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Client: Prentice Kennedy Architects on behalf of Kenmore Homes Ltd

Project Code: AHC07



**The Old Wet Dock, Alloa Harbour, Clackmannanshire:
The results of a Desk Based Assessment and
Archaeological Evaluation**

Dan Atkinson

PROJECT SUMMARY SHEET (AHC07)

Client	Prentice Kennedy Architects on behalf of Kenmore Homes Ltd.
National Grid Reference	NS 886 919 (centre)
Project Manager	Simon Stronach
Text	Dan Atkinson
Fieldwork	Dan Atkinson Chris O'Brien
Illustrations	Tom Small
Schedule	
Fieldwork	12 th & 13 th June 2007
Report	June 2007

SUMMARY

Prentice Kennedy Architects, on behalf of Kenmore Homes Ltd commissioned Headland Archaeology Ltd to undertake a Desk Based Assessment and Archaeological Evaluation at the site of a proposed housing development at the Old Wet Dock, Alloa Harbour, Clackmannanshire. The aim of the assessment was to identify potential archaeological issues that would impact on the proposed development of the site, in particular the location of the old wet dock basin that is to form a feature within the proposed development. The assessment identified the location, limit and nature of the old wet dock and helped inform the location for the trenches during the evaluation. The results of the evaluation confirmed the findings of the initial assessment. A total of eight trenches were excavated revealing the buried remains of the coping stones of the wet dock wall and the first few masonry or brick courses with the occasional survival of in-situ wooden brndering. The wet dock structures were seen to survive in particularly good condition.

(AHC07) RESULTS OF AN ARCHAEOLOGICAL EVALUATION

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1. INTRODUCTION

Prentice Kennedy Architects on behalf of Kenmore Homes Ltd commissioned Headland Archaeology Ltd to undertake a Desk Based Assessment and Archaeological Evaluation at the site of a proposed housing development at the old wet dock, Alloa Harbour, Clackmannanshire (NGR NS 886 919 centred). The Council Archaeology Officer who advises Clackmannanshire Council recommended that planning consent (2005/00250) be subject to an archaeological condition (no. 4d). Headland Archaeology presented a Written Scheme of Investigation for the works in agreement with Prentice Kennedy Architects (on behalf of Kenmore Homes) and the Council's Archaeology Officer. It is intended that the structure of the wet dock will be preserved within the proposed development as a feature of historical interest.

2. SITE LOCATION & DESCRIPTION (Figure 1)

The site of the old wet dock lies on the north bank of the Forth in the locality of the old harbour. The site is presently occupied by Sterling Stone; the area of the in-filled wet dock is currently flat, open land used as a storage area for stone (Plate 1). In addition, there are a number of small spoil heaps located along the southwest margin of the proposed development area; the periphery of the proposed development is scrubland bounded by a wire security fence; and the old wet dock entrance and associated quay structures were noted along the river waterfront along the western margin of the site (Plate 2).

3. OBJECTIVES

The objective of the field evaluation was to determine the presences or absence, quality, nature, extent and character of any buried archaeological remains, particularly the extent of the old wet dock. The results will be used to allow the local authority to make an informed decision regarding any further mitigation works associated with the proposed development.

The primary objective of the investigation was to:-

- Identify the extent and level of preservation of the old wet dock

4. METHODOLOGY

Desk Based Assessment

A systematic search was undertaken of readily available and relevant documentary sources relating to the area of the proposed works. The assessment included sites within the area of the proposed works and those sites of interest connected with the dock in the immediate vicinity. These additional sites were assessed to augment information concerning the character of the dock and its operations in this area. The archives consulted included:

- Archaeological records held at the NMRS
- Published maps held in the National Library
- Scottish National Archives
- Alloa Public Library

Walkover Survey

A walkover survey was carried out on 1st June 2007 to confirm the accuracy of any information collected during documentary research and to record the current condition of the site, in particular the location and condition of the area once occupied by the wet dock. In addition, the approximate extent of the wet dock was established on the ground to help inform upon the best location for the evaluation trenches. Any visible archaeological features not previously noted were recorded at this stage.

Trial Trenching

A total of 8 trial trenches totalling approximately 50 linear metres were excavated using a JCB backactor under direct archaeological supervision. All archaeological features exposed during the works were cleaned by hand and recorded using Headland Archaeology Ltd. standard recording methods. Colour slide and colour print photography was used and all trenches and features were surveyed in relation to the National Grid using an EDM and associated penmap software.

5. RESULTS (Figure 1-3)

Desk Based Assessment

Below are outlined the results of the Desk Based Assessment.

