

ARCHAEOLOGICAL METHOD STATEMENT

**Dartford Creek Regeneration – Dartford Creek Environment and Access
Improvements**

DCR-WB-10

Prepared By:	Submitted To:	Organisation:	Date:
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SWAT. ARCHAEOLOGY

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1 Introduction

1.1 General

The purpose of this Method Statement is to present a strategy to implement a programme of archaeological work on the Dartford Creek Access Improvement scheme at Riverside Way in Dartford, Kent (Figure 1).

SWAT Archaeology has been commissioned by Raymond Brown to carry out archaeological monitoring in accordance with recommendations made by Halcrow Group Limited (Technical Note WNDCAI) on behalf of SEEDA (South Eastern England Development Agency).

1.2 Site Location and Description

The proposed regeneration scheme is located along the eastern bank of Dartford Creek, from the Environment Agency Weir until it reaches the River Thames. The site follows the route of the Darent Valley Path and comprises approximately 1.8ha of an industrial landscape north of Dartford town centre. The site is centred at NGR TQ 541 748.

1.3 Proposed Development

The proposed works form the primary stage of regeneration works planned for Dartford Creek. The proposed development comprises:

- Construction of a new sheet-pile river wall
- Construction of a new reinforced concrete floodwall to replace existing floodwall
- Construction of a raised walkway at Riverside Way
- Habitat enhancements along the riverside
- Improvements to wetland areas, including new boardwalks
- Removal of derelict structure(s)
- Landscaping

1.4 Planning Background

It is a requirement of the Food and Environment Protection Act (FEPA) licence for the above project (ref. 34558/09/0) to implement a programme of archaeological work in line with Supplementary Condition no. 9.1:

'The licence holder must ensure that they appoint an archaeological contractor to produce an appropriate mitigation strategy, which may include provision for archaeological monitoring and if necessary excavation of any sensitive deposits that are disturbed as part of the works.'

A planning application was submitted to, and approved by Dartford Borough Council (PAN: DA/09/00852/FUL), although no archaeological condition was specified.

1.5 Status of Document

The purpose of the *Method Statement* is to present a 'written scheme of investigation' for a programme of archaeological monitoring (watching brief) at the study area.

1.6 Archaeological and Historical Background

The site has a significant history of industrial land uses associated for the most part with the river frontage itself. The Kent County Council Historical Environmental Record records wharfs, jetties, quays, locks and bridges along the extent of the creek, all adding to latter uses of the landscape. A full archaeological, geological and historical search will be will be incorporated into the final report.

1.7 Objectives of the Archaeological Assessment

The objectives of the archaeological watching brief are to contribute to heritage knowledge of the area through the recording of the archaeological remains exposed as a result of excavations in connection with the groundworks.

2 Method Statement

2.1 Methodology

SWAT Archaeology will monitor the excavations for all groundworks. Excavation will, where possible, be undertaken using a flat bladed bucket and preferably in a single direction to enable archaeological remains to be recorded prior to disturbance from being driven over. **If possible archaeological remains are encountered, machine excavation will cease to allow the remains to be investigated further.**

SWAT Archaeology will inspect the surfaces revealed. Any archaeological structures or features revealed will be recorded in plan and section as appropriate and in accordance with generic KCC and IFA guidelines. **Time and resources will be afforded to undertake any inspection or recording required.**

If significant remains are unexpectedly encountered SWAT Archaeology will inform the County Archaeological Officer and the developer immediately and further mitigation measures will be agreed.

2.2 General Project Management Procedure and Quality Control

SWAT is structured to reflect the fact that it is fully project-oriented. Project Managers, normally the first point of contact in developing new work for SWAT, are responsible for designing and managing all projects thereafter. The Project Manager drives each project through its successive stages, forming project teams by drawing upon the skills available within SWAT or other units or bodies. Project management responsibilities within SWAT are allocated according to client, geographic area and/or specialism.

All management responsibilities are contained within project teams. Project Managers ensure that projects are completed to a high standard within time and budget. Formal monitoring of each project is undertaken by SWAT Managers, at monthly project review meetings, and organisational strategy and performance is the responsibility of the Managing Director of SWAT, Dr Paul Wilkinson.

