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Client: James Watt Dock LLP
Date: December 2011

James Watt Dock, Greenock, Inverclyde
Archaeological Monitoring

Client: James Watt Dock LLP

PROJECT SUMMARY SHEET

Client James Watt Dock LLP

National Grid Reference NS 2994 7553

Parish Greenock

Council Inverclyde

Project Manager Sorina Spanou

Text Donald Wilson

Report December 2011

OASIS Reference no. Headland1 - 109532

Signed off by
.....Sorina Spanou.....:

Date:
.....04.12.11.....

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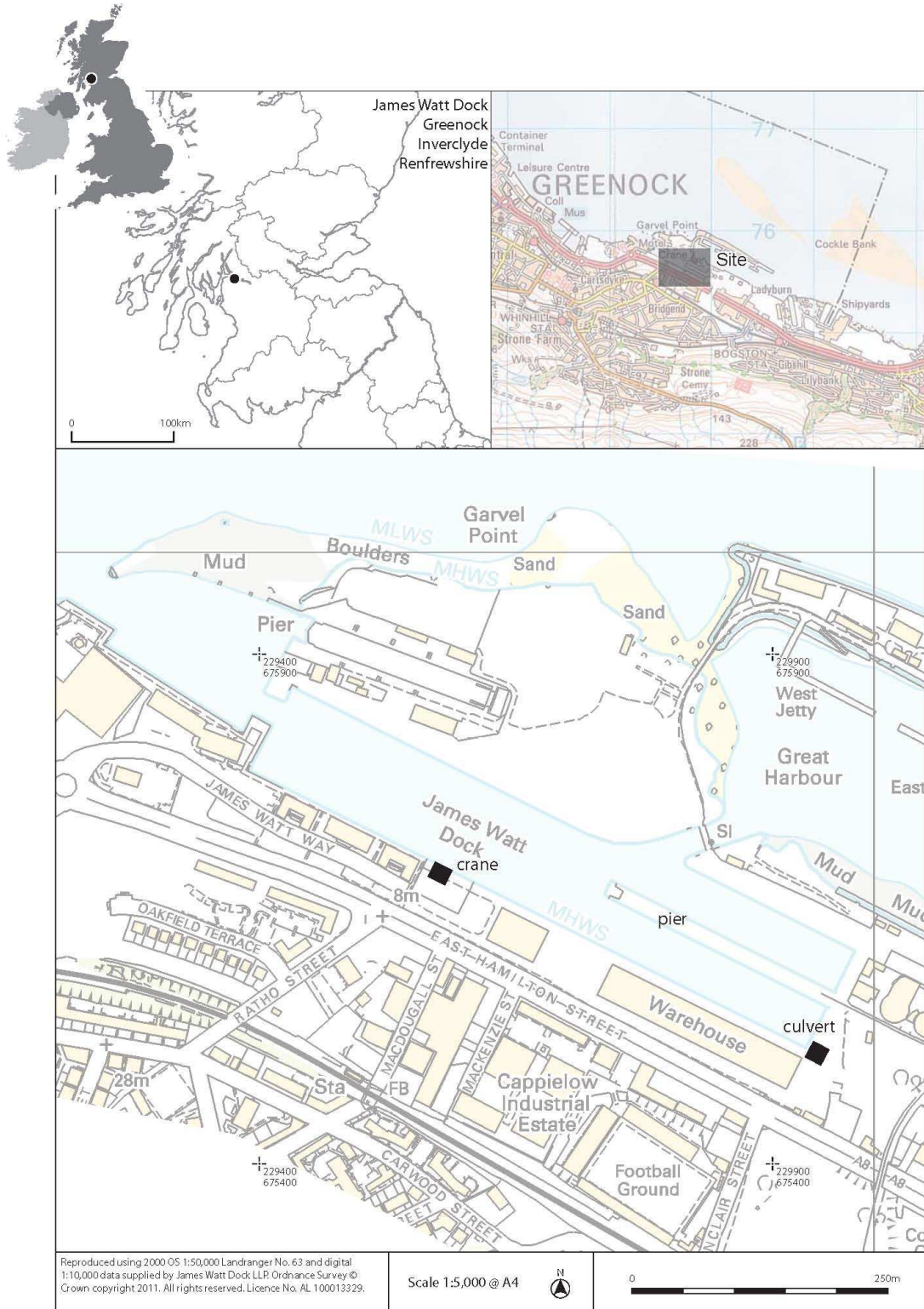
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Illus.1: Site location plan

