Fairhaven Lake, Lytham St Annes, Lancashire

Archaeological Watching Brief Report

April 2021

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Prepared by:	Steve Clarke (Assistant Supervisor), Helen Evans (Project Officer)
Checked by:	Paul Dunn (Senior Project Manager)
Edited by:	Paul Dunn (Senior Project Manager)
Approved for Issue by:	Alan Lupton (Operations Manager)
Signature:	

OA South
Janus House
Osney Mead
Oxford
OX2 0ES

t. +44 (0)1865 263 800

OA East
15 Trafalgar Way
Bar Hill
Cambridge
CB23 8SQ

t. +44 (0)1223 850 500

OA North
Mill 3
Moor Lane Mills
Moor Lane
Lancaster
LA1 1QD
t. +44 (0)1524 880 250

e. info@oxfordarch.co.uk
w. oxfordarchaeology.com
Oxford Archaeology is a registered Charity: No. 285627

Director and Chief Executive
Gill Hey, BA PhD FSA MCIfA
Private Limited Company, No: 1618597
Registered Charity, No: 285627
Registered Office: Oxford Archaeology Ltd
Janus House, Osney Mead, Oxford OX2 0ES

Fairhaven Lake, Lytham St Annes, Lancashire

Archaeological Watching Brief Report

Written by Steve Clarke and Helen Evans

With illustrations by Mark Tidmarsh

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Summary

Oxford Archaeology (OA) North was commissioned by Fylde Council to undertake an archaeological watching brief during public realm enhancement works of Fairhaven Lake and Gardens, Lytham St Annes, Lancashire (NGR: SD 33983 27316). The watching brief was focused on landscaping during the exposure and construction/consolidation of footpaths within TH Mawson's 1924 Japanese Garden, which had been infilled in the 1960s-80s. This work was in addition to an Historic Building Survey (reported separately) to photographically record the Pagoda, Pavilion café and boathouse prior to renovation works. The watching brief was undertaken over six days between 30th October and 6th November 2021.

The largely sand infill of the Japanese Garden was removed using a mechanical excavator with the features exposed then cleaned by hand. The stone-built structure of Mawson's 1924 Japanese Garden survives relatively intact, aided by the substantial size of the sandstone blocks used in the steps, paths and rockeries, and the use of concrete in the construction of the lagoon edge. Although elements of the former sandstone pathways have been lost and/or replaced with tarmac, this does not detract significantly from the survival of the remainder of the structure. Many historic photographs survive of the site in the early twentieth century, as do Mawson's planting plans. These will help to enhance subsequent consolidation, soft landscaping and gardening works.

Acknowledgements

Oxford Archaeology (OA) North would like to thank Charlie Richards of Fylde Council for commissioning this project. Thanks are also extended to Peter Iles, Planning Officer (Archaeology) for Lancashire County Council, for his help and guidance.

The project was managed for OA North by Paul Dunn. The fieldwork was undertaken by Steve Clarke. The report was written by Steve Clarke and Helen Evans, with the illustrations being produced by Mark Tidmarsh.

1 INTRODUCTION

1.1 Scope of work

1.1.1 Oxford Archaeology (OA) North was commissioned by Fylde Council to undertake an archaeological watching brief during the construction of footpaths within the Japanese garden as part of public realm enhancement works of Fairhaven Lake and Gardens, Lytham St Annes, Lancashire (NGR: SD 33983 27316). This work was in addition to an Historic Building Survey (reported upon separately) to photographically record the Pagoda, Pavilion café and boathouse prior to renovation works (OA North 2021).

1.1.2 The work is being undertaken as two conditions of Planning Permission (planning ref: 18/500). Condition 10 stating:

> 'No development (including any works of site clearance/preparation) associated with the reformation of the Japanese Lagoon Garden (the details of which are shown on drawing no. 310-RYD-XX-XX-DR-L-2103) shall take place until a Written Scheme of Investigation (WSI) outlining a programme and timetable of archaeological investigation has been submitted to and approved in writing by the local planning authority. The development shall thereafter be carried out in full accordance with the approved WSI and the timetable contained therein. Reason: To ensure that a suitable programme of archaeological investigation is implemented prior to the commencement of any construction works associated with the reformation of the Japanese Lagoon Garden in order to record and advance the understanding of the archaeological and historical significance of the site for archival and research purposes in accordance with the requirements of Fylde Local Plan to 2032 policy ENV5 and the National Planning Policy Framework.'

1.1.3 Discussions with the client and the Planning Officer (Archaeology) at Lancashire County Council, as advisors to the Local Planning Authority, determined the scope of works to be undertaken to discharge this condition. OA North were subsequently commissioned to produce a Written Scheme of Investigation (*Appendix A*) and undertake the fieldwork required, which was undertaken over 6 days between

1.2 Location, topography and geology

1.2.1 Fairhaven Lake lies adjacent to the coast at Lytham St Annes, Lancashire. The lake is man-made, constructed on two parallel banks of shingle, locally referred to as the Double Stanner. The eastern end of the feature was formerly open to the sea, enabling the high tide to fill the space between the two.

1.2.2 The Japanese Lagoon Garden lies on the south side of the lake, towards its western end. It dates to the 1920s but was infilled in the 1960's-80's. Prior to the present work being undertaken it consisted of a series of grassy earthen banks and shallow depressions, partially submerged rockeries and stone steps.

1.2.3 The bedrock geology of the site is mapped as mudstones of the Singleton Mudstone Member, formed during the Triassic Period (BGS 2020). The superficial deposits of the

site are wind-blown sands formed up to 3 million years ago in the Quaternary Period (*ibid*); there remain many, seasonally mobile, sand dune deposits close to the coast.

1.3 Archaeological and historical background

1.3.1 The archaeological and historical background of the site has been described in detail in *Fairhaven Historic Appraisal: the Development of Fairhaven* produced by Fylde Council (2017). This is briefly summarised below.

1.3.2 The area of the lake was based around a small but natural tidal lagoon, located behind a sea wall forming what is now the outer promenade. The original 12-acre boating lake was created in 1893 as part of a planned seaside resort. By 1914, tennis courts, a bowling green, croquet lawn and a small sports ground were opened to the north of the lake.

1.3.3 In 1924, T.H Mawson, local and internationally renowned landscape designer and gardener, was employed to enlarge the lake and upgrade its surroundings. The lake was effectively doubled in size, Mawson designing a 'natural' informal shape, with undulating shorelines, inlets and islands. Complimentary to this, Mawson's Japanese Garden was a series of paths and rockeries surrounding a small lagoon on the south-west side of the lake.

Plate 1: Photograph of the Japanese Garden, from Fylde Council, 2017

1.3.4 Although the Japanese Garden was largely backfilled in the 1960s and 1980s, several of the higher stone-built features (including a set of steps) remained extant. This indicated that the lower-lying features may be preserved beneath the infill. A community archaeological test-pitting evaluation undertaken in 2018 revealed well-

preserved stone steps with flanking rockeries on the east bank of the garden, a collection of stone slabs used to form an outcrop overhanging the former lagoon edge, a set of steps on the western edge of the gardens crossing an earthen bank and part of a sandstone slab pathway (Churchill Archaeology 2018).

2 WATCHING BRIEF AIMS AND METHODOLOGY

2.1 Aims

2.1.1 The project aims and objectives were as follows:

- to adhere to and fulfil the agreed programme of works associated with the archaeological potential of the site, and consequently to successfully discharge any planning condition, in whole, or in part, dependent on results;
- to compile a professional archival record of any archaeological remains within the excavation works;
- to determine or confirm the general nature of any remains present;
- to determine or confirm the approximate date or date range of any remains, by means of artefactual or other evidence; and
- to maintain a watching brief during the excavation of footpaths within the Japanese garden, to ensure the original features are not destroyed and to record any previously unknown archaeological remains.

2.2 Methodology

2.2.1 The project methodology, set out in the WSI (*Appendix A*), was adhered to in full, and was fully compliant with current guidelines and industry best practice (CIfA 2019; 2020a; 2020b; Historic England 2015). The excavation areas were located by the client's sub-contractor, who also undertook all service checks prior to the commencement of any excavation. The excavation was undertaken by either a 5 or 8-tonne mechanical excavator, fitted with a toothless ditching bucket, to the client's required depth.

2.2.2 All information identified during the site works was recorded stratigraphically, using a system adapted from that used by the former English Heritage Centre for Archaeology, with an accompanying pictorial record (plans, sections and digital photographs). Primary records were available for inspection at all times.

2.2.3 Results of all field investigations were recorded on *pro forma* context sheets. The site archive includes a photographic record, and accurate large-scale plans and sections at appropriate scales (1:50, 1:20, 1:10).

2.2.4 A full professional archive was compiled in accordance with the WSI, and with current professional guidelines (CIfA 2020b); Historic England 2015). The archive will be deposited with Lancashire County Records Office.

3 RESULTS

3.1 Introduction

3.1.1 The results of the watching brief, undertaken between 30th October and 6th November 2020, are presented below.

3.2 General soils and ground conditions

3.2.1 The soil sequence was uniform. The sandstone-slab structure of the Japanese Garden was overlain by clean sand, over which topsoil and turf had formed. Conditions throughout were very wet, with ground water rising to fill the exposed lagoon shortly following the removal of overburden.

3.3 Results

3.3.1 The landscape consisted of a series of grassy earthen banks and shallow depressions in an area *c* 20m across, centred on the former lagoon. This was surrounded by partially submerged sandstone-slab constructed steps, walkways and rockery features. Where exposed, these features were remarkably well-preserved and easily identified. Most of the topsoil and the sandy infill of the depression was removed with a mechanical excavator to the level of the stone structure, with cleaning undertaken by hand.

3.3.2 In the first instance, a curving stone slab pathway (***102***) was exposed (Fig 3; Plate 2). It was *c* 1.8m wide, and led down to the lagoon from stone-steps ***101***, previously excavated and recorded (Churchill 2018), which connected to the existing footpath to the south, to a set of 11 stepping-stones (***103***) at the north, which crossed the lagoon at a narrow point 4.8m wide. The stepping-stones, arranged in two rows, were formed of large, roughly-cut sandstone blocks, *c* 0.7 x 0.4m and, 0.6m deep (Fig 3; Plate 2 and 3).

*Plate 2: Path **102** and stepping-stones **103**, looking south*

*Plate 3: Stepping-stones **103** with curved concrete wall **106** behind*

3.3.3 Stone pathway ***102*** was extant on the south side of the lagoon, with that on the north side being revealed as tarmac pathway ***104*** (Fig 3), which was edged on the west side with small squared stones (Plate 4). Tarmac path ***104*** led upslope to a set of six stone steps (***105***), which were formed of sandstone slabs, four slabs wide. The steps were edged by large rocks forming a rockery, which had been previously exposed.

*Plate 4: Steps **105**, path **104** and stepping-stones **103** crossing the west side of the lagoon, looking south*

3.3.4 To the east of stepping-stones ***103***, the northern edge of the lagoon was formed by a low, curved concrete wall topped with roughly-hewn stone ***106***, punctuated by a small rockery on its eastern extent, which defined a change of direction in the northern line of the lagoon edge (Plate 5; Fig 3). On the opposite side of the lagoon and south of the concrete wall was a large substantial rockery (***107***; Fig 3), which appeared as an 'outcrop' of sandstone, and is clearly discernable on the historic photographs of the Japanese Gardens (Plate 1). This extended out into the lagoon and defined its shape, forming a point from which the water line continued to the south-east (Plate 6).

*Plate 5: North side of the lagoon with bridge **108** and Fairhaven Lake behind and 'outcrop' rockery **107** to the left of the image*

*Plate 6: 'Outcrop' rockery **107** on the south side of the lagoon, with eastern steps **109** and rockery **110** in the background, facing east*

3.3.5 Opposite and to north of the rockery ***107*** was a concrete and sandstone slab bridge, ***108***, over the water feed into the lagoon from the main body of the lake (Plate 5; Fig

3). East of this, at the eastern extent of the lagoon, the path continued to the east, reaching a substantial set of eight slab-built steps ***109***, flanked either site by rockeries formed of large sandstones up to 1 x 2m across ***110*** and ***111*** (Fig 3). These were previously excavated and recorded (Churchill 2018). The steps were four or five slabs wide, *c* 1.8m across.