The Managing Director of SWAT is a Member of the Institute of Field Archaeologists, and is the designated 'Responsible Post-Holder'

The Project Manager will ensure that archaeological fieldwork, and subsequent analysis and publication programmes, will be carried out in accordance with procedure outlined in the following documents:

- English Heritage, Management of Archaeological Projects (MAP2), (1991)
- SWAT, Archaeological Site Manual (2006)
- MoL, Finds Procedure Manual (1994)
- RCHME Recording historic buildings: a descriptive specification, 3rd edition (1996)
- English Heritage London Region, Archaeological Guidance papers 1-5 (revised June 1998)
- Museum of London, General Standards for the preparation of archaeological archives deposited with the Museum of London, (1998).
- IFA (Institute of Field Archaeologists), Institute of Field Archaeologists, By-Laws, Standards and Policy Statements of the Institute of Field Archaeologists, (rev. 1999)
- IFA ((Institute of Field Archaeologists), Standard and guidance for archaeological investigation of standing buildings or structures (1999)
- SWAT, Health and Safety Policy (2004)

SWAT subscribes to and abides by the general principles and specific terms of the *Code of Good Practice on Archaeological Heritage in Urban Development Policies* established by the Cultural Heritage Committee of the Council of Europe, and adopted at the 15th plenary session in Strasbourg on 8-10 March 2000 (CC-PAT [99] 18 rev

In particular to the following points:*archaeologists shall be aware of development costs and adhere to agreed timetable* (Para 3 'The Role of the Archaeologist'), with all work 'carried out to written statements setting out standards timetable and costs' (para 4 *ibid*).

The project will be run according to project management principles, with a strong emphasis on team-working to produce a fully integrated site archive, and final reports.

Project team meetings will be held, allowing refinement of recording strategies in the light of on-site findings and analysis. As a result of project team meetings recording strategies may be modified to provide maximum information retrieval.

The project team will consist of named individuals fulfilling the following pre-defined roles in addition to their contribution to the project team deliberations:

- Project Manager
- Senior Archaeologist on site

It should be noted that work associated with either artefact handling or analysis, or environmental sampling and analysis, is carried out by separate specialists and Museum departments.

2.3 General Procedures

All works, including the watching brief, will be carried out in full accordance with standard SWAT and IFA procedures unless alternative approaches and methodologies are thought to be appropriate within the framework of the stated research objectives. Such alternative techniques will not be employed without full consultation between the Local Planning Authority's representative/advisor, SWAT and the client or their agent. Such consultations will be communicated to all members of the project team for comment.

The Project Manager and Site Supervisor(s) will be responsible for ensuring that the following principles are adhered to:

- The main components of the record produced will be scale plans, elevations and sections will be recorded at scales of 1:10, 1:20 or 1:50, as appropriate for what is being recorded. Detailed drawings may be made of selected or representative features, such as columns or bases. Drawings at a larger scale, 1:1, 1:2 or similar, will be produced of details such as the profiles of mouldings and of other significant details. These records and features will be located in plan and height by reference to the survey framework and will be carried out in accordance with the SWAT *Archaeological Site Manual* (2006), and in general with standards and guidance given by the Institute of Field Archaeologists *By-Laws, Standards and Policy Statements of the Institute of Field Archaeologists* (rev 1999), and English Heritage GLAAS *Archaeological Guidance Paper 3* (English Heritage, revision June 1998).
- Resources: within this methodological framework the project team will carry through a process of continual assessment and prioritisation of objectives, allowing informed decisions to be made regarding the optimum level of recording. These decisions will reflect the need to balance the recovery of data with prudent management of available resources, avoiding inappropriate cost.

- Variation: Decisions made on these bases may result in the 'enhancement' or 'simplification' of recording systems as dictated by the evolving research framework. Any changes in recording methods will be discussed and agreed in advance with the client and/or the Local Planning Authority's designated representative/advisor.

2.4 Method statements for recording of Archaeological Features

2.4.1 Site Survey

SWAT surveyors will locate and expose archaeological features with respect to the Ordnance Survey national grid and datum as suggested in Figure 1. They will provide a survey framework tied to sufficient points on local standing buildings and in the site to enable all other more detailed records, whether photographic or made by hand, to be located accurately

2.4.1.1 SWAT Survey Standards

Standards of precision and accuracy are outlined in the *SWAT Archaeological Site Manual*, and are principally derived from three sources: the *General standards for the Preparation of Archaeological Archives Deposited with the Museum of London*, the GLAAS paper *Archaeological Guidance Paper 3 Standards and Practices in Archaeological Fieldwork* and, most importantly, the accepted standards of accuracy as used by chartered surveyors and defined by the RICS

2.4.1.2 Survey Data: collection to archive

Survey data is collected using total stations, GPS receivers, dataloggers, and automatic levels. Survey data is processed using the following software: SDRMap, AutoCAD, Oracle, ArcView and GIS. Survey data is archived in a standard format for each site. Digital survey data is stored in the survey database, which is an integral part of the SWAT computing network.

