

New Islington

Written Scheme of Investigation for a Scheme of Archaeological Excavation at New Islington, Ancoats, Manchester

Planning Ref: 111587/FO/2016/N1



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Prepared for:	Neil Sampson, Broadfield Project Management

Contact:	Graham Mottershead, Salford Archaeology, Centre for Applied Archaeology, University of Salford, Peel Building, Salford, Greater Manchester, M5 4DW
	0161 295 4862 / 07973341297
	g.d.mottershead@salford.ac.uk

Author:	Graham Mottershead	
Position:	Project Officer	
Date:	23rd February 2017	

Approved By:	Ian Miller	
Position:	Assistant Director	
Date:	23rd February 2017	

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1. Introduction

1.1 Circumstances of the Project

1.1.1 Urban Splash has obtained a planning consent (Planning Ref: 111587/FO/2016/N1) for the redevelopment of land at New Islington, in the Ancoats area of Manchester (Figure 1). The site is of considerable local archaeological interest, as it incorporates the site of one of Manchester's largest 19th-century glass works, which was established in 1827 as Maginnis Molineaux & Co, and became known subsequently as the Molineaux Webb & Co Manchester Flint Glass Works. In addition, the application area covers a tract of early 19th-century workers' housing, a former canal dock, and a large 19th-century dye works, which are also features of some historic interest.

1.1.2 In order to secure archaeological interests, and in line with the advice provided by the Heritage Management Director (Archaeology) for the Greater Manchester Archaeological Advisory Service (GMAAS), in his capacity of archaeological advisor to the Greater Manchester Planning Authorities, Manchester City Council attached a condition to planning consent (Condition 10), which states:

'No development shall take place until the applicant or their agents or their successors in title has secured the implementation of a programme of archaeological works to be undertaken in accordance with a Written Scheme of Investigation (WSI), prepared by the appointed archaeological contractor. The WSI should be submitted to and approved in writing by the local planning authority. The development shall not be occupied until the site investigation has been completed in accordance with the approved WSI. The WSI shall cover the following:

- (a) A phased programme and methodology of site investigation and recording to include:
 - targeted field evaluation trenching
 - (depending upon the evaluation results) a strip map and record exercise
 - targeted open area excavation
- (b) A programme for post investigation assessment to include:
 - analysis of the site investigation records and finds
 - production of a final report on the significance of the archaeological and historical interest represented.
- (c) Provision for publication and dissemination of the analysis and report on the site investigation.
- (d) Provision for archive deposition of the report, finds and records of the site investigation.
- (e) Nomination of a competent person or persons/organisation to undertake the works set out within the approved WSI.

Reason - To investigate the archaeological interest of the site and record and preserve any remains of archaeological interest, pursuant to saved policy DC20.1 of the Unitary Development Plan for the City of Manchester and guidance in the National Planning Policy Framework.'

1.1.3 In December 2016, Urban Splash commissioned Salford Archaeology to prepare an appropriate scheme of archaeological investigation that would satisfy the wording of Condition 10. In the first instance, and following consultation with GMAAS, a scheme of evaluation trenching was drawn up. This allowed for the excavation of ten trial trenches, with a combined total length of 160 linear metres, which were targeted across the footprint of former buildings of potential archaeological interest, including elements of the 19th-century glass works, late 18th- and early 19th-century workers' housing, the infilled canal dock, and the large Canal Street Dye Works (Plate 1).

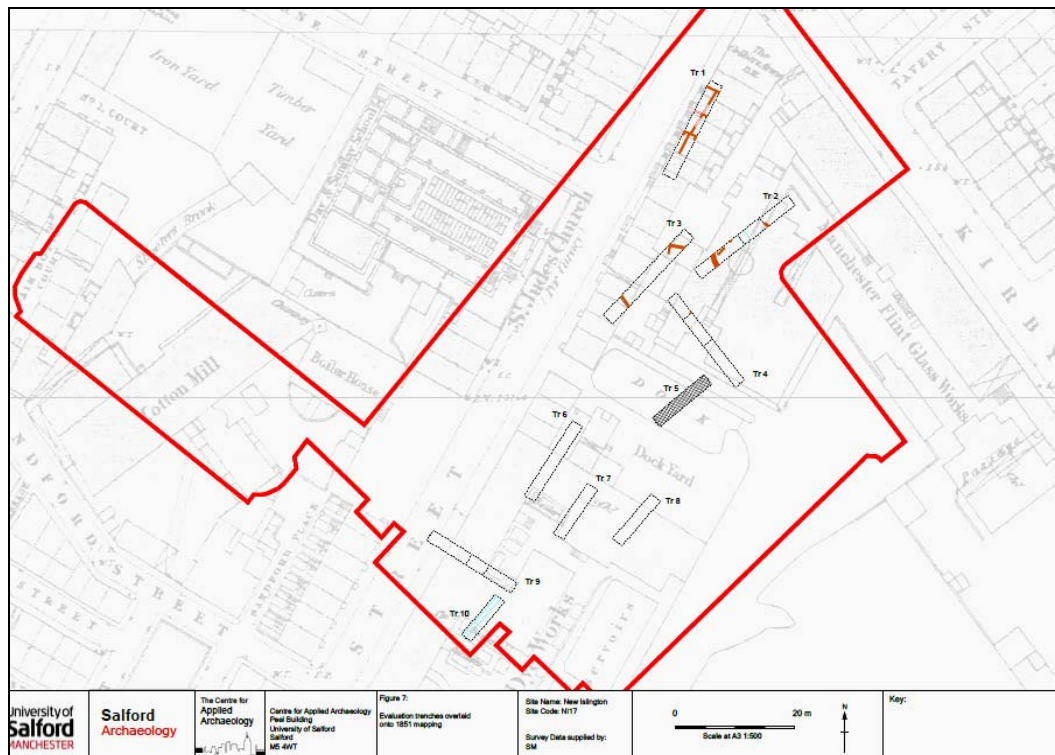


Plate 1: Location of initial evaluation trenches excavated in January 2017

1.1.4 The evaluation trenching was carried out in January 2017, and produced results that demonstrated that whilst all buried structural elements of the former Canal Street Dye Works appeared to have been destroyed during 20th-century clearance and redevelopment of the site, significant archaeological remains of the glass works and the workers' housing in the north-eastern part of the proposed development area survived *in-situ*. These significant archaeological remains are likely to be damaged or destroyed by the construction works required for the proposed development, which will include piling operations. In line with the guidance provided by the National Planning Policy Framework (NPPF), and particularly Paragraph 141 that requires developers to record and advance understanding of heritage assets to be lost in a manner proportionate to their importance and impact, it is thus appropriate to implement an archaeological strategy that will mitigate the impact of development.