3.3.6 Approximately 2m to the west of the eastern stone steps, on the southern edge of the lagoon, were five stepping-stones (***112***) leading out into the lake and accessing a substantial and partially submerged slab of sandstone *c* 2. 1m across (Plate 7). These did not appear to cross the lagoon, but were located to provide access to the sandstone slab.

*Plate 7: Eastern stepping-stones to submerged slab **112**, with eastern steps **109** and rockery **110** behind*

3.4 Environmental and finds summary

3.4.1 There were no finds of any significance recovered during the watching brief. There were also no environmental samples recovered during the watching brief, as no suitable deposits were encountered.

4 DISCUSSION

4.1 Reliability of field investigation

4.1.1 The watching brief is considered to have been successful and the results reliable. Although there was groundwater ingress, the nature of the archaeology (i.e. hard landscaping and a former lagoon edge) meant that rising groundwater did not considerably impact upon the results.

4.2 Interpretation

4.2.1 The stone-built structure of Mawson's 1924 Japanese Garden survives relatively intact, aided by the substantial size of the sandstone blocks used in the steps, paths and rockeries, and the use of concrete in the construction of the lagoon edge. Although elements of the former sandstone pathways have been replaced with tarmac, this does not detract significantly from the survival of the remainder of the structure in good condition. Many historic photographs survive of the site in the early twentieth century, as do Mawson's planting plans (e.g. Fylde Council 2017; Churchill 2018).

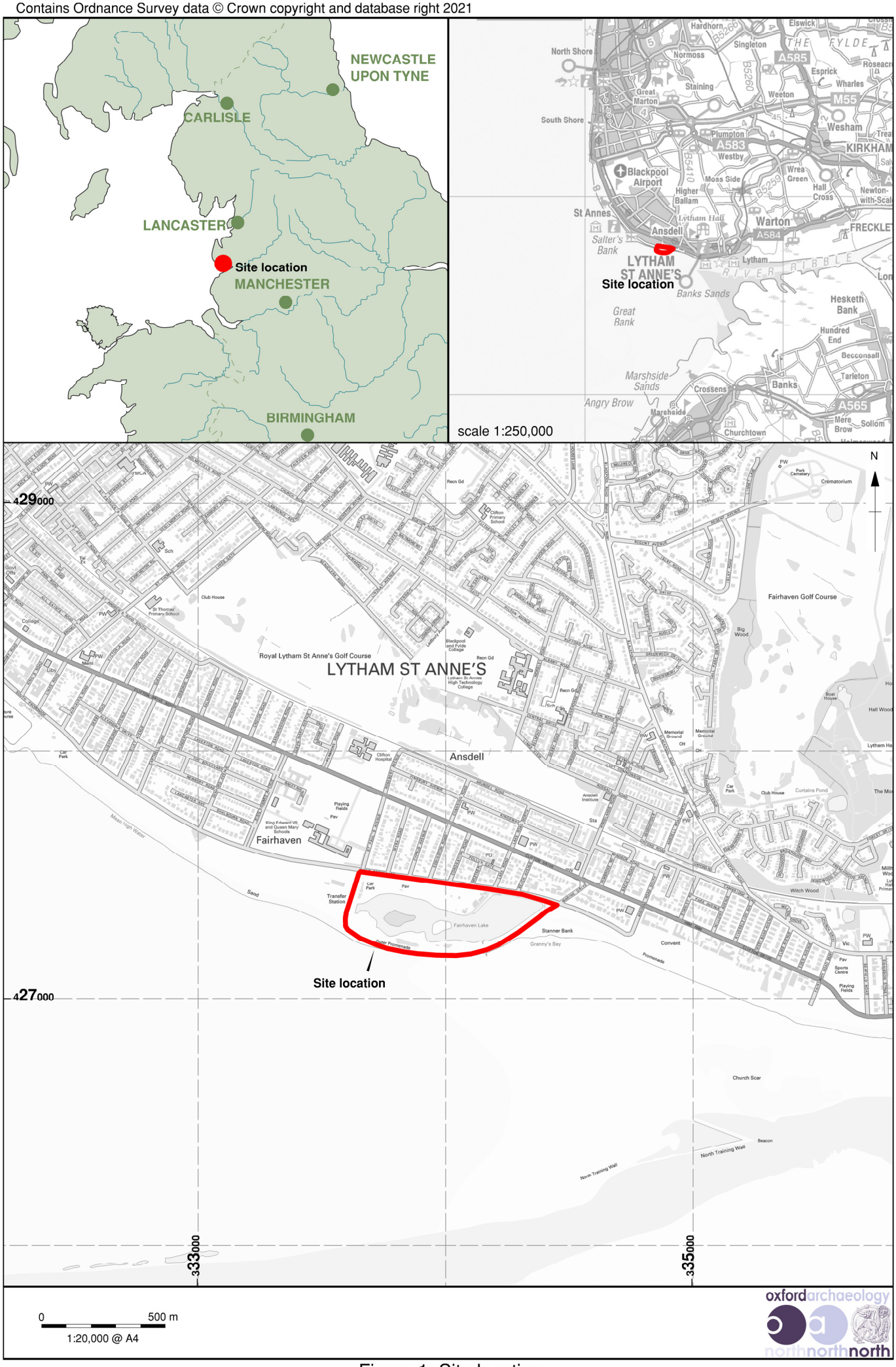

Figure 1: Site location

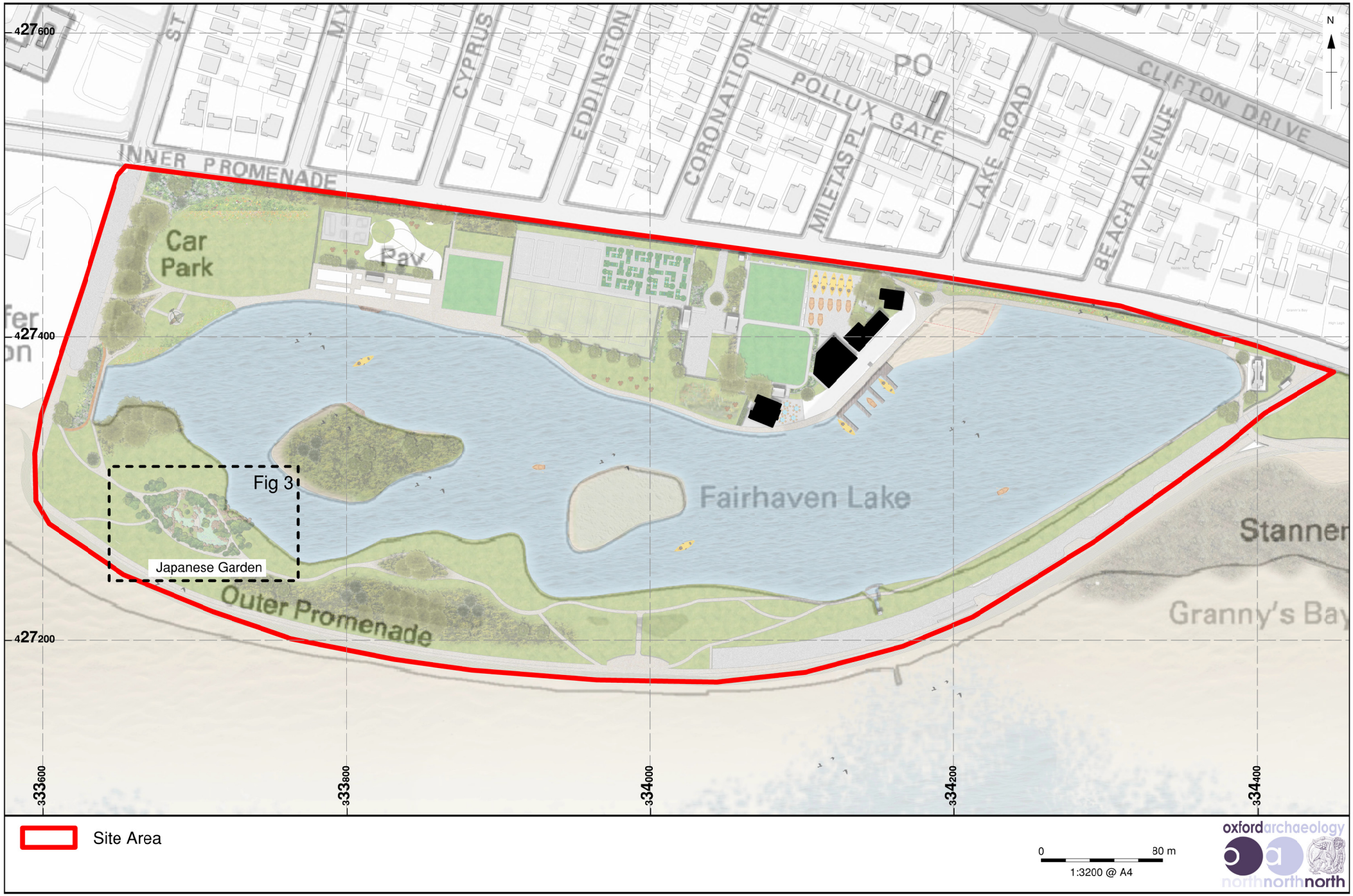

Figure 2: Location of Japanese Garden

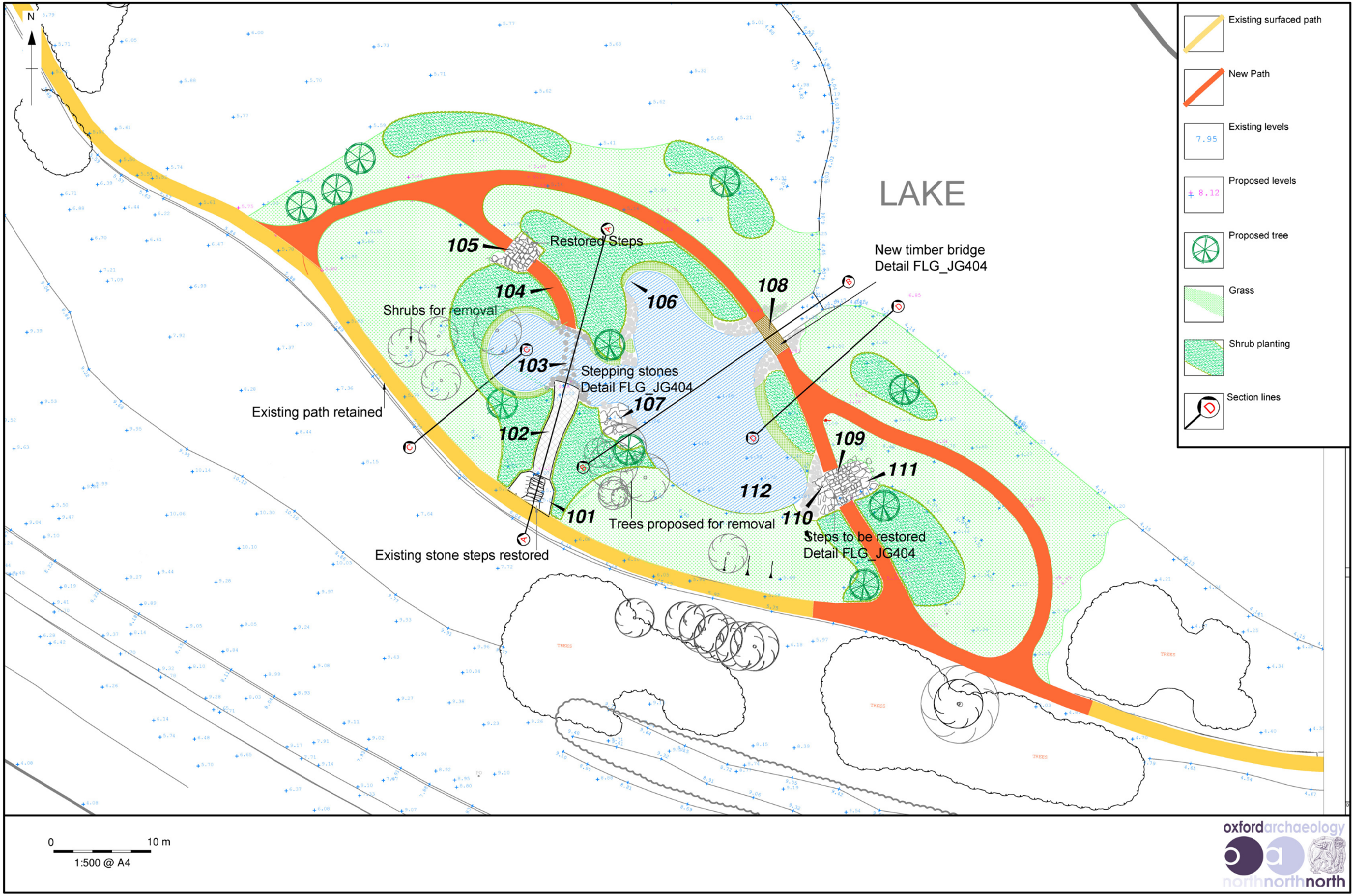

Figure 3: Japanese Garden restoration plan, showing layout and main features of interest

