5.0 CONSERVATION POLICIES FOR NEWPORT RAILWAY WORKSHOPS

5.1 INTRODUCTION:

This General Conservation Policy sets out guiding policies for the conservation of the cultural significance of a place. These policies apply to the extent of the Newport Railway Workshops site identified on *NRW/01*.

5.2 EXISTING FABRIC AND SETTING:

Recognition of Cultural Significance:

The Newport Railway Workshops should be recognised as a place of cultural significance, of importance to Australia as a whole, with attributes embracing aesthetic, historic, social and scientific significance.

All future conservation or development actions for the Newport Railway Workshops should be based on the principles of the *Australia ICOMOS Charter for the Conservation of Places of Cultural Significance* (The Burra Charter).

The Newport Railway Workshops should have a conservation approach applied to all aspects of works and use which affects it. This will ensure that the significance of the place is maintained for present and future generations.

The Statutory Process:

The statutory process for the site requires heritage approvals to be sought from Heritage Victoria for the part of the site on the Victorian Heritage Register (refer to Figure NRW/01). The Newport Railway Workshops are also individually listed as part of the Hobson's Bay City Council Planning Scheme. In relation to all proposals for adaptations, alterations or new development of the fabric and setting, these two authorities must be consulted.

Priorities for Works:

The following priorities for works are to be followed at the Newport Railway Workshops:

- Thorough recording of each building, especially the interiors, to document and understand the history of its former uses;
- Conservation of existing significant fabric, including maintenance and works necessary for the sound management of the site;
- Interpretation of the site; and
- Works associated with compatible uses of the site.

Any alterations made should be documented as part of the recording of the history and fabric of the Workshops.

Policy for Sections Identified as being of Primary Significance:

These recommendations are to read in conjunction with the Conservation Plan which graphically reproduces the following information. Note that significant equipment is outside the scope of this study but requires conservation in its original position or an appropriate space.

For all historic buildings, and parts of buildings, identified as being of primary significance to the Workshops, the existing form, structure and materials must be retained except where individual policies identify areas for adaptation (refer to section 5.5).

Significant building fabric should be retained insitu without removal or alteration wherever possible. Significant fabric is the highest priority for conservation.

All items of primary significance should be **conserved** with:

- fabric of primary significance being accorded the highest priority; and
- **preservation**, **restoration** and **reconstruction** (in that order) being the preferred conservation actions.

Reconstruction of missing fabric should only be permitted where:

- interpretation of the property would be considerably enhanced;
- this would not cause undue anachronism to its immediate context;
- there is appropriate documentary or physical evidence;
- this accords with priorities outlined in this conservation management plan.

Reconstruction of original elements and/or finishes should only occur if the precise original form can be determined. Reconstruction should be a lesser priority than the retention and protection of original fabric and is not appropriate where the whole of a building has been lost. Materials used in reconstruction should be subtly distinguished from original materials, for example by inclusion of their date of construction.

Policy for Sections Identified as being of Contributory Significance:

Buildings of Contributory Significance are of a supporting nature to the primary functions and historic themes of the Workshops, retain little evidence of significant work practices and are not individually important and/or may be substantially altered.

Listed in building number order, they are:

- Building 20 Casualty Room
- Parts of Building 65 West Block (Southern Extension), including:
  Machine Shop Extension
- Parts of Building 68 East Block (Southern Extension), including:
  Laboratory
  Building 72: Transport Office

The Casualty Room (Building 20) and the Laboratory (part of Building 68) have contained historically important functions but no significant evidence remains in the building fabric. Interpretation material should indicate their former appearance and use but the building fabric may be altered or demolished after recording.

The Machine Shop Extension (part of Building 65) and the Transport Office (Building 72) have been identified as being potentially of archaeological significance. Refer to the policies later in this section.

Open Space, Tracks and Views:

Refer to the Conservation Plan which identifies important open spaces and views.

Identified views of the Workshops, its setting and layout from Champion Road and Melbourne Road should be protected.

Redevelopment of the site should acknowledge that the North is the frontage of the Workshops. The decorative brick facades of the 1888 group of buildings face Melbourne where workers and others would arrive by train to the platform. Except for the landmark of the Water Tower, the Workshops face away from Champion Road which is now the main entry. The formal arrangement of East and West Blocks flanking Central Block, the Offices and the Clocktower is best viewed from the north of the site on the raised area known as 'Mt Newport.'

Open spaces contribute substantially to the formal arrangement of the place. The line of the tracks, fanning out and coming to a dead end in the Workshop buildings is important. The open spaces and track arrangement reflect the history of the Workshops including their initial layout hampering their subsequent growth. They must be protected.

The tracks were not assessed as part of this report. The early permanent way technology used in Victoria has been documented but all surviving remains of rail prior to the now-standard flat bottom rail have been removed.[95] The track system at Newport is unlikely to contain any outstanding examples.[96] However, it should be assessed prior to changes being made. This policy should not prevent the upgrade of track infrastructure in its existing location where it is required for access, safety or commercial reasons.

95 Brook, A. 1994 Notes on Early Permanent Way Technology in Victoria.

96 Personal comments Mike Ryan and Ian Cordwell.

Community Consultation:

There is a 'community' which has sprung up around the Newport Railway Workshops, largely consisting of rail enthusiasts and others who have used the vast spaces, such as the Fire Services Museum Inc. Many people in the wider community will also have a strong interest in any redevelopment of the Workshops site. A consultation process should be undertaken to involve interested parties in the future of this Victorian asset.

Landscaping:

The industrial nature of the landscape at the Newport Railway Workshops must be conserved. This includes the hard surface finishes and the restricted extent of plantings.

The garden area in front of the Offices must also be conserved. This was identified on 1889 plans, refer to Figure NRW/A, and is visible in historic photographs of the site. Note that the hedges, palm tree and garden layout could be reinstated but the ivy which once covered much of the brick facades should not be reintroduced because of the damage caused to brickwork.

A feature survey of the landscape is required and should identify tracks, plantings and industrial features, such as fire hoses, drainage pits and other services.

Potential Archaeological Significance:

Under Victoria's Heritage Act, all archaeological sites are protected. Any disturbance to an archaeological site - including archaeological excavation - requires the written consent of the Executive Director of Heritage Victoria. All areas of high archaeological value or potential value should be managed in ways which conserve these values.