The history and development of the harbour

The favourable position of Alloa on the River Forth, being the farthest settlement upriver for the conveyance of large vessels (the New Statistical Account mentions vessels of up to 800 tons), suggests that the haven or harbour is likely to have been utilised from an early date (Graham 1969; Turner-Simpson & Stevenson 1983). The first mention of a harbour from historical sources dates to 1502 with the provisioning of a vessel bound for the Port, paid for by the King. The extent of the harbour during this period is uncertain although some sources suggest that the waterfront comprised a simple, unimproved 'shore and anchorage'. This is perhaps supported by Pont's 16th century map that does not show any evidence for harbour structures such as wharves and piers (of note is the depiction of vessels located downriver at Airth near the Pow Burn, possibly indicating the focus of maritime activity during this period; Figure 2).

The introduction of more formal harbour structures is perhaps intimated by the reference to a 'herberie' in 1655 and by Slezer in 1693 to a 'convenient harbour for ships of burthen' (Turner-Simpson & Stevenson 1983). Reference is also given in 1722 to a 'commodius harbour' and Roy's map from the middle of the 18th century shows a pier to the northwest of the Pow of Alloa, possibly the first formal harbour structure to be built (Figure 2 and Graham 1969).

The visible remains of the harbour along the current waterfront are the vestiges of continued improvements, possibly those mentioned in the Harbour Trust Records dating from the middle of the 18th century. Examples of these developments include the stone built quay adjoining the wet dock to the northwest (Graham 1969). These improvements coincided with the increasing importance of Alloa as a major exporter of commodities such as coal and glass and an influential shipbuilding centre that developed from the late 18th century. The map evidence from the late 19th century and first half of the 20th century indicates the location of the Alloa glass works and shipyard, including a dry dock (able to receive vessels up to 800 tons), saw mill and timber yard located along the shore upstream from the harbour and wet dock. A further shipyard and ropewalk was established immediately to the south of the former Pow (wet dock) in the early 20th century (Figure 2; OS 1866; 1900; 1922; 1952; New Statistical Account 1834-5).

The development of the Pow of Alloa and the wet dock (Figure 2)

The increased development of the harbour and waterfront at Alloa from the late 18th century was necessitated by the need for a facility to carry on the export of local produce, especially coal and glass, and later, the continuation of a thriving shipbuilding centre and associated manufactures (eg. ropewalk, saw mill, timber yard). The focus of the harbour was centred on the Pow of Alloa which comprised a large creek into which flowed the Brathie Burn. Roy's mid 18th century map mentioned above shows the location of the Pow and a probable sluice pond at the confluence of the Pow and the Brathie Burn (Figure 2). The location of the sluice and pond ensured the periodic scouring of mud and silt from the Pow to ensure access for large vessels (similar to creek mouth harbours such as St Andrews in Fife). The Alloa Harbour Trust Minutes give reference to the development of the Pow in the latter half of the 18th century (BR/AHT 1754-1898).

In 1757 harbour improvements included the erection of a squared and jointed dry set freestone quay, 81m long along the north bank of the Pow. In 1761 a further quay, 35m long linked the existing quays. Further works towards the end of the 18th century included the widening of the Pow to 21m (Old Statistical Account 1791-99: 595; Turner-Simpson & Stevenson 1983). The 1825 map of John Wood gives a clearer indication as to the nature of the Pow, sluice and pond, and the harbour in the early 19th century (Figure 2). The Pow is readily discernible, as is the smaller or 'West Pow' noted to the northwest, subsequently filled in during modifications to the surviving quay along the shore in 1848 (Graham 1969).

The 1866 1st edition Ordnance Survey (surveyed in 1854) shows the nature of the Pow and harbour several years prior to the construction of the wet dock (Figure 2). The quays located within the Pow can be recognised, as can the sluice and pond at the east end. What seems evident is the relatively uneven nature of the margins of the Pow - possibly undeveloped on the north and south banks at the eastern end - noted in stark contrast to the formal structures inherent in the proposals for the new wet dock. Plans and elevations for the new wet dock were produced in 1860, examples of which survive in the documentary record (RHP47466 1860; RHP47445 1860). Construction of the dock was begun in 1861 and completed in 1863, remaining as such until the early 1870s with the introduction of proposals for further improvements. Plans were submitted in 1871 for the building of a basin enclosed by piers extending into the river to the west of the existing dock entrance. While this plan was never implemented the 'Alloa Harbour Consolidation Act 1872' endorsed a number of changes, including the construction of a quay extension from the existing south quay in the southeast corner of the wet dock. Also of note is the presence on the plans of the sluice gates and pond, possibly still used at this time to flush accumulations of mud from the dock (RHP437804 28th November 1871).

