EVELEIGH WORKSHOPS MANAGEMENT PLAN FOR MOVEABLE ITEMS AND SOCIAL HISTORY

Volume 1 Draft Management Plan for Moveable Items Eveleigh Railway Yards Locomotive Workshops

Prepared for
Department of Public Works and Services
Client Service Division

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This is **Volume One** of a six volume set of report commissioned by the Department of Public Works and Services, Client Services Division.

Executive Summary

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1.0 INTRODUCTION

1.1 BACKGROUND

This report has been preceded by a preliminary Assessment and Relics Management Policy which has been the basis for this Management Plan.

The Eveleigh Locomotive Workshops site is approximately 14 hectares located in Redfern, a Sydney suburb some three kilometres from the Sydney CBD. Construction of the buildings on the site commenced in 1887. The site ceased operations as a railway workshop in the mid- to late 1980s.

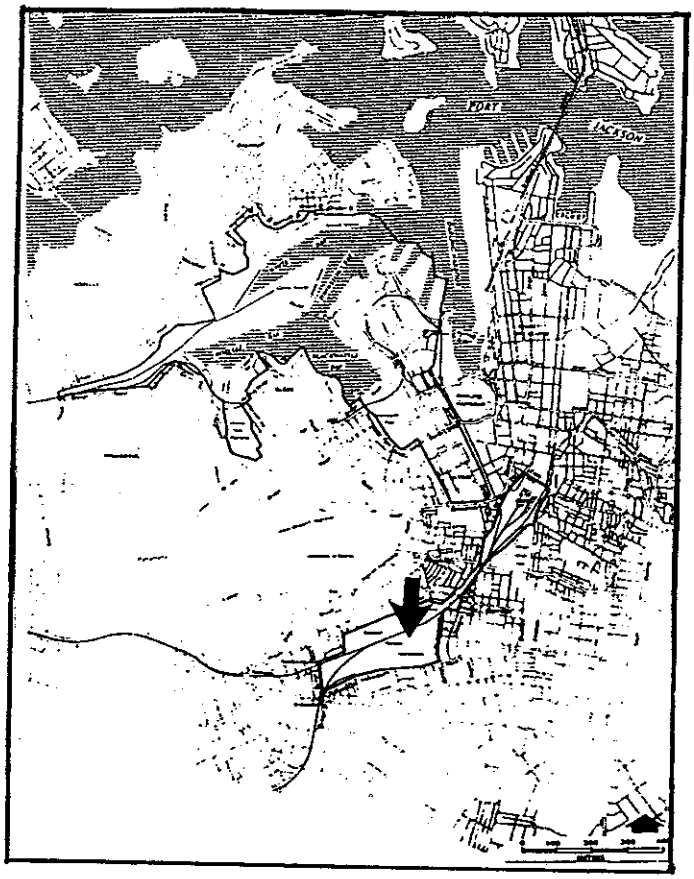
The Eveleigh site is currently being redeveloped as "The Australian Technology Park" for the Australian Technology Park Sydney Limited (APTSL), with financial support from the New South Wales and Commonwealth Governments under the Better Cities Program.

In March 1995 the ownership of the Locomotive Workshops was transferred from the State Rail Authority (SRA) to the City West Development Corporation (CWDC). The items stored within the Workshops were included in the proposed transfer and the agencies involved agreed to fund a Management Plan for those items, in parallel with a Social History for the Eveleigh Precinct.

The Client Service Division of the Department of Public Works and Services (DPWS) is the project manager on behalf of the SRA, CWDC and the Department of Urban Affairs and Planning (DUAP) for this study. Godden Mackay Pty Ltd has assembled a specialist team to carry out the study.

Considerable documentation of the site and numerous earlier studies have been carried out to address this large and complex site. Research previously carried out has not been repeated or revisited as part of this study. However, relevant issues identified in earlier studies and findings relevant to this study are included, with a reference to the appropriate study.

Machinery used at the Workshops included both imported items and items manufactured on-site. A number of the very large items are in situ and have a single purpose. Other items have been recycled to new locations for new uses. Some items represent component parts of a whole system or processes formerly carried out at Eveleigh. Many of the items are unique and have aesthetic qualities.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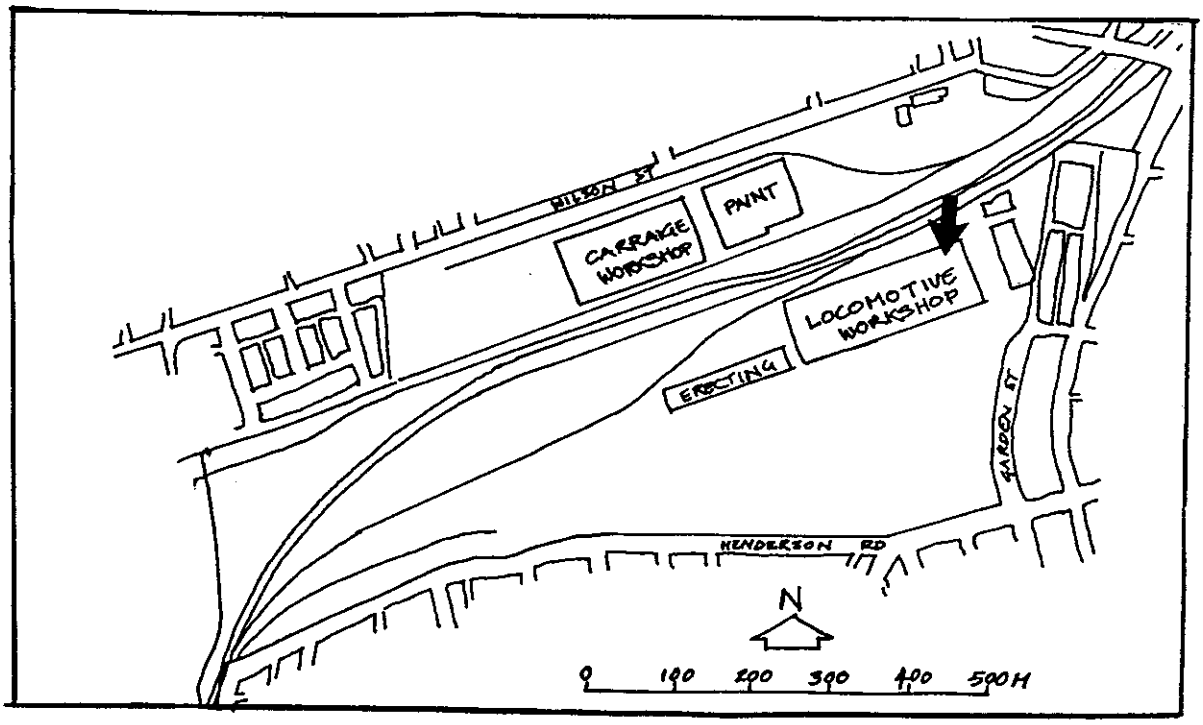
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1.2 STUDY AIMS

The aims of the entire study as a whole as defined in the consultancy brief, which are relevant to this study are:

- build on the information of Eveleigh Railway Workshops Conservation Policy - Relics, 1988, and the Locomotive Workshops Conservation Management Plan, 1995 to update the inventory and identify moveable items of heritage significance;

- develop draft conservation policies for the identified items/groups of items as appropriate;

- develop and draft a conservation management implementation program, including interpretation, for each item/group of items and whole collection, consistent with conservation policies; and

- identify those items which should be retained and establish a plan for their care, management, re-use, location and exhibition or display with consideration for the reuse options for the Locomotive Workshop as proposed by the ATPSL.

The objectives as determined by the study process and following on from the study brief are:

Define the machinery/moveable items

- review the inventory of items - noting those which are clearly not of any heritage significance, those which have been relocated to the workshop from other areas of Eveleigh and other railway workshop and should be returned, those which have been introduced by lessees of the site, and those which appear to be of significance and require further assessment; and

- label/tag items in accordance with acceptable museum practices.

Policy

- identify preferred management strategies, including the potential for conservation in situ;

- consider and recommend appropriate conditions for access to the collection;

- consider options for interpretation through display and exhibition in the short and long term;

- assess the condition of each item/groups of items;

- prepare a maintenance plan;
- draft a brief conservation policy for each item based on its heritage significance. This should be in accordance with the State Heritage Inventory assessment of significance; and
- create policies which provide options for future use, feasible and viable management of the items and include recommendations regarding the issue of short and long term use of the items, including use by others.

1.3 THE STUDY APPROACH

For this study a team of experts has been assembled, led by Don Godden. The team includes expertise in industrial archaeology, social history and interpretation and curatorial methodology. Dr Lucy Taksa led the Social (Oral) History team assisted by Joan Kent. A full list of participants and their expertise is included in Appendix A, Volume IV.

The study process showing this stage of the study is outlined in Figure 1.2.

Labelling of machinery items during the course of the study has been carried out in accordance with the *Standards in the Museum Care of Larger and Working Objects: Social and Industrial History Collections 1994* prepared by the Museums and Galleries Commission. (See Appendix H, Volume IV.) All items have been tagged with numbered archived museum labels.

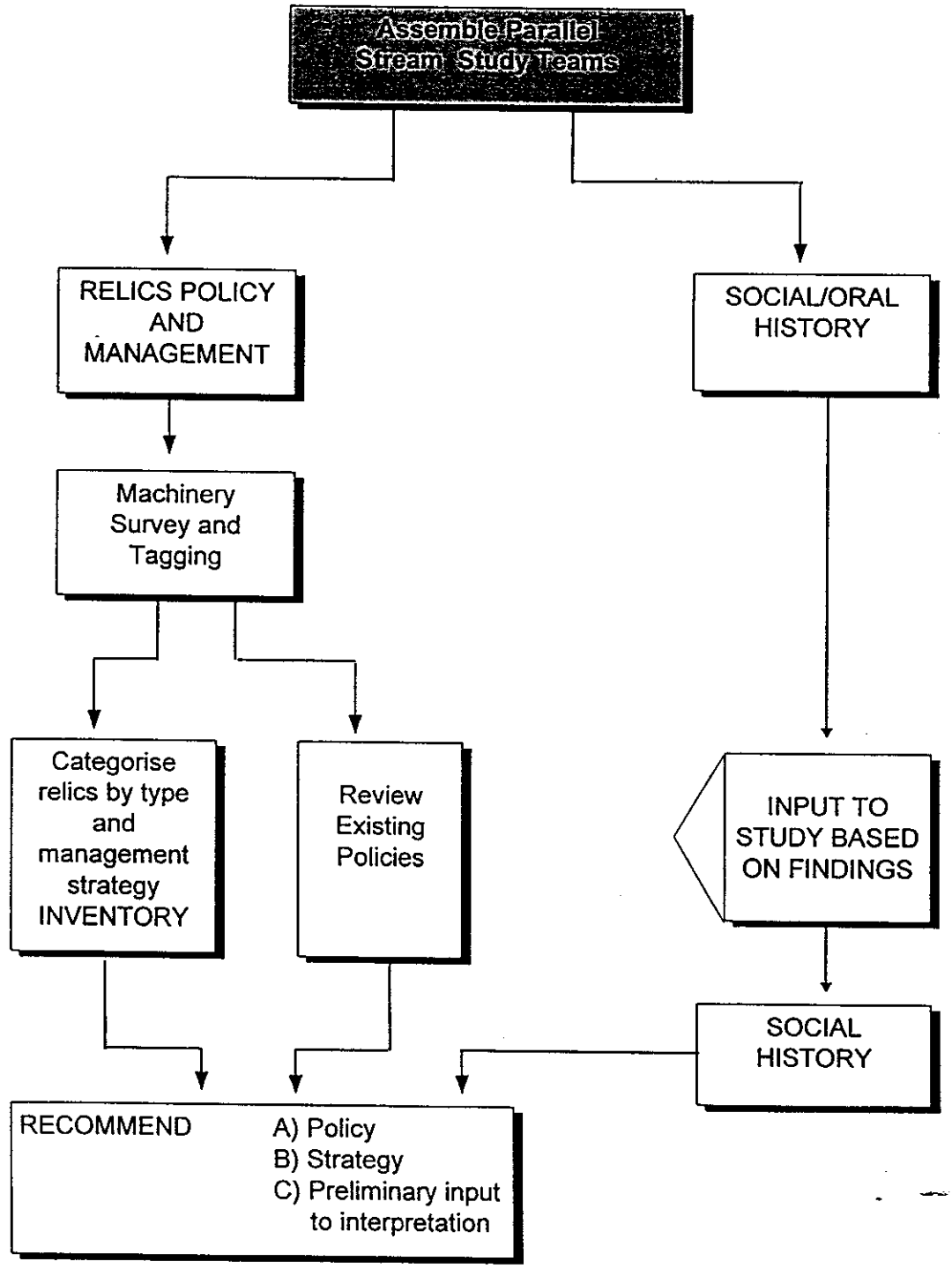


Figure 1.2 Study Process

2.0 APPROACH TO MACHINERY/ITEM CLASSIFICATION

2.1 PREAMBLE

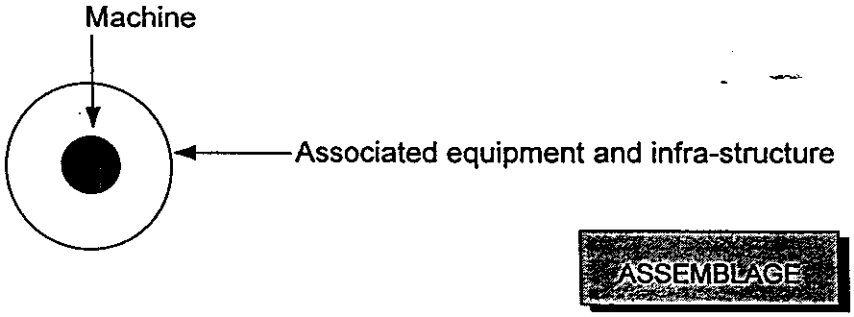
Consideration of the machinery and moveable items in a large complex such as the Eveleigh Locomotive Workshops, which operated for just over 100 years, must take into account the fact that the manufacturing processes practised may have changed over time particularly with the change over from steam to diesel and were dependant on a range of inputs including:

- a range of machines; single purpose, recycled and multi-purpose;
- power sources;
- maintenance tools; and
- associated items including operational manuals, signs and screens.

Therefore, it is rarely practical to consider any item in isolation. As a result this firm has developed an approach to complex industrial machinery collections, in which individual items are considered as components of an assemblage, a collection, a system or an operational group. For a detailed discussion of this approach see Appendix E, Volume IV, for Section 4.6.2-4.6.6 of the 1995 Conservation Plan prepared by Don Godden for Heritage Groups - State Projects. The scope of the project and the complexity of the collection, which includes over 200 items, precluded detailed consideration and planning for individual pieces of machinery.

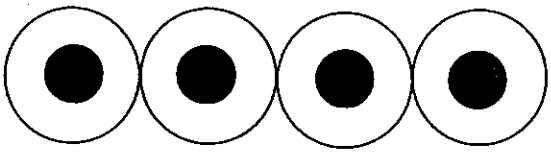
2.2 ASSEMBLAGE

An assemblage is a relic or structure including all the artefacts, tools and items normally associated with it when it was operating. In the case of a machine it might include the spanners and wrenches used to tighten the nuts, the tools needed to adjust the gears or belts, the safety screens which prevented contact with moving parts and, if applicable, samples of completed or partially completed work. Signs, pipework and associated services would also be included.



2.3 COLLECTION

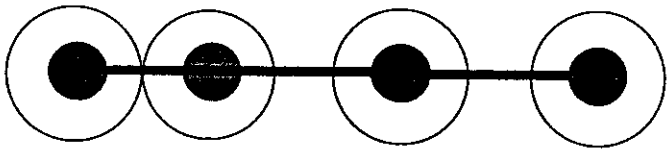
A collection is usually a number of relics or structures which belong to a group because they perform the same function or produce the same finished product. The number and displacement of machines may indicate the way the workshop operated. Even though some collections consist of a number of identical items, each item is important because it illustrates the frequency of use and the dependency of other operations or machines upon it.



COLLECTION

2.4 SYSTEMS

A system is an operational group of related artefacts which cannot function effectively if any one artefact is removed. An example is a hydraulic system, which consists of pumps, accumulators, a line network and machines operated by hydraulic power.



SYSTEM

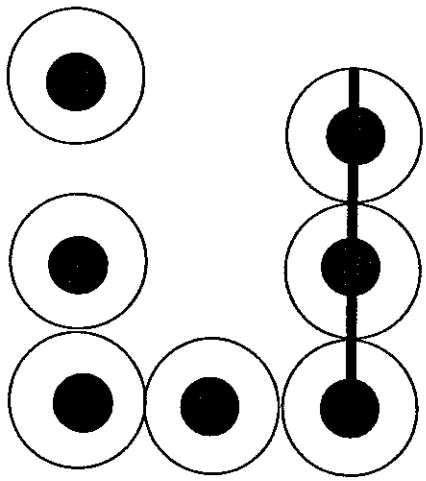
The majority of items within the workshops belong to systems and assemblages. The Rootes Blowers and the Steam Hammers are collections, but are treated as components of the steam system.

The forging tools, along with anvils and furnaces, are part of the assemblages associated with the hammers.

Because of their present condition some items such as sheet metal rollers, sheet metal furnaces and the shears are classified as individual relics.

2.5 OPERATIONAL GROUPS

An operational group consists of a number of machines that normally operate on stock as part of a sequential process; eg the machines employed to produce coil or leaf springs. The sequential process is normally identified with a particular area; eg the Spring Shop or the Steam Hammer Shop.



OPERATIONAL GROUP

2.6 TERMINOLOGY

The definitions outlined above for the terms Assemblage; Collection; System; and Operational Group are used throughout this report.

The term 'machinery collection' is used to refer to the group of machinery items as a whole and is not a reference to 'collection' in terms of machinery or relics performing the same function.

3.0 TYPOLOGY OF MACHINERY/MOVEABLE ITEMS; EVELEIGH

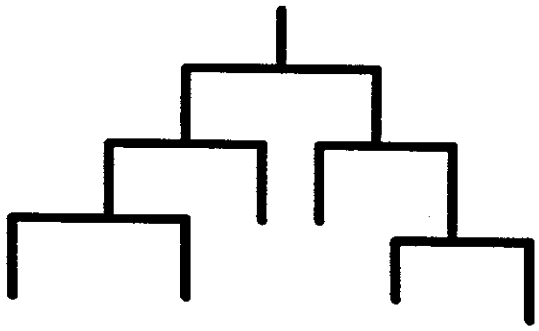
3.1 PREAMBLE

Development of a machinery/ moveable items typology is a useful tool in addressing the technological representativeness of a particular item and in understanding the contribution of the components which make up the systems.

Subsequent to this study, if the retention or relocation of any item/s of machinery is being reconsidered, the item/s should be considered within their type.

3.2 TYPOLOGICAL APPROACH

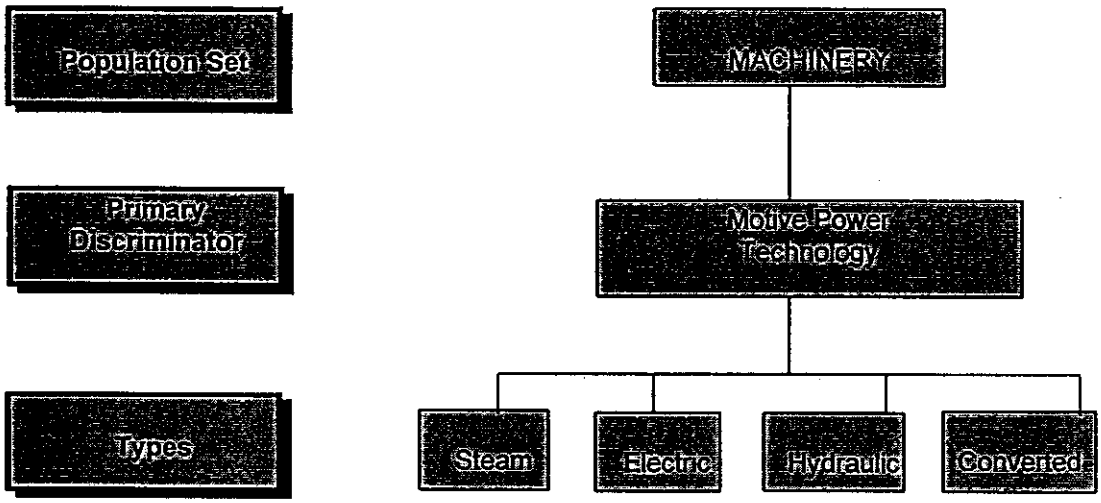
A typology tree is a method of breaking down the available information into manageable components. The main branches are the major divisions. Each of the major divisions is then sub-divided thematically or according to technology to one of several levels to arrive at a relatively homogeneous class of items. An example of a typology tree is represented diagrammatically below.



