

4. ARCHAEOLOGICAL EVIDENCE

The archaeological excavation at Beaverbank Place was carried out in two parts for logistical reasons caused by services running east to west across the site. Fortunately, the two areas touched by the excavation revealed archaeological remains perfectly aligned with the different histories of the site: the garage to the north and the main tannery to the south.

4.1 North Area (Illus 5)

The northern area, measuring 24m in length and 17m in width, presented the remains of concrete wall foundations lying close to the present ground

surface in the east and remains of structures and associated features cut into the natural gravel in the west. These structures appeared to be associated with three different phases of activities characterised by the initial construction of the tannery in the 1860s, the expansion of the tannery complex in the late 19th century and the final replacement of the tannery buildings with a garage in the first part of the 20th century.

4.1.1 Tannery shed

The earliest identified features were a series of five post-holes [061, 029, 031, 034 and 036] (Illus 6) on a north to south alignment along the western



Illus 5 North Area

edge of this northern section. They were relatively evenly spaced 1.9m to 2.3m apart and three of them still contained the stub of the wooden post. The post-holes measured between 0.7m and 1.1m in diameter and were up to 0.6m deep and cut into the natural gravels. The line of the posts seems to align precisely to the eastern side of a structure shown on the Ordnance Survey map of 1877 which appears to be the only structure shown in this area of the site at this time. The presence of post-holes seems to imply the structure was less formal than the brick-built construction to the south and this would fit with various records of tanneries indicating that there would have been numerous storage sheds around the main tannery structure, needed to house the skins as they arrived from suppliers, and this structure identified immediately to the north of the main building, seems a good example of that.

4.1.2 The expansion of the tannery

The archaeological features associated with the second phase, the expansion of the tannery, were fragmentary in nature and comprised a series of

pits and small structures also cut into the natural gravels. Of these, the main one was a rectangular brick-built structure [046] aligned WSW to ENE comprising the remains of a double-skinned brick wall in the north-east end of the northern area (Illus 7). The structure, measuring approximately 6m by 3m, extended beyond the northern edge of the excavation area with only the southern part of it exposed. The northern wall [4007] however, was exposed by the previous evaluation trenching indicating it was 2m wide internally and 3.5m long. The western wall of the structure lay below concrete foundations [049], forming, therefore, part of an earlier phase of buildings in this area. Associated with structure [046] was a fragmented area of paving [045] comprising closely fitted square slabs of fired clay 0.3m by 0.3m by 0.05m thick, laid on top of a 0.05m deep layer of light grey sand (044).

Two oval pits, [087] and [089], about 5m south of the paving, also appeared to belong to this second phase. The pits, measuring between 0.6m and 0.7m in width and, less than 0.1m in depth and were cut into natural gravels. They were set 2m apart on an



Illus 6 Post-holes [061, 029, 031, 034 and 036], looking north-west



Illus 7 Brick Structure [046], looking north-east

east to west alignment parallel with the majority of the buildings in the area.

Still belonging to this second phase and located 2m south of the oval pits, was the base of a brick-built man-hole [093], measuring 1.45m by 1.4m. The basal course of the single brick wall survived along the south-east side of the structure. The feature lay below the concrete foundations [050] of the later rectangular building in this area. Further features associated with the construction of the tannery were also identified to the west of man-hole [093]. Here, a square plinth [017] made of bricks and concrete measuring 1.4m wide, 1.4m long and 0.5m deep was identified. Vertical iron rods were anchored at the corners of the plinth likely for securing a metal superstructure to the plinth.

Surrounding the plinth to the south and north-west were a series of pits [018], [024], [028], [039], [040] and [060] cutting into the natural gravels. One of the pits [018] contained a barrel lining 0.9m in diameter and over 0.7m deep. All wooden elements of the barrel had disintegrated but the iron hoops still survived in situ. The basal

layer (020) was 0.15m thick and comprised clinker; above this was a uniform deposit (021) of clean clay 0.22m thick. The upper deposit (022) was 0.45m deep and comprised gravel and rubble representing rapid infill of the barrel-lined pit. Two of the other pits, [024] and [039], were elongated and aligned north to south, parallel with the general alignment of the buildings in this area. The others were sub-circular in plan, up to 1.3m across and 0.25m to 0.4m deep.

