NATIONAL TRUST

W A R D E R S ’ C O T T A G E S (fmr)

Fremantle, Western Australia

DUE DILIGENCE REPORT

Prepared by
National Trust of Australia (WA)

For
Department of Housing

January 2013

Executive Summary

Introduction

The 'Warders' Cottages', 7 – 41 Henderson St Fremantle, are owned by the State Housing Commission, trading as the Department of Housing. The Department of Housing aim to relinquish this ownership as the cottages are no longer suitable to its needs and it is understood that discussions had been initiated with a community housing provider.

In July 2012, following discussion with the Department of Housing on the future of the cottages, the National Trust of Australia (WA) commenced preparation of a 'Due Diligence Report' for the three buildings known as Warders' Cottages blocks W1 (1851), W2 (1853) and W3 (1858). A fourth block (W4), on Holdsworth Street, was not included in the scope of the project.

The 'Warders' Cottages Fremantle (fmr) Due Diligence Report' is intended:

a) to provide a comprehensive costed scope of work for the complete internal and external conservation of the three terraces of Warders' Cottages W1 – W3

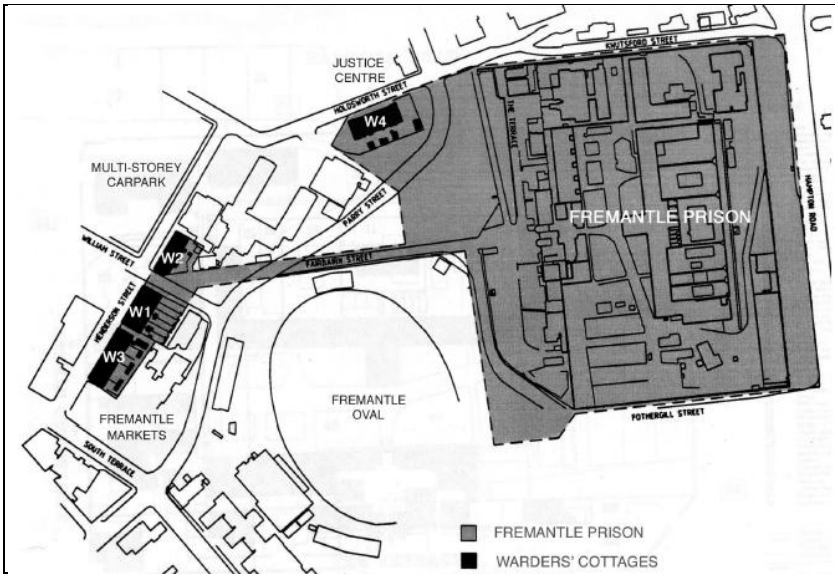
b) to advise on future use in relation to Building Code of Australia compliance and provide costs associated with any adaptive re-use requirements

c) to provide estimates for ongoing maintenance costs

This information will assist the Department of Housing and other interested parties in finding a sustainable and appropriate long term use for the cottages.

Description

The site in question includes the three discrete limestone buildings in Henderson Street central Fremantle that comprise fifteen former Fremantle Prison Warders' Cottages. The earliest pair of buildings (W1 and W2) is separated by William Street and flank the Fairbarn Street ramp leading to Fremantle Prison. The three blocks are physically separate from the Fremantle Prison precinct but historically an integral component of its development and significance.



Extract from 'Fremantle Warders' Cottages (fmr) Conservation Plan' Kelsall Binet Architects for Department of Housing, July 2011, pi.

Significance

Fremantle Prison and Warders' Cottages W1-W3, were included in the National Heritage list on 1 August 2005; and on 31 July 2010, the Prison was placed on the World Heritage list as part of eleven penal sites across Australia, 'making it the first built environment in Western Australia to be bestowed this honour.'[1] The Warders' Cottages are included in the 'buffer zone' of the world heritage listing.[2] The cottages are therefore protected by the federal *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) as part of the Fremantle Prison precinct.

> *The Victorian Georgian Warders' Cottages (fmr) in Henderson Street Fremantle have cultural heritage significance for their association with the development of the Convict Establishment in the colony of Western Australia and specifically the internationally significant Fremantle Prison. They have aesthetic value and make an important contribution to their setting and precinct, defining the western boundary of the former Convict Establishment and framing the significant vista from William Street up the Fairbairn Street ramp to Fremantle Prison.*
>
> *The cottages are the earliest examples of terrace housing in Western Australia and are unique examples of convict built housing terrace housing purpose-built to accommodate Fremantle Prison warders. They demonstrate the difficult way of life endured by prison warders who worked during the convict period and have associations with significant figures including James Manning, Clerk of Works, and Captain Henderson, Royal Engineer and Comptroller General of Convicts.*
>
> *The cottages are highly valued by the community.*

Due diligence investigations

The due diligence report estimates works required to return the cottages to residential use. The scope of work is based on existing documentation and selected specialist advice. Comprehensive documentation of works is not included in this scope and costs remain indicative only. Advice acquired for this exercise includes:

- external and internal conservation works
- archaeological potential
- landscape conservation and adaptation
- stormwater drainage requirements
- structural investigations
- pest control
- electrical requirements
- hazardous materials survey
- BCA compliance reporting
- adaptive re-use recommendations
- interpretation recommendations

A summary of these investigations is included in the report and independent reports are included as appendices to the document.

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1 Kelsall Binet Architects 'Warders' Cottages, Henderson St, Fremantle: Conservation Plan', July 2011, p5.

2 A buffer zone indicates the area around a World Heritage site in which development could impact that site.

Ownership & management

The Warders' Cottages (fmr) have remained as residential accommodation under single ownership and managed as a group since the first block was constructed in 1851. The Conservation Plan states that:

> ***Policy 10*** *The preferred use for these buildings is that they continue as residential accommodation. Ideally all terraces should be kept under single ownership or an alternative form of control (covenant) that ensures that the culturally*

Given the cottages' historic connection to the Fremantle Prison; inclusion in the boundary of its national heritage listing and buffer zone of its world heritage listing; it is the opinion of the National Trust of Australia (WA) that future ownership and management of the cottages should be directly associated with the Fremantle Prison.

If the cottages are sold out of government ownership, as part of the state government approved disposal process the State Heritage Office require a heritage agreement with the future owner to ensure protection. Heritage agreements, however, are only as effective as their regulation. Managing multiple owners' requirements is of concern to the Trust and we believe the heritage values of the cottages can only be successfully managed under a single ownership and management body.

Compliance and future use

The conservation plan states the preferred use for these buildings is they continue as residential accommodation and this view is supported by the National Trust of Australia (WA) in this report. This may take the form of long, short or medium-stay accommodation, however Building Code of Australia compliance requirements differ for each of these types of residential use.

In the absence of a defined future use, the due diligence report makes recommendations based on the assumption that some form of residential use will be retained. The current compliance of the cottages has been assessed based on long-term residential use – Class 1a. Long-term residential use will not require a 'change of use' classification and therefore bring minimal requirements under the Building Code of Australia.

Short-stay accommodation, however, will entail compliance requirements that will have some impact on significant fabric – particularly original lathe & plaster ceilings, some door openings, and facilities (kitchens and bathrooms to a minimum of two units). 'Short stay' refers to any use that is not considered as the principal residence for one group of persons. The BCA does not relate to time limits on use.

Short stay accommodation differs primarily from standard residential accommodation in that a higher level of safety is expected as the occupants may not be fully aware of the internal inconsistencies or intricacies of the place. The classification for short stay use can vary from Class 1b to Class 3, each with different requirements.

There is some scope for limited community use that will also entail BCA compliance requirements. The community benefit must be carefully assessed against the impact on heritage values in any future use considerations.

Interpretation

Ensuring the heritage values of the cottages are appreciated is an essential component of the recommendations of this report. If heritage values are understood it is more likely the cottages will be respected and cared for by those who inhabit them

and their lives will also be enriched in some way. In any future use option, interpretation should be a key consideration.

Cost estimate

In the absence of a defined alternative use, the cost estimate has been prepared on the assumption of retention of existing use. BCA requirements have been included for existing use only and a change of use will attract additional costs associated with the relevant requirements.

The works costed by Davson Ward Quantity Surveyors include:

- external conservation
- landscape works
- internal conservation
- internal adaptive re-use

The estimate for total internal and external conservation and adaptive re-use work is:

W1	$2, 125, 000
W2	$1, 625, 000
W3	$2, 250, 000
	$6, 000, 000

These costings assume all works will be undertaken as a single building contract; proposals for staging the works have not been considered.

The following items have not been included in the Davson + Ward cost estimate:

Archaeology:

- archaeological investigation prior to any building & landscaping works $59, 500
- archaeological monitoring during building & landscaping works $22, 500
- archaeological research & interpretation program $tba

Interpretation:

- interpretation plan $30, 000
- interpretation works $tba

Maintenance planning

An indicative maintenance plan has been prepared and shows how regular maintenance will reduce long term capital costs.

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1 Introduction

In July 2012, following discussion with the Department of Housing on the future of the Warders' Cottages in Henderson St, Fremantle, the National Trust of Australia (WA) commenced preparation of a 'Due Diligence Report' for the three buildings known as Warders' Cottages blocks W1, W2 and W3. A fourth block (W4), on Holdsworth Street, was not included in the scope of the project. The cottages are also referred to as the Warders' Quarters (fmr), however 'cottages' is the terminology used on the original drawings and is the term used in the 'Warders' Cottages, Henderson St, Fremantle: Conservation Plan', July 2011 by Kelsall Binet Architects.