3.3 PRIMARY TYPOLOGICAL DISCRIMINATION

In this analysis the primary branches of the typology tree are the types of motive power applied to the machinery systems. The various motive power sources available at the Eveleigh Locomotive Workshops were:

Steam;
Electric;
Hydraulic; and
Conversions (from steam to electricity).



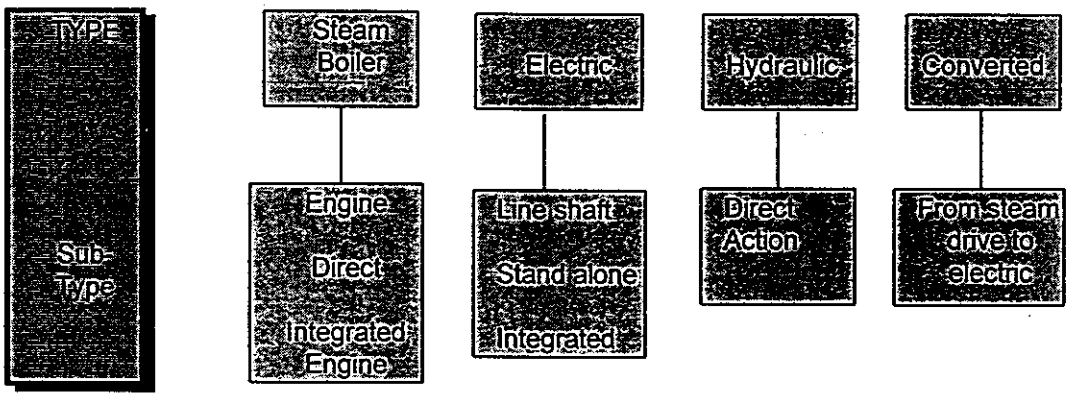
Each type consists of a population set with a common motive power technology. The motive power may indicate an historic period of operations. It also dictates the technology involved and the potential operations of the machines.

With some power sources the machinery varies very little across the population of the Type. This applies particularly to Hydraulic motivation which supplies sustained slow pressure, used at Eveleigh to act directly on presses. For this type (Hydraulic) it is not necessary to look any further down the typology tree, although groupings such as age and size may be identified as classes.

3.4 SUBDIVISION OF TYPES

The remainder of the identified types of machinery operations can be sub-divided according to connection or action differences that occur within the Type.

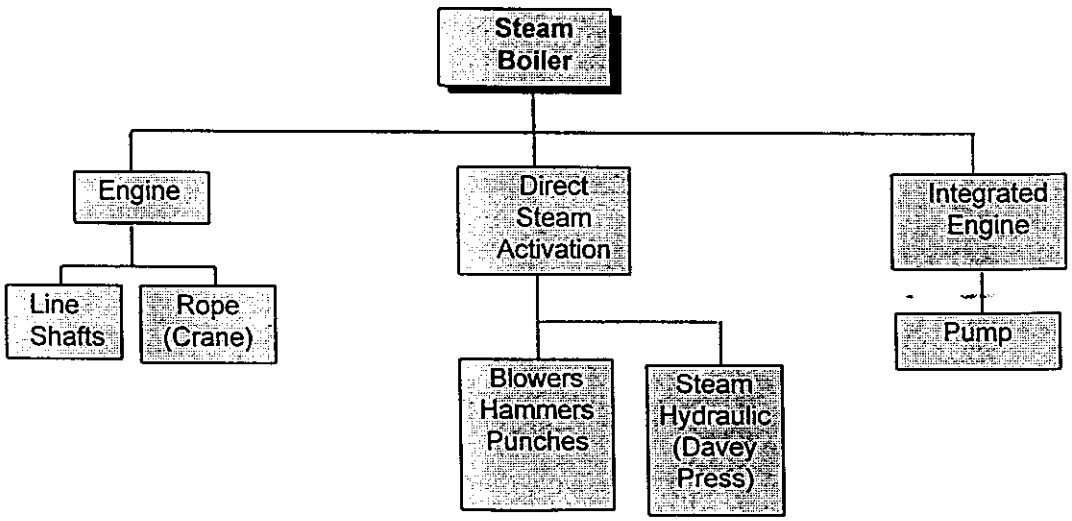
Sub-Types identified according to connection types are:



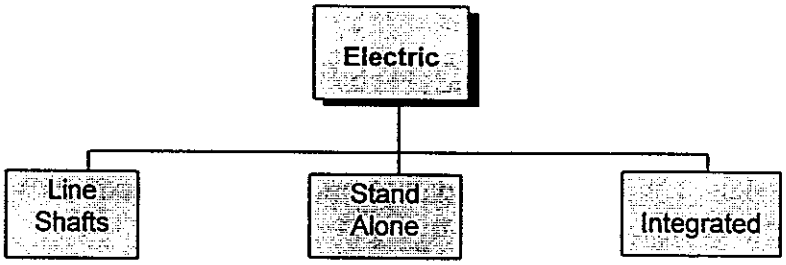
3.5 CLASSES

It is possible to further divide the sub-types into classes, by the introduction of a tertiary discriminator.

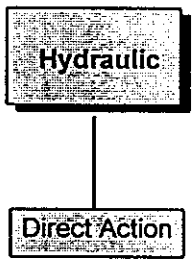
3.5.1 Steam



3.5.2 Electric



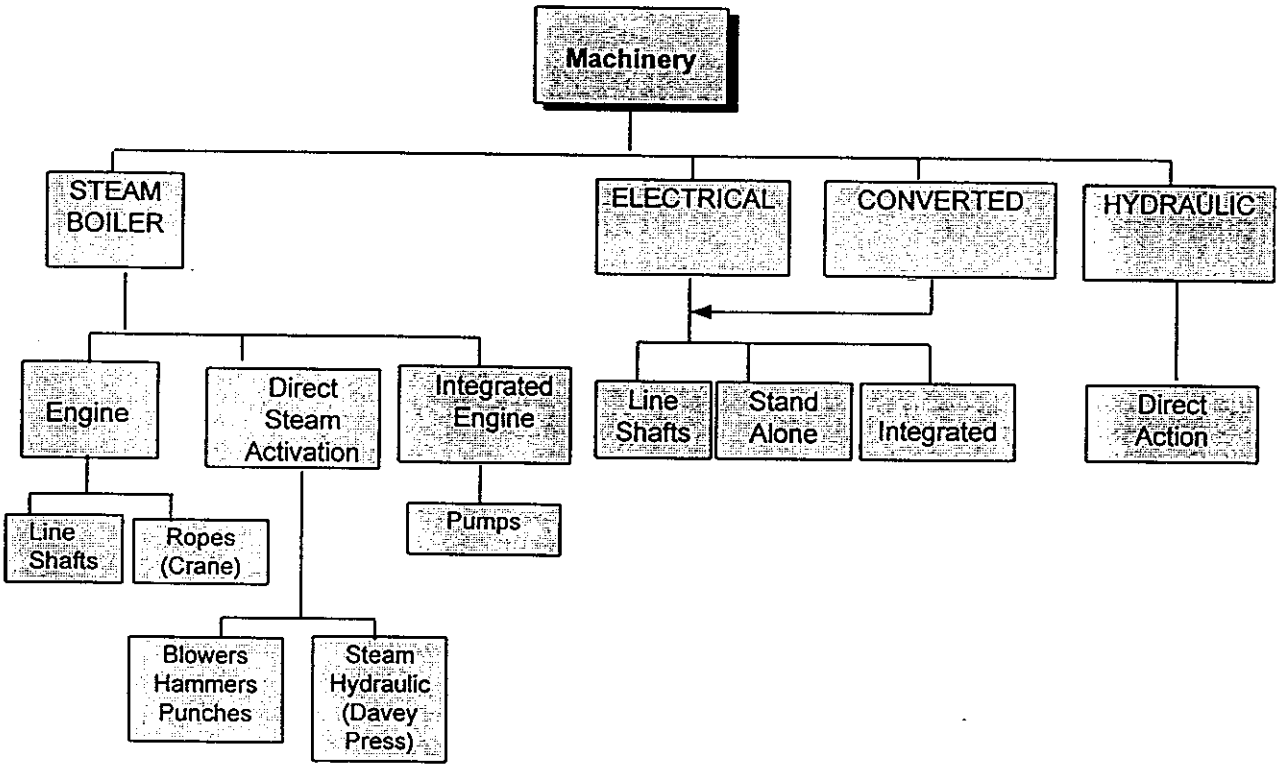
3.5.3 Hydraulic



3.6 TYPOLOGY TREE

The purpose of the introduction of the typology tree in this study is to establish representative types of machinery. Following the tree subdivisions too far may cause the population context to be too specialised, and the resulting sub group may be misleading in the context of the total population.

The typology tree according to the above analysis is presented below:



Once a homogeneous group or type has been established, by Type, Sub-type and Class, the Type profile can be analysed in the context of a number of characteristics. The characteristics relevant to the Eveleigh machines are:

Manufacturer;
Period;
Number of units; and
Operations History.

Analysis of the type will result in a representative group among which the following information can be compared:

The period of manufacture ;
The relative abundance of the type; and
The general technological variation within the type.

The establishment of a typological group allows decision-making about relative significance. This approach may be useful in future decision-making where judgements about retention or the distribution of scarce resources need to be made. For example, if limited resources for conservation works were available, then a representative of each machinery type or, within a particular type, the machine which is oldest, the most rare or best represents the type, might be selected for conservation priority.

4.0 MACHINERY SURVEY AND INVENTORY: REVIEW FINDINGS

4.1 GENERAL

The survey of machinery at Eveleigh has resulted in 213 inventory records. The inventory includes groups of items as well as major individual pieces of equipment. In cases where there were several representatives of the same item of equipment, for example a furnace, they were identified by the same inventory number with an alphabetical discriminator, eg. 121A, 121B, etc. Therefore the total of 213 inventory numbers does not reflect the total size of the machinery collection.

In addition to the items included in the inventory, there are some forty-four pieces of machinery and collections of tools on the site owned by the current occupant, Mr Guido Guoverneur. These items are not included in the inventory.

Twelve items that have no historical associations with the Eveleigh site have been identified as introduced to the site for safe keeping by the SRA. Some of these items are recommended for short term storage in Bay 15 pending further study and decision-making. The decision to scrap some items has already been made and implemented.

4.2 GENERAL CONDITION STATEMENT

4.2.1 Background

Almost all the machinery was in fair to good condition when Eveleigh closed eight years ago. However, some of the machinery had not been used for up to ten years prior to the closure of the Workshops. This means that some pieces may not have been operated for up to eighteen years.

At this stage there has been no source of information identified which details the recent operational history of the machines, so it has not been possible to determine which machinery was out of commission and for how long prior to closure. However, it is possible that the social history component of the study will identify new evidence.

4.2.2 Current State

In general, most of the machinery which has remained intact as an assemblage is in good to excellent condition. Items in this category could be operated if a power

source was connected. Although many exhibit some rusting, closer examination has shown it to be superficial and easily removed.

However, some machines which appeared, on superficial examination, to be in good to excellent condition were found to have part of the fabric missing. These machines could never be made operational again and have suffered a diminution of significance.

Many of the furnaces and forges show moderate to extreme rust. These require close examination by a conservator to determine whether they can be successfully conserved.

Most hand tools were unpainted and were often made of mild steel in the Workshops. They exhibit light to heavily rusted surfaces. These items will continue to corrode unless remedial action is taken.

Items such as the boilers, steam lines and hydraulic lines are in an unknown condition. However, because no remedial action was undertaken when the Workshops were closed, it is expected that these items will be in very poor condition. Although most systems will not be made operational, it is essential that the hydraulic and steam lines be cleaned, dried and preserved. These lines are part of the assemblage and hence an integral part of each machine.

The condition of the cylinders and pistons of the steam pumps and the steam hammers is not known. These items were not treated in any way when the Workshops closed and it is expected that the entrapped condensed moisture has caused massive pitting to all internal surfaces of the cylinder, steam chest and valves.

All the electric motors which were operational at the time the Workshops closed are expected to still be operational, provided they have not been subject to water ingress over the past eight years. It is known for example that the Covmac forging machine, the electro pneumatic hammers and some of the overhead cranes were operational some twelve months ago, and they are expected to still be operational.

4.2.3 Conclusion

The survey has established that the industrial items which make up the machinery collection as a whole exhibit a range of conditions including corrosion and missing parts. However, the majority of the machinery is intact and in moderate, very good condition or excellent condition.

4.3 MACHINERY GROUPS

The following table presents the inventory items which have been identified as Assemblages, Collections, Systems and Operational Groups.

4.3.1 Assemblages

A1 DAVY PRESS	1	Davy Press
	2	Davy Steam Intensifier
	3	Davy Hydraulic Reservoir
	4	Davy Steam Reservoir
	5	Furnace for Davy
	207	Overhead Crane
	5a	Balanced Billet Holders
	6	Davy Work in Progress
	7a	Steel Spacers
	8	Metal Case of Shims for Davy Press
	9a	Crane Balanced, Special Holder
	9b	Hand-Held Tongs, Furnace, Rake/Hoes etc.
	10	Hand Trolley for Hot Work
	11	Warning Sign for Davy Press
	12	Punches, Dies and Swage Blocks
	13	Six Buckles, Lock Pins, Wedges for Crane Tongs
	14	Assorted Metal Pieces
	15a-c	Steam Hammer Shafts (2) and Rectangular Parts Bin
	16	Crane Slings
	17	Collection of Large Fullers, Dies, Swages and Punches
	18	Mosman Tool Cabinets for Davy Press
	19	Work in Progress for Davy Press
	20	Rack of Swages, Fullers, both sides of Rack
	21	Rack of Tongs, Hand-Held Grips and Swages
	22	Rack of Mixed Swages, Moulds and Templates
	23	Collection of Large Swage Blocks for Davy
	24a-e	Metal Work Tables for Davy (5)
A2 HYDRAULIC PUMPING	184	Jib Crane 10 CWT
	185	Hydraulic Pressure Pump
	186	Steam Hydraulic Pressure Pump
	187	Overhead Reservoir
	193	Hydraulic Accumulator
	194	Hydraulic Accumulator
A3 STEAM HAMMER 40 CWT	47	Oil Furnace (Large)
	53	Furnace
	54	40 CWT Arch Steam Hammer
	70	Warning Sign
	56	Oil Furnace (Large)
	66	BCD Racks of Assorted Tools
A4 STEAM HAMMER 20 CWT	46	10 CWT Jib Crane
	47	Oil Furnace (Large)
	57	Davis & Primrose 20 CWT Steam Hammer
	66e	Rack of Tools
	71	Assorted Tools

4.3.1 Assemblages Cont...

A5 STEAM HAMMER (1)	27	AB Blacksmiths' Furnaces
	28	Davis & Primrose 8 CWT Steam Hammer
	34	KJ Tool Racks
	36	DF Tool Racks - non-fixed
	37	ABC Benches for Moulds, Dies, Templates and Tools
A6 STEAM HAMMER (2)	27	DE Blacksmiths' Furnaces
	29	Davis & Primrose Steam Hammer 8.5 CWT
	30	Wall Crane for No. 29
	31	Davis & Primrose Steam Hammer 8 CWT
	34	Tool Racks between columns
	36	Tool Racks non-fixed
A7 STEAM HAMMER (3)	19	Work in progress for Davy Press
	31	Davis & Primrose 8 CWT Steam Hammer
	34	Tool Racks between columns
	36	Tool Racks non-fixed
A8 STEAM HAMMER (4)	32	Davis & Primrose 8 CWT Steam Hammer
	34	Tool Racks between columns
	36	Tool Racks non-fixed
A9 ELECTRO-PNEUMATIC 7 CWT	45	7 CWT Jib Crane
	58	7 CWT Crane
	59	Furnace
	60	Massey 7 CWT Electro-Pneumatic Hammer
	62a-b	Tool Racks between columns
	66f	Racks of Assorted Tools
A10 ELECTRO-PNEUMATIC 2 CWT SOUTH	62a	Tool Racks between columns
	66a	Rack of Assorted Tools
	98	Massey 2 CWT Pneumatic Hammer
	99	Furnace
A11 ELECTRO-PNEUMATIC 2 CWT NORTH	92	Frazing Wheel Grinder
	95	Furnace
	96	Massey 2 CWT Pneumatic Hammer
	97	Furnace
	102a	Rack of Tools between Columns
A12 HYDRAULIC PRESS	52	Hydraulic Press
	53	Furnace
	68c	Stand of Dies
A13 ALLEN STRIKER	82	Frazing Wheel and Saw
	91	Allen Striker 1899
	94	Allen Striker 1899
	95	Furnace
A14 AJAX	79	Furnace for Ajax
	80	Jib Crane
	81	Ajax Continuous Forging Machine
	82	Frazing Wheel and Saw
	100c	Stand of Tools

4.3.1 Assemblages Cont...

A16 SPRING COILER	123	Peddinghaus Shearing Machine
	124	Reheating Furnace
	125	Witham Spring Coiler
	136	Mandrel Rack
A15 COVMAC	83	Frazing Wheel and Grinder
	84	10 CWT Jib Crane
	85	Covmac Continuous Forging
	86	Furnace for Covmac
	100c	Stand of Tools
A17 SPRING KING	111	Furnace for Springs
	112	Spring King Eye Rolling Machine
	113	Vickers Vane Pump
	114	Vickers Controller

4.3.2 Collections

C1 STEAM HAMMER	28	Davis & Primrose 8 CWT Steam Hammer
	29	Davis & Primrose 8.5 CWT Steam Hammer
	31	Davis & Primrose 8 CWT Steam Hammer
	32	Davis & Primrose 8 CWT Steam Hammer
	54	40 CWT Arch Steam Hammer
	57	Davis & Primrose 20 CWT Steam Hammer
C2 HAND TOOL RACKS	34	A-L. Tool Racks between columns
	36	A-D. Tool Racks non-fixed
	62	A-E. Tool Racks between columns
	66	A-H. Racks of Assorted Tools
	71	Assorted Tools against walls
	100	A-D. Stands of Tools
	102	A. Racks of Tools between columns
C3 FORGES	27	A-H. Blacksmiths' Furnaces
	44	Furnace
	59	Furnace
	87	Blacksmiths' Forge
	88	Blacksmiths' Forge
	90	Blacksmiths' Forge
	93	Blacksmiths' Forge
	97	Furnace Forge
	99	Furnace Forge

4.3.2 Collections Cont...

C4 FURNACES	47	Oil Furnace (large)
	48	Furnace
	53	Furnace
	56	Oil Furnace (large)
	59	Furnace
	79	Furnace for Ajax FR16
	86	Furnace for Covmac
	95	Furnace
	97	Furnace
	99	Furnace
	106	Furnace
	110	Furnace
	111	Furnace for Springs
	129	Furnace
	159	Furnace
	161	Furnace
	198	Furnace
C5 STRIKERS	91	Allen Striker 1899
	94	Allen Striker
	139	Allen Striker
C6 EOHT CRANES	196	Overhead Crane L6
	197	Overhead Crane
	202	Overhead Crane L8
	207	Overhead Crane
C7 JIB CRANES	30	Wall Crane for No. 29
	45	7 CWT Jib Crane
	46	10 CWT Jib Crane
	50	Jib Crane
	55	10 CWT Jib Crane
	58	7 CWT Jib Crane
	76	2 Ton Jib Crane
	77	1 Ton Jib Crane
	80	Jib Crane
	84	10 CWT Jib Crane
	183	Jib Crane 10 CWT
	195	Crane
C8 SPRING COILERS	125	Whitham Spring Coiler
	149	Spring Coiling Machine 10"
	150	Spring Coiling Machine
C9 SPRING DISASSEMBLERS	152	Craven Bros. Spring Disassembler
	158	Spring Buckling Press
	160	Hydraulic Spring Buckling Press
C10 BLOWERS	41	Roots No. 5 Blower 1903 Pattern Rly No. B75
	42	Roots No. 6 Blower 1910 Pattern Rly No. Br 755
	61	Roots No. 6 Blower

