

Archaeological Evaluation  
Leisure Pool  
East Marketgait/East Whale Lane  
DUNDEE  
DD54

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**ARCHAEOLOGICAL EVALUATION  
LEISURE POOL  
EAST MARKETGAIT/EAST WHALE  
LANE  
DUNDEE**

**SITE CODE: DD54**

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## **ABSTRACT**

*Dundee City Council commissioned Alder Archaeology Ltd to undertake an archaeological evaluation on the site of a proposed new leisure pool, multi-storey car park and ground-level car park at East Marketgait/East Whale Lane, Dundee. The proposed development area was located to the east of the southern end of East Marketgait centred on NGR NO 40734 30625. The work (site code DD54) was undertaken on the 19<sup>th</sup> and 20<sup>th</sup> of April 2010 in good weather conditions. The requirement was to evaluate 2% of the archaeologically sensitive area, which worked out at 4 trenches, each measuring 10m by 2m. The evaluation revealed that deposits on the site comprise 18<sup>th</sup> and 19<sup>th</sup> century made up ground dumped to reclaim land from the sea. At the northern end of the site one of these deposits contained re-deposited medieval pottery, suggesting that nearby Medieval remains were disturbed during this process of land reclamation. Trench 01 uncovered a cobbled yard surface, probably part of Stewart's Court, which seems to date to the first part of the 19<sup>th</sup> century. A square stone with a central slot found set into the cobbles may have been for a post connected to a stall for stabling horses. Trench 02 revealed two walls relating to the 19<sup>th</sup> century warehouses that used to cover the site prior to redevelopments in the early 1990s. The most significant find during the evaluation was the discovery of the redundant 1793 Sea Wall which was found in Trench 04. This wall, which measured over a metre in width at the top, survived to a height of 1.8m and was composed of large squared blocks of roughly mortared whinstone. The construction trench of this wall had truncated an earlier 18<sup>th</sup> century building which may have originally been built right up against the shoreline.*

# **1 Background**

## **1.1 Introduction**

Dundee City Council commissioned Alder Archaeology Ltd to undertake trial trenching on the site of a proposed new leisure pool, multi-storey car park and ground-level car park at East Marketgait/East Whale Lane, Dundee. The proposed development area is located to the east of the southern end of East Marketgait, centred on NGR NO 40734 30625. The work (site code DD54, OASIS ID alderarc1-77164(1)) was undertaken on the 19<sup>th</sup> and 20<sup>th</sup> of April in good weather conditions.

The work was carried out to standard conditions of Dundee City Council Archaeology Service who prepared a brief to define the archaeological works necessary at this stage of development. The requirement of this brief was to evaluate 2% of the archaeologically sensitive area, that is 80m<sup>2</sup>. The relatively small scale of the evaluation reflected the limitations in accessing parts of the site at this stage of development.

This trial trenching was designed to inform the archaeological condition on development application reference 09/00152/FUL, dated 7 August 2009.

## **1.2 Aims and Objectives**

The main aim of this evaluation was to evaluate the presence/absence, date, character and quality of any archaeological remains surviving within the development area. In particular it was important to look for traces of medieval and post-medieval defences extending southwards from the Wishart Arch or Cowgate Port and the Seagate Port. It was also important to establish whether any evidence of former shorelines survived.

## **1.3 Reporting**

The present document reports on the findings of the archaeological evaluation. Further archaeological reports will be written on any subsequent investigations needed to satisfy the archaeological condition on this development. Copies of this report will be sent to the client, The Royal Commission on the Ancient and Historical Monuments of Scotland and local authority Historic Environment Record.

## **1.4 Planning and Curatorial Issues**

This Evaluation is part of a programme of archaeological work designed to satisfy the outstanding archaeological condition on the planning consent for this development. The results of this evaluation will be used to inform the scale and type of archaeological mitigation deemed appropriate for this development.

## **1.5 Acknowledgements**

We wish to thank Ron Mitcham, Jim Green, Yeon Barrow and Andrew Reid from Dundee City Council, as well as Tom Rees from Dundee City Council Archaeology Service for their assistance and guidance throughout this project. Dundee City Council funded this evaluation.

## **2 Details of Work**

### **2.1 The Site (Illus 1)**

The proposed development lies on the east side of East Marketgait in an area that has been completely transformed in recent years as a result of the redevelopment of former jute works and other industrial premises and the creation of the new inner city bypass. Currently, the area is used for car parking and for gaining access to a retail park to the east via East Whale Lane. The focus of the evaluation however, is a much smaller area roughly one third the size of the development area, located at the north end immediately south-east of the East Port roundabout. This area was chosen for the focus of the evaluation because of its close proximity to potential early remains. The evaluation area is bordered by Seagate to the north, East Marketgait to the west and East Whale Lane to the east.

### **2.2 Archaeological Potential**

The site lies immediately adjacent to the medieval/early post-medieval boundary of the burgh of Dundee at the Seagate Port. The north-western part of the site lies within the burgh boundary, the north-eastern part is outside the burgh boundary. Although most of the southern part of the proposed development area is on land reclaimed from the river Tay in the 19th century, the northern part is of archaeological significance in that it contains the presumed line of the medieval and post-medieval defences extending southwards from the Wishart Arch or Cowgate Port and the Seagate Port. Previous archaeological evaluation by the Scottish Urban Archaeological Trust in 1989 at the Wishart Arch had revealed that it stood on the line of a medieval boundary, interpreted as the medieval limit of the burgh. Further evaluation by the Trust in 1993 in the East Port car park on the north side of Seagate had recorded a ditch which was interpreted as part of the medieval defences of the burgh.

