

	C4-3-08: Basal layer, to north of trench, grey gravelly sand with small stones and red brick fragments.
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Figure 59 *TT4.3 looking NE to cobbles.*

TT4-4

TT4-4 was located to the west of TT4-3. It was orientated NNE/SSW and measured 8.5m long by 1.5m wide. It was dug to a maximum depth of 2.5m.

Background

This trench was initially designed to find any evidence of the medieval south pier of the harbour. The trench was also aligned to correspond with the later 1760's long dock.

Results

Testing in TT4-4, below modern levels, exposed a wall foundation 1.1m from the northern terminal (C4-4-07). The wall was sealed below a layer of dark brown silt with intermittent patches of poorly preserved cobbles (C4-4-04). To the south of the wall, flush with its exposed top and running to the southern end of the trench was a mortar rich layer 4.8m in length by 200mm thick (C4-4-06).

The wall 800mm wide at the top was of uncoursed limestone rubble construction bonded with a white gritty mortar (figures 57-59). As found in TT4-1B, the northern face was very uneven and rubbly, a result of having its ashlar stone face robbed out for re-use. The southern retaining face was near vertical and fell 1.3m to a projecting plinth 300mm wide. The maximum height of the wall exposed was 1.6m in a 2.3m deep trench. The maximum width at its base, plinth included was approximately 1.45m.

To the north of the wall the abutting infills were of mixed infilled sand. The basal layer either side of the foundation C4-4-10) was a redeposited grey brown clayey silt with frequent amount of oyster shell, 1.1m thick

Conclusion

TT4-4 exposed infilled ground over a poorly preserved cobbled layer sealing a rubble-built wall with facing stone robbed out from the quayside northern face. The south elevation was better preserved and more regular, set on a plinth. Flush with the top of the wall and running the length of the trench to the south was a mortar rich layer 200mm thick. Below this were two layers of sand and gravel. The lower deposit TT4-4-10 had frequent oyster shells.

The wall, similar in build and condition to that found in TT4-1B, was interpreted as a section of the New Quay wall as featured on Colles's map of 1769.

Table 12: TT4-4 summary of results

Trench number	TT4-4
Dates excavated	27/07/2020
Location	Concrete surface of Potato Market Carpark
Co-ordinates (NW corner)	N 557762.2236, E 657522.9041
Dimensions, orientation	8m L NNE/SSW by 1.5m W
Ground level (ASL)	3.7892m
Maximum depth	2.5m
Services exposed	Manhole to the south, service trench for pipe (not exposed running NE/SW through SE end of trench.
Archaeological significance	Exposed foundation that aligns with walls found in both TT5-5 and TT4-1 and is probably the New Quay wall as featured on Colles's map of 1769
Recorded contexts	C4-4-01: Reinforced concrete surface of car park 170mm C4-4-02: Light brown sandy gravel 100m C4-4-03: Layer of white lime found to north of trench 2.5m long by 1.5m wide by 300mm thick

	<p>C4-4-04: Poorly preserved layer of intermittent cobbles found 400mm below surface in a dark brown silt, 300mm thick found throughout trench.</p> <p>C4-4-05: Yellowish brown sand found to south of wall 1.2m long and 120mm thick</p> <p>C4-4-06: Layer of compact mortar 180-200mm thick, found to south of wall, 4.8m in length by 1.5m wide.</p> <p>C4-4-07: Limestone mortared wall on foundation plinth (to south) running east-west across the trench 1.10m from the northern end. The wall was exposed at a depth of 700mm below the surface under TT4-4-4, of the trench and at the top was 550mm wide, tapering to a full width of 1.1m. It stood 1.7m high. The north face was rubbly and uneven. It was interpreted, similarly to the north face of the wall in TT4-1, that the ashlar facing stone was robbed out and re-used. The southern face was fairer and built of uncoursed random rubble. This face was near vertical and fell 1.3m to a protruding plinth 300mm wide, continuing a further 320mm to the base. The wall was not bottomed out.</p> <p>C4-4-08: Mixed infill layer, composite deposit of orange - brown sand and gravel inclusions of brick, modern pottery and occasional shell and animal bone. Found south of the wall, 2.4m long by 1.4m thick.</p> <p>C4-4-09: Light brown sand and gravel found abutting S face of wall, 400mm thick by</p> <p>C4-4-10: Layer of redeposited grey brown clayey silt with frequent amount of oyster shell, 1.1m thick, 3.1m long, found abutting S face of wall.</p> <p>C4-4-11: Dark brown, mixed infill of sand and gravel, found to north of wall 380mm thick</p> <p>C4-4-12: Greyish yellow mortar</p> <p>C4-4-13: Mixed sandy layer with frequent small stone and brick fragments. found to north of wall, exposed to the depth of 800mm to base of trench.</p> <p>Note: Trench effected by flooding at high tide</p>
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Figure 60: TT4-4, looking SW to rear of 1760's quay wall on plinth (compare to wall found in TT4-1).



