Written Scheme of Investigation (WSI) for an Archaeological Programme of Work at

No. 3 Well Street
Exeter
Devon
EX4 6QR

NGR: SX 92558/93201
JOB No: BA1212WSE
Ref: RAMM: 12/43
OASIS ref. 128480

Unit 25
Basepoint Business Centre
Winnall Valley Road
Winchester
Hampshire SO23 0LD
Tel: 07932 307121

Chapel Walk
Burgess Street
Leominster
Herefordshire HR6 8DE
Tel: 01568 610101
Fax: 01568 616900

Email: neil@borderarchaeology.com: Web: www.borderarchaeology.com

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1. Introduction

Border Archaeology has been commissioned by Grahame and Rebecca Dudley, Culmvale, Stoke Canon, Exeter, to carry out a programme of archaeological investigation at No. 3 Well Street Exeter EX4 6QR (NGR: SX 92558 93201) in respect of the proposed redevelopment of an existing garage to provide three-storey accommodation comprising two retail units, with two residential apartments above and associated works (Planning Refs: 11/1571/03 & 11/1572/14) (*figs. 1 & 2*).

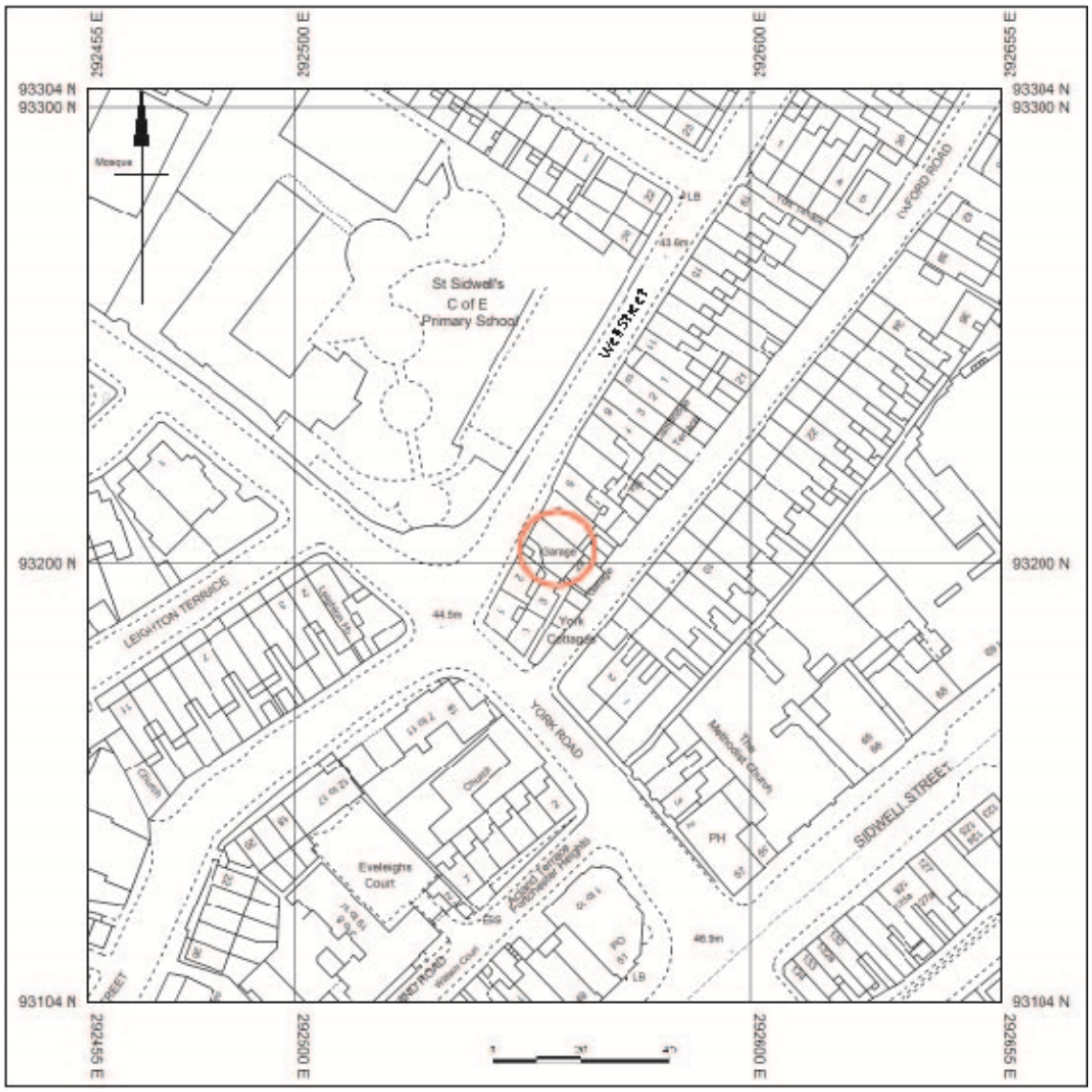

Fig. 1: Plan showing site location (reproduced by permission of the Ordnance Survey)

The archaeological programme of works detailed herein comprises initial trial trenching, the purpose of which is to provide information regarding the precise location of the well (recorded in 1420 as being used as a water supply for the City) and its condition, followed, dependent on results, by a subsequent programme of archaeological excavation.