Documentary sources and old plans suggest that the evaluation area lies across the lines of three former shorelines (16<sup>th</sup> to late 18<sup>th</sup> century), the sites of 18<sup>th</sup> and 19<sup>th</sup> century warehouses and the site of West Whale Lane (removed or buried in the early 1990s).

### **2.3 Archaeological Method**

A 2% sample of the development area was assessed in the northern part of the site by excavating four trenches each measuring 10m by 2m using a tracked 360° excavator equipped with toothless ditching buckets. The machine was controlled and monitored by two archaeologists and the location of the trenches was agreed with Dundee City Council Archaeology Service. These were placed to try to catch the possible line of the medieval town defences projecting southwards from the Wishart Arch, as well as the lines of the former shorelines. However, during the evaluation the location of trench 1 had to be moved southwards by 6m because of the discovery of a previously unknown water main running diagonally across the trench. The trenches were excavated by machine until the top of the first archaeologically significant horizon was encountered. Hand excavation was then undertaken to assess the nature and date of this horizon where safe access was possible. Pottery was collected from various layers for further analysis. Deep layers were evaluated by excavating a sondage through them with the machine and inspecting the contents of the bucket. Digging ceased when either natural deposits were encountered, important archaeology was uncovered or when the water table was reached. Trenches were recorded by making detailed notes, drawing sample

sections and detailed plans at 1:20. Trenches and features were photographed using a Nikon D60 digital camera. The locations of trenches were surveyed onto a detailed plan by the developers.

## **2.4 Results of Investigations**

### *Trench 01*

Initial investigation of trench 01 revealed extensive modern disturbance and a probable water main (0112) which was unknown to the developers. In order to avoid damaging this potentially live service, the decision was made to extend the trench 6m south in order to make up the full 10m.

Below the car park bricks and hardcore was modern made up ground (0104) which extended across the trench. In the northern half of the trench this lay over reinforced concrete (0105) and the water main (0112). A sondage was excavated next to (0112) to ascertain if earlier remains survived next to the water main, but this revealed modern concrete at a depth below (0112). At a similar level to concrete (0105) in the centre of the trench was a whinstone rubble wall (0106) running along the same orientation as East Marketgait. The NW end of this wall had been truncated by the modern deposits found in the sondage mentioned above. South-east of wall (0106) was an in-situ cobbled surface (0109). A very thin layer of silt lay above the cobbles with 19<sup>th</sup> century pottery embedded in it. The cobbles were more rounded to the north and more angular and larger to the south. At the south end of the trench a squared stone with a centrally cut square notch had been set into the cobbled surface. After photographing, the cobbled surface was excavated away to reveal the underlying deposits. Below (0109) was 19<sup>th</sup> century made up ground (0110) and (0116) which lay above a grey clay with fragmented sandstone (0115) sloping down relatively steeply to the south. Excavation below (0115) caused groundwater to seep into the trench.

### *Trench 02*

Two parallel walls were found when excavating the southern end of trench 02. Wall (0205) was a whinstone rubble wall composed of large well squared blocks and lightly mortared. Running along its W side was (0207), a heavily mortared whitish grey whinstone rubble wall. The foundations of wall (0407) were at least 30cm deeper than (0205). As with (0106) in trench 01, these were on the same alignment as East Marketgait. The deposits west of (0207) appeared to be cellar infill: a series of brick and mortar dumps (0213, 0204, 0212, 0208, 0210) capped by layer (0211). Below these deposits lay the probable cellar floor (0209), which was found to be at least 0.4m thick. Above and east of wall (0205) was a dump of modern make up (0214) which extended across the trench just below hardcore (0203). Below this was 20<sup>th</sup> and 19<sup>th</sup> makeup (0217, 0215, 0218) which sloped down gently to the south. Walls (0205) and (0207) had been cut into these layers. A sondage excavated below (0218) revealed layers of clays and sands containing no pottery (0219, 0220, 0221), then a dark organic silt containing mussel shell (0222). At just over 2.4m down from the site surface, an orangy-pink natural clay was encountered (0223).

### *Trench 03*

Apart from the developers test trench, no features or structures were revealed in trench 03, just a series of layers representing made-up ground. Most of these deposits sloped down very gradually to the SW. At the SW end of the trench a deep sondage was excavated to reveal the natural. Below hardcore (0303) was gravely silty deposit

(0304) which contained 19<sup>th</sup> century bottles. Below this was a clayey silt (0305) and a darkish brown sand (0306) which lay on top of a dark compact silt and whinstone rubble layer (0309) containing beach cobbles, pantile fragments, animal bone, brick fragments, stoneware and tin glazed earthenware. Underneath this deposit lay (0307), a thick compact deposit of sand mixed with gravel that contained re-deposited medieval pottery, tin glazed earthenware and stoneware. The natural, a fine pinkish sand, was reached 2.58m below the site surface. North-east of the sondage, an engineers' test trench was located, cutting steeply through all deposits. Most deposits continued across the trench apart from (0304) which was replaced by a similar though more orangy deposit (0310), and (0305 and 0306) which were replaced by (0312, 0313 and 0314) north-east of the test trench. Two further sondages were excavated near the north-east end of the trench. These revealed the same sequence of deposits as found before.

#### *Trench 04*

A pinkish whinstone wall (0404) was exposed at the southern end of this trench which appeared to be on the same alignment as East Whale Lane. Overlying the wall were a series of thin 20<sup>th</sup> century deposits (0405, 0406, 0407, 0408, 0409, 0410, 0411, 0412, 0413, 0414, 0415). A sondage was excavated on the east side of wall 0404 to try to find the depth of the natural. This showed that at least eight layers of make-up had been dumped in this area prior to cindery layer (0405) having been laid down. The layers (0417, 0430, 0419, 0420, 0421, 0422, 0423, 0424) comprised sands, gravels, clays, crushed rock, mortar and buried loam. The thickness of the lowest grey clay layer (0424) could not be measured owing to the water table.

