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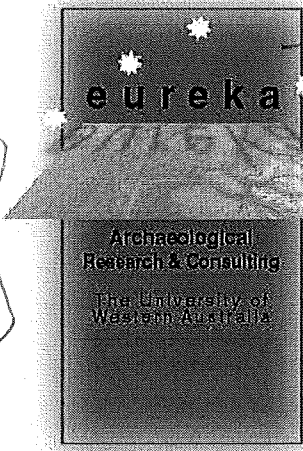
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Report
 on the Results of
 Archaeological monitoring of ground disturbance

**Fremantle Prison, Fremantle, Western
 Australia**
 for
**Palassis Architects &
 Fremantle Prison**

November 2005

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TABLE OF CONTENTS

TABLE OF CONTENTS	ii
LIST OF FIGURES	ii
LIST OF PLATES	ii
INTRODUCTI ON.....	3
ARCHAEOLOGI CAL CONTEXT	6
<i>Convicts in Western Australia</i>	6
<i>Archaeology at Fremantle Prison</i>	6
<i>Assessing Archaeological Significance</i>	7
MONI TORING BRIEF	8
<i>The Site</i>	8
<i>Participants</i>	8
<i>Archaeological Monitoring Methods and Recording</i>	9
RESULTS	9
ARCHAEOLOGI CAL SIGNIFICANCE ASSESSMEN T	13
CONCLUSIONS	14
RECOMME NDATI ONS	14
REFERENCES	15
REFERENCES	15
APPEN DIX 1 –HARRIS MATRIX	17
APPEN DIX 2 –CONTEXT SHEETS	20
APPEN DIX 3 –SITE PLAN AND SECT ION	21

LIST OF TABLES

Table 1 – Context list – excavated area Fremantle Prison 2005	13
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LIST OF FIGURES

Figure 1 – Sketch map showing location of excavation	5
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LIST OF PLATES

Plate 1 – concrete pad and brick (contexts 10 & 11) dividing wall at western end of trench	9
Plate 2 – Limestone wall base (context 25)	10
Plate 3 – Wooden artefact in context 17	11

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INTRODUCTION

This report details the results of archaeological monitoring work conducted by Eureka Archaeological Research and Consulting UWA (Eureka) on behalf of Palassis Architects, at Fremantle Prison, Fremantle.

As a result of recent rains, soil has built up in the courtyard against the walls at the eastern end of the prison compound in the area of the Engine House and Carpenter's Workshop. Moisture was seeping through the walls into the area around the entrance to the prison tunnels. Palassis architects advised that the built up soil needed to be excavated and removed to a point below the current floor level inside the building in order to prevent the water seepage.

Archaeological monitoring was required because the soil to be removed is considered likely to contain archaeological material related to the use of the prison in the 19th century. The area to be excavated is located within Zone A, an area nominated as being of highest archaeological significance (Zone A) in the Archaeological Zoning Plan (AZP) for Fremantle Prison (Bavin 1990b) (see Figure 1). This is discussed in further detail below.

Reference to the AZP (Bavin 1990b) indicates that potential archaeological material located within the soil layer may include:

- Material related to the use of the Engine House/Carpenter's Workshop (AZP, 5.2)
- Evidence of past industrial use and broader prison activities (such as charcoal, slag, organic soils from past gardens moved into site)
- Further evidence of the design and function of two ephemeral structures (noted as *a* and *b* on Figure 2). These are not noted on any historical maps, and thus require careful recording. They may have been small equipment or fuel sheds.

An archaeological monitoring brief was drawn up with Palassis Architects. The objectives of the brief were as follows:

- To observe the removal of soil overburden from the area immediately north of the 'Carpenter's Shop', in the courtyard associated with the Engine House (Figure 2, excavated area marked)
- To observe the manual removal of soil until any archaeological features or archaeological horizons are observed. If these are detected, to:
 - Stop work
 - Assess the significance of the features, record their extent and collect samples
- To record and plan the extent and depth of any archaeological features exposed during the excavation and collect soil samples

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- To provide advice on site avoidance and management strategies.