4.1.3 The garage

The third and final phase was represented by structures associated with the garage constructed in the 1920s. The main structure was defined by a concrete wall foundation [049/053], aligned NNW to SSE. The foundation was between 0.7m and 0.9m wide and up to 0.5m deep. Remnants of the basal brick courses of wall [048/052] survived in places. From this, it could be seen that the wall was built from a combination of headers and stretcher bricks 0.36m wide. Perpendicular to this were the



Illus 8 Brick Structure [043], looking south-west

concrete foundations of two further walls [008] and [051]. Remnants of brick walls [048, 050 and 011] were also present on these foundations suggesting that they were part of the same building, and formed the north, west and southern walls of a rectangular room measuring 4.8m wide by over 10m long. Two small areas of brick flooring [001 and 007] were present in the north-east corner of the area, at a level corresponding to the concrete foundations, suggesting that the northern part of the structure at least had brick floors. Overall, the main structure, measured 20m in length and 14m in width and represented the footprint of the main garage area. Associated with and very likely part of this structure were two smaller structures. Structure [043] within the north-eastern section, was a brick-built rectangular pit (Illus 8) aligned WSW to ENE and measuring 2.5m by 1.5m externally. The walls survived to a height of 0.9m (ten courses) and were built from a single line of bricks resting on a brick floor. The external face of the southern wall was largely exposed, and shown to be of very rough construction, with

the construction cut for the pit filled with a mix of mortar and bricks. A rectangular brick-built structure [056] was uncovered at the southern end. It was aligned WSW to ENE, measured 3.75m by 1.83m externally and was cut into natural gravels. The walls were 0.29m wide, over 0.75m high and the fabric consisted of a combination of headers and stretchers. The brick structure enclosed a cylindrical metal tank, 2.3m long and 1m in diameter. An oval opening measuring 0.4m by 0.2m at the west end of the top of the tank was framed by a square brick chamber mortared onto the tank. An iron pipe was incorporated into its south wall, presumably leading into the tank, but broken off just inside the chamber (Illus 9). There was a raised lip around the hole, likely for fixing a cover over the hole. The south end of the pipe extended into the unexcavated BT buffer zone to the south.

A third small pit-structure associated with this later phase was also identified to the north-west. Brick-built pit [014], aligned WSW to ENE, measured 4.6m by 1.5m, was cut into natural gravels and filled with demolition rubble. The walls



Illus 9 Brick Structure [056], looking north



Illus 10 Brick Structure [013], looking south-west

survived up to a height of 0.7m (seven courses) and were constructed from a double line of bricks resting on the concrete base of the pit. The lower six courses were stretchers while the top surviving course comprised headers. Mortar remains on the top course indicating that the walls were truncated at the top. There was a circular hole 0.1m in diameter in the concrete floor approximately 1.45m from the north-east end. Rust stains around the hole indicate that it may have had a metal cover (Illus 10). A mound of corroded ferrous material was located at the south-west corner of this pit-structure.

4.2 South Area (Illus 11)

The southern area measured 36m in length by 25m in width and was entirely dominated by the remains of the mid-19th-century tannery and its associated brick-built structures. Most of the footprint of the building comprised a grid of tanning pits arranged in a line of nine to eleven pits east to west (described as rows) by a line of eight to ten pits north to south (described as columns) presenting in total 78 fully exposed pits and eight partially exposed pits. These pits were contained within an external brick wall, sitting on a series of sandstone foundation blocks [253] and forming a rectangular building. The eastern limit of the building extended beyond the limits of excavation, but the exposed part measured 21.4m by over 18m. The pits within the wall varied in size but appeared to have been laid out in four blocks, A to D, with the pits of each block being of a similar size. All pits were constructed of brick, with brick bases. Distinctions between blocks could also be identified on the basis of the thickness of brick walls between pits. A further block, Block E, abutted the southern extent of the building adjacent to Block D.

Only sample excavations of the pits were carried out following an agreed strategy to maximise the results following the most efficient and least time-consuming methodology.

Generally speaking, the pits were all deliberately backfilled with brick rubble containing very limited artefactual or ecofactual material.

After a full investigation, survey and recording of the tannery building and associated structures, along with any later buildings, the pits were removed by machine under archaeological supervision and monitoring.