4.3.2 Collections Cont...

C11 FRAZING WHEELS	33	Frazing and Grinding Wheel
	78	Frazing Wheel and Saw
	82	Frazing Wheel and Saw
	83	Frazing Wheel Grinder
	92	Frazing Wheel Grinder
C12 BOILERS	188	C 36 Class Boiler
	189	C 36 Class Boiler
	190	C 36 Class Boiler
	191	C 36 Class Boiler
C13 LATHES	38	Lathe Bed - Whitworth
	107	Lathe
	109	Smith Coventry Lathe (Spring Coiling) No. LT33
	131	Ward Lathe
	141	Lathe
	167	Centre Lathe Denham
	168	Axle Journal Lathe
	200	Tangye 48" Wheel Lathe
C14 ELECTRO-PNEUMATICS	96	Massey 200 CWT Pneumatic Hammer
	98	Massey 200 CWT Pneumatic Hammer
	60	Massey 7 CWT Electro-Pneumatic Hammer

4.3.3 Systems

S1 HYDRAULIC	44	Furnace
	52	Hydraulic Press
	144	Hydraulic Spring Press
	152	Craven Bros. Spring Disassembler
	153	Ryerson Spring Forming Machine
	154	Ryerson Spring Forming Machine
	158	Spring Buckling Press
	184	Electric Motor for Hydraulic Pump
	185	Hydraulic Pressure Pump
	186	Steam Hydraulic Pump
	187	Overhead Reservoir
	193	Hydraulic Accumulator
	194	Hydraulic Accumulator
	213	Hydraulic Press
S2 COMPRESSED AIR	91	Allen Striker 1899
	92	Frazing Wheel Grinder
	99	Allen Striker 1899

4.3.3 Systems Cont...

S3 STEAM	1	Davy Press
	2	Davy Steam Intensifier
	3	Davy Hydraulic Reservoir
	4	Davy Steam Reservoir
	28	Davis & Primrose 8 CWT Steam Hammer
	29	Davis & Primrose 8.5 CWT Steam Hammer
	31	Davis & Primrose 8 CWT Steam Hammer
	32	Davis & Primrose 8 CWT Steam Hammer
	54	40 CWT Arch Steam Hammer
	57	Davis & Primrose 20 CWT Steam Hammer
	188	C36 Class Boiler
	189	C36 Class Boiler
	190	C36 Class Boiler
	191	C36 Class Boiler
S4 SPRING KING	111	Furnace for Springs
	112	Spring King Eye Rolling Machine
	113	Vickers Vane Pump (part of Spring King Assembly)
	114	Vickers Controller

4.3.4 Operational Groups

O1 SPRING SHOP	149	Spring Coiling Machine 10"
	150	Spring Coiling Machine
	151	Quenching Tank
	152	Craven Bros. Spring Disassembler
	153	Ryerson Spring Forming Machine
	154	Ryerson Spring Forming Machine
	155	Quenching Tank
	156	Hydraulic Press and Spring Tester
	157	Double Floor Grinder
	159	Furnace
	160	Hydraulic Press and Spring Tester
	161	Furnace
	123	Peddinghaus Shearing Machine
	124	Reheating Furnace
	125	Witham Spring Coiler
O2 WHEEL PRESS SHOP	208	Wheel Shop Crane
	209	Wheel Shop Crane
	210	Flange Press
	211	Wheel Press

4.3.4 Operational Groups Cont...

O3 STEAM HAMMER SHOP	27	A-H Blacksmiths' Furnaces
	28	Davis & Primrose 8 CWT Steam Hammer
	29	Davis & Primrose 8.5 CWT Steam Hammer
	30	Wall Crane for No. 29
	31	Davis & Primrose 8 CWT Steam Hammer
	32	Davis & Primrose 8 CWT Steam Hammer
	33	Frazing and Grinding Wheel
	35	Hot Metal Circular Saw
	40	Dual Grinder
	193	Furnace
	26	Rack of Dies, Moulds and Templates for Hammer Shop
	34	A-L. Tool Racks between columns
	36	A-P. Tool Racks non-fixed
	37	A-J. Benches for Moulds, Dies, Templates and Tools
	39	Work Bench (Timber) with 6" Vice

5.0 SIGNIFICANCE ASSESSMENT: REVIEW OF MACHINERY AND RELICS

The relevant statements of significance which refer to the machinery and historical and social significance of the Locomotive Workshops have been reviewed.

5.1 CONCEPT OF CULTURAL SIGNIFICANCE

The New South Wales Department of Planning, in the standard heritage study brief, defines heritage significance as:

> ***"historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance".***

This definition is broadly consistent with the New South Wales Heritage Act and with the definitions used by other organisations including the Australian Heritage Commission, the National Trust of Australia (NSW) and Australia ICOMOS. Most approaches to significance emphasise the value of an item to future generations, as well as to the present community.

Cultural significance is embodied in:

- the fabric of a place (including its setting and relationship to other items);
- the records associated with the place; and
- the response that the place evokes in the community or individuals to whom it is important.

Assessment of cultural significance relies on:

- an understanding and analysis of these values derived from examination of the context of a place or item;
- the way in which its extant fabric demonstrates its function;
- its associations; and
- its formal or aesthetic qualities.

An understanding of the historical context of a place and consideration of its physical evidence are therefore key components in significance assessment.

The analysis of the comparative merits of the workshops in the context of the international arena can be referred to in Appendix B. The history of the site can be referred to in Appendix A. Both were prepared by the Heritage Group, State Projects for the Conservation Plan.

5.2 BASIS OF ASSESSMENT

Assessment of cultural significance can be undertaken in a number of ways. The Burra Charter of Australia ICOMOS divides significance into aesthetic, historic, scientific and social categories. J. S. Kerr's The Conservation Plan (National Trust of Australia [NSW] 3rd Edition 1990) considers the concept of cultural significance according to three qualities: the ability of a place to demonstrate a process, custom or style; associational (historical) links for which there may or may not be surviving evidence; and formal or aesthetic qualities.

As part of the New South Wales State Heritage Inventory project, a series of assessment criteria have been developed for use in assessing heritage items. These criteria are broadly based on the criteria developed by the Australian Heritage Commission, and relate to the heads of consideration identified by the New South Wales Department of Planning and presented by the Burra Charter. The SHI methodology identifies the following criteria:

Group 1: Nature of Significance

Criterion 1: Historic Significance (Evolution and Association).

Criterion 2: Aesthetic Significance (Scenic Qualities/ Creative Accomplishment).

Criterion 3: Social Significance (Contemporary Community Esteem).

Criterion 4: Technical Significance and Research Potential (Archaeological, Education and Scientific Values).

Group 2: Comparative Significance

Criterion A: Representativeness.

Criterion B: Rarity.

To be assessed as significant an item must meet at least one of the Nature of and Significance Criteria and at least one of the Comparative Significance Criteria. It also must retain the integrity of its key attributes.

5.3 EVALUATION

The SHI criteria are presented with the equivalent or related Australian Heritage Commission criteria. Each criterion is analysed and discussed to arrive at a concise set of factors which together make up the heritage significance of the item. Those factors are then incorporated in the summary statement of significance, which endeavours to encapsulate the essential significance of the item.

In this case the significance of the machinery collection as a whole is considered in the context of its operation within and contribution to the historic Eveleigh Locomotive Workshops enterprise. The motherhood statement of significance for the Eveleigh Railway Yards, prepared by Heritage Group, State Projects, can be referred to in Appendix C, Volume IV.

AESTHETIC: SCENIC QUALITIES/CREATIVE ACCOMPLISHMENT

NSW SHI Criterion No. 2: Scenic Qualities/ Creative Accomplishment

AHC Criterion E: **Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.**

E1: **Importance for a community for aesthetic characteristics held in high esteem or otherwise valued by a community.**

AHC Criterion F: **Its importance in demonstrating a high degree of technical achievement, for a particular period.**

F1: **Importance for its technical, creative, design or artistic excellence, innovation or achievement.**

CRITERION No. 2 SCENIC QUALITIES/ CREATIVE ACCOMPLISHMENT

Sense of place and industrial character	The machinery and cranes are an essential component of the sense of place and industrial character of the Eveleigh Railway Workshops. They are a tangible link with the former operations and arrangement of the place.
Highly valued by the community in the Victorian period	During the late Victorian era the whole workshop aesthetic was highly valued by the community. Eveleigh Workshops were the subject of newspaper articles and reports and were highly valued and regarded as a tangible expression of progress. The handsome and well cared-for machinery was an integral part of the aesthetic, which promoted a sense of nationalistic pride in the achievements of the place. That aesthetic is still appreciated by the modern community.
Victorian Age machine aesthetic	Many of the machines express aesthetic qualities related to their materials and sculptural forms and their quality and precision. Many represent an industrial aesthetic generally associated with the Victorian age.

Exceptional machinery contributes to recognition as the premier railway workshop in NSW and largest in Australia from the 1880s to 1930s

Based on its scope, size and precision, the machinery was exceptional for the period. Eveleigh achieved the highest level of railway workshop technology of the period 1880s to 1930s in Australia and was comparable with other major international installations. It was the premier railway workshop in NSW, the largest in Australia during this period and was a recognised centre for precision engineering.

The most complete and authentic set of late nineteenth/early twentieth century forge and hydraulic power technology in Australia, the UK and the USA

The survival of such a broad range of technology associated with early power systems is rare and demonstrates the scope of the technological achievements of the period. Many individual pieces are of greater significance than would otherwise be the case because they are an integral part of a rare surviving former production process.

The 38 Class locomotive represented the peak of Australian manufacturing technology of the period

Eveleigh represented the peak of Australian manufacturing technology of the period with the production of a world class locomotive, the 38 Class. It was designed and manufactured at a time when the nation was uncertain of its ability to design and construct large scale industrial products and compete on the world stage - or if a large scale iron and steel fabricating industry was even appropriate for Australia to consider.

Technological capacity to contribute to the Second World War effort

Eveleigh's technological capacity is illustrated by the role of the Workshops during WWII. The capacity of the Workshops was harnessed as part of Australia's preliminary response to WWII. The Workshops initially produced tanks, guns and shells, while simultaneously manufacturing the specialist machinery, which could not be imported during war time, for tank and munitions factories.

SOCIAL: CONTEMPORARY COMMUNITY ESTEEM

NSW SHI Criterion No. 3: Contemporary Community Esteem

AHC Criterion G: **Its strong or special associations with a particular community or cultural group for social, cultural or spiritual reasons.**

G1: **Importance as a place highly valued by the community for reasons of religious, spiritual, symbolic, cultural, educational or social associations.**

CRITERION No. 3 SOCIAL: CONTEMPORARY COMMUNITY ESTEEM

Strong associations for former workers	Many former workers have fond memories of the place and their associations tend to have been with particular areas and machines.
Female workers introduced during WWII	During WWII a large female workforce was introduced to what had formerly been primarily a male domain. The female former workers are likely to have strong associations with the place and the machines that were their introduction to heavy industry and a lifestyle independent of home duties.
Local employer over generations	The place and its machines were the focus of the employment aspirations of numerous local youths and their families. In many instances several generations of workers from the same family were employed at the site and may have a particular association with a particular trade, area or collection of machines.
Particularly significant to Redfern	The Workshops have a particular significance for the occupants of Redfern and surrounds whose lives for many generations revolved around employment in the industrial trades available at the site.
Education via Trades and Apprenticeships	Eveleigh was a major employer and by pursuing a trade or apprenticeship at the Workshops many young men received an advanced education in technology via their trades or professions. Engineering-based technologies of the period were subject to international interest and were communicated to enthusiasts by a range of specialist publications and journals. Many workers had access to self-education opportunies via the Tramways and Mechanics Institute library.

SCIENTIFIC: TECHNOLOGICAL SIGNIFICANCE AND RESEARCH POTENTIAL

NSW SHI Criterion No. 4: Archaeological, Educational and Scientific Values

AHC Criterion C: **Its importance to yield information that will contribute to an understanding of Australia's cultural history.**

C2: **Importance for information contributing to a wider understanding of the history of human occupation in Australia.**

CRITERION NO. 4 SCIENTIFIC: TECHNICAL SIGNIFICANCE AND RESEARCH POTENTIAL

Understanding of late nineteenth century technology

Study of the collection of machinery on the site has the potential to contribute to our understanding of:

- late nineteenth century technological development;
- the operation of specific equipment; and
- early power systems (principally steam and hydraulic).

Operable equipment has high educational potential

Survival of many of the early machines is rare, and examination of the operations of the machines has the potential to provide insights into nineteenth century and early twentieth century engineering practices.

The machinery systems illustrate an important phase in Australia's industrial development

This is the most complete known set of authentic and operational late nineteenth century and early twentieth century forge and hydraulic power technology in Australia, the UK and the USA. Its survival contributes to the understanding of the development of industrial technology in this country and internationally.

REPRESENTATIVENESS

NSW SHI Criterion: A

AHC Criterion D: **Its importance in demonstrating the principal characteristics of:**

II) **A class of Australia's cultural environments.**

D2: **Importance in demonstrating the principal characteristics of the range of human activities in the Australian environment (including, way of life, philosophy, custom, process, land-use, function, design, technology or technique)**

CRITERION A REPRESENTATIVENESS

Representative of:	The relics collection is representative of the range of nineteenth and early twentieth century technologies and integrated systems associated with the manufacture of steam driven locomotives prior to, and during the early years, after electrification.
• *a range of technologies;*	
• *the steam locomotive period;*	The relics collection is primarily associated with the manufacture of components and steam locomotives.
• *the pioneering phase in Australian and railway history; and*	The machinery collection represents the period in Australia's history characterised by the growth in self-confidence that made the establishment of major fabricating and manufacturing plants and railway networks possible. This pioneering period was of critical importance in fostering the growth of local heavy industries.
• *the Industrial Revolution.*	The machinery and processes exhibited at Eveleigh are products of the Industrial Revolution and represent an important, and for a time controversial, component of Australia's move away from primary industries into secondary and manufacturing industries.

RARITY

NSW SHI Criterion: B

AHC Criterion B: **Its possession of uncommon, rare or endangered aspects of Australia's natural or cultural history.**

B2: **Importance in demonstrating a distinctive way of life, custom, process, land use, function or design no longer practised, in danger of being lost or of exceptional interest.**

CRITERION B Rarity

Rare survival for: • ***authenticity;*** • ***operability;*** • ***integrity; and*** • ***completeness.***	The most complete known surviving set of authentic and operational late nineteenth century and early twentieth century forge and hydraulic power technology in Australia, superior to any comparable collection in the UK or the USA. The Midlands Railway Workshop is the only comparable Australian site, but its machinery collection represents a later early twentieth century installation.
Davy Press	The Davy Press is the largest operable steam press in Australia.
Operational hydraulic system is unique in Australia	The steam operated hydraulic system is the only known surviving one of its type in Australia.
Best collection of overhead cranes in Australia	The collection of overhead cranes is the best in Australia by virtue of: • the variety represented; • the age; and • the sizes.

5.4 PREAMBLE TO THE SUMMARY STATEMENT OF SIGNIFICANCE

The machinery collection at the Eveleigh Railway Workshops is an inseparable component of the Eveleigh complex as a whole and its significance is intertwined with that of the historic enterprise and its associations. The above assessment of significance seeks to deal primarily with the machinery collection, but inevitably addresses other aspects of the history of the workshops. The Summary Statement of Significance focuses on the machinery collection in general and is intended as an overall statement embracing the *assemblages, systems, collections, operating groups* and *individual items* which comprise the collection. Statements of significance for individual items are provided on the inventory sheets.

5.5 SUMMARY STATEMENT OF SIGNIFICANCE

The machinery collection is superior to any comparable collection in the USA or the United Kingdom It demonstrates the technological reorientation associated with the change over from steam to diesel power. The collection includes a steam hydraulic system unique in Australia, the largest Davy Steam Press and the best collection of overhead cranes in Australia. The machinery makes a major contribution to Eveleigh Railway Workshops sense of place and the workshop aesthetic of the Victorian machine age which characterises the complex. It is associated with the expansion of the suburb of Redfern, the Labour struggle for working and safety conditions, the rise of the NSW railway system, the pioneering phase in the industrial development of the State and it also represents the peak of Australian precision manufacturing with the design and construction of the 38 Class steam locomotives. The collection and its history reflect the association with the sometimes contradictory demands of repair and manufacturing, public ownership and public responsibility to private enterprise, the demand for local manufacturing and the ongoing need to rely on imported stock.

5.6 IMPLICATIONS OF THE ASSESSED HERITAGE SIGNIFICANCE

Retention of these values identified in the Summary Statement of Significance implies the following:

- the collection should be kept substantially intact;
- the collection will be conserved and managed for future generations;
- where possible the items and support infra-structure will be preserved and maintained in an operable condition; and
- the return of machines to operational conditions and operating them as an educational and interpretive devise is justifiable.

6.0 ISSUE IDENTIFICATION

6.1 PREAMBLE

Issues associated with the site in general are addressed in Section 6.0 of the Conservation Plan prepared by Heritage Group, State Projects. In the following section only those issues particularly pertinent to the conservation and management of the machinery are outlined. Where there is overlap, the relevant sections of the Conservation Plan are referred to and/or are reproduced in Appendix D, Volume IV. Relevant sections from other reports have been paraphrased to make comprehension of the range of issues easier.

It is possible that the findings of the Social History Study, which is currently underway, will introduce new issues or address existing issues in the final Management Plan for Moveable Relics.

6.2 CONSTRAINTS RESULTING FROM THE ASSESSED HERITAGE SIGNIFICANCE

The machinery collection has been assessed as being of exceptionally high significance, on an international level. In order to retain the significant attributes identified in the preceding section a number of actions should or should not occur. The following points summarise the key constraints affecting the machinery collection, which arise from the established cultural significance.

- The Eveleigh machinery collection is a collection of international significance which should be retained and conserved in accordance with the accepted conservation principles.

- The individual style and design of each item within the collection should be retained and no activity which prejudices the character and ability of individual items to operate should occur.

- Proposed modifications to individual items or relocation of items should have regard for the character and layout of the collection as a whole and to the assemblage, system, collection and/or operational system the item is associated with.

- The significance of the overall collection and individual elements should be interpreted to visitors and provision should be made for appropriate public access.

- The association of the machinery with the Eveleigh Railway Workshops should be maintained and interpreted.
- Where appropriate the opportunity should be taken to document operations and technology, through examination of fabric.
- Information available from examination of the machinery and infra-structure fabric should contribute to decisions made as part of a conservation program.
- All opportunities to obtain funding for conservation and interpretation works associated with the machinery collection should be vigorously pursued.

6.3 PHYSICAL AND PROCEDURAL CONSTRAINTS

6.3.1 Physical Constraints

The main physical constraints arising from the Statement of Cultural Significance for the machinery collection, enunciated in the 1988 Godden and Associates Relics Conservation Policy and which are still relevant, are summarised below.

All significant elements should:

- be conserved according to Burra Charter of Australia ICOMOS principles;
- not be moved without a condition report;
- be protected from moisture and corrosion;
- be subject to six- or twelve-monthly inspections and conservation procedures as required; and
- be kept as intact assemblages. No part of an assemblage should be removed from the parent relic, including tools, stands and operating equipment.

