & Beveridge 1834-45 283)

5.7 The account also relates how the estate has changed hands, and is now in the possession of Sir Charles Dalrymple Fergusson, Bart. who succeeded Miss Dalrymple (Moodie & Beveridge 1834-45 284). The same source notes that Sir David Dalrymple, the late Lord Hailes, was "one of the foremost Scottish historian and antiquaries" (*Ibid.* 284).

5.8 As far as can be ascertained, no archaeological investigations have previously been carried out within the kitchen garden.

Results

South Kitchen Garden

6.1 Eighteen gradiometry grids and 16 resistivity grids were surveyed in this area and both geophysical techniques recorded a great deal of disturbance. The remains of structures pertaining to the former plant nursery on the site were evident as linear anomalies, most of which were aligned west-northwest to east-southeast. It is probable that some of the foundations, which appear to be stone or another heavily compacted material, remain in situ, as the dark lines on the resistivity image indicate high resistance to a current. Similar disturbance close to the perimeter wall also represents the location of former structures from the plant nursery and, here too, some foundations may be partially intact.

6.2 A possible structure may be represented by Anomaly A. This was recorded only by resistivity, where a rectangular series of readings about 3.5 m long and about 3 m wide, comprises both high and low resistance.

6.3 Anomaly B, located in the former car park, is a series of high positive magnetic readings that may have been caused by modern intrusion such as a service pipe. It is unlikely to be archaeological in origin.

6.4 Linear Anomalies C and D were recorded by both geophysical techniques. Anomaly C is about 30 m long and about 5 m wide, while Anomaly D is approximately 23 m long and 4 m wide.

6.5 A linear band of disturbance (Anomaly E) is located adjacent to the perimeter wall. This is a fairly small anomaly about 1 m wide and 10 m long that was recorded by both geophysical techniques.

6.6 Anomaly F was only recorded by resistivity, although some disturbance in the area was picked up by the gradiometer. The anomaly, which is about 35 m long and about 2.5 m wide, most probably represents horticultural activity.

6.7 Anomaly G was also recorded by gradiometry and resistivity and comprises a curvilinear band that included both high and lower resistance and general magnetic disturbance. The possible feature is about 35 m long and up to 5 m wide.

6.8 Anomalies H, I, and K were recorded only by resistivity (although a small magnetic anomaly may relate to Anomaly K) and appear as rectilinear areas of relatively higher resistance. Anomaly H measures approximately 9 m by 3 m, Anomaly I measures approximately 13 m by 3 m and Anomaly K measures about 3 m by 2 m.

6.9 A fourth anomaly in this area (Anomaly J) appears on the gradiometry plot to be curvilinear. Only a relatively small part of this (approximately 9 m by 3 m) was also recorded by resistivity, where it shows as an irregular patch of slightly higher resistance.

6.10 Anomaly L was recorded only by gradiometry and appears to be a square or rectangular area that includes significant magnetic disturbance, shown on Figure 3 as black and white. This anomaly appears to be related to the heated wall, where a linear area of magnetic disturbance was also recorded.

North Kitchen Garden

6.11 The survey of the north kitchen garden was limited by two areas of tree planting and by the nature of the terrain, much of which was unsuitable for gradiometry survey. Five grids were surveyed using resistivity and three using gradiometry.

6.12 Five magnetic anomalies (Anomaly M) were recorded along the heated wall, although only one of these was also recoded by resistivity. These vary slightly in size but are all 1-2 m wide and extend into the north garden for a distance of about 1 m. They are quite evenly spaced along the wall, being between 6 and 7 m apart.

6.13 Anomaly N is an area of burning that was visible during the survey and Anomalies O, P and R were all recorded over mounds of waste garden material. All of these are recent and, therefore, not archaeological in origin.

6.14 Anomaly Q appears to be a linear feature at least 15 m long and at least 4 m wide, recorded as an area of relatively higher resistance.

Discussion

7.1 The level of ground disturbance associated with the former plant nursery showed clearly on the data set. However, comparison with satellite images allowed some of the disturbance to be identified as the structural remains of greenhouses or poly-tunnels belonging to the nursery and known areas of planting.

7.2 A possible rectangular building at the location of Anomaly A appears on an aerial photograph taken at an unknown time between 1944 and 1950 and examined on-line via the National Library of Scotland's digital map collection (Plate 1). This structure, which pre-dates the site's use as a plant nursery, does not appear on any of the maps consulted for this report and therefore most probably dates to a relatively recent phase of use of the site. The mix of higher and lower resistivity may indicate the presence of a foundation cut (lower resistance) and foundation material (higher resistance).

7.3 As stated at paragraph 7.3, Anomaly B is probably a modern intrusion.

7.4 Anomalies C, D, F and G lie on the same alignment as the former greenhouses, and are probably of modern origin, relating to the plant nursery. Anomaly C corresponds fairly well to the former location of what appears to be a gravel path with planting to either side, and is therefore not likely to be archaeological.

