

Archaeological Excavation
19th century lighthouse and gun mount
Headland, Hartlepool



Image courtesy of Michael Driver



TA25/03

OASIS ID teesarch1-532913

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July 2024

Janice Adams & Emma Watson,
with assistance from Cliff Cordiner and Steve Walker

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Contents

List of Figures

List of Tables

Summary

Acknowledgements

1. Introduction
2. Location and Geology
3. Historical and Archaeological Background
4. Aims and Objectives
5. Methodology
6. Results
 - Excavation Descriptions
 - Trench 1
 - Trench 2
 - Phasing
 - Trench 1
 - Trench 2
 - Survey
7. Finds
 - Introduction
 - Pottery
 - Clay Pipes
 - CBM
 - Glass
 - Stone
 - Metalwork
 - Animal Bone and Shell
 - Miscellaneous
 - General Discussion of Finds
8. Discussion
9. Conclusion

10. Further Research

11. Bibliography and Sources

List of Figures

Figure 1: Site location

Figure 2: Trench locations

Figure 3: Trench location overlain on the Geophysical interpretation

Figure 4: Plan of Trench 1

Figure 5: Trench 1 Sections

Figure 6: Plan of Trench 2

Figure 7: Trench 2 Sections

Figure 8: The white sandstone lighthouse base (106) and stepped foundation in trench 1. Lewis holes are visible in the north part of the image, looking north

Figure 9: Detail of the stepped foundation

Figure 10: One of the Lewis holes in a slab

Figure 11: Trench 2 showing the concrete apron (202) and the concrete demolition rubble in layer (213), looking south

Figure 12: Detail view of the exposed vertical face of the concrete apron (202)

Figure 13: Excavation of Trench 1

Figure 14: Excavation of Trench 2

Figure 15: Members of the volunteer team

Figure 16: Volunteers surveying

Figure 17: Surveying

Figure 18: Finds processing

Figure 19: Ceramic gaming piece with an example of the game of Bobber and Kibs - Trench 2

Figure 20: Part of Marmalade jar of W P Hartley found in excavation and an example of a complete base - Trench 2

Figure 21: Yorkshire Relish bottle - Trench 1

Figure 22: 'Y' shaped iron bar - Trench 2

Figure 23: Lead Acid Battery fragments and image of complete battery - Trench 1

Figure 24: Leather shoe heel showing copper alloy tacks Trench 2

Figure 25: .303 rifle cartridge Trench 1

Figure 26: Bicycle tyre and inner tube – Trench 2

List of Tables

Table 1: Context information Trench 1

Table 2: Context information Trench 2

Summary

This report describes the methodology and results of an archaeological excavation undertaken by Tees Archaeology on the Headland, Hartlepool. The site is centred on National Grid Reference NZ 53220 33792. The fieldwork was undertaken in July 2024 as part of the Heritage Lottery Funded SeaScapes Project.

The site is an area of maintained open space to the east of the current lighthouse on the Headland at Hartlepool, with public footpaths and local roads surrounding the site. The Heugh Battery Museum is located to the north of the site, which is bounded to the west by the PD Ports enclosure containing the current lighthouse and other buildings.

The northern part of the green space was home to the original lighthouse on the headland (1846-1915) whereas the southern area was the location of the Lighthouse Battery (1709-1956). Both structures had been demolished in 1915 and 1956, respectively.

The site was subject to a geophysical survey in 2014. This provided possible locations of both the original lighthouse and Lighthouse Battery gun mount. Further research and investigation secured the location of the gun mount and offered three possible sites for the lighthouse (all within a 25m area). The excavation was carried out to understand how each of these structures was demolished, as well as to engage local people and to raise awareness of the heritage of the area.

The archaeological excavation comprised the investigation of two trenches.

The excavations demonstrated that there was excellent below-ground survival of both structures, with the lighthouse's arc of sandstone blocks providing a secure location for the 19th century structure. The gun mount was equally uncovered: its whitewashed walls serving as a reminder of the state of preservation in 1956.

Acknowledgements

Tees Archaeology would like to thank all of the 49 volunteers who took part the project and made it such a success (listed on the back of the report).

We would like to thank the Heugh Battery Museum manager, Diane Stephens, who suggested the project in the first place and gave us lots of support throughout. Our knowledge was greatly enhanced through the help of Joe Foster, who generously shared all of his own military research with us. The Local History team at Sir William Gray House also provided comprehensive information about the history of the original lighthouse on the site.

The project could not have taken place without the permission and support of Hartlepool Borough Council, and we would particularly like to thank Steve Wilkie, Dave Lancaster and John Hunter, who all helped enormously. We are particularly indebted to Robin Daniels, who came out of retirement to volunteer. We would also like to thank HBC's Communications team who came out daily to video staff and volunteers discussing the excavation; they posted regular blogs on their website.

The excavation was part of the SeaScapes, Tyne to Tees, Shores and Seas project, funded by the Heritage Lottery Fund and we would like to thank Jenny Swainston, SeaScapes Project Manager for her support.

1. Introduction

An archaeological excavation of land at the Headland, Hartlepool (Figure 1) was undertaken between 15th and 21st July 2024 as part of the Heritage Lottery Funded SeaScapes project. The fieldwork was led by Janice Adams and Emma Watson of Tees Archaeology, as well as former Archaeology Officer Robin Daniels and was carried out with the help of local volunteers.

A geophysical survey had taken place previously and this, along with other historic and local maps, was used to help determine the position of the trenches. The project was carried out to assess the archaeological remains in the area, involve local people and to raise awareness of the historical importance and heritage of the area.

The excavation was designed to uncover details about the demolition of two structures: the first lighthouse on the headland and the gun mount of the Lighthouse Battery.

The excavation involved 49 volunteers, many of whom were from Hartlepool and other towns along the north-east coast and the majority had not been involved in an archaeological project before. Between them they were on site for 86 days (Figures: 12-18)

Throughout the project, volunteers and staff engaged with the general public, from whom there was a high level of interest. There was strong media coverage of the project with BBC Look North, BBC Sounds, the Hartlepool Mail and Hartlepool Life running pieces. In addition to this, the Communications team at Hartlepool Borough Council came out daily to video the excavation, posting their blogs on their website. Many different volunteers were involved in discussing the uncovered artefacts and in describing their experiences. To date there have been over 94,000 views of the HBC Facebook videos.

2. Location and Geology

The site is located adjacent to the current lighthouse on high ground west of the Headland Promenade. Housing is to the west and the Friarage Field football ground, the Heugh Battery Museum and the Headland bandstand are to the north and north-west. (Figure 1). The site lies at approximately 12m above sea level.

3. Historical and Archaeological Background

Lighthouse

In the mid-1800s, the Headland was the main port of Hartlepool. As an almost island itself, it jutted out from the coastline concealing a safe haven on its western side. Yet, in stormy conditions, it was very challenging to safely guide boats into the harbour, avoiding the rocky and treacherous coastline. Consequently, there were numerous shipwrecks along the north-east coast, yet the nearest lighthouse to Hartlepool was in Seaham (Joe Foster, pers. comm.). A lighthouse was urgently needed on the Headland and the loss of 14 lives on a London brig in 1843 made the situation even more urgent.

Three sites were proposed:

- 1) A lamp on the end of a new pier (never constructed).
- 2) A lamp on the rocks out to sea.
- 3) A lamp on the Heugh, Hartlepool headland.

The latter was chosen due to its location. It had the widest vista up and down the coast and could be seen from the furthest distances. It was designed and built by local civil engineer, Stephen Robinson, the foundation stone being laid on 12th August 1846 (Information from the

Local Studies & Family History team, Hartlepool Borough Council). The suggestion, by his grandson, Bill Lindsay, that William Schaw Lindsay was involved in designing or building the lighthouse has unfortunately not been able to be corroborated (Local Studies and Family History team, pers. comm.).

The lighthouse was constructed of huge blocks of white sandstone, the provenance of which has not been ascertained. It housed two lights, a stationary (later occulting) huge white Fresnel light and a smaller red light for local journeys. It was the first coal gas-powered lighthouse to be lit efficiently and consistently in the world, with its supply both coming from the Hartlepool gas works and from a nearby gasometer, in case of intermittent supply and varying pressure.

