

SWANWICK MARINA REDEVELOPMENT

Archaeological Desk Based Assessment and Site Visit

Prepared by

NETWORK ARCHAEOLOGY LTD

For

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On behalf of

PREMIER MARINAS LTD

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NON-TECHNICAL SUMMARY

This archaeological desk-based assessment relates to the proposed redevelopment of Swanwick Marina, Southampton (NGR 449350 109450) in Hampshire. This report presents the results of desk-based study of published archaeological information in the public domain and observations from a site visit lying within a one kilometre-wide Study Area, centred on the proposed redevelopment. Searches of national and county databases, the study of maps, aerial photographs and written sources, have identified 109 sites of archaeological importance. All the sites studied have been graded according to their perceived archaeological importance. The scale of impact of the proposed scheme upon each archaeological site has been assessed, and the significance of each impact determined (taking into account the importance of each site).

This report identifies the extent of known archaeological constraints within the Study Area and provides a preliminary assessment of their significance. It assesses the site-specific value/importance of the archaeology and thereby the overall potential impact of the proposed works.

Adverse impacts have been identified upon eight locally important sites and a further six locally important sites may also be impacted by the proposed redevelopment.

Neutral impacts (i.e. a combination of adverse and beneficial affects) have been identified upon Swanwick Conservation Area and six of its listed buildings

No sites have been identified with overall beneficial impacts.

A staged approach to the archaeological investigation and mitigation of the marina redevelopment is recommended.

Due to the moderate archaeological and palaeo-environmental sensitivity of the proposed redevelopment area, consideration of evaluation comprising auger survey, and/or hand-test pitting/machine evaluation is advised. In particular, design mitigation is required to minimise potential adverse impacts upon Swanwick Conservation Area and its listed buildings.

1 INTRODUCTION

1.1 Purpose of the report

This report presents the results of an archaeological desk-based assessment and site visit of the proposed redevelopment at Swanwick Marina near Southampton, Hampshire (Figure 1).

1.2 Commissioning bodies

This archaeological assessment was commissioned by URS Corporation Limited on behalf of Premier Marinas Ltd. The archaeological contractor was Network Archaeology Ltd, a professional organisation which provides consultancy advice and undertakes archaeological field services.

1.3 Proposed redevelopment

Premier Marinas Ltd is planning to redevelop the existing marina at Swanwick.

The redevelopment will involve the demolition of existing buildings; this includes the complete removal of all foundations. The new building piles will be constructed using a continuous auger method (450mm diameter and 25-30m deep placed at 5-10m intervals), and there will be no significant ground reduction or increase. The new operations buildings and houses will be two storeys and will not have basements.

All existing pontoons will be replaced with new pontoons; these will be of similar construction to the old pontoons which are floating and attached to tubular steel piles.

Internal detail of the Proposed Redevelopment Area (PRA) is presented on figure 4.

1.4 Staged approach to archaeological investigation

Premier Marinas Ltd intends to adopt a staged, multi-disciplined approach to the marina redevelopment.

This archaeological assessment forms the first stage in what is expected to be a detailed investigative programme of archaeological research, investigation and mitigation during the design phase and construction phase of the marina.

1.5 Legislation, regulations and guidance

The redevelopment of the marina falls under the Town and Country Planning Act 1990.

Further guidance on archaeological remains and the built historic environment is provided by The Department of the Environment under the Planning Policy Guidance Note 15 (PPG 15): Planning and the Historic Environment 1994 and the Planning Policy Guidance Note 16 (PPG 16): Archaeology and Planning 1990.

Listed buildings and Conservation areas are protected under the Planning (Listed Buildings and Conservation Areas) Act 1990.

The Protection of Wrecks Act 1973 comes into effect here as any wreck deemed to be important by virtue of their historical, archaeological or artistic value, or designated dangerous by virtue of their contents will be protected.

The Hampshire County Structure Plan (1996-2011) is due to disappear as a result of the Planning and Compulsory Purchase Act 2004. Under the Act, the responsibility for strategic planning will pass from County and Unitary Councils to Regional Assemblies. The South East Regional Assembly is currently preparing a regional spatial strategy, to be known as the South East Plan (approval expected in late 2007). The South East Plan seeks to establish a legislative framework that provides for more positive management and enabling of change, rather than its prevention (South East Regional Assembly 2006:188). As this plan has yet to come into effect the Hampshire County Structure Plan still remains in force. It contains policies which are relevant to both the historical environment and the built-up coast.

1.6 Aims

The purpose of this assessment is to consider the cultural heritage implications of the proposed redevelopment and to provide a basis for further stages of investigation.

The specific objectives are:

- To identify and define the extent of known archaeological remains within the 1.5km diameter Study Area;
- To provide a preliminary assessment of their significance;
- To assess the overall impact of the proposed redevelopment on the known and potential archaeological constraints;
- To assess the need for further evaluation and mitigation prior to and during construction; and
- To make recommendations for further evaluation and mitigation, where necessary.

1.7 Circulation of report

Premier Marinas Ltd/URS Corporation Ltd will receive copies of this report.

This report will also be subject to external review by Hampshire Environment Department (Archaeology and Historic Buildings) and the English Heritage Regional Advisor for Archaeological Science.

1.8 Resourcing

This report was undertaken over a six week period in December 2006 and January 2007 with the site visit undertaken in March 2007. Data collection by one researcher took place over two weeks, one day for collecting aerial photographs and report writing was undertaken by two individuals over a one week period. MapInfo GIS was used to manage and present the data.

1.9 Report structure

This desk based assessment is divided into seven chapters followed by appendices, forming four main sections:

Chapters 1-2 serve to introduce the organisations involved, the proposed redevelopment, the context, method and standards of assessment, and the layout of this report. All headings up to and including circulation of report deal with aims. The remaining headings in the introduction deal with scope. The Method of Assessment is also part of the scope of the report, but is large enough to need its own section. It deals with the archaeological standards and methods used for the data collection, analysis and reporting. Additionally, the chapter defines nomenclature used in this report, and states where the project archive will be deposited upon project completion.

Chapters 3-4 present the results of the assessment. Specifically, they describe the physical environment of the redevelopment site, and present the known archaeology of the Study Area.

Chapters 5-7 deal with the impacts of the proposed redevelopment on the archaeological sites within the Study Area and discuss approaches which can be adopted for dealing with them.

Appendices: Four appendices (A – E) comprise an explanation of the phased approach to mitigation, explanation of statutory and non-statutory protection of archaeological sites, gazetteer of archaeological sites and constraints figures.

2 METHOD OF ASSESSMENT

2.1 Standards

This assessment has been conducted according to the Institute of Field Archaeologists' *Code of Conduct* (2000) and *Standard and Guidance for Archaeological Desk-based Assessment* (2001). Hampshire is also part of the *Solent-Thames Archaeological Research Framework*, which is currently in the early stages of publication. These frameworks promote greater appreciation and understanding of our heritage, allowing better use of the resource for display and teaching purposes, and aiding its future protection. The Framework will also identify gaps in our knowledge and set out a research strategy to encourage future investigation (<http://www.buckscc.gov.uk/bcc/content/index.jsp?contentid=-222423834>). All future archaeological work on this project should be conceived within the context of the Regional Research Frameworks and carried out with reference to standards and guidance documents mentioned above.

The site visit has been conducted according to the Institute of Field Archaeologists' *Standard and Guidance for Archaeological Field Evaluation* (revised edition, 2001).

2.2 Study Area

Data collection focused on a 1.5km wide Study Area, centred on the proposed marina redevelopment. Background archaeological and historical information for the localities on which the redevelopment site was situated was also studied to provide a broader archaeological context. The current Study Area was provided by URS Corporation Ltd.

2.3 Data collection

Data and views have been sought from statutory and non-statutory bodies during the assessment process, as summarised in Table 2.1.

Table 2.1: Summary of data sources and data collected during the assessment process

Source	Data type	Data in Study Area
British Museum (BM)	Portable Antiquities Database	No
Council for British Archaeology (CBA)	Defence of Britain Database	Yes
Countryside Agency	Heritage Coasts	No
English Heritage	List of Buildings of Special Architectural or Historic Interest held by the Department of Culture, Media and Sport	Yes
	National Monuments Register (NMR) Events database of archaeological works	Yes
	NMR Monarch database of registered archaeological sites	Yes
	NMR collection of vertical aerial photographs	Yes
	NMR collection of oblique aerial photographs	Yes
	Schedule of Ancient Monuments of England	No
	The National Mapping Programme (NMP)	No
	Register of Historic Battlefields	No

Source	Data type	Data in Study Area
	Register of Parks and Gardens of Special Historic Interest in England	No
	World Heritage Sites	No
English Nature (EN)	Ancient Woodland	No
Hampshire Record Office	Historic maps (tithe, OS etc)	Yes
	Secondary printed sources	Yes
Hampshire Site and Monuments Record	Sites and Monuments Record	Yes
	Grey Literature	Yes
Fareham Borough Council	Conservation Areas	Yes
Eastleigh Borough Council		

2.4 Site visit

Visual examination took place of the PRA, where access had been permitted by the landowner. The purpose of this work was to record extant structures and finds as well as to corroborate data identified by the historic map regression and desk-based assessment. Observations were recorded on site plans of the PRA.

2.5 Data management and presentation

2.5.1 Definition of a 'site'

The term 'site' is used throughout this report to refer to ancient monuments, buildings of architectural and historical importance, parks, gardens, designed landscapes, battlefields, public spaces, historic landscapes, historic townscapes, findspots of artefacts and any other heritage asset. Unless otherwise stated the term 'site' refers to the location where a site was situated and not to extant remains (e.g. a windmill means the location of a former windmill, and a pond means the location of a former pond). The only exception is structures, which can be taken to be extant unless otherwise stated.

2.5.2 Reference conventions

The information gathered from the data sources listed in Section 2.3 is uniquely referenced throughout this report and on all the figures. Information retrieved from public databases is prefixed by a two, three or four letter code, followed by their original source number. Sites found during the course of this desk based assessment that are not currently listed in a public database are referred to as DBA sites, identified by a two-letter suffix (Table 2.2).

Table 2.2: Summary of site reference codes

Reference code	Terms of reference	Example site reference
DBA	Desk Based Assessment Site	DBA:AA
DBP	Defence of Britain Project	DBP S0013298
SMR	Hampshire Sites and Monuments Record	SMR 5823
LS	Listed Structure	LS 489422
MON	English Heritage National Monuments Record of sites and events	MON 1309749

2.5.3 Archaeological constraint gazetteer

Known archaeological sites lying within the Study Area are summarised within a gazetteer in Appendix C. The gazetteer is structured in alphanumeric order. The gazetteer provides the source, cross-references, description, period and location of each site. The location is given as a 12 figure national grid reference to the centre of the point, area or linear. The gazetteer also gives a category of importance (see Section 2.6.1), an assessment of impact (see Section 2.6.2) and an assessment of the significance of impact (Section 2.6.3).

2.5.4 Historic map regression gazetteer

Historic map components lying within the proposed redevelopment area are summarised within a gazetteer in Appendix D. The gazetteer is structured in numeric order. The gazetteer provides the map source on which the component first appears, the map source on which the component no longer appears, a brief description and location. The location is given as a 12 figure national grid reference to the centre of the point, area or linear.

2.5.5 Archaeological figures

The archaeological sites listed in the gazetteer are presented on Figure 2 and historic map regression data is presented on Figure 3. The relationship between the historic map regression data and the proposed redevelopment is shown on Figure 4. These figures use OS Landline mapping at 1:2500 scale provided by URS Corporation Ltd. Each site is represented by a star, shaded area or dashed/dotted line, depending on the type of data held. The symbols and corresponding labels are coloured according to the importance of the site (see section 2.6.1).

2.5.6 Accuracy of displayed data

Site data originally may have been captured at a different scale to that which it is now displayed. This should be borne in mind when interpreting the exact location of constraint points and polygonal boundaries. Table 2.3 presents estimated accuracy levels based upon visual comparison with plots.

Table 2.3: Summary of accuracy levels for displayed data

Source	Source type	Source scale	Positional accuracy in relation to current OS mapping	Accuracy in relation to position on the ground
DBA	OS map	1:10 000 1:10 560	1mm	± 10m
DBA	OS map	1:2500	1mm	± 2.5m
DBA	AP vertical	1:5000 - 1:10 000	1-5mm	± 5 - 50m
DBA	AP oblique	1:1000 - 1:2500	1-5mm	± 5 - 50m
DBA	Tithe/enclosure map	1:5000 - 1:10 000	1-5mm	± 5 - 50m
DBP	digital points	-	-	?
LS	digital points	-	-	? ± 10m
MON	digital points	-	-	? ± 10m – 1000m

Source	Source type	Source scale	Positional accuracy in relation to current OS mapping	Accuracy in relation to position on the ground
SMR	Annotated maps, digital points and text data	(1:10 000)	±1-200mm	? ± 10m – 2000m

2.6 Impact assessment process

Archaeological impact assessment is the process by which the impacts of a proposed development upon the archaeological resource are identified. Each site has been assessed in its wider heritage landscape, taking account of identity, place, and past and present perceptions of value.

A three stage process was adopted:

- Stage 1: assessment of importance (see 2.6.1)
- Stage 2: assessment of the impact of the proposed development (see 2.6.2)
- Stage 3: assessment of significance of impact (see 2.6.3)

2.6.1 Importance

The sites listed in the gazetteer have been rated according to their perceived importance into categories A to D and U (as shown in Table 2.4). Where possible, each site has been assessed on the following characteristics:

- complexity (i.e. diversity of elements and relationships)
- condition (i.e. current stability and management)
- period
- physical form
- rarity
- setting
- survival (i.e. level of completeness)

The grade awarded to each site considered the scale at which the site may be judged significant (i.e. in terms of local, regional and national policies, commitments and objectives); representational value, diversity and potential; and existing local, regional and national designations (e.g. Scheduled Ancient Monuments). Some sites within the Study Area benefit from statutory protection and other protection (see Appendix B).

The process of importance categorisation has been adopted as a tool in determining appropriate mitigation. The categories should not be taken as a statement of fact regarding the importance or value of a particular site. The use of examples of types of site is simply a guideline. The inclusion of a site in a particular category often involves a degree of subjective judgment and is based upon the current level of information. Categories are not fixed or finite, and there is every possibility that the classification of a site may change as a result of findings made during later stages of investigation.

Table 2.4: Site category definitions

Grade	Description	Examples	Investigation and mitigation
A	Statutory protected	Conservation Area, Listed Building, Scheduled Ancient Monument, World Heritage Site	To be avoided
B	Nationally important	Grade I and II* Registered Park and Garden, Registered Battlefield, Major settlements (e.g. villas, deserted medieval villages), Burial grounds, Standing historic buildings (non-listed)	To be avoided
C	Regionally important	Grade II Registered Park and Garden, Some settlements, finds scatters, Roman roads, sites of historic buildings	Avoidance desirable, otherwise investigation recommended
D	Locally important	Field systems, ridge and furrow, trackways, wells	Avoidance /investigation may or may not be envisaged at this stage
U	Ungraded	Non-archaeological site held by data source	N/a

2.6.2 Impact of the proposed development

The potential impact of the proposed scheme upon a site has been assessed at three levels:

- nature of impact (see Table 2.5)
- type of impact (see Table 2.6)
- magnitude of impact (see Table 2.7)

Table 2.5: Nature of impact definitions

Impact	Description
Beneficial	Beneficial contribution to the protection or enhancement of the archaeological and historical heritage
Adverse	Detrimental to the protection of the archaeological and historical heritage
Neutral	Where positive and negative impacts are considered to balance out
None	No or negligible impact due to distance from proposed scheme, and/or construction technique which negates the impact

Table 2.6: Impact type definitions

Type	Description
Direct	Physical damage, including compaction and/or partial or total removal. Severance, in particular linear sites
Indirect	Visual intrusion affecting the aesthetic setting of a site. Disturbances caused by vibration, dewatering, or changes in hydrology etc.
Uncertain	Where the physical extent or survival of a site is uncertain, or where the visual impact of the proposed scheme on the setting of sites or the landscape has not been determined

Table 2.7: Magnitude of impact definitions

Magnitude	Description
Severe	Entire or almost entire destruction of the site
Major	A high ratio of damage or destruction to the site

Magnitude	Description
Minor	A low ratio of damage to the site
Indeterminate	Where the data level does not allow any secure calculation (e.g. because the quality and extent of the site is unknown, or because construction techniques have not yet been decided)

Factors affecting the assessed magnitude of impact include:

- the proportion of the site affected
- the integrity of the site; impacts may be reduced if there is pre-existing damage or disturbance of a site
- the nature, potential and heritage value of a site

2.6.3 Significance of impact

The ‘significance’ of the impact has been assessed as the product of the importance of each site, and the impact of the proposed scheme upon each site. The levels of significance of impact are defined in Table 2.8. Significance of impact definitions are provided only for negative impacts, as these were the only type on this particular scheme. The significance of impact rating does not take account of potential mitigation.

Table 2.8: Significance of impact definitions

Stage 1	Stage 2			Stage 3
Importance of site	Nature of impact	Type of impact	Magnitude of impact	Significance of impact
A	negative	direct	severe	high
			major	high
			minor	high
			indeterminate	high
		indirect	severe	high
			major	high
			minor	medium
			indeterminate	high or medium
		uncertain	n/a	unknown
B	negative	direct	severe	high
			major	high
			minor	medium
			indeterminate	high or medium
		indirect	severe	high
			major	medium
			minor	medium
			indeterminate	high or medium
		uncertain	n/a	unknown
C	negative	direct	severe	medium
			major	medium
			minor	low
			indeterminate	low or medium
		indirect	severe	medium
			major	low
			minor	low
			indeterminate	low or medium
		uncertain	n/a	unknown

Stage 1	Stage 2			Stage 3
D	negative	direct	severe	medium
			major	low
			minor	low
			indeterminate	low or medium
		indirect	severe	medium
			major	low
			minor	low
			indeterminate	low or medium
		uncertain	n/a	unknown

2.7 Limitations of assessment

2.7.1 Reliability of the data

Information held by public data sources can normally be assumed to be reliable, but uncertainty can arise in a number of ways:

- The Sites and Monuments Record (SMR) can be limited because it depends on random opportunities for research, fieldwork and discovery.
- Documentary sources are rare before the medieval period, and the few that do exist must be considered carefully for their veracity.
- Primary map sources, especially older ones often fail to locate sites accurately to modern standards.
- There may be a lack of dating evidence for sites.
- The usefulness of aerial photographs depends upon the geology and land use of the areas being photographed and also the season and weather conditions when the photographs were taken. Many types of archaeological remains do not produce crop, soil or vegetation marks and the aerial photographs themselves necessarily involve some subjective interpretation of the nature of sites.

2.7.2 Potential limitations of an impact assessment

Limitations of impact assessment can include:

- Inaccuracies of map sources which make it difficult to provide a precise assessment of potential impact
- Uncertainty regarding the survival and current condition of some sites. This means that the importance of some sites cannot be finalised until reconnaissance and/or evaluation has taken place on the ground
- Uncertainty regarding the precise methodologies of the development proposals
- The possibility that hitherto unknown archaeology will be encountered

3 DESCRIPTION OF THE PRA

3.1 Location and topography

The proposed area of redevelopment is located at Swanwick Marina, Hampshire (centred NGR 449350 109450). The marina is situated to the west of Lower Swanwick and lies along the River Hamble, which flows southwards into Southampton Water.

The PRA is situated on low ground, which is approximately 5m OD, and the general topography is flat.

3.2 Land use

The River Hamble runs to the south and west of the Study Area, to the north and east is two industrial areas.

3.3 Mapped Solid geology

The PRA is underlain by two types of solid geology: London Clay and Oldhaven, Blackheath, Woolwich and Reading and Thanet beds (BGS 2007) (Table 3.1).

Table 3.1: Description of solid geologies

Period	Epoch	Unit	Description
Palaeogene (65-24 my BP)	Palaeocene Epoch	Oldhaven Beds	yellow to buff pebbly silty sands with a basal pebble bed (2-7m thick)
		Blackheath Beds	sands and rounded grey pebbles of flint (9-12m thick)
		Woolwich and Reading Beds	green yellow mottled glauconitic sand and sandy clays (7-12m thick)
		Thanet Beds	green grey sand and shell beds (18-35m thick) - is a valuable water-bearing stratum that gives rise to springs; laid down in a marine environment
	Lower Eocene Epoch	London Clay Formation	sequence of up to 150m thickness (in the London basin); comprises tropical marine silty clays, clayey and sandy silts and sands; most commonly a stiff, tenacious, bluish clay that becomes brown on weathering, occasionally it becomes distinctly sandy, sometimes glauconitic, especially towards the top; large calcareous septarian concretions and nodular lumps of pyrites and crystals of selenite are common; the base of the clay is very regularly indicated by a few inches of rounded flint pebbles with green and yellowish sand, parts of this layer being frequently cemented by carbonate of lime; the clay has been employed for making bricks, tiles and coarse pottery

3.4 Mapped Drift geology

One drift geology is present within the PRA: Estuarine Alluvium (BGS 2007) (Table 3.2).