- 1.1.5 Following further consultation with GMAAS in the light of the results obtained from the evaluation trenching, it was recommended that a programme of further archaeological investigation, comprising an open-area excavation, was implemented to ensure that a detailed record of significant buried remains was compiled in advance of any construction work. This will be targeted on the footprint of the 19th-century glass works, and a block of the former workers' housing in the north-eastern part of the proposed development area (Figure 2). In addition, it was recommended that groundworks necessitated by the proposed construction programme in the area of the infilled canal dock are monitored by an archaeological watching brief, as this would represent an appropriate response to mitigate any impact to buried archaeological remains in the central part of the site (Figure 3).
- 1.1.6 This Written Scheme of Investigation (WSI) for the recommended programme of intrusive investigation has been prepared by Graham Mottershead and Ian Miller of Salford Archaeology on behalf of Urban Splash. The document has been prepared in consultation Norman Redhead, Heritage Management Director (Archaeology) for the Greater Manchester Archaeological Advisory Service, in his capacity of archaeological advisor to Manchester City Council. Any change to the proposed WSI will be agreed between the Client, the GMAAS and Salford Archaeology.
- 1.1.7 The WSI allows for the open-area excavation of the working areas of the glassworks, associated ancillary buildings, and a block of associated workers' housing. The WSI also allows for a watching brief to be carried out on any groundworks in the area of the former canal dock. This also allows for the production of a final report and archive.

1.2 Purpose of the Document

- 1.2.1 An Archaeological Written Scheme of Investigation (WSI) is a comprehensive document detailing the requirements and methodological approaches of a programme of archaeological works. It is defined by Historic England as:

'Where development will lead to the loss of a material part of the significance of a heritage asset, policy HE12.3 [of PPS5, now paragraph 141 of the NPPF] requires local planning authorities to ensure that developers take advantage of the opportunity to advance our understanding of the past before the asset or the relevant part is irretrievably lost. As this is the only opportunity to do this it is important that:

- 1: Any investigation is carried out to professional standards and to an appropriate level of detail proportionate to the assets likely significance, by an organisation or individual with appropriate expertise;
2. The resultant records, artefacts and samples are analysed and, where necessary, conserved;
- 3: The understanding gained is made publically available;
- 4: An archive is created, and deposited for future research.'

1.3 National and Local Planning Policies

- 1.3.1 The National Planning Policy Framework (NPPF; Department for Communities and Local Government, March 2012) sets out the Government's planning policies and outlines the presumption in favour of sustainable development, which is defined by three dimensions: economic, social and environmental. Of the 12 core planning principles underpinning plan and decision making, conserving 'heritage assets in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations' is one.
- 1.3.2 Section 12 specifically deals with the historic environment (paragraphs 126-41) and paragraph 128 states that local planning authorities, when determining applications, should require the applicant to describe the significance of any affected heritage assets. This should be sufficient so as to understand the potential impact on their significance and this should be done using the appropriate expertise where necessary. Paragraph 135 indicates that the effect of the proposal on non-designated assets (designated assets are covered in paragraphs 132-34) should be taken into account. Paragraph 141 requires developers to record and advance understanding of heritage assets to be lost, in a manner proportionate to their importance and impact.
- 1.3.3 Paragraph 137 specifically deals with Conservation Areas and states that local planning authorities should look for opportunities for new development to enhance or better reveal heritage assets' significance. Paragraph 138 states that not all elements of conservation areas contribute to its significance, therefore loss of buildings which make a positive contribution to the significance of the area should be treated as substantial, or less than substantial harm. This also has to be assessed alongside the relative significance of the asset affected as well as the significance of the conservation area as a whole.
- 1.3.4 NPPF outlines the need for local planning authorities to create local plans and frameworks to implement NPPF at a local level. *The City of Manchester Unitary Development Plan 2004-2016, policy CH5: Archaeology and Ancient Monuments*, sets out the City Council's policy on archaeological remains and development. Under this policy the council stipulate that:
- "Planning permission will not be granted for development that would have an unacceptable impact on an ancient monument, or site or feature of archaeological importance, or its setting." "Where planning permission is granted for development that will affect known or suspected remains of local archaeological value, planning conditions will be imposed to secure the recording and evaluation of the remains and, if appropriate, their excavation and preservation and/or removal, prior to the commencement of the development."
- 1.3.5 The council provide a reasoned justification as *"Archaeological remains are a finite and non-renewable resource, which are often highly fragile and vulnerable to damage and destruction. A sites and monuments record is maintained, providing information on known archaeological remains."*

1.4 Historical Background to Manchester's Glass Industry

- 1.4.1 The first well-documented large-scale glasshouse in Lancashire was established at Ravenhead, St Helens, in 1773 (Redding 1842, 89). St Helens had become established as the main centre of plate-glass manufacture in the country by the 1860s, reflecting the local availability of raw materials, such as coal, alkalis from the chemical works, and good supplies of suitable sand (Krupa and Heawood 2002). Manchester, however, also emerged as a major glass-manufacturing centre; the industry was well enough established by 1821 for glassblowers to take part in the processions which marked the coronation of George IV (Dodsworth 1980, 64), and by 1872 Manchester was the largest employer of glass-makers in England (Yates 1987, 29). The Manchester industry, moreover, appears to have developed in some isolation from the other main glass-making centres; a contemporary observer noted that 'Manchester glass has a reputation of its own. There are distinct features about it that do not pertain to the glass of other districts' (*Pottery Gazette and Glass Trade Review* 1898, 1120). The bulk of Manchester's 19th-century glassworks, and certainly the largest concerns, were contained within the Oldham Road and Ancoats area, although another concentration of works was also established in Hulme.
- 1.4.2 An important factor in the prosperity of the Manchester glass industry during the third quarter of the 19th century was the increased demand for press-moulded wares, although the pioneer firms of the area, such as Molineaux Webb & Co and Percival, Vickers, began their production in the manufacture of traditional fine cut and engraved tablewares. These products were recognised as being of a high quality: 'it may be affirmed without prejudice to other manufacturers in localities where such business is now carried on, that the Manchester glass is in no way inferior to the best in the country' (*The Art Journal* 1851, 290). The first Manchester firm to produce pressed glass is thought to have been Molineaux Webb & Co, who were manufacturing such wares as early as 1848, although they did not begin to register designs regularly until the 1860s (Dodsworth 1980, 67).
- 1.4.3 Molineaux Webb & Co was one of the first glass works to be established in the area, and was founded in 1827 as Maginnis Molineaux & Co. Between 1832 and 1845, the works traded as Molineaux Webb Ellis & Co, flint glass and vial manufacturers, and then as the Molineaux Webb & Co Manchester Flint Glass Works. This name was retained until the ultimate closure of the works in 1931.
- 1.4.4 The works manufactured a range of decorative pieces of cut and engraved glass. Little is known about these wares, other than the forms shown in a factory pattern book of c 1870. This contains just over 2000 designs, including some 500 designs of decanters, together with sugar basins and creams, caraffes and tumblers, water jugs and goblets. The works was also the first Manchester firm known to have produced pressed glass, which commenced in c 1848, although no pressed glass designs appear in the pattern book.