James Watt Dock, Greenock

Archaeological watching brief

by Donald Wilson

Headland Archaeology Ltd was commissioned by James Watt Dock LLP to undertake a programme of archaeological works in connection with a planning condition on public realm landscaping works at James Watt Dock, Greenock. The work included a 'reactive watching brief' where archaeological monitoring of groundbreaking works was undertaken where and when archaeological remains were uncovered during groundbreaking works or in areas of known archaeological sensitivity. The scope of work was agreed with the West of Scotland Archaeology Service, who advise the local planning authority on archaeological matters.

Headland responded to a single call-out during the reactive watching brief on ground breaking works in March 2011. This recorded a brick-constructed culvert that contained a number of cast-iron pipes and modern cables. The culvert was considered to be part of the original docks constructed in the 1870s.

1. INTRODUCTION

Headland Archaeology Ltd was commissioned by James Watt Dock LLP to undertake a programme of archaeological works in connection with public realm landscaping works at James Watt Dock, Greenock.

An Environmental Statement was prepared by Headland Archaeology in 2008; this identified a number of areas of archaeological interest within the overall proposed development boundary. Planning permission for the development was subsequently agreed in principle by Inverclyde Council (09/0182/IC) subject to a number of conditions, including one relating to archaeological works (8):

That prior to the commencement of development the developer shall submit, for the approval of the Planning Authority, an archaeological mitigation strategy to include both protective and/or mitigative actions as may be required by the Planning Authority. Thereafter the developer shall ensure that the approved archaeological mitigation strategy is fully implemented and that any required archaeological mitigative works are carried out in agreement with the West of Scotland Archaeology Service on behalf of the Planning Authority, and in accordance with a Written Scheme of Investigation which has been approved in advance by the Planning Authority.

In order to fulfil this condition 'A statement of intent for archaeological mitigation' was prepared by Headland Archaeology (June 2010) on behalf of Clydeport Properties; setting out the proposed strategy for archaeological mitigation in connection with the works planned for each development phase.

This included for archaeological monitoring on proposed public realm landscaping works at areas to the south and east of James Watt Dock and north of the sugar sheds, East Hamilton Street, Greenock (Planning ref. 10/0075/IC). A *written scheme of investigation* (March 2011) detailing the methods for this monitoring, and as referred to in the condition, was submitted to and agreed with West of Scotland Archaeology Service who advise the Local Planning Authority on archaeological matters in advance of the site works. This report details the results of that monitoring.

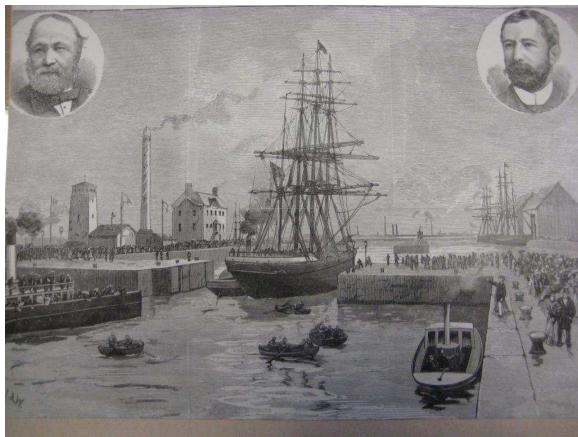
2. SITE LOCATION AND DESCRIPTION

The main extent of James Watt Dock lies to the N of the main A8 Port Glasgow Road and the Cappielow Industrial Estate on the eastern outskirts of Greenock, Inverclyde (NGR: NS 2994 7553) (**Illus 1**).

