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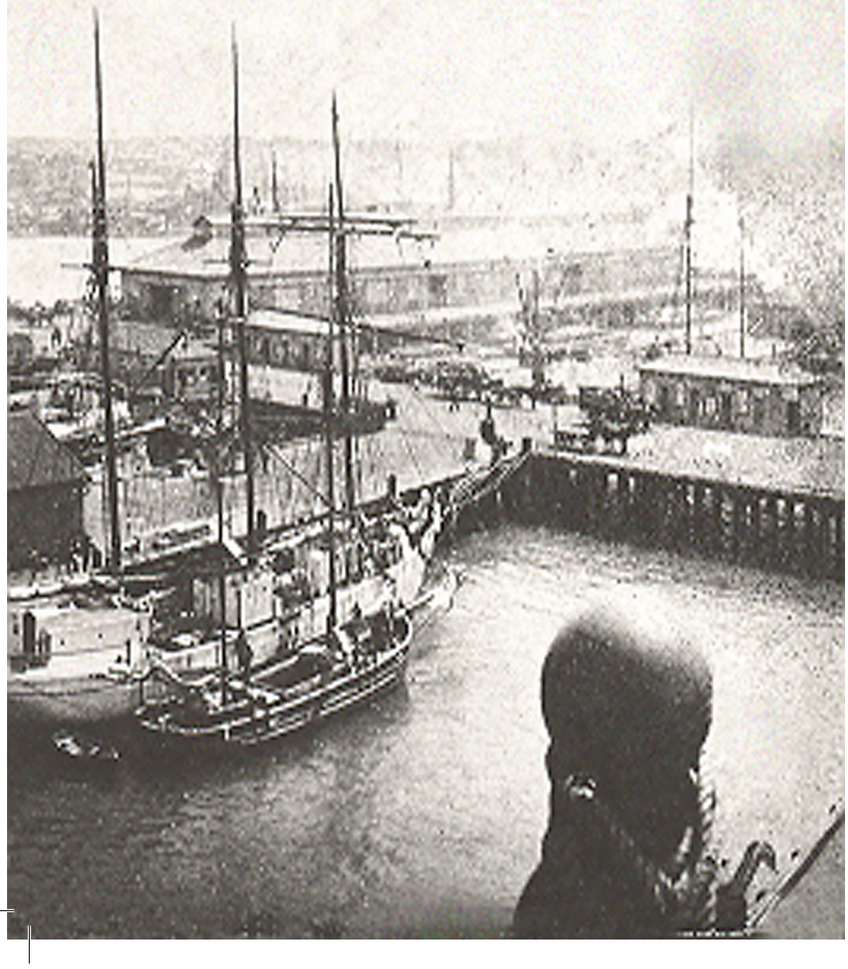
Doing Time at the Mount: Archaeological Investigations at Mt Eden Prison

Final report for NZHPT Authority 2008/144



Prepared for
Department of Corrections

DEPARTMENT OF CORRECTIONS
ARA POUTAMA AOTEAROA

October 2011

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Report prepared for
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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

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Raysan Kubaisi for creating the 3D reconstruction of the Prison building.

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Tonchi Glamuzina, Site Manager at Fletcher Construction Ltd, Andrew Rolfe and other Fletchers staff, who were always helpful both in facilitating the archaeological work and also in keeping us safe. We acknowledge their valuable contribution to our work.

Ward Demolition and Vuksich & Borich did much of the heavily lifting in the prison providing the diggers and drivers to clear away the building material and fill around the site.

Alex Stevenson, Associate Director of Stephenson and Turner New Zealand Ltd.

Graham Hobbs of BECA.

CHAPTER 1: INTRODUCTION

MOUNT EDEN PRISON DEVELOPMENT

Project Background

The Mt Eden Prison site (Figure 1) has been redeveloped to meet current and future needs. The redevelopment involved works both within and outside the historic Prison walls. The main 19th century Men's Prison and most of the 19th century Prison wall have been retained, although the Prison building is being decommissioned. Most of the areas around that building inside the walls, and areas outside the walls, were significantly altered by the project. New accommodation buildings intrude into the southern yard of the existing men's Prison, and some late 19th and early 20th century buildings (shown in Figure 2) have been demolished to make way for other new buildings.

An archaeological impact assessment was prepared in 2005 to identify any locations that might have potential to contain archaeological remains of earlier stages of the Prison, especially the Stockade dating back to 1856 (Best and Clough 2005). A separate heritage assessment of the historic buildings and a draft conservation plan were undertaken by Salmond Reed Architects (2006). The existing buildings constructed prior to 1900 identified as having heritage significance were the historic Prison, the Superintendent's House, the historic stone wall and the stone Generator Shed outside and immediately to the west of the historic wall. Other heritage buildings post dated 1900: the Gymnasium, the Bag Shop and the Tallyman's Hut.

This report presents a record of the heritage buildings and structures that were demolished, made prior to and during demolition, and the results of the archaeological investigations of those areas where earthworks were required. The archaeological work was carried out under Authority no. 2008/144 starting in 2008 and finishing in 2011.

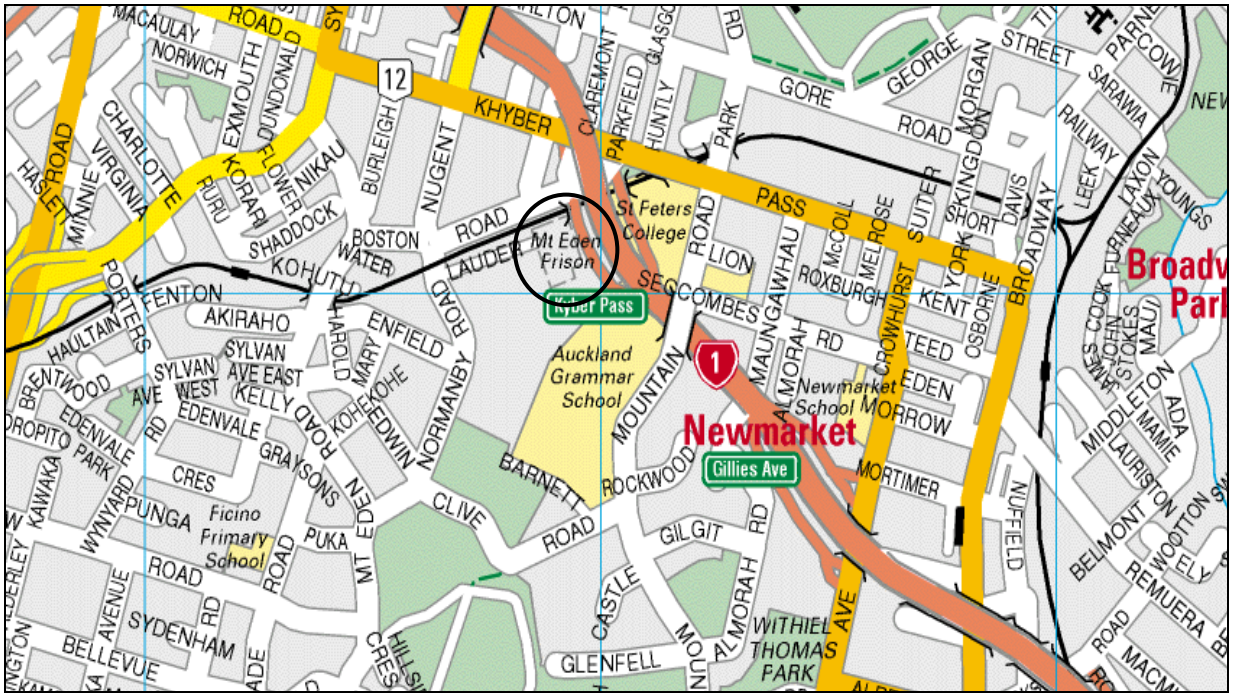


Figure 1. Location of Mt Eden Prison

Figure 2. Aerial view of Prison and heritage buildings in 2005

METHODOLOGY

Introduction

Prior to the start of works, research into the history of Mt Eden Prison was carried out and earlier work and investigations into Auckland's gaol sites were reviewed. Relevant maps, plans and aerial photographs were examined to establish the location and chronology of the various buildings that have occupied the gaol site since 1856. A number of site inspections were made to examine the locations of existing historic features, establish the probable locations of earlier recorded features in relation to the modern layout of the Prison, and assess the likelihood of survival of archaeological features and deposits.

Archaeological Potential and Objectives

The archaeological impact assessment undertaken in 2005 reviewed construction phases at the Prison and, given those phases, determined which areas of the Prison were likely to have subsurface archaeological potential, ranking them from low potential to very high potential (Figure 3). This provided general guidance for prioritising the archaeological investigations, and it was established that:

- Area 1 had the potential to destroy or damage subsurface remains of the 1856 Stockade;
- Area 2 might contain remains of the 1865 Women's and Debtors' Prison;
- Area 3, outside but close to the Prison walls, was the area where some stone-working took place and where early rubbish pits might be found. Some buildings were also known to have been constructed there.
- Area 4 had limited potential to impact on archaeological features, as much of this was an area of quarrying, with no recorded 19th century structures.

Overall, it was thought that the main archaeological features that might be impacted by excavation were remains of the early Stockade and pre-1876 facilities; features relating to the 1865 Women's Prison, officers' quarters, stables and workshops. It was considered that any subsurface remains relating to the following would be of particular significance:

- the 1856 Stockade;
- rubbish pits associated with the early Stockade and Gaol;
- the original burial places of executed prisoners; and
- any previous structures not depicted on earlier plans.

The main archaeological investigations carried out are shown in Figure 4, and these reflected the priorities established in the assessment.

Figure 3. Areas of archaeological potential

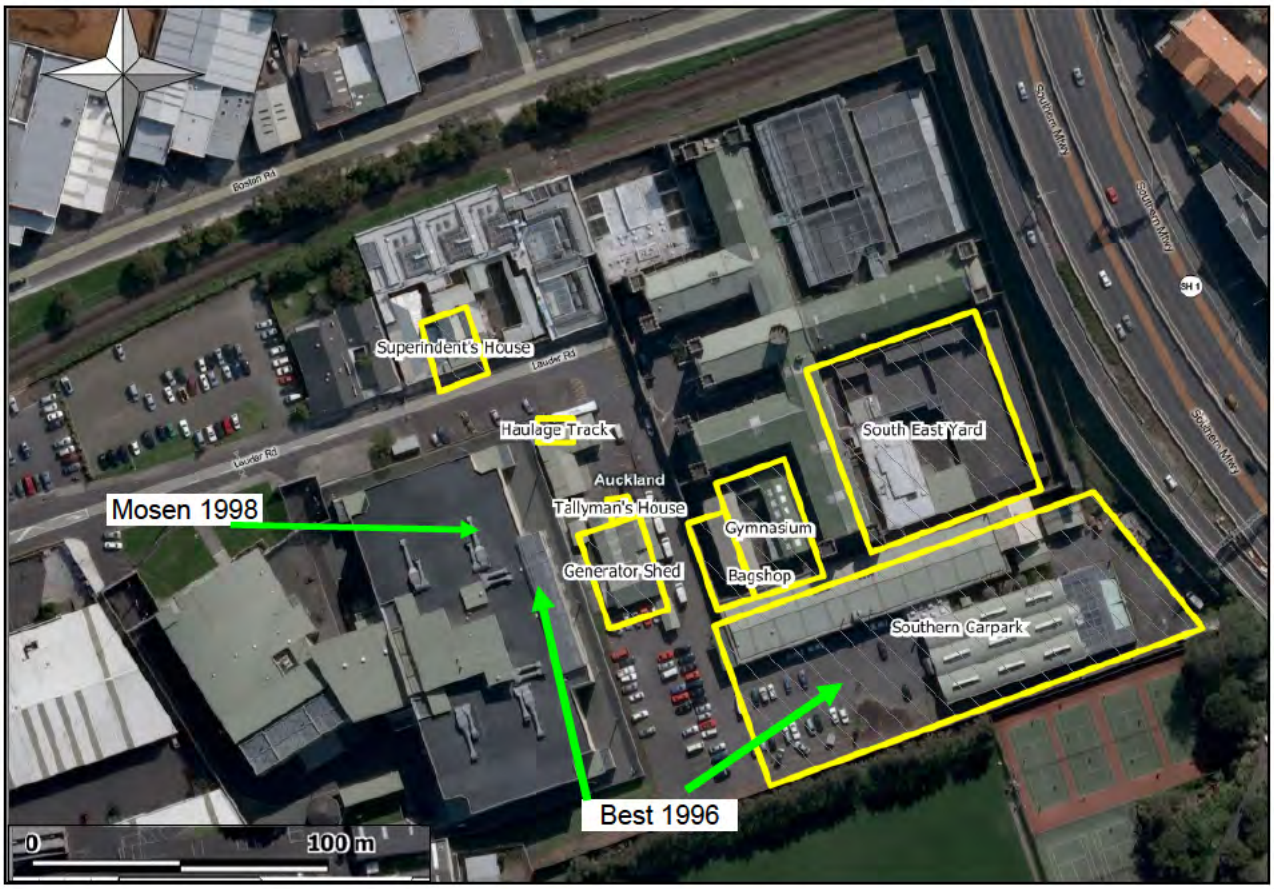


Figure 4. Main areas of previous and current archaeological investigations

Effects on Buildings

Demolition of existing buildings occurred in Areas 1-3 (Figure 3), and construction of new buildings occurred in all four of the areas of archaeological potential identified in Figure 3. The redevelopment retained the existing Men's Prison (with some modifications), and removed the following heritage structures:

- Stoneyard Wall and Cart Dock (1913)
- Former Bag Shop (c.1917-23)
- Former Gymnasium (c.1917-23)
- Former Generator Building (unknown date, after 1920)
- Former Tallyman's Hut (c.1920)
- Basalt Paving (pre-1900)
- Former Superintendent's House (c.1894)

Personnel

Clough & Associates formed a team of archaeologists who were present on site at various stages, depending upon the requirements of any given event. Some events required only the presence of a single archaeologist to monitor works, whilst others, such as the recording of the Tallyman's Hut and Generator Shed and archaeological excavation work, required a larger team. All members of the team (Table 1) were subjected to a criminal history check and underwent an in-depth site induction detailing the uniqueness of potential hazards, given that the site was a functioning Corrections facility.

Site Directors	Rod Clough, Simon Bickler, Simon Best
Archaeologists	Jennifer Low, Ben Thorne, Ben Pick, Colin Sutherland
Mapping and Site Photography	Ben Thorne
Artefacts Register	Jennifer Low
Buildings Photographer	Hamish Macdonald, Simon Bickler
Metal Analysis	Brigid Gallagher
Faunal Analysis	Stuart Hawkins

Table 1. Archaeological personnel involved in the project

Raysan Kubaisi carried out the 3D reconstruction of the prison building shown in Chapter 2.

Students from the Department of Architecture carried out the recording of the Bag Shop, Gymnasium and Generator Shed buildings. Their results were supplemented by the archaeologists and are presented in Chapter 3.

Working Conditions

Archaeologists were provided with a locked Portacom near the main entrance of the facility which acted as a noise-free base for planning meetings and computer related work and doubled

as a break room and tool and artefact storage facility. No tools or equipment were permitted to be left on site overnight and all artefacts were removed to the Portacom as quickly as possible.

In the early stages of works site hazards were minimal, with only diggers and the occasional truck being present. Once the buildings had been demolished and foundations removed, care had to be taken when moving around the landscape as the ground was extremely uneven (Figure 6). This often made excavation difficult as it was difficult to clear the rock and clean areas for photography. Care was necessary around buildings being demolished, as those built using the double wall stack technique could be unpredictable during demolition, and at least one demolished building also contained asbestos. On occasion there was limited space available for machinery and archaeologists (Figure 5). Archaeologists could not be present during the demolition of the Bag Shop as the available working space was too limited.

Once the majority of clearance work had been undertaken, the excavation for foundations of the new buildings commenced. This restricted the available space for vehicular and foot traffic, especially on the south side of the facility. The South-East Yard could only be reached via the section of heritage wall being removed on the south side. Work in the South-East Yard during the demolition of the old health centre and preparation of the area for the commencement of construction works produced a high noise level which reverberated off the remaining walls and Prison building, producing an echo. Functional sewerage lines were broken on two occasions in the South-East Yard in the vicinity of the Stockade, resulting in archaeologists having to take greater care handling soils and artefacts than would normally occur.

At no time were archaeologists in the direct presence of the prisoners, and although verbal communications from prisoners were attempted on occasion, they went unacknowledged. Photography was also carried out carefully to avoid including pictures of prisoners.

Figure 5. An example of the limited space available in some areas of the Prison complex

Figure 6. Example of the underlying strata after demolition and clearance

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

Mt Eden Remand Prison

An assessment was carried out by Best (1996) during the construction of the Remand Prison at the western side of the property. Best had previously been on the Prison site during exhumations of executed prisoners in 1989 in the North-East Yard (Figure 7) and had carried out some preliminary historical research on the Prison. Best was able to identify parts of the stonecutters' building in the west of the property below the area near the Remand Prison and identify some artefacts. The most interesting of these artefacts was a cache of handcuffs found in the Southern Carpark (Figure 8).

Best (1996) also identified some of the changes to the Mt Eden Prison that had taken place between 1991 and 1995. These are shown in Figure 9 and relate to the area of the Southern Carpark. The most significant structures removed were the Stables built around 1906 (see Chapter 6 for further information). Other outbuildings had also been demolished.

Best (1996) also highlighted the possibility of evidence for the early execution area and burials from the original Stockade era of the Prison. The actual location could not be identified from his research, but he suggested that the most likely location for these was either in the north-east or south-east corner of the original Stockade fence. This put the likely location of features either in the South-East Yard or within the area of the Medical Unit built in 1984 (Salmond Reed 2006:1). This area was therefore a major focus for the current investigations (Chapter 6).

Mosen (1998)

Mosen (1998) carried out monitoring in the area identified by Best (1996) during the clearing of the area for the Remand Prison and other administrative buildings along Lauder Rd. Mosen (1998) re-identified a stone foundation that had been identified by Best (1996) as part of the stone-crushing building. This foundation and rail tracks for a tramway were exposed and mapped. A number of artefacts, including 'bottle glass, rifle parts and assorted iron objects', were recovered from the investigation (Mosen 1998:1). However, further details of these are not available. The results of the excavation are discussed further in Chapter 5.

On-Site Visit 2005

The main assessment for the current project took place in June 2005 and was focused on identifying the approximate locations of the original buildings and, particularly, the effects on these areas of the proposed redevelopment. Apart from the standing structures, though, the work was largely archival, as sub-surface testing was not possible across the site as there was little open ground around the Prison.

An overlay of the early Stockade on the present Prison layout was created, based on previous work by Simon Best compared with an official overlay dating to 1882 (see Chapter 2). The latter was produced when the wooden buildings were still standing, and less than two months before the first foundations of the north wing of the main Prison Building were started. The results were similar but not identical, and the Stockade buildings on the latter plan were oriented differently. However, both showed that some of the early structures were outside the present Prison buildings, which and meant that archaeological investigations were likely to be profitable, particularly in the Gymnasium area.

Figure 7. Location of 1989 exhumation marked in NE Yard

Figure 8. Southern Carpark area showing approximate location of handcuffs recovered in 1996

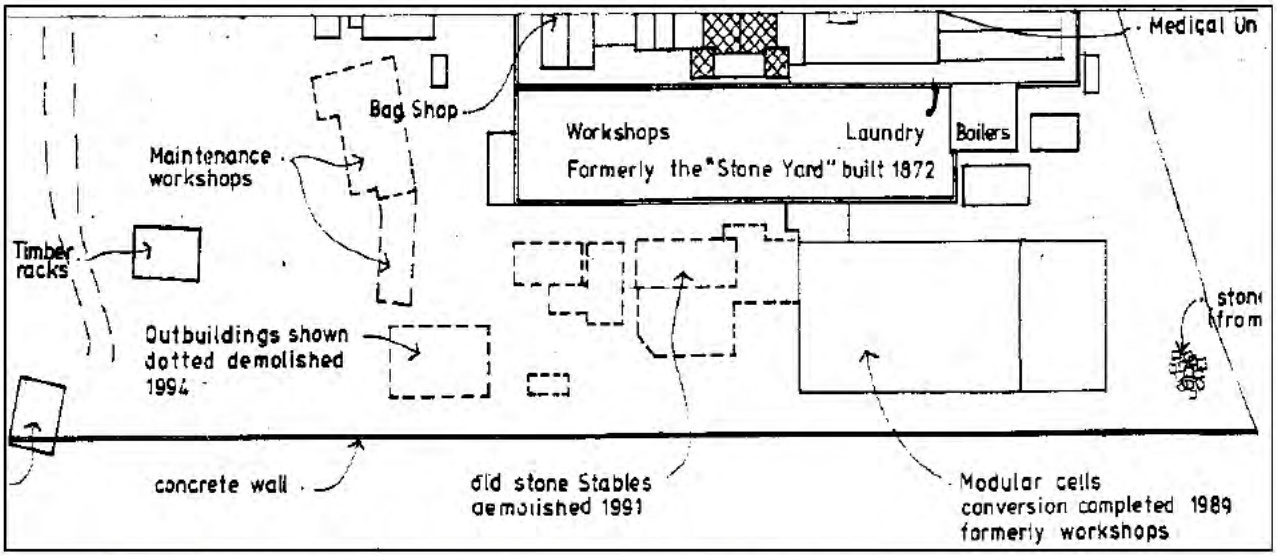


Figure 9. Part of 1995 plan showing buildings demolished (dotted lines) in the early 1990s (WCS 1995)

THE REPORT

Structure of the Report

This report focuses primarily on the archaeological work carried out during the Prison redevelopment. However, a brief historical account focused on the chronology of the buildings is given in Chapter 2 to provide the context for the later results. A summary of the history of the buildings is available in the Salmond Reed (2006) Conservation Plan and references provided therein. Chapter 3 summarises the results of the architectural and demolition recording of heritage structures removed during the project. Chapters 4-6 describe the results of archaeological investigations in various parts of the Prison, in particular the area below the old Gymnasium and Bag Shop buildings, the area at the front of the Prison around the Generator Shed building and the South-East Yard excavations. Artefacts found in these excavations are described in these chapters as they provide information relating to the excavation areas. However, additional analyses of the material that relates more broadly to the history of the Prison (clothing, utensils, food remains, glassware and clay pipes) are detailed in Chapter 7. The final chapter summarises the results and places them in a wider archaeological and historical context.

Report DVD

A DVD accompanies this report to provide supplementary material relating to the archaeological investigations carried out at Mt Eden Prison. This includes:

- PDF version of the main report
- PDFs of earlier reports relating to the project
- A copy of a powerpoint presentation of the results
- Movie files showing the 3d Models of the Evolution of the Prison
- Material relating to the recording of standing buildings and the demolition of the buildings, including measured drawings and photographic records.

CHAPTER 2: THE MOUNT

INTRODUCTION

A comprehensive history of the Prison is beyond the scope of the current project. The draft Conservation Plan by Salmond Reed (2006) provides some of the history of the Prison and outlines the significance of the architectural aspects of the standing buildings prior to the re-development. This chapter expands on the work of Best and Clough (2005) to provide a historical summary particularly focused on the buildings and other structures that have been built on the grounds from the 1850s. A chronology of the main buildings is presented, and some of the smaller structures generally ignored in previous work are identified.

THE STOCKADE

Queen St Gaol

The recorded gaols in use before the Mt Eden Stockade have been discussed in previous work (e.g. Best 1992) and are only briefly mentioned here. The first was a raupo hut in Official Bay, in use by December 1840. The second was a more permanent affair on the corner of Queen Street and Victoria Street West, started in early 1841, with the first three prisoners from the raupo hut transferred there on 13 July. A ship hulk in the Waitemata Harbour was also briefly used for prisoners (Best 1992).

The Stockade

By 1855 conditions at the Queen Street Gaol had deteriorated to a state where yet another new gaol was planned. This, the Stockade, was on the lower slopes of Mt Eden, and opened for business on 30 July 1856. This building, its subsequent additions, and most of the associated structures from that time, were situated within the present Prison walls.

Figure 10 is the earliest illustration found of the Stockade. At that time it consisted of one long two-storey building surrounded by a wooden fence. The small building to the west of the Stockade is the under-gaoler's house. The ramp or road leading down to the north was probably for cart access to the Stockade, with an apparent windlass at the downhill end of this.

It is possible that the windlass was associated with the Stockade's water supply. A report for 1861 records that while some of this was rainwater off the roofs caught in casks, in summer it came solely from a well outside the walls and was carried in by bucket (*AWHJ* 1983:13). Another account identified the well in Water Street (today some 300m to the west) where a large barrel was sunk into the ground (Franklin 1956:37).

Sixteen of the hardest cases at the Queen Street Gaol were transferred to the Stockade on 13 September 1856. Three were lifers: one was in for stabbing a captain at the Bay of Islands, one for a rape at Newmarket, and one for killing a Maori with a piece of wood in Chancery Lane (*Weekly News* 27/8/1864: 6(3,4)).

In 1858 another two-storey building was erected, parallel to the first, to house the rest of the hard labour men from the Queen Street buildings, and the fence was extended around this. The first building functioned as the penal ward, the new one as the hard labour ward. To the south of the latter was the stone-breaking yard, which by 1864 at least was partially covered in (*Weekly News* 16/4/1864:2(2,3)).

By mid-1864 overcrowding in the Stockade was again a problem, with court-martialled soldiers held there as well, and at the end of August the Provincial Government approved the erection of another building which would connect the two existing ones on the east side. Tenders for this closed on 29 August, and it was expected that the addition would be ready for use in two months (*Weekly News* 27/8/1864: 6(3,4)). Figure 11 shows the Stockade probably at some time prior to this date.

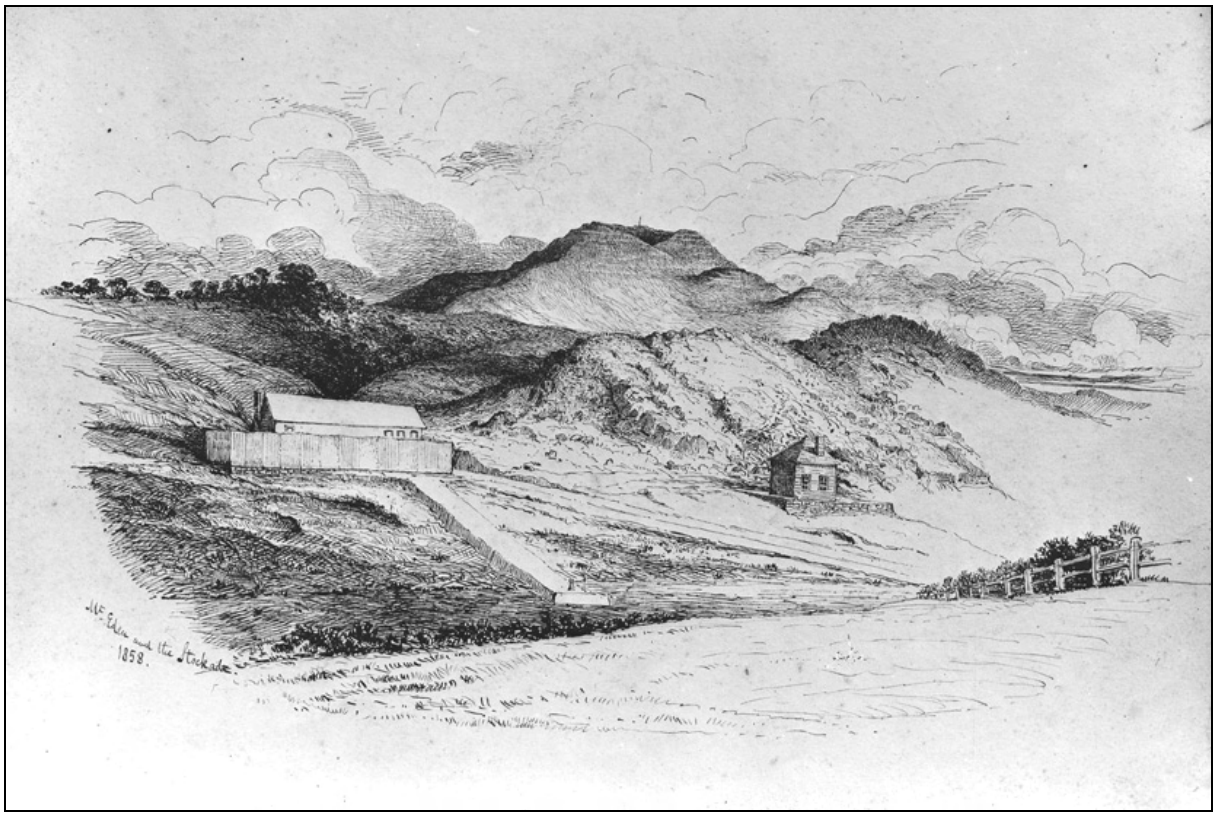


Figure 10. Sketch entitled 'Mt. Eden and the Stockade, 1858' (APL 995.1112 M92e 1214)

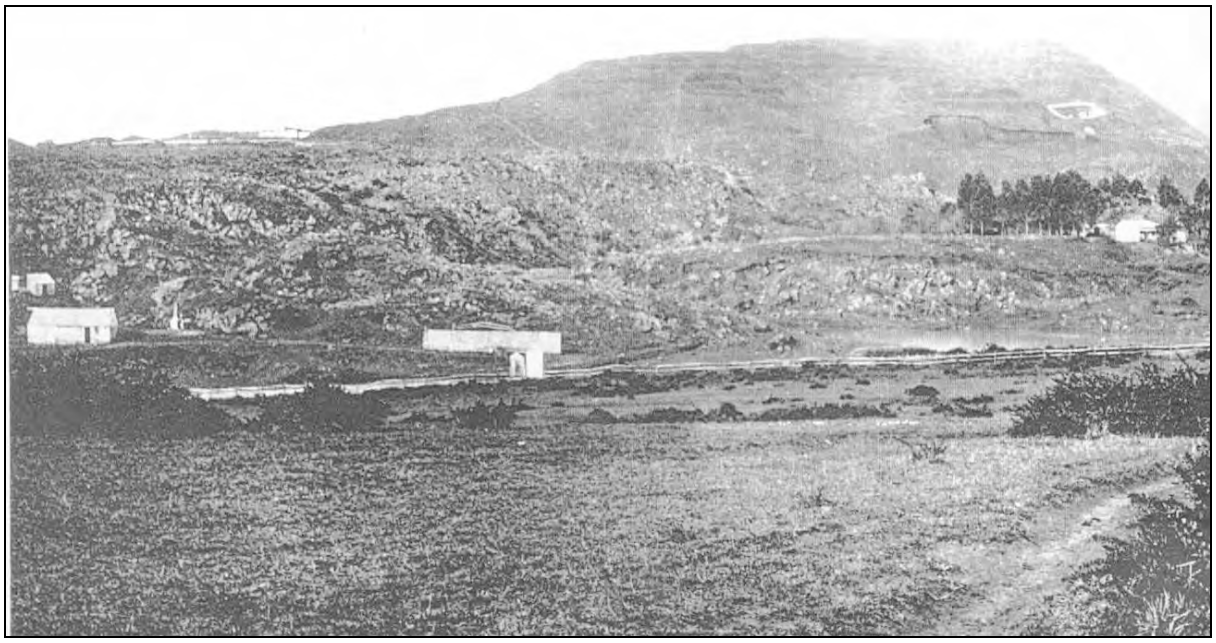


Figure 11. Mount Eden from the north, with the Stockade behind the Khyber Pass toll booth, c.1860-1864 (APL 87 No. 832)

PUBLIC GAOL

At about the same time a new prison was planned to house debtors, female prisoners and those awaiting trial. These groups had been kept in the Queen Street Gaol. This new building, just to the west of the Stockade, was proclaimed a Public Gaol on 18 November 1865, and the remaining prisoners were transferred there two days later.

In 1866 a two-storey officers' quarters was built outside the Stockade wall to the north and can be seen to the left inside the basalt wall on Figure 12, dated c.1876.

The Wall

The next major building event was the construction of the basalt wall around the main Prison site (Figure 12). This started in late 1871 (*JAPC* 1871) and finished in late 1873 or early 1874 (*JAPC* 1873, 1875), after a total of more than 12,750 man-days of labour. A summary of the state of the Gaol was provided to the House of Representatives (Figure 13) as part of their deliberations over the new Prison and shows the new stone wall (*AJHR* 1877: Session I, H-30, p.11).

The stone wall is depicted on SO1149 dated c.1876 (Figure 14) enclosing the Stockade and the officers' quarters' with the wood and corrugated iron wall still shown immediately surrounding the prisoners' quarters. The magazine and two smaller structures are shown located to the south of the Stockade.

Building Sequence

Best and Clough (2005) provide the first detailed sequence of the main gaol buildings (Figure 15). It shows how the early Stockade building was added to and how key buildings were added to the areas both inside and outside the Prison walls. However, the early photographs (listed in the Appendix) show a number of additional buildings within the Prison site as well as a number of unidentified structures. These ranged from small sentry boxes to larger wooden buildings of unknown function.

Additional Buildings

A second, undated plan SO12301 (Figure 16) does not show the structures within the basalt wall, but it does show a number of new buildings. A second and larger magazine had been constructed between the south side of the wall and the location of the earlier magazine buildings, with the Magazine Caretaker's House constructed to the east of the original magazine. Along the frontage of Boston Road three houses including the Gaoler's House (the later 1890s Superintendent's House was erected at this location) are depicted enclosed on three sides by a picket fence, while a box-thorn hedge separates the properties from the railway line. In the vicinity of the Auckland Central Remand Prison a steam crusher is shown with a railway line sited on the east side of the structure curving around a rocky hill and heading towards the main line. Figure 17 is believed to be dated slightly later than SO12301 and shows several more houses along the Boston Road frontage.

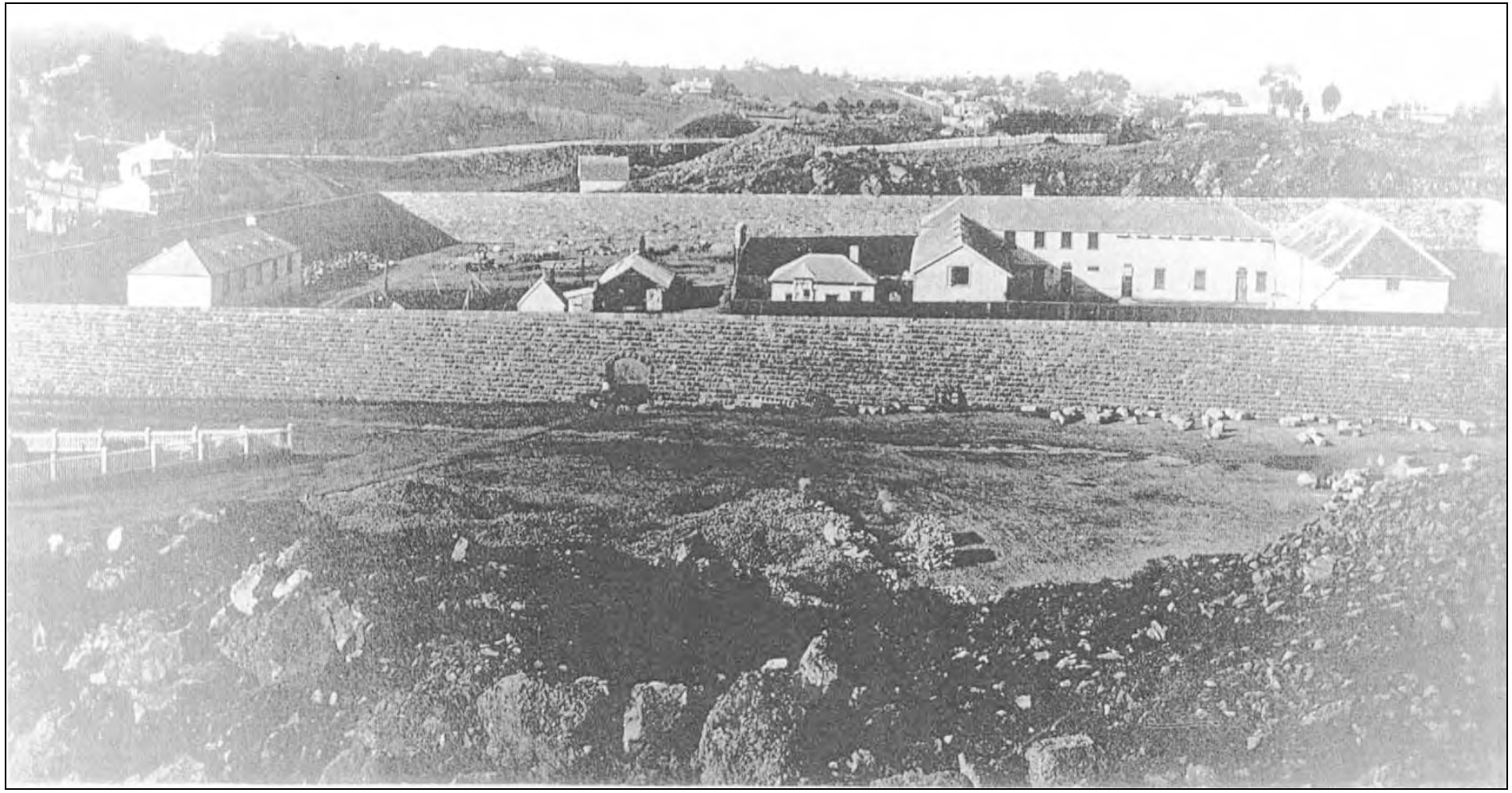


Figure 12. View of Stockade within the present perimeter wall, c.1876 (APL 995.1112 M92e P94(1) 236)

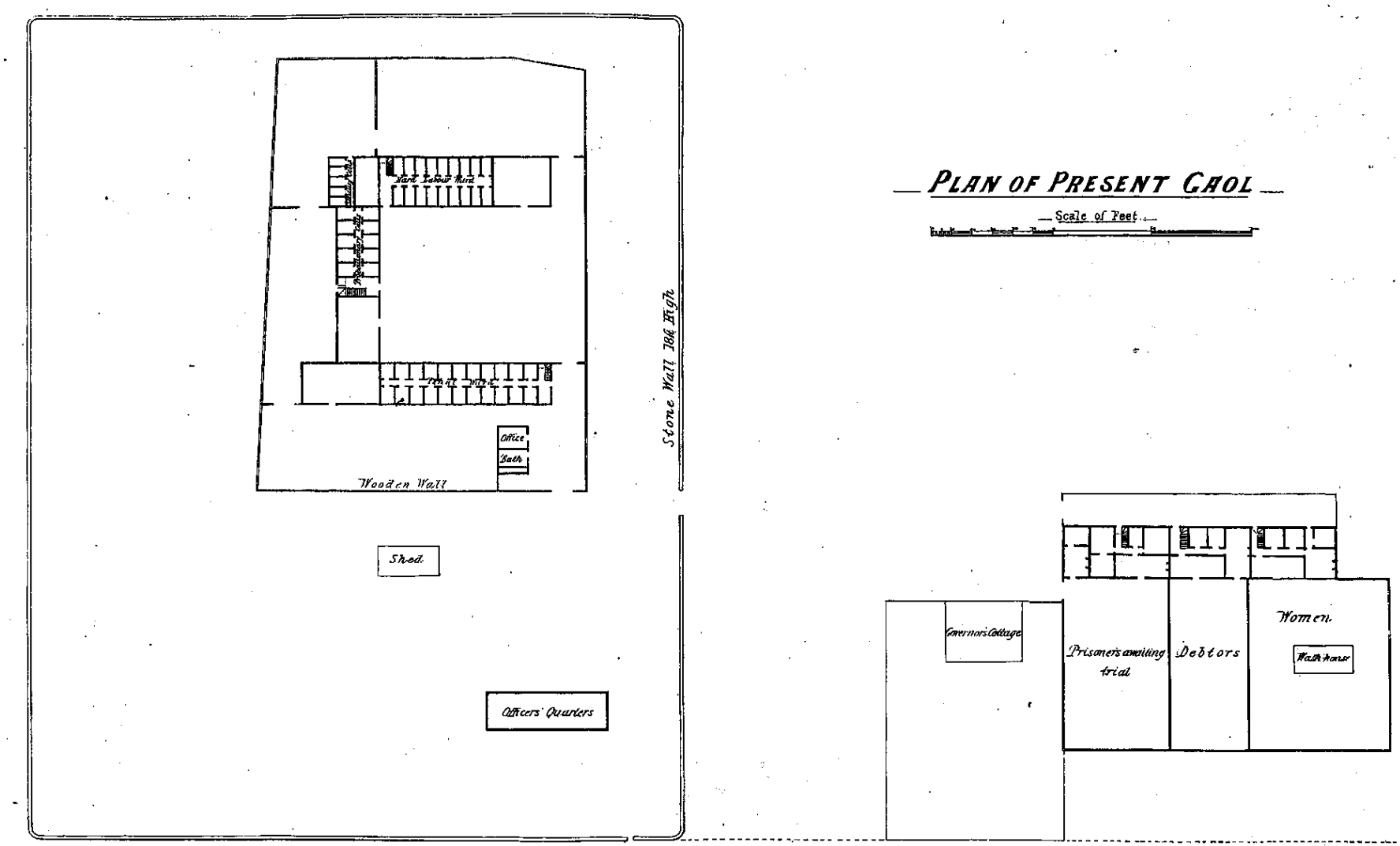


Figure 13. 1877 plan of Stockade (*AJHR* 1877: Session I, H-30 p.11)

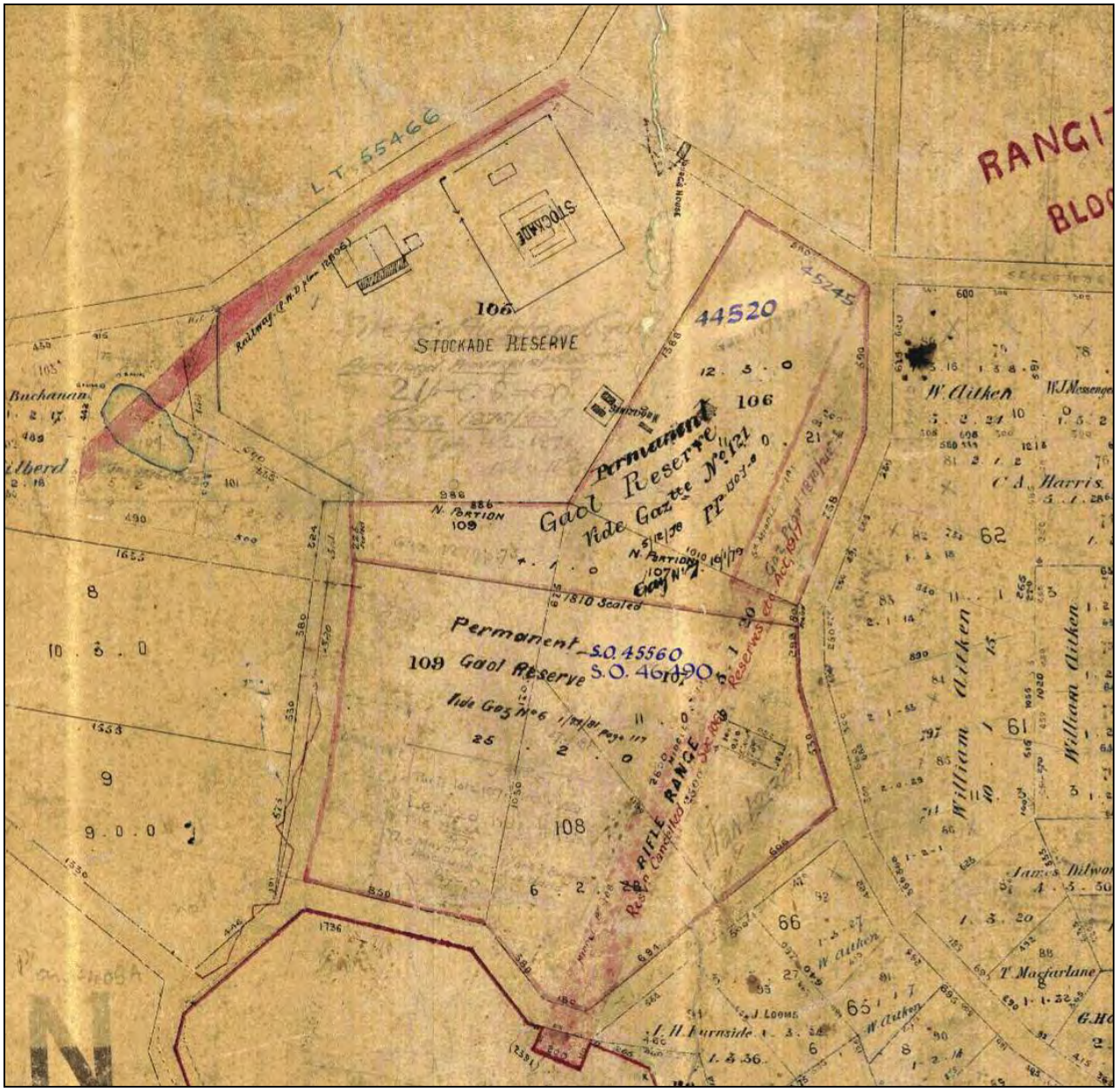


Figure 14. Plan SO1149 c.1876 showing the Stockade surrounded by the basalt wall and nearby buildings

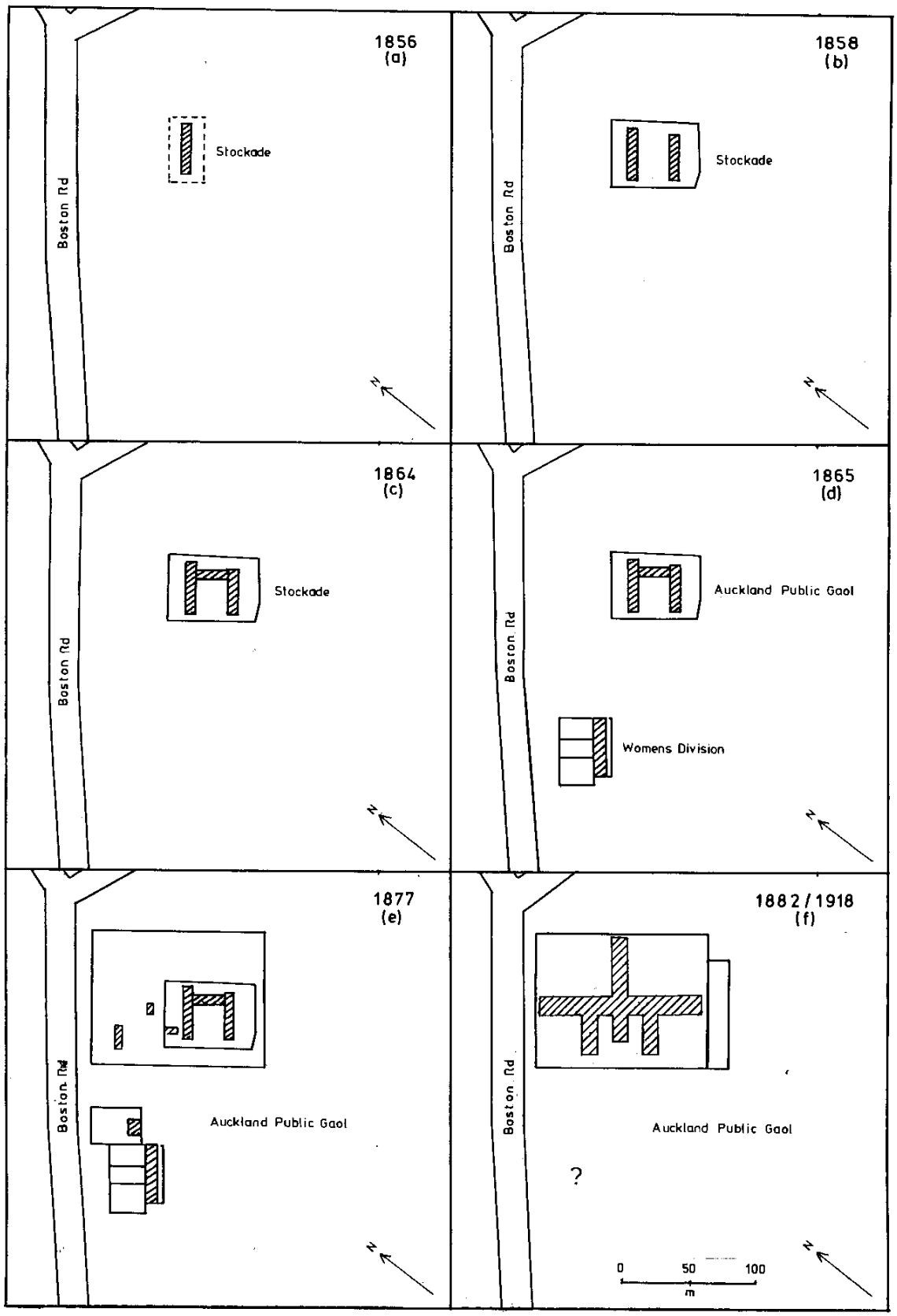


Figure 15. Stages in the growth of Mt Eden gaol (from Best and Clough 2005)

Figure 16. SO 12301 (of unknown date) showing new buildings constructed in the Prison reserve (1904?)

Figure 17. Undated Plan of Mt Eden Gaol Reserve with further houses along the Boston Road frontage (Archives NZ)

THE BURROWS PRISON

New Plans

By 1877 the wooden buildings of the Stockade had aged significantly and the Government was urged in the Report of the Auckland Gaol Commissioners to construct new buildings. Architect Edward Mahoney (Mahoney 1877) included with the report submitted plans for a new prison, originally drawn by the Governor and Gaoler Mr O'Brien (Figure 18), and Mahoney's Sketch of the Proposed Gaol at Auckland based on O'Brien's plan but altered to allow better ventilation to cells (Figure 19). Both plans had the cells running around a central administration centre with blocks of cells separated by mess areas. A chapel was to be located on the central part of the second floor of the original plan (Figure 18) and presumably would have been on the revised plans as well. Utilities and other functions were located along the northern side.

The organisation of the Prison in both cases placed the exercise areas between the central blocks and the central structure, so in effect making the cells themselves assist in the overall security of the block when the prisoners were outside. The hospital and women's prison were to be located elsewhere. However, there are no exterior plans showing how the proposed buildings were designed to look and the emphasis, unsurprisingly, was very much on function rather than form.

These plans were rejected following the arrival of Captain Hume who was appointed Inspector-General of Prisons and who had ordered further plans drawn by P.F.M. Burrows, an architect with previous experience designing prisons (Salmond Reed 2006).

Burrows' Plans

Burrows developed plans for a very elegant looking building (Figure 20-Figure 23) made up of a series of wings and extensions, allowing for a differentiation of prisoner types in different areas. The women's prison was designed to be on an extension from the main north wing, with a debtors' prison on the extension from the south wing. The cells were located on two main floors, although there was a basement for utilities. The ground floor had to be accessed from stairs from the centre (west) wing given the changing slope towards Mt Eden.

Hexagonal turrets were designed at the end of each wing and extension, with a large central hexagonal tower in the centre of the building accessed from a spiral staircase. Large arched windows were located at the ends of the wings and extensions, which contrasted with the small rectangular cell windows used along the walls.

The eastern exercise yards were designed to be triangular with a diagonal fence separating each yard. On the western side, the 'Female Yard' and 'Debtors Yards' were located in the areas between the extensions, the Prison wall and main north–south wing.

Burrows' plans were adopted, but there was clearly a rejection of the exterior design proposed and a more traditional, dour, gothic style was adopted. The hexagonal towers were replaced with rectangular crenellated turrets. However, the central tower survived and generally most of the interior appears to have been approved with minor modifications. The overall 'cathedral' style architecture remained. Modern detailed recording of the building, and the interior in particular, would be useful to determining those elements that were adopted and have survived.

There is no clear evidence that the eastern yards were ever divided diagonally and this design was probably never implemented. A 1900 photograph of the Female Yard (APL, *AWNS*-19000803-9-8) does show two women standing with two men, but interestingly there appears to be a low stone wall running parallel to the north wing. It is possible that this was designed to prevent views from the cells in the north wing into the Female Yard.

The new Prison building was built in three main stages: the north wing and west extension, the east and administration wing and the south wing, and the west wing. Work began on the north wing on 20 November 1882 and the first prisoners occupied the ground floor in 1888 while construction of the upper floor continued. The north wing was completed in 1894. Construction of the central wing comprising both cells and administration began in 1899 and was completed in 1906, with prisoners occupying cells from 1905. Construction of the south and west wings began in 1908 and was completed in 1913. Shortly after the completion of the south wing work began in extending this portion of the building, which was completed in 1917. A summary of the building chronology of the main structures is shown in Table 2 .

Although various alterations and additions took place in and around the wooden buildings of the Stockade, these remained the basic prison cell blocks until the basalt wings were constructed and brought into service. By 1918 the last of these had been finished, and all the original wooden buildings had been demolished (*AJHR* 1918: H-20:5).

20th Century Changes

The 1908 *AJHR* (H-20:5) noted that the stone wall bordering Normanby Road was pulled down and the road widened. Between 1917 and 1920 two stone or concrete block buildings were constructed in the south-west corner of the Prison, between the south wing and the Prison wall, known as the Bag Shop and the Gymnasium.

In 1913 an extension to the south Prison wall was built: it was 79m long and 17m wide, enclosing an area initially used for stone-working, and was until recent works commenced used as a workshop/storage area.

A number of buildings were located immediately outside the south wall of the Prison but their history is unclear. The earliest of these appeared to have been the Stone Stable, finished in 1906/7 (Salmond Reed 2006), and demolished in 1991. This is the only building visible in a 1940 aerial (Figure 24). A 1958 aerial shows an addition on the south side of the building, and the building platform east of this for the Bulk Store (Figure 25).

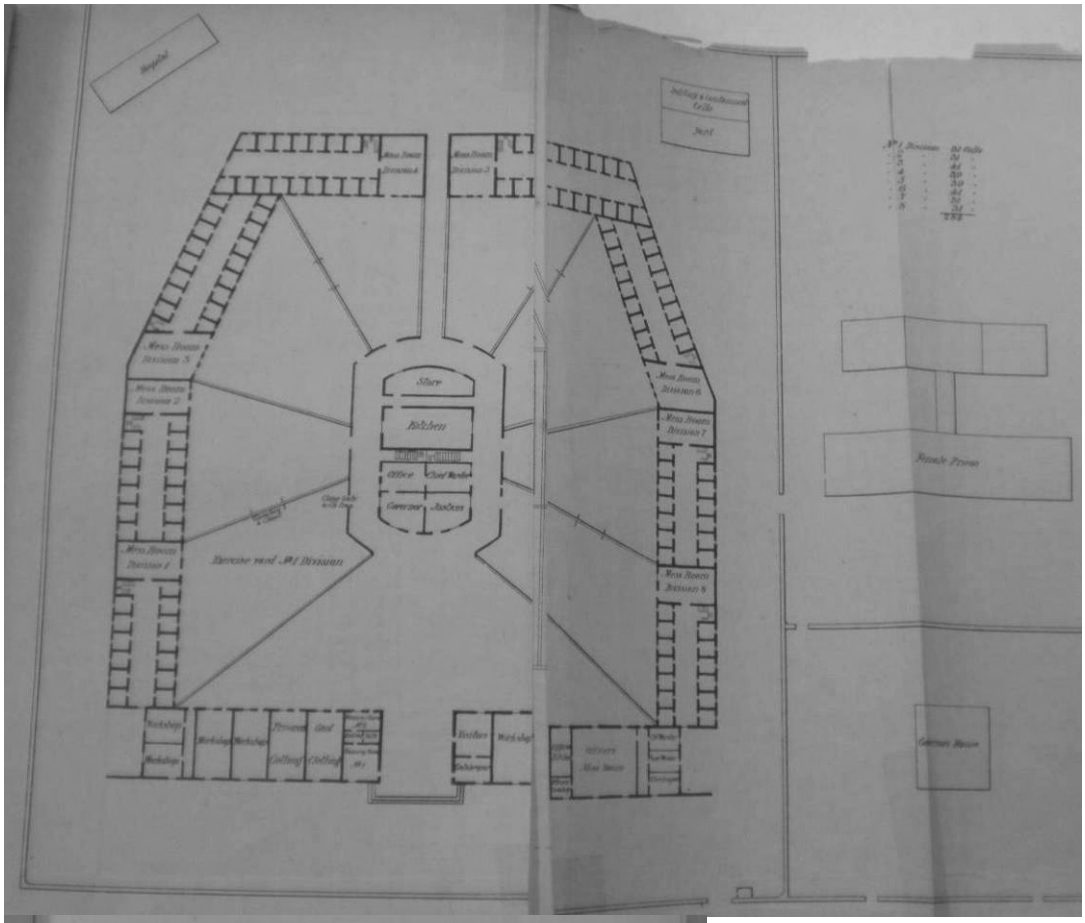
The Bulk Store was later converted into a joinery shop and maintenance garage, and in 1988 was again converted into modular cells and dayrooms, with two exercise yards added on the east end (Salmond Reed 2006). The west half of this area was cleared of buildings in the 1990s.

Comparison of the two aerial photographs shows that the quarry just south of the Stables had been filled in for a distance of about 40m, enabling the other buildings to be erected. The depth of the fill appears to be considerable, perhaps between 5m and 10m.

Other plans exist in Archives New Zealand showing other aspects of the Prison at different times, but further research is beyond the scope of the current project.

Table 2. Building chronology of the Stockade and Prison

STOCKADE	
30 July 1856	Mt Eden Stockade proclaimed as public gaol.
1 September 1856	16 prisoners transferred from Queen Street gaol. Stockade consisted of one long two-storey building surrounded by wooden fence.
1858	Hard labour building constructed, prisoners from Queen St.
1862	Mt Eden site to be future site of larger modern prison.
1864	August 1864 tenders for third building close.
August 1865	Third wooden building constructed.
August 1866	Officer's quarters and powder magazine constructed.
BASALT WALL	
1871-1874 (or late 1873)	1871 is accepted start date but wall is mentioned in newspaper articles in 1864.
1877	Report of the Auckland Gaol Commissioners included plans of existing buildings. Two designs for new prison submitted, with Burrows' plan accepted.
NORTH WING 1882 – 1894	
20 November 1882	Excavation begins for foundations of the north wing.
1888	Prisoners occupy ground floor cells and some old buildings demolished.
1892	Further prisoners occupy cells.
1893	Women's wing completed.
1893-1894	North wing completed.
1890s	Superintendent's house.
1895	Gaolers' and subordinate officers' house built.
1917	Flooring in the north wing modified.
CENTRAL/ADMIN WING 1899 - 1906	
1905	Cells occupied
1906	Administration completed
STABLE/COACH HOUSE/CART SHED	
Completed in 1907	
SOUTH WING/WEST WING 1908 - 1913	
1908	No 1 wooden building removed to 'fresh site' and excavations for foundations begin.
1911	Some cells in south wing occupied (first floor). Some cells occupied in west wing on first and second floors. Removal of remaining wooden buildings.
1913	Wings completed
SOUTH WING EXTENSION 1913 - 1917	
1913	Foundations for hospital, schoolroom, officers' quarters and some cells nearly complete by 1914.
1916	Removal of last wooden buildings. Subdivided exercise yards.
1917	South wing extension finished and occupied.



Upper floor

Figure 18. Plan of the Proposed Gaol at Auckland by the Governor and Gaoler Mr O'Brien

AJHR 1877: H30 (courtesy John Adams)

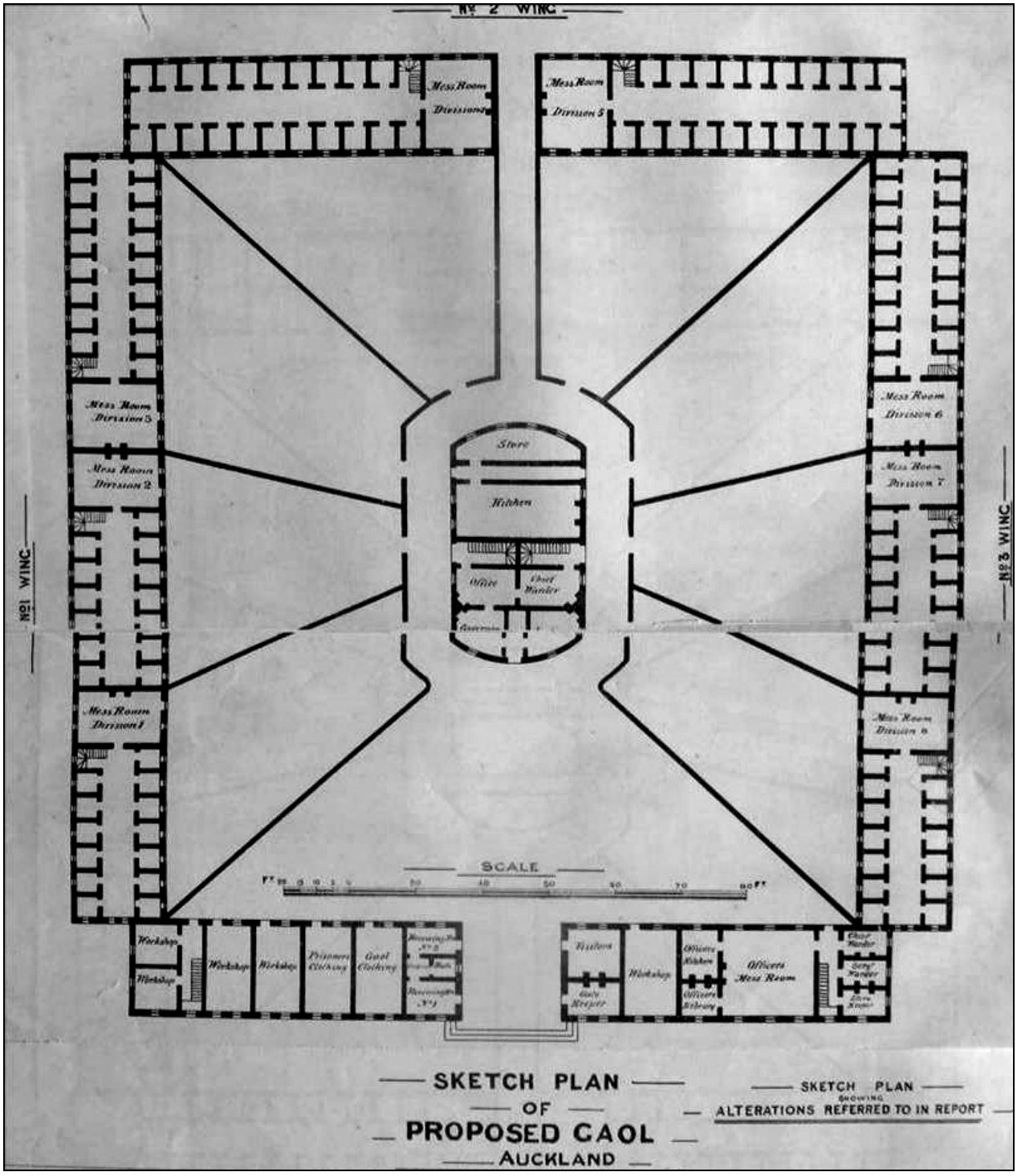


Figure 19. Mahoney's 'Sketch Plan of Proposed Goal Auckland', which was based on O'Brien's plan

AJHR 1877: H30

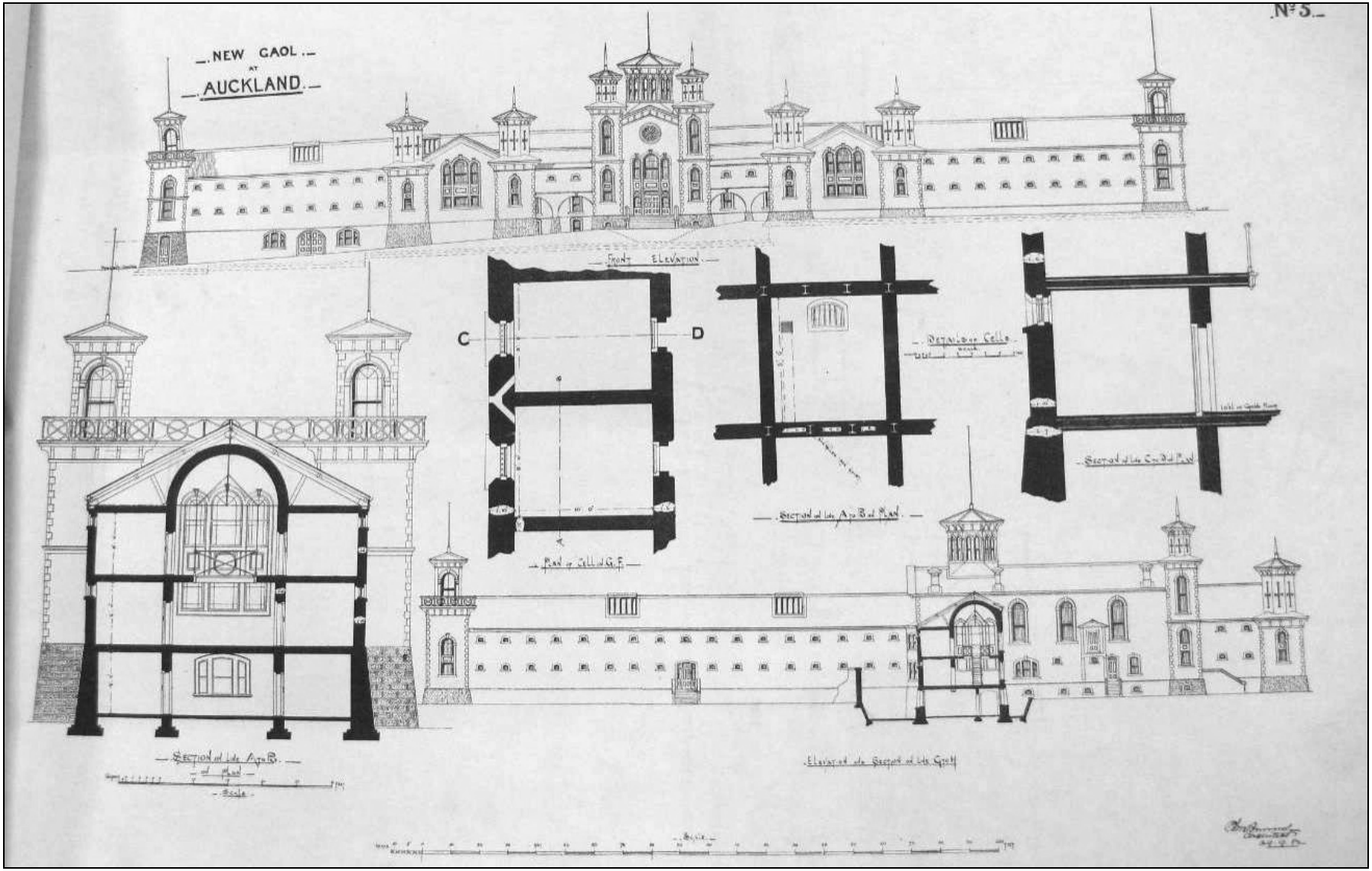


Figure 20. Burrows' plan of Mt Eden Prison (Archives NZ)

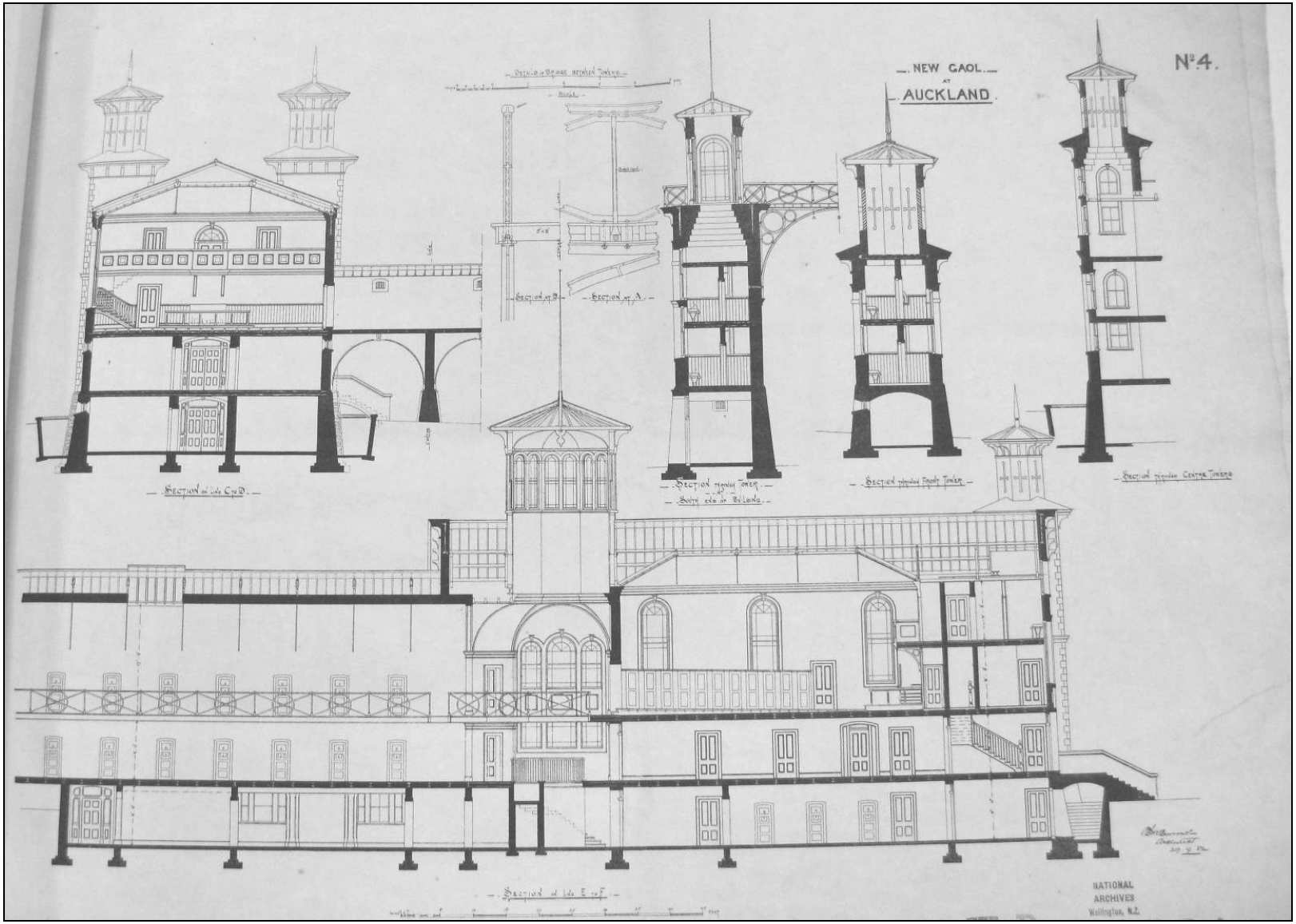


Figure 21. Section drawings of Prison showing interiors from the Burrow's Plan (Archives NZ)

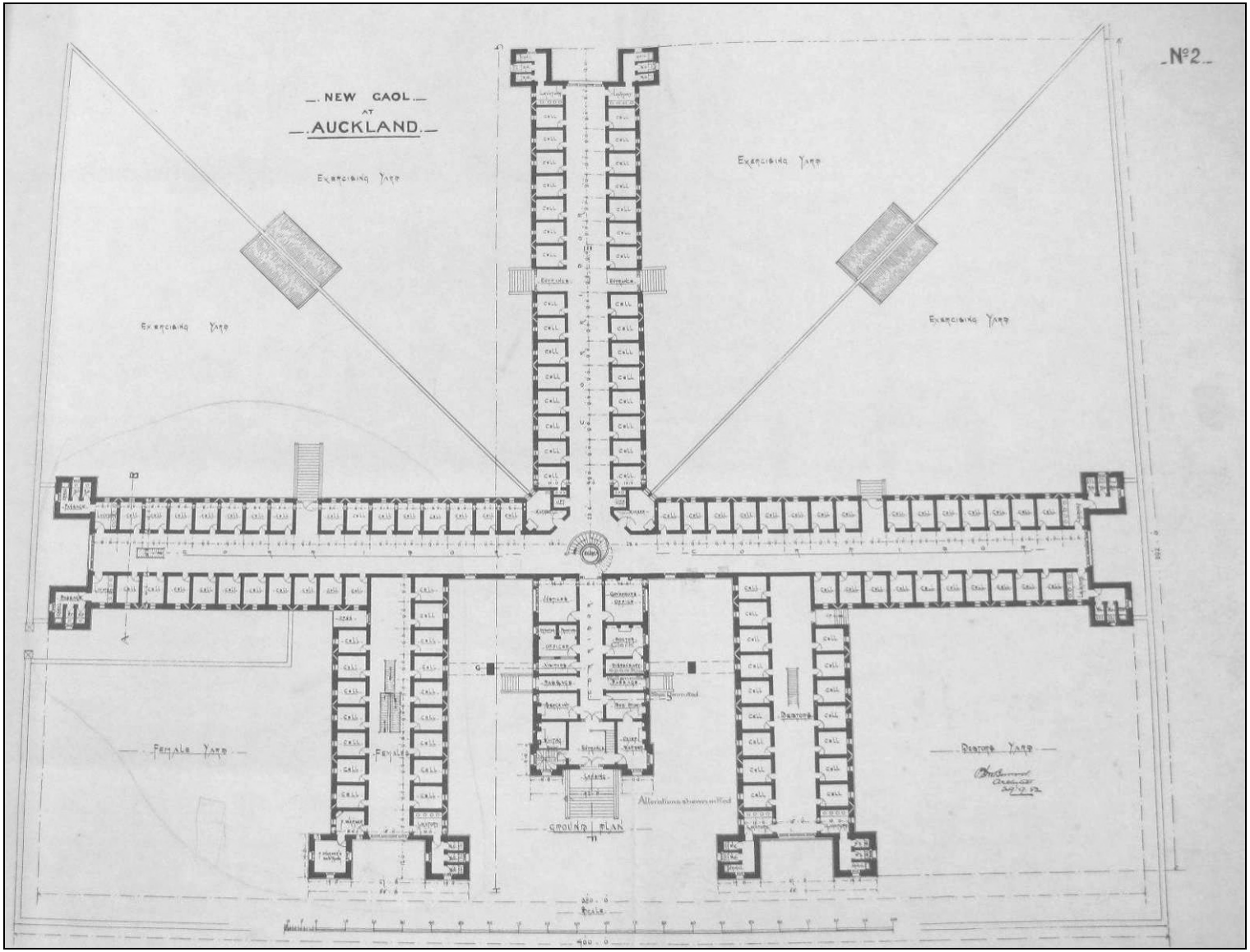


Figure 22. Ground floor plan of Burrows' Prison (Archives NZ)

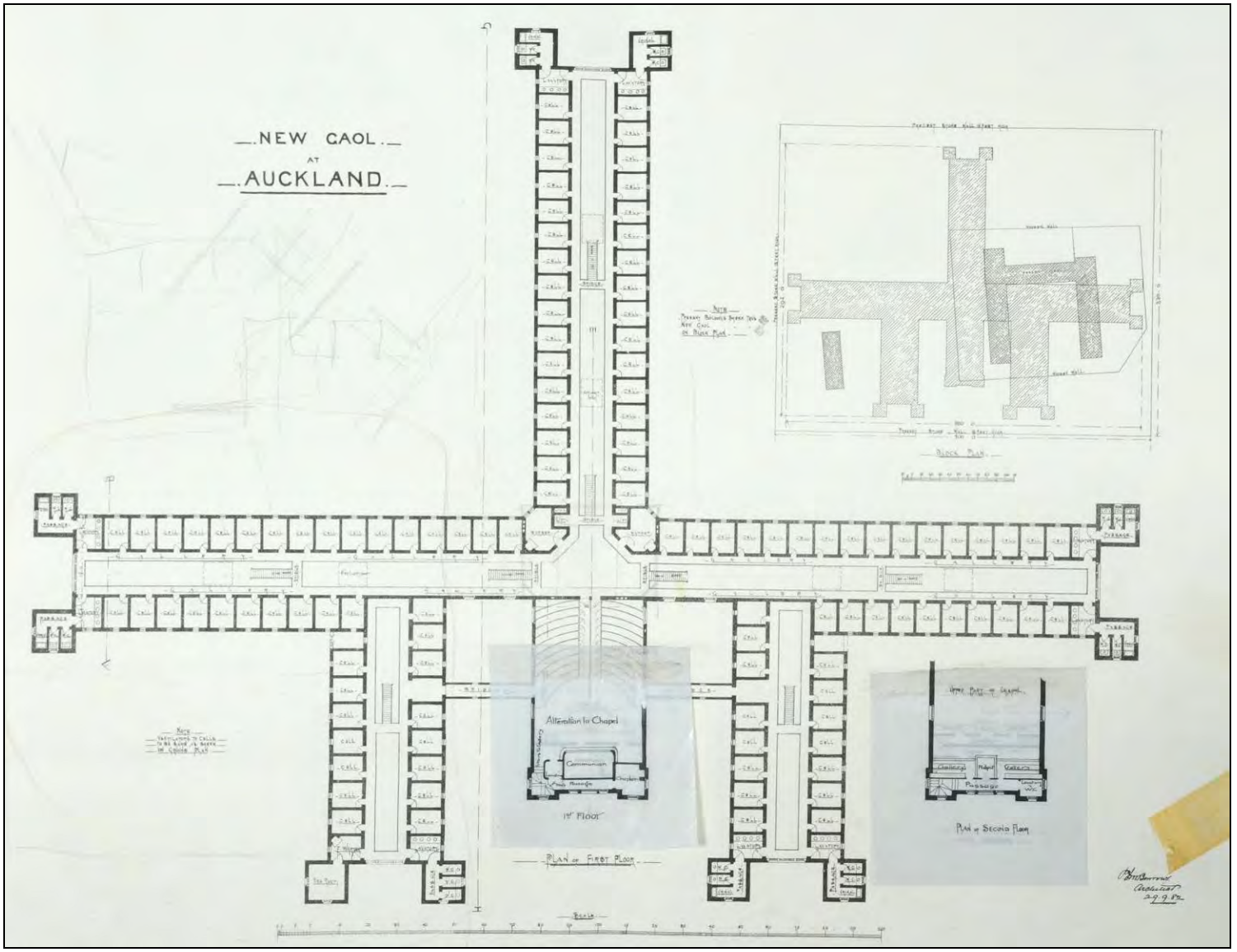


Figure 23. Plan of first and second floors of the Burrows' Prison (PWD 13824 Archives NZ)

Figure 24. 1940 aerial of Prison and surrounds (Auckland Council MapViewer)

Figure 25. 1958 aerial of Prison and surrounds (ACC Sheet 39)

PRISON DEVELOPMENT

3D Model

A 3D model of the changes in the main Prison – from Stockade to Prison – was created as part of the project (Figure 26 and Figure 27). The model was created by Raysan Kubaisi with input from the authors and was designed to assist in developing ideas about the changing landscape. A presentation was made to the NZ Archaeological Association in 2009 (Bickler et al. 2009) and provided to Department of Corrections staff for their team. The model was a useful education tool, but it also highlighted the need for more specific information regarding the other structures on the Prison grounds during its life. The previous research by Best (1996) and Salmond Reed (2006) focused primarily on the major buildings, but left out smaller structures that included utility buildings, sentry boxes and housing.