Only 14 years after its erection, the later Lighthouse Battery was constructed. This led to a problem with the lighthouse. Its location meant that the arc of the nearby gun battery was limited and the Bombardment of Hartlepool on 16th December 1914 demonstrated why this was such a major issue. The Lighthouse Battery gun had failed after four rounds and, by the time the soldiers had it operating again, the German warships were heading north. The Lighthouse Battery gun could not fire as the ships were hidden from the gun's firing range by the lighthouse. So, the War Office now had the evidence it needed to have it removed. In 1915, the lighthouse was demolished, and the military made a land-grab, taking over the land occupied by the bombed buildings nearby too, barricading the road and blocking off the entire Heugh.

The large, white light from the lighthouse was carefully removed and is now on display at the Museum of Hartlepool. However, the fate of the sandstone blocks from the lighthouse is still unknown.

A temporary lamp was erected on the town moor and only in 1926, did it move back to the Heugh and its current position 130 yards to the west of the original location.

The new lighthouse, completed in 1926, was constructed of cast iron and deliberately made to be dismantled, should such a need ever arise.

Gun mount

Thanks to fantastic research by Joe Foster (2004, 2013), there is significant knowledge about the gun battery on the headland at Hartlepool. From the 16th and 17th centuries, there is reference to artillery in the town but the first guns to have been deliberately placed on the headland were in 1709. At this time, the area was known as Soulbys Point, with Soulbys Point Battery being established around 1740. This was later referred to as the East Battery by Sharp (1816, 168-9).

However, in the mid-19th century, a period of European instability 'stoked fears of conflict' and invasion (Foster 2004, 10). In 1855, the Durham Artillery militia began training within the old emplacements of the East Battery, until the Lighthouse Battery was constructed on top, replacing the old emplacements in 1860. The Heugh Battery, its sister site, was also built at that time. They were probably 'built by contracted labour, often Irish navvies' and mainly operated by volunteers (Ibid. 11-12). The volunteers were still running the batteries in 1906, when Major General Jason Dalton commented that, the 'northern Volunteer Corps are very efficient and keen' (Ibid. 27).

The Lighthouse Battery first held cannon on wheeled carriages, but later smoothbore muzzle-loading followed by breach-loading guns and despite the changes in artillery, the Battery's outline barely altered from 1740 to 1956 (Foster 2013, 5, 7; pers. comm.).

By the 1880s, it became clear that coastal defences needed to be upgraded and due to ironclads and other advancements in shipbuilding, ships were far more resilient. After their experience in Alexandria in 1882, the Royal Navy realised that concealed coastal defences could rarely be destroyed by a ship attack (Foster 2004, 15). Guns therefore needed only a narrow apron of concrete surrounding their gun pit and the guns could be mounted in the open so that they could operate more speedily in the event of an attack (Joe Foster, pers. comm.).

In 1892, the 6-inch Mark VI breach-loading gun replaced the smoothbore at the Lighthouse Battery. Despite the above comment, the gun was constructed on a hydro-pneumatic mounting, meaning that it was placed in a deep pit and only popped up on firing (Ibid.). The front of the gun mount was protected by the concrete apron, whereas the back of the mount would have been left open so that shells hitting the pit might have an exit (Ibid.). The disadvantage of these hydro-pneumatic guns was their slow rate of fire and reduced barrel life (Foster 2004, 21-22).

By 1900, the 6-inch Mark VII gun, with underground magazine, had replaced the Mark VI. This gun, introduced by Vickers, was mounted on a central pivot in the open but still within the gun mount pit. Its role was 'to prevent hostile vessels from closing on a port to inflict damage' (Ibid. 22). This gun served two world wars and was only replaced in 1942, with a 6-inch Mark 24 gun, mounted on a 45-degree high angle (Joe Foster, pers. comm.).

In the later 1930s, a new gun mount inner apron would likely have been constructed on pillars, with the old core of the outer apron removed and extended to enlarge the pit. A lipped rim may have been added at this time as well (Ibid.).

4. Aims and Objectives

There were three primary aims of the project: -

- To better understand the changing use of the site from the Napoleonic period onwards

- To determine if there were significant archaeological remains on the site

- To engage local people and volunteers with the project.

The results of the project will form part of a permanent archive of the site. The archive will be deposited with Tees Archives under the site code **HLB24**.

5. Methodology

Two trenches were opened: Trench 1 over the first of the three locations of the destroyed lighthouse; and Trench 2 over the more likely location of the gun mount.

12 volunteers were invited to attend each day, 6 per trench. No machinery was used, and each trench was de-turfed by hand, with the sods and later spoil laid on plastic sheeting to protect the ground surface.

Each morning, the new volunteers were taken through a safety briefing and tool usage programme to ensure safe handling on site. Those who had previously volunteered with Tees Archaeology could continue the tasks set by the trench supervisor for each trench. New volunteers were offered a range of experiences and given support and guidance.

Once each trench was deturfed, the ground was trowelled back to better understand the site's geology and content. Then, according to location, mattocks and shovels were used to unearth

the site's archaeology, after which trowelling was again employed to carefully unpick the levels and to gain a better understanding of the exposed archaeology in each trench.

6. Results

Trench 1 Excavation description

Trench 1 (Figures 2- 5, & 8-10) was targeted over a geophysical anomaly in an area thought to represent deposits relating to the former Heugh Lighthouse. The trench was T-shaped: the northern part measuring 11.4m by 2m and the southern part 8.95m east-west by 2m.

The earliest deposit encountered was the stepped foundation of the former lighthouse base and the contemporary overlying circular white sandstone lighthouse base (106). The foundation continued below the excavation limit. Excavation timescales did not allow further investigation. No masonry marks were recorded on the slabs however there was evidence of chisel marks and precision cut rectangular lifting holes or Lewis holes. Lewis or Lewisson the name deriving from a lifting device that was often used when stones were of a particular shape and/or chains and slings could not be used to place them in position.

This foundation was overlain by a limestone aggregate deposit (107=109) that was excavated to a depth of 0.73m. No foundation cut was seen during the excavation and is therefore likely to lie outside of the excavated area. Metal finds were recorded during partial excavation of this layer. Above this, to the south, was a layer of asphalt (105) up to 0.12m thick. Fragments of pot, glass, metal and slag were found in this deposit. Also overlying (106) to the north was a layer of dark-brown silty-sand (108) that measured up to 0.12m thick; small fragments of crushed limestone aggregate were visible in this layer and fragments of glass were hand recovered. Above this was a compacted clay layer (104) with brick and crushed aggregate inclusions. Finds included fragments of pot, glass and metal. The visible layer was 7.3m long by 2m wide and its overall depth was up to 0.11m. A 0.1m thick layer of dark-brown sandy-silt (103) containing numerous small pebbles and fragments of pot, animal bone, glass, ceramic building material (cbm) and metal overlay this deposit. Dark-brown sandy-silt (101), up to 0.17m thick, covered the whole trench. Finds from this layer included glass, metal and pottery fragments. Overlying this layer was orange/light-brown clayey-silt up to 0.15m thick (102) which contained frequent pebble inclusions. Fragments of pottery, bone, glass, a clay ball and part of a shoe were recovered from this layer. The topsoil layer (100) covered the full trench. It measured up to 0.13m thick and comprised a sandy-silt with infrequent pebble inclusions. Small fragments of pottery, glass, animal bone, grey slate, clinker and coal, ceramic building material (CBM), clay tobacco pipe stem, slag and metal objects were recovered from this layer.

Table 1: Context information Trench 1

Context	Description	P	B&S	G	M	CP	CBM	S	Other
100	Topsoil Layer	*	*	*	*	*	*	*	*
101	Stony dark-brown sandy-silt layer	*		*	*				
102	Orange-brown clayey-silt layer	*	*	*					*

Context	Description	P	B&S	G	M	CP	CBM	S	Other
103	Dark-brown sandy-silt layer	*	*	*	*		*		*
104	Compacted clay layer	*		*	*				
105	Asphalt	*		*	*				*
106	Lighthouse sandstone base								
107	Crushed limestone aggregate								
108	Silty-sand layer			*					
109	Crushed limestone aggregate				*				
U/S	Unstratified	*			*	*			*
Key P = pottery, B&S = bone & shell, G = glass, M = metal, S = stone, CP = clay tobacco pipe, CBM = building material									

Trench 2 Excavation description

Trench 2 (Figures 2, 3, 6, 7, 11-12) was broadly square and measured 4.85m by 5m and was targeted over a geophysical anomaly potentially relating to the former lighthouse gun battery.