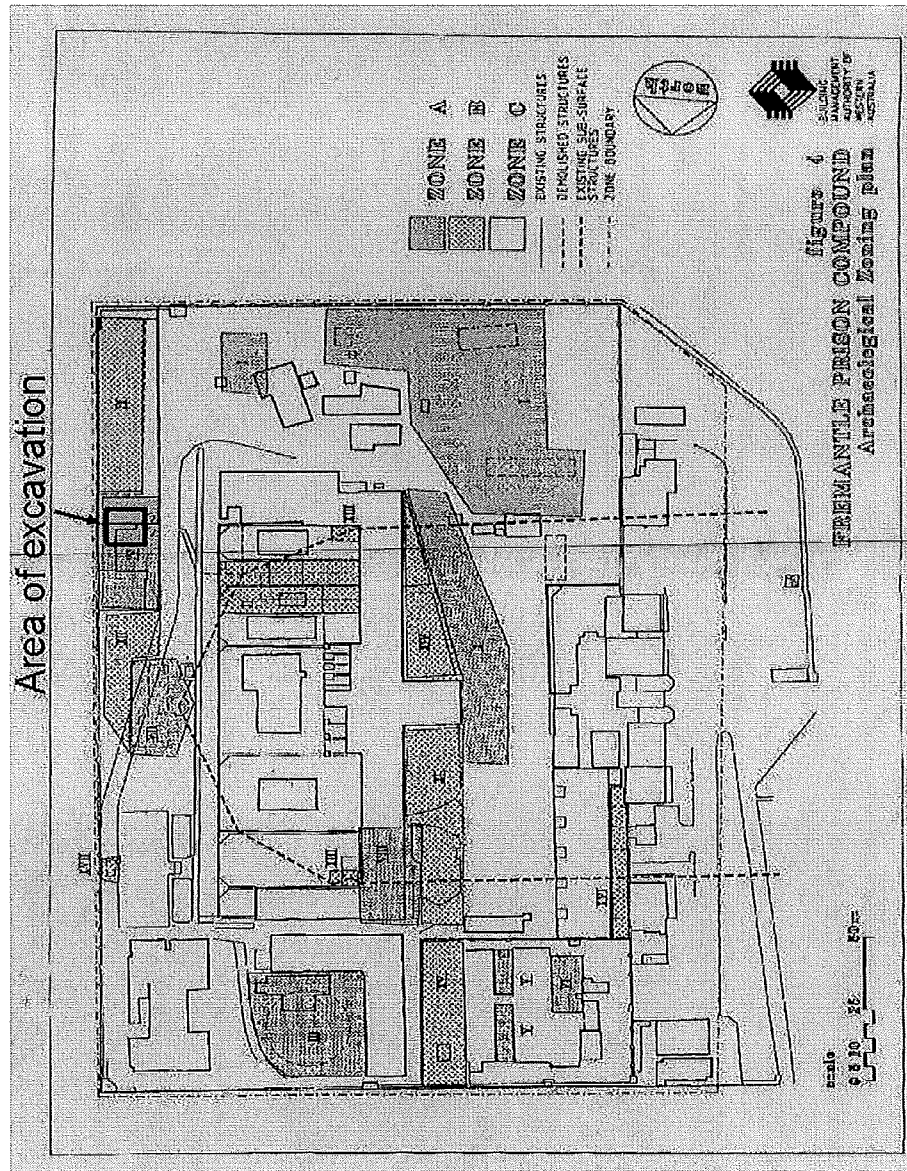


Figure 1 – Figure 4 from AZP showing area of excavation (Bav in 1990b)

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The monitoring work described here was carried out for Palassis Architects on 29th – 30th August 2005 by Eureka Archaeological research and Consulting g. The ground excavation was conducted by Cogan Industries. Representatives of Palassis Architects were also present.