APPENDIX A WRITTEN SCHEME OF INVESTIGATION

Fairhaven Lake, Lytham St Annes, Lancashire

Written Scheme of Investigation Archaeological Building Recording and Watching Brief

September 2020

Client: Fylde Council

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Checked by:	Paul Dunn (Senior Project Manager)

OA South
Janus House
Osney Mead
Oxford
OX2 0ES

t. +44 (0)1865 263 800

OA East
15 Trafalgar Way
Bar Hill
Cambridge
CB23 8SQ

t. +44 (0)1223 850 500

OA North
Mill 3
Moor Lane Mills
Moor Lane
Lancaster
LA1 1QD
t. +44 (0)1524 880 250

e. info@oxfordarch.co.uk
w. oxfordarchaeology.com
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Fairhaven Lake, Lytham St Annes, Lancashire

Written Scheme of Investigation for Historic Building Recording and Archaeological Watching Brief

Centred on SD 33983 27316

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1 INTRODUCTION

1.1 Project details

1.1.1 Oxford Archaeology (OA) North has been commissioned by Fylde Council to undertake Historic England Level 1 building recording of four buildings prior to their refurbishment and an archaeological watching brief during the construction of footpaths within the Japanese garden as part of public realm enhancement works of Fairhaven Lake and Gardens, Lytham St Annes, Lancashire (NGR: SD 33983 27316).

1.1.2 The work is being undertaken as two conditions of Planning Permission (planning ref: 18/500). Condition 10 stating:

'No development (including any works of site clearance/preparation) associated with the reformation of the Japanese Lagoon Garden (the details of which are shown on drawing no. 310-RYD-XX-XX-DR-L-2103) shall take place until a Written Scheme of Investigation (WSI) outlining a programme and timetable of archaeological investigation has been submitted to and approved in writing by the local planning authority.

The development shall thereafter be carried out in full accordance with the approved WSI and the timetable contained therein.

Reason: To ensure that a suitable programme of archaeological investigation is implemented prior to the commencement of any construction works associated with the reformation of the Japanese Lagoon Garden in order to record and advance the understanding of the archaeological and historical significance of the site for archival and research purposes in accordance with the requirements of Fylde Local Plan to 2032 policy ENV5 and the National Planning Policy Framework.'

1.1.3 As well as Condition 11, which states:

'No development associated with the building works to the pagoda, café and/or boathouses (annotated as items 1-4 on drawing no. 310-RYD-XX-XX-DR-L-2101) shall take place until a Written Scheme of Investigation (WSI) setting out a programme and timetable of building recording has been submitted to and approved in writing by the local planning authority.

The development shall thereafter be carried out in full accordance with the approved WSI and the timetable contained therein.

Reason: To ensure that a suitable programme of archaeological investigation is implemented prior to the commencement of any construction works on the buildings in order to record and advance the understanding of the archaeological and historical significance of the site for archival and research purposes in accordance with the requirements of Fylde Local Plan to 2032 policy ENV5 and the National Planning Policy Framework.'

1.1.4 Discussions with the client and the Planning Officer (Archaeology) at Lancashire County Council, as advisors to the Local Planning Authority, determined the scope of works to be undertaken to discharge conditions 10 and 11. OA North were subsequently commissioned to produce this Written Scheme of Investigation (WSI)

and undertake the fieldwork required; this document outlines how OA will implement those requirements.

1.1.5 All work will be undertaken in accordance with local and national planning policies (CIfA 2019a; 2019b; 2020a; 2020b: HE 2015a; 2015b; 2016) referenced within this document.

1.2 Oxford Archaeology

1.2.1 OA North, based in Lancaster, is the northern office of Oxford Archaeology (Chartered Institute for Archaeologist's (CIfA) registered organisation no 17), the leading archaeological and heritage practice in the country, employing in excess of 250 professionals across three regional offices. OA North is itself the largest archaeological contractor in north-west England. As a registered educational charity, OA is dedicated to maintaining and promoting the highest professional, academic, commercial and ethical standards and to the provision of access to archaeology for all. It has both an established reputation and a philosophical imperative in the pursuit of efficient and cost-effective fieldwork, post-excavation excellence, and high-quality publication and outreach. We pride ourselves on our delivery of accessible outreach, including open days, lectures, information panels, leaflets, *etc*.

1.2.2 With over 40 years of experience in commercial archaeology, OA has undertaken tens of thousands of archaeological investigations of all types, scales and periods, from desk-based assessments to major open-area excavations. OA has particular experience of working closely with principal contractors, consultant, and curators to undertake high-quality archaeological works within the tight timetables and high-pressure environments of major projects.

1.3 Location, topography and geology

1.3.1 The site is situated at Lytham St Annes, Lancashire (centred on NGR SD 33983 27316; Fig 1) and encompasses Fairhaven Lake, including surrounding structures and gardens. The principal areas of investigation are a complex of buildings to the north of the lake and the Japanese garden to the south (Fig 2).

1.3.2 The bedrock geology of the site is mapped as mudstones of the Singleton Mudstone Member, formed approximately 242 to 252 million years ago during the Triassic Period (BGS 2020). The superficial deposits of the site are mapped as wind-blown sands formed up to 3 million years ago in the Quaternary Period (*ibid*).

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND AND POTENTIAL

2.1 Archaeological and historical background

2.1.1 The archaeological and historical background of the site has been described in detail in Fairhaven Historic Appraisal: the development of Fairhaven produced by Fylde Council (2017), and will not be reproduced here.

2.2 Potential

2.2.1 The archaeological potential as detailed in the letter from Peter Iles, then of Lancashire Archaeological Advisory Service (LAAS), dated 13th August 2018, suggests that any works to the buildings would potentially obscure original details and the works on the Japanese garden would need to be undertaken with care to not damage surviving elements of the garden as constructed. As such, the main potential of the site is identifying and recording previously unknown structural details on the buildings and recording and preserving elements of the Japanese garden.

3 PROJECT AIMS

3.1 General

3.1.1 The general project aims can be summarised as follows:

- to adhere to and fulfil the agreed programme of works associated with the archaeological potential of the site, and consequently to successfully discharge any condition, in whole, or in part, dependent on results;
- to inform a decision as to whether further archaeological works will be required in advance of development ground works;
- to compile a professional archival record of any archaeological remains within the excavation works.

3.2 Specific aims and objectives

3.2.1 The specific aims and objectives of the archaeological investigations are:

- to determine or confirm the general nature of any remains present;
- to determine or confirm the approximate date or date range of any remains, by means of artefactual or other evidence;
- to photographically record the Pagoda, Pavilion café and boathouse, to record any original features which may be removed or covered as part of the renovation works;
- to maintain a watching brief during the excavation of footpaths within the Japanese garden, to ensure the original features are not destroyed and to record any unknown archaeological remains.

4 PROJECT SPECIFIC EXCAVATION AND RECORDING METHODOLOGY

4.1 Scope of works

4.1.1 There will be two phases of works, the first involving Historic England Level 1 Building Surveys of four buildings, Pagoda, Pavilion café and two boathouses (Fig 2). The second phase of works will involve the archaeological monitoring and recording of any archaeological remains encountered during below ground works required by the restoration of the Japanese gardens (Fig 3).

4.1.2 In both elements of work, the attending archaeologist will be afforded the opportunity and sufficient time to investigate the buildings and the excavated areas, and to record any archaeological features identified. If potentially significant remains are identified, the archaeologist will inform the client and the Planning Officer (Archaeology) for Lancashire County Council, as advisors to the local planning authority, works will not recommence until an appropriate scheme of works are decided upon.

4.2 Programme

4.2.1 The current programme is currently unknown, however, it is anticipated that the building recording and watching brief will be undertaken by a team consisting of a single archaeologist, under the management of Paul Dunn, Senior Project Manager. The building recording will likely be undertaken by Andy Phelps, Project Officer, and the watching brief will be maintained in the field by a Project Archaeologist as yet to be appointed. Depending on OA North's timetabling of works and weather this may be subject to change through the duration of the archaeological works. All OA North Project Officers, Supervisors and Assistant Supervisors are experienced field archaeologists capable of carrying out a range of archaeological projects.

4.2.2 All fieldwork undertaken by OA North is overseen by the Operations Manager, Alan Lupton MCIfA.

4.3 Site specific methodology

4.3.1 A summary of OA's general approach to excavation and recording can be found in *Appendix A*. Standard methodologies for Geomatics and Survey, Environmental evidence, Artefactual evidence and Burials can also be found below (*Appendices B*, *C*, *D* and *E* respectively). OA is a registered member of the Chartered Institute for Archaeologists (CIfA; RO number 17), as are many of its staff, and all work carried out will meet industry standards and follow relevant guidelines (*i.e.* CIfA 2019a; 2019b; 2020a; 2020b: HE 2015a; 2015b; 2016).

4.4 Historic Building Recording

4.4.1 Historic England Level 1 Building Recording is required of four buildings (Pagoda, Pavilion Café, and two boathouses; Fig 2). The Level 1 survey is essentially a basic visual record, supplemented by the minimum information needed to identify the building's location, age and type (HE 2016).

4.4.2 ***Photographic Record***: the survey will primarily comprise a photographic archive, which will be produced utilising a high resolution digital SLR camera (18 megapixel).

The images will be taken using RAW format files and saves as 8-bit TIFFs for archive purposes. A full photographic index will be produced and the archive will comprise the following:

- the external appearance and setting of the building, including a mixture of general shots and detailed views taken from perpendicular and oblique angles;
- general shots of the surrounding landscape;
- the general appearance of the principal rooms and circulation areas;
- any external or internal detail, structural or architectural, which is relevant to the design, development and use of the buildings, and which does not show adequately on general photographs;
- any internal detailed views of features of special architectural interest, fixtures and fittings, or fabric detail relevant to phasing the buildings.

4.4.3 ***Site drawings***: architect's plans (supplied by the client) or a print-out of the photogrammetric survey will be annotated on site. This will include any wear marks, masonry marks, or any salient detail relating to the historic and contemporary use of the building.

4.5 Watching Brief

4.5.1 An archaeological watching brief is required during any below ground works associated with the renovation of the Japanese gardens.

4.5.2 The project archaeologist will monitor the mechanical or hand-excavation of any below ground disturbance required, this is assumed to be principally during the excavation works for the construction of the footpaths. The archaeologist will principally monitor the works to ensure none of the structural features relating to the original Japanese gardens are damaged and to record any previously unknown archaeological remains.

4.5.3 The archaeologist will be afforded the opportunity to clean, investigate, record and sample all archaeological remains to an appropriate degree. The hand excavation and recording methodology which will be implemented can be found in *Appendix A*. If potentially significant archaeological remains are encountered, the archaeologist will stop excavation works. They will then inform the client and will consult the Planning Officer (Archaeology) for Lancashire County Council, work will only continue with their approval.