- 1.4.5 The original core of the works was situated on the south side of Kirkby Street. It is depicted on Bancks & Co's map of 1831 as an irregular-shaped complex on the north-western bank of the Islington Branch canal. The detail shown on the 60": 1 mile Ordnance Survey map indicates the site to have been remodelled by 1849, which seemingly included the erection of a substantial circular feature in the centre of the site, presumably representing a glass-melting furnace (Plate 2). A long, rectangular building fronting onto Kirby Street probably formed warehouse and office accommodation, with another building and yard at the south-eastern end of the works. The function of the latter building is uncertain, although it is shown to have contained a central covered passage, and possibly a chimney, suggesting it was a processing area.
- 1.4.6 The works had developed a reputation for producing high-quality products by the middle of the 19th century. At the Great Exhibition in 1851, for instance, Molineaux Webb & Co was awarded a prize medal, and the firm was described as 'taking the lead in this department of industrial art' (*Freeman's Journal* 25 November 1851).
- 1.4.7 The glassworks was expanded considerably during the second half of the 19th century. The remodelled works is depicted on the Ordnance Survey 25": 1 mile map, which was published in 1893, and depicts three glass-melting furnaces to have been erected on the former brick field to the south-east of the original furnace. This expansion seemingly necessitated the demolition of the building containing the central covered passage, depicted on the Ordnance Survey map of 1849. Associated with these new furnaces were several ancillary buildings, which are likely to have included an annealing oven, cutting and engraving workshops, and storerooms.
- 1.4.8 Despite the historical and archaeological significance of Manchester's 19th-century glass-making industry, it has not attracted the detailed research that has been afforded to the industry in neighbouring St Helens. The only 19th-century glass works in Manchester that has been subject to detailed archaeological investigation is the Percival, Vickers and Co Ltd British and Foreign Flint Glass Works, which was excavated in 2003. The subsequent analysis of the dataset recovered from this site allowed significant changes in glass-making technology to be identified (Miller 2007), whilst chemical analysis of the manufacturing waste has provided an understanding of the different recipes used in the production of both flint glass and pressed glass (Willmott, Miller and Jackson 2012).
- 1.4.9 Elements of the Molineaux Webb & Co Manchester Flint Glass Works site have also been subject to archaeological investigation. In particular, in 2010, two archaeological trenches were excavated adjacent and parallel to Cardroom Road, across the footprint of a large warehouse that occupied the northern edge of the glass works. Whilst the glass-melting furnace lay beyond the area of excavation, the remains of a flue were uncovered, interpreted a means of providing the furnace eye with a sufficient flow of air, and raising the possibility that further significant remains of the furnace survived in-situ to the south (*ie* within the present study area).



Plate 2: View of two of the glass-melting furnaces at the Molineaux Webb & Co Manchester Flint Glass Works prior to demolition

2. Aims and Objectives

2.1 Academic Aims

2.1.1 The results obtained from the evaluation trenching indicate that the study area contains buried remains that have potential to inform several of the initiatives for archaeological research of the industrial and modern periods stated in the current *Archaeological Research Framework for North West England* (Newman and McNeil 2007; McNeil and Newman 2007). These include, but are by no means limited to, the following:

- *Initiative 7.6:* 'A study of the development of workers' housing in Greater Manchester and East Lancashire should be undertaken to examine the development of different housing types...' (McNeil and Newman 2007, 139);
- *Initiative 7.7:* 'Study the material culture of industrial workers' households...' (*ibid*);
- *Initiative 7.25:* 'Where threatened with possible redevelopment excavations are required of now undeveloped and cleared former working class areas regarded as slums' (*op cit*, 147);
- *Initiative 7.35:* 'Industry specific studies are needed for those industries that have received little archaeological attention...' (*op cit*, 154);
- *Initiative 7.41:* 'The retention of later period artefacts and their routine analysis as part of all archaeological excavation projects' (*op cit*, 156).

2.1.2 The following programme of archaeological investigation has been designed to preserve by record any archaeological deposits or features that may be present that will be impacted on by the proposed development.

2.1.3 The principal aims of the project are:

- to produce a record of the form of a 19th-century glassworks, and further the understanding of the development of Manchester's 19th-century glass industry;
- to identify and record the evidence of changes in glass-production technology;
- to assess differences in glass composition over time and type;
- to determine the impact of technological change on the wider community;
- to establish the plan form, chronology, and dating for a group of urban workers' cottages;
- to further understanding of the changing urban landscape of Ancoats through the late 18th and 19th centuries (Figure 2);

2.2 Objectives

2.2.1 The principal objectives of the archaeological investigation are:

- to record, as far as is reasonably possible, all remains of the glassworks and associated ancillary buildings within the area marked in Figure 2;
- to record, as far as is reasonably possible, all remains of the workers' housing within the area marked in Figure 2;
- to undertake a watching brief on any intrusive works carried out in the area of the former canal dock marked in Figure 2;
- produce a full report on the findings of the excavation;
- to produce an archive for the project;
- to make available the results of the work in a manner proportionate to their significance.

2.2.2 The aims and objectives outlined above may be achieved via the following stages:

- *Open-Area Excavation:* the excavation of an open area, as marked in Figure 1, and covering the significant areas of the glassworks and a block of workers' housing. This will comprise the initial stripping of overburden followed by targeted excavation of key archaeological remains that are exposed;
- *Archaeological Watching Brief:* a watching brief will be maintained during construction works across the site of the former canal dock in the central part of the development area;
- *Post-excavation and Report Production:* the site records, finds and any samples from the excavation programme outlined below will be subject to a post-excavation assessment, and the results presented in a report on the excavation findings;
- *Archive Deposition:* the results of the excavation will form the basis of a full archive to professional standards, in accordance with current Historic England guidelines and 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;
- *Dissemination:* as a minimum requirement, the information generated from the archaeological investigation will be finally disseminated through the deposition of the archive at the Museum of Science and Industry (MOSI), a final report at the Greater Manchester Historic Environment Record, and an article suitable for publication in an appropriate academic journal. Pending the results obtained from the excavation, however, a wider level of dissemination may be required, such as the presentation of the results in a dedicated volume of the '*Greater Manchester's Past Revealed*' series of booklets, and the installation of a permanent information panel that explains the industrial heritage of the site.