Figure 61 Looking SW to robbed out face of quay wall in TT4-4.

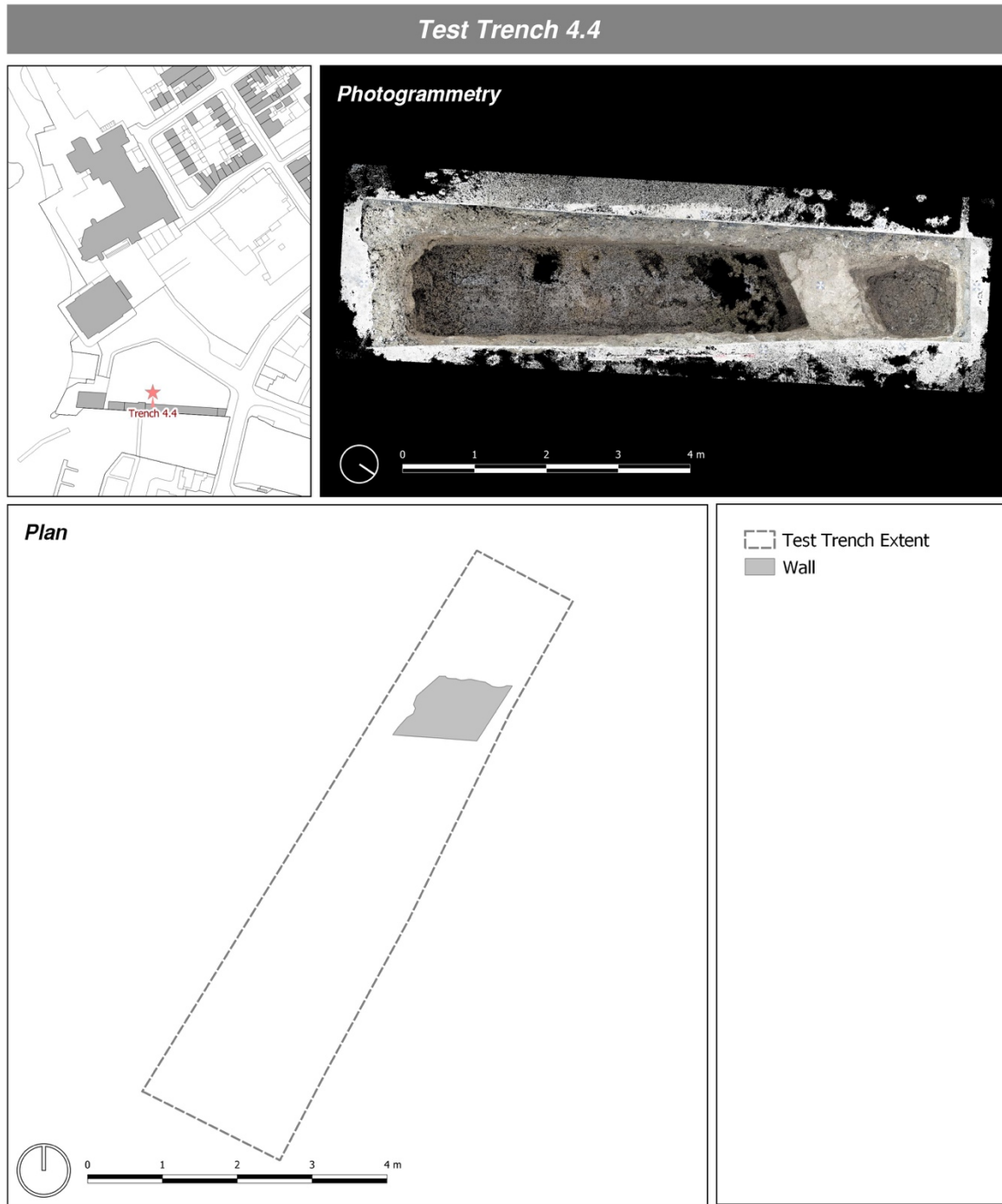


Figure 62 Plan drawing and photogrammetry of TT4-4

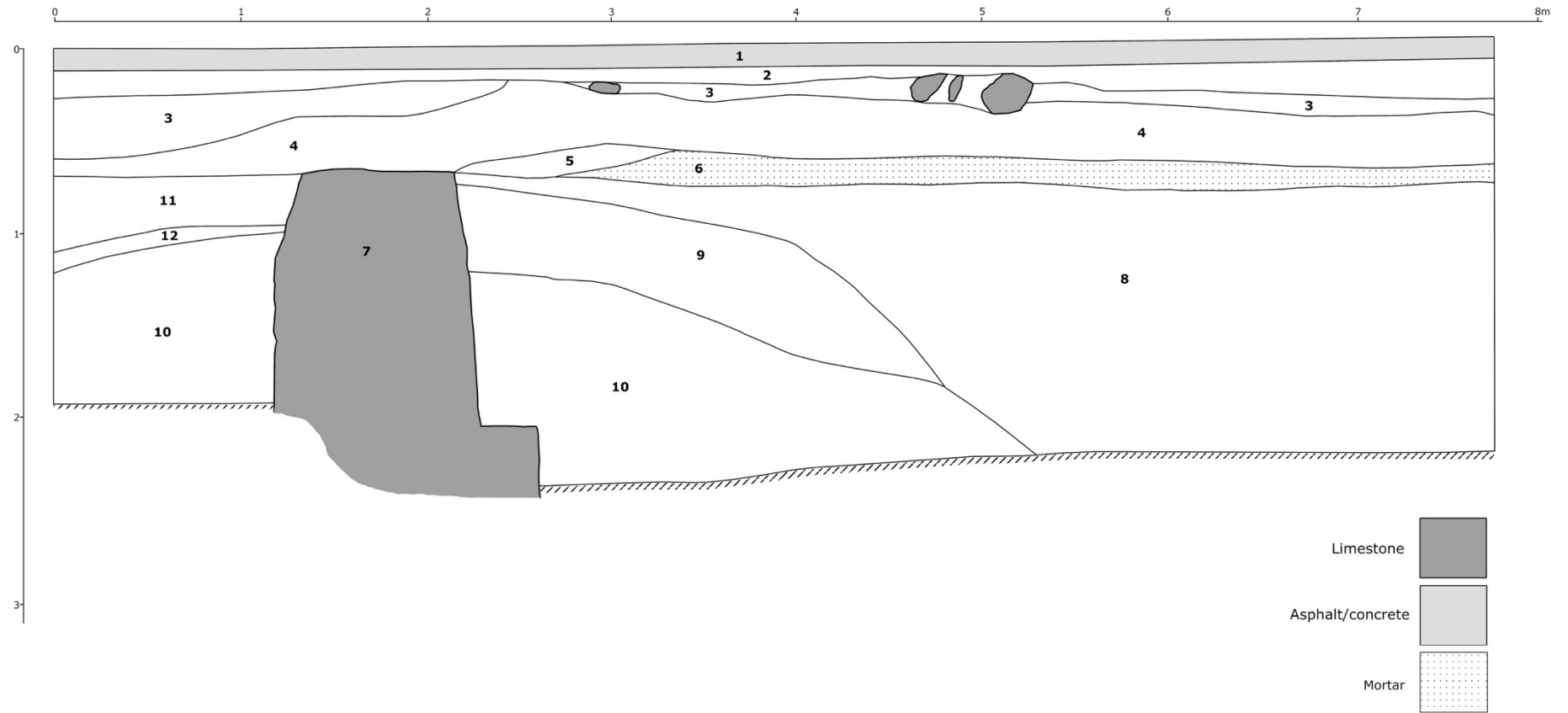


Figure 63 TT4-4 profile drawing of west-facing wall

Area 5

Five trenches were excavated in Area 5, located southeast of Limerick Courthouse, in the parking area between the River Shannon to the west and the Merchant's Quay to the east. There has been limited documented archaeological work in the land crossed by Area 5. Archaeological monitoring of civil works to upgrade lighting has taken place here, though nothing of an archaeological nature was found (Coyne 2016: 347). Renovation of Limerick Courthouse in 2003 did not involve any documented archaeological work, though anecdotally, a large culvert is said to have been revealed, running along the south of the building.