7.5 Anomaly E appears to abut the perimeter wall and, given its location, may be the remains of a lean-to structure. This may be associated either with the estate's kitchen garden or with more recent use of the site.

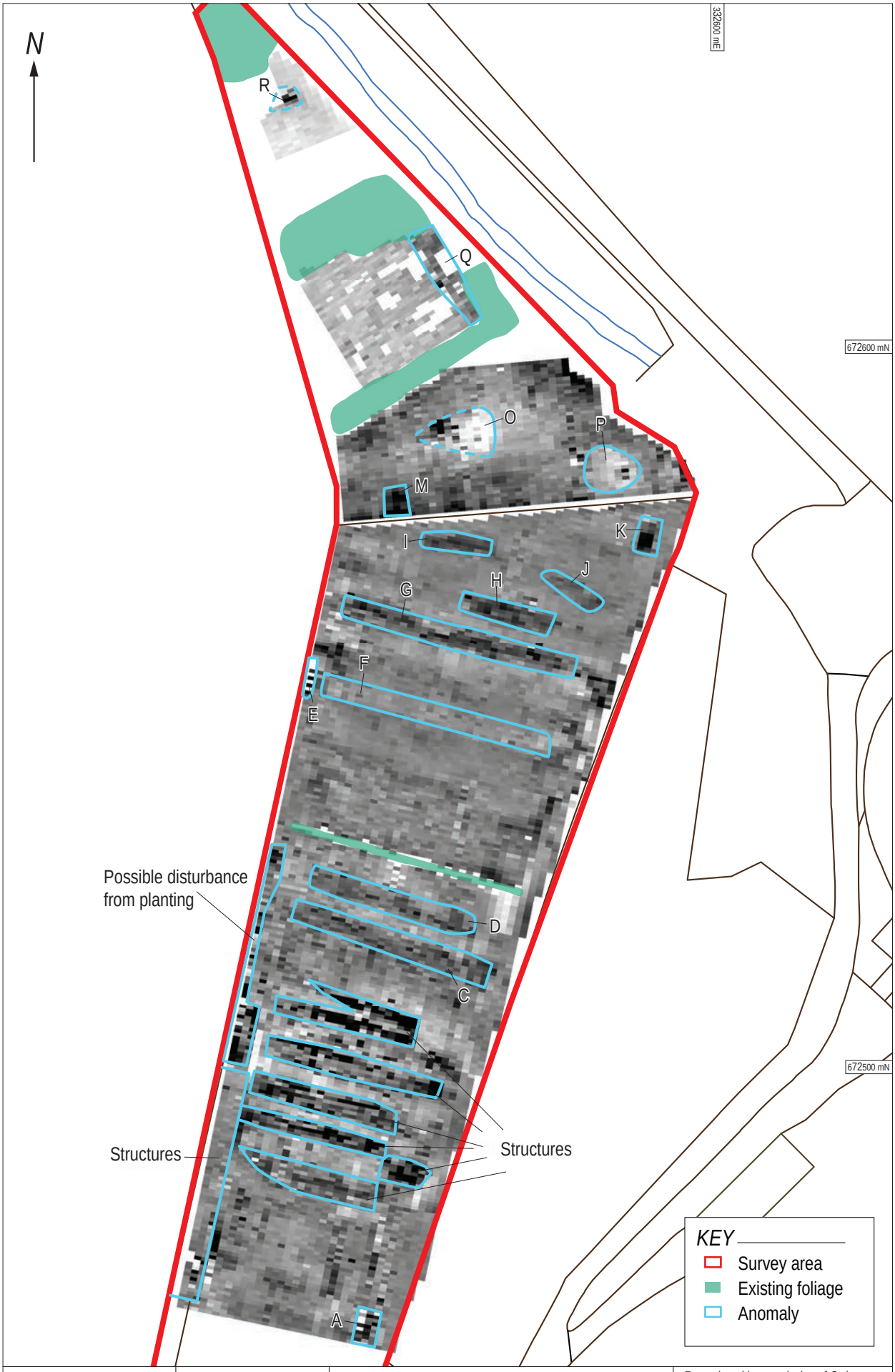

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Figure 2: Resistivity results.