This Written Scheme of Investigation has been compiled by Neil Shurety (Director) and George Children MA MIfA of Border Archaeology for approval by the Exeter City Council Archaeology Officer (ECCAO) under Condition 4 of the planning consent. Consultation of the following sources has been undertaken:

- Exeter City Council Historic Environment Record
- Devon Record Office
- West Country Studies Library, Exeter
- *Supplementary Planning Guidance (Archaeology & Planning*) (Exeter City Council 2004)
- Other readily available documentary and cartographic sources, including any information such as property records in the possession of the client

2. Site Description

The site lies on the S side of Well Street, within the extra-mural suburb of St Sidwells, extending NE of the East Gate of the Roman and medieval walled city of Exeter. As it lies within the urban area, the site is designated as unsurveyed by the Soil Survey of England and Wales (1983). However, the areas immediately to the N are characterised by typical brown earths of the DENBIGH 1 series (541j), consisting of well drained fine loamy and fine silty soils over Palaeozoic slaty mudstone and siltstone, and by typical non-calcareous pelosols of the HALSTOW series (421b), composed of slowly permeable clayey soils often occurring over Carboniferous shale

3. Aims and objectives

The aim of this programme of archaeological work is to characterise as fully as possible within the parameters of the Project the extant archaeological resource contained within the study area and to produce a full and detailed record thereof. The specific aim is to provide sufficient information to identify the precise location of the well and its condition and to inform the eventual foundation design and thus to ensure the preservation of the well and any significant remains of associated deposits or features.

4. Historical & Archaeological Background

The earliest documentary evidence for the existence of the suburb of St Sidwells dates from the 12th century, the suburb (known as St Sidwells Fee) was under the jurisdiction of the Dean and Chapter of Exeter Cathedral until 1549. St Sidwells Fee derives its name from an obscure post-Roman Christian martyr who emerged as patron saint of the City of Exeter by the late Saxon period. The site of a spring/holy well associated with St Sidwell (reputedly also the site of her martyrdom) is marked on Hooker's 1587 map of St Sidwell's Fee and on the OS 1st edition 1:500 map of 1891. The map evidence indicates that the well is situated within the NW corner of the site, within a small separate enclosure that has subsequently been incorporated within the present site and ownership; a short length of surviving brick wall pertains to this enclosure. Descriptions suggest its original form was that of a 'beehive well' (EEC HER Monument No. 11560.00) comprising a small circular stone hut erected over a shaft extending

to a depth of some 22m. The well or spring was recorded in 1420 as being used as a water supply for the City and was apparently a place of pilgrimage during the medieval period. The structure was evidently disused by the 19th century and was replaced by a public pump, which appears to have been removed at some point between 1875 and 1888 based on the OS map evidence.

There has been little archaeological fieldwork undertaken in the immediate vicinity of the site. Nevertheless, the likelihood of there being Roman activity in the area is further enhanced by the presence of a number of springs in the vicinity which the Romans may have utilised to bring water into the city (via aqueducts or conduits). The presence of a Roman extra-mural cemetery (Monument No. 10210.00) in the vicinity of the study area has been suggested based on the discovery in 1835 of a 'Roman sepulchral urn' during the course of cellarage excavations at the then Royal Mail Coach Inn, located on the W corner of Sidwell Street and York Road (NGR SX 92578 93125). An earlier account of 1806 (Event No. 1351.00), namely the *History and Description of the City of Exeter and its environs ancient and modern* (Jenkins 1806, 348), also details the discovery of 'several urns containing human ashes' in a brick field adjoining Well Lane, now Well St (NGR SX 92610 93262). These are described as being 'of very coarse workmanship, and bedded deep in the clay'.

This work also notes, rather more tenuous indications of Roman funerary activity in the area, namely the discovery in a 'brick field near St Anne's Chapel' located at the NE end of Sidwell St (Event No. 1352.00) (NGR SX92629 93280) of what appears from the description to have been a Samian ware vessel 'of a beautiful red earth or clay, of excellent workmanship' found at a depth of some 12 feet. The proximity of the site to Sidwell Street, which appears to represent the course of the principal route from the northeast leading into the walled Roman city, may be seen to enhance the likelihood of a roadside cemetery located somewhere in the immediate vicinity.

A watching brief carried out by Exeter Archaeology in 2007 at St Sidwells' Church of England School found no evidence or Roman funerary activity, although the groundworks did not extend to any depth (NGR SX 9253 9325)(Goodwin 2007). Similar negative results were obtained during the course of a watching briefs carried out at 67 Sidwell Street in 2001 (NGR SX 92635 93168), (Event No 15114) (Bell 2001) and on groundworks for the construction of new residential accommodation on the site of the former Eveleigh's Garage, Acland Road (NGR SX 92570 93120) (Event No. 15021) (Bedford & Dyer 1999), which revealed only 20th century levelling and demolition material

The medieval period witnessed the completion of a number of engineering projects designed to channel water from the natural springs on higher ground to the NE via a system of lead pipes into the medieval city, the earliest works being carried out by the cathedral authorities but others were later established, including the so-called 'Black Friars Conduit', which was probably completed in 1258/9. St Sidwell's Well initially appears to have played a key role in the operation of this system as it provided the sole source of fresh water that was fed into the city and continued to provision the city until a more efficient route was established around the middle of the 14th century.

In 1983, surviving fabric representing part of a medieval aqueduct (Monument No. 11020.00) was found in three sections during excavations carried out in King William Street, running SW off York Street, which comprised a trench up to 3.3m deep containing a lead pipe bedded on a layer of yellow clay, which had subsequently been dug out (Youngs *et al*. 1984, 213). This was

interpreted in light of a reference in the cartulary of St Nicholas Priory to what appears to be an early system of conduits and aqueducts. The document records that in 1226 Serlo, the first Dean of Exeter, granted the prior of St Nicholas 'one third of the well of St Sidwell'; as the well lay some 450m beyond the east gate this would appear to suggest the existence of an aqueduct or some such system for piping water into the city. Furthermore, the discovery in the grounds of the priory of architectural fragments pertaining to a *lavabo* and dating stylistically to the 1170s strongly suggests that such a system was already probably well established by this date (Juddery & Stoyle 1995).