6.3.2 Procedural Constraints

Procedural constraints arising from the Statement of Cultural Significance which are still relevant are summarised as follows:

- all significant fabric should be conserved;
- intervention to significant fabric should be minimised;
- security and maintenance for significant items should be provided;

- relics to undergo restoration, reconstruction or adaptation require a conservation plan;
- existing fabric should be recorded prior to alterations; and
- all site records are to be properly catalogued, annotated and lodged with an appropriate authority.

6.4 CONSERVATION APPROACH

The appropriate approach for the conservation of an item or group of items is largely dependant on the level of significance of the item. The Eveleigh machinery collection has been assessed as a whole as being of international significance as well as part of the most important industrial site in New South Wales. However, in a collection of this size some individual items are inevitably far more significant than others, either by virtue of their rarity, associations or the technology they demonstrate.

Items assessed as being of very high significance will be either rare or representative and will generally have a high level of integrity and potential for operation. The ability to operate enhances the educational potential of the item by increasing its ability to demonstrate. Where practicable, items of very high significance should be maintained in operational condition.

Items are enhanced by their role as part of a system and/or a collection and may also become more significant over time, as the rarity of their type increases. It is therefore desirable that individual and/or representative items of significance are maintained in operational condition where possible for educational and technological research, particularly if the item is part of a system which is otherwise operational.

6.5 BASIS OF LOCATION/ RELOCATION DECISION-MAKING

Relocation of an item is addressed in the Burra Charter principles.

Article 9 A building or work should remain in its historical location. The moving of all or part of a building or work is unacceptable unless this is the sole means of ensuring its survival.

Article 10 The removal of contents which form part of the cultural significance of the place is unacceptable unless it is the sole means of ensuring their security and preservation. Such contents must be returned should changed circumstances make this practicable.

However, the Eveleigh Workshops machinery collection includes a range of items with an unusually diverse history of location, relocation and movement within the workshops, including:

- machinery items in their original locations;
- machinery items previously relocated as part of their operational lives;
- machinery items relocated in order to preserve them; and
- moveable items meant to be relocated as required during a workshop process.

Where items remain in their original location, or in their final operational location, their significance is enhanced by their continued relationship within that context and the continuity of associations within the physical arrangement of the area. Wherever possible, significant items in their original locations should be retained and conserved in that location.

Items previously relocated as part of their operational lives should where possible be returned to the last known location or a previous operating location, preferably with any other items with which they were associated during their operational lives.

Items which have been relocated to Bays 1-4a from other Bays or Workshops at Eveleigh to ensure their survival will generally be recommended to be returned to the place from which they came (eg. their operational location) or to another suitable place within the Workshops.

Moveable items were generally associated with a particular process or area and only moved around within that area; for example, the Blacksmiths' Shop. Where possible moveable items should be located in the general area where they spent their operational lives, but may continue to be moved around within that area.

Movement of an item from its original location, when all avenues for retention in its original location have been explored and it has been determined that relocation is unavoidable, will involve:

- archival recording of the item in its original location prior to removal according to NSW DUAP Guidelines;

- removal specifications prepared by a suitably qualified tradesperson, supervised by an industrial heritage professional or prepared by a suitably qualified professional; and

- supervision of the removal and relocation by a suitably qualified tradesperson and /or professional /specialised curator.

This is an expensive procedure and suggests that, apart from heritage requirements, preservation in situ where possible is desirable on economic grounds.

6.6 APPROPRIATE SUPERVISION AND WORKFORCE

The machinery items comprise a rare collection which very few people have the specialised knowledge to manage and conserve. All works should be carried out under the direction of a museum curator, specialist conservator or specialist industrial archaeologist who may supervise a workforce possessing a range of specialist skills including:

- boilermakers;
- blacksmiths;
- fitters, turners and machinists; and
- tool makers.

6.7 VISITOR ACCESS, SAFETY AND EXPERIENCE

Visitor access in the vicinity of working machinery is not the subject of specific WorkCover Authority of NSW regulations.

However, operational machinery, the operator and persons in the vicinity are subject to a range of legislation administered by the WorkCover Authority of NSW. The principle behind the legislation is that no operator or person in the vicinity of an operating (or stationary) machine will be hurt. This principle guides all the legislation and results in a range of requirements including the Factory Shops and Industries Act Section 27, which requires the guarding of moving parts of a machine. Other potential areas of compliance are to do with fumes, noise and childproof restraints and fencing. The WorkCover Authority of NSW should be consulted from an early stage, so that their requirements can be met.

6.8 STATUTORY REQUIREMENTS

6.8.1 Australian Heritage Commission

The Eveleigh Railway Workshops are listed on the Register of the National Estate. The Australian Heritage Commission lists items which in the opinion of the Commission meet the following definition:

Components of the natural environment or cultural environment of Australia that have aesthetic, historic, scientific or social significance or other special value for future generations as well as the present community.

Listing on the register imposes no legal restrictions, except on Federal authorities which must consult with the Commission prior to carrying out any work which will impact on the heritage value of the place listed on the Register. Furthermore, Federal authorities may not take any action which adversely affects a place on the Register if there are alternatives which are 'prudent' and 'feasible'. For practical purposes listing on the Register of the National Estate imposes no significant constraints on the management of the Eveleigh machinery, unless it is proposed to fund works from a Federally-funded program.

6.8.2 Sydney REP No. 26 - City West

The Sydney REP No. 26 - City West (amendment No. 1 - Eveleigh Precinct) applies to the Locomotive Workshops and is comprehensively referred to on p.116 of the 1995 Conservation Plan. The sections relevant to the machinery are in bold type:

Clause 10 **Items of heritage significance are to be preserved and enhanced.** The re-use of heritage buildings through adaptation and modification is to be encouraged.

Clause 14 Any development of the building requires the consent of the Minister of the Department of Planning. **The Consent Authority may request a Conservation Plan to accompany an application for development consent relating to a heritage item.**

Clause 33 **Before granting consent to development, which may include demolition of a heritage item, the consent authority must seek the views of the Heritage Council of NSW and consider any such views within 28 days.**

6.8.3 Urban Development Plan

An Urban Development Plan prepared in terms of clause 36 of the Sydney REP No. 26 - City West, adopted by the Minister for Planning on July 13, 1993, requires that the relevant consent authority takes into account any relevant Development Control Plan (DCP) when granting consent to a development application. The development control clause relevant to this study is:

Consideration must be given to an appropriate level of conservation of Bays 1-4a of the Locomotive Workshop and their contents. One such use may be that of a railway technology museum.

The references to the machinery and relics in the above clauses are an issue because the somewhat oblique reference to 'heritage items' and the 'Locomotive Workshops and their contents', although including the machinery, does not provide clear guidance for inclusion of the steam and other pipelines and assorted infrastructure which comprises the assemblages, collections and systems.

A definition of the 'machinery' as addressed in the REP and Urban Development Plan should be included in the above instruments by way of a revision.

6.8.4 Master Plan

A Master Plan is required for the ATP site by the REP. A Master Plan was prepared for Australian Technology Park Sydney LTD by Keys Young on behalf of the City West Development Corporation and adopted by the Minister for Planning in 1994. The extent of the ATP Master Plan area is shown in Figure 6.1.

The heritage conservation objectives are to evaluate, conserve and re-use valuable heritage items and to respect their character through the juxtaposition of new buildings.

General heritage requirements relevant to this study are:

- **to conserve the Locomotive Workshops;**
- **where possible to conserve the traverser and equipment adjacent to the Workshops;**
- **to record items not conserved;**
- **to undertake archaeological surveys in the building before any disturbance.**

6.8.5 NSW Heritage Act 1977

Eveleigh Railway Workshops are subject to Sydney REP No. 26 City West Clause 33, a conservation instrument made under the NSW Heritage Act. In addition, the general archaeological provisions of the Act apply, including Section 146:

Disturbance or excavation of land containing or likely to contain relics can only take place when an excavation permit has been granted by the Heritage Council. An application for a permit should be made to the Secretary of the Heritage Council.

Relic is defined as "*Any deposit, object or material evidence which relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement; and which is 50 or more years old.*"

Discussion with a representative of the Department of Urban Affairs and Planning established that their approach in this instance may be:

Where relocation did not involve disturbance of sub-surface deposits, any moveable item, 50 or more years old, could be moved and relocated without an excavation permit, subject to the findings of this report.

Any item 50 or more years old which is anchored to the ground or has associated sub-surface lines and infrastructure would be regarded as a relic under the definition of the Act. An excavation permit would be required prior to any disturbance for removal or relocation purposes.

6.8.6 Section 170 Register

The machinery items have previously generally been addressed as part of a building. It is desirable that the CWDC, as the new owner of the site or the body responsible to DUAP, should include the machinery collection and individual significance as separate items on their Section 170 Register. (NSW State Government Agencies are required under Section 170 of the NSW Heritage Act to compile and maintain a Register of Heritage Items under their ownership / control.)

6.9 SOUTH SYDNEY CITY COUNCIL

The Council has **no Development Consent role in relation to the master planning area, including the Eveleigh Locomotive Workshop,** but the REP requires consultation with Council before the Minister grants consent to a DA. Council retains consent authority under the REP for the remainder of the Eveleigh Precinct.

6.10 NATIONAL TRUST

Eveleigh Railway Workshops are classified by the National Trust of Australia (NSW). The National Trust takes a keen interest in the place and the machinery.

Listing by the National Trust has no legal force, but is recognised as an authoritative statement regarding the heritage significance of a place. The view of the National Trust is often taken into account by other authorities and the Trust may lead community protest against any proposal which it judges to be inappropriate.

6.11 SRA RAILWAY HERITAGE COMMITTEE

The Railway Heritage Committee is an internal State Rail Committee to which outside participation is invited. The following organisations are represented:

- Heritage Council of NSW;
- National Trust of Australia (NSW);
- Institution of Architects;
- Institution of Engineers, Australia; and
- Australian Railways Preservation Groups.

6.12 PHYSICAL CONDITION OF THE MACHINERY/RELICS COLLECTION

The condition of the machinery and relics varies. The relics in Bays 1-4a fall into several categories of deterioration, each of which requires a different method of preservation and maintenance. The machinery, tools and equipment in the Workshops can be divided into the following categories of deterioration:

1. Heavily externally rusted and unpainted blacksmiths' tools and partially completed work.

2. Machines which exhibit external, superficial rust on painted body parts as well as external driving mechanisms and moving parts normally kept oiled or greased during operational life.

3. Machines which have corroded internal power or driving components, or components which require preventative maintenance.

4. Machines and equipment belonging to the steam system which may contain water in internal surfaces, valves, cylinders and piping.

5. Machines belonging to the hydraulic system which may contain water in internal valves, pipes and pistons.

6.13 ATPSL DEVELOPMENT OPTIONS

The Design Guidelines - Eveleigh Railway Yards Locomotive Workshop prepared by Crawford Partners Architects, November, 1995 outlines the most recent development options outlined by the ATP. There is some flexibility in the uses currently identified for some Bays and some changes may be made for the final document.

Crawford Partners identified the following aim in their preparation of architectural design guidelines:

> *The aim of conservation is to retain or recover the cultural significance of a place and must include provision for its security, its maintenance and its future. (Burra Charter)*

Comments referring in part to the Drawings (SK01, Ground Floor Schematic Design, SK02 Generic Cross Section, SK03 Schematic Structure) which are relevant to the machinery/ relics are reproduced below:

- Bays 1 and 2 North. To be left substantially undeveloped, for use by the Science and Engineering Centre as restricted exhibition space, contrasting old and new technologies. The use of duck-boards or raised, roped off areas would be appropriate to protect the historic machinery and tools. High level viewing platforms and walkways would enable an overview and an interpretation of original production processes.

- Bays 1 and 2 South. To remain as an operational workshop. The space will need to be acoustically isolated from the adjacent areas, with special attention being given to limiting workshop activities to those compatible with the majority of uses within the building. As above high level walkways are incorporated in the design solution illustrated.

- The isolation of this space will be expensive and difficult to achieve without some intervention with the existing fabric of the building. This pre-supposes that the annoying and environmentally unfriendly activities cannot be either deleted altogether, or cocooned in a small area.

- Bays 3 and 4 North and 5 South and Bays 6, 7, 8 and 9, North and South. To be adaptively re-used by the construction of a mezzanine level(s),- either continuous or broken by courtyards to create a variety of different spatial types within the volume of the existing buildings bay structure. This proposal is illustrated in the Generic Cross Section Drawing number SK02.

- Relics in their original location within these bays in some instances, are to be conserved in situ which, in other cases, items are to be relocated and conserved.

- The design philosophy for these areas is to create a hierarchy of circulation space such as streets, alleys and courtyards which will vary in scale and permit the introduction of natural light to otherwise internal office areas via continuous roof lights similar to those installed at the National Innovation Centre (NIC). Some columns may be required for additional support, however the aim is to avoid the introduction of any columns if possible.

- Items of heritage machinery are to be located in the streets and courtyards where appropriate. Predominantly this machinery will consist of items relocated when Bays 5-14 were cleared for Paddy's Markets.

- Bay 5 North, is to contain a 400 seat lecture theatre. It is not proposed to touch the existing structure with this facility. The theatre will rest on the existing floor slab and be a totally self contained element within the building.

- Bays 15 and 16. Also contained between existing masonry walls. At this stage it is proposed to utilise these spaces as they are.

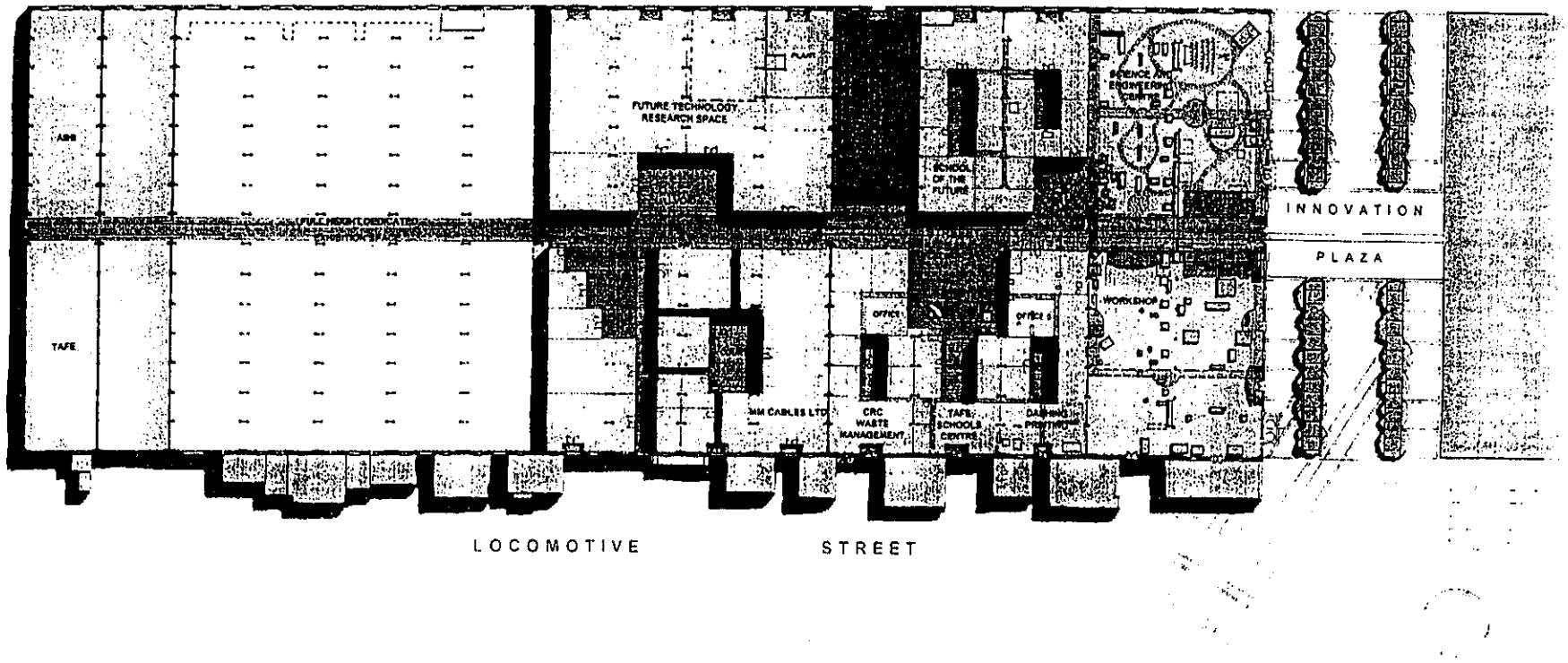


Figure 6.1 Ground Floor Schematic Design supplied by Crawford Partners

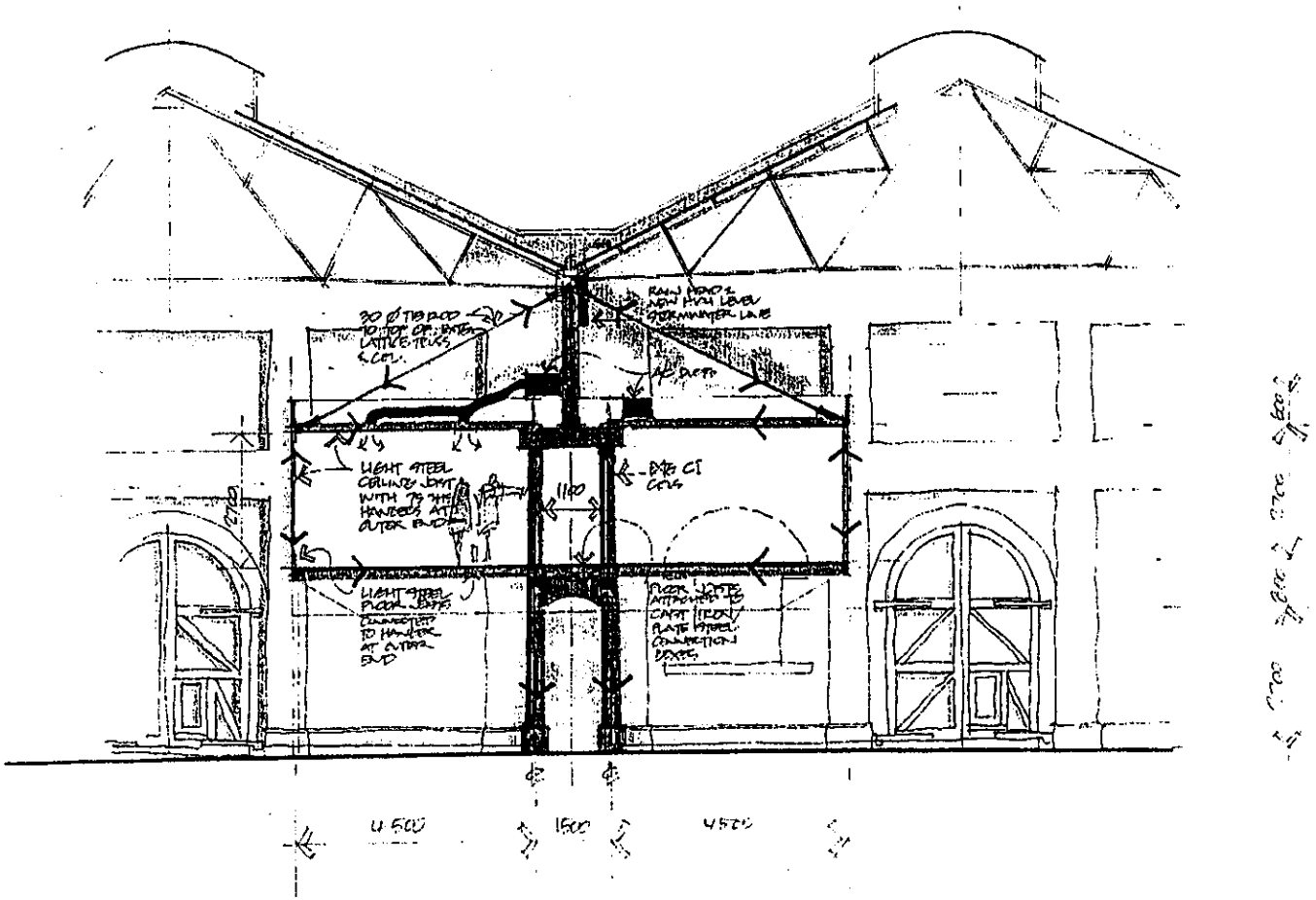


Figure 6.2 Schematic Structure supplied by Crawford Partners

AUSTRALIAN TECHNOLOGY PARK SYDNEY LIMITED
EVELEIGH LOCOMOTIVE WORKSHOP
SCHEMATIC STRUCTURE

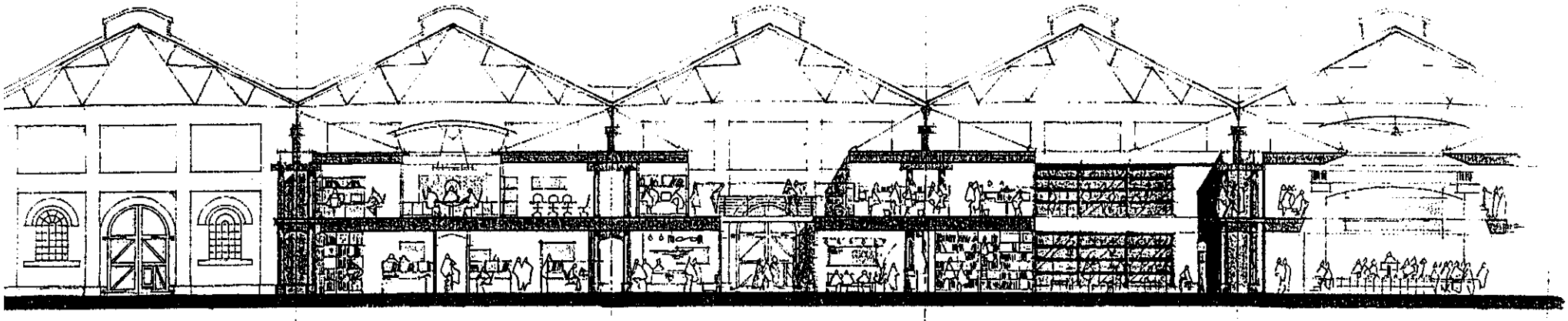


Figure 6.3 Generic Cross Section supplied by Crawford Partners

AUSTRALIAN TECHNOLOGY PARK SYDNEY LIMITED
EVELEIGH LOCOMOTIVE WORKSHOP
GENERIC CROSS SECTION
SCHEMATIC DESIGN

6.14 OPPORTUNITY FOR OPERATIONAL MACHINERY

6.14.1 Air Compressors

There are three air compressors located in the former Air Compressor Shop adjacent to the Tangara Workshop which have been identified as being of high to very high significance. (The air compressors are located outside the study area for this report.) It is believed these air compressors are in operational condition and that they formerly supplied the total compressed air needs of the Workshops.

