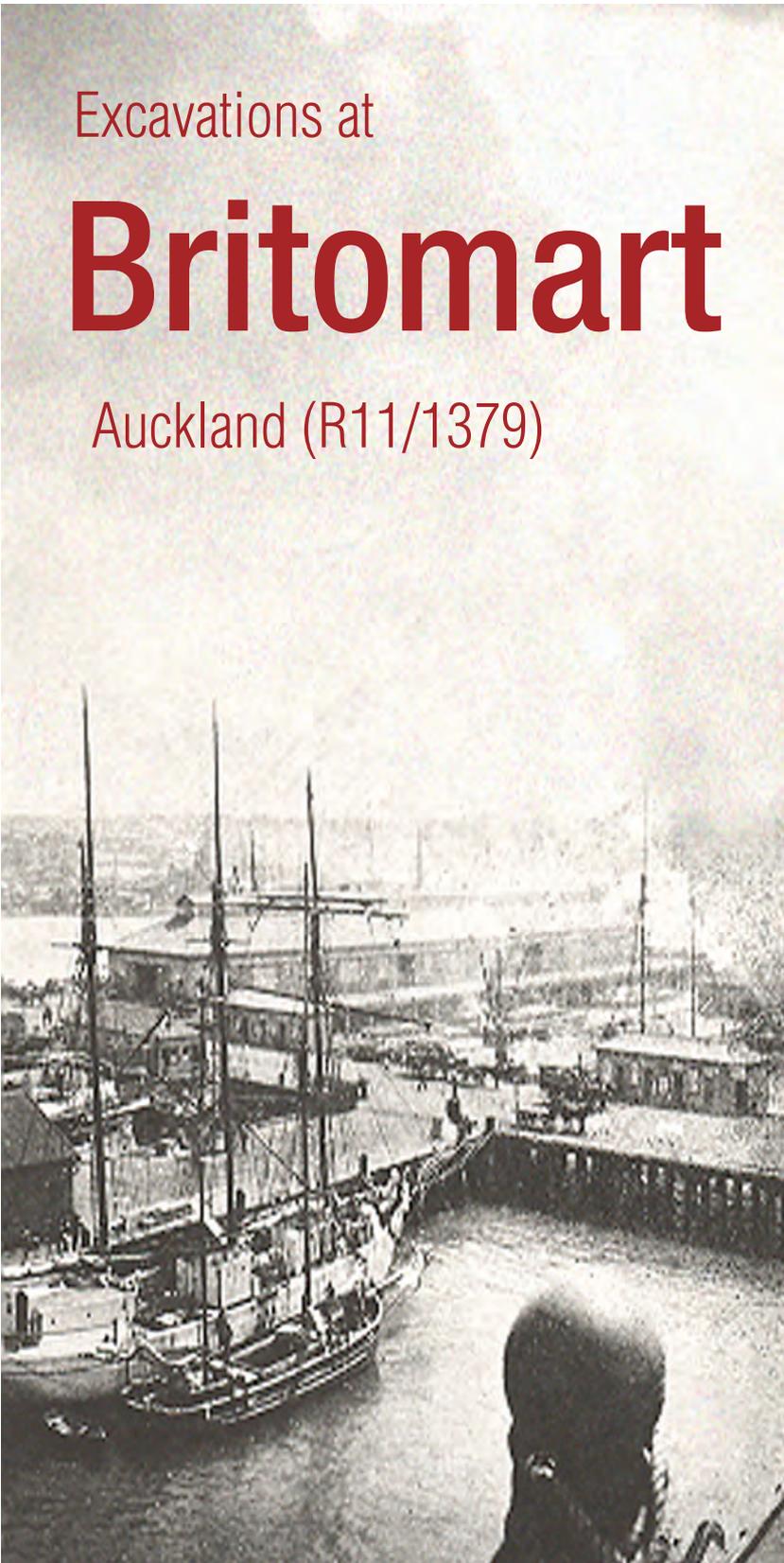


Excavations at

Britomart

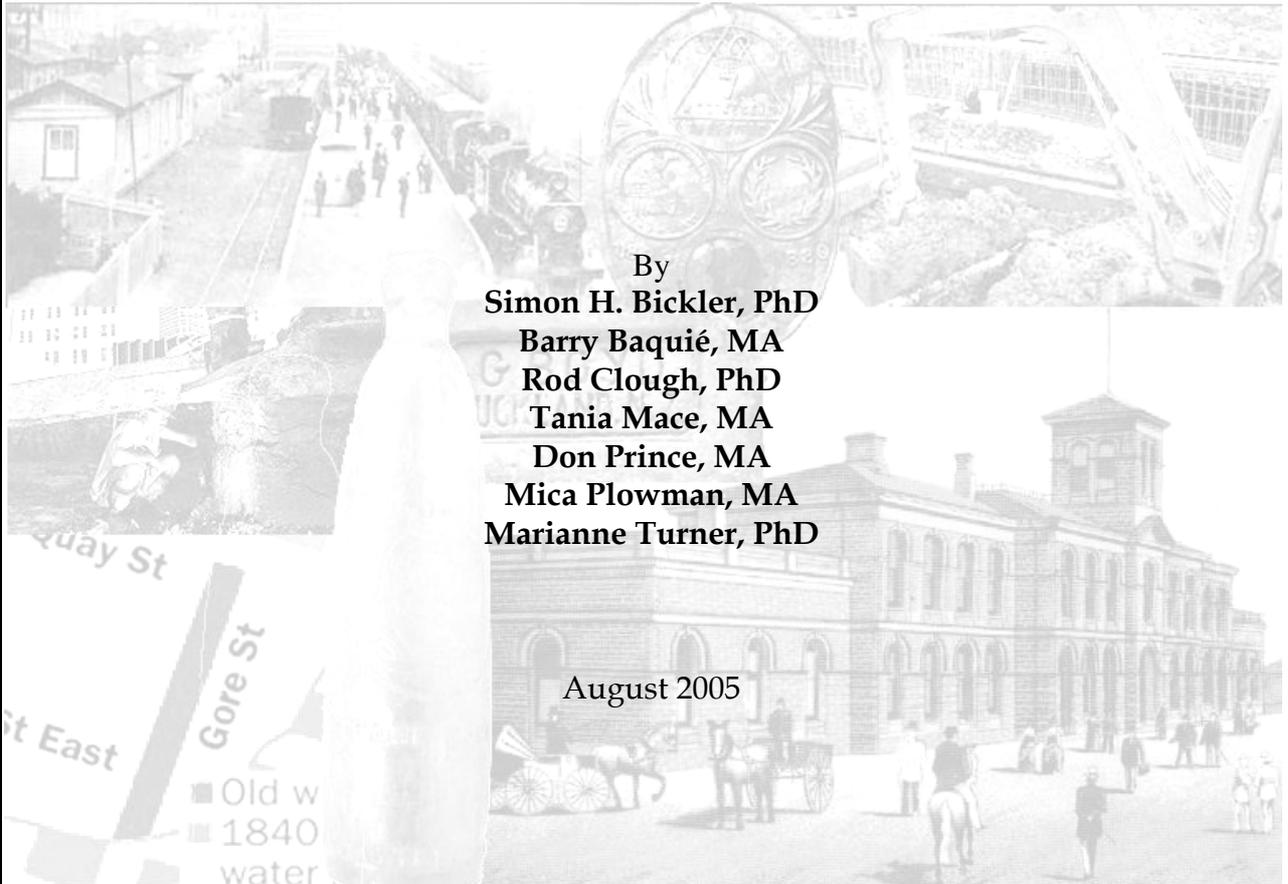
Auckland (R11/1379)

Site Report for Auckland City Council
2005



Excavations at Britomart, Auckland (R11/1379)

Prepared for Auckland City Council



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Chapter 1: Introduction

Project Background

From Town to City

The recent and ongoing developments along Auckland's waterfront have provided the opportunity for archaeologists to investigate the development of Victorian Auckland's trading hub. Downtown Auckland's waterfront developed from a few canoe landing places to a major seaport, at first serving New Zealand's capital city (1840-65) and then its largest trading city. The initial transition is aptly reflected in the title of Professor R. Stone's (2002) volume *From Tamaki-Makau-Rau to Auckland*. This report, however, relates to the next phase of Auckland's development: the transformation from town to city.

This report describes the archaeological investigations in the Britomart project area and the uncovering of evidence of commercial, industrial and residential activities that relied on the port, along what were the shorelines prior to reclamation. It also describes the growth of the rail transport system around the area. Within the Britomart project area, archaeological investigations revealed the remains of the 1885 Queen St Railway Station, as well as Queen St and Gore St jetties and information on the early businesses and residences along the waterfront.

In addition to the archaeological data uncovered, the presence of buildings of considerable heritage value within the project area and the fact that the reclamation was in itself a historic enterprise worthy of attention, add to the importance of the Britomart project in the context of a continuing resurgence of interest in Auckland's 19th century history.

From Small (and Large) Things Forgotten

Archaeology places the focus on the material and tangible aspects of history and on how objects and structures can represent and explain the past. The study of physical remains in combination with archival information provides a different perspective to what can be gained from a study of the documentation alone. Combining the two allows us to record many of the mundane everyday activities in addition to the more extraordinary, the larger vista as well as the accumulation of 'small things forgotten' (Deetz 1977). In particular archaeology records what did happen as opposed to what was planned. This is a thread that will be evident throughout the report.

The scale of the Britomart project provides a unique opportunity to record a major endeavour in Auckland's development, the reclamation of the waterfront, and to complement archaeological studies relating to earlier decades of Auckland's history (for example see Macready 1991, Best 1992, Brassey and Macready 1994, Macready and Robinson 1990, Macready and Goodwyn 1990).

Continued on next page

Project Background, Continued

Archaeological Potential

The Britomart Transport Terminal Project (BTTP) is an extensive inner city development by the Auckland City Council. It is located in an area of Auckland containing many historic buildings, which have been scheduled by the Council or registered by the Historic Places Trust because of their heritage value. The development is sited on land reclaimed between 1879 and 1885, part of a long process of the infilling of Commercial Bay. The fill for the reclamation was taken in part from Britomart Point, the site of Auckland's early military post, Fort Britomart, and of an earlier Maori pa. The fill contained extensive remains relating to the activities of the city during the latter part of the 19th century.

The prospects for successful recovery of archaeological materials were supported by contemporary media reports indicating the presence of identifiable remains from periods prior to the reclamation:

Pile driving took some time as a considerable depth had to be obtained, and contractors kept coming across relics of old Auckland in the shape of oyster shells, coir matting, old piles, and the debris of the coffer dam of the old silt basins (NZ Herald 16 May, 1883).

In addition there was considerable archival documentation available to assist in interpretation, including remodelling plans for the railway station, construction plans for the wharf renovation, as well as photographs and street plans.

Historic Buildings

The Britomart Development contained three Historic Areas registered by the Historic Places Trust. It included 13 Historic Places, such as the Chief Post Office and the Wharf Police Station, that were registered as structures forming part of the historical and cultural heritage of New Zealand (McKenzie 1995). Most of the buildings within the historic areas were constructed between the mid 1880s and 1920 and many were associated with important commercial activities linking New Zealand to the world markets:

Irrespective of whether individual buildings are of grand or humble appearance, whether notable architects designed them or the identity of the designer is not known, as a group the buildings have significance beyond that of the individual parts. The area illustrates and represents a cross section of Auckland's social and cultural history (McKenzie 1995).

The building assessments such as McKenzie's (1995) and Salmond's (1995) stress the importance of such structures to any understanding or interpretation of the development of Auckland as a major maritime and urban centre and this also applies to the layers of archaeological material underneath.

Continued on next page

Project Background, Continued

Requirements of the Archaeological Authority

Prior to the commencement of the development work in 2001, the Historic Places Trust (Rickard 1995) identified a number of issues that the archaeological investigation was required to address:

- The reclamation and fill material provides for an opportunity, through careful investigation, to derive important information on the engineering techniques used to successfully reclaim, compact and stabilise land in the 19th century.
- The interface between the reclamation fill material and the seabed may include material relating to the maritime and industrial activities which occurred on the wharves located across Commercial Bay during the period from the first settlement until the commencement of the reclamation. If hulks remain on the seabed archaeological information will be retrievable from them.
- The initial reclamation of inner Commercial Bay ended at the northern side of Customs St with massive stone retaining walls. These are likely to remain under the Railway Reclamation. These structures will provide significant information on the methods of constructing retaining walls used to contain reclamation fill material. Information on the sources of rock used in the walls may also be identifiable.
- The first major railway station building and associated buildings were located on the Britomart block in 1885. Information on the location of the main building and ancillary buildings and track and other activities on the site will be available through archaeological methods of investigation.
- The activities taking place on the Britomart block have been related to the maritime location of the reclamation since its completion. Excavation by archaeological methods of selected areas of the block may be able to provide important industrial information.
- Use of the bay by early Maori occupation may be identifiable, and consultation will be required.

The report is submitted in fulfilment of the conditions of an Authority to modify the site (2001:27) issued by the NZ Historic Places Trust under Section 11 of the Historic Places Act (1993).

Historical Background

Key Dates

A brief historical background is provided here. This section gives a broad introduction to the development of Auckland's settlement from the 1840s. Key dates relating to the history and the chronology of the modern Britomart development area are provided in Table 1.

Table 1. Key dates¹

Date	Description
- 1840	Maori Settlement of Tamaki-Makau-Rau
1840	Founding of Auckland as new colonial capital
1840s	Fort Britomart established.
1846	Queen St Jetty completed
1859	Reclamation of waterfront starts
1859	Queen St Wharf completed
1860s	Britomart Point demolished, filling used to reclaim the Britomart area
1866	Gore St Jetty completed
1879	Gore St Jetty demolished
1879-1885	Railway station reclamation
1882	Reclaimed land for sale
1883	Reclamation completed
1885	Queen St Station opens on the Britomart site
1909	Chief Post Office construction starts
1912	CPO officially opened
1913	Waterfront strike
1914	First bus service to CPO
1930	Auckland Railway Station opens on Beach Rd
1937	Britomart bus terminal opens. CPO Annexe completed
1958	Britomart carpark opens
1976	Queen St closed between Quay St and Customs St
1980	Queen Elizabeth II Square opens
1980s	Deregulation of Auckland Harbour Board and Railways Department
1987	Britomart Development proposed then cancelled with stock market crash
1988	CPO closed
1994	Auckland City purchases all Britomart properties
1995	Auckland City purchases CPO and proposes the Britomart project
2000	Rail tunnel completed. Design competition. Station resource consent granted
2001	Stormwater project. Demolition of CPO Annexe, Britomart bus terminal and carpark. Britomart underground railway station construction begins
2002	CPO restoration begins; Queen Elizabeth II Square closed
2003	Britomart Transport Centre completed

Pre-European Occupation

In the immediate Britomart area, a major pa site had been constructed on the point between what was to become Commercial or Official Bay and Mechanics Bay. A small stream (Waihorotiu) that was at least partly navigable by canoe ran down the valley in what was to become Queen St and led to the shallow mudflats that typify much of the Waitemata coast. The large village of Horotiu covered what is now Albert Park (Stone 2002). Interested readers should refer to Stone (2002) for a description of the pre-European occupation of the area.

Continued on next page

¹ Adapted from <http://www.aucklandcity.govt.nz/council/projects/britomart/when.asp>.

Historical Background, Continued

Settlement of Commercial Bay

European settlement in Auckland began in 1840 after the first Governor of New Zealand, Captain William Hobson, chose the isthmus as the site of the capital of the new colony. A group of Ngati Whatua chiefs had encouraged Hobson to choose the area they knew as Tamaki-Makau-Rau, or Tamaki of a hundred lovers. As the name suggests, Maori had prized the isthmus for centuries. It offered fertile land, abundant fishing grounds and a temperate climate (Stone 2002: 3). It also boasted a valuable portage at Otahuhu where canoes were dragged across a short distance of land separating the Tasman Sea and Pacific Ocean. The area also offered access to the hinterland through the Awaroa Creek leading into the mighty Waikato River (Stone 2002: 2).

With the decision to move the capital from Russell (Kororareka) to Auckland in 1840, the initial defence for the town of Auckland was provided by Fort Britomart, replacing the earlier abandoned pa there. This site became the headquarters of the imperial military forces in New Zealand and barracks to house the small contingent of troops were built by the troops. The name Britomart derives from the Saint Britomart, and was used by the brig that landed Shortland, the colonial secretary, at Auckland in September 1840 (Stone 2002:266).

To the west of Point Britomart was the small harbour (Figure 1), initially named Store Bay, later Commercial Bay, and it was to become the main harbour for the city (Stone 2002:267ff). The shallow mudflats that typify the coastline of the Waitemata, however, provided poor anchorage for a growing capital and development of the area was quickly deemed essential.

Settlement proceeded relatively quickly with tents set up for government officials on the eastern side of Point Britomart in what was called Official Bay and along the coast in Mechanics Bay. As infrastructure developed, Foreshore (Fore) St, later Fort St became the waterfront area with various hotels and businesses.

The dual factors of improved harbour facilities and the high value of land in the centre of town drove the reclamation of the foreshore area and in 1859 the process was under way. In less than 50 years, more than 50 hectares had been added to downtown Auckland, with smaller reclamations continuing in the 20th century (Figure 2). The focus of this report, though, relates to the 1879-86 reclamation between Customs St and Quay St. The first major reclamation between Fore (Fort) St and what was to become Customs St started in 1859 and was finished by the mid-1860s. Additional reclamation around Smale's Point was carried out in the 1870s. This led to pressure to infill the area between Point Britomart and the now significant Queen St Wharf, and to integrate rail transport with these harbour facilities.

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Historical Background, Continued

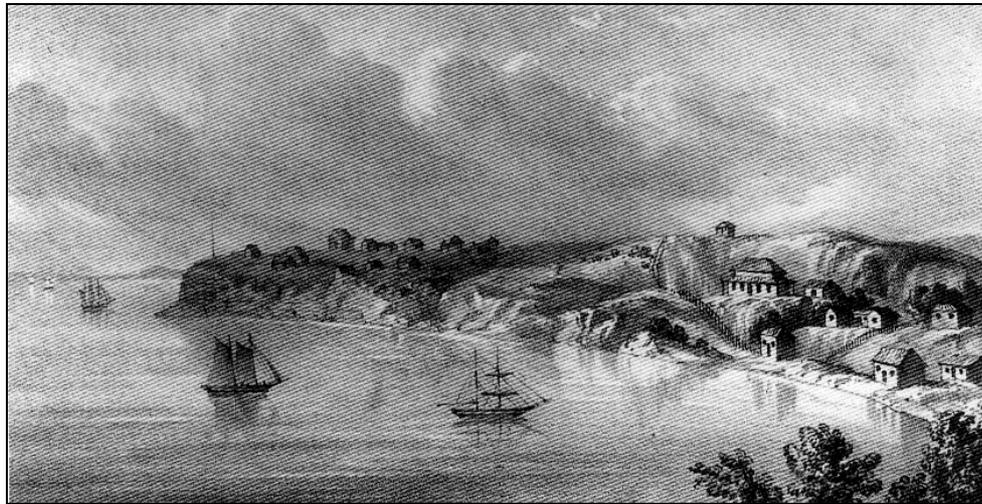


Figure 1. View of Point Britomart and Commercial Bay c.1842. P. Gauci lithograph after J.J. Merrett in Terry (1842)

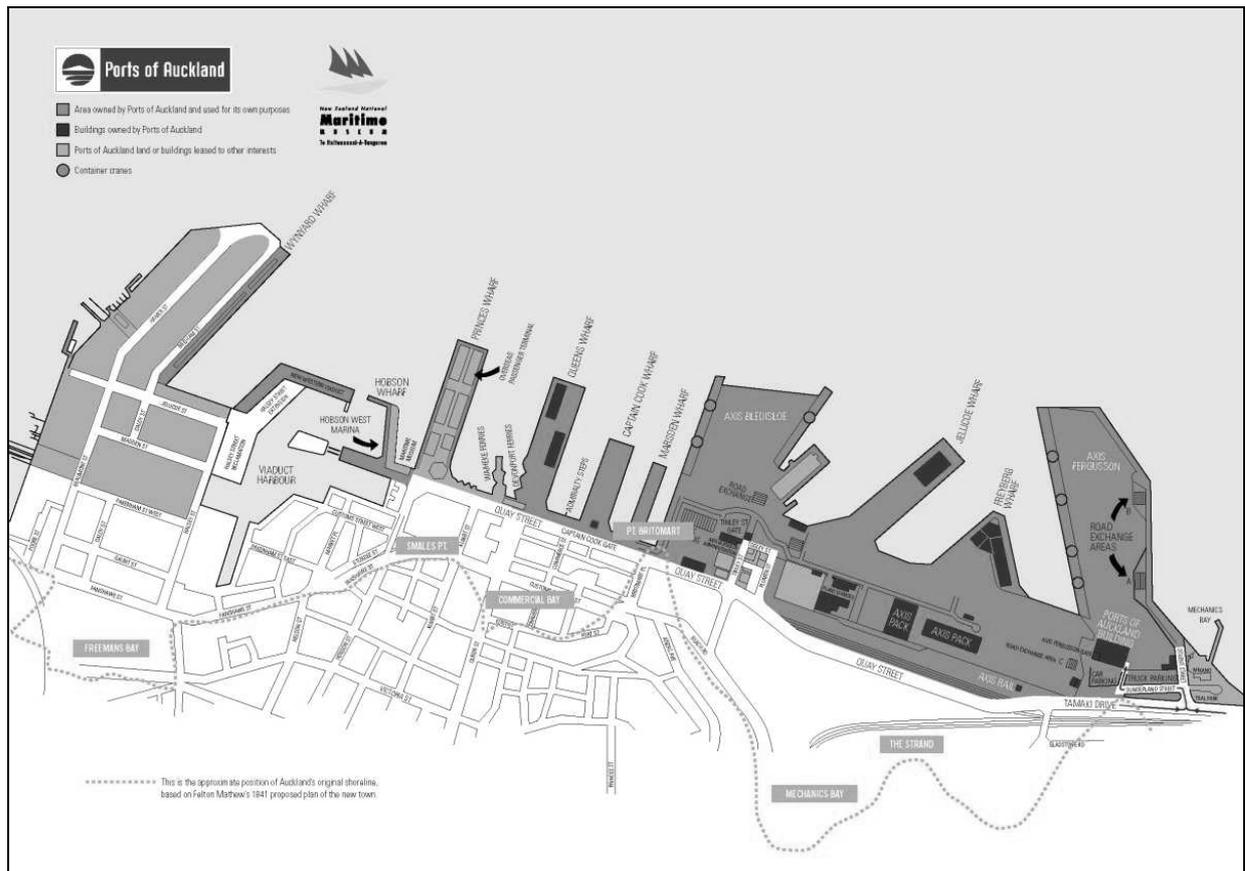


Figure 2. Location of Point Britomart, Commercial Bay and 1840 shoreline (<http://www.poal.co.nz/about/historyauckland.htm>)

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Historical Background, Continued

Port of Auckland History

The population of Auckland grew rapidly after initial settlement. By 1843, there were 3,000 people were living in Auckland and by the end of the 1860s this had grown to more than 12,000. Most depended on the port to provide them with a living, either directly or indirectly, and for their supplies.

The management of the Auckland port was relatively casual during the early years, being managed by the legislature. However, by the end of the 1860s overseas trade was growing, mainly with England and Australia, and along with a very active coastal shipping trade was placing increasing demands on the facilities. The Queen St Wharf had become central to the functioning of the city.

An Act of Parliament established the Auckland Harbour Board in 1870. The Board was governed by an elected Board with three-year terms of office and administered by permanent staff. It remained in existence until the Port Companies Act in 1988.²

The evolution of the harbour consisted of the building of the wharves, seawalls to provide breakwaters for inner facilities, reclamation of land within the seawalls, and modification of the wharves as required. Additional facilities were also constructed. The process was continuous throughout the 19th century.

Reclamation

Land speculation and development has always been one of the major commercial activities in Auckland. The very act of reclamation was partly speculative, with blocks of land being sold well in advance of the reclamation. As the city grew, the increasing pressure on land and the need for improved harbour facilities resulted in a series of reclamations (Table 2) which gradually in-filled several of Auckland's bays – Mechanics Bay, Commercial Bay and Freeman's Bay among others.

The original foreshore of Auckland can be seen in Figure 2 and Figure 3. The process began in 1859 with the area between Fort St and Customs St East (Table 2, No. 1) and was still ongoing well into the 20th century with the Bledisloe Stage 2 reclamation as late as 1983-5. The land affected by the present development, Customs St East to Quay St, known as the Railway Station reclamation (Table 2, No. 8) was reclaimed between 1879 and 1886 (Figure 4).

Continued on next page

² <http://www.poal.co.nz/about/historyauckland.htm>.

Historical Background, Continued

Table 2. Early land reclamations in Auckland

No ³	DATE	LOCATION	AREA
1	1859-6?	Fort St to Customs St East	3.64ha
2	1872-77	Mechanics Bay from Railway Bridge to Pt Britomart	7.39ha
3	1873-74	Hardinge St to Patteson St	1.52ha
4	1875-77	Queen St to Albert St	3.24ha
5	1876-77	Albert St to Nelson St	4.55ha
6	1875-77	Nelson St to Hardinge St	2.13ha
7	1878-79	Auckland Graving Dock	0.41ha
8	1879-86	Railway Station	7.59ha
9	1886	NZ Frozen Meat Company	2.73ha
10	1886	Freemans Bay: Drake St to Patteson St	2.53ha
11	1885-88	Freemans Bay: Auckland Gas Company, Beaumont St	1.21ha
12	1886-1901	Freemans Bay: Victoria Park, etc	9.41ha
13	1901-10	Mechanics Bay: Railway Embankment to Old Kings Wharf	6.79ha
14	1902-08	Hobson St including solid part of Hobson St Wharf	1.52ha

The Railway Station

With increasing commercial activity it was planned to bring the Railway Station into the heart of the city. Up to this time it had terminated to the east of Point Britomart. To achieve this, the Point (and consequently the old Fort) was to be demolished and used as fill in the Railway Station reclamation (Figure 6).

The government and the Auckland Harbour Board undertook this work. By 1882 the reclamation was sufficiently advanced to allow land on the north side of Customs St East to be leased.⁴ The Quay St frontage was completed in 1886.⁵ Stevens' 1886 Bird's Eye View of the city (Figure 7) shows that the railway station (1885) and rail link had been completed, along with two or three substantial buildings on Customs St (presumably Stanbeth House, the Masonic Club and Buckland Buildings).

The combined reclamation altered the appearance of the foreshore considerably and evidently not to the satisfaction of all observers:

The eastern waterfront with its open bays and towering promontories drowned in the beautiful green of the massive pohutukawas, has changed beyond recognition and the waters of the Waitemata now lap the drab stone walls skirting the reclamation.⁶

Continued on next page

³ Numbers refer to Auckland Harbour Board Plan of reclamations on which Figure 4 is based.

⁴ *New Zealand Herald*, 7 December 1882, p.8.

⁵ Barr 1926:151.

⁶ Quoted in http://www.akcity.govt.nz/council/projects/updates/britomart_project/historical.asp.

Historical Background, Continued



Figure 3. View of Harbour in 1859 before reclamation started. James D. Richardson (4-8921, Auckland City Libraries Heritage Online)

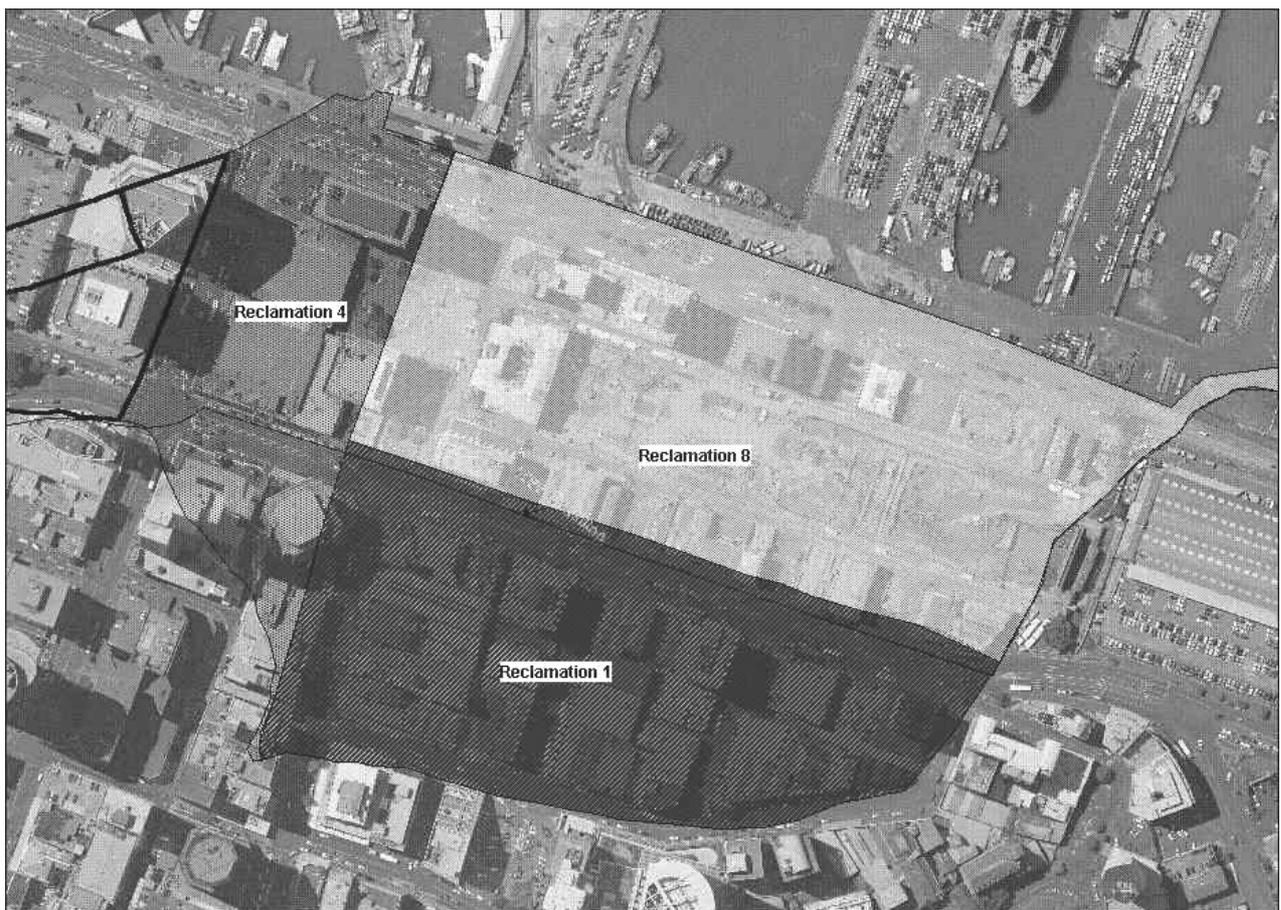


Figure 4. Location of reclamations in the Britomart area (over aerial taken in 2000; see Table 2)

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Historical Background, Continued



Figure 5. View of Harbour c.1859. James D. Richardson (4-1081, 995.1101 W33, Auckland City Libraries Heritage Online)



Figure 6. Panoramic view taken in 1881 from the vicinity of Queen St showing the demolition of Point Britomart (extreme right), Quay St reclamation (right foreground). Queen St Wharf is visible on the left with Railway Wharf in the background. Henry Winkelmann Collection, 1881 (4-967, 4-968 and 4-976, 995.1101 W33 (1880-89), Auckland City Libraries Heritage Online).



Figure 7. Portion of Stevens 'bird's eye view' map c.1885 (Auckland City Libraries Maps Online, C995.11 gmbs 1886, Evening Star Office)

Methodology

Project Area The Britomart project was carried out over several years, from 1999 to 2004. Initial assessments of the impact of the Britomart Transport development evolved as the scope of the development project changed. The areas covered by the current report include parts of Queen Elizabeth II Square in the west, through to Breakwater Rd in the east (see Figure 8) and between Quay and Customs St.

Initial assessments and monitoring were carried out at various locations around the site as required. These included the initial assessment for the BTTP (Clough 1996) and along Quay St (Clough 1998), as well as monitoring activities around Quay St and Britomart Place (Clough and Prince 1998) and the rail tunnel in Quay Park (Clough et al. 2000). The locations of these are shown on Figure 8. The results of these assessments are included in this report as they relate to the larger project. In particular, they provide complementary data on the Quay St seawall, railway yards, and sewage system.

Grid systems Two main grid systems were used during the earthworks and these were adopted for the archaeological investigation. The main grid system behind and including the Chief Post Office building is shown in Figure 9. This meant that features could be roughly recorded by area, e.g. G1. Depth was also loosely recorded by zone: A for upper levels, B for reclamation fill, C for original sea bed. In front of the Chief Post Office, another grid system was used (Figure 10) with a corresponding “C” before the grid location used to distinguish this system from the main location, e.g. CA1. GPS and theodolites were used for more accurate locations as required.

The stormwater construction plan was also used on occasion to provide general locational information and this is shown in Figure 11. These locations are indicated on some plans by the designation SWMH followed by a number.

Continued on next page

Methodology, Continued

Main Excavation

The main excavation was carried out behind (east of) the old Chief Post Office. The development required a large excavation to be dug for the tunnel in the west to bring trains in from the east to platforms behind the old Chief Post Office building, which now provides the main entrance to, and egress from, the trains. Monitoring of earthworks in this area was carried out along with excavations of the remains of the Gore St Jetty and 1885 Queen St Railway Station. This area also provided the most detailed information on the 1879-1886 reclamation.

Secondary Excavations

The transport project also required secondary excavations in a number of locations including:

- 1) Old Chief Post Office basement
- 2) Corner of Gore St and Quay St
- 3) Queen Elizabeth II Square
- 4) Galway St excavation
- 5) Tyler St excavation

These excavations were monitored and the results included exposure of old building foundations, the old sewage system and parts of the Queen St Wharf. The results of these projects are summarised in Table 3 and described in Chapter 3.

Continued on next page

Methodology, Continued



Figure 8. Aerial view of Britomart project area (2002). Inset shows location of earlier archaeological work in the project area (1) Clough 1996, (2) Clough 1998, (3) Clough and Prince 1998, (4) Clough et al. 2000

Methodology, Continued

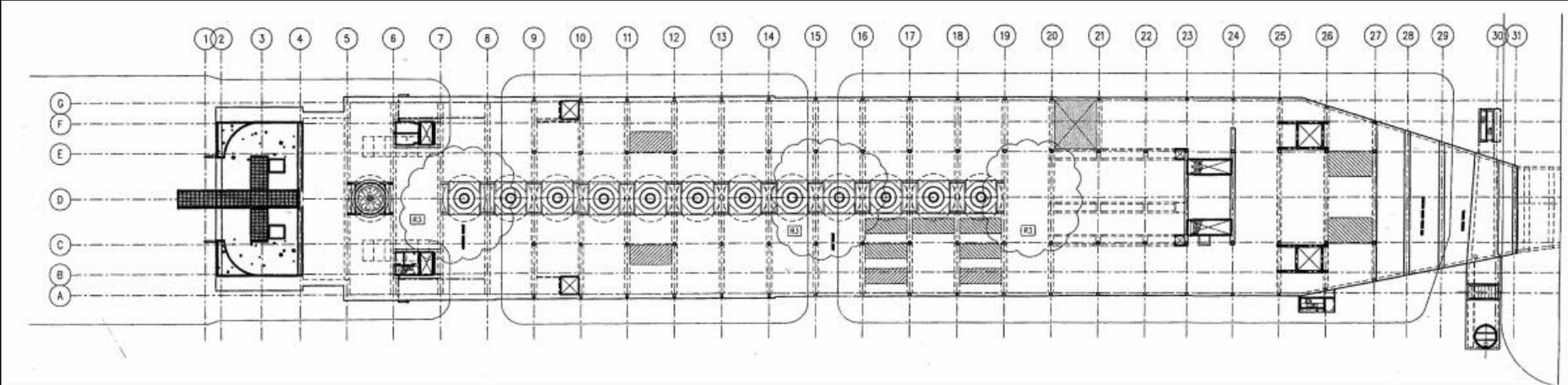


Figure 9. Grid system used in main part of construction site (behind and including the Chief Post Office)

Methodology, Continued

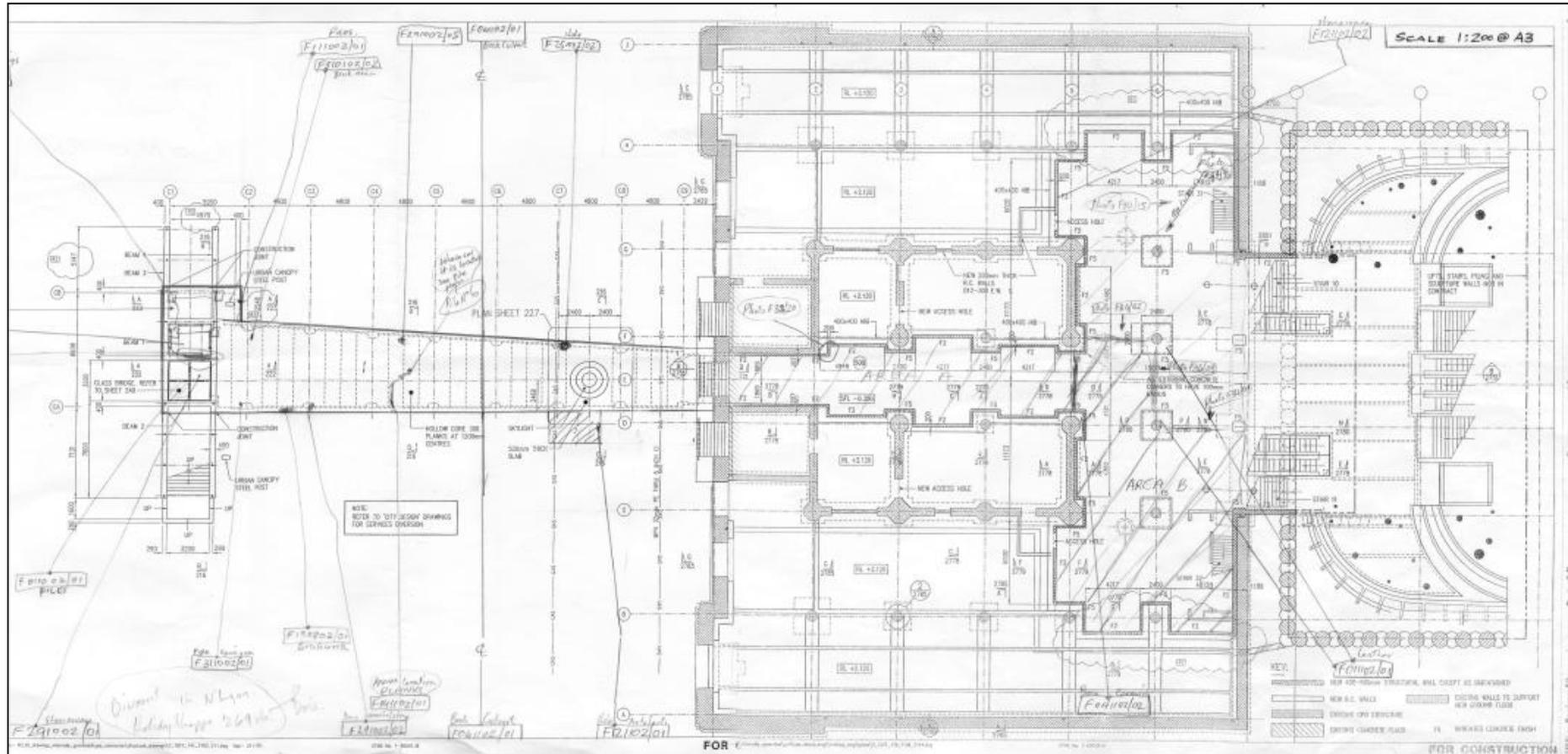


Figure 10. Concourse grid system used in front of the Chief Post Office

Methodology, Continued

Table 3. List of excavations carried out during the project

	Location	Description
1	Britomart Railway Station Reclamation	Main railway station reclamation fill between the Chief Post Office and original Point Britomart. Finds include: <ol style="list-style-type: none">1. Details of the reclamation2. 1885 Railway Station foundations3. Gore St Jetty
2	Old Chief Post Office basement	Demolition of the interior of the old CPO building. Finds relate to the original construction of building and restoration
3	Corner of Gore St and Quay St	Northern Gore St excavation which turned up footings of previous late Victorian building
4	Queen Elizabeth II Square (Queen St): <ul style="list-style-type: none">• Queen St• Planter Box• Concourse• Cantilever• Stormwater Diversion	Several excavations which turned up: <ol style="list-style-type: none">1. Piles from the original Queen St Jetty2. Brick and concrete footings from demolished buildings in QEII Square3. Parts of the Quay St Sea Wall4. Drainage systems
5	Galway St excavation	Trench excavation revealing brick foundations from late 19 th century-early 20 th century building
6	Tyler St excavation	Trench excavation revealing 20 th century concrete building piles

Strategy

In the main reclamation area, the top few metres were scraped down under archaeological supervision and concrete laid approximately north-south at each of the grid markers. The remaining material was then removed underneath these markers to the required depth (over 20m in most places) well into the original seabed. As a result of this strategy, large-scale archaeological excavations were not possible in most areas due to safety considerations. It was possible to examine the surface area on initial clearance and view sections in some areas. However with the exception of the Gore St Jetty zone and one major area of the railway station, only monitoring and surveying of features was feasible. Elsewhere, monitoring was carried out during earthworks, with archaeological features recorded as they appeared and artefacts sampled.

Sampling

Despite the difficulties, the sampling strategy employed was effective in obtaining a range of the materials that made up the fill as well as providing details on the key structural features. Given the nature of the fill, good deposits were sampled to provide information required for the social reconstruction of the waterfront and were focused on obtaining identifiable pieces for dating and interpretation of the reclamation fill process.

Continued on next page

Methodology, Continued

Historical Research

Given the importance of the area historically, major archival research was carried out, including investigations of the main structural features and social history of the area. The data collected has been used to provide a context for the results of the archaeology.

GIS

The quality of many of the 19th century maps of downtown Auckland also provided the opportunity to correlate these maps with the results of the excavations. A series of historical maps were scanned and “geo-coded” to match modern aerial images, property and road markings provided by the Auckland City Council. Archaeological plans were then also coded allowing correlation of archaeological features with a variety of historical information.

Artefact Analysis

The project team carried out artefact analysis, with specialists providing detailed catalogues included on the accompanying CD. Analysis included:

- Identification of items
 - Dating information
 - Materials analysis and
 - Social information as appropriate.
-

Conservation

Conservation of some of the better quality items was also carried out, particularly on wooden artefacts and a composite metal adze found in the main excavation. Items were then made available to the Auckland Maritime and Auckland War Memorial Museums for inclusion in their collections. Artefacts including some jetty piles were also given to the Britomart Display Centre.

Project Personnel

The following personnel were involved in the project:

Archaeology Team	Responsibilities
Rod Clough, PhD	Director, Metals analysis
Barry Baquié, MA	Field Archaeologist, Leather and wood analysis
Don Prince, MA	Field Archaeologist
Simon Bickler, PhD	Project Manager, Clay pipes, bricks analysis, IT
Specialists	
Mica Plowman, MA	Ceramics analysis
Marianne Turner, PhD	Bottles & Stoneware analysis
Tania Mace, MA	Historical Research
Simon Best, PhD	Artefact and historical analysis
Sarah Macready, MA	Editor
Conservation	
Dilys Johns, MA	Wooden artefacts
Tim Mackrell	Photographer, wooden artefacts
Rod Wallace, PhD	Wood identification

Scope and Structure

Scope

The report is designed to place the range of artefacts and structures recovered by the archaeological investigation within their historical context. It is not a definitive history of Auckland harbour and the Britomart area, but a study based on archaeologically recovered information and complementary historical documentation. This places the focus on the material aspects of the Britomart area's history and on how the recovered objects and structures represent the past. Emphasis is placed here on providing the historic context of the finds rather than an extended catalogue of finds.

Nor does this report provide a detailed account of buildings in the Britomart area. Information regarding the buildings in the area that were standing before the current project is provided in McKenzie's (1995) and Salmond's (1995) reports.

Structure

The structure of the report is designed to complement the recovered archaeological information. Chapter 2 examines the reclamation of the harbour and encompasses the structural information recovered by archaeological research during the main excavations for the Railway Station and in Queen Elizabeth II Square. Reclamation processes and the construction of the wharves, jetties and seawalls are described.

Chapter 3 describes the minor excavations carried out during the project. These relate to the old Chief Post Office, Queen Elizabeth II Square as well as smaller excavations on the periphery of the major excavation behind the old Chief Post Office.

Chapter 4 describes the results relating to the Queen St Railway Station and in particular, its construction on the reclamation and subsequent demolition.

Chapter 5 describes the artefacts recovered relating to the industrial activities on the waterfront during the late 19th and early 20th centuries. These provide information regarding the buildings, business and maritime activities.

Chapter 6 examines items relating to domestic life in Auckland. Descriptions of the ceramic, pipe, and bottle assemblages are provided here. The central threads in this chapter include the preparation and consumption of food and drink, leisure and entertainment, and personal care.

Finally, Chapter 7 outlines the major themes in the report. The modern Britomart Development is placed within its historical context and the project results summarised to show how Auckland City's evolution is reflected in the archaeological evidence.

Chapter 2: Archaeology of the Reclamation

1879-1886 Reclamation

Archaeological Investigations

This chapter describes the archaeological evidence for the reclamation and development of the harbour in the Britomart area (from 1879 onwards), in the context of the growth of Auckland Harbour from 1840-1900. The archaeological data related here shed light on the following topics:

1. The original plan for Auckland's harbour and its subsequent development including reclamation, seawall construction and building.
2. The development of the wharves and jetties in Commercial Bay.

Archaeological investigations of the reclamation were carried out during the earthworks behind the Chief Post Office. Given the quantity of material being moved, features were sampled rather than fully investigated and collections of artefacts were made. The collections from the fill formed the basis of the artefact analysis described in Chapter 6. The objective behind the investigation of the fill was to establish any information regarding the process of the reclamation. The general process was as follows:

1. Building of a sea wall in Quay St area
2. Demolition of Point Britomart and infilling area behind sea wall
3. Demolition of structures such as wharves and jetties
4. Use of the site as a rubbish dump to complete reclamation
5. Stabilisation of reclamation
6. New buildings on the reclamation land.

Geotechnical Background

It is worth briefly reviewing the underlying geotechnical information on the waterfront as this underpins the archaeological stratigraphy of the Britomart project. Prior to the major excavations in the project area, a geotechnical assessment (Tonkin and Taylor) indicated that approximately 1 million cubic metres of material would be excavated from the site, up to a depth of 21m below the present ground level. Of that 21m, around 5m have been identified as fill of varying composition but containing historic demolition material comprising objects of metal, wood, glass and ceramic. On this basis there could be in the vicinity of 250,000m³ of fill relating to the historic period reclamation.

As suggested, a good proportion of this turned out to be sterile silts and friable sandstones from Point Britomart and it was also apparent from historic observations and geotechnical cores that a significant proportion of this fill would include archaeological material relating to the reclamation process and perhaps earlier material.

Continued on next page

1879-1886 Reclamation, Continued

Dredging

More detailed assessment during the project (shown in Figure 12) illustrates the basic geological picture: Waitemata Group clays overlain with Tauranga Group alluvial layers form the basic sea bed. Some layers of seabed seen in the section are the result of dredging the harbour, and are interspersed with varying thicknesses of historic fill containing a variety of material.

During the earthworks marine sediments containing shell and harbour debris were observed, particularly in the northern third of the project area. This dredged material underlay the dumping from the industries and residences in the area. This zone of dredging is shown in Figure 13.

Stratigraphy

Generally the top 2-3m consisted of commercial and domestic refuse, which followed a pattern of tip-head dumping (Figure 14). This was evident across the reclamation where concentrated dumping of similar materials were dispatched over the leading edge of the tip, thereby showing in cross-section as sloping lenses of deposit. These included concentrations of leather, bottles and glass, tin off-cuts, dumping of vegetation and wood (Figure 15). Many areas showed evidence of burning and in one case in the vicinity of the Gore St Jetty, an area of some 200m³ was so contaminated with chemicals that special excavating procedures and dumping locations had to be arranged.

The upper stratigraphy consisted of layers of commercial and domestic dumping made in reasonably quick succession and with little time for compaction. Below this, there was solid sandstone lumps, clays, and muds delivered from locations such as Pt Britomart and probably Smales Point. These types of material did not have the appearance of upper reclamation and were more consolidated, probably because of their originally compact nature as well as being laid onto the solid Waitemata Sandstone. Seabed muds appeared to have been more integrated into the general mix of lower reclamation. Because of the heavy rains during the winter months, the reclamation became extremely laden with water and posed a logistical problem for any artefact removal.

Continued on next page

1879-1886 Reclamation, Continued

Excavation Technique

Mechanical excavating machines working from below and into an almost vertical face of reclamation usually benched on the basal sandstone in order to work the softer and more dangerous upper layers. Because of large collapsing and slipping faces of the reclamation, an 'arrow cut' method was employed. This meant that the Grid D (see previous chapter regarding grid system used) centre line was the arrow point of the excavation with the removal continuing at an angle on both sides. Work was slowed during the recovery of 9m long railway station piles and beams along the southern side of the excavation.

The seabed was shallower towards the east, and sloped downwards from east to west into the area of the old Waihorotiu Stream bed. Visual evidence for this was observed along the southern side of the excavation where the secant piling was installed. The secant piles were drilled through the upper layers of reclamation, through the mud of the seabed, and into the lower Waitemata Sandstone. In the vicinity of Grids 5 to 7 along the southern secant piling, it is possible to see the sloping stain line from the seabed muds (Figure 16), and its thickening as it closes in on the Waihorotiu Channel.

Demolition Materials

The evidence for the demolition of various structures within the reclamation was sparse. Most of the piles from the jetties and wharves (see below) were found in situ but various beams were seen in the fill. These, however, may relate to timber storage on the wharves (see Chapter 5). In upper layers, a small number of bricks, some probably from the 1885 Railway Station built on the reclamation and demolished in the 20th century, were found. The number of bricks recovered was small in comparison to those that must have been used and this suggests that most bricks from the railway station and other buildings demolished during the 20th century were removed from the Britomart site.⁷ The remains of the bus transport centre built in the 1930s, including concrete piles and beams, were recorded but are not discussed in detail.⁸

Other Artefacts Recovered

Apart from the few structural remains, and the large dumps of industrial debris found, there were small numbers of miscellaneous artefacts. Some probably derived from the original use of the harbour, and included nails and spikes either from the wharves and jetties or perhaps tools used on the wharf or on vessels using the harbour (e.g. Figure 17a, b, c). Others may relate to the reclamation fill process itself, such as equine-related items including a horseshoe and a pelham (see Figure 17d). Various food, drink and personal artefacts may relate either to the wharves or to the reclamation fill. The general distribution of artefacts is displayed in Figure 18.