Greenock and the Inverclyde waterfront sit within an intrinsic maritime landscape located along the southern fringes of the Clyde Estuary. The vestiges of this important maritime landscape can be recognised in the many harbour structures, docks

and buildings that form part of the maritime built heritage and archaeology of the region. By association, many buildings of the town and surrounding area were built on the wealth of the local businessmen who relied on this maritime infrastructure for their success, and those who worked within the many industries either directly or indirectly maritime in nature. What is clear from the map evidence and place names in the Greenock locality is the clear focus of activity towards the estuary and the sea.

The site of James Watt Dock, Garvel Island and Great Harbour form the eastern extent of a waterfront that elevated Greenock and the Inverclyde region into one of the prime centres of maritime industry and commerce in Scotland from the 18th century until gradual decline in recent decades. James Watt Dock was widely acclaimed as the 'champion' of the waterfront facilities of the day (Illus 2).



Illus 2: Historic Etching of James Watt Dock

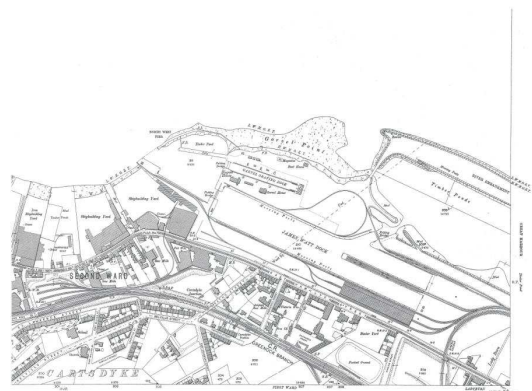
Prior to the development of the waterfront the land on which the dock facilities were built comprised a point or headland located at the eastern extent of the small bay in which the earlier harbours, docks and shipyards of Greenock and Cartsdyke were situated. Prior to the late 19th century developments the land comprised the Garvel Park Estate, acquired and developed from the late 18th century. Garvel House was built in the mid 1770s by Baillie Gammell, founder of the Greenock Bank. The House and Estate are first identified on Ainslie's 1796 map. Later maps give an indication as to the developments of the Estate which by the time of the 1st edition Ordnance Survey (Illus 3) included a number of buildings to the north and east of the main house and a walled garden. A boathouse can also be noted on the 2nd edition revision which possibly relates to developments along the Estate

foreshore prior to the sale of the land sometime between 1857 and 1868. In 1868 the Estate was sold to Greenock Harbour Trust with a view to extending the dock facilities.



Illus 3: Extract from 1857 OS map

The development of Garvel Point began with the construction of Garvel graving dock, completed in 1871. This dock was constructed immediately to the north of Garvel House, which remained in use within the dock development. Of note is the presence of a magazine along the foreshore to the north of the graving dock, possibly evidence for the storage of explosives for blasting during excavation (1897 OS, Illus 4).



Illus 4: Extract from 1897 OS map

The first sod was cut for James Watt Dock on the 1st August 1878, and the dock was finally completed in 1886. The 2nd Edition OS gives an indication of the nature of James Watt Dock only a few years after construction. What seems clear is the scale of the development and the subsequent modification to the foreshore which was extended into the estuary around Garvel Point, and along the southern fringes of Great Harbour to the east. It is likely that

the excavated spoil from the dock and other material were used to form this extension and the creation of the north embankment of Great Harbour. The western foreshore of Garvel Island was reduced during the preparation of the Garvel tidal basin, jetty and timber pond, and the entrances to the graving dock and James Watt dock. The main structures within the new development comprised the main dock, quays and embankments, and the buildings such as the sugar warehouse and those associated with the graving dock (engine house and adjacent building; and the buildings to the north of the graving dock). Great harbour and the north embankment are also identified on the 2nd edition OS. The basin of the harbour shows evidence of timber ponds, which are reduced in size by the time of the 1914 OS map, and absent by the time of the 1938 revision. The north embankment shows no evidence for buildings or structures other than a slipway towards the west end.

The 1914 revision of the OS map shows further development of the docks with the continued seaward encroachment of the north foreshore of Garvel Island and the area occupied by the newly established Garvel shipyard (Figure). Immediately prior to the Second World War evidence of the continued development of the area can be identified with the addition of buildings at the southwest corner of James Watt Dock, and the presence of an Oil and Cake works on Garvel Island. The Second World War is a time of further developments with the inclusion of buildings and facilities on the north embankment and also the likely inclusion of more jetties, all noted on the 1946 aerial photographs. After the Second World War Great Harbour and the north embankment continued in use as a marine depot and tanker cleaning facility.