A detailed review of buildings and other structures from the photographs and plans of the Prison from the 1870s into the mid-20th century was conducted to provide a more comprehensive view of the changes that had taken place. Several images are not well dated, some of the buildings are not accurately mapped onto plans, but rather sketched on, and many features are not identified, which creates some ambiguity. Photographs from oblique angles also make it difficult to accurately locate structures.

Prison Buildings

Despite the limitations, the results of the analysis did identify a number of structures within the Prison upt to c.1960 which were plotted into the GIS (Table 3, Figure 28). A number of observations about the data can be made:

- The Prison site has undergone continuous change since the Stockade was built.
- Many of the early wooden buildings in the Prison were probably modified and moved while they were on-site and much of this is unrecorded.
- Many of the buildings changed function over time.

Walls and fences were also likely to have been present on the site, although many were probably not mapped. The free labour available to the Prison contributed significantly to its ability to rapidly create and modify structures as required.

The other key component missing from this picture of the changing Prison is how the topography of the land changed. The Stockade was originally built on what looked to be flattish terrace on the slopes of Mt Eden, but fairly quickly a large area around that location was cleared and flattened, although some general sloping up towards the south remains today. However, it does appear that vegetation cover across the Prison reserve was cleared early on, probably for quarrying activities, but also perhaps for security reasons. Quarry activities started relatively close to the Stockade and then expanded across to the west of the site before continuing to the south towards Auckland Grammar School. Tracking the quarry activities in detail remains a future project.

Figure 26. 3D model of the Stockade–Gaol Phase (1850s-1860s)

Figure 27. 3D model of the Prison buildings showing completed wings (after 1917)

Table 3. Prison buildings identified to c.1960

Code	Description	Type
A1	North Boundary Hedge	Hedge
A2	North Post and Wire Fence	P&W Fence
A3	Picket Fence	Fence
CS	Cart Shed	Utilities
E1	House	Building
E2	House?	Building
E3	East Garden	Garden
F1	Generator Shed	Utilities
F10	Unknown	Building
F11	Toilet Block	Utilities
F12	Shed?	Building
F13	Administration Block	Building
F14	Unknown	Building
F2	Tallyman's House	Building
F3	Workshop	Building
F4	Workshop 2	Building
F5	Stone Crusher	Battery and Bullding
F7	Unknown	Building
F8	West Garden	Garden
F9	Sentry Box	Sentry Box
L1	Warder's House	House
L10	Staff	Building
L2	Warder's House	House
L3	Warder's House	House
L4	Warder's House	House
L5	Warder's House	House
L6	Warder's House	House
L8	House	House
L9	Reception/Admin Women's Prison	Prison
NE1	NE Yard	Yard
NW1	NW Yard	Yard
NW2	Unknown Building	Building
NW3	Outbuilding	Unknown
NW4	Secure Unit	Prison
NW5	Secure Unit Wall	Wall
P1	Main Prison Admin Block	Burrows Prison
P2	Main Prison North Wing	Burrows Prison
P2.1	Main Prison North Wing Extension	Burrows Prison
P3	Main Prison South Wing	Burrows Prison
P3.1	Main Prison South Wing Extension	Burrows Prison
P4	Main Prison West Wing	Burrows Prison
Q1	West Quarry	Quarry
R1	Haulage Track	Rail Track
R2	Haulage Track	Rail Track
S1	Stockade	Stockade
S10	Stockade Fence Internal	Fence
S11	Stockade Bath	Stockade
S12	Stockade Office	Stockade

Code	Description	Type
S2	Stockade	Stockade
S3	Stockade	Stockade
S4	Stockade Fence	Fence
S8	Stockade Officers Quarters	Stockade
S9	Stockade Shed	Stockade
SB	Workshop	Building
SB*	Sentry Box (?)	Sentry Box
SB2	Domed Roofed Workshops	Building
SB3	Laundry	Utilities
SB4	Boiler Room	Utilities
SB5	Workshops	Building
SB6	Sentry Box	Sentry Box
SE1	SE Yard	Yard
SE2	Medical Unit	Building
ST	Stables	Stables
SW1	Bag Shop	Building
SW2	Gymnasium	Building
SW2a	Gymnasium Extn	Building
T1	Captain Hocking's Tent	Tent
T2	Tent	Tent
T3	Tent	Tent
T4	Tent	Tent
T5	Tent	Tent
T6	Tent	Tent
T7	Tent	Tent
T8	Tent	Tent
T9	Tent	Tent
W1	Northern Wall	Wall
W10	Boulder Wall	Wall
W2	Southern Wall	Wall
W3	Eastern Wall	Wall
W4	Western Wall	Wall
W5	Stoneyard Wall	Wall
W6	Northern Wall Extension	Wall
W7	Southern Boulder? Wall	Wall
W8	East 6ft Boundary Wall	Wall
W9	East Boundary Wall Extn	Wall
WP1	Superintendent's House	House
WP2	Women's Prison	Prison
WP3	Unknown	Building
WP4	Women's Prison	Prison

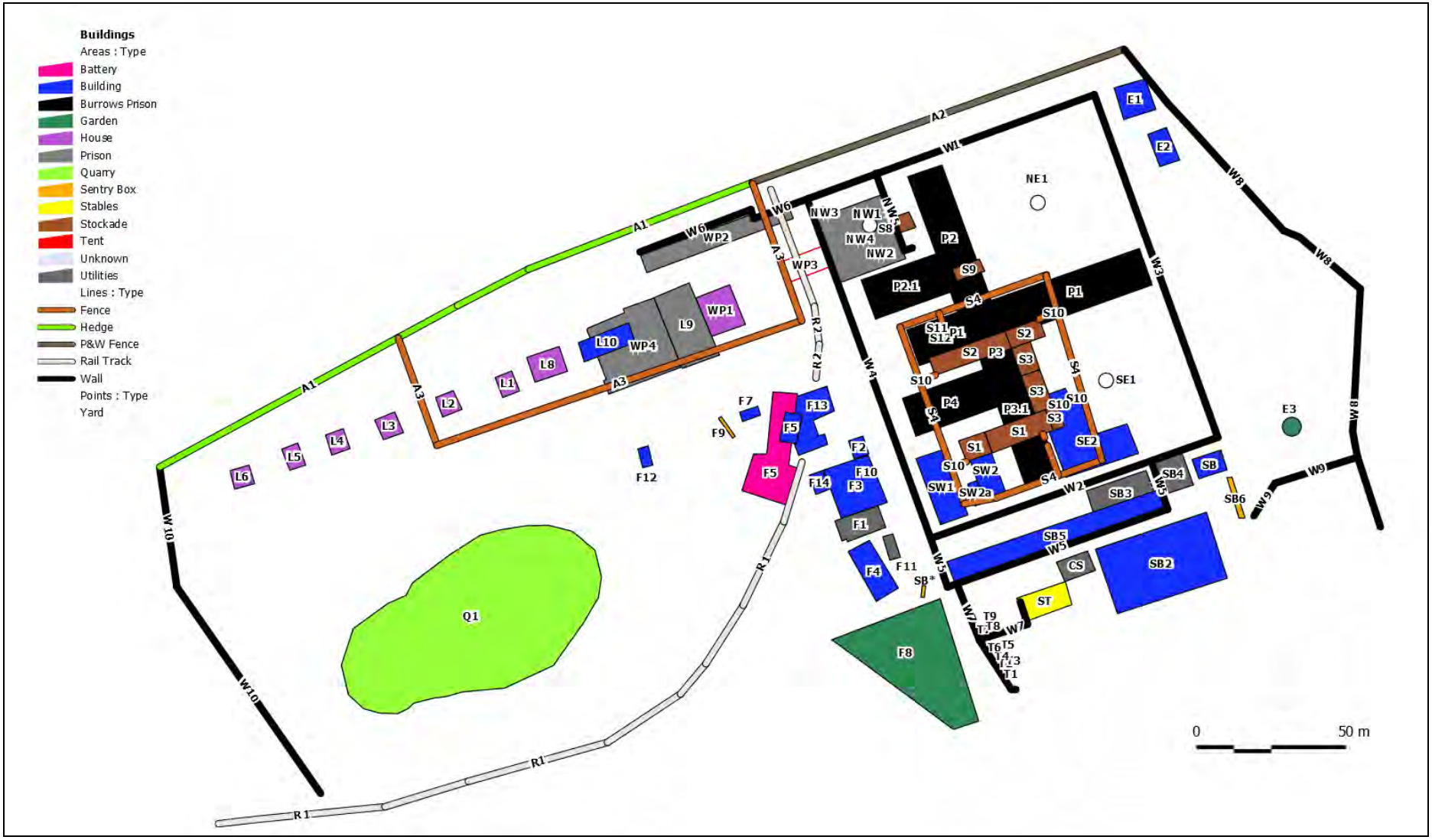


Figure 28. Plan of previously recorded structures on the current prison grounds to c.1960

CHAPTER 3: BUILDINGS RECORDING

INTRODUCTION

Recording

A photographic and architectural record of the buildings selected for demolition was created by a team of architecture students and the archaeologists during the early stages of the project. This was designed both as a final record of these (mostly 20th century) structures, as well as a complement to the archaeological investigations described below. The students were from Dr Julia Gatley's class at the School of Architecture and Planning, University of Auckland. They were responsible for the recording of the Bag Shop, Gymnasium and Generator Shed buildings. Hamish Macdonald took a series of photographs of these structures, which is available on the accompanying DVD. The remaining architectural and photographic recording of the Tallyman's Hut and the Superintendent's House/Women's Prison was carried out by the archaeological team. Sections of the Prison wall that had to be demolished were also photographed and structural information recorded. The demolition of these structures was also recorded and is described in this chapter. Excavations of these areas are described in later chapters.

Methodology

Measured drawings were made of the buildings. Where possible both the interior and exterior of the structures were photographed, along with any particular features relating to the structural or stylistic history of the structures. All these buildings had undergone major reworking at some point during their history and most of the later decoration was relatively plain, using standard modern building materials (e.g. gib board). The focus was on:

- identifying the earlier layout of the buildings;
- identifying original building materials;
- stylistic and structural elements relating to the use of the buildings in a prison context; and
- Any other general stylistic elements relating to architecture.

The photographic record included images before, during and after demolition of the structures.

Some additional archival information regarding the Superintendent's House was also carried out and the original plans of the structure were obtained from Archives New Zealand.

Figure 29. Plan showing location of buildings recorded

BAG SHOP

Description

The Bag Shop building in the south-west corner of the main Prison block gets its name from prisoners using the building as a workshop for various activities including making bags. The building was rectangular, two-storey, with a subdivided lower storey and open-plan upper level (Figure 30-Figure 33). The building was about 22.87m x 8.14m (75' x 26½') and about 8.9m high.

The structure was made up of moulded concrete block walls (Figure 34). The blocks were made from a single mould and designed to look similar to the basalt blocks of the main Prison building. Basalt blocks were used in the corners of the buildings to provide additional strength (Figure 35).

Medium size barred windows were present on the lower floor on the west side of the building and on both floors along the east side (Figure 30 and Figure 31). Small windows were present on the southern wall (Figure 31). The doors of the structure were interesting, with two doors on both the upper and lower floors in the middle of the eastern wall with each pair supported by a single lintel (Figure 30). The presence of these paired doors suggested that the building was originally designed to allow access to the north and south separately, although at the time of recording this separation hand been removed from both floors (Figure 32).

The eastern doors on the upper floor opened up on to small platforms, although only the southern platform remained. Metal support rods below the northern door confirmed the presence of a metal structure there in the original design. However, it is possible that there were external stairs up to these floors at one point as observed in the Gymnasium building next door (see below).

Large double doors were also present on both floors of the northern wall, which suggests that this may have been where materials were moved in and out of the building for the prisoners' work (Figure 30).

Internally, there were signs of significant modification to the organisation of the rooms. On the lower floor, a guard room (Figure 36 and Figure 37) was present in the centre of the block, but otherwise internal structures had been removed. The floors were concrete. The most interesting internal feature was the presence of railway tracks used as support beams running north-south through the centre of the building to support the upper floor (Figure 38 and Figure 39).

The upper floor was at the time of recording accessed through a wooden staircase which was unlikely to have been part of the original design (Figure 40). The staircase was crudely covered on the upper floor, controlling access (Figure 41). The upper floor had been stripped back with relatively minor structures used to create internal partitions (Figure 42 and Figure 43). The roof was timber trussed but was not original and was probably built in 1965 when the building was partially burnt. There were two sets of floorboards present – the northern half and the southern half. The tongue and groove floorboards ran north to south and the northern half appeared to be older, with the southern half looking as though it had been laid more recently, probably also the result of fire damage.

Figure 30. North and East elevation of Bag Shop

Figure 31. South and West views of the Bag Shop building

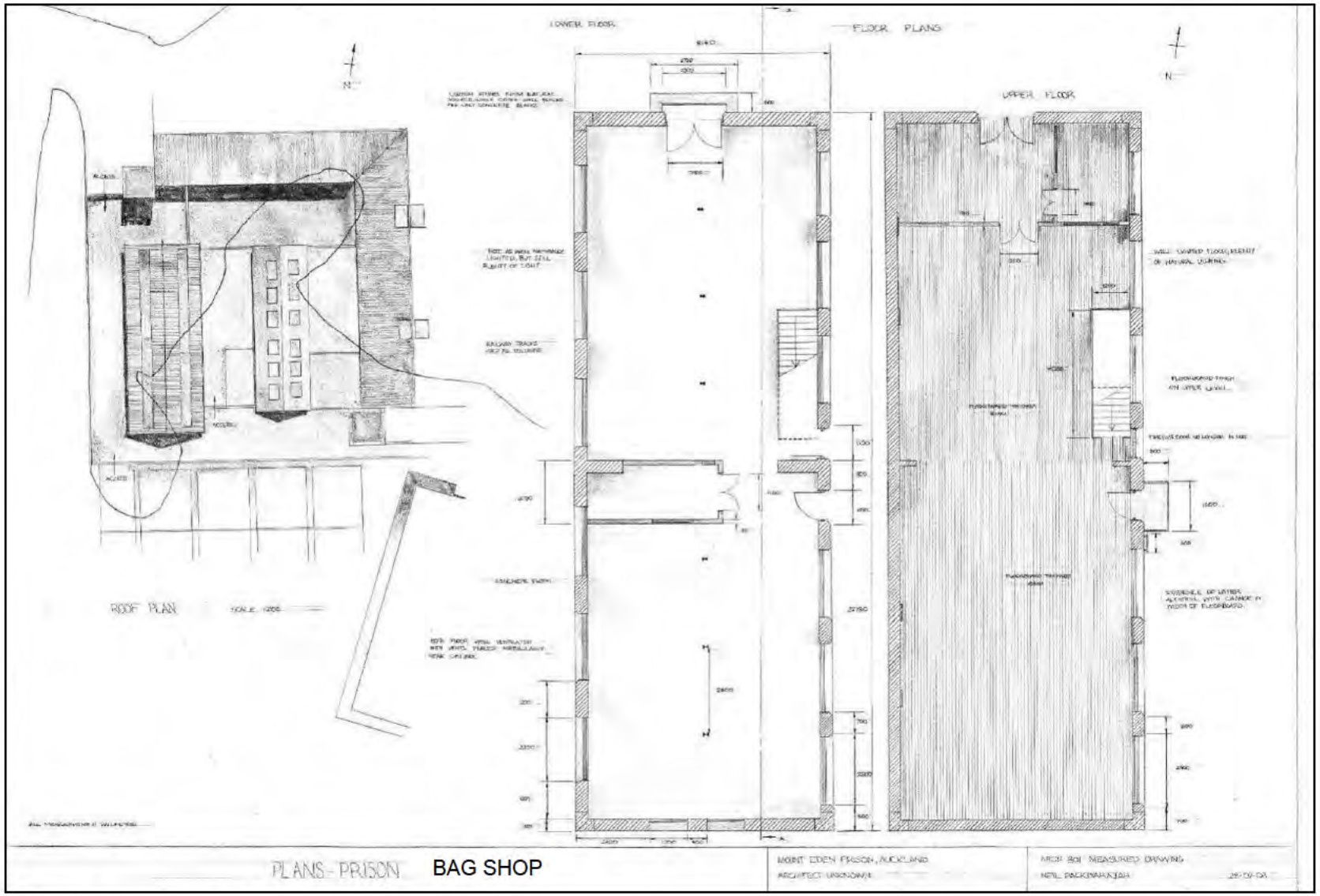


Figure 32. Plan view of Bag Shop building

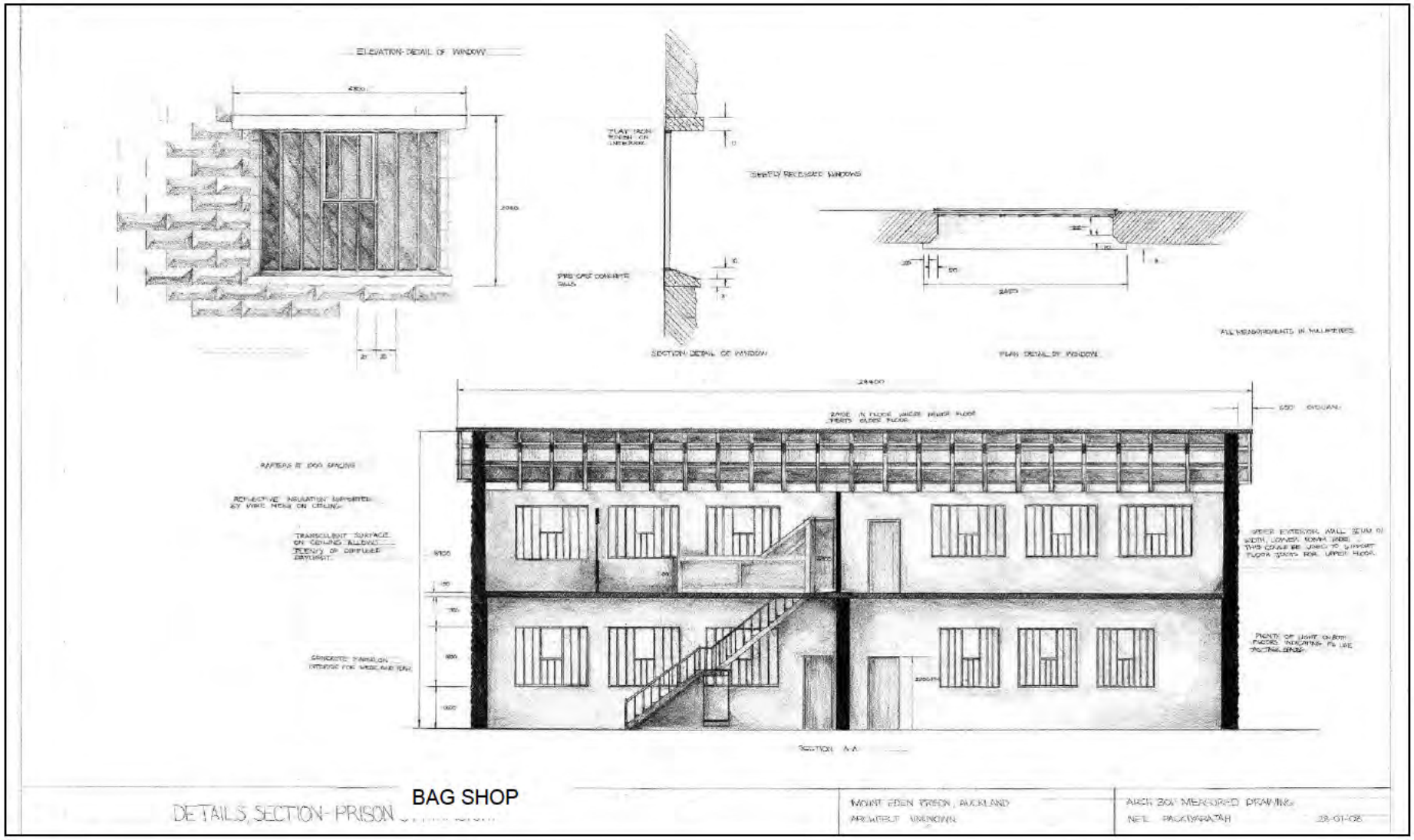


Figure 33. Internal section view of Bag Shop building

Figure 34. Moulded concrete blocks from the Bag Shop

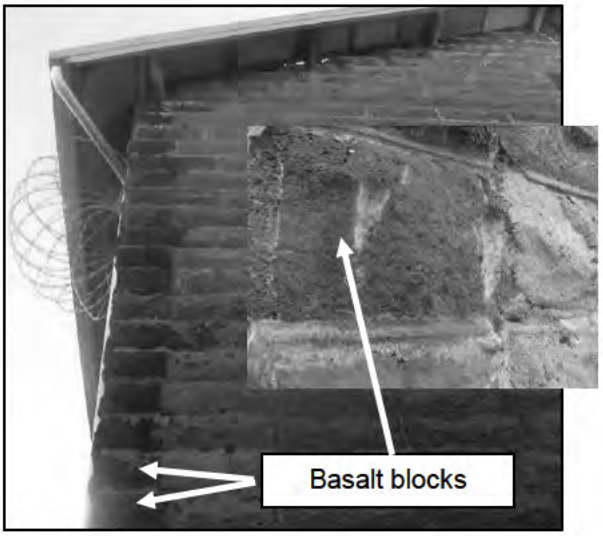


Figure 35. Basalt blocks on south-west corner of the Bag Shop

Figure 36. View of centre of lower floor of Bag Shop

Figure 37. Guard room in centre of the lower floor of Bag Shop

Figure 38. North side of lower floor of Bag Shop

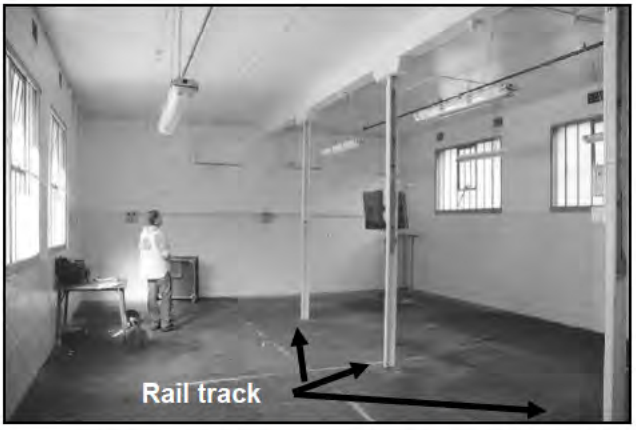


Figure 39. South side of lower floor of Bag Shop

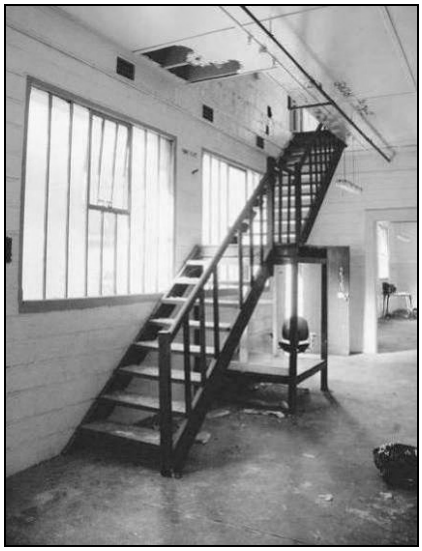


Figure 40. View of staircase in the Bag Shop

Figure 41. Enclosed staircase on upper floor

Figure 42. View of northern half of upper storey of the Bag Shop

Figure 43. View of southern half of upper storey of the Bag Shop

Figure 44. Floorboards in the centre of the upper floor of the Bag Shop

Figure 45. 'Ma Baker's Boyz' sign

Bag Shop Demolition

The initial attempts to remove the roof of the building revealed the presence of asbestos, requiring careful removal. Inspection of the roofing area was limited due to potential health concerns. The removal of the roofing iron and ceiling revealed the roof beams which showed evidence of charring. This charring was likely to have been the result of portions of the Prison being set on fire during the 1965 riot. Although the roof had probably been replaced at the time, many of the beams were not badly burned and so were not replaced (Figure 46, left).

The digger used for the demolition had to be craned over the wall due to the small working area and lack of access. Care also had to be taken in removing upper layers as the Exercise Yard immediately to the east was still in use. Archaeologists could not be present in the yard as the demolition was initially undertaken due to the lack of space and the potential for injury. This meant that the archaeologists inspected the progress of demolition periodically when it was safe and examined the resulting debris (Figure 46, right).

The demolition provided an opportunity to examine some of construction methods of the building. This included identifying:

- The first floor beams slotted into the wall between square blocks (Figure 47).
- The use of pre-cast air cavity cinder blocks for the wall construction.

Each block measured 19cm high and had a thickness of 30cm with a length of 60cm (Figure 48). There were two layers of air cavity within each block.

The ground floor was poured concrete and sat directly upon hard fill, mostly flaked stone but also containing some brick (Figure 49, Figure 50). The foundations of the building were constructed of cinder block and filled with hard fill. At a point halfway along the length of the building a block wall ran across the width of the building. This further emphasised the fact that the original construction of the building was centred on controlling access between the north and south parts. This was modified late in the history of the building to provide more open space.

Figure 46. The Bag Shop during demolition

Left: The roof of the Bag Shop following removal of the iron roof and the ceiling timbers
Right: The building during demolition – note the large section of first floor coming away intact

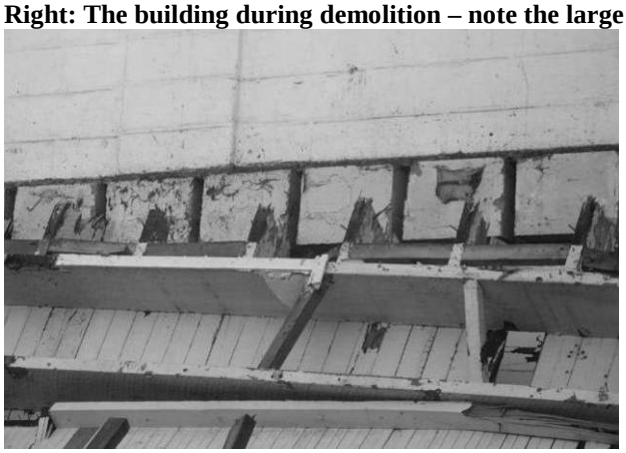


Figure 47. Detail of the construction methods used in securing the first floor to the wall of the building

Figure 48. Example of a pre-cast air cavity cinder block

Figure 49. Looking to the south along the Bag Shop floor following removal of demolition debris

Figure 50. Hard fill beneath the concrete floor and wall located halfway along the length of the building

GYMNASIUM

Description

The Gymnasium building in the south-west corner of the main Prison block was named for the use of the upper floor area as a Gymnasium in the recent past. However, at the time of recording it was no longer used for this, while the lower floor was used for a variety of other purposes including laundry and drug testing. The building was built between 1917 and 1923 on top of fill above the area of the 1858 Stockade and later Chapel (see Chapter 4) and after the building of the nearby south wing of the main Prison building. Access from that building to this area and the Bag Shop was originally relatively open, but later cinder block walls in the courtyard were used to manage access here.

The building was rectangular, two-storey, with a subdivided lower storey and open-plan upper level (Figure 51-Figure 55). The original building was about 20.64m long and 5.6m wide (67½' x 18') although additional structures did widen the building at the north by 4m, with another add-on building on the south-west corner (see below).

The structure was made up of moulded concrete block walls on the lower floor. Externally, the second floor, and the south wall on both floors, were given a rough concrete finish, leaving the moulded concrete blocks visible along the lower floor. Overall, though, the design was the same as that of the Bag Shop, which implies that the two buildings were built at much the same time.

Lower Floor

Internally, the Gymnasium appeared always to have differed from the Bag Shop, with significantly more robust construction of the floors and concrete supports (Figure 55, upper right). The floor plan (Figure 54) on the lower floor consisted of a number of 'cell' like structures allowing for controlled access to the rooms, including secure lock-up areas. Some of layout may have been original, but clearly there had also been substantial changes.

The unusual aspect of the lower floor was the arched access ways (Figure 53, Figure 56) along the western wall. Some of these had been blocked up (Figure 55, lower left) and the others set up for external access for use as a laundry and bathroom. How this area was originally meant to operate is not clear, although it is possible that the lower floor of the building was designed to be open to the courtyards on either side, except for some closed-in areas on the east side (where the moulded concrete blocks were present). Most of the modifications consisted of using cinder blocks to create a more structured space, and some rough modifications to allow for metal bar doors/gates to be built in were visible (Figure 53 [east, left side], Figure 55, upper left). The cinder block support for the exterior stair to the upper floor may also have been a later addition.

There were two other obvious changes to the building on the lower floor. An add-on on the south-west was relatively recent and not recorded (but visible in Figure 53 [west]). This consisted of a single storey room attached to the Gymnasium with a single, probably original exterior door providing access.

An extension on the north-east corner was earlier and the original internal organisation of the structure was modified to incorporate this cinder block extension. At the time of recording the last use of this extension was as an office with a holding cell (Figure 54). A wall running from the Gymnasium to the main Prison building with a locked metal door separated this area of the Gymnasium building from the southern end from the outside.

Upper Floor

The upper floor was at the time of recording accessed through a wooden staircase on the east side of the building, which provided access to two separate doors to the north and south (Figure 52 and Figure 53). Unlike the Bag Shop, it is not clear whether this was originally accessed by two separate staircases, but this is a possibility. However, it does support the notion that the upper floor was originally separated into north and south zones.

The north wall had a double set of doors, which suggests that there was exterior access to this part of the building at some point (Figure 53, Figure 57). This was similar to the neighbouring Bag Shop, although it was not clear what the particular purpose of having these doors on the upper floor might have been.

The roof was timber trussed, supported by concrete walls (Figure 58). The main interior dividing wall provided the only other support in the centre of the building.

Demolition

During demolition, it was possible to see additional detail regarding the construction of the building. The expansion of the northern end of the lower floor is more easily shown in Figure 59. Relatively modern cinder block had been added to the east side of the northern end with the original moulded concrete wall visible after this extension was removed (Figure 60).

The difference between the upper floor construction and the lower floor was also apparent during the demolition. As Figure 61 and Figure 62 show, the upper floor was made up of a double layer concrete block wall – different from the moulded concrete blocks used on the lower floor. The upper floor appeared to be a poured concrete floor of some thickness, which would have required the extra support of the concrete pillars on the lower floor (Figure 63).

Figure 51. Exterior of Gymnasium (clockwise from top left: west, south, north, east elevations)

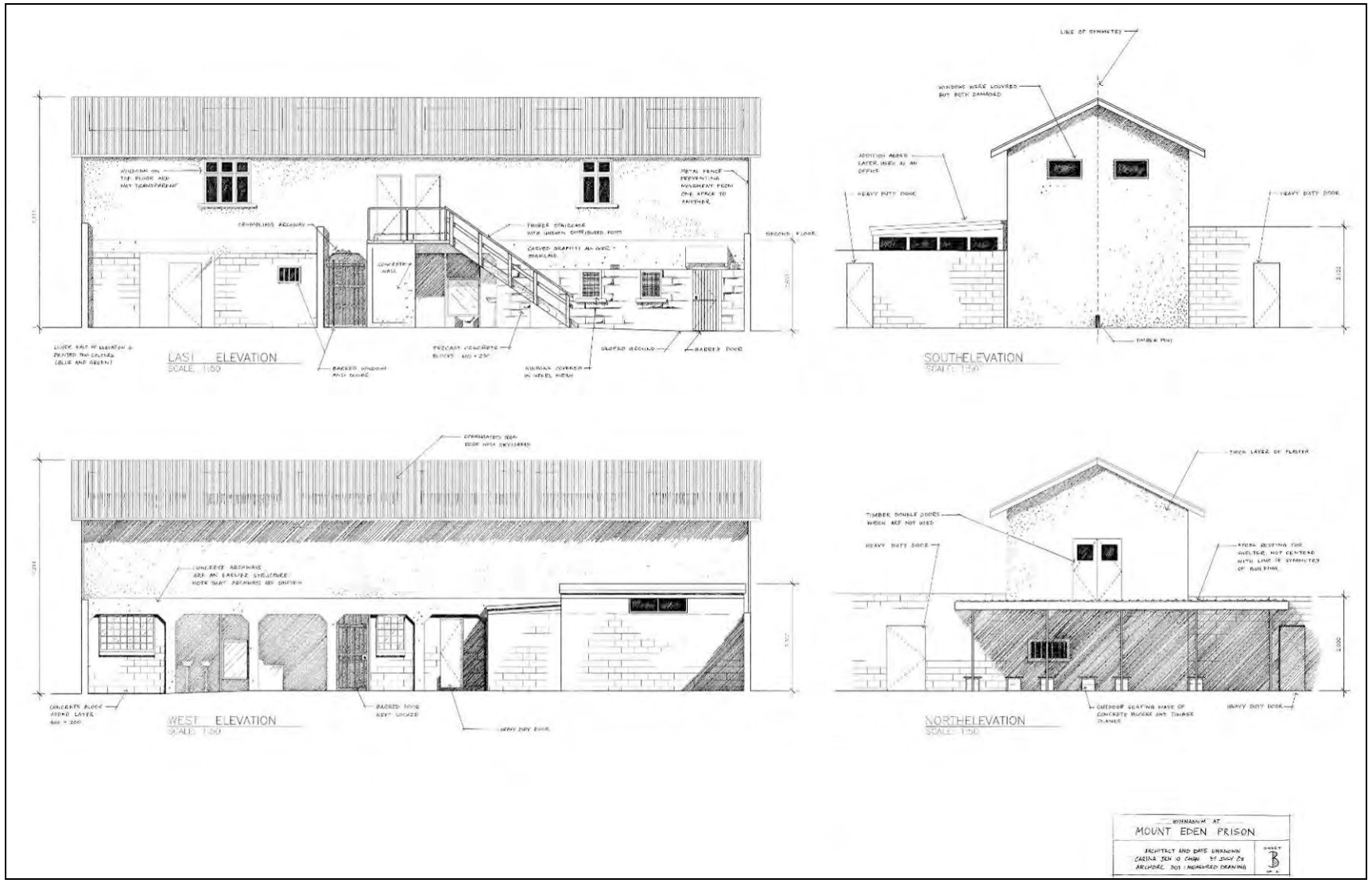


Figure 52. Exterior views of the Gymnasium building`

East, showing damage to concrete to allow for metal door frame

South

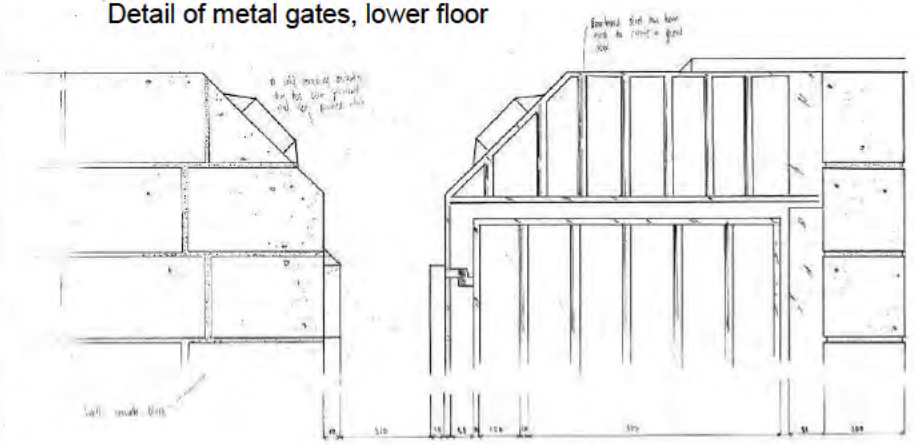
West

North

Figure 53. Photographs of the exterior of the Gymnasium

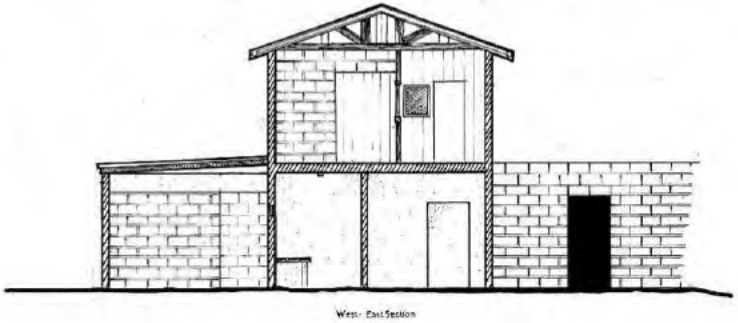
Figure 54. Floor plan of Gymnasium

Detail of metal gates, lower floor



Concrete upper floor support

Interior showing blocking up of archway



Exterior finish, west-east section

Figure 55. West-East cross-section (exterior surfaces) of the Gymnasium building and details of interior of lower floor

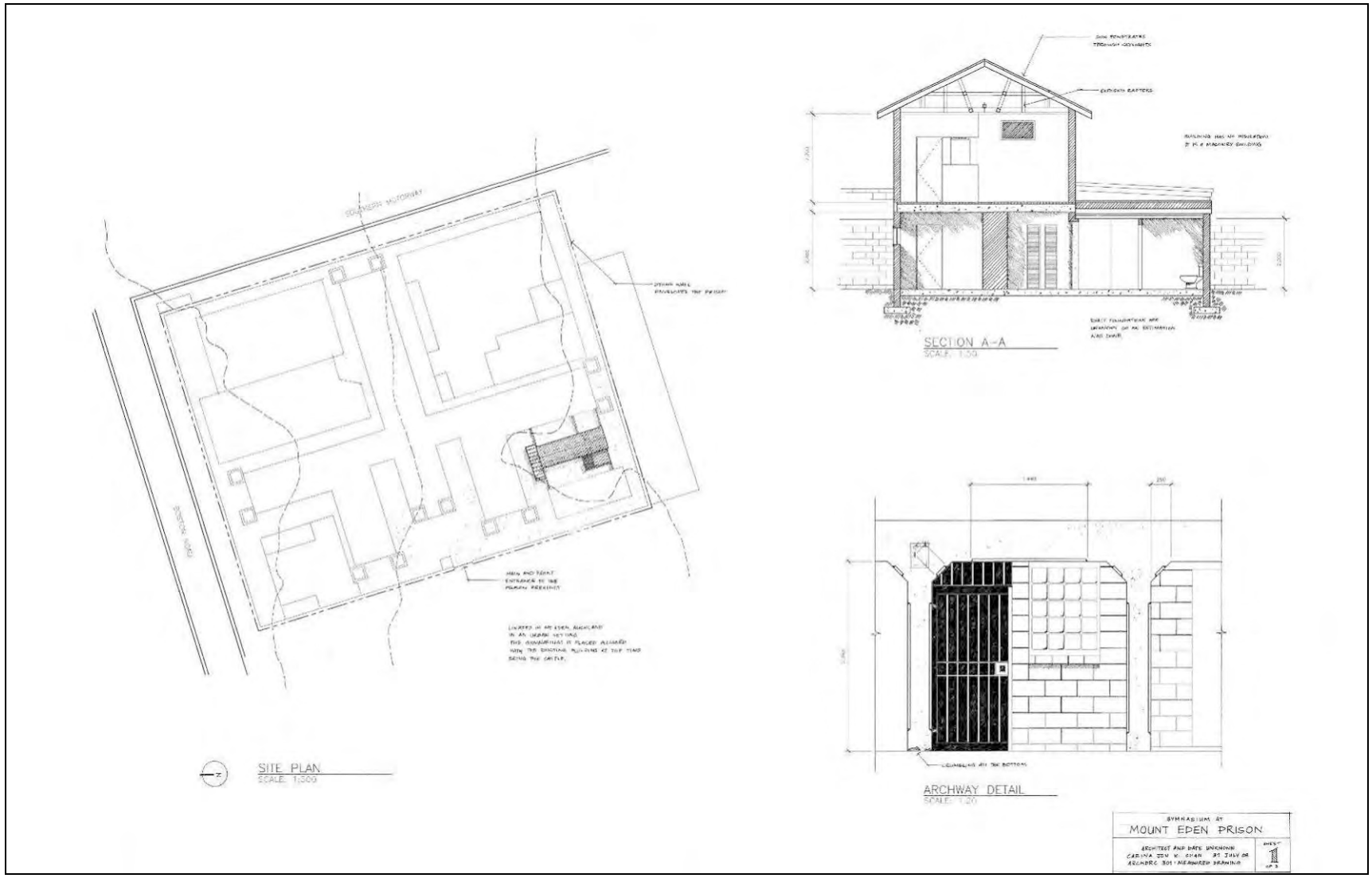


Figure 56. Archway detail and east-west section through Gymnasium

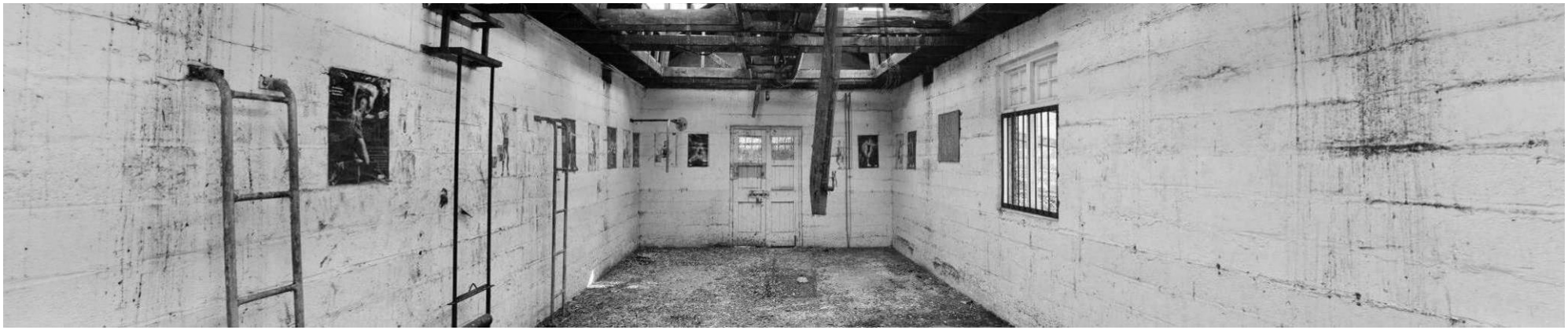


Figure 57. View of northern end of upper floor of Gymnasium looking north

Figure 58. Roof of Gymnasium

Figure 59. Photograph of lower floor, north side of Gymnasium

Figure 60. Remnant of north end of lower floor of Gymnasium

Figure 61. Cinder blocks from the upper floor of the Gymnasium

Figure 62. South-west corner of upper floor of Gymnasium during demolition

Figure 63. View of west side of Gymnasium during demolition

TALLYMAN'S HUT

Introduction

The Tallyman's Hut appears to have been built 1920s, although details about it are scant. The building itself was a simple one room cottage. Internal partitions may have been present but if so indications of these had been removed. The use of the building is attributed to the tallyman's role of counting the movement of prisoners and materials in and out of the Prison and quarry. The building backed onto modern workshop buildings that covered the area between the Tallyman's Hut and the Generator Shed.

Recording

The Tallyman's Hut (Figure 64 - Figure 67) was a relatively simple building. It was 6.25m long x 4.1 wide x ~4.5m high, with a wooden tongue and groove ceiling and floor (Figure 65). The exterior was rough plastered (Figure 64, Figure 65) on a wooden framed building. A narrow doorway on the north side provided access. Windows were on the north, east and west walls.

The interior appeared to be relatively modern and the ceiling was of typical wooden framed construction.

Near to Tallyman's Hut, to the west, the remains of basalt paving were observed around another modern office building (Figure 65). This did not extend far and appeared to be oriented NNE and with a gap between the stones. This had not been observed in a review of aerial photographs, but predated the asphalting of the area and the concrete building slab of the administrative building. The basalt paving was visible in 1998 prior to the administrative block being built (Figure 68) and extended over a slightly larger area than when later recorded. Aerial photographs of the area around the stone-crushing structures are not definitive regarding the presence of the basalt paving in this area, although there is a differently shaded material around those structures.

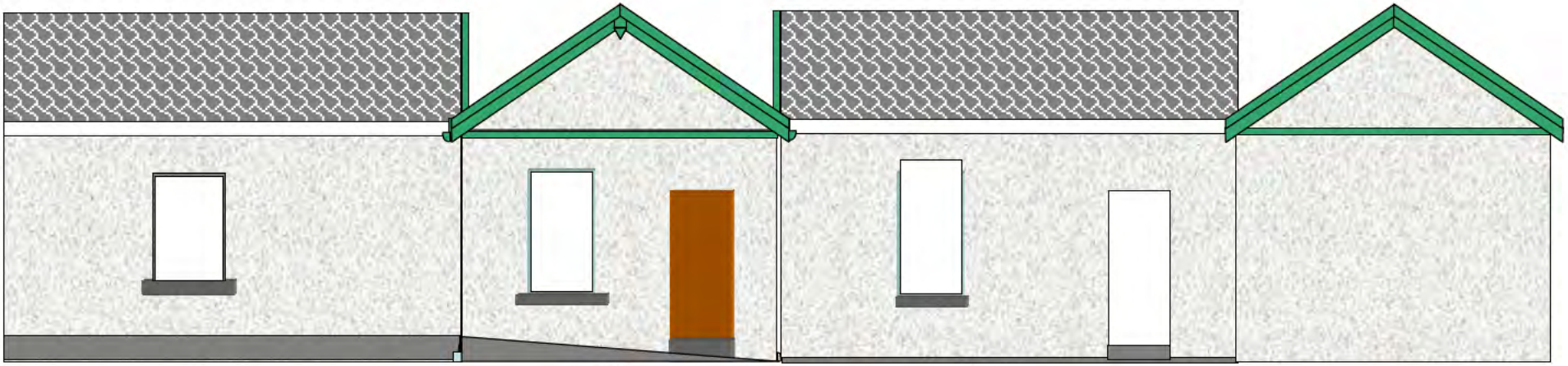
Demolition

What was also clear was that the original ground level was much lower that the asphalt layer present between the Tallyman's Hut and the Prison Wall. This necessitated the building of a retaining wall which got deeper as it headed south from in front of the main Prison Gate to the parking lot in the south-west corner of the Prison area.

Concrete was visible below the floor of the Hut after it was removed (Figure 67). The retaining wall exposed next to the Tallyman's Hut did reveal some interesting stratigraphy (Figure 67, Figure 69). The retaining wall was made up of larger basalt blocks running south and getting deeper as the wall headed south towards the Generator Shed. The blocks and design changed next to the Tallyman's Hut – much smaller blocks were used as far as the Generator Shed. At that point a concrete wall was used. The wall was holding back layers of fill including basalt flakes and blocks, scoria and other debris. More discussion of this area is presented in Chapter 5. The retaining wall probably dates after 1959, as aerials of the time do not show it. A few artefacts were also recovered from the fill behind the retaining wall near the Generator Shed, but are not considered to be of major significance (Figure 69, inset).

Figure 64. Tallyman's Hut

Figure 65. View of north side of Tallyman's Hut with later workshops and earlier basalt paving



East View North View West View South View

0 1m

Tallyman's Hut
17/09/2008
Ben Pick
Simon Bickler

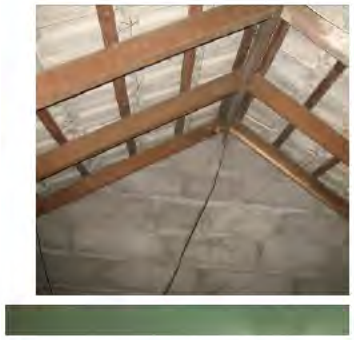


Figure 67. Area of Tallyman's Hut after demolition

Figure 68. Looking north-west across the site of the administrative office in 1998 (from Mosen 1998: Plate 1)

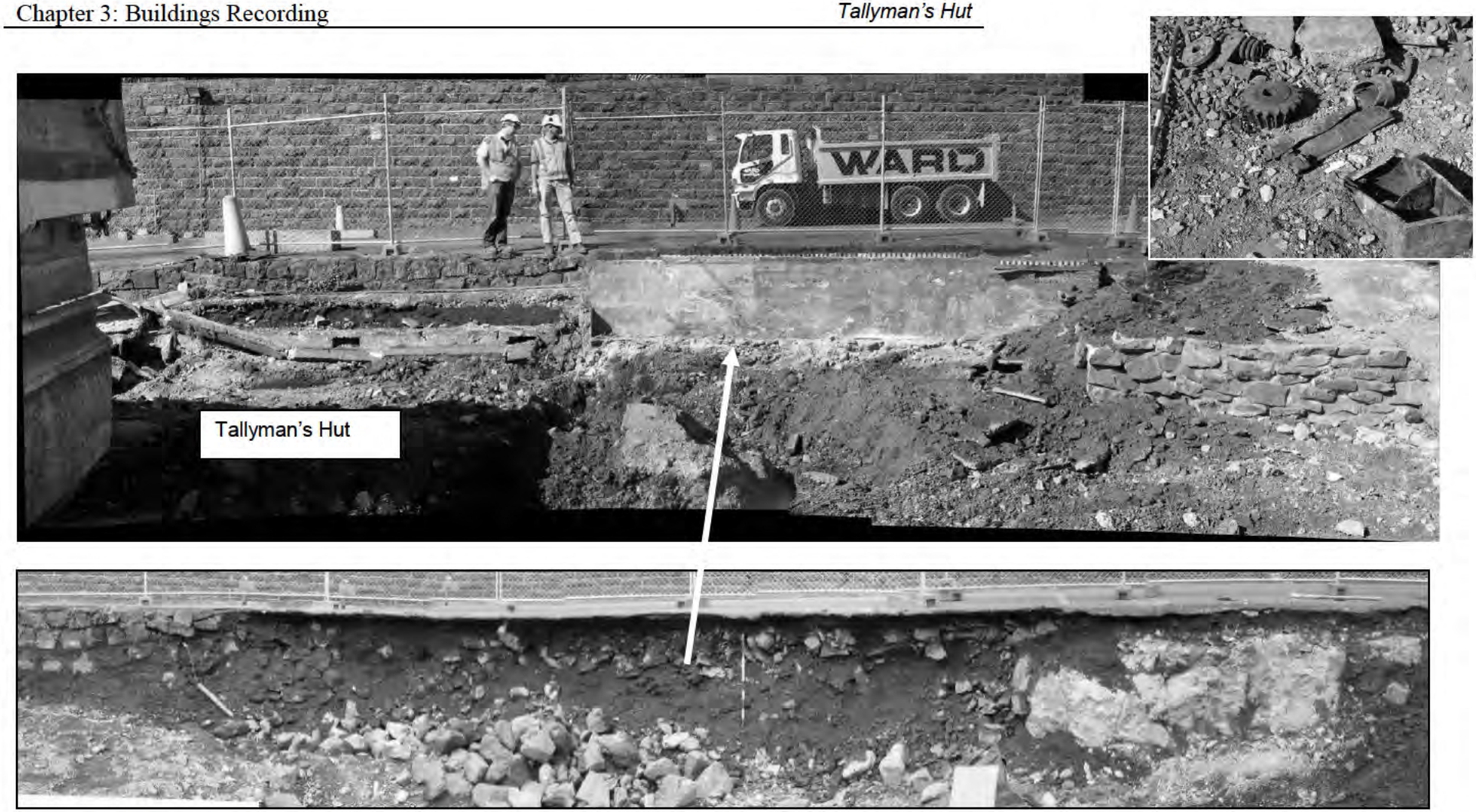


Figure 69. Fill behind retaining wall between Tallyman's Hut and Generator Shed

Top showing concrete retaining. Bottom with concrete removed
Inset shows miscellaneous metal objects from fill

GENERATOR SHED

Introduction

The date for the building of the Generator Shed in front of the main Prison wall has not been determined, but it does not appear on the plans up to around 1910. It appears on the aerial photograph dating to 1947 (Figure 70), with some sort of post arrangement outside the eastern end of the building relating to its use as a Generator Shed. It seems likely that if the building was contemporary with the Bag Shop and Gymnasium it would have been built with the moulded concrete blocks, but this was not the case. The suggestion is that the building was built after 1920 and perhaps as late as the 1940s.

The Building

The plans created by the student architects are shown in Figure 71-Figure 73 and the exterior photographs in Figure 74 after the surrounding structures and lean-to had been removed. The plans show that the Generator Shed was approximately 12.5m by 9.5m. It was single storey, although the attic space did have some proper flooring in parts and ventilation added in. The walls were made of basalt blocks, some of which had rough edges while the lower parts of the east, west and south walls were smoothed down (Figure 74, Figure 75). Concrete along the corner and top edging was used to reinforce the structure.

A small extension wall also appears to have been an original feature coming out from the north-east corner of the building, part of an exterior extension visible in the 1947 aerial (Figure 70, Figure 74 south) next to the electric pylons. With the exception of the north wall, this structure had been demolished. Remnants of the roof of this structure, though, were visible on the east wall of the main building along with some evidence of rebuilding of the wall here (Figure 76). This suggests that there may have been some internal access from this small structure originally, but that this had been changed when that structure was removed.

A number of windows had been blocked up around the building (Figure 74, Figure 78). What was unusual was that these blocked up windows were square and low on both the northern and western walls. The original purpose of these low windows was not apparent, but must relate to the original requirements of the Generator Shed. The blocking up of the small western window and the larger 'normal' window on this wall related to the creation of a secure Lock Room. Two other windows on the southern and eastern sides were converted for ventilation.

A temporary lean-to structure was present on the west side of the building as well, and this was part of the larger workshop structures that abutted the northern wall of the Generator Shed (Figure 74). A 1m wide retaining wall built from basalt blocks was visible along the northern wall of the Generator Shed, and at the time of recording was used as part of the storage space for the workshops. Along the north-west corner were steps into the Lock Room.

Along the southern wall, there were also signs of rebuilding with concrete and basalt blocks. The ends of the ceiling beams were visible from the outside (Figure 79).

Inside, there were three main rooms accessible from the southern doorway and these housed offices and electrical equipment. The flooring and walls had been modernised and no obvious early material was visible here. The Lock Room (see below) was not accessible from this part of the building. The remaining rooms had relatively straightforward interiors of relatively modern materials (Figure 80). The attic space was accessible via a ladder which was permanently installed and the roof space had probably been used for storage (Figure 81). The roof itself was a standard construction, although attaching the wall mounts to the basalt walls was done by

placing the beams into gaps in the stonework (Figure 82); unlike the floor beams they were not visible on the exterior. There were also obvious signs of recent reconstruction of some of the wooden roof beams and trusses (Figure 83). The floor of the attic was relatively simple, but substantial enough to hold equipment (Figure 84). The other interesting feature in the attic was the enclosed space above the Lock Room (Figure 85). This was clearly segregated from the rest of the attic space and was part of the security for that room.

Lock Room

The Lock Room was not accessible during initial recording, but was visited prior to demolition (Figure 73). Access was only possible externally, with no internal doors. It was not possible to determine whether this had always been the case as the interior walls had been replaced with concrete slab walls and the exterior windows on the western end had been filled in with basalt (Figure 74, west). The robustness of the interior strengthening of this room was remarkable, but as it housed all the spare keys for the Prison complex, this is perhaps not so surprising. There was no specific evidence detailing when this strengthening took place, but use as a Lock Room was probably not the original function of the room.

Demolition

Contractors began demolishing the Generator Shed on 23 March 2009 with initial removal of roofing iron exposing the roof beams to light (Figure 86). Beneath the roofing iron was a layer of building paper and chicken wire. The opportunity was taken to examine the roof structure. The roof frame was constructed from 6in. x 3in. (152mm x 76 mm) timbers and the bracing 4in. x 3in. (102mm x 76mm). The internal crossbeams were set 103.5cm apart. There were seven cross rafters on the exterior each measuring 3in. x 2in. (76mm x 51mm). There was a central layer of 26 cross rafters each measuring 3in. x 2in., but they did not reach to the apex of the roof. Smaller battens ran from the apex to under the first or second external cross rafters. The internal cross rafters were fewer, with only four noted, each measuring 5in. x 3in. (127mm x 76mm). The walls of the building were constructed of double walls of stone block with mortar and rubble between the two (Figure 87). The thickness of the wall was 30cm. The material was separated and removed off site. After demolition the foundations of the building were exposed and a wide range of artefacts were uncovered within them. These and the excavation are described in Chapter 5 below.

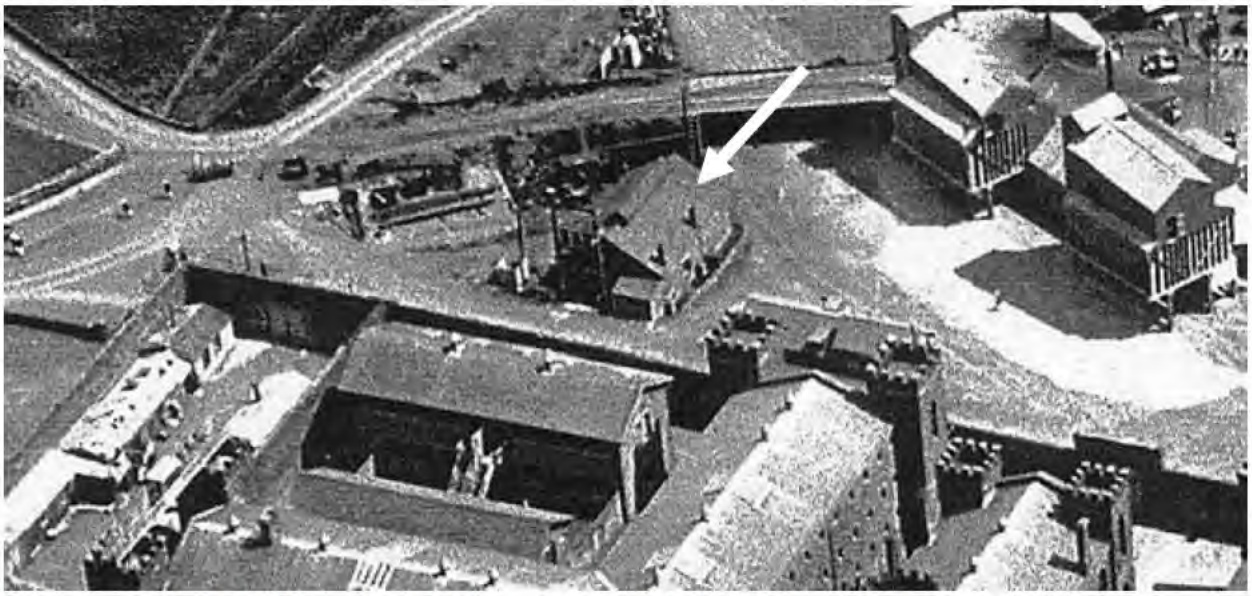


Figure 70. Aerial view of Prison in 1947 showing Generator Shed (APL Collection)

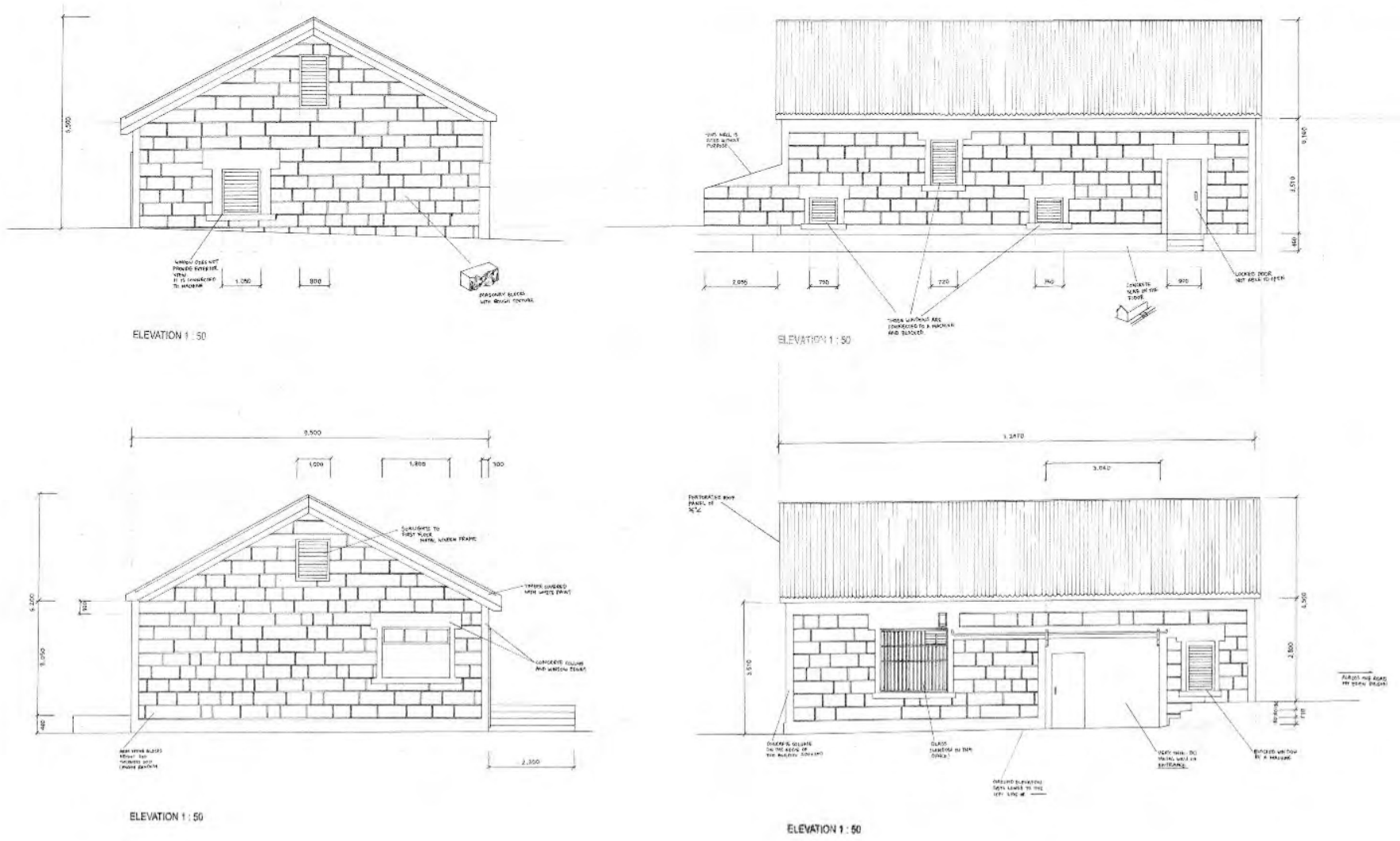


Figure 71. Side views of Generator Shed (clockwise from top left: west, north, south, east elevations)

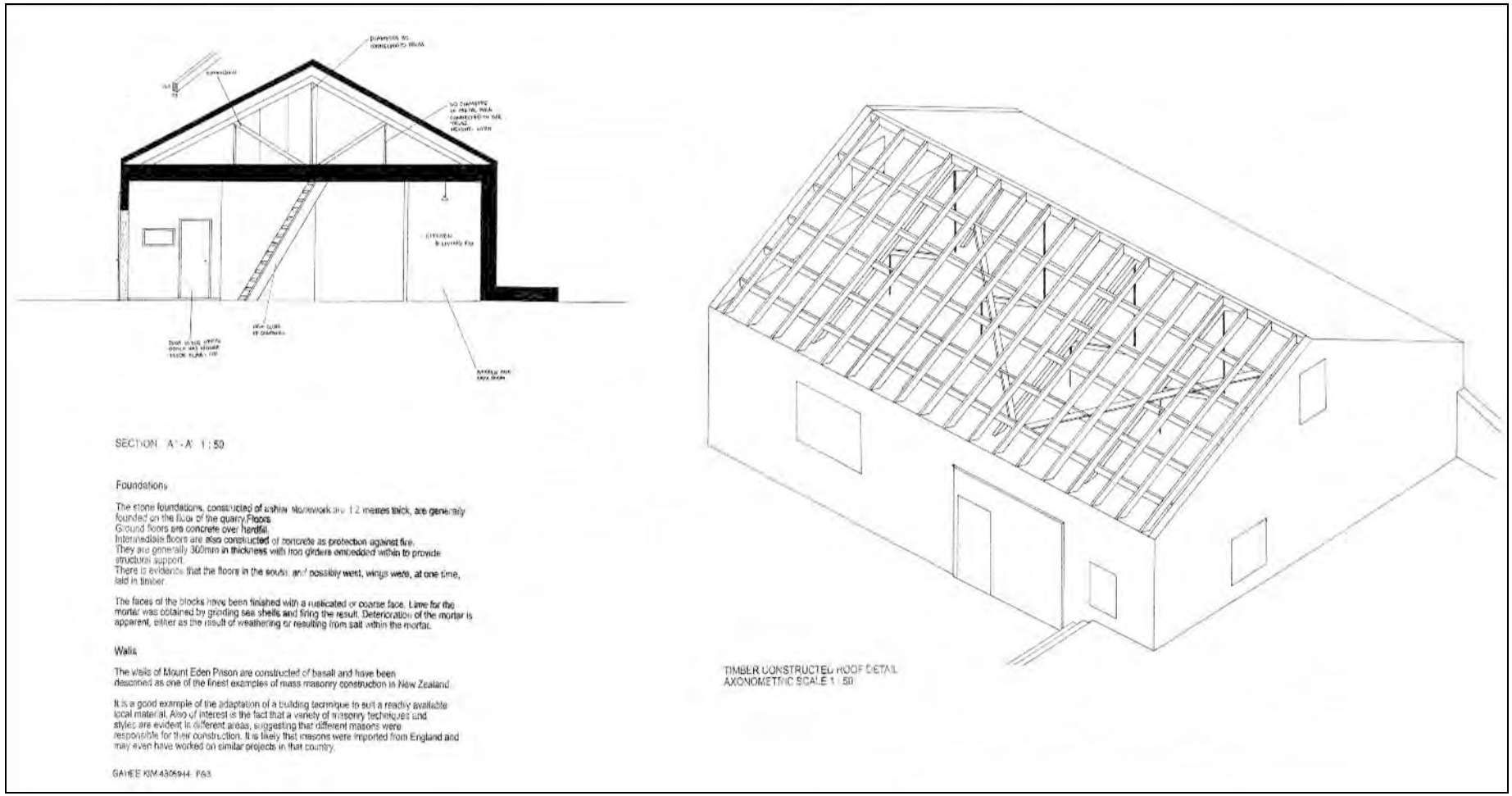


Figure 72. Oblique view and section (see Figure 37 for location) of Generator Shed

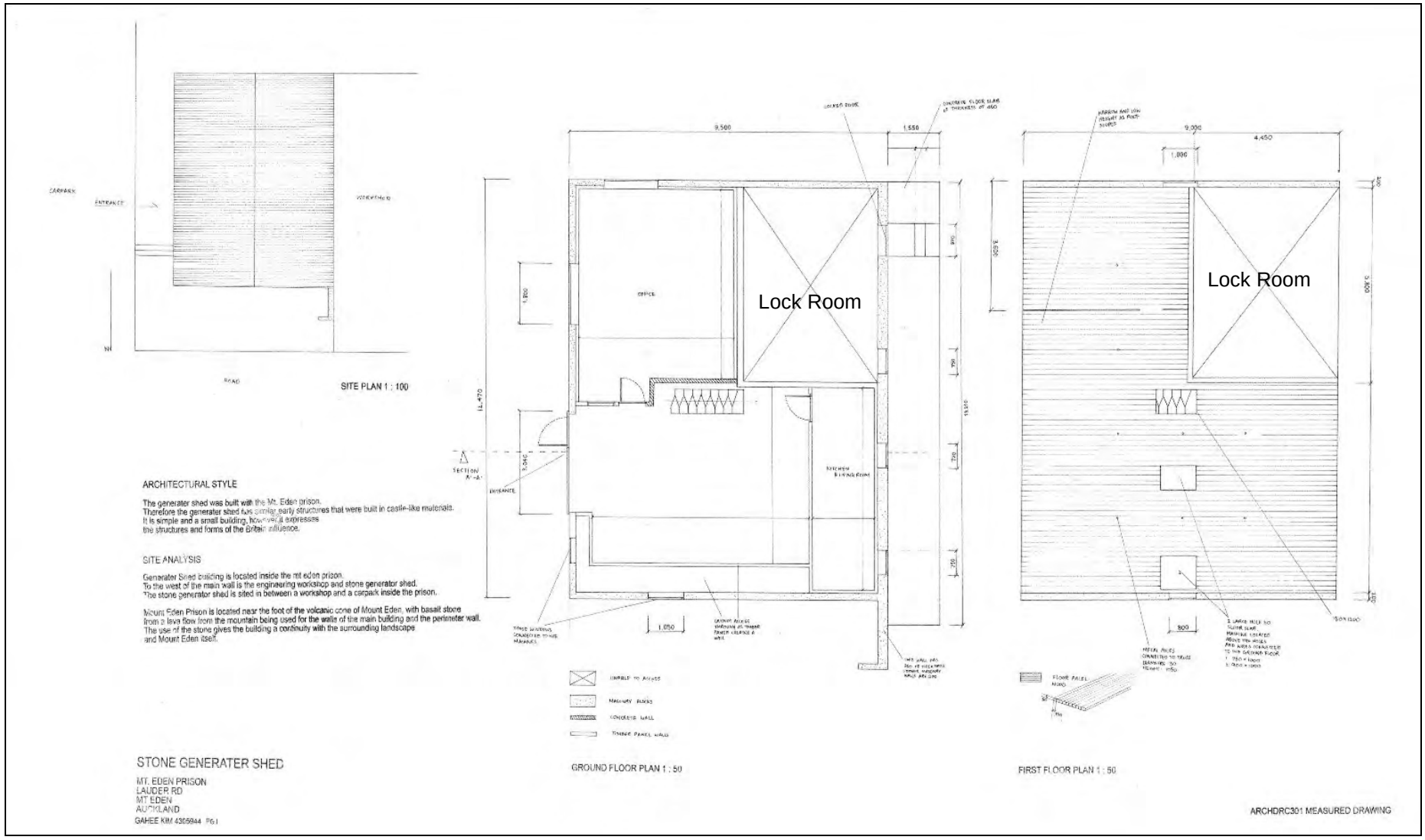
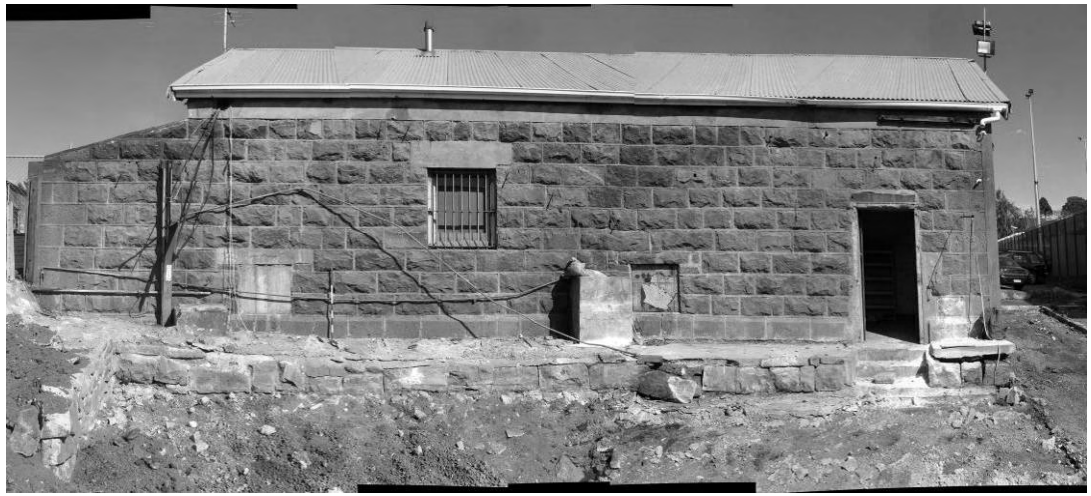


Figure 73. Plan view of Generator Shed


South


East


North

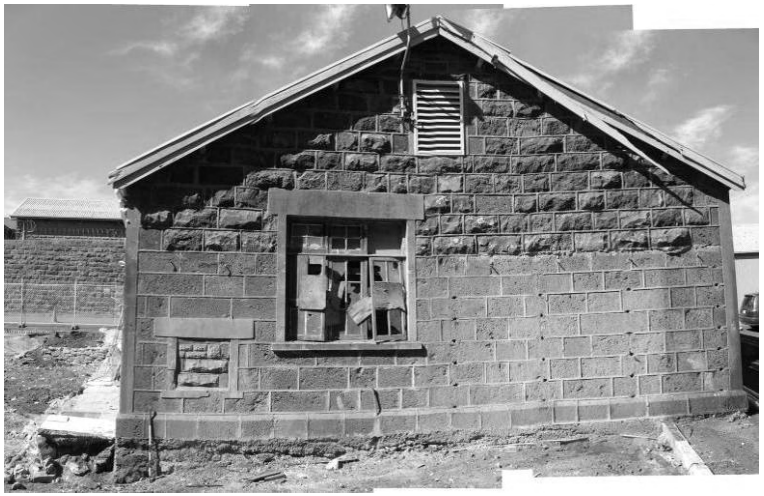

West

Figure 74. Photographic views of Generator Shed

Figure 75. Basalt and concrete edging

Figure 76. Repair work on eastern end of Generator Shed

Figure 77. Partially demolished stone work on eastern end of Generator Shed

Figure 78. View of filled aperture in Generator Shed

Figure 79. View of southern wall of Shed showing ceiling components

Figure 80. Office room in Generator Shed

Figure 81. View of attic space of Generator Shed

Figure 82. Roof beam mounted into basalt wall

Figure 83. Ridge of Generator Shed ceiling

Figure 84. Floor of Generator Shed roof space

Figure 85. Roof space above Lock Room

Figure 86. Demolition of Generator Shed

Figure 87. The internal structure of the wall of the Generator Shed

SUPERINTENDENT'S HOUSE

Introduction

The Superintendent's House was built c.1894 (Figure 88) and was later converted into a Women's Prison. The original building was of rectangular, two-storey construction. The principal structure had unreinforced brick masonry walls, supporting timber-framed floors and roof. Sub-floor walls were solid stone masonry. External brickwork appeared to be of two-skin cavity construction. The building was well subdivided. Internal walls were double brick, plaster finished. A two-storey, timber framed infill had been made on the north elevation (Salmond Reed: Appendices 2006: 68)

The interior had been substantially modified and part of the eastern section demolished relatively recently to provide covered protection to other prison buildings. However, many of the exterior elements were present and in good condition (Figure 91-Figure 92).