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⁷ Details of bricks recovered are provided in Chapter 5. The 1885 Railway Station is discussed in Chapter 4.

⁸ See Tyler Street Excavation in Chapter 3 for some additional information.

1879-1886 Reclamation, Continued

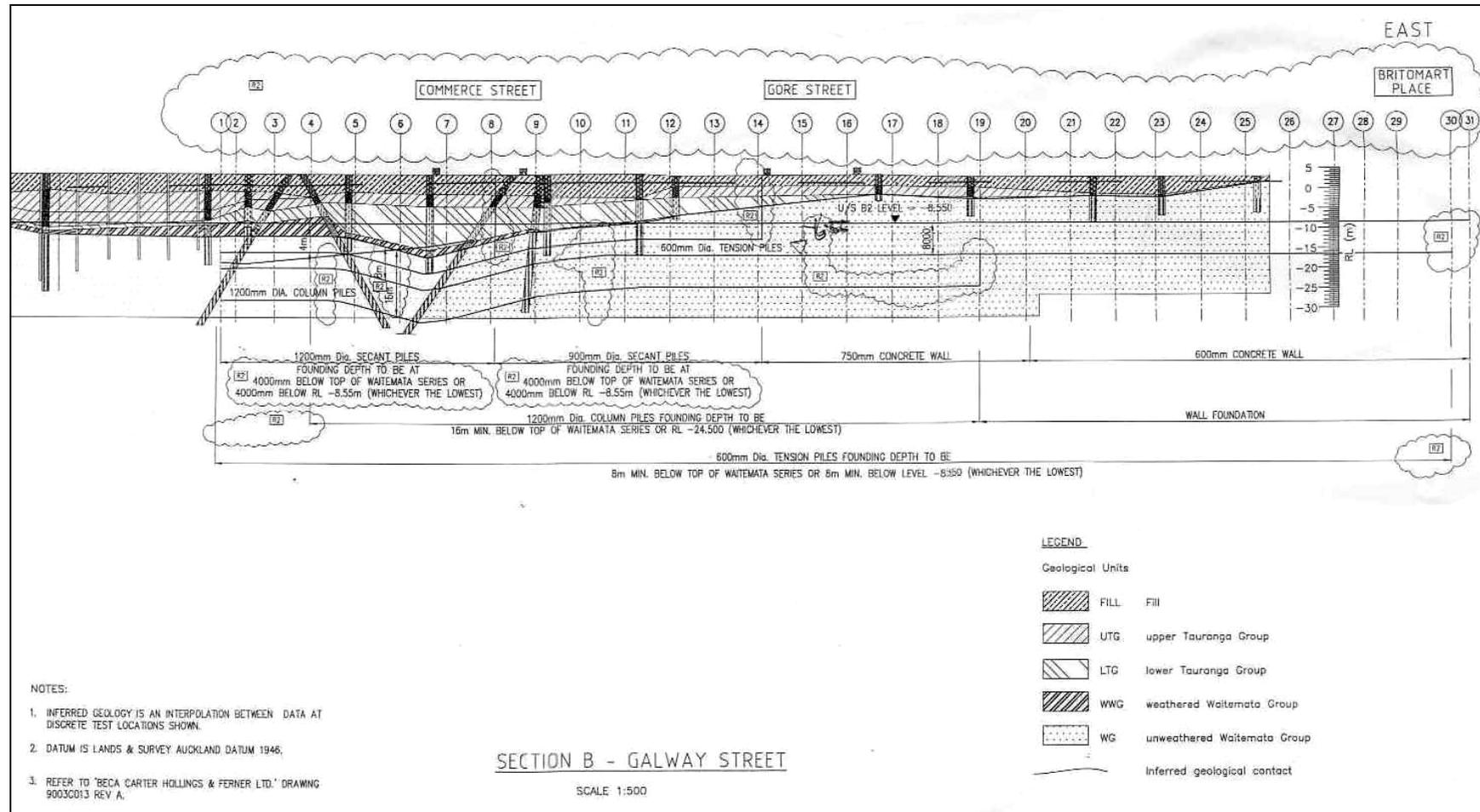


Figure 12. Geological cross section at Galway St based on geotechnical cores (courtesy Opus International)

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1879-1886 Reclamation, Continued



Figure 13. Shaded area where dredging was visible from excavations

1879-1886 Reclamation, Continued

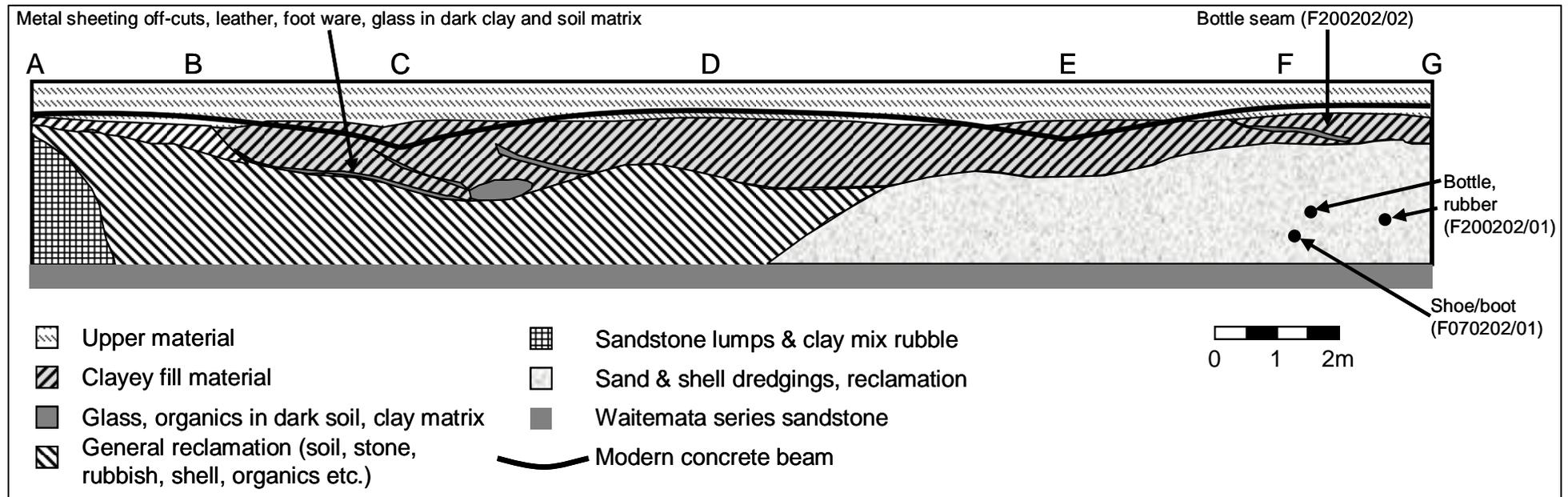


Figure 14. Simplified East Section Grids B-G, 18-19 (see Chapter 1 for description of grid locations)

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1879-1886 Reclamation, Continued

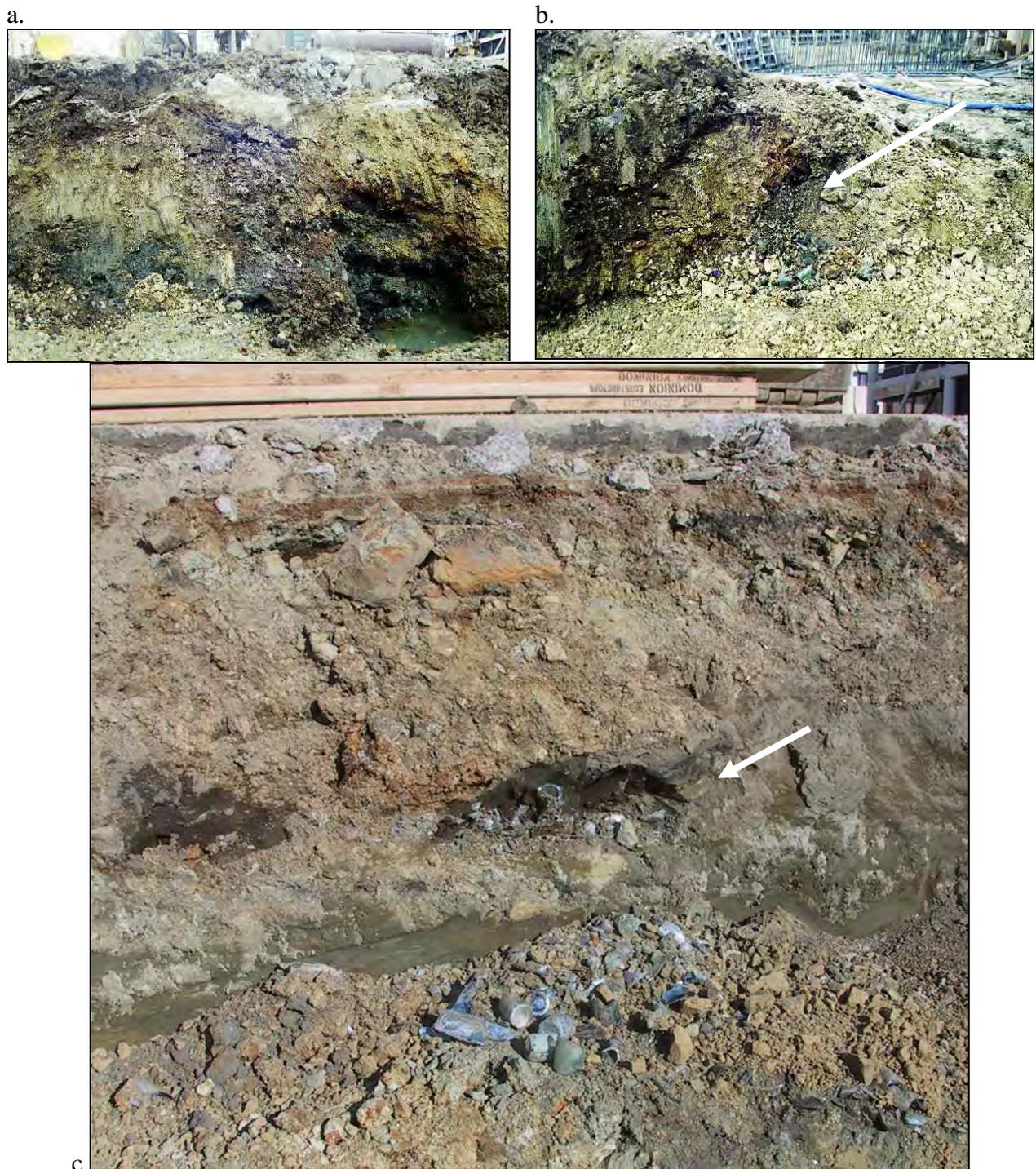


Figure 15. Bottle dumps seen in upper levels of reclamation fill

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1879-1886 Reclamation, Continued

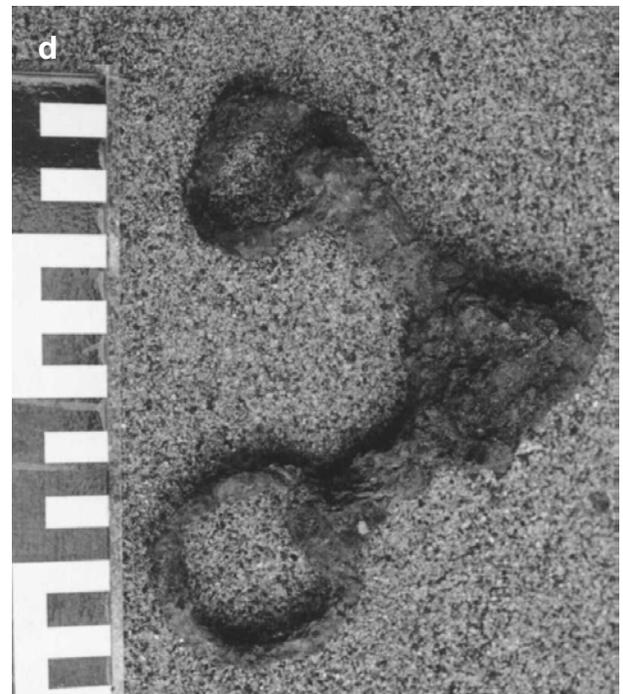
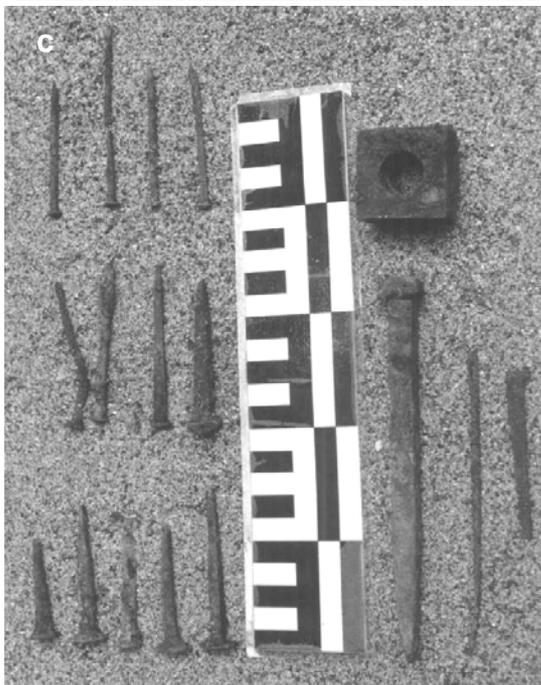
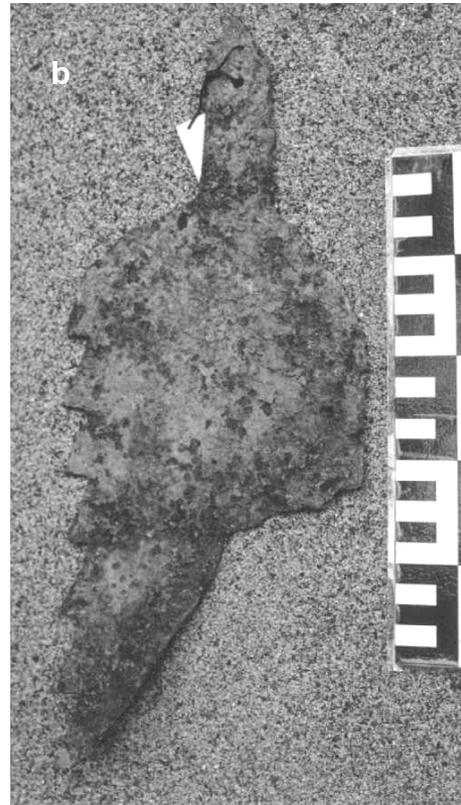
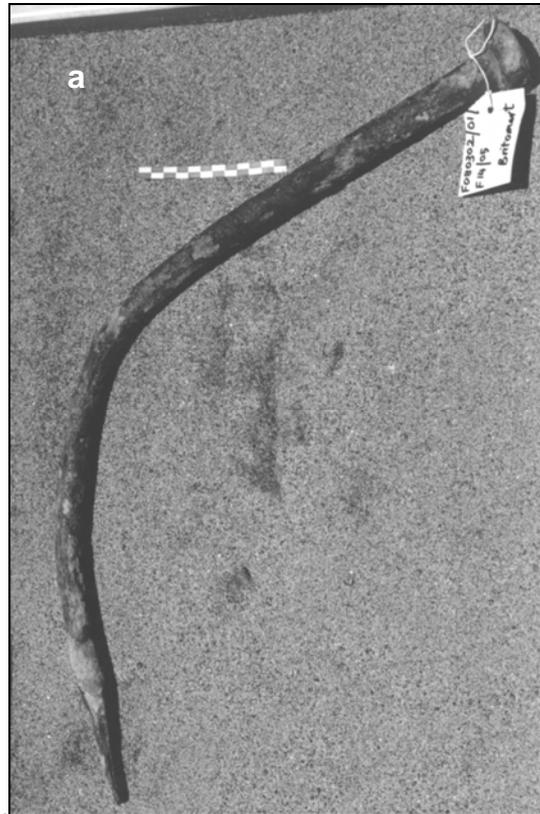


Figure 16. Stratigraphy of sea bed illustrating thickening of seabed muds

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1879-1886 Reclamation, Continued

Figure 17. Artefacts from the reclamation fill: a. Wharf spike; b. Metal saw: flush blade, same size teeth; broken/bent; bolt hole in handle; c. Nails from wharves and jetties; d. Pelham (F260402/01 at 4m)



Continued on next page

1879-1886 Reclamation, Continued



Figure 18. Distribution of artefacts recovered by material type

Customhouse St Seawall

Introduction

The following two sections describe the construction of seawalls as part of the harbour development. The seawalls represented the first stage in the reclamation as they were used as breakwaters for the harbour (Figure 19, Figure 20). Two seawalls were built in the area of the Britomart excavation:

1. Customhouse St
2. Quay St.

Although the first of these was probably located to the south of the excavated area, details of this wall are described here as they provide a context both for the later reclamation and the second of the sea walls at Quay St.

Construction

The land up to Customhouse St had been reclaimed by the early 1860s and was faced by an impressive seawall (Figure 19) possibly constructed of basalt (bluestone) from the Mt Eden Quarry (which had been used in other government constructions such as Albert Barracks) or large scoria blocks commonly used around the city. This first area of reclamation was rapidly subdivided and developed into the commercial hub of Auckland with warehouses and mills and new wharves protruding out into Commercial Bay (Figure 20).

In 1858 tenders were called for the construction of a breakwater at Point Britomart.⁹ Messrs Amos & Co constructed a new breakwater in 1865 with the help of prison labour.¹⁰

Maintenance of the Seawall

At the time that the Auckland Harbour Board took responsibility for harbour works in 1871 parts of the existing improvements were in poor condition. A breakwater in Commercial Bay was damaged, with about 120ft of the west side having burst out. The woodwork was also in poor condition. A stone wall which connected Customhouse St and the breakwater was similarly dilapidated. The wall had not been concreted and 'consequently the water washes through it carrying away the earth with which the wall is backed up.'¹¹

The Customhouse St seawall required occasional repairs. In 1873 it was repaired and pointed with cement.¹²

Continued on next page

⁹ Auckland Provincial Government Gazette, 1858, p.111.

¹⁰ *Journals of the Auckland Provincial Council*, Session XIX, October 1864-November 1864, Appendix A14, p.5 and Session XIX, December 1864-May 1865, p.139.

¹¹ Auckland Harbour Board Minute Book, 1871-1874, AHB 1/1 National Maritime Museum, 8 June 1871, p.19.

¹² *Ibid.*, 28 February 1873, p.287.

Customhouse St Seawall, Continued



Figure 19. View of Customhouse St seawall/breakwater. John Nichol Crombie, 4 Oct 1859 (4-1121, Auckland City Libraries Heritage Photos Online)

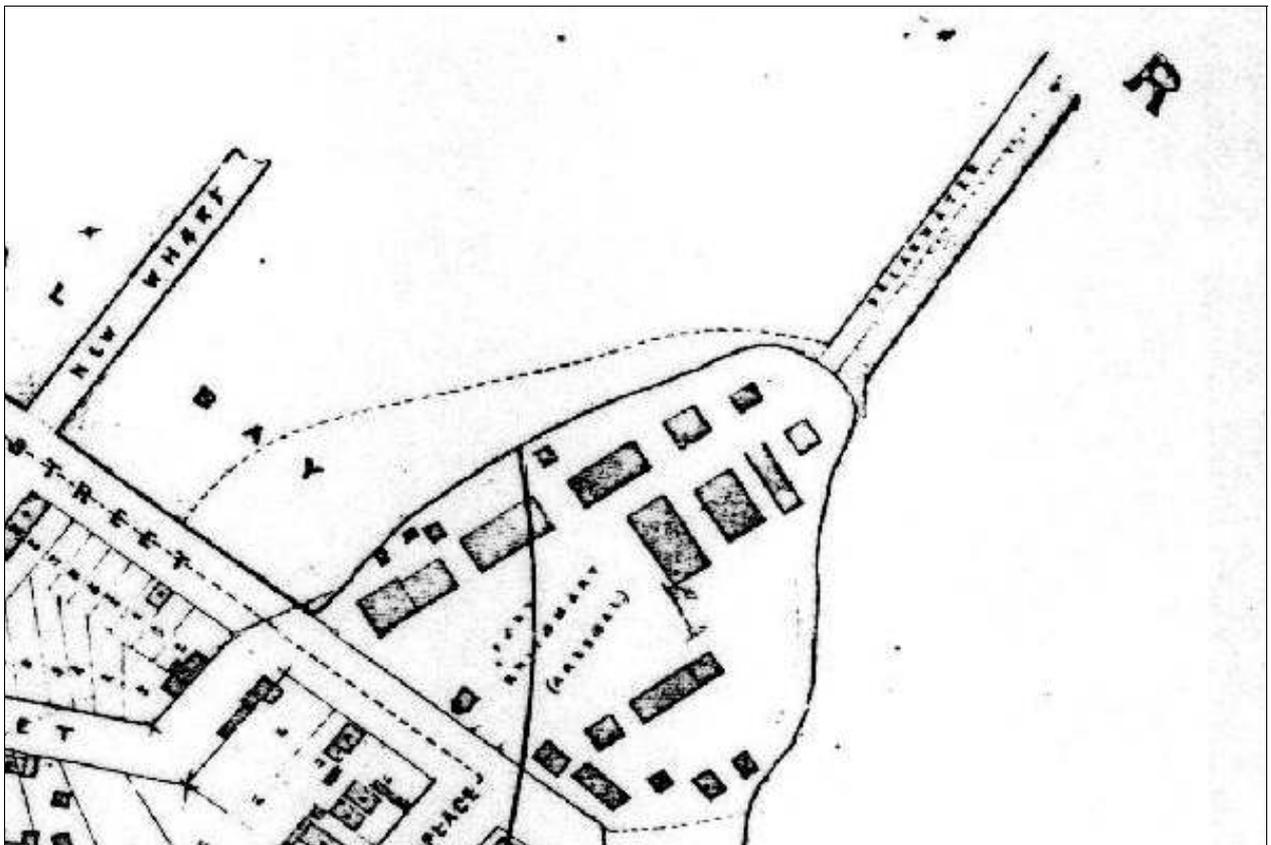


Figure 20. Location of breakwater at Point Britomart (close-up of Vercoe & Harding 1866 map)

Quay St Seawall

Construction

With the decision to reclaim the land for the Railway Station, the need for maintaining the Customhouse St seawall was removed. A second sea wall was built under what is now Quay St, probably finished early in the process (perhaps around 1880). The work was contracted to a Mr Fallon and overseen by John Witheridge, the Clerk of Works for the Government (*NZ Herald* 26 October 1885 p.6).

Archaeological investigation of Quay St seawall took place during work for the outfall at the foot of Cooks Wharf in 2001 (Clough and Prince 2001). The development work required the removal of a section of the 1880 Quay St seawall (Figure 21). The section of the seawall is illustrated in Figure 23. The archaeological evidence and plan allow the following general reconstruction to be proposed:

1. The seawall was made of fair-faced basalt blocks bonded with a Portland cement mortar; the seawall stands approximately 4.4m above the seabed.
2. The wall is capped by a 0.9m wide x 0.3m high concrete bond beam below which is a 2.1m high x c. 1.2m wide section constructed of 6 regular courses of 2 blocks overlying a 2m high x 2m (top) – 2.3m wide base section made of 6 regular courses of 3 blocks (Figure 23).
3. The design of the wall sees a straight seaward face while the inside face of the base section flares for added stability.
4. The structure is underpinned in the seabed by basalt rubble. Red scoria (c. 2m wide) has been used to keep the immediate weight of a saturated fill off the wall. Constructed at the time of the reclamation, the seawall effectively supports fill from Quay St south.

Other Sections of the Wall

The Quay St seawall was also exposed during the excavation of the Sanitary Sewer pipeline between SSMH 01 and SSMH 02 (Sanitary Sewer Man Hole, Figure 11) in the northern side of the Queen St roading makeover. A heavy pile was observed immediately to the east of the breakwater. Figure 22 shows the pile upright before and to the east of the large, dressed basalt blocks laid, in a traditional stretcher bond method, and supported to the rear, the western side, by large scoria rocks.

The blocks were roughly dressed and measured c.600mm long x 200mm x 200mm. There was no concrete bond beam visible on the small section exposed. This portion of the seawall is probably a section of what was constructed in the 1880s. A disused metal utility pipe is also present along the top of the scoria and below the surface concrete capping and paving of Queen St.

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Quay St Seawall, Continued



Figure 21. Part of Quay St seawall uncovered in 2001 (Clough and Prince 2001)

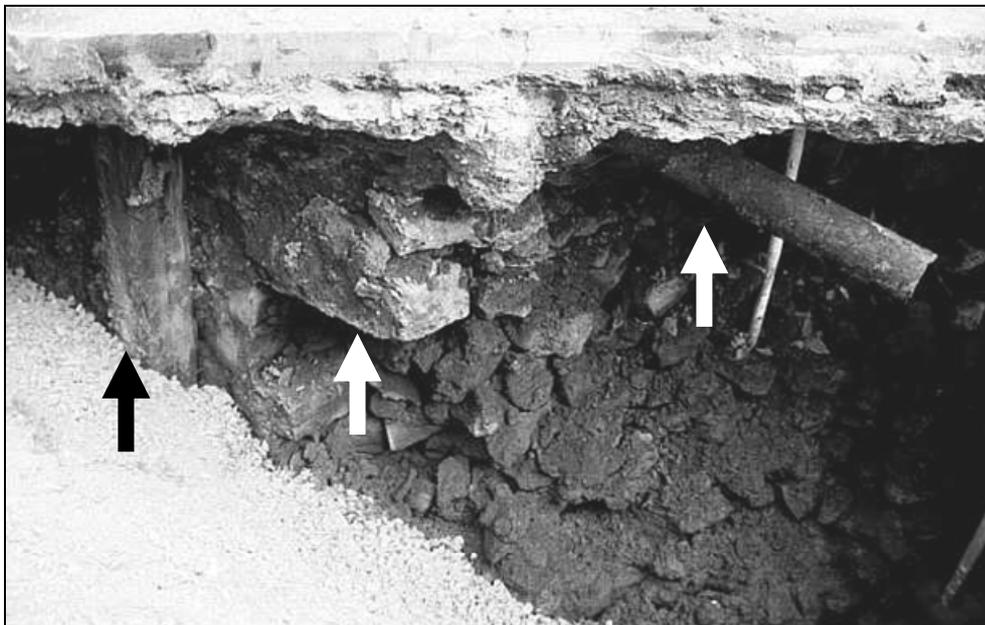
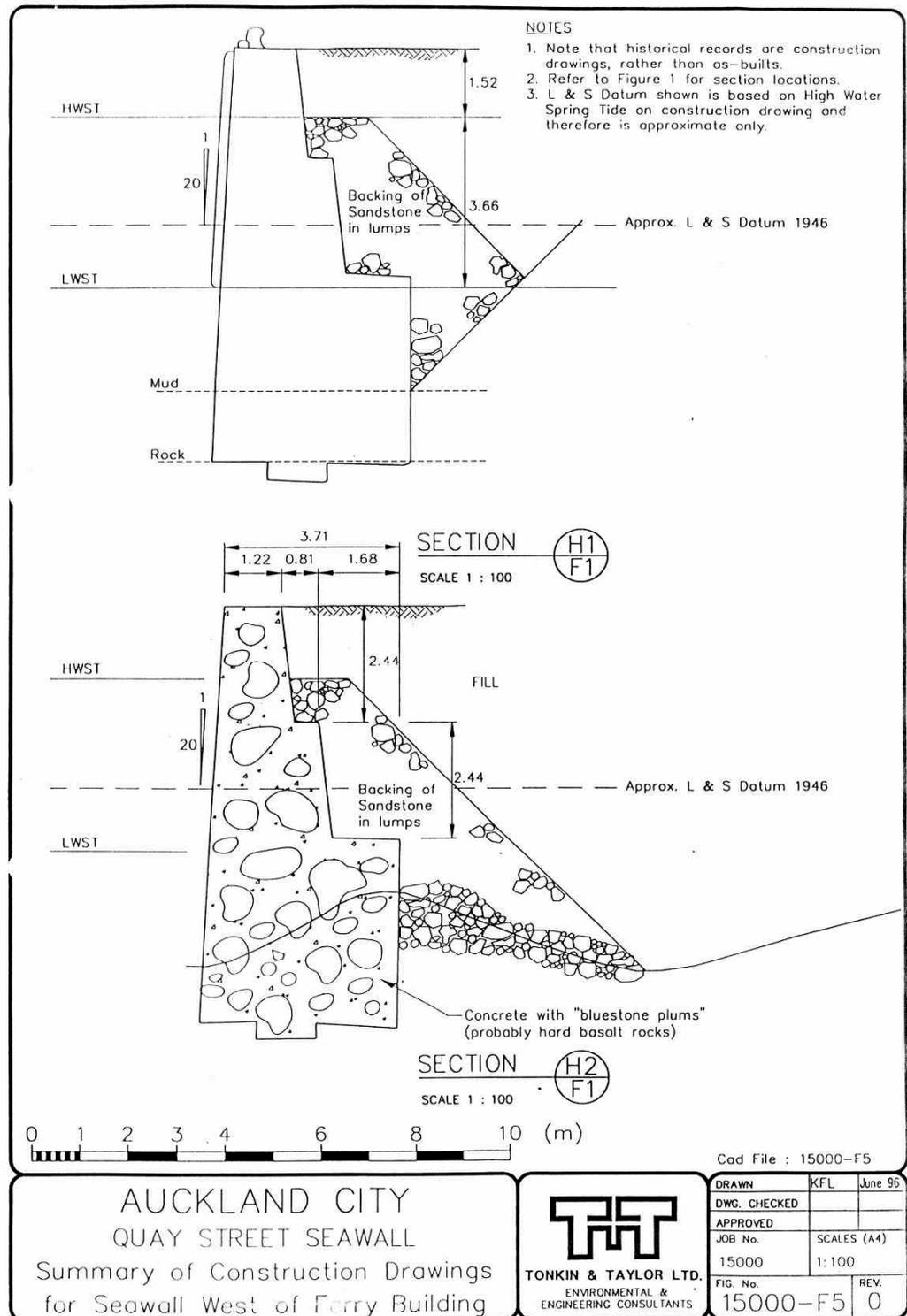


Figure 22. Breakwater: Western baulk showing pile [left], dressed basalt breakwater courses with scoria rock stabilising at rear [middle] and utility sub-surface piping [right]

Continued on next page

Quay St Seawall, Continued

Figure 23.
Diagrammatic
representation of
Quay St seawall
construction



Wharves and Jetties

Auckland Harbour in 1880s-1900

The following sections summarise the changes in the Auckland harbour involving the construction of the wharves and jetties that were required for its functioning, and describe the archaeological evidence of wharves and jetties recovered at Britomart. During the early years of Auckland's development locals and visitors frequently bemoaned the lack of landing facilities for passengers and goods. Though there were early wharves and jetties, it appears that they were not sufficiently long to allow landing in all tides and they were also not available for the use of everyone. The tidal mud flats meant that any structure had to be significantly long to be useful for the larger ships. The succession of reclamations and new wharves slowly improved the situation, as Auckland became an increasingly important colonial hub.

Early Wharves in Commercial Bay

By October 1843 a wharf had been erected in Commercial Bay. An advertisement at this time mentioned that a seven-ton sailing cutter would 'leave Rich's New Wharf, Commercial Bay'.¹³ This was an early private wharf.

Other private wharves include 'Mr Grahames's Wharf; Commercial Bay' which was mentioned in an advertisement in April 1849.¹⁴

In 1850 Mr Levy erected a jetty extending 260ft at his own expense. It is not clear where this jetty was, but the public evidently used it.¹⁵ In November 1852 an advertisement appeared in the *New Zealander* advertising the lease of the 'timber wharf at present occupied by Mr. D. Lynch.' While the location of this wharf is also not known it would appear that it was close to the central city.¹⁶

In 1865 the chairman of the Harbour Works Committee of the Auckland Provincial Council mentioned Fitzroy Jetty. The context in which this jetty was mentioned suggests that it was located somewhere between Queen St wharf and Point Britomart.¹⁷ It appears that this structure was fairly insignificant as a report of late 1864 on harbour facilities failed to mention it.¹⁸

Another wharf mentioned was the Breakwater Rd wharf that was having extra piles added in 1876.¹⁹

Continued on next page

¹³ *Southern Cross*, 21 October 1843, p.1.

¹⁴ *New Zealander*, 7 April 1849, p.4.

¹⁵ *Southern Cross*, 26 October 1850, p.2.

¹⁶ The address given for the lessor was Wyndham Street which would suggest that the wharf was in a relatively central location. *New Zealander*, 13 November 1852, p.1.

¹⁷ *Journals of the Auckland Provincial Council*, Session XIX, December 1864-May 1865, Appendix A9, p.7

¹⁸ *Ibid.*, Session XIX, October 1864-November 1864, Appendix A14, p.4

¹⁹ Auckland Harbour Board Minute Book, 1871-1874, AHB 1/1 National Maritime Museum, 25 January 1876, p.171.

Wharves and Jetties, Continued

Queen St Jetty In the mid 1840s a jetty was erected at the foot of Queen St. As early as December 1843 a letter to the editor mentioned a proposed jetty that was to be erected in Commercial Bay. The letter writer had seen the plans at ‘Messrs Nathan & Joseph’s’ and stated that the proposed jetty was ‘not at all applicable or suitable to the required purpose in Commercial Bay’ and suggested that a single channel with a raised road would be more appropriate and cheaper.²⁰ It is not clear whether the planned structure was the Queen St jetty erected by the government or a private structure.

In November 1844 the government invited tenders for the removal of ‘Clay and Rock at Smales Point, for the intended Wharf’. Particulars could be obtained from Mr Cretnay’s in Queen St where tenders were to be submitted.²¹

It appears that building the jetty was a slow process. In January 1846 a visiting sailor mentioned the lack of landing facilities at Auckland:

*‘all our boats were employed disembarking the troops. We had to land them up to their waists in water, there being no convenience in the shape of a wharf or quay available for this purpose except at high water’.*²²

By December 1846 the structure was complete. At this time Governor Grey issued a proclamation which declared the ‘Queen Street Jetty . . . [to] be the landing-place for the unloading of goods entered to be warehoused’.²³

Lack of Port Facilities

However, the Queen St jetty did not meet the needs of merchants, locals and visitors. By the late 1840s there were frequent complaints in the newspapers relating to the lack of port facilities. In July 1849 a letter was published in the *New Zealander*:

*‘There is nothing . . . to bring our settlement into disrepute abroad, discredit with new comers, and distaste with those of older denizenship, than the great want of convenience for landing from [sic] vessels in the harbour. To say nothing about quays and jetties for vessels to lie alongside of to discharge their cargoes, we have not even the wherewith for passengers to land – dry footed, we were going to say, but knee deep in mud would be nearer the mark.’*²⁴

Continued on next page

²⁰ *Southern Cross*, 30 December 1843, p.3.

²¹ *Ibid.*, 2 November 1844, p.1.

²² Henry Frederick McKillop, *Reminiscences of Twelve Months’ Service in New Zealand*, London, 1849, p.151.

²³ *New Zealand Government Gazette*, 1846, p.178.

²⁴ *New Zealander*, 5 July 1849, p.2.

Wharves and Jetties, Continued

The Building of the New Wharf

The 1850s witnessed improvements being made to the Queen St wharf facilities. The Royal Engineers designed the new Queen St wharf and the specification was available from the office of the Royal Engineers department at Albert Barracks.²⁵ Tenders were called for materials for the wharf in early October 1850. Quantities of hardwood piles, kauri timber, kauri planking, iron (flat and round), and 15 tons of coals were required.²⁶

In October 1850 the *Southern Cross* reported that a new wharf at Queen St had been contracted for.²⁷ However it appears that progress was slow. The late the following year tenders were as tenders were invited for 'the Supply of STONE for the filling in of the Wharf in Commercial Bay' and for 'excavating Earth and filling in the Wharf in Commercial Bay'.²⁸

Further details of the new structure were published in the *New Zealander*:

*'We understand Captain Daldy has obtained the contract of the timber advertised in order for to the construction of this valuable and long-wished for undertaking, and Mr. Harp for the iron work necessary for the purpose. It is reported to us that it is to be a continuation of Queen Street, for about 1300 feet. The work we are told is to commence in a month, and material enough must be supplied to keep fifty workmen engaged at it.'*²⁹

The Stalled Plan

However, progress appears to have been stalled as in January 1852 the wharf was still incomplete. At this time the government advertised for tenders for 'driving and framing the piles, and for planking the New Wharf in Commercial Bay'.³⁰ The following month a description of the plan was published:

*'This structure . . . is to be formed of two converging double lines of piles, one being nearly a continuation of the line of Queen-street, and extending from its junction with the end of the street, about 1100 or 1200 feet outwards towards the bed of the river, the other, commencing from Smale's Point, and running out in a slanting direction until it meets the main line. Each line or leg of the Wharf, when planked and filled in, is to form a causeway 18 feet wide.'*³¹

Continued on next page

²⁵ *Southern Cross*, 27 September 1850 and *New Zealander*, 11 August 1849, p.3.

²⁶ Government Gazette of the Province of New Ulster, Vol III, 1850, p.112.

²⁷ *Southern Cross*, 26 October 1850, p.3.

²⁸ New Zealand Government Gazette: Province of New Ulster, 1851, Vol. 1V, pp.158 and 185.

²⁹ *New Zealander*, 12 October 1850, p.2.

³⁰ New Zealand Government Gazette: Province of New Ulster, 1852, Vol.V, No. 2, p.7.

³¹ *New Zealander*, 11 February 1852, p.2.

Wharves and Jetties, Continued

Design and Construction

By this stage the work was only a quarter complete and concern was raised about the eventual cost and the wisdom of the design.³² In February 1853 further tenders were called for 'Forming and Metalling a portion of the Wharf Roadway in Queen-street.'³³

The design and construction of the wharf were roundly criticised by the *New Zealander*:

*'It did not require any new evidence to prove a fact for some time past. As the unsoundness of the wharf in the course of erection, - and it may be added, in contemporaneous course of dilapidation and decay - at Commercial Bay. A further illustration of its imperfect construction occurred, however, on Sunday morning last, when a considerable portion - some seventy or eighty feet - bust with a loud report.'*³⁴

New Tender

In March 1857 tenders were called for extending and widening the 'Queen-street pier'.³⁵ Soon afterwards mention was made of a tender being accepted for the 'erection of a house for watermen on the Queen Street Wharf'. F.W. Dawson was the successful tenderer with a price of £28.³⁶

In the late 1850s the Auckland Provincial government called tenders for totara piles. The piles were to be delivered to the rocks at Smales' Point, Commercial Bay by 25 August 1859. There were to be 100 piles 50 feet in length and with an average diameter of 16 inches at the centre; and 30 piles measuring 45 feet and with 15-inch diameter.³⁷ It would appear that these were for the Queen St wharf as wharf regulations relating to the Queen St wharf were published in the gazette at the time that the piles were to be delivered.³⁸

Silting up of the Harbour

It was noted in 1864 that the harbour had silted up considerably since the last survey of the harbour had been completed nine years earlier. The depth of water at the wharf had decreased considerably.³⁹

Continued on next page

³² Ibid., 11 February 1852, p.2.

³³ Government Gazette of the Province of New Ulster, Vol IV, 1953, p.76.

³⁴ *New Zealander*, 23 February 1853, p.2.

³⁵ Auckland Provincial Government Gazette, 1857, Vol. V, p.22.

³⁶ Ibid., 1857, Vol. V, p.28.

³⁷ Ibid., 1859, Vol. VIII, p.32.

³⁸ Ibid., 1859, Vol. VIII, p.118.

³⁹ *Journals of the Auckland Provincial Council*, Session XIX, October 1864-November 1864, Appendix A14, p.3.

Wharves and Jetties, Continued

The Auckland Harbour Board Takes Over

In June 1871, soon after the Auckland Harbour Board had been formed and given responsibility for the harbour and wharves, the wharf accommodation was surveyed. The Queen St wharf was inspected:

*'The stone wall on the East side is not cemented and is consequently in a very insecure state. Nearly the whole of the piles which are not coppered are in a very bad state of decay, but the copper piles of the outer T are quite sound.'*⁴⁰

The existence of several buildings on the wharf was also noted. On the first T were a waterman's house, workshop, office and the office of the water policeman. The buildings on the second T were a shed or Queen's warehouse, and an office occupied by the customs authorities. On the outer T there was an iron shed, landing waiters' office and offices for five wharfingers. All of these buildings were reportedly in good condition. There were several other structures on the wharf including mooring posts, cranes, a urinal and dolphins. There was a portable crane capable of lifting one ton and three standing cranes, which were able to lift two tons each. The dolphins were on the west side of the wharf and were apparently in a decayed state. The urinal on the third T sounded most unpleasant, being 'out of repair and in a filthy state.'⁴¹

Reclamations

As described earlier, land reclamations during the 1870s filled up around 150m of the inner wharf on the western side, with the seawall built for the Railway Station reclamation in place soon after that. This reclamation and seawall eventually encompassed the southern end of the Queen St Wharf, resulting in the dismantling of this end of the wharf.

Continued on next page

⁴⁰ Auckland Harbour Board Minute Book, 1871-1874, AHB 1/1 National Maritime Museum, 8 June 1871, p.17.

⁴¹ Ibid., 8 June 1871, pp.17-18.

Wharves and Jetties, Continued

Archaeological Recovery

Excavations carried out in front of the Chief Post Office building in QEII Square during 2003 (described in more detail in Chapter 3) revealed five former piles from the southwestern corner (Figure 24). These were excavated from the fill at a depth of approximately 4m. They were loose in the reclamation and not embedded in the marine floor. The piles were thought to relate to the earliest part of the Queen St jetty.

To confirm this, the piles were photographed and their locations were surveyed onto the plan of the area. A GIS overlay of the wharf structure based on some of the contemporary maps was added (Figure 25). Although the match was not perfect, the organisation of the piles suggests that they come from the area of a small tee probably built during the 1850s. Comparison with the more accurate 1865 (Chapman 1965) map shows a better match than shown here. The piles were about the size (15in) in diameter discussed earlier. The piles were spaced around 2m apart with a tee around 10m wide and about 25m long.

The piles uncovered illustrate some of the basic building requirements of the wharf. Firstly, the piles were relatively small in size, possibly indicative of the smaller structure envisaged. Some decking material was found in the one part of the excavation (Figure 26). Most of the decking, though, was probably removed as the reclamation took place.

Extensions and Repairs

During the 1870s and 1880s considerable extensions were made to the Queen St wharf by the Auckland Harbour Board. Repairs were also made to the well-used structure on a regular basis.⁴² Contemporary maps illustrate the evolving use of the wharf (see Figure 27 showing the evolution of the wharf). Our most detailed plans come from 1882 (Figure 28) showing the extensions to the tees at the end of the wharf.

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⁴² Ibid., 7 February 1872, p.133-144; 5 November 1872, p.248; 25 March 1873, p.296 and Auckland Harbour Board Committee Minute Book, 1878-1880, AHB 2/4 National Maritime Museum, 28 December 1880, p.308.

Wharves and Jetties, Continued



F32/15 Queen St jetty piles



F32/16 Queen St jetty piles – detail of tenon dressing



F32/17 Queen St jetty pile showing mortise



F32/18 Queen St jetty pile with bark still attached and end with bracing cut

Figure 24. Queen St jetty piles

Wharves and Jetties, Continued



Figure 25. Overlay of reclamations, piles (yellow) uncovered in 2003 and location of Queen St wharf (estimated location in blue), QEII Square

Continued on next page

Wharves and Jetties, Continued



Wharf pile in Concourse excavation



Queen St Diversion SWMH16-15; west baulk; pile next to brick footing 225mm diameter impressed into concrete footing; 5.3m from centre of SWMH 16

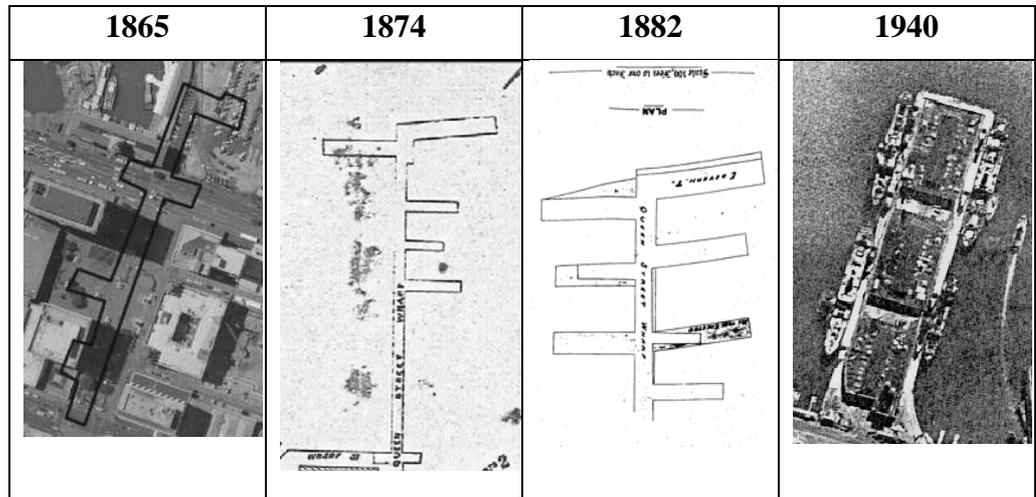


View S showing probable wharf planking at bottom of Concourse excavation. Pile no. 6 at bottom left; pile nos. 4 & 5 along sheet piling to left of planking. Four planks measure 230mm wide x 40mm thick

Figure 26. Excavated piles from the Queen St wharf (SSMH locations shown on Figure 11)

Wharves and Jetties, Continued

Figure 27.
Changes to the
Queen St wharf
1865-1940



1882 Extensions The 1882 plans illustrate an increase in the size of the major tees and the addition of a western branch to tee 3. The engineering plans show the metal tipped piles similar to those recovered in the Gore St jetty excavations (see below). Tees 2 and 3 were widened to 30ft and lengthened to 150ft on each side. Tee 1 at the northern end was also broadened considerably Figure 28).

Queens Wharf The extensions to the wharf allowed significant buildings to be built on the wharf itself. These included various ferry company buildings. The Queen St wharf was finally replaced during the early 20th century with the new Queens Wharf that continues to function today. Archaeological investigations along Quay St and around the Ferry Building may uncover more of the original wharf in the future.

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Wharves and Jetties, Continued

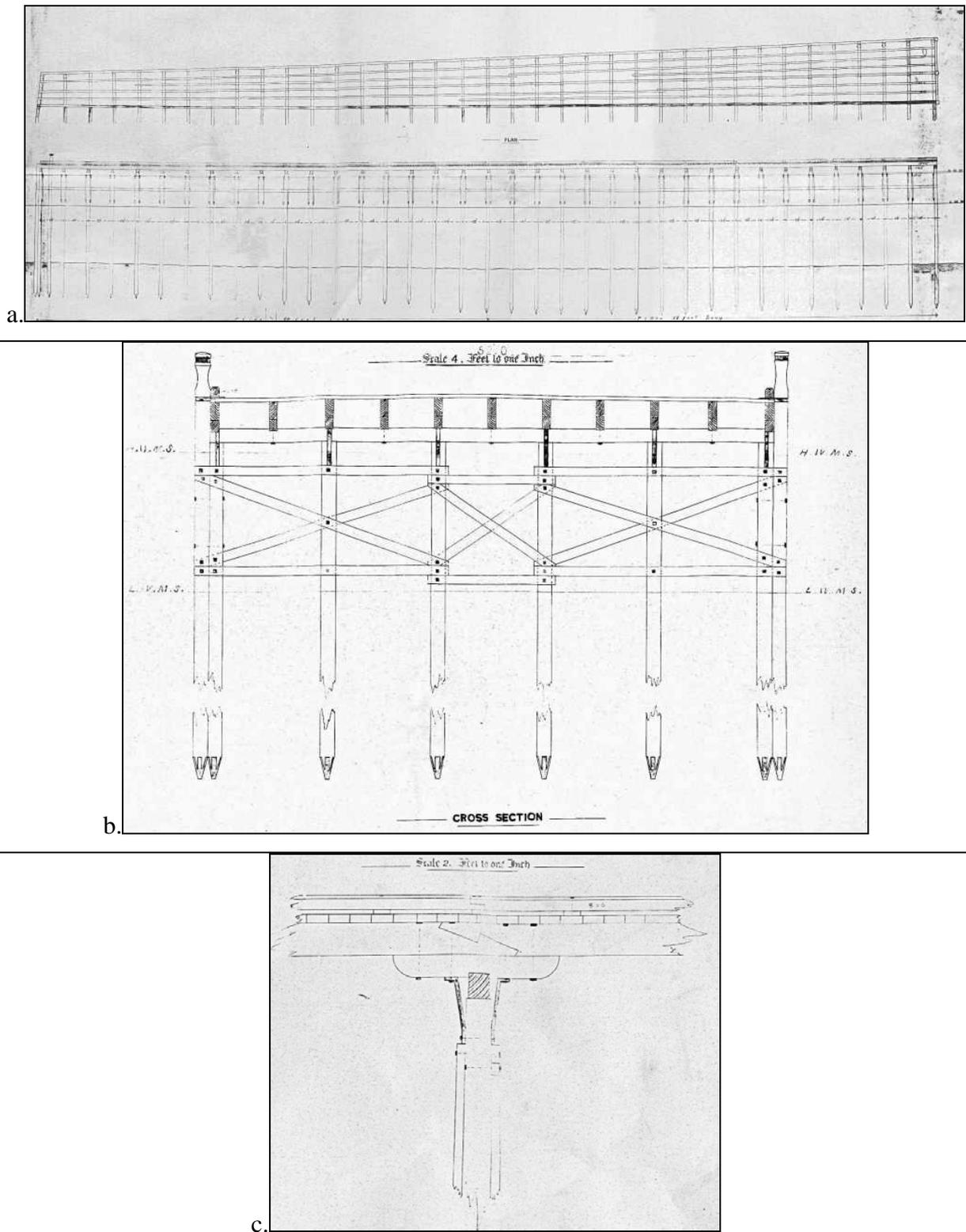


Figure 28. 1882 changes to Queen St wharf a) Extended decking to main northern tee; b) Cross section of new Tee 3 extension; c) Close-up of pile support for Tee 3 extension.