Table 3.2: Description of drift geology

Period	Epoch	Unit	Description
Eocene (1.8 my-11ky BP)	Pleistocene	Estuarine Alluvium	ranges from fine sands and gravel through silty and sandy clays to stiff clays with occasional buried peat or organic clays, depending upon local depositional factors

3.5 Mapped Soils

The PRA is unsurveyed, but there are two soil associations mapped closeby. These include soils of Wickham 3 Association to the north-west and south, and soils of Wickham 4 Association to the north-east (Table 3.3).

Table 3.3: Soils and land use

Soil association	SSEW sub-group	Description	Geological location	Land use
711g	Wickham 3	Slowly permeable seasonally waterlogged fine loamy over clayey and coarse loamy over clayey soils, and similar more permeable soils with slight waterlogging. Some deep coarse loamy soils affected by groundwater.	London Clay	Cereal and grassland rotations, permanent grassland and some deciduous woodland on steep valley sides
711h	Wickham 4	Fine silty over clayey and fine loamy over clayey soils. Slowly permeable subsoils and slight seasonal waterlogging. Some well drained clayey soils over chalk. Variably flinty.	London Clay	Cereals permanent grassland and deciduous woodland

3.6 Geotechnical Investigation of PRA

URS completed a detailed geotechnical investigation of the PRA (URS 2006). Nine environmental window sample (WS) borings were taken and advanced to a maximum depth of 5m below ground level (bgl). A further five geotechnical boreholes (BH) were undertaken to a maximum depth of 16.5m bgl. These boreholes were located throughout the PRA and were undertaken in areas of historical earth filling and land reclamation; proposed building locations requiring foundation recommendations; electrical sub-stations; fuel storage tanks; previous workshop and storage areas; anti-fouling area; and boat workshop and maintenance areas.

Analysis shows that the site comprised a 3.5m to 6.8m thick deposit of made ground underlain by Estuarine Alluvium up to approximate thickness of 5.5m to 14.0m bgl, which is underlain by London Clay of thickness between 10.5m and 16.5m bgl. The geological sequence observed is provided in Table 3.3.

Table 3.4 Observed stratigraphy

Stratum	Description	Distribution and Thickness
Made Ground	Generally consists of tarmac or gravel and cobbles underlain by sandy clayey gravel and gravely clay with occasional brick, flint and concrete fragments over white chalk fill mixed with clay in borehole samples 1, 3 and 4 underlain by gravely clay with occasional brick fragments and gravel of flint, concrete and chalk. Organic material was noted 4mbgl in borehole sample 2 and 1.5mbgl in borehole sample 3.	Encountered across the entire site from ground level to depths ranging between 3.5mbgl (borehole sample 3) and 6.8mbgl (borehole sample 1).
Alluvium	Generally brown/grey/green clayey sandy gravel, brown/orange soft to firm sandy gravely clay with occasional mottling grey/green loose clayey sand or gravel of flint. Occasional wood fragments noted in borehole sample 4.	Encountered across the site in all samples to depths ranging from 5.5mbgl (borehole sample 3) and 14.0mbgl (borehole sample 1), with a maximum proven thickness of 7.2m (borehole sample 1).
London Clay	Grey, soft to firm, slightly sandy clay with occasional gravel. Found to increase in strength with depth becoming firm, stiff and occasionally very stiff.	Encountered in all borehole samples at depths proven to between 10.5mbgl (borehole sample 3) and 16.5mbgl (borehole sample 1) with a maximum proven thickness of 5.0m (borehole samples 3 and 5).

3.7 Ground Contamination

Visual and olfactory evidence of environmental contamination was identified in the made ground strata during the geotechnical investigation (URS 2006). It was present as a black staining in soil strata in BH1 from 1.6 to 6.8m bgl; BH2 from 0.4 to 5.5m bgl; BH3 from 0.6 to 2.0m bgl; BH5 from 2.8 to 5.0m bgl; WS1 from 0.5 to 2.0m bgl; WS3 from 0.5m to 1.5m bgl; WS5 from 0.2 to 1.8m bgl; WS6 from 0.3 to 2.7m bgl; WS8 from 1.8 to 3.8m bgl; and WS11 from 0.3 to 1.8m bgl.

Slight or strong hydrogen odours were detected in the above soil strata, but they were not always associated with staining. No oily sheen or odour indicative of organic contamination was noted in the groundwater during purging and/or sampling. Current and historic site operations use a range of potential contaminants including petroleum hydrocarbons, motor oils, Tributyl Tin and Tributyl Lead (anti-fouling agents) and paints. In addition, the site has two electrical sub-stations.

Areas of contamination are believed to be around WS1, WS2, WS5, WS6, WS8, WS11, BH2, BH3, BH4, BH5. This includes areas in both boat yards, an area near the sub-station, land close to the southerly pontoons, 'wooded' area bordering Bridge Road (northern edge of PRA), area near warehouses on the southern edge of the PRA, and the area of land bounded to the south by Swanwick Shore Road.

Overall, the site is not considered to be 'Contaminated Land'. Recommendations have been made for remedial works (e.g. targeted removal of garden soil to a depth of 1m in garden areas).

3.8 Hydrogeology and hydrology

The PRA is located on relatively flat ground and is likely to be in hydraulic continuity with the River Hamble which surrounds the south and west areas of the PRA.

There are indications that groundwater is present within the made ground on the industrial area as a result of groundwater elevation monitoring and from the identification of underlying alluvium.

The Lower Swanwick stream is channelled away from the north of the site and discharged into the marina beneath the eastern area of the dock (Premier Marinas Ltd 2006:13).

4 ARCHAEOLOGY WITHIN THE STUDY AREA

4.1 Previous archaeological work within the Study Area

The county and district Sites and Monuments Record (SMR) and English Heritage's National Monuments Record (NMR) contain four records of archaeological investigations within the Study Area. These archaeological investigations are discussed below under the headings Surveys, Evaluations and Watching Briefs.

4.1.1 Surveys

Two surveys are recorded in the Study Area:

A desk-based assessment for the Hamble to Botley Jetline was prepared by Wessex Archaeology in 2000. The assessment indicated that there was a moderate to high potential for the pipeline route to encounter archaeological remains dating from the Mesolithic to Roman periods (8500 BC to AD 410). For all other periods, the potential was considered to be low. The assessment recommended that a walkover survey of the pipeline route was necessary. The walkover survey was carried out in 2001 by Wessex Archaeology. A scatter of medieval and post-medieval ceramic building materials was recorded on the pipeline route on arable land south-east of Boorley Green. The walkover survey revealed no previously unrecorded earthworks.

Over the past five years, the Hampshire and Wight Trust for Maritime Archaeology (HWTMA) have been investigating the maritime archaeology of the River Hamble. This river is an ancient waterway and has been an important route into the heart of Hampshire for millennia. As a result, the river holds many remains of past industry and settlement.

4.1.2 Evaluations

In 2004, Time Team undertook an underwater evaluation to record elements of the medieval warship 'Grace Dieu', which was lost at anchor in 1439 (MON 1407802).

4.1.3 Watching Briefs

A watching brief was undertaken by Network Archaeology Ltd in 2001 during topsoil stripping and pipe trench excavation of a jetline pipeline between Botley and Hamble (SMR 57407). A possible prehistoric gully, a Romano-British road and a number of post-medieval pits were excavated and recorded. A large amount of finds, mostly unstratified, were recovered. These included important finds of pottery from the late Neolithic, Bronze Age and Iron Age as well as worked flint, largely dating to the Bronze Age. There was also a significant amount of bone stone, which may have associations with 'burnt mounds'.

4.2 Prehistoric Period (c. 4000 BC – AD 43)

4.2.1 Prehistoric Period: General Background

Unexcavated cropmarks are not easily datable and there are difficulties in differentiating late Mesolithic/early Neolithic and late Neolithic/early Bronze Age flintwork. This section deals with those 'prehistoric' sites that cannot be more closely dated.

Overall, southern Hampshire has a low density of known archaeological sites and findspots dating to the later prehistoric periods (Cunliffe 1996; Gardiner 1996; Tomalin 1996). This pattern suggests that there was less intensive exploitation of the non-chalk areas in the later prehistoric periods (Gardiner 1996). Most of the sites are located along the major river valleys (Itchen, Meon) and the high ground of the chalk downland of the South Downs. Scatters of artefacts were identified during extensive surface collection programmes (e.g. Shennan 1985; Boismier 1994) and waste flint flakes and unworked burnt flint were also found during topsoil removal for the construction of the M27.

4.2.2 Prehistoric Period: Known Sites

No sites dating to this period are known within the Study Area.

4.2.3 Prehistoric Period: Additional Information

No additional information about sites of this period within the Study Area has been produced by researching secondary sources.

4.3 Palaeolithic (c. 500 000 – 8300 BC)

4.3.1 The Palaeolithic Period: General Background

Palaeolithic culture flourished during the Pleistocene, a period of glaciation interspersed with long periods of slightly warmer climate. Britain was still joined to continental Europe at this time, so in periods of intense cold people retreated to warmer parts of the Continent. The last glaciation occurred c.25 000 – 18 000 years ago.

Tools from the Acheulian and Clactonian tool industries of the Lower Palaeolithic period (c.700 000-150 000 years ago) include flint and quartzite handaxes, saws and awls. In the Middle Palaeolithic (c.150 000-35 000 years ago), the Mousterian and Levalloisian stone-working industries broadened the assemblage to include blades, disks, arrows and oval and biface flint tools. In the Upper Palaeolithic (c.35 000-8300 years ago) more sophisticated tools of flint and bone were produced, including needles and harpoons.

Southampton Water is classified as a ria, or drowned valley, of the English Channel. It was formed by the rivers Test, Itchen and Hamble which flow in to it. It became an inlet of the sea at the end of the last Ice Age when sea levels rose, flooding many valleys in the south of England. Four imprecisely provenanced hand axes are known from Bursledon and two others from Satchell Lane, Netley. All are from the gravel terraces associated with former courses of the River Hamble. Another handaxe has been found on the floodplain near the Flying Station at Netley. Finds such as these indicate the areas preferred by the people who made them for occupation or other activities (Wymer 1996: 3).

4.3.2 The Palaeolithic Period: Known Sites

No sites dating to this period are known within the Study Area.

4.3.3 The Palaeolithic Period: Additional Information

No additional information about sites of this period within the Study Area has been produced by researching secondary sources.

4.4 Mesolithic (c. 8300 – 4000 BC)

4.4.1 The Mesolithic Period: General Background

Mesolithic culture appears to have been a response to dramatic environmental changes created by much warmer climatic conditions. The huge body of water freed by the melting of the ice sheets contributed to the enlargement of the oceans, and by c. 5800 BC, the raised sea level had isolated Britain from the rest of Europe. The insulating properties of the sea caused further rises in winter temperatures, encouraging the spread of coniferous forest. This provided habitats more suitable for small woodland game than herbivorous herds of large animals. By 6500 BC the climate had become warmer and wetter, and the coniferous forest gave way to denser, deciduous woodland.

Evidence for Mesolithic settlement is extremely rare in Britain, but in Hampshire two sites at Broom Hill and Wakeford Copse have been identified as settlements (Wymer 1996: 4).

Generally, evidence for this period is restricted to scatters of flint artefacts, tools and weapons and more rarely, finds of bone or antler. One such scatter of flint cores, blades and flakes considered to be of Mesolithic date was found during the construction of the M27 motorway and a poorly provenanced Mesolithic pick is known from Bursledon.

New tool types, tactics and skills were developed for the exploitation of resources. Tools were fashioned from stone, wood or bone, but organic artefacts rarely survive. Flintwork of this era is distinctly different from earlier material and is generally more common. Greater reliance was placed on composite tools, particularly small flint blades (microliths) set in wooden shafts. Projectiles, to be thrown by hand or shot from a bow, are particularly prominent in the archaeological record. Other diagnostic flintwork includes tranche axes (where the cutting edge is produced by a transverse blow), end scrapers and micro-burins. The manufacture of hafted flint axes and adzes indicates that some woodland clearance was being attempted and that timber working was possibly taking place. Towards the end of the Mesolithic, it is likely that fire was being used to clear trees and to create scrub and grassland.

4.4.2 The Mesolithic Period: Known Sites

No sites dating to this period are known within the Study Area.

4.4.3 The Mesolithic Period: Additional Information

No additional information about sites of this period within the Study Area has been produced by researching secondary sources.

4.5 Neolithic (c. 4000 – 2500 BC)

4.5.1 The Neolithic Period: General Background

In the archaeological record, the shift from hunting and gathering to a settled agrarian society is manifested by the appearance of new artefact types - pottery, querns, sickles and polished stone axes. These began to replace the microliths and spears used throughout the Mesolithic period.

During the late Neolithic a new style of ceramic, 'Beaker' pottery, appeared in Britain. Commonly associated with the beakers are other artefacts such as stone wrist-guards and barbed and tanged arrowheads.

At the beginning of the Neolithic period, farming methods of crop cultivation and animal husbandry were adopted, and people began to live in more permanent and settlement communities. However, this was a gradual process and during the earlier part of the period (4500-3500 BC), the farmers were probably still semi-nomadic, mixing hunting with the cultivation of small plots of land and small-scale animal husbandry.

New types of site emerged in this period, including settlements and large ceremonial monuments. The early Neolithic period saw the introduction of long barrows (burial mounds) and long mortuary enclosures, causewayed camps (large enclosures with interrupted ditches), cursus monuments (parallel ditches sometimes stretching for several kilometres), ring ditches and round barrows. Cursus monuments often became a focus for later funerary activity.

Long barrows ceased to be built in the later Neolithic, but a new type of site - the henge - came into use. Henges range in size from quite small sites to huge enclosures. Consisting of a roughly circular bank with a ditch (usually internal) and one or more entrances, these monuments may have been the successors of causewayed camps. Some henges were also the sites of stone circles or wooden post settings.

During the Neolithic, forests still formed one unbroken sweep from the existing coastline to join the forests then covering the whole of the Isle of Wight with the exception of the Chalk Downs (Doubleday 1973: 257). At Southampton Docks there are stumps of trees present under peat and estuarine mud, at depths varying from 33 to 42 feet below the high water mark. Remains of wild animals and domesticates suggest a date of no later than the Neolithic.

4.5.2 The Neolithic Period: Known Sites

A single sherd of undecorated domestic Beaker pottery was recovered from a possible gully during a watching brief in 2001 (SMR 57407). The sherd is interesting due to the presence of what appears to be a range of different types of pottery being used as grog to make the fabric. The pottery sherd is located to the east of Bursledon, just to the north of the railway line.

4.5.3 The Neolithic Period: Additional Information

No additional information about sites of this period within the Study Area has been produced by researching secondary sources.

4.6 Bronze Age (c. 2500 – 800 BC)

4.6.1 The Bronze Age: General Background

Metalworking technology, along with new types of flint-tool and pottery design, was introduced from continental Europe at the start of this period. Food vessels, Deverel-Rimbury urns and Collared Urns were all forms current in the early Bronze Age, although Deverel-Rimbury urns became the characteristic middle Bronze Age pottery. Early metal objects appear to have been limited in their use and availability. In the middle Bronze Age new types of metal objects, including ‘palstave’ axes, spearheads and longer-bladed rapiers were introduced. With the transition to the late Bronze Age c.1100 BC, socketed leaf shaped spearheads, slashing swords and socketed axes began to be produced. These implements are often found in hoards.

The Bronze Age is marked by the appearance of more permanent habitation sites and the first use of metal. Bronze Age settlements tend to be more substantial than the semi-permanent Neolithic settlements and often include timber round-houses, fields and banks and ditches around the farm areas.

Copper and bronze metalworking also makes its first appearance, although initially a ‘prestige’ material used only for weapons and ritual purposes. The most common surviving Bronze Age monuments are the burial mounds or round barrows. These, like the earlier long barrows, are often sites in prominent locations, but usually only contain a single burial, accompanied by artefacts or grave goods.

A wide variety of burial practices were employed in Britain during the Bronze Age: inhumation, cremation, simple pits, stone cists, wooden coffins, flat graves with no surface marker, and graves covered by a cairn or mound. The more prominent, above ground monuments have made a greater impact on the archaeological record, and very few simple pit burials are known, although graves containing Beaker, or collared urn ceramics were relatively common in southern England. The construction of round barrows as funerary monuments reflects social change in the early Bronze Age. These are found in barrow cemeteries, in small groups, or as isolated remains. Burial evidence in the middle Bronze Age is dominated by cremations, either in urns or unaccompanied, and often focused on earlier or contemporary round barrows. There is a marked absence of large ceremonial monuments during the late Bronze Age, although barrows were still occasionally constructed. Nationally, burials are rare, but human remains are occasionally found on settlement sites.

4.6.2 The Bronze Age: Known Sites

No sites dating to this period are known within the Study Area.

4.6.3 The Bronze Age: Additional Information

No additional information about sites of this period within the Study Area has been produced by researching secondary sources.

4.7 Iron Age (c. 800 BC – AD 43)

4.7.1 The Iron Age: General Background

Iron-working, coinage and the potter's wheel were among the new technologies introduced to Britain from the Continent in this period. Iron was largely used for weapons and farming tools, the production of which would have increased during the period. Copper, bronze and gold continued to be used for utensils and decorative ware.

As the population grew, improved farming technology and the increasing scarcity of land led to the cultivation of heavier and poorer soils. Pollen analysis has shown that most of the suitable land in lowland Britain had been brought under the plough before the Roman conquest. Population growth also led to competition for land and the development of a more territorial society. Hillforts and defensive enclosures are manifestations of this social shift. Most enclosures are thought to have been built as a defence against stock-raiders.

The excavation of Danebury in Hampshire has revealed, in considerable detail, the development of a hill fort from the eighth century BC until its abandonment in the first century BC. In about 450 BC, Danebury began to change into a major, planned settlement with zones for food storage, crop processing, domestic habitation and even religious buildings. The artefacts that have been recovered show the skill and diversity of Iron Age smiths, potters and other 'specialists'.

In addition to hillforts, there were smaller earthworks with defences of comparable scale. Lowland settlement sites could also be 'open', or undefended. Settlement layouts varied in complexity and could include either an isolated farm, or a group of farms, often with banks, ditches, storage pits, trackways and rectangular plots.

Escalating demands for agricultural land and fuel for iron smelting, meant that forest clearance continued apace. Many new fields were cut from the forest, whilst fields established in the Bronze Age probably continued in use. Remnants of Iron Age field systems are often known as 'Celtic' fields.

The earlier part of the Iron Age witnessed a continuation of the trends begun in the late Bronze Age of increasing population. There is also a general lack of evidence for formal burial and it is likely that in the Iron Age that the deceased were either buried in water or left exposed in the open air.

An Iron Age site is known at Hamble and is a ditch and bank earthwork, which cuts off the marshy promontory of Hamble Common. This may represent the remains of a promontory fort, similar to those at Hengistbury and Exbury, defending the mouth of the river. This feature forms part of the Hamble Common group of Scheduled Monuments (SM 24323).

Wade and Watts (1989) record the excavation of a 'ritual' pit on the Bursledon Brick Company's land at Swanwick in 1927 and 1928 by Ashbee. Archaeologist Charles Fox identified clay objects as loom weights and dated the pit to the late Bronze Age/early Iron Age. The pit was 24 feet deep and a totem pole was found at the bottom of the pit. Fox suggested successive burning of blood on the sides of the pit at the bottom of the pole (Wade and Watts 1989: 8-9). The site has since been identified as a ritual pit dating to the La Tène period, although this is still speculative.

4.7.2 The Iron Age: Known Sites

No sites dating to this period are known within the Study Area.

4.7.3 The Iron Age: Additional Information

No additional information about sites of this period within the Study Area has been produced by researching secondary sources.

4.8 Roman (AD 43 – 410)

4.8.1 The Roman Period: General Background

The Roman invasion was followed by a rapid implementation of centralised administration based on towns and supported by a network of roads. Britain became absorbed into the Roman Empire, and three centuries of new order, peace and prosperity followed. This changed the way of life for most indigenous Iron Age people; communities were less isolated, due to new networks of communication, exchange and trade.

During the period of Roman rule most of the population lived in continuity with their Iron Age past: in the countryside in small villages or native style farmsteads. This dispersed settlement pattern raises the potential for abandoned Romano-British sites in apparently blank areas. Little is known about rural settlements, such as villages, farmsteads and hamlets, where the majority of the population probably lived.

During the Roman occupation, urban settlements developed at Silchester (Callewa Atrebatum) and Winchester (Venta Belgarum), the focal points of the Roman road system in the area. There was a smaller settlement at Southampton (Clausentum). Villa sites are numerous in the north-west. There were potteries in the New Forest and an imperial weaving works at Winchester, but the most substantial remains are in the town walls of Silchester and the outer wall at Portchester Castle.

The Solent was likely much narrower in Roman times, and it is possible to believe Julius Caesar's report that in his time men could wade to the Isle of Wight at low tide.

Compared with preceding periods, the Hamble to Botley area is comparatively rich in Roman remains. A Roman tile kiln, probably of 1st century AD date, has been excavated while the dense concentration of tile fragments in Fosters Copse may indicate the location of another production site.