3. Method Statement

3.1 Archaeological Excavation

- 3.1.1 The principal aim of the archaeological excavation will be to fully record all remains of the glassworks, ancillary buildings and associated workers' housing within the demarcated area (Figure 3). This will be achieved via the excavation of a single trench, measuring c. 1225 square metres, as marked in Figures 2 and 3.
- 3.1.2 **General Methodology:** all archaeological work shall be conducted following the ClfA Standards and Guidance for archaeological field evaluation (Published October 1994, Revised September 2001 and October 2008). Prior to the commencement of any excavation works, the location of the area targeted for archaeological investigation will be laid out accurately with respect to the Ordnance Survey national grid. The position of the areas will then be scanned for any live services using a cable avoidance tool. The excavations will be regularly scanned as works progresses.
- 3.1.3 **Bulk Excavation:** the evaluation trenching indicated the upper levels of archaeologically significant remains lie at depths of between 1.7m and 2.7m. In order to reach these depths, a bulk excavation of modern overburden will be required initially. This will entail mechanical excavation using a tracked machine of appropriate power to excavate the overburden, which will be undertaken under close archaeological supervision. All material excavated will be stockpiled away from the trench in a designated stockpile area, and made safe. The excavation edges will be battered to a safe angle to allow access into and out of the excavated area. No personnel shall enter any trenches designated as unsafe. The bulk excavation will be carried out by a specialist bulk excavation contractor (Clive Hurt Plant Hire) under archaeological supervision.
- 3.1.4 **Archaeological Excavation:** machine excavation will then be used to define carefully the extent of any surviving structures, features, and other remains. This will be carried out using a tracked machine of appropriate power under the supervision of an experienced member of Salford Archaeology staff. Thereafter, remains will be cleaned manually to define their extent, nature, form and, where possible, date. Once the extent of buried archaeological remains has been established, key remains of the glass works and the workers' houses will be subject to detailed archaeological excavation and recording. Hand excavation will be undertaken by trained professional archaeologists. All information identified in the course of the site works will be recorded stratigraphically, utilising *pro-forma* context sheets, and will be accompanied with sufficient pictorial record (plans, sections and photographs) to identify and illustrate individual features.
- 3.1.5 Machines will be operated and provided by a suitably experienced subcontract plant hire firm and all relevant Licences and Permits checked prior to commencement of working. The plant hire firm will have experience of undertaking archaeological works previously. All plant will be fully cleaned prior to exiting the site and no Salford Archaeology staff will operate machinery. This will be undertaken by the appointed plant hire employees only.

- 3.1.6 **Spoil:** excavated material (spoil) will be removed from the excavations and stockpiled in a designated area. It is understood that following completion of the archaeological excavation, the area will not be backfilled in order to allow the main contractor access to remove any structural obstacles that may impede the subsequent piling operations.
- 3.1.7 **Context Recording:** a unique text-number site code will be created prior to the commencement of the programme of works. Separate contexts should be recorded individually on *pro-forma* context sheets and, where necessary, incorporated into a Harris matrix. Any hand-drawn plans and sections will be recorded on drawing sheets at an appropriate scale of 1:10, 1:20, or 1:50, depending on the complexity of the data and features encountered. All drawings will be individually identified and cross-referenced, contexts enumerated and features annotated with OD level information.
- 3.1.8 **Photographic Archive:** a comprehensive photographic archive will be produced utilising a high-resolution digital camera. Where necessary, artificial lighting will be employed to ensure that the images are of high quality. All frames, excluding general contextual views, will incorporate a graduated metric scale.
- 3.1.9 **Planning:** a 'site location plan' indicating the site north and based on the current Ordnance Survey 1:1250 map (reproduced with the permission of the Controller of HMSO) will be prepared. This is to be supplemented by a trench plan at 1:200 (or 1:100), which will show the location of the areas investigated in relation to the investigation area and National Grid. The location of any OS bench marks used and site temporary bench marks will also be indicated.
- 3.1.10 The precise location of all archaeological structures encountered will be surveyed by EDM tacheometry using a total station linked to a pen computer data logger. This process will generate scaled plans within AutoCAD, which will then be subject to manual survey enhancement. The drawings will be generated at an accuracy appropriate to the final output scale. All information will be tied in to Ordnance Datum. All plan drawings will be geo-referenced based on the Ordnance Survey National Grid.
- 3.1.11 **Human remains:** human remains are not expected to be present, but if they are found they will, if possible, be left *in-situ* covered and protected. The removal of human remains will only take place in compliance with environmental health regulations and following discussions with, and with the approval of, the Ministry of Justice. If human remains are identified, the Ministry of Justice and curator will be informed immediately. An osteoarchaeologist will be available to give advice on site.
- 3.1.12 If disarticulated remains are encountered, these will be identified and quantified on site. If trenches are being immediately backfilled, the remains will be left in the ground. If the excavations will remain open for any length of time, disarticulated remains will be removed and boxed, for immediate reburial at an appropriate site. Any grave goods or coffin furniture will be retained for further assessment. Where a licence is issued, all human skeletal remains must be properly removed in accordance with the terms of that licence. Where a licence is not issued, the treatment of human remains will be in accordance with the requirements of Civil Law, ClfA Technical Paper 13 (1993) and Historic England guidance (2005).

- 3.1.13 **Finds Policy:** all finds will be collected and handled following the guidance set out in the ClfA guidance for archaeological materials. Unstratified material will not be kept unless it is of exceptional intrinsic interest. Material discarded as a consequence of this policy will be described and quantified in the field.
- 3.1.14 Finds of particular interest or fragility will be retrieved as Small Finds, and located on plans. Other finds, finds within the topsoil, and dense/discrete deposits of finds will be collected as Bulk Finds, from discrete contexts, bagged by material type. All artefacts and ecofacts will be appropriately packaged and stored under optimum conditions, as detailed in the RESCUE/UKIC publication *First Aid for Finds*, and recording systems must be compatible with the recipient museum. All finds that fall within the purview of the Treasure Act (1996) will be reported to HM Coroner according to the procedures outlined in the Act, after discussion with the client and the local authority.
- 3.1.15 **Glass finds:** it is anticipated that a considerable assemblage of glass artefacts will be recovered during the course of the excavation. It is proposed that a sampling policy is implemented, which will allow for the retention of a sample of vessels sufficient to permit the identification of the range of base widths and rim forms. Blanks from vessels will be considered to be of great significance, as will any moils, which have a potential to furnish interesting evidence for the manufacturing process. Similarly, a representative sample of cullet, gall, and other waste products will be retained. A detailed strategy for the recovery of glass fragments is presented in *Appendix 1*.
- 3.1.16 **Treasure:** any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996.

3.2 Watching Brief

- 3.2.1 This will comprise archaeological monitoring during any intrusive works by the client in the area of the former canal dock (Figures 2 and 3). A member of Salford Archaeology staff will be present during any groundworks to record any remains which may be unearthed within this area. If possible, any remains will be rapidly cleaned, drawn and photographed. It is likely that in this area remains will be at too great a depth to access safely, and therefore will be photographed and recorded from the top of the trench.