The Gore St Jetty

New Options

By the mid-1860s the Queen St wharf was overburdened and various options to provide additional wharf accommodation were investigated. In 1864 consideration was given to providing separate wharf accommodation for the timber and firewood trade.⁴³ It was decided to erect a 20ft wide quay along the waterfront from Queen St wharf to Britomart Point. This structure would be 650ft in length and was known as the Customhouse St wharf. By March 1865 the quay was nearing completion.⁴⁴

Extending at a right angle from the quay would be the Gore St jetty which was initially to measure 100ft in length. While the erection of the jetty was in progress by November 1864, the design of the structure was soon rethought.⁴⁵ By January 1865 it had been decided that the jetty should be considerably longer. New tenders were called for the construction of a 400ft long Gore St Jetty.⁴⁶ Messrs Amos & Co, who were building the Britomart Point breakwater, were the successful tenderers. It appears that the structure was designed by the Auckland Provincial Council's engineer-in-chief, Mr Weaver.⁴⁷ By February 1866 the Gore St jetty had been completed at a cost of £4193.⁴⁸ The wharf is marked on the 1866 map (see Figure 20) as 'New Wharf'.

The jetty was apparently used for both shipping and for storing timber. Large quantities of timber were stored on the wharf and on the so-called Timber wharf running parallel to Gore St jetty at the side of Point Britomart (see Figure 29).

Continued on next page

⁴³ *New Zealand Herald*, 18 January 1865, p.5.

⁴⁴ *Journals of the Auckland Provincial Council*, Session XIX, December 1864-May 1865, p.119.

⁴⁵ *Ibid.*, Session XIX, October 1864-November 1864, Appendix A14, p.4.

⁴⁶ *Ibid.*, Session XIX, October 1864-November 1864, Appendix A14, p.4.

⁴⁷ *Southern Cross*, 20 January 1865, p.4.

⁴⁸ *Journals of the Auckland Provincial Council*, Session XIX, December 1864-May 1865, Appendix B, 7A.

The Gore St Jetty, Continued



Figure 29. Looking west from Point Britomart (1869?) showing the timber wharf; 'SS Wellington' berthed alongside Gore St jetty (Source: James Richardson, 4-9024, Auckland Public Libraries-Heritage Images Online)

State of the Jetty

The Auckland Harbour Board's report on the wharves written in June 1871 stated that the Gore St jetty was 'in a very decayed state'.⁴⁹ The Customhouse St wharf was similarly:

'in a very bad state of decay . . . [due] to the portion of it covered in loose timber being nearly always in a moist state, thereby causing the timbers to rot'.⁵⁰

The following year the Auckland Harbour board decided to demolish the Customhouse St wharf.⁵¹ However the Gore St jetty would remain for a few more years. In 1874 the Auckland Harbour Board voted that £40 be allocated for repairs to the decking of the Gore St jetty (Figure 30).⁵²

By 1879 the Auckland Harbour Board evidently had no need for the jetty. The Works and Endowment Committee resolved: 'That the District Engineer be requested to cause the Gore Street Jetty to be removed as soon as possible'.⁵³ It is not clear whether the demolition work was carried out but the reclamation for the Railway Station soon filled most of the southern end of the wharf.

Continued on next page

⁴⁹ Auckland Harbour Board Minute Book, 1871-1874, AHB 1/1 National Maritime Museum, 8 June 1871, pp.18.

⁵⁰ Ibid., 8 June 1871, pp.18.

⁵¹ Ibid., 13 August 1872, p.215.

⁵² Auckland Harbour Board Minute Book, 1878-1883, AHB 1/3 National Maritime Museum, 15 May 1879, p.154.

⁵³ Auckland Harbour Board Committee Minute Book, 1871-1874, AHB 2/1 National Maritime Museum, 28 February 1873, p.287

The Gore St Jetty, Continued



Figure 30. 1874 looking north from near Customs St West (Source: Henry Winkelmann, 1-W965 Auckland Public Libraries-Heritage Images Online)

Remains Uncovered

The structural remains of the Gore St Jetty were exposed under around 2m of fill. The location of the piles and beams are shown in Figure 31. The stratigraphy around the jetty remains shows that much of the wharf was buried under the Point Britomart material, with layers of cultural debris including metal, leather and cloth off-cuts, bottles and ceramics fragments about 1m above the jetty (Figure 32).

Unlike the remains of the Queen St wharf, many of the cross beams of the wharf were still in place and visible (Figure 33) above the original sea bed floor. While the beams and piles were left, decking was removed (see Figure 34) and probably recycled. Many of the large and small piles had forged metal tips at their end (Figure 35).

Continued on next page

The Gore St Jetty, Continued

Careening Area A careening area at the southern end of the wharf was also exposed (Figure 36). This is not visible in the photos of the wharf shown above. The careening area was initially noted when the reclamation between the bottom of the concrete beams [North-South running Grids 16 and 17] and the top of the Waitemata Sandstone was being excavated. The excavating machines were benching their excavation and using the top of the sandstone as a working platform. It was during this phase that what appeared to be the northernmost end of the careening area was exposed, at approximately halfway between the East-West running Grids C and D.⁵⁴ The seabed was c.4800mm from the top of the Grids 16 and 17. The structure at this point consisted of three sets of dressed logs spiked together on top of each other (Figure 36).

Detail of the logs showed that some were pre-used and had scarfing joints (Figure 37). The middle log was dressed flat on the top and bottom to accommodate a flush join. The spikes measured 25mm or 30mm in square section (Figure 38) and in the top log the heads were rebated. The bottom log consisted of two scarfed pieces, the easternmost piece being dressed on four sides, 300mm by 250mm. All the other timbers were of similar dimensions, but only dressed on the adjoining flat faces. The other sides still showed their original tree trunk shape. The length of the structure appears to have been between 8000mm and 9000mm, and its height was c.700mm above the seabed. The western end of the logs butted into the vicinity of the base of the Gore St Jetty, and the eastern end had only one log fitted at right angles, and aligned with the top log (Figure 39).

Eastern Portion of Careening Area A month later the area towards the southern sheet piling along Grid A and in between the Grids 16 and 17 was opened up. This revealed another set of careening logs on the seabed (Figure 40), which had been spiked into the basal Waitemata Sandstone (Figure 41).

An inspection of the eastern side of the logs in the area below Grid 16 showed a set of bearers supporting a log running north-south (Figure 42). This is the easternmost side of the careening area, and coincides with the structure further north in between Grids C and D. The intervening careening structures were removed without prior notification. The bearers consisted of two logs supporting the cross member (Figure 43) and a third log on top of the bearers making the structure flush across the top (Figure 44). Spikes held the logs in place (Figure 45). In most cases the logs had been dressed along their length where they fitted against one another (Figure 46). The bearers were 2500mm apart with the southern sheet piling cutting through any further careening structure southwards.

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⁵⁴ The grid system is described in Chapter 1.

The Gore St Jetty, Continued

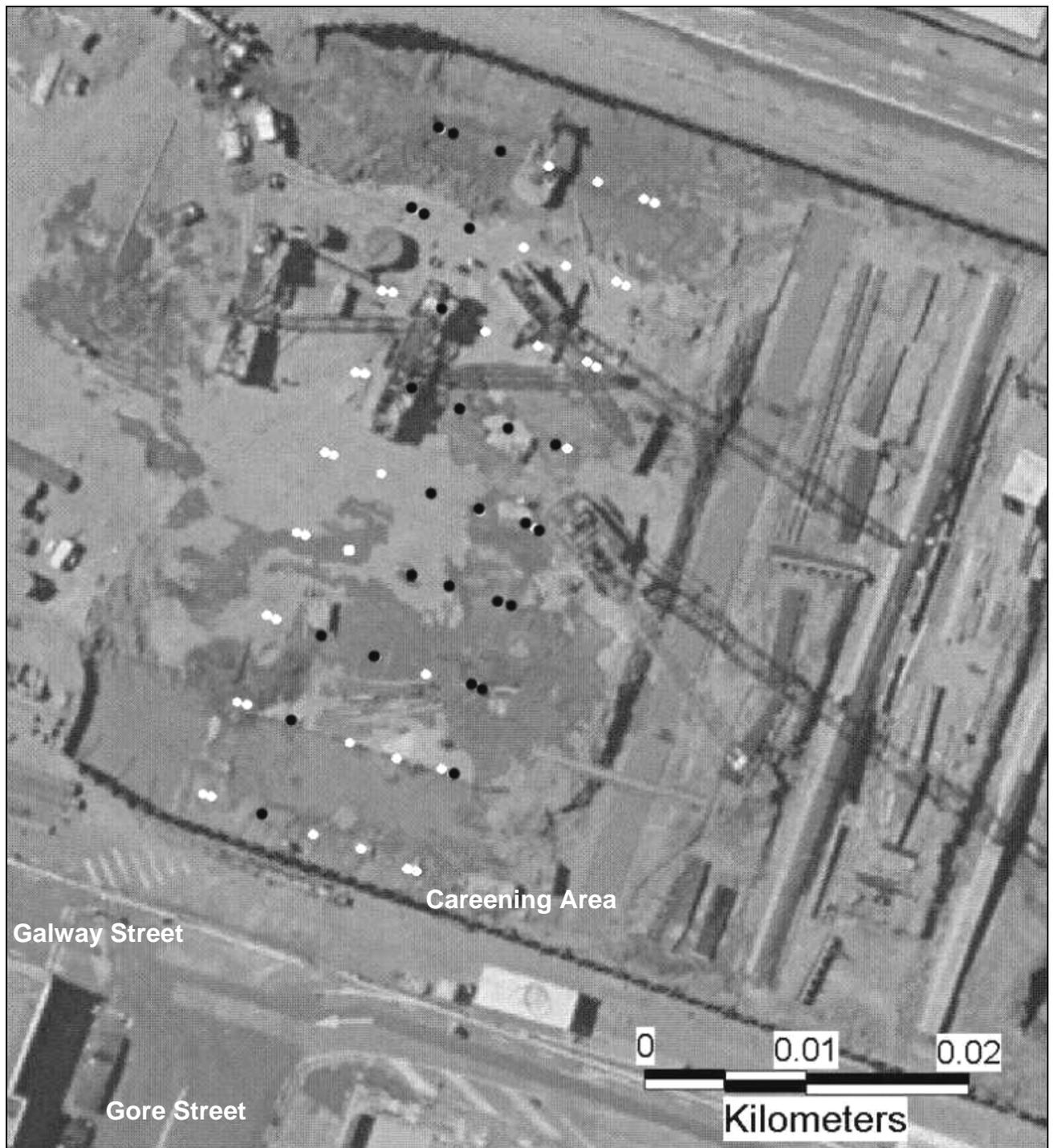


Figure 31. Plan of pile locations, Gore St jetty. Black dots indicate actual posts recovered, white dots indicate pile hole or projected location

The Gore St Jetty, Continued

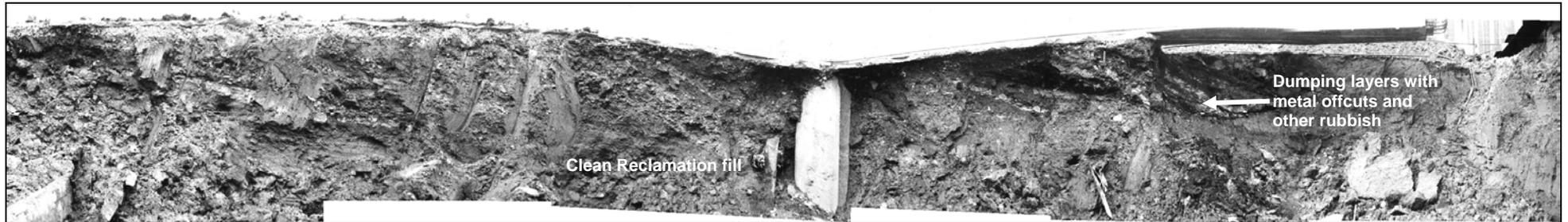


Figure 32. Gore St jetty, showing the section of the eastern baulk including feature F090402/03 (deposits of industrial material) in area G15



Figure 33. Post line at southern end of jetty; seabed visible at base

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The Gore St Jetty, Continued

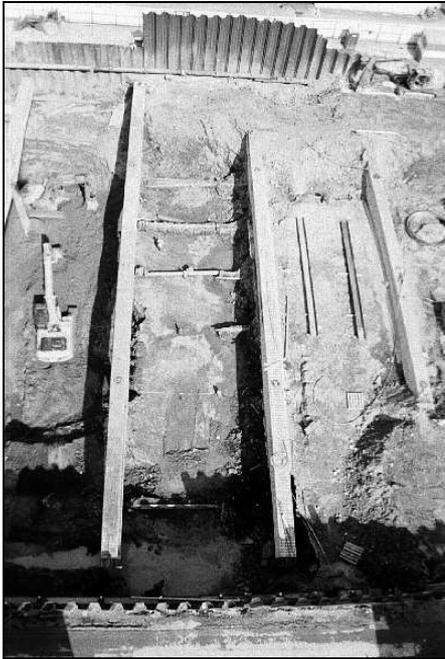


Figure 34. Gore St jetty; aerial showing grids 16(L) and 15(R), jetty piles and cross beams



Figure 35. Forged metal tip on bottom of jetty pile



Figure 36. View southwards of most northern end of careening structure

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The Gore St Jetty, Continued



Figure 37. Detail of the logs showing prior usage and scarfing joints



Figure 38. Spike in logs



Figure 39. Logs at the eastern end of jetty

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The Gore St Jetty, Continued



Figure 40. Careening logs on seabed

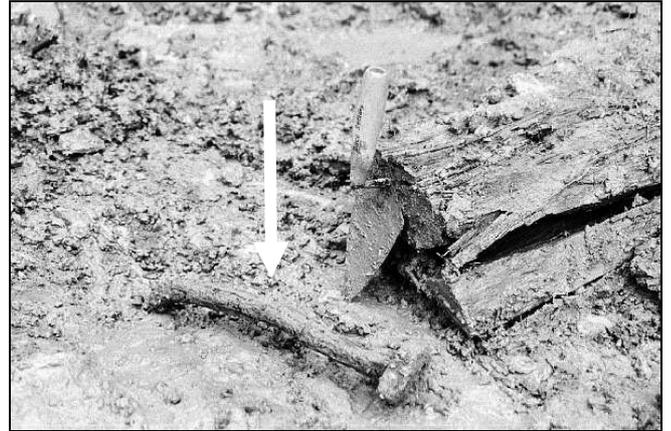


Figure 41. Spike for logs into sandstone



Figure 42. Eastern side of careening area



Figure 43. Two logs supporting cross member



Figure 44. Top beams in careening area



Figure 45. Beams held in place with spikes



Figure 46. Dressed log in careening area

Reclamation Summary

Reclamation

The 1879-1885 reclamation represented an enormous exercise in labour and horse power. The whole of Point Britomart was taken apart and moved by horse and cart and dumped in the sea. Then as the available earth ran out, the area was turned into rubbish dump for the nearby industries.

The reclamation resulted in the dismantling of the Gore St Jetty and some of the earliest part of the Queen St wharf. The decking and sub-pile and bracing structure was removed, although for the most part the remnant piles were left in situ. Excavation of the piles of the Queen St wharf revealed that the original section of the wharf was probably smaller than what was built later as the piles were smaller than those used later.

Finally, the reclamation provided not only a platform to build the new Railway Station but also valuable coastal real estate for Auckland businesses.

Chapter 3: Archaeology of the Waterfront

The Excavations

Excavations

This chapter describes the minor excavations carried out during the project. These excavations were located in the following areas: north Gore St, below the Chief Post Office, Queen Elizabeth II Square, Galway St and Tyler St (Figure 47). These smaller excavations uncovered the footings of both 19th and 20th century buildings and the development of municipal utilities such as drainage.

Some details from these excavations that relate directly to the 1879-1886 reclamation, wharves and jetties, and the 1885 Railway Station are discussed in other chapters of the report.

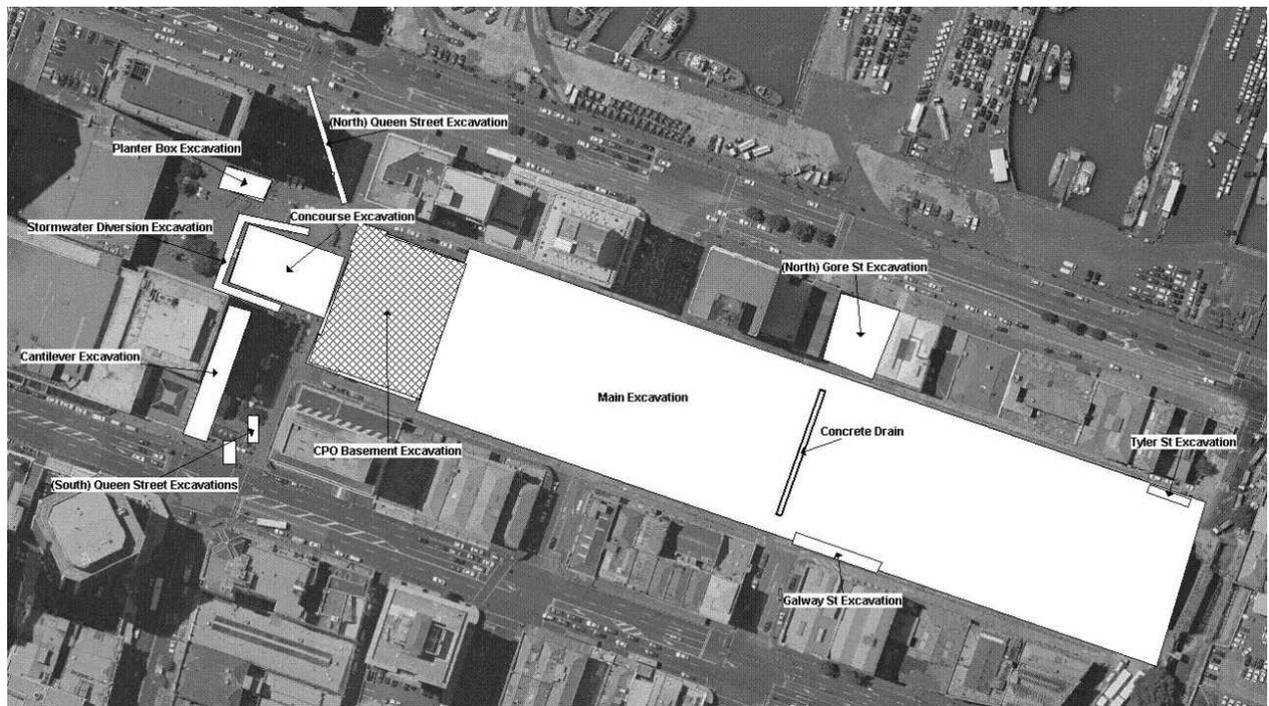


Figure 47. Location of excavations

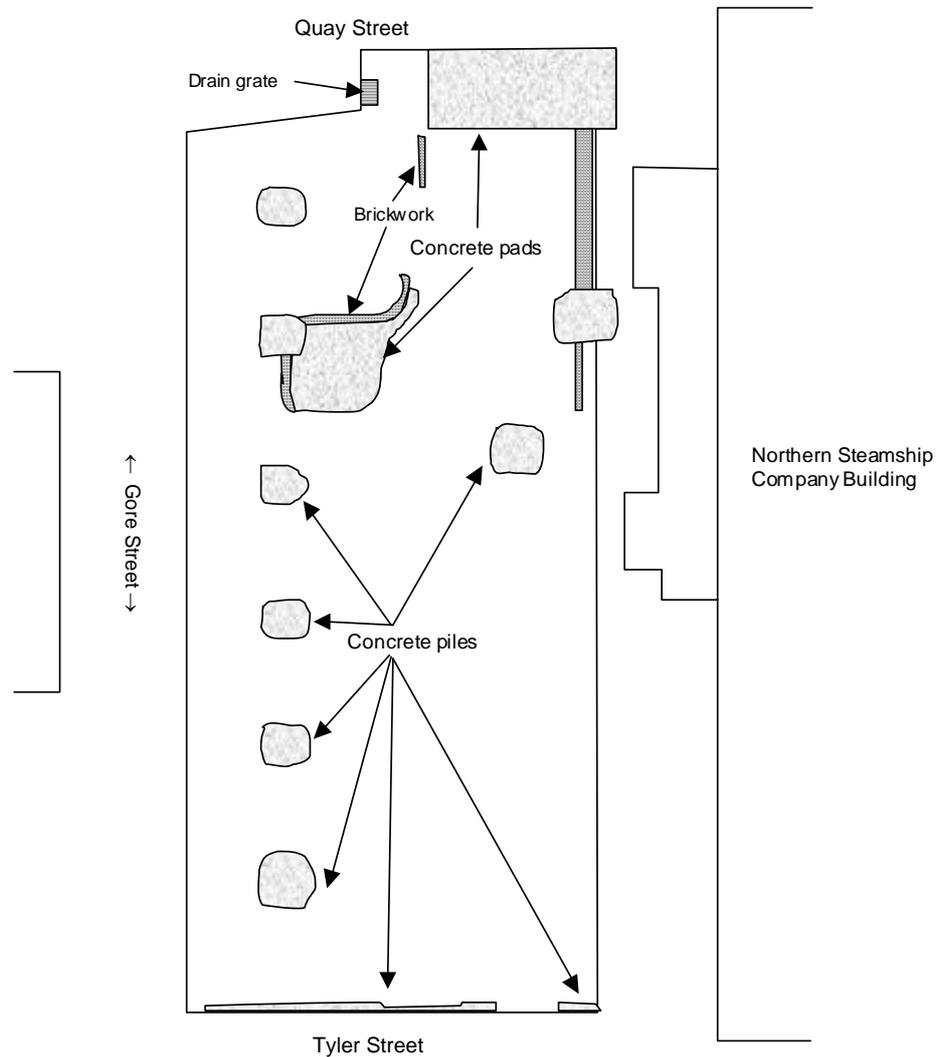
Gore St Excavation

(North) Gore St Excavation

In the northern central part of the Britomart Project, at the northern end of Gore St, excavations of a small park next to the Northern Steamship Company buildings revealed the foundations of an earlier building (Figure 48). The remains included a line of concrete footings as well as fragments of brick wall.

Examination of the Wrigg 1908 plan suggests that a 3-storey brick building was there (Figure 49).

Figure 48. Plan of excavations in northern Gore St



Continued on next page

Gore St Excavation, Continued

Figure 49.
Location of
excavation at
northern Gore St



Figure 50. N end of Gore St road excavation;
concrete foundations of unknown building



Figure 51. Concrete pile foundations at southern end
of Gore St New Road excavation at Tyler and Gore St
intersection; Northern Steamship Company Building
to L (out of sight)

Queen Elizabeth II Square

Excavations There were six sets of excavations carried out in front of the Chief Post Office in Queen Elizabeth II Square (Figure 52). They were:

1. North Queen St
2. South Queen St
3. Planter Box
4. Cantilever
5. Concourse
6. Stormwater Diversion

These excavations were carried out during different parts of the project but the results were relatively straightforward with parts of Queen St wharf piling, the reclamation fill with layers of the old road surfaces, and various aggregates and utility pipes under the surface pavement.

North Queen St A small trench along the northern side of Queen Elizabeth II Square revealed parts of the Quay St seawall (discussed in Chapter 2) as well as additional sections of the brick drainage system. The drainage system is discussed in detail in the Stormwater Diversion excavation (below).

South Queen St The excavations along the edge of Queen St and the concourse were not particularly informative. Typically, the sections revealed layers of concrete below the pavement and various 20th century utility pipes laid in scoria and/or sand over the reclamation fill (Figure 53). Part of the 1880s drainage system was also found and is described in the next section.

Planter Box The excavation in the area of the planter box in the main square was extended onto the concourse excavation (see below). The section (Figure 54) shows a variety of aggregates used to support the paving with the remains of utility pipes and old Queen St wharf piles.

Cantilever The Cantilever excavations were carried out in front of the Chief Post Office (CPO) to provide foundations for the piles for the new, cantilevered covering along the southwestern side of the Square. Sections and plans are illustrated in Figure 55 and Figure 56. The excavations revealed older concrete and brick foundations. Some of the concrete foundations may relate to the original Queen St road that ran through them which also had tramlines built there before 1908. Some wharf piles probably from the Queen St wharf were also exposed (Figure 56) and these therefore predate the main reclamation (1879).

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Queen Elizabeth II Square, Continued

Concourse

The main concourse excavations (Figure 52) exposed many of the original Queen St Wharf piles as well as parts of the drainage systems through the reclaimed land. The wharf pile locations are described in Chapter 2 and the drainage systems described in the next section.

The area immediately in front of the CPO was a separate contract to that of the railway station. The two were linked by a subsurface walkway beneath the CPO. Initially, the area to be excavated was sealed off from tidal seawater influences and soft unstable reclamation by sheet piling the outer perimeter of the works (Figure 52).

Removal of the reclamation commenced at the southwestern end. Because the greatest depth for the excavation in the Concourse was approximately 4m, and the sub-surface material, being reclamation and seabed marine mud, and consequently totally unstable for the large excavating machines to be working on, all material from the Concourse was removed from the surface level of Queen St, working from west to east. Reclamation fill was trucked out through Quay St.

The reclamation fill was composed of large quantities of scoria rocks (Figure 57a, f), and limited amounts of clay and sandstone fill as occurred in the main Britomart excavation. The removal of subsurface materials exposed remnants of former building foundations (Figure 57a,b), and wharf or jetty planking, brick footings for unknown structures (Figure 57c), a mooring anchor-rock (Figure 57d), utility gas, water, electricity, and communication cabling (Figure 57e) and ducting, as well as a ship's chain, and a limited variety of domestic artefacts.

The four, large, concrete foundation blocks at the western end of the Concourse located at some 4m below surface, measured 3000mm long, 110mm wide and 85mm thick. The concrete was composed of coarse shell, pebble, and sand mixed with a lime or Portland cement mortar.

Stormwater Diversion

The stormwater diversion excavation was carried out to re-route stormwater drainage through the concourse. The excavations ran across previous brick stormwater drains that were probably laid at the time of the reclamation of the concourse as well as a variety of utility pipes that were laid throughout the 20th century. Details of the excavation are discussed below integrating other information from nearby excavations relating to this drainage system.

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Queen Elizabeth II Square, Continued

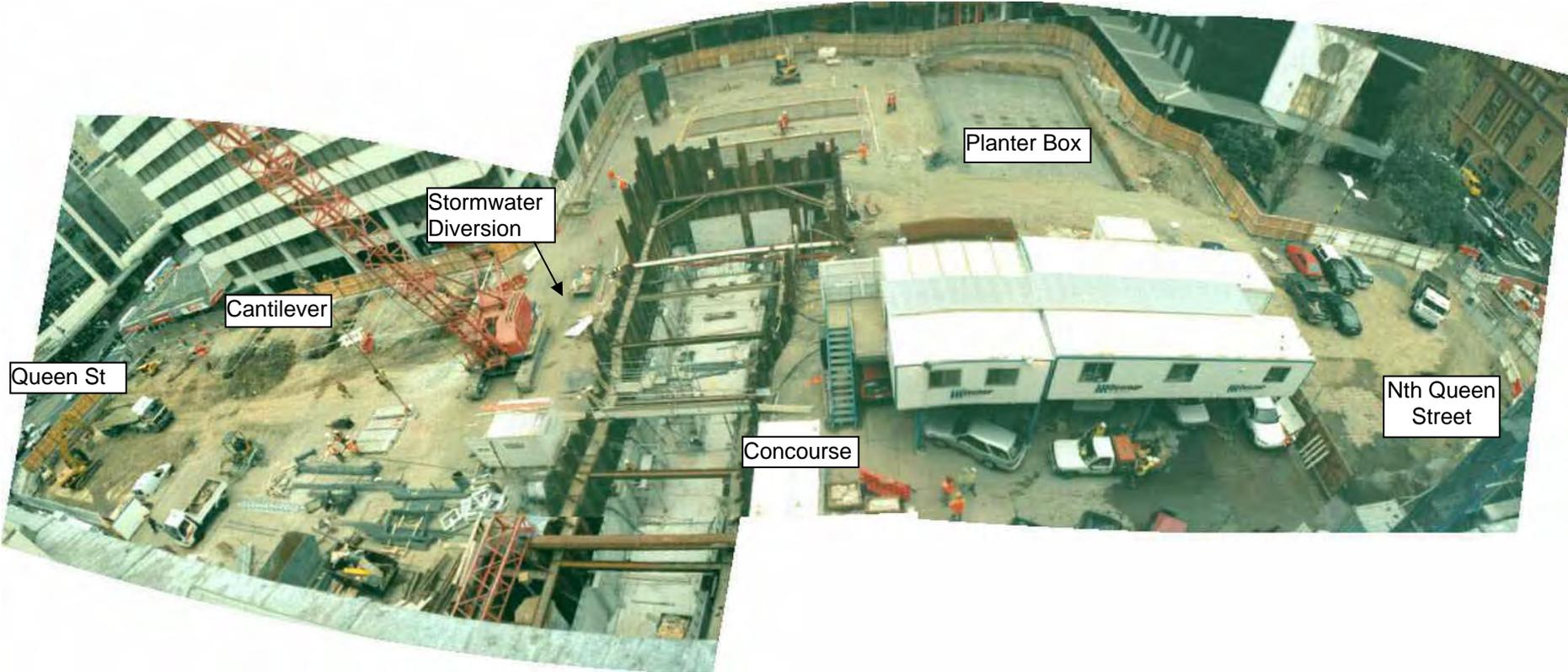


Figure 52. QEII Square Concourse Excavation; view of sheet piling installation

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Queen Elizabeth II Square, Continued

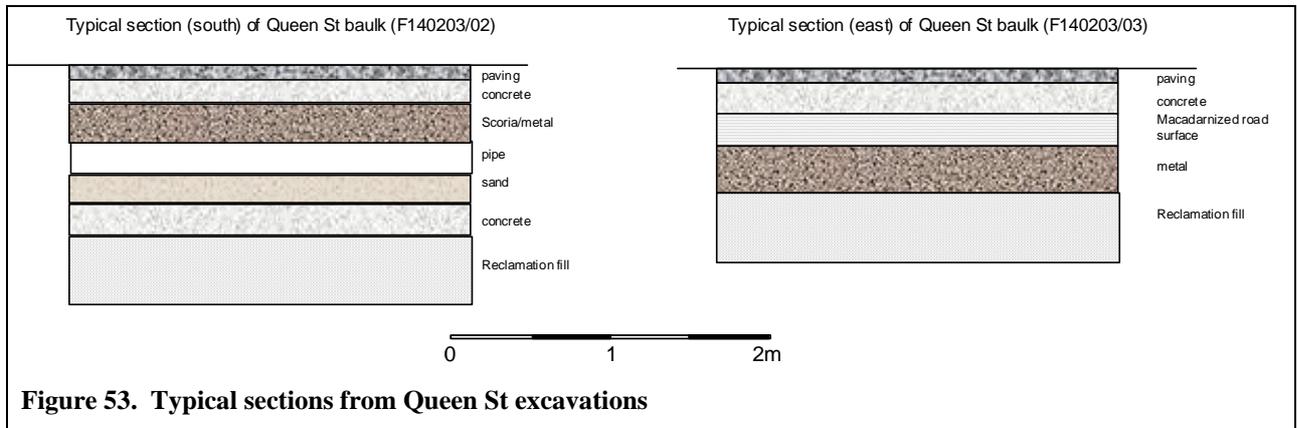
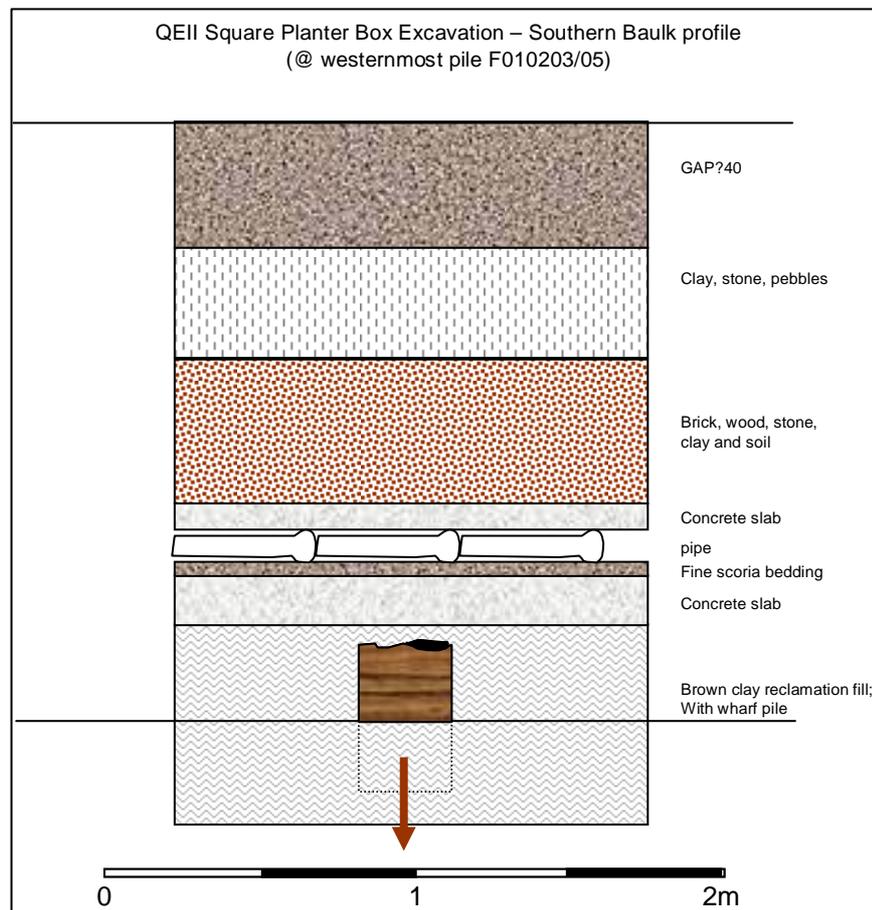


Figure 54. QEII Square Planter Box excavation - typical section



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Queen Elizabeth II Square, Continued

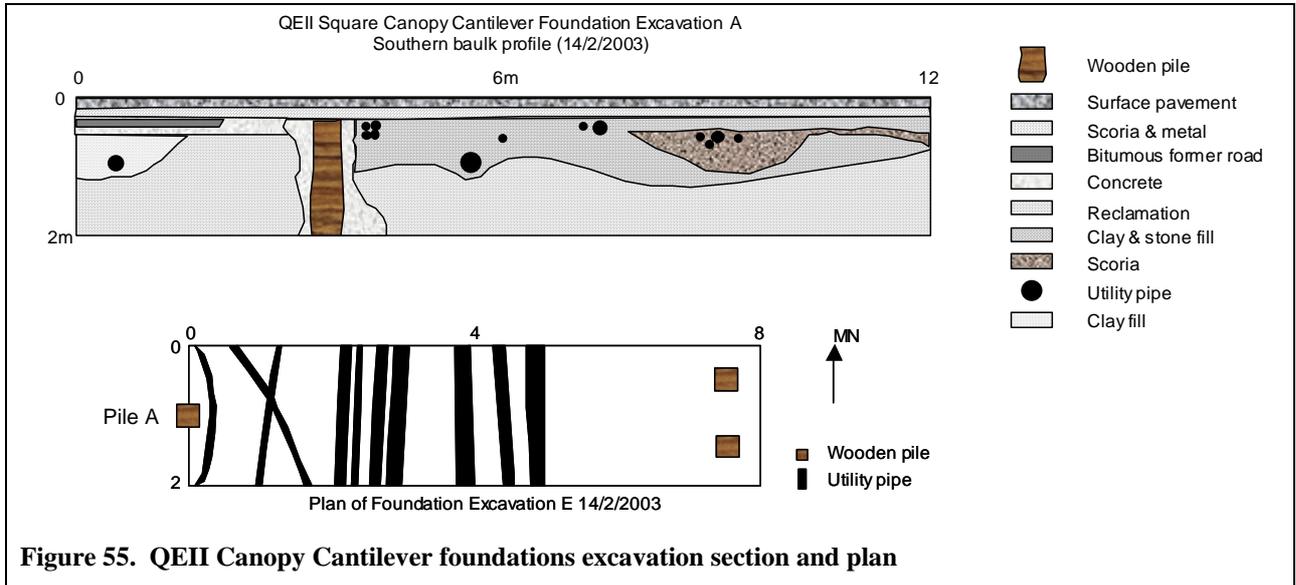


Figure 55. QEII Canopy Cantilever foundations excavation section and plan

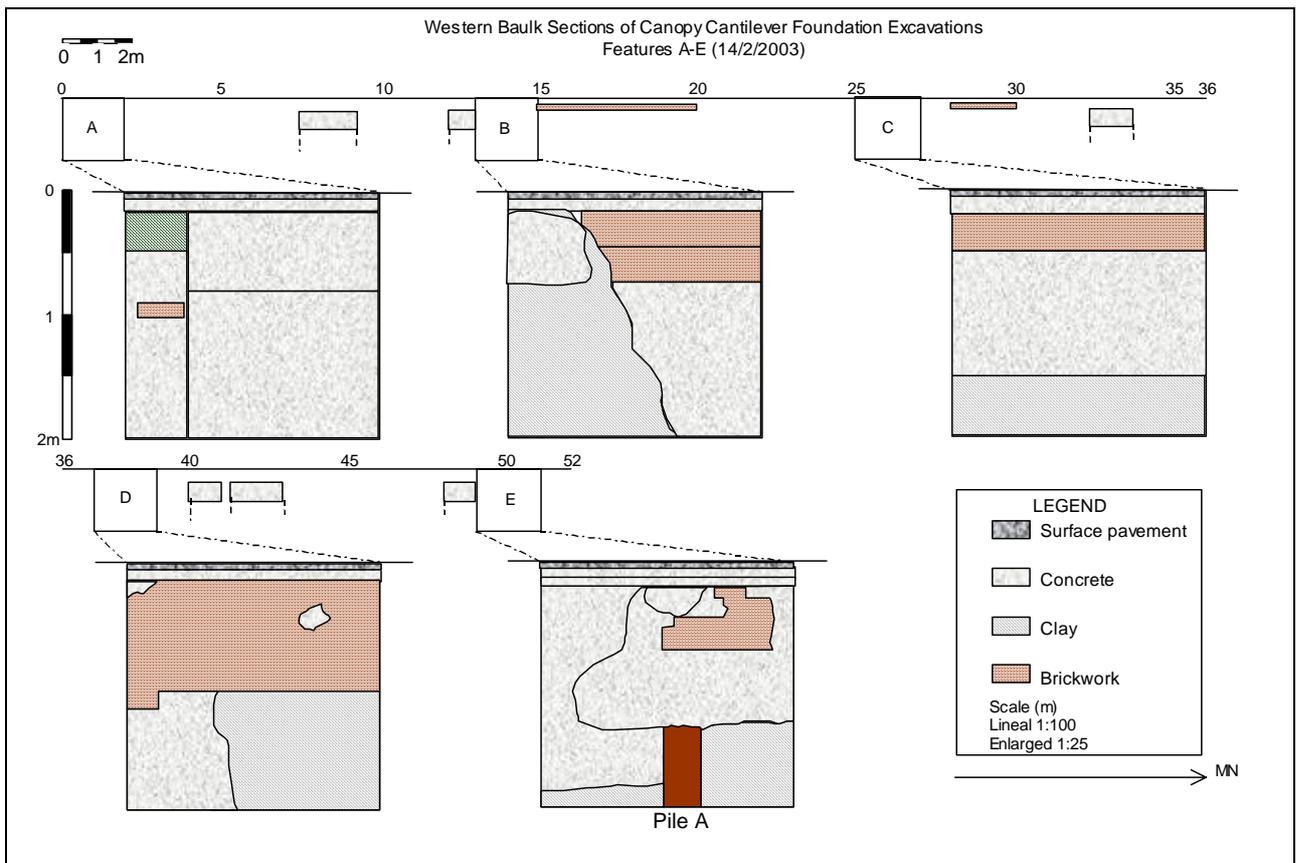


Figure 56. QEII Square - Cantilever Excavations. Western baulk sections (F140203/01)

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Queen Elizabeth II Square, Continued



a. Two of four large concrete footings recovered from the bottom of the Concourse



b. Location of concrete footing showing original boxing form work *in situ* after footing removal



c. Unknown origin of brickwork structure (middle) in face of excavation. Metal utility piping and ducting visible beneath Queen St surface concrete



d. A basalt block with metal ring inserted was probably used as an anchor with a rope tied to the metal eye at one end and a buoy to the other enabling a small harbour working boat or similar to be safely moored inshore



e. Utility line replaced to run beneath the Concourse floor



f. Large scoria rocks delayed sheet piling being driven down at this location along the northern perimeter

Figure 57. Views of QEII Concourse excavation

Drainage and the Stormwater Diversion Excavation

Introduction

In pre-European times, the Waihorotiu Creek ran down through what was to become central Auckland. This creek was to form the basis of the main downtown sewage system. A general history of the creek and its subsequent development as a key part of downtown Auckland's sewage system has been discussed by Jefferson (1980) and was subsequently archaeologically investigated by Simon Best (1992:138-145; 1995) as part of work carried out on the Auckland Gaol and His Majesty's Theatre sites. These sources form the basis of the background research provided here. Parts of the sewage system, however, continue to show up in excavations and in at least 3 locations associated with the current Britomart project and we are therefore adding an additional chapter to this story.

Waihorotiu Creek

As early as 1840, Felton Matthew suggested that the Waihorotiu Creek could be diverted to form the principal sewer for the town (Felgate 1998:198). Changes in the alignment of the streets and subsequent plans of Auckland in 1842-3 show the creek at different locations, but it was clear that drainage was a major problem. A large drainage ditch following the course of the creek made access to many of the allotments on Queen St problematic.

The Ligar Canal

By May 1843 a separate cutting was probably made from the then shoreline to about Wyndham St, cutting off the western bend just south of Shortland St. This cutting formed the Ligar Canal (Felgate 1998:199), named in the early 1840s after Charles Whybrow Ligar, the second Surveyor-General of the Colony.

The canal consisted of an open drain in the 1840s and 1850s and constituted a considerable health and traffic hazard. Plans of the Ligar canal from 1845 (see Best 1992) suggest that it was about a 6 ft wide, 4 ft deep ditch with flat base and sloping sides. Covering was relatively ad hoc. Although attempts were made to improve it, it was not until the 1870s, following the election of the first Auckland City Council in 1871, that it was finally contained.

The canal was located to the west of Queen St near Myers Park and Victoria St and between Swanson St and Fort St it doglegs to the eastern side of the street. A number of smaller brick and basalt structures intersect the Canal at various points adding to the overall complexity of the system.

Continued on next page

Drainage and the Stormwater Diversion Excavation, Continued

Drainage around Britomart

The reclamation for the Railway Station clearly required various additions to be made to the drainage system which would therefore date to the 1880s (Figure 58). This suggested that brick barrel drains were likely features to be recovered, as they were widely in use for drainage at this period. This proved to be the case.

Figure 58. Close-up of sewage outlet next to Queen St Wharf (early 1880s)



Results from Fort St Monitoring

Monitoring for a new stormwater trench in Fort St was carried out in 1997. The trench followed a line along the approximate centre of Fort St, was 3m-6m wide and approximately 4m deep, exposing the 1850s reclamation and the underlying blue/grey Waitemata sediments and basal clays. The most prominent archaeological feature encountered was the large brick barrel-shaped drain. This was exposed at the very western extent of the excavation, at the intersection of Fort St and Queen St, and was constructed of brick and basalt (Clough and Prince 1998).

Located below the road surface, the brick barrel culvert is 2.2m high, straight sided and arched at the top. This brick superstructure is built on a deep foundation of basalt boulders over 1m deep that stabilize the system in the underlying soft sediments. Detailed investigation of the basalt foundation was restricted by ground instability.

Continued on next page

Drainage and the Stormwater Diversion Excavation, Continued

Stratigraphy

The stratigraphy of the area has been significantly disturbed over time by the installation a number of utilities under Queen St's eastern footpath, including a variety of galvanised and PVC conduit, a ceramic stormwater line and telephone cable. However, in one area an identical stratigraphy was recorded behind retaining shutters in the north and south baulks, indicating an undisturbed horizon representative of the original reclamation fabric.

The simplified recovered stratigraphy was as follows:

- 50mm road seal, 250mm of concrete roading and base course,
- 2.2m of unconsolidated fill (red scoria, shell, grey and yellow clays with intermittent sandy black bands with an oily appearance) containing cultural debris,
- 500-800mm of grey/black saturated clay
- A saturated light yellow basal clay mass.

As the water table was consistently struck at c.2.4m (pers. comm. Broedelow Construction Ltd) it is assumed that the interface of the fill and the blue/grey sediments represents the seabed at the time of reclamation.

Monitoring Work in Britomart Place

Monitoring of excavations in Britomart Place, east of the railway station area revealed another drain. A 2.25m high x up to 1.45m wide (externally) section of the brick culvert was exposed obliquely crossing the trench from approximately southwest to northeast (Figure 59). Located 3.2m below the road surface in a trench opened through the Waitemata sandstone, the culvert is of similar design and dimensions to that encountered in Fort St (Clough and Prince 1998).

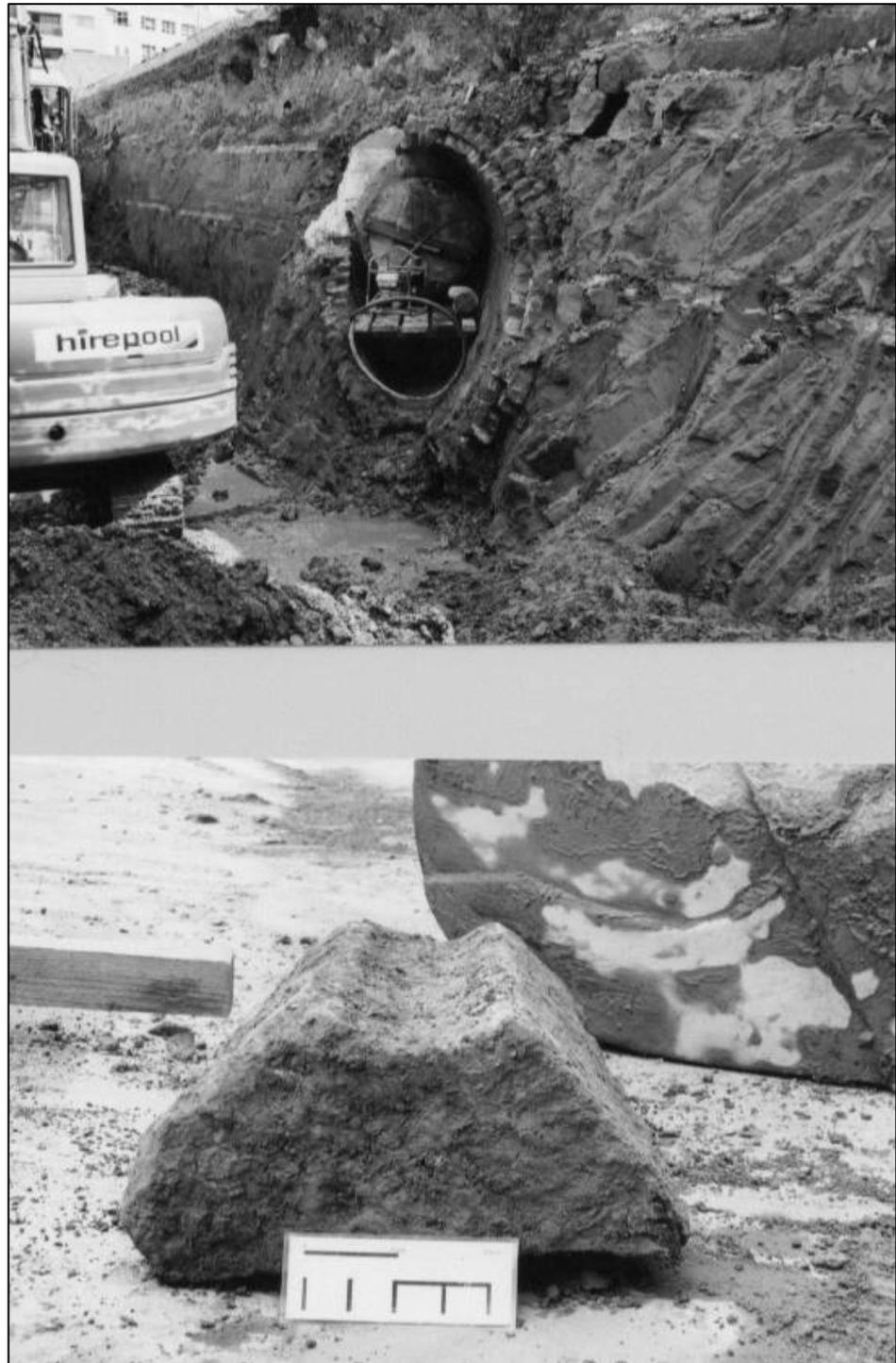
The inverted tear-drop shaped culvert in Britomart Place was found to be formed by two courses of brick that springs off a shaped basalt keystone, bonded with an extremely strong Portland cement mortar, (Figure 59). The base of the structure was found to be laid on a bed of medium graded scoria up to 0.5m deep.

As found elsewhere along its course glazed pipes, up to 250mm in diameter, discharge into the drain at intervals through its side walls. These features were cut in following the construction of the main structure, not built into the walls at the time of construction. It is assumed these side drains convey ground-water out of the reclamation fill or stormwater from nearby buildings, roads and gutters.

Continued on next page

Drainage and the Stormwater Diversion Excavation, Continued

Figure 59. Brick culvert and keystone uncovered at Britomart Place



Continued on next page

Drainage and the Stormwater Diversion Excavation, Continued

2002-3 Excavations

Parts of the drainage system were found both within the main reclamation area below the railway station and in the QEII Concourse and Stormwater Diversion excavations. In QEII square, the top of the brick barrelled culvert running down the Square was uncovered (Figure 60) during the removal of reclamation fill. As the drain was still operational, a major diversion around the western side of the Concourse was planned. However, so that works could continue until this was completed, a smaller diversion was carried out, by-passing a temporary drain below the floor of the Concourse. The double-skinned, brick barrelled culvert was demolished. During this process side entry drains were revealed (Figure 61).

The temporary water diversion was carried out by inserting plastic inner piping into the brick drain and sealing it off, then fitting piping below the Concourse floor (Figure 62). When the excavation works were complete, concrete wall panels and flooring were installed.

Conclusions

Construction techniques are similar to those described in the previously investigated sites. The drains consisted of a double-brick skin laid on concrete and scoria where possible (Figure 63). 20th century PVC piping had been laid in some of the brick drains in front of the Chief Post Office. In the main excavation area, though, the drain was not laid on major foundations (Figure 64), but seemed to be reasonably stable. This was not so in the example near Queen St, where the brick drain had partially collapsed (Figure 65). Exposed drains around Tyler St were in good condition and show some of the side drains feeding the main system (Figure 66).