The earliest deposit was the concrete apron of the former lighthouse gun battery (202). This was exposed in the east and south part of the trench. The concrete apron would have served to protect the gun and deflect incoming fire. Concrete aprons were often circular, but some did only occupy the seaward side of the gun position. The gun would have been positioned in a pit or chamber to the rear of the apron, in this case to its north-east.

Signs of repair or modifications (210) were visible to the concrete apron (202) measuring 0.3m by 0.4m and 0.5m by 0.45m in size. The repairs comprised of two rough and irregular concrete patches. These stood out from the original concrete due to the high concentration of pebbles and beach flint within their concrete make-up.

Evidence from the demolition of the site was visible as Jack Hammer peck marks could be seen cutting into the concrete structure forming shallow hollows or depressions. Initially three of these depressions (204, 206 & 208), filled by grey-brown silt (205, 207 & 209), were interpreted as anchor points/slots that may have housed pins to secure a camouflage net. However, excavation found this inconclusive although a Fe object was embedded into (206) and remained in situ. Each measured (204: 0.42m by 0.54m x depth 30mm) & (206: 0.6m x 0.54m x max. depth 70mm) & (208: 0.2m by 0.3m x max. depth 50mm).

Above the concrete was the post-demolition backfill deposit (213) that contained a high quantity of large concrete pieces from 0.3m to 1.2m in size. Many of these were left in situ as they were too heavy to remove. A small sondage was excavated through this layer to expose part of the vertical face of the gun battery apron, but the bottom of this deposit was not reached. In the north part this deposit was below a layer of mottled orange and dark black-brown sand (212) 0.14m thick.

Above this was a layer of grey-brown friable silt (203) up to 0.25m thick. This layer contained a high quantity of limestone aggregate fragments very different from the layer above. Finds from this layer dated to the 19th and 20th centuries and included pottery, metal, stone, and CBM. Also overlying the post-demolition backfill deposit was a dump of yellow clay (211) 0.15m thick measuring 0.55m by 0.35m overall. Part of a leather shoe/boot heel was recovered from the clay.

Above this was a 0.25m thick layer of brown friable silt (201). This layer contained redeposited clay lumps, pea gravel and small pebbles. Finds like those in the underlying layer were recovered these included pottery, glass, bone or shell, metal, clay tobacco pipe, a gaming piece, roofing slate, and CBM.

Overlying this layer was the brown clay-silt topsoil (200) measuring up to 0.09m thick. Glass, pot, metal, brick, tile, slag, leather, fragments of a bicycle tyre and rubber tube, and clay tobacco pipe stem of 19th and 20th century date were collected from this layer.

Table 2: Context information Trench 2

Context	Description	P	B&S	G	M	CP	CBM	S	Other
200	Topsoil Layer	*		*	*	*	*	*	*
201	Layer with redeposited clay lumps	*	*	*	*	*	*	*	*
202	Concrete gun battery apron								
203	Grey-brown silt layer	*			*		*	*	
204	Cut of demolition crater								
205	Fill of (204), grey-brown silt								
206	Cut of demolition crater								
207	Fill of (206), grey-brown silt								
208	Cut of demolition crater								
209	Fill of (208), grey-brown silt								
210	Concrete repairs/modifications								
211	Yellow clay deposit								*
212	Mottled sand layer								
213	Post-demolition backfill deposit								
U/S	Unstratified				*				
	Key P = pottery, B&S = bone & shell, G = glass, M = metal, S = stone, CP = clay tobacco pipe, CBM = building material								

7. The Finds

Finds Report – HLB24 by Cliff Cordiner

Introduction to Finds Report

In summer 2024 two trenches were opened near the Lighthouse on Hartlepool Headland. One trench targeted the site of the Lighthouse Battery and the other the former site of the Lighthouse. In both cases the structures had been dismantled and the sites made good and

levelled. The majority of the material recovered seems therefore to date from this phase of dismantling and making good of the site. None of the material found can be clearly associated with the two structures, although it is possible that they may have originated from them, all of the material recovered is of 19th century date or later. All of the material has been catalogued and the details of this are held in the archive.

Pottery

Introduction & Methodology

All of the pottery was of 19th century or later date and the generally small size of the pieces encountered suggested that it had been graded and sorted prior to deposition on the site. Pottery was assigned a fabric number as it was encountered. For ease they are grouped below by period and are discussed based on minimum number of vessels. Sherd counts and weights have also been recorded. Table 1 below shows the total numbers from each trench.

	Number of Sherds	Weight (grams)	Minimum number of Vessels
Trench 1	112	1,444	87
Trench 2	67	451	48
Totals	179	1,895	135

Table 1: Total amount of pottery recovered

Trench 1

This trench was positioned to locate the base of the 19th century lighthouse, which was demolished in 1915 following the Bombardment of Hartlepool.

Trench 1 Context	19/20th century onwards
U/S	7
100	33
101	12
102	25
103	21
104	13
105	1
Totals	112

Table 2: Trench 1 pottery sherds by context.

Trench 2

Trench 2 was placed over the site of the former Lighthouse Gun Battery which had been partly demolished, filled in and landscaped in the latter half of the 20th century.

Trench 2 Context	19/20th century onwards
200	5
201	59
203	3
Totals	67

Table 3: Trench 2 pottery sherds by context

Fabrics

The following fabrics were identified

Fabric	Description of Fabric	Surface Treatment	Decoration	Other
1	Coarse red/brown	Internal coarse, exterior smoothed	None	Plant Pot
2	Red/Brown	Interior white slip with cream glaze. Exterior clear glaze	None	Kitchen Earthenware
3	Fine light grey fabric with few inclusions	External light brown glaze	None	Stoneware
4	Fine light grey fabric with few inclusions	Internal & External clear glaze	External fine ribbing	Stamp on base with 'W', 'TRADEMARK REGD' and possible anchor design. Stoneware Marmalade Jar
5	Fine white/cream fabric	Internal & External clear glaze	Moulded leaf shape and other moulded decoration. Various colour transfers	Creamware
6	White/light grey fine fabric	Internal & External clear glaze	Fragment of black lettering visible	Creamware
7	Light grey fabric with many small grog inclusions	All over white slip, internal clear glaze, external blue / green glaze	Moulded decoration to exterior	Creamware
8	Cream with a number of dark inclusions	All over clear glaze	Applied blue and red bands and lines	Creamware
9	Dark red quite coarse	Dk brown glaze all over	None	Redware
10	Cream fabric with many grog inclusions	Clear glaze over white slip internally and over light brown slip externally	yellow/green foliage transfer	Creamware
11	Cream fabric few inclusions	All over dark brown glaze	Moulded decoration to exterior	Creamware
12	Fine light grey fabric	All over clear glaze with	painted yellow/green foliage	Bone China
13	Fine cream fabric	All over glaze, white slip to interior	External moulded decoration	Creamware mixing bowl
14	Cream fabric with numerous dark inclusions, coarse	External dark brown glaze, internal light brown glaze	None	Kitchenware?

Fabric	Description of Fabric	Surface Treatment	Decoration	Other
15	Coarse light grey	Dark brown glaze all over	None	Storage vessel
16	Coarse light grey	All over glaze, white slip both sides	None	Sanitary ware

Table 4: List of Fabrics

As noted above all fabrics are 19th century or later in date. They fall into six main groups: -

Plant Pots: Fabric 1 is the common or garden plant pot.

Kitchenwares: Fabrics 2 and 14 are from pottery used in the kitchen.

Storage: Fabrics 3, 4 and 15 are all stonewares used for storing foodstuffs such as Marmalade

Tablewares: These chiefly comprised a range of creamwares, fabrics 5, 6, 7, 8, 10, 11 and 13, while fabric 12 was a slightly finer bone china. These also included examples of Redwares, fabric 9.

Sanitary ware Fabric 16 was part of a sanitary ware suite, perhaps a wash bowl or toilet.