These changes were short lived however and in 1888 further plans were submitted for improvements to the wet dock. These included the construction of a new dock entrance and gates to the south of the 1860s dock entrance and the consolidation of the existing quay structures (RHP43707 1888). These changes resulted in the ultimate form of the wet dock into the 20th century until closure and in-filling in the 1960s (OS1900, 1922, 1951; Plate 3 – 5, 5a & 5b).

Trial Trenching

The following presents a summary of the results of the excavation of trial trenches within the vicinity of the old wet dock. Details can be found in the Appendix.

Upon the excavation of the trenches it was noted that the characteristics of the sub-surface deposits were consistent across the site. The buried remains of the wet dock quay and associated surfaces to the rear were sealed by mud and silt from the dock, building detritus and rubble (purportedly from Alloa House, demolished during the building of the current housing estate to the north and east of the site),

and concentrations of compacted stone fragments and clay (contexts 002 & 005). This deposit comprises the back-fill material used to fill in the dock in the 1960s. Above this was noted a layer of terram fabric covered by a layer of blaes [001]; constituting the present ground surface for the stone-works storage area (Plate 1). The depth of the deposits above the buried quay varied, becoming gradually deeper from west to east (0.7m to 1.3m; Plate 6).

Trench 1

Trench 1 revealed the remains of the former northeast corner of the wet dock quay approximately 1.10m below the present ground surface. Large coping stones [003] were noted above a quay wall constructed in brick [004]. It is uncertain whether the bricks represent the type of construction along this section of quay, or evidence of repair work. It is possible that this section of wall represents the extension to the north wall of the dock in the 1860s (Plate 7 & 8).

Trench 2 & 3

Trenches 2 and 3 were excavated to the west of Trench 1 along the north quay wall of the former wet dock and highlighted similar characteristics of the former quay and associated surfaces. The surface of the former quay was noted approximately 0.70m below the present ground surface in both Trench 2 and Trench 3. The coping of the quay wall comprised large stone blocks with a curved lip along the front edge (Plate 9). The quay wall beneath the coping comprised tightly laid ashlar blocks with coarse decoration on the front face. Attached to the quay wall below the coping was noted the remains of squared wooden timber baulks, employed as brandering to act as fenders to protect the quay structure and the vessels berthed alongside (Plate 10; see also Plate 5). Also of note was evidence for what appeared to be a worn groove situated along the front edge of the coping and the upper courses of the quay wall noted in Trench 2 (a similar groove was noted in Trench 7 – see below). It is possible that these represent the grooves left from the continued rubbing of the cables and hawsers used to attach the berthed vessels alongside the quay.

Trench 4

Trench 4 revealed the top of the former south quay of the wet dock approximately 0.80m below the present ground surface. The coping was well worn and fractured yellow sandstone, revealing evidence of decorative droving on the outer face. Beneath the cope was noted coarse concrete, possibly indicative of the construction of this part of the quay, or repairs (Plate 11). Of note is the similarity with the north elevation of the north wall to the new dock gate introduced in the 1880s, possibly indicating the period in which this section of quay might have been repaired. Evidence for rubble in-fill behind the wall and a cinder surface to the rear of the quay was also noted.

Trench 5, 6 & 7

Trenches 5, 6 & 7 revealed similar characteristics comprising large tightly laid cope stones with a curved lip and droved tool marks on the front face. The top of the quay was noted approximately 1.3m below the present ground surface in Trench 5; 0.95m in Trench 6; and 0.70m in Trench 7. The cope stones noted in Trench 5 revealed evidence of small holes in the face of the stone, possibly indicating the presence of lifting holes. The quay wall beneath comprised roughly squared rubble blocks, where the quay noted in Trench 5 displayed a distinct batter, differing from the quay structures noted in Trenches 1-4 and 6-8 (Plate 12). The wall in Trench 5 comprised the eastern quay of the dock, blocking what was once the area of the sluice gates and pond. Behind the quay wall in Trench 5 was noted a compacted, metallated surface. Trenches 6 and 7 were located along the southeast corner of the dock, where the surviving quay structure is likely to represent the extension of the south quay of the wet dock in the 1870s (Plate 13). Also of note were the remains of what appeared to be a worn groove situated along the front edge of the coping [017] and the upper courses of the quay wall noted in Trench 7 (a similar groove was noted in Trench 2 – see above) (Plate 14). Trench 6 revealed evidence for the continuation of the cinder surface [016] noted behind the quay wall in Trench 4.

Trench 8

Trench 8 revealed evidence for the coping [018] of the west wall of the wet dock, approximately 0.15m below the present ground surface. The cope is similar to those used to block the 1860s dock gate and actually forms the eastern elevation of this episode, and therefore dating to the early 1860s. The nature of the front elevation of the quay wall was not determined due to being obscured by a concrete rubble slab.