Areas of archaeological sensitivity are indicated on Figure NRW/2b for the Newport Railway Workshops. Detailed mapping of potential archaeological areas, including building footings and machinery bases, was outside of the scope of this report.

The important principal of archivally recording of archaeologically sensitive areas that are to be modified should be adopted.

Clearing and cleaning on the site should only be undertaken after a report on moveable cultural heritage is prepared. Removal of any items should be considered in relation to the development of interpretation for the site. An appropriately qualified person should make decisions about the relative significance of any material.

Areas of Building Footings and Machinery Bases:

The areas marked on the plan NRW/02b contain areas of building footings and/or machinery bases which are from the buildings or machinery known to have existed in the area and which have been demolished. Generally, these areas include West Block Southern Extension, West of West Block, West of West Block Southern Extension, and the basement of East Block.

It is considered likely that some archaeological remains exist in these areas which will be discovered should works occur in these areas. However, in general terms, there is little to be learned from these remains as so much is understood from existing documentation. Therefore these remains can be seen as having a contributory level of significance.

Management actions recommended are simply to document the occurrence of these remains by accurately plotting the remains on a plan of the site and by photographing the remains. Apart from the archaeological potential, these remains may also assist in interpretation of the site by demonstrating, for example, machinery locations or previous operating layouts.

Mount Newport and Pond in Area 21:

Mount Newport is a mound of demolition rubble on the former site of the old dining rooms and stores. The Pond in Area 21 has reputedly been used for dumping of unwanted items. Removing Mount Newport or draining the Pond is likely to reveal all manner of artefacts. However it seems unlikely, due to the lack of context of any artefacts recovered, that any of these will be of archaeological significance. They may have significance for their interpretative potential or through associations with historical events and people.

The management action recommended is that if Mount Newport is to be removed, or the Pond in Area 21 drained, then a process of monitoring and recovering artefacts should be implemented. This will have to include establishing facilities for conserving and storing artefacts once removed.

Buildings 70 and 72:

Building 70 seems to have collapsed to some extent and in the Doring's report the presence of a boiler in this area is noted. If it is necessary to work on this area then it is recommended that work be undertaken under supervision of a professional archaeologist so that any remains can be recorded and assessed.

Building 72 is the remains of a timber-drying kiln converted into an office. It is assumed that remains of the kiln are to be found in the ceiling and under the concrete. If it is necessary to work on this area then it is recommended that work be undertaken under supervision of a professional archaeologist so that any remains can be recorded and assessed.

Objects Brought onto Site:

Many large industrial sites seem to attract objects. Sometimes this is because people use them as dumps and other times their space is appreciated as a place to keep important objects. Many objects unrelated to the Workshops have accumulated at Newport.

This is of concern for two reasons. Firstly, over time, their relationship to the site may become confusing and people may begin to presume that they are there for some purpose. Secondly, they may cause potential hazard and disposal problems for future site managers. For these reasons, it is

recommended that a strict policy not to collect material which does not belong to the site should be followed.

The exception is where a formally established display with interpretative material is a desired use for the site.

Recording of Interiors and Photographic Records:

Prior to any changes being made at the Newport Railway Workshops, a full photographic record, including the location where the photographs were taken, should be undertaken. These photographs should be lodged with the Department of Infrastructure - Technical Services, VicTrack and Heritage Victoria. Records should also be placed in a public archive with a copy held locally so that they are accessible to future site managers.

These photographs would assist in the recording of the interiors of buildings which would focus on identifying how the functions of each building have changed over time. The detailed recording is more than just photographs as it is an analysis of the evidence which remains to demonstrate the use of each building.

It is preferable for this recording to be done for the site overall to record relationships between buildings rather than on an individual building basis.

5.3 INTERPRETATION

Retain Newport Railway Workshops as the name of the complex with any redevelopment.

A permanent display relating the history, significance and interpretation of the Newport Railway Workshops should be located in a public area of the site.

5.4 MANAGEMENT

Management of the whole of the Newport Railway Workshops site should be carefully coordinated so that the significance is retained.

Management of the site should recognise that the Newport Railway Workshops will require initial conservation works, including stabilisation of materials and interpretation, some redevelopment works to accommodate new uses, as well as cyclical and ongoing maintenance. After initial conservation works and development associated with new uses, there is a need for ongoing commitment to the conservation of the site.

Essential to the conservation of the site is a financial plan with specific provisions for ongoing maintenance and conservation. The financial plan should look at when costs are likely for maintenance after the initial capital expenditure. It should address the likely costing and how those funds are to be set aside, for example as a percentage of net rental return. The financial plan should also address future sources of grants, low interest loans and tax relief that may be available for conservation work or associated with a particular use of the site.

As a safety net for conservation against possible adverse commercial circumstances for the registered heritage area in the future, the establishment of a conservation fund is recommended. The conservation fund is an investment vehicle through which initial capital is set aside at the time of development, and to which future grants or private contributions could be added.

Current Sources of Conservation Financial Assistance:

Places on the Victorian Heritage Register are eligible for financial assistance from Heritage Victoria. This assistance is provided in the following forms:

- Low-interest loans. Rates are fixed for the duration of any loan. Recently, they were 2.4% (private or residential property), 3.0% (buildings attached to income-producing property), and 4.3% (commercial property).
- Interest-free loans
- Direct grants
- Remission or deferral of municipal and water rates and land tax. Direct inquiries to the relevant authority.

The urgency and importance of the conservation works are the main issues considered by Heritage Victoria in assessing applications. To request an Application for Financial Assistance form, telephone Heritage Victoria on 9655 6519.

The Australian Heritage Commission provides some financial assistance for heritage places. Details are available by telephoning 06 217 2111.

Other sources of funding are available for cultural heritage; some of them are ongoing programs by government departments or might be short-term or specific in their focus. It is advisable to contact Heritage Victoria on 9655 6519 to find out about current opportunities.

Disaster Plan:

A disaster plan should be devised and implemented for the Newport Railway Workshops. Fire is likely to be the major disaster source. Appropriate methods of fire detection, containment and fire fighting should be devised which will both protect people and ensure the survival of the historic fabric.

A plan for retrieval of materials immediately after a disaster should be devised and held with appropriate authorities off-site with a complete set of plans and photographs of the site.