As the trench continued to be excavated north-westwards, a large stone wall (0418) was revealed crossing the trench at right angles. The wall was composed of massive squared-off blocks of whinstone and there was evidence that some of the blocks were mortared together. The south-eastern face of this wall was exposed carefully with the digger though trench collapse caused problems. The wall survived to at least 1.8m in height, though the actual height could not be measured owing to the water table and collapse hiding some of the stonework. On top of wall (0418) were the 30cm high remains of a later narrower stone wall (0425) running on the same alignment. Wall (0425) had been truncated by deposit (0407). Immediately to the north-west of wall (0418) was its foundation trench cut [0427]. The foundation trench had been filled with a pink clay packing (0428). Cut [0427] had truncated a mortared whinstone wall (0426) and floor deposit (0429) of an earlier building. Both (0426) and (0429) had been covered by modern layers (0412 and 0413). At the north-western end of trench 04 was a re-enforced concrete layer (0431) which lay within the upper most 20<sup>th</sup> century deposits.

### **3 Interpretation**

#### *Trench 01*

Deposit (0105), which contained no artefacts, seems to represent a natural deposit of estuarine clay sloping steeply to the south. This has been covered by made-up ground (0116) and (0110) to create a level surface. Bottle glass in (0110) suggests this levelling occurred possibly in the early 19<sup>th</sup> century and this fits with cartographic evidence which shows that the trench was excavated south of the 1776 shoreline, in land that was reclaimed from the sea after this date.

The cobbled surface (0109) which lies on top of the two levelling layers and wall (0106) probably date to the same phase of construction as cobbles extend right up to the wall and there is no evidence of a wall construction trench having disturbed them. The cobbles could represent either a street or yard, or a floor surface inside a building. Plotting the trench on the 1:500 scale, 1858 surveyed OS map suggests that these cobbles may have been part of Stewart's Court (see illus 7), which was later demolished to make way for a series of regularly spaced warehouses some time in the late 19<sup>th</sup> century. In the vicinity of Stewart's court, there were a number of stables suggesting that many horses (probably working on the nearby docks) were housed nearby. This is important as the square stone with the square slot found in the excavation, looks like it once held an upright post for a stable stall. The 1858 map also shows that there was a smithy (which no doubt would have needed a space to tie up horses) located in Stewart's court. Wall (0106) does not appear to line up with any wall on either the 1858 map or the second edition OS map which means it is difficult to know whether it was part of a building or an outside boundary wall.

The northern end of trench 01 revealed extensive modern disturbance caused by a water service main which runs down the east side of rubble wall (0106). Above the pipe was re-inforced concrete (0105) which may either have been a modern road or yard surface or the capping for the service. Deposit (0104) almost certainly represents a final layer of levelling in this area prior to the development of the site as a car park.

## *Trench 02*

The natural in this trench was represented by orange-pink clay (0223) which sloped down gently to the south. The narrow organic silt (0222) that was found above this layer is probably a natural estuarine mud laid down by the Tay estuary, as there were no signs of pottery or artefacts. Four layers of sand and clay make-up (0221, 0220, 0218, 0219) had been dumped above (0222). The first three revealed no dating evidence though the third (0218) dated to the 19<sup>th</sup> century.

Two layers of make-up had been dumped above (0218): (0215) and (0217). Of the two walls found in this trench, (0205) was cut into (02170 and 90215) whilst (0207) was deeper having been cut into grey layer (0218). The walls seem to belong to two different buildings: one with heavily mortared grey whinstone walls and a cellar to the east, and the other with squared whinstone walls and no cellar to the west. Plotting the trench on the 1902 OS map shows that the western building is most likely to have been the long building east of a narrow close running parallel to West Whale Lane (see illus 8). This interpretation would make the eastern building one of the three bays of warehouses fronting Seagate that are shown clearly on a photo of the site prior to developments in the early 1990s (see illus 9). The similarity between the squared-off warehouse stonework shown in the photo and the stonework revealed in (0205) supports this interpretation.

At some point, probably during the early 1990s car park development, walls (0205) and (0207) were demolished and the cellar filled in. This was presumably when orange layer (0214) was spread across the tops of the wall foundations and crushed brick (0211) spread across the cellar.



### *Trench 03*

The natural in this trench was represented by pink sand (0308) which sloped down gently to the south. This had been overlain by 19<sup>th</sup> century deposit (0307) which contained re-deposited medieval pottery, suggesting that some of the material that made up this layer may have come from nearby medieval deposits, probably those lying to the north.

Layer (0309) which was constructed over (0207) seems to represent a 19<sup>th</sup> century yard surface, probably for a warehouse. Over (0207) was dumped make-up (0306, 0305, 0304) all seemingly dating to the 19<sup>th</sup> century. Trench 03 was placed right over the site of the three bays of warehouses fronting Seagate mentioned above in trench 02. With the discovery of a possible warehouse wall in trench 02, it is perhaps surprising no walls were found in this trench. One plausible explanation for this is that the land closer to Seagate seems to have been much more deeply scarped away than areas further south, during the redevelopment for the car park in the early 1990s.