An important aim in Area 5 was to distinguish the extent of the filled-in harbour and determine the presence, depth and condition of any quay walls, including the medieval south and north piers. The approximate location of these was based on the rich cartographic record available, particularly the 1685 Thomas Philips map and the 1752 William Eyre's map. The landward side of the quay wall was especially targeted in trenches TT5-2 -4.

Planned works for the KIFRS in Area 5 involve the installation of a large water storage tank with an associated outfall.

Background

Based on a comparative analysis of historic cartography TT5-1 was located within the Medieval harbour north of the southern pier. The harbour, as shown in 16 and 17th century birds eye illustrations, comprised an irregularly shaped port with two projecting jetties and long docks running either side of two pier walls both terminating in towers.

On the 1587 Pictorial Map, the eastern access gate shown as 'Water Gate', is depicted as a crenelated tower over an arch with a portcullis. Either side of the tower are projecting walls set diagonally flanking a crescent shaped harbour with an associated long dock. The wall to the left (south) connects to a pier with a wall walk extending into the River Shannon that terminates in a tall four storey tower. The wall to the right (northwest), bounding the precincts of St Mary's Cathedral, likewise connects to a squat tower in the river via a spanning arch. Both the north and south towers are connected by a linked chain across the harbour mouth. The south quay wall was described as running 400 feet starting from a three-sided tower. The north wall was 100 feet long and separated from the south pier by a similar distance (30m).

Hardiman's map of 1590 shows the quays as having a long dock inside the southern quay wall opening to a wider, rectangular dock between the arm like piers (Figure 64). The space between the quayside and the grounds of the Cathedral have rows of houses. A bastion is shown projecting into the Abbey River at the landward side of the south pier.

The 1633 Pacta Hibernia map is a revision of the 1587 map and appears to show the quays as being built of cut stone masonry. Speeds pictorial illustration of Limerick (1610) provides a bird's eye view of the town from the west. The expanded quay walls of the harbour are depicted as rectilinear with a small projecting jetty. Quay Gate is depicted as a square tower beside a three-sided bastion fronting into the river. Extending to the north of the tower is a stretch of wall with a small arch that intersects a row of terraced buildings facing the quays. According to Dinley and featured in Ferrer's history of the town, Quay Gate was rebuilt in 1642 with 'rooms and turret', the south quay wall was also repaired at this time (O'Flaherty 2010: 26).

The medieval pier enclosed by pier-like arms terminating in two towers set 100 feet (30m) apart. The port, capable of accommodating vessels discharging 200 tonnes or more, was irregularly shaped, with two projecting jetties and long docks running either side of the northern and southern pier walls.



Figure 64. Extract from *Limerick c.1590* by Hardiman (Trinity College Dublin) (*Irish Historic Towns Atlas No. 21 Limerick, Map 6*) showing the quays area, with gated entrance to the east.

Following the Cromwellian siege the military surveyor and engineer of fortifications and harbours, Thomas Phillips visited Limerick in 1685 to map the town. Phillip's plan shows the harbour as having an irregular back wall with four rectangular bays, the longest running along the south pier. This long dock is shown with ships at anchor. The northern pier is shown as forming a right angle sheltering the docks. A gifted artist, Phillip's drew a prospect of the town looking north east across the Shannon in pen and ink. This drawing shows a view of the western town defences from Thomond Gate to Irishtown via Baals Bridge; the belfry of St. Marys dominating the skyline. The harbour mouth, viewed from modern day Clancy's Strand, shows the squat north tower and tall slender south tower flanking the docks with moored ships at bay. Quay gate is obscured; however, three storey buildings are visible along Merchants Quay. It is noteworthy that the earlier Civil Survey, albeit incomplete for this area, describes the houses along Merchants Quay as all being built in the cage work style.

In 1693 the south tower was the scene of an accidental explosion caused by the collision of falling stones detonating an arsenal storing barrels of gunpowder beneath. The damage resulted in 'most destructive effects: fatal casualties and much injury to persons and property houses were wrecked, many windows broken, and roofs stripped'. The site of the tower at the pierhead was subsequently replaced by a 6 gunned battery.