There were no Scheduled Ancient Monuments, within the area of the docks. The sugar warehouse (HS 34172) and cantilever crane (HS 34175) are Category A listed structures.

The sugar warehouse was built circa 1885 and appears on the 1897 2nd edition Ordnance Survey. The buildings complex comprise a range of red- and white-brick warehouses, with two 5-storey and attic, 7-bay blocks, with central hoists; and two 3-storey and attic, one 9-bay, the other 11. The lower buildings have ridged roofs, with circular windows

in the attics (Hume 1976). The sugar warehouse is disused and currently undergoing stabilisation.

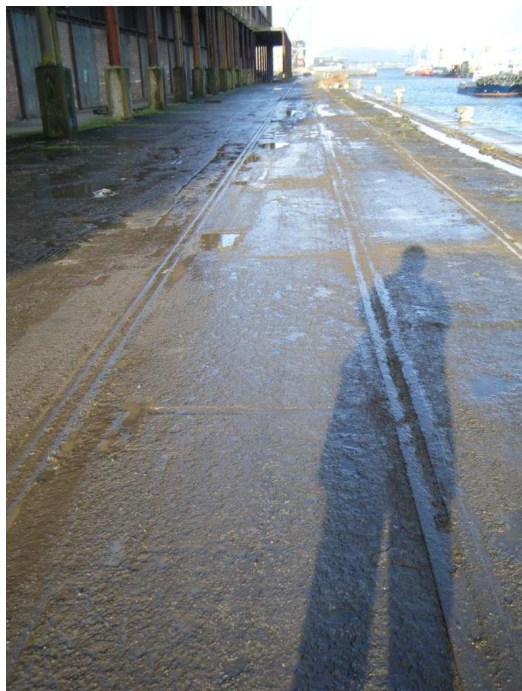
The cantilever crane was built in 1917 by Arrol and Co Ltd for the Greenock Harbour Trust and was used primarily for the fitting out of ships ([Illus 5](#)) The crane can be identified on the 1938 revision of the Ordnance Survey. The 150 ton steel cantilever crane comprises a lattice girder tower supporting a roller track on which rotates the asymmetrical cantilever truss gib with motor room and counter weight towards the shorter end. This crane was a considerable achievement in its day and is still in complete working order.



Illus 5: View of the listed cantilever crane

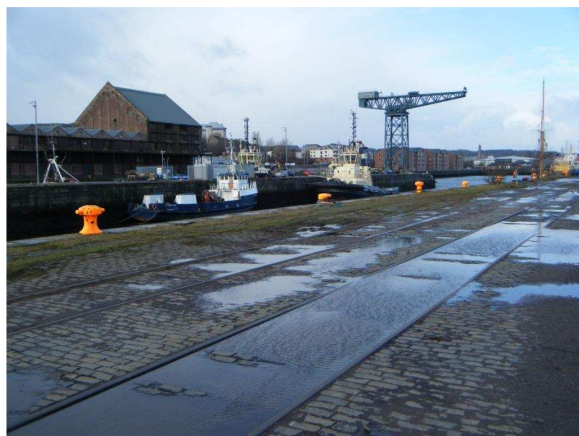
James Watt Dock was designed by W R Kinniple, the Chief Engineer for the development. The main dock structure survives particularly well and on the whole appears to represent original fabric. This is also true of the associated dockside furniture such as the various examples of bollards and mooring rings. Also of note is the survival of features such as the patent capstan located at the east end of the dock. The dock and associated furniture offers a fine example of late Victorian dock engineering. The remnants of cobbled surfaces and integrated railway track ([Illus 6 & 7](#)) were noted along the northern and eastern margins of James Watt Dock.

In addition, the in-situ remains of redundant folding gates were noted. An original retractable caisson, used to maintain the water levels within the dock at low water and allow access to both sides of the dock when closed was recorded.