Further confirmation is contained in a document of 1346, which records that water was being brought into the Cathedral Close from St Sidwell's by means of lead piping and divided between the Dean and Chapter, the priory and the citizenry. The evidence from the 1983 excavations suggests the route of the aqueduct ran in a SW direction, a similar trench being revealed at London Inn Square, outside East Gate, in 1987. The conduit is presumed to have turned SE to run along the outside of the defensive ditch to a point midway between the East Gate and the South Gate, where it entered the City, as attested in several late 13th century documents. From here, it ran to a stone conduit house in the Cathedral Close, where it debouched into a cistern for the use of the canons, their servants and higher ranking members of the citizenry, with a subsidiary supply being channelled from the Close down to St Nicholas' Priory.

The third portion of the city's water supply from St Sidwell's appears to have passed via a conduit from the Priory to the *fons de Townwill*, or Town Well, for use by the citizens of Exeter. By the middle of the 13th century, however, the existing system based on St Sidwell's Well appears to have been insufficient to cope with the growing demand within the city for a continuous supply of fresh water and documentary references of the 1260s allude for the first time to the 'Headwell of St Sidwell's', interpreted as a separate structure now constituting the 'head' of an enlarged water supply system situated in Headwell Mead and probably connected to St Sidwell's Well by what would have been a 250m pipe running along Well Street. The cathedral fabric accounts for 1328/9 refer clearly to two wells, namely, 'the new well' and 'the old well'; the natural springs in Headwell Mead later became the main source of water for the city.

A set of slightly later accounts record in considerable detail subsequent measures taken to upgrade the network, the Dean and Chapter evidently agreeing under pressure from the citizens and the prior of St Nicholas to carry out a complete overhaul of what was by then a failing system. This decision is of considerable significance as it marks the demise of St Sidwell's Well as an active component of the city's water supply network, the old source evidently being disconnected from the cathedral system and passing out of use soon after 1347. It is this phase of development upon which the results of the excavations carried out in King William Street in 1983 appear to shed important light, as they provide material evidence of activity, recorded in contemporary documents, which involved the removal of redundant pipework running between East Gate and the wells at St Sidwell's and Headwell. A new and evidently more efficient route from Headwell directly into the city appears to have been selected, bypassing Well Street and St Sidwell's, and the labourers paid £3 11s and 4d for the task of 'digging out the conduit' were clearly employed to salvage lead that was no longer needed and which could presumably be melted down and reused elsewhere.

The 17th century witnessed much devastation affecting the parish of St Sidwells and other suburban areas, including the destruction of the piped water system and underground

passages (Stoyle 1994), with lengths of pipe being torn up and reused for the manufacture of munitions. This elaborate system of passages had been established by the end of the 15th century by which time the City had completed its own water supply network, rather than making do with the third share allotted to it under the terms previously drawn up by the cathedral authorities. During the course of the Civil War, major outworks were created beyond the city walls (Monument Nos. 10343, 10359, 10365) consisting of earth ditches and ramparts, as well as the clearance of extensive fields of fire. As the crisis deepened through 1645, however, the Royalist General Goring orchestrated a programme of wholesale destruction throughout St Sidwells, with extensive swathes of housing razed by fire (Stoyle 1994).

Cartographic evidence (specifically Hooker's map of 1587 and Rocque's map of 1744) indicates that there was relatively little building activity along either side of Well Street during the early post-medieval period and it was not until the 19th century that the S side of Well Street was extensively built up. The well is shown immediately adjacent to 'York Cottages', now Nos. 1 & 2 Well St, on J. Coldridge's map of Exeter dated 1819, as being located just within the present site. A plan of 1824 (REN 2800) drawn up by Robert Cornish, Surveyor to the Dean and Chapter of Exeter Cathedral, also shows the well located immediately to the N of York Cottages. 'Aqueducts to the city conduits' are shown on Britton's 1805 'Map of Exeter' located on the junction of what are now St James' Road and Well Street.

5. Scheme of Works

This programme of archaeological works is carried out in accordance with *Standard and Guidance for archaeological field evaluation* (IfA 2008), *Standard and Guidance for an archaeological watching brief* (IfA 2008) and *Standard and Guidance for archaeological excavation* (IfA 2008). The Company adheres to guidance set out in *Management of Research Projects in the Historic Environment: The MoRPHE Project Manager's Guide* (English Heritage 2006) and to other relevant published sources of technical, professional and ethical guidance, including the IfA *Code of conduct* (2010) and *Code of approved practice for the regulation of contractual arrangements in field archaeology* (2008). Border archaeology is cognisant of the contents of the current *Supplementary Planning Guidance (Archaeology & Planning)* document (Exeter City Council 2004).

An OASIS (Online Access to the Index of Archaeological Investigations) data-capture form has been initiated (Ref. 128480). This will be updated on completion of each report stage and on deposition of the final archive.

The scope of works (as required under Condition 4) comprises the following elements:

1. Consultation of the Exeter City Council Historic Environment Record together with maps and plans held by the Devon Record Office and West Country Studies Library, Exeter, and any other readily available documentary and cartographic sources, including any information such as property records in the possession of the client.