4.5.4 A photographic and textual record will be made of the stratigraphy and archaeological features encountered. The spoil arisings from the excavations will be scanned for finds and palaeoenvironmental evidence, which will be collected if deemed significant.

5 PROJECT SPECIFIC REPORTING AND ARCHIVE METHODOLOGY

5.1 Programme

5.1.1 The final report will be completed within 4 to 6 weeks of the completion of the fieldwork.

5.1.2 A copy of the report in Adobe Acrobat (.pdf) format will be provided to the client. Once approved a copy will then be provided to the Planning Officer (Archaeology) for comment prior to final issue. Paper copies can also be provided on request.

5.2 Content

5.2.1 The content of this report will be as defined in *Appendix F*.

5.3 Specialist input

5.3.1 OA has a large pool of internal specialists, as well as a network of external specialists with whom OA have well established working relationships. A general list of these specialists is presented in *Appendix G*; in the event that additional input should be required, an updated list of specialists can be supplied.

5.4 Archive

5.4.1 The results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current Historic England guidelines (2015a) and in accordance with the Guidelines for the Preparation of Excavation Archives for Long-Term Storage (UKIC 1990). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. This archive will be provided in the English Heritage Centre for Archaeology format.

5.4.2 The site archive will be deposited with the Lancashire County Record Office following completion of the project. This will follow appropriate industry guidelines (CIfA 2020b). An OASIS summary will be produced once the archive is ready for deposition, with a digital copy of the final report being uploaded.

5.4.3 A summary of OA's general approach to documentary archiving can be found in *Appendix H*.

6 HEALTH AND SAFETY

6.1 Roles and responsibilities

6.1.1 The Senior Project Manager, Paul Dunn, has responsibility for ensuring that safe systems of work are adhered to on site. Elements of this responsibility will be delegated to the Project Officer or project archaeologist, who implements these on a day to day basis. Paul Dunn and the project archaeologist are supported by OA North's Health and Safety Advisor, Fraser Brown.

6.1.2 The Director with responsibility for Health and Safety at OA is Dan Poore Tech IOSH (Chief Business Officer).

6.2 Method statement and risk assessment

6.2.1 A summary of OA's general approach to health and safety can be found in *Appendix I*. A risk assessment has also been undertaken and approved and will be kept on site, along with OA's standard Health and Safety file, which will contain all relevant health and safety documentation.

6.2.2 The Health and Safety file will be available to view at any time.

6.3 Monitoring of works

6.3.1 Archaeological investigations will be monitored, where appropriate, by the Planning Officer (Archaeology) at Lancashire County Council. Any required visits will be carried out under auspices of the Main Contractors Health and Safety Plan and visitors will wear appropriate PPE and be accompanied at all times.

7 BIBLIOGRAPHY

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CIfA, 2019b *Standard and guidance for the archaeological investigation and recording of standing buildings or structures*, Reading

CIfA, 2020a *Standard and guidance for archaeological watching brief*, Reading

CIfA, 2020b *Standard and guidance for the creation, preparation, transfer and deposition of archaeological archives*, Reading

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Flyde Council, 2017 *Fairhaven Historic Appraisal: the development of Fairhaven*, unpubl rep

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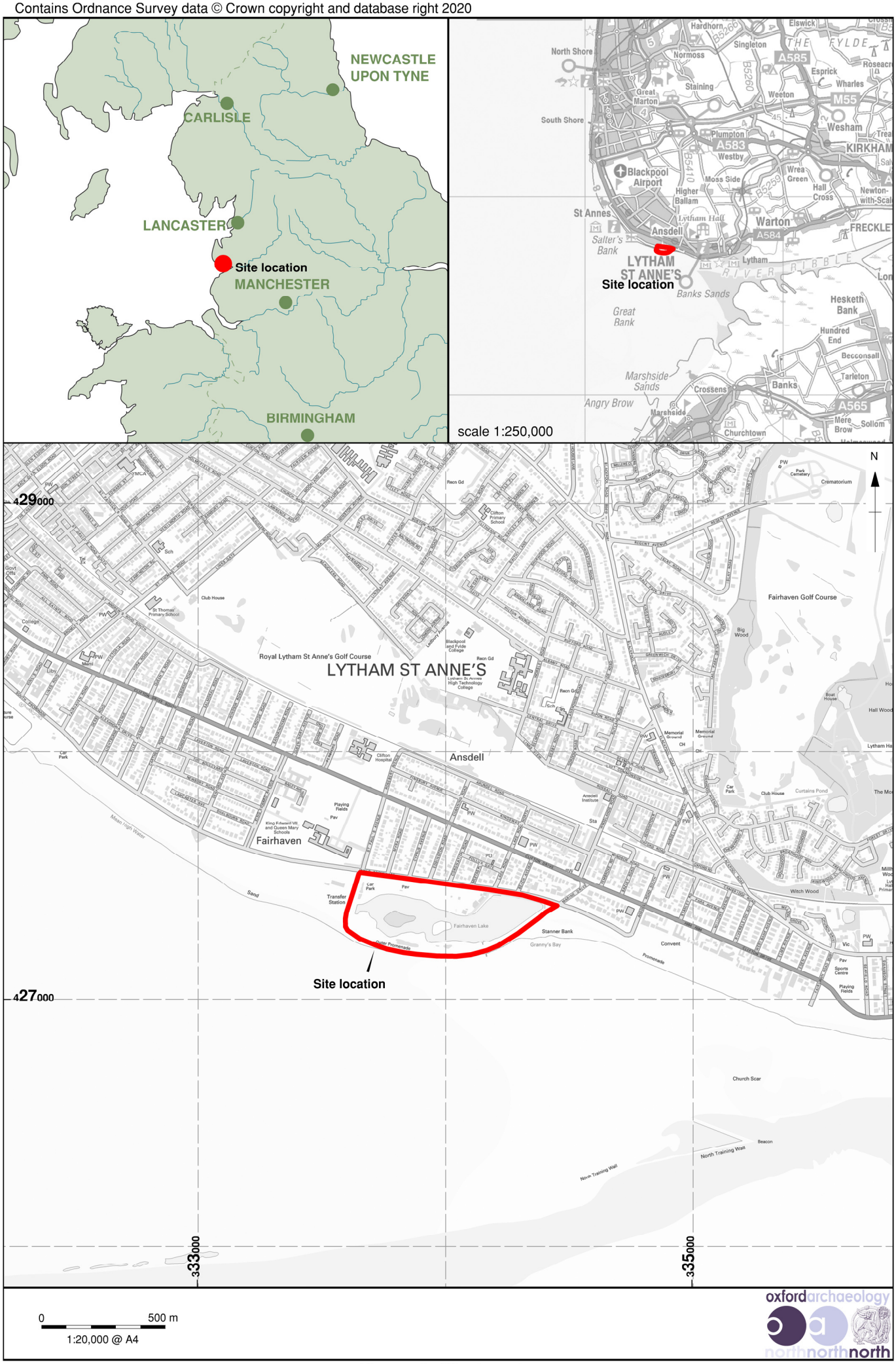