4. Health and Safety

4.1 Health and Safety

4.1.1 Full regard will be given to all constraints during the course of the project, and all relevant Health and Safety legislation, CDM, COSHH regulations and codes of practice will be respected. The University of Salford provides a Health and Safety Statement for all projects and maintains a Safety Policy. Salford Archaeology is advised on its Health and Safety matters by the University of Salford, who provide ongoing advice on health and safety matters to all departments in the organisation. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Federation of Archaeological Employers and Managers (FAME), and in accordance with current legislation, including:

- The Health and Safety at Work Act (1974);
- Management of Health and Safety at Work Regulations (1999);
- The Construction (Design and Management) Regulations (2015);
- The Control of Asbestos Regulations (2006);
- Construction (Health, Safety and Welfare) Regulations (1996);
- The Health and Safety (Miscellaneous Amendments) Regulations (2002);
- The Control of Substances Hazardous to Health Regulations (2002);
- The Health and Safety (First-Aid) Regulations (1981);
- The Regulatory Reform (Fire Safety) Order (2005);
- The Provision and Use of Work Equipment Regulations (1998);
- Lifting Operations and Lifting Equipment Regulations (1998).

4.1.2 A risk assessment and method statement will be produced by the archaeological contractor and submitted to the Client prior to the commencement of any onsite archaeological works. All Salford Archaeology staff associated with the excavation will be given a copy of the method statement and the risk assessment prior to the beginning of the works and will be required to read both documents.

4.1.3 Salford Archaeology undertakes to safeguard, so far as is reasonably practicable, the health, safety and welfare of its staff and of others who may be affected by our work. This applies in particular to providing and maintaining suitable premises, and providing all reasonable safeguards and precautions against accidents. The University of Salford will also take all reasonable steps to ensure the health and safety of all persons not in their employment, such as volunteers, students, and members of the public.

4.1.4 At present the profession of Archaeologist is largely covered by the CSCS, Construction Related Organisation CRO White Card for Archaeological Technician (Code 5363); other cards are available for site visitors etc. For this all Salford Archaeology staff likely to undertake fieldwork must pass a CITB Health and Safety Test at least to operative level. Where a member of staff has not yet received their card they will produce a certificate to prove that they have passed the test.

- 4.1.5 **Personal Protective Equipment (PPE):** all staff will wear PPE at appropriate times dictated as by the Senior Archaeologist on site. All Salford Archaeology staff are supplied with the following PPE:
- Safety Helmets (EN397);
 - Ear Defenders (EN 352-3);
 - Safety spectacles (EN166);
 - Goggles (Chemical BSEN 166 Type 3);
 - Dust masks plain and valved (EN149 2001);
 - Disposable overalls (Type 5/6 disposable EN340);
 - Hi-visibility vests (EN471);
 - Gloves Nitrile and latex disposable, PVC, EN374;
 - Heavy-duty nitrile rubber gloves (EN420, 388);
 - Safety footwear - steel toecap and mid-sole boots and Wellingtons EN345-47.
- 4.1.6 Any other PPE required by the client and/or Principal Contractor must be provided or funded by them.
- 4.1.7 **Services (Gas, Electricity, Water, Sewers, Telecoms):** it is the duty of the Client to provide all information reasonably obtainable relating to any contamination or live services present on site prior to the commencement of the programme of archaeological works.
- 4.1.8 Service plans have been provided by the client and will be inspected closely prior to the commencement of any works. The excavation area will be scanned using a cable avoidance tool before any excavation commences, and will be scanned regularly throughout the mechanical excavation process.
- 4.1.9 No member of Salford Archaeology staff will touch or otherwise interfere with a live service even if declared 'safe'. In the event of the accidental disruption of a live service by archaeologists, the Salford Archaeology Senior Archaeologist will inform both their project manager and the Principal Contractor and, when appropriate, call the relevant emergency number. Any underground service not previously identified which is encountered during excavation will be assumed to be live and will need to be made safe by the Client before further excavation. Any visible overhead cables, pipes, ducts, etc will be assumed to be live if there is no written substantiation that they are dead, and will immediately need to be made safe and/or isolated from further excavation. Where for whatever reason making safe of under- or over-ground services does not happen, Salford Archaeology may need to remove its staff from the site or an area.
- 4.1.10 **Contaminated land:** Salford Archaeology is not aware of any previous documented land usage suggesting that the site is likely to contain specific potentially dangerous subsurface ground contamination. However, it is likely that the infill of the former canal dock will contain contaminants. Should the client identify any potential contamination issues, they should notify Salford Archaeology in writing at the earliest possible opportunity.

- 4.1.11 **Access:** reasonable access to the site will be granted to representatives of the relevant archaeological curatorial body (GMAAS), who may wish to be satisfied, through regular site inspections, that the scope and practice of the archaeological works are being conducted according to professional standards and in accordance with any agreements made.
- 4.1.12 Access will also be provided for the client and their agents and invited parties of guests (eg students, councillors, planners, and museum staff – all with the express permission of the client prior to accessing the site). No visitors will be allowed onto the site without the permission of the senior Salford Archaeology member of staff and the client. All visitors will be required to adhere to site safety rules as verbally explained and will be required to sign in/out of the site on arrival/departure.

5. Other Matters

- 5.1 **Project Monitoring:** the aims of monitoring are to ensure that the archaeological works are undertaken within the limits set by the Written Scheme of Investigation, and to the satisfaction of the Heritage Management Director (Archaeology) for GMAAS, in the capacity of archaeological advisor to the Greater Manchester Planning Authorities.
- 5.2 As a minimum requirement, GMAAS will be given a minimum of one-week's notice of work commencing on site, and will be afforded the opportunity to visit the site during and prior to completion of the on-site works so that the general phasing of the site and results of the fieldwork can be assessed and to discuss the requirement of reporting or any further phases of archaeological work.
- 5.3 Salford Archaeology will notify GMAAS of any discoveries of archaeological significance so that site visits can be made, as necessary. Any changes to this agreed WSI will only be made in consultation with GMAAS.
- 5.4 **Contingencies:** it is advised that a contingency be set aside should any remains or materials be encountered requiring specific specialist analysis. The contingency will only be implemented following discussion with GMAAS and the Client.
- 5.5 **Working Hours:** normal working hours are variable between 7.30 am and 6.00 pm, Monday to Friday. It is not normal practice for the University of Salford staff to be asked to work weekends or bank holidays, and should the Client require such time to be worked during the course of a project a contract variation to cover additional costs will be necessary.
- 5.6 **Insurance:** the University of Salford has professional indemnity to a value of £50,000,000, employer's liability cover to a value of £50,000,000 and public liability to a value of £50,000,000. Written details of insurance cover can be provided if required.