5.5 FUTURE DEVELOPMENTS & CONTROL OF PHYSICAL INTERVENTION IN THE FABRIC:

New Freestanding Structures:

It is recognised that the scale of Newport Railway Workshops is one of the factors which makes adaptation of the site difficult. The relationship of the vast covered spaces to the open land, including the tracks, is important. It is not desirable to see large new buildings on the site where they confuse this relationship. Hence limited spaces for large new buildings have been identified. These are east of the Spray Painting Shop and against the western boundary with Newport College of TAFE. Refer to drawing NRW/02c. Note that other opportunities occur on the site outside of the study area which are not shown on this drawing.

Development of smaller, new structures is permitted on this site in the manner in which they have traditionally been erected and demolished. Smaller new structures must be:

- subservient in scale and siting to the identified historical fabric;
- sited so as to not impact on significant open spaces;
- sited so as to retain significant views onto and within the site; and
- sited so as not to impact on buildings and open spaces identified as being of primary significance. Refer to Figures NRW/2a and b.

Alterations to Buildings of Primary Significance:

The conservation policies for development of and alterations to buildings of primary significance on the site vary and are explained in the three sections which follow. Buildings which should be covered by policy recommendations A, B and C are listed below under the relevant headings and are also illustrated on Drawing NRW/2c.

Policy Recommendation A:

The following buildings of primary significance are substantially intact in form and building fabric. They contribute in a fundamental way to an understanding of the operation and functioning of the Workshops, and mainly date from the period of establishment. Some buildings which are included are later in date but require the same approach. The layout of the spaces and evidence of work practices mean that the opportunities for change within these buildings are quite limited.

Listed in building number order:

- Building 13 — Central Block Stores
- Building 14 — Central Block Offices & Clock Tower
- Building 15 — Engine Balancing Tables Building
- Building 31 — Timber Store
- Building 61 — Tarpaulin Shop
- Building 63 — Spring Shop Extension
- Building 64 — West Block including:
  East Engine and Boiler House
  West Engine and Boiler House

		Chimney Base
-	Parts of Building 65	West Block (Southern Extension), including:
		Fitting Shop Extension
		South of Fitting Shop Extension
		Hydraulic Riveter Shop
		South of Hydraulic Riveter Shop
		Smithy Annexe
		Westinghouse Brake Shop
-	Building 67	Water Tower
-	Building 69	East Block
-	Building 70	East Block Engine, Boiler House and Chimney
-	Building 71	East Block Lavatory

New work should not alter the exterior elevations of these buildings except for essential works to prevent deterioration.

New work should not alter the interior layout of these buildings except for the return of the structure to the appropriate earlier form based on clear evidence.

Evidence of the layout of the spaces and work practices must be retained.

For the approach to adaptations, code requirements, services and structural members, refer to the information on the following pages. The extent of development or alteration must be minimal to retain the significance of the existing buildings listed above.

Policy Recommendation B:

The following buildings of primary historical and architectural significance contribute in a fundamental way to an understanding of the operation and functioning of the Workshops. They are of historical significance because they provide valuable evidence of the expansion of the Workshops required with modernisation and the production of locomotives after 1902. The architectural significance is that the buildings demonstrate early modern industrial construction which was a response to the new requirements. The Carriage Shop Extension is of historical significance only. These buildings contain very little evidence of past work practices.

Listed in building number order:

-	Building 12	Central Block Stores Extensions
-	Building 32	Timber Shed
-	Parts of Building 65	West Block (Southern Extension), including:
		Boiler Shop Extension
		Truck Building Yard
		Blacksmiths Extension
-	Parts of Building 68	East Block (Southern Extension), including
		Paint Shop Extension
		Carriage Shop Extension

Alterations to be made to these buildings should still allow the significance to be understood. The historical significance is represented in the vast scale of the spaces, including the footprint, the long open bays of repeated

elements and the relationships with other components, such as East Block and West Block. In Building 65 West Block (Southern Extension), it is also about incremental growth.

The architectural significance is represented in the repetitious construction systems and materials. In many cases, the building materials, for example iron cladding or glazed highlights, may have been replaced a number of times. The key aspects to convey the architectural significance of these spaces are the quality of the light, open spaces and the repetitious construction systems.

In redevelopment of the site, it is preferable for adaptation to occur within these spaces rather than in those listed in *Policy Recommendation A* above. Areas in this group of buildings can be used for potentially intrusive new elements and uses, for example provision of heating/cooling, electrical, plumbing, toilet and kitchen facilities, fire or safety requirements, such as stairs.

In conveying the historical significance, the footprint of the outer building line should be demonstrated, whether by the retention of original fabric, new fabric to the same line or by a landscape treatment. The amount of original fabric retained and its placement must be sufficient to convey the original extent.

The length of bays and degree of repetition of components should be able to be appreciated. From the interior this should be demonstrated by the retention of the truss and column (or other) construction system. From the exterior, it should be able to be understood from the retention of roofing bays of gables or sawtooth systems.

With Building 65 West Block (Southern Extension), the incremental growth must also be demonstrated which requires some visibility between bays representing different eras and construction types.

For the architectural significance, a representative section of these buildings must be retained to clearly demonstrate the construction system and materials and the qualities of the space. Several bays or spans must be conserved and their detailing left exposed.

Interpretation must convey the previous extent and repetitious nature of the buildings. However, the degree of alteration may be substantial. For example, a new building may replace a significant amount of the existing with new facades but retain the original footprint. Another approach may be to insert a new building of a different form or greater height within these existing buildings, resulting in retention of the footprint and facades but alteration to the roof and spatial arrangements.

In all cases, the sections to be conserved must be very carefully treated so that they retain the significance of the buildings and are interpreted to indicate their former appearance. The approach to adaptations, code requirements, services and structural members in the sections to be conserved is outlined on the following pages.

Policy Recommendation C:

Two buildings have been identified as requiring further analysis. The Weighbridge has not been inspected and previous reports have confused

this building with the Engine Balancing Tables building so little information is currently available. Building 34, the Plating Shop has been briefly inspected and contains evidence of work practices. It also appears to have been continually used for similar purposes since c1913, although the timber bending function it once housed was discontinued.

Conservation policies for future developments and control of physical intervention in the fabric of these two buildings can't be determined without further analysis of the nature of their significance.