In the 18th century the most detailed maps for the quays are Eyres's map of 1752 and White's map of 1760. Eyres's survey is additionally detailed with cross sections between the south and north piers. James white a catholic priest and chronicler of the times, states that he drew his map for his own amusement measuring much of the distances by steps 'before the walls were thrown down, the new quay or bridge to Marydyke were made'. This preamble shows how conscious White was of documenting the town and particularly the harbour before its complete re-development in the 1760s as documented in Colles's Plan (1769). The map shows the familiar irregular shaped quays protected by the projecting north and south piers. Internally the quayside from south to north has a long rectangular dock beside two smaller bays, behind the angle of the wall leading to the northern tower is another dock orientated roughly north south, later the general site of the Court House.

Following the drawing up of plans in 1764 the configuration of the quays was altered in succeeding years (see New Quay Plan 1764, ITHA Map 17). This development resulted in new quays, one to the south known as the Long Dock, orientated east west and roughly 'U' shaped in plan. The northern element was a wedge-shaped sheltered dock now the site of the courthouse. Other contemporaneous developments included the construction of a new bridge across the Abbey River springing from the bastion at the end of Bridge Street to the opposite side of the river at Bank Place and the construction of George's Quay. In the mid-nineteenth century with the sea trade moving to other quays the site of this 'New' harbour was now largely obsolete. In 1843 the long dock was filled in and developed into the existing Potato Market with specifications drawn up by William Henshaw Owen. This open-air market was enclosed by a squared limestone ashlar wall supporting wrought-iron railings. The riverside wall along the Market was built during the canalisation of the Abbey River as part of the Kilalloe-Limerick Canal Navigation Route that started in 1757 and continuing until 1830.