Illus 6: View of the rail tracks and cobble quay

This feature highlights cutting edge technology of its day, contained within the structure of the dock entrance. The subway entrance located near the entrance to the dock in the northwest corner of James Watt Dock comprises a stone built building. The interior steps lead to a subway that traverses the dock gates to the opposite quay. The subway is currently flooded.



Illus 7: View of the central quay

Garvel Island contains the site of the former Garvel House which was demolished in 2004. The backfilled sub-ground basement and footprint of the foundations of the house survives as a feature next to the graving dock. Although the building is no longer extant, the location and remains of the house may suggest some local importance as a reminder of the nature and history of the landscape prior to the dock developments.

The Graving Dock and associated facilities are currently leased by a ship repair facility. The dock structure itself is likely to represent original fabric, although the dock gates have been recently replaced. The dock structure offers a good example of Victorian dry dock facilities, containing a rare example of clay and timber construction in the dock floor; usually lined with stone paving, cobbles or concrete. The site of the former Scotts training school is located immediately to the north of the graving dock, and survives as floors, foundations and limited upstanding remains after recent demolition. Although this facility has been demolished the school provided much of the training for the shipbuilding industry throughout Scotland and the UK. Located to the west of the entrance to Garvel Graving dock and James Watt Dock is Garvel tidal basin.

The Engine House and column/chimney base at Garvel Graving Dock provide extant remains that date to the original dock developments. The engine house is largely intact and still houses the machinery for the pump mechanisms used to pump out the graving dock, operate the dock gates, and keep the subway (aforementioned) dry. The remains of a column/chimney base were noted adjacent to the engine house the base of which bears the date 1871. The site of the former shipyard and slipway can be recognised in the northeast corner of Garvel Island. Despite the overgrown, derelict state of the area the remains of floors and foundations can still be identified within the site. Fragmentary evidence of one of the former slipways from the shipyard can also be identified along the current foreshore. The site of a former works is located to the southeast of the shipyard and is also recognized through the remains of floors and foundations, similar to the shipyard to the north. The tidal basin also contained a former timber pond, the northern boundary of which survives in the form of a jetty and timber posts, noted on the 1897 and 1914 OS maps

Great Harbour survives as a tidal basin bounded to the north by the north embankment, to the south by an armour protected shoreline and to the west by undeveloped foreshore and access bridge across a channel connecting the basin with the estuary to the northwest. This basin dates to the original dock developments. Along the southern boundary of the north embankment there are a number of jetties including the East Jetty and that associated with the former tanker cleaning facility. This facility currently lies derelict and overgrown at the east end of the north embankment where some structures still survive. Great Harbour and the north embankment should be regarded as regionally important as an element of the main dock developments along the Inverclyde waterfront. The jetties represent the remains of structures that have been modified or removed since the Second World War. The current jetties would appear to be fairly recent in date and are therefore regarded as of some local importance as part of the local marine industry.

The north embankment of Great Harbour has a number of buildings and structures located upon it including the SERCO marine depot. The brick built buildings may well relate to developments that are likely to date from the Second World War and the use of the area by the Free French Navy. The developments can be gauged from the 1938 revision of the OS and the aerial photographs dating from the immediate post-war period. The only feature that relates to the initial construction of the embankment is the slipway.

3. AIMS & METHODOLOGY

In line with planning guidelines it was proposed that where possible any archaeological remains within the proposed development area are preserved *in situ*.

Where this was not possible the main objective of archaeological works were:

- To record any archaeological remains threatened by the proposed development works.

4. ARCHAEOLOGICAL MONITORING

4.1. Methodology

The work was undertaken as a 'reactive watching brief' where archaeological monitoring of groundbreaking works will be undertaken where and when archaeological remains are uncovered during groundbreaking works or in areas of known archaeological sensitivity.

Procedures for a call out system were established whereby the contractor on site would inform Headland Archaeology in the event of archaeological discoveries or prior to groundbreaking works within areas of known archaeological remains (e.g. cobble surfaces). In particular, all staff on site received an information leaflet setting out the contractor's response in the event of the discovery of archaeological remains including contact details of the archaeological contractor. In this event, groundbreaking works were to cease until an archaeologist is present on site.

In the event that complex deposits were encountered that would require significant stoppage time, Headland Archaeology would immediately contact the client and the WoSAS Archaeologist to agree an appropriate response.