6. Post-Excavation Assessment

- 6.1 The Post-Excavation Assessment phase of the project centres around the assessment of the excavated materials, which is a pivotal point in the execution of an archaeological project. Its purpose is to evaluate the potential of the data-collection to contribute to archaeological knowledge and to identify the further study necessary. Any work undertaken should be directed towards allowing decisions to be made about the potential of the data and the nature of the future programme; no detailed analytical study should be undertaken until the assessment phase has been completed. Considerable breadth of academic knowledge is needed to make the necessary judgements; the best available staff should be used for assessment. Alternative sources of expert advice should be sought if not available within the project team.
- 6.2 Following completion of the fieldwork, the results will be collated and the site archive completed in accordance with Historic England's guideline document *MoRPHE*. Additionally, an appraisal of the available primary and secondary documentary sources pertaining to the site and the region's glass industry will be undertaken in order to set the results of the excavation into context, and facilitate an assessment of their significance.
- 6.3 A post-excavation assessment of the archive and the resource implications of the potential further analysis will be undertaken. The stratigraphic data and the finds assemblage will be quantified and assessed, and the technological samples processed and a brief assessment of their potential for further analysis made. The assessment results will be presented within a post-excavation assessment report which will make recommendations for a schedule, timescale and programme of analysis in accordance with *MoRPHE*. The proposed programme anticipates both analysis of the site stratigraphy and the artefactual evidence leading to the production of a publication report.
- 6.4 A finds assessment will be carried out after the completion of the onsite works and should as a minimum include:
- the provenance of material, which should include comments on provisional dating and evidence for contamination or residuality;
 - the range and variety of materials, which should include comment on any bias observed due to collection and sampling strategies;
 - the condition of material, which should include comments on the extent to which an assemblage is likely to be affected by preservation bias, and comment on its potential for long-term storage;
 - the existence of primary sources or relevant documentation may enhance the study of site data;
 - the quantification and cataloguing of all material.

- 6.5 This will allow the formulation of a strategy of further post-excavation analysis if required, subject to discussions with the curatorial body. Following the finds assessment any finds and samples, where necessary, will be submitted for expert assessment as part of the post-excavation phase following guidelines set out in *MoRPHE* (English Heritage 2006). The appointment of archaeological specialists will be carried out after consultation with and approval of GMAAS and client following the formulation of a post-excavation analysis strategy.
- 6.6 **Report:** a draft copy of an initial assessment report will be submitted for comment to GMAAS within eight working weeks of the completion of the fieldwork. This will present the results obtained from the excavation, and will include:
- a title page detailing site address, NGR, author/originating body, client's name and address;
 - full content's listing;
 - a non-technical summary of the findings of the fieldwork;
 - a description of the archaeological background;
 - a detailed account of the historical development of the site;
 - a description of the methodologies used during the fieldwork;
 - a description of the findings of the fieldwork;
 - detailed plans of the excavation areas, showing the archaeological features exposed;
 - an overall phased plan with sections of the excavated archaeological features;
 - interpretation of the archaeological features exposed and their context within the surrounding landscape;
 - a consideration of the importance of the archaeological remains present on the site in local, regional and national terms.
- 6.7 This assessment report will detail what further analysis is required in order to produce the final site report and any publication deemed appropriate and necessary by GMAAS. The final analysis, report production and publication would be subject to a separate WSI agreed upon by the client and GMAAS, and would be subject to separate costs agreed upon between the client and Salford Archaeology.
- 6.8 **Analysis:** a provisional programme of post-excavation analysis is anticipated. The extent of the programme, however, can only be reliably established on completion of the post-excavation-assessment report. The proposed programme anticipates both analysis of the site stratigraphy and the artefactual/ecofactual evidence leading to the production of a final report.
- 6.9 **Publication:** it is anticipated that the results of the excavation will be worthy of publication. As a minimum, the publication text will be prepared in a suitable form for inclusion as a journal article in the appropriate journal as befits its academic status.

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- 6.10 It is also likely that the results from the excavation will merit publication in a dedicated volume of the '*Greater Manchester's Past Revealed*' series of booklets, which will present the history of the glassworks set in the context of the wider Manchester glass industry, and the significant results obtained from the excavation and subsequent analysis of the dataset.
- 6.11 **Archive:** the results of the archaeological investigation will form the basis of a full archive to professional standards, in accordance with current Historic England guidelines, and current ClfA standards and guidance for the creation, compilation, transportation and deposition of archaeological archive (published October 2009). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. The deposition of a properly ordered and indexed project archive in an appropriate repository is considered an essential and integral element of all archaeological projects by the ClfA in that organisation's code of conduct. As part of the archiving process, the on-line OASIS (On-line Access to Index of Archaeological Investigations) form will be completed.
- 6.12 The site archive will be so organised as to be compatible with the other archaeological archives produced in the Greater Manchester area. All drawn records will be transferred to and stored in digital format, in systems which are easily accessible. The integrity of the site archive will be maintained upon completion of the archaeological works with the archive ultimately being deposited to the Museum of Science and Industry (subject to their approval).
- 6.13 The archaeological archive will consist of the following:
- All original records created throughout the course of the project;
 - All original drawings, whether created during fieldwork or post-investigation;
 - Indexes to the drawings;
 - Indexes to the photographic archive;
 - All born digital material;
 - Digital material created from written, drawn or photographed original records;
 - The final project report;
 - A list of contents of the archive.
- 6.14 It is likely that a large element of the project archive will be in digital format. It would thus be appropriate to deposit a copy of the archive generated from the archaeological investigation with the Archaeological Data Service (ADS), through ADS-Easy. Any records that are created in hard copy during the course of the project will be scanned and added to this digital archive.

7. Timetable

- 7.1 It is anticipated that the on-site excavation works, excluding the initial bulk excavation of the overburden, will be carried out over a period of four weeks.
- 7.2 The timetable for the watching brief during construction works in the vicinity of the infilled canal basin will be dictated by the Main Contractor.
- 7.3 The assessment report will be produced and submitted to the client within 8 weeks following the completion of the site work, pending any technical reports resulting from the analysis of any significant deposits. Note that following the assessment report GMAAS would require a separate WSI to be produced detailing the production of the final site report and any publication deemed as required. This would not be covered by the costs for the fieldwork and assessment report and would require separate costs.
- 7.4 The project archive will be deposited with the receiving museum (where applicable) within six months of completion of the final report.