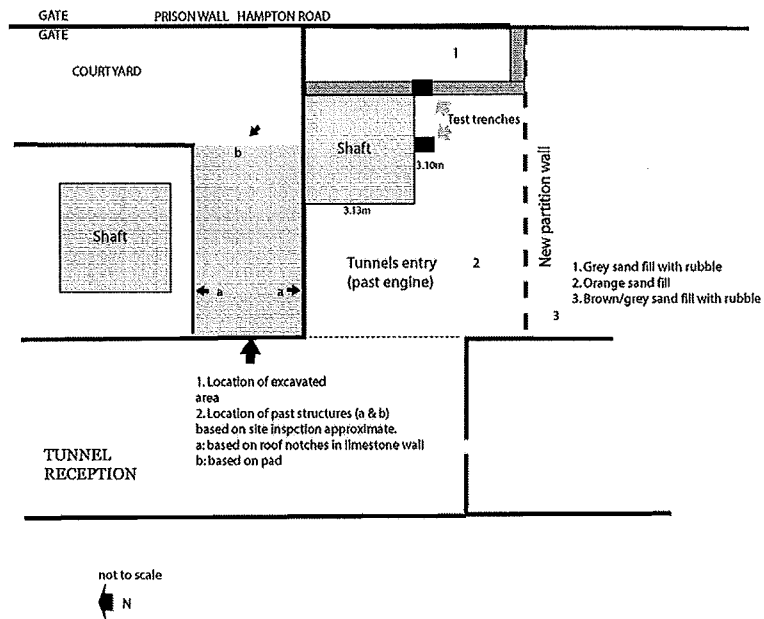


Figure 2 –Sketch map showing location of excavation

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ARCHAEOLOGICAL CONTEXT

Convicts in Western Australia

An understanding of the archaeological context, as well as local environmental factors, has implications for the methods used by archaeologists. Importantly, it also provides contextual information that allows the significance of new archaeological finds to be properly assessed.

Convicts were first sent to Western Australia between 1850 and 1868. This was the final phase of British Transportation and occurred later than other parts of Australia (Gibbs 2001). Following its establishment in 1829, the colony of Western Australia had been struggling and the colonists increasingly demanded inexpensive labour. By the 1840s there was a major recession, labour costs were continually increasing, and there were difficulties in developing transport infrastructure (Gibbs 2001: 60).

In response, the colonists decided to accept convicts in order to have a supply of cheap labour to get the necessary public works completed, and take advantage of funding available from the Imperial Government that was needed to establish the convict system (Gibbs 2001). It was therefore necessary to build a complex to house the convicts, both for when they first arrived in Western Australia before being sent to work camps, and for longer incarcerations. Fremantle Prison grew to meet both of these needs.

To date little archaeological work has been conducted on convict sites in Western Australia. Work that has been done includes consultant reports focusing on individual sites (eg. Bavin 1990a; Gibbs 1989; Gibbs 1991; Gibbs 1999; Gibbs and Lilley 1993) and the development of a framework for the study of convict places in Western Australia (Gibbs 2001; Gibbs forthcoming).

Archaeology at Fremantle Prison

The Fremantle Convict Depot Complex, subsequently known as the Fremantle Prison, was built between 1852 and 1857 (Gibbs 2001). Although it is known as a convict site, the complex was used as a prison until 1991. As such, the majority of its use has been post-convict. It is currently managed by the Department of Housing and Works on behalf of the State Government and is run as one of the state's major heritage sites. Some sections of it are open to the public and are a popular attraction to visitors in Fremantle.

Previous archaeological work on the site and its surrounds includes investigations conducted by Bavin (1990a; 1990b) and McIlroy (1990a; 1990b), as well as a number of conservation plans (eg. Building Management Authority of Western Australia 1990; Kerr 1998). This work was undertaken in response to management of the site following the closure of the prison.