2.4.2 Written Records

The Project Manager and Site Supervisor(s) will be responsible for ensuring that the methodologies followed are in accordance with the *SWAT Archaeological Site Manual* (2006).

2.4.3 Drawn Records

Scale drawings will be made by hand of significant parts of the archaeology, in the form of plans, elevations and sections. Scale plans will be produced to a scale of 1/100 for the site plan, 1/50 for grid areas, 1/20 for large features, and 1/10 for section drawings and smaller features. Single context planning and recording sheets to be used where appropriate. All drawing will be produced on plastic film using a 6H pencil and annotated with OD or TBM heights, grid reference points and context numbers.

Total station survey equipment will be used to tie the site into the Ordnance Survey whilst taped triangulation from site grid markers will be used to record features.

Archaeological features will be selectively excavated and sampled sufficient to determine the character, date and degree of survival.

Samples will be taken for botanical, faunal and other environmental data as appropriate and in consultation with English Heritage.

Where more than one phase of activity is present, a representative sample of the range of phases will be excavated and relationships between feature intersections will be investigated.

All drawings to be indexed using the SWAT Archaeology pro-forma index sheets. All excavated archaeological deposits will be described using the SWAT pro-forma context recording sheets. An index of contexts will be maintained using the SWAT pro-forma sheets.

A complete record of digital photographs will be created of every feature using appropriate scale bars. The digital photograph number will be entered on to the appropriate context recording sheets and drawings index sheets.

All environmental samples will be doubled-bagged and marked with site and context codes and will be described using the SWAT pro-forma Sample Recording sheets.

All finds will be marked with site and context codes and kept separately by context and material type. Washing and sorting of finds will take place off site at the SWAT workshops.

For further details of appropriate methodology both the Project Manager and Site Supervisor(s) will be responsible for ensuring that the following methodologies are employed:

- Appropriate computerised data capture and survey systems are used to speed up recording.
- Digitisation of selected drawn records will take place using Auto Cad or similar. Details of the scales and conventions used are given in the SWAT *Site Archaeological Manual* (2006)

2.4.4 Photographic Records

A SWAT photographer will take 35mm and large format photographs of the features, as required, both monochrome negatives and colour transparencies of each image. The anticipated minimum number of images or views to be photographed would include views of elevations, and of significant structural features. The images of each elevation will be capable of being rectified electronically or optically to serve as detailed scale records of the elevations, should this be required in the future.

For each photograph taken in this and in other cases the subject matter, direction of view, circumstances and time will be fully noted, permitting efficient indexing of photographic images and appropriate reference to them in other records and in the report.

The Project Manager and Site Supervisor(s) will be responsible for ensuring that the following methodologies are employed:

- The site record will include photographs taken by professional photographers employed by SWAT, as noted above. Digital cameras may be used when deemed appropriate. The photographic record will be sufficiently thorough and detailed to illustrate all significant structures, structural relationships, and individual items of interest.
- All site photographs, except working shots, will include a photographic scale of appropriate size.
- Both black and white and colour images will be taken. Negatives will be contact printed, with prints mounted on contact cards returned to the site

supervisors for annotations during the work programme. Colour transparencies will be mounted.

- Photographs taken by field staff will be passed to the photographic section for processing and inclusion in the photographic archive.

A computerised photographic index will be compiled, relating negative number, site photograph number, context numbers, site area, and other relevant information.

- All photos or a selection are scanned for reproduction in any reports. These can be supplied on disc if required.

2.4.5 ***Documentary Research***

Provision will be made for relevant documentary research in order to enable the overall research aims to be realised. If considered appropriate, initial documentary research will take place prior the recording exercise and will consist of an assessment of the documentary resource and its ability to inform the research aims. The research will aim to put the archaeological investigation into their cultural, economic and social context. The final scope of additional research will be determined at the reporting stage and be dependent upon the aims of any Updated Project Design.

3 Attendances, Access and Safety

3.1 General Attendance

These sections provide a summary of likely attendance requirements during the archaeological investigation exercise. If necessary, these will be revised in light of ongoing discussions on methodology. The sections are based on standard SWAT site procedures, adapted to meet the particular requirements of the project.

A summary of attendances and site requirements which may be required by SWAT is listed below:

- Safe access routes to be installed prior to the recording exercise, and to be maintained throughout the period of the works.
- A suitable security system to operate overnight, weekends and holidays. Normally this means adequate hoarding and locks.
- Effective channels of communication, including a designated supervising engineer and/or client's Project Manager to liaise with the Senior Archaeologist and Project Manager from SWAT Archaeology. A designated contractor's agent will be necessary to implement agreed attendances.