Previous investigations of the brick sewer (Best 1992; Best et al 1999; Clough and Prince 1998) had clearly shown that the construction techniques varied throughout the system, possibly indicative of different contractors or a refinement in its design. The design, dimensions and techniques for its stabilisation in the fill observed in Britomart Place, are identical to those recorded at the intersection of Commerce St/Customs St East (Clough and Prince 1998), perhaps indicating that the Customs St East to Quay St construction was, like the reclamation, a single event.

Continued on next page

Drainage and the Stormwater Diversion Excavation, Continued



Figure 60. Drain in front of Chief Post Office



Figure 61. Side entry drain revealed on western side



Figure 62. Sub-floor piping linking the bisected brick drain

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Drainage and the Stormwater Diversion Excavation, Continued

Figure 63. Brick
barrelled culvert
F200703,
Concourse
Queen St
Excavation

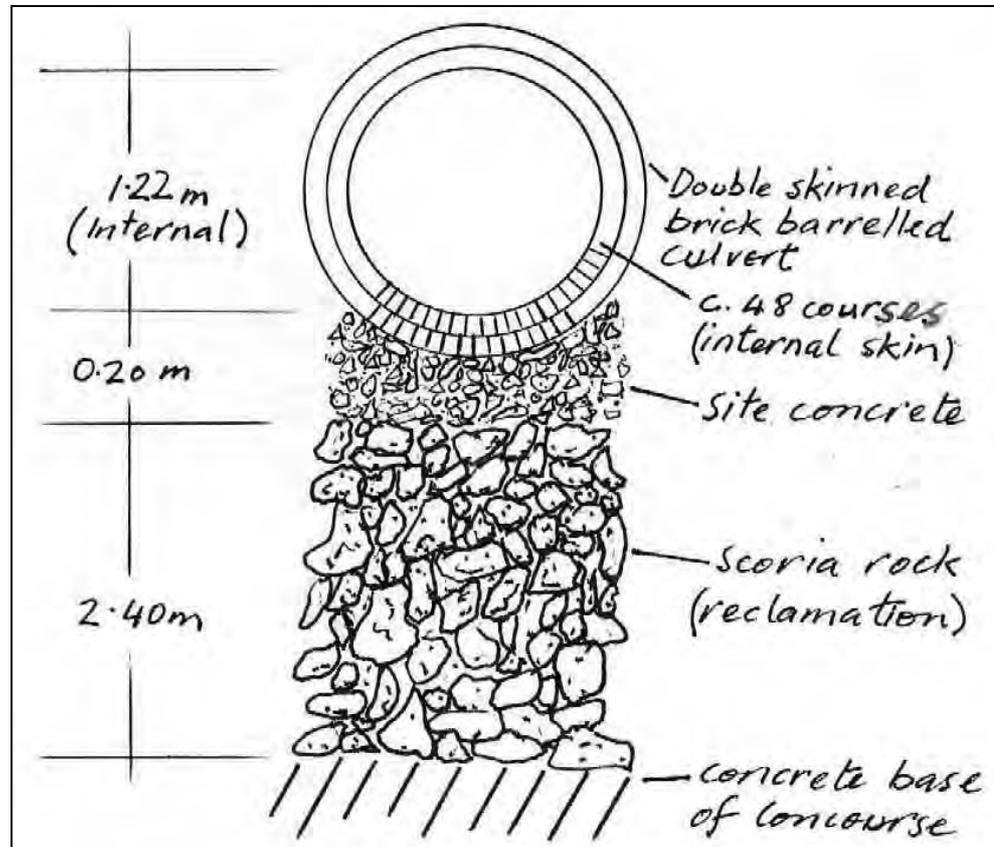
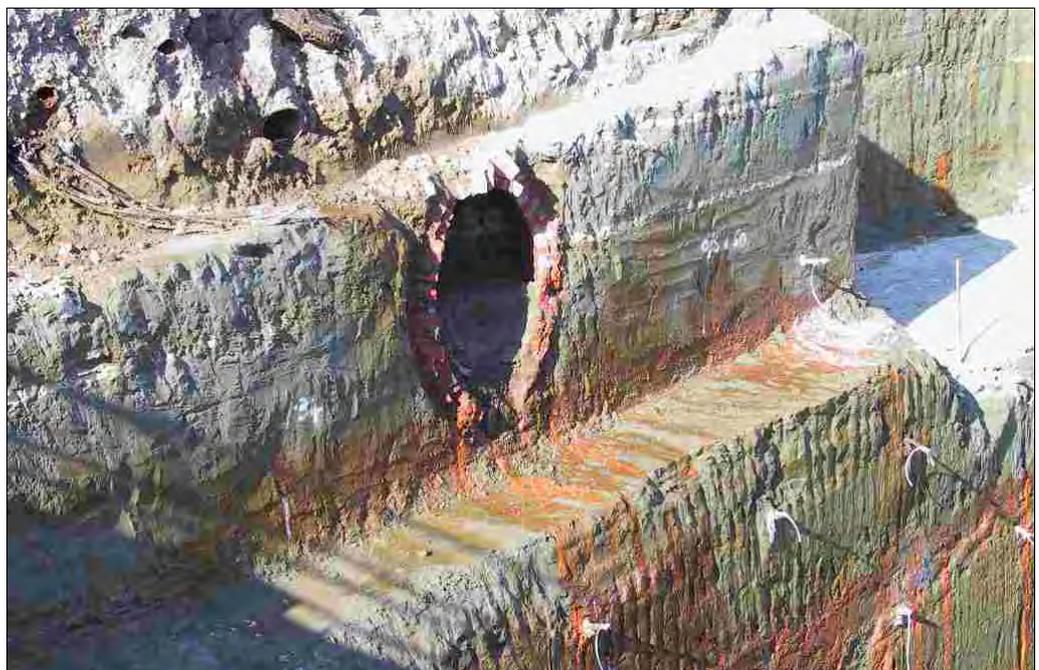


Figure 64.
Remains of brick
culvert exposed
in section in the
main Britomart
excavation



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Drainage and the Stormwater Diversion Excavation, Continued



Figure 65. Queen St Diversion, showing collapsed culvert and layers of overburden; 1.2m below surface



Figure 66. Tyler St, brick barrel culvert: a) internal structure, side entry drain (L), through brick line, c.20m N from Tyler St curb; b) external view

Concrete Drain

Concrete Drain Between the North-South running Grids 14 and 15, a large steel reinforced concrete drain was uncovered. It ran the length of these grids traversing the c.50m width of the excavation. The top of the drain was approximately level with the upper surface of Grids 14 and 15, and had been cut by the sheet piling at both ends during their installation (Figure 67).

The centre line of the drain was 3800mm from the centre line of Grid 15. The outside diameter measured 1900mm wide and was 2400mm high, the drain being constructed on a 100mm thick concrete plinth. The base of the drain was flat, but the upper half was domed, and had an inside vertical measurement of 1600mm. The walls were reinforced and measured c.200mm in thickness (Figure 68).

The structure was demolished with a pneumatic hammer on the end of the excavation machine. During its demolition several double piles [side piles] from the Gore St jetty were exposed.

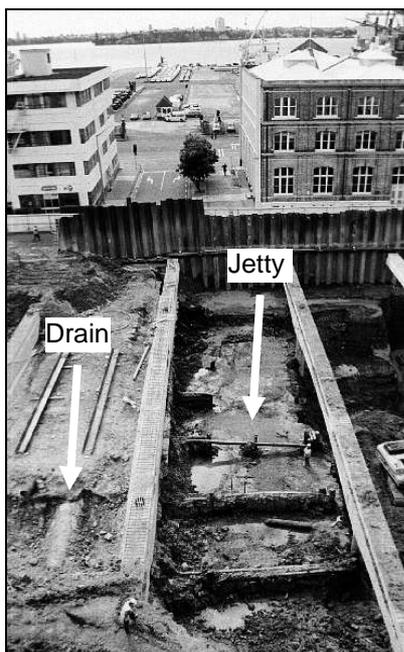


Figure 67. View northwards showing the drain at the southern end of the inter-Grid space (bottom left). Gore St jetty remains are to the right



Figure 68. View southwards showing the shape and position of the drain and its height above the seabed; Grid 15 to left

Galway St

Excavations

Excavations at the eastern end of Galway St near Gore St revealed additional piles and part of a concrete wall (Figure 69). It was originally thought that this might have been part of the Point Britomart railway station building that had been moved onto the site in 1885. However GIS analysis suggested that the wooden piles more probably related to a one storey brick building that existed at least by 1908. Tram or railway track lines were recovered along the southern baulk of the trench.

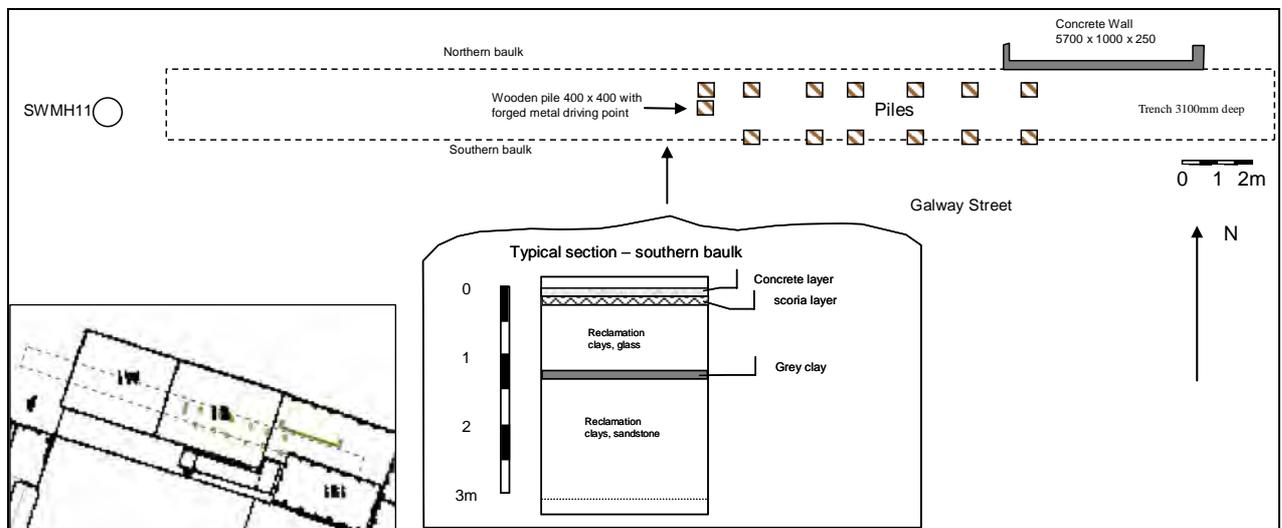


Figure 69. Plan and section of Galway St excavation (Inset - Galway St excavation showing piles, concrete wall and excavation trench (dotted line). Superimposed on 1908 plan)

Tyler St

Excavations along Tyler St

Excavations along Tyler St were carried out for the installation of new stormwater and sewer pipelines. Trenching revealed parts of the drainage system (described above) while the general stratigraphy revealed layers of various fills used in the construction of the road over the reclamation fill (Figure 70). An octagonal concrete column and rectangular beam were exposed in the sanitary sewer trench. They formed part of the former transport centre car park but were not removed.



Figure 70. Tyler St, sanitary sewer trench; northern baulk, various layers of reclamation; vicinity of SSMH5

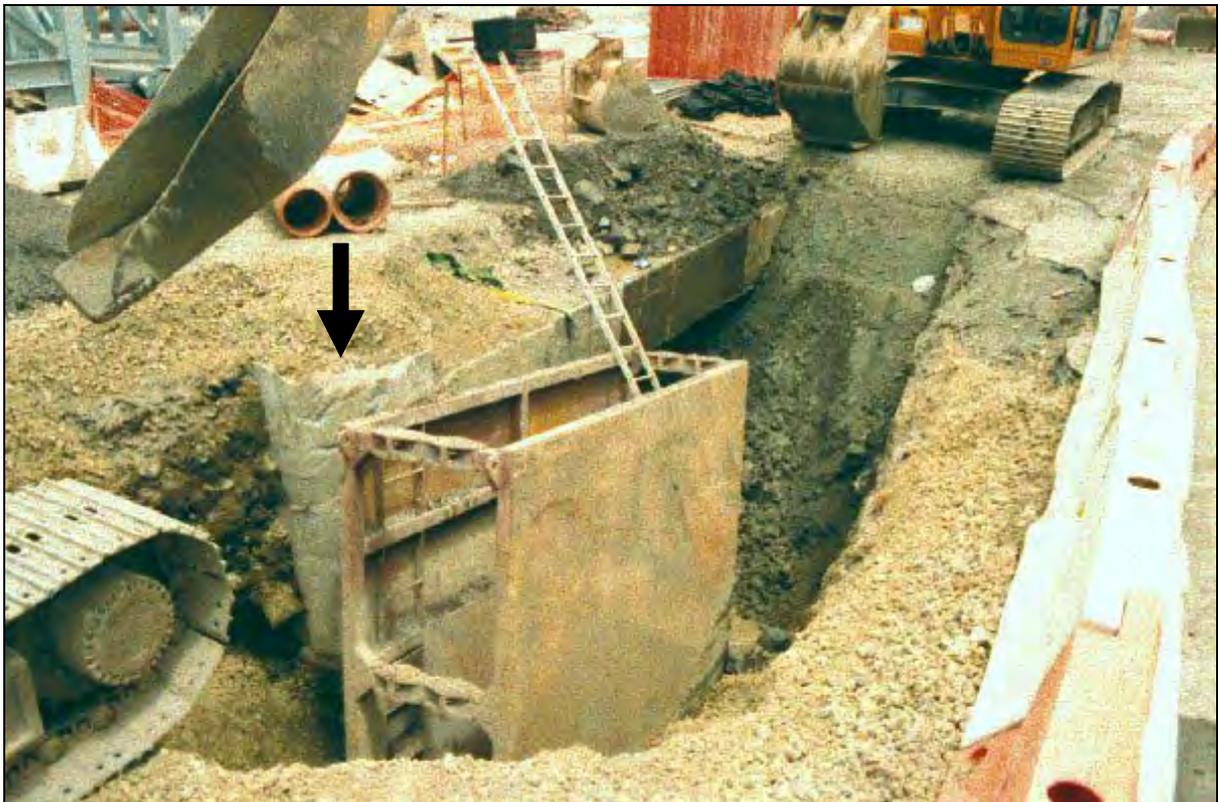


Figure 71. Sanitary sewer trench west of SSMH7; Former column and beam of transport centre car park. Octagonal column indicated. The trench workmen's safety box is mid-trench

Chief Post Office Excavation

The Old Chief Post Office⁵⁵

The history of its establishment is marked by controversy. In 1901 the General Manager of the Railways Corporation suggested, 'that the land between Auckland Station platform and Queen Street be utilised by the erection of a public building for centralising the various public offices of the City'.

The Railway Chief Engineer said in 1904: 'The land referred to is the portion of the passenger yard and approach yards fronting Queen Street. It is entirely impossible to consider giving up any portion of it. The existing accommodation is even now insufficient and no instalment could be contemplated. It is quite likely that in future it may be necessary to build a new Railway Station on the Queen Street frontage.'

Built between 1909 and 1912 on railway land beside the Queen St Railway Station, the CPO was the hub of the city, an important state building and meeting place. On either side of the CPO ornamental arches were built that at the time led to the Queen St Railway Station on the site of the recent Bus Terminal.

Controversy surrounded the building of the arches. Railway engineers said they would restrict traffic, Post Office officials said they would add to the beauty of the CPO 'and conceal the severely practical buildings behind the Post Office'. In the early 1930s after the completion of the Beach Road Station, despite appeals to the Prime Minister, the Railway Department demolished the arches.

Continued on next page

⁵⁵ Source: <http://www.aucklandcity.govt.nz/council/projects/britomart/historic.asp#cpo>.

Chief Post Office Excavation, Continued

Foundations Revealed

Excavation of the interior of the CPO building revealed the original columns used in the building (Figure 72a, b). Internal columns were constructed with a steel core fixed into the base foundation of the building and then bricked over. This brick was then plastered over. Decorative false plinths were then constructed around the base of the columns as shown in Figure 72c.

Exterior walls were made of concrete with some concrete piles (Figure 72d). The CPO basement was excavated to a depth of c.2m to 3m over the designated areas, including the narrow passageway c.3m to 4m wide trenched through the western under-side of the CPO linking into the Concourse excavation. The eastern end of this development included the refurbishing of the structural columns of the building as well as the stabilization of the outer walls and the concreting of the floors.

Excavation was done using small mechanical excavating machines exposing the column bases and walls in the reclamation. Artefacts from the basement were similar to the rest of the reclamation artefacts, although no indications of the more solid and substantial clay and sandstone fills were noted, as deeper excavation into the base layers of the Post Office subsurface was not required.

Leather footwear, metal off-cuts, a limited quantity of ceramics and glass ware and organic and wooden artefacts were not as frequent as in the main eastern reclamation excavation of the railway station. An unidentified leather artefact consisting of a leather sheath with brass or copper rivets along its length was of interest (Figure 72e).

On the roof investigations of the exterior wall showed that additional concrete had been added to the wall at some point (Figure 72e). This was laid on newspaper and a date of March 1940 was found on one piece. This suggested that the top of the CPO building was probably modified for additional security during the war. The remaining photographs (Figure 72f-j) shown below illustrate the refurbishment of the stonework of the towers on top of the building.

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Chief Post Office Excavation, Continued

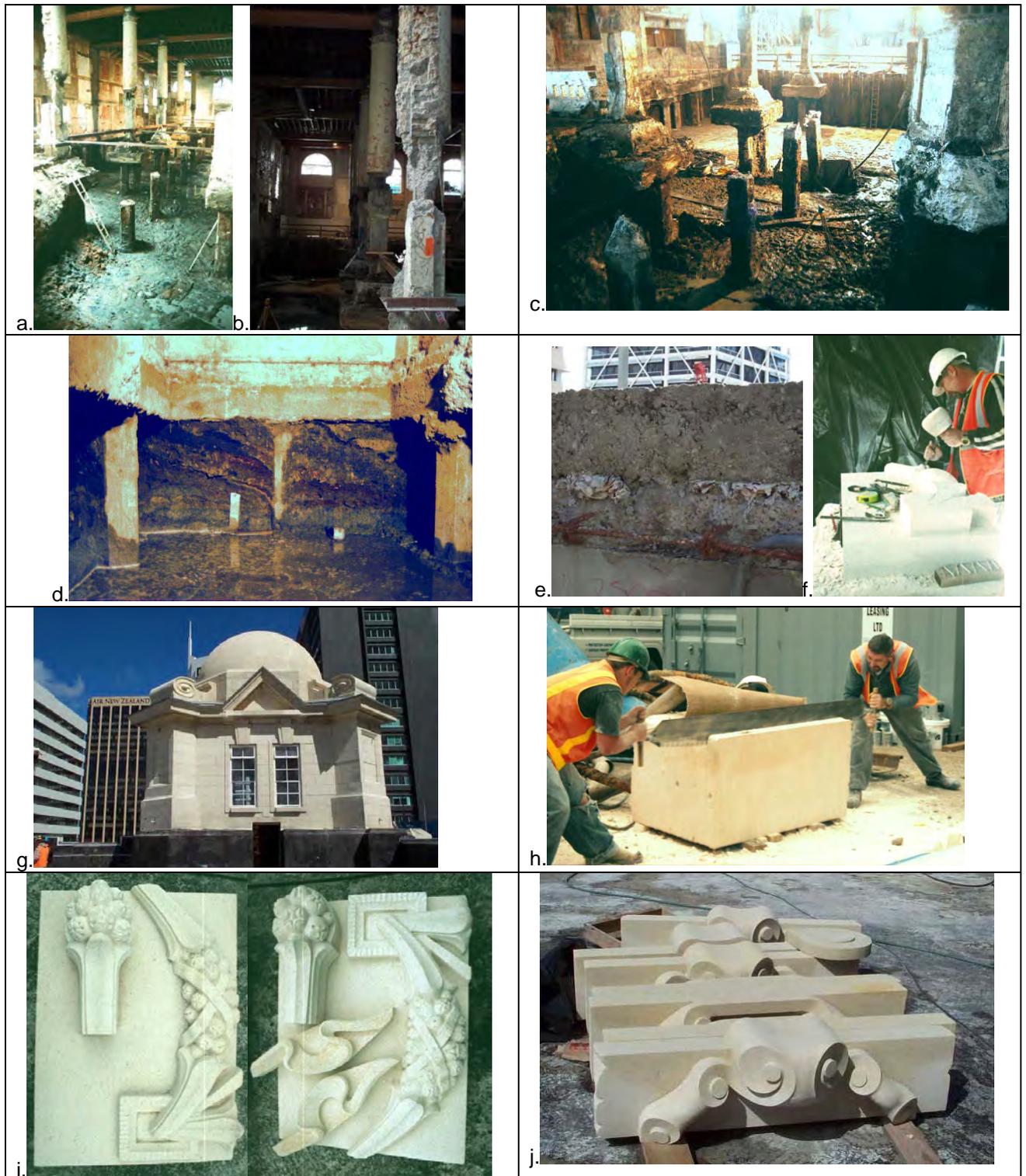


Figure 72. CPO Excavations: a-b. View internally showing pillars and area excavated; c. Area B - internal piles; site concrete poured; d. View W showing W baulk of internal excavation of CPO prior to breaking through into 'Concourse' outside; concrete columns to (L), (R), and centre; reclamation dumpings visible including scoria, tin, charcoal, clay, soil, ceramics, and mud; e. Concrete attachment on roof of CPO; f. Stonemason Jerry Smith; g. Roof of CPO; h-j. Oamaru limestone for facing – stonemason Jerry Smith

Chapter 4: The Railway Station

Introduction

Summary The 1885 railway station was a significant building in Auckland's history and its archaeological remains are described here. This chapter discusses the origins of the building, its construction on the reclamation and its subsequent demolition. Given that the demolition was fairly thorough and the area used as a bus station, the main remnants of the railway station consisted of some debris and foundations.

Sequence There have been four railway stations serving the centre of Auckland. The original Point Britomart station was built on the original point. The building was moved onto the new 1885 site and used as a Guard station. Changes to 1885 station were carried out around 1908 with the building of the Chief Post Office. The station was demolished after a new station was built in Beach Rd. In 2003, though, the new Britomart station opened under the original location of the 1885 station. The sequence is summarised in Table 4.

Table 4.
Sequence of
Auckland central
transportation
buildings

Time Period	Description
1874-1885	Point Britomart Station (off site)
1885-1930	Queen St Station
1930-2003	1930 Station (off site)
1930-2000	Central Bus Terminal
2003-	2003 Britomart Station

Stratigraphy Figure 73 illustrates the stratigraphy observed in the railway station area. The remains generally consisted of a concrete platform representing parts of the 1930 bus station. Brick footings were also observed and probably represent other structural remains of the Bus station. However, below was the reclamation fill. In the fill were many of the wooden piles supporting the 1885 Railway building (Figure 74).

Continued on next page

Introduction, Continued



Figure 73. Stratigraphy relating to the Railway building area



Figure 74. Railway building piles in reclamation

Point Britomart Station

Fort Britomart Chosen for New Auckland – Onehunga Rail Link

In 1864 it was proposed to build a railway line linking Auckland with Drury, but it would be several years before work began on the southward line from Auckland. In August 1872 Fort Britomart was chosen as the northern terminus of the railway line that would link Auckland with Mercer and on 10 August the first contract for the construction of this railway was signed.⁵⁶

Reclamation work was under way to form the Auckland station site in 1873.⁵⁷ In December 1873 the line between Auckland and Onehunga had been completed and the first passenger train ran along the tracks.⁵⁸ As the Auckland terminus was devoid of facilities for passengers a temporary platform was erected for the convenience of the public.⁵⁹

Plan for the Station

Plans for the Auckland station were drawn up in Wellington and it is likely that the architect was William Clayton, who held the post of government architect at the time.⁶⁰ Five tenders were received for the task of erecting the station buildings on the Auckland–Onehunga line. The lowest of these tenders, that of Daniel Fallon, was accepted.⁶¹ Fallon was responsible for many local public works. He had worked as a contractor since his arrival in Auckland in 1865. He was engaged to construct several railways in the Auckland region and also worked on the reclamation works at the Auckland waterfront.⁶²

Completion of the Railway Station

By mid February 1874 the station building was complete and the construction of the railway sheds was nearly finished. The station building consisted of a ‘station-master’s and ticket clerk’s office, and waiting room for passengers’.⁶³ At this time the *New Zealand Herald* reported that:

‘The station-house is only intended to be of a temporary character, as it is contemplated to erect permanent buildings nearer the “cutting,” alongside the projected roadway from Fort-street to Parnell.’⁶⁴

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⁵⁶ *New Zealand Gazette*, 1872, p.652 and *New Zealand Herald*, 26 November 1873, p.2.

⁵⁷ Appendix to the Journals of the House of Representatives, 1873, E-2a, p.2.

⁵⁸ *New Zealand Herald*, 22 December 1873, p.3.

⁵⁹ *Ibid.*, 22 December 1873, p.2.

⁶⁰ *Ibid.*, 31 October 1873, p.2.

⁶¹ *Ibid.*, 15 December 1873, p.2.

⁶² *Ibid.*, 29 September 1920, p.8.

⁶³ *Ibid.*, 18 February 1874, p.2.

⁶⁴ *Ibid.*, 18 February 1874, p.2.

Point Britomart Station, Continued

Further Works Further works connected with the railway station were undertaken in 1873 and 1874. Tenders were called in late 1873 for the erection of a carriage shed and engine shed.⁶⁵ Two months later tenders were invited for the erection of a goods shed, painting shed and repair workshop.⁶⁶ Much of the construction work required for the railways was carried out at the workshop.⁶⁷ Here the locomotives were stripped and overhauled. The workshop was equipped with a wide variety of apparatus including lathes, cranes, saws, forges and a wood steamer.⁶⁸

A new goods shed was erected at the Auckland Station in the early 1880s. It measured 200ft by 42ft and was opened in January 1882.⁶⁹

Inadequacy of the Station Despite this building programme, as early as 1881 the General Manager of the New Zealand Railways noted the inadequacy of the existing station at Auckland.⁷⁰ Plans were already in motion to build Auckland's new Railway Station.

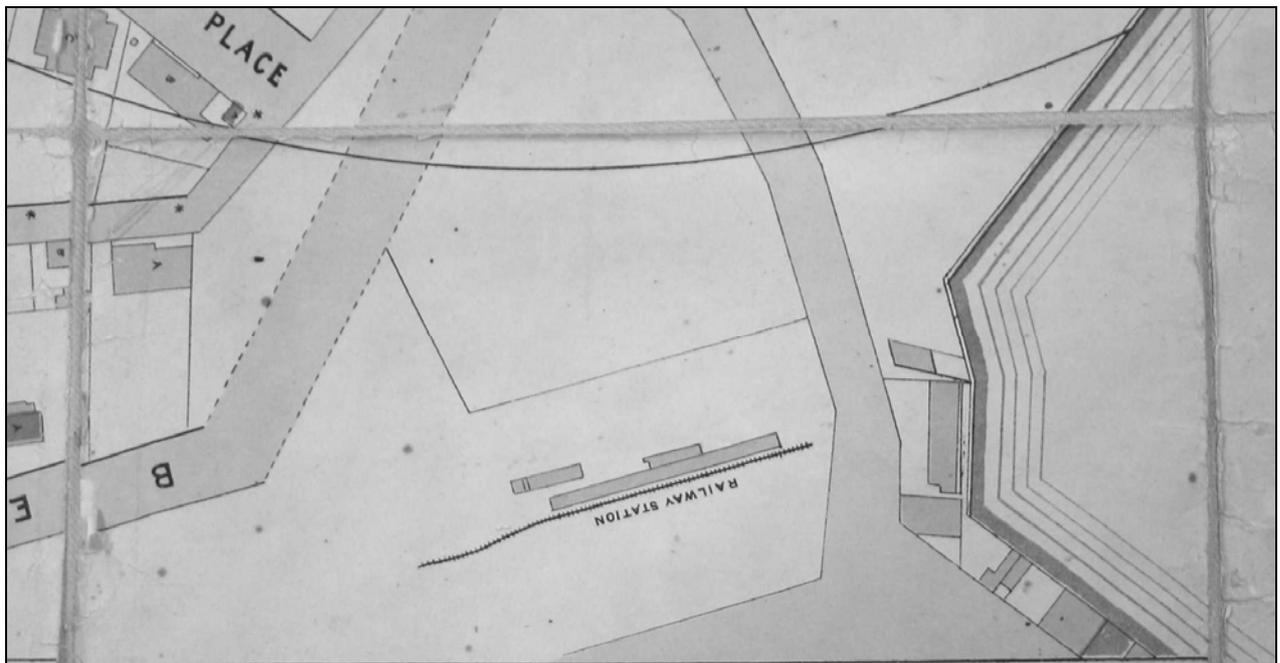


Figure 75. Location of Point Britomart Station (T.W. Hickson, 'Map of the City of Auckland, 1882', Auckland Public Library, NZ Maps 91)

⁶⁵ Ibid., 15 October 1873, p.1 and 15 November 1873, p.1.

⁶⁶ Ibid., 17 January 1874, p.1 and 28 January 1874, p.4.

⁶⁷ Appendix to the Journals of the House of Representatives, 1875, E-3, p.59.

⁶⁸ *Weekly News*, 15 May 1875, p.6.

⁶⁹ Appendix to the Journals of the House of Representatives, 1882, D-1, p.40.

⁷⁰ Appendix to the Journals of the House of Representatives, 1881, D-1, p.67.

Queen St Station

Reclamation of the New Station

In 1879 work began reclaiming the area from Customs St East to Quay St, an area of 18½ acres. The central portion of this reclamation had been earmarked by the government as a railway reserve and it would be the site of Auckland's new railway station.⁷¹ The works were delayed by problems securing sufficient fill. By late 1884 the reclamation was sufficiently advanced to allow construction of the new station buildings to begin.⁷²

Tender

In late July 1884 Dunedin contractor William Ahern was named the successful tender for the construction of the new railway station. The price for the work was £12,165 but the work included all the sheds, yards, and the important foundations required for the station.⁷³ According to the records, these foundations consisted of 36ft long piles with thick concrete pads on top designed to carry the weight of the station, freight, and trains. Hodgson (1992:58) highlights the press comments about the contractor when he had finished the piling that 'the best of his work, like the doctor's, is underground'.³⁵ A list of the main contractors involved with the Railway Station is provided in Table 5.

Personnel Involved in Construction

Table 5. Personnel involved in construction of 1885 Railway station

Name	Title	Responsibility
William Hales	District Engineer for Auckland	Designed the building
Mr Vickerma	Assistant Engineer	Inspected the building for the government
Mr John Witheridge	Clerk of the Works	Government representative for the project
Mr Ahern	Contractor	Main contractor for the project
Mr G. Boyd	Brickmaker	Supplied the ornamental bricks
Mr B. Kane	Brickmaker	Supplied the red pressed bricks
Mr J. Henderson		Painting and decorating
Mr D. Miller	Plumber	Plumbing services
Mr J. Knight	Asphalt	Asphalting
Source (NZ Herald 26 October 1885 p.6)		

Continued on next page

⁷¹ Barr, p.151 and A.W. Reed, *Auckland: City of the Seas*, Wellington, 1955, p.151.

⁷² *Appendix to the Journals of the House of Representatives*, 1884, D-1, p.37 and *New Zealand Herald*, 1 August 1884, p.5.

⁷³ *New Zealand Herald*, 26 October 1885, p.4.

Queen St Station, Continued

The Railway Station Building

Designed by William Hales, the station was a two-storied building of red and white brick with a central tower (Figure 76). The station provided a number of facilities. The top floor contained a number of offices, with ticketing departments on the ground floor along with waiting rooms. Up to 20 officials could be housed in the ticketing department but ‘as there are only two ticket apertures for sale of tickets on race days and holidays the public will have a very lively time of it’.

The building also included a bar and this featured a separate refreshment room for ladies, ‘with small slide opening to the private bar, so as to enable the fair sex to obtain a drop of “summat short”, without subjecting themselves to the gaze of the cynical public’.⁷⁴

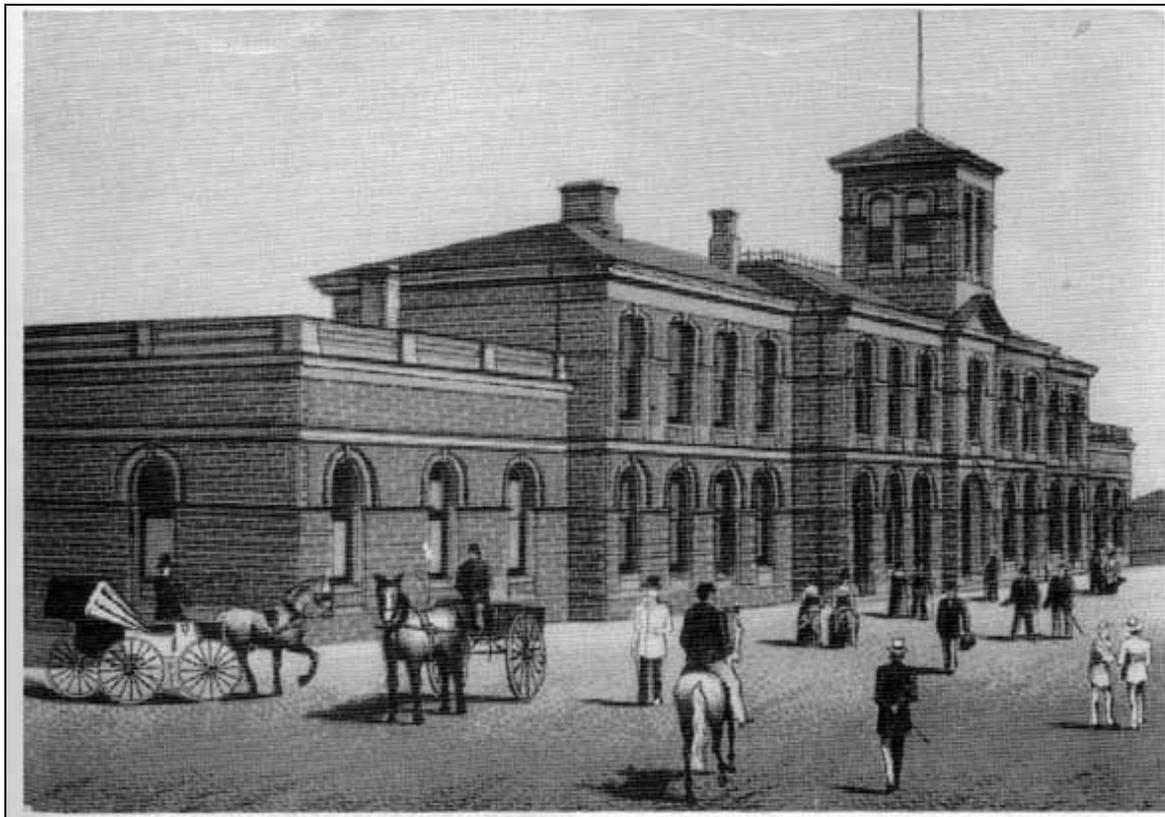


Figure 76. The Queen St Railway Station (from City Scene 23-06-2002 Auckland City Council website)

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⁷⁴ Ibid., 26 October 1885, p.6.

Queen St Station, Continued

Architectural Plans of the Building

The original architectural plans of the building have not been found but a detailed tour of the structure can be found in the *NZ Herald* article on the day of its opening. However, plans were made in 1906-8 when changes were made to the station at the time the Chief Post Office was built, and most of the original internal organisation of the building is shown. This is discussed in the next section below.

Bricks

The *Herald* article highlights a number of the key issues regarding the Railway building. One of the major stresses in the construction was the short supply of bricks of sufficient quality. Two local manufacturers supplied the project, G. Boyd and J. Kane. Boyd was a well established brickmaker and his bricks have been identified on a number of downtown archaeological sites. Little is known of J. Kane.

Although no bricks were found in situ during the excavations, a number of white ornamental bricks, many of them stamped with G. Boyd's name, were recovered in the fill. These are illustrated in Figure 77.

Ornamental Bricks

The Boyd bricks illustrated in Figure 77 show the range of those collected and were probably used mostly for the ornamental parts of the structure. Figure 77a is more unusual, made from a red clay like that of the ordinary bricks used in the structure (see below). The other white bricks show various shapes used around the window ledges. Figure 77d was probably part of an arch and Figure 77f is a corner piece. It is possible to make out the white bricks on the photographs and images of the railway station (e.g. Figure 76).

Red Bricks

The more common red bricks used in the structure may have included hand pressed and machine pressed wire-cut bricks as illustrated in Figure 78, which also indicates use of cement (Portland) mortar. This example contains some of the lime mortar used, although one of the Boyd bricks was recovered with a scoria mortar, so there was variation of building materials used in the building.

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Queen St Station, Continued

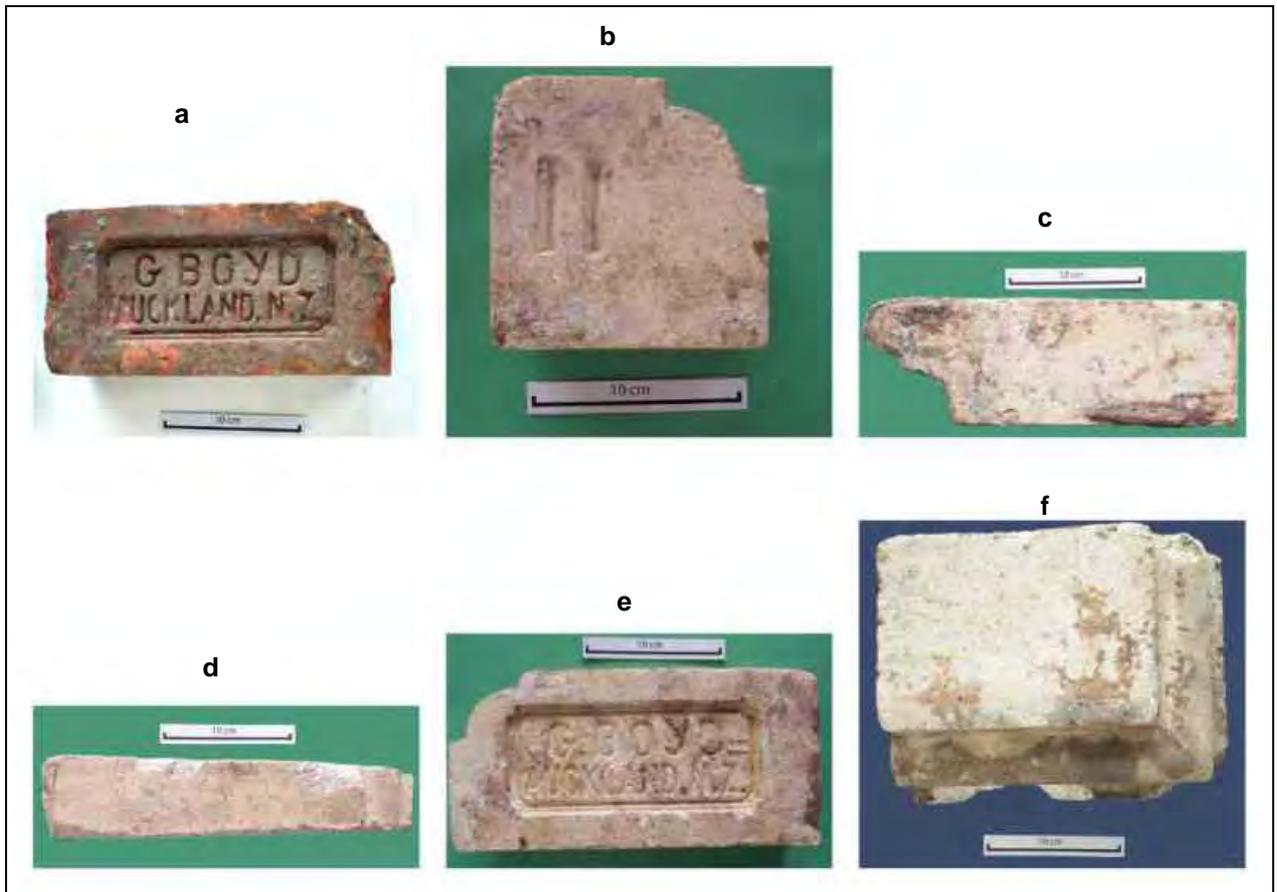
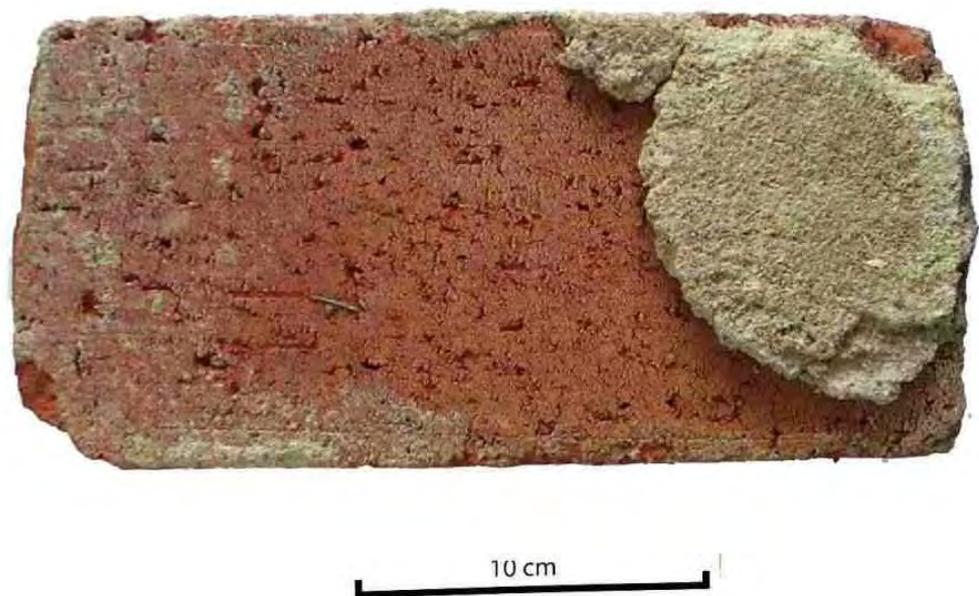


Figure 77. G. Boyd bricks probably from the Railway Station

Figure 78. Red brick possibly made by J. Kane for the 1885 Railway Station



Continued on next page

Queen St Station, Continued

Access The station was accessed through gated entrances in Queen St and Customs St East with a walkway connecting Queen St with Breakwater Rd (now Britomart Place). A large opening to Queen St wharf provided access for goods and pedestrians alike. The remainder of the station site was enclosed by a picket fence separating it from the empty sections surrounding it.

Opening Despite the problems with the brick supply, the station was completed in October 1885 ahead of schedule.⁷⁵ The railway station provided a major boost to the central city, linking the main transports systems within the city and providing a convenient link to the south. The station is visible in Figure 79, a ‘bird’s-eye view’ of Auckland dating to 1886.

Connections to the Past The new railway station included a connection to the previous station as the old building was moved out onto the new site and used as a guard’s hut (Hodgson 1992). As a result of this shift we have a photograph of it (at the left of Figure 80).

Continued on next page

⁷⁵ Ibid., 26 October 1885, p.6.

Queen St Station, Continued

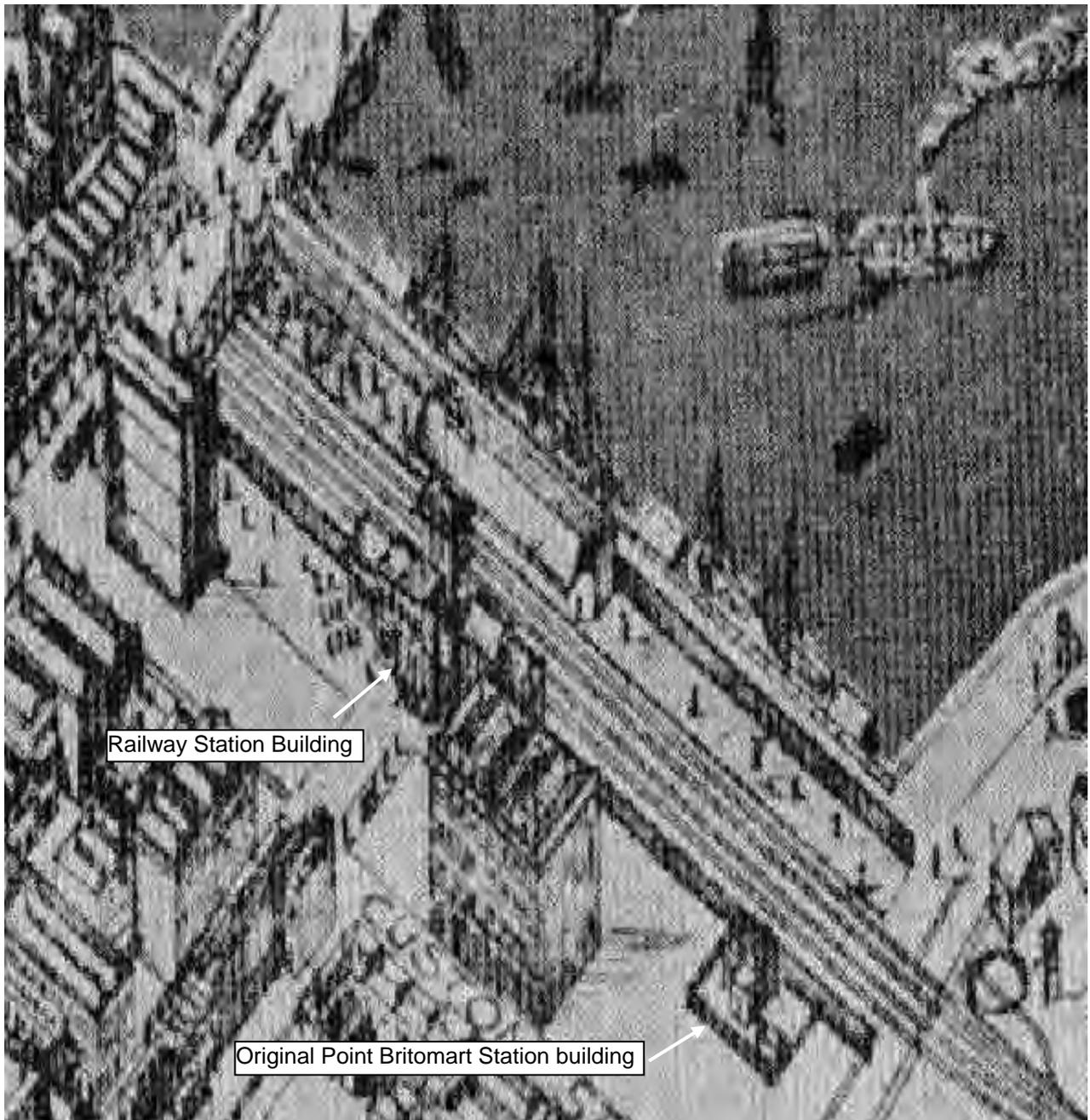


Figure 79. Close-up of Stevens' 1886 bird's-eye view of Auckland showing Queen St Railway Station

Continued on next page

Queen St Station, Continued

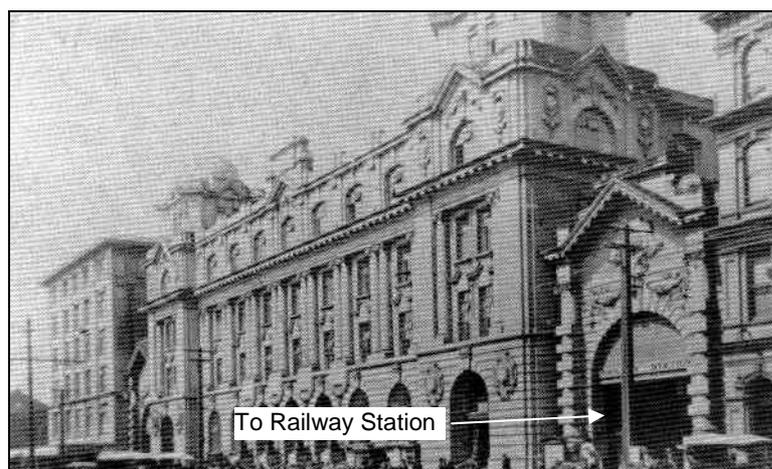
Figure 80.
Queen St Station
1906 (Old Point
Britomart
Station building
left foreground)



The Chief Post Office Moves to Britomart

By 1909 the decision had been made to build the new Chief Post Office building on the land used by the Queen St Railway Station. The building of the CPO required that the railway track be shortened along with the platform to the west. Access to the station was via arched walkways from Queen St to the station building (Figure 81). These changes had major implications for the use of the 1885 Railway Station.

Figure 81.
Former Chief
Post Office with
archways leading
to Queen St
Station (1915).
Source: Henry
Winkelman,
Auckland Public
Libraries
Heritage Images
Online 1-W1325)



Alterations to the Queen St Station

Changes to the Railway Station

The new Chief Post Office forced major changes to the organisation of the Railway Station. The plans drawn up for the changes are illustrated in Figure 82, Figure 83, Figure 84 and Figure 85. These plans usefully give the original internal organisation of the main building as well as the changes carried out to the platform. Two different scenarios are suggested from these plans. The first consisted of repartitioning of the ground floor rooms of the main building with counters, adding to the top floor and shortening the western end of the platforms. The second suggests the demolition of the Railway Station building and the construction of a new building behind the CPO as a new Booking Office (Figure 84).

Proposed Changes 1: Railway Station Building

Figure 82 shows the proposed changes to the ground floor. The original booking office was to be modified so that instead of a straight glass window with openings to sell tickets, the counter could be moved out into the main room with the ticket selling openings created on the four sides. Counters with flaps were also to be added to various offices with accessibility directly from the platforms. On the top floor (Figure 83), the main changes appear to be an addition on the eastern wing to include a new maintenance department. An external passage is proposed but it is not known whether this was built. The platforms would also be shortened as a result of the CPO building.

Proposed Changes 2: Platform and New Booking Office

The more radical option (Figure 84) suggests that the station building is removed with a new booking office (Figure 85) built behind the CPO. The railway station area would have been given over to 'Cabs'. The platforms would of course have been significantly shortened by the changes as well. Originally the departure (southern) platform was 870ft long by 20ft in width while the arrival (northern) platform was 750ft long and 20ft in width. In this plan, the platforms would have been shortened by as much as 300ft with the area made available for the new buildings.