Although the majority of the pits and structures were cutting into natural geology confirming, therefore, the absence of earlier archaeological remains, an earlier stone-built pit structure was identified underneath pits [080] and [084].

4.2.1 Earlier phase: Pre-tannery features

Following the removal of the foundations of the tannery in the area around pits [080] and [084], a rectangular stone structure [276] was identified at the southern end of this area and extending outside the limits of the excavation (Illus 11 and 12). The structure, measuring at least 5m in length and 1.6m in width, was aligned east to west and the walls, surviving to a height of 2.5m, were built of squared stone blocks with moss packed in between them. This appeared to be of the *Amblystegiaceae* moss family (Laura Bailey, pers comm). The structure had a surviving floor characterised by stone slabs. A stone-lined drain [270] very likely associated with structure [276] was identified immediately to the north running east to west. It may have been associated with the earlier bleachworks, though there is no firm evidence of either date or function.

4.2.2 The tannery buildings

The southern section of the excavation was almost entirely occupied by a single unified structure – the tannery. This was characterised by a reversed L-shaped plan aligned north-west to south-east along the longest axis and north-east to south-west along the shorter axis. The interior of the tannery was characterised by an orderly grid of tanning pits forming the bulk of the structure (Illus 13). A total of 86 pits were identified although further pits are very likely present further to the east, outside the limits of the excavation and in an area where asbestos was identified. To the south of the grid of pits was an open area, possibly a courtyard, and a line of at least five large tanks, which partially overlaid the earlier sunken structure [276]. The shorter axis of the ‘L’ was occupied by a series of rooms of which at least five were exposed. These rooms, although characterised by a different construction technique seemed to be associated with the main tannery.

The structures associated with the tannery appeared to be broadly contemporary, and the



Illus 11 South Area



Illus 12 Stone Structure [276], looking south-west

main grid of pits seemed to have been constructed as a single event with later alterations such as the removal and reconstruction of the walls between the tanning pits taking place at later times. The rooms to the west of the tannery pit complex, although contemporary, presented a more refined method of construction indicating a different use of the space, very likely dedicated to offices and storage.

4.2.3 Layout and structures

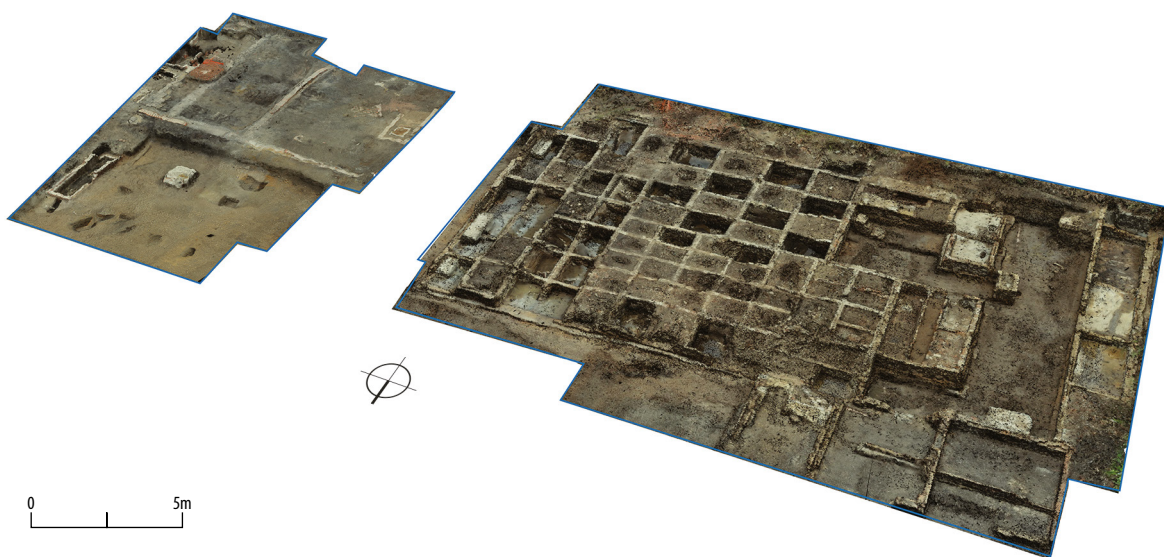
The arrangement of the pits identified during the excavation most likely represents the original function and use of the building in the period

between 1868 and 1896. The structure identified corresponds perfectly with the layout of the building as it was recorded, as seen above, around 1910 by Dunn, a renowned Edinburgh architect (Illus 4; HES, EDD/818/2–4).