Figure 1: Site location

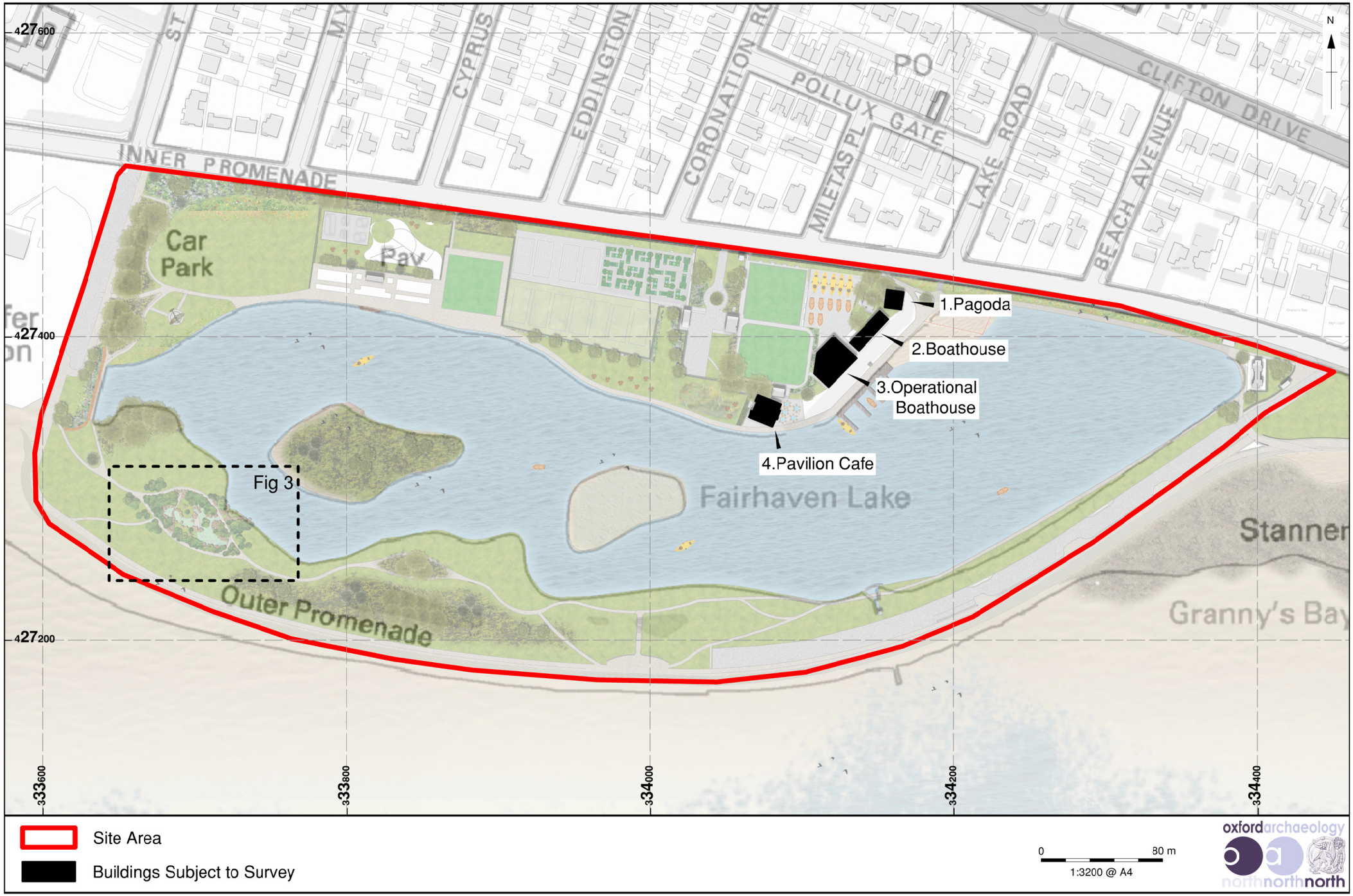

Figure 2: Buildings subject to Historic England Level 1 Survey

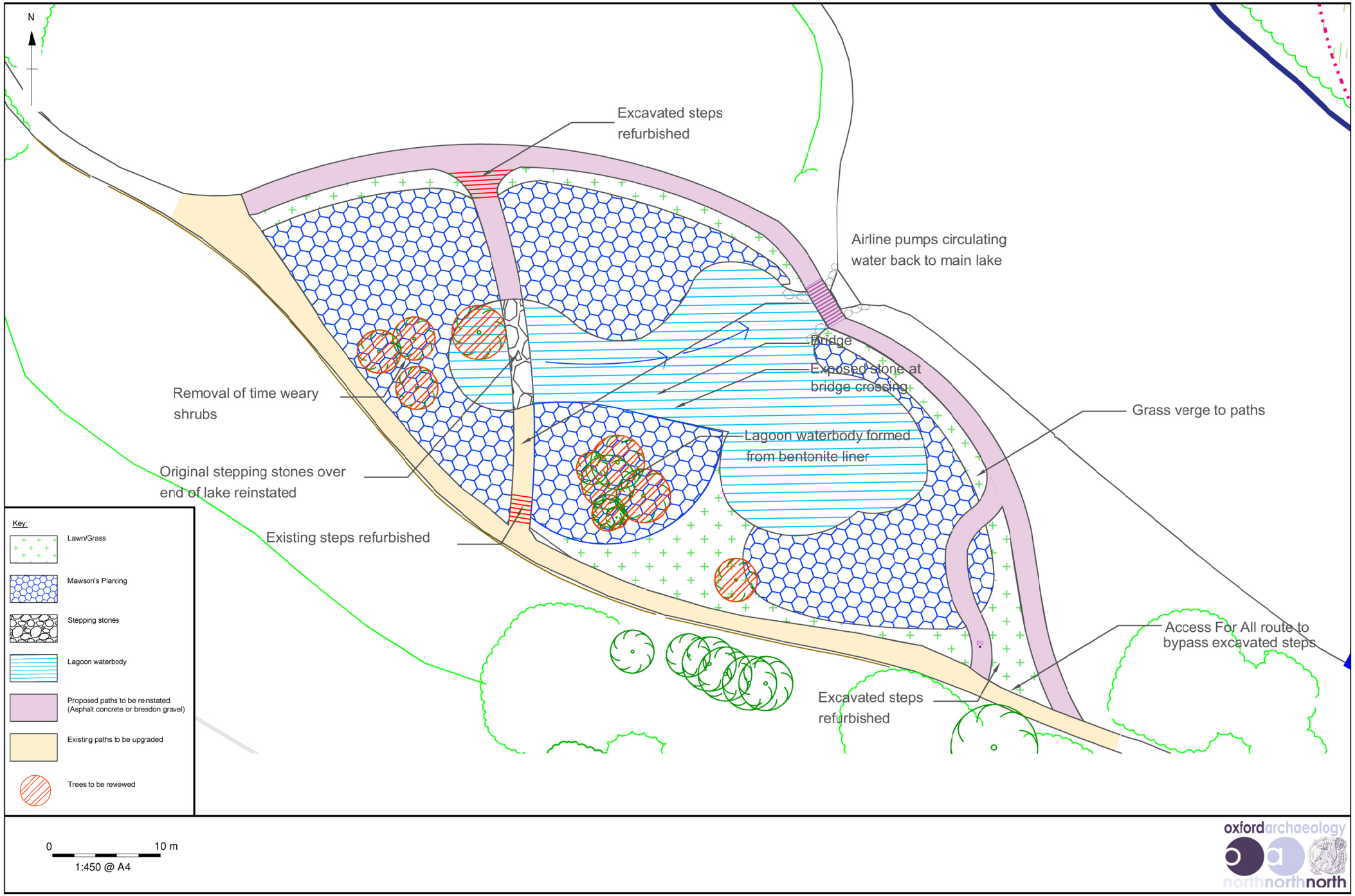

Figure 3: Japanese garden subject to watching brief

OA STANDARD FIELDWORK METHODOLOGY APPENDICES

The following methods and terms will apply, where appropriate, to all OA fieldwork unless varied by the accompanying detailed Written Scheme of Investigation.
Copies of all OA internal standards and guidelines referred to below are available on request.

APPENDIX A GENERAL EXCAVATION AND RECORDING METHODOLOGY

A.1 Standard methodology – summary

Mechanical excavation

A.1.1 An appropriate mechanical excavator will be used for machine excavation. This will normally be a JCB or 360° tracked excavator with a 1.5 m to 2 m wide toothless ditching bucket. For work with restricted access or working room a mini excavator may be used.

A.1.2 All mechanical excavation will be undertaken under direct archaeological supervision.

A.1.3 All undifferentiated topsoil or overburden of recent origin will be removed down to the first significant archaeological horizon, in successive, level spits.

A.1.4 Following mechanical excavation, all areas that require examination or recording will be cleaned using appropriate hand tools.

A.1.5 Spoil heaps will be monitored in order to recover artefacts to assist in the analysis of the spatial distribution of artefacts. Modern artefacts will be noted but not retained.

A.1.6 After recording, evaluation trenches and test pits will usually be backfilled with excavated material in reverse order of excavation, and compacted as far as is practicable with the mechanical excavator. Area excavations will not normally be backfilled.

Hand excavation

A.1.7 All investigation of archaeological levels will usually be by hand, with cleaning, examination and recording both in plan and section.

A.1.8 Within significant archaeological levels the minimum number and proportion of features required to meet the aims of the excavation will be hand excavated. Pits and postholes will usually be subject to a 50% sample by volume. Linear features will be sectioned as appropriate. More complex features such as those associated with funerary activity will usually be subject to 100% hand excavation.

A.1.9 In the case of evaluations, it is not necessarily the intention that all trial trenches will be fully excavated to natural stratigraphy, but the depth of archaeological deposits across the site will be assessed. The stratigraphy of a representative sample of the evaluation trenches will be recorded even where no archaeological deposits have been identified. Any excavation, both by machine and by hand, will be undertaken with a view to avoiding damage to any archaeological features or deposits, which appear to be worthy of preservation in situ.

Recording

A.1.10 Written descriptions will be recorded on proforma sheets comprising factual data and interpretative elements.

A.1.11 Where stratified deposits are encountered a Harris matrix will be compiled during the course of the excavation.

A.1.12 Plans will normally be drawn at 1:100, but on urban or deeply stratified sites a scale of 1:50 or 1:20 will be used. Detailed plans will be at an appropriate scale. Burials will be drawn at scale 1:10 or recorded using geo-referenced digital photography.

A.1.13 The site grid will be accurately tied into the National Grid and located on the 1:2500 or 1:1250 map of the area.

A.1.14 A register of plans will be kept.

A.1.15 Long sections of showing layers will be drawn at 1:50. Sections of features or short lengths of trenches will be drawn at 1:20.

A.1.16 A register of sections will be kept.

A.1.17 Generally, all sections will be tied in to Ordnance Datum.

A.1.18 A full photographic record, illustrating in both detail and general context the principal features and finds discovered will be maintained. The photographic record will also include working shots to illustrate more generally the nature of the archaeological work.

A.1.19 Photographs will be recorded on OA Photographic Record Sheets.

A.2 Relevant industry standards and guidelines

A.2.1 The Chartered Institute for Archaeologists Standard and Guidance notes relevant to fieldwork are:

- Standard and guidance for archaeological field evaluation (2020)
- Standard and guidance for archaeological excavation (2014)
- Standard and guidance for an archaeological watching brief (2020)

A.2.2 These will be adhered to at all times.

A.3 Relevant OA manual and other supporting documentation

A.3.1 All fieldwork will be undertaken in accordance with the requirements of the OA Field Manual (ed. D Wilkinson 1992), and the revised OA fieldwork manual (publication forthcoming).

A.3.2 Further guidance is provided to all excavators in the form of the OA 'Fieldwork Crib Sheets - a companion guide to the Fieldwork Manual'. These have been issued ahead of formal publication of the revised Fieldwork Manual.

APPENDIX B GEOMATICS AND SURVEY

B.1 Standard methodology - summary

B.1.1 The aim of OA methodology is to provide comprehensive survey cover of all investigation areas. Additionally, it is designed to provide coverage for any areas, beyond the original scope of the project, which arise as a result of further work. It provides digital plans of all required elements of the project and locates them within an overall grid.

B.1.2 It also maintains all necessary survey data and ensures that the relevant information is copied into the primary record, in order to ensure the integrity of the project archive. Furthermore, it ensures that all core data is securely stored and backed up. It establishes accurate project reference systems utilising a series of control stations and permanent base lines.

B.1.3 The survey will be conducted using a combination of Total Station Theodolite (TST) survey utilising Reflectorless Electronic Distance Measurement (REDM) where appropriate, hand-measured elements and GPS (Global Positioning System), or photogrammetry.

B.1.4 Before the main work commences, a network of control stations will be laid out encompassing the area. Control stations will be tied in to known points or existing features using rigorous metric observation. The control network will be set in using a TST to complete a traverse or using techniques as appropriate to ensure sufficient accuracy. A GPS, or other appropriate method, will be used to orientate the control network to National Grid or other recognised coordinate system.

B.1.5 All control stations will be checked by closed traverse and/or GPS, as appropriate. The accuracy of these control stations will be accessed on a regular basis and re-established accordingly. All stations will be recorded on Survey Control Station sheets.

B.1.6 Each control station will be marked with a PGM (Permanent Ground Marker). Witness diagrams will include the full 3-D co-ordinates generated, a sketch diagram and measurements to at least three fixed details, written description of the mark and a photograph of the control point in its environs.

B.1.7 Prior to entry into the field all equipment will be checked, and all pre-survey information will be logged onto the field computer and uploaded onto survey equipment as appropriate. The software in the field computer will be verified and all cabling between the GPS and/or TST and computer will be checked. Prior to conducting the survey, the site will be reconnoitred for locations for a viable control network and check the line of sight and any possible hindrance to survey. Daily record sheets will be kept to record daily tasks and conditions.

B.1.8 All spatial data will be periodically downloaded onto a field computer, and backed up onto CD, or DVD. It will be cleaned, validated and inspected.

B.1.9 All survey data will be documented on daily survey record sheets. Information entered on these sheets includes key set up information (Instrument height etc.) as well as daily variables and errors/comments. All survey data will be digitally recorded in a raw

format and translated during the download process this shall allow for any errors to be cross referenced with the daily survey record and corrected accordingly.

B.1.10 A weekly summary of survey work will be produced to access development and highlight problems. This information also will be recorded on the weekly survey journal. Technical support for the survey equipment and download software shall be available at all times. In those instances, where sites are remotely operated, all digital data will be backed up regularly and a copy returned to Oxford on a weekly basis.

B.1.11 A site plan will initially be created by a rapid survey of relevant archaeological features by mapping their extent using a combination of TST and GPS. This will form the basis for deciding excavation strategy and will be updated as the excavation clarifies the extent of, and relationships between, archaeological features.

B.1.12 Excavated archaeological interventions and areas of complex stratigraphy will be hand drawn. At least two Drawing Points (DPs) will be set in as a baseline and measurements taken off this by tape and offset. The hand drawn plans will be referenced to the digitally captured pre-site plan by measuring in the DPs with a TST or GPS. These hand drawn elements will then be scanned in, geo-referenced using the DPs as reference points and digitised following OA's digitising protocols. For further details on hand planning procedure please refer to the fieldwork guidelines.

B.1.13 Where appropriate photogrammetry or rectified photography may be used to record standing structures or burials. This will be carried out in line with Standard OA procedures for photogrammetry or rectified photography.

B.1.14 Survey data recorded in the field will be downloaded using appropriate downloading software, and saved as an AutoCAD Map DWG file, or an ESRI Shapefile. These files will be regularly updated and backed up with originals being stored on an OA server in Oxford.

B.1.15 All drawings will be composed of closed polygons, polylines or points in accordance with the requirements of GIS construction and OA Geomatics protocols. Once created, additional GIS/CAD work will normally be carried out at the local OA central office or at on-site remote locations when appropriate. Support for all GIS/CAD work will be available from OA's Oxford Office during normal office hours. The aim of the GIS/CAD work is to produce workable draft plans, which can be produced as stand-alone products, or can be readily converted to GIS format. Any hand-drawn plans will be scanned and digitised on site in the first instance. Subsequent plans will be added to the main drawing as it develops.

B.1.16 All plan scans will be numbered according to their plan site number. Digital plans will be given a standard new plan number taken out from the site plan index.

B.1.17 All digital data will be backed up incrementally on CD or DVD. On each Friday the entire data directory will be backed up and returned to Oxford where it will be copied onto the OA projects server. Each CAD drawing will contain an information layout which will include all the relevant details appertaining to that drawing. Information (metadata) on all other digital files will be created and stored as appropriate. At the end of the survey all raw measurements will be made available as hard copy for archiving purposes.