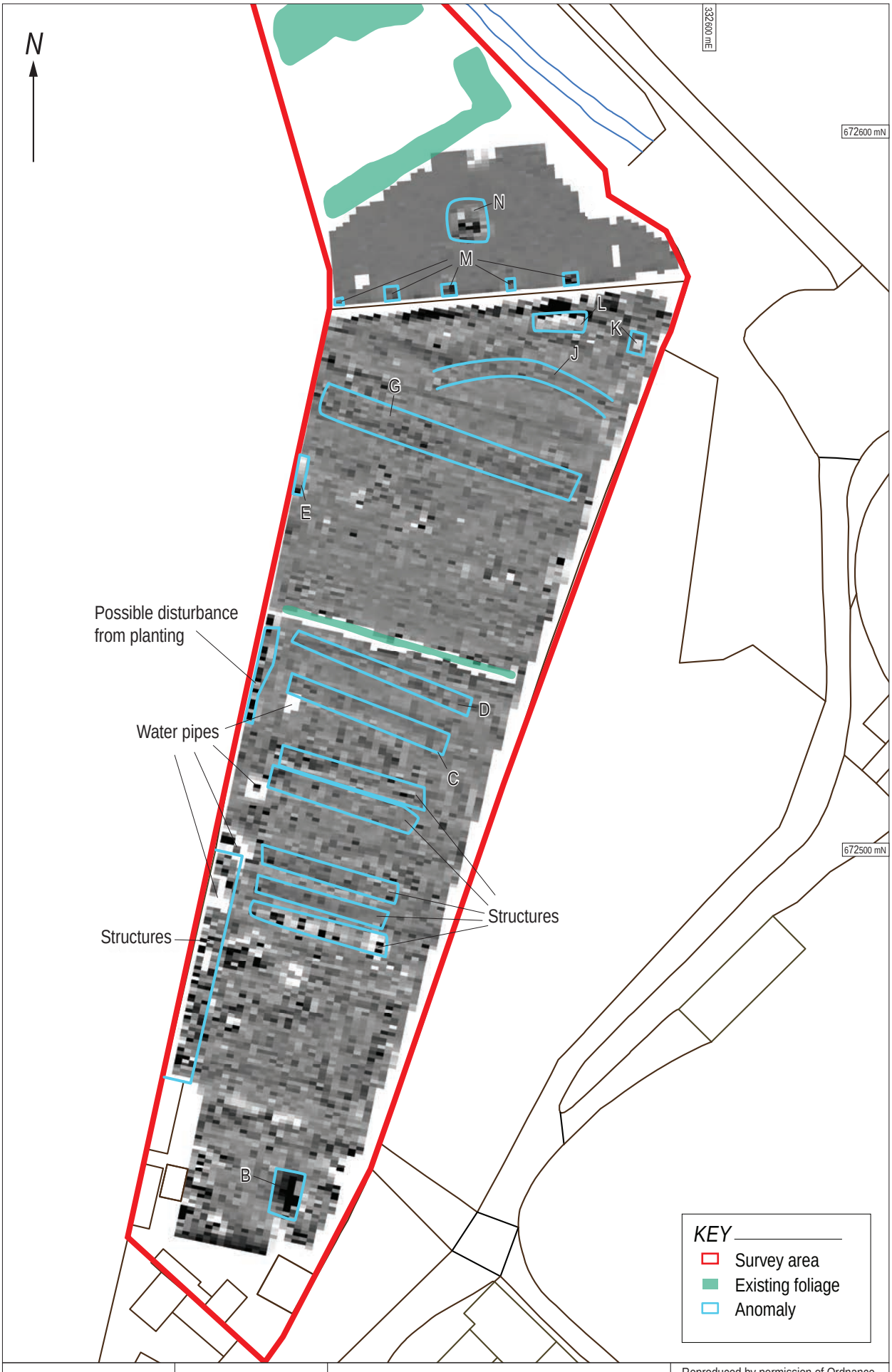

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Figure 3: Gradiometry results.