8. Staffing Proposals

- 8.1 The project will be under the overall charge of **Ian Miller BA FSA** (Assistant Director, Salford Archaeology) to whom all correspondence should be addressed. Ian has over 28 years' experience of commercial archaeology, and has a particular interest in the archaeology of the Industrial Period. Ian has been responsible for the archaeological investigation of several glass-manufacturing sites, including the Percival, Vickers Glassworks and the Molyneaux & Webb Glassworks in Manchester, the Powell & Ricketts Glassworks in Bristol, and the Corning's Glass Works in Sunderland. Ian is a member of the CBA North West Industrial Archaeology Panel, the Cumberland and Westmorland Archaeological Society Industrial Archaeology Panel, and a Co-opted Member of Council for the Association of Industrial Archaeology.
- 8.2 His role will be to ensure that the Written Scheme of Investigation is implemented within the framework of the Project Objectives. He will be responsible for all aspects of staff and resource logistics, ensuring the smooth running of the project programme. Ian holds a current valid SMSTS certificate.
- 8.3 The fieldwork will be directed by **Graham Mottershead** (Project Officer, Salford Archaeology). Graham is an experienced field archaeologist with over 25 years' experience in field archaeology who, has undertaken many excavations within Manchester and has particular experience in the excavation of workers housing and industrial remains. Graham is a qualified first aider and holds current valid certificates in SSSTS, Excavator Banksman, Cable Avoidance and Asbestos Awareness.
- 8.4 It is not possible to provide details of specific technicians that will be involved with the fieldwork at this stage, but all shall be suitably qualified archaeologists with proven relevant experience. It is anticipated that up to two technicians will be required for the initial stage of the fieldwork.
- 8.5 Specialist advice regarding the production of glass-making residues and working waste is likely to be provided by **Dr David Dungworth**, who is one of England's leading researchers in the chemical analysis and interpretation of post-medieval glass. David will provide on-site advice, and carry out the assessment of all recovered material.

Appendix 1: Proposed Programme for Glass Sampling

Information Categories

1. Raw Materials
2. Processing Residues
3. Artefacts
4. Crucible fragments
5. Structural fragments

1) Raw Materials

This category of find includes:

- Cullet
- Silica – Sand
- Alkali – Soda
- Lime

Processing: ensure the cullet is kept damp and well packaged either in polygrip bags or boxed

Sampling: collect 2 x 2kg samples of the raw material ie sand, soda and lime, from each relevant context. One sample to be retained as archive whereas the second sample is to be available to send to the designated lab for assessment.

2) Processing Residues

All deposits which are not obviously a straightforward soil layer will be sampled, this category of find includes the following:

- Scum/gall/sandever
- Large lumps of glass (tank or crucible bottom material)
- Cullet
- Moils and runs

Where glass-working waste is recovered in sufficient quantities, it will be subject to chemical analysis to allow a characterisation of the glasses produced. This will allow for an identification of different types of glass that were produced.

Processing: ensure glass processing residues are kept damp and boxed

Sampling: collect 2 x 2kg samples of the processing residues. One sample to be retained as archive whereas the second sample is to be available to send to the designated lab for assessment.

Sample any 'suspicious' dumps of material. Collect 2 x 2kg.

Ensure that moils and runs are designated as Small Finds unless quantities larger than 10 of each type are encountered whereby they will be bulk sampled.

3) Artefacts

This category of find includes:

- Examples of the manufactured goods
- Examples of the moulds used (cast iron or copper-alloy), both are rare due to re-use or scrap value.
- Cullet (examples of finished glass which have failed in the annealing process).
- Examples of tools used in the production process,

Sampling: all metal objects to be designated as Small Finds and treated accordingly, as well as examples of items which have failed in the annealing process.

Processing: ensure all glass artefacts are kept damp and bagged/boxed. All metal objects to be packed according to English Heritage guidelines on the care of metal artefacts.

4) Crucible fragments

Samples to be kept for assessment of sources and performance of refractory clays.

Keep all in first instance, for selection if eventual quantities large.

5) Structures

Brick used in the construction of the kilns and associated structures have the potential to provide information on the nature of the furnace structure and the processes being undertaken.

Sampling: bricks either recorded in situ or recovered from 'dump' deposits which possess glazing must be retained. Particular attention is to be paid to traces of glaze/glass on the corners of the brick

Processing: samples of specific bricks are to be recorded on the Brick Sample sheets and noted on plan.