Underneath the eastern terrace of the Prison are a series of weirs and tunnels cut during the 1890s and early twentieth century in order to boost the water

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supply to both the prison and the town of Fremantle (Kerr 1998: 66). These tunnels have recently been opened to tourists as part of an "Extreme Heritage" adventure.

As noted above, the area proposed for excavation, where the soil had built up against the walls, is located within Zone A, the area nominated in the AZP (Bavin 1990b) as being of highest archaeological significance. The significance assessment is based on the archaeological potential of the area to contain evidence for earliest use of the prison. This can be summarized for the excavated area as follows:

- 1852: construction of the Prison began and well 18 (now the shaft in the Carpenter's Workshop immediately south of the excavated area) was dug. (There was no workshop and wall at this time.) Well possibly filled 1902.
- 1854: Tunnels begin construction (after this time well [now shaft] north of excavated area dug)
- 1855: work had begun on Carpenter's Workshop (part of structure immediately south of excavated area)
- 1889-1897: Engine House (Building 44, immediately west and north of excavated area) built (AZP, constructions plans 9 and 10)

Assessing Archaeological Significance

In assessing the archaeological significance of sites the two principles to be taken into account are *research potential*, that is the ability of the site to answer relevant research questions about people in the past, and *representativeness*, the idea that a representative range of sites need to be preserved to answer future archaeological research questions.

The types of research questions that can be asked of archaeological sites vary according to the region, the types of site, site location and the focus of the research being undertaken. Different research questions can be asked of stratified sites than surface assemblages. This is because stratified sites have the potential to reveal changes over time in a way that surface sites do not. The representativeness of any given site is determined by how many sites of that particular type are present in the region. Sites that are unusual or unique within a region are considered to be more archaeologically significant than those that are common.

Sites may be significant for a number of reasons apart from their archaeological significance. They may have aesthetic significance, or they may be significant to other groups of people for historical reasons. *Archaeological* significance however resides in the ability of a site to contribute to the discipline of archaeology, and should be assessed by a qualified archaeologist.

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MONITORING BRIEF

The Site

The excavation took place in the courtyard against the walls between the Engine House and Carpenter's Workshop at the eastern end of the prison compound (Figure 2). The area excavated was approximately 5.1 x 1.8m, and was surrounded on the north, west and southern sides by the walls of the Engine House and Carpenter's Workshop. The eastern edge was defined by the base of a water tank, which appears to be *in situ*. Some topsoil was removed adjacent to the water tank to allow easier access to the trench.

The surface of the area was covered with patches of grass and rubbish including brick, rubble, glass and wire, and the soil was very moist. The area has not been used in recent years, nor disturbed by works, and it was felt likely that any sub-surface features would still be intact. There was evidence on the standing walls for a small lean-to building at the western end. The use, construction and dismantling of this building may be reflected archaeologically.

Participants

The following people and organisations participated in the archaeological monitoring and ground disturbing work.

Eureka Archaeological Research and Consulting, UWA

Samantha Bolton,
Archaeologist

Annie Carson,
Archaeologist

Ian Ryan,
Archaeologist

Proponent

Tom Stephens
Palassis Architects

Other Group/s

Representatives from Coglan Industries

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Archaeological Monitoring Methods and Recording

The area was excavated by a team of between two and four workers from Cogan Industries using shovels and picks. Further excavations and the removal of the wooden artefact (see below) was undertaken using a trowel. At all times an archaeologist was supervising and directing the workers where to dig.

The term "context" is used here to define each discrete archaeological entity identified in the excavated area, such as a post-hole, depositional layer, rubbish pit or erosion event (Burke and Smith 2004:117). A context is characterised by its colour and texture and when there this changed, work was stopped and a new context recorded. A sample of each context was taken, and a context sheet filled out (see Appendix 2). Sketch plans were drawn at different stages showing where the contexts were, and the relative height was measured using a dumpy.