Road networks had previously been little more than tracks. Roman army engineers built more substantial roads to expedite the movement of soldiers, food and equipment. Naturally these roads were also exploited as trade and communication routes. The projected line of a Roman road is located in the Hamble/Botley area. It may have linked the Roman port at Bitterne to the Curbridge villa and Wickham to the east and from there to the *civitas* capital at Winchester, and Chichester. A Roman road, which linked Winchester and Chichester also ran to the north of the River Hamble.

Findspots in the area between Hamble and Bursledon are indicative of Roman activity. The Roman pottery and tile found at Badnam Creek, probably during the

construction of the railway in the late 19th century, may indicate settlement. However, subsequent gravel and brickearth quarrying in this area is likely to have destroyed all further evidence. Other finds, including a lead plaque with a dedication to the god Neptune, an isolated coin and a large coin hoard, may be indicative of the wealth of communities who were ideally placed to exploit agricultural and maritime resources, such as salt, fish, oysters and other shellfish. There were also opportunities for trade and exchange provided by sheltered anchorages and the road networks.

The Roman Empire was in decline in the fourth century AD, and in AD 407, the Roman army left Britain. The Roman Emperor, Honorius, wrote to the cities of Britain in AD 410 telling them to defend themselves. The monetary system introduced by the Romans ceased to function when the last consignment of bronze coins was sent to Britain in AD 402 and by 411 all supply of coinage had ceased. Britain was no longer part of the Roman Empire.

4.8.2 The Roman Period: Known Sites

Two first century AD bronze coins, one of them a sestertius, and another coin, probably fourth century, were all found at Bursledon Brickworks (SMR 38899).

4.8.3 The Roman Period: Additional Information

No additional information about sites of this period within the Study Area has been produced by researching secondary sources.

4.9 The Anglo-Saxon Period (c. 410 – 1066)

4.9.1 The Anglo-Saxon Period: General Background

Roman authority in Britain had begun to disintegrate long before the departure of the Roman military in AD 410. The large commercial potteries seem to have closed about AD 400, and the last consignment of bronze coins from Rome was sent to Britain in AD 402. By AD 411, all supply of coinage had ceased and Britain was no longer part of the Roman Empire. The effects of the breakdown were exacerbated by internecine fighting and Saxon raids from abroad. British leaders hired Saxon mercenaries to fight against other Saxons. By the mid-fifth century, the Saxon mercenaries had been joined by a large number of settlers and had become farmers.

The early Anglo-Saxon period saw the break up of large Romano-British estates and reallocation of land. Habitation sites are thought to have been moved quite frequently. Place names may refer to old estates, rather than actual settlements, although a number of settlements were probably located within each estate. Some Roman field and estate boundaries may have remained in use, but Saxon settlement tended to be based around villages, whilst Roman towns and villas had been abandoned and largely destroyed. Nevertheless, some Saxon land divisions are preserved in present day parish boundaries. In the middle or late Saxon period, small fields were replaced by large ‘open fields’ divided into strips, in response to population growth and increasing arable land requirements.

Until the spread of Christianity, inhumation and cremation were both practised, often with weapons, personal ornaments and domestic utensils. Cemeteries are consequently often identified from concentrations of metalwork and discovered

increasingly with the use of metal detectors. Pagan Saxon cemeteries often lie along natural ridges and are unlikely to be located close to their associated settlements.

The middle Saxon phase saw the introduction of Christianity in the form of churches and 'churched' cemeteries, and the eventual disappearance of accompanied burials. There were probably many monasteries. Monastic settlements probably acted as central places, perhaps operating as mini wics with direct access to exchange networks. In addition to their religious role, monasteries at this time probably had advantageous legal status.

Documentary and place-name evidence indicate that during the early Saxon period, south Hampshire and the Isle of Wight formed a Jutish province (Yorke 1995: 37-38). By the late 7th century, this had been overrun by the Mercian West Saxon kings (whose territories lay to the north in the Upper Thames region) as a result of population pressure in their heartland (Welch 1996, 35).

Hampshire was one of the first Saxon shires, recorded in 755, but for two centuries represented the western end of Saxon England, as advances into Dorset and Somerset were fought off by the Britons. After the Saxons advanced west Hampshire became the centre of the Kingdom of Wessex, and many Saxon kings are buried at Winchester. A statue in Winchester celebrates the powerful King Alfred, who stabilised the region in the 9th century.

According to the Anglo-Saxon Chronicle (ASC), Wessex was founded by Cerdic and Cynric, chieftains of a clan known as 'Gewisse'. Archaeological evidence points to an origin in the upper Thames and Cotswolds area, and the ASC origin myth may have been political propaganda designed to justify a later invasion of the Jutish province in southern Hampshire and the Isle of Wight. Wessex expanded its boundaries and clashed with its neighbours, notably British Dumnonia (modern day Devon and Cornwall), which it eventually came to dominate, and with Mercia. After Egbert defeated Mercia in 825 and the Northumbrians accepted his overlordship in 829, Egbert became the first King of England.

The integrated system of fortified towns (the 'burhs') established under Alfred the Great helped to prevent the conquest of southern England by the Danish invaders in the 870s. Important West Saxon settlements included old Roman settlements such as Dorchester and Winchester, which Alfred made the capital in 871, and newly-founded burhs such as Wallingford.

The Middle and Late Saxon periods saw the continuing development of regional centres at Winchester, based on important royal and ecclesiastical sites, and from the early 8th century AD onwards, the port and trading centre of Hamwic (Southampton). During the 9th and 10th centuries the south Hampshire coast was subjected to Viking raids, the first on Hamwic being recorded in AD 840 (The Anglo-Saxon Chronicle, cited in Holdsworth 1980: 3). In general though, there is little evidence for Saxon settlement outside the chalk downland river valleys of the Itchen and Meon rivers (Schadla-Hall 1977, maps 14-15).

Huneberc's Hodoeporicon refers to Willibald, his father and brother embarking from Hamblemouth, in perhaps AD 721, on a pilgrimage to Rome (Morton 1992: 59). This implies that facilities for boarding a ship at least existed at Hamble during the 8th century AD, and that the area may have functioned as a small port or landing stage, perhaps associated with the monastery further upstream at Bishop's Waltham (where Willibald had resided since the age of five).

4.9.2 The Anglo-Saxon Period: Known Sites

No sites dating to this period are known within the Study Area.

4.9.3 The Anglo-Saxon Period: Additional Information

No additional information about sites of this period within the Study Area has been produced by researching secondary sources.

4.10 Medieval (c. 1066 – 1540)

4.10.1 The Medieval Period: General Background

The period between the Norman Conquest in 1066 and the first appearance of the plague or Black Death in 1349, was a time of rapid population growth in much of Britain. The arrival of the Black Death in 1349 led to a dramatic fall in the population of England. It has been estimated that the population probably fell by between a third and a half from its 1349 level, and did not recover to this peak until over 200 years later. A result of this population decline was that many farms and villages were left abandoned, particularly in the areas of poorer farming.

Deserted settlements (DMVs) have been recorded in many areas of England. The earthwork remains of street layouts, building platforms and drainage can still be seen at some sites; others can be identified from documentary sources or from crop marks seen on aerial photographs.

The medieval landscape was one of intensive arable cultivation with large ‘open fields’ divided into numerous strips. Low-lying, flood-prone land was retained for meadow and pasture, and some areas of poor soils were left as open heaths. Each village was surrounded by its own fields, woods and pastures. Some areas retain evidence of the ridge and furrow earthworks that resulted from strip-farming.

The medieval period saw a slow decline in the importance of Winchester, with its royal, administrative and ecclesiastical roles gradually being taken over by London. In Southampton the focus of settlement shifted south-west, away from the old port at Hamwic, to the area of the present day City. Elsewhere in south Hampshire, the pattern of small towns and rural settlements developing during the medieval period closely resembles the modern distribution.

The villages of Botley, first recorded in 1086 (Mills 1993: 44), Bursledon and Hamble can all trace their origins to this period. The church at Bursledon is of 13th century date, although much altered and extended in the 18th century, and may be on the same site as an earlier chapel referred to in a charter of Henry de Blois (1129-1171). A priory of the Benedictine Abbey of Thiron in France was established at Hamble during the early 12th century; the present church of the same dedication probably served as the priory chapel. This was dissolved in 1390 and in 1391 William of Wykeham bought the priory and its property for his college at Winchester.

It is possible that scatters of medieval pottery found to the south and west of Botley derive from the practice of manuring fields with domestic rubbish although these could also indicate isolated dwellings located on the edge of the village. Certainly a farmstead at Maddoxford Farm has been documented from at least 1228 while the country house Holmesland was first documented in 1320 as the home of the J. Atte

Holme family. A further settlement of at least 15 cottages may have formerly existed on the west bank of the river Hamble to the north of Bursledon although its precise location remains uncertain. The pottery found at Hound may also indicate medieval settlement in the area.

Medieval agriculture in the area is evidenced by the ridge and furrow and the probable stock enclosure on Hamble Common. No water-meadows occur within the Study Area, because the Hamble is tidal as far north as Catland Copse. To the north of this, only water meadows of category 5 (“probable water meadows, not easily identifiable from maps or air photographs”) were identified by the survey undertaken for Hampshire County Council (Oxford Archaeological Unit 2000).

Other economic activities probably centred on the river Hamble. The River Hamble would undoubtedly have provided a source of employment and trade. A combination of a double tide, two or three hours slack water, a plentiful local wood supply and safety from attack made Southampton Water and its tributaries ideal for shipbuilding (Fareham Borough Council). The forests that lined the banks of the river provided timber for shipbuilding and by the 13th and 14th century, the importance of the area as a maritime base had already been established (cf. Bettey 1986). The Royal Navy’s first man o’ war, the St. George, was built at Bursledon and launched in 1338 by Edward III (Ritchie 1984) and records for the Battle of Crecy in 1346 show that Hamble provided seven ships and 117 mariners, compared with only five ships and 96 sailors from Portsmouth (Underdown not dated). No evidence for the shipyards is known today, although the wrecks of two medieval ships, Grace Dieu, and The Holigost or The Trinity may provide some indication of their location. In 1418 the most prestigious ship of the time Grace Dieu, built for Henry V in Southampton, was moved to the Hamble River for fitting out. She was struck by lightning at Bursledon in 1439 and was towed to a mud berth about a mile upstream of Lower Swanwick. Her submerged timbers can still be seen at low spring tides (MON 1407802). The wreck is protected under The Protection of Wrecks Act 1973.

Salt production and fishing are also likely to have been important to the economy of the area during the medieval period.

4.10.2 The Medieval Period: Known Sites

Listed Buildings

There is one listed building dating to this period in the Study Area.

The Church of St Leonard is a 13th century listed building in Bursledon (LS 354896). The church is grade II listed and altered in c. 1828 with substantial additions in 1888 by Sedding. The building was originally a simple chancel and nave and contains a 12th century font. A charter of Henry de Blois (1129-1171) refers to a chapel of ‘Brixentona’ being leased to the monks of Hamble. The location of this chapel is uncertain, but it seems probable that it may be the Church of St Leonard (SMR 25770)

Non-Listed Sites

A shipyard site is recorded at Church Creek in Bursledon (SMR 55582). There are references to ships being built here dating back to 1436. Church Creek was infilled

during railway construction, but it is visible on 1st Edition OS maps. During construction there were reports of large timbers being found.

The remains of a second ship building site were also located in Bursledon (SMR 56064). This site was broadly dated from the medieval to post-medieval period.

Deserted Medieval Villages

A deserted medieval settlement of at least 15 cottages once existed on the west bank of the River Hamble in Bursledon (SMR 38848).

4.10.3 The Medieval Period: Additional Information

There is no mention of Swanwick (*Swanewik*, 15th century) in the Domesday Book. The first record relating to it is in 1231, when Henry III confirmed to Peter de Roches, Bishop of Winchester, the gift made to him by Humphrey de Millers of all the land and rent in Swanwick, which Humphrey had acquired by grant of William, Bishop of Avranches. This land became part of the possessions of the newly founded Abbey of Titchfield, and was held by the Bishop of Avranches. A grant of free warren was made to the Abbot of Edward I in 1294. Swanwick was held by the abbey until surrendered to the King with the other possessions of Titchfield Abbey in 1537 (Page 1908).

There was no separate manor of Bursledon, but the lands formed part of the ancient manor of Bishop's Waltham. From the year 1235 onwards the name occurs regularly as one of the tithings of Bishop's Waltham on the Court Rolls of that manor. The name of Bursledon does not occur in Domesday Book, nor is it found in the registers of the Bishops of Winchester. Bursledon was probably a chapel dependent upon the priory of Hamble (itself a cell of the Benedictine monastery of Tirou in Chartres), the land of which were purchased in 1391 by William of Wykeham to assist in the foundation of Winchester College (Page 1908).

4.11 Post-Medieval (1540 – 1939)

4.11.1 Post-Medieval Period: General Background

Enclosure of common lands continued from the fifteenth century, accelerating between 1758 and 1882 to include large tracts of arable and waste land. The introduction of new farming methods in the eighteenth and nineteenth centuries required the enclosure of land, and was necessary for the provision of food to the growing numbers of people dwelling in England's towns and cities. Enclosure greatly changed the appearance of the countryside, creating the small geometrically shaped fields which survive today.

This area of southern Hampshire specialised in market gardening and fruit production (Betty 1986). There were strawberry and soft fruit districts in the Hamble valley around Swanwick and Botley. Thousands of acres of strawberries and soft-fruits were grown for the Southampton, Fareham, Portsmouth and London markets.

Over several centuries a series of castles and forts were constructed along the coast of the Solent to defend the harbours at Southampton and Portsmouth. These include the Norman Portchester Castle which overlooks Portsmouth Harbour, and a series of forts built by Henry VIII including Hurst Castle, which was situated on a sand

spit at the mouth of the Solent, Calshot Castle on another spit at the mouth of Southampton Water, and Netley Castle. Southampton and Portsmouth remained important harbours when rivals, such as Poole and Bristol declined, as they are amongst the few locations that combine shelter with deep water. Southampton has been host to many famous ships, including the Mayflower and the Titanic,

During the late 17th and 18th centuries Southampton enjoyed brief popularity as a spa resort for the upper classes, and visitors included George III, the Duchess of Devonshire and Jane Austen. Industrial activity continued in the town, for instance there was a sugar refinery, and gunpowder was manufactured at Gods House Tower. Links with the ports hinterland were improved through the construction of a canal and later the railway.

The modern port of Southampton was founded in 1838, giving rise to a new era of transportation and industry. By the end of the 19th century and into the early 20th, the great liners had made Southampton their home and the town was recognised as the ‘Gateway to the Empire’, and one of the busiest ports in the country.

The continued maritime importance of the area into the post-medieval period is indicated by the construction of St. Andrews castle under Henry VIII in c. 1543-4. This is shown on the earliest map of the area ‘Southamptoniae Comitatus’ by Christopher Saxton dated 1575, and even after its disablement by Parliamentary forces in 1642, it continues to be shown on maps dated 1695 and 1724 (Laxton 1976, maps 6a and 6bii). Mackenzie’s survey of 1783 labels the site “old castle” and by 1826, the area had reverted to saltern (Laxton 1976, map 20-23).

From 1690 to 1820 vessels were built on the River Hamble at Bursledon and Hamble. In 1786, at Bursledon the small firm of Parsons launched the ‘Elephant’, which was to be Nelson’s flagship at the Battle of Copenhagen (Betley 1986: 208). A further 15 ships were built for the Navy between 1803 and 1814, the six Victory Cottages at Swanwick Shore are said to have been built to house shipbuilders during the Napoleonic wars (Fareham Borough Council). The end of the war with France saw a decline in naval contracts and the arrival of new shipbuilding techniques using iron and steel eventually led to the decline of wooden shipbuilding in rural Hampshire.

The ship-building industry on the Hamble River seems to have peaked during the 17th, 18th and early 19th centuries. Mackenzie’s survey of 1783 records the location of three building slips for Men of War on the northern edge of the Hackett’s Marsh peninsular (opposite the present-day Lower Swanwick yacht marina) and two others at Upton, probably in the area of Brixedones Farm immediately north of the M27 bridge across the River Hamble. A dock yard at Hackett’s Marsh and a brick kiln at Lover’s Bottom, now within the built-up area of Bursledon, are also shown on Thomas Milne’s 1791 map of Hampshire (Laxton 1976, map 14-19). It is probable that The Mounds ironworks and ‘Mr. Gringo’s furnace’ were established to supply bolts, nails and other iron fittings to the shipyards and perhaps have their origins in earlier periods.

In general, this period saw the continued expansion of the towns, villages and rural settlements throughout the region. The coming of the toll roads improved communications which were further enhanced by the opening of the road bridge across the river at Bursledon in 1800.

4.12 Post-Medieval Period: Known Sites

Listed Buildings

There are 29 listed structures in the Study Area, which date primarily to the post-medieval period.

The Yew Tree Cottage is an 18th century grade II listed, two-storey building in Bursledon (LS 354899). Just to the north is Rosewood House (LS 354900); a 19th century single-storey building which is also a grade II listed building. Dating to the 17th century is The Old Cottage (LS 354901); it is a two-storey timber framed house with a grade II listing. Dale Cottage is a grade II listed 18th century terraced house with two-storeys and located in Bursledon (LS 354902). Adjoining this building to the south is a similar 18th century terraced house; Woodbine Cottage (LS 354903) which is also grade II listed. A one and two-storey house of mid 19th century date is Lattice Cottage with grade II listing (LS 354904). Ewers House is a late 18th century two-storey house with an attic (LS 354907) and is a grade II listed building. A Public House known as the Jolly Sailor is dated to the 18th century and is grade II listed. It is a two-storey building with an attic and has two ship figureheads. In the same area of Bursledon is Myrtle Cottage (LS 354909) which is an 18th century two-storey building and has a grade II listing. The Greyladyes (LS 354915) are two large two-storey houses, which are now divided into several units and are listed as grade II. There are two units located on the south side and these are dated to the late 18th century. The remaining three units are located to the east and are dated to the early 19th century. The Chapel of Our Lady of the Rosary (LS 354916) was constructed in 1906 and is a small structure with an apse-ended nave with aisles on each side and is grade II listed. The interior is richly furnished with Baroque style wooden fittings. To the south-west of Greyladyes and the Chapel of Our Lady of the Rosary is a high brick boundary wall (LS 354917) of late 18th century date. It is grade II listed and was extended in 1906. To the north end of the wall are two entrance doorways; one to No 6 Greyladyes and the second to the chapel. An 18th century, two-storey building with an attic, known as Upcott House (LS 354918) is located in Bursledon and grade II listed. In the same area is Greywell House (LS 354919) which is an 18th century L-shaped two-storey house and listed as grade II.

In the Lower Swanwick area of Fareham, on the east of the River Hamble is Brooklands country house (LS 141448) and is a grade II* listed building. It was built c. 1800 for Sir Thomas Williams (later Admiral) by Nash, with later additions in 1807, 1858 and 1916. Located within the grounds of Brooklands country house is an early 19th century gazebo (LS 141449) listed as grade II*. The tympanum contains a carving of the Virgin Mary with two angels. The Old Ship Inn (LS 409471) is a timber-framed Public House constructed in the 17th century and is a grade II listed building. The building has quite a few 20th century additions. The garden cottage and billiard room (LS 431869) was built c. 1800 by Humphrey Repton and is a grade II listed building. To the southeast of the garden cottage is a grade II listed Ice house, built c. 1800. The Lower Swanwick Farmhouse (LS 408675) is a 17th century one and a half storey building with a grade II listing. A 17th century timber-framed grade II listed building is Thatched Cottage (LS 408676), which also has late 18th to early 19th century additions. Another 16th to 17th century timber-framed building is Tudor Cottage (LS 408677) and is a grade II listed building with early 19th century additions. The Hard (LS 408678) is an 18th century two-storey building and is a grade II listed building. In the same area is the Bay Tree terraced cottages (LS 408694) of 18th to early 19th century date and are grade II listed. Located at a right angle to The Hard are the Victory terraced

cottages, No 1-6, (LS 408695) of similar date to the Bay Tree cottages. These are grade II listed cottages and were said to have been built for the shipyard workers at about the time of the Napoleonic Wars or earlier. Adjacent to No 1 Victory cottages is a large timber-framed 18th century building (LS 408696) and is listed as grade II.

Leading down to the Jolly Sailor Public House, Ewers House and Myrtle Cottage are three cast-iron lamp posts (LS354910) dating to the late 19th century. These are fixed to a steep, narrow footpath and grade II listed. A K6 telephone kiosk listed as grade II (LS 355023) was designed in 1935 by Sir Giles Gilbert Scott in Bursledon and is a cast iron square kiosk with a domed roof.

The Lower Swanwick Baptist Church is dated to 1844 according to the datestone on the front gable (SMR 56892). The vestry was added to the rear in c. 1870 and minor alterations were added in the late 20th century.