Adaptations:

Adaptations introducing new materials or design should be done in a simple contemporary manner not by falsely recreating the appearance of age. They should be done in a manner sympathetic to the existing significant fabric.

Adaptations that require significant alterations should be explored in buildings covered by policy recommendation B before those in buildings listed under Policy Recommendation A.

Code Requirements:

It may be necessary to apply for variations to current code requirements, or find creative ways to meet the requirements, where satisfaction of these might detrimentally impact upon the heritage fabric of the site.

Services:

Methods of accommodating new services should be found which will limit damage to the physical fabric, for example by providing below ground pathways or using areas available for adaptation. Visible new services should be designed to have minimal impact on the appearance of the original spaces.

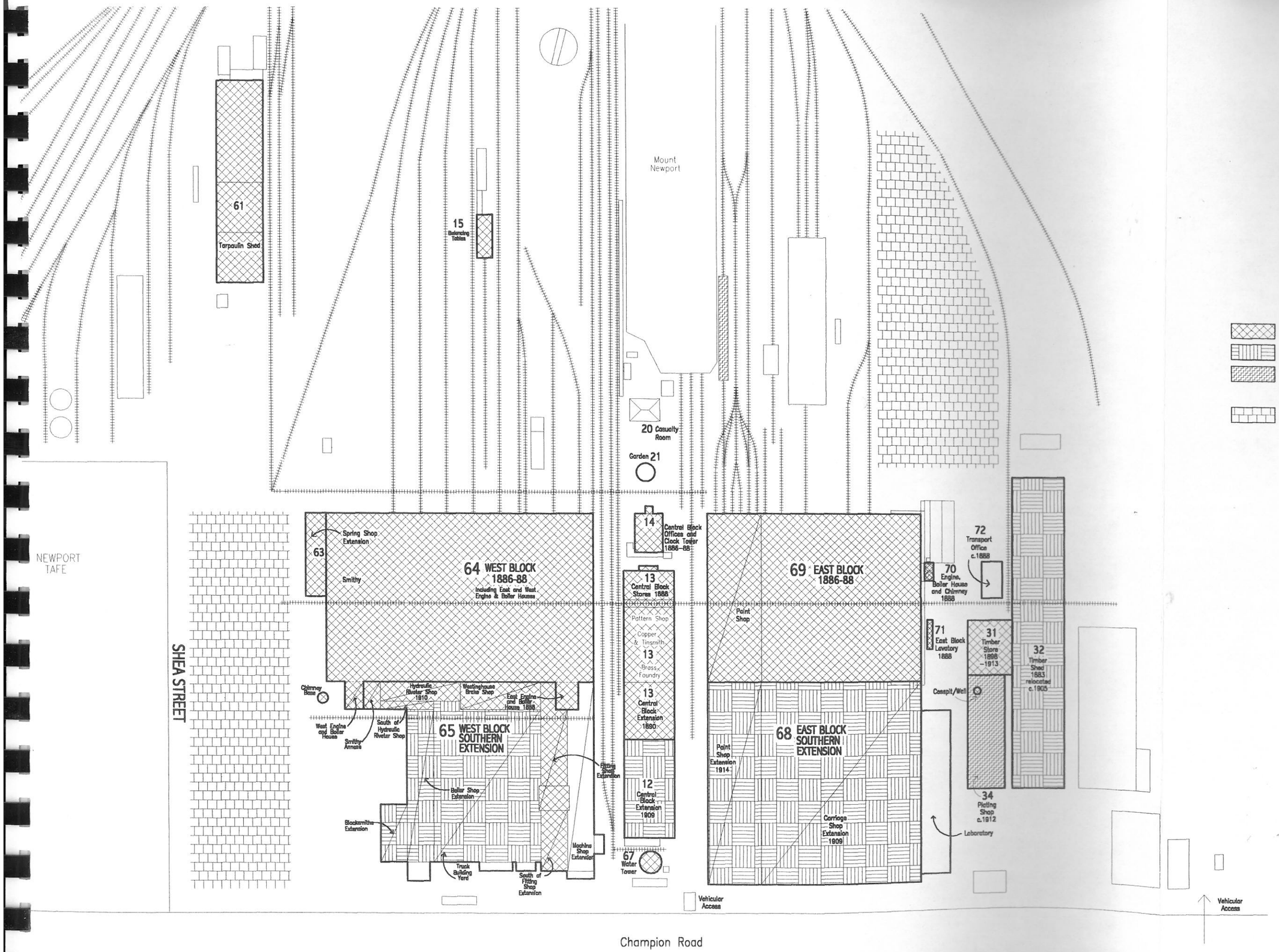
Structural Members:

As part of this report, an engineer has carried out structural assessments. The general approach to structural members is to retain the existing structural system and strengthen by introducing new elements in a unobtrusive contemporary manner. The aim of this is to subtly distinguish the historic fabric from the new elements while satisfying structural requirements. Where a timber structural member has suffered deterioration, it is preferable to replace that part to match the existing rather than replace the whole structural element in a new way. For example, a new timber section should be spliced in rather than replacing a deteriorating timber beam with a steel member.

Parking:

There are opportunities for parking to be accommodated on site without a detrimental impact on heritage features and also on neighbouring land.

5.6 CONSERVATION POLICY DRAWING:



Conservation Policy Recommendations for Section 5.5

This plan is indicative only and not derived from measurements on site

Key

- Policy Recommendation A
- Policy Recommendation B
- Policy Recommendation C
- Areas for Large New Buildings

Note: Selected rail tracks shown

Buildings of Contributory Significance not included on this drawing

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Newport Railway Workshops
Champion Road, Newport

For: Dept. of Infrastructure, Heritage Victoria and VicTrack

Description:
Conservation Policy Recommendations

Date:	October 2000
Dwg #:	NRW/02c
Scale:	Not to scale

5.7 ADOPTION AND REVIEW:

This conservation management plan, and any updates, should be kept in permanent archive. A copy should also be kept as a readily accessible document for those responsible for making decisions or carrying out works to the site. Copies should also be held by VicTrack, Department of Infrastructure - Technical Services, Heritage Victoria, Hobson's Bay City Council, the Royal Historical Society of Victoria and lodged in the State Library of Victoria.