Salford Archaeology

New Islington, Ancoats
Written Scheme of Investigation

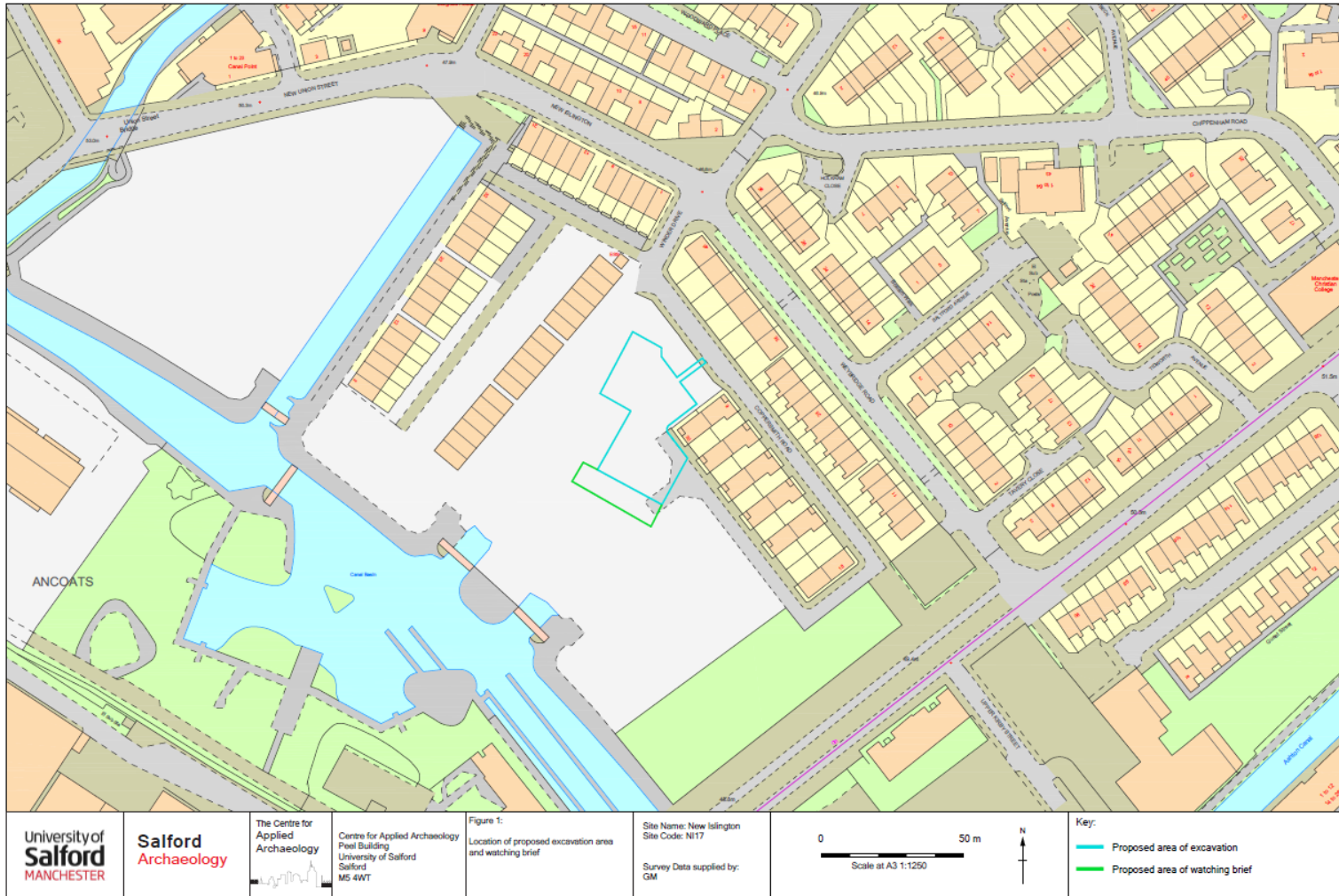


Figure 1: Site location



Figure 2: Excavation and watching brief areas on the Ordnance Survey map of 1850

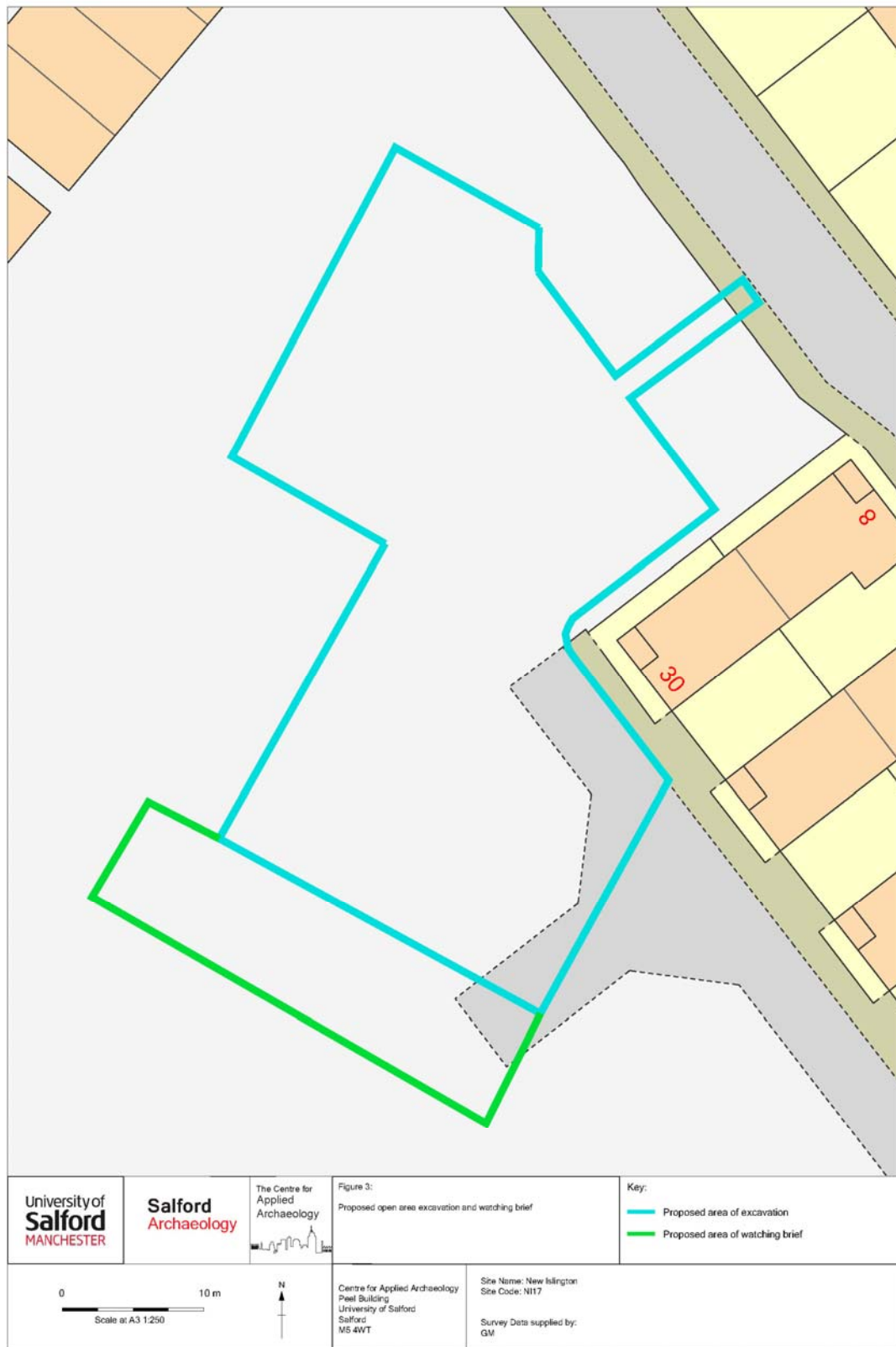


Figure 3: Excavation and watching brief areas on modern mapping

CONSULTANCY



DESK BASED ASSESMENTS



WATCHING BRIEF & EVALUATION



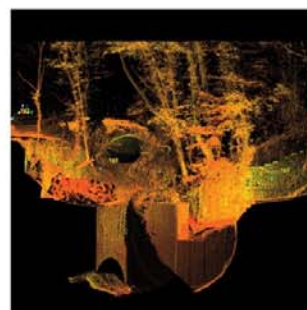
EXCAVATION



BUILDING SURVEY



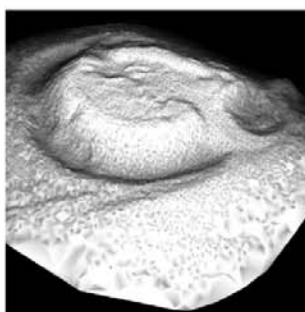
3D LASER SCANNING



COMMUNITY INVOLVEMENT



LANDSCAPE SURVEYS



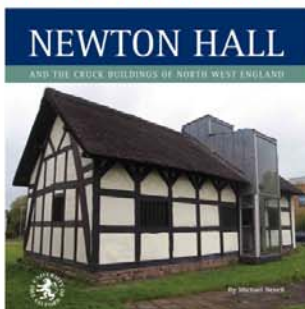
GEOPHYSICAL SURVEYS



WORKSHOPS & VOCATIONAL TRAINING



RESEARCH PUBLICATIONS



SEMINARS, DAYSCHOOLS CPD EVENTS