Non-Listed Structures

Bordering the south-eastern edge of the proposed area of redevelopment are five houses that were identified from OS maps dating from 1868 to 1910 (DBA:AU-DBA:AY). The site visit did not identify any evidence of these buildings.

A toll house is noted to the north of the area of redevelopment and is recorded on the 1868 OS map (DBA:AN). No structure was observed during the site visit.

Two buildings are recorded on the western bank of the River Hamble opposite the Swanwick Marina. These buildings are noted on the 1839 tithe map (DBA:AG, DBA:AH).

The Old Dairy is an agricultural building located on the east of the River Hamble (SMR 50629).

Within the Old Bursledon Conservation Area, on the edge of the Study Area is a Mausoleum (SMR 13739).

Located on the eastern edge of the Study Area in the parish Fareham is a 17th century building (SMR 547).

A boundary wall associated with the River House has been recorded (SMR 14612). It is located on western bank of the River Hamble, to the south-east of the town of Bursledon.

A sign post is noted on the OS map of 1868 (DBA:AO) and is located on Bridge Road, on the eastern edge of the proposed redevelopment area. This was not identified during the site visit.

Communications

Bursledon Bridge was constructed in 1934 and is a three span reinforced concrete skeletal arch bridge, which carries the A27 over the River Hamble (SMR 54218). The bridge is typical form of construction widely used in the 1930s where high clearance with medium spans was required. It was built to replace an earlier wooden bridge.

The Netley and Fareham railway extension (MON 1358729) crosses the north-west corner of the Study Area. It was opened in 1889 as a single track railway and was doubled in 1910.

Within the northeast corner of the Study Area is the Bursledon Station (MON 507351) on the Fareham to Netley railway branch line. The station was built in 1889.

The present-day Bridge Road is Lower Swanwick is recorded as a turnpike road on the tithe map of 1839 (DBA:AJ). It is now the A27, which crosses the River Hamble to Bursledon. No evidence for this former road was observed during the site visit.

Maritime Sites and Features

There are five extant barges located to the east of the River Hamble. These are all located within the north-east corner of the Study Area in Fareham. There is one wooden masted barge (SMR 42536) moored between the M27 and the railway bridges on a north-south alignment. The southern most vessel is an iron hopper barge (SMR 55541) on an east-west alignment. The largest iron built hopper barge (SMR 55542) has a bow facing east. Two of these extant iron barges (SMR 55543 and SMR 55544) are on a north-south alignment. Within the same area are the wreck of an ordnance barge (SMR 57139) and the wreck of the Thames Barge 'Kimberley' (SMR 57136) which was a common type of commercial vessel during the 19th and early 20th century.

Bursledon Point is the site of a post-medieval ship wreck (SMR 55506) which was marked on the Imray Chart (1933) and may have been cleared for the construction of the modern slip.

On the east bank of the River Hamble is the site of the Swanwick shipwreck (SMR 55520); the stern is submerged and the forward section is visible. A second shipwreck on the east bank but further to the south is the Norseman shipwreck (SMR 55536); this was built in 1847 and gutted by fire during WWII.

On the west bank of the River Hamble in Bursledon is a shipwreck (SMR 55546) which has a prominent bow.

Another unidentified shipwreck (SMR 55709) is located by the rail bridge that crosses the River Hamble.

On the east bank of the River Hamble is the wreck of a hulk (SMR 55547) within an inlet north-east of Bursledon Bridge.

Just to the south of the hulk is a wreck or jetty (SMR 56045) within an inlet; a wreck is marked on a 1992 chart.

To the south of the rail bridge is the wreck of a small vessel (SMR 56046) which is just visible in the mud.

The wrecks of two landing assault craft (SMR 57140) are located on the east bank of the River Hamble. To the west of this site is the wreck of a seaplane tender (SMR 57138) which according to the National Historic Ship Register is 1 of 46

vessels constructed. During WWI the admiralty experimented with taking a seaplane to sea on a towed barge.

Located at Bursledon Point is a large 18th century shipbuilding site with at least 3 slipways (SMR 42535) was already constructed by the 1770s. It was here that Nelson's ship the 'Elephant' was built.

To the north of the rail bridge on the west bank is the site of two building slips (SMR 56060).

A brick built dock and jetty (SMR 56043) is situated to the south of the redevelopment site on the east bank.

Situated on the southeast edge of the PRA are two lines of wooden posts representing the remains of a wooden jetty (SMR 56044). This jetty was observed during the site visit. The original location of this site, which was provided by Hampshire County Council, referred to an extant, modern jetty just to its north, leading from the public hard. There are timber remains at Bursledon Point which are thought to be the remains of a jetty (SMR 55575).

To the north of the M27, on the west bank of the River Hamble is the Maidstone Heath Hard (SMR 51287).

Field Boundaries

Five former field boundaries are located to the east of the proposed redevelopment area. They are recorded on the OS map of 1868 (DBA:AP-DBA:AT). No evidence of these field boundaries was observed during the site visit. A further field boundary was also identified from aerial photographs to the south of Bursledon (DBA:AD).

Pond

A pond is recorded on the tithe map of 1838 (DBA:AF) and is recorded to the east of Brooklands Park.

In the southern section of the Study Area, a possible site of a catch pond for salterns is located (SMR 25762). It is an earthen bank 5m in width and 1.2m in height and enclosed an area which was at a lower level than the outside ground. It used to be cut by creeks, which filled at high tide, but the site has now been cleared and levelled.

Gardens

To the north-east of Bursledon is Maidenstone Heath (SMR 35454). These gardens extend over four acres and surround the house at Maidenstone Heath. This house was formerly known as Blundells Farm and dates back to the sixteenth century.

Industrial Sites

A brick and tile works and quarry are recorded on both the tithe map of 1838 and the OS map of 1873 (DBA:AE). They are located in Lower Swanwick, to the east of the proposed area of redevelopment. To the south-east of this site is a clay pit, which is noted on the 1898 OS map (DBA:AI).

4.12.1 Post-Medieval Period: Additional Information

No additional information about sites of this period within the Study Area has been produced by researching secondary sources.

4.13 Modern (1939 to present)

4.13.1 The Modern Period: General Background

The 19th and 20th centuries have seen considerable changes in land-use and increasing development. The tithe maps for the parishes of Botley, Bursledon, Hound and Hamble show that the area was predominantly given over to arable farming with pastoral fields and coppiced woodlands being of lesser importance.

Although ship-building may have been in decline by the middle of the 19th century, other nautical activities and its association with the Navy continued to be of considerable importance to the area. For instance, a newspaper report of 1842 indicates that during the last year, Hamble had supplied London with 90 000 lobsters and crabs (Underdown not dated). Other industries included brickmaking. A brick field is marked on the north bank of Hoe Moor Creek on maps of the 1860's and the gravel and brickearth quarry at Catland Copse, now being used for land-fill, may have provided raw material for a similar purpose. Certainly, the Fareham district was important for the manufacture of bricks and other ceramic items during the 18th and 19th centuries, many of which were used in the construction of the railway line to Fareham in 1841. Further expansion of the railway network in the later 19th century saw the construction of the Eastleigh to Gosport and Fareham line in 1887.

The 20th century has seen the rise of private yachting which has kept alive the tradition of maritime riverside industry. The Hamble River has become one of the most important areas in the country for yachting and the number of craft on the river increased tenfold between the end of the war and the early 1980s. A boatyard, called Moody's boatyard originated in 1827 on a small plot of land adjoining Shore Road. The business grew and carried out laying repairs to boats on the river, to coastal vessels at Fareham Quay, to crabbers at Warsash and barges serving Botley. In the 1930s the Moody's boatyard began to produce high quality cruising yachts. The business has subsequently expanded to provide marina facilities, but boatbuilding has declined at Swanwick.

During the 20th century farmland was replaced by residential housing and light industrial installations while the waterfront areas along the river have seen extensive marina and boatyard development. The woodland, already depleted by the industries of previous centuries, has become confined to small isolated pockets and the steep-sided valleys along the creeks and inlets.

The area became famous for its involvement with flying, associated with names such as Armstrong Whitworth, Folland, Fairey Aviation, Supermarine and The Air Training School and the Gnat and Mosquito aeroplanes. Former hangers on the now disused Hamble airfield relate to this period of the area's history while pill boxes and gun batteries form part of the extensive coastal defence systems of the 19th and 20th centuries.

4.13.2 The Modern Period: Known Sites

A divisional (fourth division) anti-tank island (MON 1423142), located on the River Hamble Bridge, was constructed in 1940.

Located within the north-east corner of the Study Area, to the east of the River Hamble, are three iron barges. Two of these are hopper barges on an east-west alignment (SMR 55539 and SMR 55540) and the third is a crane barge (SMR 55545) moored alongside the hopper barge on an east-west alignment.

During the site visit, possible building footings were observed in the north-western sector of the PRA (FSU:002). In this area remnants of a red-brick wall was identified along the southern boundary of the Bridge Road (FSU:001). This may represent a former building.

4.13.3 The Modern Period: Additional Information

No additional information about sites of this period within the Study Area has been produced by researching secondary sources.

4.14 Sites of Undetermined Date

4.14.1 Sites of Undetermined Date: Known Sites

A bank and ditch boundary was observed during the Historic Rural Settlement (HRS) survey at Bursledon (SMR 50106). It is located to the south of the main town. Further to the north and south unspecified earthworks were also recorded as part of the HRS survey (SMR 50110, SMR 50108).

An earthen bank was recorded as part of the HRS survey and is the former western boundary of the churchyard at Bursledon (SMR 50111). Within the same area, an earth bank boundary was noted that demarcated a small triangular green (SMR 50112). Further to the south of Bursledon are earthworks of unspecified type were observed as part of the HRS survey (SMR 50118).

In southern Bursledon, a former northbound road route was observed during the HRS survey (SMR 50114). This route is truncated by a modern housing estate and continues as a footpath. A hollow way leading to St Leonard's Church was also observed (SMR 50116). A possible prehistoric ditch was identified off Church Lane (SMR 54318). It was recorded during an evaluation that was carried out by Southampton City Council Archaeology Unit in 2003.

To the south of Lower Swanwick is Brooklands Park (SMR 51627). The park was laid out c. 1850. Some of the larger trees date back to this period and are part of a terraced formal garden situated on a slope. It includes a good collection of exotic trees and shrubs. Humphrey Repton and Gertrude Jekyll are associated with the park and garden.

Two the north of the proposed area of redevelopment, two possible ditches were identified from aerial photographs (DBA:AB, DBA:AC). They are located just to the south of the M27.

5 HISTORICAL DEVELOPMENT OF THE PRA

5.1 Map Evidence

Maps showing the layout of the PRA, and changes to the layout, date from 1838 onwards. The information from all the available maps and plans has been assimilated and is presented as a map regression (Figure 4). The positions of field boundaries, tracks and other features within the PRA are shown on the map regression and are coloured according to the date at which they were first recorded. A gazetteer of the regression data is included in Appendix D.

The overall pattern of development at the site is one of a gradual increase in the density of buildings and the amount of land reclaimed from the river up to the mid-20th century, followed by a clearance of all previous buildings and their replacement with modern offices and warehouses. Historical building activity is most dense on the earliest dry land at the site around Swanwick Shore Road and on the strip of land along the south-west side of Bridge Road. Extending away from Bridge Road land has been incrementally consolidated in the inner river bend.

5.2 Evolution of the PRA

5.2.1 Titchfield tithe map 1838 (1:4752)

Land use was sparse in 1838 with just three buildings within the redevelopment area, all around Swanwick Shore Road. On the south-west side the first ship loading area appears in the shape of a wharf (002) with a single warehouse (001). On the other side of the road two blocks of houses face the road (003 and 004) with the rest of the block divided into two areas of open land by a field boundary (005). The land along Bridge Road is similarly partitioned (006 to 009) and the area enclosed is likely to be the limit of useable dry land in this period, nothing else being shown on the river side on this map.

5.2.2 Ordnance Survey 1st edition 1859 to 1873 (1:2500 and 1:10560)

In just a couple of decades there is a leap in building activity on the north-east side of Swanwick Shore Road. Two more blocks of houses (020 and 024) join the two already there and two outbuildings appear (015 and 016). A building is built facing Bridge Road in this block and may also represent a row of small houses. Most significantly in this area The Baptist Chapel (017) is built with an associated boundary (023) and outbuilding (018). Although the outbuilding has gone, the Chapel is the only nineteenth century building in the block that survives to the present.

On the north-west side of the plot the area is further divided by boundaries (022 and 025) and a track (021) runs as a shortcut from Swanwick Shore Road to Bridge Road. This map is the first to clearly show the original position of the road (026 and 027) which differs slightly from the present arrangement at its north end.

Activity further along Bridge Road reflects the turnpike road's status as a major thoroughfare. The main new addition is the Toll House and its outbuilding (010 and 030) near the bridge, positioned to catch travellers following the sign post (013). Two small buildings (012 and 014) on either side of the sign post may be houses or may be small warehouses associated with the redevelopment area's second wharf (011) situated closer to the traffic than the one on Swanwick Shore Road and

requiring the removal of part of the old boundary (006). The reach of the river has retreated some tens of metres to a new boundary line (028), the area between here and the main river channel being salt marsh used for salting.

5.2.3 Ordnance Survey 2nd edition 1897 to 1898 (1:2500 and 1:10560)

The Swanwick Shore Road wharf gains a building (041) while on the other side of the road building work continues apace with new buildings and extensions (035 to 040) replacing older buildings and field boundaries (016, 019 and 022). The chapel also loses its outbuilding (018).

Along Bridge Road two mile posts (033 and 034) supplement the sign post. A larger building (042) appears with associated boundaries (031 and 032) replacing the old boundary (007). This building, larger and closer to the wharf, may be an upgrade to the building (014) further southeast which disappears.

5.2.4 Ordnance Survey 3rd edition 1909 to 1910 (1:2500 and 1:10560)

A marked increase in industrial and communications structures indicates the changing use of the redevelopment area. Swanwick Shore Road wharf gets its third building (052). Larger, perhaps industrial, buildings appear on the other side of the road (046 and 050) with several subsidiary buildings (044, 045 and 051) and a boundary (043). This required an adjustment (048 and 049) of the old track (021) and the removal of a boundary (025) and two buildings (015 and 035). Back on the other side of the road the junction with Bridge Road starts to resemble its present arrangement with a slight reduction in width (027).

An additional, altered, edition of 1910 at 1:10560 shows more major building work along Bridge Road. This adds two very large buildings (056 and 058) and three large subsidiary buildings (054, 055 and 059) requiring the removal of the old boundaries (008). The largest building gets its own long jetty (057) and a new boundary is placed (053). The abundance of signage along the main road is curtailed with the removal of a sign post and a mile post (013 and 033).

5.2.5 Ordnance Survey 1931 to 1932 (1:2500 and 1:10560)

Swanwick Shore Road wharf doubles in size to the north (061) with a new warehouse (062) and smaller buildings (060 and 065) replacing an older one (041). The facing block starts to reach capacity with the addition of just an outbuilding and a small extension (063 and 064). Some residents decide they do not like their extension after all and demolish it (038).

A map of this era was not available further north. Although the south-west end of the jetty (057) should be visible on the available map, it is missing in this edition.

5.2.6 Ordnance Survey 1962 (1:10560)

Signalling the start of the late twentieth century phase of renewal, Swanwick Shore Wharf is completely rebuilt (068) requiring the demolition of all the existing buildings (001, 002, 052, 060, 061, 062, 065). The only change in the main block is the removal of a short boundary (047).

Along Bridge Road the dock area is rearranged with two buildings (058, 059) demolished to make way for new ones (066, 069). The previous limit of the river

(028) is updated to a new position (067) and the south-west end of the jetty makes its appearance (070). On the road itself, the last mile post is removed (034).

5.2.7 Ordnance Survey 1972 (1:10000)

The renewal of the last century reaches its peak with widespread demolition and rebuilding. Taking advantage of the renewed wharf on Swanwick Shore Road, two large buildings appear on it (090 and 091). Major change occurs on the other side of the road as all the existing buildings, boundaries and tracks (003 to 005, 020, 024, 036, 037, 039, 040, 043, 044 to 046, 048 to 051, 063 and 064) except the chapel, are cleared to make way for large commercial buildings (086 and 087). The north end of the block gains a track (088), perpendicular to the old road surface it runs over (026). The track services several new jetties (077, 088, 089, 092 and 0193) running in to this inlet defined by a boundary (085). Remains of one of these jetties (077) were observed during the site visit.

Along Bridge Road the old toll house and wharf are removed (009, 010, 011, 030) as well as the only other remaining nineteenth century building and warehouse here (012, 031, 032, 042) and a later boundary and building (053 and 066). They are replaced with a new building (094) and a nearby building is extended (071). Remains of the former building were identified during the site visit. The largest warehouse (056) is removed to be replaced by a similar sized building further back from the road with a further large building (080) and an office (079).

In front of these new buildings the old waterfront (029, 067) is consolidated (076) though remains amorphous to the north (084). The river is serviced with several more jetties (074, 075 and 081) and pontoons (082 and 083) replacing the single previous jetty (057, 070).

5.2.8 Ordnance Survey 2006 (1:2500)

Swanwick Shore Road wharf gains three small buildings (0114 to 0116) and a larger one (117) replaces the 1970s building (090). The wharf itself (068) is extended into the river (110) replacing the jetties and old waterfront (077, 085, 089, 092 and 093).

In the block on the other side of the road, a strip building (087) is replaced with a squarer one (111) and a small building (112) making more use of the space. An electricity sub station (113) is tucked next to the chapel. The track joining this block with the waterfront disappears as it is now some way from the water line.

Travelling up Bridge Road two of the larger buildings from the end of the twentieth century are demolished (069, 080) along with a group of smaller buildings (054, 055, 071 and 094), the latter succeeded by the next generation (103 to 105). The waterfront (072, 084) is squared up (100, 101) replacing the jetties (073 to 075) in the process. Much of the redevelopment area is partitioned (107 to 109) making different areas for parking cars and keeping boats. The road is buffered from the water front with a verge of grass and trees (102). The last remaining jetty (081) is replaced with a full complement of pontoons (095 to 099).

5.2.9 Present

There are no map-visible structures still remaining in the redevelopment area later than 1972. Situated just outside the Baptist Chapel was built in 1848 and the

boundary separating it from the redevelopment area is of the same date. With the history of construction and demolition on the site there is the strong possibility of buried structural remains and there may also be standing remnants of older structures not large enough to appear on maps.

Present land use is entirely a mixture of large modern warehouses and offices, surfaced areas for parking cars and storing boats and seven pontoons extending out in to the main river channel.

6 ARCHAEOLOGICAL POTENTIAL OF THE LANDSCAPE WITHIN THE STUDY AREA

6.1 Archaeological Remains

6.1.1 Palaeolithic (c. 500 000 – 8300 BC)

Palaeolithic finds are rare in Britain, partly because of their great age and partly due to the low level of population and the sporadic and transitory nature of settlement. The paucity of finds means that the Palaeolithic is the least understood period of human history and therefore a research priority.

Shallow excavations are unlikely to produce in-situ remains of Palaeolithic camps or activity areas, but unstratified flint or stone artefacts may occasionally be discovered. During glacial episodes, older bone or stone tools become incorporated in later gravels and boulder clays, and material of this date sometimes travelled some considerable distance from its original point of deposition and is occasionally picked up from the surface. Deep excavations are more likely to encounter material of this period.

Although no finds are recorded within the Study Area, there is the potential of identifying derived finds dating to this period where pockets or areas of glacial drift are present, particularly in the river gravel terraces.

6.1.2 Mesolithic (c. 8300 - 4000 BC)

Mesolithic hunter-gatherers, like all prehistoric peoples, normally favoured riverside locations. The potential for encountering settlement remains is very low because Mesolithic communities were largely nomadic. Concentrations of material are much more important than single finds, since they suggest focused activity and sometimes indicate where tool production was taking place.

Based on finds in the immediate vicinity of the Study Area and results from previous archaeological works (Network Archaeology 2001; Wessex Archaeology 2000, 2001), there is a low to moderate potential of encountering further Mesolithic material in the Study Area.

6.1.3 Neolithic (c. 4000 BC to 2350 BC)

Riverside locations continued to attract settlement in the Neolithic period and like the Mesolithic period, the River Hamble would have been suitable for occupation. The Study Area has little in the way of material associated with occupation. The evidence for this period is limited to a single sherd of Beaker pottery. Neolithic pottery is nationally rare (Brown and Murphy 1997), but flintwork of this period is not uncommon. Neolithic occupation sites are far more numerous than those of earlier eras, but nonetheless, late Neolithic settlements are rare in Britain and frequently lack the deep subsoil features that occur in earlier Neolithic sites (Healy 1988).

There is a moderate potential of recording further evidence of Neolithic activity within the Study Area based on previous finds and investigations within the immediate vicinity of the area of redevelopment.

6.1.4 Bronze Age (c. 2350 - 800 BC)

No sites are recorded for this period within the Study Area, but there is the potential of encountering peat deposits which may date to the Bronze Age. These deposits will be able to provide palaeoenvironmental evidence as well as the preserved remains of organic material culture and possibly submerged forests. There is a low potential of encountering Bronze Age material, but attention should be paid to areas that lay close to Bronze Age rivers, streams and springs.