The internal layout of the building has been divided up into eight blocks or areas by the authors, for ease of description. Blocks A to E relate to the grid of tanning pits which varied in size, whilst F to H cover other aspects of the overall structure.

Unfortunately, no material was recovered from within the pits to help in the understanding of whether the different blocks related to different activities. Cast iron column bases were recorded at the intersections between A and B/C, B and C, B and D and all along the southern limits of the pit complex. Where the external foundations of the brick walls could be seen, a sandstone plinth was present, set into a foundation trench recorded on the western and northern sides of the building.

The bricks provided a little dating evidence, though few had makers marks and even fewer were legible. Most can only be generically dated to the mid-19th century or later. The few that can be more closely dated are noted in the text. A mixture of red and yellow bricks was used in construction but it is not clear if there is a dating distinction between these two or if they were used contemporaneously.



Illus 13 Photogrammetry of the tannery

Block A ran across the total length of the north section of the building. It comprised four rows of a presumed total of eight pits, with a longitudinal axis running south-east to north-west. Some evidence of alteration of the pit sizes was seen in the insertion and removal of sub-dividing walls. Where this had happened, the scars of the removed walls were visible at the base and up the internal walls of the pits (Illus 14).

In general, the pits of this block were larger than those in B, D and E to the south. On average they were around 1.9m long and 1.5m wide, so likely based on a 6ft long, 5ft wide original design despite several inches of variance between many of the pits. The internal walls were two bricks wide, with three bricks wide on the external walls. Here, the third line of bricks came to a lower height creating a ledge, which is presumed to have been for supporting planks or boards to walk across the area more easily. This is a pattern that was also seen



Illus 14 Example of tanning pit in Block A, looking south-east

on the edging pits in other blocks (and in some other locations internally to the structure).

Block B comprised five rows of five pits, with long axes aligned north-west to south-east. There was more variance in their dimensions, but in general, they were around 1.7m long and approximately 1m wide. The two westernmost rows were wider (1.9m), and these showed the most instances of later alteration.

Block C also comprised five rows of five pits (making assumptions for those only partially excavated beyond the eastern limit), aligned north-west to south-east, similar to Block B. The pits measured between 2.2m and 2.3m north to south, and, also similar to Block B, the rows of pits got wider closer towards the edge of the structure. The bricks separating the three westernmost rows were different from those seen elsewhere; they were of yellow fire-clay fabric and slightly bigger than those of the rest of the building; the internal walls were also only a single brick wide. It is also of note that all the excavated examples in Block C had traces of cement render on the walls, in particular on the faces of the single-brick thickness walls. Some sub-division of the pits in the two westernmost rows could be discerned.

Block D was made up of two rows of six pits, aligned north-west to south-east. All the pits measured around 1.75m long and 1.1m wide. At least one of the walls between the pits had been removed to create a larger pit. The brick floor of one of the pits contained two bricks stamped 'EDMONSTONE FIRE CLAY WORKS DALKEITH PATENT', a company located near Newfarm, north of Dalkeith that was trading from 1851 until it went bankrupt in 1884 (Illus 15).

Block E was immediately to the south of Block D and it was clearly a later addition, as the side walls abutted the main structure. There was nothing distinctive about the types of brick used in its construction. Similarly to Block A, the alignment of the pits was generally south-west to north-east. Here the pits were square and measured 1.2m by 1.2m. Of particular note was the central pit out of the three rows, which measured the full width of the block. Unlike almost every other pit within the complex, it was filled with homogenous brown sand.



Illus 15 Stamped brick from Block D

The pits to the north and south of this had their internal brick divisions removed at some stage to form a single space. The remnants of the four pits could also be seen in the presence of four drainage holes in the floor of each pit at the south-east corner, all of which led into a drain running along the central pit. The three westernmost holes contained the remains of wooden linings, though these were in very poor condition and wood type and construction details were not discernible. The furthest west example also contained a pipe sealed with a circular iron lid with a metal hoop (Illus 16).