Additional Archival Research

Research at Archives New Zealand in Wellington in 2009 identified original building plans for the structure, although these were dated 1901/2 (Figure 89). These were use to supplement the recorded information and the results were intriguing as they showed that there had been significant changes to the original building.

Exterior

The somewhat extravagant entrance on the north side is shown in the 1902 plan. Interestingly, the archival plan shows two variants of the archway, which were both much flatter than in the final plan that was implemented (Figure 90).

The original formal entrance to the house was on the northern side, although this was referred to as a 'side elevation' on the 1901/2 plans (Figure 89). The most distinctive feature was the archway with the lions' heads in moulded concrete (Figure 91, Figure 92). It was an unusually elegant addition to a prison-related building and has interesting similarities to the Auckland High Court building, which contains a similar doorway (Figure 92) and related design. The relationship between these two buildings would warrant additional research.

Probably during the shift from house to Women's Prison, the main entrance was reduced in importance and the middle lower floor window was converted into an entrance way (compare Figure 89 and Figure 91). Modified brickwork was visible above the doorway, indicating this rebuilding. Concrete stairs were added from the exterior up to the new door.

There were also changes to the southern side of the house (Figure 93). These again probably related to the conversion of the house to a prison. The eastern window on the lower floor was filled with matching bricks on the interior (Figure 94). More extensive work was done in the centre of the wall, with a large door put in at the ground level into the main corridor. This probably replaced a window in this location. A window on the upper floor, in the centre, is also likely, but this had been replaced with a narrow locked door and a smaller barred window (Figure 93).

The southern wall also showed the former presence of a number of external structures (Figure 93, Figure 95), with diagonal stepped lines at various points in the centre. These related mostly to the exterior extension for the Women's Prison with access from the upper floor of the main building.

Extension

The original design of the eastern wall showed a single floor extension across just over half of the southern end of the wall, used for a kitchen and scullery (Figure 89). At the time of recording, it was assumed this extension was a later addition as the brickwork visible on the northern side of the extension was different from that of the main building and from a wall extending to the eastern side to prevent access to the eastern face of the building (Figure 91). During the demolition, however, it was possible to get a view of this wall and it became apparent that the extension was part original, as the archives suggested, but had been extended to the north to the boundary of the house (Figure 96). A large window to the south, still visible, was built into this extension and another smaller window in the middle of the building, with basalt lintels, was obscured, but yet another small extension had been added to that.

The small extension had a window, also with basalt lintels, on the southern side and had originally had a door on the northern side, but this had subsequently been walled up. Most importantly, this extension had been constructed to match the original house with the basalt foundations (Figure 96, top).

The extensions had been integrated with the main construction and after demolition the doors and two windows were visible in the northern end. The door was a later addition, with the extension, but the windows had been walled up and related to the original house design (Figure 96, bottom).

The western wall was labelled the front view on the original plan of the house (Figure 89). The lower floor had been made with two bays, each with a central double door providing access to the verandah (Figure 97). The northern bay was still intact but had been modified and incorporated into a later enclosing of the verandah (Figure 98 and Figure 99). The southern balcony had been demolished with an access to the modern extension to the Women's Prison buildings created (Figure 97). The upper floor balcony had also been enclosed and there were some minor modifications to the doorways accessing these, but they were largely in line with the original design. Demolition of the verandah and balcony revealed much of the original fretwork and posts (Figure 98).

Other Observations

Other observations of the exterior of the house included the use of dressed basalt blocks at the bottom of the brick walls (Figure 100) and for the original window lintels (Figure 101). The choice of brick for this building, and the elegant moulding used on the north entrance demonstrates an attempt to distinguish the Superintendent's House from the other prison structures. The other houses built for staff were apparently wooden.

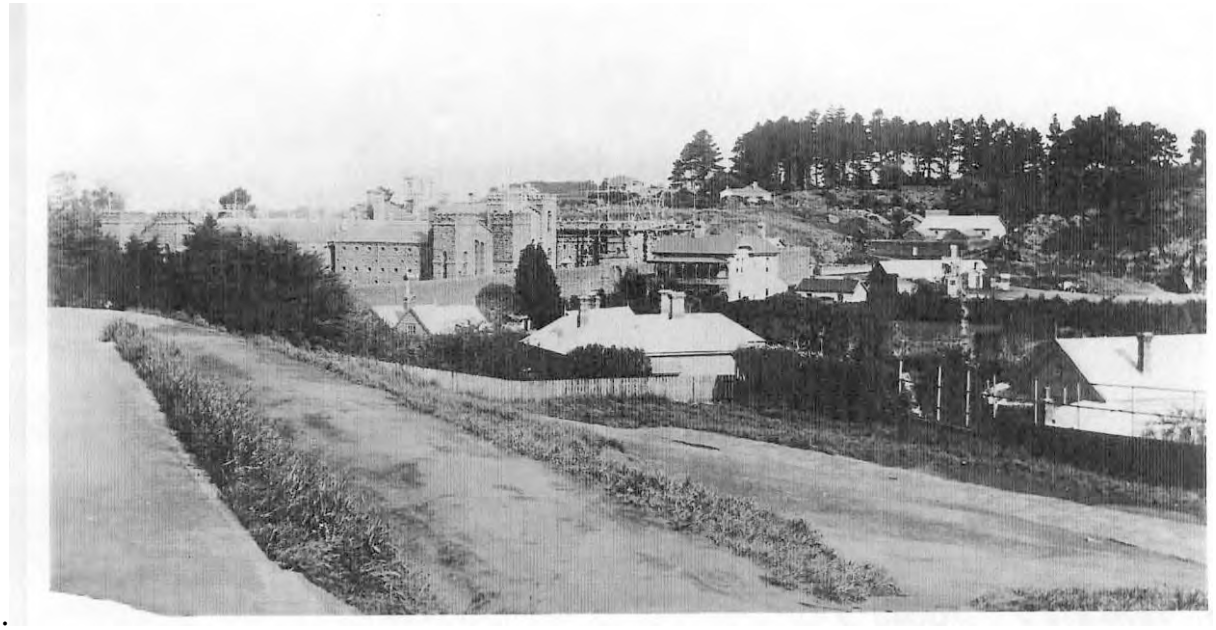


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Figure 88. 1900s view of Superintendent's House (Archives NZ)

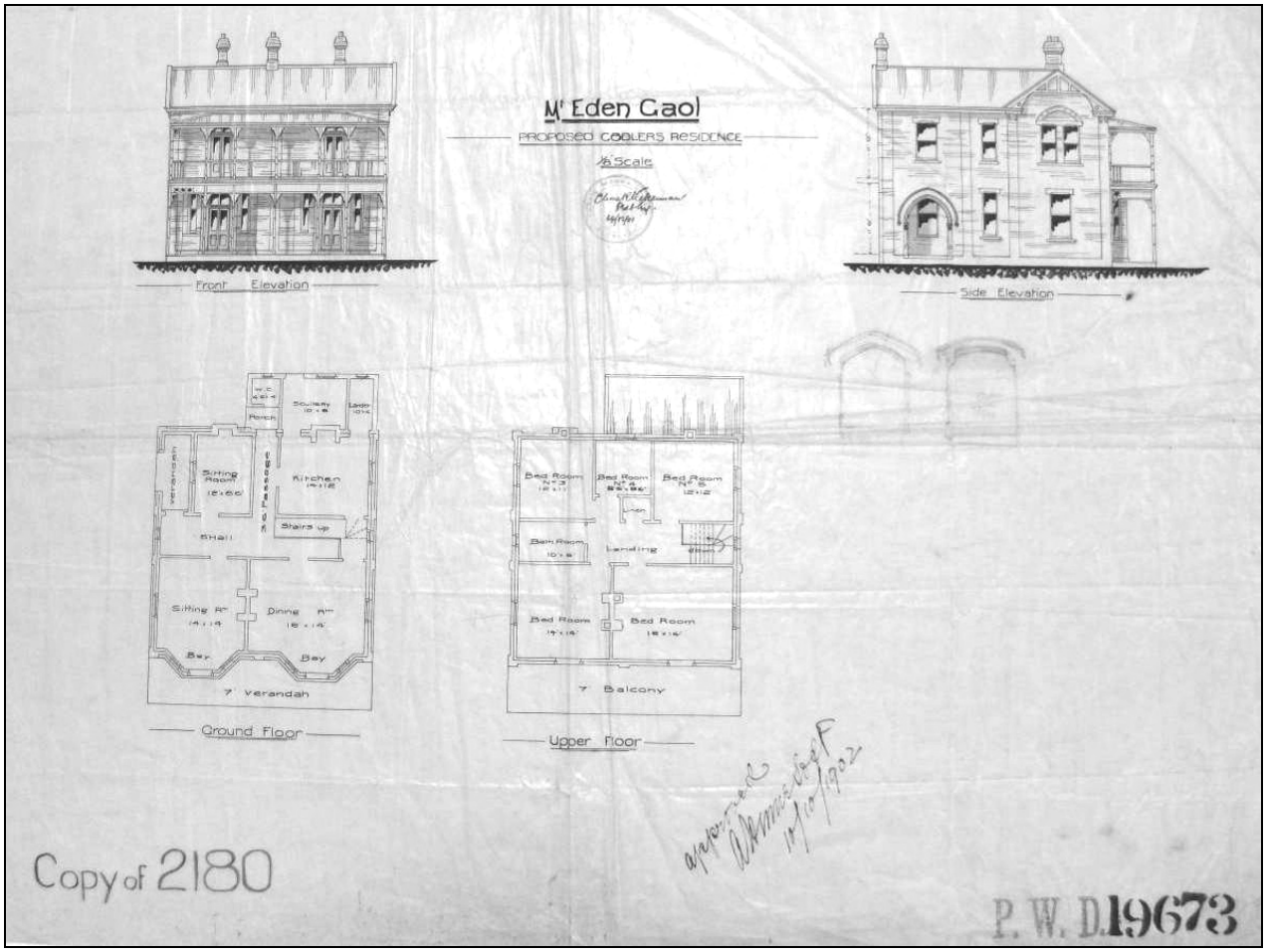


Figure 89. Plan of 'Gaolers House' dated 1901/2 (Archives NZ, Wellington)

Figure 90. View of north face of Superintendent's House (detail from 1902 plan, Figure 89)

Figure 91. Northern face of Superintendent's House

Figure 92. Close-up of doorway on northern side of Superintendent's House with detail of moulded figures

Figure 93. South side of Superintendent's House (after removal of Prison extension)

Figure 94. View of lower floor east window, south wall, before and during demolition

Figure 95. Close up of central portion of south wall of Superintendent's House

Figure 96. East side of Superintendent's House before and after demolition of extension

Figure 97. View of west side of Superintendent's House at the start of demolition and part way through

Figure 98. View of west side of Superintendent's House after removal of verandah

Figure 99. View of original northern bay

Figure 100. Basalt blocks at base of walls

Figure 101. Basalt blocks use for lintel and sill plate

Ground Floor Interior

The interior of the building had been modernised and no original wall surfaces were identified. Modern gib board had been used throughout. However, there was evidence of structural changes to the building through time. Comparison of the ground floor between the recorded plan and the original plan (Figure 102) showed one major significant difference: the staircase accessing the upper floor in the original plan was on the southern wall of the house, while this had been reversed by 2008. The reason for this clearly related to providing a southern entrance to the building and probably took place when the building was converted to a Women's Prison.

Upper Floor Interior

The changes to the ground floor were reflected in the changes to the upper floor. The staircase had shifted to the north and this had involved taking out the original bathroom (Figure 102) at the northern end of the landing. The small set of stairs at the southern of the landing would have also related to this change around. Most other rooms on the upper floor were largely as they were originally designed.

Foundations

The exposed foundations of the house revealed that basalt blocks had been used as foundation materials (Figure 103). The blocks were used to provide a large level platform (Figure 103) for the building with a higher inner platform created around the main part of the house. In the south-west corner, this had been modified when the house was converted to a Women's Prison and the basalt foundations removed and replaced with a concrete pad (Figure 103, top right). The ground floor of the house was concreted, although this is also probably related to the conversion to a prison (Figure 104). It was noted that prior to demolition this floor was covered in modern linoleum. Removal of the concrete floor revealed the wooden framing for the floor (Figure 104–Figure 110). Plywood over the framing provided a flat surface for the concrete. This plywood was held up by the wooden framing that was mounted on floor joists. These in turn were held in place with the brick foundation walls and the basalt boulders used as piles (Figure 105).

The demolition also exposed other aspects of the foundations. The main construction of the foundation wall was the partially dressed basalt blocks (Figure 106). Concrete was added to doorways to improve some of the entrances and metal beams had been added in other areas to improve the strength of the foundations (Figure 108). Figure 109–Figure 111 show the wooden flooring on the foundations and a close-up showing the circular saw marks on the floor beams (Figure 112).

One other feature identified during the recording of the foundations was a metal beam marked 'Shelton', which is a British Iron and Steel company (Figure 113). This is probably from a roof of the Women's Prison extensions in the 20th century.

Figure 102. Floor plan of Superintendent's House (left: as shown in 1902 plan; right: as recorded in 2008)

Foundations looking SSW

Foundations looking SE

Foundations looking NE

Foundations looking N

View of foundations looking NW

Close-up of foundations in north-east corner looking S

Figure 103. Foundations of the Superintendent's House

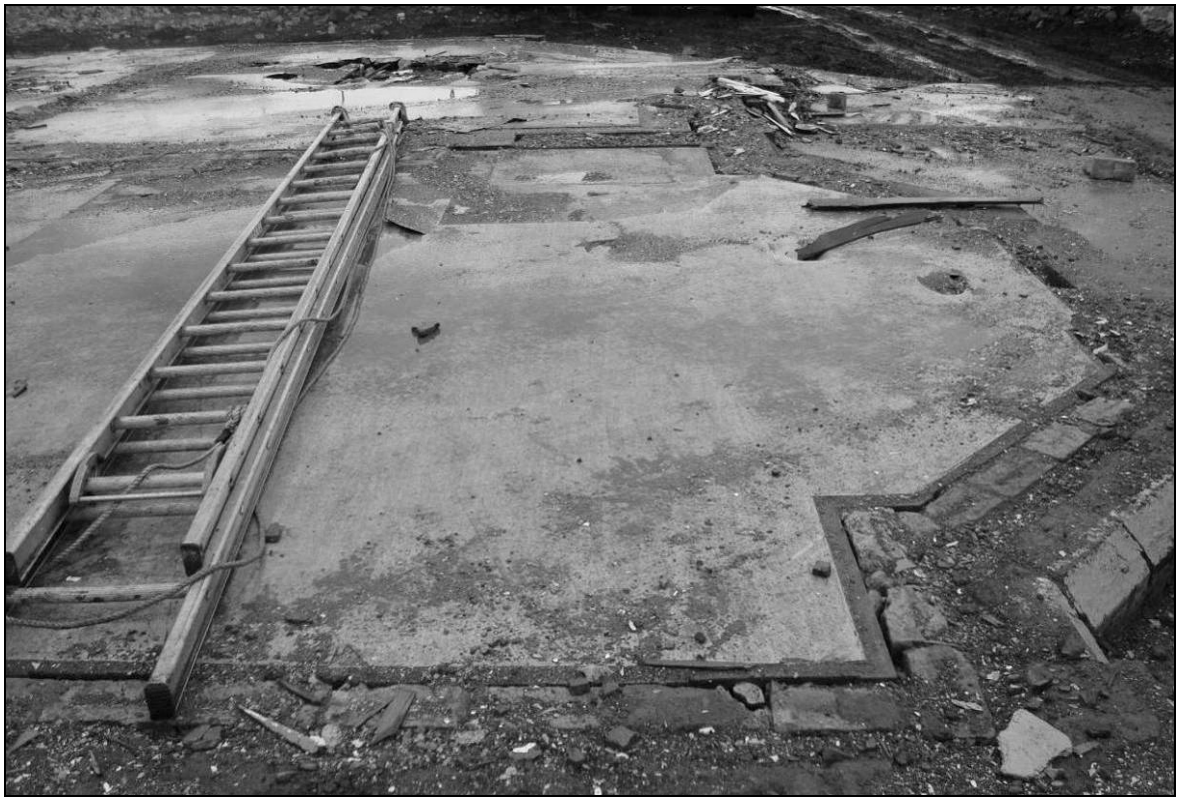


Figure 104. View of concrete floor of Superintendent's House

Figure 105. Basalt piles underpinning floor joists of Superintendent's House

Figure 106. Close-up of wall on the basalt foundation on north side of Superintendent's House

Figure 107. View of floor and foundations showing basalt and concrete

Figure 108. Metal beams in foundations of the Superintendent's House

Figure 109. Wooden floor beams on basalt piles with concrete and basalt

Figure 110. Wooden framing used for concrete floor below room G04 (see Figure 102)

Figure 111. View of framed joists on floor beams (part intact)

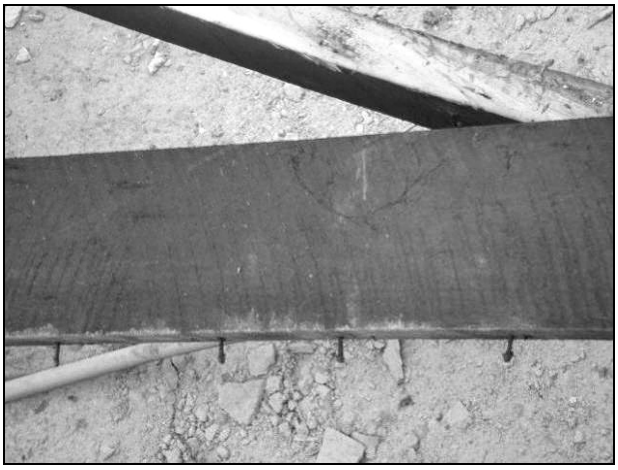


Figure 112. Circular saw marks on kauri floor beam

Figure 113. Shelton metal beam from the Women's Prison

The Cottages on Lauder Road

The Superintendent's House was the first of a number of buildings along what became Lauder Road (Figure 114). Lauder Road is not listed in the street directories until around 1966 because it had not been a legal street until then (see DP 173702, April 1995) and the cottages that sprung up there were listed under Boston Road. The cottages would have post-dated 1894.

In the 1911 Wise's Street Directory on the left side of Boston Road (under the sub-listing Mt Eden Gaol) there were 12 warders, a matron, an assistant matron and the gaoler (T. Pointon). By 1916, 38 warders were listed as well as a matron or two and the gaoler (Alexander Will Ironsides). So it appears that a few more cottages had been built. Fewer people were listed in 1921, but the number jumped again in 1939-40. It is, of course, difficult to pinpoint where all these staff were living – some may have had quarters in the Prison itself. The 1968-69 directory had 10 prison staff listed for both sides of Lauder Road. Approximately 7 houses were lost through motorway development (Auckland Council Archives MEB – 146/4).[1]

The nearby Clive Road appears for the first time in street directories in 1921, but it is the following year that somebody associated with the Prison is listed there. This was William Thomas Leggett, deputy superintendent. By 1925, four warders were listed as living in Clive Road. In 1932, there were 5 warders, the chief warder and the superintendent J. Dickinson, resident. Four prison officers and the superintendent, Ed. Buckley, were listed in Clive Road in 1968. The shift of the superintendent by this date suggests that the conversion of the old Superintendent's House to a Women's Prison had occurred by this time.

Little is known about these cottages, and the area had been significantly modified; no direct evidence relating to the cottages was observed during the redevelopment.

Figure 114. 1951 aerial showing portion of the Men's Prison, the Women's Prison and the stone battery (Whites Aviation, Alexander Turnbull Library Neg WA-29506-G)

[1] This was a file with some loose handwritten notes.

Prison Wall

WALL RECORDING

Introduction

The Prison Wall is one of the major heritage features of the Mt Eden Prison. It remains one of the defining aspects of the architectural landscape. It was the first structure of what was to become the Prison to be built, replacing the relatively small wooden fence around the Stockade buildings built in the 1850s. It was made from basalt rock from the Mt Eden quarry and most of the labour involved was provided by the prisoners. Perhaps its most distinctive, and almost invisible, feature is the curved inner corners of the walls, which made climbing out very difficult. It has been modified over time in various locations as access ways have been required and a few minor extensions created (Figure 115). The development of the new Prison buildings did not require the complete destruction of the historic wall, but some sections were demolished and other areas removed. The main components of this work included:

- Demolition of the Prison's North Wall extension along Boston Road;
- Removal of the stone wall near the Superintendent's House; and
- Demolition of the outer South Wall (Stoneyard Wall) and parts of the inner South Wall.

Figure 115. Plan showing main Prison wall components

NORTH AND WEST WALLS

North Wall

The North Wall of the Prison was not particularly affected by the redevelopment project. Photographic recording of the wall was designed simply as a snapshot of the current state of the wall. The wall itself was designed to be around 18ft high when built (Figure 116). One of the original gates is still visible and functional (Figure 116) and opens up near the original north wing of the Prison.

There were, however, clear indications of significant alterations to the wall in previous times. The most substantial was at the eastern end of the wall (Figure 117) where approximately 15m of the wall had been reconstructed in the relatively recent past. The mortar here was quite bright.

Less obvious was the reconstruction of the wall on the exterior at the western end of the wall (Figure 118). The mortar here is grey and probably a form of concrete. However, on the inside it was possible to see (Figure 119) that an old entrance had been concreted up. This is unusual, as basalt has been used elsewhere when changing the wall.

The north-west corner itself has also been recently reconstructed (Figure 120). The remains of an arched entrance through the North Wall extension (see below) is still visible, with concrete stairs in place.

The guard tower at the north-east corner is obviously not original and it is likely that the corner of the wall here had been modified. The turret arrangement in this corner is not visible on most early plans of the Prison wall, but this might have related to a simplification of the plans. However, the early photographs dating from the 1860s-1870s clearly show the south-east corner without any structures. A 1929 photograph (Figure 121) of the corner of the prison suggests that a small turret had been built on this corner by then. By 1964 (Figure 122), the guard post had been erected on top of this turret, with additional bracing and probably an enclosed wooden staircase. Additional detailed recording of the wall here would assist in clarifying when this was constructed.

Figure 116. View of North Wall of Prison showing areas reconstructed in the past

Figure 117. View of eastern end of North Wall

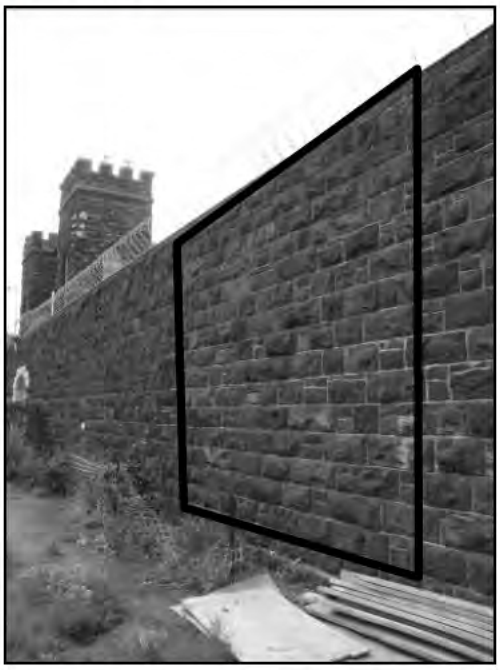


Figure 118. View of reconstructed wall at western end of North Wall

Figure 119. Interior of NW Yard showing concrete used in entrance

Figure 120. NW corner of the Prison Wall showing reconstruction

Figure 121. Looking south-west from Khyber Pass Road along Boston Road showing north-east corner in 1929 (James Richardson, APL 4-1871)

Figure 122. NE corner of the Prison 1964 (APL 7-A945 995.1112 M92E P94 (2))

North Wall Extension

Demolition of the extension to the original Prison wall (Figure 123) along Boston Road was monitored. The extension comprised a thicker wall surrounding a large arched entrance (stopped with glass blocks) and a narrower section containing a smaller arched entrance (Figure 124).

The demolition of the exterior wall and the wall of the Women's Prison immediately behind it began on 19 November 2008. The wall of the Women's Prison was constructed of steel reinforced concrete block and was situated close to, but was not bonded with, the interior face of the Prison wall. Investigation of the 10cm space between the two walls found timber spacers attached to the interior of the Prison wall which separated the two. At the top of the Prison wall the gap between the two walls was filled with concrete (Figure 124, right).

Prior to its demolition, the structure of the Prison wall extension was examined. It was not constructed of solid stone but was a double skin wall with a rubble interior (Figure 124, right). The exposed cross section of the wall revealed that the exterior basalt blocks measured 10-12cm in thickness, while the internal structure comprised rubble interspersed with thin, more or less horizontal layers of concrete at the joints between the stone blocks. The interior of the wall was vertical, while the exterior was at a slight angle, tapering towards the top. Removal of the Women's Prison building wall exposed the interior face of the North Wall extension, which had a smoother face than the exterior wall (matching the original Prison wall).

Demolition began with the wall of the Women's Prison building being pulled away with a toothed bucket (Figure 125–Figure 126). The concrete between the top of the Prison wall and building separated easily, and the concrete block and steel reinforced wall came away in small sections, breaking along cement joins. The North Wall extension swayed when nudged by the digger bucket. Removal of the upper portion of the North Wall extension was complete within minutes, large sections of the wall being brought down with minimal effort. The section surrounding the glass blocked arch came away in one piece, leaving the glass blocks and metal frame intact (Figure 127).

West Wall at North-West Corner

Subsequent to the demolition of the extension (Figure 128), some additional notes on the north-west corner were made (in 2011). The concrete remains of the Women's Prison around the Superintendent's House had substantial foundations over 2m above the original ground level along the West Wall (Figure 129). These remained along the West Wall while a new concrete floor was laid, providing access to the new buildings.

Details of the wall show how filler blocks were used (Figure 130) in the construction of the wall. The irregular nature of the dressing of the basalt blocks requires the use of small basalt pieces to level and fill between the blocks.

Two small sections of reconstructed wall were created in the area of the North Wall extension (Figure 131). These were just over 2m high.

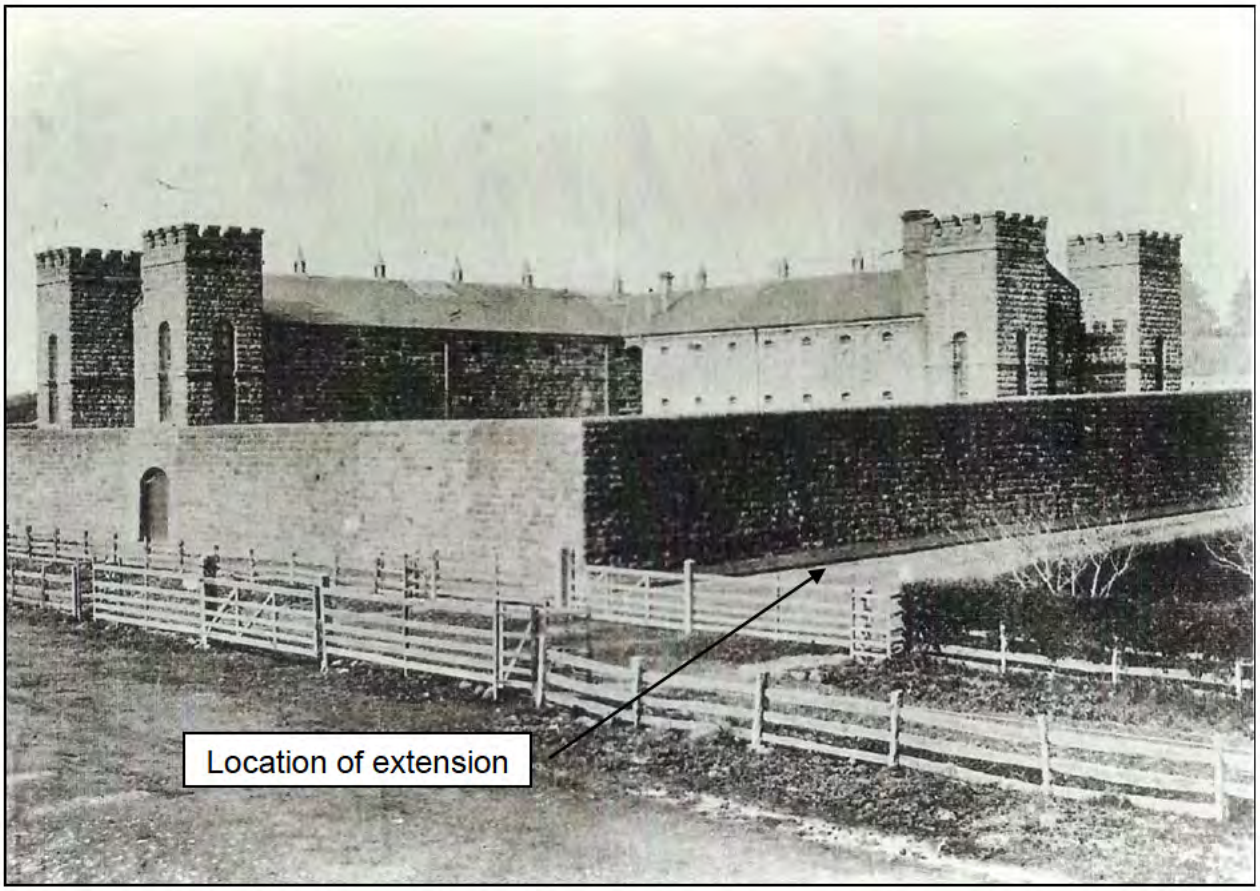


Figure 123. NW corner of Prison showing original wall before extension in 1900 (APL 995.1112 M92E/P94)

Figure 124. North Wall extension before demolition, showing thicker and narrower wall sections (left), with the wall of the Womens' Prison building behind. Close up of the internal structure of the narrow North Wall extension and Women's Prison wall (right)

Figure 125. First stages of demolition of the concrete block Women's Prison wall

Figure 126. Exposed inner face of North Wall extension, and start of demolition

Junction on left, with demolition of the thicker wall extension in one piece on right

Figure 127. Junction between the thicker and narrower sections of the North Wall extension

Figure 128. View of West Wall at northern corner after partial demolition of buildings

Figure 129. View of western side of NW corner of Prison during redevelopment

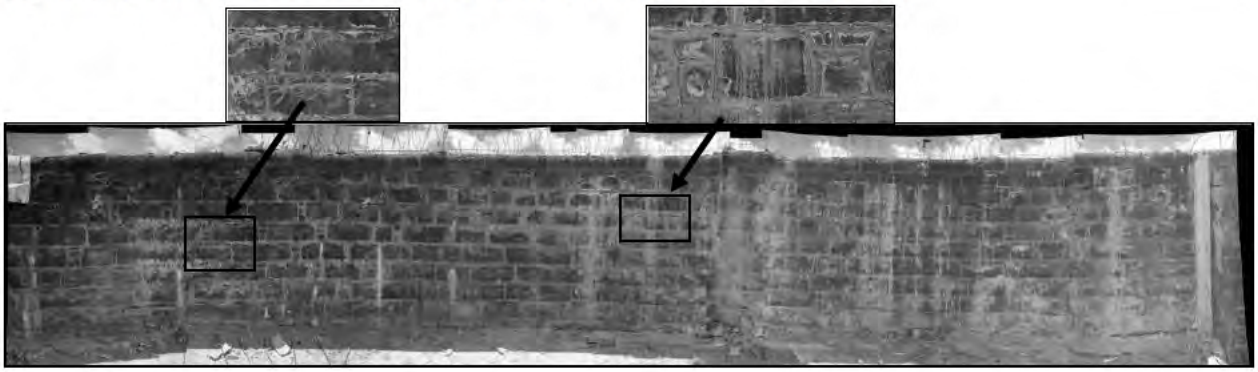


Figure 130. Section of West Wall

Figure 131. Reconstructed wall in area of the North Wall extension

Stone Wall near Superintendent's House

This stone wall was removed in November 2008. It was located in the north-east area of the Prison grounds, directly in front of the railway tracks that run along Boston Road. The wall was in the same general area as the Superintendent's House, and to the west of where the Women's Prison used to be (Figure 132).

The wall was discovered through earthwork activities when the area was being excavated down to a much lower level. The wall consisted of large irregular sized cut stone blocks set in place with a concrete mortar. The blocks appeared to have been placed at random, with no effort made to achieve a regular appearance. The whole finish of the wall appeared quite rough (Figure 134–Figure 138).

The original extent of the wall was unknown, although some 18m was exposed. Part of the wall was damaged when it was first located. Plastic pipes associated with the Women's Prison had been dug into the wall on its east side (Figure 138).

The wall appeared to have some sort of concrete kerb or ledge in front of it (Figure 133, Figure 137), and went down further behind this kerb. There was black sheet plastic and wooden framing beneath the concrete kerb-like structure, demonstrating that it was a modern feature.

The stone blocks that made up the wall measured up to 600mm across and c.250-300mm wide, although their size varied considerably as they were very irregular.

The wall's total height (Figure 133) was as follows:

- 2.30m from top of wall to bottom of kerb
- 2.05m from top of wall to kerb
- 50mm of gravel mixture on top of wall

Also noted were many large wooden foundations posts that had been put in the ground all around this area (Figure 137, Figure 139). They were associated with the foundations of the lower floors of the Women's Prison cells.

Figure 132. Approximate location of stone wall near Superintendent's House (red bar)

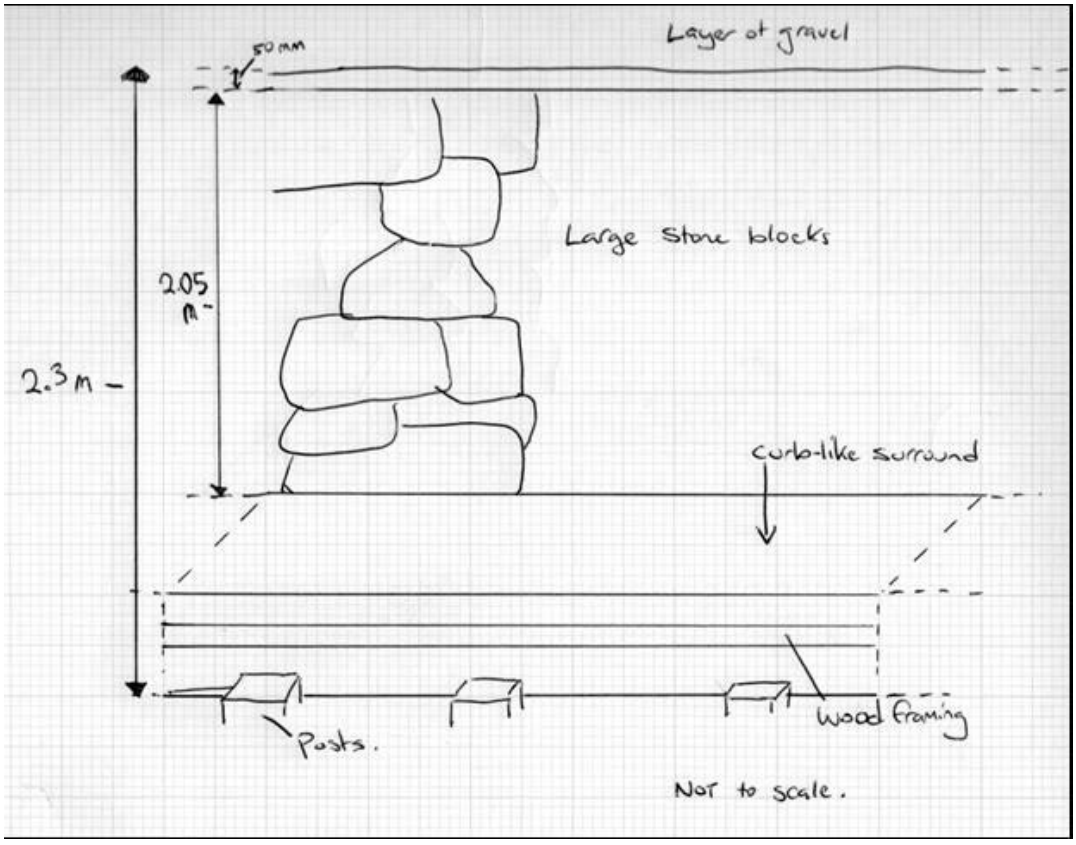


Figure 133. Diagram of stone wall (note not to scale)

Figure 134. View of entire section of wall near Superintendent's House

Figure 135. Close up showing irregular sized cut stone, and concrete kerb surround

Figure 136. Showing thickness of stone blocks of wall near Superintendent's House

Figure 137. View of wall showing kerb, and posts sticking out of ground

Figure 138. View of wall with pipes from Women's Prison

Figure 139. View of some posts that had been lifted out of the ground

SOUTH WALLS

Stoneyard Wall

The Stoneyard Wall (Figure 140) was built in 1913 (Best and Clough 2005). It was designed to match the main wall and was a similar height and shape. It extended south of the main South Wall for around 17m and ran parallel to it for around 78m. An examination of photographs suggests that the wall probably returned to the main South Wall at this point, with an entrance way in the eastern part of the wall. However, only a small section of that part of the wall remained.

In the north-west corner of the area of the Stoneyard, the wall was curved and smoothed off in the corner similar to the interior of the main wall (Figure 141). However, there were differences between the walls. A view of the cross-section revealed that a cement rather than a lime mortar was used (Figure 142). More importantly the design was different from that of the main wall, which used tie stones to pull the wall together, whereas the Stoneyard Wall was constructed of two columns of basalt blocks with a mixed basalt and cement fill to hold the wall together. The result was a thinner and slightly weaker wall.

South Wall and Foundations

A portion of the South (heritage) Wall at Mt Eden Prison was removed in February 2009 to enable access of machinery required for the demolition of existing buildings and to facilitate the construction of a new Health Centre. Approximately 18m of the wall was removed and the remaining portions of the wall were stabilised near the removal points to prevent any unintentional collapse occurring (Figure 143). The removal of this section of the heritage wall provided an opportunity to record the techniques used in the construction of the foundation and wall, and comparisons can be made with the previous investigation of the North Wall extension.

The heritage wall is constructed of stone blocks from the nearby quarry and consists of the foundations, the wall itself, and the capping. The interior face of the wall is dressed smooth, providing no hand or foot holds, while the exterior face is dressed to a rough convex finish on each stone block. Smaller stones have been used to fill gaps on both the exterior and interior faces of the wall. Rather than being tapered on both sides (the more common method of constructing free standing walls), the purpose of this wall (confining prisoners) has required vertical construction of the interior face of the wall with significant tapering occurring only on the exterior face (Figure 144).

The mortar used in the wall has been analysed and is a typical lime/sand mortar with traces of haematite providing a pinkish tinge and some alkaline basalt probably from rock dust. Tie stones running the full width of the wall have been laid at intervals within the wall (see Figure 144) to bond the inner and outer block walls. Capstones semi-circular in cross-section have been placed on the top to consolidate the wall.

The wall is 18ft (5.4864m) high. The bulk of the wall is constructed of 17 layers of stone blocks, with layers measuring from 300mm high (Layer 1 of the wall) decreasing to 200mm high (Layer 17). Layer 1 of the wall (sitting on top of the foundation) was c.750mm deep (i.e. the width of the wall) at the base. Each subsequent layer was slightly narrower, with the top of layer 17 (beneath the capstone) measuring 600mm.

The wall is largely constructed with large stone blocks on the interior and exterior faces and smaller stones at the centre. There was a noticeable increase in smaller stones at the centre with a marked decrease in the size of the blocks from Layer 9 and above.

Measurements were taken of a single tie stone within the remaining wall and further examples which had been removed. The tie stone at Layer 7 (see Figure 144) measured 700mm deep (cross-section of wall), 275mm high and 335mm wide. Other tie stones such as those in Figure 145 showed variety in the width of the stone and depth of the wall.

Two sizes of semi-circular capstones were noted. All had a common height of 300mm and depth of 600mm (cross-section) (Figure 145), but the width (or length if facing along wall) of stones varied between 600mm and 300mm.

The exposed foundations were examined prior to their later removal. The average depth of the foundation viewed from the exterior face was 920mm (3ft), with only slight variations in depth noted (within 5mm). The foundations were not constructed of a single large stone; instead large stones were located on the internal and external faces with smaller stones and flakes at the centre (Figure 146). The largest (or widest) stones were located on the internal side of the wall, although some smaller stones were noted along this face. Smaller and very small stones and a fine scoria/soil mix were noted at the centre of the foundations, consistent with stone wall construction used within other areas of the prison. The average height of the foundations was c.300mm (c.1ft). The internal and external faces have been dressed to provide a relatively flat face. Upon removal of the foundation stones shown in Figure 146, it was noted that the stones were resting on a layer of fine grained scoria.

Remaining Sections of the South Wall

The larger portion of the remaining section of the South Wall, to the west of the removed section, shows evidence of some alterations to the wall over time. An old doorway approximately 2m to the west of the current doorway (painted in Figure 147) has been blocked up.

The Layer 9 blockwork running the length of the remainder of this section of wall has been dressed flat in comparison to the convex finish of all other stonework. This is likely to have been the position of a bearer supporting a lean-to roof over the former stone working yard on the southern side of the heritage wall. The roof would have protected inmates (stonemasons?) from the sun and weather and was installed with the copper flashing situated at this level, the base of which is 2380mm (or 7ft 10in.) above the top of the foundation. At a height of 2005mm (or 6ft 9in.) above the foundation a number of iron eyes are embedded between Layers 7 and 8 of the wall. The eyes are set approximately 1150mm apart and are noted as occurring in two distinct groups on either side of the old and new doorways. The flashing is still in situ.

At the eastern end of the South Wall (Figure 148), the wall had experienced less alteration and was unpainted. However, changes were still apparent with an in-filled doorway with flashing clearly visible (Figure 149).

Figure 150 shows the eastern end of the South Wall after reconstruction.

Figure 140. View of Stoneyard Wall during demolition

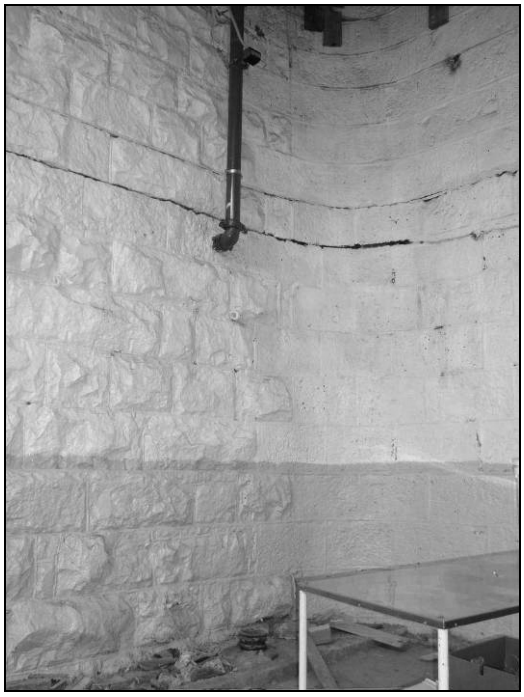


Figure 141. View of curved corner of Prison wall in the south-west of the Prison

Join between original South Wall and Stoneyard Wall

Figure 142. View of cross-section of Stoneyard wall

Top: Close-up of centre cement fill of Stoneyard Wall
Right: View of western end of Stoneyard Wall

Figure 143. View following the removal of an 18m portion of the South (heritage) Wall

Note stabilisation of remaining wall

Figure 144. Cross-section of the South (heritage) Wall. Note the tapering on the exterior face of the wall (to right)

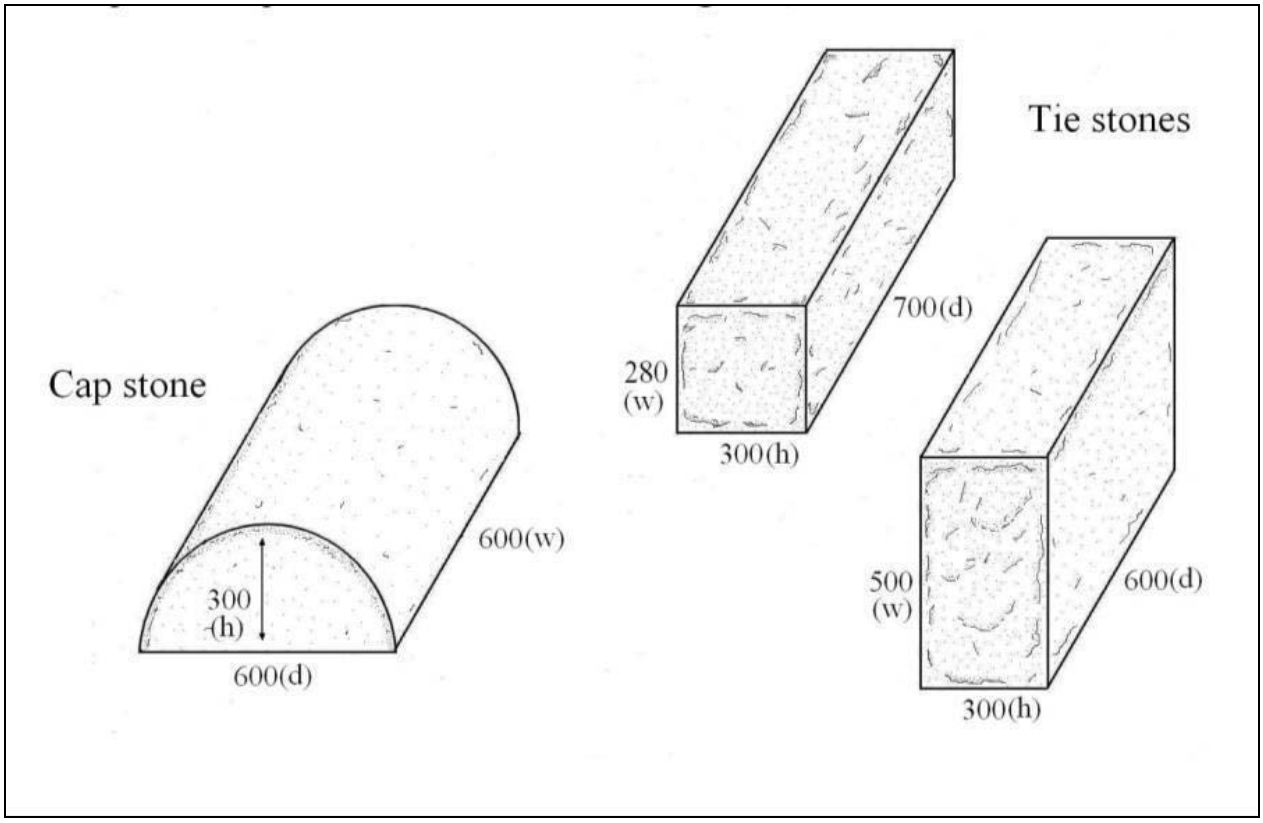


Figure 145. Examples of tie stones and capstones removed from the wall

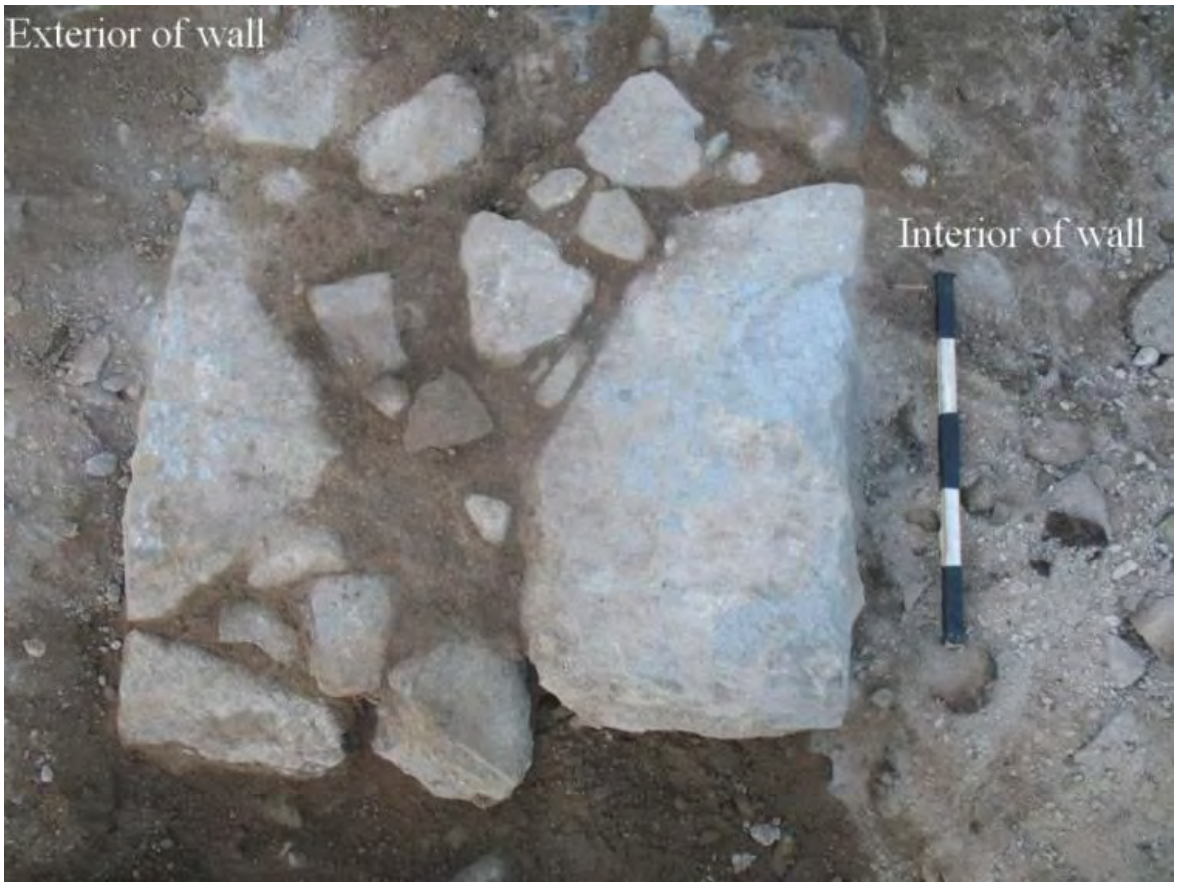


Figure 146. Plan view of the exposed foundations of the South (heritage) Wall

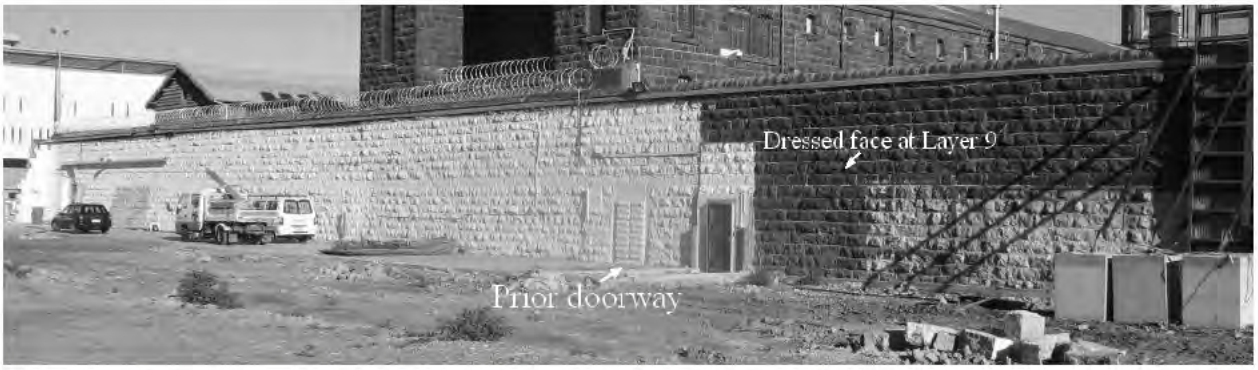


Figure 147. Remaining section of the South (heritage) Wall to the west of the wall section that was removed

Figure 148. Eastern end of South Wall

Figure 149. In-filled old entrance in eastern end of South Wall

Figure 150. View of eastern end of South Wall after reconstruction (May 2011)

Comparison of South Wall and North Wall Extension

As can be clearly seen in Figure 151, the cross-sections of the South Wall and the North Wall extension indicate a substantial difference in both the technique used in construction and the quality of the wall. While the South Wall utilises large stones with tie stones binding the two wall faces, the North Wall extension used stones that outwardly appeared similar, but were in fact much thinner. There were no tie stones in the North Wall extension and the internal structure was markedly inferior in terms of strength and cohesion, as demonstrated by the ease with which it was demolished. The North Wall extension was also significantly narrower than the South Wall and utilised cement mortar as opposed to lime mortar.

Figure 151. Comparative cross-sections of South Wall (left) and North Wall extension (right)

EAST WALL

The earliest photographs of the East Wall of the prison suggest that it was the standard 18ft high with no gates or entrances. This is despite some prison houses being located outside. The wall was photographed in 2011 during monitoring works (Figure 152) and, as noted earlier, changes were made to the corner turret for the building of a guard tower, but the view of the East Wall from the north showed that external access to the turret had been put in at some point. The development of the new Prison required a new gate just south of the centre of the wall, accessing the South-East Courtyard (see below) and much of the south-east corner of the wall was demolished for the new block, with some partial reconstruction undertaken (Figure 153).

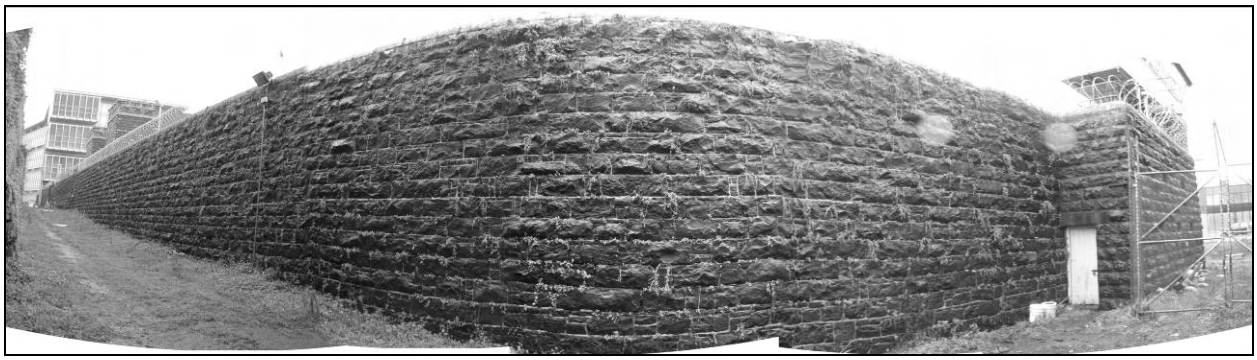


Figure 152. Fish-eye panorama of East Wall from northern end (note the door into the guard tower block)

Figure 153. South-east corner of the wall being reconstructed (May 2011)

Monitoring of Trench

Trenching along the East Wall was carried out as part of work in the South-East Yard (see Chapter 6). While much of the work did not really impact on this part of the wall, some of the trenching did expose the foundations of the stone wall. As this was part of the original wall, the stratigraphy was recorded (Figure 154) and showed that the wall was built directly onto the basalt bedrock. In the interior section, it was also possible to see the build up of scoria and asphalt layers in the South-East Yard (around 50cm deep).

Figure 154. Stratigraphy of test pit next to East Wall

New Gate

A new gate was created in the East Wall to provide access to a roadway between the wall and the retaining wall for the motorway. The wall was sawn through and this provided another useful cross-section through part of the original heritage wall (Figure 155). The wall here narrows to the top but is two blocks across with basalt fragments used in the interior.

Some animal bone was found in a small excavated test-pit just outside the East Wall near the entrance (Figure 156–Figure 158). This proved to be fragmented cow and sheep bone. Some butchery marks were observed, but given the highly disturbed nature of the material further analysis was not warranted.

Figure 155. Cross-section through East Wall

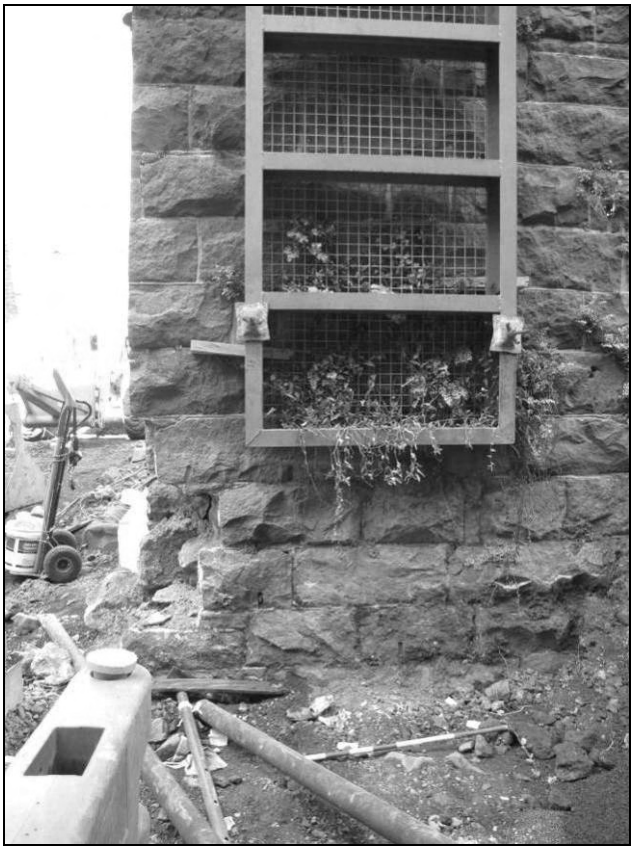


Figure 156. Location of animal bone at East Wall

Figure 157. Animal bone found outside East Wall

Figure 158. Cow and sheep bone from East Wall test pit

THE MAIN ENTRANCE

The main entrance to the Prison is located in the middle of the West Wall. Images showing the entrance in 1876 (Figure 159) suggest that it was originally just an arched gap and it is not even apparent that the entrance had doors. This is probably because the Stockade fence was the primary security for the prisoners as it surrounded the buildings where they were housed. However, by 1910, a new gateway had been built (Figure 160). The wall was made thicker here and the entrance itself was made higher and narrower. Large doors were added and a plaque on the outside was also visible. The new archway keystone was engraved with the date AD 1872. This probably relates to the date of the construction of the Prison walls, although they are actually thought to have started construction on the walls in 1871 and they were not completed until 1876.

Other additions to the wall near the entrance way included a balcony with a guard house added to the exterior north of the entrance way. It appears in a 1929 image of the Prison (Figure 161) and was still present in 1983 (Figure 162), although has been removed since then.

The sequence of images (Figure 159-Figure 162) shows that the entrance is near an area where the ground level rises visibly. Excavations in front of the Prison showed that a substantial amount of fill had been added to the area outside, which required retaining particularly in recent times.

Figure 159. Close-up of entrance of Prison in 1876 (APL 995.1112 M92e P94(1) 236)

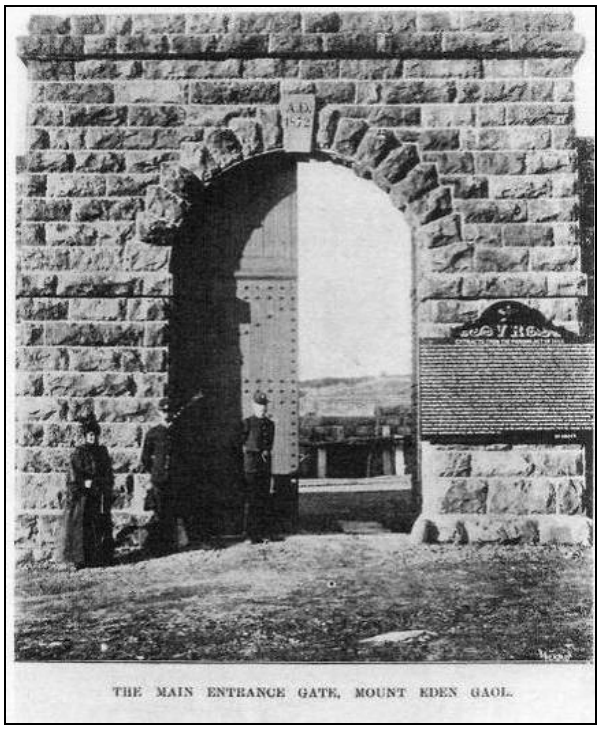


Figure 160. The main entrance gate in 1910 (*Auckland Weekly News*, APL AWNS-19000803-8-2)

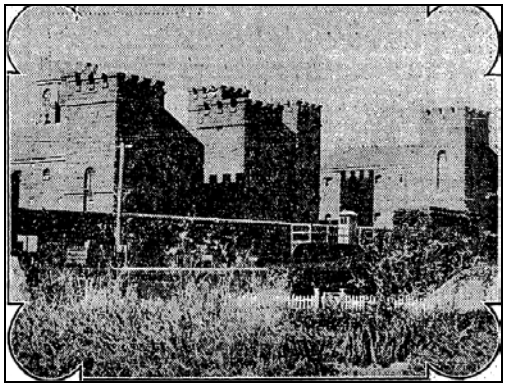


Figure 161. *NZ Truth*, 26/9/1929: 7, showing guard house and balcony north of main entrance

Figure 162. View of entrance in 1983 (Auckland Art Gallery Toi o Tāmaki, gift of John Stacpoole and John Fields, 1983)

http://www.aucklandartgallery.com/the-collection/browse-artwork/5853/mt-eden-gaol

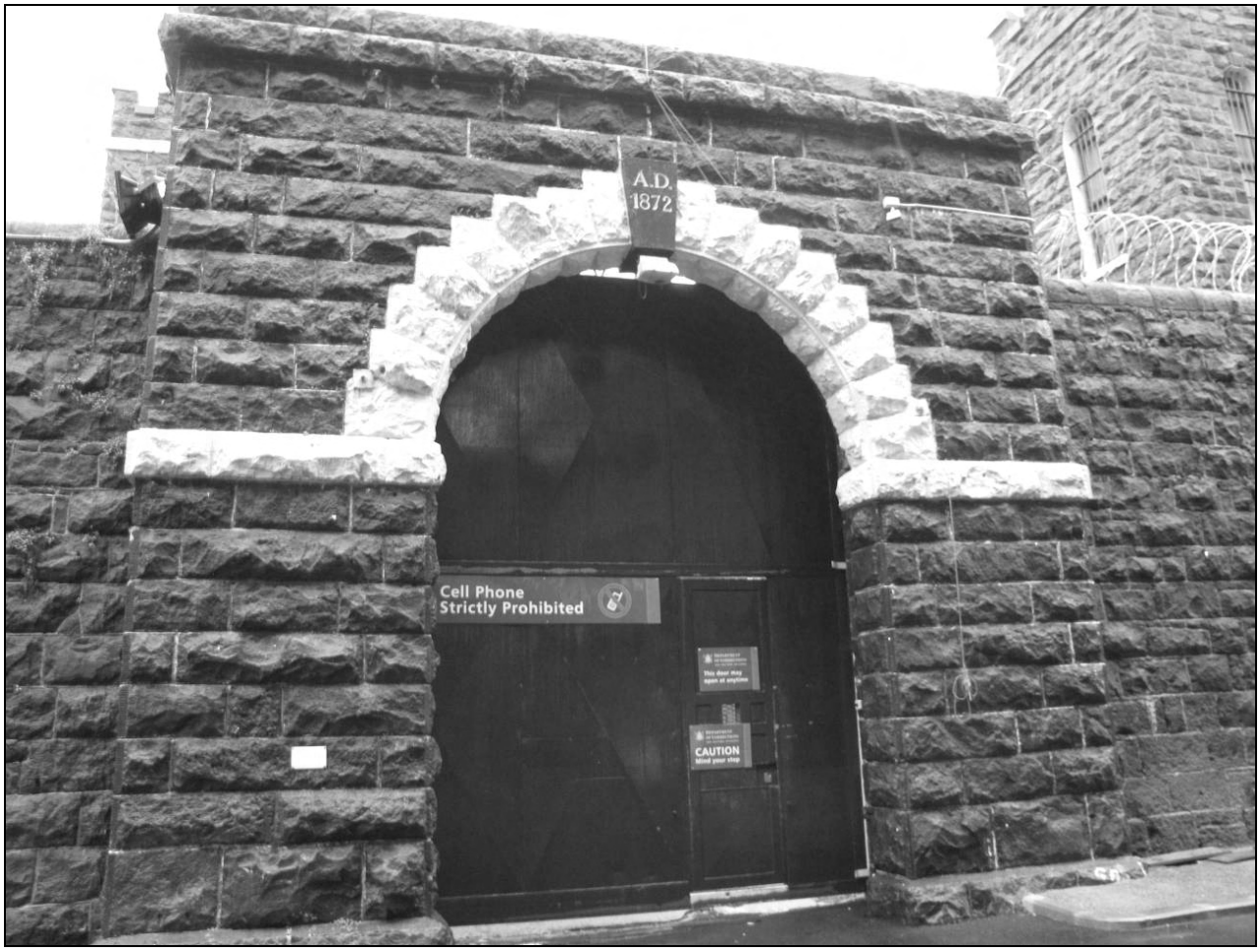


Figure 163. View of main entrance (May 2011)

PRISON WALL SUMMARY

Changes to the Wall

The current redevelopment required additional changes to the Prison wall, both to improve its functioning and to allow some parts of the development itself to proceed. The main changes to the wall during the project are shown in Figure 164. As described above, a large section of the eastern half of the South Wall was demolished to allow access to the South-East Yard and allow for new buildings. Much of this section was reconstructed (from early 2011) from the south-east corner to near the southern wing of the Prison. However, the Stoneyard Wall has been removed along with the North Wall extension, although the latter is represented by new low walls alongside the Railway.

The recording of the heritage wall was designed to add to the history of the Prison and supplement the description in the draft conservation plan (Salmond Reed 2006). The main Prison wall was built in the early 1870s, but since that time it has been added to, modified, destroyed in parts and rebuilt as the needs of the P rison have evolved. The wall was not originally a secure enclosure, but as the main Prison building was constructed, the security of the structure was improved and it replaced the earlier wooden Stockade fence. The curved interior corners of the wall appear to have been part of the original design of the wall and made climbing the wall very difficult. This curved designed was carried into the Stoneyard Wall extension along the southern side.

The finishing of most of the wall blocks was left rough, but provided little assistance for climbing. However, smoothed blocks appeared in many locations, particularly on the exterior of the South Wall when it was part of the workshops there. A variety of minor modifications occur along many of the walls relating to a range of activities, although mostly along the southern side. Changes to entrances also occurred, with old doors blocked up and others added.

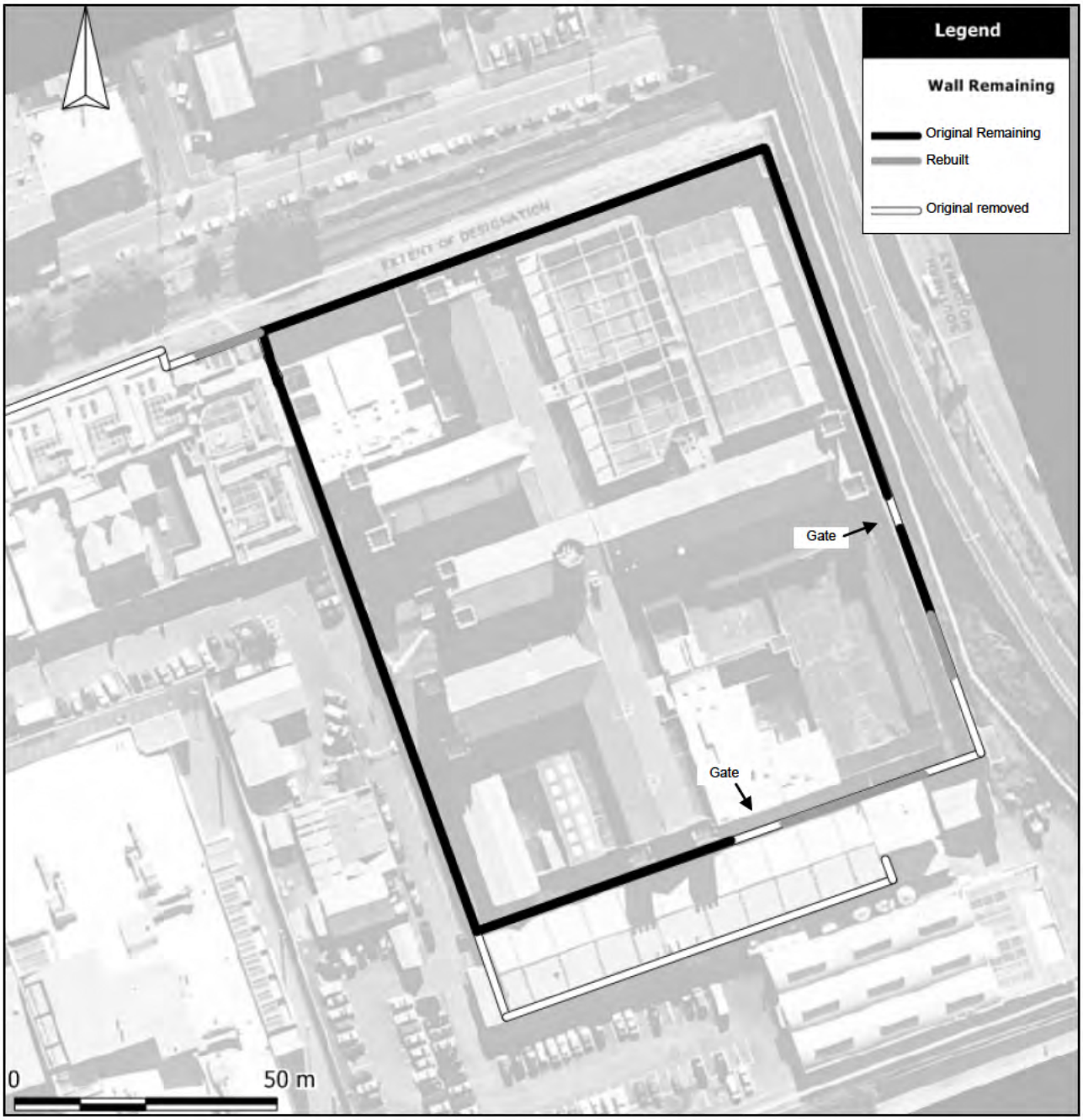


Figure 164. View of changes to the Heritage Wall

CHAPTER 4: SOUTH-WEST COURTYARD EXCAVATIONS

INTRODUCTION

Location of Excavations

Three small excavations took place in south-west corner of the Prison inside the wall (Figure 165). These were:

- The Gymnasium Excavation
- New Exercise Yard Excavation
- Bag Shop Excavation

The Gymnasium Excavation followed from the demolition of the old Gymnasium building and the removal of the material – the area of this part of the excavation is shown in Figure 165. Not all the asphalt between the Bag Shop, which was demolished later, and the Gymnasium was excavated during this first stage, but this area was monitored later during the building of the New Exercise Yard here, which allowed for some additional recording. Finally the removal of the Bag Shop allowed for some monitoring below that structure.