6.1.5 Iron Age (c. 800 BC - 43 AD)

Areas around springs and watercourses will have a higher potential since these continued to act as foci for settlement and activity during the Iron Age. There is also an increased potential for encountering ritual sites of this period close to ancient boundaries.

Although no Iron Age sites have been identified in the Study Area, there is a low to moderate potential of encountering further evidence of the Iron Age in the Study Area, particularly in the vicinity of the river terrace gravels. The presence of a possible promontory fort at Hamble and 'ritual' pit at the former Bursledon Brickworks, suggests that Iron Age occupation is present in the area.

6.1.6 Roman (AD 43 - 410)

The Study Area has a limited dataset for the Roman period.

Although the recorded distribution of Roman finds from the Study Area is low, findspots in the area between Hamble and Bursledon indicate that the area was occupied during this period and was exploited for its rich agricultural and maritime resources, such as salt, fish, oysters and other shellfish, as well as opportunities for trade and exchange provided by sheltered anchorages and the road networks.

There is a low to potential of finding further evidence of Roman occupation, as well as evidence of trade and other activities.

6.1.7 Anglo-Saxon (AD 410 - 1066)

Place names indicate that the parishes of the Study Area were settled during or before the Anglo-Saxon period, so some modern parish boundaries may date back to this time, or may indeed be even older.

The apparent lack of Anglo-Saxon remains might not reflect the true situation. The archaeology of this era is often less easily detected than that of most other periods. Early Anglo-Saxon settlements are generally difficult to locate by fieldwalking because the pottery was low-fired and so disintegrates in the ploughsoil. Furthermore, 5th century pottery types are sometimes indistinguishable from those of the mid 4th century. Later Anglo-Saxon settlements were often subsumed by medieval villages, so evidence of early occupation may have been destroyed, particularly since vernacular buildings were normally built of wood, so their below-ground remains can be easily overlooked.

Literary evidence implies that facilities for boarding a ship at least existed at Hamble during the 8th century AD, and that the area may have functioned as a small port or landing stage, perhaps associated with the monastery further upstream

at Bishop's Waltham. There is a low potential of encountering Anglo-Saxon maritime features and associated occupation and activities in the Study Area.

6.1.8 Medieval (AD 1066 - 1540)

The abandonment of villages continued into this period. The potential for intact medieval remains to survive on the sites of deserted medieval villages is greatest where there is early abandonment and pastoral land use has protected the archaeological remains from truncation by ploughing or development.

The River Hamble undoubtedly provided a source of employment and trade. By the 13th and 14th century, the importance of the area as a maritime base had been established and several important ships are known to have been in the area, as well as wrecked (e.g. Grace Dieu). Salt production and fishing are also likely to have been important to the economy of the area during the medieval period.

From the finds recorded in the Study Area and surrounding environs, it is clear that there is a moderate potential of encountering further material dating to this period, especially associated with medieval ship building, including timber and metalwork.

6.1.9 Post medieval (AD 1540 to 1900)

The ship-building industry on the Hamble River seems to have peaked during the 17th, 18th and early 19th centuries and there is also an increase in the production of fruits for both the local and national markets.

There is a moderate to high potential for encountering features associated with shipbuilding as well as associated industrial activities.

6.1.10 Modern (1900 to present)

The Study Area itself has remained relatively unchanged, with the Study Area primarily being used for mooring. The wider area is dominated by dispersed settlement and woodland.

6.2 Built Environment

There is a low potential for encountering and recording the built environment to the north-west of the proposed development area, where the former toll house once stood, and additionally in the vicinity of the wharf at the south-east end of the development area. The existing built remains on site are considered to have negligible archaeological value.

6.3 Historic landscapes and boundaries

The study areas include lands in the parishes of Bursledon, Hound and Titchfield (SMR 50113, DBA:AK, DBA:AL). The latter two parishes are referred to in the Domesday Book and these were essentially tax districts. Parish boundaries often dated back many centuries. The Bursledon and Hound parish boundary (SMR 50113) was recorded as a residual line during the HRS survey.

The Study Area includes two Conservation Areas. Swanwick Shore is a Conservation Area and occupies a bend on the eastern side of the River Hamble (DBA:AM). The Conservation Area comprises the groups of buildings, public hard

and river frontage that form the village settlement at Lower Swanwick. The hard and river frontage is situated on low lying ground south of Bridge Road, close to the Bursledon Bridge (Fareham Borough Council).

On the west bank of the River Hamble is the Old Bursledon Conservation Area (DBA:AA).

The RCHME Rural Settlement Survey designated Bursledon as an Area of Archaeological Potential. This includes the bank of the River Hamble as well as the regular row of properties and the location of the boat/ship yards. The archaeology could include the waterlogged remains of the craft and associated wooden buildings. The irregular row of properties at the east end of the High Street includes two 17th century buildings and these are recorded in the Conservation Area. This was a service area for the nearby salterns and almost certainly included accommodation for those who worked in the industry. Other areas identified include a field to the north of the parish church, which contain some earthworks and an area to the south-east of the church that adjoins the hollow way. Here, there is potential for medieval settlement close to these road junctions.

A single area that includes the church and churchyard is designated as an Area of High Archaeological Potential.

6.4 Palaeo-environmental and organic remains

Waterlogged soils that collect in hollows, pits, and water channels may contain preserved organic material (such as wood, leaves, leather, fabrics and animal tissue) and palaeoenvironmental remains (such as seeds, beetles and pollen). Such material can shed light on past human activities not usually represented in the archaeological record. This type of evidence is nationally rare, and therefore of great significance. Organic and palaeoenvironmental remains may be archaeologically important in their own right, or may have a raised value when found in close proximity to, or in an associated context with, archaeological remains.

Riverside areas are often rich in prehistoric archaeology. In areas where the watercourses have shifted since the prehistoric period, ancient settlements and other signs of activity should be anticipated close to the former riverbeds (palaeochannels). There may be numerous palaeochannels running through the Study Area; some are discernible from aerial photographs, whilst others may come to light only during ground disturbing excavations. There is a high potential for the survival of both palaeoenvironmental and organic remains in areas such as palaeochannels, where alluvial deposits would have helped to preserve such material by preventing exposure to the air.

The watercourses running across the Study Area may be embanked in places. Early embankments could seal ancient land surfaces, whilst others could be protecting parts of archaeological sites that have been largely destroyed by modern farming in the adjacent fields.

Since the last ice age, the gravel deposits of floodplains of most rivers have been constantly shifted by the meandering, braiding and sudden changes in the course of the river. Tree trunks are one variety of movable organic remains dislodged and transported by these fluvial actions and are then deposited and preserved in airless, waterlogged conditions. There is consequently a high potential for the preservation of ancient organic remains in the parts of the Study Area that lie close to river

courses. There is a high potential for encountering preserved organic remains in areas where peat deposits lie close to the land surface. These anaerobic environments will yield information concerning the ancient environmental conditions, landscapes, climate change and have the potential of preserving organic remains, such as wood, leather and textiles, which would otherwise not survive in an oxygen-rich environment.

7 ASSESSMENT OF IMPACT

7.1 Impact types of the proposed scheme

Archaeological remains could be subject to short-term, medium-term and/or long-term impacts. In this case, all the impacts are considered to be short-term (i.e. during demolition and construction). The following construction activities will have direct and indirect impacts on known and potential archaeological remains:

- Security fencing
- Demolition works
- Grubbing building foundations and site preparations
- Removal of existing pontoons
- Construction of car-parks
- Construction of building piles
- Construction of pontoon piles
- Soft landscaping

These activities could have direct and/or indirect impacts on known and potential archaeological remains within the proposed redevelopment area.

7.2 Summary of Impacts

One hundred and nine sites have been identified by the assessment. Of these sites, twenty are subject to impact, as summarised in Table 7.1.

Table 7.1: Summary of nature of impacts

Impact type	Number of Impacts
Beneficial Impacts	0
Neutral Impacts	7
Adverse Impacts	14

Impacts are considered by the nature of impact in Sections 7.3, 7.4 and 7.5.

7.3 Beneficial impacts

The proposed redevelopment is unlikely to result in short, medium or long term beneficial impacts on the archaeological resource.

7.4 Neutral impacts

The proposed redevelopment is considered to have a neutral impact on seven sites (i.e. where a combination of beneficial and adverse impacts will balance out). The grade of each site and level of impact are summarised below in Table 7.2 and Table 7.3.

Table 7.2: Summary of neutral impacts of the scheme by grade

Grade	Description	Total no. sites collated	No. sites within Proposed Redevelopment Area		
			Uncertain impacts	Indirect impacts	Direct impacts
A	Statutory protected	31	0	7	0
B	Nationally important	0	0	0	0
C	Regionally important	0	0	0	0
D	Locally important	78	0	0	0
U	Ungraded	0	0	0	0
TOTALS		109	0	7	0

Table 7.3: Summary of significance of neutral impacts

Significance of impact	Count
N/A	N/A
None	7
Unknown	N/A
Low	N/A
Low or Medium	N/A
Medium	N/A
Medium or high	N/A
High	N/A
Total	7

7.4.1 Category A sites – neutral impacts

Thirty-one sites benefiting from statutory protection are located within the Study Area. None of these sites are subject to direct or uncertain impacts, but the proposed redevelopment is considered to have indirect impacts upon seven of them. These include Swanwick Shore Conservation Area (DBA:AM) and six grade II listed buildings (LS 408678, LS 408694, LS 408695, LS 408696, LS 409471, SMR 56892). The redevelopment will affect views from the conservation area and will alter its setting permanently. Whether these changes will have an overall beneficial or adverse affect is subjective. On the one hand, demolition/construction works may have a slight temporary adverse affect on views out of the conservation area and on the setting of its listed buildings. There will also be a permanent affect on these views following the demolition of the existing buildings. The demolition of such, and the loss of the surrounding open space, may be regarded as detrimental to setting (i.e. loss of context).

Alternatively, the proposed redevelopment may also be considered an improvement to setting, in that the proposed houses and associated landscaping will provide a softer outlook and setting to the conservation area in contrast to the harsh contrast of existing light industrial buildings.

On overall balance, it is considered that there may be a very slight beneficial impact, but this change is considered to be so small that the overall impact has been classified as neutral.

7.4.2 Category B Sites – neutral impacts

No nationally important sites are located within the Study Area.

7.4.3 Category C Sites – neutral impacts

No regionally important sites are located within the Study Area

7.4.4 Category D Sites – neutral impacts

Seventy-nine locally important sites are located within the Study Corridor. None of these sites are subject to a neutral impact.

7.5 Adverse impacts

One hundred and nine sites have been identified by the assessment. The grade of each site and level of impact are summarised below in Table 7.4 and Table 7.5.

Table 7.4: Summary of adverse impacts of the scheme by grade

Grade	Description	Total no. sites collated	No. sites within Proposed Redevelopment Area		
			Uncertain impacts	Indirect impacts	Direct impacts
A	Statutory protected	30	0	0	0
B	Nationally important	0	0	0	0
C	Regionally important	0	0	0	0
D	Locally important	79	6	0	8
U	Ungraded	0	0	0	0
TOTALS		109	6	0	8

Table 7.5: Summary of significance of adverse impacts

Significance of impact	Count
N/A	N/A
None	N/A
Unknown	6
Low	0
Low or Medium	8
Medium	0
Medium or high	0
High	0
Total	14

The following sections deal in category order with sites that are directly, or indirectly or possibly affected by the proposed redevelopment area.

7.5.1 Category A Sites – adverse impacts

Thirty sites benefiting from statutory protection are located within the Study Area. No sites are directly impacted by the proposed redevelopment.

7.5.2 Category B Sites – adverse impacts

No nationally important sites are located within the Study Area.

7.5.3 Category C Sites – adverse impacts

No regionally important sites are located within the Study Area

7.5.4 Category D Sites – adverse impacts

Seventy-nine locally important sites are located within the Study Area. Eight sites are directly impacted. The impacts on a further six sites are uncertain. Five houses are directly impacted by the proposed redevelopment. These buildings are no longer extant and are recorded on OS maps dating to 1868 (DBA:AU, DBA:AV), 1897 (DBA:AW) and 1910 (DBA:AX). A former toll house is located within the redevelopment area and is recorded on an OS map of 1868 (DBA:AN). The remains of two possible modern buildings were observed during the site visit (FSU:001, FSU:002). All of these structures have since been demolished and their footprints will be larger than the proposed pile intervals, which will be used during construction of this redevelopment (see Section 1.3). One former field boundary, marked on the 1868 OS map, will also be directly impacted upon by the proposed redevelopment (DBA:AT).

Four field boundaries (DBA:AP to DBA:AS) have an uncertain impact. These field boundaries are marked on OS maps dating to 1868 and although they lie within the proposed area of redevelopment, the extent and nature of the existing archaeology is not known. The nature of the proposed construction techniques (pile construction) means that there is the possibility that the boundaries will fall in between the piles (see Section 1.3).

The turnpike road (DBA:AJ) has an uncertain impact. This road, which is recorded on the 1839 tithe map, lies on the edge of the proposed redevelopment area. However, the boundary between the edge of the road and the redevelopment area has changed over time and therefore it is not possible to be certain of their exact relationship and as to whether or not the road will be impacted by the redevelopment.

8 RECOMMENDATIONS

8.1 Liaison with statutory consultees

Liaison should be maintained with Hampshire County Council Environment Department, in order to agree future archaeological investigation, approve and monitor the implementation of any archaeological Written Scheme of Investigation (WSI), review reports, monitor fieldwork in progress, and also to visit the construction site.

8.2 Written Schemes of Investigation

An archaeological WSI should be produced for each stage of any future archaeological work (see Section 8.1).

8.3 Staged approach to mitigation

The most cost-effective means of managing archaeological risk is to implement a staged approach to investigation and mitigation, as laid out below in Table 8.1 and explained in greater detail in Appendix A. It is important, however, to avoid an overly mechanistic approach and to ensure a focus on gaining understanding and information relevant to key issues.

Table 8.1: Staged approach to investigation and mitigation

Archaeological Stages of Investigation		Phase of works
Stage 1	Archaeological review: An appraisal of archaeological potential of Study Area(s):	feasibility assessment
Stage 2	Desk-based assessment: A thorough synthesis of available archaeological information within a Study Area	conceptual design
Stage 3	Field surveys, including site visit/field reconnaissance survey, field walking survey, geophysical survey, as appropriate	detailed design
Stage 4	Field evaluation, including machine-excavated trenches, hand-dug test-pits, borehole/auger survey, as appropriate of targeted areas within Proposed Development Area	
Stage 5	Open-area excavation e.g. detailed investigation of those sites which it is not possible to avoid or desirable to preserve (e.g. excavation, topographic survey)	
Stage 6	Watching brief: Permanent presence monitoring of all ground disturbing activities	construction
Stage 7	Archive and publication. Synthesis and dissemination of results, leading on from each of the stages outlined above	post-construction

8.4 General recommendations

This report represents Stages 2 and 3 of this archaeological approach to investigation and mitigation (Table 8.1). The following general recommendations are made:

1. Consideration should be given to undertaking evaluation of the archaeological and palaeo-environmental potential of the proposed redevelopment area, in the

form of archaeological trenches, test-pits and/or auger survey. Consideration should be given to both the terrestrial and riverine elements of the scheme. A programme of pre-emptive works (i.e. in advance of construction) and reactive works (i.e. during construction) should be considered, depending upon the results of any evaluation work (see Section 8.6). The relationship between previous use of the site and the proposed redevelopment is presented on figure 4. This comparison should be used to guide any potential future archaeological works. Consideration should be given to avoiding areas of previous ground disturbance, unless these relate to structures of archaeological significance (see Section 8.7).

2. Consideration should be given to the need for an archaeological watching brief during construction (Table 8.1, Stage 6). The nature, frequency and resource levels of the postulated watching brief should be agreed with Hampshire County Council Environment Department. Some parts of the redevelopment area, where potential archaeological and palaeo-environmental remains are likely to survive may require permanent-presence or intermittent-presence monitoring, whereas areas where such remains are likely to have been destroyed by previous development should be excluded from any such work. Close liaison between the archaeological contractor and site contractor should be maintained throughout construction. Consideration should be given to stepping down the level of monitoring in the event that deep made ground and/or negative archaeological evidence is encountered. Consideration should also be given to the possible need to mobilise additional resources in the event that significant unexpected archaeological remains are encountered.
3. Any future archaeological investigations and mitigation will consider:
 - The nature of the known and potential archaeology and its distribution within the proposed redevelopment area;
 - The importance of any archaeology. Design mitigation and/or archaeological excavation should be considered to avoid impacts upon nationally important sites and also regionally important sites that have a high significance of impact, should any come to light during subsequent archaeological investigations. Where such sites are unavoidable consideration should be given to minimising impacts.
 - The nature of the local geology and soils; and
 - The proposed construction methodology.

8.5 Site Specific recommendations

Specific recommendations for significant sites which are located within or close to the proposed redevelopment area are presented in Table 8.2.

Table 8.2: Summary of recommendations

DBA:AM: Swanwick Shore Conservation Area

LS 408678, LS 408694, LS 408695, LS 408696, LS 409471, SMR56892: listed buildings

The conservation area and listed buildings benefit from statutory protection

Importance A

Figures 2 and 3, NGR 449609 109264

Recommendations

The status of the conservation area and listed buildings should be flagged to all parties.

The redevelopment should be designed so as to minimise potential impacts upon the setting of the conservation area and its listed buildings. Construction should minimise the removal of existing trees or historic landscape features which might have a permanent impact on views into and out of the conservation area and it should also ensure that the design of the new builds is as sensitive to the setting of the conservation area as possible. Close liaison with the local Conservation Officer is highly recommended

8.6 River Hamble Floodplain

Floodplain areas and their associated river channels (existing and former) present unique issues in terms of the detection and assessment of archaeological, palaeo-environmental and organic remains. There is often a deep accumulation of clays and silts (alluvium) in floodplain areas. Alluvium can protect buried archaeological remains from plough damage and development, but can also mask them from the standard techniques of detection such as geophysical survey, field-walking and aerial reconnaissance. Thus, whilst sites are perhaps more likely to survive in these areas, they are harder to detect.

In the case of Swanwick Marina, there is a high potential for the existence of former river channels, resulting from the migration of the river westwards. Terrestrial land (and therefore any associated archaeological site remains) is most likely to be found at the east end of the site.

Recommendation: Consideration should be given to undertaking a programme of evaluation, hand test-pitting and/or hand-auger survey to assess potential. Due to the difficulties in detecting archaeological remains in areas of alluvium in advance of construction, and the potential cost of recovering and analysing organic and palaeo-environmental remains, adequate resources should be put in place for dealing with unexpected remains of this kind.

8.7 Eliminating areas of no archaeological potential

Areas of previous development/disturbance, including buildings, walls, wharfs, jetties etc. are identified on figure 3. Such areas should be excluded from further archaeological examination, unless they are considered to be of archaeological significance.

It has been established that made ground exists to a depth of up to 6.8m (below ground level) within the PRA (see Section 3.5). Such areas should be excluded from further archaeological examination, unless there are potential impacts beneath this layer.

Areas of contamination have also been identified within the PRA (see Section 3.7) and such areas should also be excluded from further archaeological investigation.

8.8 Redevelopment design

Design mitigation should be considered to avoid impacts upon nationally important sites and also regionally important sites that have a high significance of impact, should any come to light during subsequent archaeological investigations.

Where such sites are unavoidable, consideration should be given to minimising impacts.

The final design should be determined in relation to archaeological sites of national and regional importance (i.e. sites of category A, B and C) and to sites where the significance of impact is deemed to be medium or high.