The work was stopped at a depth of approximately 1m below the original surface. This was below the floor level inside the surrounding buildings, and it was not necessary to excavate any further to prevent water seepage.

RESULTS

The recording forms (context sheets) for each context are attached in Appendix 2. A Harris matrix providing an interpretation of how the different contexts relate to each other, horizontally and vertically is shown in Appendix 1. Table 1 below provides a list of contexts identified during the excavation. In summary, beneath layers of topsoil (context 1) and demolition rubble (context 2) there were the remains of a structure in the western end. This consisted of a concrete floor with the brick base of a dividing wall and wooden thresholds (contexts 4, 9, 10 & 11) (Plate 1). This extended 3.07m from the western end, and at 1.88m wide, matched the width of the area between the walls. There was evidence of flooring (context 5) on the eastern concrete pad.

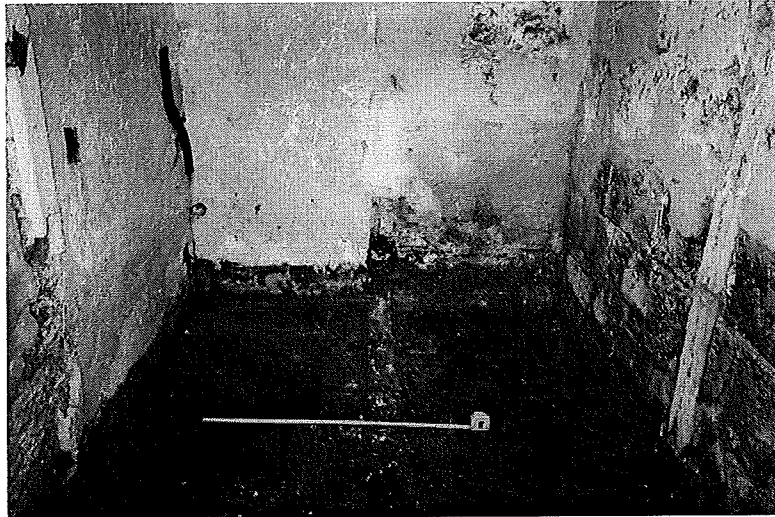


Plate 1 – concrete pad and brick (contexts 10 & 11) dividing wall at western end of trench

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At the eastern end was a layer containing pieces of metal slag (context 6). The soil was dark and humic, suggesting the presence of organic material, such as wood. There were also lenses of charcoal.

Immediately beneath the concrete pads at the western end was a layer of sand containing machine-pressed brick and limestone rubble (context 12). Below the eastern concrete pads was a base of limestone rubble (context 8/16) which went to the eastern end of the trench.

At the western end was a T-shaped wall base made of limestone cut blocks with mortar (context 25). This followed the line of the brick dividing wall and the wooden threshold that was between the two concrete pads. This wall was partially removed at the northern end, although the majority was left *in situ* (Plate 2).



Plate 2 – Limestone wall base (context 25)

Beneath the limestone rubble layer was a yellow sandy layer (context 17) containing machine pressed brick, and limestone rocks which were disintegrating, such that they were surrounded by sandy lenses. The rocks were up 0.65m long.

Within this layer was a wooden artefact (Plate 3). It consisted of five vertical timber boards, each 0.12m wide, with two largely decomposed timber boards at each end. The longest was 0.60m, however the original length would have been greater. At the base of these was a timber cross beam linking them altogether. The cross beam was approximately 0.06m wide and 0.60m long. Most of the wood collapsed upon removal. Preliminary investigations suggest that the wood is She-Oak (*Casuarina* sp.), a timber commonly used for roofing in buildings during this period in Western Australia (Allia 2006, pers. com.).