### *Trench 04*

The deepest deposit revealed in the sondage seemed to be a natural layer of clay. The layer most similar to this was the probable natural layer (0115) in trench 01. Above (0424) had been dumped three layers of make-up (0423, 0422, 0421), then a layer of crushed pink rock (0420) into which a probable 19<sup>th</sup> century wall, (0404), had been cut. Unfortunately this wall does not fit well with any of the walls shown on the 1858 or the 1902 OS maps. However, given its location, it may have been a central dividing wall for one of the warehouses shown in the 1902 map (illus 8). At some point wall (0404) was demolished and covered by a series of probable 20<sup>th</sup> century deposits, seen as (0415, 0414, 0413, 0412, 0411, 0410, 0409, 0408, 0406, 0407) in the western section and (0419, 0430, 0417) in the eastern section. The difference in the layers on either side of the trench suggests that the site of the wall may have continued to be used as a boundary after demolition. The deposits revealed in the western section seem to represent a series of layers spread over a yard. Over the top of all these deposits was very modern black cindery layer (0405) which extended right across the trench.

Two thirds of the way along trench 04 was massive rubble wall (0418) which is almost certainly the sea wall plotted on the 1793 plan. We can say this with confidence because its location is only 1.5m away from the predicted location of the sea wall in the desk-based assessment. Wall (0425), which was built on top of (0418), is evidence that the sea wall was re-used as a wall foundation for a boundary. This probably occurred in the 19<sup>th</sup> century when the shoreline of Dundee was pushed yet again further south, making the sea wall (0418) redundant. Wall (0425) was demolished when 20<sup>th</sup> century deposits (0407 and 0406) were laid over this part of the site.

North of (0418), the remains of wall (0426) and floor (0429), which seem to belong to the same building, are important as they have been cut by the foundation cut for the sea wall, [0427]. This means they pre-date the construction of the sea wall, which suggests that they represent the remains of a pre-1793 18<sup>th</sup> century building situated very close to the shoreline. From this discovery we can infer that buildings in the 18<sup>th</sup> century that had been encroaching right up to the shoreline were deliberately demolished for the new sea defence.

## **4 Conclusions and Recommendations**

### **4.1 Conclusion**

Overall the evaluation has confirmed what was expected from the cartographic sources: that archaeological deposits on the site are largely composed of made-up ground dumped in the 18<sup>th</sup> and 19<sup>th</sup> century. What is perhaps a little more surprising is that so many of the foundations of the 19<sup>th</sup> century warehouses and yards that used to cover the site survive intact below the current car park. It seems therefore that the old buildings were simply demolished without any foundations being grubbed up when the car park was created. The lack of medieval remains in trench 03 suggests that deposits and features dating to this period may lie outside the site boundary. However, the presence of re-deposited medieval pottery in trench 03 suggests that such remains may lie close by.

The discovery of the 1793 shoreline wall is significant in itself as few upstanding 18<sup>th</sup> century remains survive in this part of Dundee. Importantly however, the earlier building that was cut by this sea wall demonstrates that interesting stratigraphic information about the expansion Dundee's shoreline in the 18<sup>th</sup> and 19<sup>th</sup> century survives on the site. The discovery of these remains raises the possibility that the earlier sea defences may also survive on the site and have been missed by the trial trenching.

### **4.2 Recommendations for Further Work**

It is recommended that a selective excavation and /or archaeological monitoring takes place during the development. Firstly in order to expose and record the 1793 sea wall and further 18<sup>th</sup> century buildings which may have lain along the shoreline. Secondly to expose and record the other shorelines that may have been missed by the trial trenching. Thirdly, to look for medieval remains which may just extend into the northern part of the site. However, the ultimate decision with regards to further archaeological work lies with Dundee City Council Archaeology Service.

## **5 Bibliography**

- Dundee and its Environment 1:500 OS map surveyed in 1858, 1<sup>st</sup> edition 1861. Sheets LIV.5.25, 5.20, 6.21, 6.16
- 6 inch 2<sup>nd</sup> edition OS map, 1902.
- Perry, D 2010 *Archaeological and Desk-Based Assessment East Marketgait/East Whale Lane Dundee*. DSR. Alder Archaeology Ltd.

## Appendix 1 Context Register

<i>No:</i>	<i>Description</i>	<i>Phase</i>
0101	Car park bricks – 7cm thick	Modern
0102	Mid brown sand 8cm thick. Below 0101	Modern
0103	Greenish-grey type 1 (hardcore). Below 0102. 30cm to 80cm deep.	Modern
0104	A thick deposit of made up ground below 0103 - a grey-orange layer of mixed sands, grits, and clays. Contained blocks of concrete, stone frags, plastic and 19 <sup>th</sup> century pottery.	Modern
0105	A wide layer of grey steel re-inforced concrete below 0104. Up to 13cm thick.	Modern
0106	A mortared whinstone wall below 0104. Scarecement noted on E side comes out 18cm. Wall 0.7m wide. Blocks squared off.	19 <sup>th</sup> or 18 <sup>th</sup> century
0107	A dark greyish-black silt with glass, pantile and slate fragments. Moderate to loose compaction. Below 0105, 20cm thick.	Modern
0108	Foundation trench cut for 0106.	Modern
0109	A layer of sub-rounded to sub-angular cobbles set in places 1.4m down from site surface, just below 0104. Cobbles between 15 x 9cm and 27 x 30cm in size. Cobbles lie above 0110. At S of trench a square stone with a square slot in the centre has been set amongst the cobbles.	Early 19 <sup>th</sup> or 18 <sup>th</sup> century
0110	A mid brown sand with lightish patches below 0109 containing crushed wine bottle glass (18 <sup>th</sup> to 19 <sup>th</sup> century). 30cm thick in places.	19 <sup>th</sup> century
0111	Just above the cobbles, a black silt (trample) 2cm deep with 19 <sup>th</sup> century pottery.	19 <sup>th</sup> or 18 <sup>th</sup> century
0112	A water main pipe covered by concrete 0113.	Modern
0113	A 5cm thick layer of concrete covering 0112.	Modern
0114	Trench cut for 0112	Modern
0115	A grey clay mixed with fragmented sandstone below 0116. Slopes down to south. Continues to water table.	Natural
0116	Alternative bands of dark greyish silt and reddish sands above 0115, but abutting and to the south of 0110.	18 <sup>th</sup> century?
0201	Car park bricks – 7cm thick	Modern
0202	Mid brown sand 8cm thick. Below 0202	Modern
0203	Greenish-grey type 1 (hardcore). Below 0202. 23cm thick.	Modern
0204	A thick layer of crushed handmade 19 <sup>th</sup> century red brick and plaster – basement	20 <sup>th</sup> century?