Historical Evidence

It was hoped that the area of the Gymnasium excavation would expose evidence of some of the 1868 Stockade building. Overlays of the early plans (Figure 166) of the Stockade suggested that the south-western end of the Stockade building might sit outside the area built upon by the later main Prison wing. An early photograph dated to around 1876 (Figure 167) shows a two-storey building here with a simple gabled roof. A small window on the upper floor of the building is visible, but other details of the lower floor are obscured by the stone wall which is present at this point. However, the inner wooden Stockade fence is also visible in this image and it was thought possible that remnants of this might be found during the excavation.

The main Gymnasium excavation appeared to be in the vicinity of the room at the end of the wing identified on Figure 166as the Hard Labour Ward, although access to this room was only from the north-western wall rather than from the cells. The purpose of this room was not made clear on the plan, although it was thought to be a form of guard room.

However, after the excavation another image of the area was found showing the structure present on the Gymnasium site, which identified it as a chapel (Figure 168, see below). This image dates to 1900 and shows the wooden Stockade fence still in use as an additional wall separating the structure from the main stone wall. However, unlike the previous image (Figure 167) which shows the building with a gabled roof, the Chapel here appears to have a single sloping roof down towards the south, the small single upper floor window visible in the older image is no longer present and there are two and probably three barred windows along this wall. Whether this structure was completely rebuilt or the roof changed when it was converted into a chapel is not known.

Figure 165. Plan of area showing Gymnasium, Bag Shop and New Exercise Yard excavations

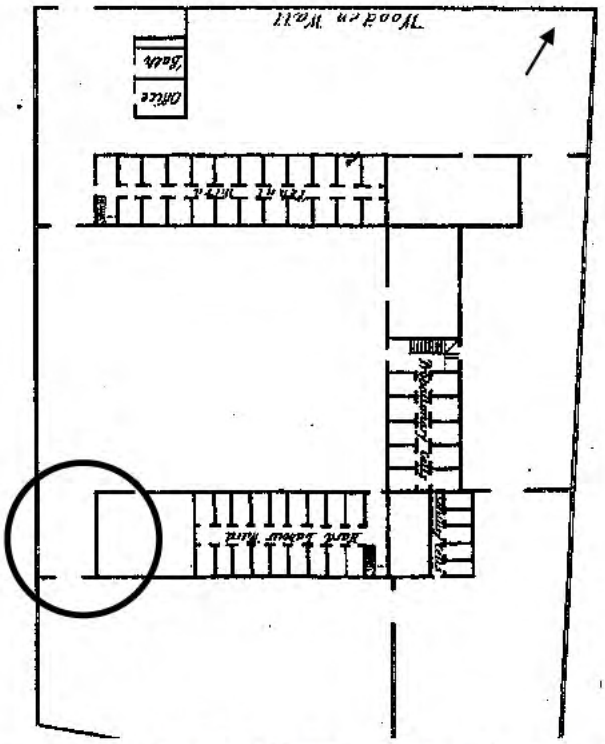


Figure 166. Close-up of 1877 plan of Stockade (*AJHR* 1877: Session I H-30:11) showing area excavated

Figure 167. View of Stockade within the present perimeter wall, c.1876 (APL 995.1112 M92e P94(1) 236) and approximate area of excavation (arrow)

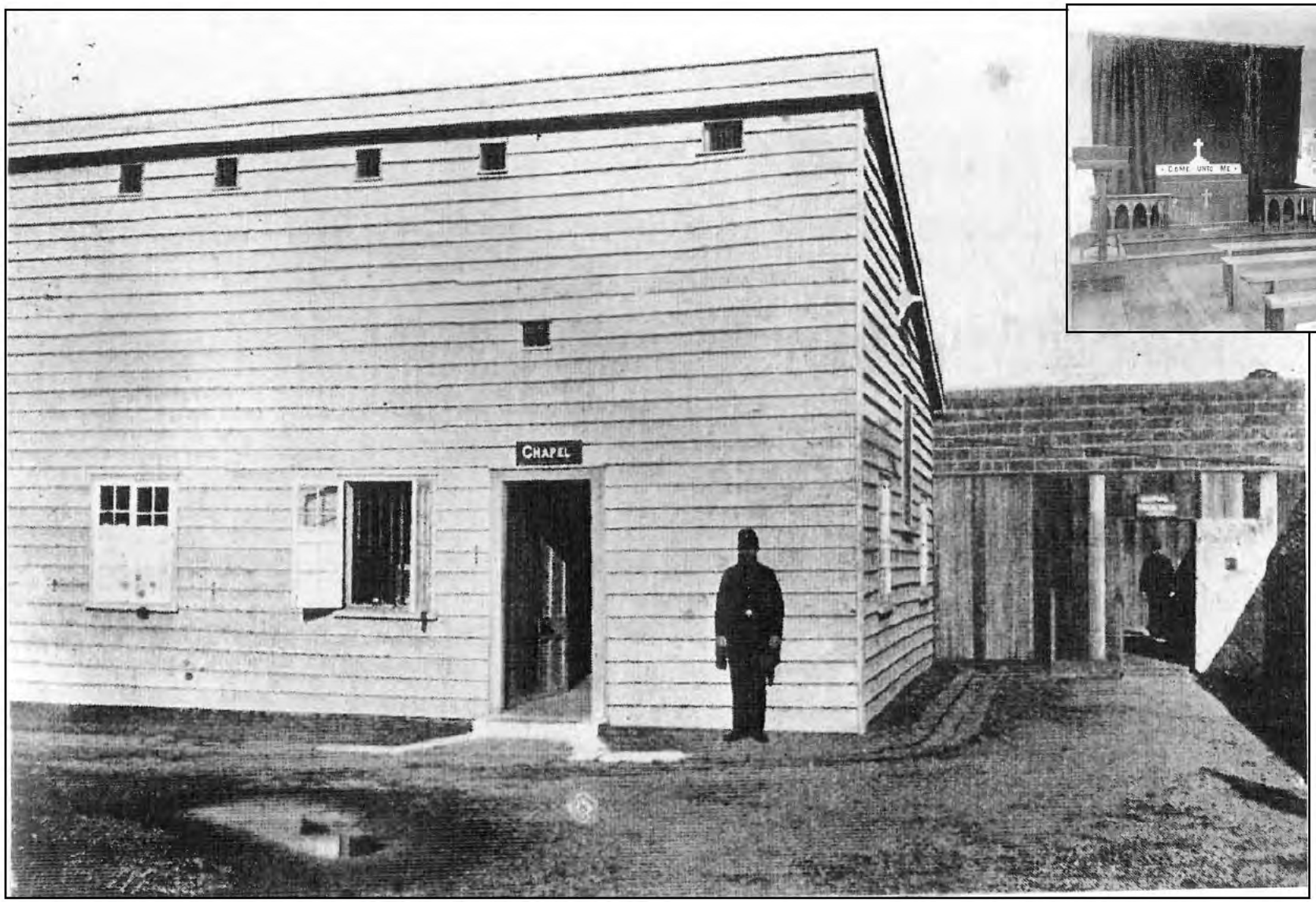


Figure 168. View of Chapel looking south at north-west corner c.1900 (APL, AWNS-19000803-9-5)

Inset showing interior of Chapel 2 August 1900 (APL, AWNS-19000803-9-6)

GYMNASIUM EXCAVATION

Methodology

Excavation of the area below the Gymnasium (Figure 169) was carried out using a large digger with a 1m bucket (Figure 170). The remains of the asphalt and concrete foundations of the Gymnasium were removed from the area around the steps leading in to the main Prison building (Area A, Figure 169).

Two other areas were also investigated and are described below. A small hole was dug at the north-east corner of the Bag Shop to see whether it was possible to pick up remains of the wooden fence (Area B, see Bag Shop excavation). A larger trench was dug between the area of the Bag Shop and the remains of the Gymnasium to expose modern drainage systems for investigation by engineers (Figure 169; see New Exercise Yard excavations). Other parts of the modern drainage system were exposed in the northern part of the site but these areas were heavily disturbed and did not reveal any archaeological features.

Results

The main area of excavation, at the eastern side of the yard, did reveal some significant archaeological deposits. Under the modern asphalt, it was possible to see a dense layer of large basalt flakes relating to the construction of the main Prison wing close by during early 20th century (Figure 171). Below the layer of flakes, remains thought to be the 1858 wing of the Stockade (Figure 172–Figure 173) were found and included:

- stone piles;
- supporting bearers for the wooden floor of the two-storey building; and
- an early concrete footing along the western side with timber slots for the posts and studs.

The most distinctive feature was a basalt block structure with curved corners surrounding the building, incorporating an entrance to the building along the northern wall. This basalt block structure consisted of three rows of blocks with the middle block about 2-3cm lower that the other two rows. This feature curved around the outside of the foundations of a rectangular building. The basalt feature has been interpreted as a shallow drain and is visible in the historic photo of the Chapel (Figure 168). It was about 40cm from what would have been the outside wall of the building. Along the northern wall, there was an area of dressed basalt blocks extending from the drain inwards towards the foundation wall of the building; this has been interpreted as the entrance way to the Chapel and matches the doorway visible in Figure 168.

The foundation was made from concrete with slots for the wall studs at intervals of between 10cm and 50cm and of varying width (Figure 174). This foundation probably related to the Chapel building itself.

There were layers of debris in the interior of the building, probably related to the demolition of the structure, although some earlier material may have been mixed in here. Fragments of white plaster were mixed into the matrix and clumps of decomposing metal, mostly nails, and other artefacts, were collected. Some remaining roughly shaped basalt blocks were found in a grid used for the floor piles (Figure 172, Figure 175).

Interpretation of Stratigraphy

Sections were drawn using the unexcavated material near the stairs into the main Prison wing (Figure 173, Figure 176), as well as from sondages across the drain feature into the interior of the building (Figure 177).

The main section near the staircase provided a snapshot of the changing use of the yard over the previous century. The upper layers consisted of a number of asphalt layers with fine scoria used in between as levelling material. This showed how the yard kept being built up, as it was generally easier to keep resurfacing the yard areas than clear out the old asphalt. This related to the tight conditions in the yard area and the difficulties of moving large quantities of material in and out of the area (the demolition diggers had to be craned into the zone in 2008-9).

Below these layers, large quantities of large basalt flakes were visible in section, particularly along the southern end. As mentioned earlier, these most probably come from the working of the basalt blocks used in the construction of the southern wing of the Prison in the early 20th century.

Most of the lower layers were filled with a range of gravel fill and other mixed debris. There was a thin distinctive layer of fill under the flakes consisting of crushed fragments of white plaster mixed with wood fragments, a large collection of nails and an assortment of artefacts. This was labelled the main 'demolition layer' and was where most of the artefacts analysed came from. The white plaster tended to break down and mix with the rest of the material as it was hand excavated. It does not show particularly well in the photographs. Under the demolition fill the natural basalt was identified.

The small sondages dug to provide sections (Figure 177) from the concrete wall foundation to the exterior drain all showed much the same pattern. All the features were dug into fine gravel fill material that overlay the area. The source of this material was not clear.

Material from inside the footprint of the Stockade/Chapel building may have been associated with the building itself, items either dropped through the floorboards during occupation of the structure or deposited when the building was demolished.

Summary of Excavation

The excavation below and under the Gymnasium provided the earliest archaeological feature excavated on the project site and related to the early Stockade phase of the Prison site. The concrete foundation matched well with the southern building present on the site from 1858 (Figure 178) through to its demolition before 1917 as the southern Prison wing was being constructed. The unusual shallow basalt drain is clearly visible in a photograph dating from c.1900. There is confusion regarding whether the concrete foundations related to the 1858 Stockade building or the Chapel that is visible in the same photograph that shows the drain. Both buildings are shown in photographs in the 1900s and may in fact be the same structure, but the Chapel has a different roof configuration to the earlier Stockade building. It is not possible on the basis of current information to determine exactly what occurred there, but it seems possible that the Stockade building was adapted at some point for the Chapel.

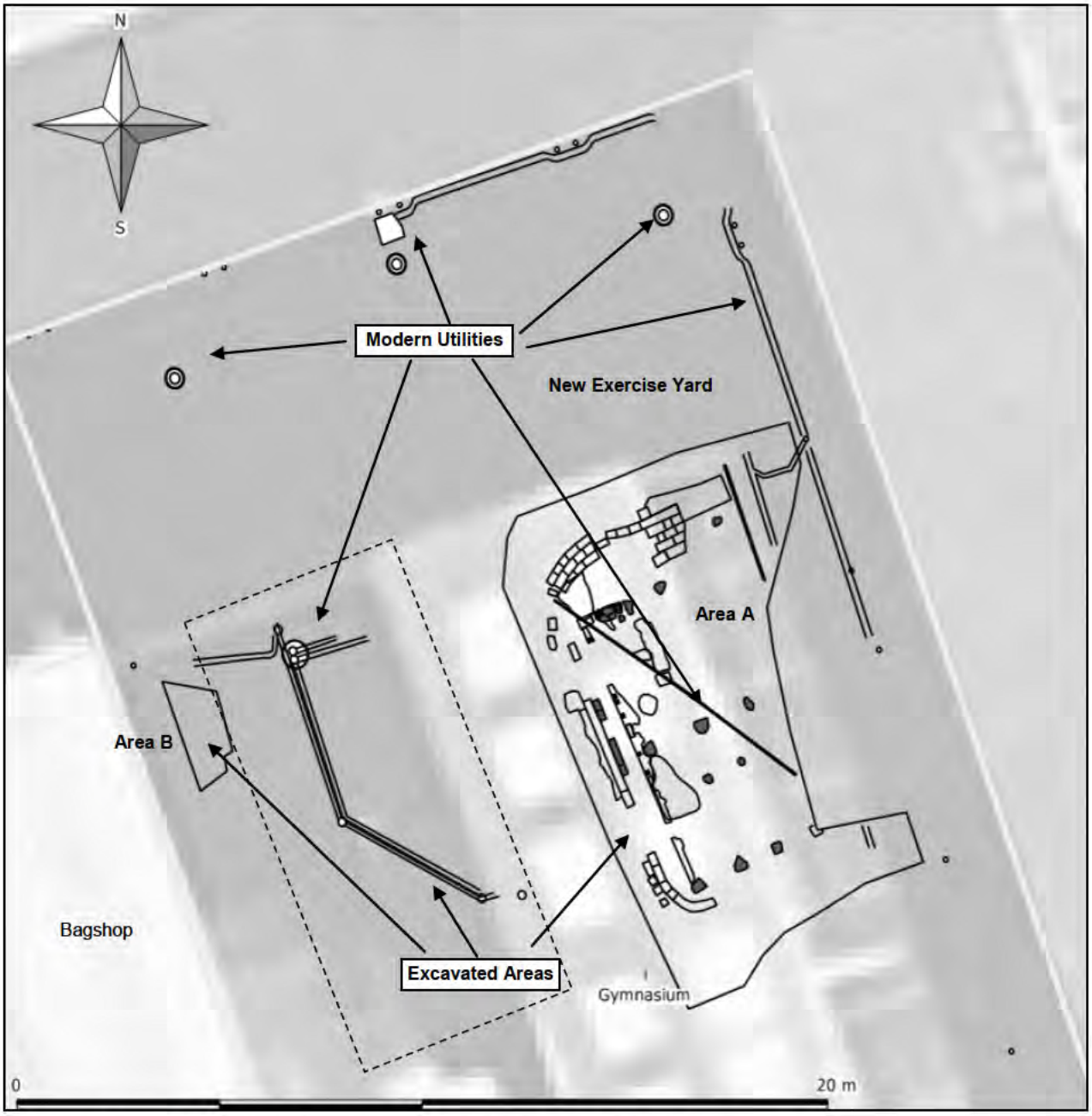


Figure 169. Plan of excavation showing main areas excavated and modern utilities

Figure 170. Scraping down fill above Stockade excavation under Gymnasium

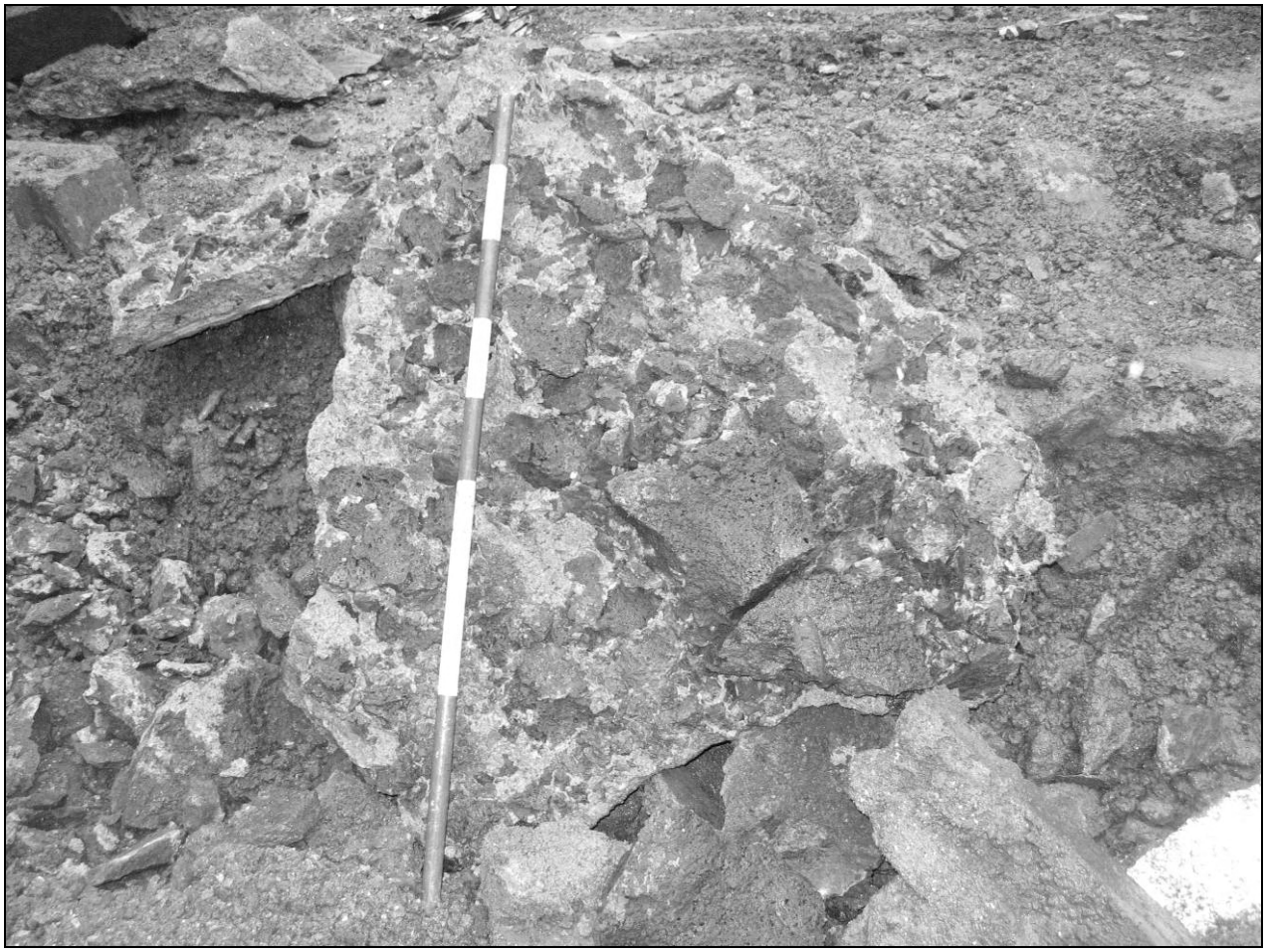


Figure 171. Basalt flakes embedded in concrete

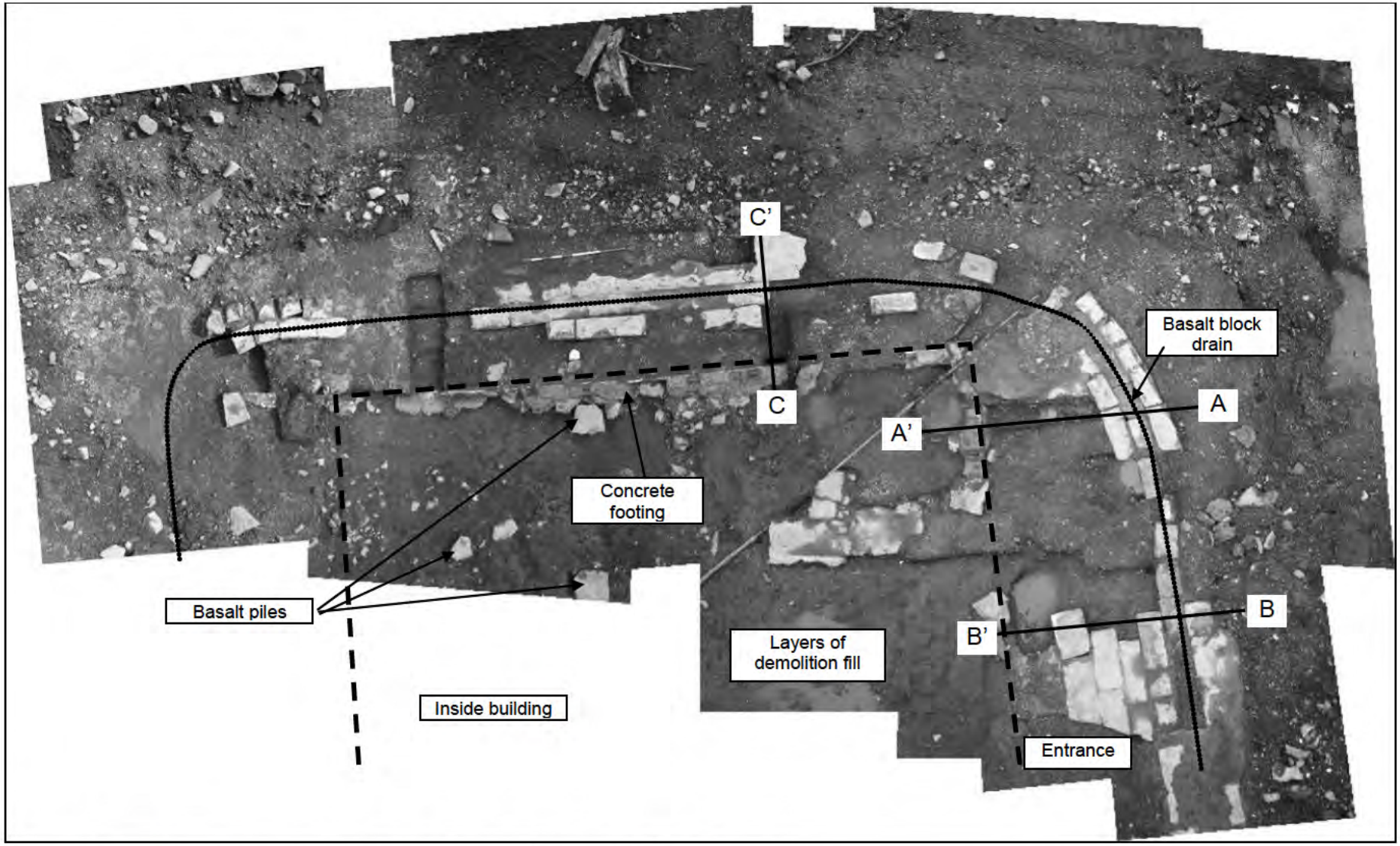


Figure 172. Plan view of Gymnasium excavation (photograph composite by Ben Thorne)

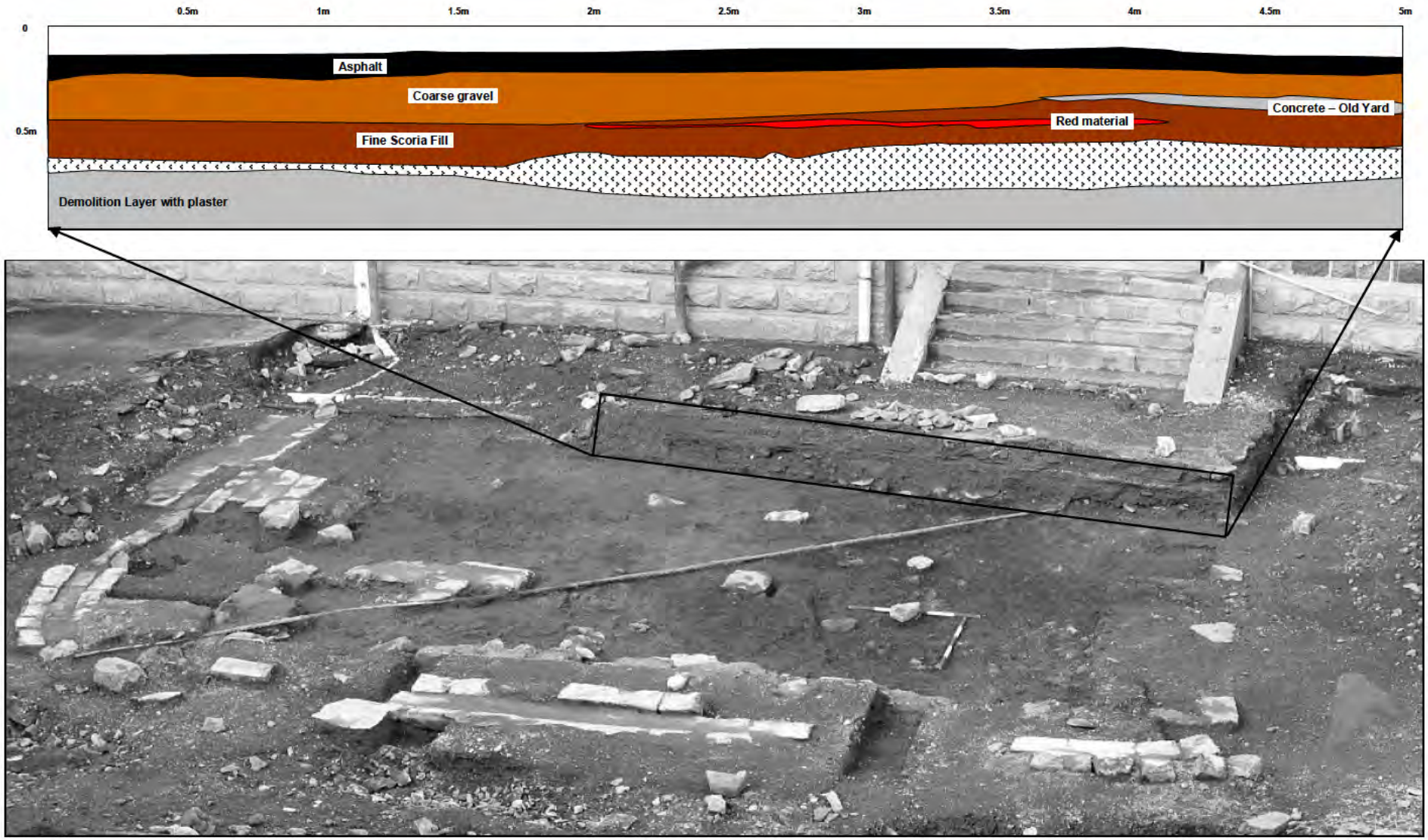


Figure 173. View of excavation showing the Stockade/Chapel building and section drawn

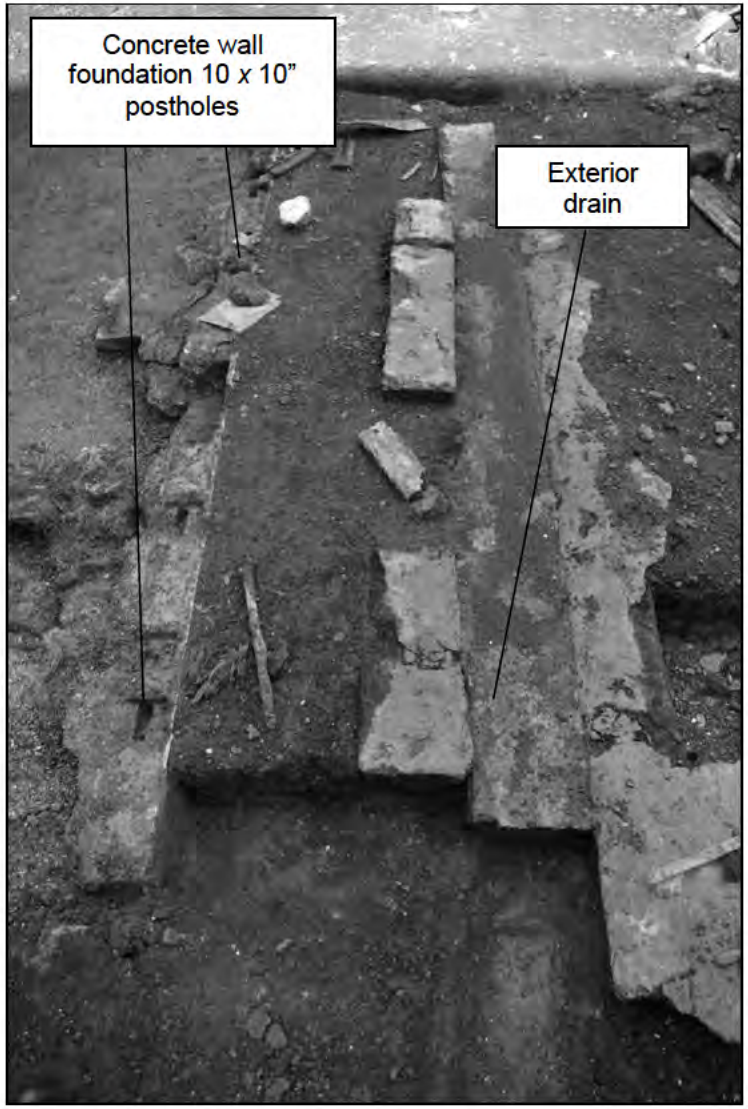


Figure 174. View of exterior western side of building

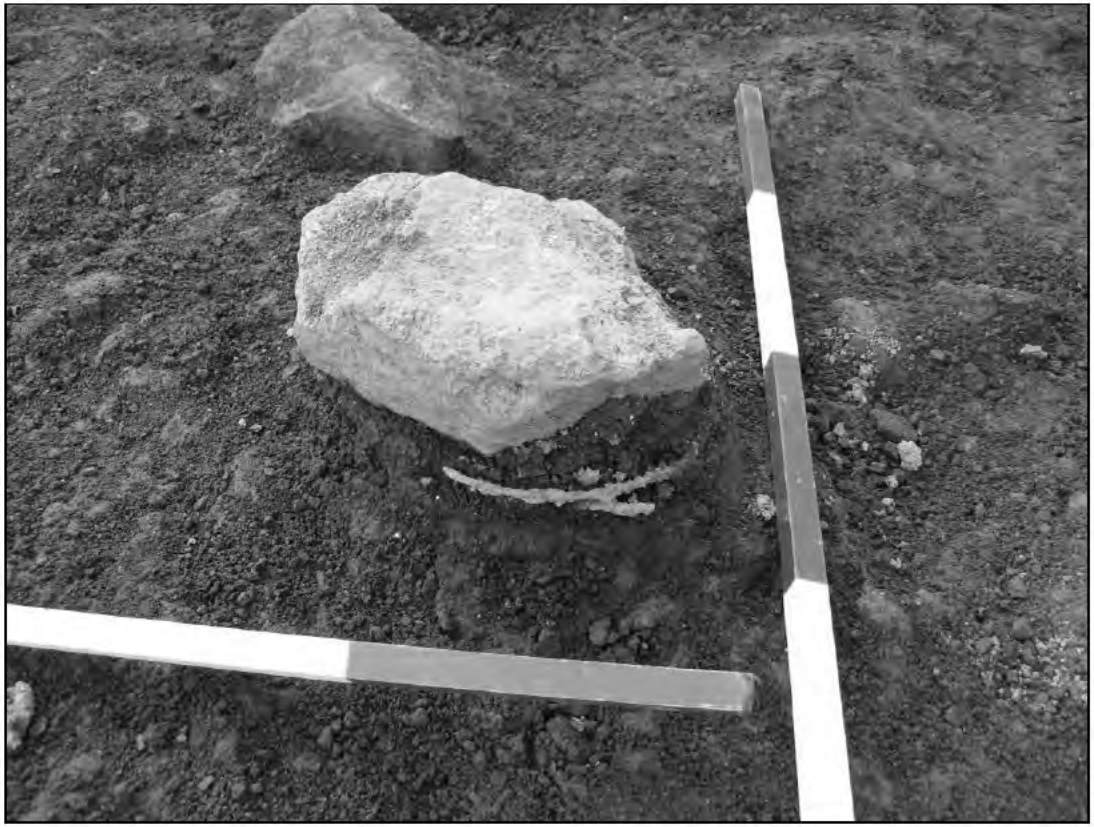


Figure 175. Close-up of basalt pile with remnant wire around the base

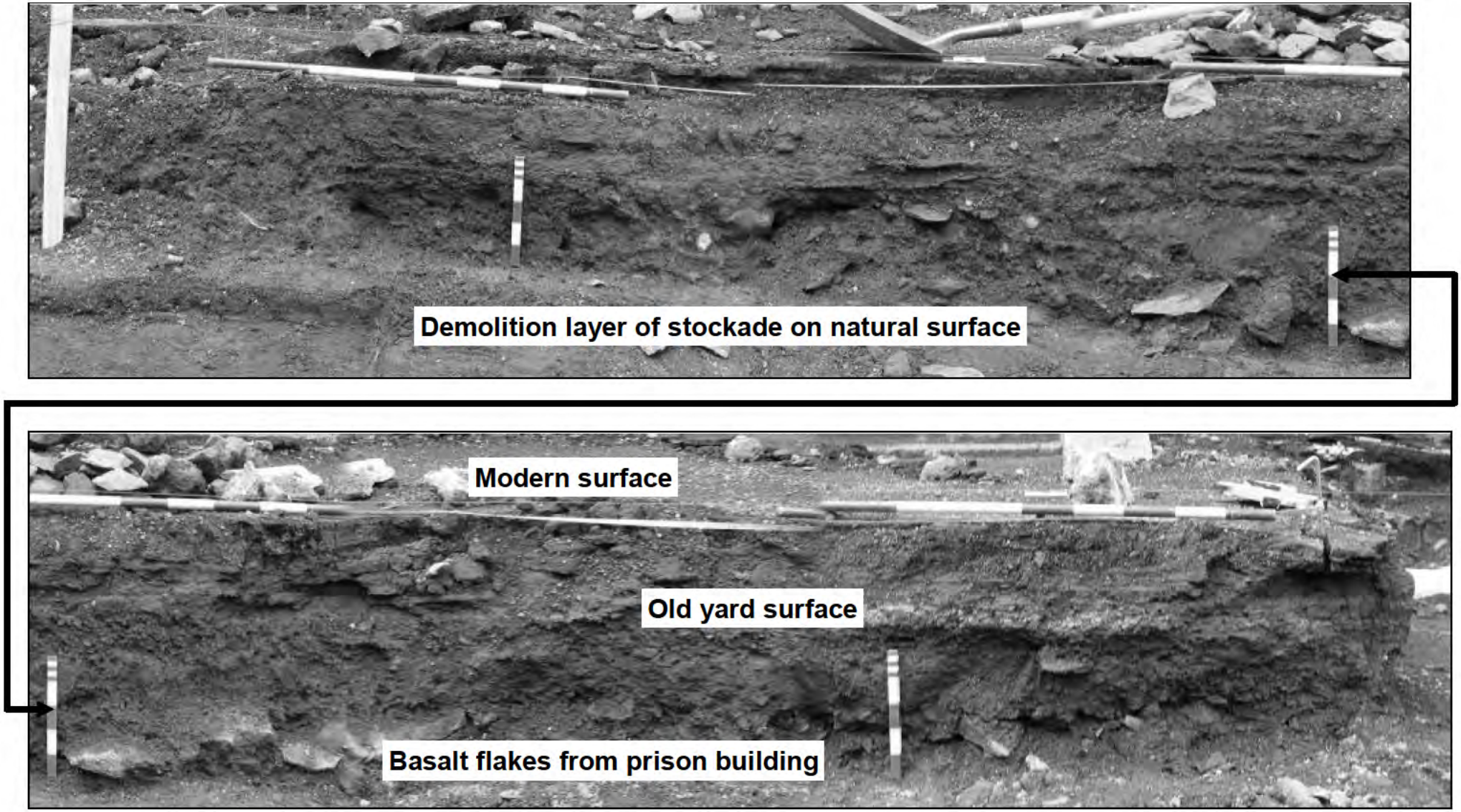


Figure 176. Section on eastern side of the Gymnasium excavation

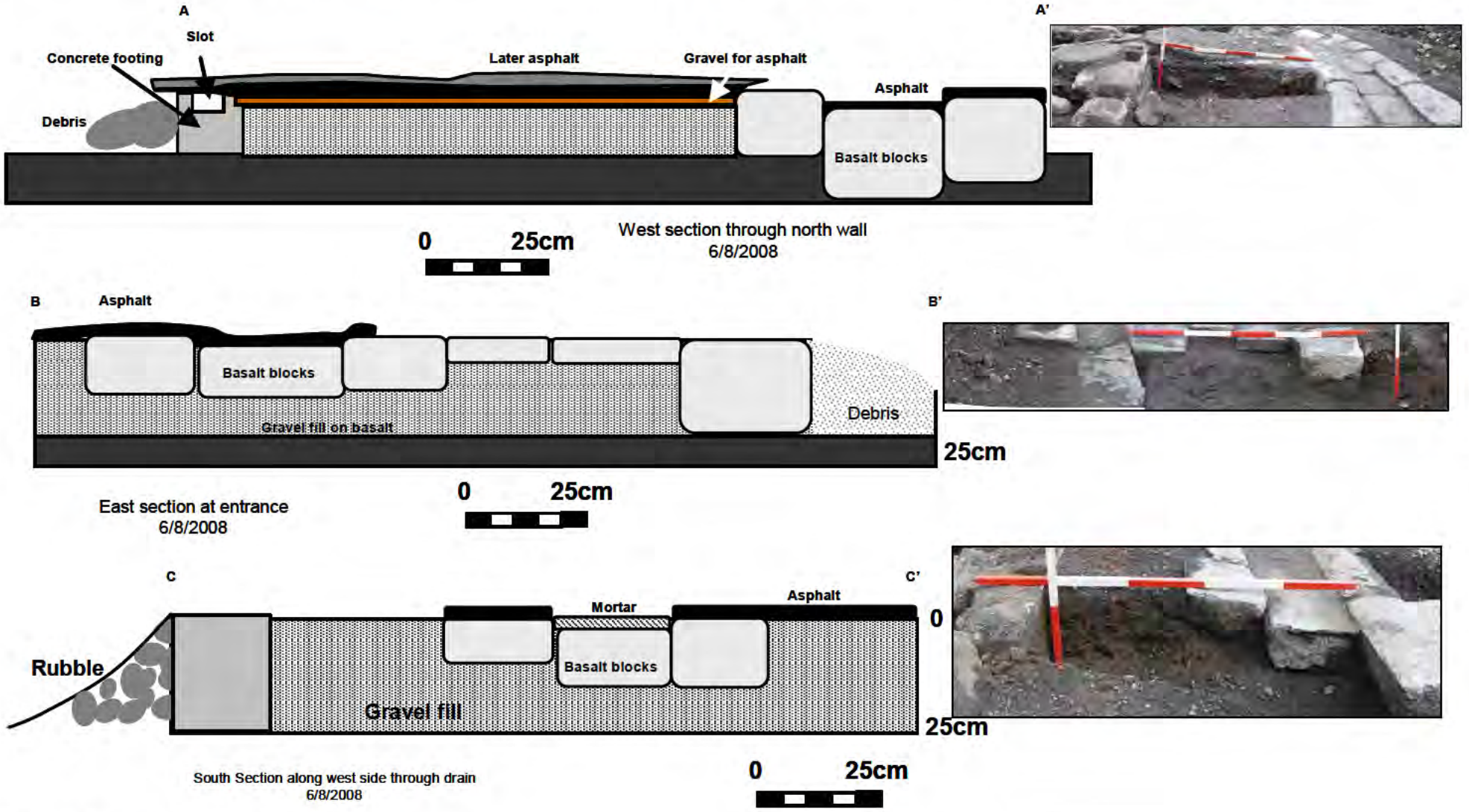


Figure 177. Section drawings through drain

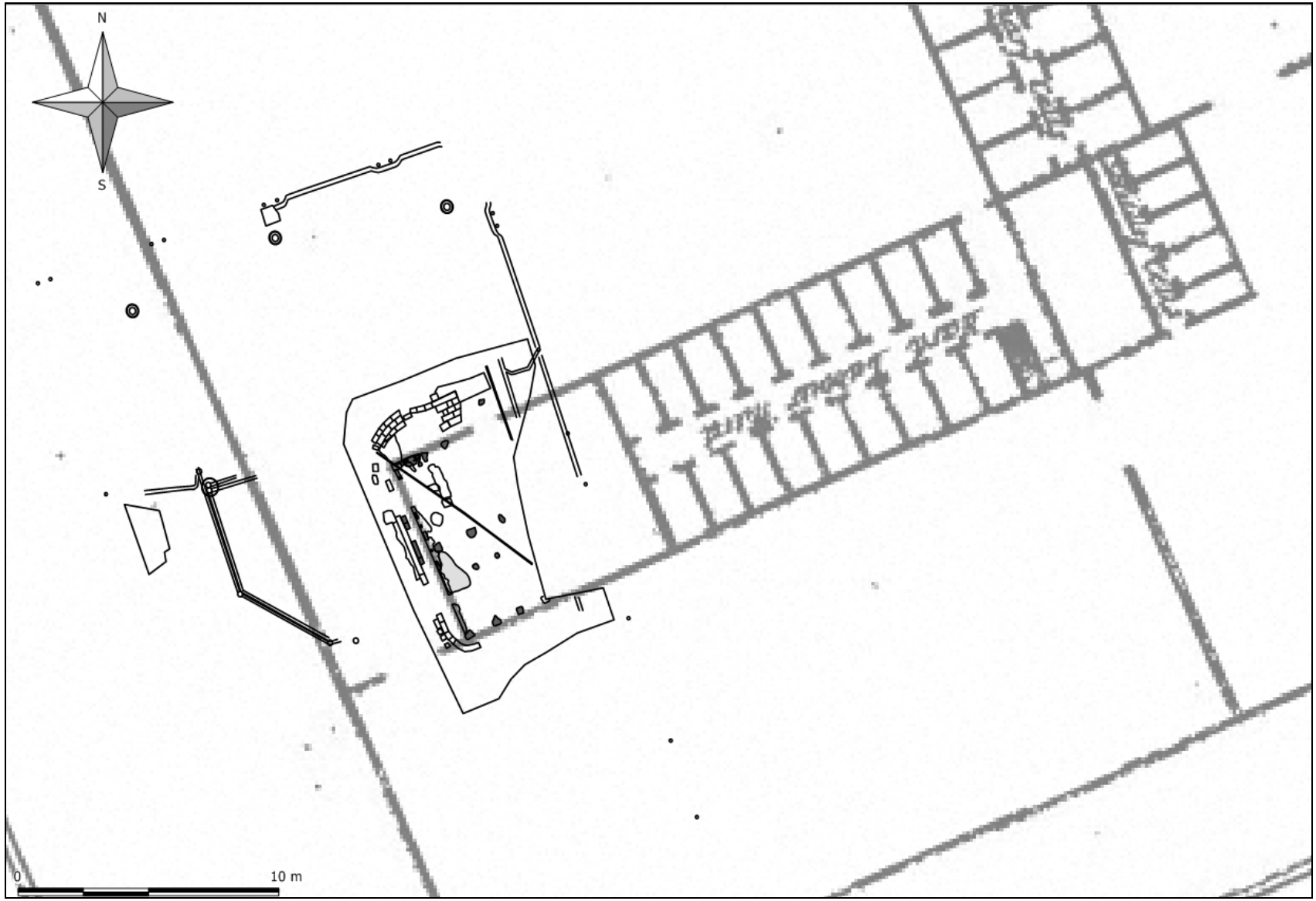


Figure 178. Overlay of excavated features on 1877 plan of Stockade

NEW EXERCISE YARD EXCAVATION

Drainage in New Exercise Yard

A single drainage trench with three branch trenches was excavated on 3 December 2008 (Figure 169). The main trench measured approximately 13m in length and was sited 1.4m to the north of the building previously housing the Bag Shop. The trenches were excavated to a depth of 80cm, the drain pipe was laid and the trenches backfilled leaving a depth of 59cm.

The main trench running on an east-west axis was approximately 75cm in width (Figure 179). A single ceramic drain running towards the north-east from the western end of the Bag Shop was exposed, but no further archaeological material was encountered during excavation. However, the trenching did provide some information on previous modifications. Within the remaining 59cm of exposed stratigraphy, nine layers were identified (Figure 180):

- Layer 1 was 9cm thick concrete which stretched across the remainder of the yard to the bag shop.
- Layer 2 was 13cm of fill, largely of orange-brown colour and containing some stone rubble.
- Layer 3 was 4cm of dark grey soil with a high percentage of very fine gravel.
- Layer 4 was 3cm of the same type of material as layer 3, but a slightly lighter shade of grey.
- Layer 5 was a brown soil with fine gravel measuring 2cm in depth.
- Layer 6 was 3cm of lime, seen previously in excavations of the Stockade/Chapel located to the north.
- Layer 7 was a 3cm layer of fine gravel/soil mix of a grey-brown colour.
- Layer 8 was a black coloured 2cm thick layer of what appeared to be old asphalt.
- Layer 9 consisted of 20cm of brown/grey soil with a high percentage of stone, similar to that seen during the Stockade excavation.

The remains of a concrete block wall with a concrete footing were exposed in the southern baulk midway between the entrance doors to the Bag Shop (see Figure 180). Evidence of this wall could be seen on the exterior of the Bag Shop building, but the section identified during excavation had been demolished some time previously. The wall was in line with an existing interior wall in the Bag Shop.

Branch Trench 1, sited at the eastern end of the main trench, measured 60cm wide with a length of 2.5m from the southern baulk and ran in a northerly direction. Branch Trench 2, located at the western end of the Bag Shop, also ran in a northerly direction with a width of 60cm and length of 2.7m. Branch Trench 3, with a length of 5.5m ran in a south-westerly direction terminating at a manhole. No archaeological remains were noted in these trenches.

Further Drainage Work

Further drainage work was undertaken the following day at the south-west corner of the exercise yard. Drainage in the south-west corner was associated with an existing toilet in the yard and ablution drainage from the Prison (Figure 181, left). The trench measured 2.5m long with a width of 35cm at the north-eastern end of the trench and increasing to 70cm around the drains at the south-west corner of the Prison. The maximum depth of the trench was 80cm. No archaeological remains were encountered within the trench, but the excavation did expose two courses of the stone block constructed Prison (Figure 181, right).

Figure 179. Looking east along the main drainage trench with branches running to the north and to the south-west (bottom right)

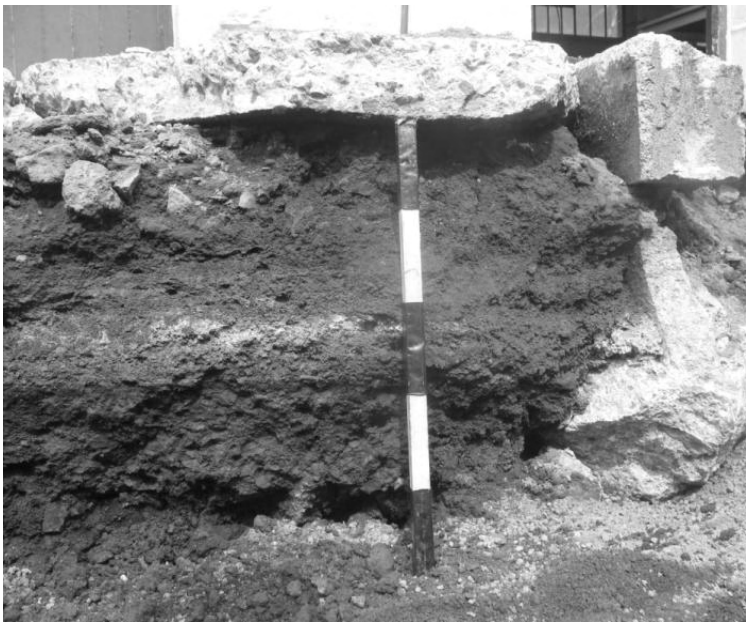


Figure 180. Layering seen in south baulk of main trench near entranceway to Bag Shop, and remains of concrete block wall

Figure 181. Drainage trench in south-west corner of exercise yard (left). Showing the exposed courses of stone in western side of trench (right)

A sump was required to be positioned on the northern side of the yard to the east of the stairs leading into the Prison. The excavation measured approximately 2m on a north-south axis by 3m on an east-west axis, while a depth of 1.2m was required (Figure 182). Excavations revealed that earlier drainage work had been undertaken, with a 9 inch diameter (229mm) pipe running east-west immediately at the base of the stairs leading into the Prison building. A power cable ran across the north-western corner of the excavated area. While no archaeological material was encountered within

the excavated pit, stones relating to the Stockade period were noted in the southern baulk at a depth of 30cm and 40cm. The long rectangular stones had previously been noted during the Gymnasium excavation, but were identified higher in the stratigraphy than the examples seen in the sump pit (Figure 182), suggesting they may have been disturbed during previous works in the yard. At a depth of 80cm solid rock was encountered, necessitating the use of a rock breaker.

Figure 182. View towards the southern baulk of the sump pit with two rectangular stones associated with the Stockade period just visible

BAG SHOP EXCAVATION

Test Trench (Area B)

A small trench was dug next to the north-east corner of the Bag Shop building at the same time as the main Gymnasium excavation (Figure 169, Area B). The purpose of the trench was three fold. The first related to engineering requirements – finding services within this area. The second was determining the basic stratigraphy of the area around the Bag Shop to compare with the results to the east in the Gymnasium excavations nearer the main Prison block. The third was to see whether it was possible to find postholes relating to the wooden Stockade fence thought to be somewhere in this area.

The test trench revealed a similar profile (Figure 183) to the section to the east (Figure 176), although it was significantly deeper. The majority of the section consisted of layers of asphalt and scoria fill, indicative of continuing use of the yard and relaying of fresh surfaces at various intervals. A metal pipe below 50cm showed that later services had been added into this accumulating fill.

There appeared to have been an earlier trench (Layer 7, Figure 183) running approximately east-west through the northern part of the test trench which had been filled. It is likely that this predated the Bag Shop itself, but it ran perpendicular to a possible wooden fence thought to be nearby and its purpose is unknown. It had been filled by the fine gravel fill used to level the area prior to asphalting.

Below these layers of asphalt were the large basalt flakes, remnants of the dressing of basalt blocks probably from the earlier stone quarrying work (Layer 10, Figure 183). These lay on the natural basalt base.

Removal of the Demolition Layer

In 2009, the Bag Shop was demolished (see Chapter 3 for further details). Following the demolition the area of the Bag Shop and nearby was scraped down and cleared of debris. Given the tight conditions in the area only a small Bobcat digger run by Vuksich and Borich was used and this made clearing the area slow going. This did allow for detailed monitoring to detect any remnants of the original Stockade or Stockade fencing, which was the focus of the archaeological monitoring.

Unfortunately, no evidence of the fencing was identifiable. A number of artefacts were recovered. These ranged from miscellaneous pieces of metal to fragments of clay pipes, bottles and ceramics, and also buttons from clothing. These were only found on the surface in a particular area of the site and subsequent small test excavations found no sub-surface artefacts (Figure 184).

Utility Trenches

After the area was scraped down a small trench was dug approximately 3m x 2m and 1m deep to house the pump for the generator that was being constructed there (Figure 185). No subsurface material was evident in the trench profiles.

Later work in the yard required digging a shallow trench for the concrete footings of the generator building to be housed in the northern end of the yard. No artefacts or structural remains were found. After this material was cleared, deeper utility trenches were dug for the new generator building. These were originally designed to run across the yard in an east–west orientation and a depth of approximately 1.5m. However, given the difficulties of the dense basalt bedrock, major rock breaking equipment had to be brought in (Figure 186) and most of the southern end of the yard was excavated totally (Figure 187).

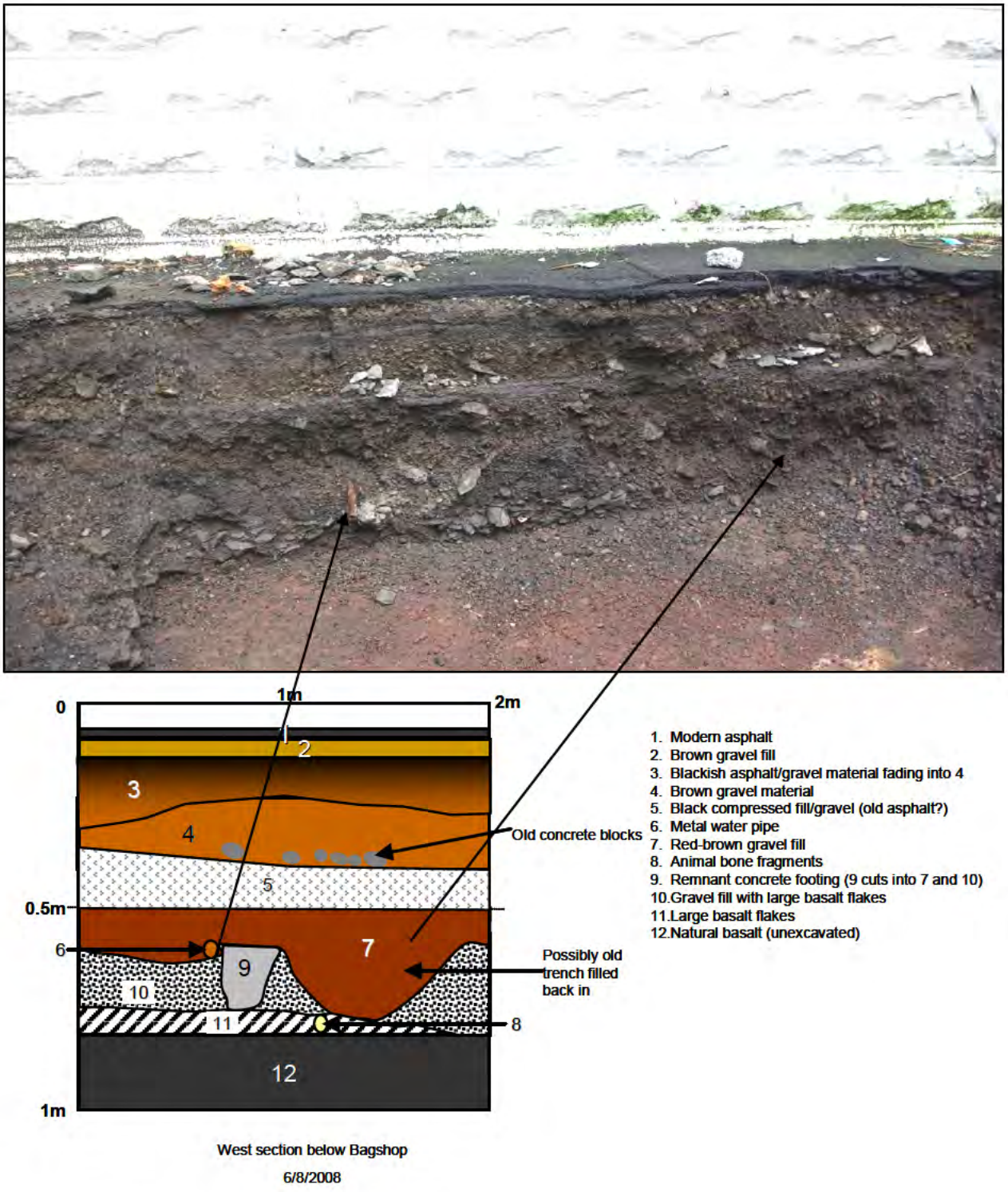


Figure 183. Stratigraphy below Bag Shop

Waste flakes (Layer 10 and 11) from stone masonry (earlier stone working yard) overlay the Stockade ground level, but were probably outside of the old Stockade

Large quantities of base-coarse gravel was then brought in and laid and rolled at the base of the large trench (Figure 187). Further deep holes were also then excavated out by the digger on the western (Figure 188) and eastern sides (Figure 189, Figure 190) of the yard. These required yet more intensive rock breaking and no archaeological material was evident in the profiles.

Unfortunately no structural remains of the Stockade were discovered in this area during the earthworks and the artefacts recovered were not particular in context but part of general fill across the area. Overall, the evidence from this area suggested that it had undergone many periods of construction which had left no intact archaeological deposits.

Figure 184. Looking north in Bag Shop yard (Note discrete area where artefacts were recovered)

Figure 185. Small trench dug for generator pump housing

Figure 186. Rock breaking while digging out main utility trench

Figure 187. Large trench in southern end of yard (note security door in wall)

Figure 188. Excavated hole in western side of yard (Note large amount of bed rock)

Figure 189. Profile of trench on eastern side of yard

Stratigraphy shows multiple layers of construction

Figure 190. Close-up of profile of large trench, eastern side of yard

Artefacts from the South-West Courtyard Excavations

ARTEFACTS OVERVIEW

The artefacts recovered predominantly came from the Gymnasium excavations, and included buttons, metal objects, clay pipe fragments and a few ceramic sherds. Three items in particular stood out in the collection: a bone toothbrush with a 'government issue' arrow scratched into the handle, a bullet and a clay pipe manufactured by Balme (London) with a stem that had been smoked down to the last 2cm. The overwhelming majority of artefacts recovered related to demolition of the Stockade/Chapel building itself, including the basalt blocks which were recorded in situ but not retained, and a large numbers of nails. This section describes the ceramics and metal objects relating to the demolition of the building. Those items relating more directly to clothing and food are described in Chapter 7 as part of a site-wide assemblage. The locations of the artefacts are shown Figure 191. All items came from Area A unless otherwise stated.

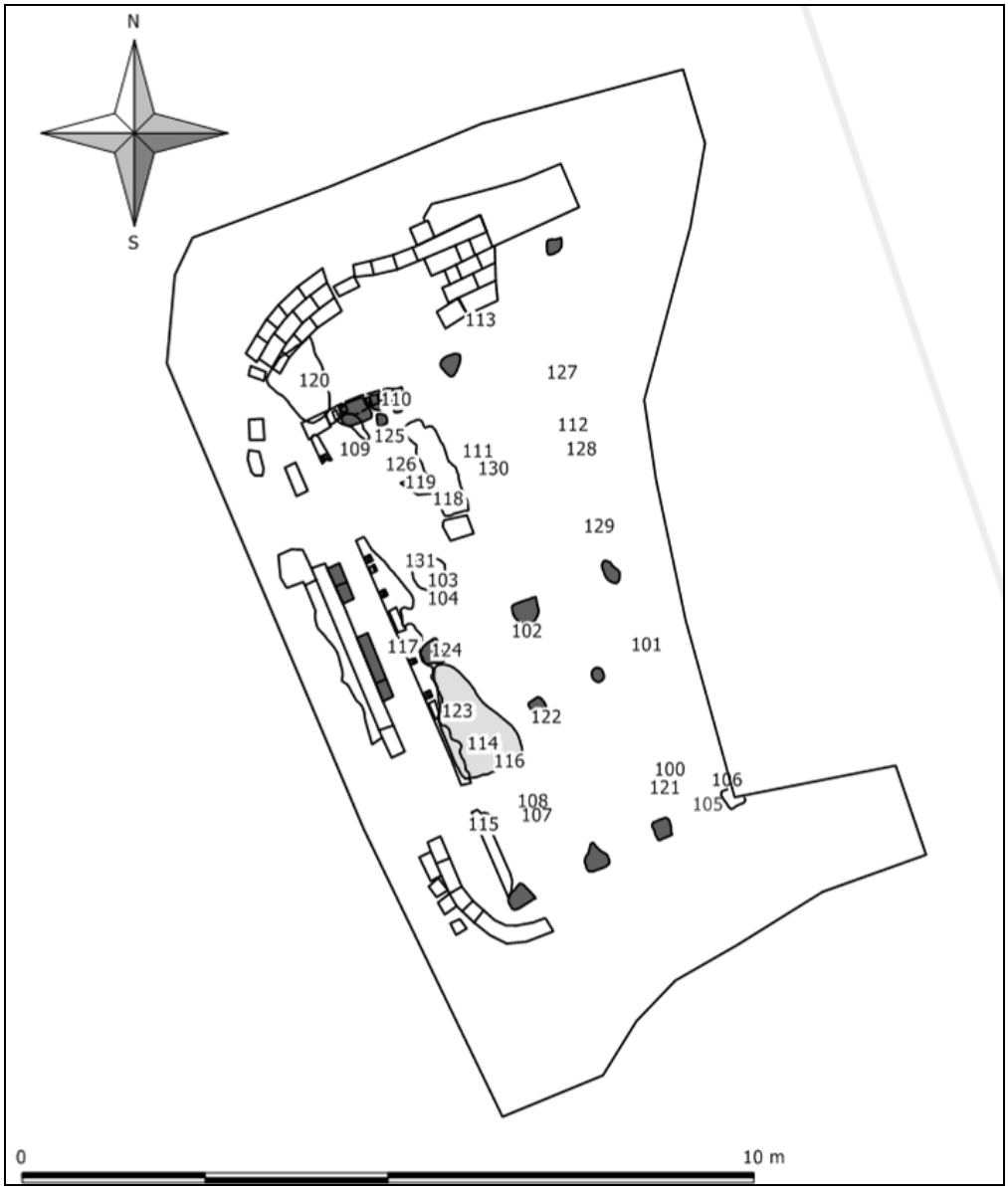


Figure 191. Gymnasium excavation showing artefact sample (Bag) numbers

CERAMICS

A total of 13 fragments of ceramic were recovered during the excavation beneath the Gymnasium. Eight of the fragments were plain white and originated from at least one teacup, one dinner plate and one jar or pot that probably contained a cream or ointment.

A single fragment from a blue transferware Willow pattern bread plate was recovered from the rubble layer above the basalt foundation stones (Figure 192). Four pieces of a teacup (Figure 192) were recovered from the demolition (lime/plaster) layer and are believed to have originated from the same item. The item was hand painted with a 4.39mm black band approximately 7.69mm below the edge of the rim, a 6mm wide red band approximately 3mm below the black band and a green sponge-decorated area immediately below the red band. These decorations were on the exterior face of the teacup with the interior being plain white.

Stoneware

The majority of the stoneware items recovered were associated with consumable products, such as ink or possibly blacking jars, or with drainage and toileting facilities. Most of the material was recovered from the rubble layer, with some located in the main demolition layer.

One piece of a brown glazed large ink or blacking jar was recovered from the upper rubble layer and was refitted with a second piece recorded in Bag 126. The jar would have had an external diameter no greater than 66.5mm. The colour was not uniform, grading to a lighter shade on the upper portions; there was at least one line incised around the circumference of the jar. A darker brown coloured partial base and side was recovered from the upper rubble layer but it was not known whether it was associated with the other sherds. This piece was also glazed internally and externally, but the exterior of the base was not. The interior colour on all three pieces was green-grey.

A stoneware sherd recovered from the demolition layer had a brown glaze on the exterior, with no interior glaze and the finish was not smoothed. It was not immediately apparent from what type of bottle or jar this piece originated. A cream coloured internally and externally glazed neck and shoulder portion of a bottle was recovered (Bag 126). This particular piece may have originated from a ginger beer or similar product.

A number of pieces of stoneware related to a toilet and drainage were collected, principally from the upper rubble layer. Ten pieces related to a drain possibly associated with the toilet, while 12 pieces related to a toilet bowl (Figure 193). All pieces of drainage and the toilet had the same grey colouration and were glazed both on the inside and outside.

Figure 192. Portion of a Willow pattern plate (left) and hand painted teacup (right)

Figure 193. Toilet fragments from upper rubble layer

OTHER ITEMS

Bullet[2]

A bullet (#114) belonging to a Beaumont-Adams pattern 54 bore cap and ball revolver was found within the demolition fill (Figure 194). The Adams revolver of 1851 had been popular with British officers as its double-action mechanism and light weight allowed for a good rate of fire. This was important in close-in engagements such as bush fighting. The 1851 model suffered from its double action mechanism, relying on a rather hard trigger pull compared to the single-action Colts, so while it had a faster rate of fire than the Colts, its accuracy was not as good. The heavier Colt carried another round in the cylinder and could be mass produced with replaceable parts, making it cheaper.

The 1853 Tranter revolver solved this problem with a rather ingenious double-trigger and safety mechanism, allowing rapid double action fire and more precise single-action shooting. The New Zealand Forest Rangers were equipped with Tranter, Colt Navy and Beaumont-Adams revolvers (Stowers 1996:271). In 1856, Frederick Beaumont went into partnership with Robert Adams, and they produced the Beaumont-Adams revolver, which included a traditional hammer and a double-action mechanism, much like a modern revolver, allowing both single and double action fire without the complexity of the Tranter. It rapidly became the revolver of choice for British officers and the British army in general, and Samuel Colt was forced to close down his London Factory only 4 years after opening it (Blackmore 1961:253-256). The Beaumont-Adams revolver remained in use by the British and Colonial forces until the 1880s, when it was replaced by the Enfield and Webley revolvers. Many had been converted to fire rimfire cartridges in that period, no longer being cap and ball revolvers.

Figure 194. Bullet (left, item 114) from Beaumont-Adams revolver (courtesy David Rudd)

Slate Artefacts

A number of pieces of slate were recovered during excavations beneath the Gymnasium in the area where the original Stockade building stood. Much of the slate material recovered from this area was building material, but at least one item related to writing. In a general collection of material located outside the footprint of the Stockade building, four pieces of slate material were recovered. Two pieces of slate were roofing tile, being quite thick, while a third piece was finer and appeared to be machine-cut with a smooth finish, and may have been intended as a writing slate. The fourth item was a fragment of stylus (Figure 195), broken at both ends.

[2] Analysis by David Rudd

One small fragment of slate was recovered from the upper rubble layer. Fifteen pieces of slate roofing tiles (or shingle) were recovered from the top of the demolition layers. One tile was complete enough to allow recording of a maximum width measurement of 107.69mm. All of these fragments had a coarse finish and showed that no attempts had been made to smooth the faces for use as writing tablets.

Ten pieces of slate were recovered from the main demolition layer. Eight appeared to be of roofing tiles similar to those recovered from the top of demolition layers. One ruled fragment (Figure 195) was similar to the finer smoothed portion found in the general collection outside the building footprint, suggesting the item may have been used as a writing tablet. A small fragment of slate offcut produced by a slate cutter's tool was also identified (Figure 195).

Three pieces of roof slate were located at the base of the demolition fill, one of which had an edge roughly chipped away on one side.

Figure 195. From left: ruled slate, offcut from slate cutter's tool, and stylus from the Gymnasium excavation

METAL OBJECTS

Methodology

All of the artefacts and fragments were examined by eye initially, with identifications made where possible. Some of the objects were heavily encrusted with corrosion masking any identifying features, decoration or form. The information, including object description and identification, material composition, dimensions and condition, was added to a database.

Assessment and Analysis

Around 880 objects were recovered from the South-West Courtyard excavations, the vast majority from the Gymnasium excavations (Area A), with 19 objects being retained from Area B (Bag 10). The results are shown in Table 4 and Table 5.

Personal or Domestic Items

Forty-two objects associated with clothing, such as buttons, buckles and decoration, heel plates from shoes or boots, utensils and cutlery were identified. These are described in Chapter 7. There was also an item of furniture, described below.

Nails, Tack and Spikes

The majority of objects (80% across the site) were identified as nails, tacks and spikes and ranged from wire pulled nails popular in New Zealand from approximately the 1880s (Middleton 2005), machine cut nails post dating c.1850, and handmade nails (Table 6). There was a smithy in the Prison complex during the early years of its development, and therefore hand forged nails may have been in use for longer than would be expected.

These objects in general exhibited extensive corrosion masking features enabling clear classification. This was most evident from deposits containing lime, shell and plaster. The condition of the wire pulled nails was the best, while the machine cut and hand made nails were in worse condition. The chemistry of hand made nails would have contributed to this. Some of the wire-pulled nails were likely to be galvanised, protecting the nail from corrosion.

Of 709 classifiable nails there, 273 or c.38% of the nails were definitively identified as wire pulled and therefore are likely to post date 1880 (Table 6). Eighteen percent of the nail assemblage was machine-cut. Only 3% of the nail assemblage was handmade although around another 5% might have been either machine-cut or handmade.

Fourteen machine-cut nails were classified as finishing nails or brads, with ‘L’ or ‘T’ heads, known as clasp heads. These nails were in better condition than nails used in the structural elements of a building. Finishing nails usually had small heads that were sunk beneath the surface of wood, making them less visible. They were traditionally used to secure floor and skirting boards, window and door frames. They were developed in the first 10 years of the 19th century, and were in common use throughout the 1800s.

Eighteen nails were identified as roofing nails, confirmed by the presence of a detachable lead head remaining around the wire-pulled nail. It is possible that more of the wire-pulled nails were used for roofing, and that the detachable lead heads were not represented within the assemblage. Historically it was common for lead to be reused, and on demolition of buildings be stripped from the nails for use elsewhere. This was due to the expense of the metal, and the low temperatures at which it can be melted, making it possible to re-melt and re-work in a domestic or industrial environment.

All of the nails were typical for late 19th century and 20th century New Zealand sites. All of the nails were typical of those used for timber framed building construction. The majority of nails were recovered from layers associated with the pre-1917 demolition of the timber framed Stockade/Chapel, suggesting that this was the building from which they originated. The nails also suggested two phases of building development:

- an earlier phase of construction post-1850; and
- post-1890.

This was indicated by the smaller, but still substantial presence of machine cut along with some hand made nails. It cannot be discounted that one building utilised more than one nail type depending on resources, building refurbishment and phases, and nail reuse.

Table 4. Area A (Gymnasium) metal objects

Location or layer description	Nails/ spikes tacks	Sheet metal fragments	Architectural/ building	Tools/ Hardware	Personal/ Domestic	Un-identified	Other (wire and coil)	Total
Artefacts from rubble	13	2	1	3	3	3	0	25
Demolition - Above lime	142	12	2	6	10	7	4	183
Demolition - main fill	530	27	6	9	29	43	4	648
Demolition - base level	7	0	0	0	1	0	0	8
Total	692	41	9	18	43	53	8	864

Table 5. Area B (Bag Shop) metal objects

Location or layer description	No. of nails/ tacks/ spikes	No. of sheet metal fragments	No. of architectural/ building objects	No. of tools/ hardware	No. of personal/ domestic objects	Unidentified/Other
NE corner of Bag Shop from lowest c.75mm of gravel fill	17			1		1

Table 6. Nail types from Gymnasium and Bag Shop (Area B) excavations

Location or layer description	Wire pulled nails	Machine cut nails	Hand made nails	Machine cut or hand made nails	Unidentified nails	Tacks	Spikes/ Large nails	Roofing	Screws	Total
Artefacts from rubble	3	3	0	0	7	0	0	0	0	13
Demolition - Above lime	67	17	0	20	17	6	1	14	0	142
Demolition - main fill	196	113	21	18	159	8	9	4	2	530
Demolition - base level	1	1	0	0	5	0	0	0	0	7
Area B: Lowest c75mm of gravel fill	6	0	0	0	0	0	11	0	0	17
Total	273	134	21	38	188	14	21	18	2	709

Furniture

A possible piece of furniture was recovered from the upper rubble layer (Bag 9). It was a wrought iron bar of metal with a circular cross-section and small flat circular foot at one end. There was an area of corrosion suggestive of a point at which another length of wrought ion would have been attached. No evidence of solder was observed. This was identified as a possible chair or small table leg; it measured 540mm in length with a diameter of 10mm (Figure 196). It was in good condition with minimal corrosion.

Figure 196. A possible chair or table leg, with small circular foot on one end (from rubble layer, Bag 9)

Industrial Tools and Hardware

Eighteen objects were identified, including iron bars of unknown use, hooks, tools and attachments.

- Stakes: 3
- Bars: 6
- Hooks: 1
- Tool: 1
- Attachment: 4
- Miscellaneous: 3

Stakes

Three types of stakes were identified. Two were iron bars with no distinguishing features, except for one end shaped to a point. These were found in the upper layers. They differed as one had a square x-section (measuring 450mm in length and 13mm in diameter) and the other a circular x-section (measuring 440mm in length and 15mm in diameter). The other stake was recovered from the demolition fill (Bag 112) and had the appearance of a modern tent peg constructed of steel wire with one end formed into a loop (Figure 197). It measured 240m in length with a diameter of 5mm.

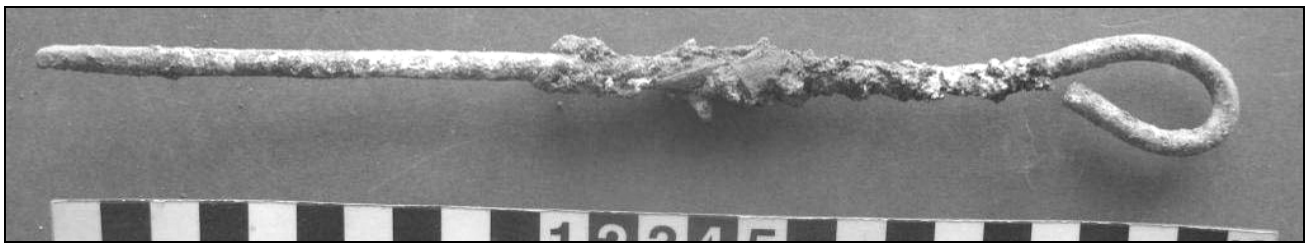


Figure 197. Stake from the demolition fill (Bag 112)

Bars

Six iron bars were found in the demolition fill. Four had square x-sections, and did not appear to be broken. They had no distinguishing features or decoration and may have been raw material for

forging in a smithy. The other two bars had circular hollow x-sections. One was open-ended and may have been a service pipe, measuring 17mm in diameter. The other had perforated ends and measured 540mm in length and 13mm in diameter.

Hooks

One 'S' hook was recovered from the demolition fill (Bag 112), measuring 55mm in length and 6mm in diameter. The hook had a circular x-section with one end curved and the other broken at the start of the curve. Another possible hook (Bag 9, from the rubble above the basalt foundation) was identified.