3.2 Accommodation and Facilities

SWAT may require accommodation during the recording exercise, and possibly also accommodation for 1 or 2 members of SWAT. The following may therefore be required:

- Lockable office area suitable for 2 persons, with lighting, electrical points, heating, chairs, tables (or desks), shelf units, lockable filing cabinet.
- Male and female toilets with hot and cold water.

Additional storage areas on site may include:

- Lockable tool store for holding large hand tools, sufficiently robust to store surveying and other equipment.

3.3 Access

A safe access route will be maintained throughout the course of the works. Safe access to the site will be granted to the representative/advisors of the Developer and the Local Planning Authority's designated representative/advisor, who may wish to be satisfied, through site inspections, that the works are being conducted to proper professional standards and in accordance with the agreements made.

All other site visits by non-SWAT personnel will be notified to the client or Attendance contractor in advance, or, if instigated by the client, main contractor or the client's archaeological consultant, to the SWAT Project Manager, or their designated on-site representative.

3.4 SWAT Health and Safety Policy

SWAT Archaeology recognises and accepts its responsibility as an employer for providing a safe and healthy work place and working environment for all staff. SWAT believes that current Health and Safety Legislation and regulations represent the basic minimum standard it should achieve.

SWAT recognises that many of the features of effective Health and Safety Management are indistinguishable from sound management practice based on quality and excellence. The general principles of good management are therefore a sound basis for achieving and maintaining Health and Safety Standards.

SWAT will use the Health and Safety Executives publication HS(G)65 *Successful Health and Safety Management* as a guide to management of Health and Safety.

SWAT provides Safety Training for its staff as follows:

- Induction Training (undertaken on joining SWAT, and as appropriate on individual projects).
- General Health and Safety Training (a Health and Safety awareness course targeted at Field and Support Staff).
- Specialist Health and Safety Training (designed to cover specialist areas and to update professional knowledge, i.e. chain saw operators).
- Manager's Health and Safety Training (designed for members of staff with responsibility for others).

Some of SWAT's archaeological work is carried out on land that has been in industrial use since the beginning of the Industrial Revolution. Much of this type of land is contaminated with heavy metals. SWAT follows the guidance contained in the HSE's publication *Protection of workers and the General Public during the Development of Contaminated Land*.

With the introduction of the construction Design and Management Regulations (1994) SWAT works with Clients, main Contractors and/or Attendance Contractor and Planning Supervisors to create a Health and Safety Plan. Each project will have its own unique plan and SWAT will also assume the role of a Designer for works associated with an archaeological interest.

3.5 Project Health and Safety Considerations

All relevant health and safety legislation, regulations and codes of practice will be respected. This requirement constitutes one of the non-archaeological constraints on the works undertaken at the site.

No personnel are to work in deep unsupported trenches. Where the installation of temporary support work and other attendance are required these will be provided by the developer as part of the archaeological agreement.

Where there is reason to believe from previous uses that the ground or adjacent buildings may be contaminated the client must have made arrangements for and undertaken pollution sampling and testing before archaeological work on site takes place.

The developer must provide all information reasonably obtainable on contamination and the location of live services before site works commence.

The health and safety of the project team is considered to be of the utmost importance. A series of safety provisions are included in SWAT's model legal agreement regulating the archaeological investigation. Health and safety provisions are also included in statements, or otherwise conveyed, to site contractors to ensure that all contractors working on the site are aware of the archaeological requirements.

SWAT staff will at all times adhere to the SWAT *Health and Safety Policy* (2004) and promptly carry out (or arrange for the Site Attendance contractors to carry out) any

instructions issued by the SWAT Health and Safety officer, who will normally visit the site weekly. The H&S officer will provide written reports after each site visit. These will be copied to the Site Supervisors, the SWAT Project Manager and the H&S Officer of the main contractor and/or Attendance contractor.

If at any time the site or part of the site is made unsafe or the safety of SWAT staff is endangered then SWAT will give notice of the unsafe condition which will be confirmed in writing if a claim for compensation is to be made. If reasonable steps are not taken to abate the danger then SWAT reserves the right to withdraw its staff and workforce from the site until it is declared safe, and the period of time of the withdrawal will be added to any agreed period of work. If SWAT is unable to find suitable work to redeploy such staff financial compensation will also be sought.

Existing services cables and drains. The location of existing services is to be ascertained and notified to SWAT before the 'handover meeting' (see above) and disconnected, diverted or made safe as appropriate.

The SWAT Health and Safety Officer will liaise regularly with his counterpart at the offices of the main contractor and/or attendance contractor throughout the periods of excavation and the recording exercises.