Frequency of Fabrics

Fabric Functions	Number	Weight	Vessels
Plant Pots: 1	10	101	7
Kitchenwares: 2 & 14	11	198	6
Storage: 3, 4 & 15	61	516	45
Tablewares: 5, 6, 7, 8, 9, 10, 11, 12 & 13	95	1017	75
Sanitary ware:16	2	63	2
Totals	179	1895	135

Table 5: Fabrics by function

There is clearly a preponderance of tablewares, but it is a little surprising to see the stoneware storage vessels occurring in such a relatively large quantity. These included a number of pieces of marmalade jars one of which had part of a logo, the letter "W", and the words "Trade Mark Regd." stamped into it. The logo fragment shows the base of a lighthouse indicating it is from a jar manufactured by W P Hartley (see Figure 20).

William Pickles Hartley was born in Colne, Lancashire, in 1846. He left school at the age of 14 and began work in his mother's grocery shop. He started his commercial career at the age of 16 when he opened his own business. This quickly became successful until deliveries of jam from a local supplier failed to arrive. Rather than disappoint his customers he started making his own jam to sell in earthenware pots (Jam-Yesterday-The-Hartleys-Jam-Factory-Bermondsey-Street-Back-Stories-Number-13.pdf).

While the distinctive jars are often referred to as Marmalade jars, they were used for jams and all preserved fruit. They usually had a label pasted on the outside and a groove around the rim for the string to hold the wax paper or cloth lid in place.

WP Hartley is believed to have designed the distinctive jars in the 1870's. Following the abolition of sugar duty in 1874 he sold his grocery business and set up a factory in Bootle. Following on from the success of this he opened a new factory in Aintree in Liverpool. They went on to open a second factory in Bermondsey, London in 1890, so whether the base stamp mentions just Liverpool, or Liverpool and London help to give a rough date.

By the 1920's most companies had switched from stoneware to the cheaper glass bottles and jars. In 1911 Hartley gooseberry jam was sent with Scott to the Antarctic. An expedition years later reported that it was still fresh and palatable.

As the stoneware jars are attractive and hard wearing it is likely that many remained in use in households around the UK long after they had stopped being made. The assemblage would appear to be derived from a largely domestic setting.

Miscellaneous

In addition to the ceramic vessels discovered there was a single gaming piece from trench 2 (see Figure 19). This measures 14mm x 14mm x 19mm and has ribbed sides. This is probably a jack from a children's' pocket game known as Bobber and Kibs which is a variation on a game sometimes referred to as jackstones or simply jacks. The game is played using a large marble known as the bobber, and rectangular pieces known as kibs. Originally they would have been made of bone, but in later versions they were made of pottery.

Pottery Conclusion

Most of the pottery comprises items used as tableware for dining. There is also a significant amount of stoneware used for storage and earthenware, with relatively little kitchen ware present. All the material dates from the 19th or 20th centuries.

Clay Pipes

Clay Pipes are usually ever-present on sites from the 17th century onwards and particularly those of 19th century date. There are insufficient examples here to draw any conclusions.

Trench	Context	Quantity	Description
1	u/s	2	Pieces of stem
1	100	1	Pieces of stem
2	200	2	Mouthpiece and partial bowl with spur. Bowl is quite small, 16mm diameter at base.
2	201	9	Pieces of stem. None stamped. One with smaller diameter hole.

Table 6: Clay Pipes

CBM

There were small quantities of CBM, comprising roof tiles, pieces of brick and pieces of dark brown glazed drain. These ranges in date from 19th to 20th century.

Glass

Glass is divided into two main functions, windows glass and bottle or vessel glass.

Window Glass

Trench	Context	Quantity	Description
1	100	19	Assorted window glass including wired opaque security glass
1	103	2	Assorted window glass including security glass
1	104	3	Assorted window glass including security glass
1	105	1	Assorted window glass including security glass
1	108	1	Thick, 10mm, clear glass. Possibly plate glass

2	200	2	Thick green tinted glass with one surface flat and one rounded coming to a thin edge, and moulded semi opaque blue glass with pebbled design on one face
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Table 7: Window glass by context

There was relatively little window glass, although the presence of security glass is of note.

Vessel Glass

Trench	Context	Number of pieces	Number of bottles	Comment
1	100	26	13	Includes one small bottle stamped " Thick Yorkshire Relish", GB on base.
1	101	1	1	Pearlescent glass sherd
1	102	17	10	
1	103	11	5	Includes part of acid battery (see below 'Metalwork')
1	104	13	3	
2	200	6	5	
2	201	21	12	

Table 8: Vessel glass by context

The Yorkshire Relish Bottle contained a product made by Goodall Backhouse, of Leeds (see Figure 21). It was advertised as similar to Worcester Sauce but fruitier and without the anchovies.

Yorkshire Relish holds Trade Mark no 3,101 and is among the first names to be registered when Trade Marks began in 1876. Goodall Backhouse was involved in a landmark legal case against Birmingham Vinegar Brewery who had begun manufacturing an imitation product which they branded as Yorkshire relish in 1890. The case ruled in favour of Backhouse Goodall meaning only they could use the name, and they spent £25,000 in legal fees defending their rights to the Trade Mark name (history of Goodall Backhouse - Let's Look Again).

It was available as either thick or thin. Thick came in square bottles, thin in round bottles. The thick version was introduced in 1935, and this provides a '*terminus post-quem*' date for the bottle found in the excavation. It was made from apples, tomatoes, dates, tamarinds, and spices. It sold in various size bottles originally priced at of 3d, 6d, and 9d as shown in newspaper advertisements of the period (Fleetwood Chronicle 27th Sept 1935). The company was sold to Hammonds Sauces in 1959, famous for their Chop sauce.

Metal

Iron

Various pieces of ironwork were found including both round and square nails of 19th and 20th century date. This included a piece of wrought iron section of fencing and a large 'Y' shaped iron bar up to 15mm thick (see Figure 22). The central part is 45mm wide and about 140mm long, it splits into two equal arms 28mm wide and 40mm long. Any detail is obscured by corrosion products.

Lead

Several scraps of lead were recovered. In addition, a piece of lead coated copper cable was found and parts of a Lead Acid Battery (see Figure 23).

Lead Acid Batteries were invented by the French physicist Gaston Plante in 1859, lead acid was the first rechargeable battery for commercial use. Early models consisted of two lead sheets separated by rubber strips and rolled into a spiral.

Copper Alloy

A few scraps of copper alloy were found and in addition a .303 rifle cartridge case missing its primer (see Figure 25). An early 20th century pressed uniform button, and two King George V pennies were also found.

Stone

Coal

Small to medium sized pieces of coal were found in both trenches. These were not significant quantities.

Slate

Slate becomes common on sites from the mid-19th century when it is imported for roofing purposes. Three fragments of roofing slate were recovered from trench 1 with partial nail holes present.

Ecofacts

Bone: A small quantity of animal bone was found, mostly butchered, including cattle, sheep, and chicken.

Other:

Leather: Finds included a shoe heel, 70mm x 70mm, stitch holes present, and the remains of heel of shoe, with tacks (see Figure 24).

Rubber: Two pieces of inner tube and one of tyre of bicycle were found in Trench 2 (see Figure 26).

Discussion of Finds

The finds assemblage dates wholly to the 19th and 20th centuries and the few clearly dated finds belong to the first half of the 20th century which would be consistent with the period when the Lighthouse site was landscaped but seems slightly early for the gun battery site, which was not landscaped until the latter half of the 20th century.

The absence of medieval material, considering Hartlepool is a medieval town may suggest the assemblage was drawn from the immediate area around the site, which was not developed until the mid-19th century.

8. Discussion

As the known literature stated that both the lighthouse and gun battery had been demolished or destroyed, in 1915 and 1956 respectively, it was assumed that little of their remains would be found *in situ*.

It was therefore a surprise and a delight to uncover the intact base of the lighthouse. At present, we know that the foundation consisted of at least three courses of white sandstone although complete excavation of the depth of the foundations could not be ascertained during this short dig. The material which had been used to infill the site after 1956 and before landscaping had strong connections with the inter-war/post WWII time period.

The excavation proved that an arc of this structure is completely undamaged, which strongly suggests that the original lighthouse had been carefully removed rather than destroyed. This notion is supported by the preservation of the many-panelled glass light, which resides in the Museum of Hartlepool. However, the location of the huge blocks from the sandstone structure is still unknown.