1.1 The site

The site in question includes the three discrete limestone buildings in Henderson Street central Fremantle that comprise fifteen former Fremantle Prison Warders' Cottages:

W1	19-29 Henderson Street (1851)	6 cottages
W2	33-41 Henderson Street (1853)	3 cottages (originally 6 cottages)
W3	7-17 Henderson Street (1858)	6 cottages

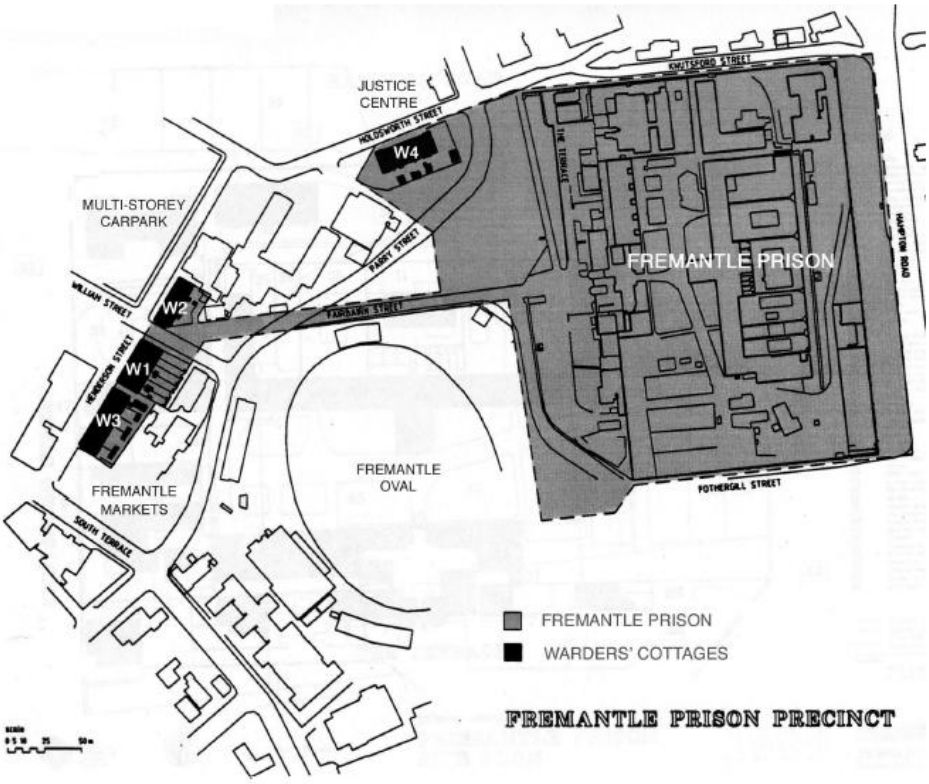


Figure 1: Location Plan showing the Warders' Cottages and the Fremantle Prison, Fremantle (not to scale)
Base drawing from *Warders Cottages, Fremantle Prison Conservation and Future Use*, BMAWA, 1990

Extract from 'Fremantle Warders' Cottages (fmr) Conservation Plan'
Kelsall Binet Architects for Department of Housing, July 2011, pi.

The earliest pair of buildings (W1 and W2) is separated by William Street and flanks the Fairbarn Street ramp leading to Fremantle Prison. The three blocks are physically separate from the Fremantle Prison precinct, as shown above, but historically an integral component of its development and significance.

Photo 5: View across Henderson Street Mall of the front and south side of W1 adjacent to the laneway entrance to the Fremantle Markets.

W1
Extract from 'Fremantle Warders' Cottages (fmr) Conservation Plan' Kelsall Binet Architects for Department of Housing, July 2011, p72

Photo 9: View across Henderson Street of the north and west elevations of W2.

W2
Extract from 'Fremantle Warders' Cottages (fmr) Conservation Plan' Kelsall Binet Architects for Department of Housing, July 2011, p74

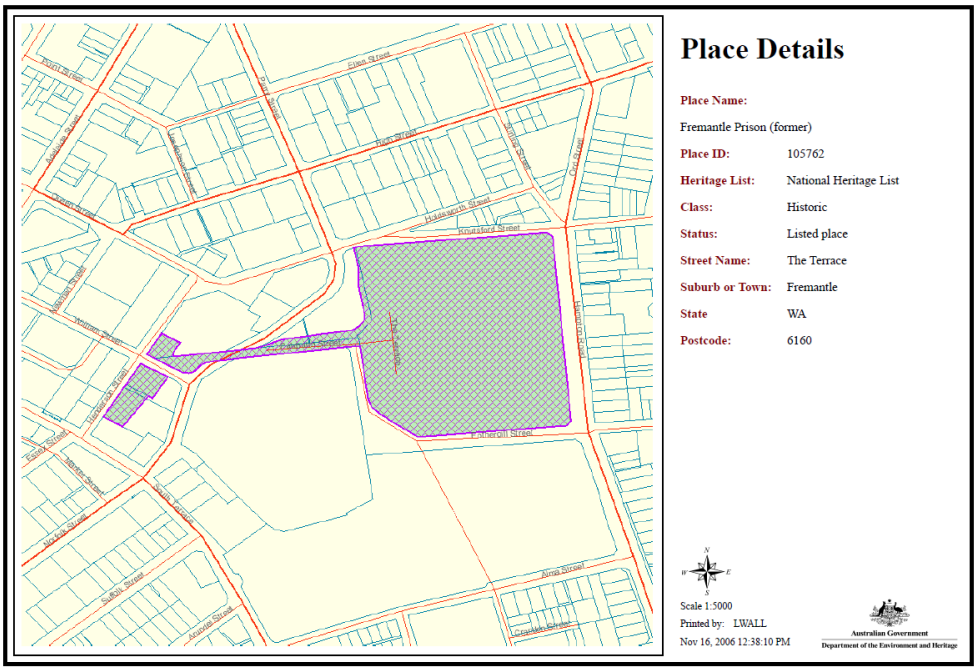
Photo 3: View across Henderson Street Mall of W3 partially obscured by plantings in the small front yards behind the low front limestone wall.

W3
Extract from 'Fremantle Warders' Cottages (fmr) Conservation Plan' Kelsall Binet Architects for Department of Housing, July 2011, p71

1.2 Significance

Fremantle Prison was included in the National Heritage list on 1 August 2005; and on 31 July 2010, was placed on the World Heritage list as part of eleven penal sites across Australia, 'in recognition of its outstanding cultural heritage significance as one of the world's greatest landmarks and the best surviving example(s) of large-scale convict transportation and the colonial expansion of European powers through the presence and labour of convicts, making it the first built environment in Western Australia to be bestowed this honour.'[3]

The Warders' Cottages are included in the 'buffer zone' of this listing and as part of Fremantle Prison's National Heritage listing.[4] The cottages are therefore protected by the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) as part of the Fremantle Prison precinct. Approval from the Australian Government environment minister is required for any proposed action affecting the significance of the places.



Boundary Plan
Australian Heritage Council National Listing

The integrity of the cottages rests with their historic links to Fremantle Prison, a link that has been physically diminished by construction of the Parry Street bypass in the 1980s. What remains of the Fairbairn Street ramp is the connector between the Cottages and the Prison, the Cottages being the primary link between the urban fabric of the City and the isolation of the Prison. As identified in the Prison master plan:

> *The Fairbairn Street Ramp is a key feature of the prison precinct and once connected the port and city of Fremantle to the convict depot before being truncated to allow the Parry Street bypass in the 1980s. Plantings and landscape elements have further obscured its clarity.*

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3 Kelsall Binet Architects 'Warders' Cottages, Henderson St, Fremantle: Conservation Plan', July 2011, p5.

4 A buffer zone indicates the area around a World Heritage site in which development could impact that site.

The City of Fremantle has commenced works associated with past studies, to reinstate the visual connection between the precinct and Henderson Street. Reconstruction of the ramp would increase the visibility of the precinct and therefore increase visitor numbers, reintegrate the precinct within its urban context and assist in the credibility of the World Heritage Nomination.[5]

Along with the Fairbairn St ramp, the cottages are a physical link between the Prison with the City of Fremantle, and help define the perimeter of the Convict Grant.

The conservation plan for the cottages states their significance:

Warders' Cottages (fmr), comprising the first terrace (W1), 19-29 Henderson Street (1851); the second terrace (W2), 33-41 Henderson Street (c.1853); and the third terrace (W3), 7-17 Henderson Street (1858), all of limestone construction in the Victorian Georgian style, have cultural heritage significance for the following reasons:

- *they were built as part of the Convict Establishment, forming its western boundary and are important for the aesthetic characteristics they share with Fremantle Prison and the other original buildings of the former Convict Establishment; they are associated with the development of the Convict Establishment, in particular from the early 1850s, and the Fremantle Prison, a place of international significance as evidenced by their inclusion on the World Heritage List;*
- *they have significant aesthetic value as simply composed, competently designed and built two-storey, terraced houses of limestone construction in the Victorian Georgian style;*
- *they are of importance for their contribution of siting, scale and simple linear form to defining the western boundary of the former Convict Establishment and for their framing of the significant vista from William Street up the Fairbairn Street ramp to Fremantle Prison;*
- *they have significant aesthetic value as a suite of three sets of terraced buildings of that together create an important contribution to the Henderson Street streetscape through their homogenous form, scale and detailing;*
- *they are of aesthetic importance for their contribution to the significant precinct and cultural environment of Henderson Street, which also includes the Fremantle Court House and Police Station, the Fremantle Markets, the Fremantle Technical College Annexe and the Sail and Anchor Hotel;*
- *they are important as the earliest examples of terrace housing in Western Australia;*
- *they are important as unique examples of convict built housing terrace housing purpose-built to accommodate the Fremantle Prison warders in Western Australia;*
- *they are of importance in demonstrating through their intactness the difficult way of life endured by prison warders who worked at Fremantle Prison during the convict period;*
- *they have associations with James Manning, Clerk of Works, and Captain Henderson, Royal Engineer and Comptroller General of Convicts;*
- *the places are highly valued for their historical associations with Fremantle, in particular the Convict Establishment, and thus contributes to the community's sense of place; and,*

[5] Palassis Architects, 'Fremantle Prison Heritage Precinct Master Plan', July 2003, p22. It should be noted that World Heritage status was subsequently achieved.