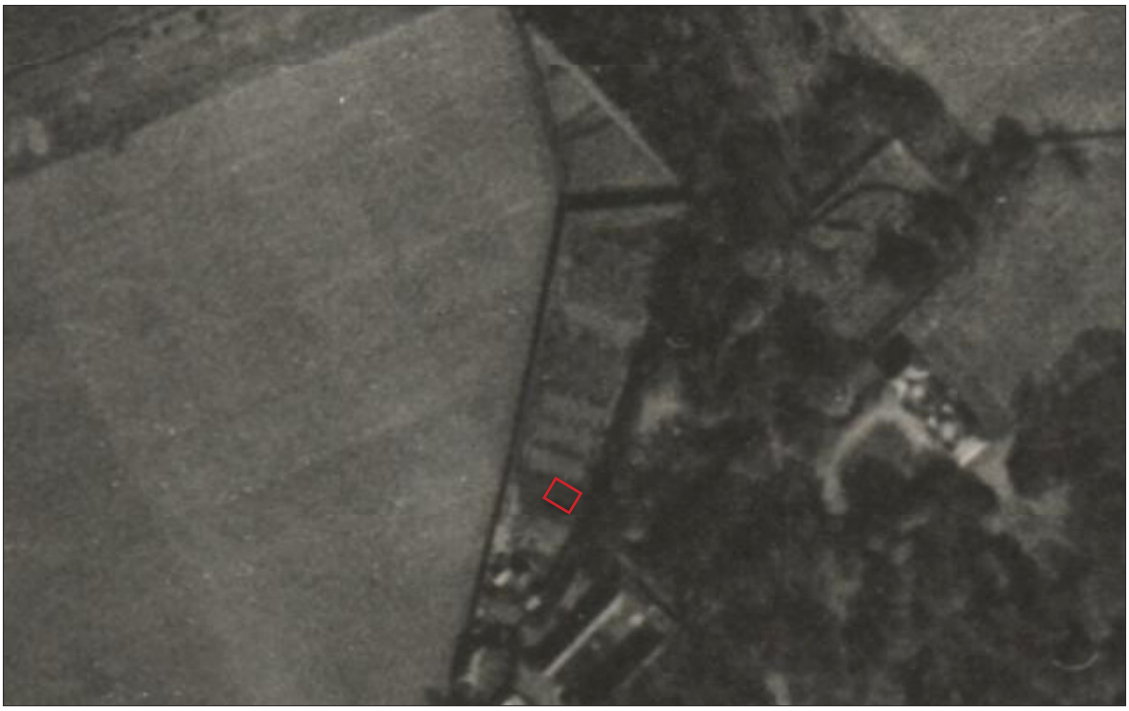

Plate 1: Aerial view of Newhailes kitchen gardens with possible structure highlighted
Reproduced by permission of the Trustees of The National Library of Scotland.

7.6 The higher resistance associated with Anomalies H and I may suggest that these were structures, possibly with compacted earthen floors. It is unlikely that any stone foundations are extant, as the resistance recorded is not sufficiently strong to suggest this. Comparison with the general alignment of features recorded, any structures at these locations are most probably associated with the kitchen garden or the more recent plant nursery.

7.7 In terms of its morphology, Anomaly J is unlike any other feature recorded during the survey, being curvilinear rather than rectilinear. The magnetic disturbance was recorded at about 0.75 m below ground surface and the higher resistance at a depth of about 0.5 m, which suggests that the anomaly is at least 0.25 m thick and is likely to include stones or heavily compacted soil. This may be archaeological in origin and could be the truncated remains of a circular or sub-circular enclosure.

7.8 Anomaly K is situated on a path about 3 m from the doorway linking the north and south gardens. A structure at this location would probably impede passage between the two gardens, which presents the possibility that, should this prove to be a structure, it may pre-date the creation of the kitchen garden.

7.9 The geophysical nature of Anomaly L indicates the type of localised magnetic disturbance associated with both metal and intense burning. Information from Paul Chandler (Newhailes Estate Manager) indicates that a furnace or boiler would have been used to supply heat to interior cavities, but that no traces of such a structure had been found by NTS. It is possible that this magnetic disturbance represents the location of the furnace or boiler, although this cannot be ascertained without intrusive investigation. The magnetic disturbance recorded further west along the heated wall may indicate either the presence of pipe-work within the wall or that sustained periods of heating has resulted in magnetic changes to the make-up of the subsoil.

7.10 The five components of Anomaly M appear to be structural and may be either individual walls or interior divisions within a larger structure. Some of the components are visible at ground level and their location suggests that they are related to the heated wall.

7.11 Modern Anomalies N, O, P and R have already been discussed at paragraph 7.13.

7.12 Anomaly Q is difficult to interpret as it was truncated by the limit of the survey and its full dimensions are, therefore, unknown. It has some characteristics of other anomalies that have

been interpreted as structures, but further work would be required in order to establish its nature and possible function.

Conclusions and recommendations

8.1 The geophysical survey has indicated that while some of the features recorded are of modern date and relate to the use of the site as a plant nursery (Anomalies B, C, D, F, G, N to P and R) there are some features that are likely to represent features from the kitchen garden.

8.2 Seven possible structures with stone or compacted earthen floors may be represented by Anomalies A, E, H, I, K, M and Q. Anomaly L is probably the location of a furnace or boiler house that would have been associated with the heated wall.

8.3 The survey recorded one possible archaeological feature (Anomaly J) that may be a circular or sub-circular enclosure.

8.4 Given the potential presence of earlier garden features and a possible enclosure, GUARD Archaeology would recommend that any future development of the site should be preceded by intrusive archaeological investigation of the Anomalies referred to in paragraphs 9.2 and 9.3. The scope of such investigations should be agreed with the East Lothian Archaeology Service.

Acknowledgements

9.1 GUARD Archaeology Ltd would like to thank Paul Chandler, Rhiannon Naismith and Daniel Rhodes of the National Trust for Scotland for their input into the fieldwork. Technical and administrative support was provided by Jen Cochrane, Aileen Maule and John Kiely. The illustrations were produced by Fiona Jackson, who also carried out the GPS survey of the geophysics grids, and the report was desk top published by Gillian McSwan. The director was assisted in the field by Beth Spence, and the project was managed for GUARD Archaeology by Bob Will.