2. Floor-slab removal to be undertaken prior to formal site start due to space restrictions and H &S considerations so as to leave in place at least a 1m width band of concrete around the site against all walls to comply with health & safety requirements and party wall legislation. Border Archaeology will carry out archaeological observation of slab

removal to identify and record any remains exposed and to ensure that these are retained *in situ* for the duration of this phase of the works. Geotechnical works will be carried out towards the end of the archaeological investigation, using information obtained from viewing open trenches and *sondages*. It is proposed to discuss any *sondages* excavated with the engineer to enable these to be sited, as far as possible, to meet engineering needs as well as to address archaeological questions. Machining will be undertaken so as to minimise disturbance to underlying deposits.

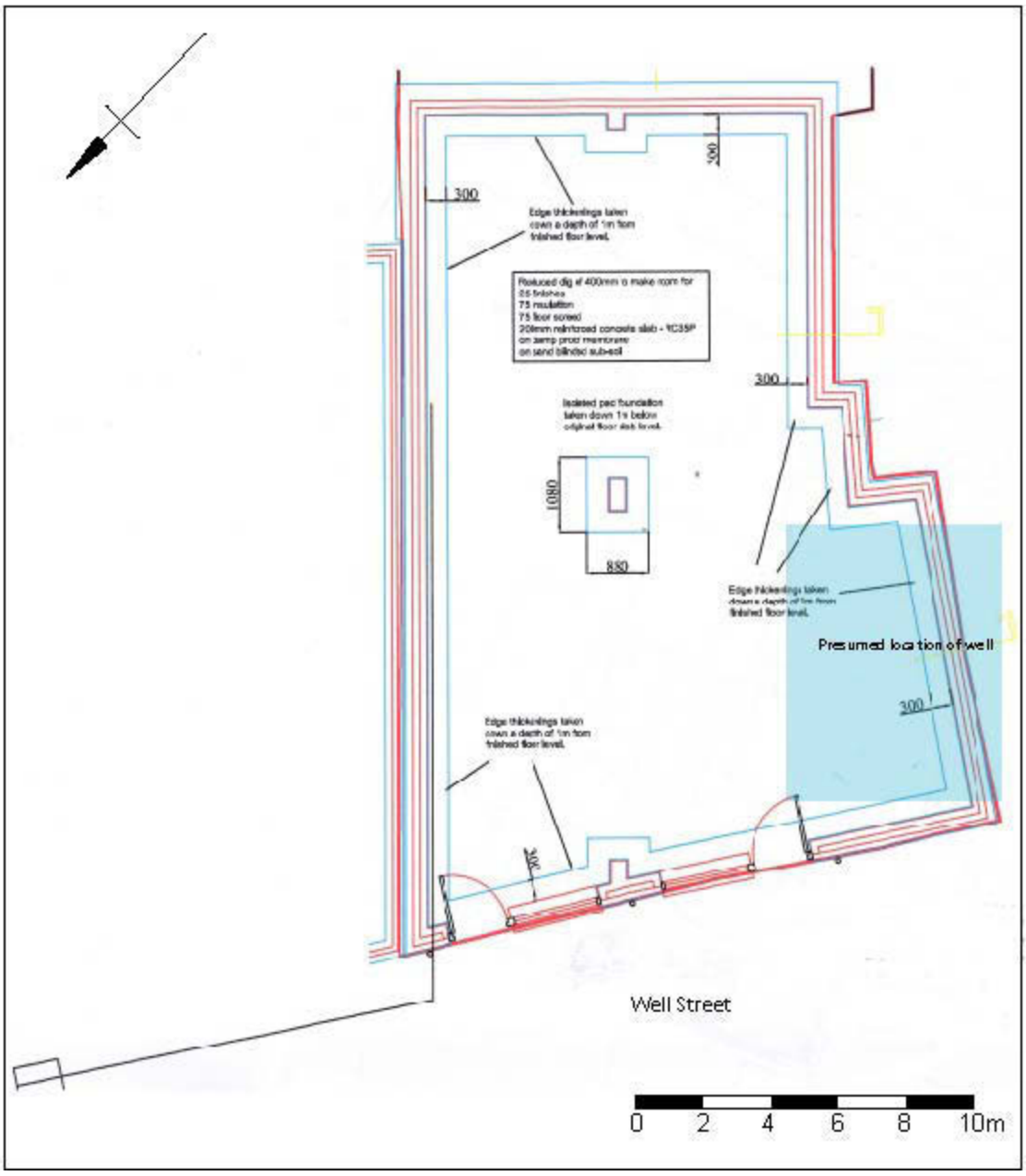

Fig. 2: Plan showing layout of foundation design & presumed location of well

3. Trial trenching to be carried out across the site to identify:

- the site of well
- its survival & condition

- any associated remains or activities (the site having served both as an earlier holy well and as a later medieval water supply)
- any other remains on the site: it is possible that there may be evidence of Roman activity in this area, as there are a number of springs in the vicinity which the Romans may have utilised to bring water into the city (via aqueducts or conduits). There are additionally references to Roman burials being found in the Well St area in the 19th century

The following is proposed as constituting an appropriate on-site methodology:

- Two evaluation trenches approximately 4m x 3m are proposed within the severely limited space in locations being agreed on site with the ECCAO and engineer/architect as necessary prior to commencement of the evaluation phase of the programme of site works to ensure that as representative a sample as possible of the site in its entirety is achieved, with respect to the practicalities of safe excavation within a confined area. Trenching will step in from the margin established by the retained 1m band of concrete flooring and opened by hand.

- Manual excavation of archaeological deposits will be utilised throughout for the recovery of stratigraphic data, with the extent and character (colour, texture, boundary characteristics etc.) of each archaeological context being defined by trowelling prior to excavation. Excavation of features and deposits will be sufficient to establish their date and character.