The implications of this Conservation Management Plan, and its updates, should be considered in all future decisions for conservation or development actions. All changes should be adequately documented in records held by VicTrack, Department of Infrastructure - Technical Services, Heritage Victoria, Hobson's Bay City Council, the Royal Historical Society of Victoria and lodged in the State Library of Victoria.

The Conservation Management Plan should be reviewed and updated with the resultant findings made available to VicTrack, Department of Infrastructure - Technical Services, Heritage Victoria and Hobson's Bay City Council. The recommendations should be regularly reassessed every five years and any urgent or priority actions identified.

6.0 CONSERVATION WORKS & OPINION OF PROBABLE COSTS

6.1 INTRODUCTION:

The principle upon which works have been identified for maintenance or conservation is based upon the following premise:

> The buildings and structures to be retained are to be brought to a standard for occupation similar to that standard of occupation at the close of these Workshops, assuming that continuing occupation required a dry habitable interior environment, with external surfaces graded and drained to preserve the adjoining building fabric and to provide effective overland flow paths for stormwater beyond the capacity of the underground drainage system. In particular, the works are not intended to provide for the standard necessary for adaptive re-use of the buildings, as this would form part of the cost base for those future projects.

The opinion of probable cost is intended only as an approximate guide as neither quantities nor qualities necessary for accurate cost estimates have been established in this preliminary survey. The cost estimates were done from the ground without close inspection of roofs etc. Hence no allowance has been made for assessing or repairing slates to East Block. Accurate costings would need to be obtained after a detailed survey through the tender of works or the opinion of a qualified quantity surveyor.

The costs of consulting fees, preliminaries for contractors or contingencies have not been included. Similarly, the costs of provision or upgrades of services have not been calculated. These would include power, gas and communications and are dependent on future use for the levels required. The cost of compliance with regulations, for example fire systems, escape systems etc, have not been included as they are dependent on future use.

6.2 GENERAL FINDINGS:

In general, the brick buildings (East Block, West Block and Transport Office), are in sound condition with only minor structural works required. The East Block Engine, Boiler House and Chimney requires some reconstruction of collapsed superstructure.

The work related to the Central Block brick buildings is minor, with the exception of soil moisture control works around the Central Block Offices and Clocktower. The extent of cracking in the Central Block Offices near the Clocktower is severe, however, the existing footing conditions indicate that substantial structural underpinning is not appropriate.

The opinion of the geotechnical engineers is:
The most realistic approach in dealing with the distress present within each of the buildings and clocktower is to attempt to maintain the moisture content of the clay surrounding the buildings.

Consequently the costs for remedial works for the Central Offices and Clocktower are associated with in ground drainage works, and therefore allocated to that item.

After these new drainage works have been installed, say, for 1 to 2 years, the extent of cracking in the Central Offices and Clocktower should be reassessed on the basis (hopefully) that cracking has reduced or at least stabilised. It may be appropriate then to install steel tie rods at ceiling and floor levels to assist the building in coping with future footing movements.

We note the presence of the former inground water storage, to the north of the Clocktower, now concrete-lined as an ornamental pond. Anecdotal evidence suggests this pond is badly cracked, and requires frequent addition of water to maintain the desired water level. This suggests that it may be contributing to problems at the Clocktower. In accordance with the recommendations of the geotechnical report, external surface works and improved drainage are proposed as the remedial works for the Clocktower area.

The introduction of concrete slabs without moisture barriers has caused problems in a number of brick buildings. This could be addressed by the inclusion of a damp proof course above the concrete floor as the most minimal option. Decay and damp would continue in the brick course below the damp proof course with this option. Alternately, removal of the concrete slab (if required) would provide the opportunity for a moisture barrier to be installed as part of a new floor being provided. Re-pointing and possibly minor brick replacement may be required as part of the repair of moisture damaged areas. No costs have been included for this work.

The timber buildings (East Block Southern Extension, West Block Southern Extension, Timber Shed, Timber Store, Plating Shop, Engine Balancing Tables Building, Tarpaulin Shop), are all in structurally sound condition, with the general exception of decay of timbers embedded in the ground, or exposed at floor level to ground/water.

As noted in the Condition Report for the various buildings, the significant issues for works will be the control of drainage, being:

- Roofing and roof plumbing;
- Downpipes;
- Underground stormwater drains and pits;
- Surface water control for external pavements; and
- Soil moisture control.

6.3 ROOF AND ROOF PLUMBING

The condition of the roofing and roof plumbing is such that its replacement is considered a priority. Presently, roofing sheets show signs of corrosion at laps, gutters leak in many locations, internal and external downpipes leak particularly at their connection to the underground stormwater drainage system. Clearly previous roofing systems for these buildings have been replaced from time to time during the life of these buildings. Replacement of the present roofing would permit full length roof sheets to be used, narrow box gutters to be widened, flashings to be reconstructed and any locally affected timbers to be reconstructed.

In our opinion, box gutters should be rebuilt in stainless steel of greater width than the present box gutters to ensure ease of maintenance. The estimate herein provides for roofing materials to be generally replaced with corrugated galvanised sheeting as is presently used on many of the buildings. It is considered that the highly reflective nature of zincalume makes it generally unacceptable for historic buildings and it would be better for all metal products to have a galvanised finish. Note that the two systems should not be combined because of the potential for galvanic reaction. The estimate allows for roofing replacement at $46 per sq. m.

Other roofing costs are repairs to ventilation louvres at $150 per lineal metre, and replacement of south light glazing at $740 per lineal metre.

Table 6.1: Preliminary Roofing Costs

Building	Approx Roof Area (m^2)	Approx Roof Cost ($)	Approx Vent length (m)	Approx Vent Cost ($)	Approx South light (m)	Approx South light Cost ($)	Estimated Cost ($)
East Block	11400	$524,400	1400	$210,000	-	-	$734,000
East Block (Southern Extension)	13400	$616,400	-	-	650	$481,000	$1097,400
West Block	15000	$690,000	1800	$270,000	-	-	$960,000
West Block Southern Extension	15000	$690,000	-	-	1500	$1,110.000	$1,800,000
Central Block	4000	$184,000	250	$37,500	300	$222,000	$443,500
Tarpaulin Shop	2700	$124,200	220	$33,000	220	$162,800	$320,000
Timber Shed	3900	$179,400	-	-	-	-	$179,400
Timber Store	800	$36,800	80	$12,000	-		$48,800
Transport Office	200	-	-	-	-	-	-
Plating Shop	1500	$69,000	-		160	$118,400	$187,400
Subtotal for Roofing Works							**$5,770,500**

Source of Costings: Rawlinsons Construction Cost Consultants & Quantity Surveyors *Australian Construction Handbook 2000* Rawlhouse Publishing Pty Ltd, Perth, 2000.