The gun mount, along with the entire Lighthouse Battery, was also documented as demolished, this time in 1956. At that time, the site was cleared in its entirety and the area laid to grass (Diane Stephens, Heugh Battery Museum Manager, pers. comm.). The discovery of the concrete gun mount apron therefore provided undocumented evidence of the alterations to the barbette, or lack thereof, over the last hundred years of its life.

According to expert Joe Foster it appears, based on its size, shape and girth, that the excavated apron of the gun mount was the original 1860 concrete, constructed to house the Mark VI hydro-pneumatic gun. This barbette had been a good enough size for the replacement Mark VII gun in the 1890s and was then wide and strong enough for the Mark 24-gun emplacement and remained the same when the later high-angle gun replaced the Mark 24. This means that the narrow apron for the Mark VII gun, suggested by the available literature, was never introduced at the Lighthouse Battery, which retained its non-standard wider aproned emplacement. This also means that the new replacement in 1938 also used the original wider apron, rather than the suggested inner apron on pillars and enlarged pit with extended apron with lipped rim. Clearly, none of these alterations were made and the Headlanders at Hartlepool chose to beat to their own drum, rather than being dictated to from afar. From the excavation evidence uncovered, this gun mount is now unique in Britain as, so far from the available evidence, it appears to be the only surviving 1860-gun mount in Britain.

It was not uncommon for Mk VI emplacements to be converted to Mk VII or Mk VII emplacements to be converted to Mk 24 but another Mk VI emplacement that went through both conversions has never been found, meaning that the lighthouse emplacement is unique. Judging by what we saw on the ground and the Record Plans it appears that the apron of the Mk VI emplacement was kept as it was fine for the Mk VII and remained wide and strong enough for the Mk 24 emplacement. In which case, the top of the apron uncovered was the original 1892 concrete which remained in use during the 1914 Bombardment and was also kept for the later high angle gun.

9. Conclusion

This excavation was prompted by a request...a request to know where the original lighthouse stood and whether any of the Lighthouse Battery survived below ground. Both structures had been described as 'demolished', the former in 1915 and the entire Battery in 1956.

The results of this excavation are both of local and regional interest.

The gun mount was discovered to be, most unusually, the size and circumference of that used to protect the town in the Bombardment of Hartlepool in December 1914 – the apron never having been altered since, despite more modern firepower.

The lighthouse base was revealed to survive as an arc of white sandstone blocks, beautifully shaped in a repeating pattern. Further investigations showed that the blocks each were 50cm deep and that there were at least three separate levels, stepped out to support the sandstone tower and heavy light.

10. Further research

It is hoped that, with local support, funding may be sought to fully expose the base of the lighthouse and leave it open for all to enjoy. Further investigations are certainly required to understand how deep the base of the lighthouse was; what happened to the lighthouse's local red light; where the sandstone was sourced; and what happened to the dismantled lighthouse in 1915. There is certainly a lot of local interest in this, and crowdfunding may be a way to achieve answers to these questions.

The Lighthouse Battery also deserves further research. Joe Foster (2013, 5) wrote that the site of the Lighthouse Battery should be valued as of 'national importance' due to its 'continuity of defence from at least 1740 to 1956' and its role in Hartlepool's Bombardment in 1914. A programme of work, in the form of a future community excavation, would enable us to better understand the rest of the site, before its re-burial. As this short excavation demonstrated, the War Office may have set out plans of alteration to its northern batteries, but local decision-making may have intervened, as clearly happened in this case. What other knowledge might be gleaned from future investigations?