4.2. Recording

All aspects of the recording were undertaken in accordance with the codes of practice of the Institute for Archaeologists.

Colour print and digital photographs were taken; a graduated metric scale was clearly visible. A full list of these can be found in Appendix 1.

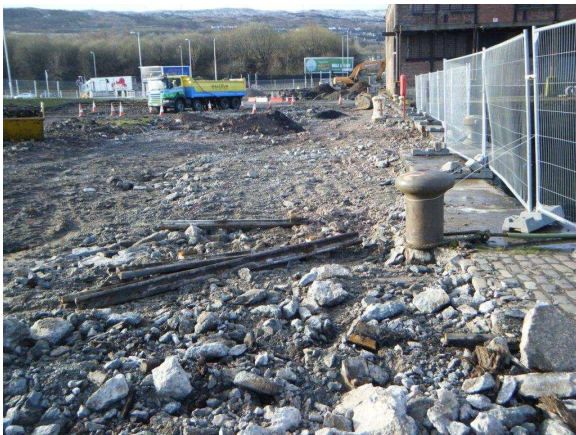
4.3. Reporting and Archives

The results of the works are presented below. A summary report has been prepared for submission to *Discovery & Excavation in Scotland* (Appendix 2) and the OASIS database – headland1 -.

The complete project archive will be deposited with the National Monuments Record of Scotland (NMRS) within six months of the completion of the project. The records (paper and digital) will be archived according to best practice guidelines set out by the Archaeological Archiving Forum.

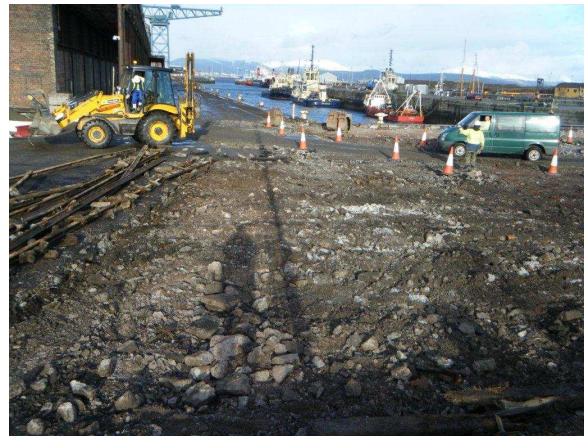
5. RESULTS

During the site visit of March 2011 a rapid photographic record of the general site was taken. This is listed in the Appendix, some illustrative photos are included in this report. These are located with reference to the main features of the James Watt Dock: a large sugar warehouse along the S side of the dock and two large E-W aligned deep water docks divided by a central pier and enclosed by a second pier to the N. The photographs include a number of original features including the remains of numerous railway lines running along both the N and S sides of the surviving sugar warehouse and some also leading into the building itself. These railway tracks were also recorded both to the E and W sides of the warehouse with a number also running along the dock piers.



Illus 8: Area cleared of cobbles (facing N)

On arrival at the site it was noted that a large area of cobbles at the E end of the docks and had been cleared (Illus 8 & 9), to the west of the warehouse current surfaces had also been removed. The depth of excavation was limited (approximately 0.15 m) and no earlier surfaces or features were revealed.



Illus 9: View of area cleared of cobbles (facing E)

Excavations were monitored at the NE corner of the warehouse, close to the southern bay of the docks. This revealed the junction of a large brick-built service culvert (Illus 1, 10 & 11) that was aligned both N-S along the dock side and E-W along the N side of the warehouse. A number of cast-iron pipes and more modern cables were visible in this culvert. Along the cobbled surface at the E end of the docks a number of square manhole covers with brick surrounds were recorded. These were thought to be associated with this culvert. This culvert was considered to be part of the original dock construction, dated to the late 1870s.



Illus: 10 Detail of the service culvert



Illus 11: View of the service culvert and pipes

5.1 Conclusion

The reactive watching brief resulted in one call-out for archaeological monitoring. This resulted in the recording of the location and nature of one brick-built culvert that is likely to have been constructed, along with the rest of the docks, in the later 19th century.