The air compressors have the potential to supply the compressed air requirements for the Oliver Hammers as well as to provide a power source to all the machinery that was formerly powered by the boilers of the steam system. Their supply potential is greater than during the operational period of the Workshops because the future requirements for compressed air will never be as great as when the Workshops were fully operational.

Compressed air could be used as a direct substitute for steam without the necessity of altering or adjusting the valves on any steam equipment.

The items which were formerly directly powered by compressed air include:

- Oliver Hammers (Bay 2S); and
- compressed air cleaning outlets (several).

Items formerly powered by the C36 class boilers in the annexe (end of Bay 2S) that could be powered by compressed air include:

- The Rootes Blowers (Bay 1 South);
- Davy Press (Bay 1 North);
- 40cwt Arch Steam Hammer (Bay 1 South);
- 20cwt Steam Hammer (Bay 1 South);
- 4 x 8cwt Steam Hammers (Bay 2 North); and
- the Hydraulic Steam Pump (Annexe Bay 4 South).

6.14.2 Advantages

The advantages of reactivating the historic machinery by connecting it to the compressed air systems would be that:

- the pistons would not idle;
- the glands would not bind;
- the cylinders would be lubricated by the automatic lubricating system; and
- the steam pipes could have a dispersant and rust converter put through at regular intervals.

One of the most significant advantages would be the operation of the Fielding and Platt Steam pump, which powered the hydraulic system. Once operational, all items including the 1885 Spring Dissassembler, the Ryerson Spring Former and a variety of hydraulic presses in Bay 1 South and Bay 4 North could be regularly checked and maintained.

6.14.3 Disadvantages

The disadvantages of bringing the historic machinery into operation are:

- the associated noise levels;
- the safety requirements of demonstrating historic machinery;
- the expense of returning the historic steam lines and systems to operational condition.

6.14.4 Possible Operating Approaches

Two possibilities have been identified for future operation of the Oliver Hammers and the steam system powered by air compressors:

1. An Ingersol Rand air compressor from the Air Compressor Shop could be relocated to Bay 1 North and connected to the steam system. This will involve the air compressor itself being overhauled, preparation of a new machine bed, connection of pipes to the steam system via a new air receiver and the installation of a water cooling tower. The estimated cost is $150,000.

2. A new compressed air line could be run from the Compressor Shop to the steam system. The estimated cost is $22,000. However, the air compressors belong to the SRA and are located outside the study area on SRA land.

6.14.5 Conclusions

The potential for future operation of the Oliver Hammers and the steam system, powered by the air compressors, has two main potential impacts.

1. It affects the proposed maintenance regime and will introduce higher maintenance costs.
2. It affects the interpretive strategy possibilities.

Nevertheless, the exceptional significance of the collection justifies their return to operating condition if it is feasible.

6.15 BLACKSMITHING OPERATION ON SITE

6.15.1 Long Term

In the light of the historic operations of the Workshops, and because continued operation of the machinery is desirable on maintenance and interpretive groundS, it is appropriate and desirable that a blacksmithing operation remains a long term feature of the site.

6.15.2 The Present Blacksmithing Operation

The present blacksmithing operation is run by Mr Guido Gouverneur, who is a sub-lessee on the site. He currently occupies Bays 1-4 South. It is proposed that in future the blacksmithing operation will only occupy Bays 1-2 South. This has several implications for the operation in terms of the range of operations which can be carried out in the space available.

Mr Gouverneur presently carries out a broad spectrum of blacksmithing operations for domestic and commercial clients. He owns a number of large and small machinery and equipment items which are presently scattered throughout Bays 1-4 South. In the course of his current work he occasionally uses several of the large SRA items of equipment in Bays 1 & 2 South. He also currently uses the Bennie Plate Shears and the Craven Bros. Rollers, as well as the Spring King Hydraulic Press in Bays 3 & 4 South. Mr Gouverneur has expressed a willingness to remount several machinery items, presently stored in Bays 3 & 4, into Bays 1 & 2 South.

With the permission of the SRA, he has in the past relocated several items previously stored in Bays 3 & 4 North into Bays 2 & 3 South, to use in his operations. (None of these items were in their original or operational locations. They had all been relocated to Bays 3 or 4 North when the Workshops closed down.)

6.15.3 Discussion of Future Management Strategy Requirements

General
One of the principle premises of the location decision-making for this report has been that items not in their original or operational locations that could be usefully employed as operating machines by the blacksmithing operation should be made available to the blacksmithing operation so they will be kept operational and be maintained. However, it is recognised that the restriction of the blacksmith's space to two half Bays significantly diminishes the blacksmith's capacity to absorb and care for items.

Although it is beyond the scope of this study, the study team recognises that the following information and/or actions are required before any long term strategy for the current or future blacksmithing operations can be finalised and formalised. (Some, but not all, of these issues are being addressed in a concurrent study.)

1. A business plan should be required of any blacksmithing business proposing to operate on the site. By identifying the blacksmith's market, potential output and personnel requirements, a business plan will allow decision-making about the type and number of machinery items which should be retained in, or relocated to, the blacksmith's area.

2. A list of the machinery and equipment required to operate the specific business should be prepared.

3. A prioritised list of equipment in Bays 3 & 4 North and South to be relocated to Bays 1 and 2 South, subject to the requirements of the business plan, the findings of this Relics Management Plan and an agreed approval process.

4. A list of equipment which has been or can be removed from Bays 1-2 South and be stored in Bay 15 against later re-use or relocation to its operational location on the Eveleigh site.

5. A source of funding for the relocation of machinery. However, the benefits of keeping the machinery items operational and maintained are considerable, and these should be recognised and offset against the relocation costs.

Specific to the Present Blacksmithing Operation

1. A list of all machinery items and equipment presently located in Bays 1-2 South is required, together with a definitive list of all the items owned by the current lessee. (This is currently being addressed in another study.)

The above requirements, particularly the relocation of items, will require considerable funds, which the current or any future blacksmithing operation is unlikely to be able to supply. (See above.)

6.16 MACHINERY RELOCATION COSTING

Costing of the relocation of the machinery is beyond the scope of this study. However, it is recognised that the amount of relocation proposed in this report will be expensive. When firm costing is required, quoting should take into account the cost of supervision by a suitably qualified industrial archaeologist or equivalent. The high expense is justified by the exceptional significance of the collection, which will only increase in significance over time.

6.17 STEAM CRANE IN THE FORECOURT AT EVELEIGH

This crane, 1082, was relocated to Eveleigh from Chullora. It is in relatively poor condition, all gauges, levers and removable items being stripped prior to its removal. The condition of the crane is such that it could only be considered as a static display.

The Powerhouse Museum have a sister crane in better condition which is to be restored. The crane 1082 is to be preserved at the Hunter Valley Training Company workshop at South Maitland.

7.0 CONSERVATION POLICY FOR MACHINERY/RELICS (REVIEW)

7.1 PREAMBLE

The following conservation policy is the result of the findings of the fieldwork phase of this project in conjunction with a review of the policy statements provided in the 1995 State Heritage Projects Conservation Plan, the Schwager Brooks Conservation Policy 1994 and the 1988 Godden & Associates Relics Conservation Policy.

This conservation policy has been developed specifically for the machinery collection. The Eveleigh Precinct Policy prepared by Schwager Brooks in the Conservation Policy for Eveleigh Precinct, March 1994 is substantially included as Appendix F (Volume IV) and should be referred to as providing the site context for the policy statements presented below. The conservation policy statements below are in some cases adapted from previous policies, or they may be reproductions of existing statements incorporating new findings, new statements, or existing statements reproduced without alterations. The following references have been used in this section and some policies are substantially as developed in those reports.

- State Heritage Projects Eveleigh Railway Yards, Locomotive Workshops Conservation Plan, 1995;
- Godden & Associates Relics Conservation Policy of 1988; and
- Schwager Brooks Conservation Policy 1994, reproduced in the State Heritage Projects Eveleigh Railway Yards Conservation Plan, 1995.

Note: The machinery provenanced to the Eveleigh site en masse is referred to throughout this section as the 'machinery collection'. This general term should not be confused with the term 'collection', used in the sense of being a description for a group of related machines as in 'assemblage, collection and system'.

7.2 GENERAL

7.2.1 Management

This Machinery/Relics Conservation Management Plan should be adopted by the CWDC (as the owner), the ATPSL (as the major tenant) and the Eveleigh Locomotive Workshops Steering Committee.

Endorsement for the Machinery/ Relics Conservation Management Plan from the Department of Urban Affairs and Planning and the Heritage Council should be obtained prior to any major works.

Given the exceptionally high significance of the Eveleigh machinery collection, it is appropriate that all potential avenues for financial support and grants for the conservation, management and maintenance of the collection are identified at the earliest possible stage and vigorously pursued.

Adequate and ongoing financial resources should be committed to the ongoing future management, conservation and maintenance of the Eveleigh machinery collection as a whole.

Future developments should comply with the requirements of the REP for Development Applications and Excavation Permits, with the exception of recurrent maintenance works, which should be formally identified and exempted from the REP provisions.

A clear structure showing statutory requirements and the lines of responsibility for management of the care of the machinery should be set out and approval processes should be prepared prior to alterations or major works. This information should be made available to all relevant personnel.

7.2.2 Statutory Approach to Machinery

Review of the REP
The references in the REP and in other statutory instruments which by implication applies to the machinery and its assorted infrastructure should be reviewed and clarified at the earliest opportunity.

Where references in statutory instrument clauses refer to:

- *items of heritage significance;*
- *the Locomotive Workshops' contents;* and
- *equipment;*

then, the following definition should apply:

For the purposes of the Eveleigh Precinct the terms *'Items of equipment'*, *'the Locomotive Workshops contents'* and *'equipment'* refer to items of equipment provenanced to the place and their supporting tools and infra-structure which comprises the following:

- individual stand alone items of equipment;
- assemblages;
- collections;
- systems; and
- operational groups.

Individual stand alone items have no associated infrastructure or elements and may be dealt with in isolation.

An assemblage is a relic or structure including all the artefacts, tools and items normally associated with it when it was operating. In the case of a machine it includes the spanners and wrenches used to tighten the nuts, the tools needed to adjust the gears or belts, the safety screens which prevent contact with moving parts and, if applicable, samples of completed or partially completed work. Signs, pipework and associated services would also be included. For management purposes this category of equipment must be considered as a whole, with potential impacts on the whole taken into consideration.

A collection is a number of relics or structures which belong to a group because they perform the same function or produce the same finished product. For management purposes this category must be considered as a group and proposals must respect the relationships, qualities and significance of the group as a whole.

A system is an operational group of related artefacts which cannot function effectively if any one artefact is removed. For management purposes this category must be considered as a group and proposals must respect the interdependant relationships, qualities and significance of the group as a whole.

An operational group consists of a number of machines that normally operate on stock as part of a sequential process eg. the machines employed to produce coil or leaf springs. The sequential process is normally identified with a particular area eg. the Spring Shop or the Boiler House. For management purposes this category must be considered as a group and proposals must respect the relationships, qualities and significance of the group as a whole and take into account the group's spatial relationship and association with a particular area.

7.3 RESPONSIBILITY FOR CONSERVATION, MAINTENANCE AND RESTORATION WORKS

The exceptional significance of the machinery collection and the associated high level of responsibilities and costs should be accepted as a government responsibility.

7.3.1 Short and Medium Term

The short and medium term relocation and restoration works should be the responsibility of the owner of the site, with the assistance of funding and grants from State and Commonwealth Governments and private sources.

The machinery collection should be handed over to the main tenant in a condition where only maintenance works are required.

7.3.2 Long Term

The long term maintenance of the machinery should be the responsibility of the main tenant.

7.4 RESPONSIBILITY FOR INTERPRETATION

The exceptional significance of the Eveleigh machinery collection means that its interpretive potential should be exploited and the community should be afforded increased opportunities to inspect, experience and learn from the static and operational states of the machinery collection.

Special works required for interpretation should be the joint responsibility of the owner and the main tenant.

It is appropriate, based on the exceptional significance of the collection, to vigorously seek funding sponsorship, both private and government, and grants for its interpretation. Formation of allied support groups such as "Friends of Eveleigh" is also appropriate.

7.5 SPECIALIST MACHINERY SUPERVISOR

A specialist industrial archaeologist or materials conservator with appropriate background or experience should be appointed to supervise the short, medium and long term care, maintenance and relocation of the machinery in the Railway Workshop. It should be a new position created as part of the operational

organisation/ administration of the site. The role may be titled Specialist Machinery Supervisor or similar and may be on a part-time or 'on call' basis.

The Specialist Machinery Supervisor should report, in the short and medium term, to an advisory supervising Committee similar to the current ELWSC, which comprises representatives of major stakeholders eg. owner, tenant and heritage authority.

In the long term the Specialist Machinery Supervisor should report to a specially convened Committee of the Heritage Council.

(See Section 8.3.2 for implementation of this role.)

7.6 CONSERVATION APPROACH

Conservation and maintenance of the machinery collection located in the Eveleigh Locomotive Workshops should be undertaken in accordance with the principles of the Australian ICOMOS Burra Charter.

This machinery management plan and statement of significance should be the basis for future management of the Eveleigh Locomotive Workshops machinery collection.

The collection of significant equipment and machinery, the majority of which is currently in Bays 1-4A of the Locomotive Workshop, should be conserved in ways which protect and enhance its cultural significance, continue its useful life and contribute to the activities at Eveleigh as both an engineering and educational resource.

Long term conservation of the outstanding cultural significance of the Eveleigh machinery collection should be an important component of the future use and management strategies.

Future developments should take into account the need to integrate the retention and conservation of the machinery within the development of the site as a whole.

The Eveleigh Locomotive Workshops should house machinery and relics provenanced to the site or judged appropriate for inclusion in the collection on site by this report, but should not become a repository for 'antique' railway machinery.

The machinery and associated tools should remain together on site as assemblages, collections or systems.

No part of an assemblage, system or collection should be removed from the parent relic. This includes all tools, stands and operating equipment.

7.7 SAFETY

The health and safety requirements of the WorkCover Authority of NSW should be taken into account.

7.8 INTRODUCED MACHINERY

Historic machinery introduced to the site from another site should be clearly labelled, by a plaque or interpretation, as a machine originating from another site.

New machinery introduced to the site for operational purposes or to facilitate operations of historic machinery should be compatible with the heritage significance of the existing machinery collection; that is, of high quality and precision.

Introduction of new machinery should have a minimal impact, be distinguishable from the historic machinery and be reversible, in the sense of being able to be removed with minimal impact.

7.9 CONSERVATION

Machinery and power systems are to be left in situ wherever practicable and in the first instance should be *preserved.*

The approach for the machinery fabric is to be one of minimal intervention consistent with the conservation of the items.

Individual items should be conserved according to their significance and as recommended in the inventory.

Consideration may then be given to making machinery and power systems operational, if practicable, or to *reconstruction* if there is sufficient surviving fabric and evidence.

The moving of any machinery from the Locomotive Workshops, including associated tools and infrastructure provenanced to the Locomotive Workshops is ***not*** acceptable unless it is the sole means of ensuring the survival of the machinery. (It should be recognised as a last resort, only to be considered when all other avenues have been fully explored.)

Machine parts from other machines of the same type and period may be used for repairs and replacements as recommended in the inventory. However, machines on other sites should not be cannibalised to upgrade or repair this machinery without an assessment of their heritage significance prior to dismantling.

Any users of the machinery must be made aware of its significance and must not make any adaptation or change without reference to the Conservation Plan and/or the Relics Management Plan and without consulting the Specialist Machinery Supervisor.

Any intrusive modern or later additions to historic machinery judged to be detracting elements may be removed in order to expose earlier and more significant fabric.

All records and archives relevant to the machinery should be professionally catalogued and lodged with the owner of the site and the Mitchell Library. This information should be readily accessible to persons involved in the conservation or operation of the machinery.

Short Term Policy: All significant fabric should be conserved by ***preservation*** in the first instance.

(This policy may be expanded to include restoration to operational condition, subject to the findings of further research, the Social History findings and the Interpretation Focus Group findings. See Section 6.14.)

Long Term Policy: ***Restoration*** **and** ***adaptation*** may be considered for nominated items subject to the findings of this report.

Reconstruction opportunities are limited to items nominated as appropriate for reconstruction in this report, unless later evidence or parts are discovered.

7.10 PRESERVATION

Preservation procedures, including cleaning and surface treatment, should be consistent with the guidelines provided in the Maintenance Plan provided in Section 8.0 unless the Specialist Machinery Supervisor appointed to manage and monitor works to relics approves an alternative procedure.

Where it is necessary to preserve machinery items and systems infrastructure appropriate power sources should be introduced, for example, a portable boiler or air compressor for the steam system and DC power for cranes.

Former systems like the fireside boiler system, the steamside boiler system and the hydraulic system should be surveyed and considered for recommissioning. If the boiler system cannot be restored, consideration should be given to the introduction of a compressed air system.

Remaining evidence of former machinery, including remains of pits and machine footings, should be retained where possible.

Both above and below ground pipe systems (eg steam and air supply lines to the Rootes Blowers in Bay 1) should be preserved.

An excavation permit, issued pursuant to the Heritage Act, should be obtained prior to any excavation within the Workshops being undertaken.