Additions and Improvements to the Station

It is not clear which plan was undertaken. One contemporary reference, the *Appendix to the Journals of the House of Representatives* for 1909, states that:

*'Additions and improvements were carried out during the year . . . The principal works were: Additions to stations and sidings at Auckland, Te Papa, Upper Hutt, Lyttelton, Coalgate, Clinton...'*⁷⁶

This suggests (by omission) that the less radical option, leaving the railway station building, was taken.

Continued on next page

⁷⁶ Appendix to the Journals of the House of Representatives, 1909, D-2, p.xvii.

Alterations to the Queen St Station, Continued

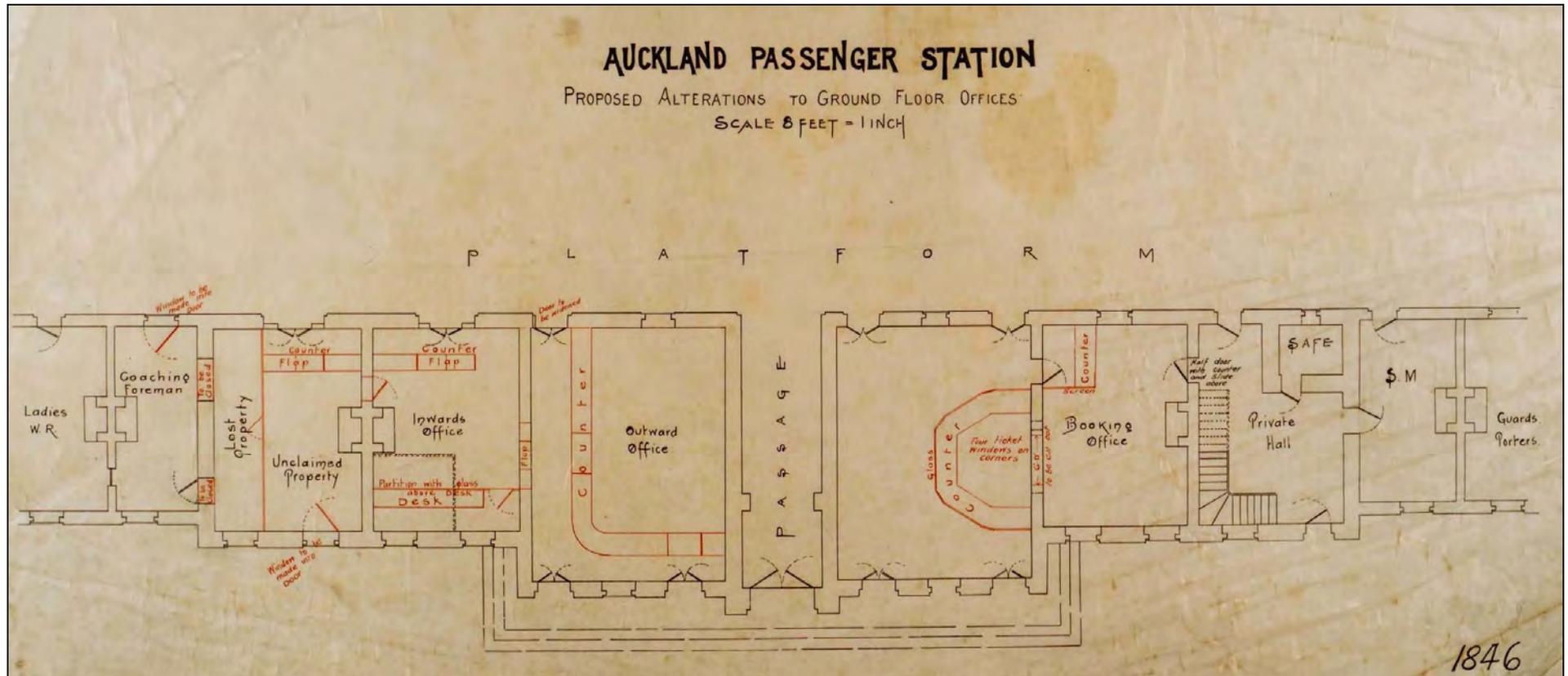


Figure 82. Auckland Passenger Station (Queen St Station) Proposed Alterations to Ground Floor Offices c.1908 (BABJ 14406 A681 F1 1846 Archives New Zealand Auckland)

Alterations to the Queen St Station, Continued

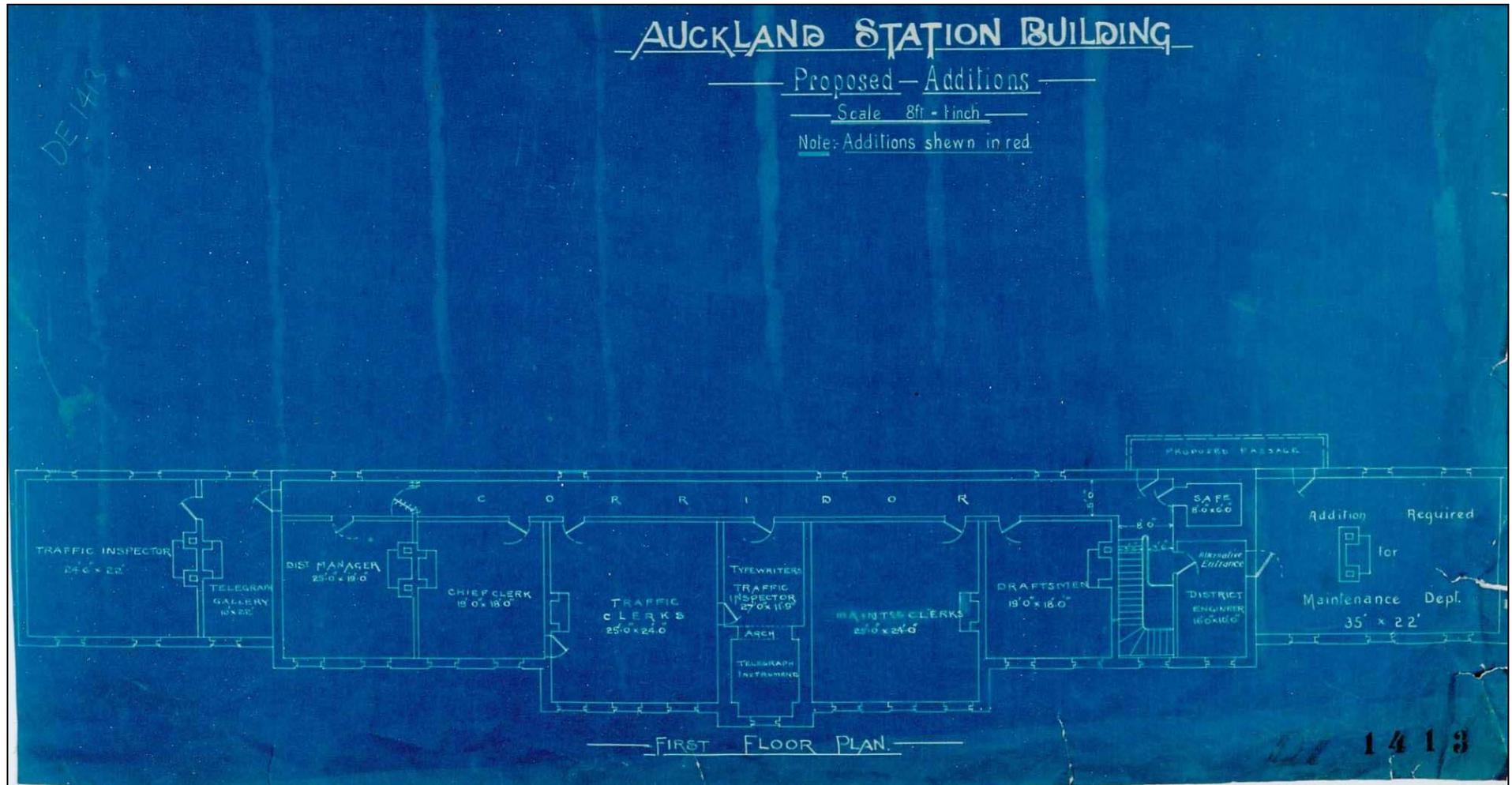


Figure 83. Auckland Station Building (First Floor) - Proposed Additions 1906 (BABJ 14406 A681 F1 1413 Archives New Zealand, Auckland)

Alterations to the Queen St Station, Continued

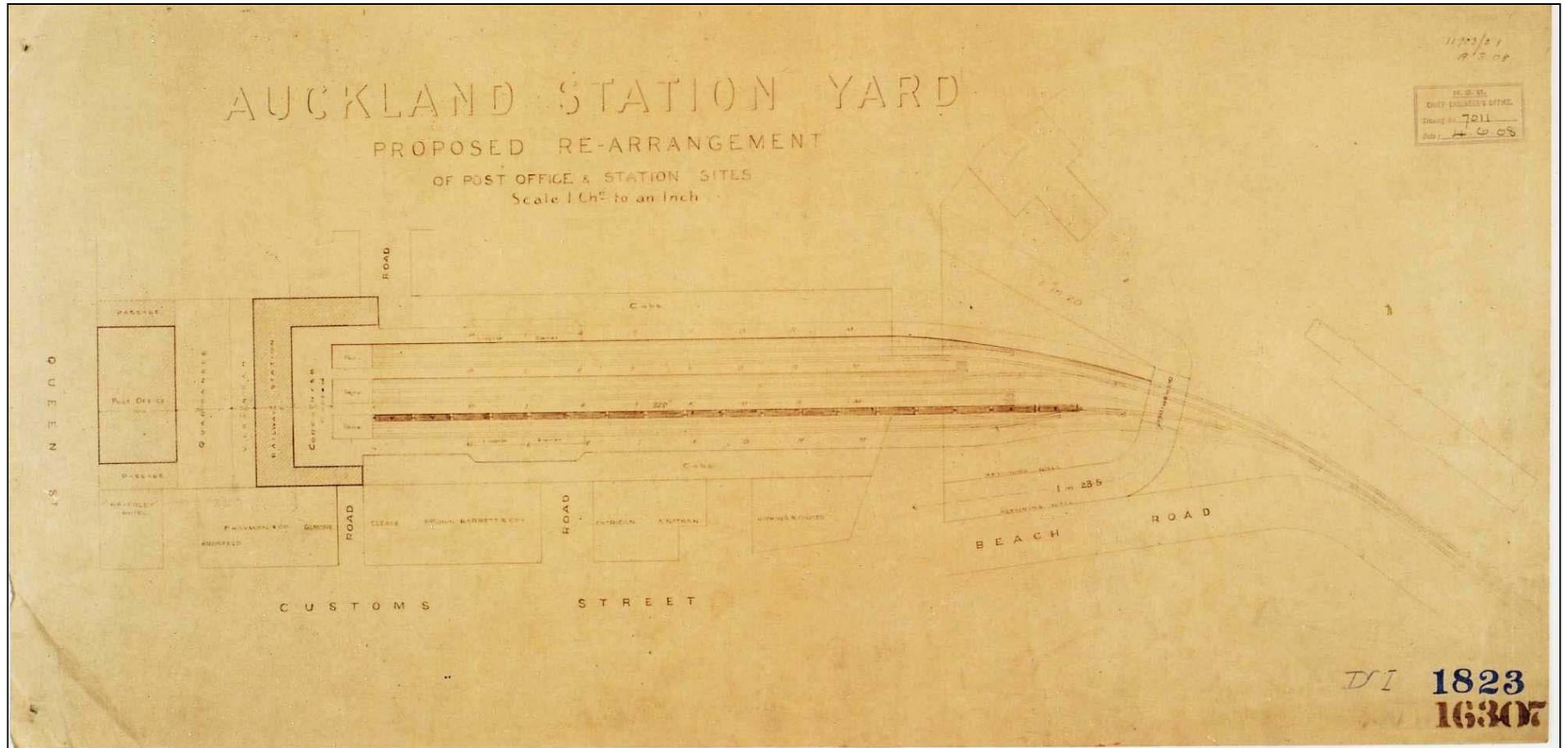


Figure 84. Auckland Station Yard proposed rearrangement of Post Office and Station 1908 (BABJ 14406 A681 F1 1823 Archives New Zealand, Auckland)

Alterations to the Queen St Station, Continued

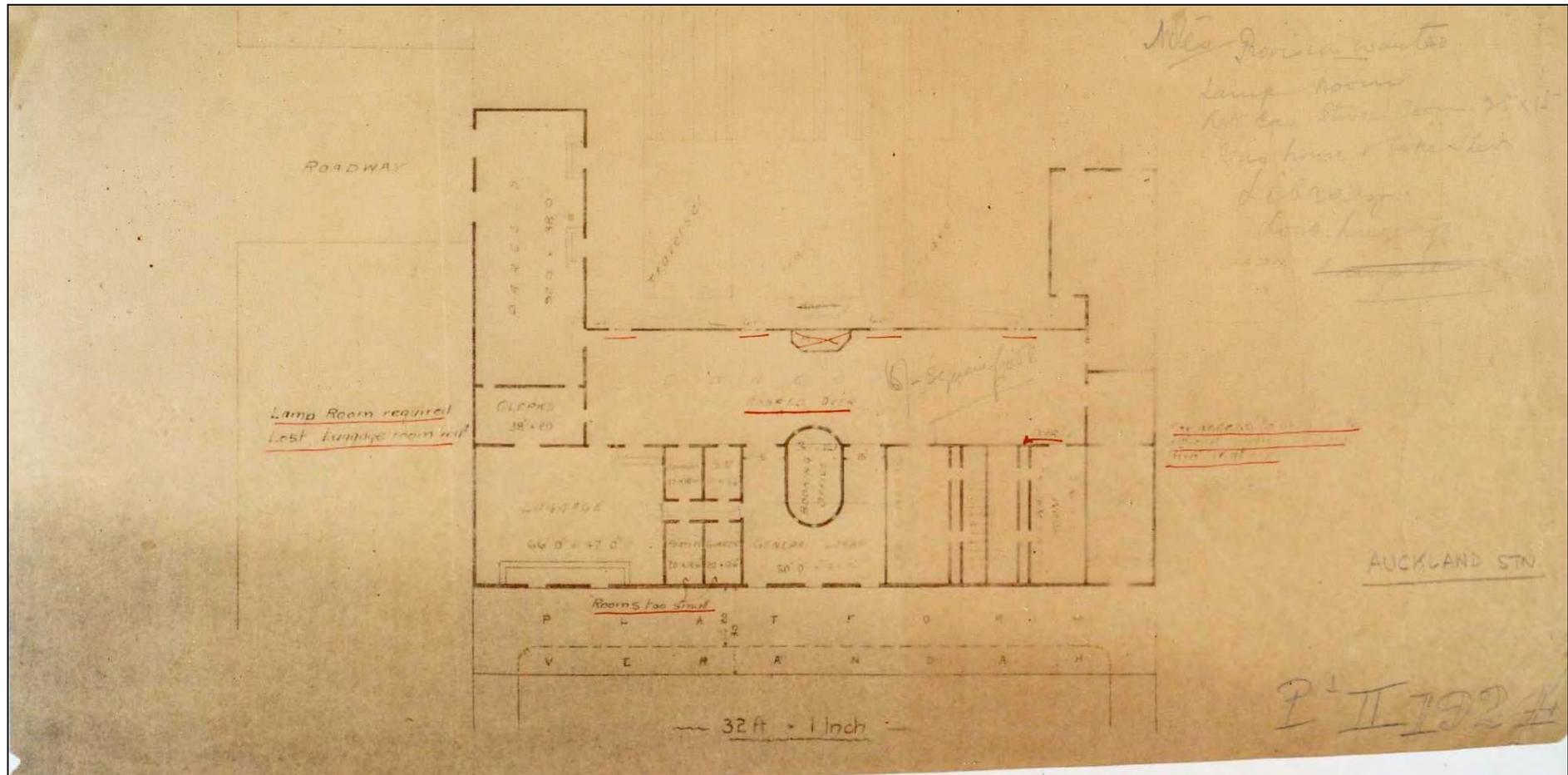


Figure 85. Proposed new Booking Office. Alterations to new Auckland Station Building 1908 (BABJ 14406 A681 LB2 1924 Archives New Zealand, Auckland)

Archaeological Investigations

Earlier Archaeological Investigation

An earlier archaeological investigation in 2000 in the area of the main 2001-3 excavations (Clough and Prince 2001) had turned up possible indicators of the railway system. For instance, a cobble surface and railway sleepers to the east of the railway station building were exposed. The finds were described as follows:

‘A 3.8m x 6.5m area of cobbles with Portland cement mortar used to both bond the individual cobbles and bed the entire area ... Under the northern portion of the cobbled area were uncovered railway sleepers 2.1m long x 0.225m wide x 0.130m thick some of which still had square spikes embedded... A number of the sleepers had checks cut into their upper surface to accommodate the overlying cobbles. The sleepers appear to run out under the road either side of the trench and most likely relate to a siding, part of the 2nd Auckland Rail Station’ (Clough and Prince 2001).

GIS analysis of the original data (Figure 86) suggests that the cobbles were probably part of Breakwater Rd and that no major buildings were built in this area. There were railway tracks running from the 1885 Railway Station in the south of the excavated area as shown in Figure 86.

Archaeological Investigations of the Station Building

Archaeological investigations in the area of the Railway Station building were carried out as piles and beams were exposed during earthworks. These were cleaned down and photographed, and the ends located on the plan. These points were surveyed in and compared with the historical map information (Figure 87 and Figure 88). They show that the remains uncovered relate to the main Railway Station building and in particular the area of the ‘tower’.⁷⁷

Construction

The construction of the Railway Station building was briefly described in the *NZ Herald* article on the opening of the station:

‘It was necessary, owing to the site being “made” ground, to pile the foundations with totara piles thirty feet long, with stringers on top, to support concrete eight feet high, before the brickwork started. All the piles were driven down to the bed rock.’ (NZ Herald 26 October 1885, p.5).

The investigations confirm these observations.

Continued on next page

⁷⁷ There is a slight discrepancy between the locations of the excavated piles and the plan of the station based on the 1908 map. However, given the distortions in process of ‘geo-coding’ the maps this is not considered particularly significant.

Archaeological Investigations, Continued

Piles

Examples of the exposed piles and beams are shown above in Figure 74 and below in Figure 89. Some of the piles had forged metal tips attached for driving in to the bedrock (Figure 89d). The basic T-construction is illustrated in Figure 89e. Totara does appear to have been the main wood used. The piles were generally in two lines about 0.5m apart. In the central area they were spaced between 1.7 – 2.3m apart. In the western part of the building the piles were generally smaller and spaced between 1.4 – 2m apart.

Beams

On top of the piles were large beams placed along the two lines. In the central area the beams measured generally 30cm wide and 35cm thick and up to around 7.75m long (see for example in Figure 89a,b,c and f). Given the weight of the concrete and brick structure it was designed to support this is not surprising. Smaller beams supported by the smaller piles were apparent in the western half of the building (Figure 90, Figure 91 and Figure 92). Scarfing of the joints for strength is illustrated in Figure 93, Figure 94 and Figure 96. The joints were then also bolted together.

The beams were laid on the piles in a variety of ways – flush on top of the bearer, on top of various spacers and on chamfered top rounded piles (see for example Figure 89f and Figure 94). It is not clear what the reason was for the different methods used.

Continued on next page

Archaeological Investigations, Continued

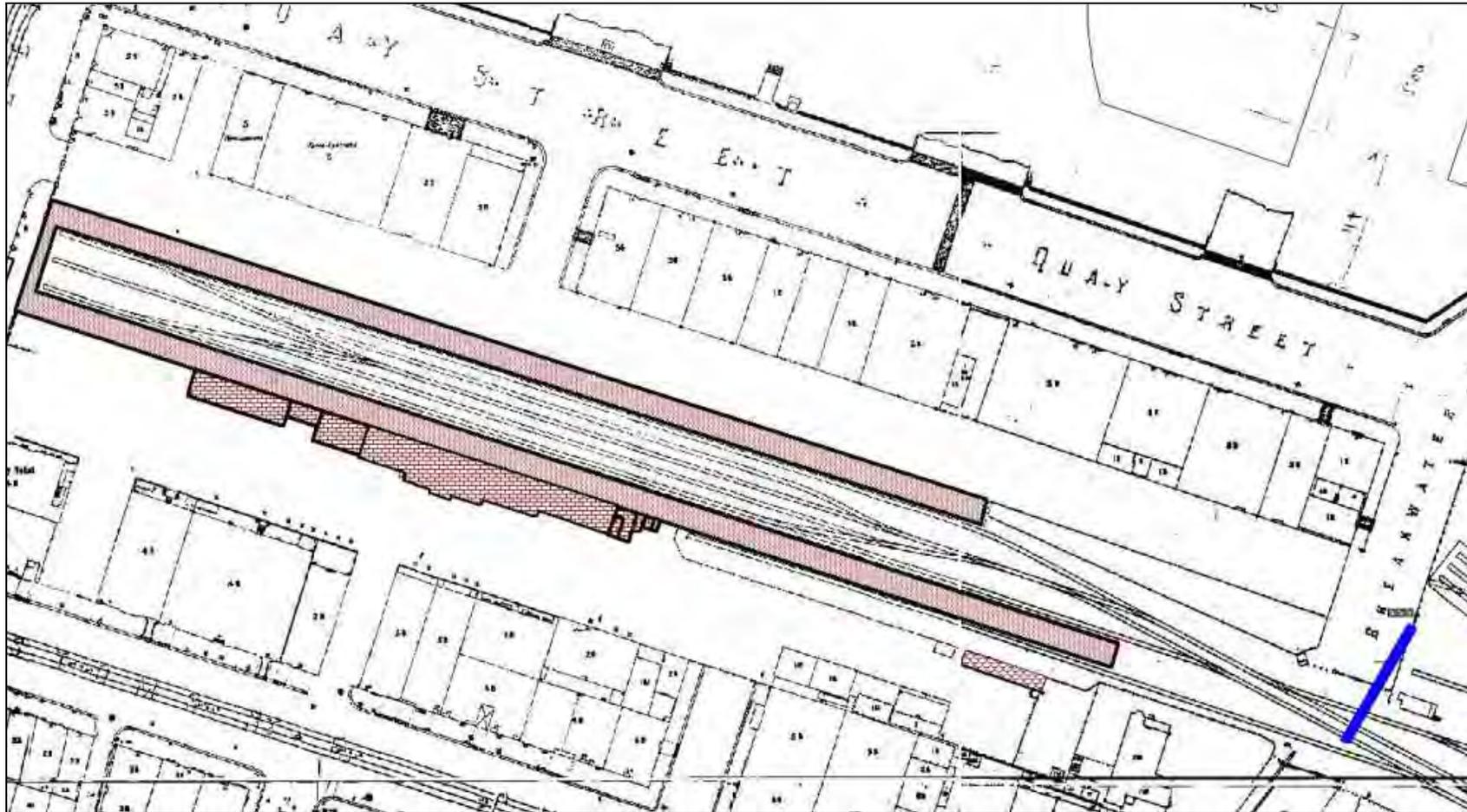


Figure 86. Location of Queen St Railway Station (1908). Cobble surface and excavated trench (2000) shown on right

Archaeological Investigations, Continued



Figure 87. Excavation of railway piles and beams. Aerial photo (2000), location of original station building and platform (1908), excavated piles and beams (in blue and black)

Continued on next page

Archaeological Investigations, Continued

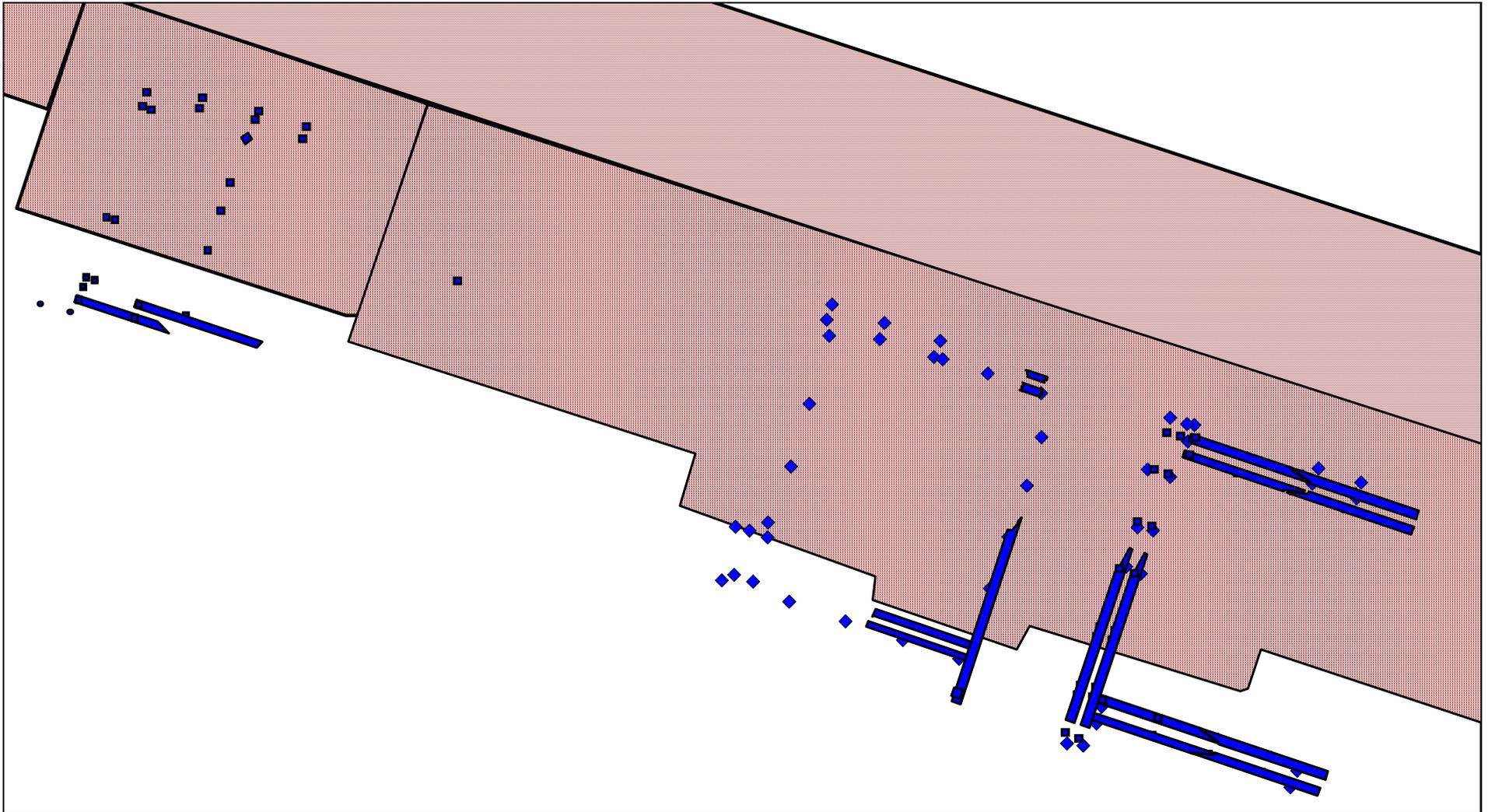


Figure 88. Close-up of piles and beams excavated from the Railway Station building

Archaeological Investigations, Continued



Figure 89. Images of the excavation of the Railway Station building: a and b) Double beams probably under the ‘tower’ area; c) GA-C09, piles and beams; secant piling in rear from G9; d) Forged metal driving point on pile from Railway substructure, Grid 10 A-C; e) Grid A-C9 – beam on piles driven into bedrock; f) Railway Station bearers

Continued on next page

Archaeological Investigations, Continued



**Figure 90. Showing area between G7 & 8 A-D;
Railway Station piles and bearers**



**Figure 91. W corner showing E-W bearers and
butting short N-S bearers**



**Figure 92. SW corner highlighting short bearers and
'spacer'**



**Figure 93. View westwards of short bearers and
spacer; pile below joint**



**Figure 94. Showing close-up of chamfered, top
rounded piles below butting E-W bearer at SE corner**



Figure 95. Showing scarfing joint of E-W bearer

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Archaeological Investigations, Continued

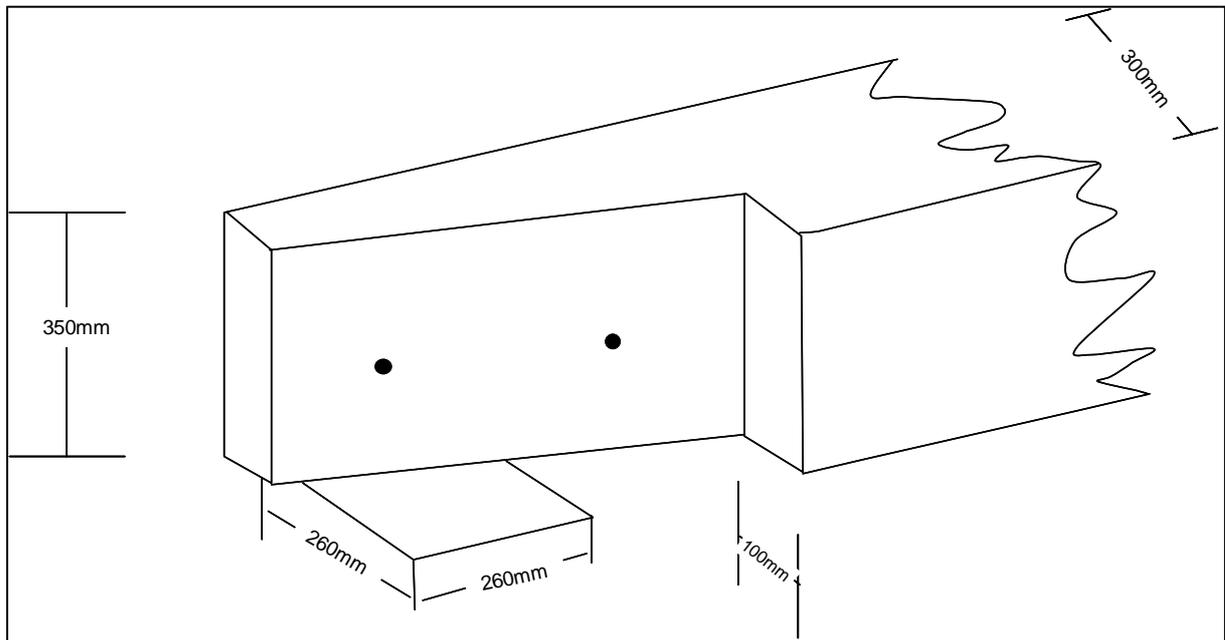


Figure 96. Scarfing joint of Railway Station beam on top of pile

Beach Rd Station: The Rail Leaves Downtown

The 1930 Station

The proximity of the Britomart railway station, the ferry building and the tram terminus brought thousands of people past and through the Chief Post Office each day. However, the national government had other ideas for the area and the CPO was the first phase of a plan to move the railway station to a larger site away from the downtown area. Passenger rail travel in Auckland is yet to recover from this decision.

The Railway Station is Replaced – ‘The last Kilometre’

The ‘new’ Auckland Railway station opened in 1930 in Beach Rd and reaction to it was rarely positive. The grandness of the Beach Rd Railway Station was promptly criticised for its inconvenience and its isolation:

‘It is ironic that the railways, whose network grids the nation should fail Auckland on the last kilometre. Yet it is that short, downtown connection which could put Auckland public transport back on the rails. The railway’s failure is marked by a splendid monument in Coromandel granite, Whangarei marble and New Lynn brick.’⁷⁸

The Britomart Site

Demolition of the 1885 Railway Station building was relatively rapid, as by 1935 the area was handed over to a bus company. The relocation of the Railway Station broke the synergy between the main transportation networks for central Auckland and when trams were abandoned in the 1950s, buses and cars took over. Passenger rail travel schedules declined rapidly from the 1970s and both internal Auckland services and intercity trains became increasingly unpopular.

⁷⁸ Quoted in http://www.akcity.govt.nz/council/projects/updates/britomart_project/historical.asp.

Chapter 5: Industries on the Waterfront

Introduction

Industries and Buildings

This chapter examines artefacts relating to the industries on the waterfront and the use of Auckland harbour as a colonial trading post. Information on the source of some of the items found in the excavations, both from the main reclamation and those indicative of the maritime activities around the harbour, is discussed. Most dramatic was the recovery of parts of a small boat that sank in the harbour.

As mentioned in Chapter 1, recording of the buildings in the Britomart Project Area was carried out by professional architects and the results are described elsewhere (Salmond Architects 1995). Most of the buildings within the historic areas were constructed between the mid 1880s and 1920 (Table 6) as the reclamation of the waterfront continued.

With the reclamation, Customs St was no longer on the waterfront and Quay St became the new coastal road. This changed the nature of Customs St, with smaller buildings increasingly being replaced by larger buildings to house the big merchants. Table 6 shows that many of the standing buildings were built from 1885 and would have been located with excellent access to both the waterfront services and the new railway link across the country.

Large buildings along Quay St on the northern side of the railway station appear from the turn of the 20th century. Kauri gum exporting, sugar importing and shipping services were all located together near the wharves, demonstrating the role of Auckland's waterfront activities in the colonial trading network.

Continued on next page

Introduction, Continued

Table 6. Heritage buildings on the Britomart Block (those to be retained in shaded cells)

Building	Address - Lot No.	Functions	Date
Barrington Gallery	10 Customs St	Warehouse for general merchant - Gustav Kronfield (Pacific Island trade). 1935 John Bates & Co - china glass and fancy goods	1904
Sofrana House	14-18 Customs St	Shipping Merchants Hayman & Co. - household goods, watches	1899-1900
Levy Building	20 Customs St	Importers (tea, coffee, groceries) (Gilmour, Younghusband & Co. YWCA WW2 to provide for social needs of women)	c. 1896
Excelsior House	22 Customs St	Tea, coffee and spice merchants (Brown, Barrett & Co). 1900 Saddlery, Wiseman & Sons	1897/8
Stanbeth House	26 Customs St	J. Coupland - produce merchant, grass seeds, horse feed. 1890s bankrupt. Rear of building added 1908	1885
Masonic Club	26-28 Customs St	John Buchanan - general merchant - built at end of speculative boom lost in depression. Later publishing. Annexe for tea, coffee & spice merchant	1885
Buckland Building	30-34 Customs St	John Buchanan - general merchant - built at end of speculative boom lost in depression. Brown and Barrett coffee roasting house to rear of 30	1885
Australis House	36-38 Customs St	A.J Entrican & Co - general merchant, butter export	1903-4
A.H. Nathan	42-44 Customs St	A.H. Nathan - groceries, wines, spirits, musical instruments, kauri gum (small annexe southwest warehouse and condiments factory)	1903
Britomart Service Station	48 Customs St	Service Station	1923-4
Hipkins & Coutts	50 Customs St	Wines and spirits, distributors of Speights from Dunedin (bulk for bottling)	1904-5
Charter House	54 Customs St	Engineering supplies, also occupied by Wilson's cement, and later Tingey & Co. (1930s)	1921
Kiwi Tavern (Twigg Building)	2 Britomart Pl.	Worrall's crockery importer later marine engineering	1911
Wharf Police Station	2 Quay St	Colonial Sugar Co.	1903-4
NZ Harbour Board Employees Union	4 Quay St	Samuel Rawnsley & Co - kauri gum merchants and exporters	1907
Quay Building	8 Quay St	New Zealand Laundry Co. later seed merchants, radio importers and manufacturers. Auckland Harbour Board workshops	1906
Union Fish Co.	16-20 Quay St	Marine engineers, car importers	1904-5
Northern Steamship Co.	22-24 Quay St	Coastal shipping - gum, flax, farm produce	1898
Chief Post Office	12 Queen St		1910
CPO Annexe	Commerce Galway Sts		1930's

Bricks and Mortar

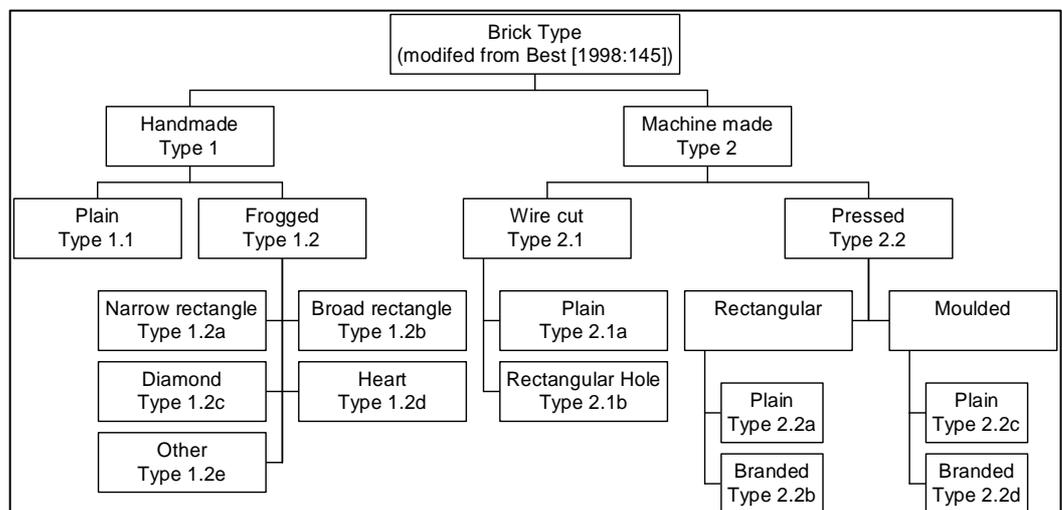
Bricks

A small number of bricks were recovered from various locations in the reclamation fill. The bricks are classified according to the manufacturing method (Figure 97); the methodology is based on a system described elsewhere for Auckland brick makers (see Best 1998:145ff, description of excavations at His Majesty’s Theatre). Recognition of manufacturing technique provides a general guide for dating the bricks, as handmade bricks were generally earlier than the machine-made ones, although there was considerable overlap in the mid 1800s.

‘Frogging’ on handmade bricks involves pressing a shape out of the brick before firing and in that way labelling the brick. It is not known whether individual brickmakers in Auckland were rigorous in applying frogs to mark their bricks but it is likely that this occurred.

Machine made bricks are generally more uniform. Wire-cut bricks are identified by the wire ‘drag’ marks across the surface of the bricks and are generally plain and undecorated. Pressed bricks could be either the standard shape or could be moulded to provide a range of ‘architectural shapes’ useful for window ledges and more decorative designs. Figure 98 shows a sample of the bricks found in the reclamation.

Figure 97.
Classification of
historic bricks
according to
manufacturing
method



Continued on next page

Bricks and Mortar, Continued

Manufacturers Only one of the brick manufacturers, G. Boyd, could be reliably identified (Table 7). A fragmentary brick made from a yellow clay marked '[B.]B.C.' was found and is known from other Auckland sites (e.g. Wynyard St, Bickler et. al. in prep). This may be a British brick (S. Best pers. comm.); it does not preserve well.

Table 7. Types of bricks recovered during Britomart excavation

Brick Type	Description	G Boyd	Unknown
1.1	Handmade plain		3
1.2a	Handmade narrow rectangle frog		1
1.2c	Handmade diamond frog		2
2.1a	Machine wirecut		7
2.1b	Machine wirecut hole		1
2.2a	Machine pressed plain	1	3
2.2b	Machine pressed branded	2	1
2.2c	Machine pressed moulded plain	6	1
2.2d	Machine pressed moulded branded	5	
	TOTAL	14	19

G. Boyd The most unusual bricks found were a collection of G. Boyd architecturally moulded bricks that may have come from one of the earlier buildings in the region. Photographs of the period illustrate that these types of bricks were common on buildings as decorative features (*Auckland Weekly News*: 1865b 4 & 2(1&2)). Interestingly, though, it is most probable that the white Boyd bricks and some of the machine pressed red bricks made by Mr B. Kane (*NZ Herald* 1885 26th October) came from the 1885 Railway Station (see Chapter 4).

Mortar The collection of bricks also provided further evidence regarding Boyd's brick manufacturing. Boyd had applied for a patent for scoria mortar in 1864 (*NZ Government Gazette* 1864:352), which appears not to have been granted, but scoria mortar appears on a white clay brick found on the site (Figure 99) impressed with G. Boyd's mark.⁷⁹ Mortar found on other bricks was, however, the more common lime based type.

Continued on next page

⁷⁹ Thanks to Simon Best for bringing the patent application information to our attention.

Bricks and Mortar, Continued

Figure 98.
Bricks recovered
from Britomart



Figure 99. G.
Boyd, scoria
mortar on brick



Lighting

Lighting

Gas lighting had become available in Auckland during the 1870s but lamps burning other fuels such as kerosene, paraffin, and other petroleum-based products were common. Candles continued to be used in many circumstances.

Light fittings were chosen to integrate with internal architectural features (Figure 100). Those recovered from the fill included glass bottomed lamps in various colours. Candlestick holders found in the fill included metal, glass (Figure 100d) and ceramics (Figure 100e-g).

Figure 100.
Glass lamp
fragments and
ceramic
candlestick
holders from the
reclamation



Merchants and Warehousing

Warehousing Unfortunately, few remains were recovered that related directly to the warehousing and merchants that occupied the waterfront. Doing business on the waterfront, though, was a major operation and employed a large number of labourers and administrative staff and must have generated a significant amount of debris, some of which would have ended up in the reclamation fill but is not clearly identifiable with the warehousing. Some items that could be attributed to the warehousing facilities include tags that were wired around items imported into New Zealand. Two examples are shown in Figure 101. The markings include the royal crest (Figure 101a) as well as prizes awarded to companies at international exhibitions (Figure 101b).

J. & J. Whitehouse The first tag (Figure 101a), marked J. & J. Whitehouse, probably comes from products manufactured by Jabez and John Whitehouse, Phoenix Foundry, Castle St, Tipton, in the UK⁸⁰. The English foundry manufactured a range of items including iron weights. The royal seal implies that they were suppliers to the British royal family.

W. Cooke & Co The second tag (Figure 101b) is a First Class Award badge given to W. Cooke & Co., a Sheffield (UK) company, at the Sydney International Exhibition. Six international exhibitions were staged by the Australian colonies in the late 19th century, the first in Sydney in 1879.⁸¹ Over 6,000,000 visitors attended the exhibitions. It was an opportunity to show how the Australian Colony and British Imperialism were ‘progressing.’

In the Sydney International Exhibition’s sumptuous, purpose-built, fast-tracked building which was erected in the precincts of power in the outer domain of Government House, a life-size statue of Captain Cook, symbolising discovery and enlightenment, enjoyed a place of prominence.

Awards were given out to exhibitors, including those from various industries and artists. W. Cooke & Co⁸² specialised in wire ropes and horseshoes (Figure 102). Both these items were found in the reclamation but it is not possible to identify them with this manufacturer.

Continued on next page

⁸⁰ <http://home.clara.net/brianp/namesqz.html>.

⁸¹ <http://www.powerhousemuseum.com/opac/A5937.asp>.

⁸² http://freepages.genealogy.rootsweb.com/~engsheffield/g_bennett/cooke.htm.

Merchants and Warehousing, Continued

Figure 101.
Tags used in
packaging
materials on
imported items

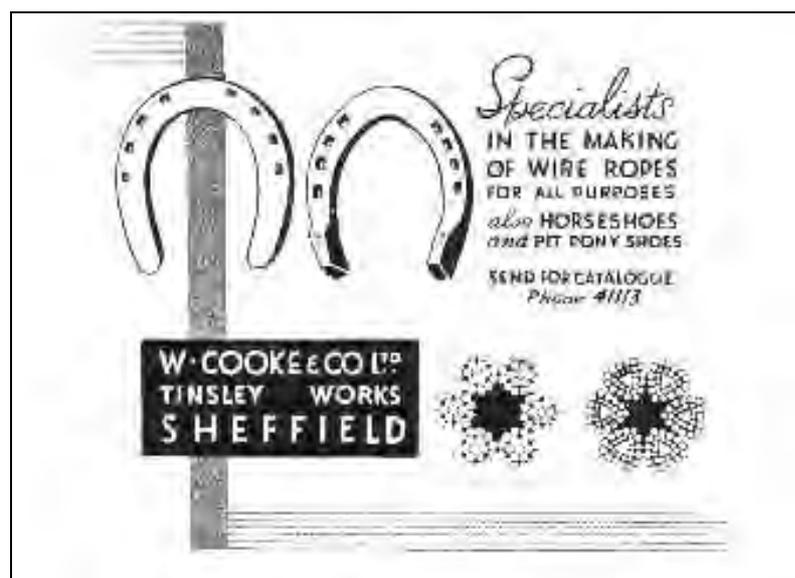


a



b

Figure 102.
Advertisement
from W. Cooke
& Co Ltd.
(http://freepages.genealogy.rootsweb.com/~engsheffield/g_bennett/cooke.htm)



Timber

Timber

As the buildings suggest, a wide range of industries were centred on the waterfront. As discussed in Chapter 1, timber was a major part of the local economy with imports and exports requiring the construction of the timber wharf east of the Gore St jetty. Timber was stockpiled in large quantities. Along with kauri gum (e.g. Figure 103), large logs (Figure 104) were found in the main reclamation fill and date to before the early 1880s and the reclamation.

Figure 103.
Kauri gum
fragment from
reclamation fill

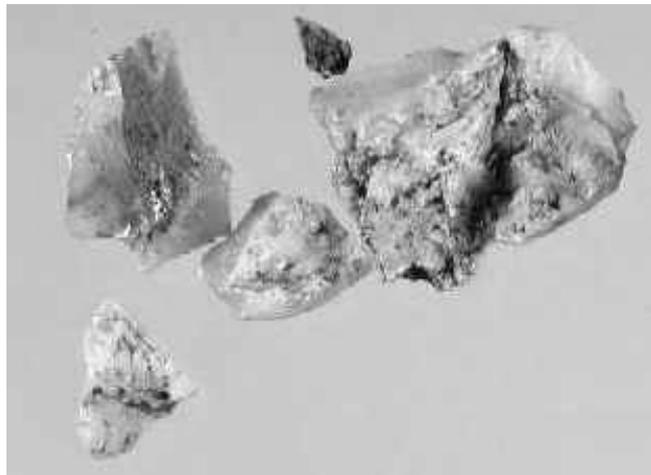


Figure 104. Log
with bark on, on
sea bed (Sampled
GD-E07)



Writing Materials

Doing Business Artefacts recovered that probably relate to the businesses include writing implements. Although commonly found in historical sites in New Zealand in both domestic and industrial settings, it is likely that most of these items relate to the waterfront industries.

Items recovered included:

1. Glass and stoneware ink bottles
2. Slate pencils
3. A pen nib with the remains of the wooden shaft.

These are described in detail below.

Ink Bottles

A total of 29 ink bottles were identified in the Britomart fill (Table 8). Two were glass while the rest were stoneware. The two glassware bottles were made up of fragments and included:

- One small shear top rectangular sampler/traveller's ink similar to one at Hall House (Best and Turner 1997:43/46).
- One large 'bell' shape ink with unusual ground lip embossed 'F.M. & Co.' on the side

Twenty-seven stoneware bottles were identified as ink containers and included a range of sizes and shapes (Figure 105). Two 'penny-ink' bottles (Figure 105), so called because that was how much they cost, were the smallest of those recovered. The rest were larger and included very large bulk purchase containers.

Continued on next page

Writing Materials, Continued

Table 8.
Stoneware ink
bottles from the
Britomart
reclamation

Number	Description ⁸³
2	Penny ink
4	Flared lip high gloss brown glaze round jars embossed 'Encre Japonaise/ N.Antoine & Fils' (Best Gaol Site Table Appendix D.) 2 large, 2 medium were identified
4	Medium brown glaze short neck round type – 2 bases, 3 tops with spouts. 1 stamp above base 'Stephens/Aldersgate St/London'
2	Two small round brown base halves only – both have ink residue – could be blacking?
6	Six large short-necked brown glaze types: – 4 with flared lip, 2 with spout. Four with manufacturers' marks stamped on them: <ul style="list-style-type: none"> • 1 – 'J.Bourne & Son?Patentees/Denby Pottery/Near Derby/870' • 3 others with 'Stephens/Aldersgate St/London'
1	One orange tan round medium ink with 'square' top with cork and 3 separate stamps: <ul style="list-style-type: none"> • 1 on base 'Doulton Lambeth' on side • 'Stephens/171 Aldersgate St/London' and • registration mark on other side giving date of 28th March 1876'
8	Ink bottle fragments

Manufacturers Represented

The manufacturers represented in the collection include Stephens of London and J. Bourne & Son, Derby and Blackwood & Co. These English ink suppliers date from the mid-1800s onwards with J. Bourne & Son supplying inks between 1850-1861 (Godden 1964:89-90). One less common bottle, with a square top and cylindrical body, is stamped by Stephens of London, but the bottle was made by the famous Doulton, Lambeth pottery that operated between 1858 and 1956 (Godden 1964:214).

One French manufacturer, N. Antoine & Fils, was also represented and his products were characterised by a high gloss finish on the stoneware. Although only brown bottles were represented at Britomart, it is also known that the same bottles have been found in vibrant cobalt blue glass overseas.

Pencils and Pens

Slate pencils and a pen nib were also recovered from the reclamation.

Continued on next page

⁸³ Source information includes: Macready and Goodwyn (1990:46), Godden (1983:110), Tasker (1989:86).

Writing Materials, Continued

Figure 105.
Stoneware ink
bottles from
Britomart
excavations

		
<p>F040602/01 cylindrical, cork, 3 separate stamps: 'Stephens 171 Aldersgate St London' on side, 'Doulton Lambeth' on base, Registration Mark giving date of 28 March 1876</p>	<p>F220202/03 dcp_1370.jpg 'Stephens/...Aldersgate St/London'</p>	<p>F220202/03 'Stephens/Aldersgate St/London'</p>
		
<p>F220202/03 'Encre Japonaise/N.Antoine & Fils'</p>	<p>F080402/02 'J. Bourne & Son/Patentees/Denby Pottery/Near Derby/870'</p>	<p>F220202/03 penny ink</p>

Maritime Artefacts

Maritime Artefacts

A small number of maritime artefacts were found in the reclamation fill. Perhaps the most dramatic was a large anchor (Figure 106a) found in 2000 during excavations for the Rail Tunnel around Quay Park (Clough, Prince and Baquié 2000). The anchor is about 1.5m long with a single fluke and may in fact have been a mooring anchor rather than a ship's anchor (Clough, Prince and Baquié 2000:3). It predates the reclamation in that part of the harbour and probably dates from the late 1880s.

Ship's Anchor Chain

On the other side of the site, a ship's anchor chain was found wrapped around a pile during excavations in the QEII Square Concourse excavations (see above). This pile was probably part of the Queen St Wharf and dates to between approximately 1860 and 1885. The chain is 11m long with 251 links, each approximately 62mm long x 45mm wide; the diameter of the link shank is 19mm (Figure 106b). Measurements were based on 10 random links in the chain, and not considering original size by extrapolation. The links are of forged metal and some are very worn and thin, especially where links join and maximum wear occurs.