6. DISCUSSION

The archaeological investigation at the site of the old wet dock at Alloa has allowed the opportunity to locate the extent and assess the nature and survival of the relict wet dock structure. The Desk Based Assessment has succeeded in establishing the location of the wet dock and the placing of the facility within the wider developments of Alloa as a port, the development of the harbour and foreshore, and more particularly the development of the area of the Pow of Alloa in which the wet dock was built.

In tandem with the developments of the harbour at Alloa, the building of the wet dock allowed for the loading and unloading of vessels at every state of the tide. As such, the wet dock was central to the operation of the harbour well into the 20th century.

The trial trenching succeeded in locating the extent of the old wet dock and assessing the nature of the survival of the remains. On the whole the remains of the quay and relict ground surface to the rear survived in particularly good condition, given the nature of the buried remains and the lack of alterations to the structure since the middle of the 20th century. Some dock furniture, namely, the timber brandering, also survived. The details that were seen to survive on the quay structure were particularly interesting, such as the grooves created by the constant wear of cables and hawsers from berthed vessels, and the remains of the in-situ brandering used to protect and minimise damage to the quay structure and vessels alongside.

The evaluation also established the depth of dock infill (noted in the Trench descriptions above and in the Appendix) and made-up ground above the buried structure. The made-up ground over the buried structure was shallower towards the dock entrance and the riverfront at the west end.

7. REFERENCES

Published

Graham A 1969 *Archaeological Notes on some harbours in Eastern Scotland* p.200-285 in Proceedings of the Society of Antiquaries of Scotland 101 1968-69

New Statistical Account for Scotland 1834-5, Vol. 8: 1-7

Old Statistical Account for Scotland 1791-99, Vol 8: 592-98

Turner-Simpson A & Stevenson S, 1983 *Historic ALLOA: The archaeological implications of development* Scottish Burgh Survey

Maps (National Library of Scotland)

c1580 Pont sheet 32

1745-55 Roy sheet 16/1b Area around Tullibody, in Stirlingshire and Clackmannanshire

1825 Wood Town Plan of Alloa

1866 Ordnance Survey 1:10560 scale Clackmannanshire sheet CXXXIX (surveyed 1854)

1900 Ordnance Survey 1:2500 scale Clackmannanshire sheet CXXXIX.8 (surveyed 1863; revised 1899) Stirlingshire sheet XVIII.7 (surveyed 1959-61-62; revised 1895)

1922 Ordnance Survey 1:2500 scale (revised 1913)

1951 Ordnance Survey 1:1250 scale sheet NS8891 NW (surveyed 1950)

National Archives of Scotland

BR/AHT Alloa Harbour Trust 1754-1898

RHP43704 1871 - Bound plans and sections of improvements at the existing dock and of new dock at Alloa Harbour

RHP43707 1888 - Bound plans and sections of the proposed works at Alloa Harbour

RHP47445 27th October 1860 – Sections of new wet dock at Alloa Harbour

RHP47466 27th October 1860 – Elevations and sections of coffer dam, culvert and other features of the new wet dock at Alloa Harbour

APPENDIX: Registers**1.1 Trench Register**

All trenches were 1.80m wide

Trench No.	Description	Length (m)	Depth to top of quay (mm)
1	Trench oriented roughly N-S. Pinkish orange blaes [001] above terram membrane (Th= 0.5m), above dark greyish black mixed silty clay and detritus from backfill [002] of wet dock (Th= 0.50m), above cope [003] of dock quay wall and brick quay structure [004]. Excavated to max. depth of 1.3m	4.5	1100
2	Trench oriented roughly N-S. Pinkish orange blaes [001] above terram membrane (Th= 0.40m), above dark greyish black mixed silty clay and detritus [005] (Th= 0.60m), and a black silty deposit [009] from the backfill of the wet dock (Th= not determined), above cope [006] of dock quay wall comprising ashlar stone structure with rough decorated surface. Also remains of attached wooden branding on the front face of the quay and a tarmac surface [007] to the rear, possibly replacing an earlier cobbled surface. Excavated to max. depth of 1.3m	8	700
3	Trench oriented roughly N-S. Pinkish orange blaes [001] (Th= 0.40m) above terram membrane, above dark greyish black mixed silty clay and detritus [005], and a black silty deposit [002] from the backfill of the wet dock (Th= 0.45m), above cope [006] of dock quay wall comprising ashlar stone structure similar to Trench 2. A mixed concrete and tarmac surface [010] was noted behind the quay. Excavated to max. depth of 1.2m	8	700
4	Trench oriented roughly N-S. Pinkish orange blaes [001] above terram membrane (Th= 0.80m), above black silt [002] (Th= 0.10m) and a dark greyish black mixed silty clay and detritus [005] (Th= not determined) from the backfill of the wet dock, above cope [011] of dock quay wall and concrete quay structure (possible patching). Cinder surface [016] behind the quay, similar to Trench 6. Excavated to max. depth of 1.3m	10	800
5	Trench oriented roughly E-W Pinkish orange blaes [001] above terram membrane (Th= 0.60m), above dark greyish black mixed silty clay and detritus [005] from backfill of wet dock (Th= not determined), above cope [013] of dock quay wall and roughly squared stone quay structure with a pronounced batter. Compacted metal surface [014] to the rear of the quay. Excavated to max. depth of 1.3m	8	1300
6	Trench oriented roughly E-W Pinkish orange blaes [001] above terram membrane (Th= 0.50m), above dark greyish black mixed silty clay and detritus [005] from backfill of wet dock (Th= not determined), above cope [015] of dock quay wall and roughly squared stone quay structure. Excavated to max. depth of 1.3m	5.5	950