- *they are highly valued as one of a number of other landmark convict constructed sites in Fremantle that contribute to the historic and social values of both the Convict Establishment specifically and Fremantle generally.* [6]

1.3 Ownership

The places are owned by the State Housing Commission, trading as the Department of Housing, under which they operated as Homeswest accommodation between 1991 and 2011. They have remained empty since the last tenant vacated in October 2011.

It is intended that the Department of Housing relinquish ownership as the cottages are no longer suitable to its needs. In compliance with the Government Heritage Property Disposal Process, preparation of the conservation plan in 2011 was a preliminary step towards achieving this aim. The State Heritage Office will require preparation of a heritage agreement to ensure extra protection if sold out of government ownership.[7] Heritage Agreements, however, are only as effective as their regulation. Managing multiple owners' requirements is of concern to the Trust and we believe the heritage values of the cottages can only be successfully managed under a single ownership and management body.

Given the cottages' historic connection to the Fremantle Prison; inclusion in the boundary if its national heritage listing and buffer zone of its world heritage listing; it is the opinion of the National Trust of Australia (WA) that future ownership and management of the cottages should be directly associated with the Fremantle Prison.

1.4 Aim

This due diligence report is intended:

d) to provide a comprehensive costed scope of work for the complete internal and external conservation of the three terraces of Warders' Cottages W1 – W3

e) to advise on future use in relation to Building Code of Australia compliance and provide costs associated with any adaptive re-use requirements

f) to provide estimates for ongoing maintenance costs

2 Due diligence investigations

The report estimates necessary works based on existing documentation and selected specialist advice. It should be noted that comprehensive documentation of works is not included in this scope and that costs remain indicative only. Estimates are provided by a qualified quantity surveyor, however, and are deemed sufficient for budgeting purposes. Advice acquired for this exercise includes:

- external and internal conservation works recommendations
- archaeological potential
- landscape conservation and adaptation
- stormwater drainage requirements

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6 Kelsall Binet Architects 'Warders' Cottages, Henderson St, Fremantle: Conservation Plan', July 2011, p5.

7 A heritage agreement is a legally binding contract that sets out a framework for long term conservation and maintenance of a place. SHO advise that heritage agreements are usually a requirement of the Government Disposal Process.

- structural investigations
- pest control
- electrical requirements
- hazardous materials survey
- BCA compliance reporting
- adaptive re-use recommendations
- interpretation recommendations

A summary of these investigations follows; independent reports are included as appendices to the document.

2.1 Review and update of previous reports

2.1.1 2005 Schedule of Conservation and Maintenance Works

The 'Fremantle Warders Cottages: Schedule of Conservation and Maintenance Works', August 2005, was prepared by Kelsall Binet Architects with Carnegie Associates Structural Engineers and Page Kirkland Group Quantity Surveyors for the Department of Housing and Works. It recommends external conservation work only.

> *The report is not intended to serve as the comprehensive basis for the general upgrading works. The report does not address issues such as the condition of decorative finishes, built-in furniture, electrical fittings or plumbing services, apart from where they have a detrimental effect on the condition of the fabric of the building.*[8]

The 2005 report gives a comprehensive description of the cottages' external and internal design and it is not intended to repeat this information here.

In addition, considerable information is given on the nature of the deterioration of the building fabric, particularly in relation to conservation of the limestone walls. It is important for owners and users of these buildings to understand the ways in which they work (or don't work) through the control of damp and provision of adequate ventilation.

Section 4.1.1 of the report is included in the appendices to this document as it is important information that should be communicated to future owners and managers.

In summary, the 2005 report proposes the following works:

- Address falling damp (roof and guttering)
- Address rising damp (drainage and ground works)
- Remove inappropriate render and paint finishes
- Improve ventilation
- Remove inappropriate mortars and repair stonework as required
- Repair structurally defective verandahs to W3

> *The walls will never be free of damp and while our recommended approach will not provide an instant cure it will help to reduce the degree of moisture in the walls, with the result that many of these problems will become manageable. Contaminated walls will take time to dry out and improvements will need to be monitored. It may be necessary to reassess the works as a consequence of information gained from these*

[8] Kelsall Binet Architects with Carnegie Associates Structural Engineers and Page Kirkland Group Quantity Surveyors 'Fremantle Warders Cottages: Schedule of Conservation and Maintenance Works', August 2005, p1.

observations. Occupants and maintenance contractors will need to understand and continually reinforce this approach. [9]

The recommended works were costed in 2005 at $611,650 excluding gst.

2.1.2 2007 drainage proposal

In June 2007, Wood & Grieve Engineers prepared a proposal to improve the drainage to the terraces comprising W1: no's 7 – 17 Henderson St. This proposal and sketch design is included as appendices to this report and forms the basis for cost estimates for hydraulic works.

2.1.3 2008 Urgent Conservation Works – Unit 29

In 2008 Kelsall Binet Architects documented urgent conservation works to the northern elevation of W1 and internally to the ground floor of the end cottages of W1 at 29 Henderson St. Some but not all of these works were completed however, and lack of maintenance to the gutters on this northern elevation meant subsequent damage by water ingress that has not since been repaired.

The removal of internal render to expose the original lime-washed stone is an example of works that could be completed in the remaining cottages. The extent of render removal is, however, dependent on internal condition and interpretive decisions.

The drawings for this work are included in the appendices to this report.

2.1.4 2009 Documentation of Conservation and Maintenance Works

In 2009, on the understanding that works were to be undertaken, Kelsall Binet Architects prepared documentation for external conservation of cottages W1 – W4. These works were costed at $1, 946, 000 for cottages W1 – W3, excluding asbestos removal, relocation costs, professional fees and gst. The works did not proceed.

The scope of works excluded:

- outbuildings (laundries and former wcs)
- internal conservation,
- upgrade of internal finishes and fittings (including kitchens, laundries and bathrooms),
- any compliance requirements; and
- landscape works.

These exclusions have been addressed as part of this due diligence exercise.

This documentation forms the basis for external conservation works costed as part of this report. The drawings are included as appendices to this report.

2.1.5 Department of Housing maintenance

Maintenance records provided by the Department of Housing range from 1999-2009 and indicate a largely re-active program of works over this time. There are some instances of an internal painting program (2002) and unspecified large-item plumbing work undertaken to some cottages in 2009. Pest control appears to have been

[9] Kelsall Binet Architects with Carnegie Associates Structural Engineers and Page Kirkland Group Quantity Surveyors 'Fremantle Warders Cottages: Schedule of Conservation and Maintenance Works', August 2005, p20.

limited to treating 'suspected infestations' (2002) rather than pro-active inspections or treatments.

The maintenance records are included in the appendices to this report.

2.2 2012 due diligence reports

2.2.1 Archaeological scoping document

As part of the due diligence process, National Trust archaeologist Leanne Brass reviewed existing documents, including the conservation plan and reports outlining previous archaeological works, particularly to block W3. In the 'Archaeological Scoping Document for Fremantle Warders' Cottages (fmr)' she makes recommendations to plan, monitor and interpret the archaeological potential of the places.

In summary, the Scoping document makes the following recommendations for an archaeological assessment strategy of the Warders' Cottages (fmr) which would involve three stages:

- ***Stage 1: Archaeological Investigation to Guide Conservation and Future Development***

  It is recommended that archaeology be used to guide conservation at the Warders' Cottages (fmr) – specifically that survey and test-pitting of the rear and front gardens be carried out to determine the location of key archaeological features so as to develop a plan to avoid these in the proposed refit of the site (as outlined in the Due Diligence Report). Previous archaeological assessment of limited sections of the rear yards of W3 was carried out in 1989, making W1 and W2 a priority for Stage 1.[10] This stage should also include an initial assessment of the archaeological potential of the underfloor deposits, recommendations for priority areas for monitoring in Stage 2 and further recommendations for archaeological research at the cottages as part of a Stage 3 assessment.

- ***Stage 2: Archaeological Monitoring***

  It is recommended that archaeological monitoring be carried out during the future refit of the cottages. This would potentially limit archaeological investigation to areas where ground disturbance (including landscaping, removal of trees, paving, fences etc) and/or access to the underfloor deposits is planned. This should include documentation and excavation of extant outbuildings if they are to be demolished or disturbed.

- ***Stage 3: Archaeological Research and Interpretation Plan***

  It is recommended that an archaeological research and interpretation program be further developed and linked to work currently being undertaken between Fremantle Prison and archaeologists from the University of Western Australia.

- ***Long Term Management of Archaeological Material***

  A further recommendation is made that if archaeological material is recovered from the Warders' Cottages (fmr) through archaeological survey and excavation that provision be made for the long term care, conservation and maintenance of these collections. Collections should be appropriately labelled and packaged in archive

[10] See McIlroy, J. Fremantle Prison Conservation and Future Use. Historical Archaeological Assessment of Hampton Road Reserve and Henderson St Cottages, Building Management Authority of Western Australia, 1990.

quality boxes and conservation advice sought for fragile items. It is recommended that archaeological material is lodged with the Fremantle Prison collections.