Tools

A crowbar was recovered from the demolition fill (Bag 112). It measured 450mm in length, with 9mm diameter. It was made of an iron rod with circular x-section and two working ends. One end curved gently, and the other was flattened with a straight edge. Cut divets were not visible on either end. This was an example of a crudely made tool, rather than from a manufacturer's template.

Attachments

Three different probable attachments were identified from the mixed debris/rubble layer (Bag 11). Two were fragments of curved rectangular sheet material, with circular nail perforations for attachment. These were likely to be from the same object, and may have been a brace of some sort. Similar to this in the main demolition layer was a sheet metal object tentatively interpreted as part of a barrel hoop (Bag 105). This was was a rectangular length of metal finished at one end and broken at the other. No perforations were evident in this example. It measured 140mm in length and 35mm in width. The thickness of the sheet metal was 5mm. It was likely that barrels would have been present in the Prison complex containing various goods.

At the top of the demolition layer was a circular object with possible perforation through the centre and threads visible on the exterior in one small area (Bag 101). It measured 22mm in diameter and 10mm in depth. The object was interpreted as a nut or attachment. Further identification was not possible.

Miscellaneous

Three objects were recovered that could not be identified. A machine cut and lathed copper alloy object of unknown function (Bag 11, Figure 198) was recovered from the mixed debris layer. It took the form of a half circle with a hole at the centre of the apex. There was a small foot at one end of the object that was a half circle in shape, with some fragments missing (likely to have occurred during production). The corresponding foot was missing, with an old break edge. It measured 52mm in length and 33 mm in width. The metal sheet measured 3mm in depth. There was no wear to indicate use and its condition was very good.

A rectangular iron metal plate fragment from the top of the demolition layer had straight sides (Bag 100). It measured 97mm in length, with one end complete and one end broken. There were no distinctive features visible in its current condition. Also in this layer was a flat steel object in two pieces with straight parallel cut sides and broken at both ends (Bag 101). This possible plate measured 65mm in length and 29mm in width and was 6mm thick and heavy; no other diagnostic features could be identified.

Figure 198. Unidentified object from mixed debris/upper rubble (Bag 11)

Discussion

Most of the objects attributed to tools and hardware were relatively small and undiagnostic. The lack of visible identifiable features that might aid interpretation and knowledge regarding manufacturer or production is the result of extensive corrosion and accumulated dirt from the burial environment. X-ray analysis might extract more information, but could not be justified for this project. It is possible that some of these types of tools and hardware derived from a local, in house forge, able to produce objects as needed to specific requirements. Some appeared crude and simple in nature. The presence of the bars of iron supports this suggestion.

Of interest is the collection of tools and bars in the main demolition layer (Bag 112). Given the high number of worked iron objects, including a crow bar, S hook, wire peg and sheet metal fragments including some of lead in one bag, they may have been dumped together and represent a specific activity.

Architectural or Building Elements

Forty-one fragments of sheet metal interpreted as being part of roofing or flashing were recovered. Some had an off white colour paint on one side, and some had small circular perforations representing attachment by wire pulled nails or tacks.

Nine other objects were considered to represent building elements of the Prison complex, including some compressed and heat affected wire mesh (chicken wire) from Bag 1, iron sheet metal off-cuts (Bag 112) and two possible portions of service or down pipe (Bags 5 and 138). There was a bracket for wall mounting, typical of one used to support a down pipe or drain (Bag 4), and part of a possible fence in Bag 9. Constructed of two lengths of wrought iron rod with circular x-section, they were twisted together at one end, and shaped to create an oval gap between the two rods at the other. The object appeared complete, with no obvious point of attachment to another piece of metal. It measured 500mm and is shown in Figure 199.

Figure 199. Possible part of fence, Bag 9

One object from the main demolition layer was tentatively interpreted as part of a hinge or latch from a door or window (Bag 143). This length of metal was shaped with a flattened and curved end tapering to a point. It measured 76mm in length, with a maximum width of 21mm.

Two objects from the top of the demolition layer (Bag 102) and in the main demolition layer (Bag 143) were identical and identified as possible spring loaded bolts or locks. The superstructures were copper alloy metal, with an iron or steel mechanism within the structure and were probably mounted to a wall, door or window. One object from Bag 143 (Figure 200) consisted of a rectangular cut metal plate, shaped to a point one end and a double point at the other. There was a rectangular gap at the back of the structure and evidence of circular perforations for mounting nails at the pointed ends. Two loops extended, either end, from one side of the cut metal plate. These held an iron rod with a round flat head, and a possible bolt or spring with threaded end, which remained in the loops. Approximately half way along the bolt/spring at right angles was a small circular attachment with a central groove around the circumference and possible rectangular hole at the toe: a possible handle or lever. The object could have been mounted due to the two pointed ends of the rectangular plate being stepped back slightly, allowing the central length of the plate to sit slightly proud. This would also allow a mechanism to move along the rectangular gap in the plate structure.

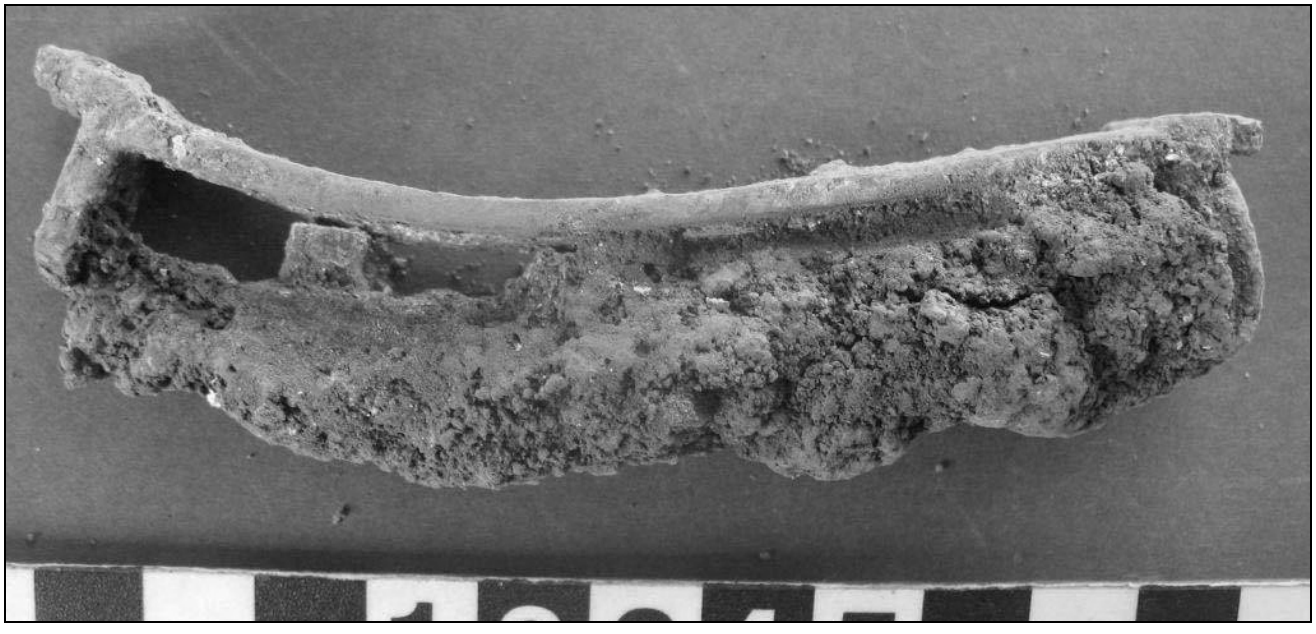


Figure 200. Unidentified object, Bag 11

CHAPTER 5: GENERATOR SHED EXCAVATION

INTRODUCTION

Work in front of the main entrance to the Prison took place at various stages of the project. Recording of the Tallyman's House, the Generator Shed, a couple of workshops, a toilet block and parking areas was undertaken during the initial works and is described in Chapter 3. This chapter describes the results of work subsequent to the buildings demolition and during excavation for the new buildings and walkway.

Archaeological Investigations

The investigations carried out took place in three main phases (Figure 201):

- monitoring of preliminary earthworks in the area including removal of the modern buildings;
- the demolition of the Generator Shed and removal of foundations; and
- exposure of the 'rail track' (Haulage Track) in front of the main gate.

Archaeological features consisted of the foundations of the structures that had been demolished and a few remnants of earlier structures. However, the majority of the area contained large quantities of fill used to flatten the area and provide retaining near the Prison wall. This fill contained concrete, stone debris and basalt blocks. As with other areas of the Prison, the base material was the dense gravel rock and there was no natural soil present.

Historical research had determined that the area in front (west) of the prison had been actively used during the 19th century and 20th century for workshops and other activities associated with the stone-working at the Prison. It was therefore hoped that evidence of this work would be uncovered. It was the collection of artefacts, and particularly the large number of drill bits recycled into the foundations of the Generator Shed, that provided that evidence and demonstrated the value of monitoring the demolition of buildings.

Monitoring of Preliminary Works

Monitoring of the preliminary clearance occurred at various stages as the Tallyman's Hut and the modern workshop and administrative buildings were removed. Basalt block paving (Figure 202) around the administrative buildings was recovered and set aside for recycling. It generally consisted of basalt, dressed on the top and sides but undressed on the base. Most blocks were rectangular but sizes varied considerably.

Other remnant foundations were found in the area, including a concrete foundation (Figure 203) extending towards the new Remand Prison building at the western side of the area. This looked identical to the foundations excavated by Mosen (1998) and identified by Best (1996) as part of the foundations of the old stone crusher's shed.

Demolition fill that had been shifted towards the eastern half of the area to create a flat area next to the main Prison wall was also visible in section (Figure 204). This had already been noted during the recording of the Tallyman's Hut and the Generator Shed. It contained no major artefacts and probably dated the second half of the 20th century.

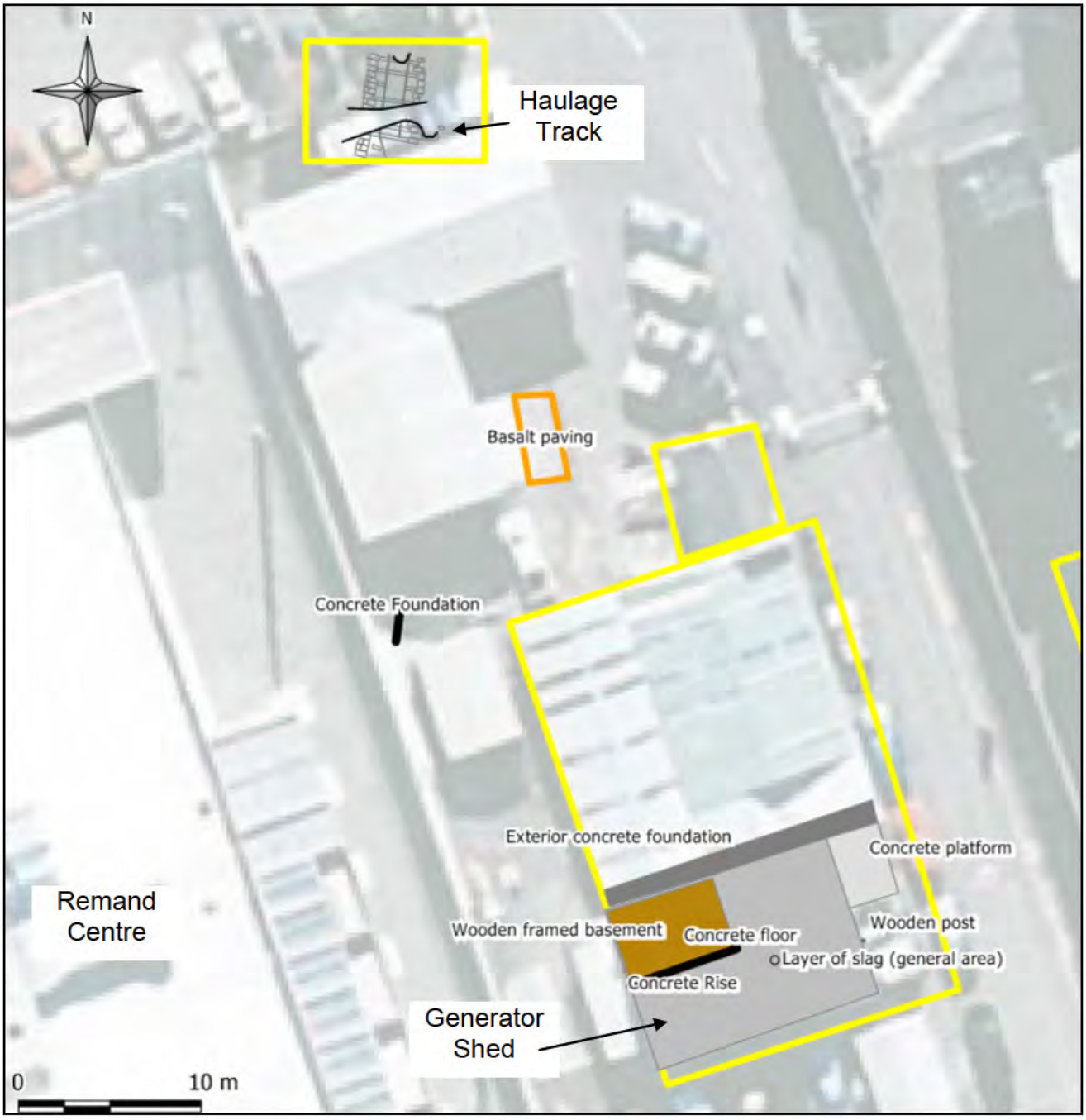


Figure 201. Plan showing main archaeological features uncovered near the Generator Shed

Figure 202. View of area north of Generator Shed showing removal of basalt paving

Figure 203. Old concrete wall foundation along western end of the project area

Figure 204. Section in front of Prison wall to the north of the Generator Shed

THE EXCAVATION

Generator Shed Foundations

Following removal of the upper portion of the building (see Chapter 3), leaving only the concrete floor, foundations and the pit within which the generator was housed, work on demolition of these features commenced. Removal of the upper layer of the concrete foundations revealed parts of 322 artefacts including broken metal tools, chains, horseshoes and rail track which had been laid out 10cm below the surface of the foundations, acting as steel reinforcing (Figure 206).

The metal objects were concentrated in the wall foundations, which meant that they predated the building of Generator Shed (no later than 1947) and were probably pre-WWII. Many of the larger items were laid out along the axis of the foundation wall but other material was simply dumped and concrete poured over the top (Figure 207).

The foundation of the Generator Shed itself was poured concrete with the south-west corner being at a lower level for the Lock Room. It was around 5-10cm thick with a raised lip along the southern edge of where the Lock Room wall would have been.

Along the eastern side of the Shed, there was a thick retaining wall (Figure 208, Figure 209). This appeared to have been made in at least two phases. The bottom 18cm was made up of scoria fill capped with a think concrete layer. This was probably the earlier floor for the attached lean-to structure built onto the Generator Shed and visible in early aerial photos. A further 28cm of soil and mixed fill was visible above this old floor with concrete laid on top of that at similar level to the asphalt road running along side the Prison Wall. This concrete floor was probably contemporary with the retaining wall built along the western Prison wall during the later half of the 20th century.

Below the concrete foundation at the eastern side of the Generator Shed, a large wooden post was uncovered that appeared to be a power pole (Figure 210). The hardwood post was embedded in coarse concrete containing large red stones. There was evidence of charring on the post. The post had maximum dimensions of 25cm (north-south) and 21.5cm (east-west). Around 97cm was exposed during excavation down to the concrete bed. A number of artefacts were recovered from around the post including glass, bone, ceramic (including an insulator), iron, lead and steel. The most unusual artefact from this area was a metal bell similar to that used in early telephone exchanges (see below, Figure 212).

In the south-west corner of the excavated area beneath the Generator Shed at a depth of 50cm was a 17cm layer of coal mixed with smithing slag (Figure 210). This slag included coal and vitrified ash and probably came from a nearby smithy. Beneath the coal and slag layer was an 8cm layer of stone fill. A 10cm layer containing brick and glass remains was immediately beneath the stone fill layer.

Figure 205. View of concrete foundations of Generator Shed looking east

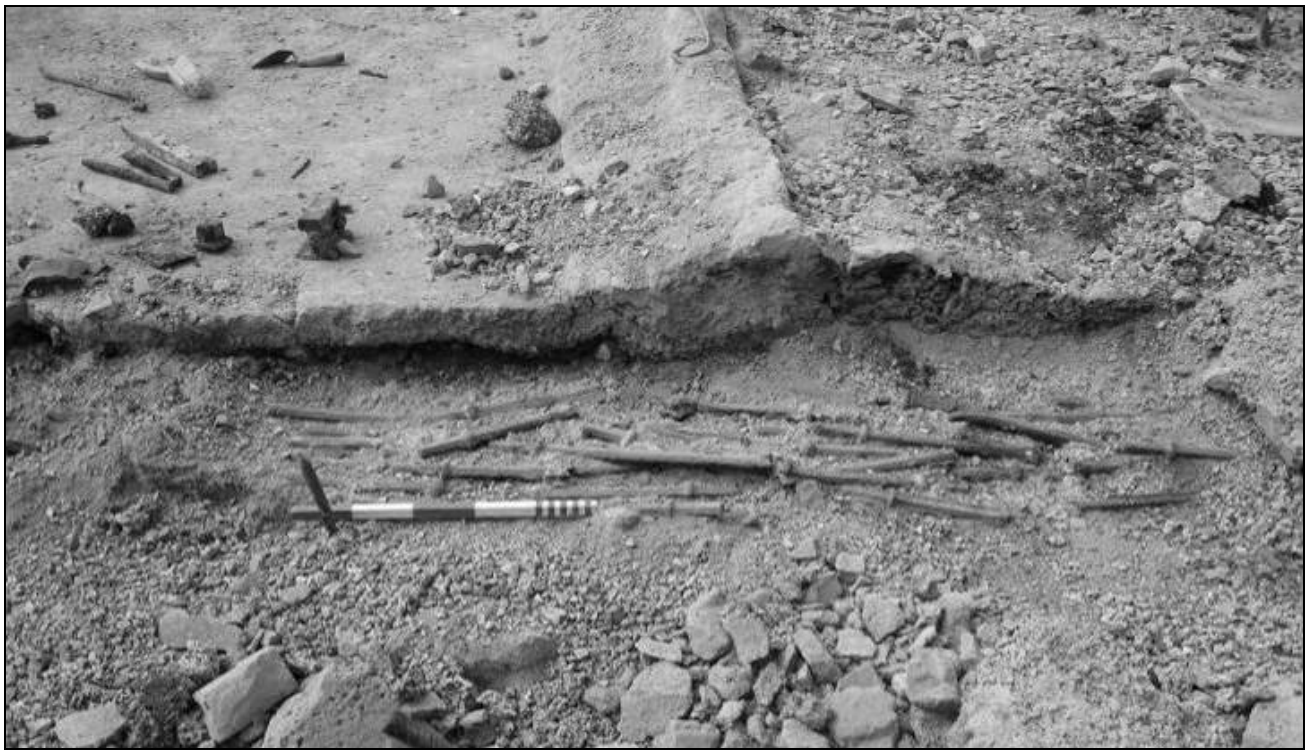


Figure 206. Drill bits laid out as steel reinforcing within the foundations of the building

Figure 207. Close-up of embedded tools in concrete

Figure 208. View of section of retaining wall along eastern side of Generator Shed

Figure 209. View of concrete foundations on east side of Generator Shed

Figure 210. Wooden post and material deposits beneath the Generator Shed

ARTEFACTS FROM UNDER THE GENERATOR SHED

Introduction

A small number of artefacts were recovered from beneath the foundations of the Generator Shed: two ceramic items and a single piece of slate from around the wooden transformer post, and six metal objects from a square feature beneath the Shed (Bags 7 and 15). There was also a small amount of glass and bone (discussed in Chapter 7).

Ceramics and Slate

Two ceramic items were recovered from the Generator Shed excavations from the area around the wooden post. The first item was identified as a portion of a ceramic transformer insulator. These ceramic insulators were used wherever bare wires were supported by a pole or pylon and at power line entry points to buildings. This particular insulator once sat atop the transformer pole. The second item was a portion of a brown transferware bread plate with a floral motif.

A single piece of slate was recovered from the area around the wooden transformer post. The slate had a rough finish indicating that it was probably part of a roofing tile rather than part of a writing kit.

Metal Objects

Six metal objects were recovered from the square feature beneath the Generator Shed. Two were iron, three were copper alloy and one was enamelled iron. All of them were excavated from near the base of the square feature. The three large objects were:

Bag 7

- An incomplete 'U' shaped metal object with no apparent attachment holes, masked by corrosion, was recovered measuring 9.5cm in length and 1.2cm in depth. It was identified as a shoe/boot heel plate. It would have been accidentally lost or discarded following breaking or reuse. Use wear patterns were not identifiable.
- An oval, blue enamelled lid fragment with the central handle missing (Figure 211). Rivet holes were visible on the vertical edge of the rim, and it may have belonged to a teapot. It measured 10.2cm in length, 9.6cm in width and 3.2cm in height (max). Typical of domestic ware in the late 19th century and early 20th century, and probably used by prison officials rather than for prisoners.

Bag 15

- This was probably a circular light or communications fitting. It had impressed decoration and a small central 'S' hook on one side for attachment (Figure 212). It had been cut and moulded from sheet metal with a scalloped edge and radiating impressed lines from the central hook. The scalloped edge was bent in sections, with one section broken off. The fitting measured 9.0cm in diameter (max), 6.2cm in diameter (min), and the height was 4.5cm.

The three metal other objects from beneath the Generator Shed comprised two fragments of copper alloy sheet metal with no distinguishing features, and one fragment of iron wire.

Figure 211. 'Teapot' lid, beneath Generator Shed (Bag 7)

Figure 212. Light or bell fitting, beneath Generator Shed (Bag 15)

ARTEFACTS FROM THE FOUNDATIONS

Introduction

A large number of drill bits and other stone working tools were recovered from the foundations of the Generator Shed. These reflected the presence of small scale industrial activity and the use of machinery on site, most likely associated with stone processing and working. Stone breaking and dressing were known to have been practised by prisoners at the site from as early as 1863.

Drill Bits (Bag 4)

Samuel Ingersoll invented the pneumatic drill in 1871 and Charles Brady King of Detroit invented the pneumatic hammer (a hammer which is driven by compressed air) in 1890, and patented it in 1894.[3] This suggests that most of the items recovered here probably dated from the 1870s onwards and probably a bit later. The machinery represented here directly related to the hard labour undertaken by the prisoners.

Thirty-two large drill bits along with 3 more inconclusive drill bit fragments were examined. Three of the drill bits had 6 pointed 'stars' at the working end, and the rest were 4-sided crosses. They were likely to have been forged and used in the breaking up of stone from the quarry.

Two distinct shaft diameters were identified in the drill bits, 2.4cm and 2.7cm:

- Five of the 32 definite drill bits had shaft diameters of 2.7cm, and measured 25.5cm from the working end nose to octagonal nut (Figure 213). These were the only drill bits to measure this and they all had a crossed '+' at the nose.
- The remaining 27 of the 32 drill bits had shaft diameters of 2.4cm (Figure 214). Nine drill bits measured 11cm in length but the remains of the metal shaft had shorn away above the nut without the working nose. Eleven drill bits measured c.9cm from the nut to the end without the working nose, but still retained the working nose. Of the remaining eight drill bits, seven showed a measurement range of 8.0-10cm in length from nut to the end without the working nose and retained the working nose. One other no longer had the working nose and measured 7.0cm in length.

The information showed that there were standard measurements for drill bits during this time and that there were some standard measurements used to mount the drill bits in the appropriate machine. From the drill bits recovered it can be assumed that:

1. For a shaft diameter of 2.7cm, the standard distance between nut and working nose was 25.5cm.
2. For a shaft diameter of 2.4cm, the measurement between the nut and the end opposite to the working nose was most critical. This ranged between 8 and 11cm, with the average being 9.0cm. Some drill bit shafts may have sheared away because they were incorrectly mounted into the stone working machinery.

Other Stone Working Tools

Other objects that may also have related to stone working activities, such as the dressing of stone for building work at the Prison and breaking up of the stone for road metal (both known activities at the Prison), included:

[3] http://inventors.about.com/od/pstartinventions/a/pneumatic.htm

- A probable lever, made from cast iron (Figure 215). It had a square, straight handle end, with parallel sides. The handle shaft had an elliptical profile with a circular hole along its centre that may have allowed a wire pulley or the like to be run through it. The sides had 'U' shaped profiles that could also have contained a pulley. Its weight and robust nature suggested it belonged to a large machine, and it may have acted as an on/off lever, or for 'driving' a machine in some way.
- 2 small lengths of wrought iron chain:
  - A chain comprising 5 rings (2 large and 3 smaller rings) that had been forged from circular iron rods by bending them into ovals and hammering them together under heat.
  - A chain comprising 6 small rings and 1 '8' ring with a bolt on the end. A wrought rod of iron had been used to form the bolt, which had a tapering end, with the point tip missing. Both were strong chains that could have been used for moving equipment or stone.
- 2 heavy hooks with mounting attachment:
  - A hook with a circular socket for an attachment/bar at right angles to the hook, and a hole at the tip of the hook for a small attachment. The profile of the hook and socket was circular and the width/diameter of the metal tapered towards the hook tip. It could have been positioned on a moveable component.
  - A hook which descended from a rectangular plate with two square mounting holes and was probably mounted in a fixed position. The hook was wrought iron and forged. The tip of the hook was broken and missing.
- 1 hatchet head (Figure 216). A triangular shaped head with partial remains of a socket. It had been forged, with little work or use wear evident on the blade. No handle remained.
- 2 partial sets of tongs reflected the possible presence of a nearby smithy:
  - The single side of a forged set of blacksmiths tongs. It had a flat pincer head and evidence of a hinge mechanism and handle. It was made of wrought iron and forged, with hammering evident on the surface. It was part of a set of flat jaw tongs and would have been used for holding plates and discs (Sims 2006:28).
  - The other was also the single side of a tong-like tool with a rivet hole for attachment to a matching tong. The recovered tong consisted of a single piece of forged wrought iron whose width increases with length (see Figure 217).
- There were a variety of different tool heads that could have been used in the breaking up and dressing of rock:
  - 9 forged pick heads for breaking up stone (all used). They could have been used by prisoners to make metalling, or to cut blocks in preparation for the Prison masonry from 1863 onwards.
  - 15 forged large bolts modified to a point or bevel edge (Figure 218), with evidence of hammering on the striking head. These would have been used to dress the cut pieces of stone, and could be called cold chisels. The relatively small size of these hand tools may account for the relatively high number found, due to accidental loss.
- 4 miscellaneous objects:
  - A corroded 2-piece nut which would have been tightened around its diameter to hold another fitting in place.
  - An object with a modified curved spoon-like end, possibly used for digging small holes.

- Two modified tools that could have been used to dress stone, and forged on site as required.

Other Objects

Four large horse shoes (Figure 219) that may reflect the use of a horse and dray to cart the road metal produced by the prisoners out of the Prison were recovered. They ranged in length from 17.5-19.0cm and all had 8 rectangular nail holes (4 on each side), turned over heels (caulkins, hammered in forge), a central groove, and an upturned flange of metal at the toe of the shoe for helping to keep the shoe in place. There were also some large structural nails, 3 octagonal nuts (similar to those associated with the drill bits) and some unidentifiable objects.

A brass metal tube was found (Bag 14) which had a circular x-section at one end, and a hexagonal x-section the other. It contained many small cables (with hexagonal x-sections) within. It probably related to electrical power cabling. The insulation cover (plastic) was visible around the protruding cables which had been roughly but deliberately shorn off. There were two perforations in the metal rod, one small circle and one small square. Next to the square a possible maker's/manufacturer's mark ?'U__U' was observed.

One enamelled cup with a handle was also recovered.

Figure 213. Large drill bits from Generator Shed foundations

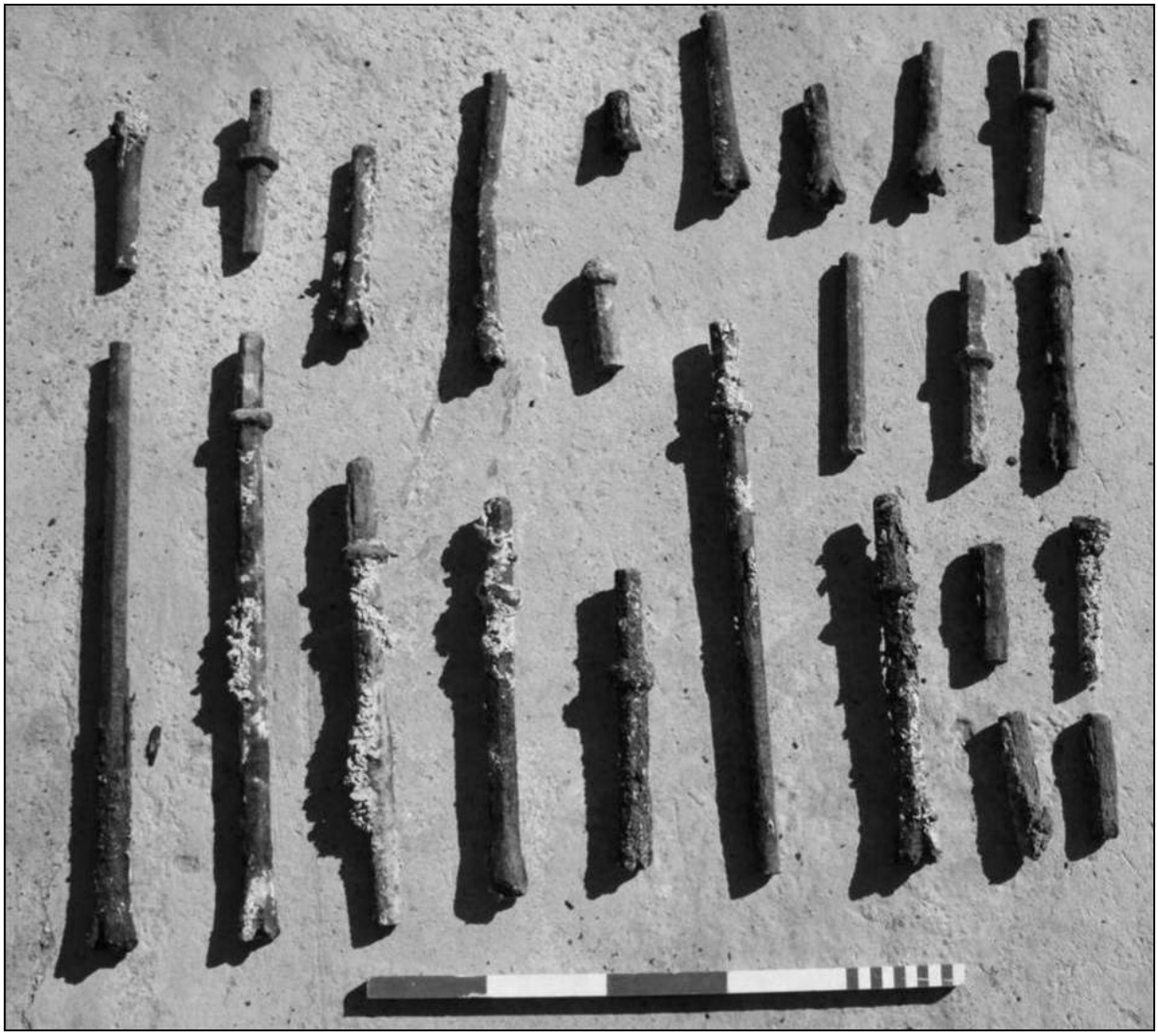


Figure 214. Range of drill bits from the Generator Shed foundations

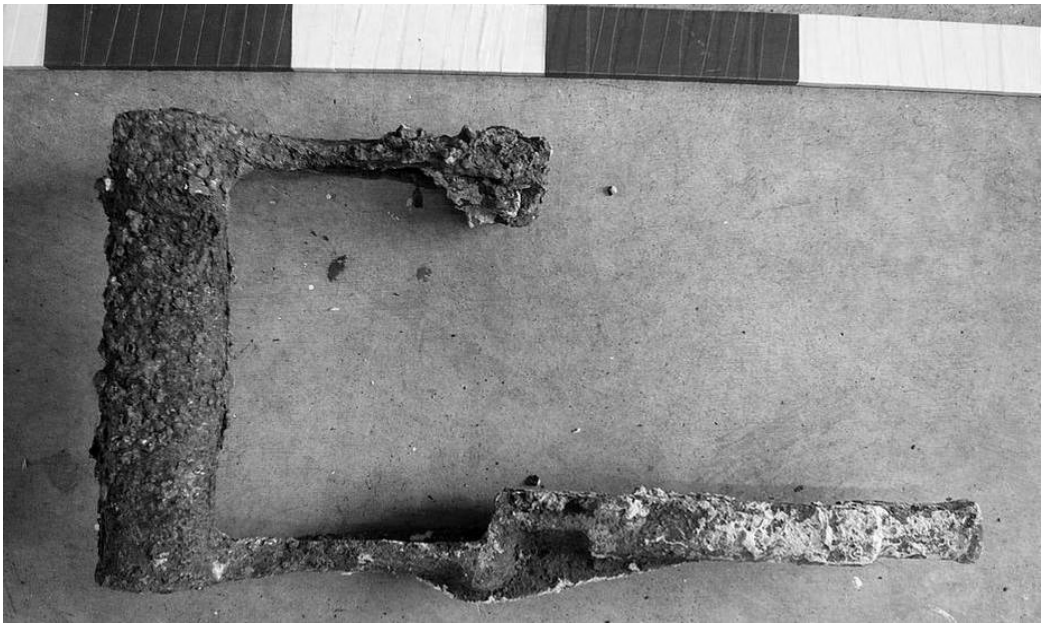


Figure 215. Lever from the Generator Shed foundations

Figure 216. Hatchet head from Generator Shed foundations

Figure 217. Blacksmith tong, Generator Shed foundations

Figure 218. Cold chisels used for stone dressing, from the Generator Shed foundations

Figure 219. Horseshoes, Generator Shed foundations

HAULAGE TRACK

A portion of a rail track surround by basalt paving was exposed and recorded (Figure 220–Figure 222). The rail track was laid on sleepers running in a roughly northerly direction from near the corner of the new Remand Prison towards the north-west corner of the main Prison wall. Only a few metres of the rail had been exposed, but this was sufficient for detailed recording. Typical pegs are shown in Figure 220. The larger one was related to the wooden components.

The track did once extend further around to the west. Mosen (1998) provides a sketch plan (Figure 223) made prior to the building of administration block and the Remand Prison. No detailed recording of the track was carried out, but it seems likely that this track is the one shown in SO 12301 (Figure 224), which is thought to date around 1905-1910 – although this is not certain. SO 12301 was overlaid on the modern aerial using the main wall for geo-referencing points and showed that while the main road and Prison wall features were surveyed in, the internal features of the Prison to the west of the main Prison walls were sketched in approximately and in fact were generally 10-30m east of where they appear on the plans.

Early photographs of the area show rails for hand carts in the general area (Figure 225), but the exposed rail track appears to be later than those shown. A photo dating from 1902 (Figure 226) shows the area in front of the Colonial Ammunition Company (south of the Prison), but although wheel marks are apparent, rail tracks are not at this point. Later aerials suggests that the track ran close to the buildings used for the stone breaking, but then continued to run north towards the main rail line (Figure 227). The track in 1940 appears to be running to the south of the stone-crushing buildings, disappearing as it swings around the buildings, before becoming apparent once more between the main Prison wall and the wall around the Superintendent's House (Figure 227). The large gate through the North Wall extension is visible here and appears to relate to providing access to the main rail track for this siding. By 1959, though, this appears to have gone (Figure 228) and a building appears between the Superintendent's House and Prison wall.

The excavated paved area was just to the east of the stone-crushing building in the 1940s and 1958 aerials, but it was not clearly identifiable in either photograph (Figure 227, Figure 228). The ground does seem to be different around there (it is over-exposed in the images), but paving is not apparent.

Additional archival research at Archives New Zealand in Wellington did uncover a plan (Figure 229) showing the rail siding. It is not clear whether this was a plan of what was already in place or a proposed plan. It is dated 1919 and shows the siding from the stone crusher running along the boundary of the Colonial Ammunition Company, which is on the earlier plan as well, extending across Normanby Road and through other properties to join up with the main rail line. In addition a second branch is shown near the stone-crusher running further east, but stopping in roughly the area where the Generator Shed was located (but not illustrated). No remnants of that branch line were identified and this suggests that the Generator Shed was built after this plan was created.

Overall the information suggests that the exposed track dates to after 1902, but was in place by 1910. It may have been modified. It was in active use in 1950 but had been demolished by 1958.

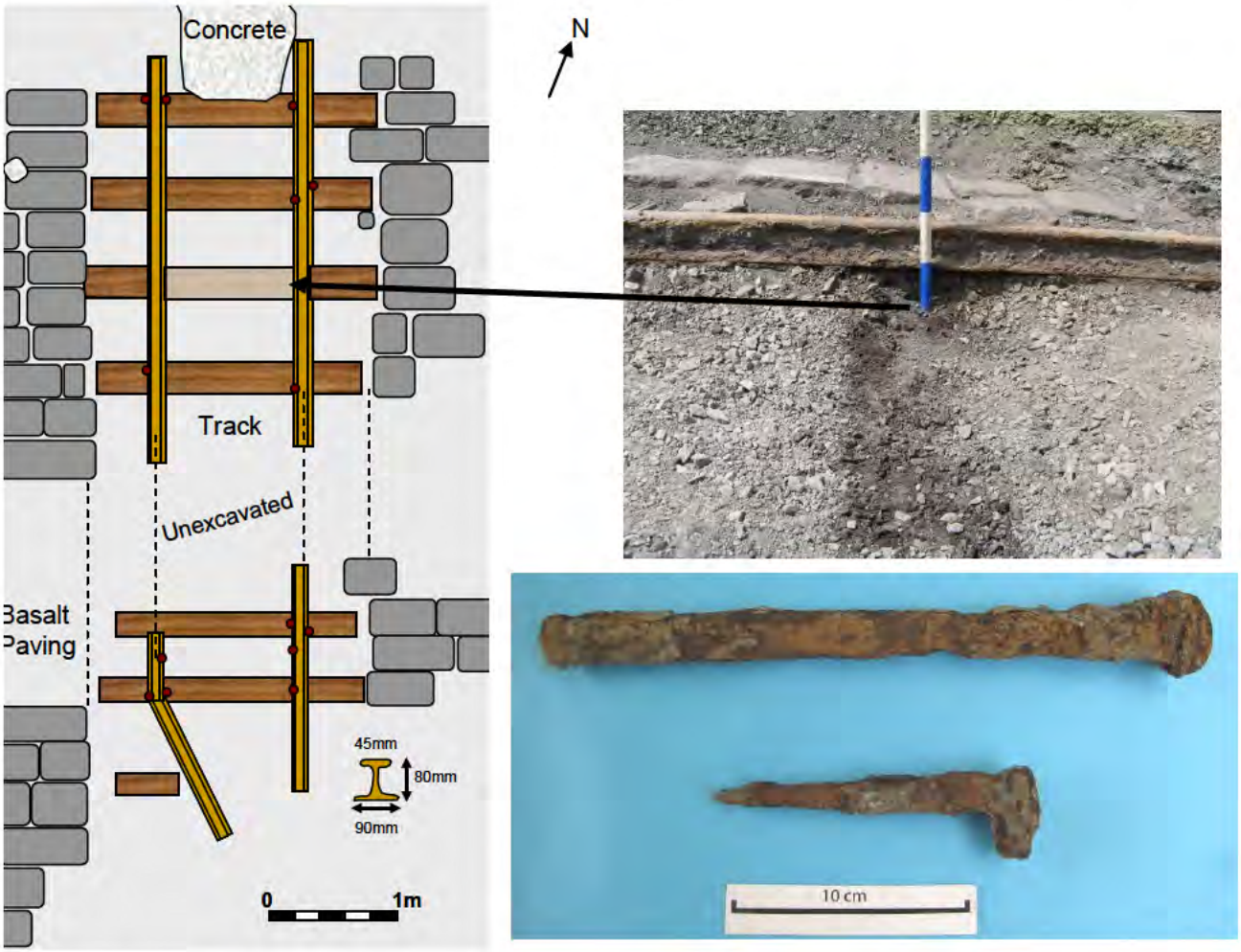


Figure 220. Plan of haulage rail track

Figure 221. Exposed rail track found in front of entrance to Prison

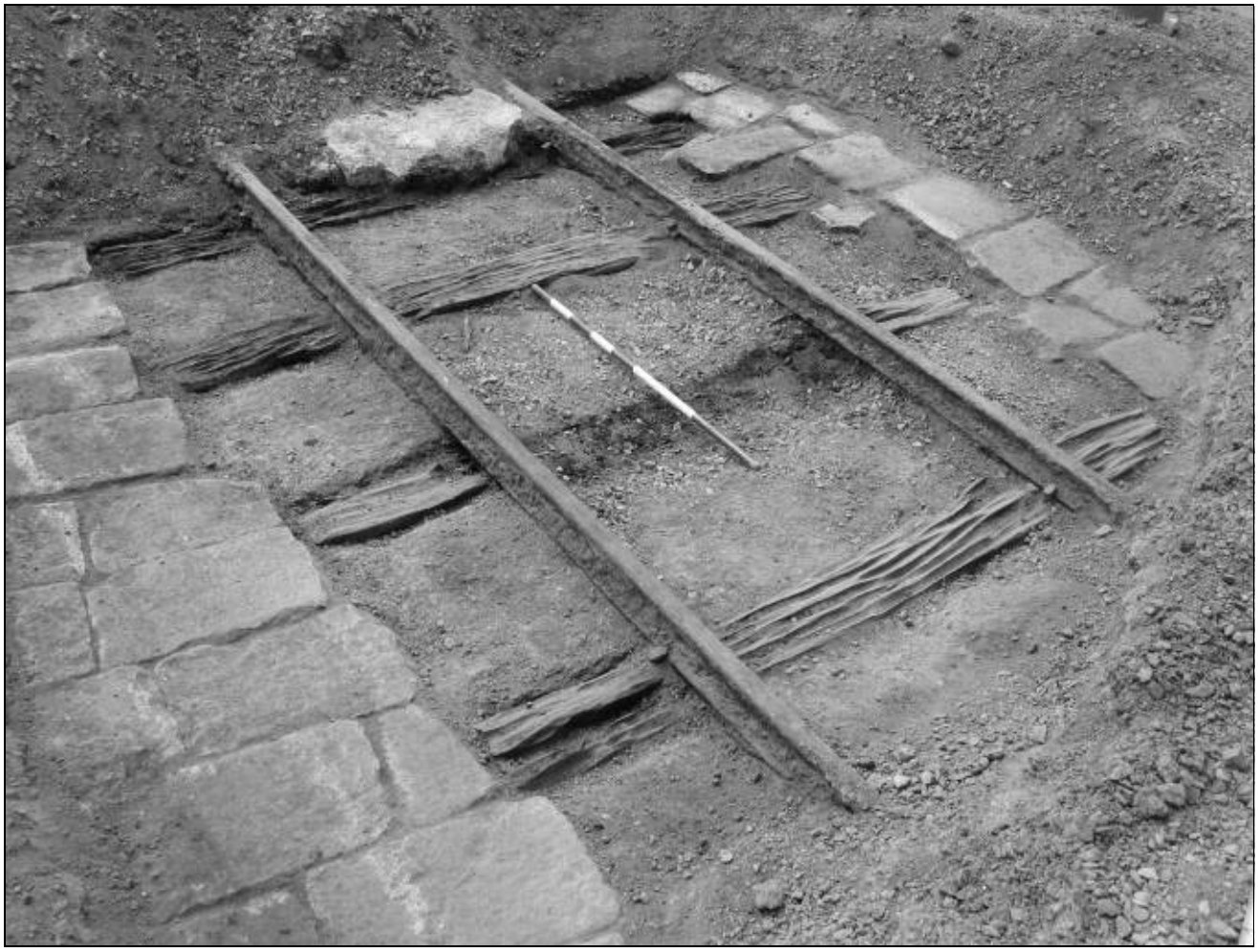


Figure 222. Exposed rail track found in front of entrance to Prison

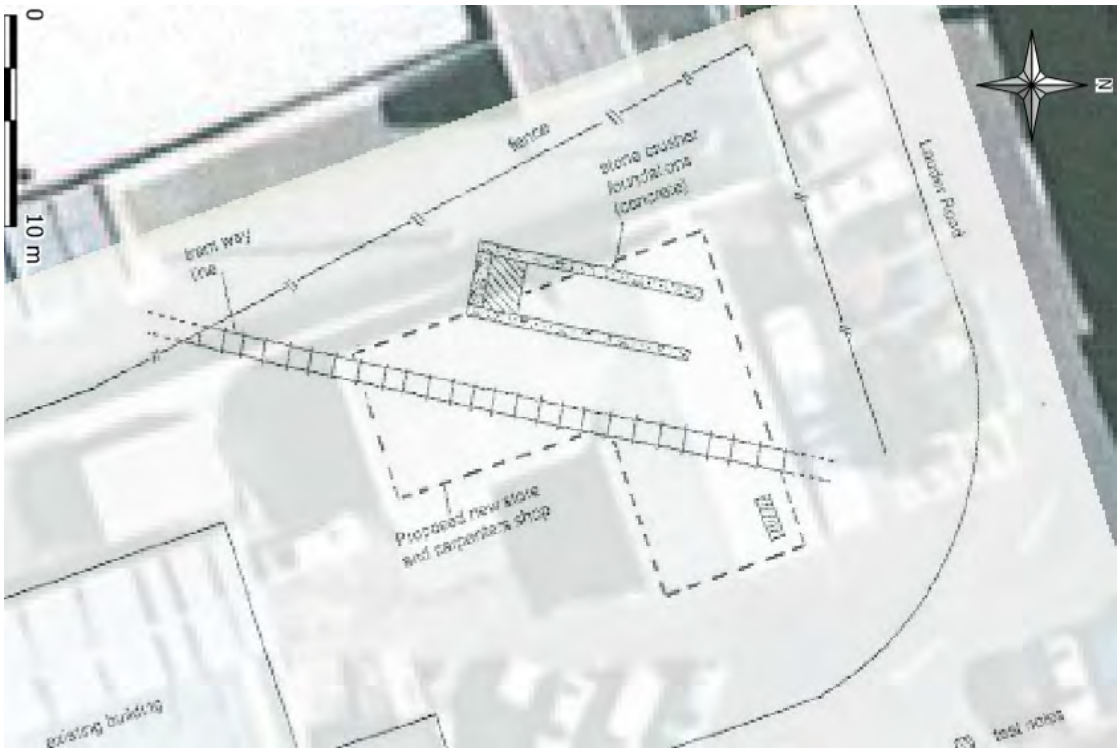


Figure 223. Overlay of excavation plan from Mosen (1998: Figure 2) on recent aerial

Figure 224. Overlay of SO 12301 over recent aerial showing location of rail track and stone crusher building

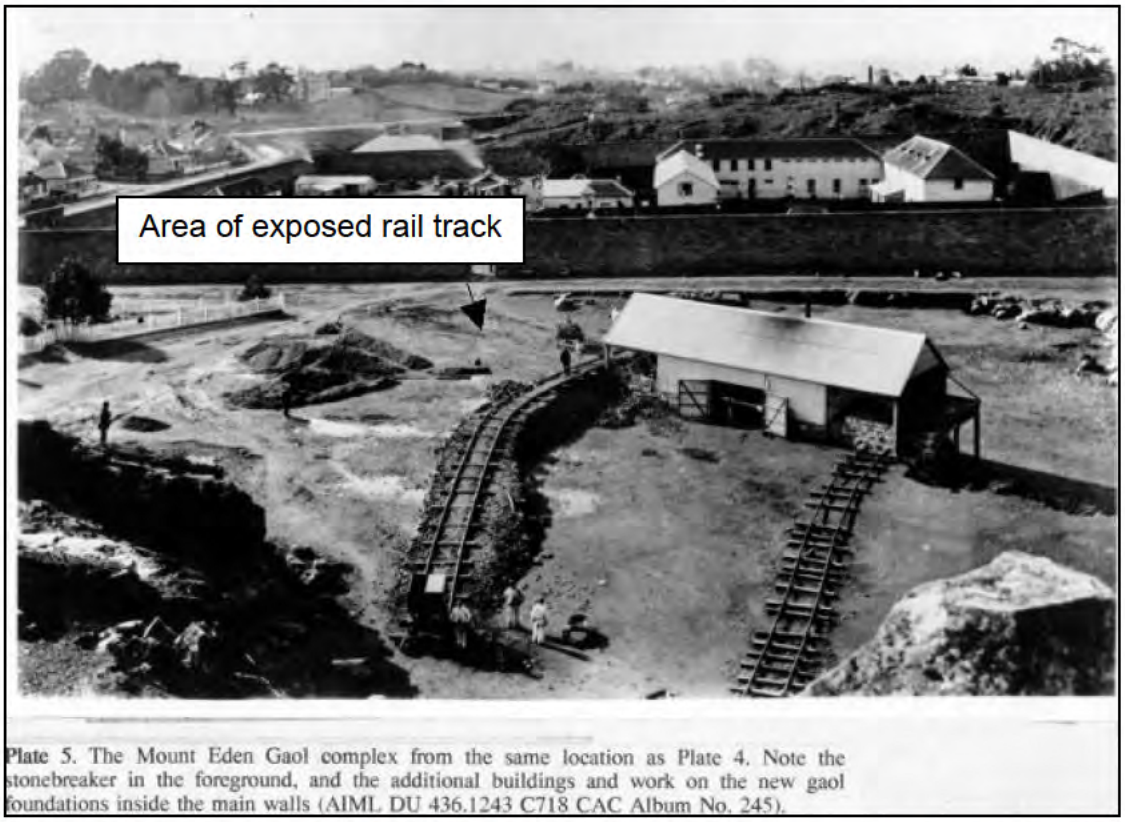


Plate 5. The Mount Eden Gaol complex from the same location as Plate 4. Note the stonebreaker in the foreground, and the additional buildings and work on the new gaol foundations inside the main walls (AIML DU 436.1243 C718 CAC Album No. 245).

Figure 225. Photograph of area in front of Prison wall 1880s-1890s? showing rail tracks (AIML)

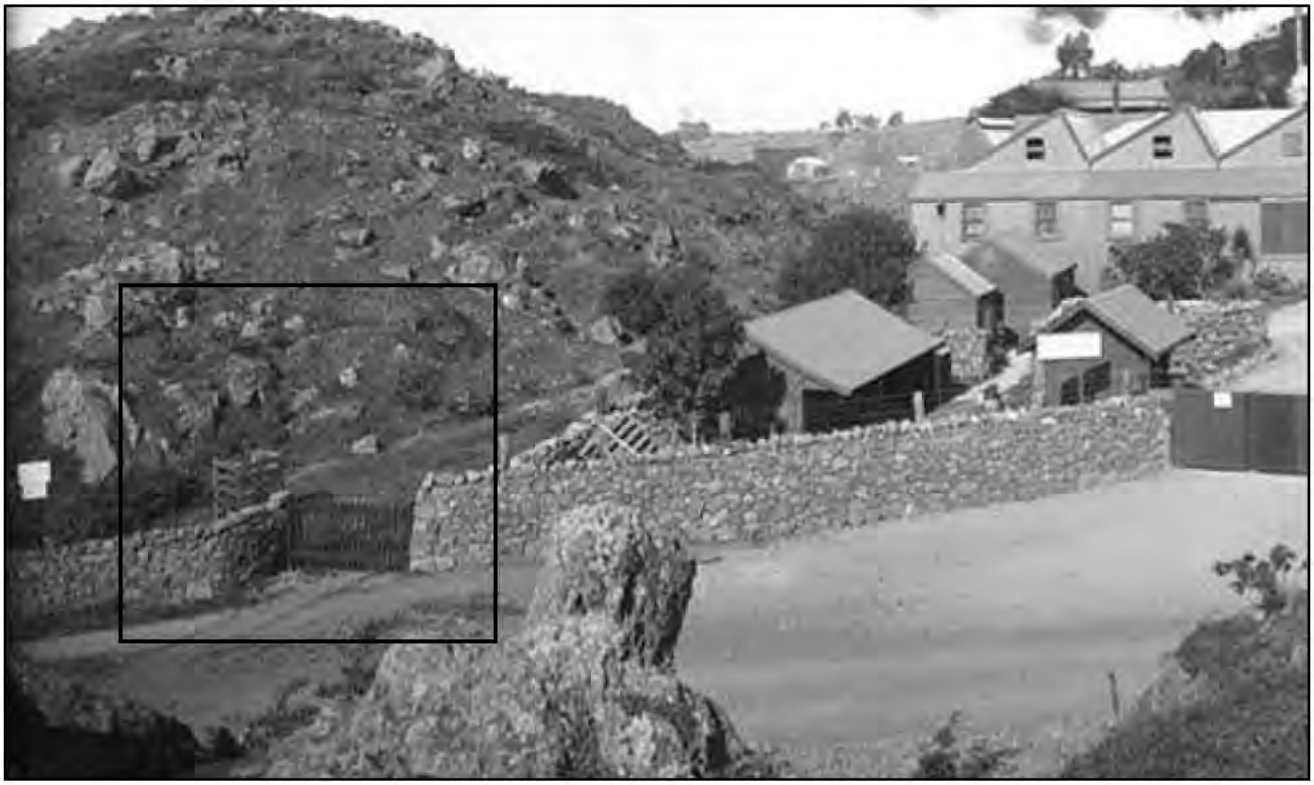


Figure 226. View of the northern end (looking east) of the Colonial Ammunition Company in 1902 showing the location of the western end of the area of the railway siding (APL W1056)

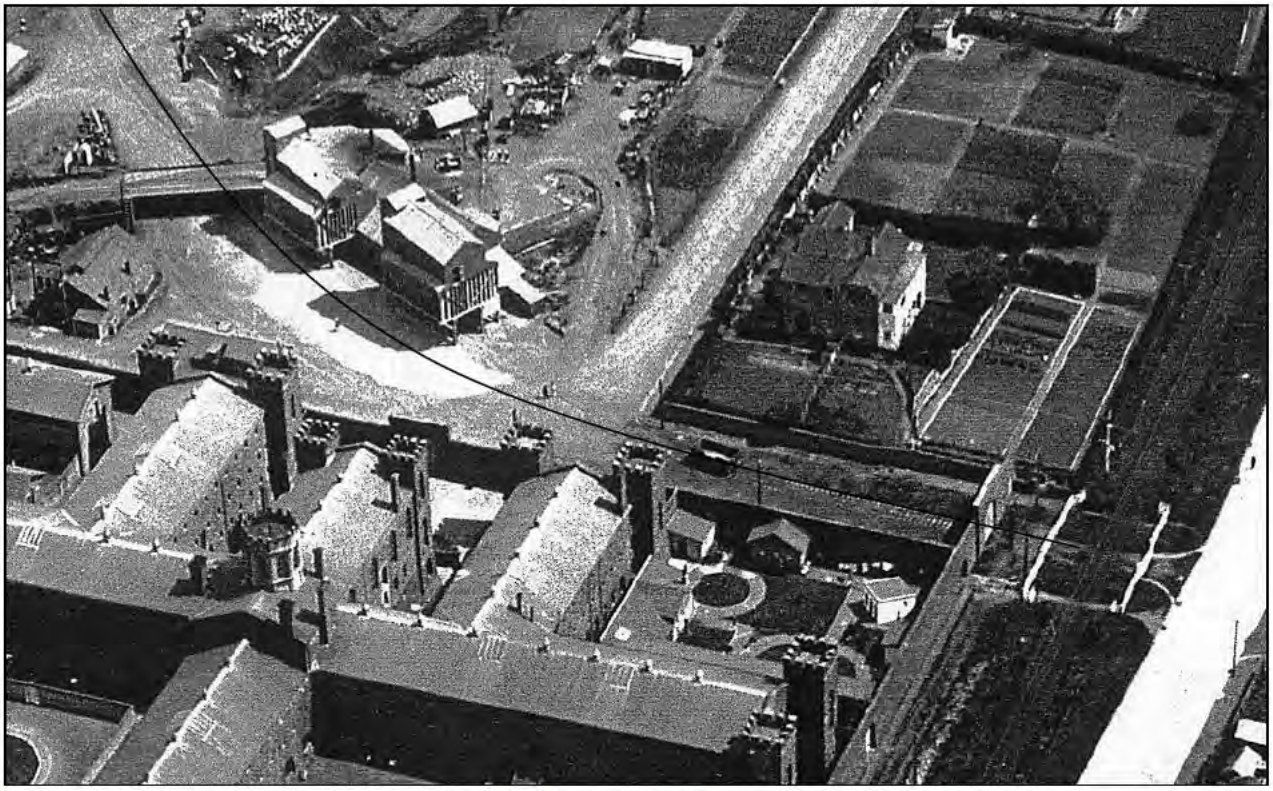


Figure 227. Close-up of 1940 oblique aerial showing rail track (APL NZ Map 6206)

Figure 228. Area of paving and exposed haulage track overlaid on 1959 aerial (Auckland Council Mapviewer)

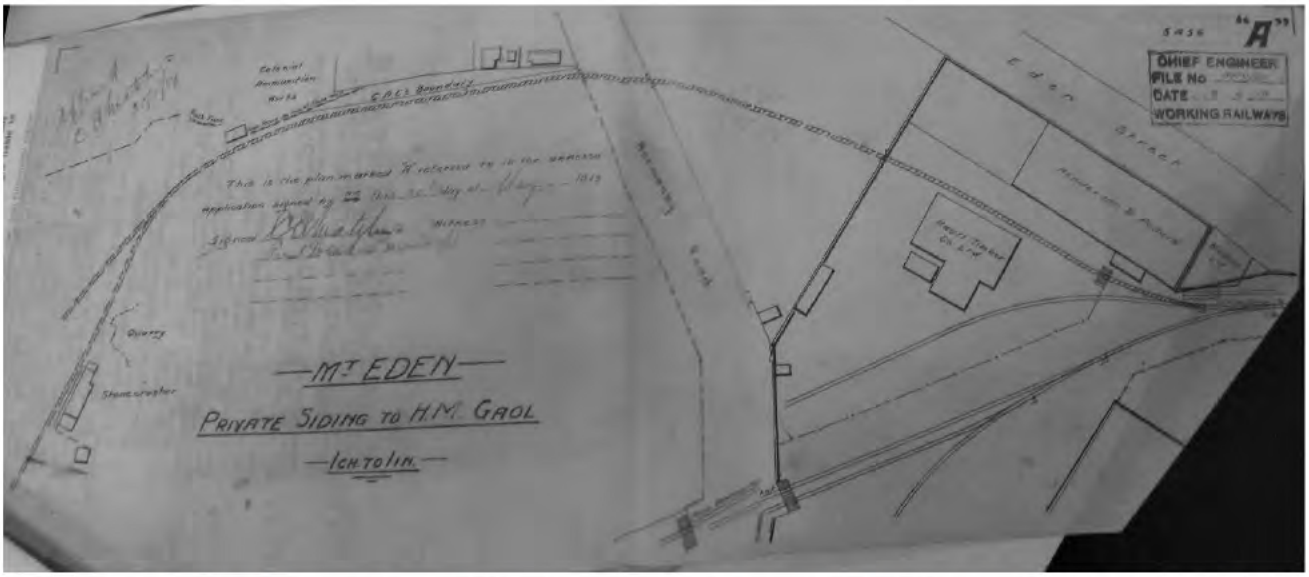


Figure 229. 'Private Siding to H.M. Gaol' showing track across Normanby Rd to Stone Crusher (Archives NZ, dated 1919)

CHAPTER 6: SOUTH-EAST YARD EXCAVATIONS

INTRODUCTION

Following the demolition of buildings and exercise yards previously occupying a portion of the South-East Yard, monitoring was undertaken during the removal of the foundations and debris to determine whether any archaeological remains pertaining to earlier phases of the Prison still existed. A number of features were encountered and are described below.

Numbering of features and mapping was undertaken as they were uncovered in different parts of the excavated area, and for this reason sequential features may be located in different areas. For the purposes of this report features are reported on in groups within specific areas (Figure 230):

- The Medical Unit;
- The North-West Quadrant; and
- The Exercise Yard.

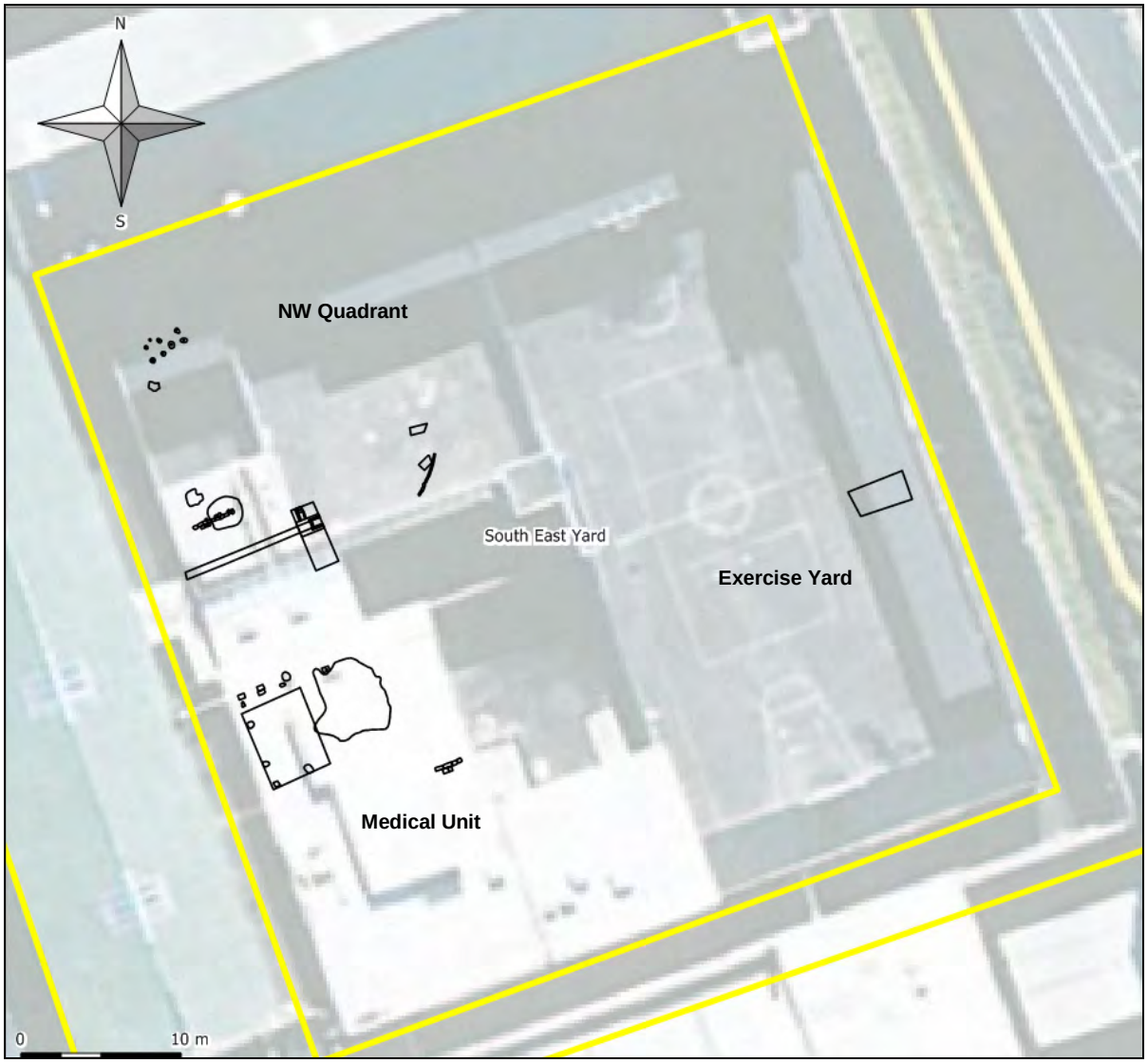


Figure 230. Features excavated in the South-East Yard

MEDICAL UNIT

Following the demolition of the Medical Unit, mechanical clearing uncovered a number of features (Figure 231), some pertaining to post-1900 structures and activities and some relating to the earlier Stockade period. In total 15 features were located and a large number of artefacts recovered.

Feature 1

Feature 1 (Figure 232) was located approximately mid-length along the eastern wall of the old Medical Unit. It consisted of two rows of shaped stone blocks, with four stones on the internal face and two on the external face remaining. The internal length of the feature was 1.75m with the maximum width 64cm. Artefacts recovered near this feature included clay pipes, bottle and window glass, bone, iron plate and nails. A modern sewerage pipe trench lay immediately against the interior face of the stone alignment.

Feature 3

Feature 3 (Figure 233, Figure 234) initially appeared as a row of bricks and stone, in an area believed to have been a garden used by prisoners some time after 1900. Feature 3 was applied to a wider area encompassing a number of features, with the majority believed to be related to the early solitary cells in the Stockade. The cells had been used to accommodate prisoners on punishment or those awaiting execution.

An area measuring 2m wide on an east-west axis was excavated by trowel, working from the northern end towards the south for approximately 2.10m (Figure 235). The excavation boundary on the eastern edge was dictated by a modern sewerage trench; however Feature 3 was later extended to the east. The feature was excavated to an average depth of 22cm at the northern end, with the upper layer consisting of brick rubble generally all within a 2cm depth. Between 2cm and 8cm depth lay a plaster layer similar to that seen in the Gymnasium excavations (demolition layer). This layer contained numerous artefacts including a complete salad oil bottle, black beer bottles and glass fragments including a pig snout gin, all recovered from just inside (to the south of) the brick alignment. The third layer was a 3cm layer of stone flakes with a small number of artefacts from the layer above.

The artefacts included marked bricks, one of which might have carried a maker's mark (now illegible) and one engraved with the number 15. This may have been a cell marking for the gaolers. A number of clothing items including buttons and boot heel plates were collected, and a number of pins probably related to prison tailoring activities were also recovered (see Chapter 7). Several of the metal buttons were typical pant/trouser buttons with examples embossed with wording on the outer edge such as 'BEST RING…'. Material collected from the top layer of fill included bone (including rat bone), buttons manufactured of wood, ceramic, metal and shell, glass, ceramics, clay pipe and a variety of hardware related to the construction of buildings, such as nails and slate.

The excavation of Feature 3 was extended to the west from the western edge and north from the north-east corner. Features 14 and 18 were located in this area, along with a number of artefacts including clay pipe, buttons, iron, scallop shell and bone, although fewer in number than earlier excavation in Feature 3. A test unit measuring 1m x 40cm was opened to the west of the old Medical Unit step; however, no archaeological remains were located. An extension to the south of the original Feature 3 area was made, resulting in final measurements for the feature of 6.5m (N-S) x 3.5-4.7m at widest (E-W). A number of additional stone blocks or stone block impressions were recorded.

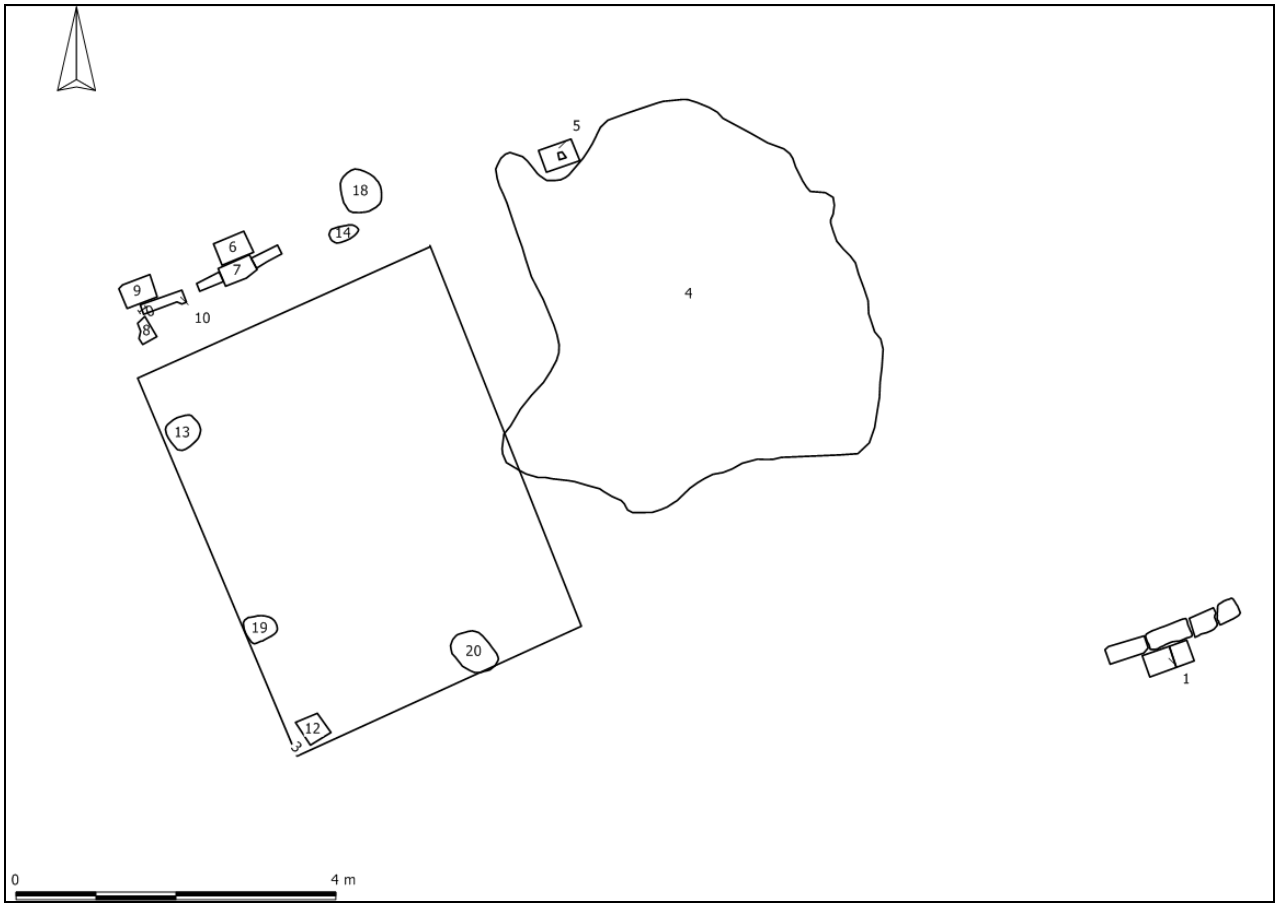


Figure 231. Features excavated in South-East Yard below Medical Unit

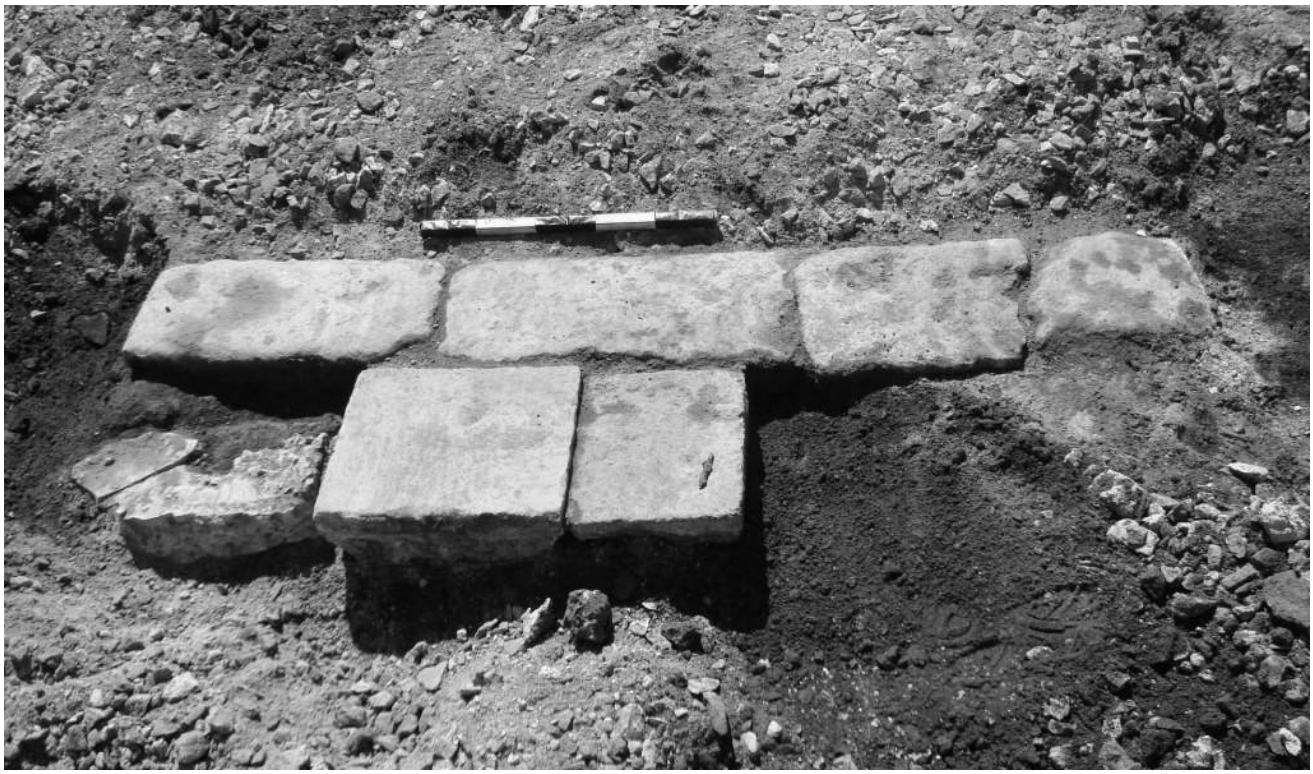


Figure 232. Stone alignment on the eastern side of the Medical Unit (Feature 1)

Figure 233. Feature 3 with features 6, 7, 8, 9 and 10 noted

Nearby Features (6, 7, 8, 9, 10, 12, 13, 14, 18, 19 and 20)

Items such as large stone blocks, stone block impressions and the brick alignment were each given individual feature numbers and the dimensions of each were recorded. Features 6 and 7 were two large stones sitting side by side but slightly offset on the northern margin of Feature 3. The Feature 6 stone measured 44cm x 30cm with a depth of 20cm. The Feature 7 stone was slightly smaller and measured 42cm x 26cm with a depth of 20cm. The two stones were initially noted associated with the brick alignment. Feature 8 was a smaller stone with maximum dimensions of 20cm (w) x 30cm (l). Feature 9 was a large stone block measuring 43cm x 30cm. Feature 10 was the brick alignment uncovered during the earliest phase of clearance. Feature 12 was a large stone located in the south-west corner of the southern extension to Feature 3 and measured 32cm x 30cm with a depth of 24cm. Feature 13 was a large stone block impression measuring 42cmx 40cm with a depth of 17cm. Feature 14 was tentatively labelled a stone block impression.