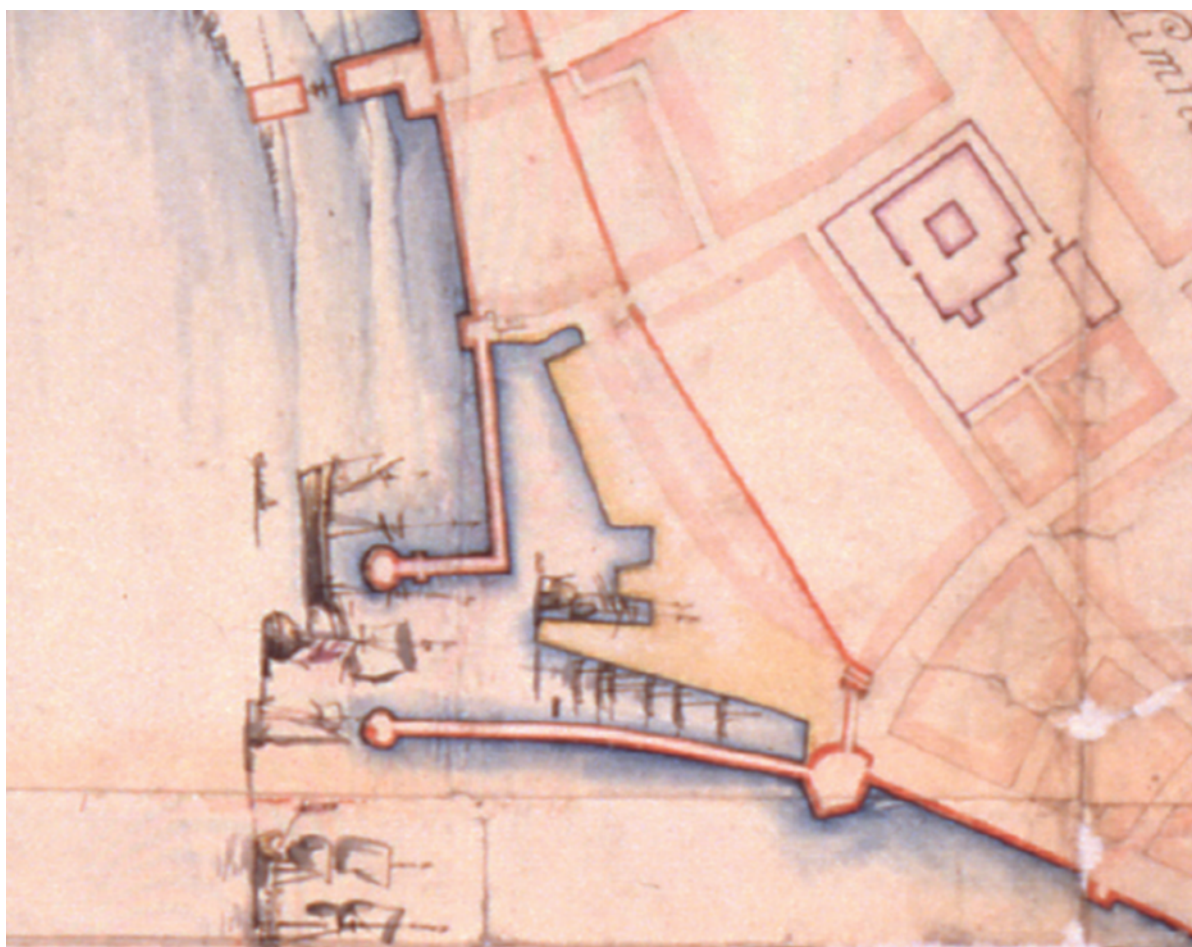


Figure 65 Extract from *Limerick*, 1685 by Thomas Phillips showing a single entrance into the harbour.

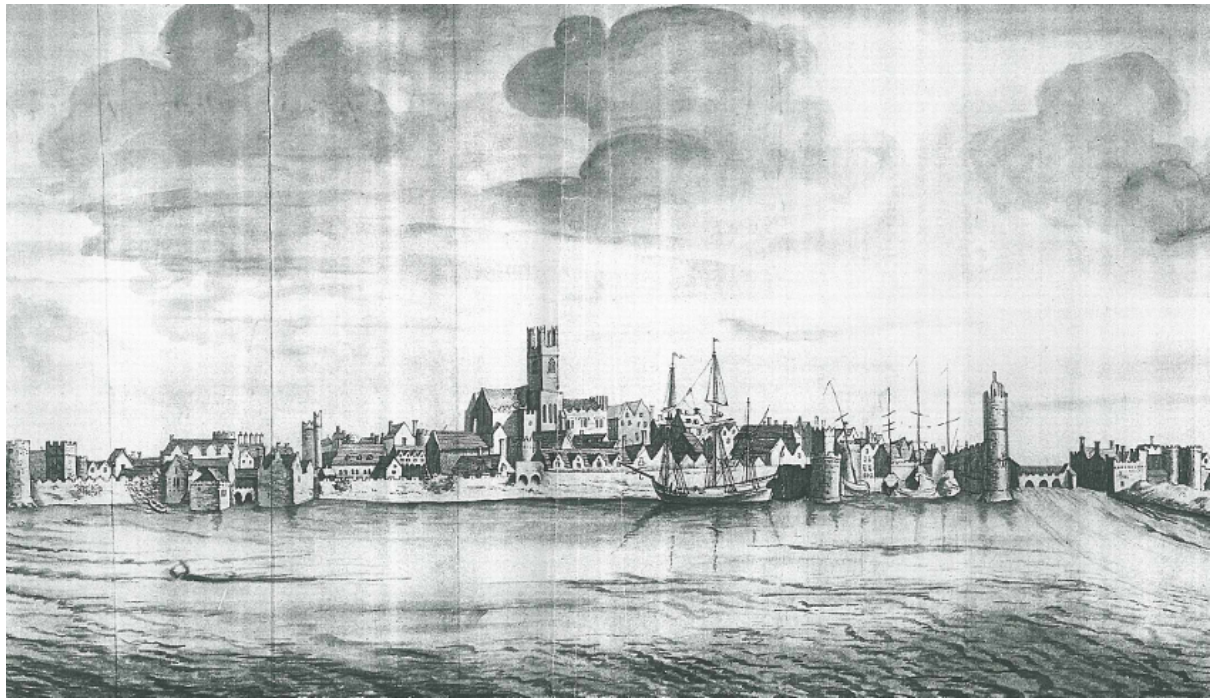


Figure 66 *Phillips' Prospect of Limerick, 1685, showing the mill site and harbour entrance with towers.*



Figure 67 *Extract from Willian Eyres' map, 1752m showing the harbour, note apparent tunnels at 'Q', Mills and Breweries.*

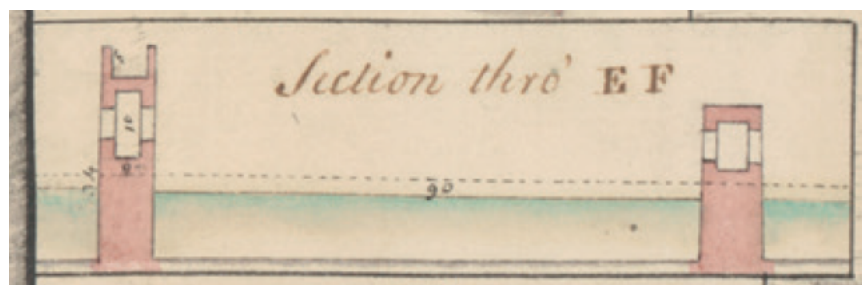


Figure 68 *Section E-F from Eyres Map through the entrance into the Harbour.*



Figure 69 Map of archaeological testing in Area 5.