Budget estimates are included for the recommended works. Where works are to be undertaken, monitoring must be included as an absolute minimum. Ideally, this is preceded by an up-front investigation (stage 1 above). The costs are for a 'best case' scenario and may be reduced through a university partnership and student field-school exercises, for example.

The full report is included as an an appendix to this document.

2.2.2 Landscape conservation and adaptation

Review of panoramic and aerial photos from c1890 to the present indicates that most of the existing vegetation dates from the l970s and 1980s. A panoramic photo of the southern cottages from c1890s reveals sparsely planted back yards with some shrub planting along the rear walls of the buildings, paths and what is probably mown grass. The central group of cottages (W1) has picket fences enclosing the back yards. There is a wide strip of grass on the east (outer) side of the picket fence. The sequence of aerial photos from 1948 to the present indicates that the back yards contained very few trees until the late 1970s – early 1980s, from which time planting generally intensifies. Based on a visual inspection and photographic evidence the oldest existing tree is an Almond in the rear yard of the central group of cottages.

The back gardens now contain a variety of shrubs and trees, some of which are large and mature providing shade and enclosure. Some of the large trees are very close to structures and pose a threat to their structural stability. The front courtyards contain mature Frangipani trees which contribute to the streetscape as well as shading the fronts of the houses. These trees however appear to be disrupting surface and subsurface drainage to the detriment of the structures.

The gardens have been neglected for some years and are invaded with weeds. The cultivated trees and shrubs appear to be mostly in sound condition but require pruning to remove dead growth, improve their shape and stimulate new growth. Hard landscape elements (walls, fences paving and structures such as trellises) are in poor condition. There has been a build-up of soil and leaf litter over time raising ground levels to the degree of adversely affecting surface drainage which should be directed away from the buildings. Some trees pose a structural hazard to buildings because of their close proximity and/or interference with surface and subsurface drainage.

Little of the existing landscape fabric is of historic significance, however in the context of contemporary residential use of the cottages, the gardens are of great value, providing as they do extensive outdoor space for such an inner-urban location. The existence of this space and its capacity for enjoyment and recreation is a significant legacy of the history of the place; the majority of its contents are not.

The few historically significant trees and those which are appropriately located should be retained and subject to remedial work to improve their health and appearance. A few climbing plants and areas of shrubbery in appropriate locations should be retained if possible. All other landscape fabric may be removed and renewed to suit contemporary residential use in accordance with water sensitive landscape design principles and with due regard to protection of the surrounding buildings and thoroughfares.

Site plans have been marked up to diagrammatically show a broad scope of works for costing and are included in the appendices to this document.

2.2.3 Structural services condition report

Structural engineer Peter Baxendale (PBCE) has completed a 'Structural Services Condition Report' to provide 'guidance on the necessary scope of remedial and maintenance works required to enable the existing structure to continue to perform its current task and be safe for operational use into the foreseeable future.' The report identifies that there has been considerable visual deterioration to the structure since completion of the Carnegie & Associates structural report in 2006. The Carnegie report focussed on the W3 verandah and PBCE has identified additional works. Due to time pressures, assumptions were made that W2 is in similar condition to W1.

The structural report is general only and did not include intrusive or sub-surface investigations, testing, or specific measurements or calculations. The same nomenclature for timber verandah members is used for ease of reference to the Carnegie report.

In summary, the front verandah of W3 has deteriorated since 2006, most significantly floor beam end decay reflected by the propping of these elements. Works to external laundries, stores, sheds and WC structures all require low level repairs and/ or re-stumping. Internally, however, no major issues are identified apart from the well-recognised problems with storm water drainage and ensuing ongoing damage.

Peter Baxendale's report detailing elements requiring structural attention is included as an appendix to this document.

2.2.4 Review of stormwater drainage condition

Kelsall Binet Architects has assessed the drainage needs of the cottages and detailed a typical front courtyard design to improve drainage. Problems have been exacerbated by the raising of Henderson Street, particularly affecting W1 which now sits well below the street level. The works costed are based on the typical front courtyards documented by Kelsall Binet Architects in 2009.

It has been identified that the City of Fremantle has recently installed additional stormwater infrastructure along the length of the laneway between W1 and W3 to service the Fremantle Markets courtyard. Preliminary discussions between Kelsall Binet Architects and the City of Fremantle indicated the City may be amenable to the utilisation of this infrastructure to alleviate the Cottages' drainage problems. This has not been confirmed with the City.

2.2.5 Electrical services condition report

Comspark electrical contractors was requested to inspect the places and advise on basic upgrade works. The units are separately metered and have RCDs installed. A budget estimate of $1, 800 per unit was given for tidying up, replacing switches and power points and testing. The quote does not include replacing faulty earths, RCDs or light fittings. Refer to the cost estimate prepared as part of this work for the full scope of electrical works costed. The report is included in an appendix to this document.

2.2.6 Pest control inspection

Westate Pest Control has advised on inspection and Termidor treatment costs for termites based on the assumption that access is provided to sub-floor and internal

areas. The floor boards of blocks W1 and W2 would need to be lifted for adequate access to the soil areas between each floor joist or wall supports and ventilation of these areas should be provided following treatment.

- for termite inspections and reports on the three blocks, the cost would be approximately $1,500 plus GST,
- for treatment of the ground floor sub-floor areas using Termidor, the cost would be around $7,000 plus GST.

Care should be taken in any decision making regarding access to the floor, however, as damage caused by cutting traps and lifting boards may be greater than the possible termite damage. Westate's advice is included as an appendix to this document.

2.2.7 Review of external and internal building condition

Conservation Architect Gena Binet, of Kelsall Binet Architects, with Kelly Rippingale, Conservation Architect with the National Trust of Australia (WA), undertook a comprehensive site survey to review the extent of deterioration of the buildings since works were documented in 2009. Any variations have been included in the costings for this report.

In addition, a scope of internal works were developed which form the basis for costings of internal conservation and adaptive re-use works.

2.2.8 Hazardous materials report

Detailed inspection and testing for hazardous materials was undertaken by Environmental Site Services. The main areas of concern are bonded asbestos-containing materials and the prevalence of lead based paints.

> *The objective of the survey was to as far as practicable, locate, identify and visually assess asbestos containing materials (ACM) and other hazardous materials present in the areas nominated for inspection and to present the information collected in a way that allows the duty holder to manage the risks arising from those materials in order to meet owner/employer obligations under the Occupational Safety and Health Regulations 1996 (Western Australia).*
>
> *...For the purpose of this report, typical hazardous materials to be identified are asbestos containing material (ACM), synthetic mineral fibre (SMF), lead based paint and polychlorinated biphenyls (PCBs) within fluorescent light capacitors.*
>
> *An ESS HAZMAT consultant conducted a visual inspection and minor destructive sampling program on the property. The inspection was limited by minor destructive nature of the sampling, limited access to some areas, the widespread ad hoc use of asbestos and other hazardous materials in the construction industry. ESS recommends any suspected hazardous material identified through major demolition be assessed in its own right and expert opinion sought in its management.*
>
> *For these reasons the client is advised that the report is not a definitive description of all ACM and other hazardous material present in the area(s) of investigation.*
>
> *This report presents the findings of a survey completed on the 21st of November 2012 and includes Survey Results Register 7.0 Results Register, and an asbestos risk assessment.*[11]

[11] Environmental Site Services, 'Hazardous Material Survey Warders' Cottages, Fremantle WA', November 2012, p4.

The 'Hazardous Material Survey Warders' Cottages, Fremantle WA' report is included as an appendix to this document.

2.2.9 Public Use and Compliance Audit Report

JMG Building Surveyors was contracted to inspect the cottages 'to identify and demonstrate ... that the buildings were either of sufficient standard to not be altered or that there are necessary changes to be carried out to improve occupancy and reuse of the buildings for residential with one or two buildings being used as community services facilities.'[12]

The inspection identifies areas that may be affected or need to be addressed to meet current legislation compliance requirements depending on future use options.

The report takes into consideration:

- Community importance and building characteristics (heritage value)
- Fire resistance and compartmentation
- Access and Egress (including access for persons with disabilities)
- Fire safety systems and construction
- Health and amenity
- Energy efficiency

It is assumed that separating walls do not extend to the underside of the roof (there is no access to the roof space) and spread of fire between units is identified as a major compliance issue in relation to personal safety of occupants.

It has also been identified that little or no research has been undertaken into the spread of fire between limestone rubble walls however the structural engineer has advised that in his opinion the relatively good condition of the walls makes it unlikely that these walls would not meet rating requirements.

The major issues identified are:

- Spread of fire through the roof space
- Compliance of low level glazing
- Stair and balcony balustrade height
- Inadequate smoke detection systems
- Health and amenity of laundries and bathrooms

The 'Public Use and Compliance Audit Report' is included as an appendix to this document.

3 Compliance and future use

3.1 Generally

The Burra Charter: Australia ICOMOS Charter for Places of Cultural Significance (1999) defines 'use' as:

> *… the functions of a place, as well as the activities and practices that may occur at the place. (Article 1.10)*

'Compatible' use refers to:

> *… a use which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance. (Article 1.11)*

[12] 'Public Use and Compliance Audit Report for Western Australia State Housing Commission – Warders Cottages – Fremantle', JMG Building Surveyors, October 2012, p3.

Conservation policies for a place of cultural heritage significance should:

> *… identify a use or combination of uses or constraints on uses that retain the cultural significance of the place. New use of a place should involve minimal change, to significant fabric and use; should respect associations and meanings; and where appropriate should provide for continuation of practices which contribute to the cultural significance of the place.*

The Warders' Cottages (fmr) have remained as residential accommodation under single ownership and managed as a group since the first block was constructed in 1851. The Conservation Plan states that

> ***Policy 10*** *The preferred use for these buildings is that they continue as residential accommodation. Ideally all terraces should be kept under single ownership or an alternative form of control (covenant) that ensures that the culturally significant unity of these buildings is retained.* [13]

Ownership and management of the cottages is discussed in previous sections. The preferred use for these buildings is that they continue as residential accommodation. The 'Public Use and Compliance Audit Report' outlined above makes recommendations based on the assumption that some form of residential use will be retained.