9 ACKNOWLEDGMENTS

Network Archaeology Ltd would like to thank the following for their contribution to the project:

Table 9.1: Acknowledgements

Organisation	Name	Position	Contribution
Hampshire County Council	Rachel Salter	SMR Officer	Provision of SMR data
URS	Lucy Rosser	Environmental Consultant	Provision of scheme information
English Heritage	Natalie Hill	Enquiry and Research Services Officer	Provision of NMR data
	Liz Jenkins	Enquiry and Research Services Officer	
Network Archaeology Ltd	David Bonner	Company Director and Project Manager	Project management
	Sarah Ralph	Project/Research Supervisor	Report writing
	Sarah Mounce	Project Supervisor	Data collection and Report writing
	Susan Freebrey	GIS Officer	Report figures
	Adam Holman	IT/GIS Manager	Report figures

10 BIBLIOGRAPHY

10.1 Primary sources

Table 10.1: Pre-OS maps

RO reference	document title	document type	year	scale
21M65/F7/42/2	Bursledon tithe map	Tithe	1839	1:2376
21M65/F7/42/1	Bursledon tithe apportionment	Tithe	1841	n/a
21M65/F7/122/2	Hound tithe map	Tithe	1838	1:4752
21M65/F7/122/1	Hound tithe apportionment	Tithe	1840	n/a
21M65/F7/234/2 to 21M65/F7/234/4	Titchfield tithe map	Tithe	1837- 1838	1:4752
21M65/F7/234/1	Titchfield tithe apportionment	Tithe	1839	n/a

Table 10.2: OS maps

County	Sheet	Series	Year	Scale
Hampshire	66	1st edition	1868	1:10560
Hampshire	74	1st edition	1859	1:10560
Hampshire	66.13	1st edition	1866	1:2500
Hampshire	66.14	1st edition	1866	1:2500
Hampshire	74.1	1st edition	1873	1:2500
Hampshire	74.2	1st edition	1873	1:2500
Hampshire	66SW	2nd edition	1898	1:10560
Hampshire	74NW	2nd edition	1898	1:10560
Hampshire	66.13	2nd edition	1897	1:2500
Hampshire	66.14	2nd edition	1897	1:2500
Hampshire	74.1	2nd edition	1897	1:2500
Hampshire	74.2	2nd edition	1897	1:2500

Table 10.3: Oblique aerial photographs

Source	NGR Index Number	Accession Number	Frame	Film Type	Date Flown	NGR	Network AP Reference
NMR	SU4909/1	CCC 8770	2529	Black & white	28/03/1927	449400 109500	
NMR	SU4909/2	NMR 4483	18	Colour slide	08/05/1989	449300 109500	
NMR	SU4909/3	NMR 21001	12	Black & white	19/07/1971	449900 109800	

Table 10.4: Vertical aerial photographs

Source	Sortie Number	Library Number	Frames	Date	Scale 1:	Start NGR	End NGR	Network AP Reference
NMR	RAF/106G/UK/585	25	6228-6234	02/08/1945	2500	448300 109400	450000 109300	
NMR	RAF/106G/UK/650	27	5093-5095	12/08/1945	2500	448900 109100	448300 109200	
NMR	RAF/106G/UK/1566	394	5087-5088	07/06/1946	4800	448900 109900	448500 109900	
NMR	RAF/CPE/UK/1749	468	4074-4076	21/09/1946	9800	449800 109700	448700 110000	AP. 1, AP. 2
NMR	RAF/CPE/UK/1749	468	4090-4091	21/09/1946	9800	448700 108800	449400 108800	
NMR	RAF/CPE/UK/1768	484	3002	07/10/1946	9840	448400 108300	448400 108300	
NMR	RAF/CPE/UK/1768	484	3033-3034	07/10/1946	9840	449000 108100	448400 108500	
NMR	RAF/CPE/UK/1768	484	4033-4034	07/10/1946	9840	450100 109800	449500 110300	
NMR	RAF/CPE/UK/1768	484	4048-4049	07/10/1946	9840	449600 110200	450200 109600	
NMR	RAF/CPE/UK/1821	501	3372-3374	04/11/1946	10000	449400 110600	450300 110000	
NMR	RAF/CPE/UK/1821	501	5377-5379	04/11/1946	10000	448300 108700	449200 108100	
NMR	RAF/CPE/UK/1842	509	4052	18/11/1946	10000	450200 109000	450200 109000	
NMR	RAF/CPE/UK/1842	509	4058	18/11/1946	10000	449400 108400	449400 108400	
NMR	RAF/CPE/UK/1977	584	5216-5218	11/04/1947	4800	449300 109400	448600 109800	
NMR	RAF/82/765	1421	19-20	20/04/1953	5000	448500 109500	449000 109500	
NMR	RAF/82/765	1421	23-24	20/04/1953	5000	449300 110300	448800 110200	
NMR	RAF/58/1087	1442	12-13	15/04/1953	3400	448900 109400	448400 109400	
NMR	RAF/82/1006	1520	371-372	31/08/1954	15000	450100 109800	449000 110200	
NMR	RAF/58/2859	1919	456-458	13/05/1959	11000	449600 108000	448400 108300	
NMR	RAF/58/2859	1919	456-458	13/05/1959	11000	450400 110200	449100 110500	
NMR	RAF/58/2860	1920	48-50	14/05/1959	11200	448700 110600	450500 109700	
NMR	RAF/58/2860	1920	47-48	14/05/1959	11200	448200 108400	449000 108000	
NMR	RAF/543/626	1929	57-58	08/07/1959	10666	449500 108400	448800 108400	
NMR	RAF/543/626	1929	56-58	08/07/1959	10666	449900 110500	448500 110500	
NMR	RAF/58/4878	2238	54-56	18/01/1962	10000	448600 110800	450100 110700	
NMR	RAF/58/4878	2238	54-55	18/01/1962	10000	448700 108900	449500 108900	
NMR	RAF/106G/UK/492	4957	5049-5052	08/07/1945	4000	449800 109700	448600 109700	
NMR	RAF/541/T/51	5063	3073	12/10/1950	10333	448200 108700	448200 108700	
NMR	MAL/69061	5455	6-7	19/06/1969	10000	449200 108400	449200 109300	
NMR	MAL/69061	5455	8	19/06/1969	10000	449200 110100	449200 110100	
NMR	OS/70091	11100	138-140	08/05/1970	7000	450000 109600	448800 109600	

Source	Sortie Number	Library Number	Frames	Date	Scale 1:	Start NGR	End NGR	Network AP Reference
NMR	OS/70091	11100	147-148	08/05/1970	7000	448900 108500	449600 108500	
NMR	OS/62092	11109	127-129	31/08/1962	6500	448500 108900	449700 109500	
NMR	OS/62092	11109	168-171	31/08/1962	6500	449400 110700	448000 110000	
NMR	OS/69258	11143	374	11/06/1969	7200	449300 108300	449300 108300	
NMR	OS/69258	11143	375-376	11/06/1969	7200	449400 109900	450100 109500	
NMR	OS/74250	12080	21-22	12/10/1974	7500	448800 108500	449500 108600	
NMR	OS/74250	12080	35-36	12/10/1974	7500	449400 110000	448800 110000	
NMR	OS/74250	12080	54-55	12/10/1974	7500	449000 108700	449700 108700	
NMR	OS/75019	12090	54	20/04/1975	7500	449800 108400	449800 108400	
NMR	OS/75019	12090	79-80	20/04/1975	7500	450200 110000	449700 110300	
NMR	OS/79072	12380	225-227	16/07/1979	5300	449800 108700	448900 108700	
NMR	OS/79072	12380	248-251	16/07/1979	5300	448700 109600	450000 109500	
NMR	OS/81042	12488	2-3	08/07/1981	8100	448800 110000	449600 110000	
NMR	OS/85189	12756	2-6	25/07/1985	5200	448600 110000	450000 109900	
NMR	OS/85189	12756	40-42	25/07/1985	5200	450000 109200	449300 109200	
NMR	OS/85189	12756	43-45	25/07/1985	5200	449100 108400	449700 108400	
NMR	OS/92044	13923	17	05/04/1992	5100	448700 110000	448700 110000	
NMR	OS/92044	13923	18-20	05/04/1992	5100	449100 110000	449900 110000	
NMR	OS/92056	14611	262	16/04/1992	5000	448800 108300	448800 108300	
NMR	OS/92056	14611	263-264	16/04/1992	5000	449200 108400	449700 108500	
NMR	OS/92087	14612	18-21	06/05/1992	5500	450200 109100	448900 109000	AP. 3
NMR	OS/92087	14612	22	06/05/1992	5500	448400 109000	448400 109000	
NMR	OS/68152	20229	14-16	03/06/1968	10000	449400 110300	448800 108700	
NMR	OS/68152	20229	31	03/06/1968	10000	448900 109800	448900 109800	

10.2 Secondary Sources

Table 10.5: Published and unpublished sources

Author	Year	Title	Journal/Publishers
Betty, JH	1986	Wessex from AD 1000	Longman
Boismier, W.A.	1994	The Evolution of the Hampshire Landscape: Archaeological Resources on County Council Owned Farm and Recreation Land	Hampshire County Council
British Geological Survey	2007	GeoIndex	http://www.bgs.ac.uk/magazine/geology/ ? Date accessed: 12/12/06
Cunliffe, B.	1996	'The Iron Age of Hampshire: an assessment', in DA Hinton and M Hughes, Archaeology in Hampshire: a framework for the future	Hampshire County Council
Doubleday, H.A.	1973	A History of the County of Hampshire Volume 1	Victoria County History
Fareham Borough Council		Conservation Area Character Assessment Swanwick Shore	Fareham Borough Council
Gardiner, J.	1996	'Early farming communities in Hampshire', in DA Hinton and M Hughes, Archaeology in Hampshire: a framework for the future	Hampshire County Council
Hampshire County Council	2006	Hampshire County Structure Plan 1996 - 2011 (Review)	www.hants.gov.uk/structureplan/summary.html
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Institute of Field Archaeologists	2000	Code of Conduct	
Institute of Field Archaeologists	2001	Standard and Guidance for Archaeological Desk-Based Assessments	
Laxton, P.	1976	'Introduction' in Two Hundred and Fifty Years of Mapmaking in the County of Hampshire	Harry Margary
Mills, A.D.	1993	A Dictionary of English Place-names	Oxford Paperbacks
Morton, A.D.	1992	Excavations at Hamwic: volume 1, C.B.A. Res. Rep. 84	Council for British Archaeology
Network Archaeology	2003	Hamble to Botley, Hampshire Jetline Pipeline: Archaeological Watching Brief	Unpublished client report
Oxford Archaeological Unit	2000	Hampshire Water Meadows Survey – archaeological desk-based study for Hampshire County Council	Unpublished client report
Oxford Wessex Archaeology	forthcoming	Solent-Thames Archaeological Research Framework	Buckinghamshire County Council

Author	Year	Title	Journal/Publishers
Page, W.	1908	A History of the County of Hampshire Volume 3	Victoria County History
Ritchie, S.	1984	Hamble River and Much About Old Bursledon	Milestone Publications
Schadla-Hall, R.T.	1977	The Winchester District: The Archaeological Potential	City of Winchester
Shennan, S.J.	1985	Experiments in the Collection and Analysis of Archaeological Survey Data: the East Hampshire Field Survey	Sheffield University Department of Prehistory
South East Regional Assembly	2006	A Clear Vision for the South East: The South East Plan Core Document	http://www.southeast-ra.gov.uk/southeastplan/plan/view_plan.html
Tomalin, D.	1996	'Towards a new strategy for curating the Bronze Age landscape of Hampshire and Solent region', in DA Hinton and M Hughes, Archaeology in Hampshire: a framework for the future	Hampshire County Council
Underdown, I.M.	nd	Hamble, Hampshire: official guide	Hamble Parish Council
URS	2006	Geo Environmental Ground Investigation at Swanwick Marina	Unpublished client report
Wade, R. and Watts, G.	1989	Titchfield; A Place In History	Ensign Publications
Welch, M.G.	1996	'Anglo-Saxon Hampshire', in DA Hinton and M Hughes, Archaeology in Hampshire: a framework for the future	Hampshire County Council
Wessex Archaeology	2000	London Jetline Project Hamble to Botley, Hampshire: Archaeological Desk-based Assessment	Unpublished client report
Wessex Archaeology	2001	London Jetline Project Hamble to Botley, Hampshire: Walkover survey and recommendation for further archaeological work	Unpublished client report
Wymer, J.	1996	'The Palaeolithic and Mesolithic periods in Hampshire', in DA Hinton and M Hughes, Archaeology in Hampshire: a framework for the future	Hampshire County Council
Yorke, B.	1995	Wessex in the Early Middle Ages (Studies in the Early History of Britain)	Leicester University Press

APPENDIX A

Explanation of Phased Approach to Archaeological Investigation and Mitigation

EXPLANATION OF PHASED APPROACH TO ARCHAEOLOGICAL INVESTIGATION AND MITIGATION

Stage 1: Study Area Investigation Study

An appraisal of archaeological potential

Stage 2: Desk-based Assessment

A thorough desk based synthesis of available information

Aerial photographic study:

Identification and mapping of palaeochannels from aerial photographs should be undertaken as part of the desk-based assessment.

Stage 3: Field Surveys

Field reconnaissance survey

This is a visual inspection of the proposed development, in order to:

- locate and characterise archaeology represented by above ground remains (e.g. earthworks and structures); and
- record the nature and condition of existing field boundaries crossed by the development, to establish their potential antiquity.
- A walkover of the entire development area should normally take place.

Fieldwalking survey

The distribution of finds found by fieldwalking can indicate areas of archaeological activity, which are not represented by above ground remains.

A programme of structured fieldwalking should normally take place across all available arable land to recover archaeological artefacts. A minimum of five transects at 10m separation based upon the centreline of the proposed development should normally be walked.

Geophysical survey

Geophysical survey methods are non-intrusive and can detect and precisely locate buried archaeological features.

Magnetometry is the most cost-effective technique for large scale surveys. *Recorded* magnetometer survey, supplemented by background magnetic susceptibility survey is normally recommended.

Unrecorded magnetometer scanning is not recommended because it requires spontaneous, subjective interpretation as the unrecorded scanning survey progresses. This method does not therefore provide a secure basis for eliminating areas that produce negative results from further consideration.

Auger survey

Geotechnical borehole survey supplemented by hand auger survey could:

- generate stratigraphic profiles and establish the depth of alluvium;
- look for 'islands' of solid geology which are elevated in comparison with their contemporary landscape;
- look for former river channels;
- look for evidence of buried land surfaces;
- assess the viability of using targeted magnetometer survey on the floodplain.

Ideally, an environmental archaeologist would consult with the geotechnical team in order to develop a strategy which would enable the opportunistic and immediate examination of the geotechnical team's soil cores, in conjunction with a *hand auger survey* tailored to meet archaeological objectives listed above.

Radiocarbon dating and palaeo-environmental assessment

Soil samples recovered may require radiocarbon dating and assessment of potential for preservation of palaeo-environmental important remains.

Stage 4: Evaluation

Field evaluation should normally take place at the sites of positive findings made during earlier stages of archaeological assessment and field survey, which it may not be possible or desirable to avoid. Evaluation might involve machine-excavated trenches, hand-dug test-pits and/or hand auguring. The objectives are to confirm the presence or absence of archaeological remains, to determine their character, extent, date and state of preservation, and to produce a report on the findings. The choice of technique(s) will depend upon site-specific factors.

Stage 5: Mitigation

Excavation

It may not be possible or desirable to avoid significant archaeological sites identified by previous survey work and/or evaluation. Ideally, *excavation* of such sites should take place in advance of construction. Excavation would involve machine-stripping of limited, open areas, followed by archaeological investigation. The objectives would be to obtain a full record of the archaeological remains prior to construction, and to produce a report on the findings.

Earthwork survey

This work is undertaken to produce a topographic record of extant earthworks. These sites might include known earthworks identified by the Desk based Assessment, or previously unknown earthworks found during the Field Reconnaissance Survey. The sites may include settlement earthworks or agricultural earthworks (such as, ridge and furrow and lynchets).

Two methods are commonly employed; plane table survey which obtains a hachure survey, or total-station theodolite survey which produces a close contour plot.

Stage 6: Watching Brief

A permanent-presence watching brief will be required during all ground disturbing activities of the construction phase of the project, to record unexpected discoveries, and known sites which did not merit investigation in advance of construction. The main phases of monitoring

for the development will be topsoil stripping, trench excavation and the opportunistic observation of the pre-construction drainage. The objectives are to obtain a thorough record of any archaeological remains found during construction, and to produce a report on the findings. Contingencies should allow for salvage excavation of significant, unexpected archaeological sites found during construction.

Stage 7: Archive, Report and Publication

On completion of all archaeological fieldwork associated with the pipeline scheme, a comprehensive programme of post-excavation assessment, analysis, reporting and publication will be implemented. The post-excavation programme will be subject to a written scheme of investigation to be agreed in advance with the Senior Planning Archaeologists and will be in line with 'The Management of Archaeological Projects', English Heritage 1991.

APPENDIX B

Statutory and Non-Statutory Protection of Archaeological Sites

STATUTORY AND NON-STATUTORY PROTECTION OF ARCHAEOLOGICAL SITES

Legislation

Ancient Monuments and Archaeological Areas Act 1979 (as amended by the National Heritage Act of 1983)

Under this Act, the Secretary of State, in consultation with English Heritage, maintains a schedule of monuments deemed to be of national importance. In practice, most Scheduled Monuments fall into the category of Scheduled Ancient Monuments (SAMs), defined as 'any Scheduled Monument and any other monument which in the opinion of the Secretary of State is of public interest by reason of the historic, architectural, traditional, artistic or archaeological interest attaching to it' (Section 61 [12]). Scheduled Monuments also includes Areas of Archaeological Importance (AAIs). Only portable items are beyond the protection of scheduling.

The present schedule of just over 13,000 sites has been compiled since the first statutory protection of monuments began in 1882. The criteria for scheduling have been published but there are many sites of schedulable quality, which have not yet received this status.

Any action which affects the physical nature of a monument requires Scheduled Monument Consent, which must be sought from the Secretary of State. Consent may be granted after a detailed application to the Secretary of State. Failure to obtain Scheduled Monument Consent for any works is an offence, the penalty for which may be a fine, which may be unlimited.

The National Heritage Act 2002

This enables English Heritage to assume responsibilities for maritime archaeology in English coastal waters, modifying the agency's functions to include securing the preservation of ancient monuments in, on, or under the seabed, and promoting the public's enjoyment of, and advancing their knowledge of ancient monuments, in, on, or under seabed. Initial duties will include those formerly undertaken by the Government's Department of Culture, Media and Sport (DCMS), in respect to the administration of The Protection of Wrecks Act 1973.

<http://accessibility.english-heritage.org.uk/default.asp?WCI=Node&WCE=8197>

Planning (Listed Buildings and Conservation Areas) Act, 1990

Listed Buildings and Conservation areas benefit from statutory protection under this Act.

Listed buildings

Under this Act, the Secretary of State, in consultation with English Heritage, is responsible for the compilation of the List of Buildings (and other structures) of Special Architectural or Historic Interest. Listing gives buildings important statutory protection.

Buildings are classified in grades to show their relative importance as follows:

- Grade I Buildings of exceptional interest
- Grade II* Particularly important buildings of more than special interest
- Grade II Buildings of special interest, which warrant every effort being made to preserve them

The grading of listed buildings is non-statutory; the awarding of grades is simply a tool to assist in the administration of grants and consents. The list is used by local planning authorities in conjunction with PPG 15 Planning and the Historic Environment as the basis upon which decisions on the impact of development are made on historically and architecturally significant buildings and their settings.

Any work that involves the demolition, alteration or extension of a listed building (or its curtilage) requires listed building consent, which must be sought from the Secretary of State, usually via the local planning authority. Consent may be granted after a detailed application to local planning authority or the Secretary of State. Carrying out work on a listed building (or its curtilage) without consent is an offence and can be punishable by an unlimited fine.

Conservation Areas

There are activities that may be considered inappropriate within or adjacent to Conservation Areas; for example by disrupting important views, or generating excess traffic. Development within a Conservation Area is likely to be resisted if considered inappropriate in terms of scale, setting, massing, siting, and detailed appearance in relation to surrounding buildings and the Conservation Area as a whole. High standards of design are expected in all Conservation Areas, whether for new or replacement buildings, extensions, alterations or small scale development. Planning permission is normally resisted for small scale development which could lead to a number of similar applications, the cumulative effect of which would be detrimental to the character and appearance of the area. Demolition of unlisted structures within Conservation Areas is usually only permitted where removal or replacement would preserve or enhance the character and appearance of the area, or where the structure is beyond economic repair. Development which would adversely affect the character or appearance of buildings of local interest is likely to be resisted. Demolition would almost certainly only be permitted in exceptional circumstances.

The Protection of Military Remains Act 1986

This Act makes it an offence to interfere with the wreckage of any crashed, sunken or stranded military aircraft or designated vessel without a licence. This is irrespective of loss of life or whether the loss occurred during peacetime or wartime. All crashed military aircraft receive automatic protection, but vessels must be individually designated. Currently, there are 21 vessels protected under this Act, both in UK waters and abroad, and it is likely that the Ministry of Defence will designate more vessels in the future.

There are two levels of protection offered by this Act, designation as a Protected Place or as a Controlled Site.

Protected Places include the remains of any aircraft which crashed while in military service or any vessel designated (by name, not location) which sank or stranded in military service after 4th August 1914. Although crashed military aircraft receive automatic status as a Protected Place, vessels need to be specifically designated by name. The location of the vessel does not need to be known for it to be designated as a Protected Place.

Diving is not prohibited on an aircraft or vessel designated as a Protected Place. However, it is an offence to conduct unlicensed diving or salvage operations to tamper with, damage, remove or unearth any remains or enter any hatch or other opening. Essentially, diving is permitted on a 'look but don't touch' basis only.

Controlled Sites are specifically designated areas which encompass the remains of a military aircraft or a vessel sunk or stranded in military service within the last two hundred years. Within the controlled site it is an offence to tamper with, damage, move or unearth any

remains, enter any hatch or opening or conduct diving, salvage or excavation operations for the purposes of investigating or recording the remains, unless authorised by licence. The effectively makes diving operations prohibited on these sites without a specific licence.