- Excavation will proceed in this manner to a designed formation level of 500mm, or to the top of significant archaeology, as defined above. Dependent upon findings, *sondages* will be excavated stratigraphically at either end of each trench to establish the extent and character of any underlying deposits. However, it is proposed to undertake on 'over-dig' of 200mm in line with EH recommendations in order to provide an appropriate protective barrier.

- Poorly stratified deposits such as dark earths and garden soils will be removed in spits and sampled and sieved for the recovery of artefacts and palaeoenvironmental materials. Such deposits would be subdivided into horizontally-gridded vertical spits allowing for vertical separation of artefacts and ecofacts.

4. Depending on results, further archaeological site work may be required prior to construction work commencing. This could include archaeological excavation - which would be completed before any construction groundworks begin - and/or the subsequent monitoring and recording of said groundworks. The nature and extent of this work, if required, will be confirmed with the ECC AO and marked up as necessary on a site plan.

5. In the event of a requirement for further detailed excavation, this will not *normally* exceed the formation level for the new build (except in instances where, for example, the last *c*.300mm of a pit fill is removed rather than being left *in-situ* under the presumed formation level). Allowance may be made for a suitable buffer zone to

comprise a nominal 200mm depth of either dug soil or inert sand. All such excavation will be by hand and will adhere to the following on-site criteria.

- Excavation of pits and other intrusions will allow for their stratigraphic recording and for the identification of post-pipes, post-packing and any related material.

- The well and other deep intrusions encountered below the surviving horizontal archaeological stratigraphy will be excavated to formation level, or marginally below in the interest of removing a small remaining depth of base fill; where substantial deposits remain below formation level, a hand augur may be used to determine depth. Any significant unexcavated deposits and remains will be preserved *in-situ* through use of geotextile lining and sand blinding, prior to hardcore/concrete being laid. **It should be noted that specific health & safety considerations will ultimately determine the feasibility of any archaeological excavation or investigation.**

- Samples taken from selected contexts will be assigned sample numbers and these will be entered into a sample register and cross-referenced with context sheets. Samples of mortars, renders, stone and CBM (brick, roof tile, floor tile, wall tile and hypocaust elements) may assist in the analysis of building palaeotechnology. Buried soils and sediment sequences reflecting the pedology of the site will be analysed for information on site formation processes.

6. Completion of analysis and reporting of results, including wider publication if merited, any conservation/consolidation of finds, and provision for deposition of archive and finds with the Royal Albert Memorial Museum & Art Gallery (RAMM).

7. Subsequent backfilling of trenches will be the responsibility of the client.

6. Site Recording

6.1 Methodology

The proposed programme of archaeological work will be carried out in accordance with established technical and ethical standards.

A recording methodology will be implemented based on a fully integrated drawn, written and photographic record sufficient to fulfil the aims and objectives of the project. This methodology will be applied at all stages of archaeological work, namely, evaluation, any excavation and any monitoring/recording.

Field-staff will complete separate, numbered pro-forma context sheets with detailed descriptive and stratigraphic information. Plans, sections and elevations will be drawn at scales of 1:50, 1:20 or 1:10, as appropriate, on gridded, archivally stable polyester film, with artefact details recorded at an appropriate scale. All such plans, elevations and sections will contain

grid and level information relative to OS data and will be numbered, registered and cross-referenced to the written record.

Detailed photographic records will comprise high-resolution digital images of all stratigraphic units to include record views of contexts, samples and artefacts, together with a representative record of site works; key features will, if required, additionally be photographed for black & white reproduction. All photographic records (except publicity photographs) will be indexed by frame number and cross-referenced to the written record. Subject and direction of view will be recorded in a register, indexed by frame number. Digital images will be archived as uncompressed RAW or TIFF images onto DVD and printed on archive quality photographic paper by a professional photographic laboratory.

A site diary will be maintained by the Site Director Matt Edgeworth MIfA recording information on liaison and monitoring meetings, visits and a record of staff on site. All records created during fieldwork will be checked for consistency and accuracy by him and by George Children MIfA.

6.2 Treatment of human remains

In the event of human remains being exposed, all work within the immediate locale will cease pending consultation with the Exeter City Council Archaeology Officer. If further excavation of these remains is deemed necessary, then a separate method statement detailing their excavation, sampling and recording will be provided. All human remains identified will be treated in accordance with approved technical and ethical guidance (McKinley *et al* 1993; McKinley 1998, 2000a; Brickley & McKinley 2004, CofE/EH 2005, IfA 2011)

The company is cognisant of the latest deliberations by the Ministry of Justice (IfA 2011) and the requirements of Section 25 of the Burial Act 1857; any arrangements regarding the discovery of human remains will be at the discretion of HM Coroner whose instruction/permission will be sought. It is understood that all human remains should, where possible, be preserved *in-situ*, covered and protected, only being removed in the event of exceptional circumstances and with the appropriate licence, observance of environmental health regulations, coroner's permission and with adequate security provided.

6.3 Recovery, processing and curation of artefactual data

Selection/retention policy with respect to finds is informed by principles set out in *Standard and guidance for the collection, documentation, conservation and research of archaeological materials* (IfA 2008) and *Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation* (AAF 2007) and will conform to the specific deposition requirements of the RAMM, the aim being to produce a comprehensive material archive for use by current and future researchers (IfA 2008). In general terms, post-1800 material will be discarded following identification and recording, unless any such material represents pertinent dating evidence for particular features or is otherwise intrinsically of value, in which case it will either be retained on a temporary basis pending identification or held as part of the eventual archive.