3.1.1 Long term residential use

The buildings have been assessed for their current long-term residential use – Class 1a. In this use proposal residents are familiar with the vagaries of the place (uneven and steep stair risers for example) and they are therefore less of a risk to personal safety. By addressing the fire safety, glazing, balustrades etc. "it is considered that the buildings could be brought to a sufficient standard to be occupied" with relative ease and minimal interference to significant fabric.[14]

3.1.2 Alternative uses

An option for future use is for the places to be let as short stay apartments with one used as a community service office or similar (local history society for example). This would constitute a change of use and considerations of the classification – particularly in relation to fire separation, access and egress.

The advice given is that the unit with the least floor variation to ground level should be considered if one unit is desired for public access. Should there be no specific use upstairs then the requirement for access to the upper level does not need to apply. External facilities would require upgrading to enable employment of a person with disabilities for any office or community service use on the ground floor.

Short stay accommodation differs primarily from standard residential accommodation in that a higher level of safety is expected as the occupants may not be fully aware of the internal inconsistencies or intricacies of the place. The classification for short stay use can vary from Class 1b to Class 3, each with different requirements.

In particular a higher level of fire separation may be required between floors as well as between individual residences. Although untested, the fire resistance between limestone separating walls may well be achievable, however the current ceiling

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13 Kelsall Binet Architects 'Warders' Cottages, Henderson St, Fremantle: Conservation Plan', July 2011, pvii, p176.

14 'Public Use and Compliance Audit Report for Western Australia State Housing Commission – Warders Cottages – Fremantle', JMG Building Surveyors, October 2012, p10.

construction would not achieve the requisite spread of fire or fire resistance levels. Having said this, the compliance report states that the change of use 'is not an insurmountable issue' and that alternate solutions may be achieved through fire engineering warning systems.

In addition, the use of short stay accommodation would mean a minimum of two accessible units would have to be provided. This would most likely be achievable in W2 where ground-to-floor levels are minimal compared with W1 and W3.

3.1.3 Recommendations

As stated above, given the long history of residential use of the Warders' Cottages (fmr), ongoing residential use is preferred. This may take the form of long, short or medium-stay accommodation.

Long-term residential use will not require a 'change of use' classification and therefore bring minimal requirements under the Building Code of Australia. Short-stay accommodation will entail compliance requirements that will have some impact on significant fabric – most particularly original lathe & plaster ceilings, some door openings, and facilities (kitchens and bathrooms to a minimum of two units).

'Short stay' refers to any use that is not considered as the principal residence for one group of persons. The BCA does not relate to time limits on use.

There is some scope for limited community use that will also entail BCA compliance requirements. The community benefit must be carefully assessed against the impact on heritage values in any future use considerations.

Assessment of some options includes:

Long term public housing	Requires minimal changes under the BCA however offers limited interpretive value or community benefit.
Private residential	Requires minimal changes under the BCA however would be difficult to manage changes and 'improvements' which would have an impact on heritage values and offer limited interpretive value and community benefit.
Transitional housing	Changes required under the BCA will depend on length of stay; a turnover of tenants offers higher interpretive and community value.
Short stay commercial	Higher changes required under the BCA, high interpretive value and moderate community benefit.
Mix with one community use	Ideally one unit is set aside for public access, interpretation and possible use by a community heritage organisation or similar. This option is possible in any of the above scenarios

3.2 Interpretation

Ensuring that the heritage values of the cottages are appreciated is an essential component of the recommendations of this report. If heritage values are understood it is more likely the cottages will be respected and cared for by those who inhabit them and their lives will also be enriched in some way. In any future use option, interpretation should be a key consideration.

An interpretation plan should be developed for the cottages that identifies the key themes and storylines connected with them and takes into account the World Heritage status of the Fremantle Prison. The plan would also propose techniques that

may be utilized to make these themes and storylines accessible to users of the cottages.

Different approaches will be more suited to some themes and audiences than others and many can be readily incorporated into programmed building works at little or no additional cost. For example this report has already identified the need for painting of the cottages and removal of inappropriate finishes. Reinstatement of previous colour schemes and/or paint scrape ladders left to reveal layers of earlier surface coatings can be readily undertaken. A graffiti labeling technique is an engaging way in which to introduce an historical timeline in an unpredictable fashion. Similarly glass splashbacks in the kitchens could utilize text, images and graphics to present general themes or individual stories.

For external audiences it is suggested that one cottage be retained for public visitation on a regular, seasonal or programmed basis. It should maintain strong links with the Prison. For times when this cottage is inaccessible and for virtual audiences a website accessible fly through could be developed linking the cottages with images and audio that explore the themes identified in the interpretation plan.

The interpretation plan and its subsequent recommendations would help ensure a heightened understanding of the heritage values and significance of the cottages. It should not be considered a luxury but rather a conscious component of their ongoing management, conservation and future use.

Images that demonstrate a few suitable interpretive techniques are included in the appendices to this report.

The continuing use of the places as accommodation could also be seen as part of the interpretation of the place. If a space or place continues to be used for the purpose it was designed then it is possible, through association and experience, to develop a strong understanding of the place. Conservation and redevelopment decisions should assist in this process which will also ensure the retention and enhancement of cultural heritage values.

4 Scope of work

4.1 Summary of costed works

The work costed by Davson Ward Quantity Surveyors is comprehensive however is based on a broad scope, not architectural documentation. External works are based on those documented by Kelsall Binet Architects with additional information based on visual inspection of the rate of deterioration since this work was documented. In addition, a general internal scope of work has been defined for costing purposes. Landscape works and outbuilding conservation has been included in this report as has information arising from the hazardous materials, archaeology, structural engineering and other reports commissioned to inform this due diligence exercise.

In summary, the works costed include the following:

1. External conservation works including:
   - address falling damp (roof and guttering)
   - address rising damp (drainage and ground works)
   - remove inappropriate render and paint finishes
   - improve ventilation
   - remove inappropriate mortars and repair stonework as required

- repair structurally defective verandahs to W3
- repair structural defects to outbuildings
- remove and replace hazardous materials
- archaeological monitoring
- pest control

2. Landscape works including:
   - planting removal and pruning
   - paving and hard features/ structures
   - fencing
3. Internal conservation work including:
   - remove inappropriate render and paint finishes
   - new limewash and paint finishes
   - new floor finishes/ treatments
4. Internal adaptive re-use work including:
   - upgraded bathrooms, kitchens and laundries
   - upgraded electrical and plumbing services
   - upgraded/ new fire and intruder alarm systems
   - fire separation
   - compliance-related items (glazing, balustrades etc.)
   - remove and replace hazardous materials
5. Interpretation including:
   - interpretation plan
   - interpretation elements
   - archaeological assessment

4.2 Cost estimate

In the absence of a defined alternative use, the cost estimate has been prepared on the assumption of retention of existing use. BCA requirements have been included for existing use only and a change of use will attract additional costs associated with the relevant requirements.

The estimate for total internal and external conservation and adaptive re-use work is:

W1	$2, 125, 000
W2	$1, 625, 000
W3	$2, 250, 000
	$6, 000, 000

As outlined above, the cost indication is not based on tender documentation and may change depending on the final scope, specification and detail of the works. The estimate assumes that the works will be carried out before any further deterioration of the buildings occurs and that they will remain unoccupied until the works are fully completed. The pricing is prepared on the assumption that all works are done as one construction contract. Staging or piecemeal works will entail additional costs.

The detailed Davson + Ward cost estimate is included as an appendix to this report.

4.2.1 Exclusions

The following items have not been included in the Davson + Ward cost estimate:

Archaeology:

- archaeological investigation prior to any building & landscaping works $59, 500
- archaeological monitoring during building & landscaping works $22, 500
- archaeological research & interpretation program $tba

Interpretation:

- interpretation plan $30, 000
- interpretation works $tba

4.2.2 Order of works

The conservation plan outlines conservation works in order of priority with the following notes that are worth repeating here:

> *Completing the Priority 1, 2 and 3 works in one phase has many advantages, the first being that the sooner the works are carried the sooner the cause of the deterioration will be removed, thereby minimising the deterioration and consequent cost of repairing original building fabric.*
>
> *Other benefits will include a noticeable improvement in the presentation of the building and confining the disruption to the occupants to a single period. Furthermore, it will also permit the contractor to carry out the works in a logical sequence thereby reducing the inefficiencies resulting from the inevitable duplication when work is done in a piecemeal manner. It would also allow the project to develop the economies of scale associated with more efficient work practices.*
>
> *...Priority 4 works will be required as a follow-up to the Priority 2 and 3 works. Solid walls that have become saturated may take many months or even years to dry out after the Priority 2 and 3 works have been completed. The length of the drying out period varies and is not possible to predict accurately. Limewash tends to draw salt to the surface of the walls. During the drying out process it is likely that salt will be deposited on the inner and outer surfaces of the walls. The appearance of salt on the surface is an indication that the natural evaporation process is working. The salt will need to be removed continuously during the drying out period and it is likely that some areas of lime render will need to be repaired as a result of the salt working its way to the surface.*[15]

The costings provided for this due diligence exercise assume all works are undertaken as a single building contract and proposals for staging the works have not been considered.