9.2 OASIS reference number: guardarc1-168747

Newhailes Nurseries: Geophysical Survey

Data Structure Report

Section 2: Appendices

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Appendices

Appendix A: References

Documentary Sources Consulted

Carlyle, A 1791-99 'Parish of Inveresk' in the *Statistical Account of Scotland*, Vol. 16 http://stat-acc-scot.edina.ac.uk/ [Accessed 2 December 2013].

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Ordnance Survey 1895 *Edinburghshire Sheet IV SW,* Six inch 2nd edition map.

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Ordnance Survey 1919 *Edinburghshire Sheet IV SW,* Six inch 2nd edition and later maps.

Ordnance Survey 1934 *Edinburghshire Sheet IV SW,* Six inch 2nd edition and later maps.

Ordnance Survey 1944 *Edinburghshire Sheet IV SW,* Six inch 2nd edition and later maps.

Ordnance Survey 1947 *Edinburghshire Sheet IV SW,* Six inch 2nd edition and later maps.

Ordnance Survey 1944-50 *NT 37 SW (Midlothian),* Air Photo Mosaics.

Appendix B: Raw Geophysical Data

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Figure 4: Raw resistivity data.

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Figure 5: Raw gradiometry data.

Appendix C: Discovery And Excavation Scotland Entry

LOCAL AUTHORITY:	East Lothian
PROJECT TITLE/SITE NAME:	Newhailes Nurseries: Geophysical Survey
PROJECT CODE:	3699
PARISH:	Inveresk
NAME OF CONTRIBUTOR:	Christine Rennie
NAME OF ORGANISATION:	GUARD Archaeology Limited
TYPE(S) OF PROJECT:	Geophysical Survey
NMRS NO(S):	NT37NW 168.07 and NT37SW 52
SITE/MONUMENT TYPE(S):	Walled garden and dovecot
SIGNIFICANT FINDS:	Possible structures
NGR (2 letters, 8 or 10 figures)	NT 3256 7257
START DATE (this season)	7th January 2014
END DATE (this season)	10th January 2014
PREVIOUS WORK (incl. *DES* ref.)	None known
MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)	GUARD Archaeology Ltd undertook a geophysical survey of the former kitchen garden at Newhailes, East Lothian on behalf of the National Trust for Scotland. The survey recorded part of a possible circular enclosure, possible floor deposits of seven structures within the site and identified the location of a boiler house or furnace associated with a heated wall. More recent features relating to use of the site as a plant nursery were also recorded.
PROPOSED FUTURE WORK:	Possible watching brief
CAPTION(S) FOR ILLUSTRS:	None
SPONSOR OR FUNDING BODY:	National Trust for Scotland
ADDRESS OF MAIN CONTRIBUTOR:	52 Elderpark Workspace, 100 Elderpark Street, Glasgow, G51 3TR
EMAIL ADDRESS:	christine.rennie@guard-archaeology.co.uk
ARCHIVE LOCATION (intended/ deposited)	NMRS

Appendix D: Written Scheme of Investigation

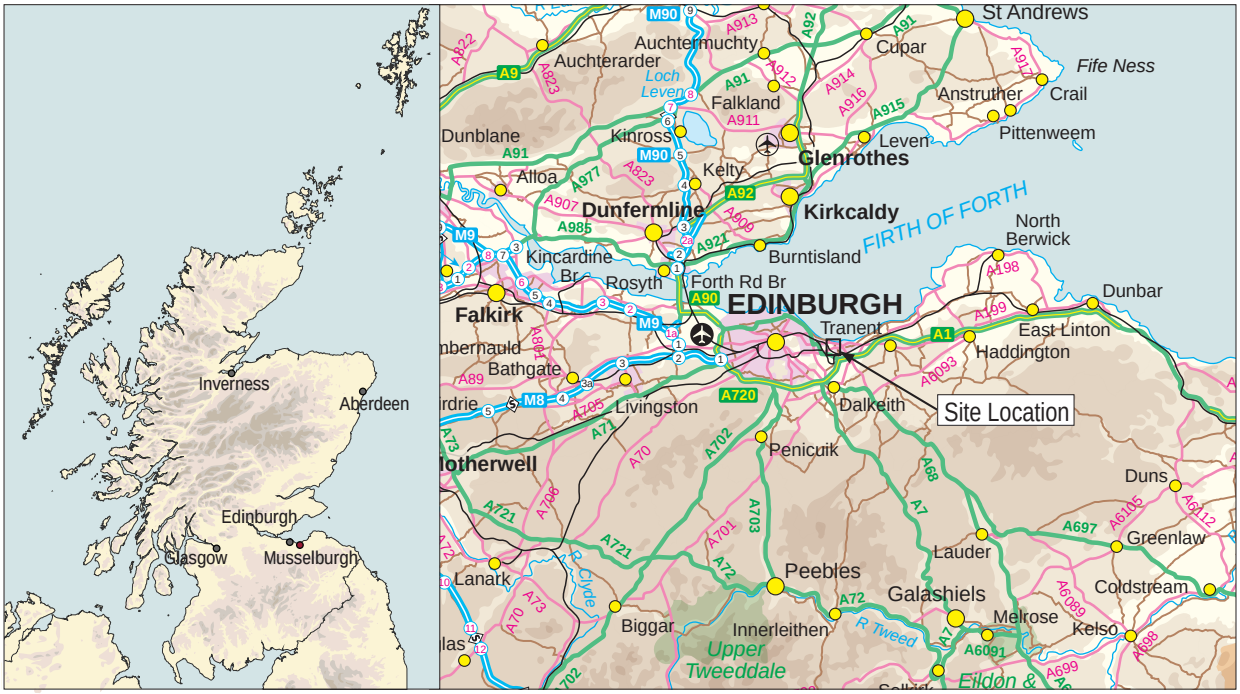
NEWHAILES WALLED GARDEN: GEOPHYSICAL SURVEY