If evidence of underground lines or evidence of former machinery is uncovered during construction excavations, the advice of an industrial archaeologist should be sought.

Whenever possible, all material evidence of the workshop operation, eg in situ pipes, should not be removed unless there is no practicable alternative. This applies even if the material evidence has been decommissioned.

7.10.1 Treatment of External Surfaces

External surfaces are to be treated according to the traditional or existing finishes, individual recommendations made in the Maintenance Plan Section 9.0 of this report, or recommendations from the Specialist Machinery Supervisor.

Machinery may be made to look as though it has been recently overhauled, but should not be made to look new. All external surfaces should be treated to prevent rust - but oiling or waxing is preferred to repainting.

7.10.2 Treatment of Internal Surfaces

Treatment of internal surfaces for corrosion is appropriate for all machinery to prevent deterioration of the items. Such treatment may be at the direction of the Specialist Machinery Supervisor.

7.11 RESTORATION, RECONSTRUCTION OR ADAPTATION

Reconstruction, restoration or adaptation proposed for an individual item or group of items may be considered in the long term.

Any items proposed for restoration, reconstruction or adaptation should be subject to the findings of a brief conservation plan or heritage impact statement addressing the proposal. The proposal should also be approved by the Specialist Machinery Supervisor.

7.12 RELOCATION AND REPOSITIONING

For the purpose of this report 'relocation' means moving an item to another Bay or another place. 'Repositioning' means moving the item to another position in the same Bay in which it is presently or was formerly located.

Relocation of an item should generally only be considered if it has been approved in this report.

Machines to be relocated which are assessed as significant should be subject to appropriate preservation and relocation procedures (see Section 8.0) and placed in an approved appropriate and secure location.

A heritage impact statement should be prepared for items of low significance if no practicable alternative to the relocation or removal of the item can be identified subsequent to the findings of this report. For individual items, systems or collections of moderate or high significance a heritage impact statement or a conservation plan may be required by the consent authority.

Significant Items to be Removed From the Site
Before any machinery assessed as being significant is moved off site, consideration should first be given to:

- alternative secure locations on site; and
- the SRA Heritage and Cultural Precinct (as a second preference).
  Carriageworks?

Only as a last resort should significant items be removed from the site.

Once consent has been approved, Standard Procedures for the relocation of an in situ item must be followed, unless an alternative procedure is approved by the Specialist Machinery Supervisor. (See Section 8.0 for Standard Procedures for Relocation.)

7.13 MAINTENANCE

Maintenance regimes for the relics and machinery should comply with the Maintenance Plan provided in Section 8.0 unless the Specialist Machinery Supervisor approves an alternative course of action.

7.14 PERSONNEL AND TRADESPERSONS WITH APPROPRIATE SKILLS

Only suitably qualified personnel should work on the machinery (see Section 8.0 for a list of appropriate trades).

7.15 STUDENT PARTICIPATION IN WORK ON MACHINERY/RELICS

It is appropriate for students/apprentices to work on machinery and relics only where the guidelines provided in Section 8.0 are followed.

7.16 VISUAL SETTING FOR MACHINERY

Retention of an appropriate visual setting for major individual items of machinery and for machinery assemblages, systems and collections should be a major consideration in the design of new constructions within the site.

Signage associated with the machinery should be specially designed not to detract from the visual industrial character of the machinery.

Where possible, guards, guard rails and/or safety devices introduced to historic machinery should be designed to retain and respect the visual qualities of the machines.

7.17 INTERPRETATION

The history and significance of the machinery/relics collection should be addressed by interpretation.

Provision should be made for funding an Interpretation Plan for the site as a whole.

Evidence of past industrial operations, including the overhead cranes, should be retained for interpretation wherever possible, but particularly in Bays 1-4a of the Locomotive Workshops and in the early annexes along the southern elevation.

Opportunities to further research the history and associations of the machinery should be taken wherever possible, particularly for those items about which very little is known.

7.18 FUTURE USE

It is essential that the entire collection stays on the Eveleigh site for the future.

It is however appropriate to arrange short term loans of the moveable and smaller (not fixed) items for educational purposes, such as for exhibitions and displays by museums or groups with sufficient expertise to manage the curation of the items.

It is desirable that in the long term as many items as possible are made operational.

If a viable operational use can be identified for the machinery on site (eg. in fabricating or in a craft workshop use), then it is appropriate that the machinery continue its working life, subject to adequate maintenance levels being met.

In the circumstances described above a lease arrangement, with care and maintenance clauses with a sub-tenant, is considered appropriate.

7.19 FEASIBLE AND VIABLE MANAGEMENT OF THE ITEMS

Security
Display of items should take the need for security into account and measures should be introduced to prevent theft and vandalism.

Items should be stored and preserved or displayed in such a way that they are secure and that small pieces cannot be easily taken from them. (For example, items which will never operate again may be fused together.)

7.19.1 Items Which Are Not Operable

Items which are not operable should:

1. be preserved;
2. be interpreted; and
3. be used as static displays.

7.19.2 Items Which Are Operable Or Potentially Operable

Items which are operable or potentially operable should:

1. in the short term be preserved;
2. be maintained in operable condition;
3. in the long term be returned to operating condition;
4. be subject to safety requirements from the WorkCover Authority of NSW; and
5. be used for static and operational display and educational purposes.

7.19.3 Moveable Items

Items which are moveable should:

1. in the short term be subject to preservation;
2. be located according to the recommendations in this plan;
3. be subject to location tracking so that they can be located at any time; and
4. be available for static and operational display.

7.20 SHORT AND LONG TERM USE OF THE ITEMS

7.20.1 Short Term

In the short term the items may be presented primarily as a static display.

Establishment of leasing arrangements with tenants who may wish to use the machinery is appropriate, subject to assessment by a supervising committee and the Specialist Machinery Supervisor.

A blacksmithing operation should continue at the site.

Every tenant should be made aware of the exceptional significance of the machinery collection and of the requirements of the Management Plan for Moveable Relics.

7.20.2 Long Term

It is appropriate that long term leases of space on the site may include the lease and operation of the machinery located on that space.

Suitably qualified and supervised leasees may be held responsible for maintenance and upgrading of the machinery within their lease, subject to an approved maintenance schedule.

Alternatively, leasees who do not possess the skills required to maintain historic machinery must use approved tradespeople, subject to the approval and supervision of the Specialist Machinery Supervisor and according to an approved maintenance schedule.

Leasees with items in their space may also contribute to a central machinery fund, which would pay for a permanent maintenance presence on site.

Any proposed work to machinery cannot be carried out without the approval of the ATP (as the main tenant) and the supervision of the Specialist Machinery Supervisor.

7.21 EDUCATIONAL POTENTIAL

In the long term it is desirable that the educational potential of the collection is fully realised. This will require:

1. items being returned to operational condition where possible;
2. items to be accessible to the public where possible;
3. items to be displayed in operation where possible;
4. items to be fully interpreted; and
5. selected items to be available for short term inclusion in suitable exhibitions at museums or in properly arranged travelling exhibitions.

7.22 USE OF THE ITEMS BY OTHERS

Items should only be available for use or loan by others subject to an agreed approval process.

The approval process should include judgement by the Specialist Machinery Supervisor, the owner and the lessee of :

- the ability of the proposed operators to provide adequate security;
- the ability of the proposed operators to provide educational opportunities;
- the suitability of the proposed use of the item; and
- the qualifications and experience of the proposed operators.

7.23 THIS REPORT

The completed Machinery/Relics Management Plan should be lodged with an appropriate public repository, such as the Mitchell Library, and with the stakeholders of the site.

This report should be immediately available for reference within the Workshop Bays 1-4a.

7.24 REVIEW

This Management Plan should be reviewed at five-yearly intervals or at shorter intervals if judged appropriate by the Specialist Machinery Supervisor and the supervising Committee.

8.0 MANAGEMENT STRATEGIES

8.1 PREAMBLE

The strategy for implementing the conservation policy provided in Section 7.0 is provided below. The strategic approach assumes that a minimal level of financial resources sufficient for basic requirements will be made available. Some general strategic issues are also addressed, where it is considered appropriate.

8.2 MANAGEMENT STRATEGY

The management of the machinery collection should include an immediate, short term and long term approach. However, as the machinery collection is generally not fragile and has been shut down and in storage for eight or more years, **no immediate conservation measures are required for the machinery although continued security should be ensured.**

The proposed management strategy therefore only addresses a short term and a long term component.

8.3 SHORT TERM STRATEGY

In the short term the following strategic approach should be implemented to preserve the machinery collection.

8.3.1 Management Structure

A chain of responsibility for the implementation of this report should be set in place.

A committee (ELWSC) made up of the stakeholders should have overall responsibility for the implementation of this report and should be the body which staff responsible for machinery ultimately report to.

8.3.2 Creation of a Machinery Supervisory Role

The job description, appointment and selection of a Specialist Machinery Supervisor (title optional, as described in Section 7.3) who will be responsible for the management and supervision of the care and conservation of the machinery should be set in motion.

The Specialist Machinery Supervisor should be qualified and experienced as either a museum curator, a specialist conservator or a specialist industrial archaeologist.

The Specialist Machinery Supervisor should report to an appointed supervising Committee.

8.3.3 Personnel to Work on the Machines

Provision should be made to employ suitably qualified and experienced tradespersons and personnel, sufficient to stabilise and preserve the machinery of collection, in the short and long term.

Personnel employed to maintain and care for the machines should report to the Specialist Machinery Supervisor.

8.3.4 Administration of Machinery/Relics

A recording system should be set in place so that the location of any moveable item or items approved for relocation is recorded, and the movements of the item are tracked.

8.3.5 Personnel and Tradespersons with Appropriate Skills to Work on the Machinery

Only suitably qualified personnel should work on the preservation of the machinery. Such personnel may include:

- boilermakers;
- blacksmiths;
- tool makers; and
- fitters and turners.

Other suitably qualified persons may be included as approved by the Specialist Machinery Supervisor. (See Section 7.14 for related policy.)

8.3.6 Student Participation in Work on Machinery/Relics

It is appropriate for students/ apprentices to work on preservation of the machinery and relics only in the following circumstances:

- where the whole process, procedure and personnel involved in proposed work on a machinery item is documented and approved by the Specialist Machinery Supervisor prior to the commencement of work;

- where no student or apprentice is to carry out work alone or unsupervised;

- where students or apprentices comprise part of a team working on any relic or item of machinery;

- where supervision is by a suitably qualified specialist or tradesperson.

(See Section 7.15 for related policy.)

8.3.7 Items of Low/No Significance to be Removed from the Site

Items nominated in this report for removal should be collected and removed from the site as soon as possible.

There are no special care requirements for these items during the removal process.

The removal should be supervised by a person sufficiently familiar with the list to ensure only the nominated items are removed.

8.3.8 The Eveleigh Machinery Collection - General

All machinery items nominated for retention on site should, in the short term, be subject to the preservation procedures recommended in Section 9.0 of this report.

The preservation procedures recommended in this report may only be altered if an alternative strategy approved by the Specialist Machinery Supervisor is recommended as an alternative.

Future developments should comply with the requirements of the REP for Development Applications and Excavation Permits, with the exception of recurrent maintenance works which should be formally identified and exempted from REP provisions.

8.3.9 Design in the Vicinity of Machinery

The design of developments in the vicinity of the machinery items should preserve a visual setting appropriate for the machinery.

The design of developments in the vicinity of operational or potentially operational machinery should also take into account the spatial requirements of the operation of the machinery, the possible need for the installation of additional safety features and the need for viewing access.

8.3.10 Occupational Health and Safety Requirements

The WorkCover Authority of NSW should be approached at an early stage, and design in the vicinity of both operational and stationary machinery should take into account any WorkCover Requirements.

8.3.11 Items to be Stored Pending Further Investigation

Items identified in this report for further investigation and storage should be collected and relocated to secure storage in Bay 14.

There are no special care instructions during the relocation process.

Items are to be tagged in accordance with museum practices, if for any reason this has not already taken place in such a manner that the tag is not readily removed. (See Appendix H for Museum standards.) The tag is to be hard-wearing and to include the following information:

- Name of item; and
- Inventory Number.

The inventory sheets for items in storage should be held in the vicinity of those items.

A recording system should be set in place so that the new location of any item removed from storage is recorded, and the movements of the item are tracked.

Machinery in storage is to be stabilised and preserved according to the procedures outlined on their inventory sheets.

Opportunities for further research into the historical background of these items should be vigorously pursued.

Relocation of these items should be subject to agreement between the SRA (the owner) and ATP (as the primary tenant).

8.3.12 Items to Remain In Situ

These items should in the first instance be subject to preservation procedures (see Section 9.0 for preservation procedures).

Development in the vicinity of in situ items should take into account the visual qualities and operational and safety requirements of the items.

Development design in the vicinity of items assessed as being of Outstanding or High Significance or as having outstanding or high educational or interpretive potential should make provision for an appropriate level of public access (including public viewing of operations, if the machine is operable) and safety.

If items which are presently inoperable have in the long term potential to be made operable then design in their vicinity should take potential future spatial, safety and viewing requirements into account.

8.3.13 Items Nominated for Relocation

Items nominated as suitable for relocation in this report should be located only to the space, bay or area indicated on the inventory sheet (and in this report).

8.3.14 Items Proposed for Locations Outside the Report Recommendations

If for operational reasons there is a proposal to locate the item/s in an alternative location to those recommended in this report, then the proposed re-location should, depending on the assessed significance of the item/s, be subject to:

- a conservation plan (for items of outstanding, high or moderate significance); or
- a heritage impact statement (for items of low significance);

to be prepared by the Specialist Machinery Supervisor or a suitably qualified expert.

8.3.15 Items Proposed for Relocation from Operational or Original Locations

Movement of an item/s from its original location should only occur as a last resort; for example when it is the sole means of ensuring the survival of the item/s.

The proposed relocation of the item should be subject to a conservation plan or heritage impact statement, as outlined above, to be approved by the consent authority.

8.3.16 Standard Procedure for Approved Relocation of Significant Items

In such a situation as described above the Standard Procedure is:

- approval for relocation to be received in writing from the owner/ head leasee;
- archival recording of the item in its original location to be completed prior to removal according to NSW DUAP Archival Recording Guidelines;
- removal specifications to be prepared by a suitably qualified expert; and
- the removal process to be supervised by an approved tradesperson, specialised curator or expert.

8.3.17 Maintenance

Maintenance regimes for the relics and machinery should comply with the Maintenance Plan provided in Section 9.0, unless the Specialist Machinery Supervisor approves an alternative course of action.

A diary of inspections and maintenance for each machine is to be kept by the Specialist Machinery Supervisor and should be commenced as soon as possible and rigorously updated over time.

Machines should be inspected by a suitably qualified person at intervals of not less than 12 months or as recommended on the inventory sheets.

All significant elements should be protected from moisture.

Approved appropriate conservation procedures should commence as soon as any corrosion is identified.

The fireside boiler system should be surveyed and, if practicable, be subject to preservation procedures and recommissioned.

The steamside boiler system should be surveyed and, if practicable, be subject to preservation procedures and recommissioned.

The hydraulic system should be surveyed and, if practicable, be subject to preservation procedures and recommissioned.

The Davy Press should be preserved.

Rails should be left visible and in situ wherever possible. If they must be covered they should be protected prior to covering.

Maintenance works should be formally identified and exempted from REP provisions.

8.3.18 Treatment of External Surfaces

Surface finishes should be executed by specialised tradespeople under expert supervision.

Machinery can be made to look recently overhauled, but should not be made to look new.

8.3.19 Treatment of Internal Surfaces

Treatment of internal surfaces for corrosion is appropriate for operational machinery at the direction of the Specialist Machinery Supervisor.

Standard procedures for treatment of internal surfaces are provided Section 9.0 and must be followed unless the Specialist Machinery Supervisor directs that an alternative procedure be employed.

8.3.20 Interpretation

In the short term an interpretation plan for the site as a whole, including the historic buildings, new buildings, exterior spaces and the machinery should be prepared.

Provision for circulation requirements for access and viewing of historic machines should be included in designs developed for the place.

8.4 LONG TERM STRATEGY

8.4.1 Long Term Conservation

Reconstruction, restoration or adaptation work may be proposed for an individual item or group of items in the long term.

Reconstruction, restoration or adaptation work proposed for an individual item or group of items should be considered as funding becomes available and should not be commenced unless sufficient funds are available to complete the proposal.

Any major proposal should be subject to the findings of a brief conservation plan or a heritage impact statement which addresses the implications of the proposal. For example, if the proposal involved major replacement of all or most of the moving parts of an item, it may not be considered appropriate.

In the long term, the introduction of a barcode tagging system linked with an information database should be considered for the machinery collection.

8.4.2 Relocation

Subsequent to the findings of this report, if no practicable alternative to the relocation or removal of an identified significant item can be found, then a heritage impact statement should be prepared for single items, or items of identified low significance. For individual items, systems or collections of moderate or high significance a heritage impact statement or a conservation plan may be required by the consent authority.

Once consent has been approved, Standard Procedures for the relocation of an in situ item must be followed unless an alternative procedure is approved by the Specialist Machinery Supervisor.

8.4.3 Standard Procedure for Relocation of a Significant Item or Group of Items

The Standard Procedure will be:

- archival recording of the item, if it is in its original or operational location, to be completed prior to removal according to NSW DUAP Guidelines;
- removal specifications to be prepared by a suitably qualified tradesperson supervised by the Specialist Machinery Supervisor; and
- removal and relocation to be supervised by a suitably qualified tradesperson, professional /specialised curator or the Specialist Machinery Supervisor.

Any item of assessed significance removed from the site should be tagged and stored in a secure repository. The tag is to be securely attached and be hard-wearing. It is to include the following inscription: *Machinery from the Eveleigh Locomotive Workshops. Heritage Item No. (Inventory Number).*

A record of the new location and of any security and management arrangement for the item should be kept on site in a readily accessible place.

9.0 LOCATION RECOMMENDATIONS

The following tables of location recommendations are based on the logic outlined in Section 6.5. The location recommendations generally reflect the assessed level of significance, in that the most significant items are recommended for conservation in situ and items of lesser significance may be moved within a bay. However the operational history of the machines and their former role as moveable items, or location as part of an assemblage, collection, system or operational group has also been an important factor in determining their recommended locations.

The significance of all items in the Eveleigh machinery collection is enhanced by their inclusion in a collection of international significance. Because the collection as a whole is such an important heritage item individual items are of high to exceptional significance because of their contribution towards the whole, and no item however apparently mundane could be considered to be of less than moderate significance.

9.1 MASTER LIST

NO.	ITEM	Present Location	Remain In Situ	Reposition Within Bay	Relocate to New Bay	Temporary Store Bay 15	Conflict With Devel.	NOTES
1	Davy Press	1N	X				N	Conserve in situ.
2	Davy Steam Intensifier	1N	X				N	Conserve in situ.
3	Davy Hydraulic Reservoir	1N	X				N	Conserve in situ.
4	Davy Steam Reservoir	1N	X				N	Conserve in situ.
5 A-P	Balanced billet holders	1N		X			N	Conserve. May reposition in same bay.
6	Davy Work in progress	1N		X			N	Conserve. May reposition in same bay.
7 A-B	Steel Spacers	1N		X			N	Conserve. May reposition in same bay close to their original location.
8	Metal case of Shims for Davy Press	1N		X			N	Conserve. May reposition in same bay close to their original location.

9A	9A Crane balanced special holder.	1N		X			N	Conserve. May reposition in same bay close to their original location.
9B	9B Hand-held tongs, Furnace Rake/ Hoes etc.	1N		X			N	Conserve. May reposition in same bay close to their original location.
10	Hand trolley for hot work	1N		X			N	Conserve. May reposition in same bay.
11	Warning sign for Davy Press	1N		X			N	Conserve. May reposition in same bay.
12	Punches, dies and swage blocks	1N		X			N	Conserve. May reposition in same bay close to their original location.
13	Six buckets - lock pins, wedges for crane tongs	1N		X			N	Conserve. May reposition in same bay.
14	Assorted metal pieces	1N		X			N	Conserve. May reposition in same bay.
15 A-C	Steam hammer shafts (2) and rectangular parts bin	1N		X			N	Conserve. May reposition in same bay
16	Crane slings	1N		X			N	Conserve. May reposition in same bay close to their original location.
17	Collection of large fullers, dies, swages and punches	1N		X			N	Conserve. May reposition in same bay close to their original location.