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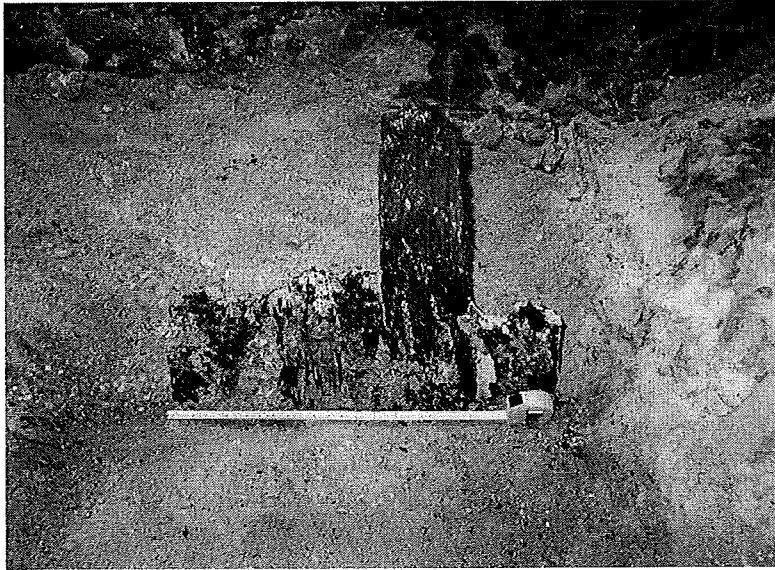


Plate 3 – Timber boards in context 17

Most of the yellow sandy layer was not removed. During excavation of the wood, two more layers were revealed. These were a thin grey, sandy layer (context 22) and a basal layer of limestone (context 23). Only very small areas of these two layers were revealed. No artefacts were noted in either.

The only other major feature was a pit (contexts 14 & 24) dug through the limestone rubble layer (context 8/16) for two iron pipes immediately west of the water tank, against the standing wall. One pipe went through the wall and could be seen on the other side. This feature was left *in situ*.

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Context number	Description	Contents	Comments
1	Topsoil	Building rubble and rubbish ranging from 1920s to modern	Highly disturbed
2	Demolition rubble	Wood, brick, asbestos, iron pipe	
3	Grey/brown sand	Clean fill	
4	Concrete base with brick walls and wooden threshold		Same as 9, 10, 11
5	Black organic flooring	Wood, soil, charcoal and red brick pieces	Flooring above concrete pad; did not extend all way across
6	Slag rubble	Slag	Debris from burning, possible boiler
7	Mixture of decomposed wood and charcoal	Wood and charcoal	Possible flooring
8	Limestone base		Limestone base under concrete
9	Concrete base with brick walls and wooden threshold		Same as 4, 10, 11
10	Concrete base with brick walls and wooden threshold		Same as 4, 9, 11
11	Concrete base with brick walls and wooden threshold		Same as 4, 9, 10
12	Yellow sand		Base for concrete pad
13	Humic lens		Decay of organic material
14	Grey brown fill containing <i>in situ</i> pipes for context 24		

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15	Yellow sand		Base for concrete pad
16	Limestone base	Limestone rocks (60-120mm)	Fill; possible levelling layer for concrete pads
17	Yellow sand	Limestone rocks (2-200mm)	Same as 18
18	Yellow sand	Limestone rocks (2-200mm)	Same as 17
22	Grey clay sand		Very thin layer (c.5mm). Not fully excavated
23	Limestone base		Limestone basal layer; not fully excavated
24	Cut for pipes		Contains 14
25	Limestone wall		Foundations for walls outlined by concrete pads

Table 1 – Context list – excavated area Fremantle Prison 2005

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ARCHAEOLOGICAL SIGNIFICANCE ASSESSMENT

The presence of the concrete floor and the machine pressed bricks throughout the deposit would suggest that this structure dated from the mid to late twentieth century. Although both of these technologies were in use in Australia from 1850, machine pressed bricks, in particular, were not in common use until well in to the twentieth century (Lewis n.d.).