	infill below 0213. 55cm thick.	
0205	The foundations of a large whinstone wall made of large squared blocks, unmortared. Just below blocks are cobbles. Wall 0.6m wide.	19 <sup>th</sup> century
0206	Foundation trench cut for 0205.	19 <sup>th</sup> century
0207	A whinstone wall of similar width to 0205 running alongside it. Made of heavily mortared fragmented whinstone blocks, with large squared off flat whinstone slabs at the base.	19 <sup>th</sup> or 18 <sup>th</sup> century
0208	Below 0204, a black silt with occasional plaster sitting against 0207. 20cm thick.	19 <sup>th</sup> century?
0209	A whinstone and mortar layer below (0210) – floor of basement. At least 40cm thick, but not bottomed.	19 <sup>th</sup> century
0210	Crushed grey mortar mixed with sands and grits, 40cm thick.	19 <sup>th</sup> century?
0211	A thin compact purple-grey gritty sand below 0203 but above 0213. 5cm thick.	20 <sup>th</sup> century?
0212	Brick rubble and stones below 0204, 13cm thick.	20 <sup>th</sup> century?
0213	A layer of crushed 19 <sup>th</sup> century bricks below 0211. 8cm thick.	20 <sup>th</sup> century?
0214	Made up ground below 0203, a lightish brown mixed layer of reddish orange sand, grit, rounded pebbles and fragments of whinstone, slopes gently down to the south. 17cm thick.	20 <sup>th</sup> or 19 <sup>th</sup> century.
0215	A mid brown clayey silt and loam below 0217, 19cm thick.	20 <sup>th</sup> or 19 <sup>th</sup> century.
0216	Void	Void
0217	Similar to 0214 but more rounded stones and gravel, below 0214. 11cm thick.	20 <sup>th</sup> or 19 <sup>th</sup> century.
0218	A mid grey-brown silty sand with flecks of mortar below 0215. 70cm thick.	19 <sup>th</sup> century.
0219	A mid brown silty clay, 22cm thick.	Probably pre 18 <sup>th</sup> or 19 <sup>th</sup> century.
0220	Yellow clay.	Probably pre 18 <sup>th</sup> or 19 <sup>th</sup> century.
0221	Grey gritty sand.	Probably pre 18 <sup>th</sup> or 19 <sup>th</sup> century.
0222	A dark organic silt c 19cm thick with flecks of mussel shell.	Natural?
0223	A sterile orangy-pink clay.	Natural
0301	Car park Bricks – 7cm thick	Modern
0302	Mid brown sand 8cm thick. Below 0302	Modern

0303	Greenish-grey type 1 (hardcore). Below 0302. 41cm thick.	Modern
0304	Intermittent layers of mid brown compact gravels, grits and silt with 18 <sup>th</sup> or early 19 <sup>th</sup> century bottle glass at base. 34cm thick. Layer below 0303	19 <sup>th</sup> century
0305	A lightish pinky-brown clayey silt, 25cm thick below 0303.	19 <sup>th</sup> century
0306	A darkish brown silty sand below 0304, 19cm thick.	19 <sup>th</sup> century
0309	A darkish grey-brown compact silt and 50% fragmented whinstone with occasional beach cobbles. Layer contains bone and tin glazed earthenware. Old yard surface? 31cm thick, below 0305.	19 <sup>th</sup> century
0307	Mixed mid to light brown sands with 20% gravel, 91cm deep below 0306. TGE, stoneware and re-deposited medieval pottery found in this layer.	19 <sup>th</sup> or 18 <sup>th</sup> century
0308	A sterile pinkish fine sand with occasional boulders and smaller stones. Below 0307.	Natural.
0310	Orangy-brown compact sand and grit with angular gravel. Layer below 0304, but above 0305.	19 <sup>th</sup> century
0311	Cut and fill of test pit trench, vertical cut, 0.8cm wide.	Modern
0312	Mid brown sand/ sandy gravel with small stone frags below 0303. 23cm thick.	19 <sup>th</sup> century
0313	Loose sand below 0312. 15cm thick	19 <sup>th</sup> century
0314	Sandy clay mid brown with small stones 12cm thick below 0313. Above 0309.	19 <sup>th</sup> century
0401	Car park bricks – 7cm thick	Modern
0402	Mid brown sand 8cm thick. Below 0402	Modern
0403	Greenish-grey type 1 (hardcore). Below 0402. 12cm thick.	Modern
0404	A mortared whinstone wall running NNW- SSE 0.45m wide. Blocks squared. 0.45cm thick.	19 <sup>th</sup> century
0405	Crushed black compact grits and furnace waste below 0403. 9.4 -35cm thick.	20 <sup>th</sup> century
0406	Pink sandy silt below 0405, 9.5cm thick.	20 <sup>th</sup> century
0407	Mid to light grey-brown silty sand with mortar flecks below 0406, 10cm thick.	20 <sup>th</sup> century
0408	A dark brown thin gritty sand below 0407, 6cm thick.	20 <sup>th</sup> century
0409	A thin layer like 0407 below 0408, 8.5cm thick.	20 <sup>th</sup> century
0410	A dark gritty compact cinders and sand below 0409, 14.5cm thick.	20 <sup>th</sup> century
0411	A mid brown orangy silty sand below 0410, 5cm thick.	20 <sup>th</sup> century
0412	Mixed pinkish silt and 20% gravel below 0411, 10cm thick.	20 <sup>th</sup> century
0413	A grey layer of crushed mortar and sand below 0412, 6cm thick.	20 <sup>th</sup> century