Retained artefacts will be bagged and labelled with the site code and context number before being removed off-site for pre-Assessment preparation. Artefacts recovered by sieving will be similarly processed but identified by sample number.

Roman pottery processing will conform to criteria set out by the Study Group for Roman Pottery (SGRP) and in accordance with *Guidelines for the processing and publication of Roman pottery from excavations (*Directorate of Ancient Monuments and Historic Buildings, 1980) and *Guidelines for the Archiving of Roman Pottery* (SGRP, 1994). Processing of post-Roman pottery is in accordance with guidance set out in the standards document *Minimum Standards for the Processing, Recording, Analysis and Publication of Post-Roman Ceramics* (MPRG, 2001).

Identification of ceramics will be by reference to the Regional Ceramic Type Series held by RAMM with evidence assessed in relation to existing national and regional research frameworks for Roman, Saxon and medieval pottery, including the SGRP research framework and the National Database of Medieval Pottery Production Centres established at King Alfred's College, Winchester.

6.4 Conservation Requirements

Thomas Cadbury Esq., Curator of Antiquities RAMM will be contacted in advance of site work and instruction sought as to appropriate conservation requirements. All such conservation work and will conform to the specific deposition requirements of the RAMM

Finds will be appropriately packaged and stored under optimum conditions, as detailed in the RESCUE/UKIC publication *First Aid for Finds* (Watkinson & Neal, 1998) and under the direction of an on-site conservation specialist only where significant preserved organic artefactual material is discovered. X-ray photographs of archaeological metalwork will be produced off-site by the nominated conservator P. Parkes Esq., Cardiff Conservation Services.

Should evidence of Roman cremation burials be revealed during the course of the site works, these will be subject to whole-earth recovery (McKinley 1998; 2000a) and removed to ASUD University of Durham where micro-excavation, including for the recovery of any pyre goods or debris (McKinley 2004, 11), and conservation will be undertaken. Detailed context information will be provided to facilitate interpretation.

6.5 Bioarchaeological investigation

There is clearly a substantial likelihood of encountering preserved organic materials (e.g. wood or timber structural remains, leather, textile, fibrous material, cordage & keratinous & osseous materials) during the course of the on-site investigation.

In addition to the well itself, the fills of other cut features, such as domestic waste pits and ditches, may be found to contain a range of environmental indicators, such as charcoal and other charred plant macrofossils, mineral-replaced plant and insect remains, bone, shell, pollen and spores etc.

All on-site sampling will be undertaken in accordance with English Heritage guidance (2002) and with any specific direction from Vanessa Straker, EH Science Advisor for the South West region, whose advice will be sought as necessary.

Samples (other than monoliths) for the recovery of palaeoenvironmental data are taken from individual contexts and generally comprise volumes of 40-60L or else 100% of the deposit (if its total volume is less than 40L). These are taken from 1) deposits & pit fills believed not to be contaminated or of mixed/secondary origin (e.g. backfills or deposits with a high degree of residual/intrusive artefactual material), i.e. all deposits sampled should be well sealed and free from contamination 2) those thought or known to contain well-preserved biological remains 3) deposits likely to be closely datable and those interpretatively important at the context or site level. Assessment is by ASUD University of Durham who will retain environmental material and samples in a controlled environment prior to any archiving requirements.

Where deposits are found to contain large animal bone fragments, mollusc shells and carbonised materials, these are recovered by hand-collection and recorded through the finds system while deposits exhibiting evidence of vertebrate & mollusc assemblages and plant macrofossils will be sieved through a 10mm mesh to enhance recovery of such assemblages and also of small artefacts.

Fish, insects, small mammals and parasites, mineralised and carbonised seeds and chaff etc., together with potential industrial residues, will be recovered from samples by fine-mesh sieving and flotation separation (to be undertaken by ASUD).

Recovery of faunal/floral microfossils is through specialist sub-sampling, where this is deemed appropriate, with pollen analysis potentially providing evidence of background flora to compare with local flora from plant macrofossil evidence and insect (e.g. beetle) remains.

Monolith samples and small samples from discrete contexts will be collected from undisturbed sequences which appear in light of on-site specialist advice sought from Dr K. Wilkinson of ARCA to have the potential for a dateable environmental sequence or information about deposit origin and grain structure and condition.

In the event of waterlogged deposits being encountered, monoliths will be recovered from convenient and relevant sections for sub-sampling for the recovery of pollen and other small biological remains. Accompanying 20L bulk samples will be taken from along the same sections for the recovery of macro plant remains, insects and wood fragments, where possible. These monoliths will be radiocarbon dated top and bottom initially, and at other points along the monolith as advised at the Assessment stage for subsequent Analysis. Additionally, samples of preserved wood and any other organic finds will be recovered and conserved for subsequent analysis and interpretation by approved specialists. It is recognised that waterlogged organic objects are unstable when found and sensitive to rapid changes in environmental conditions, which, if not carefully controlled, can lead to deterioration upon excavation (English Heritage 2010, 5).

All preserved artefactual material identified below the level of late post-medieval/modern overburden, or samples thereof, will be collected and recorded.

Should substantial assemblages of preserved organic remains (e.g. timber structures) be encountered, M. Bamforth Esq., of L-P Archaeology, will be available to carry out site visits at short notice to ascertain whether the find is indeed anthropogenic or of natural origin and to advise on the justification for further exposure and investigation, as well as to arrange for any immediate conservation requirements.

RAMM will be contacted by George Children MA MIfA prior to the start of fieldwork to obtain advice regarding a site-specific retention policy in respect of any preserved organic materials identified.