Further costs for roof drainage include gutters, downpipes and branch drains. We are concerned that existing subfloor drains are inadequate and/or damaged or blocked, hence these estimates allow for new subfloor branch drains (requiring removal and reinstatement of concrete floors).

Table 6.2: Further Costs for Roof Drainage

Building	Approx Gutter Length (m)	Rate ($/m)	Estimated Cost ($)	Approx Branch Drain Length (m)	Rate ($/m)	Estimated Cost ($)	Subtotal
East Block	800	$150	$120,000	900	$180	$162,000	$282,000
East Block (Southern Extension)	1200	$150	$180,000	750	$180	$135,000	$315,000
West Block	1000	$150	$150,000	1200	$180	$216,000	$366,000
West Block Southern Extension	1500	$150	$225,000	800	$180	$144,000	$369,000
Central Block	360	$150	$54,000	200	$180	$36,000	$90,000
Tarpaulin Shop	280	$150	$42,000	160	$110	$18,000	$60,000
Timber Shed	300	$60	$18,000	320	$110	$35,000	$53,000
Timber Store	60	$150	$9,000	100	$110	$11,000	$20,000
Plating Shop	180	$150	$27,000	100	$110	$11,000	$38,000
Subtotals			**$825,000**			**$768,000**	**$1,593,000**

Source of Costings: Rawlinsons Construction Cost Consultants & Quantity Surveyors *Australian Construction Handbook 2000* Rawlhouse Publishing Pty Ltd, Perth, 2000.

Within the large building areas (East Block, East Block Southern Extension, West Block, West Block Southern Extension) the use of a syphonic downpipe system should be considered as an alternative to rehabilitating the underground stormwater drainage beneath these buildings.

A specific study is required to investigate in detail the underground drains beneath the buildings. Videos made available by VicTrack, primarily for the drains in the Workshop area to the east of the heritage zone, consistently show leaking and damaged drains. Hence, the concern is that the underground stormwater drainage systems within the building areas is likely to be in need of substantial repair or replacement.

The lack of documented information on site main drainage systems within the heritage area of the site, requires the following actions:

- Hydroblast clean existing stormwater drainage pipes and pits;
- Investigate underground drainage condition and assess capacity; and
- Upgrade as necessary.

In order to prepare a preliminary estimate, we have allowed for the alternative of a new main drainage system from the present point of discharge from the site extending to form a suitable grid type drainage system serving all of the heritage buildings and external pavements to be retained.

We also have concerns that the original agricultural drainage system through the site (labelled as French drains on historic drawings) may no

longer function as intended, and therefore drainage works associated with the building reconstruction should incorporate new agricultural drains, as part of the control of soil moisture.

An indicative new main stormwater drainage system is suggested in the attached sketch. A preliminary estimate of cost, allowing for removal and reinstatement of pavements where necessary, is $750,000.00. Care would need to be taken with the potential for damage to historic fabric or archaeological material when replacing drains.

Additional allowance should be provided for reconstruction of external pavements to the perimeter of the buildings, in order to grade surfaces away from buildings and to provide adequate ground floor level elevation above external surfaces. Integral with this work would be new external pavement stormwater pits, and the creation of appropriate overflow flow paths for storm flows beyond the capacity of the underground drainage system. This preliminary estimate for paving is $930,000.00.

As part of the works, the ornamental pond north of the Clocktower needs a new concrete liner, constructed for an allowance of $50,000.00.

6.3 SUMMARY

Note that these figures have been provided by unit area to allow an informed decision on the merit of undertaking part of the works, for example repair to part of a building, or they could be used to compare the amount of work achieved by a fixed budget.

Building works can be generalised as follows:

Table 6.3: Building Works

		Estimate Allowance		
			Rate ($/m^2)	Cost ($)
East Block	• Basement floor replacement with concrete	2000 m^2	$150	$300,000
	• Timber floor replacement where rotted or damaged by trams	2000 m^2	$50	$100,000
	• General floor repairs	1000 m^2	$80	$80,000
	• Brickwork repairs – tie gables to underpurlins, rest truss template, repair cracked brickwork	-	-	$80,000
	• Engine house reconstruction allowance			$150,000
	Subtotal			**$710,000**
East Block Extension	• Replace embedded timber column footings	210 No.	$3000	$630,000
	• Replace timber planking over drainage trench with concrete	500 m^2	$100	$50,000
	• Repair external wall mullions and bottom plate	230m	$500	$115,000
	• Repair wall cladding	-	-	$45,000
	Subtotal			**$840,000**
West Block	• Brickwork repairs (as East Block)	-	-	$120,000
	• Smithy extension roof framing repairs	-	-	$30,000
	• Repair external wall mullions and bottom plate	60m	$500	$30,000
	• Repair wall cladding, including gable ends and Smithy extension	-	-	$60,000
	Subtotal			**$240,000**
West Block Extension	• Replace embedded timber column footings (allow 150 number)	150 No	$3000	$450,000
	• Repair external wall mullions and bottom plate	360m	$500	$180,000
	• Repair wall cladding including gable ends between different roof forms	-	-	$180,000
	Subtotal			**$810,000**
Central Block	• Replace embedded timber column footings (allow 20 No.)	20 No.	$3000	$60,000
	• Repair external wall mullions	200m	$500	$100,000

	and bottom plate			
	• Repair wall cladding	-	-	$30,000
	• Note Office/Clocktower repair in external paving and drainage estimates	-	-	-
	Subtotal			**$190,000**
Tarpaulin	• Repair timber floors	2000m^2	$40	$80,000
Shop	• Replace/repair wall claddings	1000m^2	$40	$40,000
	• Repair external wall mullions and bottom plate	60	$500	$30,000
	• Allowance for some embedded timber column replacement, say	10	$3000	$30,000
	Subtotal			**$180,000**
Timber Shed	• Replace/repair external columns (allow 20) with new footings	20 No.	$3000	$60,000
	• Repair external wall framing and battens, including mullions and girts	650m^2	$100	$65,000
	• Allowance for some embedded timber columns, say	-	-	$30,000
	Subtotal			**$150,000**
Timber Store	• Replace embedded timber column footings, say	24	$3000	$72,000
	• Repair external wall mullions and bottom plate	80	$500	$40,000
	• Repair wall cladding	400	$40	$16,000
	Subtotal			**$128,000**
Transport Office	• Replace ungalvanised lintels	12	$1000	$12,000
	Subtotal			**$12,000**
Plating Shop	• Replace timber floor	750m^2	$80	$60,000
	• Replace embedded timber column footings	20	$3000	$60,000
	• Repair external wall mullions and bottom plate	150	$500	$75,000
	• Repair wall cladding	-	-	$40,000
	Subtotal			**$230,000**