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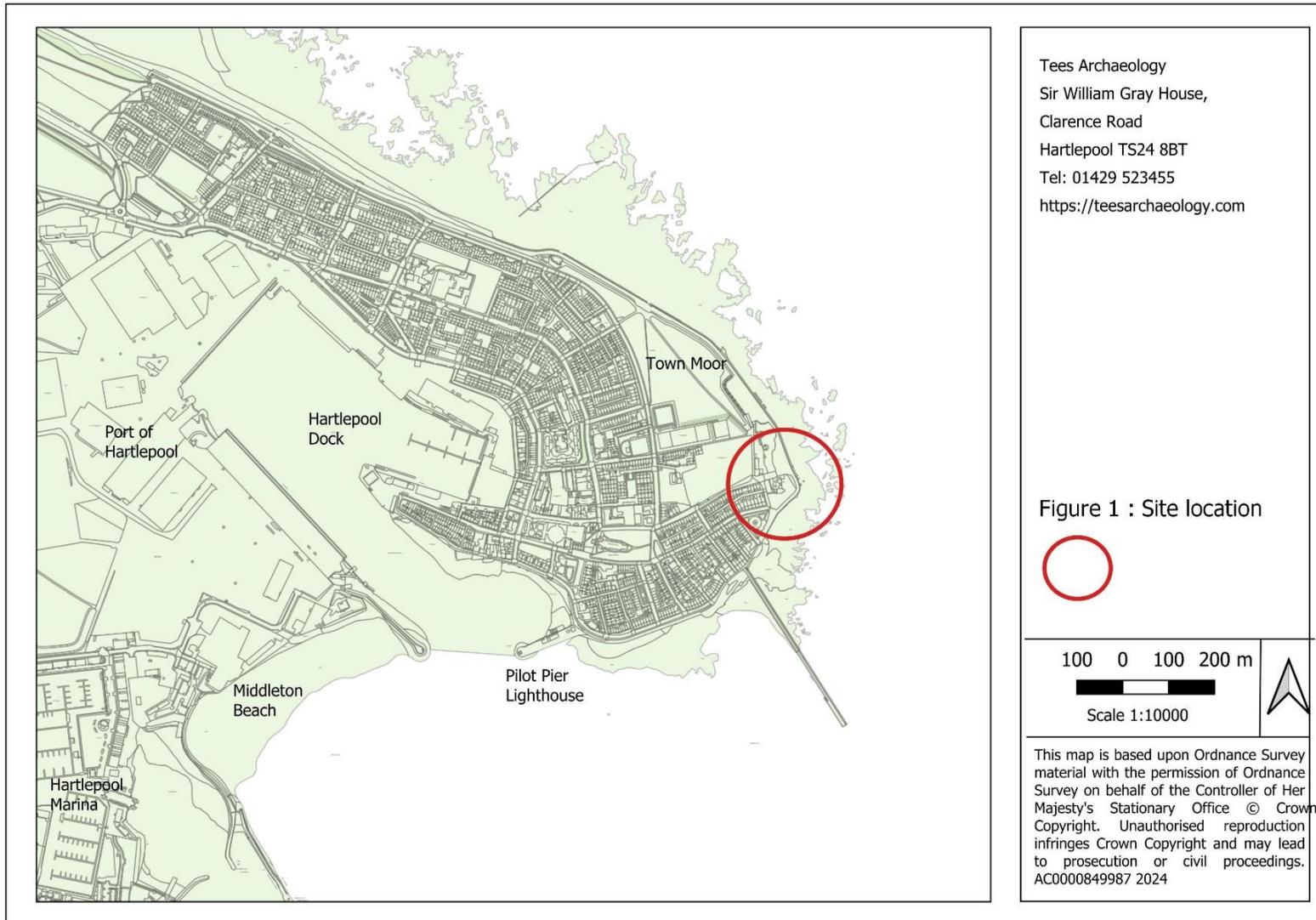
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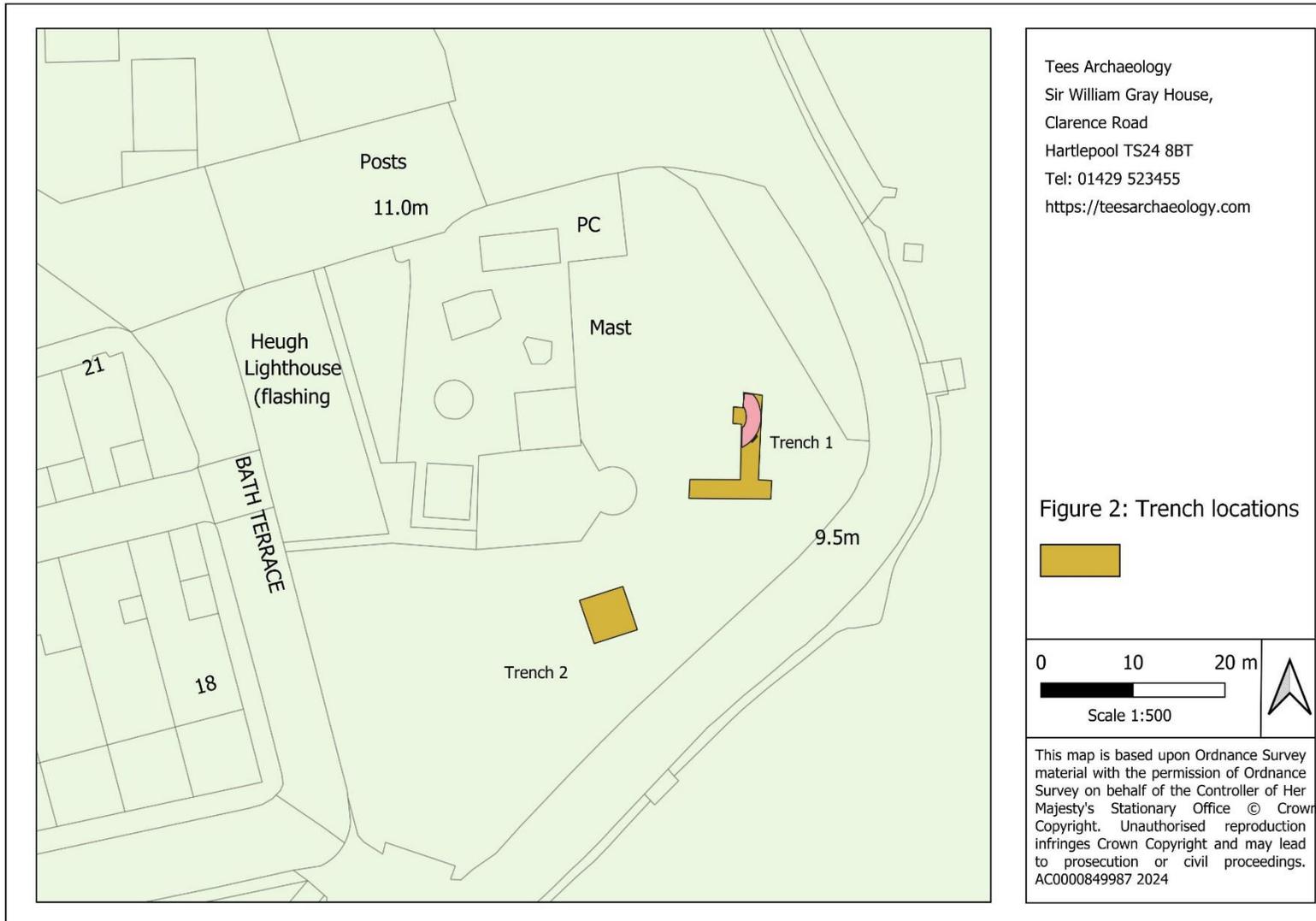
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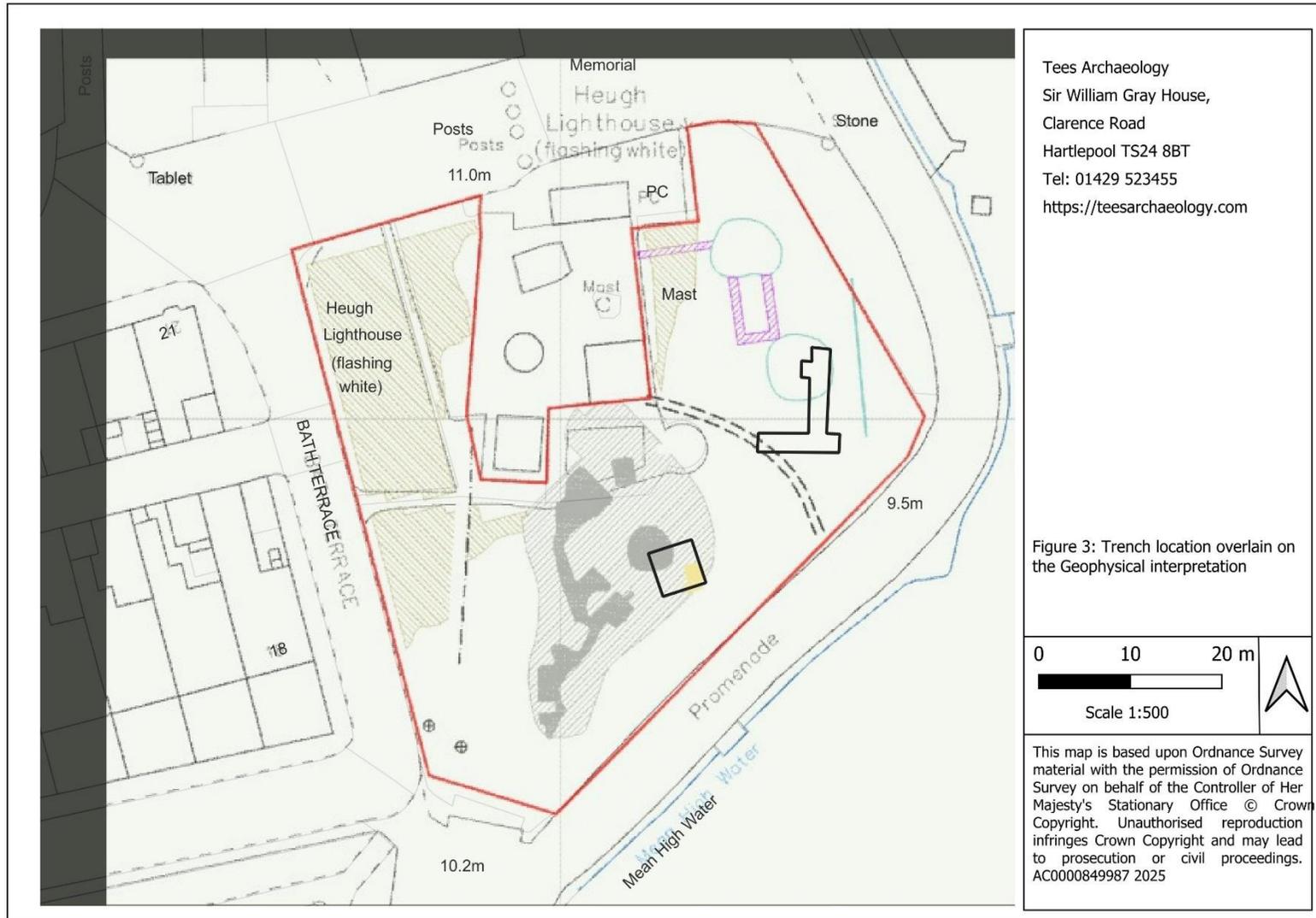
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Figures