0414	A dark thin layer (13) below 0413, 4cm thick	20 <sup>th</sup> century
0415	A purplish clayey silt mixed with fragments of whinstone below 0414, but just above the top of 0404. 11cm thick.	20 <sup>th</sup> century
0416	Foundation trench cut for 0404.	19 <sup>th</sup> century
0417	Mixed browny-orange silt and 80% pebbles below 0405, 21cm thick	20 <sup>th</sup> century
0418	A large E-W aligned whinstone wall made from large (most 70-90cm long and 75cm wide) well squared blocks of stone. The wall stands at least 1.8m high but the precise depth could not be seen owing to water seeping into the trench. There is some evidence of hardened yellowish lime mortar in between some of the lower courses of stone, but these could not be investigated owing to health and safety concerns. The wall measures roughly 0.85m wide, but is wider towards the base extending out another 25cm over two ledges on the seaward side (S). One of the central blocks exposed on the seaward side has a curved end and may be a piece of re-used worked stone. A later narrower wall 0425 has been built centrally on top of 0418. Interpreted as the 1793 sea wall.	Late 18 <sup>th</sup> century
0419	A grey layer of brown sand and crushed mortar below 0430. 15cm thick.	19 <sup>th</sup> or 20 <sup>th</sup> century
0420	Pink crushed rock, sands and grits below 0419, 15cm thick.	19 <sup>th</sup> or 20 <sup>th</sup> century
0421	Dark loamy sand below 0420, 13cm thick.	19 <sup>th</sup> or 20 <sup>th</sup> century
0422	Crushed fragments of beige rock and brown clay below 0421, 36cm deep.	19 <sup>th</sup> or 20 <sup>th</sup> century
0423	Brown clay, 26cm thick below 0422.	19 <sup>th</sup> or 20 <sup>th</sup> century
0424	Grey clay mixed with a darkish silt with fragmented whinstone, depth not fully taken as layer went below water line. Below 0423. >41cm thick.	Natural?
0425	A later wall built on centrally on top of 0418. Wall measures 55cm wide but only survives to 30cm in height. Wall is a whinstone rubble built wall bonded with yellow mortar. The wall lies below 0405 and 0406.	19 <sup>th</sup> century
0426	The remains of a whinstone rubble wall that has been cut during the construction of wall sea wall 0418. Wall is aligned NNE-SSE and measures 55-50cm in width. The wall is bonded together with a whitish-grey crumbly lime mortar.	18 <sup>th</sup> century
0427	The cut for the construction of sea wall 0418. This was noted on the landward side of 0418 cutting 0426.	Late 18 <sup>th</sup> century
0428	Fill in between sea wall 0418 and cut 0427, a reddish clay packing.	Late 18 <sup>th</sup> century
0429	Compact mortar with pea gravel below, interpreted as floor inside building relating to wall 0426. Below 0412 and 0413. Not excavated.	18 <sup>th</sup> century
0430	A brown-grey gritty sand below 0417 and above 0419, 19cm thick.	19 <sup>th</sup> or 20 <sup>th</sup> century

0431	Reinforced concrete at the N end of Trench 4, above 0410.	20 <sup>th</sup> century
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## Appendix 2 Photographic Register

<i>Image No</i>	<i>Description</i>	<i>View</i>
DSCF3667.jpg	Excavating through the bricks in the carpark, trench 01.	N
DSCF3668.jpg	As above.	NNW
DSCF3669.jpg	Excavating into 0103.	N
DSCF3670.jpg	As above.	N
DSCF3671.jpg	Excavating into 0104.	N
DSCF3672.jpg	Excavating into 0104.	NE
DSCF3673.jpg	Ray Cachart inspecting the depth of 0105.	N
DSCF3674.jpg	As above.	N
DSCF3675.jpg	Shot showing wall 0106 in foreground, concrete 0105 in background and pipe 0112 to the left and side of the photo.	E
DSCF3676.jpg	Photo of wall 0106.	W
DSCF3677.jpg	As above	W
DSCF3678.jpg	Cleaning off cobbled surface 0109.	NNE
DSCF3679.jpg	The squared stone set amongst the cobbled surface at the S end of trench 01. The central square slot may have held a post.	NNE
DSCF3682.jpg	As above	S
DSCF3683.jpg	Cobbled surface 0109 cleaned.	S
DSCF3684.jpg	Shot showing the depth of cobbled surface 0109.	S
DSCF3685.jpg	Working shot	S
DSCF3686.jpg	As above	SW
DSCF3687.jpg	As above	NW
DSCF3688.jpg	Shot showing layers 0110 and 0116 below cobbled surface 0109	SE
DSCF3689.jpg	As above	SW
DSCF3690.jpg	Shot showing layers 0110 and 0116 and 0115 below.	W
DSCF3691.jpg	Shot showing layer 0116 which has been dumped above 0115 to	N