Source: Rawlinsons Construction Cost Consultants & Quantity Surveyors *Australian Construction Handbook 2000* Rawlhouse Publishing Pty Ltd, Perth, 2000.

Table 6.4: Summary Table

Building	Roofing Costs ($)	Further Roof Drainage Costs ($)	Building Costs ($)	Total ($)
East Block	734,000	282,000	710,000	1,726,000
East Block (Southern Extension)	1,097,400	315,000	840,000	2,252,400
West Block	960,000	366,000	240,000	1,566,000
West Block Southern Extension	1,800,000	369,000	810,000	2,979,000
Central Block	443,500	90,000	190,000	723,500
Tarpaulin Shop	320,000	60,000	180,000	560,000
Timber Shed	179,400	53,000	150,000	382,400
Timber Store	48,800	20,000	128,000	196,800
Transport Office	-	-	12,000	12,000
Plating Shop	187,400	38,000	230,000	455,400
Total	**$5,770,500**	**$1,593,000**	**$3,490,000**	**$10,853,500**
Main Drains				750,000
External Pavements				930,000
Pool				50,000
Subtotal				**$12,583,500**
Preliminaries (15%)				1,887,500
ESTIMATE FOR WORKS				**$14,471,000**

6.5 SHORT TERM WORKS:

It is acknowledged that the costings outlined above may take some time to be funded and initiated.

As the present structures forming the main framing (timber and steel), and the masonry walls are in generally sound condition, urgent works to essentially maintain the present condition of structures and materials to allow the time necessary to fund major works are as follows:

1. Patch and repair leaking gutters;
2. Patch and repair roof sheetings and flashings;
3. Patch leaking southlights with wall cladding;
4. Patch/repair/replace leaking downpipes;
5. Flush out all stormwater drains and pits servicing the buildings and the immediate perimeter external areas;
6. Maintain the pump in 'Cesspit No. 3' providing outfall drainage to the East Block Basement;
7. Where subfloor stormwater drains within building areas are found not to function, install temporary suspended PVC drains discharging to external stormwater pits; and,
8. Seal the ground surface against moisture loss in the immediate vicinity of the north end of the Central offices and Clocktower.

When these urgent works are complete, it is expected that the present structure conditions should remain comparatively constant over the next, say 2 to 3 years.

Costing of these short term works is difficult as unforeseen conditions may emerge as the works proceed. However, as a guide to the costs of these works, the following allowances are suggested:

1 Repairs to Roof Claddings, South Lights, Ventilation Louvres, Flashings.

Table 1:

Building	Approx Roof Area (m^2)	Approx Roof Repair Cost $5/sqm	Approx Vent Length (m)	Approx Vent Repair Cost ($15/m)	Approx South Light (m)	Approx South Light Repair Cost ($15/m)	Estimated Cost
East Block	11,400	$ 57,000	1400	$ 21,000	-	-	$ 78,000
East Block Extension	13,400	$ 67,000	-	-	650	$ 10,000	$ 77,000
West Block	15,000	$ 75,000	1800	$ 27,000	-	-	$102,000
West Block Extension	15,000	$ 75,000	-	-	1500	$ 22,500	$ 97,500
Central Block	4,000	$ 20,000	250	$ 3,850	300	$ 4,500	$ 28.300
Tarpaulin Shop	2,700	$ 13,500	220	$ 3,300	220	$ 3,300	$ 20,100
Timber Shed	3,900	$ 19,500	-	-	-	-	$ 19,500
Timber Store	800	$ 4,000	80	$ 1,200	-		$ 5,200
Transport Office	200	-	-	-	-	-	-
Plating Shop	1,500	$ 7,500	-		160	-	$ 7,500
Subtotal for Roofing Works		**$338,500**		**$ 56,350**		**$ 40,300**	**$435,100**

2 Repairs to Gutters and Stormwater Drains.

Table 2:

Building	Approx Gutter Length	Repair Rate	Estimated Cost	Approx Branch Drain Length	Clean Rate	Estimated Cost	Subtotal
East Blk	800	$30	$ 24,000	900	$15	$ 13,500	$ 37,500
East Extn	1,200	$30	$ 36,000	750	$15	$ 11,250	$ 47,250
West Blk	1,000	$30	$ 30,000	1,200	$15	$ 18,000	$ 48,000
West Extn	1,500	$30	$ 30,000	800	$15	$ 12,000	$ 42,000
Central	360	$30	$ 10,800	200	$15	$ 3,000	$ 13,800
Tarpaulin	280	$30	$ 8,400	160	$20	$ 3,200	$ 11,600
Timber Shed	300	$15	$ 4,500	320	$15	$ 4,800	$ 9,300
Timber Store	60	$30	$ 1,000	100	$20	$ 2,000	$ 3,800
Plating	180	$30	$ 5,400	100	$20	$ 2,000	$ 7,400
Subtotals			**$150,900**			**$69,750**	**$220,650**

Clearly if parts of the East Block (Southern Extension) and West Block Southern Extension were not to be retained in their entirety, these repairs could be reduced in scope.

3 Other Repair Costs

Other costs include surfacing around the Central office, say with plastic sheet covered in soil/gravel/bark chips. We suggest an allowance of $4,000 be made for a proposed 5m 'apron' around the north end of the building.