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Figure 4: Plan of Trench 1

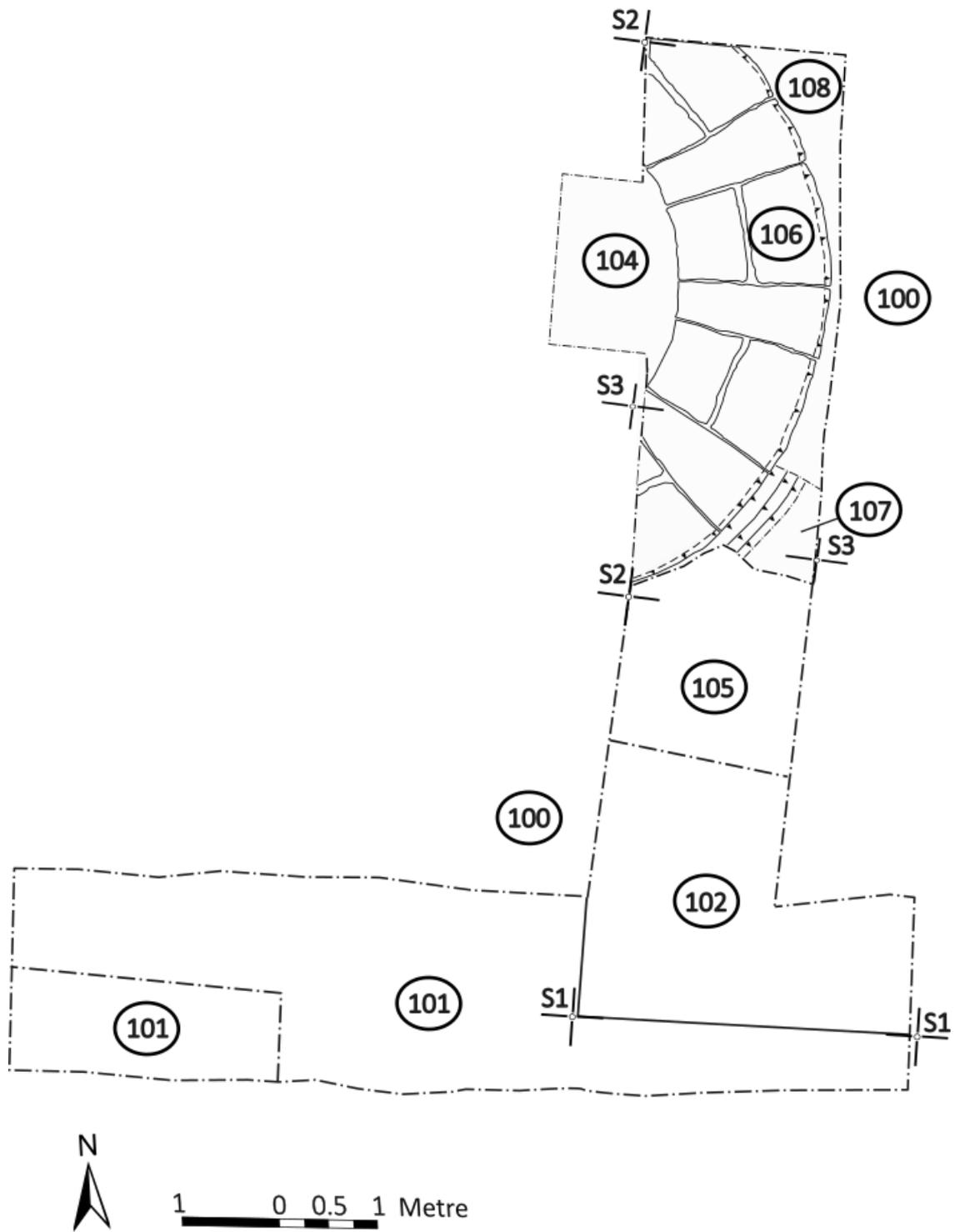
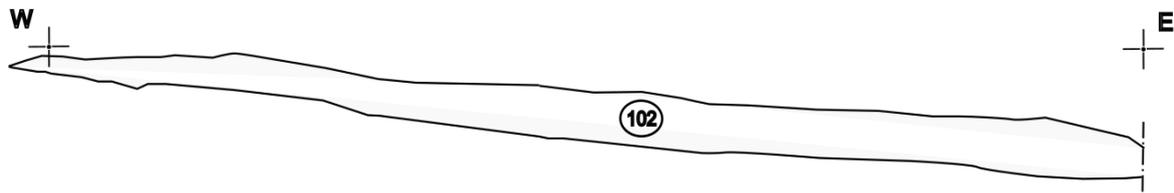
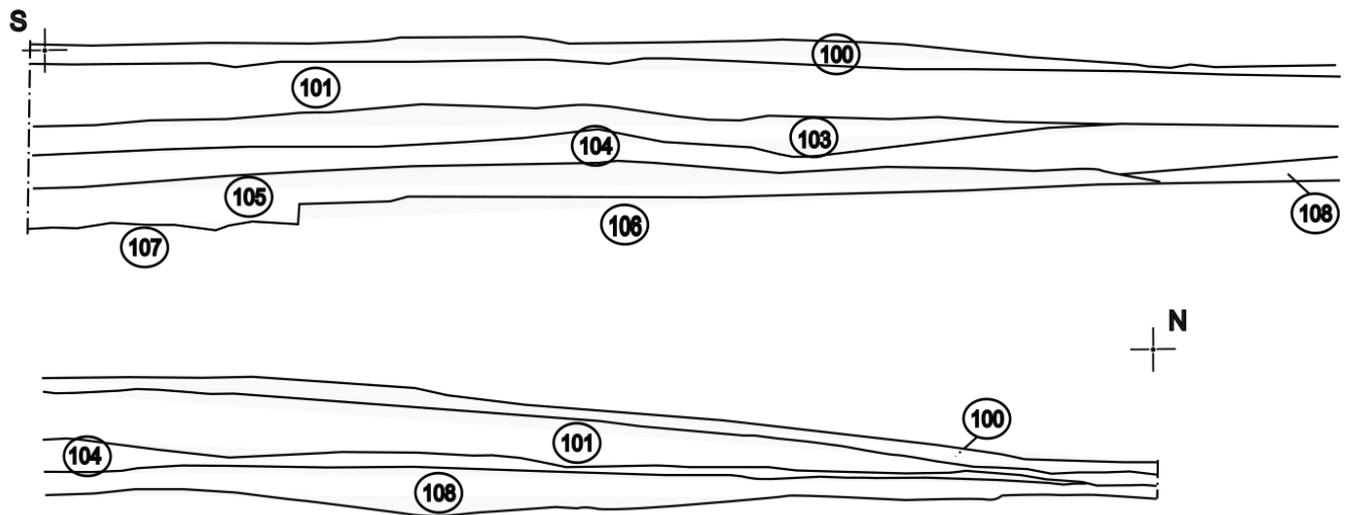