18	Maintenance tool cabinets for Davy Press	1N		X			N	Conserve. May reposition in same bay.
19	Work in progress for Davy Press	IN		X			N	Conserve in situ close to their original location.
20	Rack of swages, fullers, (both sides of rack)	IN	X				N	Conserve in situ.
21	Rack of tongs, hand-held grips and swages	IN	X				N	Conserve in situ.
22	Rack of mixed swages, moulds, templates	IN	X				N	Conserve in situ.
23	Collection of large swage blocks for Davy	IN	X				N	Conserve in situ.
24 A-E	Metal work tables for Davy (5)	1N		X			N	Conserve. May reposition in same bay.
25	Furnace for Davy	1N	X				N	Conserve in situ.
26	Rack of dies, moulds and templates for hammer shop	2N		X			N	Conserve. May reposition in same bay close to their original location.
27 A-H	Black-smiths forges	2N	X				N	Conserve in situ.
28	Davis primrose 8cwt steam hammer 1	2N	X				N	Conserve in situ.
29	Davis and Primrose steam hammer 8.5 cwt	2N	X				N	Conserve in situ.
30	Wall crane for No.29	2N	X				N	Conserve in situ.
31	Davis and Primrose 8cwt steam hammer	2N	X				N	Conserve in situ.
32	Davis and Primrose 8cwt steam hammer	2N	X				N	Conserve in situ.
33	Frazing and grinding wheel	2N	X				N	Conserve in situ.
34 A-L	Tool racks between columns	2N	X				N	Conserve in situ.
35	Hot metal circular saw	2N	X				N	Conserve in situ.
36 A-P	Tool racks non-fixed	2N	X				N	Conserve in situ. May reposition in same bay close to their original location.

37 A-J	Benches for moulds, dies, templates and tools	2N	X	X			N	Conserve in situ. May reposition in same bay close to their original location.
38	Lathe bed Whit-worth	2N	X				N	Conserve in situ.
39	Work bench (timber) with 6" vice	2N		X			N	Conserve. May reposition in same bay close to its original location.
40	Dual grinder	2N	X				N	Conserve in situ.
41	Roots No. 5 Blower 1903 Pattern Rly No.Br 751	1S	X				N	Conserve in situ.
42	Roots No. 6 Blower 1910 Pattern Rly No. Br 755	1S	X				N	Conserve in situ.
44	Forge	1S	X				N	Conserve in situ.
45	7cwt jib crane	1S	X				N	Conserve in situ.
46	10cwt jib crane	1S	X				N	Conserve in situ.
47	Oil furnace (large)	1S	X				N	Conserve in situ.
48	Furnace	1S	X				N	Conserve in situ.
49	Hydraulic Ram Press	1S	X				N	Conserve in situ.
50	Jib crane	1S	X				N	Conserve in situ.
51	Brett type impact punch	1S	X				N	Conserve in situ.
52	Hydraulic press	1S	X				N	Conserve in situ.
53	Furnace	1S	X				N	Conserve in situ.
54	40cwt arch steam hammer	1S	X				N	Conserve in situ.
55	10cwt jib crane	1S	X				N	Conserve in situ.
56	Oil furnace large	1S	X				N	Conserve in situ.
57	Davis Primrose 20cwt steam hammer	1S	X			N	N	Conserve in situ.
58	7cwt crane	IS	X			N	N	Conserve in situ.
59	Furnace	1S		X			N	Conserve. May reposition in same bay.
60	Massey 7cwt electro-pneumatic hammer	IS	X			N	N	Conserve in situ.
61	Roots No. 6 Blower	IS	X			N	N	Conserve in situ.
62 A-E	Tool racks between columns	IS	X			N	N	Conserve in situ.
64	Anvil	1S		X			N	Conserve. May reposition in same bay.

65	Quenching bath	1S		X			N	Conserve. May reposition in same bay.
66 A-H	Racks of assorted tools	1S		X			N	Conserve. May reposition in same bay close to their original location.
67	Warning sign for 40cwt hammer	1S		X			N	Conserve. May reposition in same bay.
68 A-E	Stands of assorted dies	1S		X			N	Conserve. May reposition in same bay close to their original location.
69	Metal trolley bin	IS		X			N	Conserve. May reposition in same bay.
70	Warning sign for 40cwt hammer	IS		X			N	Conserve. May reposition in same bay.
71	Assorted tools against walls	IS		X			N	Conserve. May reposition in same bay close to their original location .
72	Hot metal trolley	IS		X			N	Conserve. May reposition in same bay.
73	Crane tong support	IS		X			N	Conserve. May reposition in same bay.
74	Metal trolley	IS		X			N	Conserve. May reposition in same bay.
75	Metal stand with 2 metal boxes	IS		X			N	Conserve. May reposition in same bay.
76	2 ton jib crane	2S	X				N	Conserve. May relocate to another bay.
77	1 ton jib crane	2S	X				N	Conserve in situ.
78	Frazing wheel and saw	2S	X				N	Conserve. in situ
79	Furnace for ajax FR 16	2S	X				N	Conserve in situ.
80	Jib Crane	2S	X				N	Conserve in situ.
81	Ajax continuous forging machine	2S	X				N	Conserve in situ.
82	Frazing wheel and saw		X				N	Conserve in situ
83	Frazing wheel/ grinder	2S	X				N	Conserve in situ.
84A	10cwt jib crane	2S	X				N	Conserve in situ.

84B	'Covmac' continuous forging machine	2S	X				N	Conserve in situ.
86	Furnace for Covmac	2S	X				N	Conserve in situ.
87	Blacksmith forge	2S	X				N	Conserve in situ.
88	Blacksmith forge	2S	X				N	Conserve in situ.
90	Blacksmith forge	2S	X				N	Conserve in situ.
91	Allen Striker 1899	2S	X				N	Conserve in situ.
92	Frazing wheel Grinder	2S	X				N	Conserve in situ.
93	Blacksmith Forge	2S	X				N	Conserve in situ.
94	Allen Striker 1899	2S	X				N	Conserve in situ.
95	Furnace	2S	X				N	Conserve in situ.
96	Massey cwt pneumatic hammer	2S	X				N	Conserve in situ.
97	Furnace	2S	X				N	Conserve in situ.
98	Massey cwt pneumatic hammer	2S	X				N	Conserve in situ.
99	Furnace	2S	X				N	Conserve in situ.
100a-d	Stands of tools	2S		X			N	Conserve. May reposition in same bay close to their original location.
101a-c	Anvils	2S		X			N	Conserve. May reposition in same bay.
102a-d	Racks of tools between columns	2S	X				N	Conserve in situ.
103	Swage block	2S		X			N	Conserve. May reposition in same bay.
104	Churchill grinder	3S			8S		N	Conserve. Relocate to bay 8S.
105	Buffer, grinder and quenching bath	3S	X				N	Conserve in situ.
106	Furnace	3S			2S		N	Conserve. Relocate to bay 2S.
107	Lathe	3S			2S		N	Conserve. Relocate to bay 2S.
108	Smith and Coventry grinder	3S			2S		N	Conserve. Relocate to bay 2S.

109A	Smith Coventry lathe (spring coiling) Ser No. 333	3S	X					Conserve in situ.
109B	Small Lathe	3S			2S			Conserve. Relocate to bay 2S
110	Furnace	3S			2S		N	Conserve. Relocate to bay 2S.
111	Furnace for springs	3S	X				Y	Conserve in situ.
112	Spring King eye rolling machine	3S	X				Y	Conserve in situ.
113	Vickers vane pump (part of Spring King assembly)	3S	X				Y	Conserve in situ.
114	Vickers Controller	3S	X				Y	Conserve in situ.
115	Four wheeled trolley	3S				15	N	Conserve. Relocate to bay 1S.
116	Halifax shaper	3S			2S or 10N		N	Conserve. May relocate to another bay. (Bay 2 or 10).
117	Boring machine	3S			2S or 9N		N	Conserve. May relocate to another bay. (Bay 2 or 9).
118	Launch's Screw cutting machine	3S			2S or 10N		N	Conserve. May relocate to another bay. (Bay 2 or 10).
119	Surface grinder	3S			2S or 10N		N	Conserve. May relocate to another bay. (Bay 2 or 10).
120	Cincinatti milling machine	3S			2S or 11S		N	Conserve. May relocate to another bay. (Bay 2S or 11S).
121	Bed from Genevoise	3S	N/A		Tool Room		N	Place with 134.
122	Bed from Genevoise	3S	N/A		Tool Room		N	Place with 135.
123	Pedding - haus shearing machine	3N		X			N	Conserve. May reposition in same bay.
124	Reheating furnace	3N		X			N	Conserve. May reposition in same bay.
125	Whitham spring coiler	3N	X				N	Conserve in situ.
126	Grinder	3N			14N		N	Conserve. Relocate to another bay. (14N)

127	Craven brothers drill	3N			14N		N	Conserve. Relocate to another bay. (10N)
128	Bevel wheel shaper	3N			13N		N	Conserve. Relocate to another bay. (13N)
129	Furnace	3N				15	N	Conserve. Relocate to bay 15.
130	Centreless grinder	3N			13N		N	Conserve. Relocate to another bay. (Bay 13N)
131	Ward lathe	3N			11N		N	Conserve. Relocate to another bay. (Bay 11N)
132	Vertical shaper	3N			10S		N	Conserve. Relocate to another bay. (Bay 10S)
133	60" vertical borer Webster & Bennett	3N			9N		N	Conserve. Relocate to another bay. (Bay 9N)
134	Genevoise drilling and boring machine	3N			10N		N	Conserve. Relocate to another bay - 10N
135	Genevoise drilling and boring machines	3N			10N		N	Conserve. May relocate to another bay - 10N
136 A-B	Mandrel rack	3N		X			N	Conserve. May reposition in same bay.
137	Brown and Sharpe universal grinder	3N			14		N	Conserve. May relocate to another bay - 14N.
138	Herbert twin drill/ borer	3N			12		N	Conserve. Relocate to another bay - 12N.
139	Allen Striker	3N			2		N	Conserve. May relocate to another bay.
140	Cylindrical grinder	3N			TBD		N	Conserve. Relocate to another bay.
141	Lathe	3N			TBD		N	Conserve. Relocate to another bay.
142	Furnace	3N				15	N	Conserve. Relocate to bay 15.

143	Hydraulic Ram	3N				15	N	Conserve. Relocate to bay 15.
144	Hydraulic spring press	3N	X				N	Conserve in situ.
145	Spindle Router	3N				15	N	Conserve. Relocate to bay 15.
146	Points/ switches	3N				15	N	Relocate to bay 15.
147	Signalling gear	3N				15	N	Relocate to bay 15.
148	Furnace	3N				15	N	Relocate to bay 15.
149	Spring coiling machine 10"	4N	X				Y/N	Conserve in situ. Reposition in same bay.
150	Spring coiling machine	4N	X				Y/N	Conserve in situ. Reposition in same bay.
151	Quenching tank	4N		X			N	Conserve. May reposition in same bay.
152	Craven Bros. spring disassembler	4N	X				Y	Conserve in situ.
153	Ryerson spring forming machine	4N	X				N	Conserve in situ.
154	Ryerson spring forming machine	4N	X				N	Conserve in situ.
155	Quenching tank	4N		X			Y/N	Conserve. May reposition in same bay.
156	Hydraulic press and spring tester	4N	X				N	Conserve in situ.
157	Double floor grinder	4N		X			N	Conserve. May reposition in same bay.
158	Spring buckling press	4N	X				N	Conserve in situ.
159	Furnace	4N		X			N	Conserve. May reposition in same bay.
160	Hydraulic spring buckling press	4N	X				N	Conserve in situ.
161	Furnace	4N		X			N	Conserve. May reposition in same bay.
162	Work table	4N		X			N	Conserve. May reposition in same bay.
163	Pump	4N				15	N	Relocate to bay 15.

164	Electric starter cabinet	4N			TBD		N	Conserve. May reposition in same bay. May relocate to new bay.
165	Electric motor & base plate	4N				15	N	Relocate to bay 15.
166	Machine parts	4N			TBD		N	Conserve. May relocate to another bay.
167	Centre lathe Denham	4N			10N		N	Conserve. May relocate to another bay - 10N.
168	Axle journal lathe	4N			9N		N	Conserve. May relocate to another bay - 9N.
169	Planning machine	4N			10S		N	Conserve. May relocate to another bay.
170	Electric motor	4N				15	N	Relocate to Bay 15.
171	Motor generator	4N			15	15	N	Relocate to Bay 15.
172	Work bench and vice	4N		X			N	Conserve. May reposition within Bay.
173	Armatures	4N	Scrap				N	Relocate to a location outside Eveleigh Railway Workshops. Scrap
174	Grinding table	4N			TBD		N	Conserve. May relocate to another bay.
175	Electric motor	4N	Scrap		TBD		N	Relocate outside Eveleigh Railway Workshops. Scrap.
176	Electric motor	4N	Scrap		D		N	Relocate outside Eveleigh Railway Workshops. Scrap
177	Single bed vertical borer with oval heads	4N			9N		N	Conserve. May relocate to another bay. (Bay 9N)
178	Rectifier	4N				15	N	Relocate to Bay 15.
179 A-E	Hydraulic riveter	4N	X				N	Conserve in situ.
180	Plate rollers	4S	X	X	15. 2S or 4S		N	Conserve. May reposition in same bay. May relocate in another bay.

181	Craven plate rollers 1886	4S	X	X	15, 2S or 4S		N	Conserve. May reposition in same bay. May relocation another bay. (2)
182	Bennie metal guillotine	4S	X	X	15, 2S or 4S		N	Conserve. May reposition in same bay. May relocate to another bay. (2S)
183	Jib crane 10cwt	4S	X				N	Conserve in situ.
184	Electric motor for hydraulic pump	3S Annexe	X				N	Conserve in situ.
185	Hydraulic pressure pump	3S Annexe	X				N	Conserve in situ.
186	Steam hydraulic pressure pump	3S Annexe	X				N	Conserve in situ.
187	Overhead Reservoir	3S Annexe	X				N	Conserve in situ.
188	C36 class boiler	2S	X				N	Conserve in situ.
189	C36 class boiler	2S	X				N	Conserve in situ.
190	C36 class boiler	South Annex 2S	X				N	Conserve in situ.
191	C36 class boiler	2S	X				N	Conserve in situ.
192	Pressure vessel	4S	X				N	Conserve in situ.
193	Hydraulic accumu-lator	3S	X				N	Conserve in situ.
194	Hydraulic accumul-ator	4S	X				N	Conserve in situ.
195	Crane	3S	X				N	Conserve in situ.
196	Overhead crane L/6	4N		X			N	Conserve. May reposition in same bay.
197	Overhead crane	3N		X			N	Conserve. May reposition in same bay.
198	Furnace	2N	X				N	Conserve in situ.
199 A-B	Air receivers	3N				15	N	Relocate to bay 15.
200	Tangye 48" wheel lathe	7S	X				N	Conserve in situ.
201	Trolley	3N			Any		N	Conserve. Relocate to bay 1S.
202	Overhead crane L/8	4N		X			N	Conserve. May reposition in same bay.
204 A-D	Line shafts and counter-shafts	3N			13N		N	Conserve. Relocate to bay 13N.
205 A-C	Height setting table	4N		X			N	Conserve. May reposition in same bay.
206	De Burgue electric shears	IS	X				N	Conserve in situ.
207	Overhead crane	1N	X	X			N	Conserve in situ.

208	Wheel shop crane	4N			TBD		N	Conserve. Relocate in new bay or externally.
209	Wheel shop crane	4N			TBD		N	Conserve. Relocate to new bay.
210	Flange press	4N			TBD		N	Conserve. Relocate to new bay.
211	Wheel press	4N			TBD		N	Conserve. Relocate to new bay.
212	Pipe bender	4N			TBD		N	Conserve. Relocate to new bay.
213	Hydraulic press	4N			TBD		N	Conserve. Relocate to new bay.
214	Air Compressor	Air Compressor House		X				Conserve in Situ
215	Air Compressor Ingersoll	Air Compressor House			1			Re-installed in Bay 1
216	Thompson 90 degree V twin compressor	4AN			TBD			
217	Thompson 90 degree V twin compressor	Air Compressor House			TBD			
218	7 tonne Crane	4AN						Conserve. May reposition.

9.2 ALL ITEMS TO BE CONSERVED IN SITU

NO.	ITEM	Present Location	Remain In Situ	Reposition Within Bay	Relocate to New Bay	Temporary Store Bay 15	NO.	ITEM
1	Davy Press	1N	X				N	Conserve in situ.
2	Davy Steam Intensifier	1N	X				N	Conserve in situ.
3	Davy Hydraulic Reservoir	1N	X				N	Conserve in situ.
4	Davy Steam Reservoir	1N	X				N	Conserve in situ.
25	Furnace for Davy	1N	X				N	Conserve in situ.
207	Overhead crane	1N	X	X			N	Conserve in situ.
20	Rack of swages, fullers, (both sides of rack)	1N	X				N	Conserve in situ.

9.2 ALL ITEMS TO BE CONSERVED IN SITU CONT...

NO.	ITEM	Present Location	Remain In Situ	Reposition Within Bay	Relocate to New Bay	Temporary Store Bay 15	Conflict With Devel.	NOTES
21	Rack of tongs, hand-held grips and swages	1N	X				N	Conserve in situ.
22	Rack of mixed swages, moulds, templates	1N	X				N	Conserve in situ.
23	Collection of large swage blocks for Davy	1N	X				N	Conserve in situ.
41	Roots No. 5 Blower 1903 Pattern Rly No.Br 751	1S	X				N	Conserve in situ.
42	Roots No. 6 Blower 1910 Pattern Rly No. Br 755	1S	X				N	Conserve in situ.
44	Forge	1S	X				N	Conserve in situ.
45	7cwt jib crane	1S	X				N	Conserve in situ.
46	10cwt jib crane	1S	X				N	Conserve in situ.
47	Oil furnace (large)	1S	X				N	Conserve in situ.
48	Furnace	1S	X				N	Conserve in situ.
49	Hydraulic Ram Press	1S	X				N	Conserve in situ.
50	Jib crane	1S	X				N	Conserve in situ.
51	Brett type impact punch	1S	X				N	Conserve in situ.
52	Hydraulic press	1S	X				N	Conserve in situ.
53	Furnace	1S	X				N	Conserve in situ.
54	40cwt arch steam hammer	1S	X				N	Conserve in situ.
55	10cwt jib crane	1S	X				N	Conserve in situ.
56	Oil furnace large	1S	X				N	Conserve in situ.
57	Davis and Primrose 20cwt steam hammer	1S	X			N	N	Conserve in situ.
58	7cwt crane	1S	X			N	N	Conserve in situ.

9.2 ALL ITEMS TO BE CONSERVED IN SITU CONT...

NO.	ITEM	Present Location	Remain In Situ	Reposition Within Bay	Relocate to New Bay	Temporary Store Bay 15	Conflict With Devel.	NOTES
60	Massey 7cwt electro-pneumatic hammer	1S	X			N	N	Conserve in situ.
61	Roots No. 6 Blower	1S	X			N	N	Conserve in situ.
62 A-E	Tool racks between columns	1S	X			N	N	Conserve in situ.
206	De Burgue electric shears	1S	X				N	Conserve in situ.
27 A-H	Blacksmiths forges	2N	X				N	Conserve in situ.
28	Davis and Primrose 8cwt steam hammer	2N	X				N	Conserve in situ.
29	Davis and Primrose steam hammer 8.5 cwt	2N	X				N	Conserve in situ.
30	Wall crane for No. 29	2N	X				N	Conserve in situ.
31	Davis and Primrose 8cwt steam hammer	2N	X				N	Conserve in situ.
32	Davis and Primrose 8cwt steam hammer	2N	X				N	Conserve in situ.
33	Frazing and grinding wheel	2N	X				N	Conserve in situ.
35	Hot metal circular saw	2N	X				N	Conserve in situ.
38	Lathe bed Whitworth	2N	X				N	Conserve in situ.
40	Dual grinder	2N	X				N	Conserve in situ.
198	Furnace	2N	X				N	Conserve in situ.
34 A-L	Tool racks between columns	2N	X				N	Conserve in situ.
82	Frazing wheel and saw		X				N	Conserve in situ.
77	1 ton jib crane	2S	X				N	Conserve in situ.
79	Furnace for ajax FR 16	2S	X				N	Conserve in situ.
80	Jib Crane	2S	X				N	Conserve in situ.