Feature 18, to the north-east of Feature 14, was a large stone block impression measuring 50cm x 50cm. Feature 19 was also a large stone block impression measuring 45cm x 36cm and was located between Features 12 and 13. Feature 20, the remaining feature within the wider Feature 3 area, was also a large stone block impression to the east of Feature 12 measuring 45cm x 55cm. Features 9, 6 and 18 were aligned on an east-west axis to the north of Feature 3. Features 9, 13, 19 and 12 lined up along a north-south axis and features 12 and 20 were aligned along a southern east-west axis. These stone blocks and stone block impressions were evidently the foundation stones of a building.

Feature 4

Feature 4 (Figure 236) was a large area adjoining Feature 3 (to the east) that was partially excavated. The feature initially appeared as an area containing a large number of loose rocks. It contained a

number of artefacts, predominantly building materials discarded from construction and cleanup, which are likely to be from the period of building the Prison wing. Early artefacts such as clay pipe stems and bowls may have been associated with the Stockade period and were deposited here during demolition and clean up of the old buildings.

An area was opened along the eastern boundary of Feature 4 running north to south. The upper soil matrix was hard-packed and mixed with stone fragments, probably used as a method of levelling the ground when the 'dump' was no longer required. Artefacts such as bricks, glass, nails, clay pipe bowls and stems and buttons were found lodged among the rocks. Five wheelbarrow wheels were located, with three interlocked by their axles running from the southern end of the trench to approximately midway (Figure 237). A pipe ran almost the entire length of the trench passing into the southern baulk beneath the southernmost wheel. A single button embossed 'VR' with a crown was one of two buttons from the excavations that provided evidence of military clothing (see Chapter 7). A large amount of clear corrugated roofing glass was present and a representative sample collected. Other remains collected included an enamelled mug (unmarked), small pots with traces of paint pigment, paint palettes, and samples of different coloured paint pigments, located at the southern end. The paint appeared to have been waste which had been dumped in the same location over time, with layers of different colours (mainly white and orange/red) present, although other colours including grey and blue were also recorded.

The stratigraphy at the southern end of the trench showed a mixture of construction wastage. The upper 8cm consisted of powdered and small flaked basalt and may have been associated with basalt powder and flakes used in mortar making. Layer 2 consisted of 11cm of wasted mixed mortar. Layer 3, the colour pigment layer, contained 5cm of material. Layer 4, although not excavated to depth, was a dark friable soil (Figure 238).

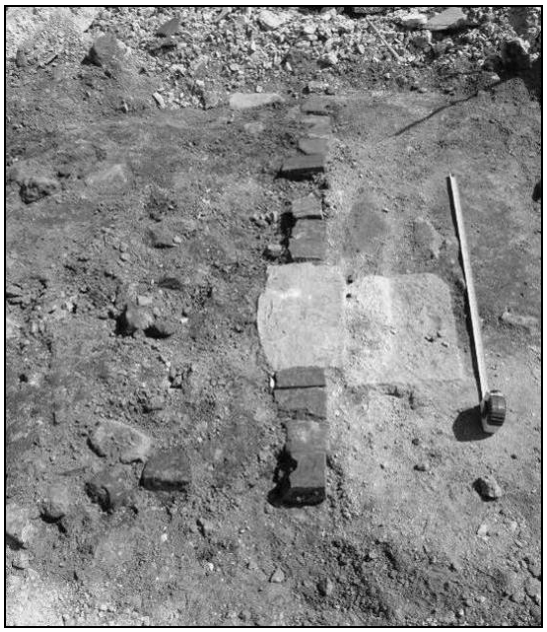


Figure 234. The brick alignment and large stones (renamed Features 10, 6 and 7)

Figure 235. The early excavation of Feature 3 prior to extensions

Figure 236. Feature 4, termed the 'rubbish dump', contained a wide variety of items from different periods

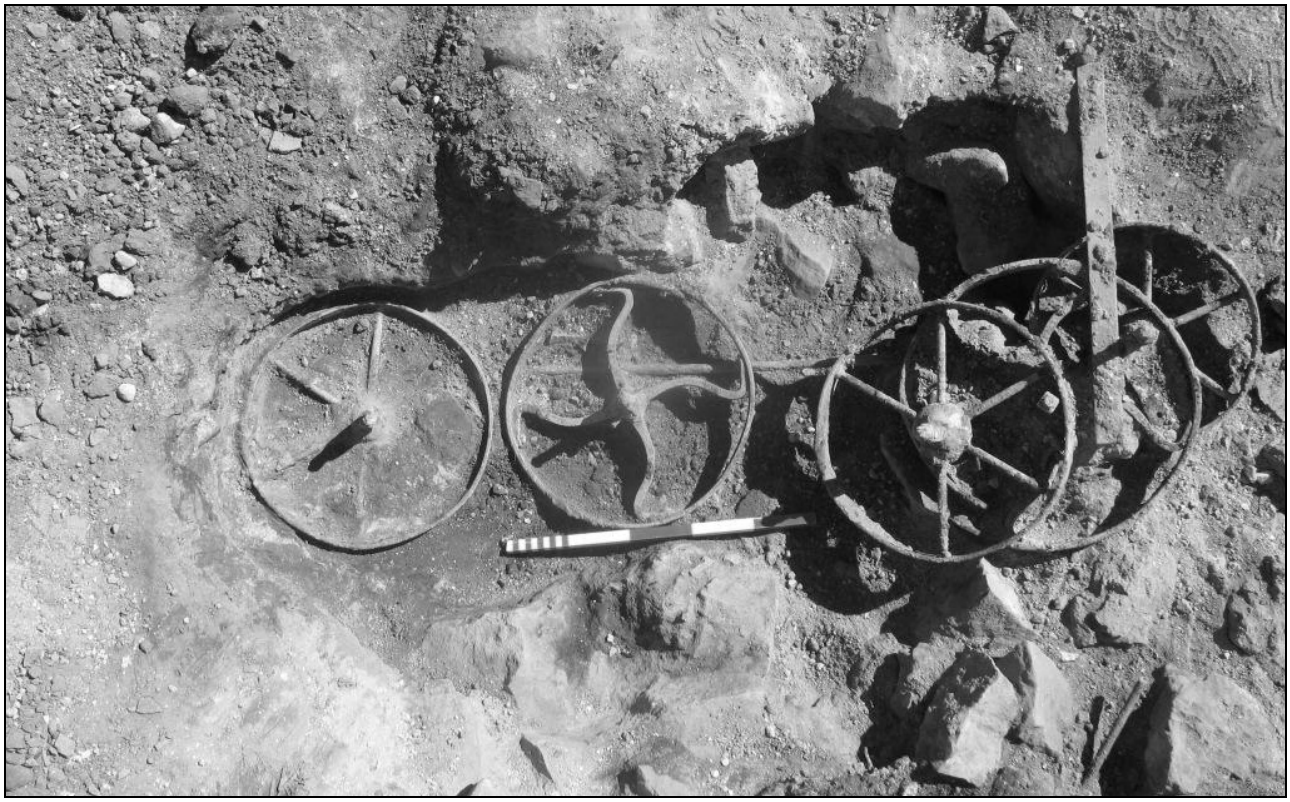


Figure 237. Wheelbarrow wheels from Feature 4

Figure 238. Stratigraphy at south end of Feature 4, with paint pigments

Feature 5

Feature 5 (Figure 239) was a large stone block measuring 46cm x 30cm. In the central area of the stone a partial depression of a rail track indicated that the stone had been used as a foundation for a rail placed upright. The position of the stone within the site and aerial photographs dating from the 1940s suggest this might have been related to a dividing wall between exercise yards.

Figure 239. Stone block with rail track impression

NORTH-WEST QUADRANT

Introduction

To the north of the old Medical Unit features, another set of features was excavated (Figure 240). Initially a large ceramic drain was identified running from the south Prison wing ENE. This was followed and led to a large deep rectangular, brick-lined sump pit. This drain had not been in use for some time. Features relating to other structures were found nearby. A number of large irregular stones and post-holes, probably relatively modern, were identified

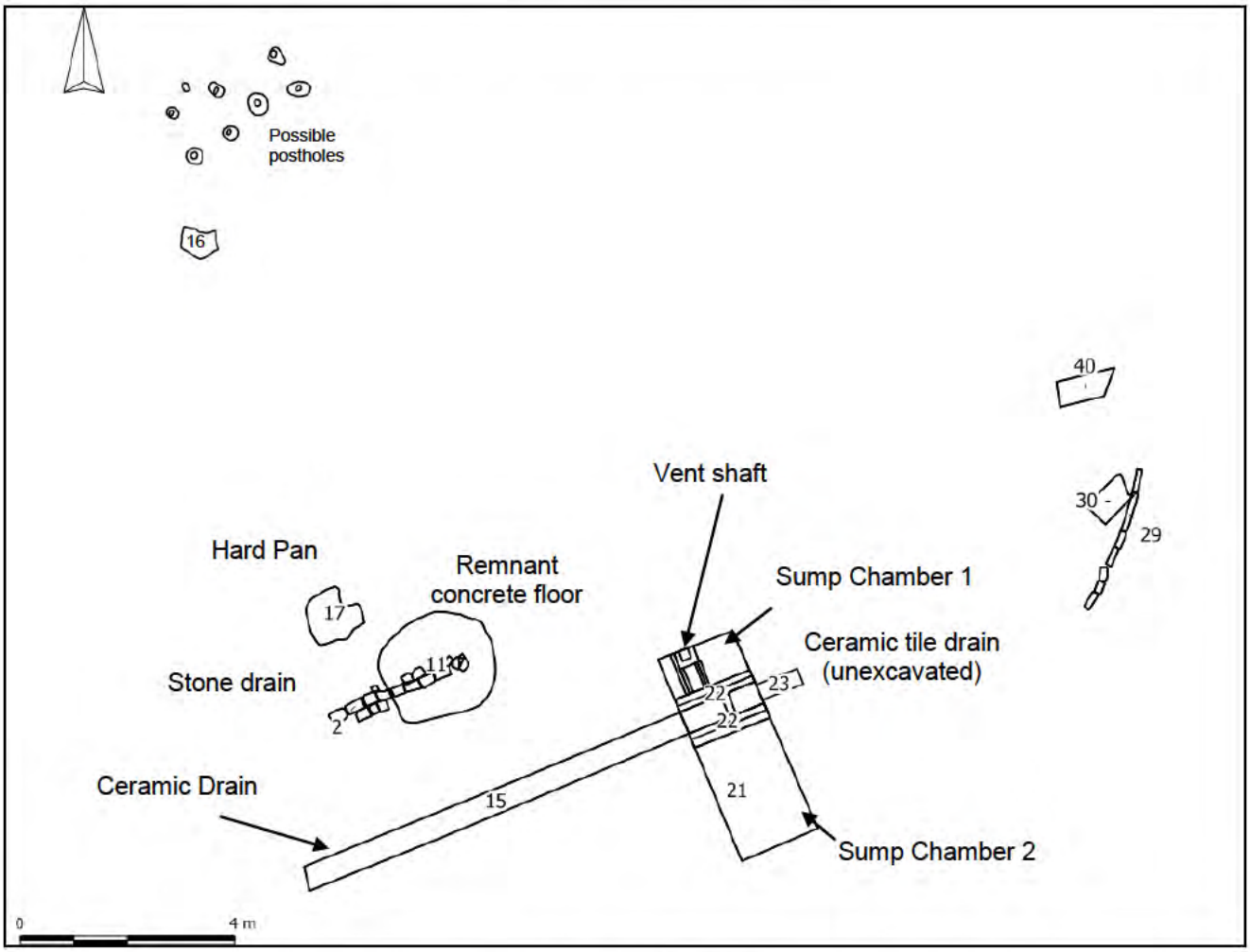


Figure 240. Plan view of features excavated in North-West Quadrant

Feature 15

Feature 15 was an almost intact orange coloured ceramic aerated tile drain (Figure 241) running eastward 7.70m from the edge of the excavated area on the western boundary emptying into Feature 21. The drain was first located on the western edge of the excavated area and was partially excavated (5.70m). The drain was constructed of tongue and groove aerated ceramic tiles. The cross-section of the drain was circular with 10 interlocking tiles required to form the drain. It had a maximum internal width of 11in. (28cm). Each tile measured approximately 12in. in length, was 5½in. wide on the top (exterior face) and 3½in. on the bottom (interior face) (30.5 x 14 x 8.9cm). There were two aeration

holes running the length of the tiles. The maximum external radius for the upper half of the drain was 14in. (35.6cm), while the lower half was wider at 18in. (45.7cm). Several modern (post-1900) artefacts were recovered from around the drain including a toothpaste tube, a scrabble piece, ceramic, glass and a spoon.

The eastern end of the drain (Figure 242), which emptied into Feature 21, was cleared, measured and photographed. At this end the drain was not circular, the upper third having been altered so that the top was flat. The internal diameter of the drain at its widest point was 10in. (25.4cm). The top of the drain was level with the top layer of stone blocks from Feature 21. The drain had been filled in with soil and contained four distinct layers of sediment including sewerage. Layer 1 consisted of 7cm of brown soil; Layer 2 was 6cm of grey soil probably containing a substantial amount of sewerage waste; Layer 3 was a 5cm thick layer of coarse sewerage; and Layer 4 was a 5cm thick layer of fine sewerage.

Figure 241. View of the tile drain from the west before it was fully excavated

Figure 242. Feature 15 tile drain emptying into Feature 21/Feature 22

Feature 21

Excavations were nearing completion when a final digger scrape beginning approximately 9m to the east of the Prison block moving eastward unearthed a line of rectangular stone blocks. The wall was followed for some distance to the south, when it was discovered that it veered in a 90 degree angle towards the west. The same was found at the northern end. When all four corners of the feature were uncovered, a small test pit dug in the interior showed it had some depth. No plans of the Prison had placed a structure in this location. Various theories as to its function were put forward, including a store room and a burial vault (one had been known to exist on the site). To determine the use of the structure it was decided to excavate it in its entirety. The structure proved to be divided into three sections, the larger stone structure being bisected by an inserted brick feature (Feature 22) into which Feature 15 emptied. The northern portion of Feature 21 was labelled Pit 1 and the southern portion Pit 2. Excavation revealed the structure to be a septic tank system in its most basic form, though later modified (Figure 243).

Clearing the overburden, it was clear that the entire structure had been backfilled with large rocks, some of which were too large to lift. Following removal of the fill a single large rectangular stone measuring 44.4cm (l) x 22.8cm (w) x 10.7cm (d) originally from within the wall of the structure, was noted at the base of one of the pits. The position of the stone suggested that the majority of the structure had ceased to be utilised prior to being filled in. The structure measured 4.09m on a north-south axis by 1.47m on the east-west axis. The maximum depth was 1.38m. There were six courses of mortared blocks well-dressed on the internal face. Measurements were taken from two rectangular blocks:

- 40.5cm (l) x 22.8cm (h) x 24.1cm (d); and
- 61cm (l) x 30.5cm (h) x 22.8cm (d).

A third stone block located on the north-west corner of the structure was semicircular as opposed to rectangular. The measurements for this stone were 40cm (l) x 24.1cm (h) x 30.5cm (d). The upper five courses of stone were flush, with the sixth course stepped in 2.5cm on the northern and southern ends only. Artefacts recovered during the excavation of this feature included glass, shell, iron, slate, clay pipe and a sock, and were predominantly recovered from the south-east corner. It was believed

that the actual level of the structure may have been higher as digger scraping to the east uncovered similar stones out of context which may have sat above those still in situ.

Further research highlighted a notation by a committee appointed to consider remarks made by the Visiting Justices regarding the state of the Prison. In the committee's report the drainage and sanitation of the Prison was described as inadequate and it was stated that 'Immediate steps ought to be taken to remove, either by water or the dry closet system, all accumulation of filth, the whole of which should be daily conveyed to where it should be deodorised, and finally sold' (*Daily Southern Cross*, 31/1/1867). Reports of an attempted escape were printed in the *Daily Southern Cross* (27/4/1867:5) and stated that the prisoner was detected 'behind the water closet' at the rear of the prison. In 1877 Mahoney (*AJHR* Session I, H30:4), discussing the sewerage system, noted that 'it is, therefore, necessary that the earth-system at present in use be continued, but in a more efficient manner; for instance two or three pits might be formed in suitable places, the sides and ends built up with stone or brickwork, and the bottom covered with 6 or 9 inches of earth.' It is possible that Feature 21 was the 'earth-system at present in use' that Feature 22 was the result of improvements undertaken as suggested by Mahoney.

Using the description of the scene of the attempted escape and comparing it to a photograph dated c.1900, it was apparent that the privy mentioned in the article was in the same position as that seen in the photograph. Comparing the location of Feature 21 with the photograph suggested that the privy sat above the south-west corner of the feature. This would explain the high number of undergarment buttons and a regimental button found at the base of this corner; the privy would have been used by prisoners during work hours and by guards.

Feature 22

Within Feature 21 was a brick structure (Figure 243) consisting of two walls running parallel 56cm apart. These walls spanned the breadth of the structure. The walls were nine courses deep with the bottom of the base layer 78.7cm below the top of the stone blocks. The upper layer of surviving brick was oriented north-south in a single course, while lower layers had two courses of brick.

The bricks were resting on stone rubble which had been placed within the structure to provide a building platform for the brick structure. At a distance of 56cm from the eastern wall a large rectangular stone 56cm in length was placed on a north-south axis between the two brick walls. The stone was 30.5cm (h) x 12.7cm (w) and the top of the stone was 20.3cm below the top of the Feature 21 wall. This stone block, which effectively divided the brick structure into two chambers, did not reach to the base of the chambers, but left an opening of 28cm between the base of the block and the base of the chambers.

The Feature 15 drain emptied into the first chamber (Chamber 1) on the western side of the structure. A second drain, Feature 23, constructed using the same method as the Feature 15 drain, led away from Chamber 2 in an easterly direction (Figure 244). Artefacts recovered from Feature 22 included clay pipe, a button, glass, and bone, including a human tooth.

Associated with this feature was a vent shaft situated to the north of Chamber 1 of Feature 22. The shaft led north from the northern wall of the brick structure, venting just inside the northern stone wall of Feature 21. The opening of the vent shaft was 20.3cm x 16.5cm. The vent shaft sat on stone rubble. There were six layers of brickwork associated with the vent. The lower two layers were oriented north-south while the upper four layers were oriented east-west (Figure 243).

Feature 23

This drain was constructed in a circular cross-section using 10 aerated tongue and groove bricks (Figure 244). The internal diameter of the drain at the midpoint measured 28cm. The exterior of the

top brick of the drain lay 25.4cm below the top of the stone wall, with the base of the bottom brick lying 10.2cm above the floor of Chamber 2. The Feature 23 drain was set 28cm below that of the Feature 15 drain. No sediment sample was collected from within the drain as it had not been fully in-filled and a number of young decaying rats had contaminated the surrounding soil. Feature 23 was later recorded several metres to the east.

Phases of Use

The Feature 15 drain, Feature 21 septic tank and Feature 23 drain were contemporary (Figure 245). They probably date to the construction of the south wing of the Prison as the Feature 15 drain led from that wing to the tank and no other drain flowed into the tank. The stonework above the drains did not appear to have been altered at any stage. The Feature 22 brick modification was probably required to improve the functioning of the septic tank. The Feature 21 tank was to all intents and purposes a sediment holding tank where solid waste settled and liquid flowed through the drains. The tank would have been cleared of sediment at regular intervals. The later modification may have been required if the tank was not operating as it should, or perhaps as a result of new standards relating to sanitary conditions and the handling of human waste.

Figure 243. Feature 21, the stone septic tank, and Feature 22, the brick modifications (note vent in foreground)

Figure 244. Tile drain leading east from Chamber 2, Feature 22

Figure 245. Showing the relationship between Features 15, 21, 22 and 23

Feature 29

This was a garden border feature (Figure 246) and was 5cm wide and 2.7m long. It did not directly relate to any recorded use of the yard. Further investigation did not reveal any other related structures.

Feature 40

Feature 40 was a circular brick drain running in an east-west alignment located to the north of the Feature 23 tile drain (Figure 247). The bricks were oriented east-west and 16 courses were used to create the desired shape. The internal diameter of the drain was approximately 30cm.

Feature 2

Feature 2 was a stone drain with a total length of 2.75m remaining (Figure 248). The drain had a maximum width of 65cm and consisted of three rows of stones with the central rows of stones at the lowest depth; the outer rows being placed on a slant to facilitate drainage. The drain was consistent with that found during excavations in the South-West Courtyard and similar to that seen around the chapel in a photograph dated c.1900 (Figure 168). The remaining 2.75m length of drain provided only an indication of the orientation, but not whether the drain veered in one direction or another. It varied in width between one and three stones. The exterior stones on each side were slanted downwards, facilitating drainage. The central stones were laid flat. Yellow clay was packed either side of the drain and the outer stones were pressed into the clay. The clay would have been brought in specifically for the purpose of packing and waterproofing the drainage system.

At a distance of 1.19m from the western edge of the feature, the drain passed beneath a thin concrete floor (Feature 11). A small number of artefacts including bone, shell, wire, ceramic and glass were recovered from within and around the drain.

Feature 11

Feature 11 was a thin layer of concrete flooring overlying Feature 2 (Figure 248, Figure 249). The concrete was first noted during machine scraping and hand excavated by trowel to reveal its entirety. The concrete was extremely brittle and did not contain large stones, being more like plaster-like. The width of the concrete (north-south) was 1.20m with the length (east-west) 1.60m. The flooring proved to be thicker (approximately 2cm) at the western edge than at the eastern edge where the concrete was less than 1cm thick. Beneath the concrete flooring was a fill consisting of yellowish soil filling in the earlier drainage system.

Features 16 and 17

Feature 16 was a large stone measuring 65cm x 50cm and was irregularly shaped. It was not consistent with the large stones found in the wider Feature 3 area and was not considered to be a foundation stone for a building. North of Feature 16 were some post holes, probably modern (Figure 250).

Feature 17 was an area of hardpan to the north of Feature 2 measuring 1.4m x 1m. There was no evidence suggesting that the feature was the result of human modification.

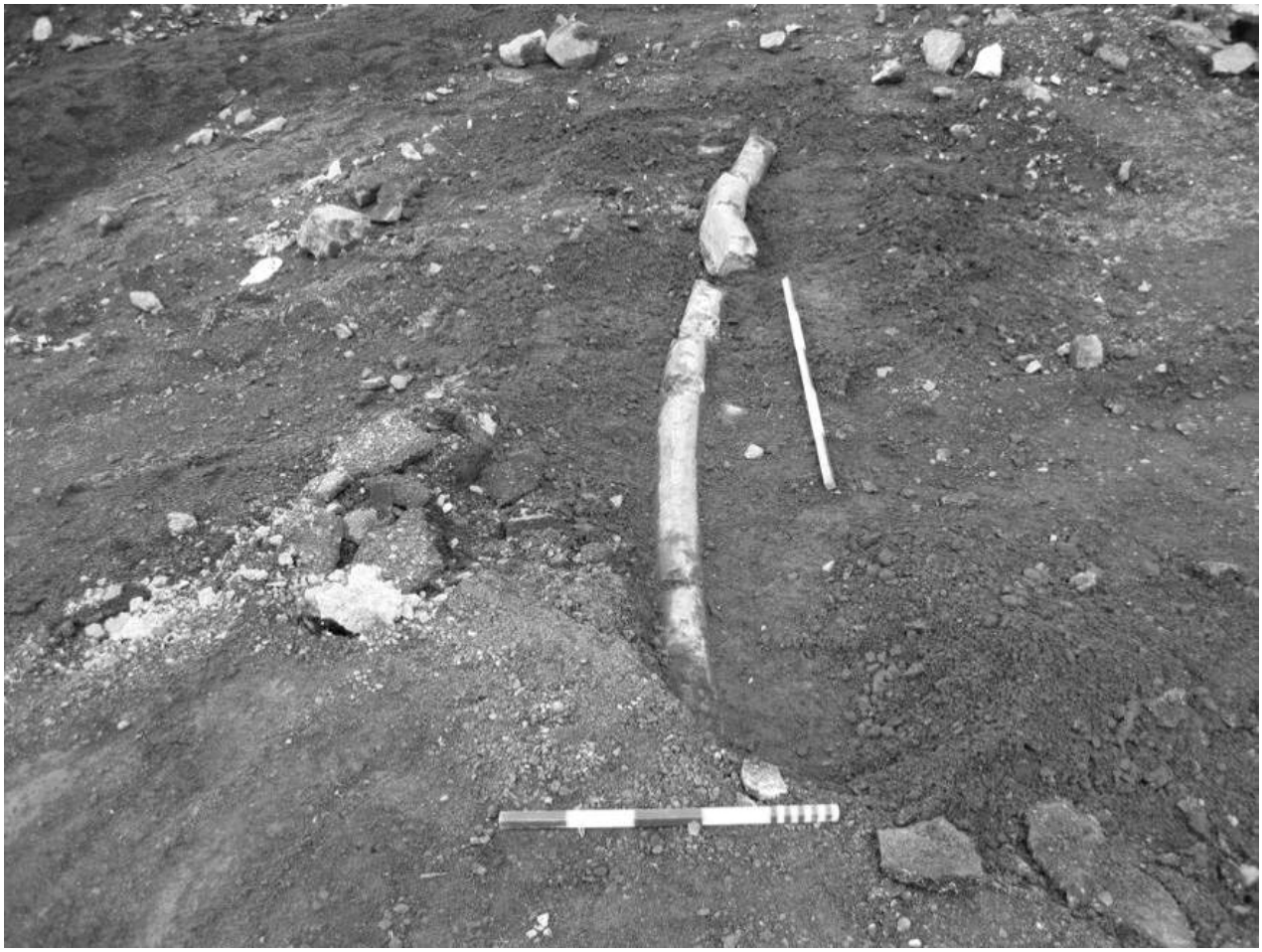


Figure 246. Stone garden border feature (Feature 29)

Figure 247. Feature 40 (to the right) was constructed of brick and located to the north of the tile drain Feature 23

Figure 248. Feature 2 stone drain beneath the Feature 11 concrete floor

Figure 249. The stone drain (Feature 2) following complete excavation

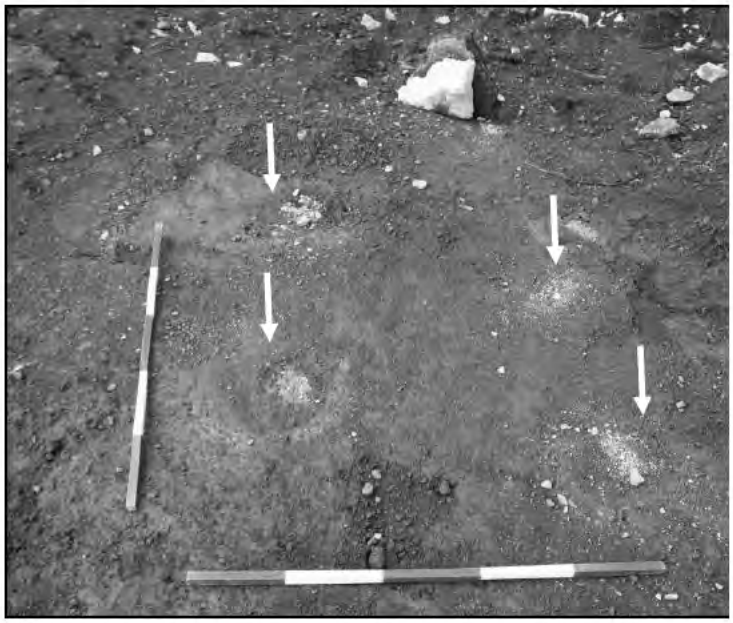


Figure 250. View of post holes in NW Quadrant

Other Monitoring Work

Other excavation work in the South-East Yard also gave views of the general stratigraphy in this area. The build-up of material throughout much of the Yard (Figure 251) was not as deep as in other areas, such as the Gymnasium (South-West Courtyard). The stratigraphy suggested that the eastern side was not generally built up, but was used for recreational purposes for much of its history, with only a couple of asphalt layers on top of the basalt bedrock.

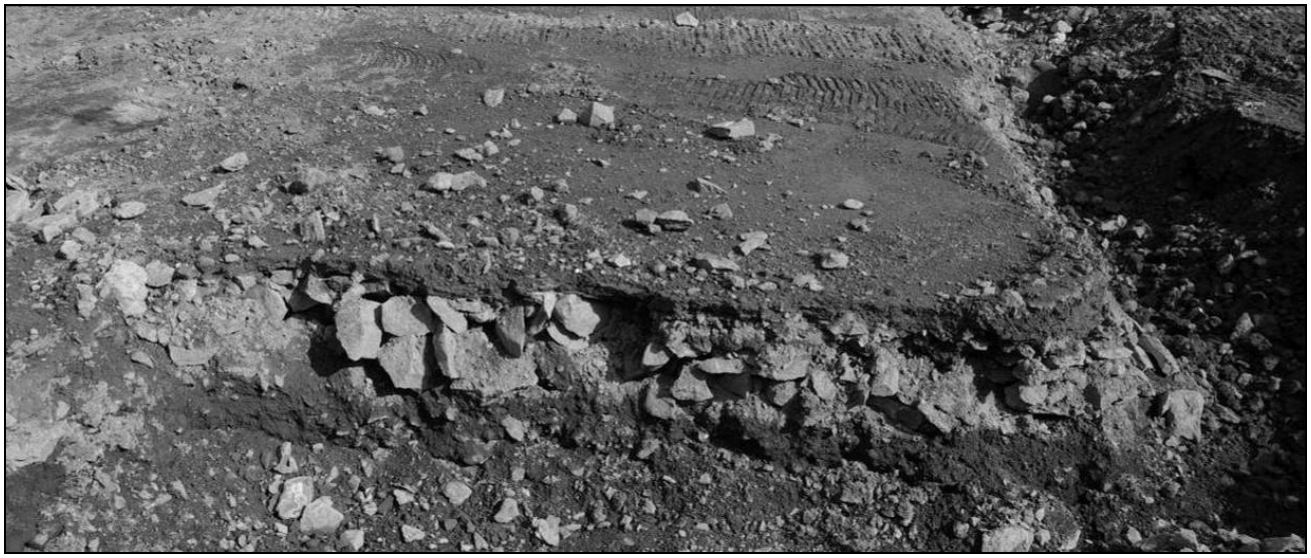


Figure 251. View of stratigraphy in South-East Yard

Additional monitoring work around the South-East Yard included some additional checks on the condition of the main Prison building (central/east wing). The main wing was fenced off from the Yard with a modern concrete and wire structure, but this was relatively new, and access to the Yard from the Prison wings was part of the original design. The South-East Yard ground level was well above the bottom level of the Prison wing, requiring a combination of retaining walls and steps up and down to the various parts of the Prison building. The retaining wall here was made from rough-faced basalt blocks, although parts had been smoothed off (Figure 252). Some cracking of the main blocks in the southern wall of the central wing were seen near the windows. This sort of damage included fracturing of the face of the blocks (Figure 253, left) as well as cracking through the blocks themselves (Figure 253, right). The long term implications of this damage do require further assessment.

Figure 252. View of walkway along southern side of the central wing of the Prison building

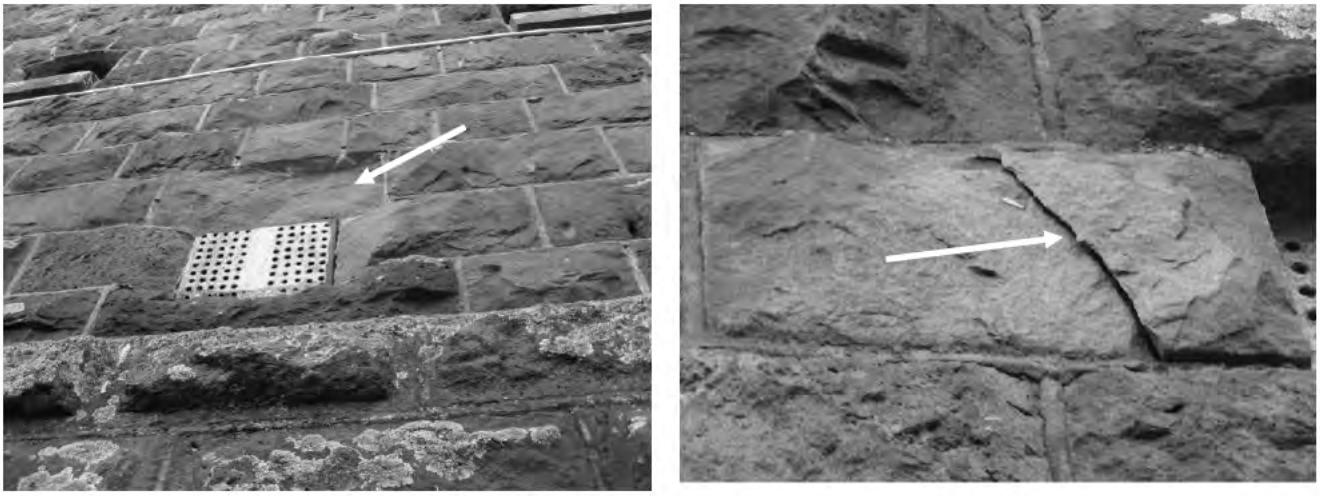


Figure 253. View of damage on the southern side of the central wing

Artefacts from South-East Yard

MODERN FINDS AND CERAMICS

Modern Finds

Two modern finds, both recovered from Feature 15, were recorded (Figure 254). The first was a red plastic lid from a tube of toothpaste of unknown brand. The second was a tile from the board game 'Scrabble', the letter A with a point score value of 1.

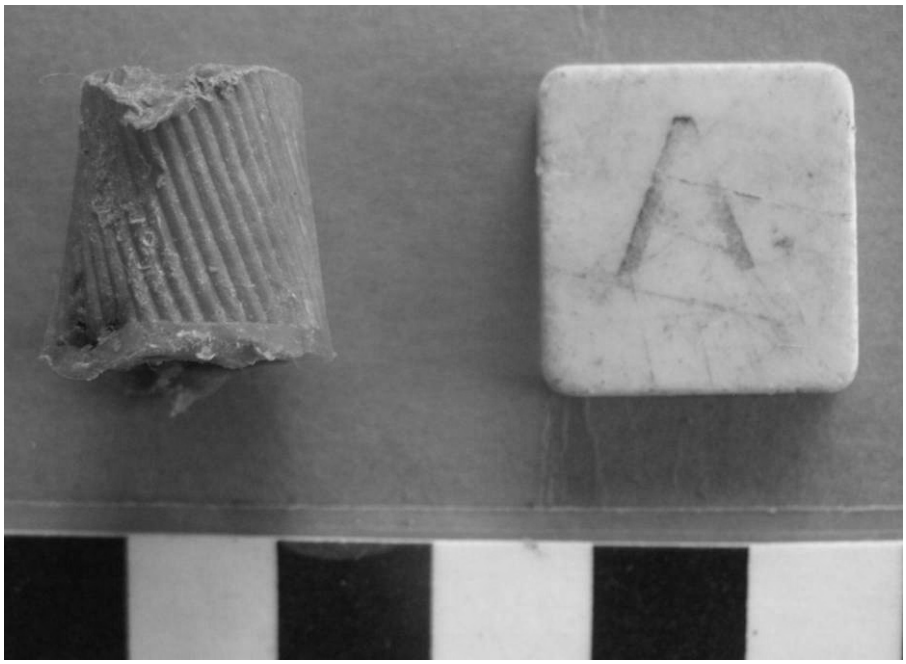


Figure 254. Toothpaste lid (left) and Scrabble tile (right) recovered from Feature 15

Ceramics

A number of pieces of ceramic were recovered, that are believed to be associated with prison staff rather than inmates. The upper scrape of the North-West Quadrant produced a single sherd of a plain white teacup. Also located in the North-West Quadrant beneath the stone alignment was a small fragment of a plate of unknown size. This fragment had a blue transfer pattern on each side of the dish, but not enough was present to determine the pattern name. From a general collection in the South-East Yard approximately half of what was believed to be an egg cup was noted. The item was similar in form to a teacup from a child's tea set; however, given the context of the Prison this was unlikely. Four portions of a plain white bowl, similar in form to a Chinese noodle bowl, were recovered from the southern pit of a storm water trench excavation.

Feature 3 contained the largest amount of ceramic deposited (24 pieces), but many of these pieces were derived from just four vessels. Eight pieces came from a single white teacup with a gilt design consistent with the Tealeaf pattern (Figure 255). Twelve pieces came from a bowl which had a glaze with a blue tinge. The rim of this bowl was rolled and there were no identifying manufacturer's marks (Figure 255). Three pieces of a plain white dinner plate with a slightly scalloped edge were recorded (Figure 255). The final item was a small fragment from a jar or pot similar to those used by dispensing pharmacists for creams and ointments (Figure 255).

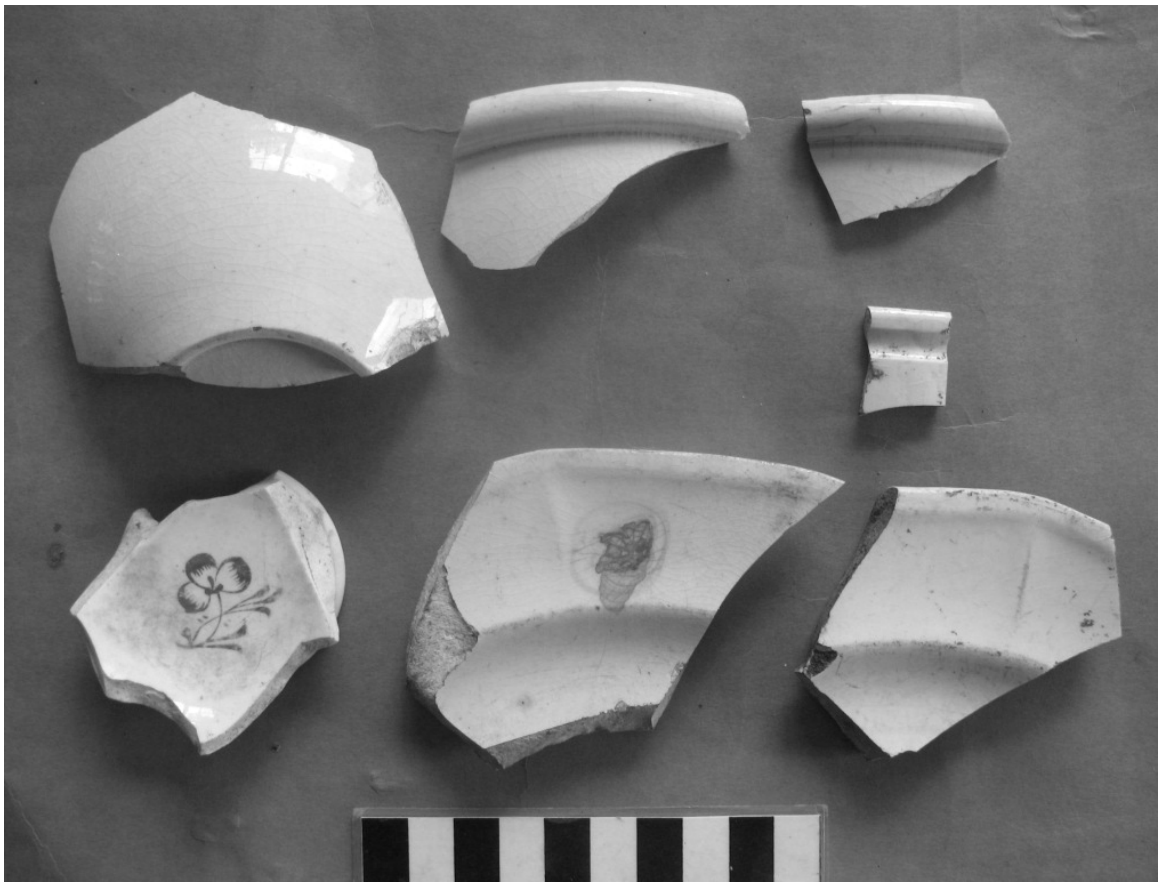


Figure 255. Examples of the ceramics from Feature 3, bowl with rolled rim (top), ointment jar (centre), Tealeaf pattern teacup base (bottom left) plain dinner plate with slightly scalloped edge

Two pieces of ceramic were removed from the Feature 4 deposit. The first was a portion from a plain white dinner plate with badly cracked glaze. The second was approximately one-third of an ointment pot or jar. One small fragment from a white ointment jar or pot was recovered from Feature 21 Pit 2.

Stoneware

Stoneware items were recovered from Features 3 and 21, with a single fragment located in the upper scrape of the North-West Quadrant. The small size of this piece did not allow for identification of a particular vessel form, but it had a brown glaze on the exterior wall.

At least 3 vessels were identified among stoneware recovered from Feature 3. The first was a complete penny ink standing 52.29mm with a base diameter of 48.34mm (Figure 256). The ink was finished with a brown salt glaze. Two pieces of a brown salt glazed bottle were noted, but it could not be determined what the bottle originally contained (e.g. blacking or ginger beer). Also recovered were two fragments of a cream coloured bottle, likely to have contained ginger beer.

Two vessels believed to have been ginger beer bottles, both with blob top finishes, were recovered from the northern end of Feature 21 (Pit 2). Nine pieces of a cream coloured salt glazed bottle were located and were refitted (Figure 257). There were no potter's markings on this vessel. A second ginger beer (Figure 258), a brown salt glazed vessel, was located broken into ten pieces. This particular example contained markings which allowed a date range for the manufacture of the bottle to be determined. The stamped marking reads [VITREOUS] STONE BOTTLES, [WARRA]NTED NOT TO ABSORB, J BOURNE, [PAT]ENTEE, CODNOR PARK POTTERY, NEAR DERBY.

Those words in brackets were barely visible in the stamp and were all located on the left hand side of the stamp. This particular stamp places the manufacture of the bottle between 1833 and 1841 (Jeffries 2007). After 1841 the potter was known as J. Bourne & Son. This date range does not suggest the Feature was built or utilised during these years, but rather highlights the reuse of bottles where possible. The lag time between earliest possible date of manufacture and deposition was approximately 30-40 years, in which time the bottle may have been refilled many hundreds of times.

Figure 256. Stoneware penny ink recovered from Feature 3

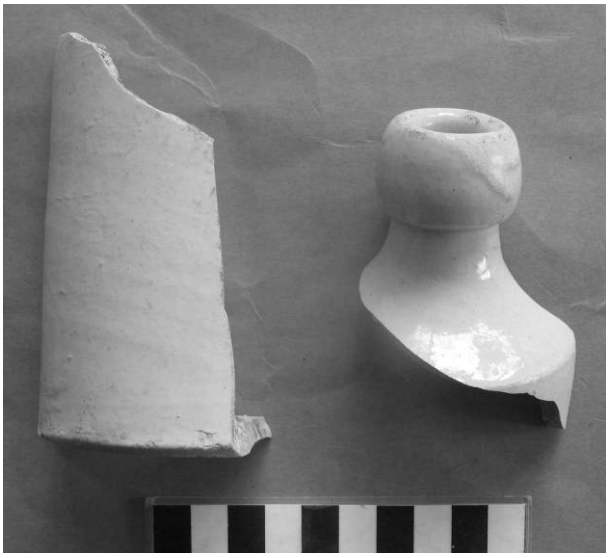


Figure 257. Portions of the cream coloured blob top ginger beer from Feature 21

Figure 258. Portions of the blob top brown ginger beer showing the J. Bourne pottery stamp (Feature 21)

SLATE OBJECTS

Introduction

Slate on a historic period site is commonly the result of items used in the construction of a building, such as roofing or waterproofing, or as part of a writing kit. Slate was much cheaper to obtain than paper and ink, and if taken care of was reusable for an extended period of time. Analysis of material recovered from Mt Eden Prison suggested that slate was used at the site for both purposes, but also provided one unusual example of slate used to make a sundial.

Slate Styluses

Six pieces of slate styluses were recovered from Feature 3 (Figure 259). Three pieces were from the shaft, while the remaining three had a shaped end indicating they were the writing end of the implement. Four pieces of slate were retained from the Feature 4 Rubbish Dump. A portion of a stylus broken at both ends was recorded.

Sundial

The Feature 21 septic tank system provided two examples of slate from Pit 2. The first item appeared to be a portion of a broken roofing tile, while the second had a different function, although the slate material may have originally been destined for or used as a roofing tile. The item was recovered in two pieces and was a handmade sundial (Figure 260). The dial was unusual in that it did not provide hours for which the sun naturally occurs, but was limited to the hours between 7am and 1pm. This suggested that the room in which the sundial was located within the Prison was perhaps exposed to direct sunlight only during those hours and that the sundial was deliberately fashioned for that room. For the majority of inmates, these hours would have corresponded to work hours, requiring them to be out of their cells. It is possible that the sundial was housed in the cell of a solitary confinement or condemned prisoner, or was perhaps used by a staff member in a room obtaining limited direct sunlight. Whether the sundial was deposited into the sewerage system from the newer south wing of the current Prison or into the septic tank system after the system was no longer utilised and filled in is not known.

Roofing Tile

Three fragments of slate tile were recovered from Feature 3 with a further fragment recovered from the Feature 3 extension. The three remaining pieces of slate were likely to have originated from roofing tiles. One piece showed the bevelled edge on one side of the slate, consistent with that seen on roofing tiles.

One other small fragment, possibly from a roofing tile, was recovered from Feature 22 Chamber 1 associated with the septic tank system. A further eight pieces of slate were recovered from the upper scrape in the North-West Quadrant of the South-East Yard, all of which appeared to be remnants of roofing tiles. One piece (Figure 261) showed evidence of the hole drilled through the tile for the roofing nail to affix the tile to the roof.

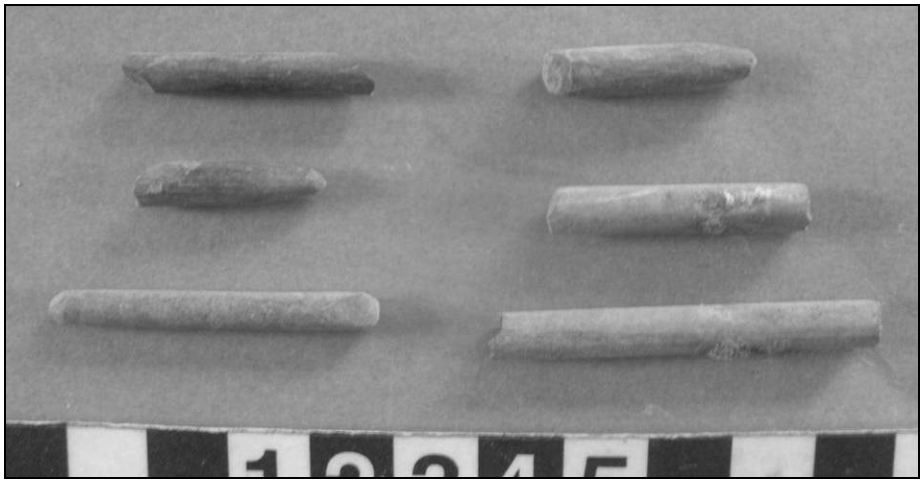


Figure 259. Six pieces of slate styluses recovered from Feature 3

Figure 260. The sundial recovered from the septic tank system (note the hours are limited to 7am to 1pm)

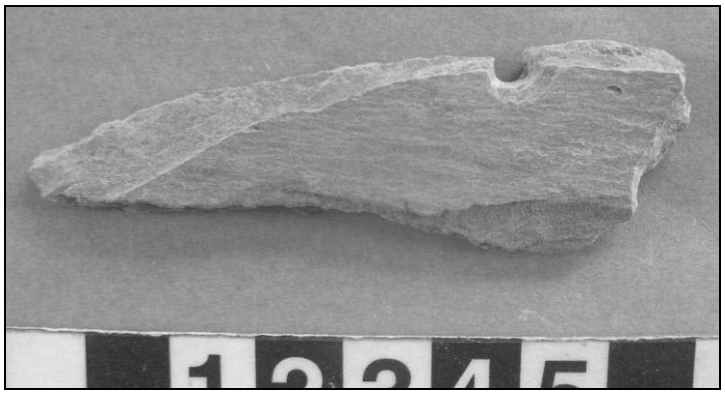


Figure 261. Portion of a roofing tile showing the pre-drilled nail hole

Musical Instrument

An unusual piece of bone material (Figure 262) was recovered from Feature 21 Pit 2. The item was not believed to be ivory as there was no evidence of a Schreger pattern (a series of crossing lines, the angle of which is unique to specific animals). The piece appeared to be manufactured from processed bone using a technique pioneered in 1832 by button maker T.W. Ingram (Lindbergh 1999). This involved bone being boiled down to slurry, whereupon it could be pressed in a mould.

The exterior of the piece shows evidence of a thread at the base portion, suggesting the item was to be screwed onto or placed tightly into another object. The interior face of the item had a series of lines around the visible circumference that suggested another item was likely to have been lodged inside it. The exterior was marked with the initials R.D., with the periods being graphically depicted with an x, and surrounded by an incomplete oval. It was not clear whether this mark related to a manufacturer or was placed there by an owner. Items such as chess pieces and tobacco pipes were ruled out as generally these items were not composite objects (although later tobacco pipes can be).

Different musical instruments were examined to determine whether the item could have come from one of the composite (generally wind) instruments. Comparison to various musical instruments suggested the piece was probably part of the blowpipe valve from a set of bagpipes.

Figure 262. Exterior and interior faces of a bagpipe blowpipe valve marked R.D.

METAL ANALYSIS

Summary

Over a thousand objects were recovered from the South-East Yard excavation site. The breakdown of the quantities of metal objects recovered and assessed from each area is shown in Table 7. Approximately 760 nails were identified (over 70% of the South-East Yard assemblage) and details were recorded. Seventy-five fragments of wire (of iron and copper alloy) were identified. Iron sheet metal that might have come from vessels, mugs, pipes, etc, but which were now in too fragmentary a condition to be identifiable, made up 11% of the assemblage, with over 100 fragments recorded. The remaining items are discussed in more detail here, except for buttons, which are discussed in Chapter 7.

Table 7. Quantities of metal objects recovered and assessed by area

Feature No. or Location Description	No. of nails	No. of wire fragments	No. of sheet metal frags/offcuts	No. of other objects	Total
Feature 1	12	-	-	1	13
Feature 3	391	2 CuAl	19 Fe	42	454
Feature 4 – 1870s to 1900s rubbish dump	276	17 Fe 20 CuAl	64 Fe 21 Pb 6 CuAl	29	442
Feature 12	6	-	-	2	8
Feature 15	19	4	-	6	29
Feature 20 – above level of blocks	7	-	-	7	14
Feature 21 – pit 2	-	-	>3	2	>5
Feature 21 – assoc. with stone wall at end of brick pipe	8	14	-	1	23
General Surface	18	4	-	1	23
Scrape of brick fill S of rail line trench	8	-	-	-	8
Upper scrape in NW Quad	15	5	-	-	20
South-East Yard	-	-	3	3	6
Total	760	75	116	94	1045

Feature 1

Thirteen metal objects were recovered from this feature, of which 12 were interpreted as nails. The other object was a possible wall bracket or mount, but due to the heavy corrosion on the object and attached concretions this could not be confirmed.

Feature 3

Of 454 metal objects recovered from this area, 412 were identified as being either nails, wire fragments or metal off-cuts from sheet metal with no obvious function. This accounted for 90% of the assemblage recovered from Feature 3. The remaining 42 objects ranged in type (see Table 8).

Table 8. Metal artefacts from Feature 3, South-East Yard excavation

Bag	Material	Description	Quantity	Interpretation
1	CuAl	Circular, complete, 2 holes for attachment within oval concave centre. Slight lip on rim edge.	1	Button
1	Pb	Circular object with large hole on centre. One side flat with incised line around hole. Has been hammered into shape. On the other side the circular shaped lead protrudes and there is a skirt of lead around the object. Bent out of shape, the hole appears squashed.	1	?Pipe fitting
1, nth side of back wall	Fe	Curved sheet metal, approx half remains, four circular holes	1	Drain cover
2, sth side of back wall	Fe	Screw with threads visible and round head	1	Screw
38	CuAl	Pins, small, one complete, one complete but in 2 pieces. Both have round heads.	2	Pins
38	CuAl	Circular, complete, 4 holes for attachment within concave centre, words impressed around rim 'BEST RING EDGE'.	1	Button
43	Fe	'U' shaped object, fragment only, 2 square/rectangular holes visible, broken at central point	1	Shoe/boot heel plate
59	CuAl	Circular, complete, 4 holes for attachment in concave centre of button. Buttons b. and c. have the words 'BEST RING EDGE' impressed around the rim.	4	Buttons
61	Fe, wood	Miscellaneous object with curved working end with circular deliberate perforation with residual mineralised wood handle in situ. Lime wash and orange pigment? covering.	1	Unidentified hand tool and handle
67	Fe	Sheet metal, rolled to create a circular hole. Broken and in 2 pieces.	2	Gudgeon (small and part of) or Rim of can/pot
69	CuAl	Small, complete with round head	2	Pins
69	Fe	Small, complete with round head	1	Pin
71	CuAl	Circular, complete, flat back, raised rim, 2 holes for attachment.	1	Button
71	CuAl	Circular, complete, concave centre, 4 holes, words impressed around edge unreadable due to soil encrustation.	1	Button
71	CuAl, Ag	Circular, complete, silver plating (almost gone), concave centre, 4 holes, words impressed around edge 'BEST.RING.EDGE.'	1	Button
71	CuAl	Circular, complete, concave centre, 4 holes, words impressed around edge '.BEST.SOLID.EYELET.'	1	Button
80	Fe	Rectangular profile, rounded tip only.	1	Rasp or chisel tip
80	Fe	Circular head and round shaft, broken along shaft. No threads.	1	Bolt
80	Fe	'U' shaped object. Central groove on one side. No holes visible. Complete.	1	Shoe/boot heel plate
80	Fe	Rod of metal with round shaft profile, loop at one end and screw threads at the other - possibly shorn off at the screw end?	1	Fixing, possibly for hammock
80	Fe/stainless steel	Utensil head, in 2 pieces. Handle, shoulder and working end present. End of handle missing. No makers marks visible.	1	Spoon head
83	Fe	Complete, 'U' shaped object.	1	Shoe/boot heel plate
89	CuAl	Small, complete with round head	1	Pin
91	CuAl	Length of metal rod with hexagonal profile. In two pieces, fresh break between the 2, old breaks at either end	1	Unknown
93	CuAl	Circular, complete, 4 holes (now 1 jagged hole due to corrosion), probable words around edge covered by burial soil and concretions	1	Button
93	CuAl, Fe	Circular, complete, slightly curved, convex front, small shallow concave dip in centre of front, no decoration visible, no holes visible, probable attachment on back	1	Button
93	CuAl	Circular, complete, at least 1 hole in centre, slight concave appearance to front, no decoration visible.	1	Button
93	CuAl	Circular, complete, 4 holes, concave centre, words impressed around edge '.BEST.SOLID.EYELET.'	1	Button
93	CuAl	Circular, complete, no form or decoration visible	1	Button
103	Fe, galvanised?	Screw with phillips head, complete	1	Screw
103	Fe	Bolt or rod of metal with threads and square nut. Both ends have old breaks.	1	Bolt and nut
103	Fe	Length of metal with square profile, curved at one end, and broken. Other end also broken. Part of a 'U' shaped object?	1	Unknown
103	Fe	Corrosion mass and burial soil. Part of a nail or tip end of tool.	1	Unknown, probable nail.
112	CuAl	Victorian one penny, Brittania, 1875. Victoria facing left.	1	Coin
128, Sth extension	Fe	Plate of metal with key hole in centre. One side flush for mounting. No decoration.	1	Key Plate
128, Sth extension	Fe	Utensil handle, shoulder and beginning of bowl. No decoration or plating evident. Rounded end to handle, no makers marks visible.	1	Spoon head

Personal and Domestic Objects

Personal or domestic items comprised a large proportion of the other objects recovered from Feature 3. The 42 metal objects identified included 15 buttons, 2 spoon heads, 6 pins, 3 heel plates and 1 coin. (see Table 8 and also Chapter 7)

An 1875 penny was recovered from Bag 112 (Figure 263), in an area thought to have been under the solitary confinement cells that were constructed in 1865 (*Daily Southern Cross*, 24/8/1865:4), and is likely to reflect accidental loss by a prison officer.

Figure 263. Coin, Feature 3, Bag 112

Fixtures and Fittings

A small number of fixtures and fittings were found in Feature 3: a drain cover, a key plate, three fixings and two bolts.

The drain cover was circular (only about half remained) with at least four holes punched through the sheet metal. It was probably forged. It was recovered from fill on the north side of the back wall in Feature 3, but it is not known from where it originated. It is suggested that its small size and relatively good finish meant that that it was an internal building feature located at the base of pipes within the Prison building, perhaps in the kitchen or bathing areas.

An iron (possibly cast) rectangular key plate with a keyhole in the centre was identified and showed evidence of being mounted flush on a door/wall. The front side of the plate was not decorated, with the front square edges either removed after manufacture or created during the casting mould. The key plate was strong, functional and once mounted on a door would have been very secure. Key plates have a long history and are difficult to date.

The 3 fixings recovered comprised:

- One object in 2 pieces that may have been the rim of an iron vessel made of sheet metal, or a small gudgeon (Bag 67). If it was a gudgeon then it was likely to be one of at least two that acted in a hinge like fashion, and would not have taken a lot of weight. The sheet metal had been heated and either moulded or hammered into shape. It may have been part of small internal door, for example, a cell or kitchen hatch.
- A rod of metal with a round shaft profile, a forged loop at one end, and screw threads at the other end (Bag 80). This was probably mounted into a wall and the loop used to support another fitting. It may have been used to hold hammocks as these were employed until at least around 1919 (Holland 1919).
- A circular lead object with a large hole through the centre (Bag 1), with one side flat and an incised line around the hole. On the other side, there was a skirt of lead around the object. It had been hammered into shape, and damaged during or after the demolition. It might have been used on the exterior of a building to support pipe work.

Two bolts, one with a nut attached, and one screw, were recovered from Bags 80 and 103. The bolt and screw from Bag 103 appeared quite modern, with little decay compared to the surrounding metalwork. They were galvanised, and the screw had a Phillips flat head. Although galvanisation was patented in France in 1839, given the lack of galvanised objects seen in the rest of the South-East Yard excavation, it seems likely these were later than the other objects identified.

Tools

The 3 objects used as tools comprised:

- A rasp or chisel tip with a rectangular profile, and a rounded tip (Bag 80).
- Part of a nail or tip end of tool that was masked by dirt and corrosion (Bag 103).
- A length of metal with a square profile (Bag 103). One end was broken but curved. The other end was also broken. It has not been identified, but may have been part of a 'U' shaped object.

Discussion

Bags 103 and 67 appeared to have contained objects classified as fixtures, fittings and tools, while Bags 38, 43, 59, 71, 93 and 112 solely contained objects associated with personal or domestic activities. Bags 1, 80 (Figure 264) and 128 had both types of objects within them.

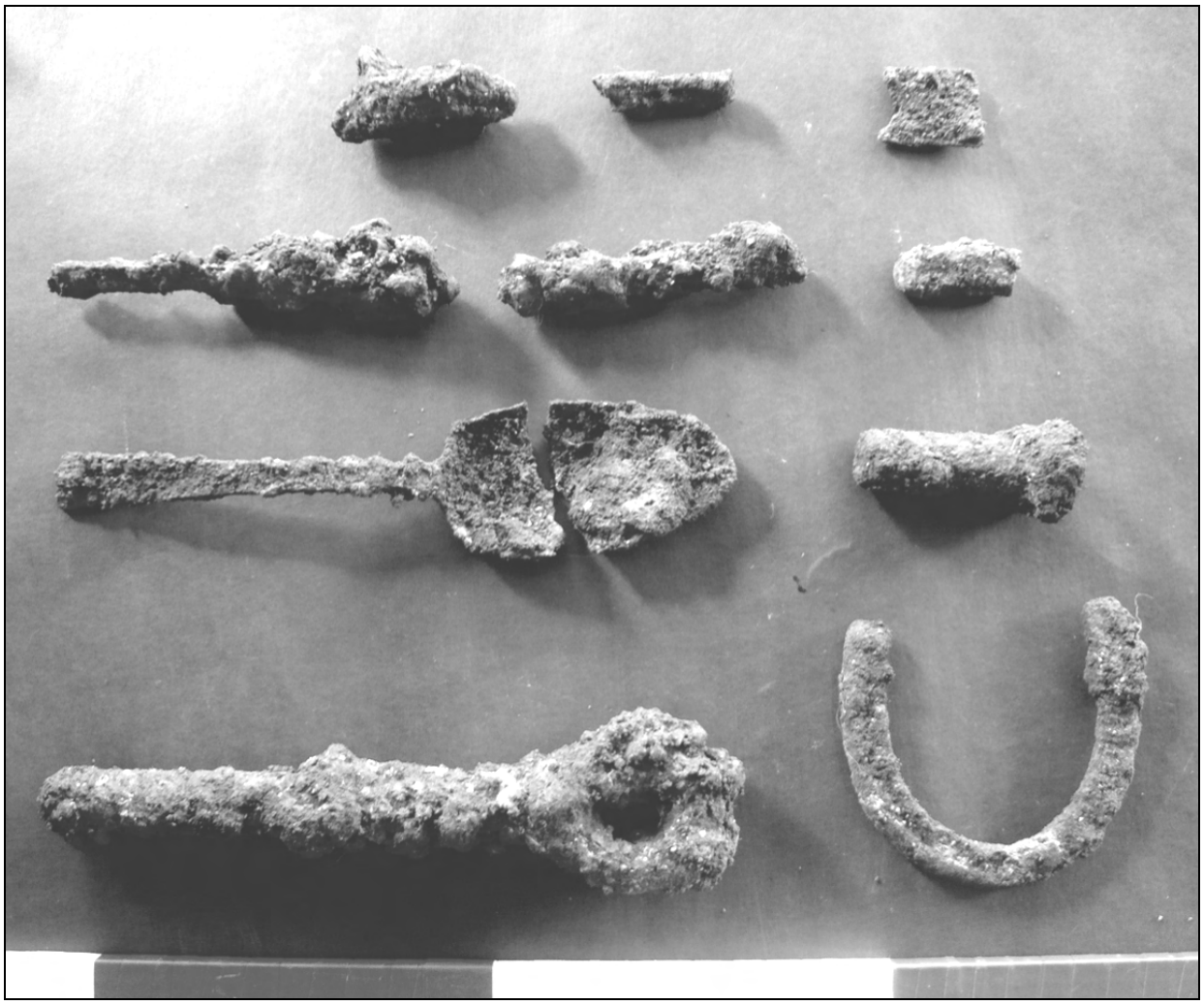


Figure 264. Metal objects from South-East Yard

Centre: iron spoon. Bottom left: possible hammock bolt and loop. Bottom right: complete heel plate. Feature 3, Bag 80

Feature 4

Over 440 metal objects were recovered from the rubbish dump feature interpreted as dating somewhere between the 1870s to the 1900s as this area predated the medical buildings here. Over 90% of these were identified as being nails, wire fragments, or metal offcuts/sheet metal with no obvious function. The remaining objects ranged in type (see Table 9), with a noticeable lack of objects that could be interpreted as being domestic or personal in origin, such as utensils and buttons. An exception to this was an iron shoe/boot heel plate.

Twenty-nine objects are listed in Table 9, including hooks, bolts, knife blades, 2 possible mounts or brackets, 2 rasp or chisel fragments, 1 washer associated with machinery and a possible copper alloy 'lid' of moulded sheet metal. There was evidence of 'tin' cans and paint use in the Prison, with the colour orange predominating. Most of the above objects related to the fixtures and fittings within the Prison buildings, and some discarded tools, possibly related to industrial activities performed on the site, such as stone working.

Personal and Domestic Objects

A white enamelled mug and a piece of a shoe/boot heel plate were identified. Both of these are common objects of the period. While the heel plate was more likely to belong to a prison officer, the mug might have been used by either officer or prisoner.

Fixtures and Fittings

The hooks varied in form and likely function. Those from Bags 5 and 20 were modified from wire, and so were fairly *ad hoc* in nature. That from Bag 20 appeared to be modified on one end from a clothes hanger. Neither would take great weight. This item appeared similar to the hook from Bag 116. Shaped into an 'S' form, it was likely to have been modified from a piece of heavy wire or nail shaft and to have been attached to another hook, chain or object, and would not have been weight bearing. The hook from Bag 105 was the only hook recovered that seemed capable of taking any weight and the long tang suggested it could have been mounted into masonry.

In Bag 126 was a slightly curved sheet of metal for a backing, and another rectangular sheet of cut iron that had been attached to create a loop for holding an object with a circular profile in place. Its light weight suggested it was wall mounted and may have been used to hold other small fittings.

Tools

Two incomplete blades from Bags 109 and 120 were found, with only part of the blade end and cutting edge remaining. Neither had tips intact, nor shoulder to the tang. They were of different forms and interpreted as having different functions. The blade from Bag 109 **(**Figure 265) was iron and heavy, with a depth of approximately 2-3mm, and a heavily serrated cutting edge. It may been used in a saw-like manner and was possibly from a tool associated with stone working.

The other blade recovered from Bag 120 (Figure 266), was fine, with a depth of < 2mm, with the greatest depth along its straight back, and tapering to a fine cutting edge. The cutting edge curved up towards the tip and the back of the knife. There was a small shallow scallop pattern along the back of the blade reflecting corrosion pits consistent with the blade being hammered in a hot forge during construction. This blade was more likely to have had a domestic origin, such as a kitchen knife. It may have been discarded into the rubbish dump due to breakage.

Two objects, interpreted as fragments of a rasp and a possible chisel, were recovered from Bags 105 and 116. The possible chisel (Bag 116) was heavily corroded. The possible rasp had three sides with a triangular profile on the working end. It had a fine tang to take a handle (missing, with no obvious

residue of its composition). Corrosion had prevented any pattern on the rasp sides being seen. The form of the object suggested fine craftsmanship, possibly associated with stone or wood work.

Table 9. Metal objects from Feature 4, South-East Yard

Bag	Material	Description	Quantity	Interpretation
3	CuAl			
5	Fe	Wire bent into a circular form at both ends and straight middle section.	1	Hook
15	Enamelled Fe/Sn	Mug with a riveted handle, with a white enamel coating. Complete	1	Mug
17	CuAl	Rectangular length of metal with square ends, folded into a right angle along the central length of the object All sides deliberately cut. Object appears complete.	1	Possible bracket
20	Fe/Sn	Circular vessel, squashed in one direction, with burial soil and fragments of iron, concrete and glass within. The base is detaching. One area of rim remains.	1	Can
20	Fe	Length of wire with curled end, shaped to a point. The other end in pressed flat.	1	Hook – modified from a clothes hanger?
104	Fe/Sn	Base, of vessel, complete	1	Can base
104	Fe	Complete, circular disc with shallow bowl. Red-orange residue and heat affected material on interior. No flange on rim.	1	?Paint Pellet/crucible
105	Fe	Tool with complete tang (rectangular profile), slight shoulder and part of 3 sided triangular working end. No features evident on working end.	1	Possible rasp
105	Fe, wrought	Hook, complete, both ends pointed. Hook has circular profile, and tang has squared profile.	1	Hook – probably mounted into wall. A strong hook, could take weight.
106	Fe, paint	Vessel fragment with circular base constructed by pressing 2 pieces of sheet metal together. The base appears to be separate to the body though attachment method not identified. Blue-grey pigment/residue in base.	1	Paint pot
107	Fe	Bolt, with square head and threads at other end. Circular profile. Probable broken threaded end.	1	Bolt
107	Fe	Round disc with shallow bowl	1	Possible paint pellet
109	Fe	Sheet metal doubled over and shaped into figure 'S'.	1	Rim of vessel, probable can
109	Fe	Blade fragment, serated, slightly tapering. Tip and shoulder missing. Slight bow in metal.	1	Knife blade
109	Fe	Screw, part of. Broken along threads, 2 twists visible. Round head with screw driver groove visible. Half of head missing. Round profile to shaft.	1	Screw
116	Fe	Rectangular profile with bevelled cutting edge.	1	Possible chisel fragment
116	Fe	Hook, shaped into an 'S' form. Formed from heavy wire or nail shaft.	1	Hook
119	Fe	Circular cut and lathed metal with circular perforation in centre, large	1	Washer
119	CuAl	Sheet metal cut into circle, with real cut edge around exterior, interior edge broken, in 3 pieces. The metal has been moulded to form a convex lip around the object. Incomplete.	3	Possible lid or flashing.
119	Fe	Wire bent into 'T' shape	1	Tab, for opening a can
119	Pigment/ Paint	Pigment residue, no apparent metal.	1	Paint residue
120	Fe	Blade fragment, curved cutting edge, straight back.	1	Knife blade
123	Fe	'U' shaped heel fragment	1	Boot/shoe heel plate
126	Fe	Circular shaft profile, corrosion has distorted the rest of the form.	1	Bolt and nut
126	Fe	Sheet metal, slightly curved with a second piece of metal attached through the back of it to create a loop of metal within the curve. 1 fragment has second metal loop, the other is a piece of the backing metal.	1	Possible mounting/bracket
126	Fe	Round disc with shallow bowl and slight rim.	1	Possible paint pellet or crucible
126	Pigment/Paint	Mix of iron metal, concrete and orange pigment	1	Paint sample

Tin Cans and Paint

There was evidence of at least 4 'tin' cans, made from iron sheet metal, doubled over to give the cans structure and rigidity (Bags 20, 104, 106 and 109). One of the cans was complete but distorted due to pressure, probably after deposition in the rubbish dump. The others represented the base of two cans and the rim. It could not be ascertained whether they were from the same vessel. These originally may have been paint pots, or they may have been reused food cans. Two paint samples and three

possible crucibles or pellets for mixing or working with paint were also recovered (Figure 267). A small 'T' shaped piece of bent wire, typical of a tab found on the top of a food tin such as sardines was also identified.

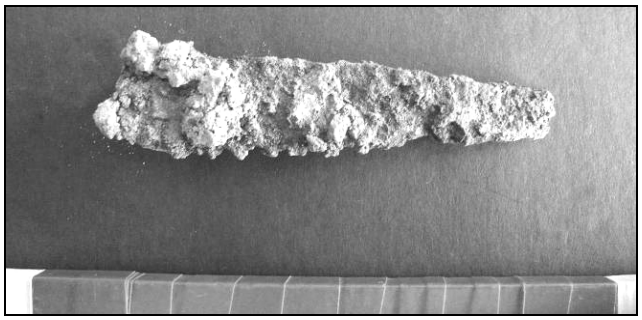


Figure 265**. Serrated knife, Feature 4, Bag 109**

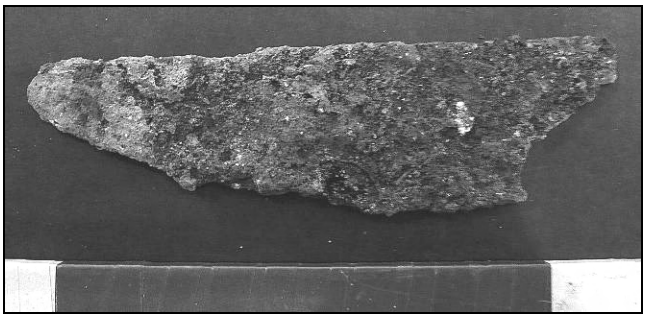


Figure 266. Knife blade from Feature 4, Bag 120

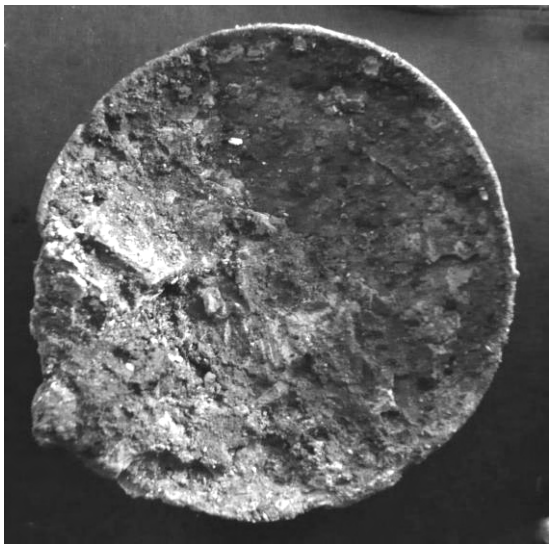


Figure 267. Possible crucible with paint residue, Feature 4, Bag 104

Feature 12

Six nails and two other objects were recovered from Feature 12. These two objects were:

- 1 complete copper alloy pin (Bag 129).
- 1 rectangular plate with 3 holes. There was 1 large hole in the centre, 2 smaller holes for nails on the sides. This was probably a wall mount or hinge component, an internal fixture within the Prison buildings.

Feature 15

Twenty-nine metal objects recovered from Feature 15. Nineteen were nails and four were sheet metal fragments. Six objects are described more fully below (Table 10).

Table 10. Metal objects from Feature 15

Bag	Material	Description	Quantity	Other
132	CuAl	Casing with circular x-section, flat end has dimple in it suggesting it has been fired. The ripple effect of the metal around the open end also suggests firing	1	Shell casing, possibly for pistol, .22 calibre
134	Stainless Steel	Utensil head only. Oval shape, concave bowl, little decoration - impressed line around edge of handle - broken at beginning of handle. Handle missing.	1	Spoon
134	Coated tin	Rolled up tube, no lid, white exterior with red writing, 'Koly…'. Opening, with threads, is squashed.	1	Toothpaste tube – used
134	Fe	Circular profile with threads at one end, and hexagonal nut on the threaded end. Bend at end of bolt, shorn off.	1	Bolt
134	Fe	Thin bars of metal with central rectangular hole. Later modification to a rough point at one end, original slight convex end the other. Slight notch at tip of modified end - evidence of process of modification or use	2	Unidentified

Personal or Domestic Objects

A stainless steel spoon head was recovered and post-dates 1915, when the invention of stainless steel was patented in the US by Harry Brearley. Brearley had discovered it first in 1912 by Brearley when working for the Brown-Firth research laboratories in Sheffield, England (ww.wikipedia.com). There was simple decoration around the edge of the spoon shoulder, and no markings have been identified.

A used tube of toothpaste was recovered from Bag 134 (Figure 268). It had a tin body with a white, enamel coating, with the red letters 'Koly…' printed on it. This was a well known toothpaste brand in New Zealand called Kolynos. It was created by N.S. Jenkins (USA) in 1908 and bought out by Colgate-Palmolive in 1995. It was particularly popular in the 1930s and 1940s (www.wikipedia.com).

Ammunition

One used casing from a .22 calibre pistol was recovered from Bag 134 (Figure 269). It had a red strip around the rippled opening that may indicate use for bird shot (pers. comm., N. Prickett). There was no headstamp or maker's mark evident.