4.3 Maintenance planning

> *Adequate, regular and well-supervised maintenance and timely major repair can be the single most important part of a conservation programme. A lack of maintenance can lead to the loss of significant fabric and inappropriate maintenance can lead to a gradual loss of significant detail and character.*
>
> *It will be noted that the conservation works required to the Warders' Cottages are principally to overcome the various forms of decay to the fabric attributable to the presence of excessive dampness in the walls. The aim of the conservation works therefore is essentially to control the amount of moisture entering the limestone walls to*

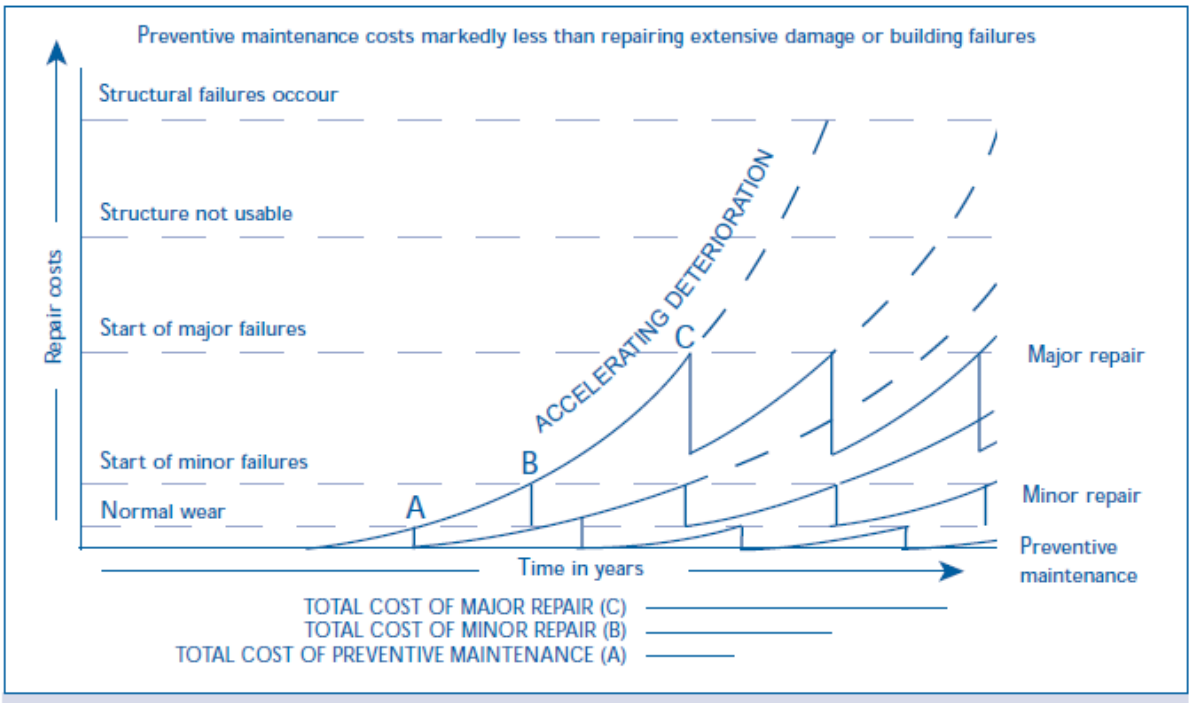
[15] Kelsall Binet Architects 'Warders' Cottages, Henderson St, Fremantle: Conservation Plan', July 2011, pviii-ix.

a level that can be handled by natural evaporation. Maintenance works should pay particular attention to complementing this aim by ensuring that the buildings are kept watertight, that all rainwater goods and rainwater disposal are in good condition, that walls are protected and that ground water is directed away from the building.

Policy 53 *A regular maintenance programme should be implemented to protect important fabric, buildings and landscape to retain that cultural significance of Warders' Cottages (fmr).* [16]

The table below indicates the value of regular preventative maintenance that is not only cost-effective, but most importantly preserves significant heritage fabric and negates unnecessary replacement with new material when the original fails.

The indicative maintenance plan following has been prepared with the assumption that an initial capital injection will bring the places to a reasonable standard that can be maintained into the future. This regular maintenance will reduce long term capital costs. A cpi of 3% has been added for each year and rates shown are per cottage with the double cottages in W2 considered as two for this exercise.



'Preparing a Maintenance Plan', Heritage Victoria, 2001, p2.

[16] Kelsall Binet Architects 'Warders' Cottages, Henderson St, Fremantle: Conservation Plan', July 2011, pp199-200.

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Indicative maintenance plan
Warders' Cottages (fmr), Fremantle
November 2012

bi/ annual			2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
rainwater goods & drainage	inspect & clean	bi-annual	$ 250	$ 258	$ 265	$ 273	$ 281	$ 290	$ 299	$ 307	$ 317	$ 326	$ 336	$ 346	$ 356	$ 367	$ 378	$ 389
smoke alarms, rcds	inspect	bi-annual	$ 100	$ 103	$ 106	$ 109	$ 113	$ 116	$ 119	$ 123	$ 127	$ 130	$ 134	$ 138	$ 143	$ 147	$ 151	$ 156
pest control	inspect	annual	$ 175	$ 180	$ 186	$ 191	$ 197	$ 203	$ 209	$ 215	$ 222	$ 228	$ 235	$ 242	$ 250	$ 257	$ 265	$ 273
lime render	inspect & make good*	annual	$ 1,000	$ 1,030	$ 1,061	$ 1,093	$ 250	$ 258	$ 265	$ 273	$ 281	$ 290	$ 299	$ 307	$ 317	$ 326	$ 336	$ 346
chimneys	inspect & clean	bi-ennial	$ 200	$ -	$ 212	$ -	$ 225	$ -	$ 238	$ -	$ 252	$ -	$ 268	$ -	$ 284	$ -	$ 301	$ -
general building condition	inspect fully	bi-ennial	$ -	$ 500	$ -	$ 530	$ -	$ 562	$ -	$ 596	$ -	$ 631	$ -	$ 669	$ -	$ 709	$ -	$ 752
general defects	make good as needs	annual	$ 1,000	$ 1,030	$ 1,061	$ 1,093	$ 1,126	$ 1,159	$ 1,194	$ 1,230	$ 1,267	$ 1,305	$ 1,344	$ 1,384	$ 1,426	$ 1,469	$ 1,513	$ 1,558
	sub total per cottage		**$ 2,725**	**$ 3,101**	**$ 2,891**	**$ 3,289**	**$ 2,191**	**$ 2,587**	**$ 2,324**	**$ 2,744**	**$ 2,466**	**$ 2,911**	**$ 2,616**	**$ 3,088**	**$ 2,775**	**$ 3,275**	**$ 2,943**	**$ 3,474**
	sub total all cottages		*$ 49,050*	*$ 55,814*	*$ 52,034*	*$ 59,204*	*$ 39,440*	*$ 46,569*	*$ 41,838*	*$ 49,396*	*$ 44,383*	*$ 52,395*	*$ 47,081*	*$ 55,576*	*$ 49,944*	*$ 58,949*	*$ 52,981*	*$ 62,528*
cyclical																		
rainwater goods	repaint	7 years							$ 1,210							$ 1,420		
external joinery (painted)	repaint	10 years										$ 3,900						
external joinery (painted)	refresh (treat)	3 years			$ 1,090			$ 1,180			$ 1,270			$ 1,360			$ 1,450	
external joinery (unpainted)	treat	3 years			$ 1,090			$ 1,180			$ 1,270			$ 1,360			$ 1,450	
external cladding	repaint/ limewash	10 years											$ 3,990					
limestone walls	repair/ repoint	5 years						$ 1,770					$ 1,995					$ 2,220
glazing	repair seals, beading etc.	5 years						$ 590					$ 665					$ 740
windows	ease	5 years						$ 1,180					$ 1,330					$ 1,480
wiring & electrical	inspect fully	4 years				$ 560				$ 620				$ 680				$ 740
hot water system	replace	10 years											$ 3,990					
internal floors	treat/ clean	5 years					$ 2,875					$ 3,250					$ 3,625	
internal walls	limewash	7 years							$ 12,100							$ 14,200		
internal joinery	repaint	14 years															$ 8,700	
pest control	treatment	7 years							$ 15,125							$ 17,750		
bathroom	upgrade	15 years																$ 14,800
kitchen	upgrade	15 years																$ 17,760
laundry	upgrade	20 years																$ 7,400
fences	repair	10 years										$ 6,500						
landscape	major prune	bi-ennial		$ 265		$ 280		$ 295		$ 310		$ 325		$ 340		$ 355		$ 370
interpretation	renew	10 years													$ 13,900			
	sub total per cottage		**$ -**	**$ 265**	**$ 2,180**	**$ 840**	**$ 2,875**	**$ 6,195**	**$ 28,435**	**$ 930**	**$ 2,540**	**$ 13,975**	**$ 11,970**	**$ 3,740**	**$ 13,900**	**$ 33,725**	**$ 15,225**	**$ 45,510**
	sub total all cottages		*$ -*	*$ 4,770*	*$ 39,240*	*$ 15,120*	*$ 51,750*	*$ 111,510*	*$ 511,830*	*$ 16,740*	*$ 45,720*	*$ 251,550*	*$ 215,460*	*$ 67,320*	*$ 250,200*	*$ 607,050*	*$ 274,050*	*$ 819,180*

exclusions

security systems
general gardening
major works (structural defects etc.)

assumptions

This is a maintenance program only; an initial capital injection is required to bring the places to a reasonable standard that can be maintained. Regular maintenance will reduce long term capital costs.
cpi of 3% added for each year
costs shown are per unit (W2 each unit considered as two)
* limestone render internally should be considered sacrificial during drying out period (5 years allowed) then will need to be re-applied less frequently