WRITTEN SCHEME OF INVESTIGATION

PROJECT 3699

by

Christine Rennie



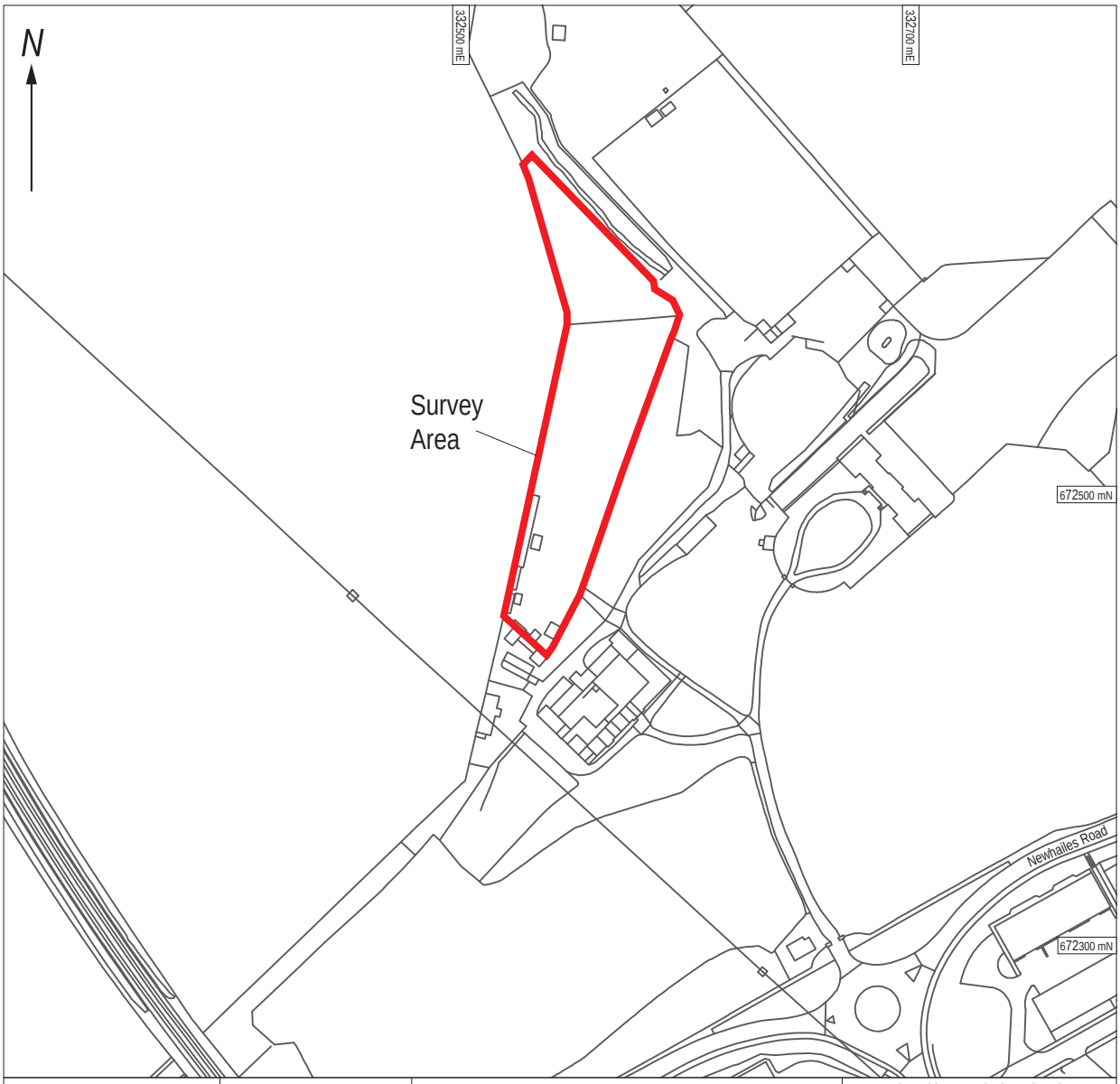


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Figure 1: Site location.