Tools and Other Objects

There was one bolt found in Bag 134, and also 2 modified lengths of iron with a rectangular hole in the centre (Figure 270). They had subsequently been modified with one end shaped into a point, and there was a small rounded notch worn into the point (distorted by corrosion). They appeared to have been mounted onto something else at the rectangular hole, perhaps on a piece of machinery or fixing on a cart, trolley or such like. The modification was rough as though done *ad hoc* rather than by a specialised craftsman. Five more of these items were recovered from the South-East Yard excavation, Feature 20.

Figure 268. Kolynos toothpaste tube, Feature 15, Bag 134

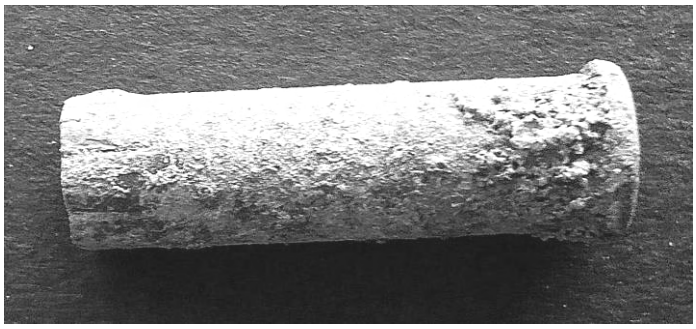


Figure 269. Shell casing, calibre .22 casing, Feature 15, Bag 141

Figure 270. Unidentified, modified lengths of iron metal from Feature 15, Bag 134

Feature 20

Seven nails and seven other objects were recovered from Feature 20. No wire or sheet metal fragments were recovered. There was one used casing from a .22 calibre pistol with one rimmed flat end with a small impressed circular divot seen off centre (evidence of firing). There was red paint around the rippled open end, with white powder residue inside. There was no headstamp or maker's mark evident.

Five modified lengths of iron with a rectangular hole in the centre were recovered from Feature 20, Bag 141. They were identical to those described above. A hand tool fragment, interpreted as the central section of a chisel or rasp, was also found. It was tapering with a rectangular profile.

Feature 21

Of the 28 objects recovered from Feature 21, 8 were identified as nails, and at least 3 fragments of sheet metal were recovered. The complete number is not known as the fragments of metal were very fragile and continually breaking. Half the assemblage was wire fragments. Three other objects of greater interest were identified:

- One fork head with 4 fork tines was recovered from Bag 152, in Pit 2. It was stainless steel, with little evidence of corrosion. The break in the handle appeared old, and due to stress.

Like the stainless steel spoon head recovered from Feature 15, the fork post dates 1915, when stainless steel was patented. This could have been used by either officer or prisoner during the 20th century, and is likely to have been originally discarded due to breakage.

- One possible gudgeon was recovered from Bag 177, Pit 2. It was made from iron sheet metal and bent around to form a circular hole into which another fixture could pivot. It was probably part of a hinge of some kind, perhaps a door or hatch. It was very fragile and corroded due to the nature of its deposition environment.
- One possible rasp or chisel fragment was located in Bag 142, associated with the stone wall at the end of the brick pipe. It was typical of other possible partial chisels and rasps found.

Other Metal Finds

A variety of other metal objects were recovered from general surface locations. Mostly these were nails, wire fragments and a flat screw.

Southern Carpark Area

SOUTHERN CARPARK

Little was found in the Southern Carpark area below the South-East Yard. The demolition of the buildings (Figure 271) was not recorded in detail as these were late structures and had no particular heritage value. Historical research had suggested that Stables might be located in the Southern Carpark area (Figure 272, Figure 273), but no definitive features were identified in this area when it was scraped down. It is likely that the area was cleared and levelled when the carpark was built and demolition material from the Stables removed.

Figure 271. View of workshop buildings during demolition

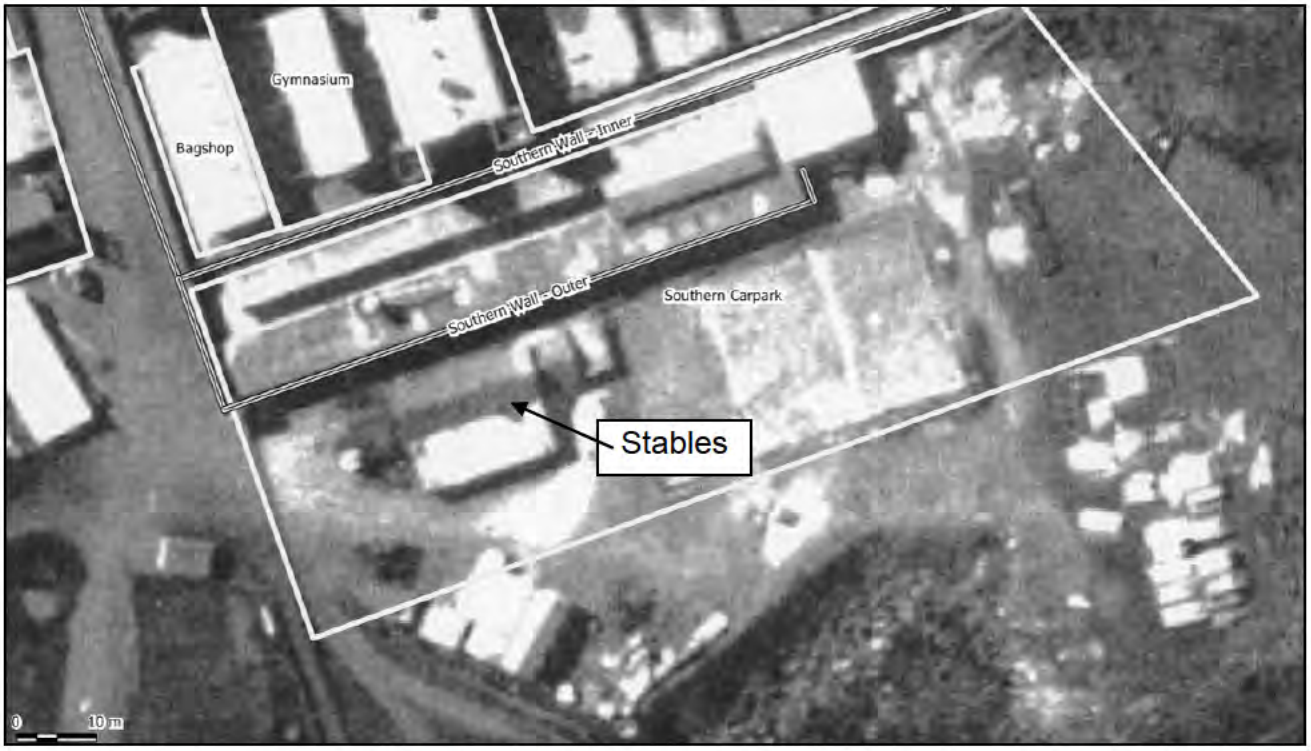


Figure 272. Aerial photograph from 1947 showing Stables in area of modern Southern Capark (APL Collection)

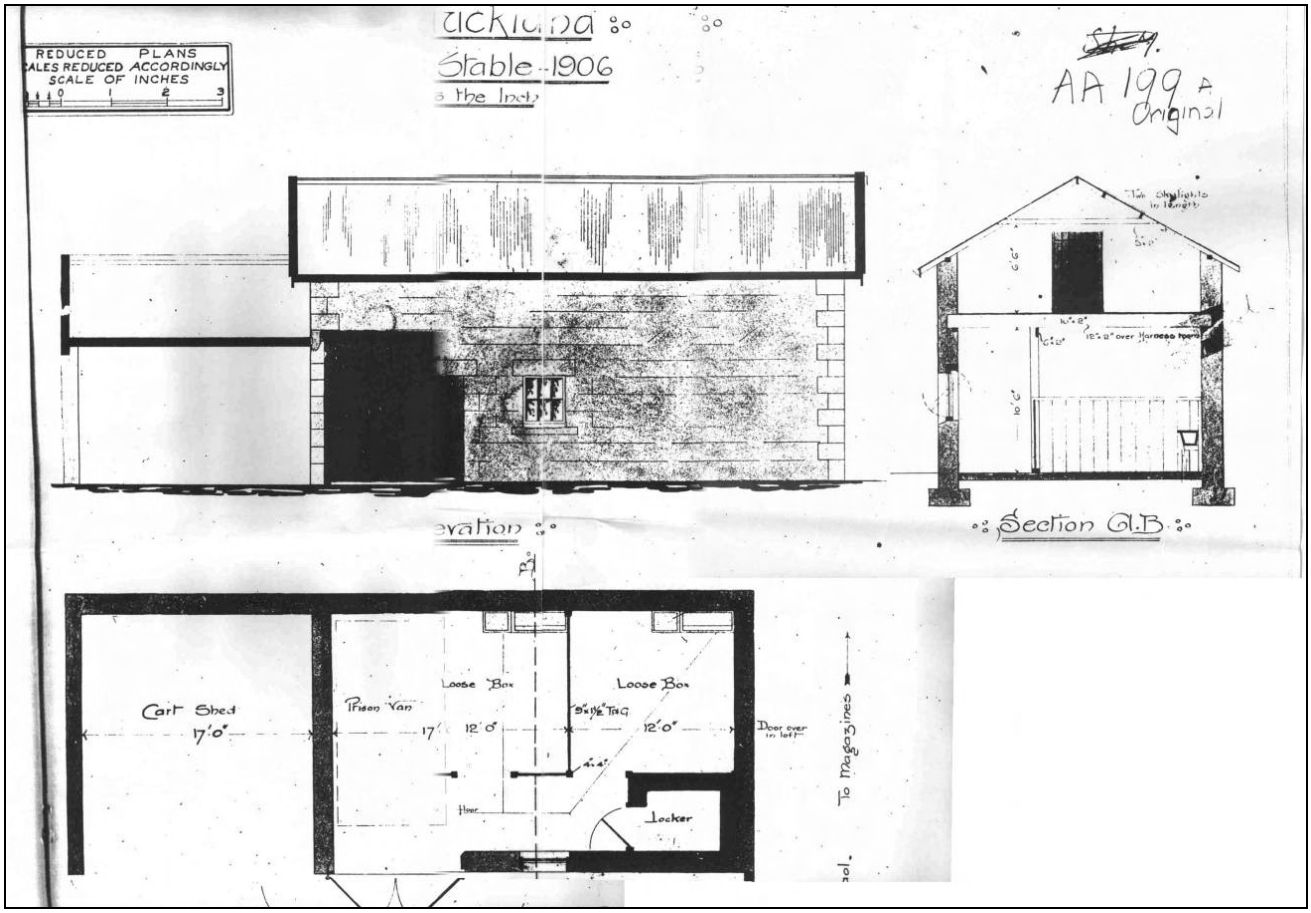


Figure 273. Plan of Stables building dating to 1906 (Archives NZ, AA199)

South Trench

A trench approximately 2m wide running from the south-east corner of the Prison grounds (motorway end), culminating near the boundary of the Remand Centre, was opened for the purpose of stormwater/sewerage renewal (Figure 274). Several deep pits for the placement of manholes were necessary. No in situ archaeological features were encountered; however, some artefacts were recovered with the digger bucket, although no precise locations could be established. Towards the eastern end of the trench a single railway carriage wheel was found (Figure 276), probably from a wagon used to carry stone. This was similar to others found in the South-East Yard Excavation. Later widening of the trench for placement of manholes uncovered a train coal carriage axle and wheel matching the wheel in Figure 276.

A painted black ceramic statue of a cat in a seated position was recovered (Figure 275). The head was missing from the statue along with a portion of the tail and a chip from one of the feet. The statue was not glazed.

Six complete or near-complete bottles or jars were also recovered, consisting of a black beer bottle, a Symington coffee essence bottle, a small champagne or green beer bottle, a Thompson & Hills Oak brand jam jar, a small crown top water bottle, and an Everett's external thread gum jar (see Chapter 7, Figure 319–Figure 320).

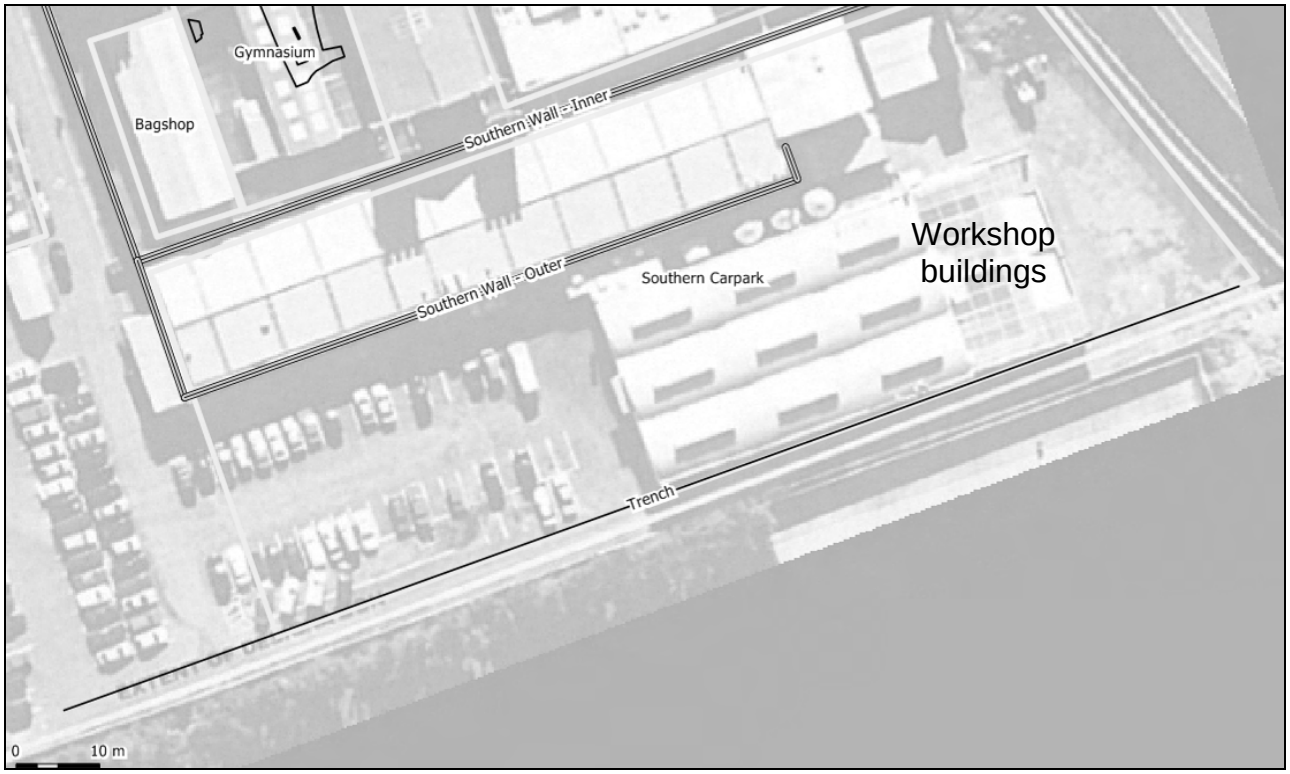


Figure 274. Modern view of Southern Carpark showing approximate location of trench dug

Figure 275. Unglazed cat statue recovered from the South Trench

Handcuffs

As discussed earlier, previous work in the Southern Carpark had included recovery of handcuffs. One set, found by Simon Best, had a maker's mark (Figure 277). The mark shows that it was made by Field & Son. No detailed information has been found for Field & Son, but products have been found marked just 'Field 233 Holborn London'. Parker, Field & Sons, however, had operated from 233 Holborn between 1842 and 1877 before moving to 59 Lehman St in London (pers. comm. Simon Best). It is likely that the handcuffs were made at Lehman St with a later change of ownership.

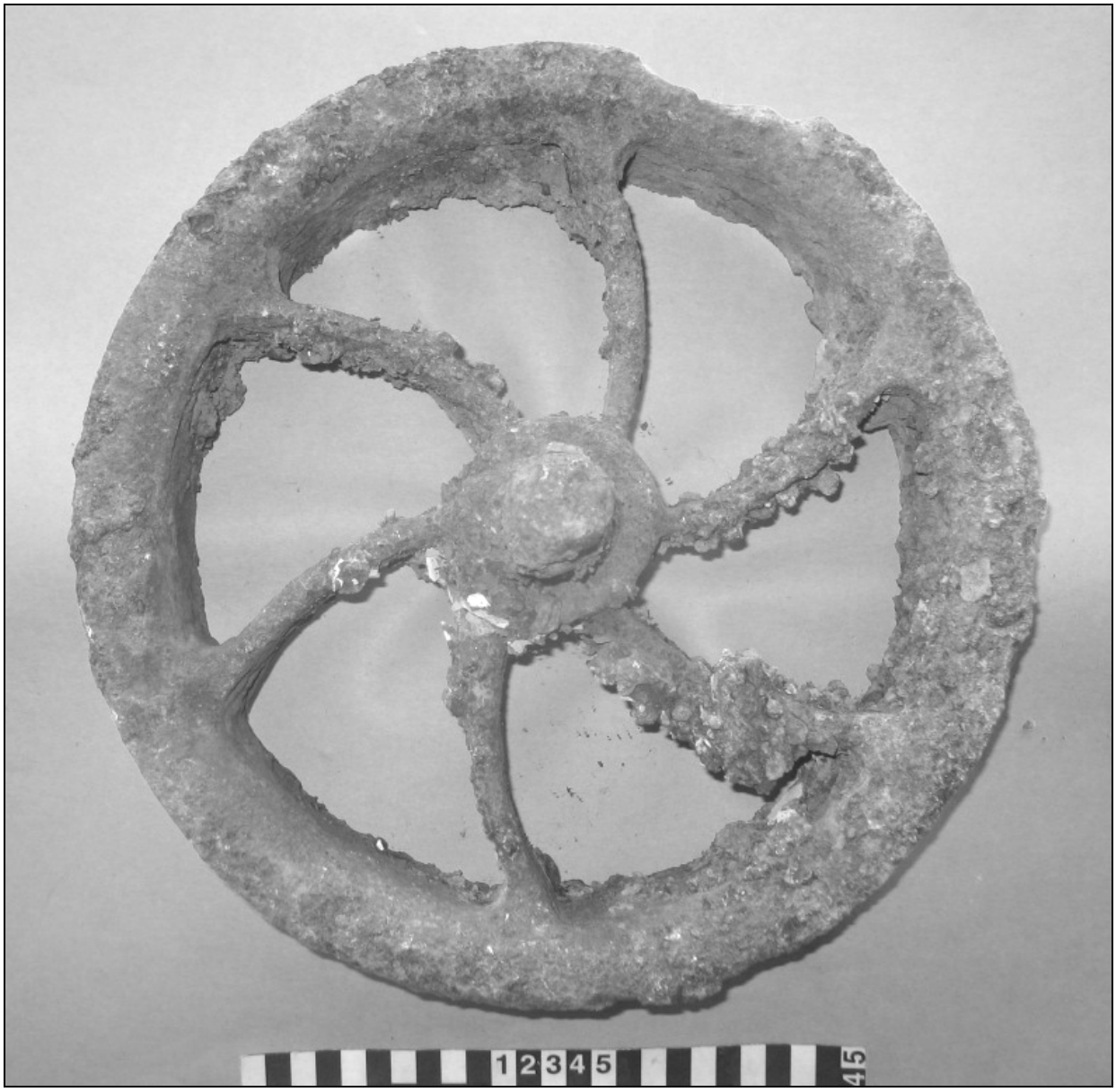


Figure 276. Rail carriage wheel recovered from south trench in Southern Carpark

Maker's mark at end of handcuff

Figure 277. Handcuffs found in 1996 in the Southern Carpark (courtesy Simon Best)

CHAPTER 7: THE MT EDEN ASSEMBLAGE

INTRODUCTION

This chapter summarises the smaller items recovered from the excavations that provide information relating to life in the Prison. Larger items and those associated with the structural remains excavated have been described earlier relating to each area. The analysis here focuses on:

- Artefacts related to prison clothing;
- Utensils and food remains;
- Glassware; and
- Clay Pipes.

PRISON CLOTHING

No specific research had been carried out previously on prison clothing, but as a number of items were excavated during the project, some additional archival information was collected to provide a context for those recovered items. The best documentary evidence identified was in the form of tenders published by the Superintendent, Stores Inventories held in archives and notes on prison dress recorded in newspaper articles at the time. It is known that under the Regulations of the Stockade no prisoners were to retain any of their own clothing, but were supplied with prison clothing marked 'M E G' for 'Mt Eden Gaol' (*Daily Southern Cross*, 25/8/1864:5). An 1863 Tender called for by the Superintendent for the furnishing of clothing for Mt Eden Prison (*Daily Southern Cross* 13/10/1863:1) included the following items:

- Boots, 30 pairs
- Duck Trousers, 60 pairs
- Blue Serge Shirts (Scotch Twill), 80
- Moleskin Trousers, 20 pairs
- Rugs, 20.

Tenders for supplying these items closed on 14 October 1863 with the accepted Tenders published in the *Daily Southern Cross* (29/10/1863:3) awarding Tenders to the following: S. Rout [Samuel Rout, Settler's Store, Vulcan Lane – Boots and Clothing], J. Rout [High Street – Men's and Women's Clothing and Footwear], D. Nathan [Shortland Street – Blue Serge Shirts], R. Moody, W. Rattray [possibly of Rattray & Mattheson], R. Keesing, B. McKerras, and W. Miller.

The 1865 Tender (*Daily Southern Cross*, 18/4/1865:1) called for:

- Blue Shirts, 50
- Mole Trousers, 20 pair
- Caps (strong), 100
- Blankets (single), 50
- Rugs, 20.

The above tenders suggest that clothing was purchased pre-made during the Prison's early years. This changed sometime around 1870 with the addition of the Women's section, when later tenders called for the supply of materials, suggesting that incarcerated prisoners were employed to manufacture or repair clothing within the Prison walls. This caused some resentment and there was a protest by needlewomen of Auckland, who saw unfairness in having to compete 'with bad characters who are fed, clothed, and housed at the expense of the government' while having to support themselves at their own cost (*Daily Southern Cross*, 20/3/1872:4).

A disgruntled letter writer signed 'Justice to Many, But Friendship to Few' wrote to the Editor of the *Daily Southern Cross* (27/9/1872) regarding the nature of Tenders for the Prison and included the following statement: 'First, the Clothing Department is supplied by Clark and Son, of Shortland Crescent who send a cart with the materials, such as blue, yellow, and moleskin trousers for the men; also check for shirts, and a large supply of blue stuff for female wear.' This suggests that a range of options were explored by the Gaol.

Tailor's Shop

Some time prior to 1874, a Tailor's Shop was erected in the Old Division (main gaol area) and is possibly one of the smaller buildings seen to the north/north-east of the Stockade in the 1876 view of the Prison (SO 1149). The Stores Inventory for Mt Eden Prison dated 31 December 1874 indicated that a variety of clothing and material was either in use or in store (Provincial Secretary 1875). The same inventory noted a quantity of branding numbers and letters, used to brand clothing, blankets, etc, with 'M E G' and perhaps a prisoner's number. An unusual article appearing in the *Daily Southern Cross* (17/9/1872:2) told from the Stockade cat's perspective regarding the female prisoners, noted the 'blue prison uniform, with its ugly numbering'.

Branding

Branding of clothing in this manner allowed for identification of the person as a prisoner; however, the subsequent decades saw this practice halted. Increasing transfers of prisoners between different locations for the purposes of criminal trials, allowing them to be closer to family, or for other reasons, meant that prison clothing had to be returned at the expense of the Government. To eliminate the expense of returning clothing Captain Hume, Inspector of Prisons, declared 'clothing is not to be marked with the name or initials of any particular gaol, but only with a series of broad arrows'.[4]

As a result of legal restrictions, there are very few photographs existing of prisoners and those that do are often taken from long range, leaving no real opportunity to gauge the dress of prisoners beyond general classifications. We are left therefore with documentary sources such as the 1874 Stores Inventory to determine much of the clothing available to prisoners, which included the following articles:

> Bodices (72), Boots (205 pairs), Caps (171), Covers Cap (151), Chemises (76), Drawers, flannel (5), Hoods (34), Jackets, cloth grey (102), cloth yellow (77), dungaree (84), blue serge (33), Petticoats (72), Shirts, cotton (394), flannel (16), Shoes (53 ½ pairs), Skirts (82), Socks (4 pairs), Stockings (40 pairs), Trousers, canvas (4), cloth black (5), yellow (49), grey (8), moleskins (228), Vests, brown (2), yellow (65), grey (92).

It was not expected that most of these items would be found in the archaeological investigations. Clothing was generally made of natural fibres such as cotton or wool, which degrade rapidly leaving only the hardier items associated with clothing such as buttons, pins, and decorative items to be found.

[4] Capt. Hume, Prisons Department Circular 82/16, 12th October 1882, Archives NZ.

Buttons

More than 100 buttons were recovered during excavations of the South-East Yard and in the location of the former Gymnasium. The material utilised for buttons included wood, bone, pearlshell, ceramic, brass, copper and copper alloy, tin and lead. The buttons were of various sizes and can be attributed to various forms of clothing including undergarments, trousers, shirts and jackets.

Size of buttons are traditionally measured in lines (from the French *lignes* equating 40 lines to an inch) and buttons can be generally classified based on the following size ranges: 14-24 lines (8-15mm) are the smaller buttons originating from underclothing, shirts and waistcoats; medium sized buttons of 26-34 lines (16-21mm) originated from coats, jackets, trousers and nightwear (Birmingham 1992). Attaching buttons to clothing was undertaken in one of two fashions: the sew-through method, where the button is sewn on to the garment through a number of eyes (usually between 2 and 5 eyes, with 4 being commonplace in this sample), or by a shank attachment, a metal loop soldered onto a disc in a two-piece button whereby a split pin could be used allowing the button to be removed for laundering (Lindbergh 1999).

Buttons can and often did outlast the garment, and were removed and kept for reuse once the garment was no longer viable. Lindbergh (1999) notes that clothing may contain a mixture of button types; especially those using the smaller sized buttons where the buttons themselves were functionally interchangeable.

Materials Used for buttons

Nine different base materials were utilised to manufacture the buttons recovered during excavations at the Gymnasium and in the South-East Yard (Figure 278). Bone was the greatest single contributor of base material amongst the assemblage, with 13 recovered from the Gymnasium area and 32 from the South-East Yard. Ceramic buttons (all Prosser variant) were recovered in greater numbers in the South-East Yard (23), compared to the Gymnasium (4). Three wooden buttons were located in each area, while the South-East Yard provided 4 examples of pearlshell buttons. Eighteen metal buttons were identified, with 10 copper alloy buttons recovered from the Gymnasium and 2 from the South-East Yard. Two lead buttons and single examples of tin and copper buttons were recovered from the Gymnasium. Two brass military issue buttons were recovered from the South-East Yard excavations.

Types of Clothing Associated with Buttons

Buttons from the Gymnasium and South-East Yard excavations could be identified to within three clothing categories: Trousers/Jackets/Coats; Shirts; and Undergarments. Two other categories were Button Moulds and Unidentified (Figure 279, Figure 280). The overwhelming majority of buttons are likely to have originated from Trousers/Jackets/Coats, with 22 recovered from the Gymnasium excavation and a further 27 recovered from the South-East Yard excavation. Undergarment buttons were more prevalent in the South-East Yard (27) than the Gymnasium (5), and this can be attributed to the loss of buttons in the water closet located above the Feature 21 cesspit. Shirts buttons were the fewest identified clothing buttons, with 5 found in the Gymnasium area and 6 in the South-East Yard. Each location recorded 2 button moulds. Four buttons could not be identified to a particular category given their fragmentary nature.

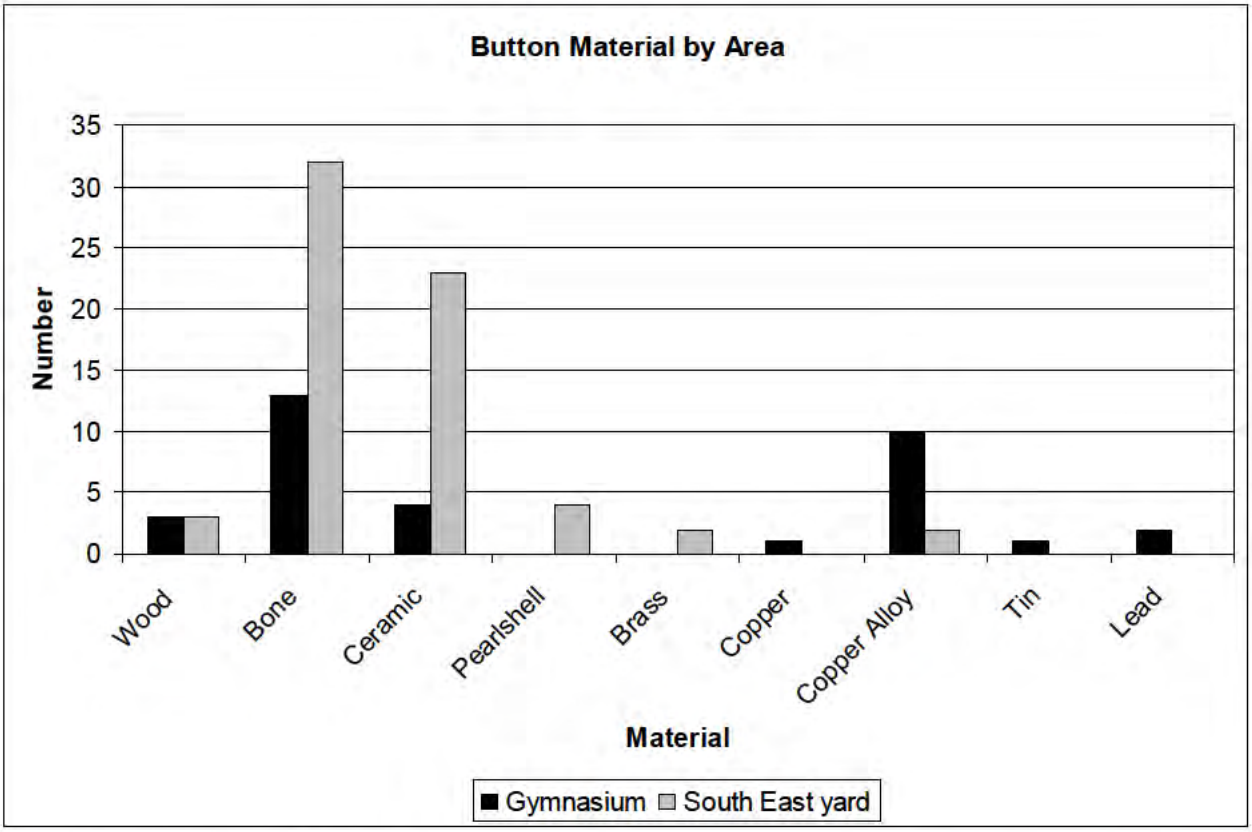


Figure 278. Comparison of the type of material used in button manufacture from the two areas of excavation

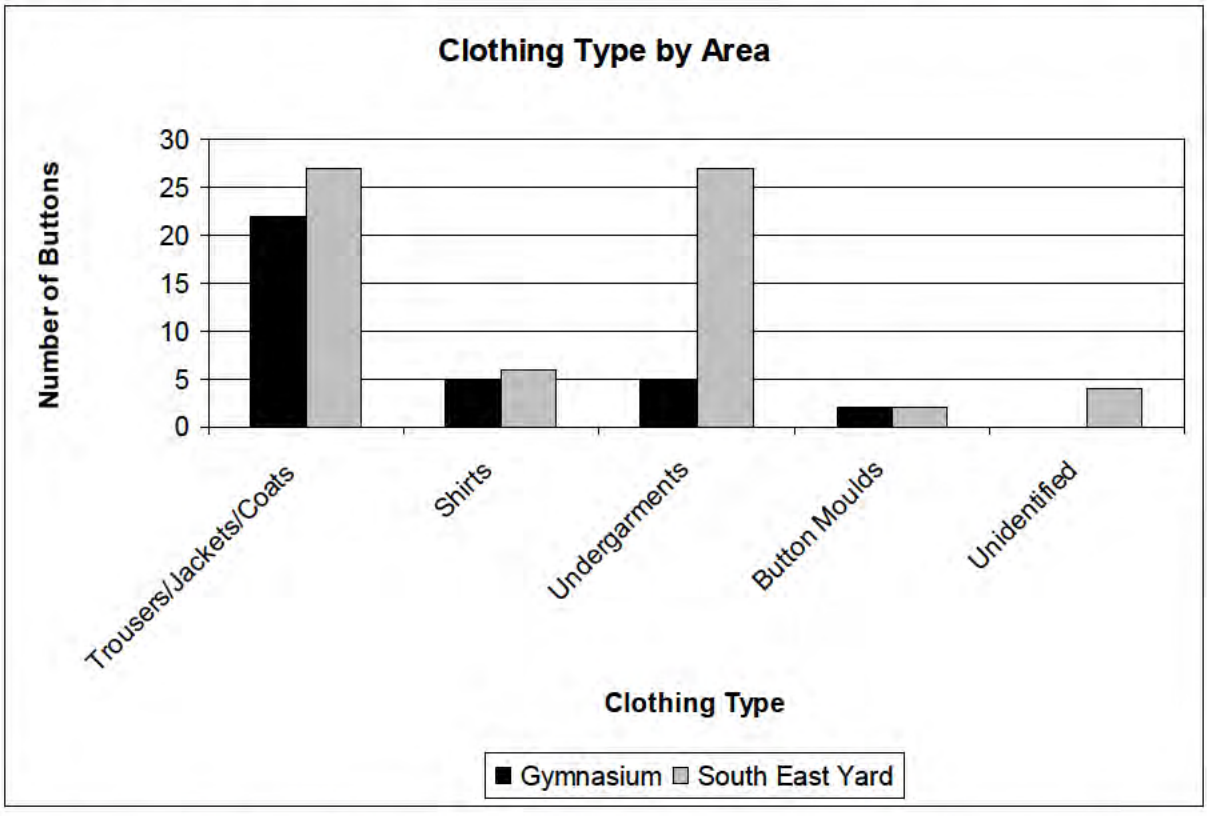


Figure 279. Comparison of the clothing forms represented by the buttons from the two excavated areas

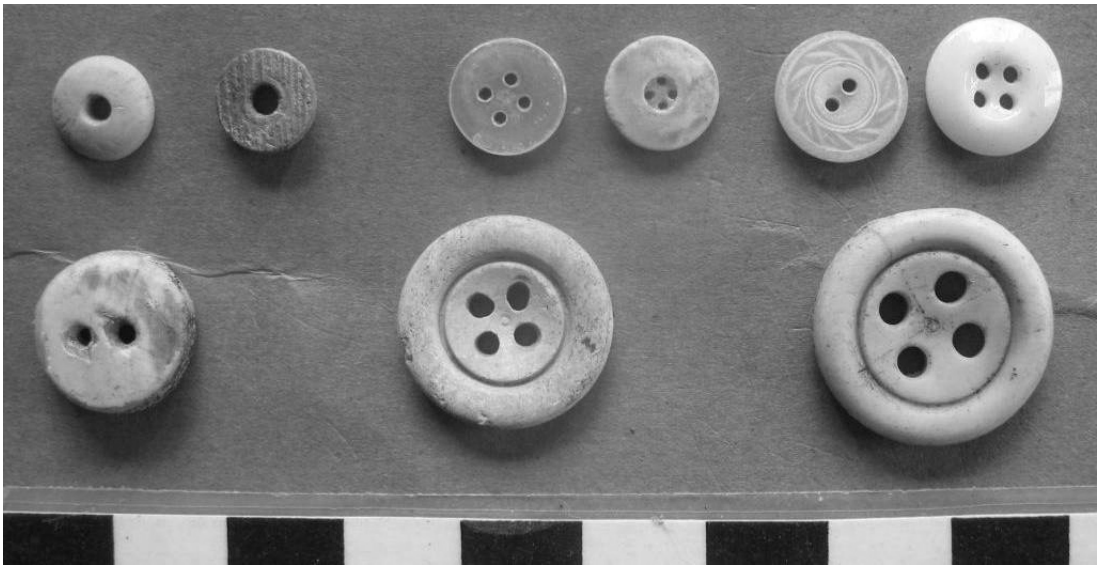


Figure 280. Sample of non metal buttons recovered during excavations of the Gymnasium and the SE Yard

Top from left: bone button mould (front), wood button mould (rear), three pearlshell undergarment buttons, 'small china' (Prosser variant) undergarment button. Bottom from left: crude pearlshell button, bone shirt button, bone trouser button with visible centre markings

Buttons from the Gymnasium Excavation

Thirty-four buttons were recovered during the excavation beneath the Gymnasium and were made from wood, ceramic, bone, copper, copper alloy, lead, and tin. The excavation took place in an area where the original Stockade building stood and which was later utilised as the prison chapel until the Prison building was completed. Buttons recovered from the former footprint of the Stockade building could potentially have fallen through gaps in the floorboards of the building.

The upper rubble layer revealed a copper alloy trouser button bearing the name of J & B Pearse & Co. London (Figure 281). This company was established c.1760. Trendell (1921) recorded Pearse & Co. as army clothiers having 'supplied the uniforms for the rank and file of the Yeoman of the Guard under Royal Warrant during four reigns' and 'for every branch of the service' from their premises at Old Ford Road.

There were 16 buttons from demolition layers beneath the Gymnasium in the area of the original Stockade building. These included a bone trouser button measuring 18.82mm and a copper alloy trouser button with a stamped design measuring 16.12mm (examples shown in Figure 282). This particular button type could also have been used as the attachment point on trousers for suspenders.

A single tin shirt button measuring 13.81mm stamped with BEST.RING.EDGE (Figure 283) was located at the top of the demolition layer. These tin buttons were manufactured from a single sheet of metal.

The main demolition layer contained 13 examples manufactured from bone, wood, ceramic, copper alloy and one example in lead. The lead example is strictly speaking not a button, but rather a hem weight of the type often sewn into the hems of jackets or skirts.

A single wooden button mould with a diameter of 8.6mm was recovered. There were no visible remains of any cloth or thread associated with the mould. Five bone buttons ranging in size from 17.06mm to 18.88mm were all of the same cut bone type containing four eyes. All five buttons are likely to have originated from trousers or jackets. Four copper alloy buttons sized between 16.05mm and 16.28mm with a stamped design are likely to have been associated with trousers (possibly

suspender points). One of these buttons retained some evidence of gilt, suggesting that these particular types of buttons were originally finished in gold colouration. Two sew-through ceramic undergarment buttons measured 11.18mm and 11.35mm and both had four eyes.

Seventeen buttons or partial buttons were recovered from areas around the Stockade building. One incomplete example made of lead had two eyes and was likely to have been a button rather than a hem weight. One wooden button mould with a diameter of 9.11mm contained no trace evidence of cloth or thread. An incomplete wooden button with two eyes had a maximum diameter of 17.63mm and may have originated from a coat or jacket. Two sew-through ceramic undergarment buttons measured 10.66mm and 10.88mm and had four eyes.

Six bone buttons were recovered, one of which measured 12.23mm and probably originated from a shirt. The remaining five bone buttons originated from trousers and measured between 17.85mm and 19.32mm. One copper button measuring 13.36mm with four eyes probably came from a shirt. Four copper alloy buttons were recorded: a four eye sew-through shirt button measuring 12.81mm, the front plate of a composite shirt button containing rows of very small holes around the plate, and two trouser suspender buttons with a stamped design measuring 16.11mm and 16.16mm. The second of these buttons retained some gilt colouration.

Buttons from the South-East Yard

The South-East Yard produced a large number of buttons, predominantly from archaeological features located within the yard, and with a smaller number recovered in general areas during clearance. These buttons were manufactured from wood, bone, copper alloy, shell, brass and ceramic.

Two small items in this collection were not strictly buttons but rather were button moulds, a precursor to a button. One of the items was made of wood and the second of bone. The wooden item had a diameter of 8.57mm with the single central eye having a maximum diameter of 2.7mm. The bone item measured 8.66mm with a central eye of 1.87mm. These moulds were used in making either cloth or thread covered buttons such as the 'death's head' variety. Bone moulds[5] were considered sturdier bases for buttons than the wood variety and were the preferred type to use for garments which would be washed, but wood moulds held the thread in position better. The moulds were flat on one side (to be placed on the garment) and convex on the outer side.

A larger bone button with four eyes had a diameter of 17.62mm and probably originated from trousers or a jacket; it was recovered from brick fill located on the south side of a trench containing the remains of the wall foundation using old railway tracks. Two ceramic buttons (possibly of the Prosser variant and commonly referred to as 'small chinas') were recovered from the North-West Quadrant of the South-East Yard, the first from the upper scrape with a diameter of 10.89mm and the second located beneath the stone alignment with a diameter of 11.23mm. Both ceramic buttons had four eyes and were consistent with those associated with undergarments. The Prosser patent button was manufactured from 1840 onwards by pressing powdered clay into a die (White 2002). Prosser, together with Minton & Co., manufactured these buttons in vast quantities until competing French manufacturers secured the majority of the market, forcing Minton & Co. out (Turner 1866).

Twenty-one individual buttons or remains of buttons were recovered from the Feature 3 area. Feature 3 was located in an area believed to have contained the solitary confinement cells initially constructed in 1865 and demolished no later than 1908. Two delicate pearlshell buttons measuring 9.31mm and 9.51mm respectively both had four holes of less than 1mm each and were likely to be associated with undergarments. Twelve bone buttons, all with four eyes and a circular indentation surrounding the eyes, were recovered from this feature. These buttons were divided into two size categories: those under 16mm diameter and those over 16mm (as per Birmingham 1992). Three

[5] Bone Moulds www.wmboothdraper.com/Buttons/buttons_main.htm Accessed March 2011

buttons measuring between 13.19mm and 14.04mm were likely to have originated from clothing such as shirts. The remaining nine bone buttons ranged between 17.15mm and 19.34mm and were likely to have come from heavier clothing such as trousers or jackets. Two wooden buttons were replicas of the bone buttons in style, measuring 17.15mm and 17.52mm, and were likely also to have originated from trousers or jackets. Four plain white ceramic buttons with four eyes ranged between 9.98mm and 10.88mm and were likely to have originally been associated with undergarments. A portion of a single copper alloy trouser or jacket button was also recorded. Approximately half of the outer edge of the button was recovered, but wording around the edge could not be interpreted due to the extensive deterioration of the piece.

Five buttons were recovered from the rubbish dump (Feature 4). Only representative samples were taken from Feature 4, and therefore it is likely that a greater number of buttons may have been present. Two plain white ceramic buttons with four eyes measuring 10.94mm and 11.33mm probably originated from undergarments. One further undergarment button was made of pearlshell. This particular example had two eyes and was etched with a 'piecrust' motif.

A single copper alloy trouser or jacket button measuring 17.32mm included the clothing manufacturer's details: G BRYETT AUCKLAND (Figure 284). George Bryett emigrated from Devon on board the *Ocean Mail* travelling as a single man aged 21, arriving in Auckland on 23 November 1875.[6] Bryett's occupation on arrival was listed as Tailor and it appears he quickly set himself up in Auckland, advertising his occupation, Tailor and Habit Maker, Shortland Crescent in the *Waikato Times* (14/12/1876:4).

A complete 18mm two-piece brass button (Figure 285) with the 'VR' cipher, crown and wreath was attributable to the militia (Prickett 1994). The militia were composed of local volunteers and were often stationed at garrisons while the Imperial Forces where elsewhere. Following the withdrawal of the Imperial Forces from New Zealand the militia was absorbed into the Armed Constabulary, a forerunner to the New Zealand Police. The reverse of the button was marked E & Ws PATENT and had a shank soldered across for attachment to the uniform by means of a split pin. This allowed the button to be removed prior to laundering. No information regarding E & W was found.

Feature 12, a large stone block located to the south of Feature 3, was placed in an excavated depression from which 6 buttons were recovered. Two plain white ceramic undergarment buttons measured 10.25mm and 10.80mm. Two bone buttons, possibly also originating from undergarments, measured 12.37mm and 13.67mm. Two larger bone buttons measuring 16.64mm and 18.77mm were likely to have originated from trousers or jackets. All 6 buttons contained four eyes and all bone buttons had a circular indentation surrounding the eyes.

Twenty-eight buttons were recovered during the excavation of the large Feature 21 cesspit. All buttons were located at the base of Pit 2, in the south-eastern portion of the cesspit. The accumulation of early material in this location and not elsewhere in the feature (i.e. Pit 1) suggested this area was where waste material was routinely deposited into the cesspit. A newspaper article dated 1867 and a photograph of this area of the prison dated c.1900 show that a water closet sat above this location for an extended period of time. While the septic tank would have been emptied periodically, removing later material additions, early material located on the base of the pit may have largely escaped removal.

Thirteen plain white ceramic buttons were recorded, with 11 identified as undergarment buttons measuring between 9.88mm and 11.38mm. The remaining 2 ceramic buttons possibly originated from shirts and measured 15.62mm and 15.66mm. All of the ceramic buttons contained four eyes.

[6] www.http://freepages.genealogy.rootsweb.ancestry.com/~ourstuff/OceanMail.htm

At least 14 bone buttons were recovered from Feature 21 Pit 2, 11 of which were complete, with the remaining 3 represented by a quarter to half of the button. All 14 buttons contained four eyes and had a circular indentation surrounding the eyes. One button measured 15.48mm, suggesting that it originated from a shirt. Ten buttons ranged in size from 16.19mm to 17.97mm, and probably came from trousers or jackets. The 3 remaining buttons could not be measured accurately due to breakage and refitting attempts suggested they were different buttons.

A complete brass button measuring 25.95mm was identified as that of the 14th Buckinghamshire Regiment of Foot (Figure 286). The button displayed the regimental number, the royal tiger, and the battle honours of India and Waterloo. The 14th was present in New Zealand from 1860 to 1867 (Ryan and Parnham 2002). It is not immediately clear whether the 14th were stationed at the Stockade as references to the unit generally relate to their combat experiences, but the presence of the Regimental button suggests that they were. Reviews of the *Daily Southern Cross* indicated that several members of the 14th Regiment were incarcerated for various offences, but as no prisoner was to retain their own personal clothing it is unlikely the button came from a prisoner's uniform. The rear of the button displayed the manufacturer's details, P TAIT & Co LIMERICK, and had a birdcage shank. Peter Tait & Co. began operations in Limerick, Ireland in 1852 mass producing shirts and other forms of clothing. They won a contract to outfit the British Military in 1854 and continued to do so for many years. Peter Tait retired from the business in 1875, handing control to his son, who renamed it Auxiliary Forces Clothing and Equipment Company (Burt 2011).

Feature 22 was a later brickwork modification to the Feature 21 cesspit, possibly dated to upgrades to the sewerage system ordered after a review by the Visiting Justices and a subsequent committee (*Daily Southern Cross*, 31/1/1867), but more likely to have been associated with the construction of the Prison south wing (1908-1931). The modification allowed sewage to flow from a ceramic tile drain through the cesspit, emptying into a second ceramic tile drain in the eastern wall, thus negating the bulk of the original stone cesspit, which was backfilled predominantly with stone. Feature 22 contained two areas: Chamber 1 (west side) and Chamber 2 (east side). One button was recovered during the excavation of this feature, from Chamber 1. The 13.4mm pearlshell button had two eyes and is likely to have originated from undergarments.

Figure 281. J & B Pearse & Co. copper alloy button

Figure 282. A number of these copper alloy buttons with a stamped design were recovered from the Gymnasium excavation

Figure 283. Shirt button manufactured from a single sheet of tin

Figure 284. Button advertising the name of the tailor George Bryett

Figure 285. Militia jacket button

Figure 286. 14th Regiment jacket button showing the tiger and the battle honours of India and Waterloo

Suspenders and Buckles

A number of trouser suspender buttons were identified from excavations in the Gymnasium area and this same area provided two examples of items associated with suspenders. The first item was a pressed brass ornately designed portion of a suspender clasp (Figure 287). This item was recovered from the top of the demolition layer, suggesting a deposition possibly around the turn of the century. Suspenders are not known to have been worn by prisoners as this particular article of clothing could be used as a means to cause self-harm or harm to other prisoners and guards, and were a notable omission in the 1874 Stores Inventory.

The second suspender clasp was recovered from the main demolition layer of the original Stockade/Chapel building. The suspender clasp was made of brass and had two prongs which would have passed through eyes to set the length of the braces (Figure 288, top).

A portion of a belt buckle was recovered from within the Stockade/Chapel building footprint in the demolition fill. The buckle was manufactured from brass with the cross-piece cast with the frame. It was tentatively identified as a rifle sling buckle (Figure 288, bottom).

Brooch

A single gilt brooch (Figure 289) of pressed brass was recovered from the main demolition layer within the original Stockade/Chapel building footprint. The brooch design was that of a three looped ribbon, with the voids of the loops being setting places for precious or semi-precious stones. A pin to attach the brooch to clothing was soldered to the rear.

Pin

A single pin was identified from material recovered from the Gymnasium area. The pin was manufactured from copper and was incomplete, measuring 20.73mm in length. A number of other pins were found in the South-East Yard.

Woollen Clothing

A portion of a piece of clothing manufactured of machine knitted wool, possibly a sweater (jumper) or vest was recovered from Feature 20 (Figure 290), a stone block impression in the South-East Yard. The wool was dyed a dark blue and is likely to have been part of an item of clothing issued to a prisoner.

Figure 287. Ornate suspender clasp manufactured of pressed brass

Figure 288. Top: suspender clasp. Bottom: portion of a belt buckle possibly for a rifle

Figure 289. Tri-looped ribbon brooch with stone settings

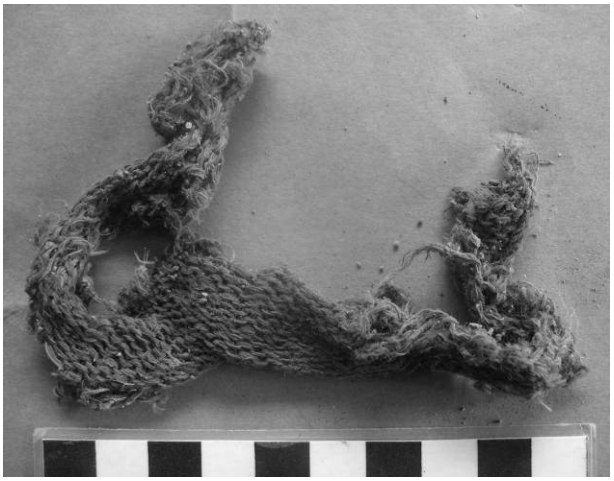


Figure 290. Portion of a machine knitted woollen jumper or vest

Boot and Shoe Heel Plates

No leather was recovered from the various features, which might have been expected. However, some information about shoes was obtained from the boot and shoe heel plates found. From the Gymnasium excavation 8 plates were identified, 7 of which were typical 'U' shaped plates. All had rectangular tack holes for attachment to the heel of the footwear, one flat side for sitting flush against the heel, and a slightly rounded side to lie face down to the ground. They varied in size as shown in Table 11.

Table 11. Boot and shoe heel plates from Gymnasium excavation

Layer	Bag	Length (mm)	Width (mm)	Thickness (mm)	Condition
Rubble artefacts	3	80	77	7	Complete
Demolition layers	102	70	75	7	Complete
	103	75	73	7	Complete
	111	64		9	Incomplete
	112	66	53	5	Incomplete
	120	55	11	5	Incomplete
	131	60	70	5	Complete
	142	70	58	5	Incomplete

The plates varied within only a limited range. The large plates (length 70mm and over) maintained a depth of 7mm (Figure 291), and the apparent smaller plates (lengths less than 70mm) 5mm (Figure 292). The lengths were often smaller than the width. The plate from Bag 111 had a thickness of 9mm.

An anomaly was the plate from Bag 112 (Figure 293), which had a different form with one straight side and a curved side, making a 'D' shaped object with a heart shaped cut out in the middle. At the curve apex a rivet remained in situ with a flat circular head. The head of the rivet was on the flat side of the plate. There may have been more rivets beneath the corrosion. The plate measured 66mm in length, 53mm in width and 5mm in thickness. Heel plates are typical artefacts found on occupation and work sites. They were attached to extend the lifetime of the footwear, and in some cases show distinctive decorative elements, as seen on the example in Bag 112.

An additional three heel plates were found in the South-East Yard.

Figure 291. Larger form of heel plate from Bag 102

Figure 292. Smaller form of heel plate from Bag 131

Figure 293. A heel plate with a heart shaped cut out, Bag 112

Conclusion

The buttons, heel plates, suspenders, buckles, brooch and pins appear to reflect a better standard of dress and lifestyle than might have been expected of the prisoners of the time, and many of these items are more likely to have belonged to prison officers.

The heel plates are likely to have been attached to a leather soled boot or shoe, increasing the lifespan of the foot wear, and are therefore more likely to be the property of prison officers than that of prisoners, for whom hobnail boots would be better wearing, especially if employed in hard labour. However, it cannot be discounted that there was a hierarchy of prisoner in Mt Eden and that some of them did have iron heel plates.

The pins were small and two were made of copper alloy, suggesting an earlier date than those made from steel. The upset head alloy pin (probably the type found in Feature 3 of the South-East Yard), was manufactured from c.1880. The steel type was introduced c.1890.

Utensils and Food

UTENSILS

Utensils from the Gymnasium Excavation

The largest group of metal objects was the utensil or small tool group, with 12 identified. This group comprised of 5 spoons, 1 knife, 1 spoon/fork, 1 possible fork and 7 unidentifiable handles. These were found singly and had no apparent association with each other. Due to the relatively secure nature of demolition layer, the objects are most likely to represent the phase of Prison development associated with the Stockade/Chapel demolition, prior to the construction of the Gymnasium, pre-1917.

From the demolition layer 5 spoons or partial spoons, part of a knife, and 7 unidentified utensil handles or parts were been identified:

- Bag 110: oval spoon bowl in 2 pieces, with a slight point at the bowl end, and the shoulder and neck still present. 96mm in length, 50mm in width at the widest point, with a bowl depth of 12mm. No decoration, markings and coatings were visible.
- Bag 128: an oval spoon bowl, similar to the bowl described above, bowl length 90mm.
- Bag 130: an incomplete spoon with a large oval head and broken handle (Figure 294). No decoration, makers marks or plating were visible to aid further identification. 140mm in length, bowl length 78mm, maximum width 47mm and bowl depth 15mm. Probably the remains of a serving/kitchen spoon.
- Bag 5: an incomplete shallow oval spoon bowl, broken at neck to handle and made of iron. 75mm in length, 48mm in width, 9mm depth of bowl.
- Bag 8: an incomplete iron elliptical spoon bowl, neck and part of handle (Figure 297). No decoration/markings/coatings were visible. 146mm in length, maximum width of bowl 52mm with a depth of 15mm, maximum handle width 10mm.
- Bag 137: a length of metal, with one straight edge and one with a slight bow. The object appeared to taper, both ends were broken and it was tentatively interpreted as part of an iron knife blade, with possible partial tang. 82mm in length, 22-28mm in width and c.4mm thick.
- Bag 112: an incomplete handle, broken along thin section of the shaft. It widens towards the rounded end of the handle. No decoration, maker's marks or plating were evident. 113mm in length, 27mm at its widest point. Based on form it is most likely to have been the handle to a spoon or fork.
- Bag 126: an incomplete utensil handle with oval x-section along the shaft. It was broken at the neck, and the handle widened and flattened at the other end. 113mm in length, 17mm in width. There were no distinguishing features visible on the handle.
- Bag 137: an incomplete utensil handle with rounded end and the beginnings of a central groove down the centre, beginning 4cm from the end. The metal tapered slightly. 67mm in length, maximum width 30mm.
- Bag 142: a possible utensil handle of cast iron. It tapered slightly to a squared end. The object was incomplete and measured 83mm in length with a width range of 9-14mm.
- Bag 101: an incomplete object with reduced rectangular tang for inserting into handle (missing). It had a slightly shaped shaft with narrow neck and a working end with a possible

tine? Another possible tine was missing. The tool was bowed, with the bend at the neck of the object. Possibly a small fork, it represented a tool or utensil that showed a higher degree of workmanship. 83mm in length.

- Bag 102: a utensil handle probably originating from a spoon or fork, with rounded end and tapering shaft (Figure 295). It was broken at the neck. 138mm in length, maximum width 23mm. No decoration, maker's marks or plating were visible.
- Bag 103: part of a possible utensil or spatula (Figure 296) formed from sheet metal and cut to shape with a machine. The widest end was rounded and there was a shoulder half way along. Maximum width 23mm, length 112mm. No decoration, maker's mark or plating evident.

One utensil came from from the upper rubble layer:

- Bag 4: a utensil handle, broken at the neck (Figure 298), the handle widening and flattening at the opposite rounded end. There was a fracture in the metal where it had been bent. It was 153mm in length.

Discussion

All of the utensil and small tools recovered from the Gymnasium excavations are consistent with the type of object found within sites where habitation, cooking and eating occur. All of these objects were incomplete, suggesting that they were present within the demolition layers of the Stockade/Chapel having previously been discarded by their users/owners.

Utensils from the South-East Yard

Utensils recovered from the South-East Yard comprised 3 spoons, 1 fork and 1 knife:

- Two spoons derived from Feature 3 (Bags 80 and 128), both heavily corroded and made of iron. One of them was almost complete (minus the end of the handle) and broken in two (Figure 264, above). The other mainly consisted of the handle, shoulder and beginning of the spoon bowl. Both were covered in corrosion mass, and therefore any original plating or decoration on the spoons was not visible. These spoons are likely to pre-date 1915, when the invention of stainless steel was announced and patented in the US by Harry Brearley. Brearley had discovered it first in 1912 when working for the Brown-Firth research laboratories in Sheffield, England.[7]
- One stainless steel spoon head was found in Feature 15 (Bag 134) – there was little decoration, but there was an impressed line around the edge of the beginning of the handle, which was missing.
- A stainless steel fork head with four tines was recovered from Feature 21 Pit 2 (Bag 152). Both utensils must post date 1915.
- An iron knife blade, probably from a kitchen knife, found in Feature 4 (Bag 20).

Cutlery

Spoons were common utensils that were used by all inmates in a Victorian jail, such as Mt Eden. These spoons from the assemblage may have been either the property of a prison officer, a prisoner

[7] http://en.wikipedia.org/wiki/Harry_Brearley

or the gaol kitchen. Only one fork and two knives were found in the assemblage, and it is likely that access to these utensils was more tightly controlled.

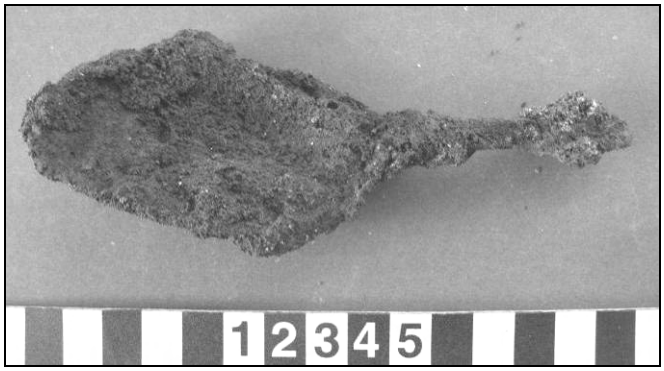


Figure 294. Spoon from Bag 130, Gymnasium excavation

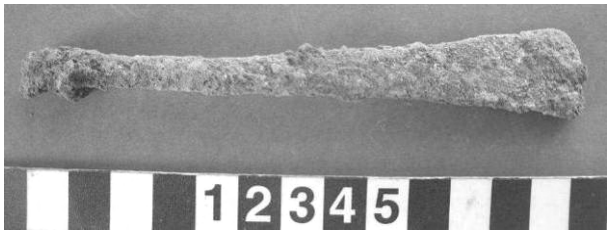


Figure 295. Utensil handle from Bag 102, Gymnasium

Figure 296. Utensil handle from Bag 103, Gymnasium

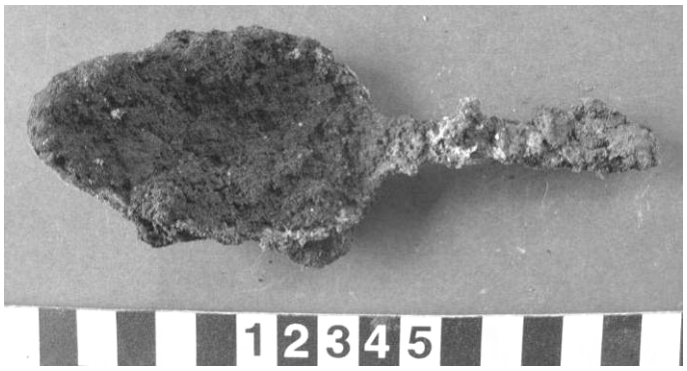


Figure 297. Spoon from Bag 8, Gymnasium

Figure 298. Utensil handle from Bag 4, Gymnasium

FAUNAL REMAINS

By Stuart Hawkins

Introduction

Faunal remains were found in a few contexts from the excavations, although the quantities were generally small and most were not in secure chronological contexts. These cannot therefore been seen as particularly representative of food consumed and disposed of on the Prison site over the years.

Methodology

Identifications were made to the lowest taxonomic level possible, whether that was family, genus, or species. However the most fragmented bone, which could not be assigned to a taxonomic class, was put into a broad mammal, fish, or bird category. The domesticated ungulates were identified by comparison to archaeological samples with the help of illustrations (Sissons 1930). The animal bones were quantified using NISP, MNI (for age estimates only), and MNBC (Minimum number of butchery cuts).[8] All methods were aggregated by provenance unit.

Animal age at time of death was estimated based on rates of epiphyseal fusion and timetables for tooth eruption (Silver 1969; Bull and Payne 1982; Grant 1982) and is expressed as age ranges in years for MNI. Indication of the sex of some pigs was determined from the morphology of the canines, where closed root canines are female and open root canines are male (Schmid 1972). Juvenile and adult birds were identified based on whether the epiphyses of long bones were fused.

Butchery cut definitions follow Watson (2000: Figure 3.3) for pork, beef and mutton, and Schulz and Gust (1983: Figure 1) for beef. Bones were assigned to butchery cuts to the extent possible with the available reference collections.

Results

The faunal assemblage comprised a total of 697 animal bones and teeth, mostly mammal. The majority of these were unidentified mammal fragments (Table 12). The most abundant identified taxon was cattle followed by rat, sheep, and sheep/pig. Only 3 bones from the South-East Yard excavation were identified as pig. Spatially most of the bones were concentrated in the South-East Yard, particularly Feature 21 Pit 2 and Feature 3, in which the majority of the cattle bones and teeth were also present. In the Gymnasium area smaller concentrations of mammal bones were found and these were concentrated within the demolition layers. Only small amounts of bird and fish remains were recovered. The bird bones identified were small bird bones (one of which was identified as black bird from the South-East Yard, and one a chicken bone from the Gymnasium area). The small amounts of fish bones were unidentified from both the Gymnasium and South-East Yard areas.

Two human teeth were recovered, one a molar with really bad cavities from the Gymnasium main demolition layer, and a chipped human incisor from South-East Yard Feature 22 chamber 2. Some of the bones also included a few bone tools – one a filed down bone handle from the South-East Yard (Bag 52) that looked suspiciously like a shank (see below). Another bone handle which was heavily rat gnawed was recovered from South-East Yard Feature 21 Pit 2 (see below).

[8] NISP – Number of Identified Specimens, MNI – Minimum Number of Individuals

Table 12. Mt Eden Prison Taxa NISP by provenance

Area	Provenance / TAXA	bird	black bird	cattle	cf sheep/pig	chicken	fish	human	mammal	pig	rat	sheep	Total
Gen Shed	area around wooden post beneath Shed			4	0				0		0	0	4
Gym	Area A			0	0				6		0	0	6
	Area A below demolition dark layer			0	0				2		0	0	2
	Area A top of demolition layer			6	0				38		1	1	46
	Area A main demolition layer			9	0			1	40		3	3	56
	Bag 109			0	0				0		0	0	2
	Bag 111			0	2				0		0	0	2
	Bag 112			0	0		1		1		0	0	2
	Bag 121			0	0				1		0	0	1
	Bag 122			1	0				4		0	0	5
	Bag 124			0	0				0		1	0	1
	Bag 125			2	0				3		0	1	6
	bag 126			2	0				14		0	4	20
	bag 128			1	1				2		4	1	9
	Bag 129			0	0		1		1		1	1	4
	Bag 131			1	1				0		0	1	3
	Bag 146			0	0				1		0	0	1
	from rubble bag 1			0	3				0		0	0	3
	Unprovenanced			0	1	1			1		0	0	3
Gym Total				22	8	1	2	1	114		10	12	170
North end	fill above natural			1	0				0		0	0	1
North end Total				1	0	0				0		0	1
SE Yard	47			3	2				43		9	0	57
	55			1	0				5	2	2	0	10
	above mortar layer			7	0				52		0	0	59
	Bag 52			0	0				1		0	0	1
	Feature 12			0	0				4		0	0	4
	Feature 20 above blocks level			0	0				1		1	0	2
	Feature 20 north east corner down to base			0	0				5		0	0	5
	Feature 21 Pit 2			18	3				132	1	1	1	156
	Feature 22 chamber 2			0	0			1	1		0	1	3
	Feature 3	2		17	5		1		109		3	2	139
	Feature 3			0	0				14		0	1	15
	Feature 3 extension		1	3	2				22		4	1	33
	Feature 3 south extension			0	0				1		0	0	1
	Feature 4 rubbish dump	1		5	1		1		6		0	1	15
	Feature 4 soil layer			0	0				1		0	0	1
	NW quad from fill over stone alignment			0	1				0		0	0	1
	RD9			5	0				0		4	0	9
	Surface mixed			3	0				8		0	0	11
SE Yard Total		3	1	62	14	0	2	1	405	3	24	7	522
Grand Total		3	1	89	22	1	4	2	519	3	34	19	697

Cattle

The beef remains were mostly from individuals aged between 6 months and 108 months (0.5-9 years, Table 13). At least two individuals from the Gymnasium area were under 4 years of age and another mature individual was over 7 years of age. The butchery cuts consumed at the Prison were a mixture of some high quality cuts such as rib and short loin, and some more marginal quality cuts such as short rib, neck and brisket (Table 14). Most of the quality cuts were deposited in the South-East Yard, whereas the Gymnasium area appears to have a higher proportion of low quality cuts. Only one head bone was present in the Gymnasium area.

Table 13. Cattle age at death MNI by provenance in months

Provenance	84-108 -	6-10 +	6-108	48 -	84 +
SE Yard					
Bag 47	1	0	0	0	0
Bag 55	0	1	0	0	0
Feature 21 Pit 2	1	0	0	0	0
Feature 3	1	0	0	0	0
RD9	0	0	1	0	0
Gymnasium					
Area A main demolition layer	0	0	0	1	0
Bag 122	1	0	0	0	0
Bag 125	0	0	0	1	0
Generator Shed	0	0	0	0	1
Total	4	1	1	2	1

Table 14. Cattle MNBC by provenance

Provenance	Head	Neck	Chuck	Foreshank	Brisket	Short plate	Short rib	Rib	Short loin	Rump
SE Yard										
Bag 47	0	0	0	0	0	0	1	0	1	0
Bag 55	0	0	0	0	0	0	0	0	0	1
above mortar	0	0	0	0	0	0	1	0	0	0
Feature 21 pit 2	0	1	0	0	2	1	2	4	1	0
Feature 3	0	1	1	0	1	0	5	1	0	0
Feature 4 rubbish dump	0	1	0	0	0	0	1	1	2	0
RD9	0	1	0	0	0	0	0	1	0	1
Surface mixed	0	1	0	0	0	0	0	1	0	0
North end										
Fill above natural	0	0	0	0	0	0	1	0	0	0
Gymnasium										
Area A top of demolition layer	0	1	0	0	0	0	1	1	0	0
Area A main demolition layer	0	1	0	1	0	0	2	0	1	0
Bag 125	1	0	0	0	0	0	0	0	0	0
Bag 126	0	1	0	0	0	0	0	1	0	0
Bag 131	0	0	0	0	0	0	1	0	0	0
Gen Shed	0	1	0	0	0	0	0	0	0	0
Total	1	9	1	1	3	1	15	10	5	2

Sheep

Sheep were identified as either younger than 4-5 years or older than 4 years (Table 15), giving an indication that mutton and potentially hogget cuts as well were being consumed at the Prison. There were no sheep head elements present. Most of the mutton cuts consumed and deposited were good quality neck cuts, but a number of low quality cuts such as scrag end of neck and forequarter were also present (Table 16). It is unusual that the popular mutton leg cuts were not present.

Table 15. Sheep age at death MNI by provenance in months

Provenance	48-60 -	48 +	36+
SE Yard			
Feature 3	1	0	0
Gymnasium			
Area A top of demolition layer	1	0	0
Area A main demolition layer	0	1	0
Bag 128	0	0	1
Bag 129	0	1	0
Bag 131	0	1	0
Total	2	3	1

Table 16. Sheep MNBC by provenance

Provenance	Scrag	Fore-quarter	Neck	Loin
SE Yard				
Feature 21 Pit 2	1	0	0	0
Feature 22 chamber 2	0	0	1	0
Feature 3	0	0	2	0
Feature 4 Rubbish dump	0	0	1	0
Gymnasium				
Area A layer above demolition layer	1	0	0	0
Area A demolition layer	0	0	1	1
Bag 125	0	0	1	0
Bag 126	0	1	3	0
Bag 128	0	1	0	0
Bag 129	1	0	0	0
Bag 131	0	0	1	0
Total	3	2	10	1

Pig

The pig cuts belonged to animals of 18 months or younger (Table 17), an indication that pigs were slaughtered as soon as they reached a level of maturity suitable for meat production and consumption. The few pig elements recovered included a skull fragment and a humerus, suggesting that the pork was limited to marginal cuts including brawn and hand.

Table 17. Pig age at death MNI by provenance in months

Provenance	12 months	12-18 months -
SE Yard		
55	1	0
Feature 21 pit 2	0	1

Faunal Summary

A clear pattern of a reliance on beef in the diet comes from the analysis of the remains concentrated in the South-East Yard and to a lesser extent the Gymnasium area. The beef cuts were most likely purchased and then brought to the Prison for further butchery. This is evident from the narrow range of cuts present, which did not include head or carpal parts. The age range of identified bones suggested that mostly prime steers bred for meat and some mature females at the end of their milk production were exploited. Mutton and maybe some hogget, too, were also brought to the site and represented by a narrow range of mainly neck cuts. Pork was not a major part of the diet. The cranial fragment identified suggested that one of these was a pig skull which was split open and made into brawn, which is made from the meat and brains. A hand cut was also present, which probably suggests that ham was made at the site. The pigs were bred for meat probably by a specialist pig farmer. Chicken was also a rare addition to the diet. Overall it appears that prison diet was restricted to a narrow range of meat cuts of surprisingly good quality mixed with low quality cuts.

A few other faunal remains were also recovered, but did not form part of the diet. These included commensals such as the European introduced black bird and rats. A chipped human incisor was recovered, interestingly, considering that a suspicious looking shank was recovered in the same area. Perhaps a relic of a prison fight?

Bone Utensils

Five bone utensils including four toothbrushes and one kitchen utensil were recovered from excavations in the Gymnasium and the South-East Yard. The presence of toothbrushes indicates that the oral hygiene of prisoners was of some importance to prison officials. Bone was used in the manufacturing of toothbrushes from the late 1700s, although they had first been invented in China in the late 1400s. In 1780, William Addis, while imprisoned in England for causing a riot, fashioned the first European toothbrush from a bone leftover from a meal and bristles he obtained from a guard. Following his release from prison, he began mass-producing the toothbrush using Siberian boar hair for the bristles (Mattick 2009). Bone continued to be used in the manufacture of toothbrushes until the onset of World War One when food shortages required bone to be kept for making soup.

There are five parts to the toothbrush, although these can be grouped into three areas: the stock which includes the head and bristles, the neck or shank, and the handle (Mattick 2009). The material recovered during excavations at Mt Eden provided examples of all three parts of the toothbrush.

A complete toothbrush (although present in two parts) was recovered from the Gymnasium excavations (Figure 299). The total length of the toothbrush was 155mm. The bristle side of the stock showed that four rows of bristles were originally present. The reverse of the stock had four lines incised along the length of the head, which had an orange coloured substance embedded within the lines (Figure 300). It was not clear that this orange coloured substance was originally associated with the toothbrush as it was water soluble and may have been the result of the substance coming into contact with the toothbrush post-deposition. The handle was marked with an arrow, commonly seen on objects issued by the Government (Figure 299).

Meyer Rhein patented the three-row toothbrush in 1844 and this configuration continued until 1890 (Mattick 2009). The example recovered showed four rows of bristles, but it is possible that it was manufactured during the years when the three-row toothbrush was more common. It is certain that the toothbrush was manufactured prior to 1914.

A toothbrush handle which appeared to have been filed down towards the neck to fashion a shank was recovered from the South-East Yard (Figure 301). The handle had been filed down on both sides to form a thin edge. The total length of the object was 83.76mm. The Government issue arrow was

apparent on one side, while on the opposite side of the handle the markings 'Extra Fine' and 'Guaranteed Wire-Drawn' were just visible.

The remains of a toothbrush handle showing evidence of being heavily gnawed by rats was recovered from Feature 21 Pit 2 (Figure 302) in the South-East Yard. This particular feature was identified as part of disused septic tank sewerage system associated with the current south wing of the Prison and it is possible that the broken piece of the toothbrush was disposed of down a toilet. The length of the heavily chewed object was 89.21mm.

A second toothbrush handle identical in markings to that of the apparent shank was recovered from Feature 4, a large rubbish dump in the South-East Yard (Figure 303). The markings 'Extra Fine' and 'Guaranteed Wire-Drawn' were easily visible on the reverse of the handle. The handle was broken off at the neck and measured 93.79mm in length.

A single bone handle from a kitchen utensil such as a knife, fork or spoon was recovered from the Feature 4 rubbish dump (Figure 304). The handle had a flat butt and was wider at the heel end (15.56mm) than at the neck end (14.08mm). A hole of approximately 5mm diameter was drilled lengthwise into the handle for the placement of the utensil itself. Remains of pins which would have secured the utensil to the handle were located 32.35mm from the neck end and were visible on either side of the handle. The bone had split lengthwise from the drilled hole on both sides of the handle. The Government Issue mark was incised on one side.