Adze and Hammer

A large metal bladed adze (Figure 106c) was found that may have been used in boat building activities. It was found near a small whaling boat (see below). A hammer (Figure 106d) was also identified in the fill and may have dropped from a boat in the vicinity of the Queen St jetty or from the jetty itself.

Pipe

One of the pipes found in the reclamation also emphasises maritime activities – smoking was a popular activity particularly for sailors. An anchor motif and a ship are moulded on to alternative sides of this particular example (Figure 106e). Other pipes are discussed below, in Chapter 6.

Continued on next page

Maritime Artefacts, Continued

Shipwrecked Mariners 'Medal'



Perhaps one of the more dramatic items found was a Shipwrecked Mariners 'Medal' found during pouring of concrete in the main excavation along the northern wall (Figure 106f). Research by Vicky Spalding from the NZ National Maritime Museum identified the item as a membership token from the Shipwrecked Fishermen and Mariners' Royal Benevolent Society in the UK.

The Society is still in operation and its website summarises its history and operation:

It's Not Just The Wrecked Ship Which Is A Disaster ... It's The Wrecked Lives...

The Shipwrecked Fishermen and Mariners' Royal Benevolent Society is a registered charity whose object is to relieve distress amongst the seafaring community by making grants to merchant seafarers and fishermen, their widows and dependants in cases of need.

The Society was founded in 1839 as a result of the tragic loss of a fleet of fishing boats on the north Devon coast the previous year. A month later, Her Majesty Queen Victoria graciously announced herself Patron of the Society and since then the Society has been honoured by Royal Patronage. In 1850, the Society was incorporated by an Act of Parliament, on which the Rules and Regulations of the Society are still based. Today, the Society still gives help in the event of shipwreck, but our main function is to pay grants to retired seafarers and their widows in cases of need. Around 3,000 people receive regular six-monthly grants; others receive a special grant to meet a particular need.

(<http://www.shipwreckedmariners.org.uk/welcome.htm>)

The particular example found is a membership token issued by the Shipwrecked Mariners' Society in return for an annual subscription of 2/6d. The tokens, which were re-issued each year, would have been worn around the neck on a ribbon or chain. In the event of a shipwreck they could be traced back and assistance given as necessary. The token is made of a base metal and on one it is inscribed 'Shipwrecked Mariners Society 1874' and has an engraving of a ship in distress with a lighthouse in the background. On the reverse it is inscribed 'England expects every man will do his duty' and there is an engraving of Lord Nelson; underneath the figure is inscribed 'Davis' or 'Davie'.

Although the object apparently carries the date 1874, information from the Society suggests that the number 1874 represents the membership number. However, there is no record listing this membership number to an individual (Joyce Eves email communication to Vicky Spalding 2002).

Continued on next page

Maritime Artefacts, Continued



Figure 106. Maritime artefacts: a) Anchor found near Britomart excavations, Rail Tunnel, Quay Park (Clough et al. 2000); b) Ship's chain found around Queen's Wharf pile; c) Adze possibly relating to boat building; d) Pipe with maritime motifs on the bowl; e. Shipwrecked Mariners 'Medal' (photos courtesy of Auckland Maritime Museum)

Harbour Boat

Whaling Boat

Most important were the remnants of a small boat (Figure 107a,b,c) found approximately 50m east of the Queen St wharf and about 150m west of the Gore St jetty. Customs St is about 45m south of the find spot and Fort St another 165m south, but given the shallowness of the harbour the water level here was not high when the boat was abandoned. The boat was badly crushed in the fill but many of the wooden fragments were recoverable and could be identified. Also recovered was part of the metal oar ring or rowlock (Figure 107d). The sternpost and one of the ribs were located on 20 May 2002 and the remainder of the boat, including the keel, other rib parts, and strakes, on 8 and 10 July 2002 when that area of excavation was continued.

Analysis of the remains showed that it was a lapstrake/clinker constructed inner harbour working boat, which had perhaps been re-figured from a whaling vessel. It would have been rowed, and possibly had rigging for sailing. The size of the keel suggests it was about 9m long (Darren Wilcox, boat builder, pers. comm.) with a beam of around 2m.⁸⁴ This suggests that the vessel had been of considerable size and weight for its type. It was manufactured from local woods and was used around the wharves, jetties and regions of the inner harbour, and possibly the Hauraki Gulf as a whaler in earlier times.

At the time of the vessel's excavation, it was immersed in a wet and probably anaerobic state. The naturally occurring marine sediments and later harbour dredgings bedded and covered the boat hull. The mechanical excavation destroyed any salvageable detail from the vessel, as the area was deep in water, mud, and dredgings. Consequently, no information as to its intentional or accidental demise was recovered. Because of the boat's location, its loss must have occurred some time between 1840 and 1886. There are no indicators to suggest anything more precise.

Reconstruction

It was originally thought that the boat may have been a small dinghy, but consultation with boat builder Darren Wilcox suggested that the boat was possibly a small cutter or whaling boat. The bottom parts were inserted into a ridge on the keel (Figure 107e) with notched ribbing used for the internal structure (Figure 107f). What was unusual was that almost all the planks were individually shaped (e.g. Figure 107g), suggesting a larger boat made specifically for a particular task.

Continued on next page

⁸⁴ In a study of design, construction, and use of Connecticut (US) whale boats from 1850 to 1970, Ansel notes that the beam of these vessels is in the vicinity of one-fifth its length (Ansel 1970). If the harbour boat found at Britomart hypothetically had a length of some 9m, then its beam would have been in the vicinity of slightly more than one-fifth its length, that is, about 2m.

Harbour Boat, Continued

Components: the Keel

The major components retrieved comprised parts of the keel, ribs, sternpost, bracing element, and strakes.

The salvaged keel piece measured 2050mm long, 100mm wide and 210mm thick. It was broken at the sternpost. The keel was possibly made from kauri (*Agathis australis*) and was rebated lengthwise 20mm from the top along either side to house the garboard strakes. The rebate was cut such that each strake was fitted at an external angle of approximately 60°. These strakes were fastened with chisel-pointed copper nails having a rectangular cross-section of 2mm by 3mm and 50mm long. The strakes were fastened every 130mm along the length.

Every 46mm along the centre of the deadwood top of the keel were the corroded remains of the metal elements probably used to fasten the strake ribs to the keel. At the mid-ship break in the keel, the remains of one of the holes for the fastening system occur (Figure 108).

At the sternpost end of the keel three holes were drilled through the keel width, two large ones together measuring 40mm in diameter, and a third one 65mm further along the keel and 20mm in diameter. It is not known what they were used for, but it is possible they may have been part of the mechanism for the fixing of the rudder some 400mm to 500mm from the stern of the boat.

Sternpost

When this element of the boat was retrieved from the reclamation it was bolted to a remnant end of the boat's keel, and was later relocated to the rest of the keel. The sternpost was possibly made from pohutukawa (*Metrosideros excelsa*) and measured 650mm long, 150mm wide, and 95mm thick. The upper end was extremely rotten with worm and borer damage. Consequently, the original length of the sternpost was not retrievable.

The 100mm wide keel was rebated approximately in half and fitted into a similarly angled rebate in the bottom of the sternpost. They were joined at an angle of 110° and fixed with two 12mm diameter drift bolts with large clench ring washers on both sides, and the bolts peened to make a head (see Figure 109).

Continued on next page

Harbour Boat, Continued

Bracing Element

This piece of the boat's structure fitted into the angle between the keel and the sternpost and acted as a bracing support. It also had an angle of 110° in its fixing position. Corresponding groove marks on this element matched others on the other two pieces, viz., the sternpost and the keel. A curved ledge 20mm wide had been carved to accommodate the ends of the lapstrakes. This was evidenced by 50mm long rectangular cross-sectioned copper nails still embedded in the upper wall of the ledge, similar to those fastening the garboard strakes along the keel. The remnant heads of five corroded fixing bolts occur at 180mm intervals along the curved upper surface of the brace. This element measured 760mm long, 95mm wide, and 50mm thick along the leg fastened to the keel. The leg fixed to the sternpost had similar dimensions but had rotted away on the upper part. It had approximately 200mm left intact (Figure 110). These three structural elements of the boat are shown assembled, as they would have been during its working life (Figure 111).

Ribs

Three lapstrake rib frames were recovered from the reclamation. One appeared to be almost complete, while the other two were partially intact. The complete one measured 1183mm long, 75mm wide, and 90mm thick, and appears representative of the type of rib framing elements in the boat. The wood consisted of pohutukawa (*Metrosideros excelsa*) and was curved to form the hull and beam of the boat.

Seven and possibly eight angled rabbet slots were cut across the width to accommodate the lapstraking. The average length of these housing steps measured 170mm. Because the strakes measured 20mm in thickness, so too, the depth of the rabbet was 20mm. Lapstrakes were approximately 190mm to 200mm wide and fitted flush into the rabbeted slot and snugly overlapped the inferior strake by some 20mm. This would have been caulked with tar or some other waterproofing agent, and fixed with a copper nail through the overlap.

Holes indicating where the strakes were fixed to the rib showed a consistent pattern. A larger hole occurs towards the middle of the flat housing step with usually two smaller holes in the vicinity where the strakes overlapped.

The lower two strake housings were shorter, being 95mm and 60mm in length, as the strake-ribbing curve was greater. The base of the rib where it was fixed through the keelson contained a 12mm diameter hole, probably for a hanger bolt. The rib at this location showed evidence of breakage and suggested that perhaps this rib element may have continued as one piece across the keel to include the rib on the other side of the hull (see Figure 112).

Continued on next page

Harbour Boat, Continued

Strakes

As with all clinker or lapstrake built boats, the boards vary in width and shape according to where they are fitted. Strakes retrieved from under the reclamation were broken and split, although some showed evidence of tapering, shaping, and fixing.

Where boards had not been damaged and split, it was possible to determine measurements of width and thickness, but not length. Some retained original edges with fixing patterns still visible, although most of the nails had pulled free or corroded away. There was no evidence of any bevelled edges or rebating to set strakes flat against the internal ribbing. Thickness varied between 12mm and 20mm although most were at the thicker end of the scale. Vertical band-sawing marks were evidenced on some of the strakes. Several showed construction tapering while others had suggestive warping and bending, although not pronounced, to accommodate the boat shape.

One tapered strake measured 1750mm long, although part of the tapered end had broken off, 200mm wide at the wide end, and 50mm at the tapered end. The plank was 18mm thick, and was square cut at the wider end. This strake had a nailing pattern with a hole approximately every 110mm. At 740mm from the square cut end there were three nail-holes across the width (Figure 113).

Comparison

The reconstruction suggests that the recovered vessel was possibly similar in size to the double-ended Montagu Naval Whaler built in 1977 and on view at the National Maritime Museum in Auckland (Figure 114). Although this vessel has a different internal structure, it nevertheless offers an impression of how the Britomart boat might have looked.

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Harbour Boat, Continued

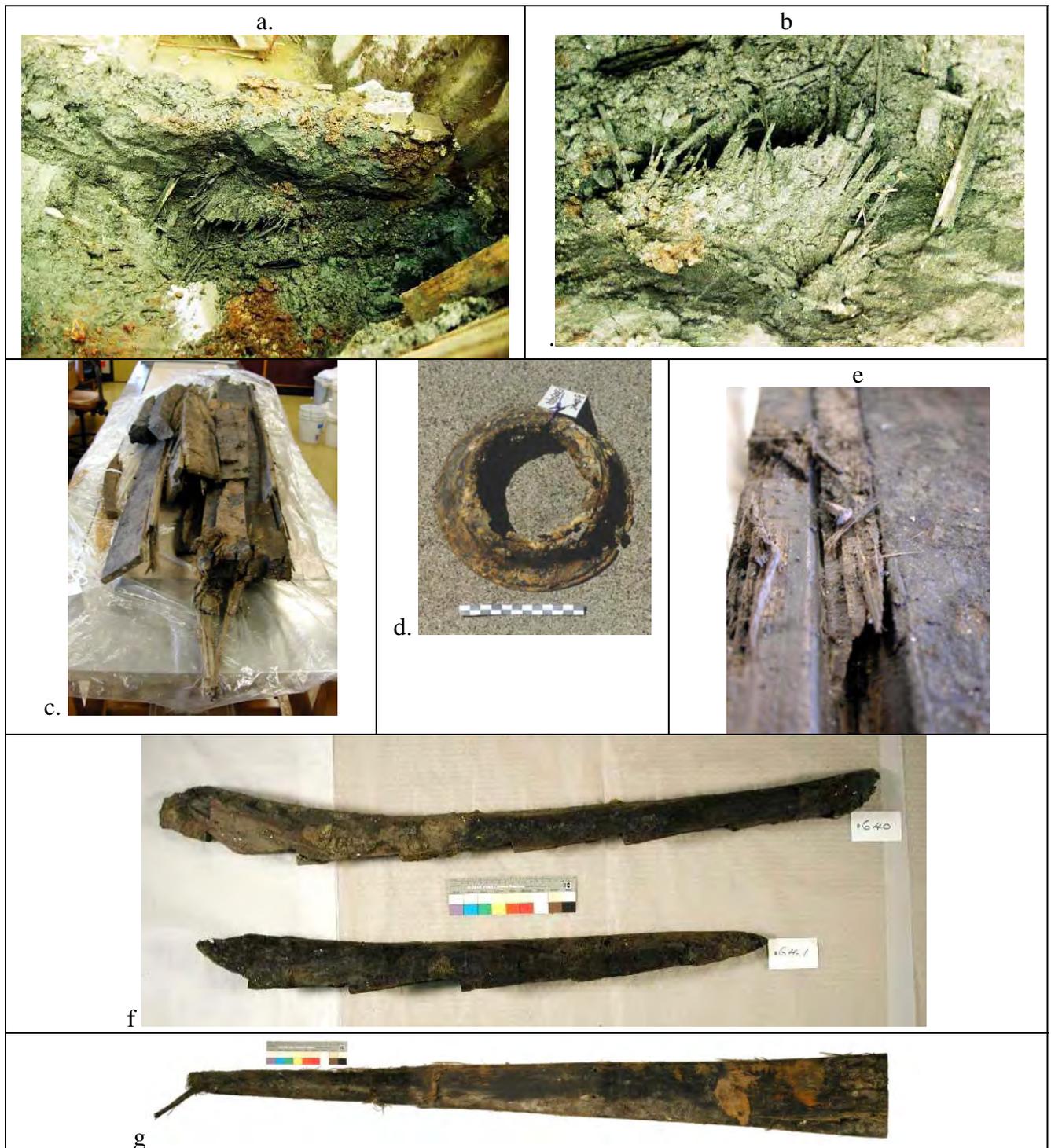


Figure 107. Harbour boat remains: a. F200502/02, remains of small boat; b. Close-up of remains in situ; c. Skirt-like circular object; diam at top = 115mm; d. Recovered planks in lab; e) Close-up of ridging for planks to be inserted into keel; f) Ribs; g) Shaped planking

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Harbour Boat, Continued



Figure 108. Showing remains of hole from fixing element 140mm long and 12mm in diameter. Also visible is the rebate [top right], which housed the garboard strake

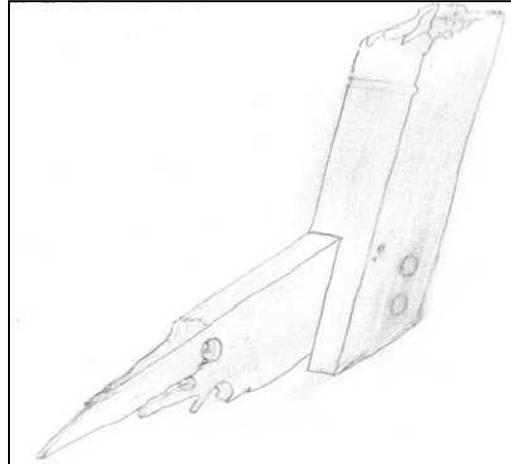


Figure 109. Sternpost attached to broken part of keel

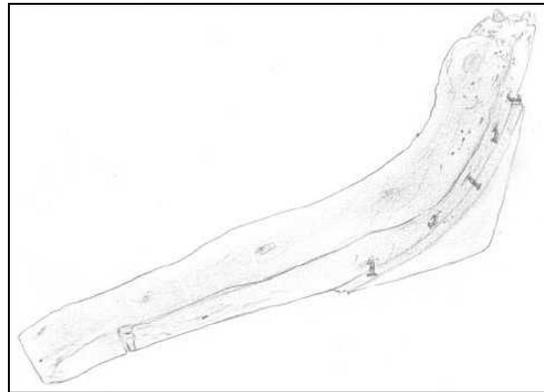


Figure 110. Bracing element



Figure 111. Showing the keel, sternpost, and bracing element in position. Strake pieces are to the rear

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Harbour Boat, Continued

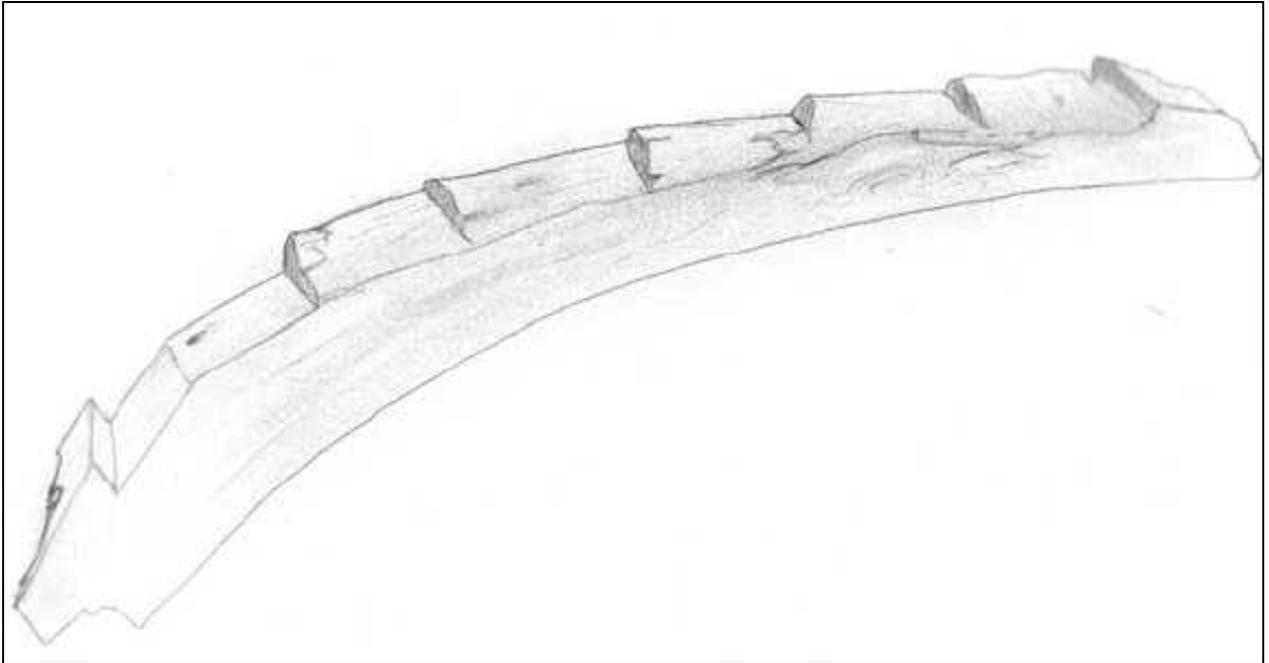


Figure 112. Rib with strake housings cut into outer side



Figure 113. Showing possible sheer strake with copper nail head and diamond-shaped washer[R] and intermediate nail hole[L]. The nailing pattern showed that the copper nail and washer fixings were some 110mm apart with intermediate nails with no washers



Figure 114. Showing Montagu Whaler K11, National Maritime Museum, Auckland

The Colonial Entrepôt: Imports and Exports

Summary

The artefacts described in this chapter illustrate the development of the Auckland waterfront industries during the late 19th and early 20th centuries. The excavations around the main reclamation site revealed some of the early buildings built on the newly reclaimed land as well as some of the public infrastructure required to support these industries. What is clear from the evidence of the construction of the brick sewers (Chapter 3) is that by the time the Railway reclamation was carried out, local government was well equipped to provide sophisticated support for these industries.

The evidence from the artefacts as well as from the excavations described in Chapter 3 shows that some of the buildings originally constructed on the reclaimed land did not survive to the end of the 20th century. It is likely that smaller buildings were replaced as the real estate became more valuable.

Imports

Artefacts illustrate the range of imports into the country. Details are provided in Chapter 6, but the artefacts include:

- Ceramics from England
- Clay pipes from Scotland, France and Belgium
- Bottles from England and Australia
- Industrial material from England and Australia.

This material clearly illustrates the reliance of the colony on Britain.

Exports from Auckland

Evidence for exports is obviously less easy to identify. Clearly much material was distributed from the Auckland hub both for internal use elsewhere in the colony and overseas, most commonly to Australia and Britain. Timber products are the one identified export found in the fill.

Chapter 6: People and the Harbour

Introduction

Domestic Life This chapter looks at items relating to the domestic side of life in Auckland. Descriptions of the ceramic, pipe, and bottle assemblages are provided here. The central threads in this chapter are the preparation and consumption of food and drink, leisure and entertainment, and personal care.

As discussed in Chapter 5, the reclamation contained a great deal of material from industries that existed around the waterfront. While discussing the industries in terms of their role in the economic life of the colony, it is easy to forget about the lives of the people carrying out the work there. The Britomart project described here did not include any detailed excavations of living areas and so we are dependent on interpreting the lives of the people from the debris that made it into the fill.

Many of the items would have come from hotels and restaurants as well as a variety of other commercial establishments including the trading stores. Breakages would have been common in this environment and this is reflected in the material recovered: large pieces often thrown into the fill in reasonable concentrations. Bottle dumps, for instance, have been referred to in Chapter 2 and show that large numbers of bottles were transported en masse to the reclamation site probably by the wagon full.

Artefact Analysis The first section of this chapter describes items relating to food and drink and focuses primarily on the analysis of the ceramics and bottles. Traditionally, ceramic and bottle analyses in archaeological reports are presented in terms of the material they are made from. This tends to obscure, however, the more general sociological aspects of the material culture and here a different tack is taken in the presentation. Technical details of the materials analysis are discussed in the following section to provide comparative information for other studies, but the rest of the chapter is based on analysing the recovered material culture according to its function.

A large collection of bottles was recovered in the Britomart excavations and this placed additional emphasis on the analysis of the bottles. The drinking habits of colonial New Zealand have been analysed on the basis of historical documentation (see, e.g., Eldred-Grigg 1984). Archaeologically, there is substantial interest in the glass bottles used for drinks, as there was considerable technological innovation during the 19th century particularly with regard to aerated liquids such as soda water. It is from this time period that the origins of Coca-cola and other drink empires derived.

Ceramic Analysis

Introduction Mica Plowman carried out the analysis of the ceramic assemblage following similar studies from other New Zealand historic sites (see, e.g., Plowman 2000; Clough *et al.* 2004a,b). Given the basic context of material, essentially a rubbish dump, the description here deals with the assemblage as a whole.

Methodology The methodology is outlined in other publications (mentioned above) and not reiterated in detail here. Generally, the collection of material was identified according to:

Category	Description
Fabric	Refers to the type of material used. Includes earthenware, ironstone, porcelain and stoneware
Decorative Technique	Describes the type of decoration applied to the pottery. Transfer printing was the most common type found at Britomart
Decorative Pattern	Describes the particular pattern of decoration used. Some patterns are named, others are catalogued by comparison with similar material found at other sites
Colour	The colour of the pattern
Function	This included whether the vessel was used for food preparation, eating on, decoration, in the bathroom, etc
Form	Describes the shape of the vessel, e.g. plate, bowl, tureen etc
Size	Various measurements of size taken on the vessel where possible. Useful indicator sometimes relating to function

A large sample of the ceramics was then digitally photographed (over 300 images) with selection based on getting representative samples of the material including most patterns (both named and unnamed – see below), forms and functions. This information formed the basis of a searchable image database with currently three other assemblages included. The analysis was carried out using that data and information from available artefact reports.

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Ceramic Analysis, Continued

Fabric

Earthenware is the most common type of pottery found in New Zealand historic period sites (see e.g. Table 9). Britomart follows the pattern with approximately 75% earthenware and a variety of other fabric types making up the remaining 25%. Compared with the nearby Albert Barracks and His Majesty's Theatre sites this figure is low, which probably reflects the fact that the Britomart site is a general rubbish dump while the ceramics in the other sites reflect domestic material more than anything else.

Table 9. Britomart ceramics identified by fabric compared with four other assemblages⁸⁵

Fabric	Britomart Reclamation	His Majesty's Theatre	Fale Pasifika	Miner's Bay, Kawau Island	Albert Barracks
Earthenware	364	1604	66	333	829
Hard paste porcelain	1		1	2	
Ironstone china	26		1	2	
Porcelain	2	1			4
Semi-vitreous china	76	15	4	3	18
Stoneware	9			4	
Terracotta			1		7
Unidentified	3			2	
Total	481	1620	73	346	858

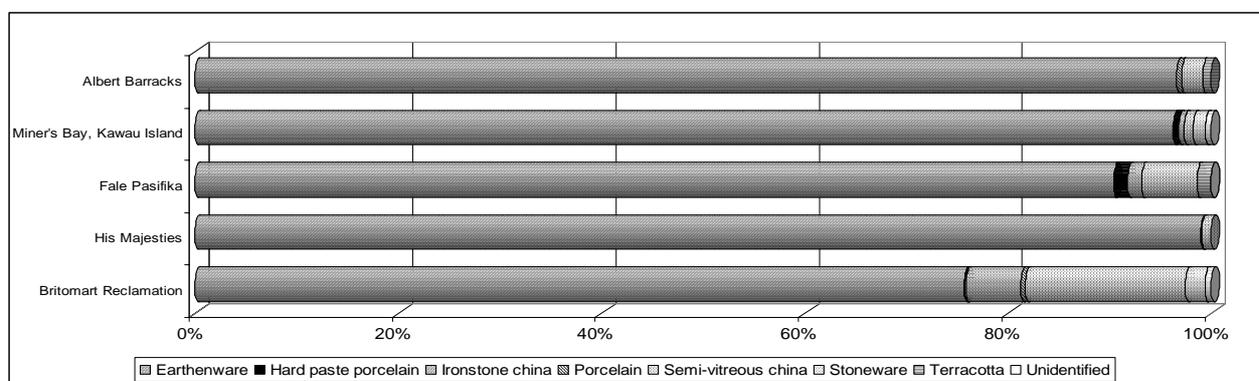


Figure 115. Percentage of fabric types at Britomart and four other historic sites

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⁸⁵ Data from other sites from His Majesty's Theatre (Plowman 2000), Fale Pasifika (Clough et al. 2004b), Miner's Bay (Judge pers. comm.) and Albert Barracks (Clough et al. 2004a). It should be noted that plain and whitewares are generally under-represented as they are often not diagnostic and not fully sampled.

Ceramic Analysis, Continued

Decoration

Transfer printing was by far the most commonly used decoration on pottery during the late 19th century and again Britomart reflects this (Table 10). Figure 116 simplifies the more complex data to show that almost 50% of the Britomart ceramic assemblage uses transfer printing as the predominant decorative type. Again, comparison with the other sites suggests that this figure is relatively low. Interestingly, the unusually high proportion of edge-banded material may reflect the proximity of commercial establishments, such as restaurants and hotels that may have preferred the less decorated and more standardised edge banded wares.

Table 10. Decorative types found at Britomart and four other historic sites

Technique	Britomart Reclamation	His Majesty's Theatre	Fale Pasifika	Miner's Bay, Kawau Island	Albert Barracks
Appliqué	12	8			3
Colour glazed (marbling)				2	
Colour glazed/slip coloured		75			17
EBHL/Hand painted	33		1		6
Edgebanded/hairlined	75	9	7	1	
Hand-painted	12	41		2	61
Marbled		16			2
Outline transfer-print w/ overglaze handpainting	2				
Plainware	6				90
Plainware/whiteware	55	187			
Relief moulded	20	9	1	4	19
Relief moulding /w hand painting	6				
Rouletted					2
Shell-edged		31			2
Slip glazed	7		2	3	20
Slip glazed w/ hand painting	1				
Slip glazed w/ hand-painting & appliqué	1		1		
Slip glazed w/ relief moulding	10				
Slip glazed-banded	4			10	22
Slip glazed-mocha ware				5	16
Sponged	1	38		10	23
Stamped/handpainted ?	1	2			
Transfer w/ EBHL	1				
Transfer-print	224	1100	52	261	560
Transfer-print- marbled	2			3	8
Transfer-print w/ hand-painting	1	17			
Transfer-print w/ relief moulding	3	73	1		5
Transfer printed with additional misc decoration		4			
Unidentified	1	10	1	6	2
Total	478	1620	66	307	858

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Ceramic Analysis, Continued

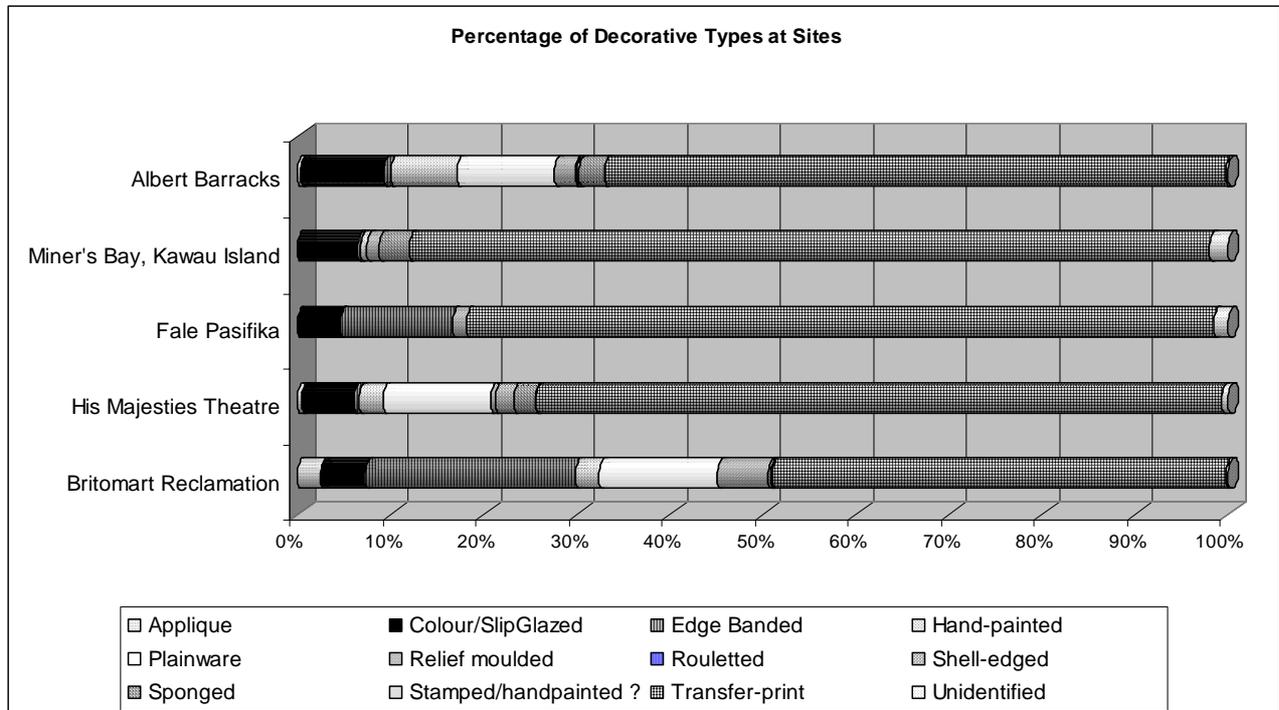


Figure 116. Percentage of decorative types at Britomart and four other sites

Colour

Colour is also commonly reported, although it is probably in itself not that useful a measure taken in isolation (Table 11). The colours are generally correlated with decorative types. Blue-on-white transfer printing is the most common material along with plain white wares. The mustard, yellow and beige material usually refers to baking dishes. Beyond noting that there is a wide range of colours represented in the Britomart collection that reflects the rubbish dump nature of the site, no further analysis is presented here regarding colour.

Continued on next page

Ceramic Analysis, Continued

Table 11. Distribution of colours found at Britomart and four other sites

Colour	Britomart Reclamation	Fale Pasifika	Miner's Bay, Kawau Island	His Majesty's Theatre	Albert Barracks
Black	28	2	11	139	30
Flown Black					28
Beige				11	3
Flown Blue	8	1	56	124	64
Blue	94	15	117	391	338
Blue Dark			67	78	12
Blue Light	38	6	3	319	37
Blue/Black	1				
Blue/brown	1				
Blue/gold	3				
Blue/white	1		2		
Blue/yellow	1		3		
Brown	45	10	10	31	53
Brown/green	1				
Cream	1		2	7	3
Gold/Gilt	41	2		4	5
Green	25	15	14	109	34
Green/Blue			1		
Green/Red			4		
Grey	29	3		16	32
Mustard	1	1			
Orange					2
Pink/Gold	1				1
Polychrome	20	3	17	95	52
Purple	42	4	3	55	27
Red	25	3	5	16	12
White (Plain)	81	7	27	197	90
Yellow			2		35
Yellow/White			2		
Total	487	72	346	1592	858

Continued on next page

Ceramic Analysis, Continued

Function and Form

As with most sites, the majority (79%) of the Britomart material is tableware (Table 12). Again this is lower than expected. The high proportion of unidentified material in the Albert Barracks probably reflected methodological differences as this material was not examined by Mica Plowman who carried out the analysis on all other sites discussed here. The breakdown of different forms (Table 13) of the material again shows the wide range recovered, as expected.

Table 12. Function of material from Britomart and four other historic sites

Function	Britomart Reclamation	His Majesty's Theatre	Fale Pasifika	Miner's Bay, Kawau Island	Albert Barracks
Bed/bathroom	45	76	19	1	20
Decorative	5	6	1	1	1
Kitchen/utilitarian	29	39	3	27	3
Other	4	39			9
Tableware	383	1333	47	313	598
Tableware ?	3			4	
Unidentified	14	127	3		227
Total	483	1620	73	346	858

Patterns

Identification of the various patterns on the pottery is shown in Table 14. Asiatic Pheasants predominates and this is common in late 19th century Auckland sites (Plowman pers.comm.). Again, the large number of patterns that are identified simply as 'Britomart' patterns (those referred to with the prefix BR) illustrates the rubbish tip aspect of the site, as it is likely that the material came from a number of different sources.⁸⁶

Examples of Material Found

Examples of the material found at Britomart are shown below according to their various functions, along with other relevant material. Functions include food preparation and cooking, preservation and storage and food presentation.

Continued on next page

⁸⁶ Patterns that do not have a formal name (e.g. Asiatic Pheasants) or a more colloquial description such as Imitation Jasper are referenced according to either a Department of Conservation reference collection (starting with E) or by a two letter prefix based on the site where the pattern is first formally identified.

Ceramic Analysis, Continued

Table 13. Forms of pottery from Britomart Reclamation

Form	Number
Ashet	23
Baking dish	4
Bed pan	1
Bowl	9
Bowl ?	3
Bowl/washbowl	1
Candle holder	7
Chamber pot	7
Chamber pot/ ewer	1
Childs's Teacup	1
Cosmetic container	4
Cup	66
Cup ?	4
Egg cup	12
Ewer	2
Ewer/Jug	3
Ginger jar	1
Holloway's ointment	1
Invalid feeder	1
Jar/canister	8
Jar/canister ?	2
Jug	15
Jug ?	5
Jug handle	2
Milk Jug	3
Mixing bowl	10
Mug	8
Mug ?	1
Mug/shaving mug	1
Plate	105
Saucer	55
Serving bowl	2
Side plate	35
Soap dish	2
Soup plate	8
Sugar /slop bowl	8
Teapot	9
Tile	2
Toothbrush case	3
Toothbrush case/soap dish	1
Tureen	15
Tureen lid	3
Vase	1
Wash bowl	17
Unidentified	9
Total	481

Continued on next page

Ceramic Analysis, Continued

Table 14. Patterns identified at Britomart⁸⁷

Pattern	Count	Pattern	Count	Pattern	Count
Unidentified	68	(BR50)	1	(BR99)	1
(BR1)	2	(BR51)	1	(EA198)	1
(BR10)	1	(BR52)	1	(EA199)	1
(BR100)	1	(BR53)	2	(EA285)	1
(BR101)	1	(BR54)	3	(EA316)	1
(BR102)	1	(BR55)	1	(EA318)	1
(BR103)	1	(BR56)	1	(EA322)	1
(BR104)	1	(BR57)	2	(EA350)	1
(BR105)	1	(BR58)	2	(EA354)	1
(BR106)	1	(BR59)	2	(EA355)	1
(BR107)	1	(BR6)	1	(EA45)	1
(BR108)	1	(BR60)	1	(EA460)	1
(BR11)	1	(BR61)	1	(HM178)	1
(BR12)	1	(BR62)	1	(HM189)	1
(BR13)	1	(BR63)	1	(WS1)	33
(BR14)	2	(BR64)	1	(WS3)	45
(BR15)	2	(BR65)	1	Albion	2
(BR16)	1	(BR66)	1	Alhambra	1
(BR17)	1	(BR67)	1	Amaranth	4
(BR18)	1	(BR68)	2	Antique 2	1
(BR19)	1	(BR69)	9	Asiatic Pheasants	41
(BR2)	1	(BR7)	4	Belgrave	1
(BR20)	1	(BR70)	1	Bouquet	1
(BR21)	1	(BR71)	1	Cable	6
(BR22)	2	(BR72)	3	Cable ?	1
(BR23)	1	(BR73)	1	Carlton	1
(BR24)	2	(BR74)	1	Dulcamara	8
(BR25)	1	(BR75)	1	Fibre	3
(BR26)	1	(BR76)	1	Gem	2
(BR27)	1	(BR77)	1	Imitation Jasper	12
(BR28)	1	(BR78)	1	Imitation Jasper 2	1
(BR29)	1	(BR79)	1	Japanese (var 2)	1
(BR3)	2	(BR8)	1	King	1
(BR30)	1	(BR80)	1	Lotus	1
(BR31)	1	(BR81)	2	Montilla	2
(BR32)	1	(BR82)	1	Morea	1
(BR33)	1	(BR83)	1	Non-diagnostic (ND Hand painted)	1
(BR34)	2	(BR84)	1	Non-diagnostic (ND Outline)	1
(BR35)	1	(BR85)	1	Non-diagnostic (ND Relief Moulding)	9
(BR36)	4	(BR86)	2	Non-diagnostic (ND Transfer printer with relief moulding)	1
(BR37)	2	(BR87)	1	Non-diagnostic (ND Transfer printing)	7
(BR38)	1	(BR88)	1	Rhine	24
(BR39)	1	(BR89)	1	Ribbon 1	1
(BR41)	1	(BR9)	3	Rouen	16
(BR42)	1	(BR90)	1	Seaweed	1
(BR43)	1	(BR91)	1	Siam	1
(BR44)	1	(BR92)	1	Springfield	1
(BR45)	1	(BR93)	1	Syria	1
(BR46)	1	(BR94)	1	Willow	15
(BR47)	6	(BR95)	1	TOTAL	478
(BR48)	1	(BR96)	1		
(BR49)	1	(BR97)	1		
(BR5)	3	(BR98)	2		

⁸⁷ Pattern numbers are identified according to the following scheme: BR represents patterns first identified at Britomart, WS at Winstone Stables site, HM at His Majesty's. EA refers to the DOC Reference Collection. Names of patterns are derived from various sources. See Plowman (2000) for further discussion.

Bottle Analysis

Britomart Results

Marianne Turner carried out analysis of the bottles sampled from the reclamation fill. Identification of the likely contents and use of the bottles was carried out along with information regarding dating, manufacturing, and form. Both glass and stoneware items were analysed.

Bottles were found in the fill both in large dumps (e.g. Figure 117) and individually. The majority of bottles were probably used, at least originally, for alcohol (Table 15). The fill contained a large number of aerated water bottles and there was significant variation in those found. Other bottles included a salt container and ink containers.

Table 15. Contents of bottles in fill

Glassware	Number
Aerated Water	72
Alcohol	212

Stoneware	Number
Alcohol	3 (2)
Domestic	10
Food?	17
Gin	3
Ginger beer	22
Household	38
ND	33
Stout/beer	39

Figure 117.
Bottle pit in
reclamation fill



Continued on next page

Bottle Analysis, Continued

Manufacturing and Use

Where possible manufacturing techniques have been identified. In a general way manufacturing techniques can provide dating information, since various technological improvements were introduced throughout the 19th and into the 20th century (Macready and Goodwyn 1990). However, owing to bottle reuse and the slow replacement of some glassware by improved techniques, this form of dating can only be general (Brassey and Macready 1994:87 and Ritchie and Gumbley 1992:32). A summary of the common black 'beer' manufacturing techniques has been provided in Macready and Goodwyn (1990:75-76) whilst Ritchie and Gumbley (1992:31-33) detail the chronology of technological changes in glass production, which will not be repeated here. Generally, the older the bottle the more imperfect the finished product, with bulges or dents, irregular shapes and finishes and air bubbles in the glass, while more elements are hand finished rather than tool finished or moulded.

Black Beer Bottles

Black or greenish-black 'beer' type cylindrical bottles tend to be the most common glassware found in early European sites in Auckland. These are most likely to have contained beer, but are also known to have contained wine, whiskey or ginger beer (Brassey and Macready 1994:88). The refilling of these bottles with beer was widespread in 19th century New Zealand (Brassey and Macready 1994:88). Tasker (in Ritchie and Gumbley 1992:38) even suggests that dumps of these bottles were mined for refilling subsequent to their original use. This type of bottle was mainly produced in a mould with the top, rim, lip or mouth applied after the bottle had been blown. This process resulted in a high finish to the base and, contrastingly, irregular tops. (Hand applied tops were produced when a ring of molten glass was laid laterally around the neck to form a rim under which the string or wire could be anchored to tie down the cork. They can be identified by the glass hanging below the ring (Tasker 1989:32) and stretch marks on the neck.)

Stoneware Vessels

Stoneware vessels were used to store a variety of products and their manufacturing techniques and styles remained fairly constant, making close dating rarely achievable (Macready and Goodwyn 1990:40). However, maker's marks and decoration, although rarely carried except on ginger beer bottles, can aid with dating (Macready and Goodwyn 1990:40).

Summary

Dating was a not a major concern in the project given the known dates for the reclamation. Details of the bottles recovered are presented below according to their function.

Food and Drink

Food Preparation and Cooking

Introduction This section illustrates the range of artefacts relating to food preparation and cooking found in the reclamation fill. Given the proximity of many commercial premises such as hotels and restaurants, it is likely that much of the reclamation fill came from these establishments, although there is probably not much to distinguish between them and domestic arrangements in the vicinity.

Cooking The late 1870s – early 1880s saw the increasing use of coal ranges replacing the more primitive ‘colonial oven’. The colonial oven was essentially a large iron box with a hinged door built into the fireplace with the fire built over the top. Coal and wood stoves were imported into New Zealand and provided much-improved hob cooking, oven and even water heating. It is likely that commercial establishments along Auckland’s waterfront were relatively quick to upgrade (Salmond 1986:45, 145ff).

Blackening and Grease Jars Stoneware jars that probably originally containing blackening are indirect evidence of these stoves. ‘Blackening’ is a compound like boot polish. In the 19th century its most common usage was polishing cast iron stoves. These jars may also have contained other substances like grease. At the His Majesty’s Theatre site, a large number of the flared rim stoneware jars were found in association with a saddlery and may have contained cartwheel grease (Felgate 1998:191). At Britomart a total of 10 containers were probably blackening jars (Table 16 and Figure 118).

Table 16.
Blackening jars

Description	Number
Glassware	1
Characteristic square aqua bottles with panels – usually embossed but the Britomart example is plain with a wide mouth/short neck (F090402/01/Y)	
Stoneware	9
Large wide mouth flared lip tan round jars, 1 with stamp: ‘Doulton Lambeth’ One small flared lip round jar	5
Medium off-white round jars 1 with no top, 1 with pressed lip, one with bead rim; 1 has stamp ‘Port Dundas/Glasgow/Pottery Co’. Other stamp is smudged LIPSCOMBE & CO /CHESTERFIELD	3
Small off-white round no top – could be ink?	1

Continued on next page

Food Preparation and Cooking, Continued

Ceramic Kitchenware

The ceramics most easily attributed to kitchenware are the large mixing bowls and baking dishes. Four baking dishes were recovered and are characteristic mustard-yellow dishes (Figure 119). One has the impressed mark on the bottom: '(warr)anted Sharpe'.

At least 10 mixing bowls were also recovered and consist of large deep whiteware bowls with rounded lips.

Metal Roasting Dish

The remains of at least one metal roasting dish was recovered from the Britomart fill. However, it was in poor condition and only one end was present.

Continued on next page

Food Preparation and Cooking, Continued

Figure 118.
Stoneware
blacking jars
from reclamation

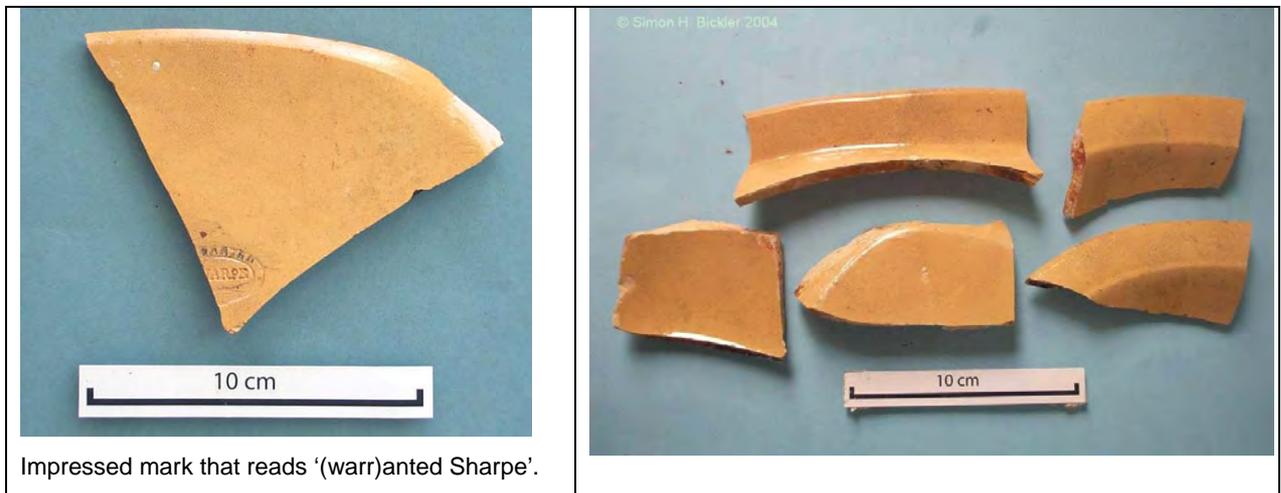


Figure 119. Baking dishes from Britomart reclamation



Figure 120. Large mixing bowls from Britomart reclamation

Condiments and Dressings

Dressing up the Food

Traditional New Zealand cooking was rarely inventive and relied much on enhancing the flavours with a variety of flavouring agents. During cooking various extracts might be included and there were commonly meat extracts, coffee, chicory, etc, as well salt and increasingly pepper. Condiments usually added to the food after cooking included sauces, chutneys, pickles, relishes and dressings. Archaeologically recovery is high compared to the main contents of the Victorian menu – meat, carbohydrates and vegetables – as these foodstuffs were generally preserved in a variety of containers (see section below). Only animal bones (mostly cow) were found in small quantities in the Britomart fill.

Britomart Bottles

Table 17 summarises the bottles collected that were probably used for foodstuffs. Significantly, large numbers of salad oil bottles were collected (Figure 121) and included a number of different sizes and shapes. Also common were a variety of sauce bottles and pickle jars.

Sampling

It should be noted that the bottles are a sample of those from the reclamation fill. It was not possible to establish useful MNI estimates. However, often the bottles were found in large bottle pits (described in Chapter 2). The bottle pits often contained numbers of similar bottles, such as the salad oil bottles, probably indicative of dumping from commercial premises where large numbers of similar bottles were used within short time periods.

The History of Sauces

The history of some of the sauces represents an interesting insight into the development of the British Empire. Worcestershire sauce, for instance, represents imperial cross-cultural origins. In 1835, Lord Marcus Sandys, an ex-governor of Bengal, approached chemists John Lea and William Perrins, in Worcester, dealing with pharmaceuticals, toiletries and groceries, with a recipe from India. Lea and Perrins considered the results to be an ‘unpalatable, red-hot fire-water’ but during the following year, they came across the barrel and to their amazement, the mixture had mellowed. In 1838, the Anglo-Indian Lea & Perrins Worcestershire Sauce was launched commercially.⁸⁸

Tomato ketchup also has similar mixed origins, developing during the 1800s from a tomato concentrate. Sugar was added to the recipes during the latter part of the century particularly in the US. In England, the ketchups led to the development of the various ‘brown’ or steak sauces. Local production of ketchup by H. Olson, for instance, shows how important these sauces were for the young colony.

Continued on next page

⁸⁸ See www.leaperrins.com for further information on the history. See also Andrew F. Smith (2001), ‘Pure Ketchup: A History of America’s National Condiment’, Smithsonian Books, for more information on ketchup.