The Protection of Wrecks Act 1973

The Protection of Wrecks Act is in two sections. Section 1 provides protection for designated wrecks which are deemed to be important by virtue of their historical, archaeological or artistic value. Approximately 56 wrecks around the coast of the UK have been designated under this section of the Act. Each wreck has an exclusion zone around it and it is an offence to tamper with, damage or remove any objects or part of the vessel or to carry out any diving or salvage operation within this exclusion zone. Any activities within this exclusion zone can only be carried out under a licence granted by the Secretary of State, who receives advice from the Advisory Committee on Historic Wreck Sites (ACHWS). There are four levels of licences: a visitor licence, a survey licence, a surface recovery licence and an excavation licence.

Administration of this Act and associated licenses is the responsibility of English Heritage in England, Historic Scotland in Scotland, Cadw: Welsh Historic Monuments in Wales and the Environment and Heritage Service in Northern Ireland. Any of these organisations will be able to provide more in depth information (see useful addresses).

Section 2 of the Protection of Wrecks Act provides protection for wrecks that are designated as dangerous by virtue of their contents. Diving on these wrecks is strictly prohibited. This section of the Act is administered by the Maritime and Coastguard Agency through the Receiver of Wreck.

The Town and Country Planning Act 1990

Section 54a of the Act requires planning decisions to be taken in accordance with policies contained in the appropriate Local Development Plan. Material considerations, including national guidelines, should also be taken into account as they provide an overall context for the consideration of planning applications and set out Government policy.

Regulations

Hedgerow Regulations 1997 (Section 97 of the Environment Act 1995)

Under these Regulations, prior to work, which may damage or remove hedgerows, it is required to categorise the hedgerows according to a number of historical and ecological criteria which are laid out in the Regulations. District Councils are required to administer the Regulations and to maintain a map of hedgerows deemed to be ‘important’ under the criteria of the Regulations.

Under the regulations, a hedgerow is regarded as ‘important’ on archaeological or historical grounds if it:

- marks a pre-1850 parish or township boundary;
- incorporates an archaeological feature;
- is part of, or associated with, an archaeological site
- marks the boundary of, or is associated with, a pre-1600 estate or manor; or
- forms an integral part of a pre-Parliamentary enclosure field system (DOE, 1997).

An archaeological site is defined as a Scheduled Ancient Monument (SAM) or a site recorded in a County Sites and Monuments Record (SMR);

The Hedgerow Regulations define a pre-Parliamentary enclosure field system as any field boundary predating the *General Enclosure Act of 1845*.

The implication of this legislation is that virtually all hedgerows can be classified as being ‘important’ for historical purposes under the Hedgerows Regulations 1997.

The historical criteria, however, are presently under review.

Guidance Notes

Central government guidance on archaeological remains and the built historic environment include:

- Planning Policy Guidance Note 15 (PPG 15): Planning and the Historic Environment (1994)
- Planning Policy Guidance Note 16 (PPG 16): Archaeology and Planning (1990).

The key policy statements in PPG16 are that “where nationally important archaeological remains, whether Scheduled or not, and their settings, are affected by proposed development there should be a presumption in favour of their physical preservation”.

For less important sites, PPG16 states that, “the desirability of preserving a scheduled monument and its setting is a material consideration in determining planning applications whether that monument is scheduled or unscheduled”.

The County Sites and Monuments Record is used in conjunction with PPG 15 and PPG 16, as the basis upon which decisions on the archaeological impact of development are made. The basic premise of the Guidance is that archaeological deposits are a finite non-renewable resource that must be protected. It also points out the unknown nature of archaeological deposits and allows Planning Authorities to include within planning conditions, archaeological evaluation, to determine the full impact on the archaeological resource. The evaluation can be required prior to determination of the planning decision. This evaluation may detail any measures that can be implemented to mitigate the damage and help to decide whether excavation is required of the threatened archaeological remains.

Structure Plan and Local Plan Protection

Scheduled and non-scheduled sites of archaeological importance, listed buildings, and historic parks and gardens and their settings are also protected under policies contained within the relevant Structure Plan and Local Plans for the area:

- Hampshire County Structure Plan 1996 – 2011 (Adopted 2000)
- A Clear Vision for the South East: The South East Plan Core Document (Due to be adopted end 2007)

Guidance for sites having no statutory protection

The Register of Parks and Gardens of Special Historic Interest in England

This register was compiled by English Heritage between 1984 and 1988 and is maintained by them. Parks and gardens of special historic interest have no statutory protection.

Listed parks and gardens are classified in grades to show their relative importance as follows:

- Grade I –international historic interest

- Grade II* - exceptional historic interest
- Grade II –national historic interest

The listing and grading process is designed to draw attention to important historic parks and gardens as an essential part of the nation's heritage for use by planners, developers, statutory bodies and all those concerned with protecting the heritage. However, no new controls apply to parks and gardens in the register, nor are existing planning controls to listed building affected in any way. It follows that structures such as fountains, gates, grottos and follies within gardens can also be listed as 'Listed Buildings' and whole parks and gardens can also be scheduled as Ancient Monuments.

Any work that affects the physical nature of registered parks and gardens requires consultation with the Garden History Society. English Heritage should be consulted in the case of those designated as Grade I or Grade II*.

The Register of Historic Battlefields

This register is maintained by English Heritage and currently includes forty sites. Registered battlefields have no statutory protection. Planning Policy Guidance note 15, however, offers a degree of protection to many of the known battle sites within England.

APPENDIX C

Archaeological Constraints Gazetteer

ARCHAEOLOGICAL CONSTRAINTS GAZETTEER

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference	Figures
DBA:AA	EBC		Old Bursledon conservation area	Undetermined	A	none	n/a	448568 109174	2
DBA:AB	AP. 1		Possible ditch	Undetermined	D	none	n/a	449453 110059	2
DBA:AC	AP. 1		Possible ditch	Undetermined	D	none	n/a	449420 110124	2
DBA:AD	AP. 2		Field boundary	Post-medieval	D	none	n/a	448737 109554	2
DBA:AE	T. 1838	OS. 1873	Brick and tile works and quarry	Post-medieval	D	none	n/a	449907 109299	2
DBA:AF	T. 1838		Pond	Post-medieval	D	none	n/a	449943 108979	2
DBA:AG	T. 1839		Building	Post-medieval	D	none	n/a	449160 109193	2
DBA:AH	T. 1839		Building	Post-medieval	D	none	n/a	449027 109419	2
DBA:AI	OS. 1898		Clay pit	Post-medieval	D	none	n/a	450063 109164	2
DBA:AJ	T. 1839		Turnpike Road	Post-medieval	D	-unc	unknown	449804 109126	2
DBA:AK	OS. 1866 - 1868		Hound and Titchfield parish boundary	Undetermined	D	none	n/a	449340 109854	2
DBA:AL	T. 1839	OS. 1859	Bursledon and Titchfield parish boundary	Undetermined	D	none	n/a	449364 109214	2

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference	Figures
DBA:AM	FBC		Swanwick Shore conservation area	Undetermined	A	neutral	none	449609 109264	2
DBA:AN	OS. 1868		Toll house	Post-medieval	D	-D indet	low or medium	449296 109634	2
DBA:AO	OS. 1868		Sign post	Post-medieval	D	-unc	unknown	449342 109599	2
DBA:AP	OS. 1868		Field boundary	Post-medieval	D	-unc	unknown	449294 109631	2
DBA:AQ	OS. 1868		Field boundary	Post-medieval	D	-unc	unknown	449345 109567	2
DBA:AR	OS. 1868		Field boundary	Post-medieval	D	-unc	unknown	449385 109463	2
DBA:AS	OS. 1868		Field boundary	Post-medieval	D	-unc	unknown	449281 109644	2
DBA:AT	OS. 1868		Field boundary	Post-medieval	D	-D indet	low or medium	449540 109389	2
DBA:AU	OS. 1868		House	Post-medieval	D	-D indet	low or medium	449523 109362	2
DBA:AV	OS. 1868		House	Post-medieval	D	-D indet	low or medium	449526 109352	2
DBA:AW	OS. 1897		House	Post-medieval	D	-D indet	low or medium	449531 109338	2
DBA:AX	OS. 1910		House	Post-medieval	D	-D indet	low or medium	449544 109396	2
DBA:AY	OS. 1910		House	Post-medieval	D	none	n/a	449544 109376	2
FSU:001	FRS		Red brick walls, possible building	Modern	D	-D indet	low or medium	449332 109600	2

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference	Figures
FSU:002	FRS		Possible building footings	Modern	D	-D indet	low or medium	449308 109599	2
LS 141448	EH	SMR 5823	Brooklands large house, c. 1800, grade II*	Post-medieval	A	none	n/a	449644 108963	2
LS 141449	EH	SMR 5828	Gazebo in grounds of Brooklands house, C19, grade II*	Post-medieval	D	none	n/a	449695 108856	2
LS 354896	EH	SMR 5664, SMR 25770, MON 831673	Church of St Leonard, C13, grade II	Medieval	A	none	n/a	448861 109717	2
LS 354899	EH	SMR 5667	Yew Tree Cottage, C18, grade II	Post-medieval	A	none	n/a	448840 109433	2
LS 354900	EH	SMR 923	Rosewood house, C19, grade II	Post-medieval	A	none	n/a	448836 109448	2
LS 354901	EH	SMR 5668	The Old Cottage, house, C17, grade II	Post-medieval	A	none	n/a	448546 109288	2
LS 354902	EH	SMR 5669	Dale Cottage, terrace house, C18, grade II	Post-medieval	A	none	n/a	448881 109426	2
LS 354903	EH	SMR 5670	Woodbine Cottage, terrace house, C18, grade II	Post-medieval	A	none	n/a	448867 109422	2

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference	Figures
LS 354904	EH	SMR 5672	Lattice Cottage, house, C19, grade II	Post-medieval	A	none	n/a	448760 109385	2
LS 354907	EH	SMR 5675	Ewers house, C18, grade II	Post-medieval	A	none	n/a	449012 109405	2
LS 354908	EH	SMR 5676	Jolly Sailor public house, C18, grade II	Post-medieval	A	none	n/a	449035 109377	2
LS 354909	EH	SMR 5677	Myrtle Cottage, C18, grade II	Post-medieval	A	none	n/a	449052 109355	2
LS 354910	EH	SMR 5678	3 lamp posts, C19, grade II	Post-medieval	A	none	n/a	449041 109350	2
LS 354915	EH	SMR 2084, SMR 5760 to 5762	Greyladyes house, C18, grade II	Post-medieval	A	none	n/a	448588 109379	2
LS 354916	EH	SMR 5683	Chapel of our Lady of the Rosary, 1906, grade II	Post-medieval	A	none	n/a	448567 109374	2
LS 354917	EH	SMR 5684	Boundary wall to Greyladyes house, C18, grade II	Post-medieval	A	none	n/a	448568 109346	2
LS 354918	EH	SMR 5685	Upcott house, C18, grade II	Post-medieval	A	none	n/a	448916 109570	2
LS 354919	EH	SMR 5686	Greywell house, C18, grade II	Post-medieval	A	none	n/a	448883 109492	2
LS 355023	EH	SMR 5671	K6 telephone kiosk, 1935, grade II	Post-medieval	A	none	n/a	448573 109321	2

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference	Figures
LS 408675	EH	SMR 597	Lower Swanwick farmhouse, C17, grade II	Post-medieval	A	none	n/a	449741 109722	2
LS 408676	EH	SMR 6241	Thatched Cottage, C17, grade II	Post-medieval	A	none	n/a	449540 109602	2
LS 408677	EH	SMR 6242	Tudor Cottage, C16/C17, grade II	Post-medieval	A	none	n/a	449594 109259	2
LS 408678	EH	SMR 6243	The Hard cottage, C18, grade II	Post-medieval	A	neutral	none	449549 109294	2
LS 408694	EH	SMR 6244, SMR 6245	Bay Tree terraced cottages, C18, grade II	Post-medieval	A	neutral	none	449561 109299	2
LS 408695	EH	SMR 6246 to 6251	Victory terraced cottages no.1-6, C18, grade II	Post-medieval	A	neutral	none	449556 109314	2
LS 408696	EH	SMR 6252	Building, C18, grade II	Post-medieval	A	neutral	none	449572 109332	2
LS 409471	EH	SMR 5826	The Old Ship inn, C17, grade II	Post-medieval	A	neutral	none	449608 109332	2
LS 431869	EH		Garden Cottage, c. 1800, grade II	Post-medieval	A	none	n/a	449682 108968	2
LS 431870	EH	SMR 26567	Ice house, c. 1800, grade II	Post-medieval	A	none	n/a	449695 108957	2

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference	Figures
MON 1358729	EH		Netley and Fareham extension railway, 1889	Post-medieval	D	none	n/a	449641 109901	2
MON 1423142	EH	DBP S0008807	Anti-tank island, 1940	Modern	D	none	n/a	449245 109708	2
MON 507351	EH		Extant railway station, 1889	Post-medieval	D	none	n/a	449000 109600	2
SMR 13739	HCC		Mausoleum	Post-medieval	D	none	n/a	448619 109733	2
SMR 14612	HCC		Boundary wall at the River House	Post-medieval	D	none	n/a	449083 109188	2
SMR 25762	HCC	MON 229649	Earthworks, possibly saltworks pond, C16	Post-medieval	D	none	n/a	449250 108750	2
SMR 35454	HCC	SMR 52137	Maidenstone Heath formal gardens	Post-medieval	D	none	n/a	449260 110030	2
SMR 38848	HCC		Possible deserted medieval settlement of North burlesden	Medieval	D	none	n/a	449348 110028	2
SMR 38899	HCC	MON 229705	Two coins, C1 and ?C4	Roman	D	none	n/a	449950 109851	2
SMR 42535	HCC	MON 1371215, MON 1393852	Shipyards with three slipways, C18	Post-medieval	D	none	n/a	449300 109185	2
SMR 42536	HCC	MON 1371143	Extant wooden masted barge	Post-medieval	D	none	n/a	449655 110020	2

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference	Figures
SMR 50106	HCC		Bank and ditch boundary	Undetermined	D	none	n/a	448690 109840	2
SMR 50108	HCC		Earthworks	Undetermined	D	none	n/a	448720 109780	2
SMR 50110	HCC		Earthworks	Undetermined	D	none	n/a	448770 109800	2
SMR 50111	HCC		Western boundary bank of church	Undetermined	D	none	n/a	448830 109720	2
SMR 50112	HCC		Boundary bank	Undetermined	D	none	n/a	448885 109755	2
SMR 50113	HCC	T. 1839, OS. 1868	Bursledon and Hound parish boundary	Undetermined	D	none	n/a	449076 109897	2
SMR 50114	HCC		Road	Undetermined	D	none	n/a	448860 109820	2
SMR 50116	HCC		Holloway leading to St Leonard's Church	Undetermined	D	none	n/a	448865 109700	2
SMR 50118	HCC		Earthworks	Undetermined	D	none	n/a	448650 109320	2
SMR 50629	HCC		The Old Dairy agricultural building	Post-medieval	D	none	n/a	449407 108860	2
SMR 51287	HCC		Maidstone Heath Hard	Post-medieval	D	none	n/a	449355 109967	2
SMR 51627	HCC	OS. 1859	Brooklands Park	Undetermined	D	none	n/a	449686 108929	2
SMR 54218	HCC		Bursledon bridge, 1934	Post-medieval	D	none	n/a	449249 109706	2

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference	Figures
SMR 54318	HCC		Ditch	Undetermined	D	none	n/a	448757 109807	2
SMR 547	HCC		House, C17	Post-medieval	D	none	n/a	449950 108979	2
SMR 55506	HCC		Shipwreck	Post-medieval	D	none	n/a	449260 109210	2
SMR 55520	HCC		Swanwick shipwreck	Post-medieval	D	none	n/a	449360 109750	2
SMR 55536	HCC		Norseman shipwreck	Post-medieval	D	none	n/a	449545 109050	2
SMR 55539	HCC	MON 1371138	Extant iron hopper barge	Modern	D	none	n/a	449640 110004	2
SMR 55540	HCC	MON 1371148	Extant iron hopper barge	Modern	D	none	n/a	449650 110000	2
SMR 55541	HCC	MON 1371188	Extant iron hopper barge	Post-medieval	D	none	n/a	449580 109970	2
SMR 55542	HCC	MON 1371196	Extant iron hopper barge	Post-medieval	D	none	n/a	449550 109964	2
SMR 55543	HCC	MON 1371203	Extant iron barge	Post-medieval	D	none	n/a	449460 109951	2
SMR 55544	HCC	MON 1371197	Extant iron barge	Post-medieval	D	none	n/a	449520 109960	2
SMR 55545	HCC	MON 1371149	Extant iron crane barge	Modern	D	none	n/a	449629 109991	2
SMR 55546	HCC		Shipwreck	Post-medieval	D	none	n/a	449290 109815	2
SMR 55547	HCC		Inlet hulk	Post-medieval	D	none	n/a	449430 109810	2
SMR 55575	HCC		Timber remains of jetty	Post-medieval	D	none	n/a	449200 109250	2
SMR 55582	HCC		Shipyard	Medieval	D	none	n/a	448970 109630	2

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference	Figures
SMR 55709	HCC		Shipwreck	Post-medieval	D	none	n/a	449450 109880	2
SMR 56043	HCC		Dock	Post-medieval	D	none	n/a	449410 108890	2
SMR 56044	HCC		Jetty	Post-medieval	D	none	n/a	449470 109256	2
SMR 56045	HCC		Jetty or wreck	Post-medieval	D	none	n/a	449420 109750	2
SMR 56046	HCC		Remains of small vessel	Post-medieval	D	none	n/a	449420 109860	2
SMR 56060	HCC		Two building slips	Post-medieval	D	none	n/a	449225 109750	2
SMR 56064	HCC		Ship building site	Medieval to Post-medieval	D	none	n/a	449020 109510	2
SMR 56892	HCC	Pers. Comm. Mike German	Lower Swanwick Baptist Church, c.1844, grade II	Post-medieval	A	neutral	none	449575 109354	2
SMR 57136	HCC		Wreck of the Thames Barge "Kimberley"	Post-medieval	D	none	n/a	449589 109941	2
SMR 57138	HCC		Wreck of a seaplane tender	Post-medieval	D	none	n/a	449511 109946	2
SMR 57139	HCC		Wreck of an ordnance barge	Post-medieval	D	none	n/a	449511 109942	2
SMR 57140	HCC		Wreck of two landing assault craft	Post-medieval	D	none	n/a	449592 109941	2

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference	Figures
SMR 57407	HCC		Single sherd of Beaker pottery	Neolithic	D	none	n/a	449128 109933	2