0 100 m

Non-Technical Summary

1.1 This document sets out the scope and methodology of works to be employed for the geophysical survey of two areas of the walled garden in Newhailes Estate, East Lothian. This proposal for non-invasive archaeological investigation of the walled gardens has been commissioned by the National Trust for Scotland and follows archaeological investigations and recording work carried out in the estate since 2000.

1.2 This project design establishes the actions and products required to achieve an initial investigation into site. The fieldwork will comprise a programme of non-invasive archaeological work that utilises geophysical survey to establish the presence or absence of sub-surface remains relating to earlier use of the site. The survey works will be conducted primarily by experienced project staff from GUARD Archaeology Limited. The GUARD Archaeology staff will also provide training of local volunteers during a 'drop in' session for local heritage groups on one afternoon during the course of the geophysics survey. A report on the project will be produced at the end of the work, which will illustrate and describe the results and provide recommendations for further archaeological work should this be appropriate.

Site Location and Description

2.1 The site of the walled gardens lies on the western side of Newhailes Estate, about 1.7 km west of the centre of Musselburgh, East Lothian. The area to be surveyed, which comprises the north and south walled gardens, is bounded to the east and north by trees, to the south by existing structures and to the west by the estate perimeter wall.

2.2 The bedrock at the walled gardens is Scottish Middle Coal Measures Formation, a sedimentary rock that comprises repeated cycles of sandstone, mudstone and siltstone. The superficial geological unit is Raised Marine Deposits of sand and gravel. Neither of these types of rock unit would be expected to adversely affect the geophysical survey.

Archaeological and Historical Background

3.1 Newhailes House (NMRS: NT37SW 168) was originally known as Whitehill and was bought by James Smith around 1686 who proceeded to construct the present villa. Following a change in ownership, the estate was renamed as Broughton House, until being bought by Sir David Dalrymple, First Baronet of Hailes, who renamed it Newhailes to distinguish it from his family estate of Hailes in East Lothian. The estate remained in the ownership of the Dalrymple family until it was gifted to the National Trust for Scotland in 1997.

3.2 The walled garden or kitchen garden (NMRS: NT37SW 168.07) was built at the end of the eighteenth century to supply fruit and vegetables for the house. The walled garden is a distinct area which has remained in similar use from the second half of the eighteenth century until today. Its walls and buildings (including perimeter walls, dovecot, greenhouses, potting and storage sheds, propagation houses etc) in combination demonstrate the continuous development and utilisation of the space over this period. It is currently in use as a small garden centre with the northerly compartments used as growing areas. The south-eastern end of the garden is occupied by a Dovecot (NMRS: NT37SW 52) and a glasshouse complex. The dovecot date from the late seventeenth or early eighteenth century and could be the 'dovecoat' mentioned as being part of the estate of 'Broughton house' (Whitehill) in

1709. In 2011 the glasshouses underwent a detailed photographic and measured survey.

3.3 Previous archaeological work carried out within Newhailes Estate includes evaluation and/or recording of the stables (NMRS: NT37SW 168.02), the Shell Grotto (NMRS: NT37SW 168.04), the servants tunnel (NMRS: NT37SW 168.11), icehouses (NMRS: NT37SW 168.01) and fruit store (NMRS: NT37SW 1213). These investigations revealed floor levels of the fruit store and icehouses, a cobbled surface in the stable courtyard where a polished steatite with Egyptian hieroglyphs was found, and an earlier form of the Shell Grotto.

3.4 Outwith the estate, prehistoric activity is represented by Brunstane enclosure Scheduled Monument (SM 4112; NMRS: NT37SW 60), while medieval remains include Brunstane moated site Scheduled Monument (SM 10580; NMRS: NT37SW 238).

Project Objectives

4.1 The project objectives are:

- to survey the north and south walled gardens using gradiometry;
- to survey the north and south walled gardens using resistivity;
- to provide a training opportunity to members of local interest groups in the use of geophysical survey techniques, and
- to report on the results of the investigations and identify recommendations for further work should this be appropriate.

Methodology

5.1 The geophysical survey at Newhailes will employ both gradiometry and resistivity in order to meet the above aims and objectives. A series of 20 m by 20 m grids will be laid out over the site, and will be tied into the National Grid using a sub-centimetre Smart Rover DGPS. Each grid will be surveyed at a traverse of 1.0 m and an interval of 0.5 m, giving 800 readings per grid. This resolution will ensure that any archaeological remains will be picked up at least once per traverse.

5.2 Gradiometry is a quick and competent method of collecting data in the field. It employs twin magnetometers aligned so as to detect changes in the earth's magnetic field, such as those created by burning, and subtle changes in magnetism caused by disturbance of the subsoil, such as the presence of buried structures or in-filled cuts.