4 Summary of Short Term Costs

Hence, the total short term works costs are estimated at $659,750 as follows:

	Table 1	Table 2	Other	Total
East Block	$ 78,000	$37,500	-	$115,500
East Block Extension	$ 77,000	$47,250	-	$124,250
West Block	$102,000	$48,000	-	$150,000
West Block Extension	$ 97,500	$42,000	-	$139,500
Central Block	$ 28,300	$13,800	$4,000	$ 46,100
Tarpaulin Shop	$ 20,100	$11,600	-	$ 31,700
Timber Shed	$ 19,500	$ 9,300	-	$ 28,800
Timber Store	$ 5,200	$ 3,800	-	$ 9,000
Transport Office	-	-	-	-
Plating Shop	$ 7,500	$ 7,400	-	$ 14,900
				$659,750

Costs not included in these estimates are professional fees, builder's and proprietor's preliminaries and project contingency (which we suggest should be at least 20% of the estimated $659,750).

BIBLIOGRAPHY

Reports & Other Publications:

Appendix to Report of the Victorian Railways Commissioners, *Victorian Parliamentary Papers* 1886 No 80 Table 21.

Appendices and Minutes of Evidence, *Victorian Parliamentary Papers* 1905, No 34.

Annual Report of the Victorian Railways Commissioners, *Victorian Parliamentary Papers* 1888, No 69.

Annual Report of the Victorian Railways Commissioners, *Victorian Parliamentary Papers* 1889, No 119.

Annual Report of the Victorian Railways Commissioners, *Victorian Parliamentary Papers* 1890, No 151.

Annual Report of the Victorian Railways Commissioners, *Victorian Parliamentary Papers* 1890, No 68.

Annual Report of the Victorian Railways Commissioners, *Victorian Parliamentary Papers* 1899.

Annual Report of the Victorian Railways Commissioners, *Victorian Parliamentary Papers* 1900, 1901, 1902.

Annual Report of the Victorian Railways Commissioners, *Victorian Parliamentary Papers,* 1915.

Annual Report of the Victorian Railways Commissioners, *Victorian Parliamentary Papers* 1939

Banger, C *Remains of Servicing Facilities from the Steam Era in Victoria* Newsrail, November 1986

Birmingham P.L. 1982, *The ML2 story : the History of the Victorian Railways' Famous B Class Diesel-Electric Locomotive*, Bacchus Marsh, Vic. Railway Traction Research Group.

Carlisle, R.M. Abbott, R.L. 1985, *Hudson Power: An Illustrative History of the R Class 4-6-4 Passenger Locomotives in Service on the Victorian Government Railways, Australia, 1951-1974*, ARHS Melbourne.

Carlisle, R.M. Abbott, R.L. 1985, *Hudson Power: An Illustrative History of the R Class 4-6-4 Passenger Locomotives in Service on the Victorian Government Railways, Australia, 1951-1974*, ARHS Melbourne.

Clark, P. 1992 'The Spirit of Progress Cars Parts 1 & 2' *Australian Model Railway Magazine*, Vol 15, No 8.

Doenau, G. 1979 'The Newport Story', *Bulletin of the Australian Railways Historical Society,* Volume XXX, No 505: 251.

Doring, C. & M.J. 1988 *Heritage Study of Newport Railway Workshops 1888-1988.*

Elliot, J. 1949, *Report on Rail Transport in Victoria*, Report to the Minister of Transport by John Elliot.

Harrigan, L. J. 1962 *Victorian Railways To '62*, Victorian Railways Public Relations and Betterment Board

Leppitt, J. 1996 'Victorian Railways DERM' *Australian Model Railway Magazine* Vol 17 No 12.

Pike, C *Remains of Servicing Facilities from the Steam Era in Victoria - Part Two* Newsrail, July 1988

'Rail-Motor Shop', 1954 *The Victorian Railways News Letter.*

The Railway Commissioners, 'Railway workshops at Inland Depots'. Return to an Order of the Legislative Assembly, *Victorian Parliamentary Papers* 1885 No 22.

Rawlinsons Construction Cost Consultants & Quantity Surveyors, 2000 *Australian Construction Handbook 2000* Rawlhouse Publishing Pty Ltd, Perth.

Report from the Parliamentary Standing Committee on Railways on Proposed Expenditure under Railway Loan Application Act, No 3151 and 3191 *Victorian Parliamentary Papers* 1923 No 1.

Spencer, C. 1930 Spotting, *The Victorian Railways Magazine*, January 1930:11-12.

VicRail Public Relations Division Report *Power Parade* 1981

The Victorian Railways News Letter October 1973.

Victorian Parliamentary Papers 1920, No 1.

Victorian Parliamentary Papers 1910, C No 6.

Wilson, S. 1990, Beaufort, Beaufighter and Mosquito in Australian Service, Aerospace Publications Pty. Ltd,

Winter, A.V. *The V.R. and VicRail 1962-1983*, Privately Published.

Weetman, S. 1930 Nineteen-Twenty-Nine, *The Victorian Railways Magazine* January 1930:7.

Woodroffe, T. H. Evidence, Final Report of the Royal Commission on Management of the Railway Department, *Victorian Parliamentary Papers* 1902 No 6:

Woodroffe, T. 1904, *Victorian Railways Rolling Stock Branch, Diagrams and Particulars of Locomotives, Cars, Vans and Trucks*, Facsimile ed. 1978 Victorian Model Railway Society.

Woodward Clyde 1999 *Phase 1 Environmental Site Assessment of Newport Workshops, Victoria Vol 1 & 2.* Woodward Clyde Pty Ltd.

Drawings:

Selection of MMBW drawings from City West Water - property of Technical Services, Department of Infrastructure, contact Mike Ryan.

Set of Historical Drawings of Newport Railway Workshops dating from 1886 - property of Technical Services, Department of Infrastructure, contact Mike Ryan.

Photographs:

Set of Black & White photographs from Public Record Office, Victoria - property of Technical Services, Department of Infrastructure, contact Mike Ryan.

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25 Wests Road Maribyrnong VIC 3032
Tel: 9318 6252 Fax: 93188159

Medical Certificate

1/6/2017

This is to certify that:

Mr Rhett English,
53 Ridge Dve,
AVONDALE HEIGHTS. 3034

has attended this clinic on 1/6/2017 because of
a medical condition

I conclude by reason of this condition/ patient's statement that he was/will be unfit for work

from 1/6/2017 to 1/6/2017 inclusive.

Signed: _____

Dr. John Haddad
MBBS