6.5.1 Sampling for scientific dating purposes

Both radiocarbon and dendrochronological dating will be considered and specialist on-site advice sought as circumstances dictate.

6.6 Geoarchaeological recording

Dr Keith Wilkinson Director of ARCA, Geoarchaeology and Geomatics, will be retained in an advisory capacity for the duration of the fieldwork phase of the project

6.7 Retrieval & analysis of archaeometallurgical finds, residues and debris

Items such as ores, slags, fragments of hearth and furnace structures, crucibles and scrap metal will be treated as registered finds and retained for assessment; however, where very large quantities of debris are encountered, a suitable sampling strategy will be devised by the appointed metallurgical specialist Dr David Starley. Such large technological residues would be collected by hand.

Bulk samples will also be collected from primary deposits in those areas where metalworking has been carried out (i.e. furnaces, hearths and pits) for the retrieval of micro-residues (in particular, hammerscale). Any workshop floor surfaces identified comprising a single context will be sampled throughout (at 0.2-0.5m intervals) to examine the distribution of hammerscale and samples will be taken from secondary deposits (spatially and chronologically removed from the metalworking areas) for comparison.

Additionally, the processing of environmental samples will be integrated with the recovery of archaeometallurgical remains, as soil samples might be found to contain traces of micro-residues.

6.8 Scientific Dating

A range of scientific dating methods will be employed, as appropriate. In addition to techniques such as ^{14}C and dendrochronology, dating methods applied to inorganic materials exposed to firing or burning may be used, e.g. thermoluminescence for ceramics, flint artefacts and hearth stones, and archaeomagnetic dating for fired structural remains, such as furnaces and kilns and possibly domestic hearths and ovens.

7. Post-excavation

7.1 Site Archive

Site Archive compilation will be carried out under the supervision of George Children MIfA and in accordance with *Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives* (IfA 2009) and *Management of Research Projects in the Historic Environment* (MoRPHE) (EH 2008: Appendix 1). All such archive preparation will, of course, also be undertaken in accordance with current RAMM deposition conditions.

All primary fieldwork documentation and records will be preserved and will form part of the Archive, archive consolidation being undertaken immediately following the conclusion of fieldwork.

The Site Archive will contain all data collected, including records, photographs, finds and environmental sample records. It will include, where relevant, the following elements as outlined in the *MoRPHE* (2008) guidance:

Copies of correspondence relating to fieldwork
Survey reports (e.g. borehole, geophysical, documentary)
Site notebooks/diaries
Original photographic records
Site drawings (plans, sections, elevations)
Original context records
Artefacts, ecofacts and any other sample residues
Original finds records (e.g. registered finds, bulk finds, artefact dating catalogues)
Records of conservation and X-rays undertaken during fieldwork
Original sample records
Original skeleton records
Computer discs and printout
External specialist field records and sampling strategies

The archive will be quantified, ordered and internally consistent. Indexing will include a plan showing the location and reference number of sections and, where practicable, photograph locations or directions of view. The archive will be assembled in accordance with the guidelines published in *Guidelines for the preparation of excavation archives for long-term storage* (UKIC 1990), *Standards in the museum care of archaeological collections* (MGC 1994), *Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation* (Brown 2007) and *Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives* (IfA 2008).

In summary: the written, drawn and photographic records will be of sufficient quality to facilitate publication in an appropriate specialist journal; data concerning complete identifiable and itemized objects will be transferred to specified object record sheets and all items recommended for post-excavation analysis will be processed by the appointed specialists.

7.2 Research Archive

The Research Archive will comprise, where relevant, the following components collected during the research phase of the programme:

Records, Reports, Finds/Environmental material, Photographic, Graphic & Miscellaneous material and Electronic data

8. Archive Review

Specific deposition requirements will be obtained from RAMM prior to compiling and reviewing the Archive.

Border Archaeology will ensure the Archive is complete and in a stable, ordered and accessible condition; all data generated and information recovered during the course of the Fieldwork, Assessment and Analysis stages will form part of the final archive.

The Site Archive will be subject to review to ensure post-excavation funding is allocated to best effect and that post-excavation planning decisions are firmly based.

The nature and character of all materials, finds etc. will naturally determine the level of Assessment and arrangements will be agreed in advance with the Exeter City Council Archaeology Officer. A copy of this assessment procedure will be sent to Mr & Mrs Dudley and to the Exeter City Council Archaeology Officer, with assessment being undertaken by relevant specialists (as outlined in Section 13) and a statement of potential produced based upon their recommendations.

The potential of any recovered material to address research priorities will be assessed as soon as possible after excavation to avoid loss of information and will include the following considerations: Quantity and condition of material, work required for identification and archive transfer, level of conservation, research potential, methodology & time/ cost estimates

The results of this stage of the project will form the basis of an Updated Project Design (UPD) and possibly a review of the retention/disposal policy in the light of a clearer understanding of the quantity and quality of recoverable material.

8.1 Analysis

Any provision for Analysis will be based on recommendations supplied to Border Archaeology by its nominated specialist contractors at the Assessment stage and detailed in a UPD. This will include stabilisation of waterlogged artefacts.

9. Dissemination

The OASIS form will be completed. The city Historic Environment Record entry will be in an electronic format (Word, plus graphics (main site plan showing location of trenches / any areas of excavation and the main features found) that can be incorporated into GIS. Results will be made available as soon as possible following completion of Assessment, Analysis and Conservation, in the form both of a summary report (hard copy and pdf) and subsequent publication, where appropriate, in the *Proceedings of the Devon Archaeological Society* with format and extent to be agreed once the results of work are clear. Appendices detailing all specialist work undertaken together with results will be incorporated into the final report.