Before SWAT staff enter the site there will be a formal hand-over meeting on site attended by both Health & Safety officers, the Site Manager, the SWAT project Manager and site Supervisor, the representative of the Local Planning Authority or their designated advisor, and such others as are deemed appropriate. Similarly, upon completion of the recording exercise, a formal hand-back meeting, attended by the same key representatives, will be held on site.

While on site, SWAT staff will at all times wear the appropriate protective clothing, with which they are issued. The site Supervisors will be under strict instruction not to allow onto site any member of staff who fails to comply with this requirement.

4 Site Archive, Assessment and Reports

4.1 Archive, Storage and Processing Facilities

In accordance with the guidelines issued by the Institute of Field Archaeologists and English Heritage, site and research archives from excavations and programmes of the recording of standing structures or buildings in the Kent area will be deposited with an appropriate recipient museum. Temporary storage will be with SWAT. The storage and processing facilities available to SWAT can be summarised as follows:

- Both long and short term storage of finds and samples takes place at the premises of SWAT Archaeology, School Farm Oast, Graveney Road, Faversham, Kent.
- Paper and digital records are initially stored in appropriate environmental conditions at SWAT
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- A digital archive will be kept off premises in a secure place.
- Following analysis and publication, the site and research archives, SWAT will deposit the site and research archives with the appropriate recipient museum, subject to arrangements for the transfer of finds ownership.

4.2 The Project Archive

SWAT Archaeology is obliged to prepare archaeological archives to a prescribed standard for deposition in an appropriate museum.

In line with English Heritage recommendations, SWAT Archaeology have issued guidance for the preparation of archives,; ie Museum of London, *General Standards for the preparation of archaeological archives deposited with the Museum of London*, (1998). These are supplemented by the United Kingdom Institute for Conservation's *Conservation Guide-lines* No 2. Such guidance will be followed in all circumstances.

The integrity of the site archive will be maintained. All finds and records will be curated by SWAT in the first instance awaiting transferral to the appropriate recipient museum, and will be available for public consultation.

Ownership of any finds or representative samples rests in the first instance with the landowner who is requested to donate them to the appropriate recipient museum. If required, subsequent arrangements may be made between the landowner and SWAT for the conservation, display or provision of access to or the loan of selected finds. If the finds are not to be donated to an appropriate recipient museum arrangements will need to be made by the client for a comprehensive record of all relevant materials (including detailed drawings, photographs and descriptions of individual finds), which can instead constitute the archaeological archive.

The minimum acceptable standard for the site archive is defined in the *Management of Archaeological Project* (English Heritage, 1991, para 7.4 and Appendix 3). It will include all materials recovered (or the comprehensive record of such materials as referred to above) and all written, drawn and photographic records relating directly to the investigations undertaken. It will be quantified, ordered, indexed and internally consistent before transfer to the appropriate recipient museum. Copyright of the written archive will be vested with SWAT until it can be deposited with a museum.

The appropriate recipient museum's guidance on the needs of digital storage and archival compatibility will be sought and followed.

United Kingdom Institute for conservation *Guidelines for the preparation of excavation archives for long term storage* (1990), and the Museum of London, *General Standards for the preparation of archaeological archives deposited with the Museum of London* (1998) will be followed unless specific standards are enforced by the appropriate recipient museum. Arrangements for the curation of the site archive will be agreed with the appropriate recipient museum, and details of such arrangements will be copied to the Local Planning Authority if required.

Pursuant to these agreements the archive will be presented to SWAT within 12 months of the completion of fieldwork (unless alternative arrangements have been agreed in writing with the Local Planning Authority).

4.3 Reporting

The analysis will lead to an *Interim Report* (if appropriate) as specified in 'Appendix 3: Site archive specification' in the *Management of Archaeological Project* (MAP 2).

A report will be compiled describing and explaining the evidence for the archaeological history and use of the site, illustrated with selected photographs and drawings. This account will integrate the results of documentary research, as well as the work of the other specialist, undertaken in the course of the proposed programme of work. The report will include a summary suitable for inclusion in journals, and information will be reported also to the East Kent County Council HER.

In addition to the technical reports, which SWAT is obliged to prepare, an additional report giving an overall view of the project and its results in non-technical language may be prepared and issued to the client and other relevant parties on completion of the report on the recording exercise. This would normally be within 12 months of completing the on-site works.

4.4 Publication

A short summary of the results of the work will be submitted to the SMR and NAR (using the appropriate archaeological report forms).

By means of basic database completion, SWAT stores details of all sites it records in a digital form, to permit inclusion of the data in any future academic researches.

The *Interim Report* will be structured in such a way so as to be compatible with any requests for further dissemination of the results (e.g. publication).

5 Bibliography

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