Following identification of the species, the wooden artefact of joined timber boards appeared to be part of a collapsed roof. It was not *in situ*, and was part of the surrounding fill.

All of the contexts fully excavated related to the construction of the concrete pads. No material pre-dating the 20th century was found *in situ*, and no features relating to the construction of the surrounding buildings, such as wall trenches were found. In this context the material excavated is considered to be of low archaeological significance

It is not definitively known what the structure in this area was, although the location, layout and archaeological material suggests that it was a machinery shed, such as a pump house or boiler.

CONCLUSIONS

The excavated material described here dates from the mid to late 20th century. It is no considered to archaeologically significant. All layers excavated had however been modified, and the undisturbed layer of soil beneath them, known as the natural layer, was not reached. The unexcavated lower layers are still considered to have archaeological potential. Further excavation has the potential to yield evidence relating to the construction of the walls for the Carpenter's Workshop and Engine House, as well as the construction and use of the wells and tunnels. This would enable a better understanding of the industrial uses of the prison, particularly from the post-convict period.

RECOMMENDATIONS

It is **recommended** that Palassis Architects:

1. continue to monitor any further ground disturbance work at Fremantle Prison, particularly within Zone A, the area of highest archaeological significance as identified in the Archaeological Zoning Plan (Bavin 1990b).
2. consult a materials conservator to assess the wooden artefact so it can be stabilised and conserved if required.

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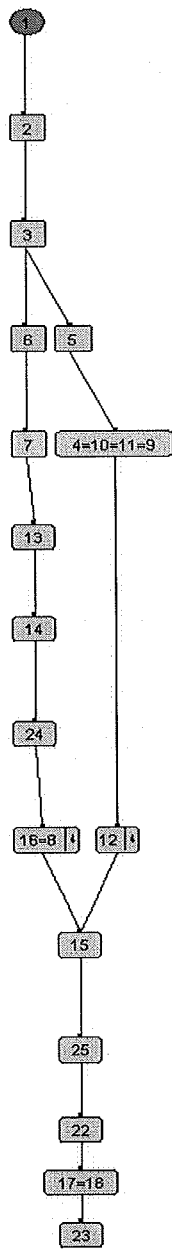
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APPENDIX 1 – HARRIS MATRIX

Context number	Description
1	Topsoil
2	Demolition rubble
3	Grey/brown sand
4	Concrete
5	Black organic flooring
6	Slag rubble
7	Mixture of decomposed wood and charcoal
8	Limestone base
9	Concrete
10	Concrete
11	Concrete
12	Yellow sand
13	Humic lens
14	Grey brown fill containing <i>in situ</i> pipes for context 24
15	Yellow sand
16	Limestone base
17	Yellow sand
18	Yellow sand
22	Grey clay sand
23	Limestone base
24	Cut for pipes

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Context number	Description
1	Topsoil
2	Demolition rubble
3	Grey/brown sand
4	Concrete
5	Black organic flooring
6	Slag rubble
7	Mixture of decomposed wood and charcoal
8	Limestone base
9	Concrete
10	Concrete
11	Concrete
12	Yellow sand
13	Humic lens
14	Grey brown fill containing <i>in situ</i> pipes for context 24
15	Yellow sand
16	Limestone base
17	Yellow sand
18	Yellow sand
22	Grey clay sand
23	Limestone base
24	Cut for pipes
25	Limestone wall

Harris Matrix – notes

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The Harris Matrix is a visual interpretation of how the different contexts relate to each other, horizontally and vertically. The number refers to the context number, and each level is a different period in time, or phase, such that the most recent layers (e.g., topsoil) are at the top, and the earliest layers (e.g., natural soil) are at the bottom. Contexts that are on the same horizontal level, but are not joined (e.g., contexts 5 and 6 above), have no direct relationship but occurred during the same phase. Contexts that occurred at exactly the same time (e.g., contexts 4, 9, 10 and 11) are shown with an equal sign ("="). For further information, see Harris (1977; 1979), Brown & Harris (1993), Burke & Smith (2004: 136-141) or www.harrismatrix.com.