7	Trench oriented roughly E-W Pinkish orange blaes [001] above terram membrane (Th= 0.65m), above dark greyish black mixed silty clay and detritus [005] from backfill of wet dock (Th= not determined), above cope [017] of dock quay wall and roughly squared stone quay structure. Excavated to max. depth of 1.3m	7.5	725
8	Trench oriented roughly E-W. mid brown topsoil [001] (Th= 0.15m), above the cope [018] of the dock quay wall. Concrete rubble slab resting on the front edge of the cope, therefore not possible to see quay wall. This section of quay wall represents 1880s structure blocking the 1860s dock gate. Excavated to max. depth of 0.25m	3	150

1.2 Context Register

Context No	Description	Thickness (Max.)
001	Orange overburden of stone waste	70cm
002	Black silty infill of dock	unobservable
003	Dock wall	40cm
004	Brick foundations for 003	unobservable
005	Clay infill of earlier dock	60 cm
006	Earlier solid stone dock wall	unobservable
007	Tarmac layer	10cm
008	Rubble core base for 007	20-30cm
009	Grey green layer containing stones	unobservable
010	Concrete base behind 006 in trench 3	unobservable
011	Wall in trench 4	40 cm
012	Footings for 011	unobservable
013	Wall in trench 5	40 cm
014	Metalled surface in trench 5	20 cm
015	Wall in trench 6	unobservable
016	Cinder layer in trench 6	20 cm
017	Wall in trench 7	unobservable
018	Wall in trench 8	unobservable
019	Concrete layer covering 018	unobservable

1.3 Photographic Register

Colour Slide & Colour Print

Shot No	Direction Facing	Description
1	-	I D shot
2	NE	Trench 1 containing 001, 002, 003, 004
3	NE	Detail of 003 and 004
4	E	Deposit profile of Trench 1
5	N	Trench 2 showing 006
6	S	Trench 2 showing 006 and 007

7	N	Northern section of Trench 2
8	E	Southern section of Trench 2
9	N	Detail of 006 in Trench 2
10	E	Wooden brander attached to 006, Trench 2
11	N	Groove in 006, Trench 2
12	N	Trench 3
13	S	Trench 3
14	E	Southern section of Trench 3
15	W	Detail of brander and timber posts, Trench 3
16	S	Trench 4
17	S	Detail of 011 and 012, Trench 4
18	E	Deposit profile of Trench 4
19	NW	Trench 4
20	S	Detail of 012, Trench 4
21	E	Trench 5
22	E	Detail of wall 013, Trench 5
23	S	Deposit profile of Trench 5
24	S	Trench 6
25	S	Detail of 015, Trench 6
26	E	Section of Trench 6, 001, 005 and 015
27	W	Detail of cinder 016 and wall 015, Trench 6
28	S	Trench 7
29	S	Detail of wall 017, Trench 7
30	E	Section of Trench 7
31	E	Trench 8
32	E	Wet dock entrance
33	SW	Timber jetty and navigation lights
34	SW	Timber jetty and navigation lights

1.4 Drawing register

Drawing No	Section	Plan	Description	Initials and Date
1	1:10	1:20	1:20 plan of trench 1 and 1:20 section of trench 1	CO 12/6/07
2	1:10	1:20	1:50 plan and 1:20 section of trench 2	CO 12/6/07
3	1:10	1:20	1:50 plan and 1:20 section of trench 3	CO 12/6/07
4	1:10	1:20	1:50 plan and 1:20 section of trench 4	CO 12/6/07
5	1:10	1:20	1:50 plan and 1:20 section of trench 5	CO 13/6/07
6	1:10	1:20	1:50 plan and 1:20 section of trench 6	CO 13/6/07
7	1:10	1:20	1:50 plan and 1:20 section of trench 7	CO 13/6/07
8			1:20 rough dimensions plan of trench 8 (sketch)	CO 13/6/07