10. Deposition of the Archive

The museum reference number for the project is RAMM: 12/43. Copies of the museum's current (revised) conditions of deposition and other documentation including transfer of ownership have been requested. Mr & Mrs Dudley will be consulted, where applicable, for permission for the title to any artefacts discovered to be transferred to RAMM in due course and following completion of refurbishment works.

Archive deposition will take place within a period of three months of the RAMM re-opening for archive deposition (any variation thereof is subject to agreement with the ECCAO).

Arrangements are in place for temporary archiving pending re-opening of RAMM, with all materials held by specialist contractors in appropriate controlled environmental conditions prior to packaging in a form acceptable for archive deposition.

The OASIS (Online Access to the Index of Archaeological Investigations) data-capture form will be completed on deposition of the final archive.

11. The Report

Following completion of fieldwork and sign-off, a **Summary Report** will be submitted to the Exeter City Council Archaeology Officer in both hard copy and pdf formats within three months of completion of site work.

This will include the results of specialist assessments undertaken and any radiocarbon dates obtained. Should further analysis and publication be required, a concise post-excavation assessment and proposal will be included as an appendix to the report. With reference to publication, the presumption is that any such requirement will be apparent following the completion of, or possibly during the course of, site work.

Copies will be remitted to Mr & Mrs Dudley, Dominic Tyler, Architect, and to the Exeter City Council Archaeology Officer.

12. Timescales

1. City HER entry, summary report, OASIS entry (before archive deposition), will be completed within three months of the cessation of site work (subject to delays outside control of Border Archaeology)

2. Any wider publication that is merited (namely, a proof-ready publication) within six months of completion of fieldwork

3. Archive deposition will be within three months of the RAMM re-opening for receipt of archives.

4. Timescale may subsequently be varied by agreement with ECCAO, if appropriate

Mr Dudley has assured Border Archaeology that sufficient time will be made available to facilitate all relevant works so required by Exeter City Council. The evaluation is expected to last about 5 days after the removal of the concrete overburden.

The specific details of any further works required and associated timescales for completion thereof will be agreed in advance with the Exeter City Council Archaeology Officer.

13. Staff and External Specialists

Neil Shurety Dip.M GMInstM retains overall project responsibility.

The Management Team comprises George Children MA MIfA and Stephen Priestley MA; the Site Director is Matt Edgeworth MIfA. George Children MIfA will assess and audit site records to ensure compliance with Border Archaeology's ISO 9001 fieldwork standards and liaise with both Neil Shurety and Matt Edgeworth MIfA to that effect.

A pre-works risk assessment will be completed and lodged in the site Health & Safety File with particular focus on issues relating to working at depth and working in confined spaces.

Border personnel will be deployed to assist in excavation as appropriate to space constraints.
The following specialists have been appointed to provide, where required, sampling, consulting, analysis & reporting services:

1. *Geoarchaeology and environmental sampling*: Dr Keith Wilkinson MIfA; Richard Payne MSc ARCA Winchester
2. *Prehistoric and Roman ceramics*: Dr Jane Timby FSA MIfA (freelance specialist)
3. *Samian Ware*: Dr Felicity Wild (freelance specialist)
4. *Post-Roman, medieval & post-medieval ceramics*: Dr Alejandra Gutierrez University of Durham
5. *Coins*: Dr Adrian Popescu Senior Assistant Keeper Department of Coins and Medals Fitzwilliam Museum Cambridge
6. *Flint*: Dr Randolph Donahue University of Bradford
7. *Glass*: Dr Hilary Cool MIfA Barbican Research Associates

8. *Leather and metal objects*: Dr Quita Mould Barbican Research Associates
9. *Archaeometallurgy*: Dr David Starley AIfA (freelance specialist)
10. *Artefact and materials conservation*: Dr Phil Parkes Cardiff Conservation Services
11. *Building materials*: Dr Phillip Mills MIfA (freelance specialist)
12. *On-site conservation (preserved organic materials)*: Mr M. Bamforth L-P Archaeology
13. *Faunal remains*: Dr Deborah Jaques Palaeoecology Services Hull
14. *Human remains*: Dr Anwen Caffell, Archaeological Services University of Durham
16. *Insects & molluscs; ostracods & plant macrofossil & charcoal assessment; diatoms & pollen; wood/dendrochronology*: Dr Charlotte O'Brien co-ordinates the provision of all specialist services on behalf of Archaeological Services University of Durham (all materials submitted to ASUD are received by Dr O'Brien to be allocated to the appropriate university specialists)

14. Public Access

The nature of the site broadly precludes the provision of viable access to the excavation for Health & Safety reasons. In order to provide access to the historic environment for the benefit of the local community the following public access strategy will be implemented if results merit it:

1. Display boards, where appropriate
2. Border staff on hand to answer questions from the general public
3. Site tours/Open days, should these be appropriate in view of exceptional archaeological finds
4. A summary article for media release at the end of the project
5. Offer of a talk to the Devon Archaeological Society

15. Monitoring

The Exeter City Council Archaeology Officer will be advised of the start of preparatory site works in due course; arrangements to monitor progress of work with him will be made by Neil Shurety. Any proposed changes to the timetable will be notified. A date for completion of archaeological site work will be confirmed with the ECCAO by Neil Shurety, Director, Border Archaeology, and the timetable for the post-excavation and reporting work will extend from that date. All matters of a technical or interpretative nature will be addressed by George Children MA MIfA.

16. General Bibliography

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