Further evidence of drainage was seen in the pits of the southern row of Block E. The pit furthest east had a drain hole in the north-east corner, with a wooden lining and a round plug. The pit next to this had a rounded lump of concrete at the same location, indicating the drain had been sealed off. The evidence from the excavation of the two pits indicates that this originally was a block of eight equal-sized pits, all with drains leading into a pipe located within the middle partition. Later, the four



Illus 16 Pipe sealed with a circular iron lid

pits to the north were combined into one long pit while the pits to the south were made into two pits linked through a hole in the partition wall.

To the south of the main tannery complex was an open L-shaped space, with further structures forming Block F, large shallow tanks forming Block G, and a series of rooms of apparent different functions forming Block H to the south-west.

Block F included two brick surfaces on either side of a channel with two large pits to the south of

these. The channel [161], aligned north to south and measuring 3.2m in length and 0.6m in width, sloped from 0.18m to 0.3m deep from north to south as the base sloped significantly towards the south end probably to allow better drainage. Approximately halfway along the channel, two brick pillars set opposite each other narrowed its width to 0.25m. At the base of the lower south end of the channel was a ceramic pipe. The brick pillars may have supported a removable board sealing off the north end of the pit, while the sloping base down to a drain hole could indicate that the channel was used for rinsing. The large pits might also have had a rinsing function, or alternatively, might be condensation chambers, as required by the 1863 Alkali Act. On either side, concrete-rendered brick floor surfaces ran parallel with the channel. Two brick pillars joined by a brick wall lay around 1m to the west of the channel and surfaces and were both approximately 0.75m high. It is likely that the brick pillars formed the base of a machine.

Block G, which, as seen above lay over the location of the earlier pre-tannery structure [276], comprised five shallow tanks, approximately 0.5m deep (Illus 17). Each tank was 3.85m long and 2.1m wide and cement render was used for the floors and the internal

walls. Upon removal of the block, a V-shaped drain was identified running east to west, lined and capped with flagstones. The drain was likely fed by a series of drainage holes in the tanks above, although at least one of these had been sealed off.

Block H was a rectangular building measuring approximately 16m by 8m, abutting the southern half of the tannery complex on its western side. Similar to the areas of pits, the external and internal walls were of brick construction, and the northern exterior wall also lay on a sandstone foundation. The surviving internal walls divided the space into five rooms, the northernmost of which had a small alcove in its south-eastern corner. Other details of interest include a large sandstone slab on the eastern wall of the middle room, which very likely formed a threshold into the 'business' part of the tannery complex. A brick sample retained from this area was stamped for local maker Hawkhill Brickworks, Restalrig, Edinburgh, who were manufacturing between *c* 1870 and 1885.

Other features of interest which were identified across the tannery complex were the bases of a series of hollow cast iron columns; 15 in total. They were set in four rows, which largely matched the division of the different blocks of the pits. They were 0.22m



Illus 17 Block G, looking south-east

in diameter, 0.05m thick and made entirely of cast iron. Within the complex of tanning pits, the column bases were set into the brick walls and were therefore not visible, but the southernmost row were set into an external wall and their full extent was visible. Here they could be seen resting on square sandstone slabs, with each slab then resting on a concrete foundation up to 0.3m in thickness. In terms of design, they appeared to be modelled on classical Greek columns, with a square base plate, above which two rings formed the interface with the shaft (Illus 18).

The implication of the presence of the columns is that, overall, the tannery structure was something akin to an open shed, rather than a series of enclosed rooms, and this certainly compares well with surviving photos from other tannery sites (Illus 19). Although the groups of pits would likely each have separate functions, they all lay in one large hall or shed as seen in reconstructions of tanneries in Edinburgh such as the Hewit's tannery (Hewit website). The skins could easily be moved from one set of pits to the next without obstruction, and the odours of one part of the process would soon mix with the next, very likely creating a foul atmosphere throughout.

Although the main focus of the tannery activities was on the southern part of the site, it is possible that the set of features from the north portion of the excavation described above, also related to this phase.



Illus 18 Example of hollow cast iron columns



Illus 19 An example of a 19th-century tannery (© Keighley News)