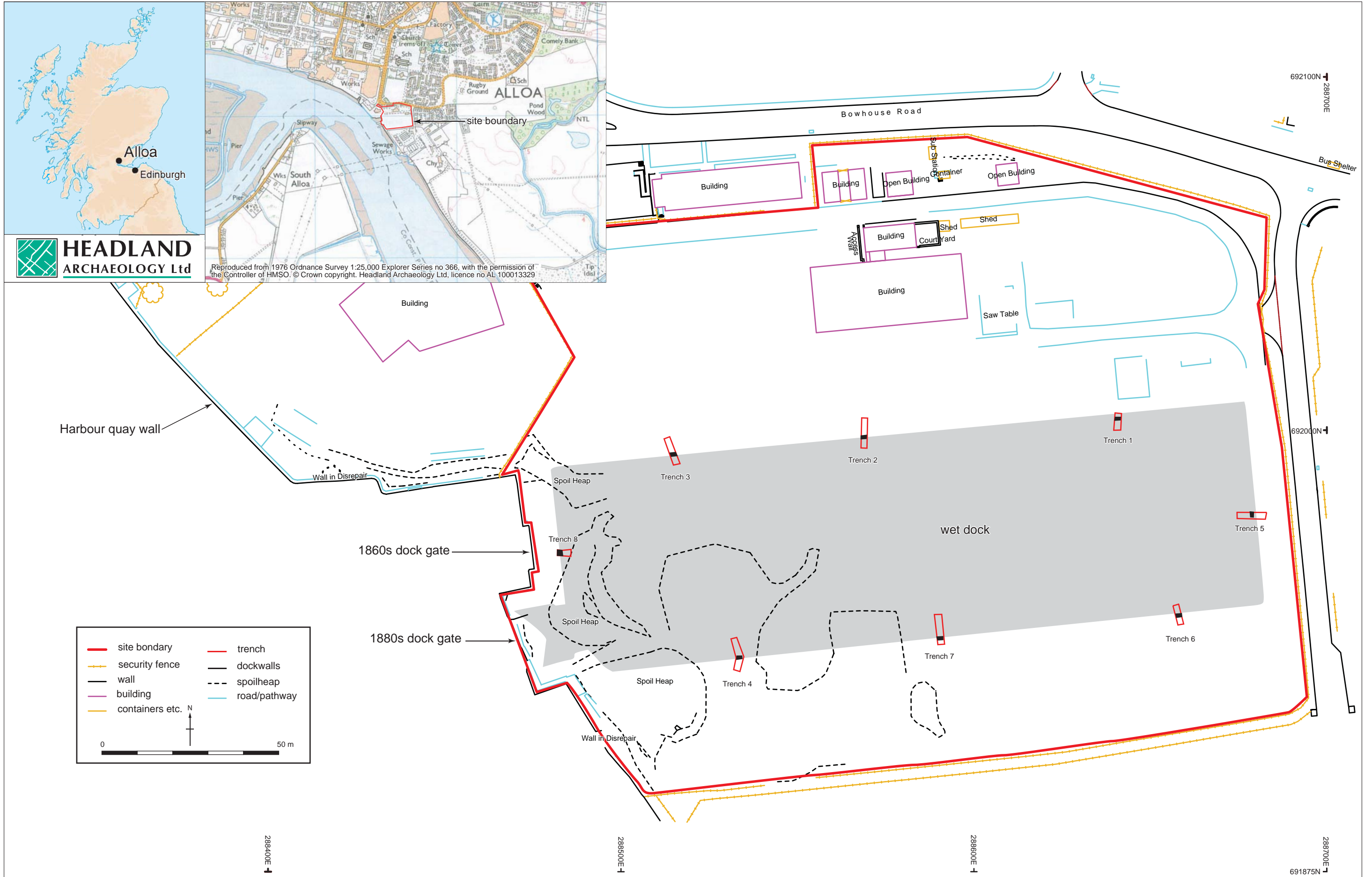


Figure 1: AHC07, Site location with trench layout



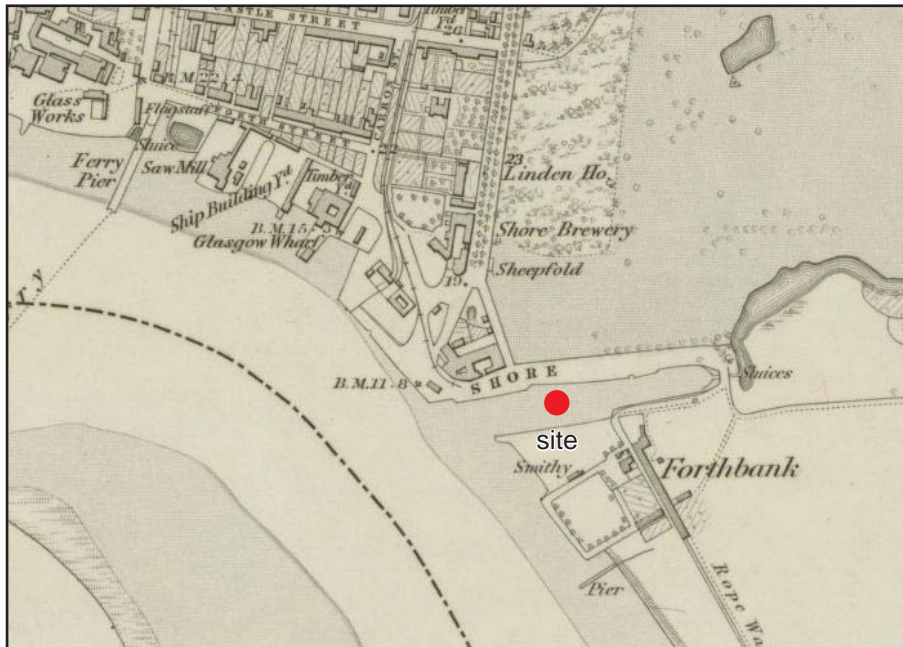
Pont c. 1580



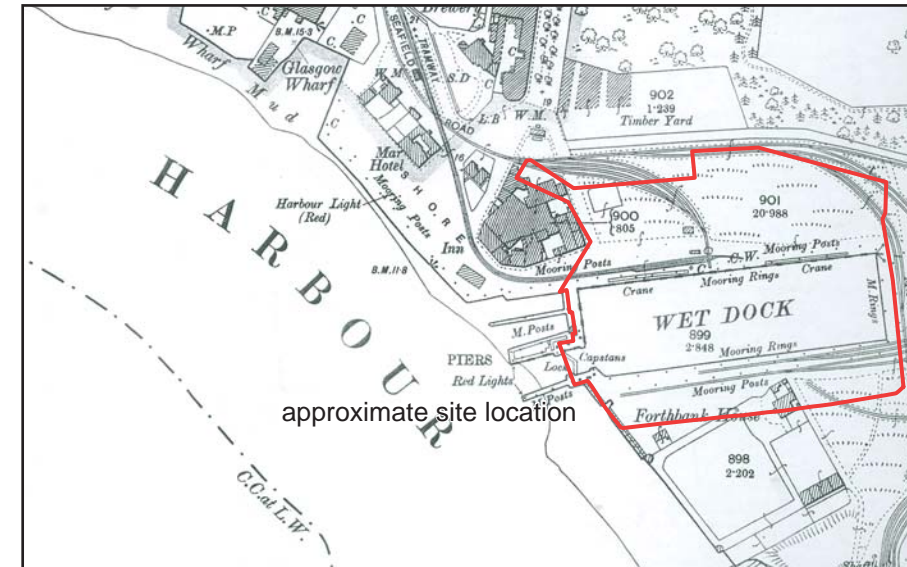
Roy 1745-55



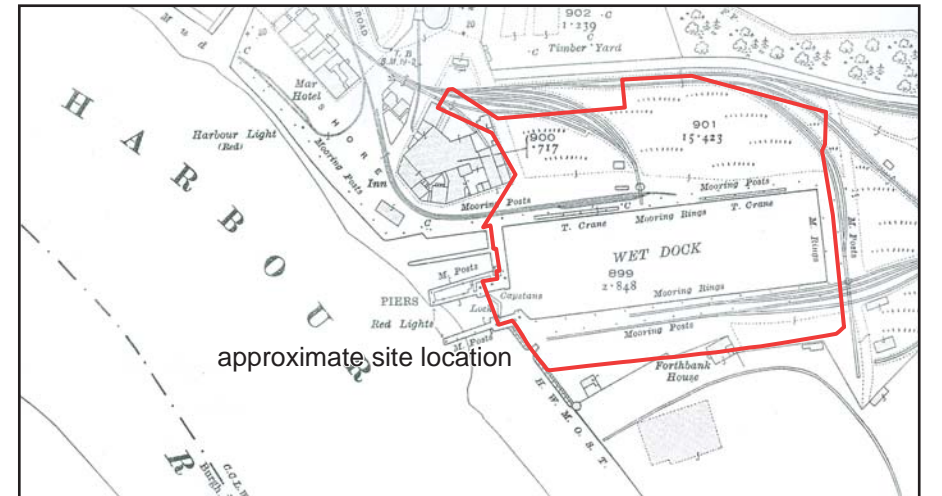
Wood 1825



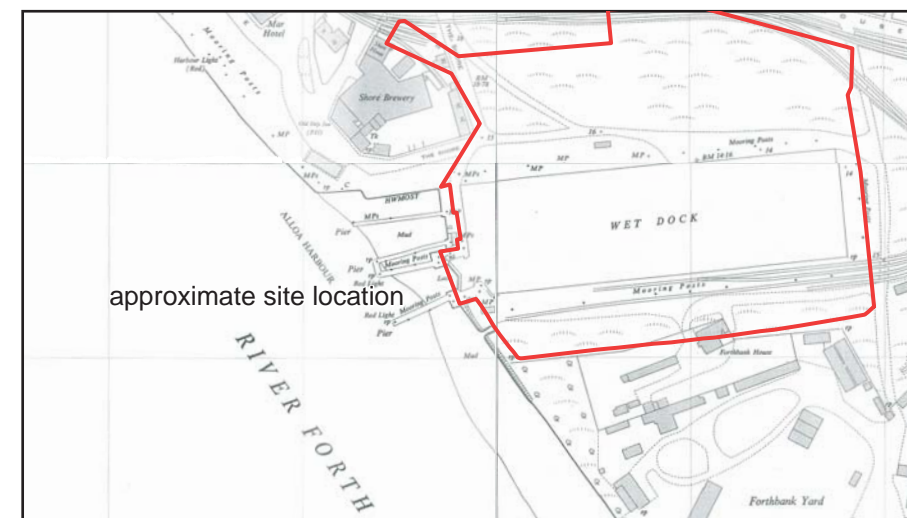
Ordnance Survey 1866



Ordnance Survey 1900



Ordnance Survey 1922



Ordnance Survey 1951

Figure 2: AHC07, Map progression showing the development of the Port and Wet Dock.



Plate 1:
General view of infilled dock - looking east.