Figure 5: Trench 1 Sections

Section 1: Internal trench section



Section 2: Trench section



Section 3: Lighthouse base profile

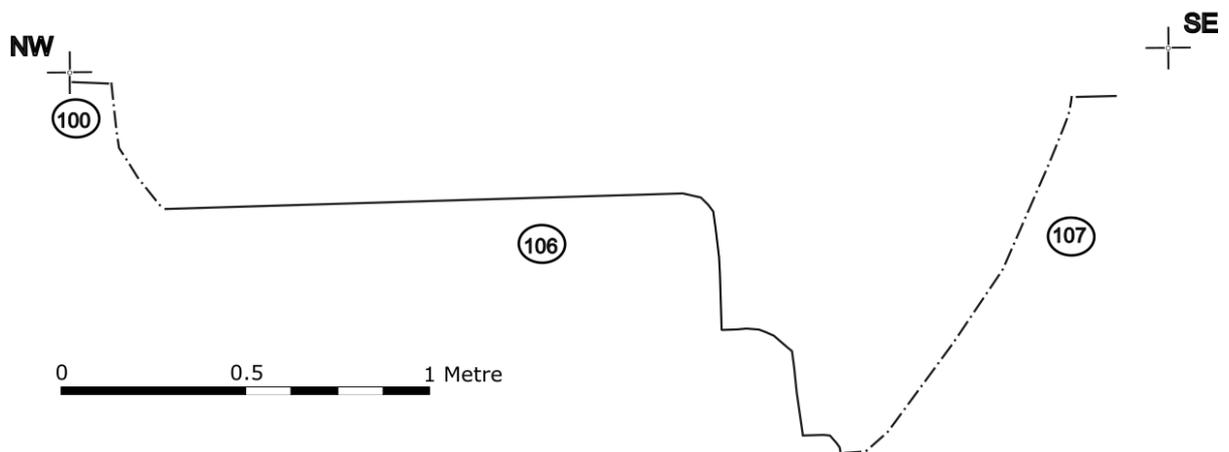


Figure 6: Plan of Trench 2

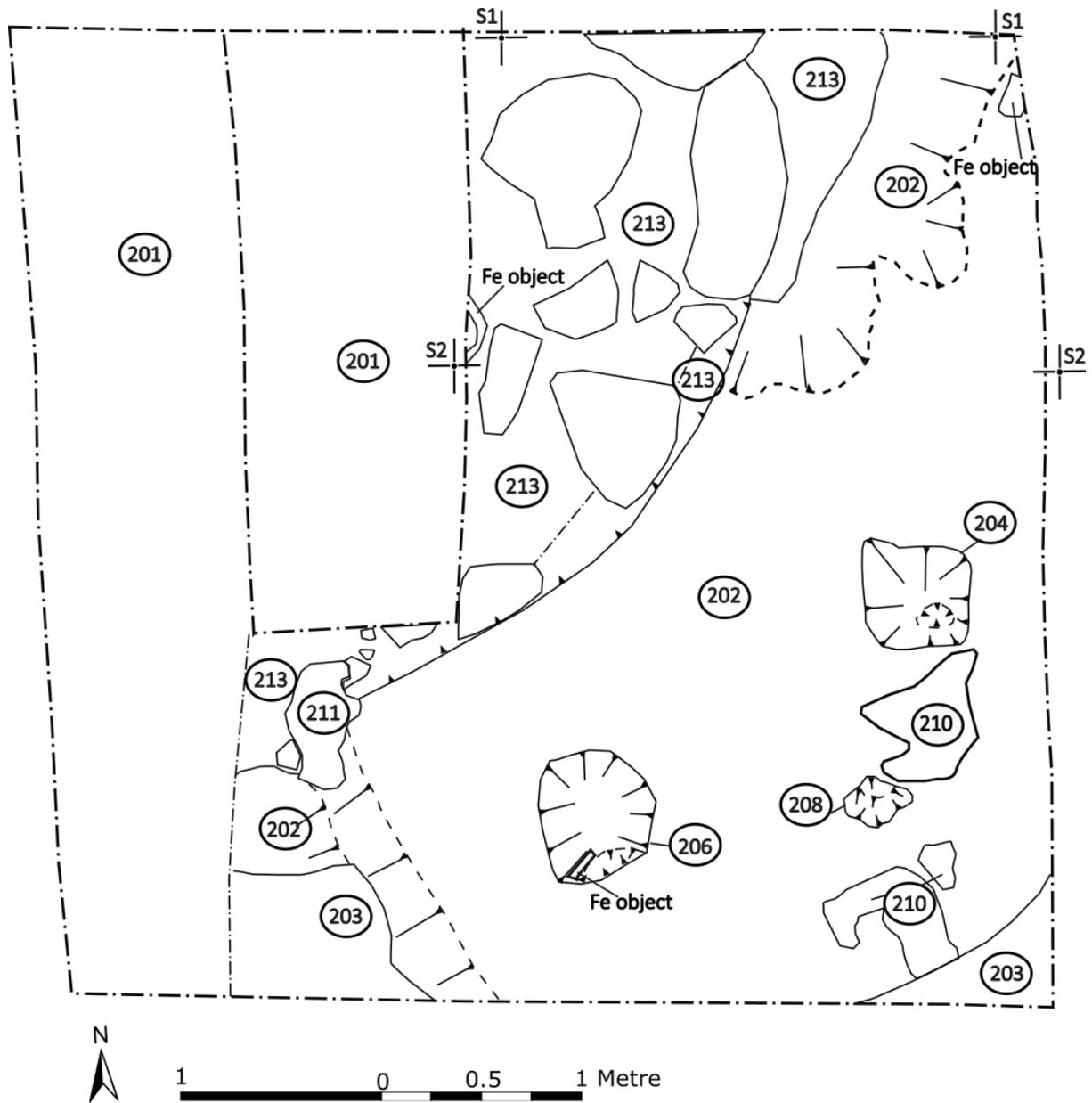
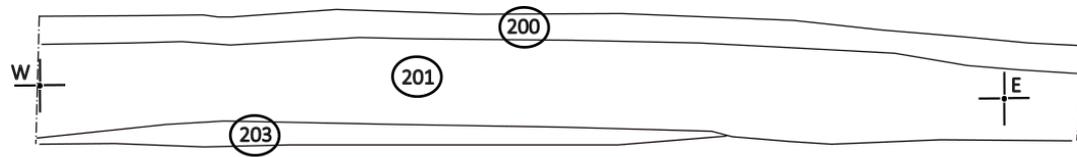


Figure 7: Trench 2 Sections

Section 1: South facing section along Trench 2



Section 2: Profile across trench showing angle of concrete apron/barbette

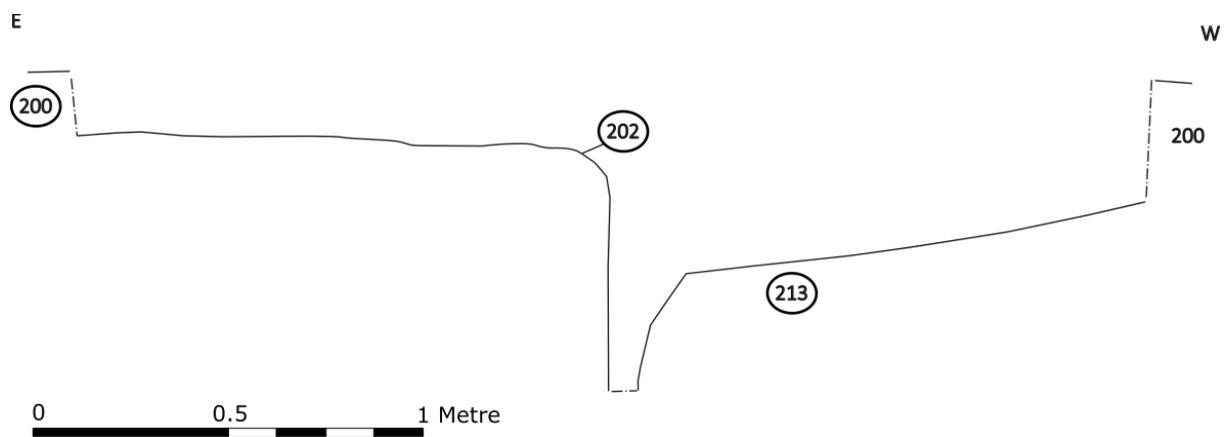




Figure 8: The white sandstone lighthouse base (106) and stepped foundation in Trench 1. Lewis holes are visible in the north part of the image, looking north



Figure 9: Detail of the stepped foundation



Figure 10: A Lewis hole in one of the sandstone slabs



Figure 11: Trench 2 showing the concrete apron (202) and the concrete demolition rubble in layer (213), looking south



Figure 12: Detail view of the exposed vertical face of the concrete apron (202)



Figure 13: Excavation of Trench 1



Figure 14: Excavation of Trench 2



Figure 15: Members of the volunteer team



Figure 16: Volunteers surveying



Figure 17: Surveying



Figure 18: Finds processing

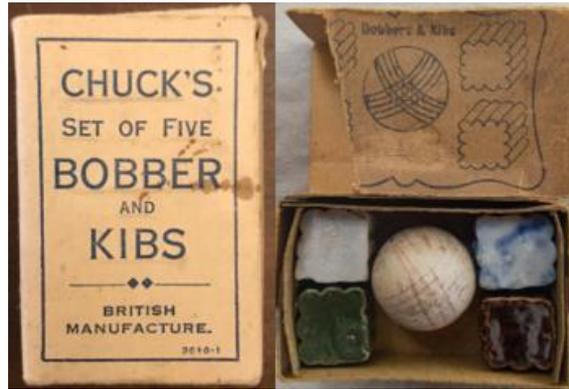


Figure 19: Ceramic gaming piece with an example of the game of Bobber and Kibs - Trench 2



Figure 20: Part of Marmalade jar of W P Hartley found in excavation and an example of a complete base - Trench 2



Figure 21: Yorkshire Relish bottle - Trench 1

Figure 22: 'Y' shaped iron bar - Trench 2



Figure 23: Lead Acid Battery fragments and image of complete battery - Trench 1



Figure 24: Leather shoe heel showing copper alloy tacks Trench 2

Figure 25: .303 rifle cartridge Trench 1



Figure 26: Bicycle tyre and inner tube – Trench 2

List of volunteers – huge thanks to all 😊

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Judith Arber
Sandra Anderson
Deborah Aribigbola
Brianna Bailey-Minton
Sam Beacher
Andrew Blakemore
David Brewster
Geoffrey Bowler
Garry Carden
Wendy Clark
Bethany Cochrane
Nicky Cooke
Clifford Cordiner
Oliver Corbett
Ross Coulman
Demi-leigh Foster
Joe Foster
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Yvie Gibson
Stuart Hare
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Rebecca Lawton
Janette Lowther
Sharen Meredith
Daniel Murphy
Nathan Pilcher
Derek Robson
Emma Senior
Alan Simkins
Ian Simons
Victoria Spurs
Martin Talbot
Malcolm Thomas
Jonathon Trueman
Paul Vicente
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Christopher Watson
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Sue Wilson
Phillipa Worthington