Condiments and Dressings, Continued

Table 17. Food bottle types

No.	BottleType	Embossing
4	C & B bottle	Crosse & Blackwell bottle
1	C & B bottle?	just neck/top so unsure
1	Club Sauce	'Yorkshire Relish/ Goodall Backhouse & Co' with plain stopper
1	Club Sauce	'(Lilla & Edwards Reli)sh, (Chutney (and Sauce))'? Most missing
1	Club Sauce	'(M)andarin ... (S)auce'
2	Club Sauce	H.L.Koefoed Shortland Thames NZ Tomato Sauce
4	Club Sauce	H.Olson Auckland Tomato Sauce
4	Club Sauce	Tomato Sauce
2	Club Sauce	just tops so makers etc unknown
1	Club Sauce	Lea & Perrins Worcestershire Sauce, 'A.&.C Co' on base
1	Club Sauce	Lea & Perrins Worcestershire Sauce with cork sheath
1	Club Sauce	Lea & Perrins Worcestershire Sauce, 'A & C Co' on base
1	Club Sauce	Lilla & Edwards Relish Chutney & Sauce, '1223' on base
4	Club Sauce	Mellor & Co
1	Club Sauce	'Moulder Matakahe NZ Tomato Sauce' with cork sheath in place
1	Club Sauce	Overall's Worcestershire Sauce London
9	Club Sauce	plain
1	Club Sauce	Worcestershire Sauce '...o's' rest missing
1	cylindrical jar	2-piece mould, wide mouth - relish/capers?
5	essence	'Burnett' and 'Boston' on sides, same bottle as above
3	essence	rectangular bottles 'kiwi brand' on sides
3	Goldfields Jar	6-sided
1	Goldfields Jar	known as 'Cathedral pickle' square, bevelled shoulder, neck ring
2	jar	large wide stopper, short peg
1	jar	Mason Jar shape
1	jar	relish/capers?
1	jar	wide short pegged stopper
1	ornate jar	meat extract?
1	oval bottle	goldfields type? Panel for label
1	rectangular jar	capers/pickles?, rounded shoulders
1	round jar	Finest table Salt J.T.Morton Leadenhall Street London
1	round jar	large like embossed type pickles, top part only
1	round jar	like Masons or Mortons jar
1	round jar	Mortons Jar? Sides/top missing
1	round jar	neck ring, capers. 'K' on side near base
1	round jar	pickles - of kind later commonly embossed but this example is plain
14	round jar	pickles?, all with corks, 11 with seals
1	round jar	plain, shallow kickup
1	round jar	with cork+seal in place, relish/capers?
6	Salad Oil	classic Whirly design
3	Salad Oil	diagonal line panelled type
1	Salad Oil	double ring at neck
1	Salad Oil	fluted sides
1	Salad Oil	plain stopper
1	Salad Oil	serrated edge stopper like those found with Whirly salad oils
1	Salad Oil	stopper only - dots around side of rim
49	Salad Oil	Whirly chevron hybrid, 2 with corks, 4 with serrated edge stoppers
1	Salad Oil	with plain stopper+ cork sheath
2	square coffee	W.P Branson Coffee Extract
1	Square Jar	capers/pickles?, rounded shoulders
1	Vinegar	fluted sides
1	Vinegar?	side panel - Champions?
1	wide mouth jar	plain stopper

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Condiments and Dressings, Continued

Figure 121.
Salad oil bottles

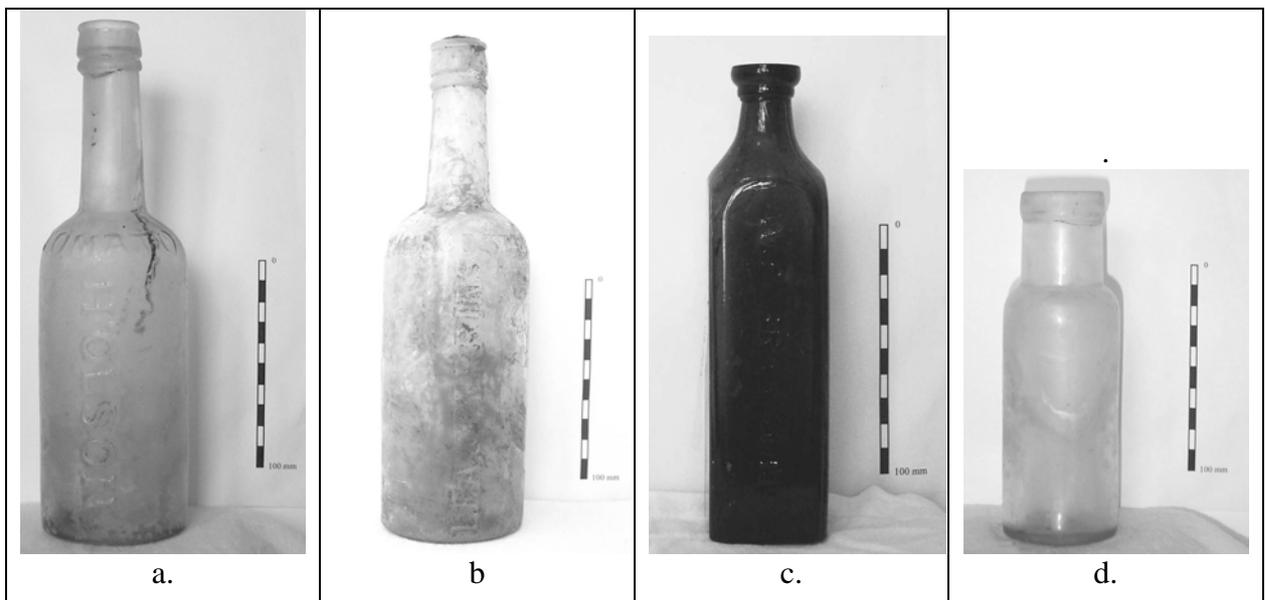
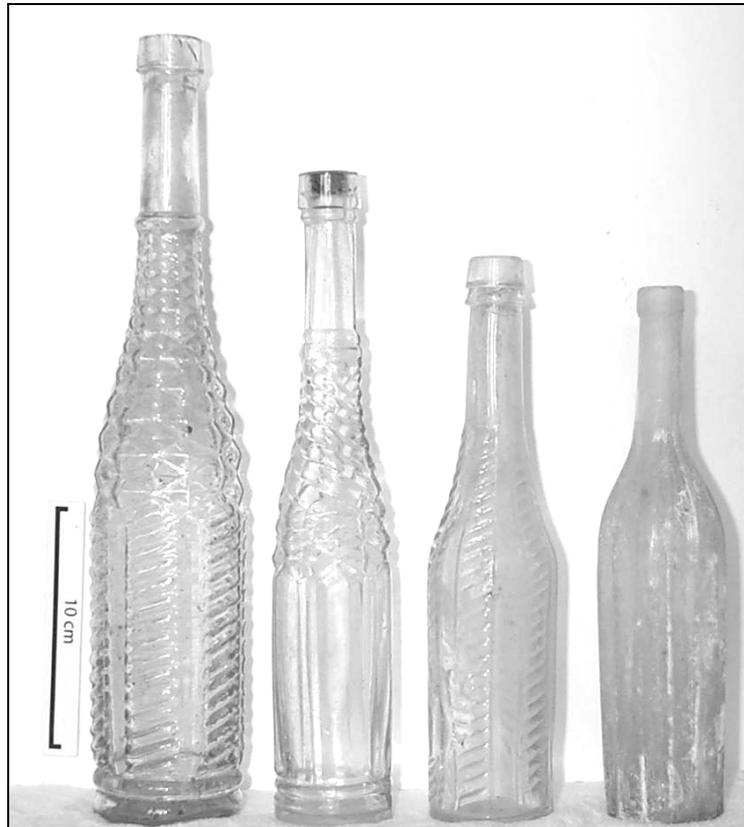


Figure 122. Food bottles recovered from Britomart: a) H. Olson Tomato Sauce; b) Lea & Perrins Worcestershire Sauce; c) Bransons Coffee Extract; d) Pickle jar

Food Preservation and Storage: Jars and Cans

Preserving Foods

The prevalence of sauces, chutneys, relishes and pickles described in the previous section also highlights the importance of food preservation. Refrigeration was not available and both long term and short-term storage solutions were required. In addition to the bottles described above, a number of ceramic jars and tin cans were recovered from the Britomart fill.

The ceramic jars (Figure 123) are often characterised by a ridge under the rim to provide a way of tying muslin or other coverings over the top of the jar. They are usually plain whiteware. Fragments of a single 'Chinese' jar were also recovered and may have been used to store ginger.

Tin Cans

Preservation of food in cans had been developed in the early 19th century and was commonly available by the 1870s. It not only provided long-term storage but easy portability of foodstuffs to the colonies. At least 10 tin cans were recovered from the fill, although many more were present but had not been well preserved. The 10 sampled are described below and examples are shown in Figure 124. The cans include jam and sardines.

Base and part of body plus frags of same
Base from small can
Base only, corroded
Broken base of can only
Crumpled part of can
Joined to tin rim approx 50mm diam.
Label visible 'ASMAN' Bros St. COES RED PLUM
Not part of 25a
Sq. sided - kerosene?
Sardine tin -rectangular /rounded corners. Writing visible: sides

Continued on next page

Food Preservation and Storage: Jars and Cans, Continued

Figure 123.
Preserving jars
(left - typical
whiteware jar
with ridging for
attaching top;
right: possible
ginger jar)

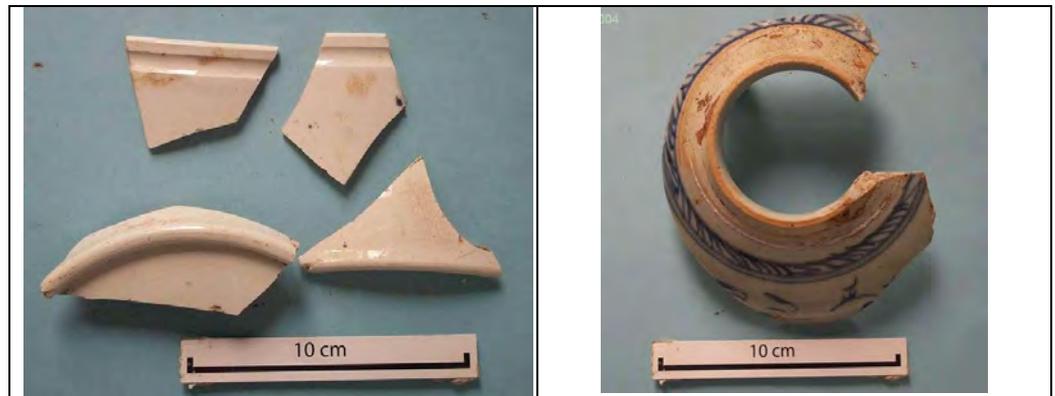


Figure 124. Tin
cans from
Britomart



Food Presentation

Introduction

Tableware constitutes the largest proportion of the sample assemblage from Britomart and indeed from most New Zealand historical sites. There are a number of factors contributing to this, however, that are worth mentioning. Firstly, presentation of food was of major importance to most Victorian households and extensive effort was made to emphasise one's status and wealth through ornate dinner services. A wide range of patterns was used, falling in and out of fashion throughout the 19th century.

A second factor contributing to the high proportion of tableware recovered reflects sampling or reporting strategies in reports where there is a clear bias towards patterned wares used for tableware at the expense of the plain and unpatterned wares. This represents a significant bias in the interpretation of historical assemblages in New Zealand.

Dinner Services

Dinner services were complex affairs and were ideally bought in sets for a designated number of people (Figure 125). Matching sets of plates of different sizes, bowls, platters, tureens, stands and a variety of other forms made up the complete service. Archaeological recovery of the tableware at Britomart indicated that plates were by far the most common single vessel form in the fill, typical of most archaeological sites in the area (see, e.g., Plowman 2000:85).

Patterned Services at Britomart

The most commonly represented tableware patterns (>10 pieces) from the Britomart reclamation were tabulated according to form (Table 18). Based on this the type of service, either dinner or tea, most likely to be represented by the collection was determined. The most common dinner services represented were, in descending order, WS3⁸⁹ (Silber and Fleming 1990L 9 - #3000, see also Figure 127), Asiatic Pheasants, Rhine, Rouen and Willow. Some of these are illustrated in Figure 127. The WS3 dinner material was mostly found in blue. Tea services are discussed below in the next section.

The forms represented by the dinner services included those expected from the ordering books, although intriguingly bowls are rare and poorly represented in the collection.

Continued on next page

⁸⁹ WS3 – Winstone Stables pattern 3. This is a common edge banded pattern found on several sites.

Food Presentation, Continued

DINNER SERVICES.			
Dinner Service for 6 persons, 54 pieces, comprises:—		Dinner Service for 8 persons, 73 pieces, comprises:—	
12 Meat Plates.	1 Dish, 10 inch.	12 Meat Plates.	1 Dish, 10 inch.
12 Tart "	2 " 9 "	12 Soup "	2 " 9 "
12 Cheese "	2 Vegetable Dishes.	12 Tart "	1 Soup Tureen, with Ladle and Stand complete.
1 Dish, 16 inch.	2 Sauce Tureens, with Ladles and Stands complete.	12 Cheese "	2 Sauce " "
1 " 14 "		1 Dish, 18 inch.	2 Vegetable Dishes.
1 " 12 "		1 " 16 "	2 Butter Boats.
		1 " 14 "	
		1 " 12 "	
Dinner Service for 12 persons, 120 pieces, comprises:—		Dinner Service for 18 persons, 168 pieces, comprises:—	
36 Meat Plates.	2 Flat Dishes, 10 inch.	54 Meat Plates.	4 Flat Dishes, 9 inch.
24 Tart "	2 " " 9 "	18 Soup "	1 Soup Tureen, with Ladle and Stand complete.
12 Cheese "	1 Soup Tureen, with Ladle and Stand complete.	24 Tart "	4 Sauce "
12 Soup "	2 Sauce " "	18 Cheese "	4 Vegetable Dishes.
1 Gravy Dish, 18 inch.	4 Vegetable Dishes.	1 Flat " 20 "	2 Pie Dishes, 9 inch.
1 Flat " 18 "	1 Salad Bowl.	1 " " 18 "	2 " " 11 "
1 " " 16 "	3 Pie Dishes.	2 " " 16 "	1 Salad Bowl.
2 " " 14 "	1 Fish Drainer.	2 " " 14 "	1 Cheese Stand.
2 " " 12 "		4 " " 12 "	1 Fish Drainer.
		4 " " 10 "	
<p>The number of Pieces comprising Services can be altered to suit purchasers.</p> <p><i>N.B.—No Ladles are supplied with Real China Dinner Services.</i></p>			
<p>MONOGRAMS, Crests, Masonic Devices, Regimental, Hotel, and other Badges printed or painted on each piece of ware to order.</p>			
<p>EVERY article is charged at a fixed rate, according to the price of the Service.</p>			
<p>EVERY single article counts as a "piece;" thus a Soup Tureen comprises and counts four pieces, viz., Tureen, Cover, Stand, and Ladle; Sauce Tureen comprises and counts four pieces, viz., Tureen, Cover, Stand, and Ladle; Vegetable Dish comprises and counts two pieces, viz., Dish and Cover.</p>			
<p>EXTRA pieces, as Hot-water Plates, Vegetable Drainers, Cheese Stand (with or without cover), Butter Boat, Pickle Tray, Hash Dish (with Hot-water Pan), or Beef-steak Dish, can be made to match any Service.</p>			
<p>WE beg to draw your special attention to the great advantage of ordering a sufficient quantity of one pattern to make a package, as given in price list.</p>			
<p>EACH cask or crate can be assorted with sets for 6, 8, 12, or 18 persons, to suit the convenience of the purchaser, but all must be of one pattern.</p>			
<p>THE prices for goods in packages are understood as being at the potteries. The packages are charged as low as possible.</p>			
<p><i>Almost every article represented in this Catalogue is kept in stock by us, and can in most cases be dispatched within a few hours after the receipt of order, you will thus be enabled to supply your customers with the goods at the shortest notice.</i></p>			
<p>Most of the Patterns of Dinner Services illustrated in this Catalogue can be supplied of an inferior or mixed quality, when ordered in quantities, at lower prices than quoted in our Price List. As we do not keep these qualities in stock, two or three months are required to execute such orders.</p>			
<p>We do not hold ourselves responsible for breakage of, or damage to, goods in transit, but we employ experienced packers, thus minimising risk of breakage.</p>			
<p>ALL prices are quoted free at our warehouse, excepting where special quotations are given for original packages delivered at the potteries.</p>			
8			

Figure 125. Ordering dinner services (Silber & Fleming 1990:8)

Continued on next page

Food Presentation, Continued

Table 18. Most common tableware patterns and type of service represented

Pattern	WS3	Asiatic Pheasants	WS1	Rhine	Rouen	Willow	Imitation Jasper
Ashet	4	5		6		3	
Bowl ?	1						
Bowl/washbowl							
Cup	7	1	19		1	1	6
Mug	2						
Plate	16	24		9	11	7	2
Saucer	5		10	1			3
Serving bowl		1					
Side plate	3	6	4	4	3		1
Soup plate	3	1		3			
Sugar /slop bowl	1						
Tureen	1	2		1		4	
Tureen lid	1	1					
Total	44	41	33	24	15	15	12
Service	Dinner Tea	Dinner (Tea?)	Tea	Dinner	Dinner	Dinner	Tea

Plate Sizes

A histogram of the rim diameter of all (67) plates sampled from the fill is shown in Figure 128. The distribution shows that there was variation between the plate sizes ranging from 8-10.5 inches in approximate 0.5 inch intervals. The various functions of the plates and the patterns are highly variable, given the large number of different patterns that contributed to the assemblage. However, future research with larger numbers of vessels should allow development of an archaeological model of the types of plates most popular in the New Zealand Victorian household through time.

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Food Presentation, Continued

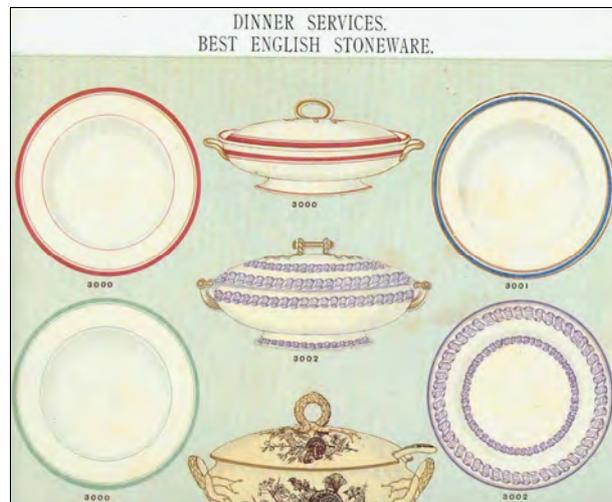


Figure 126. Dinner services advertised in Silber and Fleming (1990:9).
Pattern 3000 = WS3; Pattern 3002 = Cable

Pattern	Plate	Ashet	Other
WS3 (Silber and Fleming 3000)	10 cm	10 cm	10 cm
Asiatic Pheasants	10 cm	10 cm	10 cm
Rhine	10 cm	10 cm	10 cm Cable pattern plate

Figure 127. Some dinner services identified from Britomart Reclamation

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Food Presentation, Continued

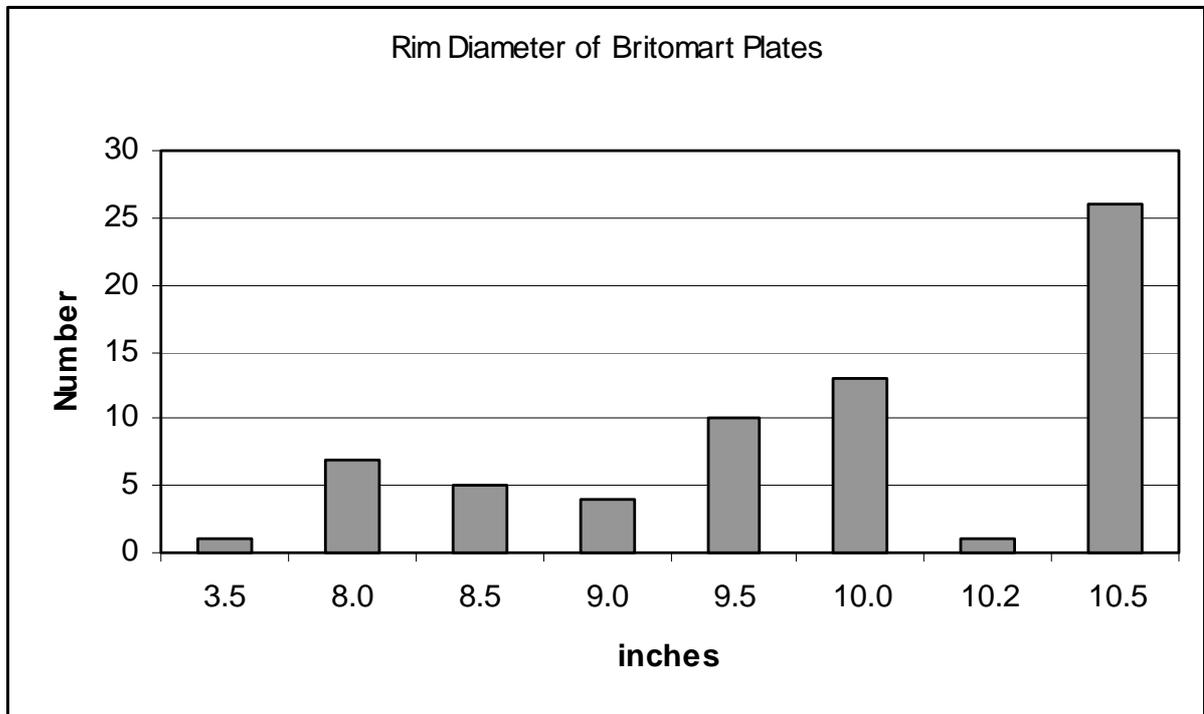


Figure 128. Histogram of plate rim diameters (inches)

Tea, Coffee and Chocolate

History

The 19th century saw a major growth in the popularity of stimulants such as tea, coffee and drinking chocolate. With tea from the Indian subcontinent replacing China tea, however, lower prices made tea in particular an essential part of the English and colonists' diet. Coffee and drinking chocolate were less popular and more expensive than tea but still enjoyed.

Tea and Breakfast Services

Tea and probably coffee were served on Tea and Breakfast Services which, like the dinner services, were of major importance to Victorian households. Tea services generally consisted of teacups, saucers, a cream jug, a slop basin and 'bread plates'. Larger services added coffee cups and small plates. Breakfast services were similar to tea services with cups and saucers, various plates, a milk jug, sugar and slop basins, eggcups and additional items such as 'covered muffin dishes' (Silber and Fleming 1990:34).

The services could also be expanded with items such as trays, serving dishes and more specialised coffee services including coffee pots and demi-tasse style cups.

Patterns

The patterns used on the services were often the same as those used for the dinner services. Thousands of patterns were produced though the 19th century, which makes identification complex. Analysis of the collection from Britomart described in the previous section has already highlighted likely common sets found there (Table 18). They included WS3, WS1 and Imitation Jasper. Examples are illustrated in Figure 129.

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Tea, Coffee and Chocolate, Continued

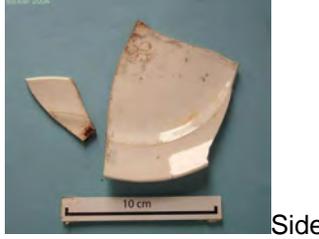
<p>WS3</p>	 <p>Cup/saucer</p>	 <p>Sugar or slop bowl</p>
<p>WS1</p>	 <p>Cup</p>  <p>Saucer</p>	 <p>Cup</p>  <p>Side plate</p>
<p>Imitation Jasper</p>	 <p>Saucer</p>	 <p>Cup</p>
<p>Eggcups</p>	 <p>Cable</p>	 <p>Plain</p>
<p>Milk jug</p>	 <p>Seaweed</p>	 <p>BR33</p>

Figure 129. Common tea and breakfast service material recovered in the reclamation fill

Aerated Water

Aerated Water The popularity of aerated water drinks grew steadily throughout the end of the 19th century. There was significant innovation during this period relating to the methods of bottling soda waters. Reviews of this can be found in Tasker (1989) in particular relating to New Zealand, but many of the technical achievements remained in the Old World.

Patents and Manufacturing The numerous aerated water bottle patents illustrate the ongoing difficulties involved in ‘capturing’ safely and successfully these fizzy drinks. It was a popular type of drink but presented a major headache technologically. Primarily, there was the problem of keeping the drink fizzy. On ordinary bottles with a cork and wire closure, the cork would often dry out and the drink would go flat. Introduced in the 1830s, the first patent, named after its inventor, ‘the Hamilton’s Patent’, solved the cork shrinkage problem by designing a bottle that could not be stood upright. Hence it is commonly referred to as a ‘torpedo’ bottle.

However, unlike other drinks, a significant amount of aerated water bottling was carried out locally in New Zealand with bottling companies either sourcing their own bottles or importing them in bulk for filling here. As the particular bottle shapes required particular technology to fill them, bottling companies had to ensure they had worked out the licensing of the patents they used and obtained the necessary equipment.

The Britomart reclamation fill contained a relatively large range of aerated water bottles and a total of 51 bottles were identifiable to patent (Table 19 and Figure 130). Seven different patents are represented.

Table 19. Patent Aerated bottles

Bottle Type	Date Range	Total
Barrett & Elers Patent		1
Codds Patent	1872 to present (Tasker 1989:60)	2
Gledhills Patent	1874 - 1880 (Tasker 1989:59-60)	1
Hamilton Patent	1830s - 1900s?	8
Hogbens patent	1870 – 1890 Most popular during 1879-1882 (Tasker 1989:61)	29
Lamont Patent	1870s - ?	6
Maughams Patent	1870s - ?	4
Total		51

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Aerated Water, Continued

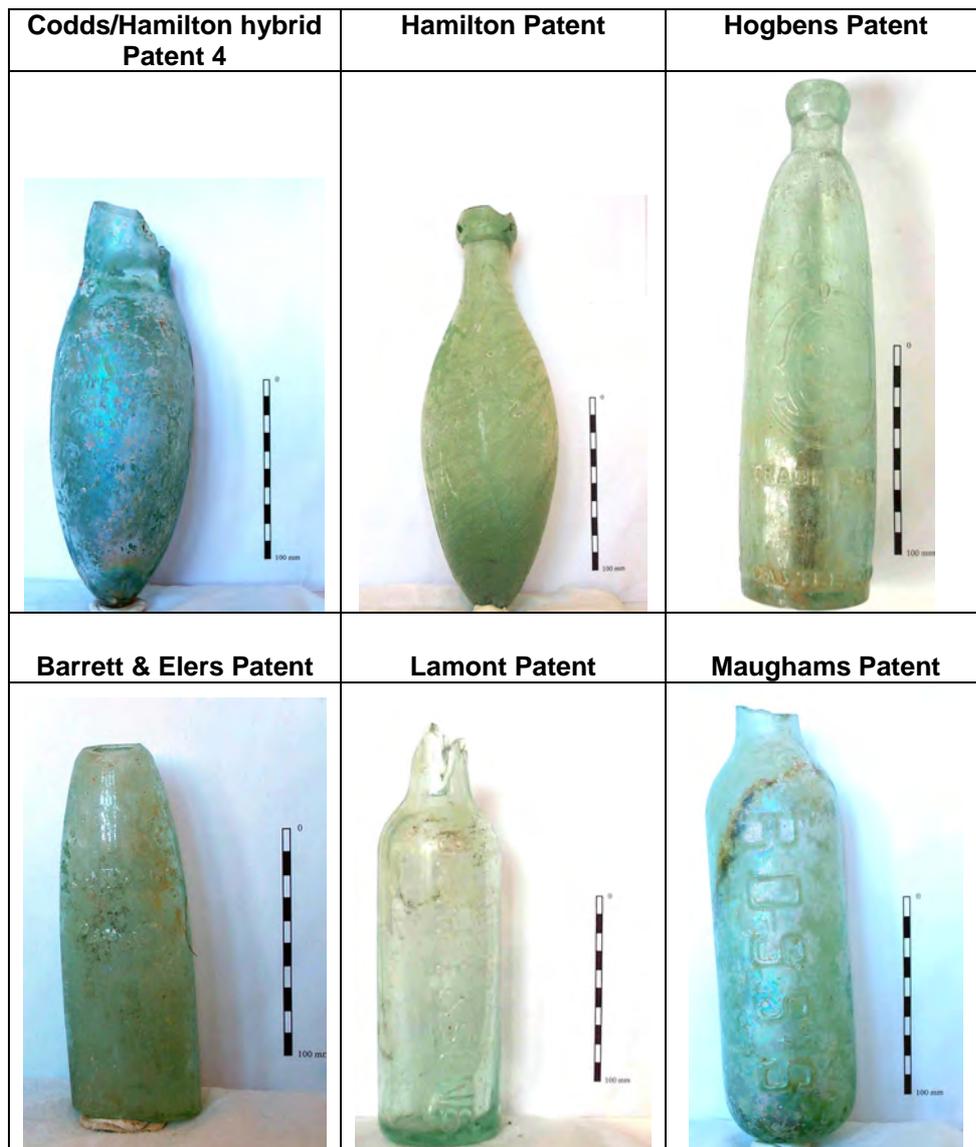


Figure 130. Patent aerated water bottles from Britomart excavations



Figure 131. Stoppers from aerated bottles

Continued on next page

Aerated Water, Continued

Exploding Bottles

Another problem was the danger of exploding bottles when the glass was unable to withstand the build up of internal gas pressure. That this was quite a common event is evident from the practice in aerated water factories of surrounding each bottle-filler with a wire-mesh cage as a safety measure against flying glass (Tasker 1989:57). It is not clear how vulnerable the workers were to problems with exploding bottles, but some hazard was clearly involved. The glass of aerated water bottles is therefore much thicker than that of other bottles and many of the earlier patents had 'blob' tops – a reinforced thick rim.

Hogben, Gledhill and Other Patents

The 'torpedo' bottle reigned supreme until the 1870s but had definite shortcomings; the most obvious being that, once opened, the drink had to be consumed immediately and had to be held upright all the while. The 1870s saw the introduction of many different patents, most of them short-lived. Among them were those represented in this collection such as the Codd's patent or 'marble' bottle, and Hogben's patent or 'stick' bottle (Figure 130).

Edward Hogben's patent of Melbourne, Australia, and Barrett & Elers patent of London are almost identical; unless the patentee details are embossed on the bottle, it is almost impossible to tell them apart (Figure 130).

Possibly because of the proximity of Australia to New Zealand, Hogben's patent bottles appear to be by far the most common (as was the case at J. Grey/Grey & Sons Aerated Waters – see Rusden 1979:49). Variants such as Lamont's patent, Gledhill's patent (a local New Zealand contribution) and Maugham's patent ('bomb' bottle) were also common (Figure 130).

Codd's Patent

Some patent bottles were variations of the 'Hamilton's' theme, like the Maugham's patent with its rounded rather than pointed base (which nevertheless, shared the same disadvantages). Others managed to stand upright and attempted to treat the 'going flat' problem by various ingenious ways. Codd's patent emerged as the most successful patent of the 1870s crop, possibly because it did not involve having rubber stoppers or wooden sticks floating about as you were drinking (as with Hogben's and Lamont's patents), and the marble was an attraction for children once the drink was consumed.

A disadvantage for aerated water factories was that a high percentage of 'marble' bottles failed to return to the factory. Other uses include employing the rubber rings for shanghais, and the bottles as water bombs for catching fish. The latter involved partly filling a bottle with water and carbide. The bottle was turned upside down and thrown into the water where the generated gas caused the bottle to explode and stunned fish to pop to the surface (Rusden 1979:38).

Continued on next page

Aerated Water, Continued

Codd/Hamilton Hybrid

An unusual bottle recovered from Britomart was an example of a Codd/Hamilton hybrid bottle (Figure 130). Understandably they were never produced in great numbers for very long – given that the marble feature was designed to enable bottles to stand upright. This ‘Patent 4’ bottle has a very narrow slender neck chamber, with pinching designed to keep the marble in the shoulder of the bottle.

This particular example comes with the embossed details: ‘George Dixon Sydney Street Wellington/Codds patent 4 Barnett & Foster Sole Agents London’, which illustrates the complex set of relationships involved in bottle manufacturing:

1. Patent holder (Codds)
2. Agents (Barnett & Foster)
3. Bottler (George Dixon, Wellington).

The use of the patents does provide some datable information and Rusden (1979:48) suggests that John Grey & Sons used these bottles from 1874-80. However, we did not find any specific to that manufacturer. The George Dixon bottle is, however, more helpful as the particular hybrid patent was manufactured by Dixon between 1875-6 while in business with his son Edward on Sydney St (Peter Fisher pers. comm.).

It is possible that these hybrid bottles were introduced because old habits die hard, and it was used to acclimatize people to the new idea of a marble in their drink.

Patents

Tasker (1989:133) and others give the impression that Hogben’s/Barrett & Elers patent (‘stick’ bottle) were never that common and in use for only a few years from the late 1870s. Archaeological collections (in Auckland at least) give a slightly different picture,⁹⁰ possibly reflecting a localised situation and the preferences of local Auckland bottlers. It might be that for a short period at least these bottles ‘flooded’ the market and gave the Codd’s patent (introduced in 1872) a run for its money before the latter finally gained the upper hand.

Continued on next page

⁹⁰ At Sky City the ratio of stick to Codds was 4:3 (total 28) while at Chancery St it was 1:1 (total = 6, Macready and Robinson 1990). At Britomart the ratio is 41:1 for all the reclamation fill!

Aerated Water, Continued

Manufacturers Manufacturers are identified by the embossing details found on the bottle. A total of 41 had some embossing and 13 were plain. An additional 18 were not complete enough to establish any information.

Embossing details can include:

- The drink manufacturer
- The bottle maker
- The patentee of the bottle design/shape.

Sometimes the bottle maker and patentee are one and the same. Most common is a combination of drink maker and bottle maker details. For example, as illustrated by this collection, John Grey & Sons imported bottles from:

- E. Barrett & Co. Makers London (1)
- John Lamont Maker Glasgow (1)
- E. Breffit & Co. Makers London (1)
- Lumb & Co. Maker Castleford (6). The company was in operation 1870s-1905.

John Grey & Sons of Eden Crescent, Auckland

John Grey & Sons of Eden Crescent, Auckland, are the most common aerated water manufacturers represented (N=19). John Grey operated alone between 1874-1880, then as John Grey & Sons from 1880 to 1902. The earliest bottle in this collection is a Hogben's patent – the only one with 'J. Grey'. The rest, including two Hamilton's patent bottles and four Lamont's patent (introduced 1874), are embossed 'J. Grey and Sons'. This means that new Hamilton's patent bottles were still being ordered for use post 1880. In addition the J. Grey & Sons trademark symbol, not in use until 1885, was found on only one in this collection (Rusden 1979:47,50) and, as it was found in the reclamation,⁹¹ it must represent one of the first such bottles.

Auckland Aerated Water Company

The next most common manufacturer is the Auckland Aerated Water Company. George Gledhill, who operated between 1859-1890s, owned this aerated water producer. The one example of Gledhill's patent, patented by George Gledhill himself in 1873 (Macready and Goodwyn 1990:80-81), is also likely to be attributable to this bottler. At least four of the seven 'stick' bottles represented by this bottler were Barrett & Elers patent as indicated by the embossing – a contrast with John Grey & Sons above, who preferred Hogben's patent.

Continued on next page

⁹¹ Unfortunately this bottle was given to the archaeologists and not recovered in situ so its provenance is not secure

Aerated Water, Continued

T. Hartley & Co.

Another Auckland aerated water manufacturer represented by a Hamilton's patent bottle is 'T. Hartley & Co.'. Thomas Hartley had an aerated water business in Durham Lane from March-December 1876 (See Brassey 1990:45-46).

Other Manufacturers

Others (apart from George Dixon) are all imports from outside New Zealand:

- 1 George Dixon Wellington (Codds/Hamilton hybrid)
 - 2 J. Ross Sydney Manufacturers (Hogbens)
 - 1 Ross/Belfast (Maughams patent)
 - 2 Old Medal Aerated Waters Co. (Maughams).
-

Ginger Beer

Ginger Beer Ginger beer was a popular drink and sold in stoneware bottles. A total of 8 of these were identified in the collection (Table 20). The bottles are usually tan coloured with a characteristic lip shape (Figure 132). Four of the bottles were manufactured by J. Bourne & Son and imported from England, while a single Australian bottle was manufactured by T. Field in Sydney.

Table 20. Ginger beer bottles from Britomart reclamation

	markings	colour	
	Stamp: 'Vitreous Stone Jars Co/Warranted Not to Absorb/J. Bourne & Son/Patentees/Codnor Park Potteries/Near Derby	tan	
	1 base has 'J. Bourne & Son/Patentees/Denby Pottery/Near Derby/787'	orange/tan	
	top only	orange/tan	
	top only	tan	
	complete	tan	
	Stamp; 'T. Field/Potter/Sydney'	tan	
	Stamp: 'Vitreous Stone Jars Co/Warranted Not to Absorb/J. Bourne & Son/Patentees/Codnor Park Potteries/Near Derby'	tan	
	top only	brown	

Figure 132. Bottle 48: Complete tan ginger beer bottle

Alcohol

Alcohol in the Colony

Alcohol played an essential role in the lifestyle of late Victorian Auckland. It was valued, and cursed, for its nutritional, curative, narcotic, social and fiscal properties. Eldred-Grigg (1984) provides a useful examination of the role of alcohol and much of the following summary is distilled from this analysis.

Consumption was also an indicator of social class and this had several aspects: type, source, price, access, and setting. Beer was generally considered essential to the working classes, whereas wine, including fortified wine, was more refined. Imported drinks were generally regarded as better than any of the locally produced varieties, although Australian wines were not considered as good as those from Europe. By the end of the 19th century, though, the quality of breweries and distilleries producing local tipples had narrowed the gap somewhat. This was certainly the case for beer, dominated by local production by the 1870s.

Price remained a crucial factor in determining consumption, but given the considerable taxation involved this was a dynamic factor. Duties were adjusted at various times at times to promote and at other times stifle local production and to manage consumption patterns.

Access to alcohol was also crucial. Although there was apparently never any shortage, different groups obtained and drank their alcohol in a variety of ways and locations. In more rural areas, where access to imported supplies was usually more difficult and more expensive, local stills were common (and as a result it is difficult to estimate consumption).

Alcohol in the 1880s

The 1880s were a pivotal time in the history of the colony with regard to alcohol. From 1840-1880, alcohol had shifted from unregulated, partially regulated, to national and then provincial management. A constant stream of legislation and regulations was passed by the regulatory authorities as attempts were made to control the moral health of the colony, but the strong financial benefits to the government from customs and duties and licensing taxation limited attempts by temperance advocates (Eldred-Grigg 1984: 61ff).

By the end of the 1870s, however, alcohol consumption patterns appear to have reduced by and large and in particular in the consumption of spirits (Eldred-Grigg 1984:78).

Continued on next page

Alcohol, Continued

Changing Patterns

Over 240 alcohol bottles were identified (Table 21) and all were handmade and imported. Unlike aerated water bottles most 19th century alcohol bottles were not embossed with contents or manufacturers' details until the 1900s (they were mainly beer bottles). This allowed many bottles to be continually recycled. Despite this the proximity of a large number of hotels near the Britomart dump and the bulk dumping nature of the deposits suggest that the sample is probably a reasonable representation of the primary use of these bottles. It was decided to compare the results of the sample with historical records presented by Eldred-Grigg (1984: 261, 283).

Changing patterns in consumption of different drinks reflect changes in the colony during the 19th century. In spirits there was a steady increase in imported whisky along with a steady decline in the brandy and rum consumed (Eldred-Grigg 1984). Comparison between the reported national statistics and the Britomart collection (Figure 133) suggests that the bottle assemblage fits with an expected date of the late 1870s based on the ratio of brandy and rum to whisky bottles. However, the bottle sample is biased by a large number of gin bottles, probably indicative of the nearby bars.

Table 21.
Number of
alcohol bottles by
contents

Type	Number	Possible
Bitters	2	3
Black Beer	57	
Beer/Stout	39	
Brandy	11	
Bols Gin	3	
Case Gin	10	
Champagne	99	
Hock	3	2
Porter		1
Spirits	13	
Unknown	4	2
Whisky flask	4	
Wine	1	4
TOTAL	246	12

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Alcohol, Continued

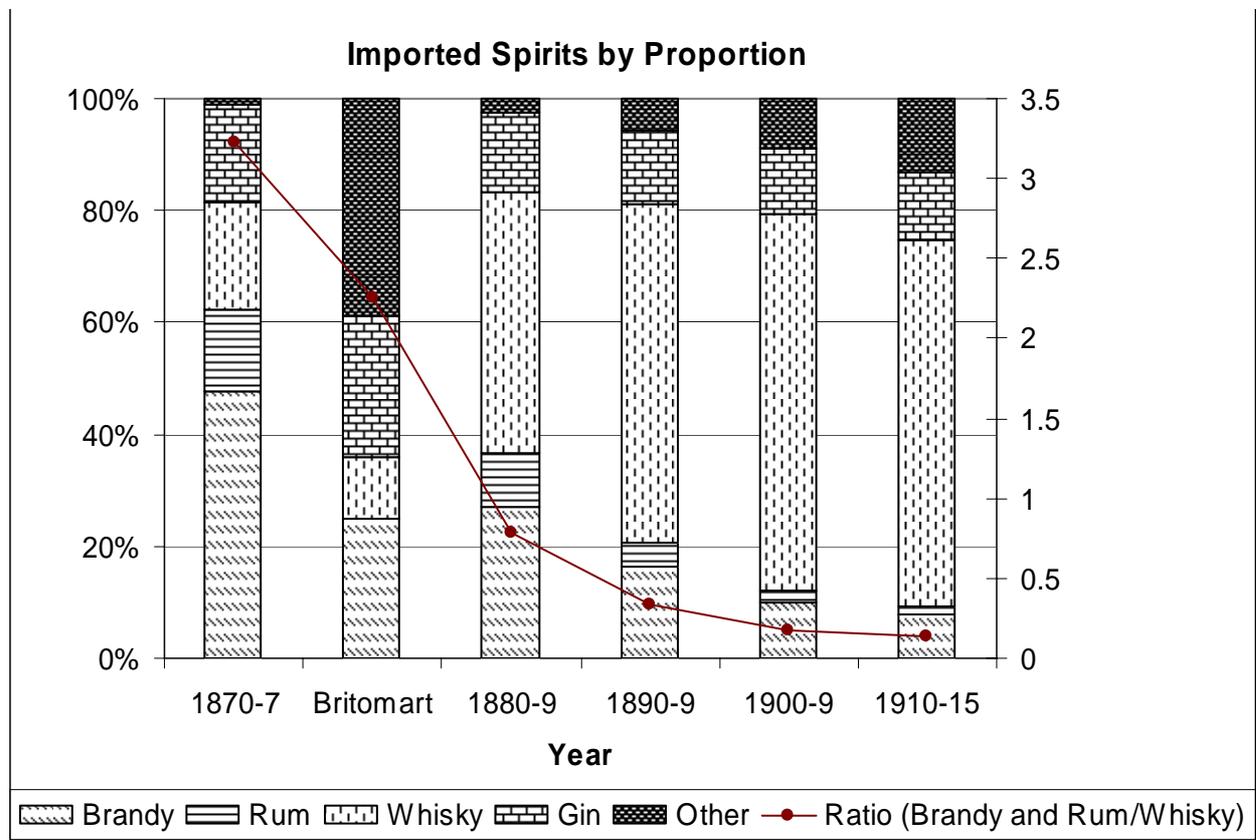


Figure 133. Proportion of imported spirits by type from 1870-1915 (data from Eldred-Grigg 1984: 261, 283-4)

Stoneware Stout/Beer

Stoneware stout/beer bottles are often characterised by a white or cream slip (Figure 134). Sixteen mostly complete examples with rounded shoulders were recovered, of which 1 was large and 2 medium-sized. A further 5 bottles were represented only by their tops.

Manufacturers are usually recognised by stamps:

- 'Port Dundas/Glasgow/Pottery Co.' = 4
- 'H. or M. Kennedy/Barrowfield/Pottery/Glasgow' = 7. Each has a number between 'Barrowfield' and 'Pottery': 30 x 2, 2 x 2, 10 x 1, 26 x 2. These are possibly batch numbers.

A further 4 two-tone stoneware (cream/tan) bottles were also recovered and were of medium size and with a pronounced shoulder.

Continued on next page

Alcohol, Continued

Black Beer Bottles

These were the earliest beer bottles in use in New Zealand. They came in a variety of shapes, with different rim types and in several sizes. Their use decreased only gradually over time in proportion to the increasing use of the 'ringseal' bottle (see below). These bottles ruled supreme until the 1870s. Fifty-seven were represented in the collection. Types (after Felgate 1998) included:

- 24 big stubby (Type 1)
- 8 small stubby
- 12 porter type (no shoulder)
- 11 big tall slender (Type 5), 2 small tall slender.

Other information included:

- 35 bases: 3 snap glass pontil, 10 moulded, 22 bare iron
- 71.4% bare iron and snap glass 28.5% moulded
- All hand applied rims etc.

Five examples had embossed bases, although it was not possible to identify the manufacturers:

- 1 Type 5 moulded: 'C.W & Co' with 'X' flanked by two circles (Bedford 1986:33, Table 10).
- 1 Type 5 moulded has central dimple with lines radiating out from it like a sun
- 1 Type 5 moulded has '6 to the gallon' around a central dimple'
- 1 Type 5 moulded has 6 dimples in outer ring around base
- 1 Type 1 moulded has 'S *' on base.

Ring Seal 'Champagne'

The popular ditty 'ten green bottles hanging on the wall' refers to these very common bottles. There were not enough black beer bottles to meet demand so during the 1870s up until the introduction of the crown seal in 1910, huge numbers of empty champagne bottles were imported from France, and, it is assumed, at a much cheaper price than the black beers from Britain. While commonly used to bottle beer, they were used for a range of other products as can be seen below. However, by the late 1800s the association of beer with these bottles was so strong that the general public would not buy beer in any other type of bottle. Even when the revolutionary 'crown top' was introduced in 1910, they had to be applied to bottles in the traditional 'ring seal' shape before people would buy them (Tasker 1989:41-43).

All the bottles in this collection are plain, and have hand applied string rims. Some have wrench marks on the neck. Two different sizes were represented: 29 small and 69 large (a total of 98).

Continued on next page

Alcohol, Continued

Use of the Champagne Bottles

Many of the champagne bottles had corks and seal remnants. One example of the seal reads 'John Stephen's Sauce, Pickles and Pure Vinegar Maker Gloucester,' which provides further evidence that so called alcohol bottles were not always exclusively used for alcohol.

Two had paper label remnants:

- Lion's foot with '....New Zealand...', probably beer
 - Another has tree(s) to one side and a woman's face which may relate to food products not alcohol.
-

Bitters

There were two embossed 'Dr Soules 1872 Bitters' bottles in the characteristic square dark brown bottle with a picture of a hop plant leaf and fruit – see Bedford (1986) for dates of production (USA 1872-1900), and Tasker (1989:50). These were the most frequent bitters bottle encountered in New Zealand. The other three bottles are large round amber bottles minus tops – different to hock bottles, which are deeper in colour and have a different base diameter and character.

Bitters never really took off in New Zealand. It was a ploy in the 19th century to avoid paying a liquor tax by including herbs so that the drink was proclaimed to have medicinal properties.

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Alcohol, Continued

Figure 134.
Stout/beer bottles



Figure 135.
Black beer
bottles

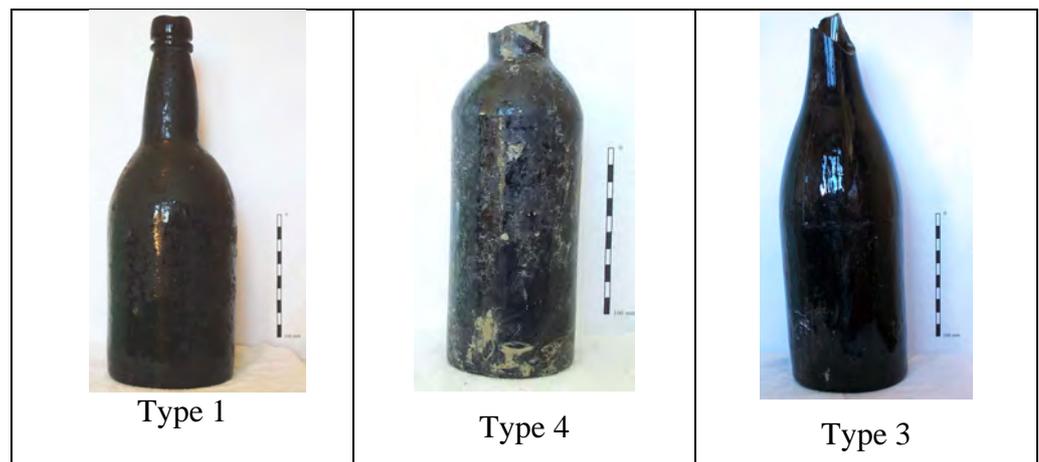


Figure 136.
Ring-seal
'champagne'
bottle (Feature
030502/02)



Continued on next page

Alcohol, Continued

Case Gin

Gin was the most popular of the spirits in the 19th century. A major reason was that it was the cheapest alcoholic beverage you could buy, and consequently the one most maligned ('mother's ruin'!) by the moral majority.

Characteristically gin was placed in square bottles known as 'case gin' bottles because their square shape allowed them to be packed snugly and safely to reduce breakage. In the 19th century almost all gin was made in Holland, a mixture of herbs, juniper berries and barley (Tasker 1989:47).

The classic case gin bottle saw some basic changes over time; mainly refinement in form and rim application. After 1880, the noticeably wonky bases and roughly applied rims had become considerably more regular. Tasker (1989:48) provides the following classification for case gin bottles in New Zealand:

- Type A – pig snout, earliest used until about 1875
- Type B – 1875-1880, wonky top/concave base
- Type C – c.1880, flat bottom, more uniform, rounded shoulders.

All 10 relatively complete Britomart examples had very wonky hand applied cone rims similar to Type B. No 'pig snout' rims were identified and as they had fallen out of favour by around 1875, this is consistent with the reclamation period.

A further 5 bottles bases were found, 3 of the old concave wonky type. Two examples had a star pattern on the base (A or B). The final 2 bases were flat based with striated sides (Type C), more characteristic of the regular refined post 1880 type.

Bols Gin

Two 'Bols Gin' stoneware bottles were recovered. Not much is known about these bottles (see Brassey and Macready 1994:66/67, Macready and Goodwyn 1990:40/49 for illustrations). These examples, though, were tall stoneware bottles with handles.

Brandy

Brandy was also a popular tippie. Characteristic bottles were the round, slender light green glass type with a ring seal roughly hand applied and minor to major wrench or twist marks on the neck. At Britomart there were 10 standard size and 1 smaller size bottles. The examples in this collection have minor wrench marks.

Continued on next page

Alcohol, Continued

Figure 137.
Brandy and
whisky bottles

Smaller type

F220402/02 Brandy



Whisky flask



Whisky

Whisky bottles are usually identified as flasks. The Britomart examples included 4 standard sizes and 1 large flask. All were aqua in colour (Figure 137).

Continued on next page

Alcohol, Continued

General Spirits A further 12 bottles that were generally used for spirits were identified. Nine were large round bottles, 3 of which were light green and could possibly have been used for wine. The rest were aqua. The bottles have a similar shape to the tall slender black beer type.

Wine Wine was not a particularly popular drink in the 19th century and only 12 bottles were recovered. Of these, 5 were German ‘hock’ style bottles. These are tall and slender bottles – all of large size. Four of them were deep amber and the other (a complete example) was light amber.