Plate 2:
Entrance to wet dock - looking east.



Plate 3:
Aerial photo of Alloa harbour c.1950.



Plate 4:
The harbour and dock beyond - looking east.

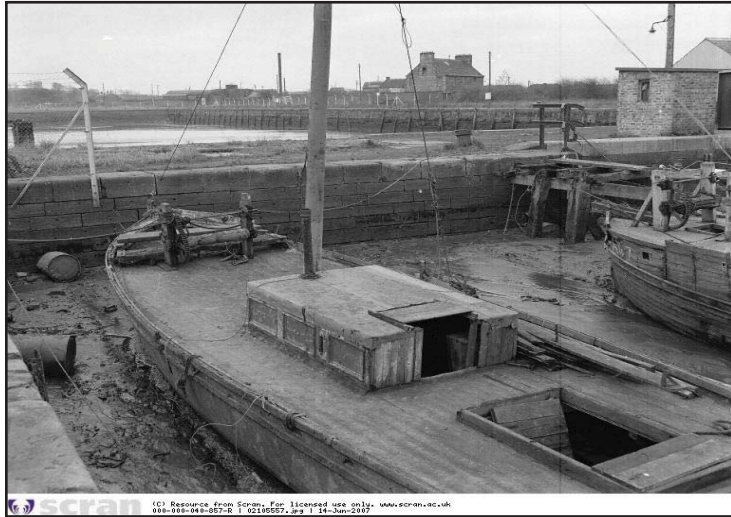


Plate 5:
Harbor and wet dock c.1950 - looking southeast.



Plate 5a:
Blocked 1880's gate - looking south.



Plate 5b:
Blocked 1860's gate. Note the difference in the cope stones - looking south (1860's in the foreground & 1880's beyond).



Plate 6:
Working shot of excavation of Trench 2 - looking north.



Plate 7:
Trench 1 - General shot - looking north.



Plate 8:
Trench 1 - Detail of brickwork on quay wall.



Plate 9:
Trench 2 - Coping with possible groove (next to scale) cut by rubbing of cables from berthed vessels.



Plate 10:
Trench 2 - Brandering on quay wall.



Plate 11:
Trench 4 - Cope and stonework of quay - looking south.



Plate 12:
Trench 5 - Cope and stonework of quay - looking south.



Plate 13:
Trench 6 - Looking south.



Plate 14:
Trench 7 - Cope and stonework, and possible groove from cable - looking south.