	create flat ground.	
DSCF3692.jpg	Starting the excavation of trench 02.	NNE
DSCF3693.jpg	Discovery of walls 0207 and 0505.	NE
DSCF3694.jpg	Wall 0205.	NE
DSCF3695.jpg	Shot showing cobbles at the base of 0205.	NE
DSCF3696.jpg	Shot showing mortared wall 0207.	N
DSCF3697.jpg	Excavating through wall 0207.	NE
DSCF3698.jpg	As Above.	NE
DSCF3699.jpg	As Above.	NE
DSCF3700.jpg	The sondage excavating at the N end of trench 02.	NE
DSCF3701.jpg	Recording trench 02.	NNE
DSCF3702.jpg	Shot looking down into the bottom of the sondage in trench 02.	SE
DSCF3703.jpg	Preparing for the excavation of trench 03.	N
DSCF3704.jpg	As above.	NW
DSCF3705.jpg	Starting to excavate trench 03.	N
DSCF3706.jpg	As above.	N
DSCF3707.jpg	Excavation down to the top of 0307.	NE
DSCF3708.jpg	Shot looking at the sondage excavated at the SW end of trench 03.	NW
DSCF3709.jpg	As above	NW
DSCF3710.jpg	As above	NW
DSCF3711.jpg	General shot of the SW end of trench 03	N
DSCF3712.jpg	Shot looking at the sondage excavated at the SW end of trench 03.	NW
DSCF3713.jpg	As above.	NW
DSCF3714.jpg	General shot of the SW end of trench 03 when filling in the sondage.	NE
DSCF3715.jpg	Shot showing the SE facing section of trench 03. Layer 0309 and the test trench can be seen clearly.	NNW
DSCF3716.jpg	As above.	NNW
DSCF3717.jpg	Investigating layer 0309.	N
DSCF3718.jpg	The digger with wheel off.	W



DSCF3719.jpg	Excavating the end of trench 03 after a long delay.	NE
DSCF3720.jpg	As above	NE
DSCF3721.jpg	As above	NE
DSCF3722.jpg	The test trench [11] in the section	NW
DSCF3723.jpg	As above	NW
DSCF3724.jpg	Trench 03 after excavation finished.	NE
DSCF3725.jpg	Trench 03 after excavation finished.	NE
DSCF3726.jpg	Trench 03 after excavation finished.	NE
DSCF3727.jpg	Starting to excavate trench 04.	N
DSCF3728.jpg	Wall 0404 and 20 <sup>th</sup> century deposits above.	SE
DSCF3729.jpg	Wall 0404.	NW
DSCF3730.jpg	As above	NW
DSCF3731.jpg	As above	W
DSCF3732.jpg	As above	NW
DSCF3733.jpg	As above	NW
DSCF3734.jpg	Excavation of sondage next to 0404.	E
DSCF3735.jpg	As above.	E
DSCF3736.jpg	Looking into the sondage next to 0404.	NE
DSCF3737.jpg	Cleaning off the front of wall 0418.	NW
DSCF3738.jpg	As above.	NW
DSCF3739-43.jpg	Looking at wall 0418 from the seaward side.	Various
DSCF3744.jpg	Trench 04 after the discovery of wall 0404	N
DSCF3745-47.jpg	The top of wall 0418.	SW
DSCF3748.jpg	Looking at wall 0418 from the seaward side.	NW
DSCF3749.jpg	As above.	NW
DSCF3750.jpg	The stone in the centre of 0418 which may be re-used worked stone.	NW
DSCF3751-53.jpg	Wall 0425 which was built on top of 0418.	SW

DSCF3754-55.jpg	Wall 0456 and layer 0429, both cut by the cut for wall 0418, 0427.	SW
DSCF3756.jpg	The NW end of trench 04.	S

## Appendix 3 Drawing Register

<i>Sheet No.</i>	<i>Description</i>	<i>Scale</i>
1	Plan, section and notes relating to Trench 1.	1:10, 1:20
2	Plan, sections and notes relating to Trench 2.	1:10, 1:20
3	Plan, sections and notes relating to Trench 3.	1:10, 1:20
4	Plan, sections and notes relating to Trench 4.	1:20

## Appendix 4 Finds Register

<i>Context</i>	<i>Material Type</i>	<i>Details</i>
0110	Glass	Green bottle base. Heavy fabric, deep kick-up in base. Slight denaturing  2 green bottle shards
0111	Pottery	1 rim sherd Tin-glazed Earthenware (TGE): white glaze with blue banding and sponged decoration  1 body sherd TGE: dark brown glaze
0218	Pottery	1 rim sherd TGE: cream glaze with brown splashes; red fabric  1 body sherd TGE: dark brown glaze; red fabric  1 body sherd TGE: transfer printed blue and white glaze  6 body sherds TGE: white/cream glaze
0215	Glass	2 green bottle bases. Heavy fabric, deep kick-up in base. Slight denaturing  3 green bottle body shards in thinner fabric. Slight denaturing
0215	Stone	2 small fragments slate
0304	Glass	2 green bottle necks. String rim. Slight denaturing  1 green bottle base. Heavy fabric. Deep kick-up; frit on outer surface of kick-up. Very slight denaturing

0312	Pottery	1 body sherd TGE: glazed orange with brown and white banding. Splotchy cream and brown patterning on orange ground
0307	Pottery	1 body sherd stoneware 2 stoneware base sherds (?jars) 1 body sherd TGE: cream/yellow glaze with brown splashes 1 body sherd redware: glazed green-brown. Late medieval or post-medieval 1 base sherd redware: thumbbed, green glaze. Late medieval or post-medieval
0309	Pottery	1 body sherd TGE: yellow glaze, red fabric 1 rim sherd stoneware
0309	CBM	2 tile fragments: red fabric 2 ?brick/tile fragments
0309	Animal bone	Cattle humerus shaft fragment; abraded 1 mammalian long bone shaft fragment; abraded
Near base of 0418 on seaward side.	Iron	Nail; flat oval/rectangular head length 98mm, width of head 12mm

While the green bottles and the tin-glazed earthenware pottery appear to be 19th century in date, there are two redware pottery sherds which are of late medieval or post-medieval date (Context 06 and 07, Trench 3).