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Warders' Cottages, Fremantle (fmr)

Due Diligence Report

January 2013

Appendices

Appendix 1 2005 Schedule of Conservation and Maintenance Works (extract)

4. ARCHITECT'S REPORT

4.1. PROPOSED CONSERVATION WORKS

4.1.1. General background

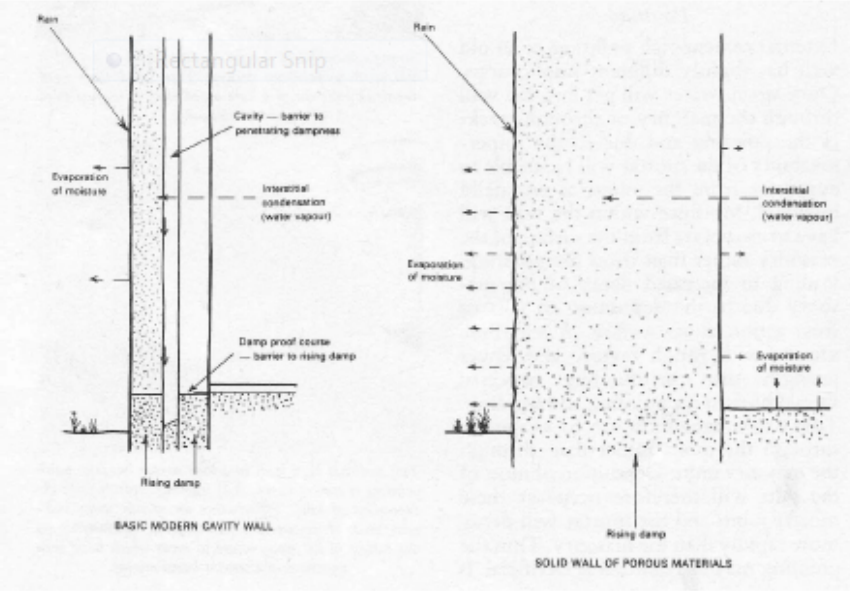


Figure 9
Understanding the Behaviour of Masonry Walls
Hughes, Philip, *The Need for Old Buildings to "Breathe"*, Society for the Protection of Ancient Buildings Information Sheet 4, Spring 1986.

A fundamental principle in the care and conservation of old buildings is the need to let the built structure breathe to allow the natural evaporation of moisture. Modern buildings are generally constructed with some form of cavity wall that allows moisture to penetrate the outer leaf of the building but protects the inner leaf from damp. They also make use of impervious membranes and solid damp proof flashings that further reduce moisture seepage into the building structure. Old buildings which were built prior to the development of the cavity wall, such as those that make up the Fremantle Warders' Cottages, are constructed with solid masonry walls with only Terrace W4 (3-9 Holdsworth Street) having a damp proof course. When these buildings were constructed it was accepted that a certain amount of dampness would penetrate the buildings through the walls and that this moisture would evaporate naturally.

This traditional system is effective unless an impervious layer is applied to the walls preventing the natural evaporation process and leading to a build up of moisture within the wall and the deterioration of building fabric. In particular, internal wall plaster can be affected and timbers can quickly succumb to wet or dry rot because the moisture content is too high. Modern building materials such as plastic paints and strong

cement renders are examples of the types of impervious layers that can prevent the natural evaporation of moisture from solid masonry walls. For example, strong cement renders develop fine hairline cracks through which moisture penetrates by capillary action and then becomes entrapped in the walls. The advantageous evaporation of moisture from the wall is prevented by the impermeability of the cement render and severe breakdown of the weak underlying material can occur.

External cement rich pointing of an old wall has slightly different implications. Again water will get into the wall through cracks in the pointing and due to the impermeability of the mortar will be unable to evaporate from the joints. Moisture within the wall will have to evaporate from the surface of the masonry rather than from the pointing thus leading to the increased decay of the masonry. A soft lime mortar with a course texture encourages moisture to evaporate through the joints rather than the masonry units. The pointing should be regarded as sacrificial. This is good practice because it is cheaper and easier to re-point at intervals than to replace the masonry units.

Under normal circumstances, older buildings will function well if they are allowed to work as they were intended. Mortars, plasters, renders and finishes should all be relatively permeable materials allowing moisture to pass through them and evaporate on the surface. Traditionally mortars, plasters and renders were usually lime-based and decoration was limewash.

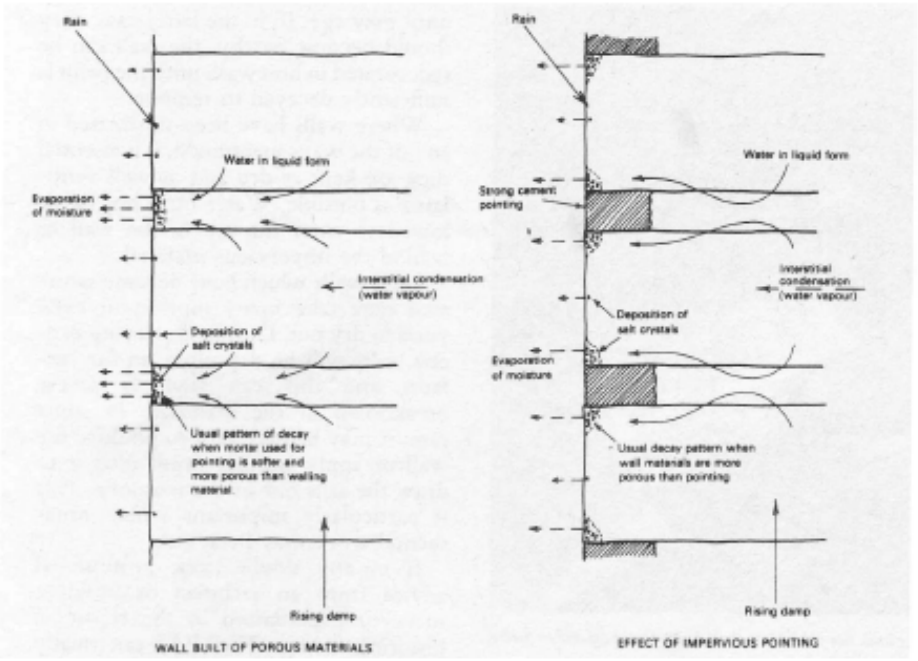


Figure 10

The effect of Impervious Pointing on Walls built from Porous Material

Hughes, Philip, The Need for Old Buildings to "Breathe", Society for the Protection of Ancient Buildings Information Sheet 4, Spring 1986.

Appendix 2 2007 WGE drainage proposal

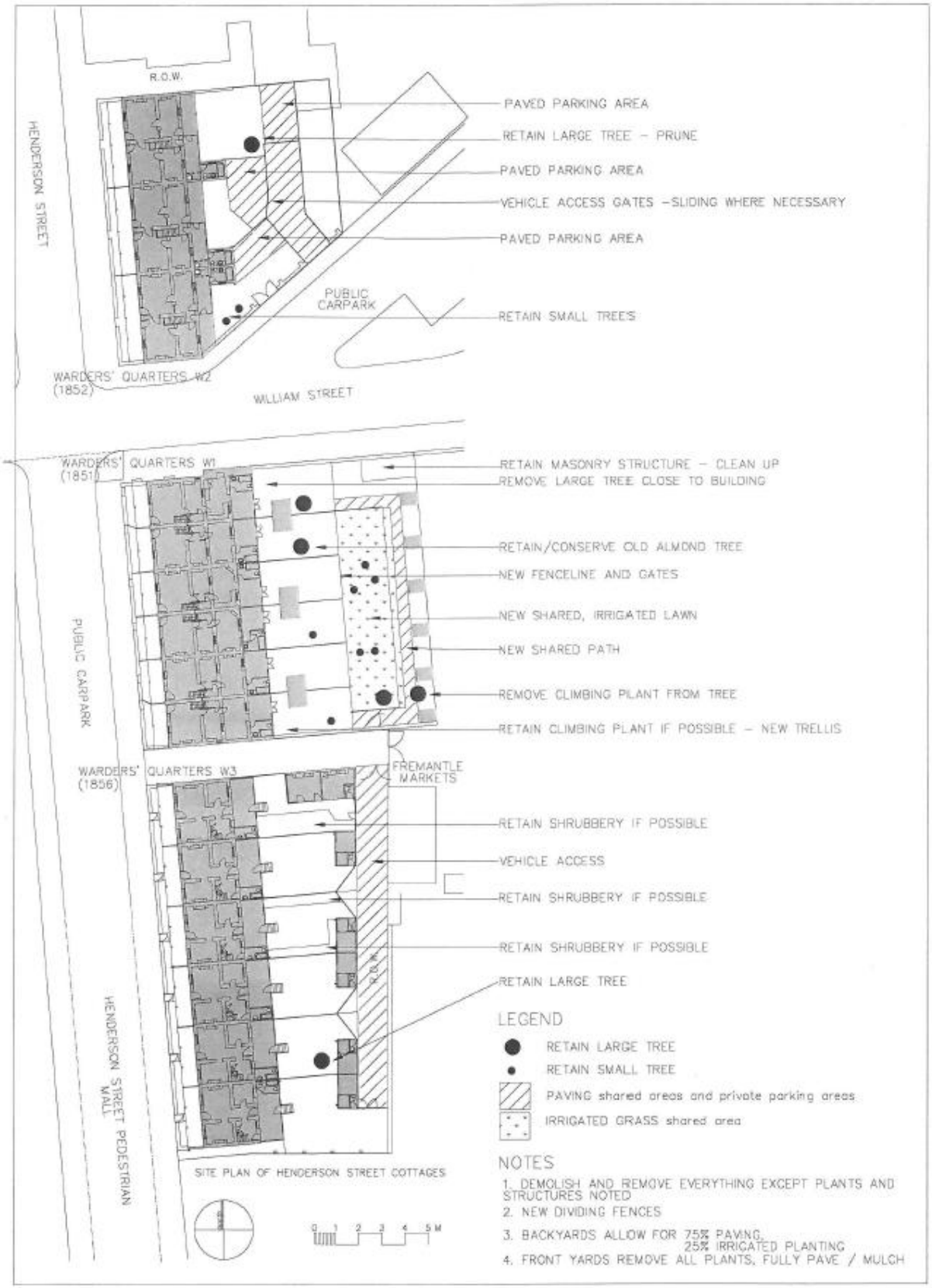
Appendix 3 2008 Urgent Conservation Works