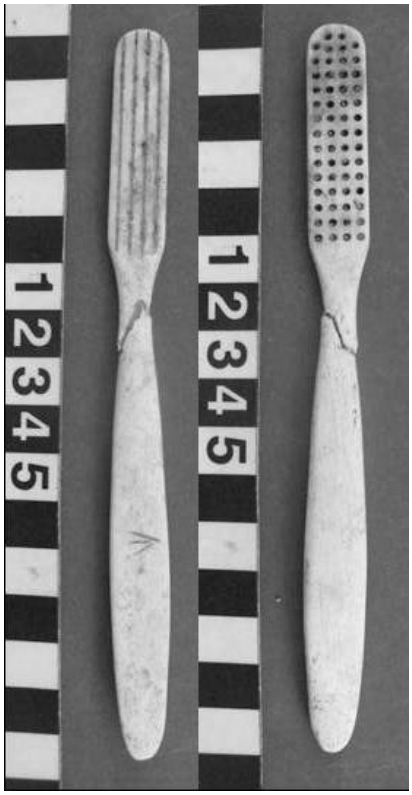


Figure 299. Complete Government Issue toothbrush recovered from the Gymnasium excavation

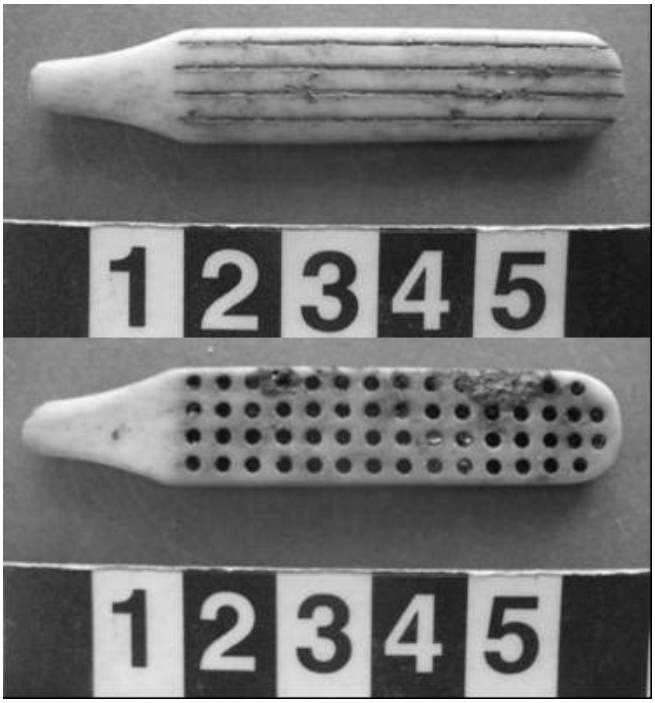


Figure 300. Two views of the stock portion of the toothbrush

There is an orange coloured substance within the incised lines

Figure 301. Toothbrush handle which has been filed down at one end, potentially into a shank, SE Yard

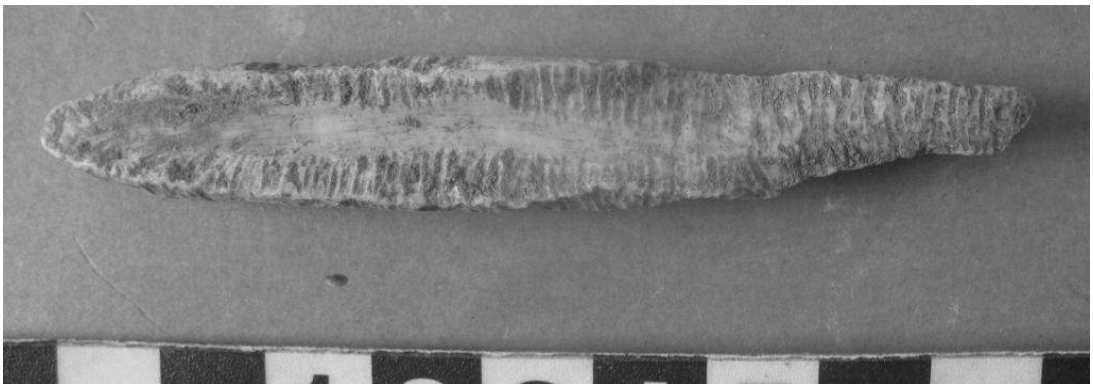


Figure 302. Rat gnawed toothbrush handle recovered from the Prison south wing septic tank, SE Yard

Figure 303. Toothbrush handle showing the Government Issue mark and the stamps on the reverse

Figure 304. Bone handle from kitchen utensil recovered from Feature 4, SE Yard

SHELL

Introduction

A small number of shell fragments were collected during excavation at Mt Eden Prison and were obtained from both the Gymnasium and the South-East Yard excavations. Analysis suggested that most of the shell was not likely to have been discarded food, but rather was likely to have been used in building materials or on pathways. Crushed or small shell was often mixed into 19th century concretes and mortar, spread over pathways in place of gravel, or added to garden soils to improve drainage.

Gymnasium

Two species of shell were collected from the Gymnasium excavation, *Pecten novaezelandiae* (Queen Scallop) and *Saccostrea glomerata* (Auckland Rock Oyster). Three fragments of scallop shell were recorded, one of which was located within the main demolition layer in Area A (Figure 305). The shell specimens were broken, but they were not crushed and were unlikely to have been used on a pathway. The fragment of oyster noted was a portion of the lower right valve of the shellfish (Figure 305). These species are likely to have been a part of inmate diet.

South-East Yard

Although a number of shells and shell fragments were recovered during excavations in the South-East Yard, they pointed to non-dietary uses of shell. No large concentrations of shell were found.

A portion of an upper left valve of a *Saccostrea glomerata* was located in a general clearance of the area. A scrape south of a trench where railway tracks cemented with stone were found yielded a single fragment of *Pecten novaezelandiae.* In the area identified as having been used as a garden by one of the guards (pers. comm. to J. Low 2010) within fill material on the north side of the brick wall a portion of a *Dosinia anus* (Ringed Dosinia or Tipatipa) was located. A second fragment of *Dosinia anus* was recovered from Feature 3 neighbouring the garden feature. In the eastern extension of Feature 3 a larger portion of *a Pecten novaezelandiae* was collected. Within Feature 20, a stone block impression, a single whole *Paphies australis* (Pipi) measuring 43.84mm was found.

The Feature 4 rubbish dump contained some whole shell examples: an upper left valve of a juvenile *Saccostrea glomerata* measuring 37.88mm in length and a lower right valve measuring 54.22mm in length (Figure 306), a *Pecten novaezelandiae* shell with a width of 61.87mm (Figure 306) and a juvenile *Austrovenus stutchburyi* (Cockle) with a width of 19.18mm. Also identified among the shell remains in Feature 4, was a single *Allodiscus tessellatus*, a now rare land snail with a diameter of 9.51mm. Little information could be obtained regarding this species, although Powell (1957) notes that a relative *Allodiscus dimorphus* could be found among the dead leaves of the Titirangi area.

A single whole *Zethalia zelandica* (Wheel Shell) with a diameter of 14.83mm was recovered from the Feature 15 drain leading into the septic tank system. Within the septic tank system in Feature 21 Pit 2 two fragments of an identifiable bivalve were located.

The area in the North-West Quadrant of the South-East Yard produced only two fragments of *Paphies australis* and a single whole *Zethalia zelandica*. This Wheel Shell was smaller than the previous example, measuring only 10.05mm in diameter.

Figure 305. Scallop and Oyster shell remains recovered during the Gymnasium excavation

Figure 306. From left: *Pecten novaezelandiae*, *Saccostrea glomerata* lower right and upper left valves

Figure 307. *Austrovenus stutchburyi* (left) and *Allodiscus tessellatus* (right)

Glassware

GLASS SUMMARY

The glass assemblage contained both food and non food items. Glass was recovered from four excavation areas: the Gymnasium, the South-East Yard, the Generator Shed, and the South Trench in the Southern Carpark. A total of 695 pieces of glass (including complete specimens) were analysed from all four excavations, with analysis indicating that at least 66 vessels were present along with an unknown number of window panes and skylight sheets (minimum count of one each is included in Figure 308). Table 18 summarises the minimum number of vessel types by excavation. Figure 308 shows the percentage of each product category for all items recovered from Mt Eden Prison.

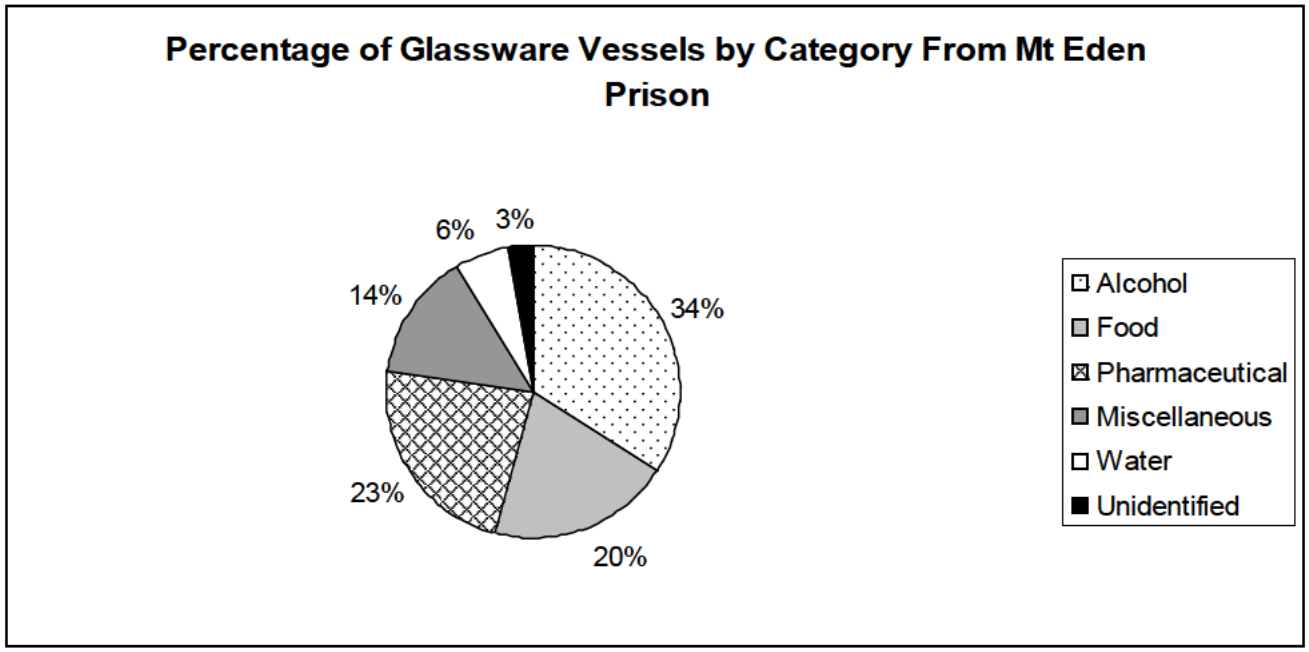


Figure 308. Showing the overall percentage of vessels identified by category for material recovered from Mt Eden Prison

The South-East Yard produced at least 36 individual items with the largest number (16) recorded in the alcohol category. Alcohol in glass containers was unlikely to have been consumed or deposited by prisoners, and their presence is probably the result of consumption by guards or workmen associated with the early construction phase of the Stockade building. Reuse of bottles with other liquids is also possible.

The Gymnasium excavation produced at least 20 vessels, with the predominant category being pharmaceutical items, but closely followed by alcoholic beverages. The material beneath the Gymnasium is associated with the early phase of the Goal (1850s-1870s) but does contain some later material.

The Generator Shed excavation produced a minimum of four items, which post-date 1900.

Six items were recovered (five complete) from the South Trench in the Southern Carpark and had a deposition date range of c.1860s–c.1920.

Table 18. Minimum Number of Glassware items recovered from the separate excavations at Mt Eden Prison

Minimum Number of Individual Glassware Vessels By Product Type				
	SE Yard	**Gymnasium**	**South Trench**	**Generator Shed**
Alcohol				
Black Beer	8	3	1	
Case Gin	3	1	1	
Champagne	1			
Wine	3	2		
Modern Beer	3			
Food				
Coffee			1	
Jam			1	
Oil	2			
Pickle	1	1		
Salad Oil	3	1		
Sauce		1		
Vinegar	1			
Unidentified	2			
Pharmaceutical				
Medicine	4	6		3
Castor Oil	1	1		
Disinfectant		1		
Miscellaneous				
Window Glass	present	present		
Window (Stained)	2			
Skylight	present			
Safety	present			
Drinking Glass	1			
Gum/Glue			1	
Oil Lamp Chimney		1		
Polish	1			
Water				
Mineral	2	2	1	
Unidentified	2			
Total	**36**	**20**	**6**	**4**

GLASS FROM GYMNASIUM EXCAVATION

The glass material recovered from excavations beneath the Gymnasium was highly fragmented with no complete examples of vessels recorded. A single sherd of aqua coloured window glass with a thickness of 3.06mm was recovered from the upper rubble layer. The top of the demolition layer provided three examples of window glass ranging from 1.58mm to 3.91mm thick. Nineteen pieces of aqua coloured glass representing three individual bottles were identified as large pharmaceutical bottles, possibly either having contained dispensed medicines or patent medicines. Other pharmaceutical remains included a body fragment of a castor oil bottle, a fragment from an amber disinfectant bottle, and an unknown patent or dispensed medicine. A single body sherd originating from a wine bottle was the only evidence of alcohol being present in this layer. Mineral water in the form of a small green dumpy bottle rim and neck completed the material for this layer.

The largest quantity of glass was recovered from the main demolition fill, that area within the footprint of the Stockade/Chapel building and its immediate surroundings. It was probably deposited from the initial construction of the building, the use of the building (with fragments falling between the floorboards), to its eventual removal and the deposition of demolition debris. Fifty-one fragments of window glass were collected from the demolition fill, with the majority (49) ranging in thickness from 1.30mm to 2.48mm, with two fragments (3.47mm and 3.48mm thick) having been painted over with a thick layer of white paint, perhaps to afford some level of privacy. All window glass was aqua; no coloured glass that could be clearly associated with chapel window glass was recorded. Two fragments of a clear oil lamp chimney were recovered.

Pharmaceutical remains included 13 pieces of a cobalt castor oil bottle in which most of the body, the rim/neck and base was present, two pieces of a blue oval patent or dispensed medicine bottle, and a partial rim/neck of a blue aqua short necked panel patent medicine bottle.

Only three food products were identified, with at least one each of pickle, salad oil and a sauce. One mineral water product was identified by the presence of a single complete white clay marble, which may have originated from a ‘torpedo’ bottle or a later ‘Codd’ bottle.

At least one case gin bottle was identified from 15 body fragments and a shoulder portion. All were of the same dark green colouration. Three pieces of light green coloured glass were likely to have come from a wine bottle containing a still white wine. Sixty-five pieces of dark olive green glass from at least three ‘black beer’ bottles were recorded; fifty-seven of these were body sherds, four were partial bases, one was a partial neck/shoulder, and three were rim/necks (Figure 309). The rims were all applied to the necks with examples of two collar/skirts (one straight and one slightly curved), and a rolled collar/band rim.

Figure 309. 'Black beer' rims/necks recovered from the demolition layer of the original Stockade/Chapel building

The lower part of the demolition layer contained two pieces of glass material, both belonging to an amber coloured bottle. One piece was a body fragment while the second piece was a complete prescription rim and neck. Both pieces were likely to have originated from a disinfectant bottle.

GLASS FROM THE SOUTH-EAST YARD

The South-East Yard produced the greatest number of glass remains, with at least 34 individual vessels identified to likely original product type, with 2 other vessels remaining unidentified. Alcohol was more prevalent than other types of products. Feature 3 provided several complete bottles with deposition likely to predate 1865. The material deposited in Feature 21 is likely to predate c.1870 and was probably deposited by guards, as prisoners should not have had access to these products.

Three pieces of glass were found during a digger excavation beneath the eastern Prison wall extending towards the motorway. Two pieces were from the same amber 'modern beer' embossed '…ERTY OF...COMPANY LIMITED AUCKLAND N.Z. 1921' (Figure 310) with a portion of the ABC triangle visible. The base was marked with the interlocked initials M.G., one of the marks used by the Melbourne Glass Bottle Works Company and accompanied by a small triangle. This bottle was manufactured in 1921 and would have been one of the last used for the New Zealand market in Australia, as the AGM plant began production in Penrose in 1922. A small body fragment of a green coloured vessel was probably from a bottle of still white wine or similar.

Figure 310. Portion of a 'modern' ABC beer dated 1921

General Collection

A general collection of glassware from the South-East Yard following clearance produced 14 pieces of window glass ranging between 1.45mm and 3.78mm in thickness. Four pieces of 'black beer' glass were collected, three small body or base fragments and one partial base and side. The kick-up on the base of this bottle was tool formed. There was no evidence of embossing.

Feature 3

Feature 3 underneath the solitary and condemned cells produced 358 pieces of glass and 6 complete vessels, representing at least 23 individual vessels of which 2 could not be identified by type. The unidentified vessels included a fragment of a clear plain round bottle which could have been utilised for a number of different products, and the shoulder portion of a small bottle which possibly contained polish, ink or medicine. Window glass was the most numerous item, with 112 pieces recorded measuring between 1.32mm and 3.40mm in thickness. A single piece of safety glass, flat on one side and ribbed on the exterior face, was noted. Two fragments of a plain round clear glass vessel were likely to have originated from a drinking glass.

173 pieces of glass and one complete bottle were identified as belonging to alcoholic beverages. These 174 items represented at least 7 individual bottles, and originated from only two alcohol types: case gin and 'black beer'. Seventy-four pieces of dark olive green glass were identified as belonging to case gin bottles and included two bases and one pig snout rim (Figure 311). Only one of the bases was complete enough to measure dimensions – 69.39mm x 73.73mm (Figure 311) – and was embossed with a large + extending almost to the edge of the base.

'Black beer' glass consisted of one complete pint size bottle standing 233mm high (Figure 312), three complete quart size bases (two shown in Figure 312), one partial base, two rims and 93 pieces of fragmented glass. The kickup on all of the bases was formed by a tool and contained no embossing. Base sizes ranged between 80.51mm and 89.54mm for the quart size bottles with the pint size bottle having a diameter of 65.87mm. The two collar-skirt rims were applied to the necks.

Glass from food containers numbered 17 fragments of glass and four complete bottles. Thirteen of the fragments of glass were related to a rectangular cross-section pickle bottle, 12 fragments coming from the body and the 13th piece being from the rim. A complete fluted vinegar bottle (Figure 313, left) standing 216mm with a base diameter of 49.72mm was embossed on the base with what appeared to be a registration mark. Closer inspection of the series of letters and numbers associated with registration marks showed the mark was not a legitimate one.

A complete salad oil bearing a striking resemblance to a 'World Globe' bottle standing 249mm high had a base diameter of 72.84mm (Figure 314, right). The bottle had a flared rim finish but did not have the world globe embossed above the shoulder as would have ordinarily been expected for a bottle of this form. A second complete salad oil with a flared rim stood 269mm high with a base diameter of 58.05mm (Figure 314, left).

A complete salad oil bottle of commonly referred to as a 'Christmas Tree' stood 251mm high with a maximum base diameter of 73.90mm (Figure 314, right). The bottle had a hexagonal cross-section and was wider at the base than the neck and had a collar finish. These particular bottles were very fragile and are not often recovered intact from archaeological sites.

Fifty-three pieces of glass and 1 complete bottle were identified with pharmaceutical products with at least 6 individual bottles identified. Twenty-nine pieces were associated with at least 1 cobalt castor oil bottle. The glass remains were highly fragmented but included a rim and neck with a collar band finish, and a base with a central nipple. At least one small round clear bottle or vial that would have contained a powdered medicine was present. Twenty-two pieces of aqua glass were associated with at least 2 rectangular cross-section patent medicine bottles; however, none of the glass was embossed, pointing either to a particular type of proprietary medicine or to a dispensing chemist. A single complete unembossed oval cross-section bottle standing 172mm high with base dimensions of 64.44mm x 43.24mm had a collar finish (Figure 315). These particular bottles were used for a variety of mid to late 19th century patent medicines and were also used by chemists to dispense prescription only medicines.

The material recovered from Feature 3 was unusually early. The salad oil bottles combined with the presence of a pig snout case gin suggest that deposition was unlikely to postdate 1865. This suggested the feature was a rubbish dump associated with the Stockade and built over during the construction of solitary cells in 1865. The location was certainly not a great distance from the rear entry which opened onto the mess area. The single skylight fragment, probably originally from Feature 4, may have been transferred to Feature 3 during clearing excavations by the digger.

Feature 4

The Feature 4 'rubbish dump' contained numerous pieces of glass (predominantly window/skylight), and therefore only a representative sample was collected for analysis. The majority of glassware recorded in this feature related to window glass and skylights. Three other items were collected and analysed.

Standard aqua window glass was numerous, with 19 pieces recorded measuring between 1.32mm and 3.72mm thick. Seven pieces of safety glass with thickness between 4.52mm and 5.81mm had a flat surface on one face and a ribbed finish on the other. This glass may have been used either as

traditional window or door glass or as a form of skylight. Fifty pieces of corrugated glass, ribbed on the exterior face were recorded. It is likely this glass was utilised solely as skylight.

Figure 311. Pig snout case gin rim, neck and shoulder (left) and base (right)

Figure 312. Complete pint sized 'black beer' flanked by two base and partial bodies of tall quarts

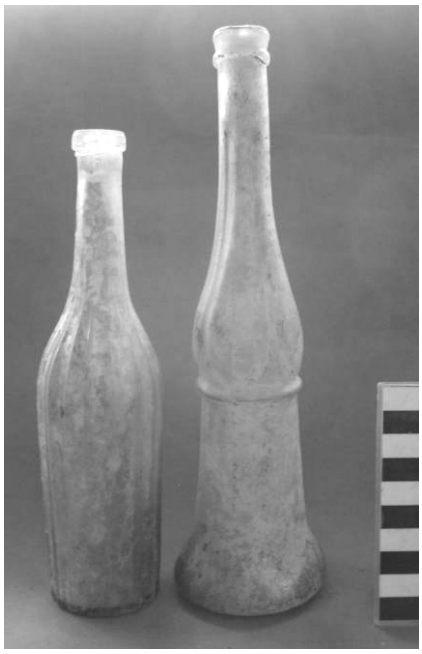


Figure 313. Fluted vinegar (left) and salad oil similar in form to a 'World Globe' (right)

Figure 314. Salad oil (left) and Christmas Tree salad oil (right)

Figure 315. Complete oval cross-section medicine bottle

At least 2 stained glass windows were represented amongst the glass material recovered from Feature 4, and may have been used in the original Stockade building following its conversion to the Prison Chapel. Both windows glasses were emerald in colour, with one being a slightly lighter hue. One of the windows was of standard window manufacture, whilst the second (the more brilliant emerald example) had a flat internal face with a textured external face.

Two food product bottles were identified, but were both highly fragmented. The remaining item was a clear glass bottle containing some form of polish, but it is unclear what the polish was intended for (e.g. boot, wood, brass). A portion of the bottle was embossed '…HINE'.

Feature 21 Pit 2

Thirty-seven pieces of glass were recovered from Feature 21 Pit 2 (cesspit). The glassware was recovered from the south-east corner of the pit, suggesting deposition was via the water closet sited above for approximately 30-40 years. All of the glassware was identified as originating from alcoholic beverages and represented at least 6 individual vessels. The material was consistent with a deposition range of c.1860-1870.

'Black beer' was represented by 23 pieces of glass with a minimum of 2 vessels present, evidenced by 2 bases (Figure 316) and 2 rims. It is possible that all the 'black beer' glassware originated from only 2 bottles which were shattered sometime after deposition when the cesspit was filled with rock. Both bases had tool formed kick-ups and the rims were both collar skirt finishes. At least 2 wine bottles were present amongst 11 pieces of wine bottle glass and included one base and 2 rim/neck (one was a ring seal and the other had a collar skirt finish). There was one champagne bottle base and one case gin base (Figure 316).

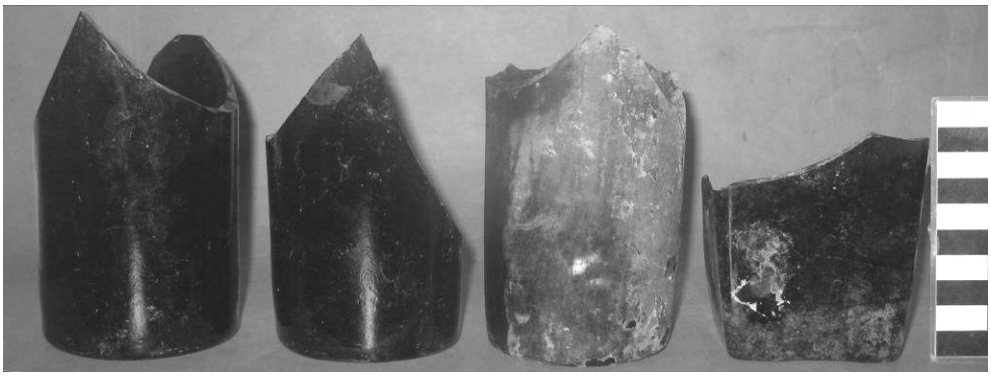


Figure 316. Two 'black beer' bases, champagne base and case gin base

Figure 317. Glass bottle tops from South-East Yard

Right to left: ring seal wine, collar skirt wine, and collar skirt 'black beer'

GENERATOR SHED GLASS

Glass material was recovered from two distinct areas located to the east of the Generator Shed. A complete KIA-ORA MINERAL WATER Co bottle standing 196mm high with a base diameter of 57mm, embossed on the base with the company initials K-O, was recovered from the area around the wooden transformer post (Figure 318). The bottle was a Codd patent but had the bulge neck in place of the usual double indentations. Although Codd bottles were manufactured from 1872, this particular specimen is unlikely to predate 1900. No specific company information was obtained providing an early date for the company, but it is known that their premises on New North Road suffered water damage following a fire in 1913 (*Wanganui Chronicle*, 1/5/1913). Controlling interest in Kia-Ora was obtained by Schweppes in 1930 (*Evening Post*, 4/6/1935), after which Kia-Ora was used as a drink name only.

Two patent medicine bottles were identified from a prescription rim/neck in aqua glass and a prescription rim/neck and partial shoulder of clear glass rectangular cross-section bottle. Both of these rims were located in close proximity to the Kia-Ora bottle.

A secondary location of material to the south-east of the transformer pole was identified as relating to a 'smithy', given the amount of slag deposits noted. Fourteen pieces of a blue aqua pharmaceutical bottle with a rectangular cross-section were recovered but not all of the bottle was present. Embossing on the front panel was incomplete but identified the pharmacist as '…USSELL/…HEMIST/ …CKLAND'. The base of the bottle was embossed with the number 6.

Figure 318. Kia-Ora Mineral Water found near the wooden transformer post

GLASS FROM THE SOUTHERN CARPARK

During excavations for the South Trench in the Southern Carpark, the digger unearthed five complete and one almost complete bottles or jars. A complete tall quart 'black beer' bottle standing 296mm high with a base diameter of 76.22mm was manufactured in a three-piece mould (Figure 319, centre). The bottle was embossed L 40 on the base with a central nipple and finished with a collar skirt rim. A complete small champagne bottle standing 254mm high with a base diameter of 73.68mm was finished with a ring seal (Figure 319, right). Traces of the lead seal were visible on a portion of the

neck. A complete mineral water or soda bottle with a crown top finish stood 191mm high with a base diameter of 55.53mm (Figure 319, left). It was embossed XST on two opposing sides just above the base. A search of the letters XST found no reference to bottle manufacturers or to any particular type of beverage or consumable product.

A complete Symington & Co, Edinburgh, Coffee and Chicory bottle standing 213mm high with base dimensions 50mm x 50.76mm bore the mould number 2158 on the base (Figure 320, centre). Symington was reported to have begun producing coffee for the Victorian market during the 1850s. A small amount of the coffee essence was poured into a cup and mixed with hot water, much the same way instant coffee is made today. Each bottle contained enough essence for approximately 25 cups.[9] A large almost complete Thompson & Hill Oak brand jam jar standing 149mm high with a base diameter of 97.91mm was missing only a portion of the base and a small section of the body (Figure 320, right). Thompson and Hill began producing jam from a factory at Birkenhead in 1897 using the brand name Oak.[10] The company was taken over by Watties in the early 1960s, who continued to use the brand. A fifth complete vessel marked EVERETT'S on the base stood 103mm high with a base diameter of 55.18mm (Figure 320, left). The jar was manufactured from clear glass with an external thread. The mouth was approximately 28.5mm in diameter and there was evidence of a white coloured residue on the interior face of the jar. Although there was an Everett's bottle company in Ohio, they produced only alcohol and soda bottles and were absorbed into the Ohio Bottle Company by 1904. It is likely that the name Everett refers to a product manufacturer, and although no records were located for this particular company or product, the jar is likely to have contained gum or glue. At least three of the vessels post-date 1900 (the soda bottle, jam jar and gum jar), while the coffee, champagne and 'black beer' bottles date to the latter part of the 19th century.

Figure 319. Bottles from the South Trench

From left: crown top mineral water, quart size 'black beer', small champagne

Figure 320. Bottle and jars from the South Trench

From left: external thread gum, Symington & Co Coffee, Thompson & Hill's Jam

[9] www.bmj.com/content/2/1037/local/admin.pdf
[10] http://www.teara.govt.nz/en/food-and-beverage-manufacturing/5

Clay Pipes

CLAY PIPES FROM THE GYMNASIUM

Clay pipe fragments were analysed by Colin Sutherland. A total of 42 clay pipe fragments were recovered from the Gymnasium, representing no fewer than 12 specimens. The minimum number of pipes was established by counting the largest number of uniquely identifiable elements of pipe, which in this case is the spur. Included in this number are a number of cutty pipes which, while they do not have spurs, have a corresponding part that is easily identifiable.

Maker's Marks

Five known makers, mostly originating in Glasgow, were identified in the assemblage (Table 19). Pipes from all these makers have been recovered from New Zealand sites before.

Table 19. Clay pipe makers represented in the Gymnasium excavation assemblage

MAKER	No.	Date Range
McDougall	4	1847 – 1968
Davidson	2	1861 – 1910
Murray	1	1830 – 1861
Balme	1	1832 – 1854 1862 – 1866
Fiolet	1	1764 – 1920
Unknown	3	

Duncan McDougall and Co, Glasgow.

Duncan McDougall and Company is listed for the period of 1847-1968 (Oswald 1975:205) and was one of the true powerhouses of the 19th century Glasgow pipe making industry. McDougall is often renowned as the largest exporter of pipes in Britain, and indications from around the USA, Australia and New Zealand support this (Alexander 1983; Humphrey 1969; Walker 1983). Four stems bore the McDougall mark; all of them with the usual McDOUGALL/GLASGOW stamped into the side.

William Murray and Co, Glasgow (Caledonian Pipe Works).

William Murray is known to have produced pipes between 1830 and 1861 (Oswald 1975:205; Walker 1983:13), though examples from this maker have been found in sites that date as late as 1869. Only 1 piece from this maker was recovered from the Gymnasium excavation, inscribed in the usual way MURRAY/GLASGOW.

Thomas Davidson and Co, Glasgow.

Thomas Davidson took over Murray's company (Caledonian pipe works) in 1862 and continued to manufacture pipes until 1910 (Oswald 1975:205; Humphrey 1969:15). Pipes from this manufacturer have been recovered from sites throughout New Zealand and often have numbers moulded onto the left side of the spur. Two examples from this maker were recovered from the Gymnasium excavation, all of them with the mark DAVIDSON/GLASGOW on the side of the stem.

Balme, London.

Oswald (1975:132) lists several Balmes in London, all working out of Mile End. Examples from New Zealand are usually attributed to Paul Balme, who manufactured pipes in the periods 1832-54 and 1862-6. The specimen recovered from Mt Eden Prison has BALME/LONDON stamped on the

back of the bowl, with the letters W/B embossed on the spur. This could indicate that it was made by William Balme (1856-1861).

Fiolet, St Omer.

Louis Fiolet was known to have made pipes in St Omer, France, between 1764 and 1920 (Humphrey 1969:17). The company is listed as having an office in London between 1853-84 (Atkinson & Oswald 1969:59), though it is uncertain whether this would have had any effect on their exports to places like New Zealand. One stem fragment from the Gymnasium Excavation can be attributed to this maker. It has the words FIO[LET]//ST OM[ER]//DEPOS[E] stamped on top of the stem.

Discussion

Most of the pipes showed some signs of use, with most of the bowl fragments blackened during the smoking process. There were also two pipes that underwent extensive modification, so they could be used despite breakages. The most modified was the Balme pipe, which continued to be used after its mouthpiece broke off. The smoker appears to have held the pipe with their teeth, creating indentations on the top and bottom of the stem. The other was one of the Davidson pipes, which someone appeared to have tried to sharpen. The presence of Davidson pipes tends to indicate that the pipes from this area were deposited after 1861.

CLAY PIPES FROM THE SOUTH-EAST YARD

136 fragments of clay tobacco pipes were recovered during excavations in the South-East Yard, along with two complete examples. A minimum number of 36 pipes were present in the assemblage. The majority of examples contained evidence of charring, suggesting they were used for some period of time before breakage and disposal. Gojak and Stuart (1999) suggest that pipes in general survived in use from several days to two weeks, such was their fragile nature, but it is likely that in the prison there would have been a greater need to preserve the pipes for as long as possible. All of the pipes appeared to be the shorter cutty pipes favoured by labourers.

Some pipes were recovered from the general fill. Following the initial clearance a stem piece was located on the surface. The stem was missing the bowl and the mouthpiece, but it was stamped MURRAY GLASGOW (Figure 321). Two fragments of a bowl were recovered which fitted together and one further bowl fragment was noted. None of these pieces had any identifying marks. In the areas located above Features 3 and 4, four bowl fragments were recovered, along with one partial bowl and stem, and one partial stem with the mouthpiece worn down. Test Pit 1 yielded two partial stems, one of which contained remnants of a yellow brown glaze. The excavation of a stormwater trench uncovered a single partial stem with no identifiable markings.

The majority of material relating to clay tobacco pipes was recovered from archaeological features, some large and others small and discrete. The immediate area around Feature 1, an alignment of stones located towards the rear of the Stockade yard (east side), held one partial stem stamped…..N/….OW possibly originating from a Davidson pipe and a partial bowl with relief moulding of alternating lines and returning lines (Figure 321).

Feature 3

Fifty-six individual fragments of clay pipe were recovered from Feature 3, believed to be the location of the solitary and condemned cells, made up of 25 partial stems, 21 partial bowls, 2 whole stems, 2 bowls with spur, 3 stems with partial bowl, 1 bowl with partial stem and 1 partial stem with spur. Four individual manufacturer's were identified from marks located either on stems or bowl: Milo, McDougall, Davidson and L. Fiolet. At least seven McDougall pipes were present within material

recovered from this Feature, and one each of the remaining three manufacturers. The L. Fiolet pipe was stamped with the mark L. Fiolet St. Omer Depose (Figure 323), being one of only two French pipes recovered during excavations in the South-East Yard (the second also Fiolet). The Milo pipe was stamped as such on the bowl (Figure 326) and was manufactured by Theophilus Milo of London who produced wares between 1860 and 1870. The single Davidson pipe was identified from a stem fragment where only ...ON was visible. The McDougall pipes were generally identified from partial stems, with one a partial stem and bowl also containing a mould number 131 (Figure 322). Comparison of this mould number to an 1875 Price List for McDougall pipes identifies this mould number as Junk T D (Sudbury 2006). Also noted were two Baltic Yachter stems (example Figure 323), but the manufacturer of these two pipes is unknown. Three partial bowls showed evidence of relief moulding; one fragment was moulded like a tree complete with bark patterns and a cut branch (Figure 322); another had a crown on one side with an anchor on the other; the third example was too fragmentary to discern the mould type. Several fragments of bowl contained a line of small indentations around the circumference approximately 3mm below the rim.

Five of the stems retained evidence of glaze; three having a yellow-brown glaze (example Figure 323) and two having a yellow glaze (example Figure 323). The glaze was used to put a barrier between the porous clay and the smoker's lips to prevent skin sticking to the clay and being ripped away when the pipe was removed. At least three stems showed evidence of teeth marks where the pipe was held between the teeth. Two of these stems (third row Figure 323) showed grooving on the upper and lower sides of the pipe. The majority of mouthpieces were unformed, but there were two examples of formed mouthpieces (Figure 323), although these were not finished neatly. Two examples had very short stems (top and second row Figure 323) and were either designed to fit into a further stem piece or were modified after their original stem broke. Three spurs were noted among the pieces collected, one of which was marked with the initial T.

Feature 4

Feature 4 contained five pieces of clay pipe including two partial stems with no markings. A partial bowl and stem was stamped MURRA…, being that of William Murray who is known to have manufactured pipes between 1830 and 1861 (Figure 324). A stem bearing the stamp Baltic Yachter was of unknown manufacture (Figure 324). A partial bowl was marked with the initials T. D. using plate inserts inside the mould (Figure 324).

Features 12 and 15

Two partial stems and one partial bowl were recovered from Feature 12. None of the pieces had any identifying marks. The area associated with Feature 15, the ceramic tile drain, contained 13 pieces of clay pipe. Eight pieces were partial bowls with no markings, and there was a single partial stem and a whole stem, again with no markings. One partial stem was stamped …RISTO…, which suggests it was manufactured in Bristol. Two pieces of a bowl fitted together to showing the name WHITE RIFLE PIPE inside a shield.

Features 20 and 21

Feature 20, a stone block impression, revealed one partial bowl with no markings. Feature 21, the large stone cesspit, revealed 32 pieces of clay pipe, two almost complete pipes (Figure 326) and two complete pipes (Figure 326). All the clay pipe material was located in the designated Pit 2 (south end), and located beneath the water closet located in the yard for a period of not less than 30 years. There were at least 12 pipes amongst this collection and four manufacturers were represented: McDougall, Davidson, L. Fiolet (Figure 326), and Balme (Figure 327). The McDougall name was recorded nine times, predominantly on bowls, but also recorded on stems. There were three distinctly

different marks used by McDougall (Figure 327), one forming a circle of McDougall Glasgow, the second placing the name and city within a shield, and the third with '277 Parliamentary Rd'.

Bowls and fragments suggested that at least two T D type pipes were present in the assemblage. One partial stem marked …E &Co has not been specifically identified and may relate to White or Balme. One stem showed a design where the pipe had been rolled over the design before firing. Another pipe bore the name J Harris, Auckland. This was an advertising pipe for J. Harris, owner of 'Cavendish House' on Princes Street, who moved his business to the top of Shortland Street in August 1863. Harris sold a range of tobacco and tobacco products including Meerschaum and briar root pipes, and French and Fancy pipes (*Daily Southern Cross*, 21/8/1863).

Feature 22

Feature 22, the later brickwork modification within Feature 21, produced nine pieces of clay pipe representing at least one pipe. A stem with spur was stamped W. WHITE and a bowl fragment marked T D.

Figure 321. Top: relief moulded partial bowl from Feature 1. Bottom: Murray pipe stem from surface

Figure 322. Examples of the bowls recovered from Feature 3, SE Yard

Figure 323. Examples of the stems recovered from Feature 3, SE Yard

Figure 324. Murray pipe, T. D. pipe and Baltic Yachter pipe recovered from Feature 4, SE Yard

Figure 325. Remains of the White Rifle Pipe bowl and partial stem of a pipe manufactured in Bristol

Figure 326. Maker's marks, SE Yard

From top: L. Fiolet, McDougall (Parliamentary Road), unmarked, McDougall

Figure 327. Maker's marks of McDougall (bottom row), Balme (top left) and hand inscribed initials (top right)

CHAPTER 8: DISCUSSION AND CONCLUSIONS

SUMMARY OF RESULTS

Introduction

Mt Eden Prison has undergone continuous change since it started as an army stockade in the 1850s. It has acquired a number of names as it has evolved from stockade to gaol to prison. The forbidding exterior of the main Prison block built out of rock quarried by the prisoners themselves was at various times called the 'Stone Jug',[11] 'Reston's Restaurant',[12] and 'The Mount'. Recently, it has become 'The Rock' (e.g., Siemer 2008), a moniker adopted from the Alcatraz Prison. Looking at the Prison today, it is not so easy to recognise how much of the Prison building is carved out of the rock around Mt Eden. Early photographs of the area showed that the original Prison wall created a flat area out of what had been the lower slopes of Mt Eden as the southern wall was hard against the un-quarried slopes. Through time, the quarrying activities extended further and created a wider buffer around the Prison, now filled in with commercial activities. However, the architecture, history and archaeology all demonstrate how the basalt rock from Mt Eden has changed the landscape, using prison labour.

The work carried out at Mt Eden Prison combined archival research, recording of heritage buildings that were demolished, and archaeology – both monitoring and a few set piece excavations. The main Prison building was still a functioning prison and it was therefore not possible to investigate that structure. Preliminary recording of the structure by Salmond Reed (2006) and observations made by archaeologists during the project indicate that significant information regarding the construction and history of the institution could be obtained by more detailed investigation.

The key archaeological investigations that were carried out were in the area under the old Gymnasium, in the South-East Yard and in front of the Prison around the old Generator Shed. The basalt bedrock made digging conditions difficult, with concrete and basalt flakes in large quantities in the upper layers around the structural remains. In this chapter, we bring together some of the conclusions, first from the artefacts recorded from the different areas, then from the archival information, buildings recording and excavation work, to explore the history of Mt Eden Prison.

Artefact Assemblage

The artefacts recovered from the excavations contained few objects that were unique to the Prison, but the range of artefacts was not typical of other 19th century archaeological sites excavated around Auckland. This is not surprising given the specialised nature of the site and its history. It is the near absence of a good ceramics assemblage that is most distinctive. Only a few fragments of ceramics were recovered throughout the project area, and while transfer printed pottery was standard in most contemporary domestic situations, the prisoners were probably given more robust but cheap metal plates which have not been recovered. Objects such as pipe fragments and bottles are also typical, but like the ceramics were in relatively small numbers given the history and nature of the Prison site. Whether this scarcity related to heavily controlled access to tobacco and drinks, particularly alcohol, at the site or to disposal practices is not known, but probably both factors played a part.

A few items spoke more directly to prison life. The government-issue arrow marks found on toothbrushes, the handcuffs found by Best in 1995, and the bullet from the Gymnasium excavation all

[11] E.g., *Observer*, 21/9/1889: 11; *Observer*, 12/9/1891: 16

[12] *Observer*, 9/12/1892: 6; Reston was the governor of Mt Eden Gaol from 1883 to 1900 [*North Otago Times*, 16/3/1883: 2; *Colonist*, 24/1/1900: 4]

relate to the governing and managing of the prisoners. The modified bone toothbrush handle suggested that the prisoners found ways of arming themselves at times.

A couple of militia or military buttons date from the 1850s to the 1870s, tracking the transition from the military stockade to a public gaol. Other personal items, though, such as jewellery, suspenders and belt buckles, are more likely to have been the property of the guards than the prisoners, but none were expensive and that is hardly surprising. Cheap adornment would have been the order of the day.

The faunal remains recovered from the excavations were limited and it is difficult to draw conclusions from the assemblage. Butchered sheep, pig and cow were identified and included some good cuts along with a number of cheaper cuts. However, these were found together and it is not clear whether the different cuts were given to different groups in the prison, for example the good cuts to the staff. Other finds included shell, rats and bird bones, but these were not brought in for food (with the exception of a few of the shells and a chicken bone) and were probably discarded in the rubbish.

A large quantity of building debris was found around the Prison, often used as fill for later surfaces. Within the Prison wall itself, the yards continued to be built up through time. The demolition of the Stockade building used as a chapel included a large number of nails mixed into the remains of the plaster used inside the building. It was also possible to see the early foundations and floor piles, and to match the entrance on the north-west corner with the early photographs. The unusual basalt block drain around the Stockade/Chapel building was in good condition but its shallowness remains intriguing. Remains of the wooden Stockade fence were not identified, but given the difficult conditions and major ground disturbance this is perhaps not surprising.

The nails within the demolition fill of the Stockade/Chapel contained both an earlier set of nails from the 1850s-70s and a later post-1880s set. It seems likely that the earlier material came from the original building of the Stockade, whereas the later nails could have been used during any refurbishment of the structure when it had become the prison Chapel.

An even wider range of nails was recovered from the South-East Yard excavation, from possible handmade nails, to machine cut nails, wire pulled nails and narrow L-head and T-head nails. The majority by far were the wire-pulled nails, followed by the machine-cut nails. This puts the date of the nails found post-1880, and more likely post-1890, when wire pulled nails quickly became the norm because of the ease of their manufacture and relative economy. Narrow L-head and T-head nails were recovered and were probably used in wood flooring or panelling. A smaller quantity of wire pulled nails with detachable lead heads were also found and would have been used for roofing of makeshift corrugated sheds or fencing in the prison yard.

Slate that was used for roofing was also recovered, although not in the quantities that might have been expected. It is likely that after the 1965 riots, when much of the Prison building was burned, this material was removed from the site. Slate used as a writing surface was also found in the debris, as were some lead pencils, but the unique sun-dial scratched into a shaped piece of slate was a special item.

The plaster found in the Gymnasium excavation was not diagnostic and was heavily crushed into the other debris from the demolition of the Stockade/Chapel building. Other artefacts found around the site included the remains of door locks, hinges and a range of other broken objects of unknown function. The identification of two possible spring loaded bolts may indicate locking mechanisms used on some buildings in the late 1800s–early 1900s era. Overall, most of the old building material must have been removed from the site with only some recycling.

Stone Working

Stone breaking was a key component of the discipline regime meted out to the prisoners. Most of the evidence of this activity was gone by the latter half of the 20th century, but the investigations carried out trace the story of this activity, its increasing mechanisation, and changes in transportation of the product from horse and dray to rail and wagon.

The best evidence for the stone breaking activities came from the objects within the foundations of the Generator Shed. Stone breaking and dressing are known to have been practised by prisoners on the Mt Eden Prison site, commencing at least as early as 1863 (WCS 1995). Hard labour prisoners are recorded in the *Weekly News* (17/8/1864:6) as being present at the gaol from 1858, when extensions were made to the original Stockade to house them.

In 1863 pre-cutting of the stone for the future new prison commenced (WCS 1995). This was conducted by male prison inmates, and there appears to have been a two tiered skill system in place:

- Those of lower skill who worked in the quarry breaking up the stone for metalling, and cutting stone for later building works. This role was filled by those sentenced to short periods of detention, and those awaiting trial.
- Those of increased skill who dressed the cut stone for the later projected new prison, plus general maintenance and additions to the current prison. This role was filled by those on longer term sentences.

Objects from the Generator Shed site reflect both of these types of work and include drill bits, a lever, chisels and cold chisels, tongs, and a hatchet head. A blacksmith's forge is known to have existed on the site from 1909 (*AJHR*, 1910: H-20:6). It is not known exactly when the first quarrying and breaking up of stone for road metal began, but it is likely to have been sometime between the dates 1856 (when the first Mt Eden Public Gaol was opened by John Logan Campbell) and 1863, when pre-cutting of the stone for the new prison began. In 1866, a tramway was laid to convey the broken metal from the stone breaking machine (*Weekly News,* 11/8/1866:15), replacing the horse and dray that was used previously, confirming that the production of road metal was already well established by this date.

Supporting a late 1800s date for the objects recovered is the presence of four large horse shoes on the site. The form of the shoe suggests that they came from work or dray horses, and reflect the period pre-dating 1866, when the horses were replaced by the tramway. The horse shoes were recovered from within the foundations of the Generator Shed. Horse and dray were used prior to the laying of rail track in 1866 (*Weekly News*, 11/8/1866:15) to move the broken stone from the quarry to outside of the prison. Rail machinery, and at some earlier point stone breaking machines, can be regarded as good indicators of efficiency, mass production and potentially an emphasis on speed and maximum earnings for the Prison. An ethos of prison management of the time was that prisons should be self-sufficient and earn an income rather than be a drain on society.

A few other tools were found during the South-East Yard excavation, including chisels, rasps and knives. These may have had a domestic or industrial function. It is likely that they were used within the buildings of the Stockade or Gaol. The rasps and chisels were all broken, but they are unlikely to have been allowed to be kept by prisoners as they would have made ready weapons. The modification of the bone toothbrush handle into a possible shank suggests that careful monitoring of prisoners' activities would be required. Knives would have been used in the kitchens and in light industry, but no handles were found, although a partial blade was identified.

The product of all this hard labour, though, was the basalt blocks. The basalt was hewn by the prisoners out of the Mt Eden quarry, dressed and used throughout the site and exported from the site. The irony is that by the time the Gymnasium and Bag Shop buildings were constructed after 1917, it

appears that the Prison's south wing had temporarily exhausted the supply, or at the least the desire for more basalt buildings, and these buildings were constructed out of moulded concrete blocks. The mould chosen looked like the roughly dressed stone used in the wall and the main Prison wings. Basalt was used in the corners to provide better structural support. The Generator Shed, however, was built out of basalt and after the Prison buildings within the wall were finished. No detailed analysis of the basalt flake debris from the stone breaking activity was carried out, although remains were found near the southern wing of the Prison above the demolition layer of the Stockade/Chapel remains.

THE CHANGING FACE OF MT EDEN PRISON

The results of the Mt Eden Prison excavations can be placed within a larger framework of historical archaeological interest in understanding how 'institutions' have operated around the world over the last few centuries. 'Total institutions' such as prisons organise people into hierarchical and usually supervised groups bounded and separated from the outside both socially and physically (after Gorman 1962 quoted in Sutton 2003; De Cunzo 2006; Spencer-Wood and Baugher 2001; Piddock 2007; Flexner [in press]). The appeal for archaeologists in these institutions relates both to the evolving roles that such institutions have played in societies, often at the intersection of class, gender, race and power relationships, and also to the overt spatial manifestation of these relationships in the landscape. Furthermore, the location and organisation of penal institutions has always been an important factor in the British settlement of Australia and New Zealand (see e.g. Cassella 2001, 2005, 2007; Casella and Frederickson 2004).

With such a venerable institution as the Mt Eden Prison, with a living, active and frequently revolving community and a rich documented history, the results of the archaeological endeavours at the Prison to date have significantly added new information to our understanding of its history.

A few excavations have been carried out in New Zealand on former prison sites, although the extent of the work has usually been limited. The work on the Queen Street Gaol site (Best 1992) in central Auckland has been discussed earlier and the Mt Eden Prison is a direct descendant of that complex. Other prisons outside of Auckland have also been the focus of archaeological work. Petchey (2002) describes the excavation of the Dunedin Gaol site, which dated between 1855 and 1898, and provides interesting comparative data to the Mt Eden Prison excavations. Artefacts were similar in both sites, although the larger Mt Eden Prison provided a wider range of materials than the more limited Dunedin site, despite the Mt Eden construction material being dominated by the local Mt Eden basalt.

Habberfield-Short (2007) discusses the results of excavations relating to the Lyttleton Gaol complex, also from the late 19th century. The area examined was peripheral to the main complex and much of the material recovered could not be easily separated from some of the earlier use of the land.

Evidence of hard labour was found at both Dunedin and Lyttleton (Habberfield-Short 2007), where prisoners were involved in quarrying stone and working that material. The hodge-podge of buildings on the Dunedin Gaol site (Petchey 2002) that built up during the second half of the 19th century was also similar to Mt Eden, but never reached the scale seen at Mt Eden. Eventually, that site was cleared and used for building the new Law Courts complex, while at Mt Eden the main Prison block replaced the earlier structures.

The major shift during the creation of the Prison during its early life was the growth of a general movement derived from Britain, described as the 'separation system'. This separation system was one of the major responses to the squalid conditions criminals had been subjected to in earlier periods. It involved the creation of prison buildings with separate components reflecting the types of crimes that had been committed. Apart from separate prisons for men and women, the idea was to

separate vagrants from felons, remand prisoners from convicted prisoners and debtors from other prisoners as well. The idea was to prevent different classes of criminals for corrupting each other (Tomlinson 1980:94-95).

The separation system also included providing a cell to ensure that prisoners were generally isolated from each other, except during supervised communal activities. The creation of cells for individual prisoners, however, required new buildings and also created challenges for handling lighting, ventilation, heating (Tomlinson 1980:100-102) and drainage. All of the proposed designs for the main building at Mt Eden incorporated the separation system, explicitly creating individualised cells and separate spaces for the different prisoners from the outset.

The drainage system found in the South-East Yard highlights the basic requirements of looking after prisoners. Life in the Prison revolved around routine, none more important than the routine around mealtimes. While we did not recover much relating to the prisoners' life inside the main Prison building beyond a few animal bones, we did at least get to track the flow through the digestive system to gain a more fundamental view than was offered up by the historical sources. Drainage is serious stuff on historic sites! The 10-sided ceramic drain found in the South-East Yard that led to the sump was a relatively significant structure. It had to be dug into the basalt bedrock and then built with basalt blocks. Archival research suggested that this might have been an 'earth-system' used for sewage prior to 1877, which may have been improved upon with better venting using the brick structure found inside. A privy was also noted in this location around 1900, and explains why a high number of undergarment buttons (and a regimental button) were found inside the feature.

Examination of other infrastructure relating to the main Prison building requires work on that building which was not possible during this project, but the exterior of the building was an obvious statement both to prisoners and to the community. Tomlinson (1980:110) notes that 18th century gaols had largely adopted the same design as houses, with rooms off a corridor or courts. The wooden Stockade buildings at Mt Eden fitted this model. But by the 19th century, a more overt and monumental prison architecture was being employed in England and its colonies, with the turrets and crenellation of mediaeval castles a favoured source of inspiration of prison design. This presented 'a daunting and repelling, sight' (Tomlinson 1980:110). Indeed, as discussed earlier, the more elegant exterior of the Mt Eden Prison building proposed by Burrows was dropped for not conforming to this dour outlook. Burrows had experience in designing a prison in Malta (Salmond Reed 2006), where a more exotic brief may have been used. The model for the Mt Eden Prison was to follow the trend back in England, where there had been a strong reaction to the creation of 'Prison Palaces' that might be perceived as giving criminals a 'taste of luxury' (Tomlinson 1978:71).

The plans for the 1880s Prison fit neatly with the description provided by Foucault (1995) regarding Victorian period penitentiaries. The architectural design closely followed those in Europe, with individual cells and centralised surveillance, along with the provision of the hospital and chapel to care for the physical and moral well-being of the prisoners. The two rejected designs presented in 1882 followed the panoptican model more obviously, with the central offices and infrastructure surrounded by the cells. The Burrows model still had a centralised control area, but the emphasis seems to have been on creating individual cell blocks in stages. This offered separate management of different types of prisoners in different areas. More practically, perhaps, the attraction of this design reflected the fact that the Prison was to take over 30 years to complete and could be built in stages by prison labour while maintaining operation.

The philosophy of separation that governed the design of the main Prison continues with the latest developments. However, the modern design requires that separation to be expanded outside the original space created by the main Prison wall, with separate structures such as the Remand Prison and new buildings outside. In fact, the old main Prison remains a relatively inefficient structure to maintain compared with modern prisons and will soon be empty. Individual cells are also less

common, as the pressure on the Prison requires space to be used more efficiently. The most important shift, though, is that the new prison buildings are multi-storey and that in itself offers additional security options.

Hard Rock

Hard labour was integrated into this system of separation, becoming one of the main 'communal' activities that prisoners were required to participate in as part of their punishment and rehabilitation. Quarrying at Mt Eden provided not only the material for the ongoing building of the Prison infrastructure but also material for sale to support the prison system. Tomlinson (1978:70) shows that the use of penal labour was not the common mode of punishment in England until the 1870s, and the Reports of the Royal Commission on Prisons (RRCP 1868:A12-1) noted that 'none of the existing prisons could be conveniently and economically made available for carrying out, in a proper manner, sentences of penal servitude, and of hard labour for considerable periods'. The Royal Commission in 1868 did recommend a central penal institution for the Colony, but was unable to decide on a particular location. Intriguingly, Dr (later Sir) James Hector, the leading local geologist, provided a breakdown of suitable locations and materials available in New Zealand where quarrying work could be undertaken by prisoners (RRCP 1868: A13 Appendix E 40-42).

The 'discipline' the hard labour provided was not just repressive, and there was considerable debate over the punishment aspect of the work versus the personal, social and economic benefits of the labour. The communal aspect of the work was considered to balance the social separation in cells; prisoners could receive remuneration for the work carried out that would be available once a prisoner was released; and materials could be sold and exported for the benefit of the whole community (see e.g., Tomlinson 1978:70-71; RRCP 1868). Indeed, once the stone-breaking and other labour were implemented for the prisoners around the country, detailed annual reports tracking the value of the 'skilled, unskilled and female' labour were completed and sent to the House of Representatives.

Controlling Space

The separation system operated beyond the confines of the individual cells. The addition and removal of walls continued to be the main tool for controlling access around the Prison. The wooden Stockade fence was of course the first of these in the 1860s, and remnants of this were still being used in the later Prison structure after the stone wall had been constructed around the main Prison complex. However, a number of additional walls were no doubt built between structures.

Control of the prisoners was inbuilt in the original design of many of the buildings examined, including the Bag Shop and Gymnasium. Both buildings were originally separated into two, with a large wall on both floors with exterior access to upper floors only. This allowed for four separate spaces with exterior walls to channel the prisoners from the main Prison building to the different rooms. This interior wall was later dismantled in both buildings as requirements changed. Later concrete block walls with heavy gates were constructed to maintain security.

The main Prison wall, supplemented with barbed wire and the later guard towers on the corner, demonstrates the focus on keeping the prisoners inside. Escapes from the prison have occurred, but climbing the stone wall was never a major strategy with the curved corners and sheer face making climbing up the inside of the wall difficult. Escape by tunnelling out was never a serious option for prisoners. The dense bedrock made this impossible.

Missing Pieces

Despite the large quantity of information recovered in the project, little direct information was found regarding the prisoners themselves. No burials were encountered during the project works. Prisoners

who were executed between the 1860s and 1882 were buried on site, but were exhumed in 1989. It is possible that other prisoners were buried on site during its history, but for the most part, prisoners who died of natural causes were buried elsewhere (Best, pers. comm.).

Although a number of items of a personal nature were found, there was nothing particularly important that identified different classes of prisoners, men as opposed to women, or represented any ethnic group, or that was specific enough for much to be said. A few items could be attributed directly to the prison guards, particularly the militia from the early Stockade period. Given the conditions in the Prison the low-value of the items found was not a surprise.

The presence of a few early alcohol bottles from rubbish dumps is intriguing. There is no direct proof that the bottles contained alcohol and they may have been brought in containing other liquids, but it is possible that the items were smuggled in or were available to the prison staff.

LIVING ARCHAEOLOGY

We were conscious of a certain irony during the first excavation, surrounded by wire and the basalt wall, that we were the ones doing hard time re-excavating the basalt in the pouring rain while the prisoners looked on, providing a wide range of comments from their cells. A greater irony, however, was inherent in the construction of the main Prison building and wall itself. The prisoners' labour was used to quarry, dress and build the structures that were to incarcerate them. Evidence of this process was found throughout the site with large quantities of flake material found in the excavations in the layers above the early Stockade buildings.

The structures that have been built, renovated, added to and torn down over the last 150 years at Mount Eden reflect changing social responses to criminality here in New Zealand. The artefacts always bring home some of the reality of the sites we excavate. We know there must be stories relating to objects like the sundial and the bullet, and while we often shy away from guessing what those stories might be, at least we can be reminded that the stories are out there to be recreated.

Any engagement with the material and archival record of the Prison involves living people and an existing institution that plays an integral, albeit often hidden, part of our society and that has done so since colonial times. Current prison guards talked to us about prisoners they look after and sometimes the generations that they have interacted with throughout their careers. The Prison affects the lives of people throughout the country.

The most crucial lesson from the excavation is recognising the dynamic and changing nature of the institution and how that has been expressed in the archaeological record. The archival information provides snapshots into some of the swirling threads of history around the building, but it is the archaeology – and the stratigraphy particularly – that tells us about these living spaces and puts the current development in its proper context: the latest response to the latest social pressures.

Recognising this dynamism and the responses to rapidly changing social demands is crucial to why we excavate historical archaeological sites (and probably all sites). While we often dismiss the later intrusions that have damaged or destroyed the features we most want to find, that damage and destruction are part of the story of these places. We have seen this repeatedly at a number of industrial and institutional sites, for example the Clark Potteries in Limeburners Bay (Clough et al. 2008), the School of Business site at Wynyard Street (Bickler et al, 2007), at Britomart (Bickler et al. 2005) and at the Sunnyside Lunatic Asylum in Christchurch (Watson and Sarjeant 2009:63), where the physical landscape is aggressively and repeatedly transformed throughout their history.

Still, while a Dickensian stone jug has become 'the Mount' and the archaeological record attests to the constant development that has occurred, we can't help but be reminded of the aphorism that

despite ‘changes upon changes, things stay the same’. Information from the past helps us to examine how the Prison might evolve in the future. The new prison buildings surround the old Prison building as corporate blocks rising above the nearby motorway, hiding the institution in plain sight.

REFERENCES

BIBLIOGRAPHY

Alexander, D. 1983. Clay tobacco pipes from the Caleb Pusey house. In P. Davey (ed.), *The Archaeology of the Clay Tobacco Pipe 8*: BAR International Series, Vol. 175, pp. 195-233.

Atkinson, D. and A. Oswald. 1969. London *Clay Tobacco Pipes.* London: Museum of London.

Best, S. 1992. The Queen Street Gaol. Auckland's first courthouse, Common Gaol and House of Corrections (Site R11/1559). *Auckland Conservancy Historic Resource Series* No. 2. Department of Conservation, Auckland.

Best, S. 1996. Mount Eden Gaol: Preliminary Archaeological Assessment of the Proposed Remand Prison Site. Unpublished Report.

Best, S. and R. Clough. 2005. Mount Eden Prison: Archaeological Assessment for Proposed Development and Alterations. Report prepared for Stephenson and Turner New Zealand Ltd & Department of Corrections.

Bickler, S.H., B. Baquié, R. Clough, T. Mace, D. Prince, M. Plowman, M. Turner. 2005. Excavations at Britomart, Auckland (R11/1379). Clough & Associates Monograph Series No. 1. Excavation Report for Auckland City Council.

Bickler, S., R. Clough, G. Farley, M. Turner, D. Bonica, T. Mace, K. Hill, and J. Low, 2007. Middle Class Spread. Archaeology at the Corner of Wynyard St and Grafton Road. Report in Fulfilment of NZHPT Authority No. 2003/232 prepared for the University of Auckland. Clough & Associates Ltd. Monograph Series No. 2.

Bickler, S.H. June 2009. Doing Time at the Stone Jug: Recent Results of Excavations at Mt Eden Prison. NZ Archaeological Association Conference, Wellington, New Zealand.

Birmingham, J. 1992. *Wybalenna: the Archaeology of Cultural Accommodation in Nineteenth Century Tasmania.* Australian Society for Historical Archaeology. Sydney.

Blackmore, H.L. 1961. *British Military Firearms 1650–1850*. London:

Bridgewater, A. and G. 2004. *Mastering Hand Tool Technologies*. Quantum Books.

Bull, G. and S. Payne. 1982. Tooth eruption and epiphyseal fusion in pigs and wild boar. In B. Wilson, C. Grigson, and S. Payne (eds.), *Ageing and Sexing Animal Bones from Archaeological Sites*. British Archaeological Reports British Series, 109: 55–71. Oxford.

Burt, D.C. Peter Tait. American Civil War Society (UK) Ltd. Accessed on line 2011 from

www.acws.co.uk/archives/military/petertait.htm.

Casella, E. C. 2001. To Watch or Restrain: Female Convict Prisons in 19th-Century Tasmania. *International Journal of Historical Archaeology* 5(1):45-72.

Casella, E. C. 2005. Prisoner of His Majesty: postcoloniality and the archaeology of British penal transportation. *World Archaeology* 37(3):453-467.

Casella, E. 2007. *The Archaeology of Institutional Confinement.* The American Experience in Archaeological Perspective. Gainesville: University Press of Florida.

Casella, E. C., and C. Fredericksen. 2004. Legacy of the 'Fatal Shore': The Heritage and Archaeology of Confinement in Post-Colonial Australia *Journal of Social Archaeology* (4): 99-125.

Casey, M. and T. Lowe. 2000 Archaeologcal Investigations of the former CSR Site, Pyrmount (Jacksons Landing). Unpublished report for Lend Lease Development, Sydney.

Clough, R., S. Macready and M. Plowman. January 2008. R.O. Clark's Pottery (1864-1931), Limeburners Bay, Hobsonville: Archaeological Investigation. Report on S18 investigation of site R11/1508 in fulfilment of NZHPT Authority No. 2007/355 prepared for Hobsonville Residential Developments Ltd. Clough & Associates Monograph Series No. 3.

Cramb, I. 1992. *The Art of the Stonemason*. Alan C. Hood & Co. Inc.

De Cunzo, L. 2006. Exploring the Institution: Reform, Confinement, Social Change. In *Historical Archaeology*, edited by M. Hall and S. W. Silliman, pp. 167-189. Blackwell, Oxford.

Flexner, J. in press. An Institution that was a Village: Archaeology and Social Life in the Hansen's Disease Settlement at Kalawao, Moloka„i, Hawaii. *International Journal of Historical Archaeology*.

Foucault, M. 1995. *Discipline & Punish: The Birth of the Prison*. Translated by A. M. S. Smith. Vintage Books, New York.

Franklin, E.C. 1956. *Mount Eden's First Hundred Years*. Whitcombe and Tombs Ltd. Auckland.

Gojack, D., and I. Stuart. 1999. The Potential for the Archaeological Study of Clay Tobacco Pipes from Australian Sites. *Australasian Historical Archaeology* 17:38-49.

Grant, A. 1982. The use of tooth wear as a guide to the age of domestic ungulates. In B. Wilson, C. Grigson, and S. Payne (eds) *Ageing and sexing animal bones from archaeological sites*. British Archaeological Reports British Series, 109: 91–108. Oxford.

Habberfield-Short, J. 2007. Archaeological Excavations: Lyttleton Gaol Complex M36/159 and M36/160. Opus International Unpublished Report for Christchurch City Council.

Holland, H.E. 1919. *Armageddon or Calvary: The Conscientious Objectors of New Zealand and The Process of Their Conversion.* Wellington: The Maoriland Worker Printing and Publishing Company.

Humphrey, R.V. 1969. Clay pipes from Old Sacramento. *Historical Archaeology*, 3:12-33.

Jeffries, N. 2007. The Vitoria Pottery from New Palace Yard, Westminster. Accessed online http://www.geog.qmul.ac.uk/victorianlondon/pdf/PotteryWestminster.pdf

Jenkins, J.G. 1968. *Traditional Country Craftsmen*. London: Routledge, Kegan and Paul.

Lindbergh, J. 1999. Buttoning down archaeology. *Australasian Historical Archaeology* 17:50-57.

Lydon, J. 1993. Archaeology in The Rocks, Sydney, 1979–1993: from Old Sydney Gaol to Mrs Lewis' boarding-house', *Australasian Historical Archaeology* 11:33–42.

Mahoney. 1877. Enclosure 1 in Report of the Auckland Gaol Commissioners and Correspondence Thereon. *AJHR* Session I, H30. Wellington: Government Printer.

Mattick, B. 2009. *A Guide to Bone Toothbrushes of the 19th and Early 20th Centuries*. Textstream.

Middleton, A. 2005. Nail chronology: the case of Te Puna Mission Station. *Journal of the Australasian Society for Historical Archaeology* 23:55-62.

Mosen, J. 1998. Test Excavations at the Site of the New Store and Carpenters Workshop, Mt Eden Prison, Auckland. Bioresearches unpublished report for Department of Corrections.

Oswald, A., 1975. *Clay Pipes for the Archaeologist*. Oxford: BAR 14.

Petchey, P.G. 2002. Dunedin Law Courts Archaeological Investigation: Old Dunedin Gaol Site I44/324. Unpublished Report for the Department of Courts.

Philson, T.M. n.d. Casebook, 1859-1879. Typescript copy in Philson Medical Library, University of Auckland (Original in Archives NZ, Auckland).

Piddock, S. 2007. *A Space of Their Own: The Archaeology of Nineteenth Century Lunatic Asylums in Britain, South Australia, and Tasmania*. Springer, New York.

Powell, A.W.B. 1957. *Shells of New Zealand*. Auckland: Whitcombe and Tombs Ltd.

Prickett, N. 1994. *Archaeological Excavations at the Omata Stockade and Warea Redoubt, Taranaki*. NZAA Monograph 20.

Provincial Secretary. 26 January 1875. H.M. Gaol/Auckland: Stocklist 31st December 1874. Archives NZ AP2 27 268/75.

Ryan, T., and B. Parnham. 2002. *The Colonial New Zealand Wars*. Wellington: Grantham House.

Salaman, R. A. 1975. *Dictionary of Tools Used in the Woodworking and Allied Ttrades c.1700-1970*. George, Allen and Unwin Ltd.

Salmond Reed Ltd. 2006. Conservation Plan for Mt Eden Prison (Draft). Report prepared for Department of Corrections.

Schmid, E. 1972. *Atlas of Animal Bones for Prehistorians, Archaeologists, and Quaternary Geologists*. Amsterdam: Elsevier Science Publishers.

Schulz, P.D. and S.M. Gust. 1983. Faunal remains and social status in 19th century Sacramento. *Historical Archaeology*, 17(1): 44–53.

Siemer, V. 2008. *The Rock: An Intimate and Personal Account from Inside New Zealand's Most Notorious Prison*. Albany, N.Z: The Author.

Silver, I.A. 1969. The aging of domestic animals. In D.R. Brothwell and E.S. Higgs (eds.), *Science in Archaeology: A Survey of Progress and Research*, 283–302. New York: Praeger Publishing.

Sims, L. 2006. *The Backyard Blacksmith: Traditional Techniques for the Modern Smith*. Quarry Books.

Sisson, S. 1930. *The Anatomy of the DomesticMammals*. Philadelphia: W.B. Saunders Company.

Spencer-Wood, S. M. and S. Baugher. 2001. Introduction and historical context for the archaeology of institutions of reform. Part I: Asylums. *International Journal of Historical Archaeology* 5(1): 3-17.

Stowers, R. (with Binsley, J. E.). 1996. *Forest Rangers: a history of the Forest Rangers during the New Zealand Wars*. Hamilton: R. Stowers.

Sudbury, J.B. 2006. *Historic Clay Tobacco Pipe Studies*. Volume 1. Ponca City: Phytolith Press.

Sutton, M.-J. 2003. Re-examining total institutions: a case study from Queensland. *Archaeology in Oceania* 38:78-88.

Tomlinson, M.H. 1978. 'Prison palaces': a re-appraisal of early Victorian prisons, 1835–77. *Historical Research* 51 (123):60-71.

Tomlinson, M. H. 1980. Design and reform: the 'separate system' in the nineteenth-century English prison. In King, A. (ed.), *Buildings and Society: Essays on the Social Development of the Built Environment*, pp. 94-119. London: Routledge & Kegan Paul.

Trendell, A. P. (ed). 1921. *Dress and Insignia Worn at His Majesty's Court, Issued with the Authority of the Lord Chamberlain.* London: Harrison & Sons.

Turner, J.P. 1866. The Birmingham button trade. In Samuel Timmins (ed), *The Resources, Products and Industrial History of Birmingham and the Midland Hardware District: A Series of Reports, Collected by the Local Industries Committee of the British Association at Birmingham, in 1865*. London: Robert Hardwicke.

Vivian, J. 1978. *Building Stone Walls*. Storey Publishing.

Walker, I., 1983. Nineteenth-century clay tobacco pipes in Canada. In P. Davey (ed.), *The Archaeology of the Clay Tobacco Pipe 8*: BAR International Series. Vol. 175, pp. 1-88.

Watson, K. A. 2000. A Land of Plenty: Butchery Patterns and Food Supply in 19th Century New Zealand. Unpublished M.A. Thesis, University of Otago.

Watson, K.A. and C. Sarjeant. 2009. Sunnyside Lunatic Asylum: Report on the Archaeological Investigations. Unpublished Report for Ngai Tahu Property Ltd.

White, C. 2002. Buttons. In Charles E, Orser Jr (ed), *Encyclopedia of Historical Archaeology. London:* Routledge.

Wises New Zealand Post Office Directories.

Works Consultancy Services Ltd . 1995. Draft Conservation Plan , Unpublished manuscript.

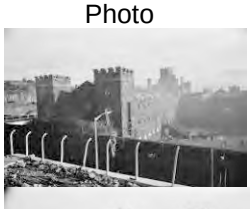
ABBREVIATIONS

ACC	Auckland City Council (now Auckland Council)
AIML	Auckland Institute and Museum Library
AJHR	*Appendix to the Journal of the House of Representatives*
ARC	Auckland Regional Council (now Auckland Council)
APL	Auckland Public (Central) Library
AWHSJ	Auckland-Waikato Historical Society Journal
AWNS	*Auckland Weekly News Supplement*
JAPC	*Journal of the Auckland Provincial Council*
LINZ	Land Information New Zealand
NZH	*New Zealand Herald*
RCCP	Reports of the Royal Commission on Prisons
WCS	Works Consultancy Services (Draft Conservation Plan 1995)

APPENDIX – IMAGES AND PLANS USED IN THE REPORT

Photo	Date	Source
	c.1860-1864	APL 87 N0. 832
	c.1876	APL 995.1112 M92e P94(1) 236
	1876	APL 995.1112 M92e P94
	c.1880s-1890	AIML DU 436.1243 CAC Album No.245
	1900	APL AWNS-19000803-8-2
	c.1900	Unknown
	1900	APL AWNS-19000803-9-5
	1900	APL AWNS-19000803-9-8
	1900	APL 995.1112 M92E/P94 (1)
	3 August 1900	APL AWNS-19000803-9-6

Photo	Date	Source
	1900	APL AWNS-19000803-9-4
	1940	APL NZ Map 6206
	1940	Provided by Auckland Council Mapviewer Online 2007
	1947	APL Collection
	11 October 1958	Sheet 39, ACC
	1959	Provided by ARC 2007
	2 September 1965	APL 995.1112 M92E P94 Neg 7-A2108
	2 September 1965	APL 995.1112 M92E P94 Neg 7-A2108
	20 July 1965	APL 995.1112 M92E P94 Neg 7-A1851

Photo	Date	Source
	20 July 1965	APL 995 1112 M92E P94 Neg 7-A1855
	20 July 1965	APL 995.1112 M92E P94 (3) Neg 7-A1856
	20 July 1965	APL 995.1112 M92E P94 Neg 7-A1852
	20 July 1965	APL 995.1112 M92E P94 Neg 7-A1857
	20 July 1965	APL 995.1112 M92E P94 Neg 7-A1853
	Undated	Archives New Zealand
	c.1876	LINZ SO 1149
	Undated	LINZ SO 12301
	1951	Alexander Turnbull Library Neg WA-29506-G