## Appendix 5 Discovery & Excavation in Scotland Entry

LOCAL AUTHORITY:	Dundee Council
PROJECT TITLE/SITE NAME:	Archaeological Evaluation for a Leisure Pool, East Marketgait/East Whale Lane, Dundee
PROJECT CODE:	DD54
PARISH:	Dundee
NAME OF CONTRIBUTOR(S):	Barton, T, Perry, D, Cachart, R.
NAME OF ORGANISATION:	Alder Archaeology Ltd
TYPE(S) OF PROJECT:	Archaeological Evaluation
NMRS NO(S):	NO43SW 280, NO43SW 512, NO43SW 593, NO43SW 676
SITE/MONUMENT TYPE(S):	Warehouses, Factories, Courtyard, Sea Defence, Buildings
SIGNIFICANT FINDS:	Re-deposited Medieval Pottery
NGR (2 letters, 8 or 10 figures)	Site centred on NO 40734 30625
START DATE	19-04-10
END DATE	20-04-10
PREVIOUS WORK (incl. <i>DES</i> ref.)	None
MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)	<p>Dundee City Council commissioned Alder Archaeology Ltd to undertake an archaeological evaluation on the site of a proposed new leisure pool, multi-storey car park and ground-level car park at East Marketgait/East Whale Lane, Dundee. The proposed development area was located to the east of the southern end of East Marketgait centred on NGR NO 40734 30625. The work (site code DD54) was undertaken on the 19<sup>th</sup> and 20<sup>th</sup> of April 2010 in good weather conditions. The requirement was to evaluate 2% of the archaeologically sensitive area, which worked out at 4 trenches, each measuring 10m by 2m. The evaluation revealed that deposits on the site comprise 18<sup>th</sup> and 19<sup>th</sup> century made up ground dumped to reclaim land from the sea. At the northern end of the site one of these deposits contained re-deposited medieval pottery, suggesting that nearby Medieval remains were disturbed during this process of land reclamation. Trench 01 uncovered a cobbled yard surface, probably part of Stewart's Court, which seems to date to the first part of the 19<sup>th</sup> century. A square stone with a central slot found set into the cobbles may have been for a post connected to a stall for stabling horses. Trench 02 revealed two walls relating to the 19<sup>th</sup> century warehouses that used to cover the site prior to redevelopments in the early 1990s. The most significant find during the evaluation was the discovery of the redundant 1793 Sea Wall which was found in Trench 04. This wall, which measured over a metre in width at the top, survived to a height of 1.8m and was composed of large squared blocks of roughly mortared whinstone. The construction trench of this wall had truncated an earlier 18<sup>th</sup> century building which may have originally been built right up</p>

	against the shoreline.
PROPOSED FUTURE WORK:	Watching Brief
SPONSOR OR FUNDING BODY:	Dundee City Council
CAPTIONS FOR ILLUSTRS	The Sea Wall exposed in Trench 04, view to NW
ADDRESS OF MAIN CONTRIBUTOR:	Alder Archaeology Ltd, 55 South Methven Street, Perth PH1 5NX
ARCHIVE LOCATION (intended)	NMRS
EMAIL ADDRESS:	<a href="mailto:Director@AlderArchaeology.co.uk">Director@AlderArchaeology.co.uk</a>

## Appendix 6 Standard Terms of Reference for all Fieldwork

### 6.1 Recording Methodology

Alder Archaeology employs a Single Context Recording System that allows full cross-referencing of stratigraphy, finds and environmental samples, as well as site-wide phasing. All features will be planned at scale 1:20, and sections drawn at scale 1:10. Sections and profiles will be drawn and all features will be photographed with metric scale included. Environmental samples will be taken from archaeologically significant contexts, if the analysis of these samples would aid significantly in the interpretation of any features identified.

### 6.2 Human Remains

If human remains are encountered they will be left in situ and the local police will be informed. If removal is required this will take place in compliance with Historic Scotland's Policy Paper *The Treatment of Human Remains in Archaeology*.

### 6.3 Products and Reporting

A Data Structure Report will normally be prepared within a period agreed within the Written Scheme of Investigation/ Project Design, after the completion of the fieldwork. This forms the basic level of reporting. Further reporting may be required on the basis of discoveries made during excavations.

A copy of the report and the project archive will be deposited in the NMRS. Further copies will be sent to the client, LAAO and others, as appropriate.

### 6.4 Artefacts

Finds of objects will be subject to the Scots Laws of Treasure Trove and *Bona Vacantia*. We will report such finds, if recovered, with supporting documentation to the Secretariat of the Treasure Trove Panel for disposal to the appropriate museum.

### 6.5 Discovery and Excavation in Scotland

A brief summary of the results will be submitted to *Discovery and Excavation in Scotland*.

### 6.6 General Conditions and Health and Safety

We adhere to the Code of Conduct of the Institute for Archaeologists.

Alder Archaeology Ltd has public liability insurance of £2,000,000. Details of this can be provided on request.

We operate a strict health and safety policy and conforms to the Health and Safety at Work Act. We undertakes Risk Assessments on all fieldwork carried out.

Alder Archaeology representatives will at all times wear protective footwear, high visibility clothing and other appropriate clothing. Hard hats will be worn if there is active plant on site or at all times if the site is deemed a hard hat area.

If lightly contaminated deposits are uncovered disposable boiler suits and gloves will be worn. A source of clean water will be made available for staff to clean hands with. If the health risk posed by site contamination is felt to be too high all further archaeological work will stop in that area.