B.2 Relevant industry standards and guidelines

B.2.1 Historic England, 2017 Understanding the Archaeology of Landscapes A Guide to Good Recording Practice

B.2.2 Historic England, 2015 Metric Survey Specifications for Cultural Heritage (3rd edn)

B.2.3 Historic England, 2016 Understanding Historic Buildings: A Guide to Good Recording Practice

B.2.4 Historic England, 2017 Photogrammetric Applications for Cultural Heritage: Guidance for Good Practice

B.3 Relevant OA manual and other supporting documentation

B.3.1 OA South Metric Survey, Data Capture and Download Procedures

B.3.2 OA South Digitising Protocols

B.3.3 OA South GIS Protocols

B.3.4 These will be superseded by the OA South Geomatics Manual (in progress).

APPENDIX C ENVIRONMENTAL EVIDENCE

C.1 Standard methodology – summary

C.1.1 Different environmental and geoarchaeological sampling strategies may be employed according to established research targets and the perceived importance of the strata under investigation. Where possible an environmental specialist(s) will visit the site to advise on sampling strategies. Sampling methods will follow guidelines produced by Historic England and Oxford Archaeology. A register of samples will be kept. Specialists will be consulted where non-standard sampling is required (e.g. TL, OSL or archaeomagnetic dating) and if appropriate will be invited to visit the site and take the samples.

C.1.2 Geoarchaeological sampling methods are site specific, and methodologies will be designed in consultation with the geoarchaeological manager on a site by site basis.

C.1.3 Bulk soil samples, where possible of 40 litres or 100% of a deposit if less is available, will be taken from potentially datable features and layers for flotation for charred plant remains and for the recovery of small bones and artefacts. Larger soil samples (up to 100L) may be taken for the complete recovery of animal bones, marine shell and small artefacts from appropriate contexts. Smaller bulk samples (general biological samples) of 10-20 litres will be taken from any waterlogged deposits present for the recovery of macroscopic plant remains and insects. Series of incremental 2L samples may be taken through buried soils and deep feature fills for the recovery of snails and/or waterlogged plant remains, depending on the nature of the stratigraphy and of the soils and sediments. Columns will be taken from buried soils, peats and waterlogged feature fills for pollen and/or phytoliths, diatoms, ostracods and foraminifera if appropriate. Soil samples will be taken for soil investigations (particle size, organic matter, bulk chemistry, soil micromorphology etc.) and possibly for metallurgical analysis in consultation with the appropriate specialists.

C.1.4 Bulk samples from dry deposits will be processed by standard water flotation using a modified Siraf-style machine and meshes of 0.25mm (flot) and 0.5 or 1mm depending on sediment type and like modes of preservation (residue). Heavy residues will be wet sieved, air dried and sorted. Samples taken exclusively for the recovery of bones, marine shell or artefacts will be wet sieved to 2mm. Waterlogged samples (1L sub-sample) and snail samples (2L) will be processed by hand flotation with flots and residues collected to 0.25mm (waterlogged plants) and 0.5mm (snails) respectively; these flots and residues will be sorted by the specialist. Samples specifically taken for insects, pollen, other microflora and microfauna, metallurgy and soil analysis will be submitted as whole earth to the appropriate specialists or processed following their instructions.

C.2 Relevant industry standards and guidelines

C.2.1 Historic England, 2010 Waterlogged Wood: Guidelines on the recording, sampling, conservation and curation of waterlogged wood.

C.2.2 Historic England, 2011 Environmental Archaeology. A guide to the theory and practice of methods, from sampling and recovery to post excavation, (2nd ed)

C.2.3 Historic England, 2004 Dendrochronology: Guidelines on Producing and Interpreting Dendrochronological Dates (revision due 2020).

C.2.4 University of Bradford, 2019 Archaeomagnetism: Magnetic Moments in the Past https://www.brad.ac.uk/archaeomagnetism/

C.2.5 Historic England, 2008 Luminescence Dating. Guidelines on Using Luminescence Dating in Archaeology (revision due 2020).

C.2.6 Historic England, 2008 Guidelines for the Curation of Waterlogged Macroscopic Plant and Invertebrate Remains (currently being revised).

C.2.7 Historic England, 2015 Archaeometallurgy. Guidelines for Best Practice.

C.2.8 Historic England, 2015 Geoarchaeology. Using Earth Sciences to Understand the Archaeological Record.

C.2.9 Historic England, 2017 Organic Residue Analysis and Archaeology.

C.2.10 Baker, P and Worley, F, 2019 Animal Bones and Archaeology: Recovery to Archive. Historic England

C.3 Relevant OA manual and other supporting documentation

C.3.1 Oxford Archaeology 2017. Environmental Sampling Guidelines, 4th ed.

APPENDIX D ARTEFACTUAL EVIDENCE

D.1 Standard methodology - summary

D.1.1 Before a site begins arrangements concerning the finds will be discussed with the Finds Team Leader. Information will be provided by the project manager about the nature of the site, the expected size and make-up of the finds assemblage and any site specific finds retrieval strategies. On-site requirements will be discussed and a conservator appointed who can be called on to make site visits if required. Special requirements regarding particular categories of material will be raised at this early stage for instance the likelihood of recovering assemblages of waterlogged material, large timbers, quantities of structural stone or ceramic building material. Specialists may be required to visit sites to discuss retrieval strategies.

D.1.2 The project manager will supply the Finds Team Leader with contact details of the landowner of the site so that consent to deposit any finds resulting from the investigation can be sought.

D.1.3 The on-site retrieval, lifting and short term packaging of bulk and small finds will follow the detailed guidelines set out in the OA Finds Manual (sections 2 and 3), First Aid for Finds and the UKIC conservation guidelines No.2.

D.1.4 All finds recovered from site will be transported to an OA regional office for processing; local sites will return finds at the end of each day, away based sites at the end of each week. Special arrangements can be discussed for certain sites with the Team Leader before the start of a project. Larger long running sites may in some instances set up on-site processing units to deal with the material from a particular site.

D.1.5 All finds qualifying as Treasure will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act (1996), and the Treasure (Designation) Order 2002. Where removal cannot be effected on the same working day as the discovery, suitable security measures will be taken to protect the finds from theft.

D.1.6 Each box of finds will be accompanied by a finds context checklist itemising the finds within each box. The number of bags of finds from each context and individual small find from each context will be recorded. A member of the processing team will check the list when it arrives in the department. There are separate forms for finds recovered from fieldwalking.

D.1.7 The processing programme is reviewed on a weekly basis and priorities are worked out after discussions with the Fieldwork Team Leader and the Post-excavation Team Leader. Project managers will keep the Finds Team Leader informed of any pressing deadlines that they are aware of. All finds from evaluations are dealt with as a matter of priority.

D.1.8 All bulk finds are washed (where appropriate), marked, bagged and boxed by the processing team according to the guidelines set out in section 4 and 5 of the OA Finds Manual, First-aid for finds and the UKIC guidelines No.2. They must also take into account the requirements of the receiving museum. Primary data recording count and weight of fragments by material from each context is recorded on the site database.

D.1.9 Unstable and sensitive objects are recorded onto the database and then packaged and stored in controlled environments according to their individual requirements. The advice of a conservator will be sought for sensitive objects in need of urgent conservation. All metalwork will be x-rayed prior to assessment (and to meet the requirements of most receiving museums).

D.1.10 Finds recovered from the environmental sample processing will be incorporated into the main assemblage and added to the database.

D.1.11 On completion of the processing and data entry a finds file for each archaeological investigation will be produced, a summary of which is available for the project manager. The assemblage is allocated an OA number for storage purposes. Bulk finds are stored on a roller racking system, metals in a secure controlled storage and organic finds are refrigerated where possible.

D.1.12 The movement of finds in and out of the storage areas is strictly monitored and recorded. Carbon copy transit forms exist to record this information. Finds will not be removed from storage without the prior knowledge of the Finds Team Leader.

D.1.13 Finds information summarised in the finds compendium is used to assess the finds requirements for the post excavation stages of the project. The Team Leader holds a list of all specialists used by OA (see below) both internal and external.

D.1.14 On completion of the post excavation stage of the project the team prepares the finds assemblage for deposition with the receiving museum. Discussions will be held with the museum, the excavator and the Finds Team Leader to finalise any selection, retention or discard policy. Most museums issue strict guidelines for the preparation of archives for deposition with their individual labelling, packaging and recording requirements.

D.2 Relevant industry standards and guidelines

D.2.1 CIfA, 2014 Standard and guidance for the collection, documentation, conservation and research of archaeological materials

D.2.2 Society of Museum Archaeologists, 1993 Selection, retention and dispersal of Archaeological Collections. Download available via http://www.socmusarch.org.uk/publica.htm)

D.2.3 UKIC, 1983 Packaging and Storage of Freshly-Excavated Artefacts from Archaeological Sites. Conservation Guidelines No.2. Archaeology Section, United Kingdom Institute for Conservation.

D.2.4 UKIC, 1988 Excavated Artefacts and Conservation: UK sites Revised Edition. Conservation Guidelines No.1. Archaeology Section, United Kingdom Institute for Conservation.

D.2.5 Watkinson, D E & Neal, V, 1998 First Aid for Finds (3rd edition). RESCUE & UKIC

D.3 Relevant OA manual and other supporting documentation

D.3.1 Allen, L, and Cropper, C (internal publication only) Oxford Archaeology Finds Manual.

APPENDIX E HUMAN REMAINS

E.1 Standard methodology - summary

E.1.1 Human remains will not be excavated without a relevant licence/faculty and, where applicable (for example, a post medieval cemetery), a risk assessment from the local environmental officer.

E.1.2 All human remains will be treated with due care and regard to the sensitivities involved, and will be screened from the public throughout the course of the works.

E.1.3 Excavation will be undertaken in accordance with CIfA (Roberts and McKinley 1993), Historic England (2018), the Advisory Panel on the Archaeology of Burials in England (APABE, 2015, 2017) and British Association of Biological Anthropology and Osteoarchaeology Code of Practice (2019) and Code of Ethics (2019). For crypts and post-medieval burials, the recommendations set out by the CIfA (Cox 2001) and by the Association of Diocesan and Cathedral Archaeologists and APABE (2010) are also relevant.

E.1.4 In accordance with recommendations set out in the Historic England and Church of England (2005) and updated by the Advisory Panel on the Archaeology of Burials in England (2017), skeletons will not be excavated beyond the limits of the trench, unless they are deemed osteologically or archaeologically important.

E.1.5 Where any soft tissue survives and/or materials (for example, inner coffins, mattresses and other paddings) soaked in body liquor, no excavation or handling of the remains will take place until an appropriate risk assessment has been undertaken. Relevant protocols (i.e. Cox 2001) for their excavation, recording and removal will be adhered to.

E.1.6 OA does not excavate or remove modern burials (those less than 100 years old) and does not remove or open sealed lead coffins. Appropriate PPE (e.g. chemical suit, latex gloves) will be worn by all staff when working with lead coffins.

E.1.7 Graves and their contents will be hand excavated in plan. Each component (for example, skeleton, grave cut, coffin (or remains of), grave fill) will be assigned a unique context number from a running sequence. A group number will also be assigned to all of these, and small finds numbers to features such as coffin nails, hobnails and other grave goods (as appropriate).

E.1.8 Soil samples will be normally taken during the excavation of inhumations, usually from the region of the skull, chest, right hand, left hand, abdomen and pelvis, right foot and left foot. Infants (circa. less than 5 years) will normally be recovered as bulk samples. Soil samples will also be taken from graves that appear to contain no human bone.

E.1.9 Burials (including the skeleton, cremation, coffin fittings, coffin, urn, grave goods / other) will be recorded by photographic and written record using specialised pro forma context sheets, although these records may only include schematic representations of the location and position of the skeletons, depending on the nature and circumstances of the burial.

E.1.10 Where digital imaging is used it will be done in accordance with the British Association of Biological Anthropology and Osteoarchaeology Recommendations on the Ethical Issues Surrounding 2D and 3D Digital Images of Human Remains (2019).

E.1.11 Where necessary, hand drawn plans (usually at 1:10, sometimes 1:5) will be made, especially of contexts where required details cannot be adequately seen using photography (for example, urned cremations; undisturbed hob nails).

E.1.12 Levels will be taken. For inhumations this will be on the skull, pelvis and feet as a minimum.