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APPENDIX 2 – CONTEXT SHEETS

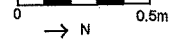
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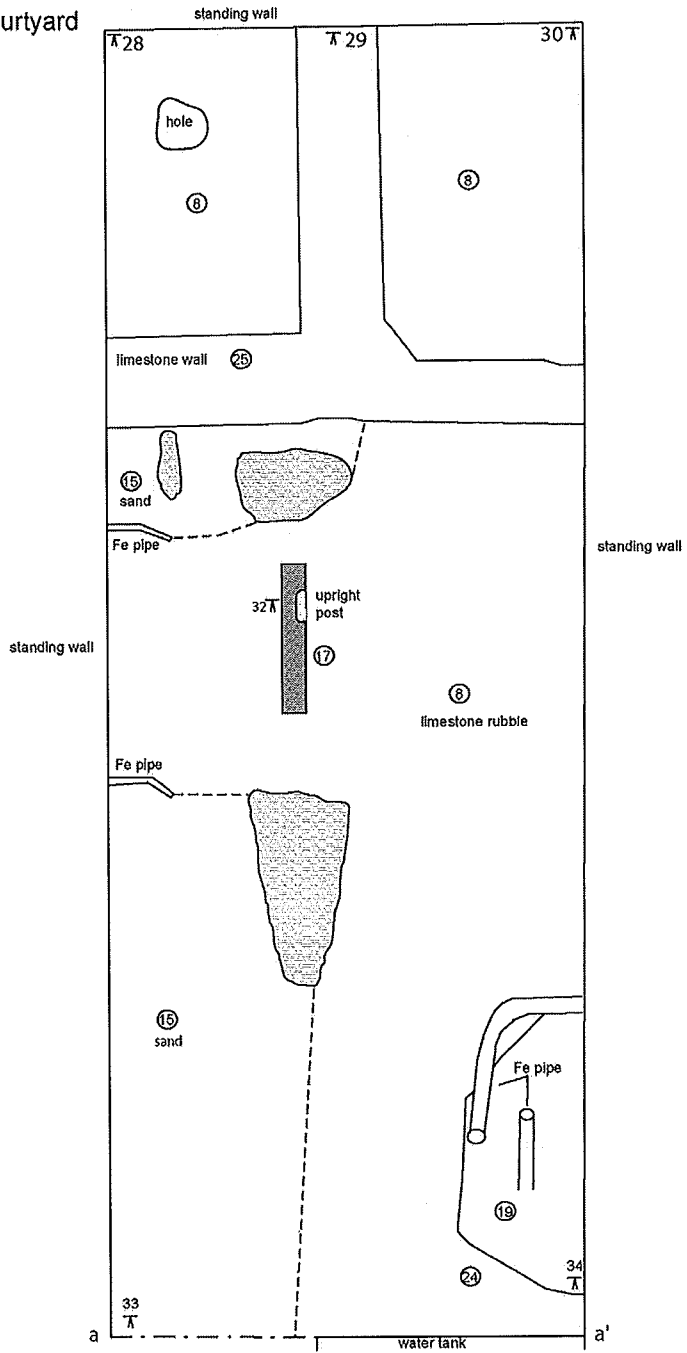
APPENDIX 3 – SITE PLAN AND SECTION

Fremantle Prison Courtyard - Plan 1

Samantha Bolton & Annie Carson
30/08/05



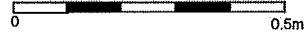
- KEY
- wood
 - rock
 - survey point
 - unclear edge
 - limit of excavation
 - context number
 - a - a' location of Section 1



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Fremantle Prison Courtyard
- Section 1

West facing section
Samantha Bolton & Annie Carson
30/08/05



- KEY
- - - limit of excavation
 - Ⓜ context number
 - a'-a location of section as marked on Plan 1