Four aqua ring seal fine glass bottles and two green fine glass bottles with mottling were also probably used for wine. One miniature amber bottle was also recovered.

A variety of wine glass fragments were also recovered in the reclamation fill.

Miscellaneous Fragments of two large stoneware barrels were found and were probably 4 gallon stone jars with tap attachments. A further 212 glass bottles probably used for alcohol were also found but could not be identified.

Glass Drinking Tumblers Several glass tumblers were also recovered from the fill (Figure 138). Some may have been simple drinking glasses but some finer crystal glass fragments perhaps used for drinking spirits were also found.

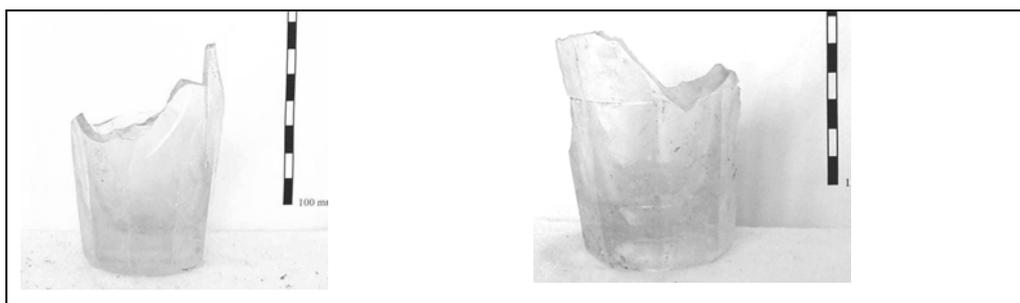


Figure 138. Drinking tumblers found in reclamation

Summary The range of bottles recovered from the reclamation fill is fairly representative of what we might expect to be sold in downtown Auckland. While the numbers are only a small sample of those actually seen in the reclamation fill, and in many cases hundreds of such bottles may have been dumped at a time, it is likely that many may have come from the local hotels in the area.

Leisure and Entertainment

Tobacco

Pipe Studies in New Zealand

One of the most common artefacts recovered from historical sites in New Zealand are clay pipes. Analysis of pipes focuses on identifying the manufacturers of the pipes based on the marks found on them, establishing information about dating, and looking at the more exotic forms found. In New Zealand, dating information from pipes is usually of limited value as mass production in the 19th century had done much to standardise the 'normal' clay pipe form, although more limited production of an enormous number of 'exotic' shapes occurred for a variety of reasons. These exotic forms include the use of popular characters, such as Caesar and Punch (from Punch and Judy), and the use of decoration such as transfer printing to create 'commemorative' pieces (see, e.g., Brassey 1991).

Yet pipes remain part of a complex story relating to global relationships in Victorian times. Large plantations in the New World colonies, such as the USA, supplied the vast global demand for tobacco via the extensive trading empires. Pipes therefore represent more than individual artefacts and must be understood as part of a 'tobacco consumption package' (Cessford 2001). This package includes any item linked to the production, distribution or consumption of tobacco and most importantly relates to the global relationships that distributed the package.

Tobacco and Smoking in New Zealand

Production in New Zealand never achieved major proportions, although there were many attempts during the 19th century (Eldred-Grigg 1984). Growing was generally carried out in small quantities for personal use. Maori adopted the plant quickly in several areas for local use. Smoking was endemic in the country and crossed class lines and age groups. Several campaigns attempted to curb tobacco use, but as with alcohol, the taxation revenue gathered by the government always limited the political will to change the situation until the latter part of the 20th century.

Continued on next page

Tobacco, Continued

Demise of Clay Pipe Smoking

Pipe smoking had been the dominant form of using tobacco, although chewing and snuff was also popular with particular groups well into the mid 19th century. However by the time of the Britomart reclamation, cigarettes were starting to make significant inroads into the global market. In the US, less than 20 million cigarettes were produced in 1865. By 1880 this figure had risen to 500 million, doubling every five years so that by 1895, 4 billion cigarettes were produced there.⁹²

The Smoker's Kit

Smokers required a number of objects to assist them in their addiction. Along with pipes, tobacco pouches and matchboxes were essential to the rituals of smoking. Preservation of the pouches appears to have been rare but pipes and metal matchboxes are common in archaeological assemblages.

The Britomart Collection

Over 450 pipes were represented in the reclamation fill. Almost all were white clay pipes with very standard bowl types and relatively thin stems. A few pipes had very ornate moulded bowls and there was at least one pipe made from brown clay. Some of the decorated pipes are shown in Figure 139.

The overwhelming majority of identifiable pipe fragments found in the Britomart collection came from only two manufacturers: William White and Thomas Davidson (Table 22). Both are Scottish manufacturers whose products are common in New Zealand archaeological assemblages. McDougall pipes were also represented, but not in the proportion usually found on sites excavated elsewhere in Auckland.

Matchboxes

The remnants of at least four metal matchboxes were also recovered. One was in excellent condition but had no markings. Two lids had labels with 'Bell & Co... Wax Ve.... 1832 London'. The date, however, relates to the company's start rather than the date of the matchbox.

Continued on next page

⁹² Gordon L. Dillow, 'The Hundred-Year War against the Cigarette', reprinted from the February/March 1981 issue of *American Heritage* by The Tobacco Institute, Washington D.C., p. 6. cited in *Smoking and its Enemies: A Short History of 500 Years of the Use and Prohibition of Tobacco* by Sean Gabb (1997). First published by the Freedom Organisation for the Right to Enjoy Smoking Tobacco (FOREST), London, 1990, ISBN 1 871833 14 0 (<http://freespace.virgin.net/old.whig/faghist.htm>).

Tobacco, Continued

Table 22. Pipe manufacturers represented in the Britomart assemblage⁹³

Feature	..ISTON	B[lake]	Davidson	Macdougall	W.White	unknown	unknown, TD style	unknown, Belgium	Unknown, Glasgow	unknown, French	Total
F060502/01			1			2					3
F060702/01		1				1					2
F080202/03						1					1
F090402/01						1					1
F090402/03						1					1
F140502/01			2			3					5
F150502/03									1		1
F190202/01						1					1
F190202/02						2					2
F210202/03		1	42			105					148
F220202/03						1			1		2
F220402/01						2					2
F220402/02						3					3
F220402/02A						1					1
F220402/02/C					34	80					114
F220402/02B	1			1	95	46	24				167
F220402/03						2					2
F250602/01/X			1			3		1		1	6
F260402/01						1					1
Total	1	1	46	1	129	256	24	1	2	1	463

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⁹³ Features are described in detail on the accompanying CD.

Tobacco, Continued

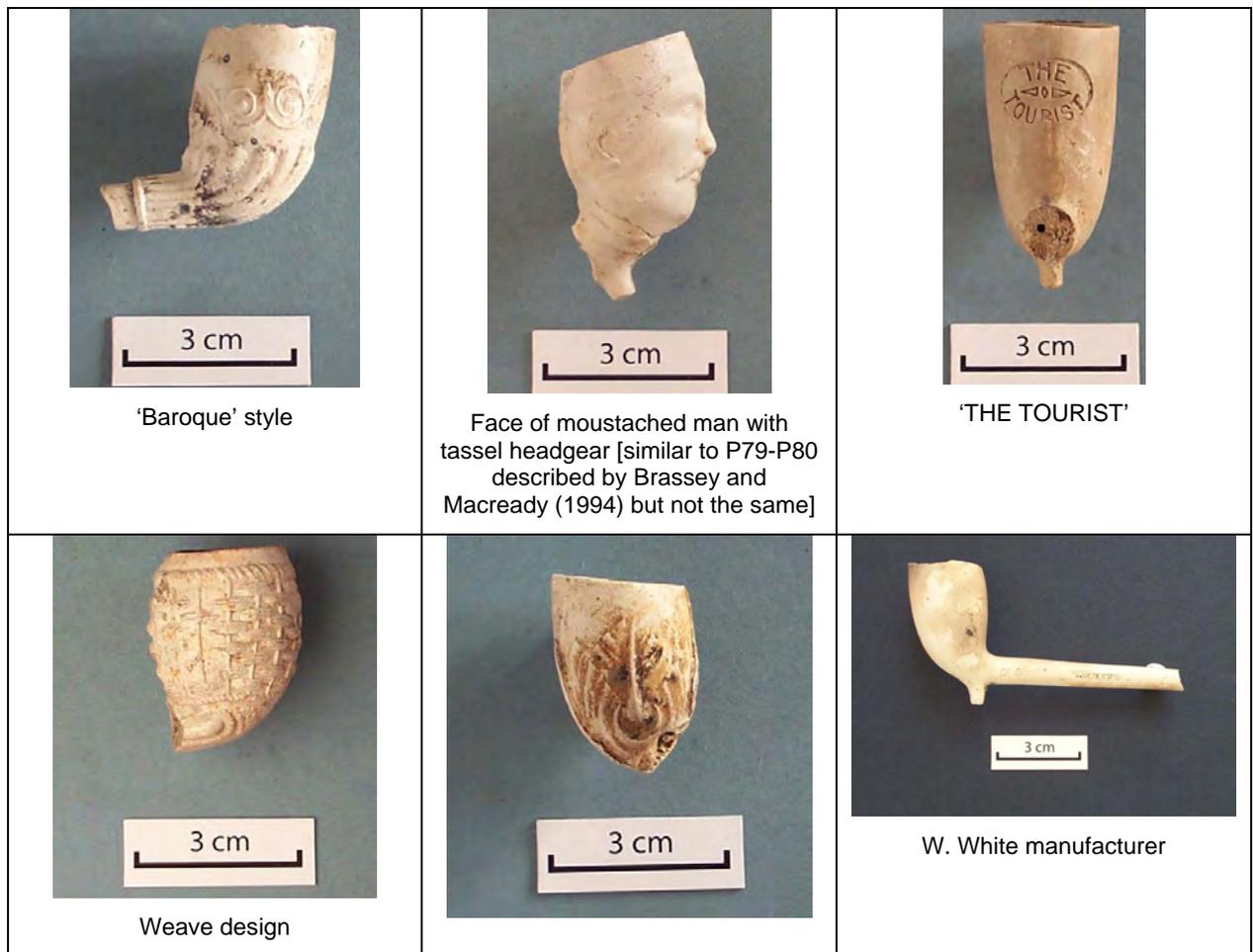


Figure 139. Decorated pipes from fill

Figure 140. Matchboxes from reclamation



Toys and Decorative Artefacts

Toys and Decorative Artefacts

A few toys and decorative artefacts were found in the Britomart fill. These included a miniature pipe with the bowl in the shape of the character Punch from 'Punch and Judy'. Other items were part of a child's teacup, china doll fragments, the leg of a small statue and small containers and stands (Figure 141).

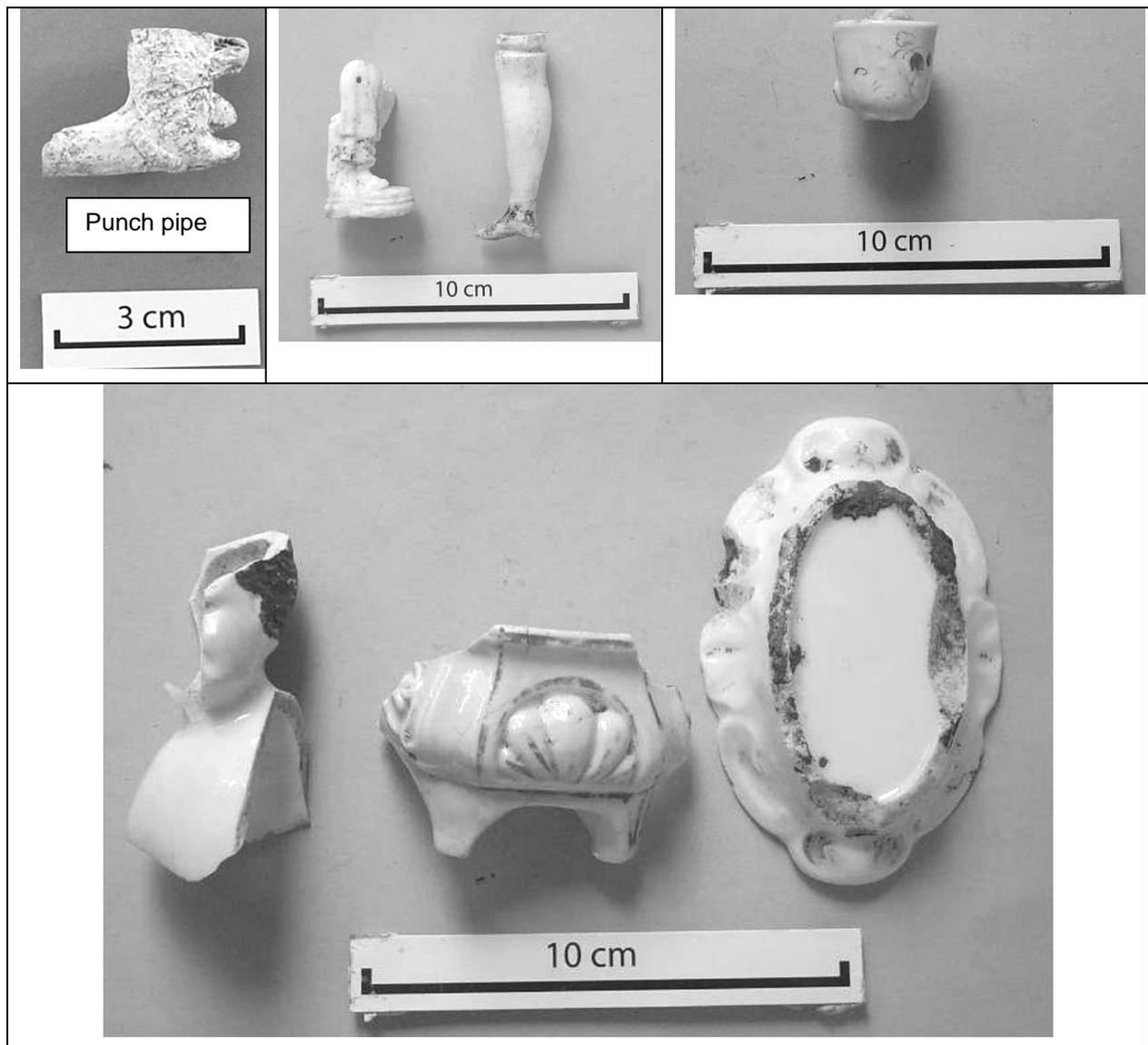


Figure 141. Toys and decorative items

Personal Care

Clothing and Leather Items

Material

Given the industrial nature of the reclamation fill, the number of personal items of clothing recovered was perhaps less than might be expected given the size of the excavation. However, large off-cuts of leather and cloth (along with metal sheets) and items relating to clothing were seen in the fill (see, for example, Figure 142). Tanneries were located nearby and were the probable source of the off-cuts. A few bits of cloth were recovered but were not particularly diagnostic. A large number of shoes and boots were unexpectedly represented in the fill. This section therefore focuses on the leather items found.

Before and After

Within a short time of the establishment of Auckland town, the leather and footwear industry was ready to begin production. The earliest detailed information comes from the Police Census 1845 (McLean 1989:31-51; 56-59; 64-67) where a total of 21 shoe or boot makers were listed either as property owners or tenants, although their stated occupation does not mean they were engaged in that profession at that time. The 1845 population of 3,574 persons from Tamaki to Epsom (ibid 1989:50) was well resourced for leather producers and shoe and boot makers (Table 23).

Table 23. Showing the breakdown and locations of leather manufacturers in Auckland in 1845, including tanners, shoemakers, saddlers/harness makers, and curriers. (Data derived from McLean 1989:31-69)

Date	Location	Shoemakers		Tanners		Saddlers		Curriers	
		Owner	Tenant	Owner	Tenant	Owner	Tenant	Owner	Tenant
1845	Queen St	2	4						1
	Shortland St		4						
	Fields Lane		1						
	Chancery St	1							
	O'Connell St	1	1	1					
	Albert St	1	2						
	Durham St		1						
	West Queen St (Swanson St)		1						
	Princes St						1		
	High St		1						
	Mechanics Bay		1						
	Epsom			1	1				
	Sub Total	5	16	2	1	0	1	0	1
	TOTAL	21		3		1		1	

Continued on next page

Clothing and Leather Items, Continued



Figure 142. Clothing objects

Clothing and Leather Items, Continued

From Growers to Butchers to Tanners to Boot Makers

Some farmers who farmed stock in the outer suburbs doubled as butchers in town, for example Adam Chisholm, who owned a farm in Papakura. As was the practice in early downtown Auckland, some butchers killed stock on their premises, so there was a ready supply of pelts and hides for processing. Chisholm carried out his animal slaughter in O'Connell St, but 'in September 1844 he was charged with being the owner of a slaughterhouse in the town of Auckland which was a public nuisance and a menace to health' (Walker 1990:5). At this time there was one other tannery recorded in Epsom. Within a radius of several hundred metres from the downtown tannery there were 16 butchers' premises, 13 shoemakers, and one currier (McLean 1989:59 Tenancy Plan 2b).

As the town grew tanneries were forced to move to the outer suburbs of Auckland, where water supplies were better and more consistent. During the 1860s Jagger Company and Warnock Tanneries were located near Western Springs, and Ireland Brothers were set up at Panmure, where they discharged their effluent into the Tamaki River at high tide (Doug Astley, pers. comm. 2003). In 1868 William Sutherland had a boiling down works, and in 1873 he forged a partnership with a Mr Dawson. The partnership engaged William Catley in 1876, and produced a high quality white chrome leather used extensively for the lining of saddles. In 1881 Sutherlands moved the tannery to a site near the Onehunga Springs on reclaimed land, and discharged their effluent into the Manukau Harbour (Doug Astley, pers. comm., 2003; *Apparel* 5:2 [February 1974]:27-28).

In 1879 Elijah Astley and his son John found employment in the tannery of Ireland Bros at Panmure. After six months B. Gittos & Sons offered them both a more remunerative position at their tannery in Avondale, but after Gittos closed down, the Astleys rented part of a tannery from H. Bell who owned a small tannery, also in Avondale. Eventually they moved to a tract of land near the Whau River in New Lynn, and later opened a small shop in Albert St for taking orders (*Apparel* 2:5 [May 1971]:46-47 and 49-52). Astleys specialised in black harness, bridle, and saddlery leathers. They also bought in hides and tanned leather suitable for currying, and produced shoe and boot sole leathers (*Leather Trades Review* 19 October 1960:93-94).

Continued on next page

Clothing and Leather Items, Continued

Boot and Shoe Making

The manufacture of leather goods during the 1860-1870s period included G.A. Coles in New North Road, and Trenwith Bros. in Wakefield St, bespoke boot makers, i.e., making boots to order (Doug Astley, pers. comm. 2003). From an early photograph [probably late 1870s] taken of the corner of Customhouse St and the Queen St wharf, a small bootmaker, T. Richards (Figure 143) was in business next to the future tipping grounds of the Britomart Project excavation.

As there were no modern 19th century footwear producing industries set up in the new Colony, it was apparent that all footwear had to be imported until viable manufacturing to service the local market had been set up. There is no doubt that immigrants brought with them an extra pair of boots or shoes to see them through the tough times of early colonial hardship. Fashion, according to overseas trends, dictated the style and types of shoes and boots colonists would have preferred to wear, but early accounts of downtown Auckland certainly did not offer the promenades and boulevards where they would have liked to display their finery. Consequently, footwear followed necessity, and it must be remembered that not all could afford to be fashionable. As Swann succinctly puts it: 'Dress and shoes are an expression of the wearer's place in society and of his feelings, whether desire to promote sexual attraction or support a political faction, or summoning up courage for war, or repulsion after it. Children's shoes...follow a different pattern, depending on whether the child is treated as a miniature adult, or something to be seen but not heard' (Swann, 1982:6).



Figure 143. T. Richards Boot Maker, third building from corner of Queen St Wharf along Customhouse St (Source: Henry Winkelmann, Auckland Public Libraries Heritage Images Online, 1-W965)

Continued on next page

Clothing and Leather Items, Continued

Supply

Initially Auckland had an ample supply of experienced shoe and boot makers, but machinery used for sewing, pegging, and screwing boots and shoes together was not available. Merchant businessmen needed to import footwear to supply a demand as shoes and boots wore out. However, boot makers resident in early Auckland were kept busy making repairs and then crafting new footwear once local supplies and leather materials become available.

Leather Artefacts from the Britomart Project

The remains of the leather footwear from the excavations show that a utilitarian approach to what citizens wore and ultimately discarded was taken. The former owners of the boots and shoes certainly had their money's worth, as all were in decrepit condition and well beyond the continued repair many samples displayed. These artefacts were the useless cast-offs made some 120 to 140 years ago.

Blucher boots worn by men, and elastic-sided boots worn by both men and women were the most common style of footwear artefacts recovered from the Britomart reclamation (Figure 144). As most of these items were crafted and held together by the wooden pegging system (Figure 145), and this method was one that was developed in the USA, it is possible that they may have been imported from there, although England is an equally likely source. Blucher boots were fashionable in Europe from 1820 to 1850 (Nunn 2000:112) and were also part of the military outfit. Swann (1982:44) describes them as: 'black leather, flesh out,... narrow square toe with high spring, 1½-inch short stacked heel, iron horseshoe and hob nailing... two pairs of lace holes to tie over tongue. No back seam...', a description which fits those from Britomart. Whether these are military or civilian footwear is difficult to say. Most were not in good condition. Elastic-sided boots were popular after 1837 when India rubber material was patented (Nunn 2000:112)

Condition of Footwear

Footwear recovered from the reclamation was all well worn and had obviously been discarded because repair was no longer an option. Uppers were missing from many of the soles, and inner and outer soles were separated from each other. Most common was the complete sole with heel, and the counter all in place. Uppers, including informative vamps, were usually absent but some scrap remains gave indications as to their design, use, and structure. (See Swann 1982 for the terminology of shoe parts.)

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Clothing and Leather Items, Continued

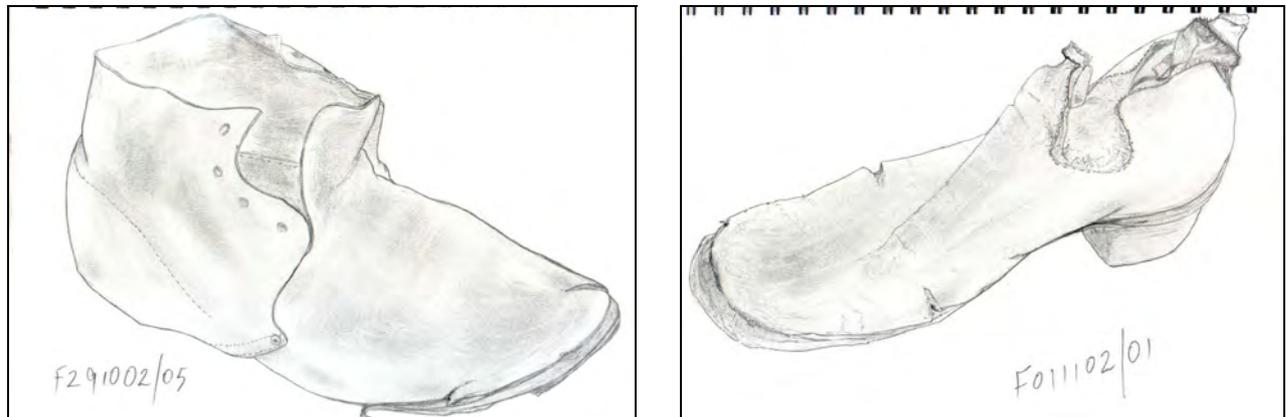


Figure 144. a. F291002-05 Blucher boot; b. F011102-01 elastic-sided boot



Figure 145. Wooden pegs holding sole and heel to upper of elastic-sided boot

Continued on next page

Clothing and Leather Items, Continued

Gender and Size

Gender of the owners of the footwear has been largely determined by length of sole. Brassey (1989) observes adult and children's sizes only, but later notes (Brassey 1990) women's shoes as being less than 220mm in length. Macready and Goodwyn (1990) identified children's sizes as being less than 150mm in length and adult as being 240mm and over. Mosen (1998), however, follows Best's 1992 method.

The Best (1992) system has been used to review the Britomart data, viz: children's size being <180mm; women's and young adult from >181mm and <250mm; and male as being > 251mm. Measurable shoe or boot lengths were taken from 51 articles of footwear, and categorised by size into the wearer's gender (see Table 24).

Table 24. Shoe and boot lengths by size and gender

Children	Adult		Total Number	Range in mm
	Female/Young Adult	Male		
12				110-180
	19			181-250
		20		251-320
			51	

Heels and Clumps

In addition to these, 14 sole-heel parts were not measurable lengthwise, but had been pegged. Of the measurable soles 15 had also been nailed as well as pegged, and 8 had evidence of stitching. Of the 8 heels collected, 7 were pegged, and 4 also had nails. Clumps were separated from soles, and numbered 15, all of which were pegged, and 4 had nailing holes. Evidence of stitching occurred in 3 of the clumps. Of the clumps, 7 also had metal toe plates, or evidence of staining and marking where they had been. The lengths ranged from 115mm to 150mm and widths from 70mm to 90mm.

Where footwear was complete it was found that the clump was in the vicinity of half the total length of the shoe or boot. This would place these 15 clumps into the adult 230mm to 300mm length range.

Continued on next page

Clothing and Leather Items, Continued

Lefts, Rights or Straights

One of the most important technical innovations towards the end of the 18th century in Europe, according to Swann (1982:32), was the re-introduction of lefts and rights in footwear. With a fashion swing to flatter shoes, straights were made redundant. Even as late as 1800, the army required soldiers to wear their boots on alternate feet on alternate days in order to make them last longer (Swann 1982:33).

From the available measurable and whole soles from the Britomart reclamation, a determination was made as to which foot each artefact was probably worn on. Because many of the shoes and boots were only remnants of their former selves, and had subsequently spent well over a century as part of the debris of the growing town, distortion was inevitable. The results are shown in Table 25. The larger numbers of straights is interesting and it is possible that redundant, out-of-fashion footwear was shipped to the Colonies, where the latest European or 'civilized' fashion was not appreciated.

Miscellaneous Leather

Apart from leather scraps from shoemakers or bespoke bootmakers, other items included harness strapping and saddlery pieces, as well as scrap materials (Table 26). Time and storage conditions have not been favourable to the preservation of these items.

Other Archaeological Sites in Auckland

Other archaeological sites in the Auckland city area have also produced leather products. Most sites carried similar types and condition of footwear to those of the Britomart excavation. Illustrated examples and details of footwear occur in Brassey (1990:55 and 1989:47), Best (1992:91-94; 1997:12-13; 1998:30-32 and 109; 1999:30-31; and 2001:36-38), Mosen 1998:117-119), and Macready and Goodwyn 1990:113-114).

Continued on next page

Clothing and Leather Items, Continued

Table 25. Straights, lefts and rights identified

Straights	Lefts	Rights
25	12	14

Table 26. Details of leather artefact examples

Feature N°	Leather Type	Description
F010602/02	?Saddle side flap	400mm x 250mm; doubled and stitched together
F011102/01/ PO Area B	Harness strapping	2 pieces of split strapping: 1) 290mm x 45mm x 5mm with two strips each 250mm x 20mm x 5mm, one with riveted buckle strap and keeper; 2) 173mm x 22mm x 5mm with rivets, probably the other buckle strap from 1) above; 3) 440mm x 30mm x 5mm with 2 split strips, each 130mm x 20mm x 5mm with stitching at other end of main strap; 4) 260mm x 40mm-25mm x 3mm scrap strip
F040602/03	Strap	980mm long x 50mm wide x 5mm thick in 2 pieces; 5mm holes at one end over 200mm; holes left from side stitching; stamp EL
F090402/03	Blinker	240mm x 140mm x 2-3mm thick; tear-drop shaped; stitching around edges
F090402/03/Y	Strap	370mm long x 15mm wide x 5mm thick; 14 holes x 5mm dia. at rounded end; buckle attachment sewn and broken at other end for buckle removal before dumping
F130602/01	Leather Legging	6 x lacing holes either side; 2 x pieces stitched; leather lace; right leg
F220202/01/Y	Horse Nose Feed Bag (Chaff)	Strap 523mm long x 25mm wide x 5mm thick with 13 x 5mm dia holes; 3 x rivets holding part of bag remains, which is c 400mm long x 70mm wide
F220202/01/Y	Harness Straps	5 pieces: 1) 270mm long x 36mm wide with keeper; 2) 220mm long x 36mm wide double loop with buckle attachment back flap, but cut to remove buckle; 3) 260mm long x 45mm wide; 4) 100mm long x 40mm wide with buckle attachment part but buckle removed; 5) 145mm long x 42mm wide with 40mm buckle tongue slot, but buckle removed; Stitching holes on both sides of most pieces; some with double stitching holes
F220202/03	Harness Loop	190mm long x 80mm diameter with both ends flattened each 20mm x 20mm with stitching
F290102/01	Strap	330mm long x 12mm wide x 3mm thick; stitching around one end which is rounded
F291002/05	Scrap	270mm x 45mm 2mm and 3mm doubled and stitched together
No Number	Leather 'Tube'	580mm long x 55mm wide x 4mm thick; 40 copper rivets with washers holding seam in place; ends appear to have been broken or cut

Ablutions and Hygiene

Introduction

In the 19th century considerable importance was placed on personal hygiene and care. There were several dimensions to this, many deriving from advances during the 18th century when the development of water closets made an impact in crowded cities. In colonial New Zealand, outhouses were the norm for most domestic situations and they were only gradually incorporated into the main building structures. Apart from what was required for carrying out one's ablutions, a whole range of hygiene and cosmetic products were developed. They ranged from improved brushes (in particular the development of the toothbrush), to a huge range of cosmetics, hair products and perfumes. Some of these artefacts were found in the Britomart fill (Figure 147).

The Bathroom

Bathroom wares were found in the Britomart collection (see Table 27). These were made up of a wide range of vessel forms and could be bought either as individual items or as parts of decorated sets. Plain/white ware was common but patterned sets were also popular and some examples are shown in Figure 146. Parts of a bedpan and invalid feeder were found, perhaps from the Auckland Hospital, although these items were relatively common in households as well.

Table 27.
Bathroom wares

Vessel form	Total
Bedpan	2
Chamber pot	7
Chamber pot/ ewer	1
Cosmetic container	4
Ewer	2
Ewer/Jug	1
Invalid feeder	1
Soap dish	2
Toothbrush case	3
Toothbrush case/soap dish	1
Wash bowl	17
Total	41

Other Items

Other items such as toothbrushes, toothpaste containers and toothbrush cases illustrate the growing interest in dental care (Figure 147). Fashion in the Victorian period also emphasised the importance of hair, with lush long thick hair for women and big sideburns for men very much in vogue. The reclamation fill contained hairbrushes (Figure 147) as well as a number of bottles relating to colouring and caring for hair (see below).

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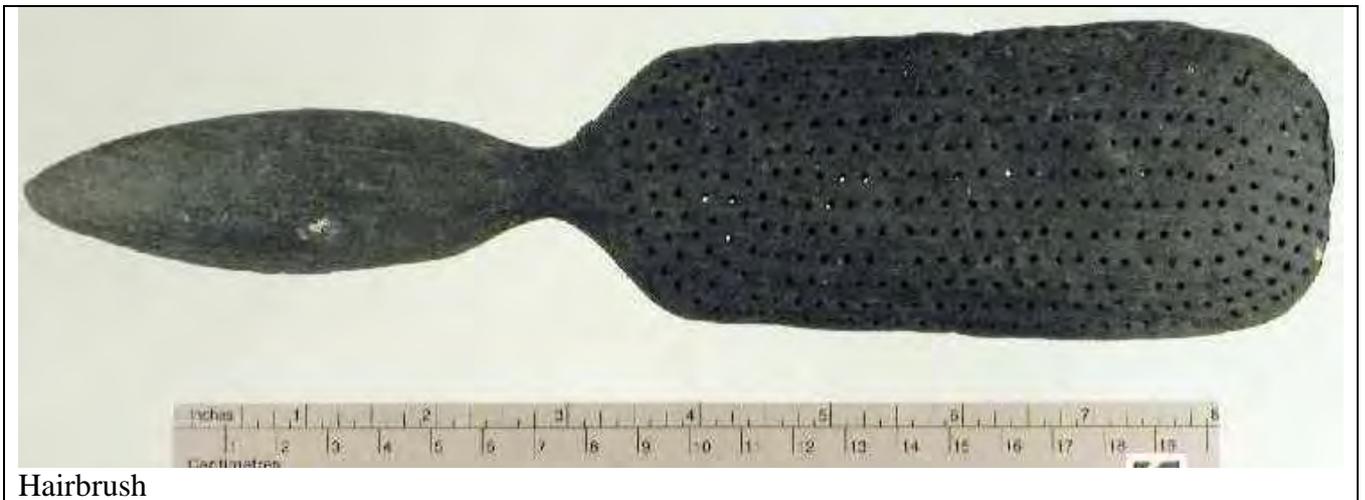
Ablutions and Hygiene, Continued



Figure 146. Bathroom wares

Continued on next page

Ablutions and Hygiene, Continued



Hairbrush



Cotton reel and small brushes (toothbrush handle and other small brushes)

Figure 147. Artefacts relating to personal care

Continued on next page

Ablutions and Hygiene, Continued

Perfume

Five perfume bottles were recovered from Britomart. These are generally recognisable as small bottles made of clear glass with thick walls and pressed lips. The examples were:

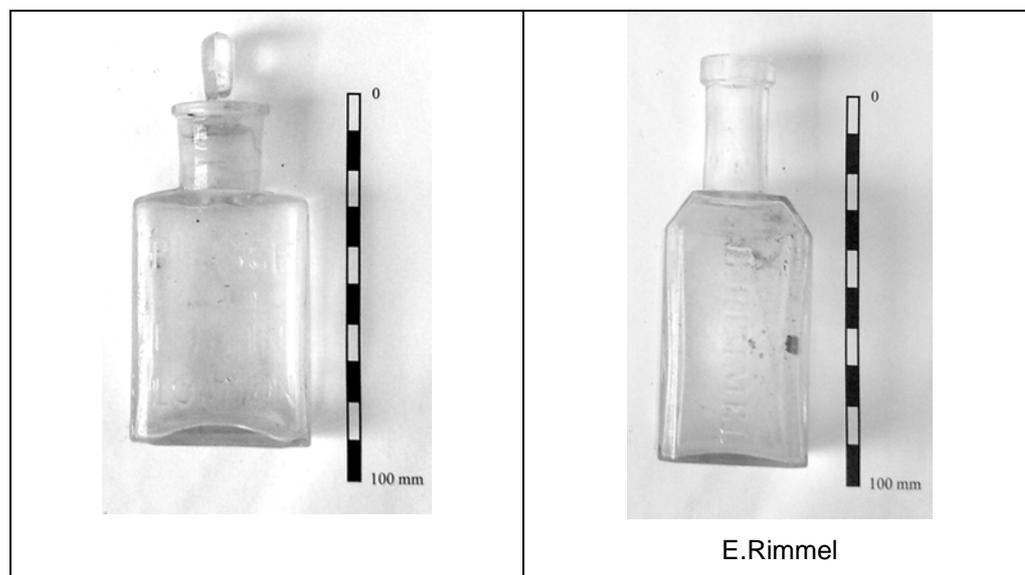
- 1 round, ornate – no top.
- 1 small panel pressed lip embossed ‘Piesse and Lubin London’. Other examples have been found at Chancery St (Macready and Goodwyn 1990: 83), and Hall House, Russell (Best and Turner 1997:39).
- 1 round bottle, no top, snap pontil base – glass sherds distorted base.
- 1 rectangular bottle with stopper in place.
- 1 square bottle.

Piesse and Lubin were perfume manufacturers of 2 New Bond St, London, (laboratory established 8.9.1855⁹⁴) but perhaps moved later to Sternoton St.

Eugene Rimmel was a famous perfumerer, and frustrated hairdresser, doing business in London in the middle of the 19th century. He wrote the classic *The Book of Perfumes* (London: Chapman & Hall 1865), which was a major seller. Eugene Rimmel is also credited with being the first to employ women in his perfume factory.⁹⁵

None of the bottles was ornate and it is unlikely that they represented the best of the European perfumes.

Figure 148.
Perfume bottles
identified in
Britomart fill



⁹⁴ <http://www.hants.gov.uk/museums/h0060380.html>.

⁹⁵ *Essence and Alchemy: A Book of Perfume* by Mandy Aftel (North Point Press, 2001).

Healthcare

Introduction While the focus on looks was important to Victorian colonials, it was the rapid advances in medicine, and the sale of medications ranging from potent to useless, curative to poisonous, that have left some of the most visible archaeological reminders. Alcohol remained probably the most important ‘drug’ available to people but it also formed the basis of a wide range of medications and quack remedies consumed by the populace (see Eldred-Grigg 1984 for a history of these).

The Britomart Bottles A total of 54 bottles were identified as general pharmaceutical bottles (Table 28), and another 15 as castor oil bottles. Although many cannot be attributed definitively, identification is based on comparison with bottle forms known to have contained pharmaceutical products. Embossed bottles, though, make attribution more straightforward.

Bottles recovered from Britomart from chemists include (Figure 150):

- Castor oil bottles
 - Bottles for poisons
 - Vials
 - Cobalt blue bottles and jars.
-

The Embossed Pharmaceutical Bottles Thirty-one oval, rectangular, square panel embossed pharmaceutical bottles were identified in the recovered collections. Embossed panel bottles date from 1867 (Lorrain 1968:40). These bottles were generally used either for patent medicines or chemists’ prescriptions.

Chemists’ Prescription Bottles Chemists often took on the role of doctor, particularly for people who were unable to afford the doctor’s consultation fee. Chemists, therefore, commonly made up their own medicines, usually similar concoctions to the patent medicines, but at a cheaper price. Most of the plain panel bottles are chemists’ prescription bottles. Others were embossed with the chemist’s name and address, as on the two examples from Britomart below:

- Aqua panel, ‘Sharland Auckland’
- Oval light blue panel, ‘Dawson... Chemist. Auckland’.
-

Another item associated with a chemist is an aqua stopper of the type placed in a salt mouth pharmaceutical jar. These were used to store powders and crystals (Tasker 1989:33).

Continued on next page

Healthcare, Continued

Castor Oil

Castor oil bottles were of standard size with cone/collar tops with hand-applied rims. Many recovered still had their corks and seals. This was unusual as most bottles recovered did not have corks.

Castor oil itself was used as a cathartic. It provided relief from constipation, acting for about 5 hours after ingestion but leaving a nauseating aftertaste. It was also used as a restorative tonic. Gut irritation, though, was a major side effect after prolonged use (*Encyclopaedia Britannica* Vol. 5 1971, William Breton Publisher, USA)

Vials and Other Poison Bottles

A variety of containers for poisons were also recovered. Vials in particular were recovered and were usually small, cylindrical, clear glass bottles with pressed lips (see Hall House report, Best and Turner 1997:43). The prescription lip was not intended to be placed to the mouth but allowed precise measurements to be made when pouring. A variety of essences and concentrates might be stored in them as well as strychnine and iodine (for cuts).

Cobalt Blue Bottles and Jars

Cobalt blue is generally a colour that indicates that contents are not to be consumed (the cobalt blue castor oil bottles are an exception, but even with this product too much was not good for you).

Five medium sized 6-sided bottles, ribbed on three sides, with a pressed lip were recovered. One has 'NOT TO BE TAKEN'. There were also two large oval bottles (short necked, pressed lip) with ribbed fronts. The instructions, shapes and ribbing on these bottles are precautionary devices to reduce the possibility of imbibing the contents by mistake. The latter two characteristics in particular are useful in the dark when fumbling on the bedside table for cough medicine for example, and for assisting blind and poorly sighted people.

It is interesting to note that modern plastic methylated spirits and kerosene bottles use similar strategies, with unusual shaped bottles, but colouring the liquid rather than the container.

Other Vessels

One very large round medicine bottle (with no top, but probably with a short neck) was also found and was probably used for bulk chemical storage. Two wide-mouth, round jars, one large and one medium, were also probably used by local chemists.

Continued on next page

Healthcare, Continued

Patent Medicines – ‘Quack’ Cures and Remedies

These are medicines and products promising much by either curing and/or alleviating ailments or by preventing them via the regular ingestion of a tonic of some form or other. Many contained powerful drugs and chemicals such as opium, morphine, codeine, alcohol, chloroform and cannabis. The addictive nature of many of these products may have contributed to the large numbers of these bottles found in bottle dumps throughout the country. ‘Barry’s Tricopherous (see Figure 151) for the Skin and Hair’ and ‘Davis Vegetable Painkiller’ are two very common examples.

Some medicines were prescribed for non-existent health problems. ‘Dr Churchill’s Hypophosphiles’ is an extreme example. Taken at regular intervals, this ‘cure’ claimed to prevent ‘softening of the brain’, a disease that allegedly occurred with over-use (Tasker 1989:72,75,76). The majority found in New Zealand sites were imported – many from America, but Europe was also a common source.

Holloway’s Ointment

A single jar of Holloway’s Ointment for gout and rheumatism was also found. These are a common find on historic sites.

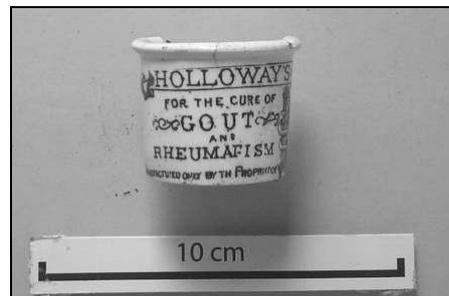


Figure 149. Holloway's Ointment

Continued on next page

Healthcare, Continued

Table 28. Pharmaceutical bottles

BottleType	Embossing	Colour	Number
6-sided	ribbed sides at front	cobalt blue	2
6-sided	ribbed sides at front, NOT TO BE TAKEN	cobalt blue	1
6-sided	striations to 3 panels	cobalt blue	2
oval bottle	striated front	cobalt blue	1
oval panel Dawson.....Chemist... (Au)ckland	light blue	1
oval panel	John Wyeth & Bro, Phila.	clear	1
oval panel	like magnesia/epsom salts bottles, cork in	light blue	1
oval panel	magnesia/epsom salts type	light blue	2
oval panel	plain?	light blue	3
oval panel	plain? Just top	aqua	1
oval panel	plain? Just top	clear	1
oval panel	short neck, striated front	cobalt blue	1
panel bottle	Barrys Safe Hair Dye/Securo Du Barry N.Y.	cobalt blue	1
panel bottle	Lyons Kat Hairon For the Hair New York	aqua	1
panel bottle		aqua	1
panel bottle	Barrys Tricopherous for the Skin and Hair	aqua	1
panel bottle	Barrys Tricophorous for the Skin and Hair/Directions in the Pamphlet/ New York	aqua	1
panel bottle	Davis Vegetable Pain Killer	aqua	3
panel bottle	Dr Churchill/Discovery/Swann,Paris/Hypophosphiles Du Dr Churchill	clear	1
panel bottle	fragment (cinc)innati	aqua	1
panel bottle	fragment Woodbury N.J. on side	aqua	1
panel bottle	one has Y.C.Co on base, another has 20 RT, 1 oval	aqua	3
panel bottle	plain	aqua	4
panel bottle	plain	clear	1
panel bottle	plain, 1 with neck ring	aqua	1
panel bottle	plain, with cork	clear	2
panel bottle	Sharland Auckland	aqua	1
round jar		cobalt blue	2
round jar	wide mouth	cobalt blue	1
square panel	plain	clear	1
vial		clear	5
vial	2 piece mould, pills?	clear	1
vial	pill bottle?	clear	2
vial	plain	clear	1
vial	St Jakobs Oel/ A Vogeler & Co/Baltimore M.D. Note spelling of Oil	aqua	1
			54

Continued on next page

Healthcare, Continued



Figure 150. Pharmaceutical bottles

Healthcare, Continued

Figure 151.
Advertising cards for
'Barry's
Tricopherous
for the skin and
hair'



Summary

Artefacts from the reclamation fill

Range of Artefacts

The reclamation fill contained a wide range of artefacts. The collection of ceramics and bottles suggests that many of the nearby industries used the fill as a way of disposing of their everyday rubbish. Compared with other nearby sites, the Britomart collections illustrate the broad base of material culture relating to both individual and commercial practices.

The collection is also notable for a number of other features:

- The range of patents of aerated water bottles
 - Over 100 new ceramic patterns not described elsewhere
 - Large collection of pharmaceutical bottles.
-

Chapter 7: Discussion and Conclusions

Britomart Archaeological Project

Summary

The Britomart Archaeological Project represents one of the major archaeological projects carried out in New Zealand. The structural remains of the wharves, jetties and railway station have all substantially enriched our understanding of the workings of Auckland harbour during the latter part of the 19th and early 20th centuries. Despite the relatively poor contexts the artefacts provide a useful closely dated collection for comparison with other historical sites and as such provide the basis for ongoing research throughout New Zealand. Most dramatically, the project highlights one of the most substantial engineering feats carried out in 19th century Auckland: the demolition of Point Britomart to reclaim land suitable for transport and industrial facilities required for the growing colonial city.

Archaeological Assessment

As described in Chapter 1, this report was designed to provide information regarding a number of key issues highlighted by the NZ Historic Places Trust in the original archaeological assessment. These are summarised again below:

1. Evidence for early Maori occupation.
 2. The potential to provide important information on the engineering techniques used to reclaim, compact and stabilise land in the 19th century.
 3. The likelihood that the reclamation fill and the seabed might include material relating to the maritime and industrial activities which occurred on the wharves located across Commercial Bay, and the possibility of the presence of hulks on the seabed.
 4. The potential for the survival of massive stone retaining walls at the northern side of Customs St relating to the initial reclamation of inner Commercial Bay.
 5. The potential for information relating to the 1885 Railway Station.
 6. The potential for industrial information relating to activities taking place on the completed reclamation.
-

Early Maori Occupation

It was disappointing that no information directly reflecting the influence of tangata whenua on the early colony was recovered. However, since the area under investigation was reclaimed land there was very limited potential for evidence of pre-European occupation. Apart from the odd artefact, or perhaps the remains of a canoe lying on the original seabed, it is difficult to see what could have been recovered from this period. While Maori played an important role in the establishment of Auckland (Stone 2002), it is difficult to find material evidence of this among the wealth of material relating to European occupation in downtown Auckland.

Continued on next page

Britomart Archaeological Project, Continued

Prior to the Reclamation

Official Bay offered less than ideal harbour facilities during the early years of Auckland's development. Locals and visitors frequently bemoaned the lack of landing facilities for passengers and goods. Although there were early wharves and jetties, it appears that they were not sufficiently long to allow landing in all tides in the relatively shallow Waitemata. This meant that dredging was an important activity. Evidence of the area dredged was seen during the excavations.

Remnants of the original harbour facilities including parts of both the Queen St and Gore St jetties were found during excavation. Excavation of the piles of the Queen St jetty revealed that the original section was smaller than the wharf that developed later, based on smaller piles. Queen St jetty was gradually extended and enlarged throughout the 19th and 20th centuries. Gore St jetty's fate was not so fortunate.

Only a small amount of structural material relating to the maritime and industrial activities that occurred on the wharves located across Commercial Bay during the period from the first settlement until the commencement of the reclamation was recovered. Some individual artefacts, such as an anchor, were found at the interface between the reclamation fill material and the seabed, but these were rare. Large timber logs were also recovered on the old seabed reflecting one of the most important uses of this part of the waterfront as storage for timber being used to meet Auckland's building requirements. However, the excavation of a small boat is a reminder of the difficulties encountered by the colonists with the relatively poor wharf facilities during the 1840s-1860s.

Reclamation

The 1879-1886 reclamation represented an enormous exercise in labour and horsepower. The whole of Point Britomart was taken apart and moved by horse and cart and dumped in the sea. Then as the available earth ran out, the area was turned into a rubbish dump for the nearby industries and households. The large collection of artefacts recovered suggests that many of the nearby industries used the fill as a way of disposing of their everyday rubbish. Many of the items would have come from hotels and restaurants as well as a variety of other commercial establishments including the trading stores. Breakages would have been common in this environment and this is reflected in the concentrations of material recovered: large pieces often thrown into the fill. Bottle dumps show that large numbers of bottles were transported en masse to the reclamation site probably by the wagon full. Compared with other nearby sites, the Britomart collection illustrates a broad base of material culture relating to both individual and commercial practices.

Continued on next page

Britomart Archaeological Project, Continued

Reclamation (*continued*)

The remnants of the Quay St seawall also reveal much of the sophisticated engineering required for the reclamation. Basalt blocks were placed over basalt rubble and cemented together. This then supported the reclamation fill with scoria stabilising the back of the wall. The reclamation resulted in the dismantling of the Gore St jetty and some of the earliest parts of the Queen St wharf. Decking was removed, although for the most part the piles were left *in situ*.

The New Facilities

The succession of reclamations and new wharves slowly improved the facilities, as Auckland became an increasingly important colonial hub. The bustling warehouses and office buildings were at the core of trade networks with other parts of the world, connecting the new colony to its colonial neighbour Australia, the Americas, the other satellites of the British Empire and, most importantly, with the 'home country', Great Britain. The range of artefacts including the bottles, packaging labels, leather and cloth off-cuts, ceramics, boat fragments and tools give an insight into maritime and industrial activities along the waterfront after the reclamation provided a new commercial zone for Auckland.

Excavations also revealed more information regarding the developing infrastructure necessary to sustain the growing city. The Ligar Canal running along Queen St was extended into the reclamation area with brick barrel drains. Investigations of the brick sewer had clearly shown that the construction techniques varied throughout the system, possibly indicative of different contractors or a refinement in its design. In the main excavation area, the drain was not laid on major foundations, but seemed to be reasonably stable. This was not so in the exposed example near Queen St, where the brick drain had partially collapsed. Exposed drains around Tyler St were in good condition and show some of the side drains feeding the main system. Much of this network continued to be used with the addition of concrete and plastic drains during the 20th century.

Continued on next page

Britomart Archaeological Project, Continued

The Railway Station

The reclamation provided a platform to build the new 1885 Railway Station replacing the small Point Britomart station to the east, which consisted only of a small wooden structure for passengers. The Queen St Railway Station, close to the downtown shopping area, the ferry building and the tram terminus, brought thousands of people in and out of downtown Auckland. The station building itself had good facilities including public bars and appears to have been well received by Aucklanders.

Unfortunately, the building of the CPO in the early 20th century was the first phase of a plan to move the railway station to a larger site away from the downtown area. Passenger rail travel in Auckland is yet to recover from this shift, but the new station at Britomart opened in 2003 and its integration with the CPO brings 21st century Aucklanders a chance to travel to the heart of the city as they did in the Victorian era.

Appendices

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