E.1.13 Human remains that are exhumed will be bagged and labelled according to skeletal region and carefully packed into suitable containers (for example, acid free cardboard boxes) and transported to a suitable storage location. Any associated coffins and coffin fittings will be contained with the human remains wherever possible.

E.1.14 Unurned cremations will not usually be half sectioned, but excavated in spits and/or quadrants (i.e. large deposits or spreads), or recovered as a bulk sample.

E.1.15 Wherever possible, urned cremations will be carefully bandaged, recovered whole and will be excavated in spits in the laboratory, as per the recommendations of McKinley (2004, 2017).

E.1.16 Unless deemed osteologically or archaeologically important disarticuled bone / charnel will be collected and reserved for re-burial if immediate re-internment as close to its original position is not practicable. In some instances, a rapid scan of this material may be undertaken by a qualified osteologist, if deemed relevant.

E.1.17 If undisturbed, pyre sites will normally be excavated in quadrants, at the very least in 0.5 m blocks of 0.5 m spits.

E.1.18 Pyre debris dumps will be half sectioned or quadranted and will be subject to 100% sampling.

E.1.19 Wooden and lead coffins and any associated fittings, including fixing nails will be recorded on a pro forma coffin recording sheet. All surviving coffin fittings will be recorded by reference to Reeve and Adams (1993) and the unpublished master catalogue that is being compiled by OA. Where individual types cannot be paralleled, they will be drawn and/ or photographed and assigned a style number. Biographical details obtained from legible departum plate inscriptions will be recorded and further documentary research will be made.

E.1.20 Funerary structures, such as brick shaft graves and/or vaults will be recorded by photogrammetry or hand-drawn at a scale of 1:10 or 1:20, as appropriate. Location, dimensions and method of construction will be noted, and the structure added to the overall trench plan.

E.1.21 Memorials, including headstones, revealed within the areas of development will be recorded irrespective of whether they are believed to be in situ.

E.1.22 Where required, memorials will be accorded an individual context number and will also be included as part of the grave group, if the association with a burial is clear.

E.1.23 Memorials will be recorded on pro-forma context sheets, based on and following the guidelines set out by Mytum (2002), and will include details of:

- Shape
- Dimensions
- Type of stone used
- Condition, completeness and fragmentation of stones, no longer in original positions
- Iconography (an illustration may best describe these features)
- Inscription (verbatum record of inscription; font of the lettering)
- Stylistic type

E.2 Relevant industry standards and guidelines

E.2.1 Advisory Panel on the Archaeology of Burials in England, 2013 Science and the Dead. A guideline for the destructive sampling of archaeological human remains for scientific analysis. English Heritage Publishing.

E.2.2 Advisory Panel on the Archaeology of Burials in England, 2017 Guidance for Best Practice for the Treatment of Human Remains Excavated from Christian Burial Grounds in England

E.2.3 Advisory Panel on the Archaeology of Burials in England, 2015 Large Burial Grounds. Guidance on sampling in archaeological fieldwork projects

E.2.4 Association of Diocesan and Cathedral Archaeologists and APABE, 2010 Archaeology and Burial Vaults. A guidance note for churches. Guidance Note 2

E.2.5 British Association of Biological Anthropology and Osteoarchaeology. 2019a Code of Practice (http://www.babao.org.uk/index/ethics-and-standards)

E.2.6 British Association of Biological Anthropology and Osteoarchaeology. 2019b Code of Ethics (http://www.babao.org.uk/index/ethics-and-standards)

E.2.7 British Association of Biological Anthropology and Osteoarchaeology, 2019c Recommendations on the Ethical Issues Surrounding 2D and 3D Digital Images of Human Remains (http://www.babao.org.uk/index/ethics-and-standards)

E.2.8 Cox, M, 2001 Crypt archaeology. An approach. CIfA Paper No. 3

E.2.9 English Heritage, 2002 Human Bones from Archaeological Sites. Guidelines for producing assessment documents and analytical reports

E.2.10 Historic England, 2018 The Role of the Human Osteologist in an Archaeological Fieldwork Project. Swindon, Historic England

E.2.11 McKinley, J, and Roberts, C, 1993 Excavation and post-excavation treatment of cremated and inhumed human remains, CIfA Technical Paper No. 13

E.2.12 McKinley, J, 2004 Compiling a skeletal inventory: cremated human bone. In Brickley, M, and McKinley, J (eds) Guidelines to the Standards for Recording Human Remains, CIfA Technical Paper No. 7. 9-13

E.2.13 McKinley, J, 2017 Compiling a skeletal inventory: cremated human bone. In Mitchell P, and Brickley, M (eds) Updated Guidelines to the Standards for Recording Human Remains, CIfA 14-19

E.2.14 Mitchell P, and Brickley, M (eds) Updated Guidelines to the Standards for Recording Human Remains, CIfA 2017

E.2.15 Mytum, H, 2000 Recording and Analysing Graveyards. CBA Handbook No. 15

E.2.16 Reeve, J, and Adams, M, 1993 The Spitalfields Project. Volume I – The Archaeology Across the Styx. CBA Research Report No. 85

E.2.17 The Human Tissue Act 2004

E.3 Relevant OA manual and other supporting documentation

E.3.1 Loe, L, 2008 The Treatment of Human Remains in the Care of Oxford Archaeology. Oxford Archaeology internal policy document

E.3.2 Oxford Archaeology 2018 *Fieldwork Manual Human Remains* unpublished

APPENDIX F REPORTING

F.1 Standard methodology - summary

F.1.1 For Watching Briefs and Evaluations, the style and format of the report will be determined by OA, but will include as a minimum the following:

- A location plan of trenches and/or other fieldwork in relation to the proposed development.
- Plans and sections of features located at an appropriate scale.
- A section drawing showing depth of deposits including present ground level with Ordnance Datum, vertical and horizontal scale.
- A summary statement of the results.
- A table summarising the features, classes and numbers of artefacts contained within, spot dating of significant finds and an interpretation.
- A reconsideration of the methodology used, and a confidence rating for the results.
- An interpretation of the archaeological findings both within the site and within their wider landscape/townscape setting.

F.1.2 For Excavations, a Post-Excavation Assessment and Project Design will generally be prepared, as prescribed by Historic England Management of Research Projects in the Historic Environment (MoRPHE) 2006, Section 2.3. This will include a Project Description containing:

- A summary description and background of the project.
- A summary of the quantities and assessment of potential for analysis of the information recovered for each category of site, finds, dating and environmental data. Detailed assessment reports will be contained within appendices.
- An explicit statement of the scope of the project design and how the project relates to any other projects or work preceding, concurrent with or following on from it.
- A statement of the research aims of the fieldwork and an illustrated summary of results to date indicating to what extent the aims were fulfilled.
- A list of the project aims as revised in the light of the results of fieldwork and the current post-excavation assessment process.

F.1.3 A section on Resources and Programming will also be produced, containing:

- A list of the personnel involved indicating their qualifications for the tasks undertaken, along with an explanation of how the project team will communicate, both internally and externally.
- A list of the methods which will be used to achieve the revised research aims.

- A list of all the tasks involved in using the stated methods to achieve the aims and produce a report and research archive in the stated format, indicating the personnel and time in days involved in each task. Allowance should be made for general project-related tasks such as monitoring, management and project meetings, editorial and revision time.
- A cascade or Gantt chart indicating tasks in the sequence and relationships required to complete the project. Due allowance will be made for leave and public holidays. Time will also be allowed for the report to be read by a named academic referee as agreed with the County Archaeological Officer, and by the County Archaeological Officer.
- A report synopsis indicating publisher and report format, broken down into chapters, section headings and subheadings, with approximate word lengths and numbers and titles of illustrations per chapter. The structure of the report synopsis should explicitly reflect the research aims of the project.

F.1.4 The Project Design will be submitted to the County Archaeological Officer or equivalent for agreement.

F.1.5 Under certain circumstances (e.g. with very small mitigations), and as agreed with the County Archaeological Officer or equivalent, a formal Assessment and Project Design may not be required and either the project will continue straight to full analysis, or a simple Project Proposal (MoRPHE 2006 Section 2.1) will be produced prior to full analysis. This proposal may include:

- A summary of the background to the project
- Research aims and objectives
- Methods statement outlining how the aims and objectives will be achieved
- An outline of the stages, products and tasks
- Proposed project team
- Estimated overall timetable and budget if appropriate.

F.1.6 Once the post-excavation Project Design or Project Proposal has been accepted, the County Archaeological Officer or his appointed deputy will monitor the progress of the post-excavation project at agreed points. Any significant variation in the project design will be agreed with the County Archaeological Officer.

F.1.7 The results of the project will be published in an appropriate archaeological journal or monograph. The appropriate level of publication will be dependent on the significance of the fieldwork results and will be agreed with the County Archaeological Officer. An OASIS (Online Access to the Index of Archaeological Investigations) form will be completed for each project as per Historic England guidelines.

F.2 Relevant industry standards and guidelines

F.2.1 Oxford Archaeology (OA) adheres to the national standards in post-excavation procedure as outlined in Historic England's Management of Research Projects in the Historic Environment (MoRPHE; EH 2006). Furthermore, all post-excavation projects

take into account the appropriate regional research frameworks as well as national research agendas such as the Framework for Historic Environment Activities & Programmes in Historic England (SHAPE; EH 2008).

APPENDIX G LIST OF SPECIALISTS REGULARLY USED BY OA

G.1.1 Below are two tables, one containing 'in-house' OA specialists, and the other containing a list of external specialists who are regularly used by OA.

Internal archaeological specialists used by OA

Specialist	Specialism	Qualifications
John Cotter	Medieval and Post Medieval pottery, Clay Pipe and CBM	BA (Hons), MCIfA
Dr Alex Davies	Prehistoric Pottery	BA (Hons), MA, PhD, ACIfA
Edward Biddulph	Roman Pottery	BA (Hons), MA, MCIfA
Kate Brady	Roman Pottery	BA, ACIfA
Cynthia Poole	CBM and Fired Clay	BA (Hons), MSc
Leigh Allen	Metalwork and worked bone	BA (Hons), PGDip
Anni Byrd	Metalwork, coins and glass	MSx, MCIfA
Dr Ruth Shaffrey	Worked stone artefacts	BA, PhD, MCIfA
Julian Munby	Architectural Stone	BA, FSA
Dr Rebecca Nicholson	Fish and Bird Bone	BA (Hons), MA, D.Phil, MCIfA, FSA Scot
Dr Lee Broderick	Animal bone	BA (Hons), MA, MSc, FZG, SAC Dip (ecology), PhD
Dr Mairead Rutherford	Pollen	BSc, MSc
Ian Smith	Animal Bone	BA (Hons), MSc, PCIfA
Dr Martyn Allen	Animal Bone	BA (Hons), MA, PhD
Dr Denise Druce	Charred plant remains, charcoal and pollen	BA (Hons), PhD, MCIfA
Sharon Cook	Charred plant remains	BSc, MSc, ACIfA
Elizabeth Stafford	Geoarchaeology and land snails	BA (Hons), MSc
Carl Champness	Geoarchaeology	BA (Hons), MSc, ACIfA
Nicola Scott	Archaeological archive deposition	BA (Hons Dunelm)
Mike Donnelly	Flint	BSc, MCIfA
Dr Louise Loe	Human Bone	BA PhD, MCIfA, BABAO
Helen Webb	Human Bone	BSc, MSc, MCIfA, BABAO
Mark Gibson	Human Bone	BA, MSc, ACIfA, BABAO
Dr Lauren McIntyre	Human Bone	BSc, MSc, PhD, MCIfA, BABAO
Ui Choileain	Human Bone	Pg Dip, MA, Msc, BABAO
Natasha Dodwell	Human Bone	BA, MSc, BABAO

External archaeological specialists regularly used by OA

Specialist	Specialism	Qualifications
Lynne Keys	Slag	BA (Hons)
Quita Mould	Leather	BA, MA
Penelope Walton Rogers, The Anglo Saxon Laboratory	Identification of Medieval Textiles	FSA, Dip.Acc
Dana Goodburn-Brown	Conservation	BSc (Hons), BA, MSc
Steve Allen, York Archaeological Trust	Conservation	BA, MA, MAAIS
Dr Richard Macphail	Soils, especially Micromorphology	BA (Hons), MSc, PhD
Dana Challinor	Charcoal	MA, MSc
Dr Nigel Cameron	Diatoms	BSc, MSc, PhD
Dr David Smith	Insects	BA (Hons), MA, PhD
Professor Adrian Parker	Phytoliths and pollen	BSc (Hons), D.Phil
Dr David Starley	Metalworking Slag	BSc (Hons), PhD
Wendy Carruthers	Charred and waterlogged plant remains	BA (Hons)
Dr John Whittaker	Ostracods and Foraminifera	BA (Hons), PhD
Dr John Crowther	Soil Chemistry	MA, PhD
Dr Martin Bates	Geoarchaeology	BSc, PhD
Dr Dan Miles	Dendrochronology	D.Phil, FSA
Dr Jean-Luc Schwenninger	Optically Stimulated Luminescence Dating	PhD
Dr David Higgins	Clay Pipe	BA, PhD, MCIfA
Dr Hugo Anderson-Wymark	Flint	BSc, PhD, FSA Scot, MCIfA
Dr Damian Goodburn-Brown	Ancient Woodwork	BA, PhD

APPENDIX H DOCUMENTARY ARCHIVING

Standard methodology – summary

H.1.1 The documentary archive constitutes all the written, drawn, photographic and digital records relating to the set up, fieldwork and post-excavation phases of the project. This documentary archive, together with the artefactual and environmental ecofact archive collectively forms the record of the site. The report is part of the documentary archive, and the archive must provide the evidence that supports the conclusions of the report, but the archive may also include data which exceeds the limitations of research parameters set down for the report and which could be of significant value to future researchers.