5.3 Resistivity is also an efficient method of detecting sub-surface remains, and is particularly good at detecting the more discrete disturbances created by in-filled cuts. The survey method works by registering changes in the conductivity of the subsoil, by passing a current between fixed electrodes and mobile electrodes attached to the resistivity meter. The mobile electrodes do not penetrate the soil, but measures the soil's resistance to the current at a point about 0.5 m below ground level.

5.4 The NTS Area Archaeologist will liaise with local volunteer groups and individuals to enable participation in the geophysics survey through a 'drop in' session held during one afternoon during the survey. Training and participation of local volunteers will be supervised by the GUARD Archaeology team.

Reporting, Archive & Small Finds Arrangements

6.1 Following completion of archaeological fieldwork, GUARD Archaeology Limited will prepare a report, outlining the main results and including annotated illustrations of the survey data. This report will also recommend targets for potential future phases of work.

6.2 The report will be submitted to the National Trust for Scotland and, subject to their approval, then submitted to the East Lothian Council Archaeology Service.

6.3 The report will include the following:

- executive summary
- a site location plan to at least 1:10,000 scale with at least an 8 figure central grid reference
- OASIS reference number; unique site code
- contractor's details including date work carried out
- nature and extent of the proposed development, including client details
- description of the site history, location and geology
- a site plan to a suitable scale and tied into the national grid so that features can be correctly orientated
- context & feature descriptions
- plans of the features drawn at a suitable scale
- discussion of the results of the surveys
- recommendations regarding the need for, and scope of, any further archaeological work, such as excavation, post-excavation analysis and publication
- bibliography

6.4 At least two copies of the report will be prepared for the client.

6.5 The report will be presented in an ordered state and contained within a protective cover/sleeve or bound in some fashion. The report will be page numbered and supplemented with section numbering for ease of reference.

6.6 Once the report has been finalised, 3 hard copies and a disk containing a pdf and word doc of the report, as well as some unembedded photos, will be submitted to East Lothian Council Archaeology Service.

Copyright

7.1 Unless otherwise agreed copyright for any report resulting from the archaeological work undertaken as part of the project will be deemed the intellectual property of GUARD Archaeology Limited.

Publication

8.1 A summary of the project results will be submitted to *Discovery and Excavation in Scotland*. In the event of minor archaeological remains being encountered during the work, it is proposed that a comprehensive report submitted to *Discovery and Excavation in Scotland*, will form the final publication of the site. A copy of this will be included in the Data Structure Report.

Archive

9.1 The archive for the project, including a copy of the report, will be submitted to the National Monuments Records for Scotland within three months of completion of all relevant work.

9.2 The online OASIS form at http://ads.ahds.ac.uk/project/oasis/ will be completed within 1 month of completion of the work. Once the Data Structure Report has become a public document by submission to or incorporation into the SMR, the East Lothian Council Archaeology Service will validate the OASIS form thus placing the information into the public domain on the OASIS website.

Personnel and Liaison

10.1 The GUARD Archaeology team will comprise the following qualified and experienced GUARD archaeologists:

- Project Director (on-site Archaeologist): Ms Christine Rennie
- Additional field staff: Ms Beth Spence and Ms Fiona Jackson
- Technical Support: Ms Aileen Maule
- Finds and Environmental Support and Conservation: Ms Aileen Maule
- Illustrator: Ms Fiona Jackson
- Project Manager: Mr Bob Will

10.2 The GUARD Archaeology Project Manager, Mr Bob Will, will be the point of contact for the archaeological works. A full CV for individuals concerned can be made available on request.

Timetable and monitoring

11.1 The start date for the project will be Tuesday 7th January 2014 and the surveys will be conducted throughout the week and finish on Friday 10th January 2014. The NTS Area Archaeologist and the East Lothian Council Archaeology Service will be informed of the site mobile phone number prior to the start date so that monitoring visits can be arranged. An afternoon dedicated for training of volunteers will be agreed with the NTS Area Archaeologist and organised by NTS. A report will be prepared and submitted to the National Trust for Scotland within four weeks of completion of the surveys.

Health & Safety and Insurance

12.1 GUARD Archaeology Limited adheres to the guidelines and standards prescribed for archaeological fieldwork set down in the Institute for Archaeologists approved Health and Safety in Field Archaeology document. It is standard GUARD Archaeology policy, prior to any fieldwork project commencing, to conduct a risk assessment and to prepare a project safety plan, the prescriptions of which will be strictly followed for the duration of all archaeological fieldwork. Any site visitors and all local volunteer participants will be expected to conform to the health and safety regime in place during the project. Copies of the resultant project safety plan and of GUARD Archaeology Limited's Fieldwork Safety Policy Statement may be viewed upon request.

12.2 GUARD Archaeology Limited also possesses all necessary insurance cover, proofs of which may be supplied upon request.

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