TT5-1

Trench TT5-1 was excavated in two sections. The initial excavation (TT5-1A) was carried out on 25-30 June; the trench was later extended to the north (TT5-1B), on 15-16 July, to investigate a large culvert uncovered during renovations to the courthouse in 2003. TT5-1A was aligned north-northwest/south-southeast and measured 7.8m length by 1.5m width. Its southern end was against the kerb of the pavement that runs around the perimeter of the Potato Market (Figure 70). The ground is flat at this location, with a slight dip towards the kerb. TT5-1B was a continuation of TT5-1A to the north, extending up to the perimeter wall of the Court House. The trench measured 6.3m length by 1.5m.

Following the reconfiguration of the quays in the 1760's the trench would generally have been north west of the northern arm of the newly built long dock. This land was later reclaimed during the construction of the Court House in 1810. Given the length of TT5-1, the trench has the potential to impact on medieval quays and later alterations of the Georgian era.

Results

The current asphalt surface and a layer of concrete and dark grey gravel road base were broken, below which was a thin layer of mixed gravels (C5-1A-04) above another asphalt surface (C5-1A-05) which sits on greyish brown fill (C5-1A-06). Cutting through these modern layers was a concrete bollard base in the centre of the trench (C5-1A-03), which extends to 600mm below the surface. At the south end of the trench was a mass of white lime (C5-1A-10) which abuts the modern infill (Figure 72).

A cobbled surface of rounded and closely set stones was revealed at 400mm (C5-1A-07), preserved across the centre and south of the trench for a stretch of 4m (Figure 73). The cobbled paving dips slightly in the centre, which was found to correspond with a pit below, into which the stones have sunk. Under the cobbles was a golden brown coloured sandy rubble fill that contained brick, ash and mortar (C5-1A-08). The northern end of the cobbled surface has been cut; greyish brown fill (C5-1A-06) present above the cobbles in the south and centre extends to a greater depth here, through which a cast iron pipe runs at 900mm depth.

The base of the brown rubble beneath the cobbles is a shallow and regular curve, bordered by a lens of red oxidised soil with a white upper margin (C5-1A-09) (Figure 74). This indicates the soil has been heat affected; directly beneath this lens was charred black fine silty clay (C5-1A-11) which has a maximum depth of 2m; on its south side the cut is regularly curved but is irregular to the north where there has been later disturbance. In section, the shape of this deposit echoes the heat-affected lens above, which itself is mirrored by the sunken cobbled surface. The base of the pit corresponds approximately to the high tide mark, which was 1.7m depth below the surface. The regular shape and nature of the pit fills, evidence for burning and the mass of lime at the south of the trench supports the interpretation that this was the site of a kiln for preparing lime mortar possibly used in the development of the courthouse.

The lime kiln pit cut into brownish yellow coarse sand (C5-1A-12). From 2.38m depth, the top of a mortared limestone wall was exposed (C5-1A-15), 3.9m to the north of the Potato Market perimeter wall (Figure 75). Once identified as an *in-situ* feature, a trench box was lowered to allow for closer investigation. The wall was cleaned and fills on either side examined (Figure 76). The trench crosses the west-southwest/east-northeast oriented alignment of the wall, which is 1.4m in width, giving a clear section of both faces (Figure 77). It is built of limestone boulders bonded with pale grey mortar. There is rougher facing on the southern side, formed of one large boulder; the northern side is more regular and has smaller, straight-edged stones. Hand excavation and mechanical digging exposed the wall to a height of 450mm.

Abutting the south side of the wall is a deep deposit of dark reddish-brown clayey silt (C5-1A-13), below the mass of lime and perhaps corresponding with the infilled dock. On the north side of the wall is a thin lens of this same dark reddish-brown clayey silt; below was yellowish brown clayey sand (C5-1A-14), only present from below the level of the wall. This contained a large glass bottle base and fragments of black glazed ceramic. Excavations reached a maximum depth of 3.3m in the centre of the trench, on the south side of the wall.