Bibliography

Cartographic sources

The following maps held by the National Library of Scotland and the British Library were examined (listed in chronological order):

Roy, W 1747-55 *Military Survey*

Ainslie, J 1796 *Counties of Renfrewshire*

Ordnance Survey 1856-7 Renfrewshire II.6 1:2500

Ordnance Survey 1897 Renfrewshire II.6 1:2500

Ordnance Survey 1914 Renfrewshire II.6 1:2500

Ordnance Survey 1938 Renfrewshire II.6 1:2500

APPENDIX 1- PHOTOGRAPHIC REGISTER

Frame No	C/S No.	Facing	Description
1	1/36		Film 1 ID shot
2	1/35	S	View of the road at the E end of the site
3	1/34	SW	General view of the E end of the docks
4	1/33	S	General view of the E end of the docks
5	1/32	N	General view of the E end of the docks
6	1/31	N	General view of the E end of the docks
7	1/30	E	General view of the E end of the docks
8	1/29	NW	General view of the E end of the docks
9	1/28	NW	NE corner of the docks
10	1/27	W	View of the rails to the N side of the warehouse
11	1/26	W	Area to the W side of the warehouse
12	1/25	W	Cobble surface to the W side of the warehouse
13	1/24	NW	View of an old boat
14		NW	Burnt-out car
15	1/23	E	W side of the warehouse
16		E	W side of the warehouse
17	1/22	W	General view of the crane
18	1/21	W	General view of the crane
19			Underside of the crane
20	1/20	SW	View of small crane
21	1/19	NW	View of the main crane
22	1/18	SW	General view of the docks
23	1/17	SE	General view of the docks
24	1/16	S	General view of the docks
25	1/15	SE	General view of the docks
26	1/14	S	E end of the docks
27	1/13	E	Central pier of the docks
28	1/12	W	Rails to the S side of the warehouse
29	1/11	N	Excavations to the E side of the warehouse
30	1/10	NE	S elevation of the warehouse
31	1/09	E	Initial view of the culvert
32	1/08	E	Initial view of the culvert
33		E	Internal view of the culvert
34		E	Internal view of the culvert
35		S	Internal view of the culvert
36		SE	View of the culvert
37		N	Internal view of the culvert
38		E	General external view of the culvert

APPENDIX 2 – DISCOVERY AND EXCAVATION IN SCOTLAND REPORT

LOCAL AUTHORITY:	Inverclyde
PROJECT TITLE/SITE NAME:	Archaeological monitoring at James Watt Dock, Greenock
PROJECT CODE:	JWDG08-002
PARISH:	Greenock
NAME OF CONTRIBUTOR:	Donald Wilson
NAME OF ORGANISATION:	Headland Archaeology Ltd
TYPE(S) OF PROJECT:	Watching brief
NMRS NO(S):	none
SITE/MONUMENT TYPE(S):	none
SIGNIFICANT FINDS:	none
NGR (2 letters, 8 or 10 figures)	NS 2994 7553
START DATE (this season)	March 2011
END DATE (this season)	August 2011
PREVIOUS WORK (incl. DES ref.)	none
MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)	<p>Headland Archaeology Ltd was commissioned by James Watt Dock LLP to undertake a programme of archaeological works in connection with a planning condition on public realm landscaping works at James Watt Dock, Greenock. The work included a 'reactive watching brief' where archaeological monitoring of groundbreaking works was undertaken where and when archaeological remains were uncovered during groundbreaking works or in areas of known archaeological sensitivity.</p> <p>Headland responded to a single call-out during the reactive watching brief on ground breaking works in March 2011. This recorded a brick-constructed culvert that contained a number of cast-iron pipes and modern cables. The culvert was considered to be part of the original docks constructed in the 1870s.</p>
PROPOSED FUTURE WORK:	none
CAPTION(S) FOR ILLUSTRS:	
SPONSOR OR FUNDING BODY:	James Watt Dock LLP
ADDRESS OF MAIN CONTRIBUTOR:	13 Jane Street Edinburgh EH6 5HE Scotland
EMAIL ADDRESS:	donald.wilson@headlandarchaeology.com
ARCHIVE LOCATION (intended/deposited)	NMRS