H.1.2 At the outset of the project OA Archive manager will contact the relevant local receiving museum or archive repository to notify them of the imminent start of a new fieldwork project in their collecting area. Relevant local archiving guidelines will be observed and site codes, which integrate with the receiving repository, will be agreed for labelling of archives and finds.

H.1.3 Where there is currently no receiving museum for the project archive, although responsibility for the archive ultimately lies with the client, OA will hold the archive on their behalf for a period of up to 3 years after completion of the report, after which time (in the event that a suitable depository has not been secured) provision for further storage of the archive will be made in agreement with Oxford Archaeology, the client and the relevant planning archaeologist.

H.1.4 During the course of the project the Archive team will assist the Project Manager in the management of the archive including the cataloguing and development technique suitable for photographic archive requirements.

H.1.5 The hard copy site archive will be security copied by scanning to PdFA and a copy of this will be housed on the OA Archive Server. A full digital copy of the archive, including scanned hard copy and born digital data, will be deposited with and made publicly available on-line through the ADS. A further copy will be maintained on the OA server and if requested a copy on disk will also be sent to the receiving museum with the hard copy. This will act as a safeguard against the accidental loss and the long-term degeneration of paper records and photographs.

H.1.6 Born digital data will only be printed to hard copy for the receiving museum where practical. Archive elements that need maintaining in digital form will be sent to ADS in accordance with Arches Standard and ADS guidelines. A copy will be sent to the receiving museum by CD and back-up copies will be stored on the OA digital network. In most cases a digital copy of the report will be included in the OASIS project library hosted by ADS.

H.1.7 Prior to deposition the Archive team will contact the museum regarding the size and content of the archive and discuss any retention and dispersal policies which may be applicable in line with local and SMA Guidelines ' Selection, Retention & Dispersal of Archaeological Collections' 1993.

H.1.8 The site archive will then be deposited with the relevant receiving museum or repository at the earliest opportunity unless further archaeological work on the site is expected. The documentary archive will include correspondence detailing landowner consent to deposit the artefacts and any copyright licences in accordance with the receiving museum guidelines. Deposition charges will be required from the client as part of the project costs but the level of the fee is set by the receiving body, and may be subject to change during the lifespan of the project. Changes to archiving charges beyond OA's control will be passed across to the client.

H.1.9 Oxford Archaeology will retain full copyright of any commissioned reports, tender documents or other project documents, under the Copyright, Designs and Patents Act 1988 with all rights reserved; excepting that it will provide the receiving repository or museum for the archive with a full licence for use to the client in all matters directly relating to the project as described in the Written Scheme of Investigation, and in line with the relevant receiving body guidelines.

H.1.10 OA will advise the receiving repository or museum for the archive of 3rd party materials supplied in the course of projects which are not OA's copyright.

H.1.11 OA undertakes to respect all requirements for confidentiality about the client's proposals provided that these are clearly stated. It is expected that such conditions shall not unreasonably impede the satisfactory performance of the services required. Archaeological findings and conclusions can be kept confidential for a limited period but will be made publicly available in line with the above procedure either after a specified time period agreed with the client at the outset of the project, or where no such period is agreed, after a reasonable period of time. It is expected that clients respect OA's general ethical obligations not to suppress significant archaeological data for an unreasonable period.

H.2 Relevant industry standards and guidelines

H.2.1 At the end of the project the site archive will be ordered, catalogued, labelled and conserved and stored according to the following national guidelines:

H.2.2 EAC, 2014 A Standard and Guide to Best Practice for Archaeological Archiving in Europe (EAC Guidelines 1)

H.2.3 CIfA, 2014 Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives

H.2.4 Brown, D, 2011 Archaeological Archives A Guide to Best Practice in Creation, Compilation, Transfer and Curation. AAF

H.2.5 UKIC, 1990 Guidelines for the preparation of excavation archives for long-term storage

H.2.6 SMA, 2020 Standards and Guidance in the Care of Archaeological Collections

H.2.7 Local museum guidelines such as Museum of London Guidelines: (http://www.museumoflondonarchaeology.org.uk/English/ArchiveResearch/DeposResource) will be adopted where appropriate to the archive collecting area.

H.2.8 The site archive will be prepared to at least the minimum acceptable standard defined in Management of Archaeological Projects 2, Historic England 1991.

H.3 Relevant OA manual and other supporting documentation

H.3.1 The OA Archives Policy.

APPENDIX I HEALTH AND SAFETY

I.1 Standard Methodology - summary

I.1.1 All work will be undertaken in accordance with the current OA Health and Safety Policy, the OA Site Safety Procedures Manual, a site-specific Risk Assessment and, if required, Safety Plan or Method Statement. Copies of the site-specific documents will be submitted to the client or their representative for approvals prior to mobilisation, and all relevant H and S documentation will be available on site at all times. The Health and Safety documentation will be read in conjunction with the project WSI.

I.1.2 Where a project falls under the Construction (Design and Management) Regulations (2015), all work will be carried out in accordance with the Principal Contractor's Construction Phase Plan (CPP).

I.2 Relevant industry standards and guidelines

I.2.1 All work will be carried out according to the requirements of all relevant legislation and guidance, including, but not exclusively:

I.2.2 The Health and Safety at Work Act (1974).

I.2.3 Management of Health and Safety at Work Regulations (1999).

I.2.4 Manual Handling Operations Regulations 1992 (as amended).

I.2.5 The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (2013).

I.2.6 The Construction (Design and Management) Regulations (2015).

I.2.7 Relevant OA manual and other supporting documentation

I.2.8 The OA Health and Safety Policy.

I.2.9 The OA Site Safety Procedures Manual.

I.2.10 The OA Risk Assessment templates.

I.2.11 The OA Method Statement template.

I.2.12 The OA Construction Phase Plan template.

oxfordarchaeology

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@oxfordarchaeology.com
w: http://oxfordarchaeology.com

OA North

Mill 3
Moor Lane
Lancaster LA1 1QD

t: +44 (0) 1524 541 000
f: +44 (0) 1524 848 606
e: oanorth@oxfordarchaeology.com
w: http://oxfordarchaeology.com

OA East

15 Trafalgar Way
Bar Hill
Cambridgeshire
CB23 8SQ

t: +44 (0) 1223 850500
e: oaeast@oxfordarchaeology.com
w: http://oxfordarchaeology.com

APPENDIX B DESCRIPTIONS AND CONTEXT INVENTORY

Japanese Gardens						
General description					**Orientation**	-
Watching brief maintained during the excavation of the infill of the lagoon to the south of Fairhaven Lake. Stone steps ***101***, ***105*** and ***109*** had previously been excavated (Churchill Archaeology 2018). Several original structural features of the Japanese Garden were revealed in good condition.					**Length (m)**	-
					Width (m)	-
					Avg. depth (m)	-
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
101	Structure	2	-	Stone steps leading down from existing footpath to the south, to stone path ***102***	-	Twentieth century
102	Structure	1.8	-	Stone path from stone steps ***101*** to stepping-stones ***103***	-	Twentieth century
103	Structure	4.8	-	Stepping-stones crossing narrow point of the lagoon, between stone path ***102*** and tarmac path ***104***. Comprising 11 roughly-hewn sandstone blocks.	-	Twentieth century
104	Structure	1.8	-	Curving tarmac path leading from stepping-stones ***103*** to stone steps ***105***. Edged by small stones along the western edge of the path	-	Twentieth century
105	Structure	2	-	Stone steps from tarmac path ***104*** leading up to the new path to the north	-	Twentieth century
106	Structure	0.5	-	Concrete capped with roughly-hewn stone around the northern arc of the lagoon	-	Twentieth century
107	Structure	-	-	'Outcrop' rockery on southern edge of lagoon	-	Twentieth century
108	Structure	-	-	Stone-capped bridge across the water feed into the lagoon from the lake	-	Twentieth century
109	Structure	-	-	Stone steps flanked by rockeries ***110*** and ***111*** to the east of the lagoon	-	Twentieth century
110	Structure	-	-	Rockery flanking the western side of stone steps ***109***	-	Twentieth century

111	Structure	-	-	Rockery flanking the eastern side of stone steps ***109***	-	Twentieth century
112	Structure	-	-	Stepping stones to the west of stone steps ***109***. Comprising 5 stepping-stones and a large sandstone slab.	-	Twentieth century

APPENDIX C BIBLIOGRAPHY

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Fylde Council 2017 *Historic Appraisal: the development of Fairhaven*, unpubl rep

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APPENDIX D SITE SUMMARY DETAILS

Site name:	Fairhaven Lake, Lytham St Annes, Lancashire
Site code:	L11332
Grid Reference	SD 33983 27316
Type:	Watching Brief
Date and duration:	30th October-6th November 2020; 6 days
Area of Site	1,076m^2
Location of archive:	The archive is currently held at OA North, Mill 3, Moor Lane Mills, Moor Lane, Lancaster, LA1 1QD, and will be deposited with Lancashire County Record Office in due course.
Summary of Results:	The archaeological watching brief during public realm enhancement works of Fairhaven Lake and Gardens, Lytham St Annes, Lancashire (NGR: SD 33983 27316). The watching brief was focused on landscaping during the exposure and construction/consolidation of footpaths within TH Mawson's 1924 Japanese Garden, which had been infilled in the 1960s-80s. The largely sand infill of the Japanese Garden was removed using a mechanical excavator with the features exposed then cleaned by hand. The stone-built structure of Mawson's 1924 Japanese Garden survives relatively intact, aided by the substantial size of the sandstone blocks used in the steps, paths and rockeries, and the use of concrete in the construction of the lagoon edge. Although elements of the former sandstone pathways have been lost and/or replaced with tarmac, this does not detract significantly from the survival of the remainder of the structure. Many historic photographs survive of the site in the early twentieth century, as do Mawson's planting plans. These will help to enhance subsequent consolidation, soft landscaping and gardening works.

oxfordarchaeology

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@oxfordarchaeology.com
w: http://oxfordarchaeology.com

OA North

Mill 3
Moor Lane
Lancaster LA1 1QD

t: +44 (0) 1524 541 000
f: +44 (0) 1524 848 606
e: oanorth@oxfordarchaeology.com
w: http://oxfordarchaeology.com

OA East

15 Trafalgar Way
Bar Hill
Cambridgeshire
CB23 8SQ

t: +44 (0) 1223 850500
e: oaeast@oxfordarchaeology.com
w: http://oxfordarchaeology.com