Table 13: TT5-1A summary of results

Trench number	TT5-1A
Dates excavated	25-30 June 2020
Location	Merchant's Quay
Co-ordinates (NW corner)	E 557740.4154, N 657558.5212
Dimensions, orientation	8.8m NW/SE by 1.5m NE/SW
Ground level (ASL)	3.9066m
Maximum depth	3.3m
Services exposed	Cast iron pipe at 900mm depth towards north of trench; concrete bollard base to from surface to 600mm depth and 600mm wide along centre-east of trench.
Archaeological significance	Cobbled surface (C5-1A-07) at 0.4-0.8m depth. Mortared limestone wall aligned WSW/ENE towards south of the trench from 2.38m depth (C5-1A-15). The wall has rough facing on south side and finer face on north side; irregular coursing. Excavations revealed 450mm of the wall's height. Yellowish brown clay abutting the north side of the wall (C5-1A-14) contained black glazed ceramic and a black glass bottle base.
Recorded contexts	<p>C5-1A-01: Concrete surface</p> <p>C5-1A-02: Gravel road base, dark grey</p> <p>C5-1A-03: Concrete bollard base, to 600mm depth</p> <p>C5-1A-04: Stony silt of modern infill of mixed gravels and building materials</p> <p>C5-1A-05: Tared former road surface</p> <p>C5-1A-06: Redeposited builders' fill, grey brown</p> <p>C5-1A-07: Cobbled surface set in coarse sand, yellowish brown</p> <p>C5-1A-08: Rubble with brick, ash and mortar</p> <p>C5-1A-09: Lens of oxidised soil, red with white upper mardin, in crescent shaped lens</p> <p>C5-1A-10: White lime, a suspected dump or production waste</p> <p>C5-1A-11: Charcoal rich black fine silty clayey silt, moist</p> <p>C5-1A-12: Sand, brownish grey yellow, coarse, frequent rounded pebbles</p> <p>C5-1A-13: Clay, dark reddish brown</p> <p>C5-1A-14: Clayey sand, yellowish brown</p> <p>C5-1A-15: Limestone wall bonded with mortar</p>

Having completed excavations in trench TT5-1A, an application was made to extend the trench to the north with the aim of identifying the large drain found during renovations of the courthouse in the early 2000s. Trench TT5-1B extended from the north of TT5-1A up to the perimeter wall of the courthouse. In the centre of the trench was a brick lined gulley or culvert with stone slab lintel carrying a terracotta pipe (C5-1B-07) at 740mm depth. At the north end of the trench, the drain which was the target of the excavation was exposed from a depth of 750mm, running directly beneath the kerb and perimeter wall along the south side of the courthouse (Figure 78). The drain consisted of a sheer wall of mortared limestone rubble incorporating some brick (C5-1B-11); it was revealed to a depth of 2.8m, where there is a plinth that forms its base. Fills abutting the wall were grey brown and brown silty clay containing brick, with ash, mortar and charcoal inclusions at the lowest depths reached. The drain was not breached and the trench did not extent into the courthouse land, but its depth and its position, corresponding with the wall around the courthouse, were established.

Table 14: TT5-1B summary of results

Trench number	TT5-1B
Dates excavated	15-16 July 2020
Location	Merchant's Quay
Co-ordinates (NW corner)	E 557739, N 657564
Dimensions, orientation	6.3m NW/SE by 1.5m NE/SW
Ground level (ASL)	3.9461m
Maximum depth	2.8m
Services exposed	Cast iron pipe at 1200mm depth towards north of trench; 6" terracotta pipe in the centre of the trench at 1400mm; brick lined culvert (C5-1B-07) at 740mm depth in south of trench.
Archaeological significance	Mortared limestone and brick drain wall (C5-1B-11) at 0.75m to >2.8m along south perimeter wall of courthouse, contemporary with courthouse construction, 1810.
Recorded contexts	C5-1B-01: Tarmac C5-1B-02: Concrete C5-1B-03: Mortar rich layer C5-1B-04: Cut for terracotta pipe with grey fill C5-1B-05: Displaced cobbles and builders fill with stone and brick C5-1B-06: Silty sand, charcoal rich C5-1B-07: Brick lined gulley with slab lintels C5-1B-08: Orange brown clay with few inclusions C5-1B-09: Grey brown fill with brick C5-1B-10: Brown grey silty clay with patches of ash, mortar and charcoal C5-1B-11: Limestone and brick drain wall sitting on stone plinth at 2.8m depth