Appendix 4 2009 Documentation & Costing of Conservation and Maintenance Works

Appendix 5 Department of Housing maintenance reports

Appendix 6 Archaeological scoping document

Appendix 7 Landscape conservation and adaptation



INDICATIVE LANDSCAPE STRATEGY

NTWA November 2012

Appendix 8 Structural services condition report

Appendix 9 Electrical services condition report

Appendix 10 Pest control inspection

From: *Brian Langenberg <brian@westatepest.com.au>*
Date: *16 November 2012 5:34:02 PM AWST*
To: *Gena Binet <gena.binet@westnet.com.au>*
Subject: RE: Warders Cottage Fremantle

Hi Gena

We have checked the drawings you sent through and cost indications are as follows:

- *for termite inspections and reports on the three blocks, assuming access is provided to sub-floor and internal areas, the cost would be approximately $1,500 plus GST,*
- *for treatment of the ground floor sub-floor areas using Termidor, assuming adequate sub-floor access is provided, the cost would be around $7,000 plus GST.*

We can provide more detailed estimates of cost of the Termidor treatments once the termite inspections are carried out.

You may have received a call from Nathan Colgan this afternoon as we discussed access to the sub-floor areas of these buildings with him. We share the view that for Blocks W1 and W2 the floorboards may need to be stripped and lifted for access to the soil areas between each floor joist or low wall, whatever the floor supports may be. We would seek his advice on ventilation of these areas following treatment also.

Please let me know if you require any further information.

Kind regards

Brian Langenberg
Westate Pest Control
Unit 1/68 Westchester Road, Malaga WA 6090
www.westatepest.com.au
info@westatepest.com.au
t 618 6365 4800
f 618 9249 9868

Appendix 11 Internal Scope of Work

W1

Note: the external works already include the following items:

- New eaves gutter detail to Sunroom/Bathroom lean-to
- Check all flashings to rear lean-to roofs and repair as required to make watertight
- Clean out all chimneys

Generally	All units	Remove all redundant fixtures and fittings including redundant telephone cabling and wiring. Clean off, rust treat and paint all surface mounted metal electrical conduits.
Termite treatment	All units – Lounge, Dining & Kitchen	Cut discrete access hatches in floors making use of short boards and replacement boards to limit damage to original fabric. Inspect for termites, repair termite damage and treat sub-floor space with Termidor
Timber floors	All units	Patch floors, piecing in new boards as required. Sand and oil boards.
Timber stair	All units	Refix any loose treads, patch treads (especially where nosing cracked or broken away), piecing in new boards as required. Sand and oil boards.
	Unit 21	Remove carpet fixed to treads and make good
	Unit 25	Reconstruct handrail to ground floor using retained remnants where possible
Masonry walls	All units	Remove plastic paint and cement patching and replaster with lime plaster. Limewash. Plastic paint covers 100% of walls. Allow 500mm high band of cement render to inner face of external walls plus patching to 10% of walls.
Skirtings, architraves, doors etc	All units	Prepare and paint timbers
Ceilings – lath and plaster	Upper floor and most ground floor	Remove plastic paint. Patch cracks with lime plaster. Paint with limewash.
Ceilings – Plasterboard	Some ground floor ceilings?	Prepare and paint.
Skylights to Kitchen	All units	Replace Alsynite sheeting with new. Install roller blind.
Internal windows	All units	Prepare and paint all timber joinery. Ease all sashes.
	Unit 29	Replace broken panes to two windows (pair of 8 pane casements) and re-putty as required.
Kitchen	All Units	Remove vinyl floor tiles and hardboard lining under and install new floor coverings. (Termite inspection hatches to remain accessible) Install new kitchen cabinets and equipment including exhaust fans etc. NOTE: retain Metters wood stove

Sunroom/ Bathroom timber framed lean-to	All units	Remove ceilings and lining to stud walls. Remove vinyl tiles and hardboard floor covering to Sunroom and ceramic tiles to Bathroom. Remove existing fixtures and fittings in Bathroom. (Retain c. 1920s copper in brick surround). Replace all rotten and damp affected timbers to stud walls (entire east wall and at least 1 metre of return walls). Insulate stud walls and roof and line with sheeting. Lay new floor covering to Sunroom and tile floor to Bathroom. Install new bathroom fittings and fixtures etc Install new exhaust fans in Bathrooms. NOTE: Retain coppers
Sunroom/ Bathroom timber framed lean-to	Unit 23	Remove and reconstruct reconfigured bathroom to improve functionality of bathroom, sunroom and kitchen.

W2

Generally	All units	Remove all redundant fixtures and fittings including redundant telephone cabling and wiring. Clean off, rust treat and paint all surface mounted metal electrical conduits.
Termite treatment	All units – timber floors to ground floor level	Cut discrete access hatches in floors making use of short boards and replacement boards to limit damage to original fabric. Inspect for termites, repair termite damage and treat sub-floor space with Termidor
Timber floors	All units – all timber floors to both levels except kitchen	Remove carpet, underlay and any fixings such as grippers, glue etc. Patch floors, piecing in new boards as required. Sand and oil boards. Patch floors, piecing in new boards as required.
	Kitchens	Remove vinyl tiles and hardboard lining under. Remove all fixings and glue and make good.
Timber stair	All units	Refix any loose treads, patch treads (especially where nosing cracked or broken away), piecing in new boards as required. Sand and oil boards. Refix loose handrails. Prepare and paint. Remove fibrous cement sheeting fixed to outside of stair enclosures
Masonry walls	All units	Remove plastic paint and cement patching and replaster with lime plaster. Limewash. Plastic paint covers 100% of walls. Remove 500mm high band of cement render to inner face of east and west external walls plus patching to 10% of these walls. Allow to remove 1000mm high band of cement render to inner face of north and south external walls plus patching to 10% of these walls.
Skirtings, architraves, doors etc	All units	Prepare and paint all painted timbers.

Ceilings – lath and plaster	Upper floor and most ground floor	Remove plastic paint. Patch cracks with lime plaster. Paint with limewash.
Ceilings – Plasterboard	Some ground floor ceilings?	Prepare and paint.
Internal windows	All units	Prepare and paint all timber joinery. Ease all sashes.
Kitchen	All Units	Remove vinyl floor tiles and hardboard lining under and install new floor coverings. (Termite inspection hatches to remain accessible) Install new kitchen cabinets and equipment including exhaust fans etc. NOTE: retain any existing Metters wood stoves
Enclosed verandah/ laundry	All units	Remove sealer from terracotta tile floor and wax tiles. Remove laundry fixtures and cupboard doors and install new to same location.
Bathroom	All units	Remove all fixtures, fittings, tilings etc. Install new.

W3

Generally	All units	Remove all redundant fixtures and fittings including redundant telephone cabling and wiring. Clean off, rust treat and paint all surface mounted metal electrical conduits.
Termite treatment	All units – timber floors to ground floor level	Cut discrete access hatches in floors making use of short boards and replacement boards to limit damage to original fabric. Inspect for termites, repair termite damage and treat sub-floor space with Termidor
Timber floors	All units – all timber floors to both levels	Patch floors, piecing in new boards as required. Sand and oil boards. Patch floors, piecing in new boards as required.
	Kitchens	Remove vinyl tiles and hardboard lining under. Remove all fixings and glue and make good.
Timber stair	All units	Refix any loose treads, patch treads (especially where nosing cracked or broken away), piecing in new boards as required. Sand and oil boards. Refix loose handrails. Prepare and paint.
Masonry walls	All units	Remove plastic paint and cement patching and replaster with lime plaster. Limewash. Plastic paint covers 100% of walls. Allow to remove 500mm high band of cement render to inner face of external walls (ground floor only) plus patching to 10% of these walls.
Skirtings, architraves, doors etc	All units	Prepare and paint all painted timbers.

Ceilings – lath and plaster	Upper floor and most ground floor	Remove plastic paint. Patch cracks with lime plaster. Paint with limewash.
Ceilings – Plasterboard	Some ground floor ceilings?	Prepare and paint.
Internal windows	All units	Prepare and paint all timber joinery. Ease all sashes.
Kitchen	All Units	Remove vinyl floor tiles and hardboard lining under and install new floor coverings. (Termite inspection hatches to remain accessible) Install new kitchen cabinets and equipment including exhaust fans etc. NOTE: retain any existing Metters wood stoves
Bathroom	All units	Remove all fixtures, fittings, tilings etc. Install new.

Appendix 12 Hazardous materials report

Appendix 13 Public Use and Compliance Audit Report

Appendix 14 Interpretation examples

Graffiti labelling technique
Central Greenough

Glass splashbacks in kitchens

Paint ladders & scrapes reveal previous colour schemes
National Trust of Australia (WA) Head Office - The Old Observatory, West Perth

Appendix 15 Cost Estimate