APPENDIX D

Historic Map Regression Gazetteer

HISTORIC MAP REGRESSION GAZETTEER

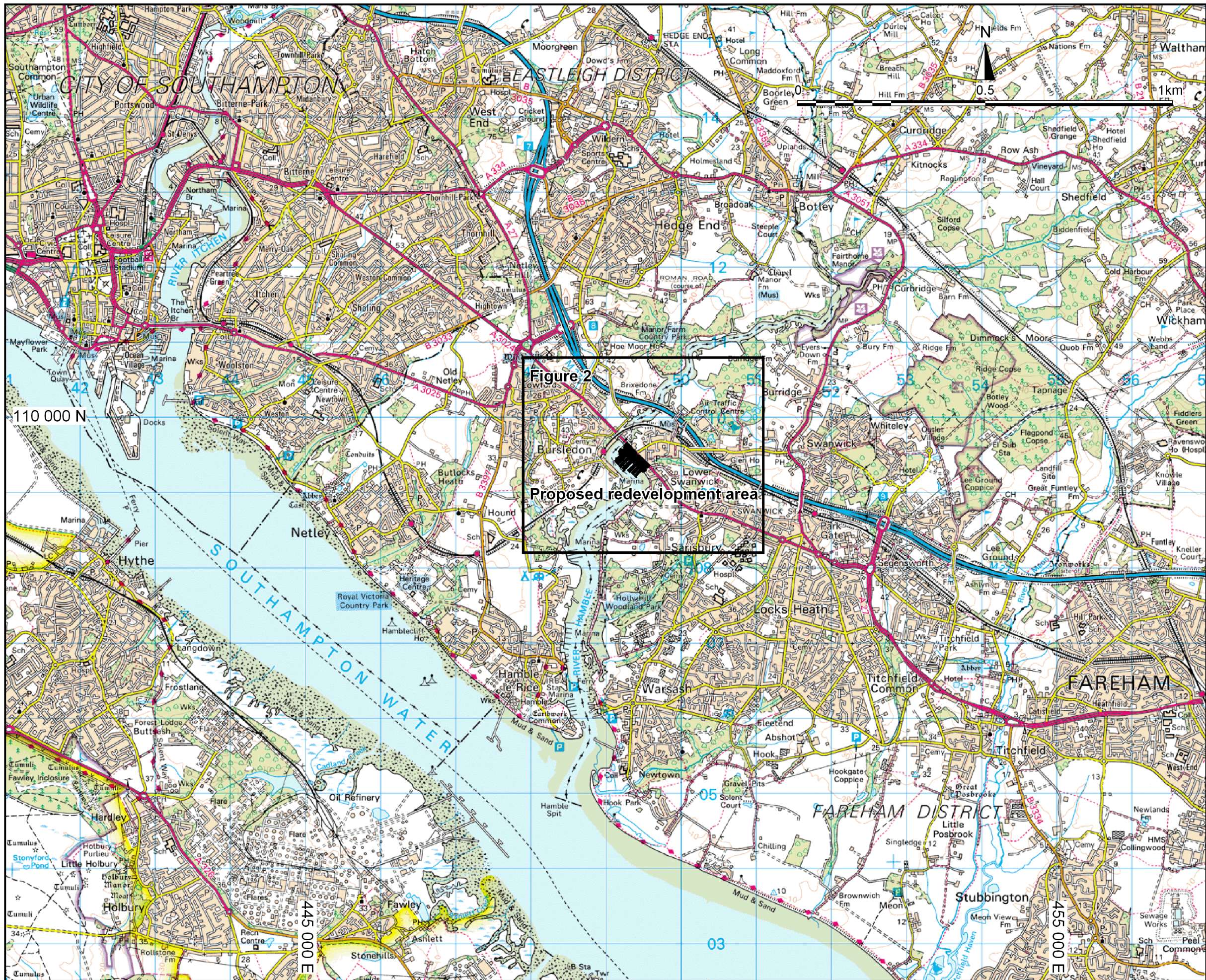
Reference	Description	Appears on	Disappears on	National grid reference
001	Building	T. 1838	OS. 1962	449528 109304
002	Wharf	T. 1838	OS. 1962	449507 109305
003	Building	T. 1838	OS. 1972	449533 109336
004	Building	T. 1838	OS. 1972	449524 109352
005	Field boundary	T. 1838	OS. 1972	449539 109374
006	Field boundary	T. 1838	OS. 1st ed	449336 109602
007	Field boundary	T. 1838	OS. 2nd ed	449334 109589
008	Field boundaries	T. 1838	OS. 3rd ed	449384 109475
009	Field boundary	T. 1838	OS. 1972	449306 109625
010	Outbuilding	OS. 1st ed	OS. 1972	449289 109651
011	Wharf	OS. 1st ed	OS. 1972	449316 109613
012	Building	OS. 1st ed	OS. 1972	449341 109600
013	Sign post	OS. 1st ed	OS. 3rd ed	449364 109581
014	Building	OS. 1st ed	OS. 2nd ed	449375 109569
015	Outbuilding	OS. 1st ed	OS. 3rd ed	449536 109359
016	Outbuilding	OS. 1st ed	OS. 2nd ed	449540 109354
017	Baptist chapel	OS. 1st ed	Still present	449575 109353
018	Outbuilding	OS. 1st ed	OS. 2nd ed	449564 109356
019	Building	OS. 1st ed	OS. 2nd ed	449570 109371
020	Building	OS. 1st ed	OS. 1972	449527 109368
021	Track	OS. 1st ed	OS. 3rd ed	449529 109388
022	Field boundary	OS. 1st ed	OS. 2nd ed	449526 109375
023	Boundary	OS. 1st ed	Still present	449583 109360
024	Boundary	OS. 1st ed	OS. 1972	449524 109357
025	Field boundary	OS. 1st ed	OS. 3rd ed	449547 109387
026	Road	OS. 1st ed	OS. 1972	449515 109405
027	Road	OS. 1st ed	OS. 3rd ed	449508 109406
028	Boundary	OS. 1st ed	OS. 1962	449404 109445
029	Boundary	OS. 1st ed	OS. 1972	449303 109580
030	Toll house	OS. 1st ed	OS. 1972	449296 109646
031	Field boundary	OS. 2nd ed	OS. 1972	449332 109588
032	Field boundary	OS. 2nd ed	OS. 1972	449333 109595
033	Mile post	OS. 2nd ed	OS. 3rd ed	449299 109635
034	Mile post	OS. 2nd ed	OS. 1962	449317 109618
035	Building	OS. 2nd ed	OS. 3rd ed	449525 109377
036	Building extension	OS. 2nd ed	OS. 1972	449520 109366
037	Outbuilding	OS. 2nd ed	OS. 1972	449539 109351
038	Building extension	OS. 2nd ed	OS. 1932	449534 109341
039	Building	OS. 2nd ed	OS. 1972	449571 109367
040	Building	OS. 2nd ed	OS. 1972	449565 109377
041	Building	OS. 2nd ed	OS. 1932	449524 109325
042	Building	OS. 2nd ed	OS. 1972	449344 109591
043	Boundary	OS. 3rd ed	OS. 1972	449540 109365
044	Outbuilding	OS. 3rd ed	OS. 1972	449533 109364
045	Outbuilding	OS. 3rd ed	OS. 1972	449533 109374
046	Building	OS. 3rd ed	OS. 1972	449545 109375
047	Boundary	OS. 3rd ed	OS. 1962	449577 109360
048	Track	OS. 3rd ed	OS. 1972	449547 109386
049	Track	OS. 3rd ed	OS. 1972	449526 109392

Reference	Description	Appears on	Disappears on	National grid reference
050	Building	OS. 3rd ed	OS. 1972	449538 109393
051	Building	OS. 3rd ed	OS. 1972	449549 109388
052	Building	OS. 3rd ed	OS. 1962	449530 109310
053	Field boundary	OS. 3rd ed	OS. 1972	449350 109579
054	Building	OS. 3rd ed	OS. 2006	449392 109547
055	Building	OS. 3rd ed	OS. 2006	449340 109538
056	Building	OS. 3rd ed	OS. 1972	449373 109513
057	Jetty	OS. 3rd ed	OS. 1972	449339 109480
058	Building	OS. 3rd ed	OS. 1962	449422 109484
059	Building	OS. 3rd ed	OS. 1962	449367 109557
060	Building	OS. 1932	OS. 1962	449522 109325
061	Wharf	OS. 1932	OS. 1962	449486 109347
062	Building	OS. 1932	OS. 1962	449505 109327
063	Building extension	OS. 1932	OS. 1972	449536 109365
064	Outbuilding	OS. 1932	OS. 1972	449547 109341
065	Building	OS. 1932	OS. 1962	449528 109315
066	Building	OS. 1962	OS. 1972	449353 109561
067	Boundary	OS. 1962	OS. 1972	449377 109439
068	Wharf	OS. 1962	OS. 2006	449494 109348
069	Building	OS. 1962	OS. 2006	449415 109469
070	Jetty	OS. 1962	OS. 1972	449262 109399
071	Building extension	OS. 1972	OS. 2006	449327 109550
072	Boundary	OS. 1972	OS. 2006	449356 109540
073	Jetty	OS. 1972	OS. 2006	449329 109574
074	Jetty	OS. 1972	OS. 2006	449245 109588
075	Jetty	OS. 1972	OS. 2006	449237 109554
076	Wharf	OS. 1972	Still present	449415 109376
077	Jetty	OS. 1972	OS. 2006	449451 109423
078	Building	OS. 1972	Still present	449367 109506
079	Building	OS. 1972	Still present	449339 109470
080	Building	OS. 1972	OS. 2006	449403 109422
081	Jetty	OS. 1972	OS. 2006	449282 109435
082	Pontoon	OS. 1972	Still present	449260 109372
083	Pontoon	OS. 1972	Still present	449310 109339
084	Boundary	OS. 1972	OS. 2006	449257 109614
085	Boundary	OS. 1972	OS. 2006	449488 109428
086	Building	OS. 1972	Still present	449546 109356
087	Building	OS. 1972	OS. 2006	449553 109385
088	Track	OS. 1972	OS. 2006	449515 109393
089	Jetty	OS. 1972	OS. 2006	449502 109372
090	Building	OS. 1972	OS. 2006	449524 109301
091	Building	OS. 1972	Still present	449507 109332
092	Jetty	OS. 1972	OS. 2006	449453 109293
093	Jetty	OS. 1972	OS. 2006	449397 109259
094	Building	OS. 1972	OS. 2006	449337 109603
095	Pontoon	OS. 2006	Still present	449181 109539
096	Pontoon	OS. 2006	Still present	449199 109469
097	Pontoon	OS. 2006	Still present	449230 109420
098	Pontoon	OS. 2006	Still present	449395 109303
099	Pontoon	OS. 2006	Still present	449422 109257
100	Wharf	OS. 2006	Still present	449274 109505

Reference	Description	Appears on	Disappears on	National grid reference
101	Boundary	OS. 2006	Still present	449251 109639
102	Boundary	OS. 2006	Still present	449265 109667
103	Building	OS. 2006	Still present	449338 109583
104	Building	OS. 2006	Still present	449350 109562
105	Building	OS. 2006	Still present	449369 109559
106	Building	OS. 2006	Still present	449324 109491
107	Boundary	OS. 2006	Still present	449233 109572
108	Boundary	OS. 2006	Still present	449422 109496
109	Boundary	OS. 2006	Still present	449381 109425
110	Wharf	OS. 2006	Still present	449508 109302
111	Building	OS. 2006	Still present	449534 109378
112	Building	OS. 2006	Still present	449556 109386
113	Electricity sub station	OS. 2006	Still present	449576 109359
114	Building	OS. 2006	Still present	449499 109354
115	Building	OS. 2006	Still present	449505 109356
116	Building	OS. 2006	Still present	449512 109358
117	Building	OS. 2006	Still present	449515 109309

APPENDIX E

Figures 1 - 4



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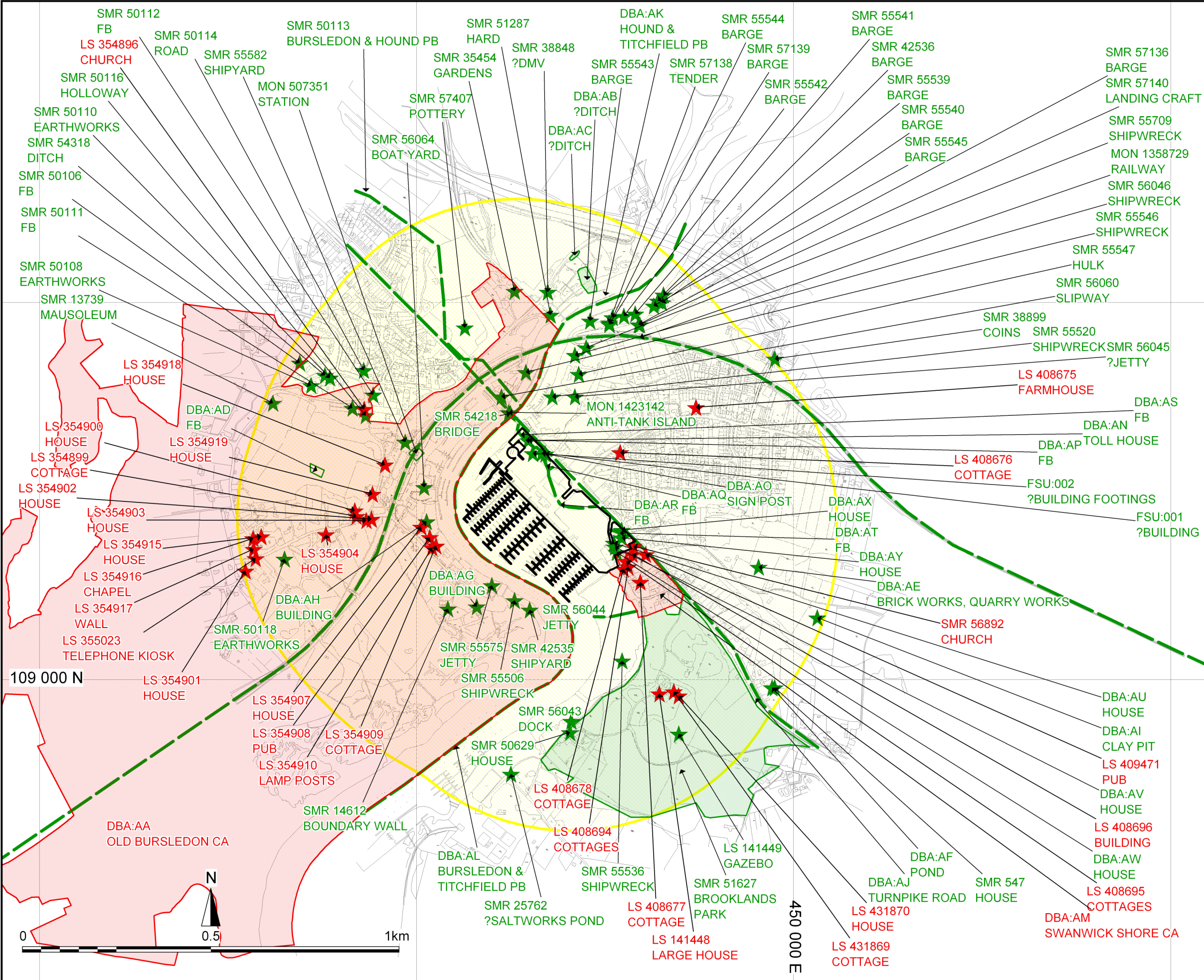
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Swanwick Marina

Figure 1
Location of proposed
redevelopment

Scale: 1:50 000



Study Area

Proposed Redevelopment Area

Archaeological constraints

A grade

B grade

C grade

D grade

U grade

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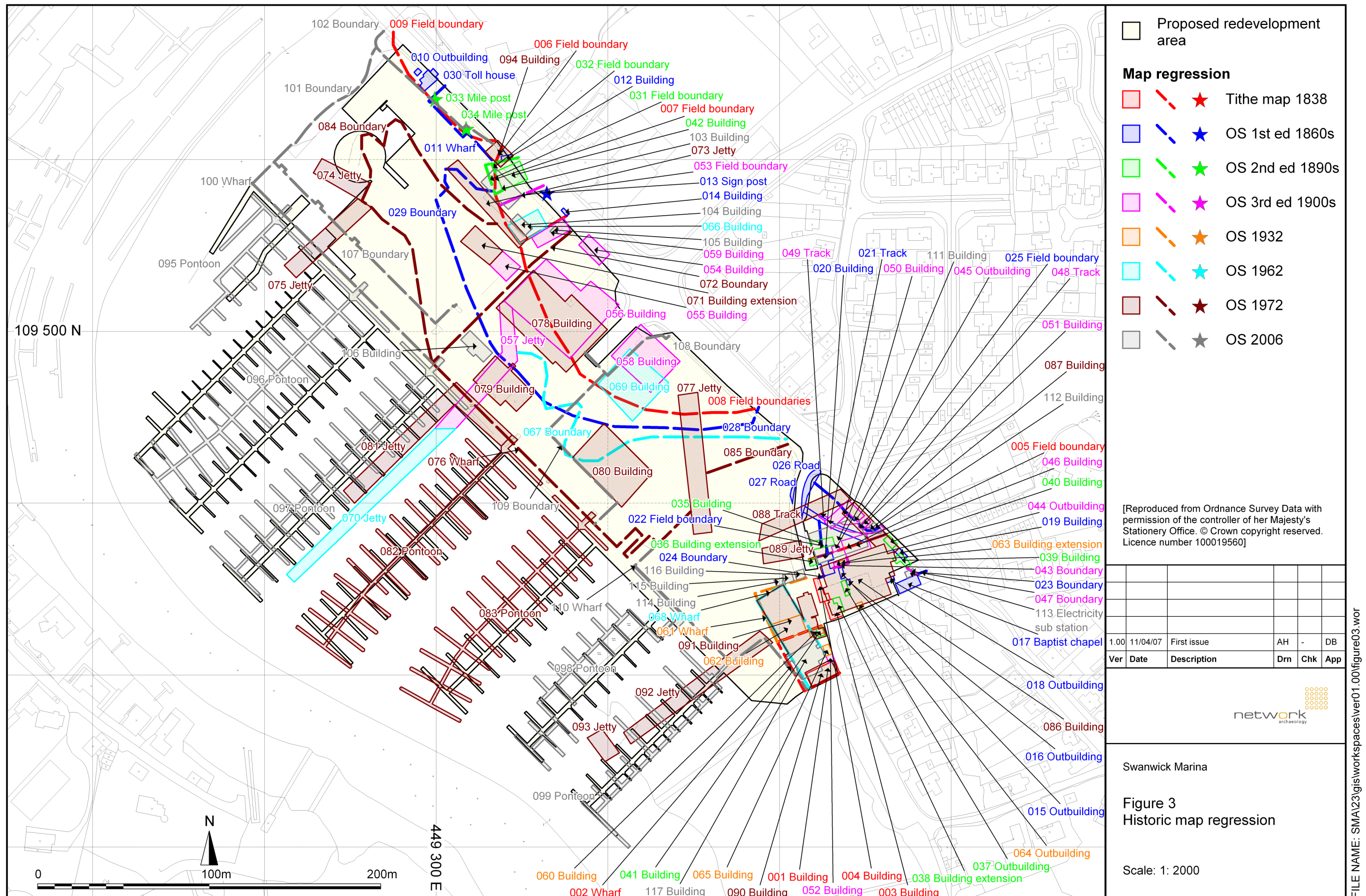
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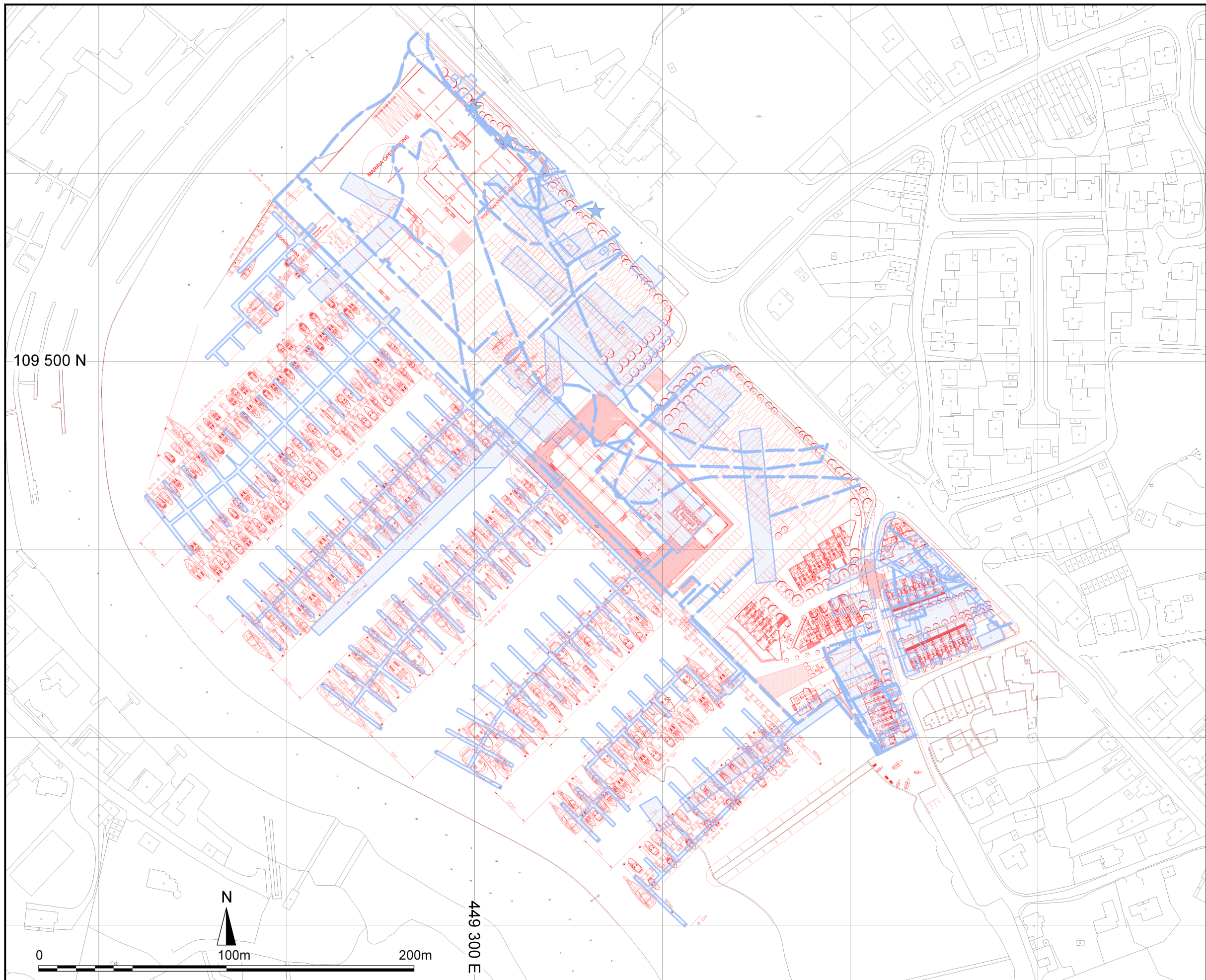


Swanwick Marina

Figure 2
Archaeological constraints

Scale: 1:10 000





- Proposed redevelopment
- Historic map regression data

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1.00	11/04/07	First issue	AH	-	DB
Ver	Date	Description	Drn	Chk	App



Swanwick Marina

Figure 4
Proposed development in relation to historic map regression data

Scale: 1: 2000