9.2 ALL ITEMS TO BE CONSERVED IN SITU CONT....

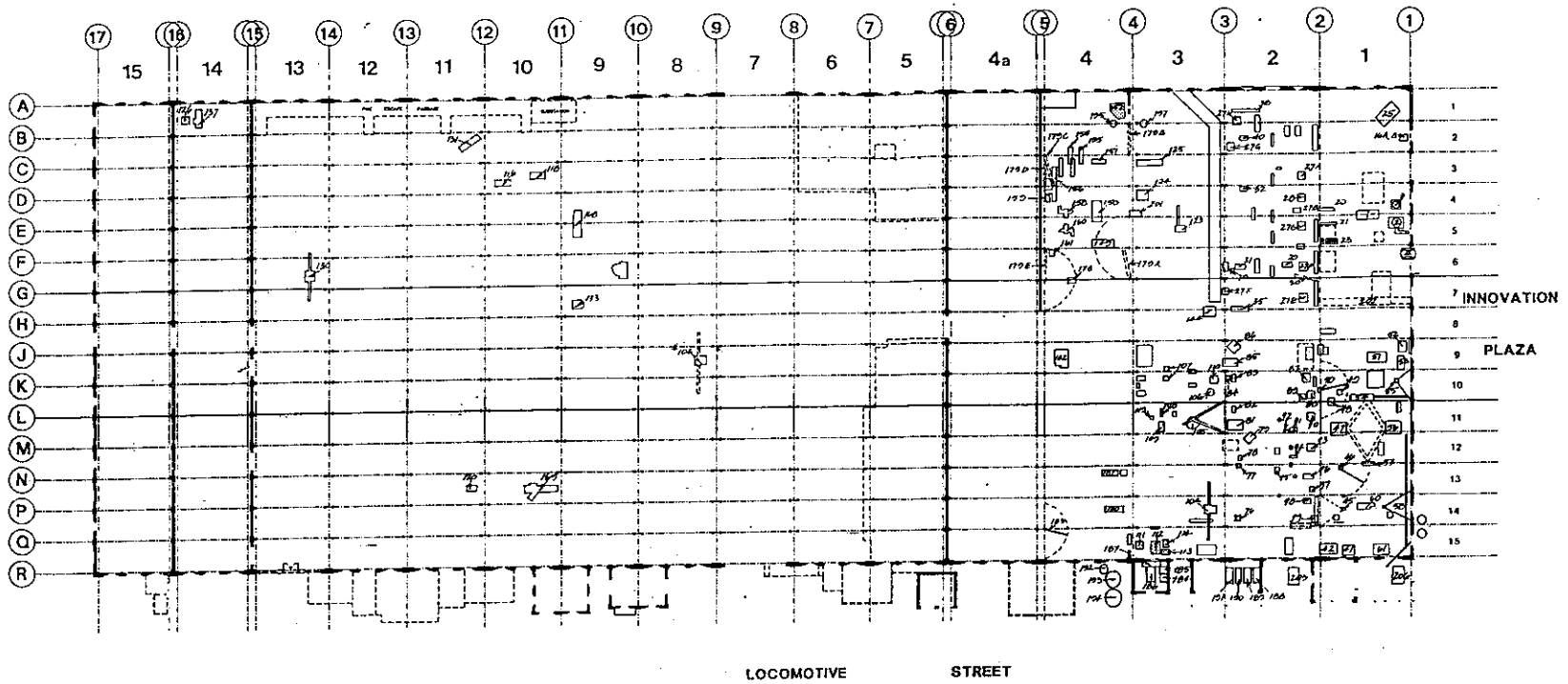
NO.	ITEM	Present Location	Remain In Situ	Reposition Within Bay	Relocate to New Bay	Temporary Store Bay 15	Conflict With Devel.	NOTES
81	Ajax continuous forging machine	2S	X				N	Conserve in situ.
83	Frazing wheel/ grinder	2S	X				N	Conserve in situ.
84	10cwt jib crane	2S	X				N	Conserve in situ.
84	'Covmac' continuous forging machine	2S	X				N	Conserve in situ.
86	Furnace for Covmac	2S	X				N	Conserve in situ.
87	Blacksmith forge	2S	X				N	Conserve in situ.
88	Blacksmith forge	2S	X				N	Conserve in situ.
90	Blacksmith forge	2S	X				N	Conserve in situ.
91	Allen Striker 1899	2S	X				N	Conserve in situ.
92	Frazing wheel Grinder	2S	X				N	Conserve in situ.
93	Blacksmith Forge	2S	X				N	Conserve in situ.
94	Allen Striker 1899	2S	X				N	Conserve in situ.
95	Furnace	2S	X				N	Conserve in situ.
96	Massey cwt pneumatic hammer	2S	X				N	Conserve in situ.
97	Furnace	2S	X				N	Conserve in situ.
78	Frazing wheel and saw	2S	X				N	Conserve in situ.
98	Massey cwt pneumatic hammer	2S	X				N	Conserve in situ.
99	Furnace	2S	X				N	Conserve in situ.
188	C36 class boiler	2S	X				N	Conserve in situ.
189	C36 class boiler	2S	X				N	Conserve in situ.
190	C36 class boiler	South Annex 2S	X				N	Conserve in situ.
191	C36 class boiler	2S	X				N	Conserve in situ.

9.2 ALL ITEMS TO BE CONSERVED IN SITU CONT.....

NO.	ITEM	Present Location	Remain In Situ	Reposition Within Bay	Relocate to New Bay	Temporary Store Bay 15	Conflict With Devel.	NOTES
102 a-d	Racks of tools between columns	2S	X				N	Conserve in situ.
125	Whitham spring coiler	3N	X				N	Conserve in situ.
144	Hydraulic spring press	3N	X				N	Conserve in situ.
105	Buffer, grinder and quenching bath	3S	X				N	Conserve in situ.
109	Smith Coventry lathe (spring coiling) Ser No. 333	3S	X					Conserve in situ.
111	Furnace for springs	3S	X				Y	Conserve in situ.
112	Spring King eye rolling machine	3S	X				Y	Conserve in situ.
113	Vickers vane pump (part of Spring King assembly)	3S	X				Y	Conserve in situ.
114	Vickers Controller	3S	X				Y	Conserve in situ.
187	Overhead Reservoir	3S Annexe	X				N	Conserve in situ.
184	Electric motor for hydraulic pump	3S Annexe	X				N	Conserve in situ.
185	Hydraulic pressure pump	3S Annexe	X				N	Conserve in situ.
195	Crane	3S	X				N	Conserve in situ.
186	Steam hydraulic pressure pump	3S Annexe	X				N	Conserve in situ.
152	Craven Bros. spring disassembler	4N	X				Y	Conserve in situ.
153	Ryerson spring forming machine	4N	X				N	Conserve in situ.
154	Ryerson spring forming machine	4N	X				N	Conserve in situ.
156	Hydraulic press and spring tester	4N	X				N	Conserve in situ.

9.2 ALL ITEMS TO BE CONSERVED IN SITU CONT.....

NO.	ITEM	Present Location	Remain In Situ	Reposition Within Bay	Relocate to New Bay	Temporary Store Bay 15	Conflict With Devel.	NOTES
158	Spring buckling press	4N	X				N	Conserve in situ.
160	Hydraulic spring buckling press	4N	X				N	Conserve in situ.
179 A-E	Hydraulic riveter	4N	X				N	Conserve in situ.
183	Jib crane 10cwt	4S	X				N	Conserve in situ.
192	Pressure vessel	4S	X				N	Conserve in situ.
193	Hydraulic accumulator	3S	X				N	Conserve in situ.
194	Hydraulic accumulator	4S	X				N	Conserve in situ.
200	Tangye 48" wheel lathe	7S	X				N	Conserve in situ.
208	Air Compressor - Atlas Copco	4N	X				N	Conserve in situ.
210	Thompson 90 Degree V Twin 2-Stage Compress	4N	X				N	Conserve in situ.
211	Thompson 90 Degree V Twin 2-Stage Compress	4N	X				N	Conserve in situ.
200	Tangye Wheel Lathe	4N	X				N	Conserve in situ.
212	R & W Hawthorn Leslie and Co Ltd 7 Ton Loco Crane 1081	4N	X				N	Conserve in situ.



SKETCH PLAN LOCATION OF INVENTORY ITEMS PREPARED BY GODDEN MACKAY PTY LTD.

BASE PLAN prepared by Crawford Partners Architects Pty Ltd

Items to:
- remain in situ
- be returned to their former operational location. (Bays 8-14).

Items in potential conflict with the current development proposal.
- Location if not required in the workshop

AUSTRALIAN TECHNOLOGY PARK, SYDNEY LIMITED

EVELEIGH LOCOMOTIVE WORKSHOPS

PUBLIC WORKS

THE LOCOMOTIVE WORKSHOPS
AUSTRALIAN TECHNOLOGY PARK SYDNEY LIMITED
EVELEIGH, NEW SOUTH WALES

GROUND FLOOR

DA-02

 A.C.N 059 858 855 378 ABERCROMBIE STREET CHIPPENDALE NSW 2008 PHONE: (02) 310 5933 FAX: (02) 310 5944 . Cad-File: c:\projects\9535\da\da-02 Scale:1:500 Project No:9535 Date Jan 1996

Figure 9.1 Sketch Plan showing inventory items to be conserved in situ or be returned to operating locations. Base plan provided by Crawford Partners Architects.

9.3 ALL ITEMS TO BE CONSERVED: MAY REPOSITION IN SAME BAY CLOSE TO THEIR ORIGINAL LOCATION

NO.	ITEM	Present Location	Remain In Situ	Reposition Within Bay	Relocate to New Bay	Temporary Store Bay 15	Conflict With Devel.	NOTES
19	Work in progress for Davy Press	IN		X			N	Conserve in situ close to their original location.
7 A-B	Steel Spacers	1N		X			N	Conserve. May reposition in same Bay close to their original location.
8	Metal case of Shims for Davy Press	1N		X			N	Conserve. May reposition in same Bay close to their original location.
9A	9A Crane balanced special holder	1N		X			N	Conserve. May reposition in same Bay close to their original location.
9B	9B Hand-held tongs, Furnace Rake/ hoes etc.	1N		X			N	Conserve. May reposition in same Bay close to their original location.
12	Punches, dies and swage blocks	1N		X			N	Conserve. May reposition in same Bay close to their original location.
7 A-B	Steel Spacers	1N		X			N	Conserve. May reposition in same Bay close to their original location.
8	Metal case of Shims for Davy Press	1N		X			N	Conserve. May reposition in same Bay close to their original location.
9A	9A Crane balanced special holder.	1N		X				Conserve. May reposition in same Bay close to their original location.
9B	9B Hand-held tongs, Furnace Rake/ hoes etc.	1N		X			N	Conserve. May reposition in same Bay close to their original location.
12	Punches, dies and swage blocks	1N		X			N	Conserve. May reposition in same Bay close to their original location.

9.3 ALL ITEMS TO BE CONSERVED: MAY REPOSITION IN SAME BAY CLOSE TO THEIR ORIGINAL LOCATION CONT....

NO.	ITEM	Present Location	Remain In Situ	Reposition Within Bay	Relocate to New Bay	Temporary Store Bay 15	Conflict With Devel.	NOTES
16	Crane slings	1N		X			N	Conserve. May reposition in same Bay close to their original location.
17	Collection of large fullers, dies, swages and punches	1N		X			N	Conserve. May reposition in same Bay close to their original location.
26	Rack of dies, moulds and templates for hammer shop	2N		X			N	Conserve. May reposition in same Bay close to their original location.
39	Work bench (timber) with 6" vice	2N		X			N	Conserve. May reposition in same Bay close to its original location.
100a-d	Stands of tools	2S		X			N	Conserve. May reposition in same Bay close to their original location.

9.4 CONSERVE: MAY REPOSITION IN SAME BAY

NO.	ITEM	Present Location	Remain In Situ	Reposition Within Bay	Relocate to New Bay	Temporary Store Bay 15	Conflict With Devel.	NOTES
5 A-P	Balanced billet holders	1N		X			N	Conserve. May reposition in same Bay.
6	Davy Work in progress	1N		X			N	Conserve. May reposition in same Bay.
10	Hand trolley for hot work	1N		X			N	Conserve. May reposition in same Bay.
11	Warning sign for Davy Press	1N		X			N	Conserve. May reposition in same Bay.
13	Six buckets - lock pins, wedges for crane tongs	1N		X			N	Conserve. May reposition in same Bay.
14	Assorted metal pieces	1N		X			N	Conserve. May reposition in same Bay.
15 A-C	Steam hammer shafts (2) and rectangular parts bin	1N		X			N	Conserve. May reposition in same Bay.
18	Maintenance tool cabinets for Davy Press	1N		X			N	Conserve. May reposition in same Bay.
24 A-E	Metal work tables for Davy (5)	1N		X			N	Conserve. May reposition in same Bay.
59	Furnace	1S		X			N	Conserve. May reposition in same Bay.
64	Anvil	1S		X			N	Conserve. May reposition in same Bay.
65	Quenching bath	1S		X			N	Conserve. May reposition in same Bay.
66 A-H	Racks of assorted tools	1S		X			N	Conserve. May reposition in same Bay close to their original location.
67	Warning sign for 40cwt hammer	1S		X			N	Conserve. May reposition in same Bay.
68 A-E	Stands of assorted dies	1S		X			N	Conserve. May reposition in same Bay close to their original location.

9.4 CONSERVE: MAY REPOSITION IN SAME BAY CONT...

NO.	ITEM	Present Location	Remain In Situ	Reposition Within Bay	Relocate to New Bay	Temporary Store Bay 15	Conflict With Devel.	NOTES
69	Metal trolley bin	1S		X			N	Conserve. May reposition in same Bay.
70	Warning sign for 40cwt hammer	1S		X			N	Conserve. May reposition in same Bay.
71	Assorted tools against walls	1S		X			N	Conserve. May reposition in same bay close to their original location .
72	Hot metal trolley	1S		X			N	Conserve. May reposition in same Bay.
73	Crane tong support	1S		X			N	Conserve. May reposition in same Bay.
74	Metal trolley	1S		X			N	Conserve. May reposition in same Bay.
75	Metal stand with 2 metal boxes	1S		X			N	Conserve. May reposition in same Bay.
36 A-P	Tool racks non-fixed	2N	X				N	Conserve in situ. May reposition in same bay close to their original location.
37 A-J	Benches for moulds, dies, templates and tools	2N	X	X			N	Conserve in situ. May reposition in same Bay close to their original location.
101a -c	Anvils	2S		X			N	Conserve. May reposition in same Bay.
103	Swage block	2S		X			N	Conserve. May reposition in same Bay.
123	Pedding - haus shearing machine	3N		X			N	Conserve. May reposition in same Bay.
124	Reheating furnace	3N		X			N	Conserve. May reposition in same Bay.
197	Overhead crane	3N		X			N	Conserve. May reposition in same Bay.
136 A-B	Mandrel rack	3N		X			N	Conserve. May reposition in same Bay.
106	Furnace	3S			2S		N	Conserve. Relocate to Bay 2S.

9.4 CONSERVE: MAY REPOSITION IN SAME BAY CONT...

NO.	ITEM	Present Locat-ion	Remain In Situ	Repositio n Within Bay	Relocate to New Bay	Temporary Store Bay 15	Conflict With Devel.	NOTES
107	Lathe	3S			2S		N	Conserve. Relocate to Bay 2S.
108	Smith and Coventry grinder	3S			2S		N	Conserve. Relocate to Bay 2S.
109	Small Lathe	3S			2S			Conserve. Relocate to Bay 2S
110	Furnace	3S			2S		N	Conserve. Relocate to Bay 2S.
149	Spring coiling machine 10"	4N	X				Y/N	Conserve in situ. Reposition in same Bay.
150	Spring coiling machine	4N	X				Y/N	Conserve in situ. Reposition in same Bay.
151	Quenching tank	4N		X			N	Conserve. May reposition in same Bay.
155	Quenching tank	4N		X			Y/N	Conserve. May reposition in same Bay.
157	Double floor grinder	4N		X			N	Conserve. May reposition in same Bay.
159	Furnace	4N		X			N	Conserve. May reposition in same Bay.
161	Furnace	4N		X			N	Conserve. May reposition in same Bay.
162	Work table	4N		X			N	Conserve. May reposition in same Bay.
196	Overhead crane L/6	4N		X			N	Conserve. May reposition in same Bay.
202	Overhead crane L/8	4N		X			N	Conserve. May reposition in same Bay.
205 A-C	Height setting table	4N		X			N	Conserve. May reposition in same Bay.
164	Electric starter cabinet	4N			TBD		N	Conserve. May reposition in same Bay. May relocate to new Bay.
172	Work bench and vice	4N		X			N	Conserve. May reposition within Bay.

9.5 CONSERVE: REPOSITION IN SAME BAY OR RELOCATE

NO.	ITEM	Present Location	Remain In Situ	Reposition Within Bay	Relocate to New Bay	Temporary Store Bay 15	Conflict With Devel.	NOTES
180	Plate rollers	4S	X	X	15. 2S or 4S		N	Conserve. May reposition in same Bay. May relocate in another Bay.
181	Craven plate rollers 1886	4S	X	X	15, 2S or 4S		N	Conserve. May reposition in same Bay. May relocation another Bay. (2)
182	Bennie metal guillotine	4S	X	X	15, 2S or 4S		N	Conserve. May reposition in same Bay. May relocate to another Bay. (2S)

9.6 CONSERVE: RELOCATE TO BAY 15

NO.	ITEM	Present Location	Remain In Situ	Reposition Within Bay	Relocate to New Bay	Temporary Store Bay 15	Conflict With Devel.	NOTES
129	Furnace	3N				15	N	Conserve. Relocate to Bay 15.
142	Furnace	3N				15	N	Conserve. Relocate to Bay 15.
143	Hydraulic Ram	3N				15	N	Conserve. Relocate to Bay 15.
145	Spindle Router	3N				15	N	Conserve. Relocate to Bay 15.
146	Points/ switches	3N				15	N	Relocate to Bay 15.
147	Signalling gear	3N				15	N	Relocate to Bay 15.
148	Furnace	3N				15	N	Relocate to Bay 15.
199 A-B	Air receivers	3N				15	N	Relocate to Bay 15.
163	Pump	4N				15	N	Relocate to Bay 15.
165	Electric motor and base plate	4N				15	N	Relocate to Bay 15.

9.7 CONSERVE: MAY RELOCATE TO ANOTHER BAY.

NO.	ITEM	Present Locate-ion	Remain In Situ	Reposition Within Bay	Relocate to New Bay	Temporary Store Bay 15	Conflict With Devel.	NOTES
76	2 ton jib crane	2S	X				N	Conserve. May relocate to another Bay.
126	Grinder	3N			14N		N	Conserve. Relocate to another Bay. (14N)
127	Craven brothers drill	3N			14N		N	Conserve. Relocate to another Bay. (10N)
128	Bevel wheel shaper	3N			13N		N	Conserve. Relocate to another Bay. (13N)
130	Centreless grinder	3N			13N		N	Conserve. Relocate to another Bay. (Bay 13N)
131	Ward lathe	3N			11N		N	Conserve. Relocate to another Bay. (Bay 11N)
132	Vertical shaper	3N			10S		N	Conserve. Relocate to another Bay. (Bay 10S)
133	60" vertical borer Webster and Bennett	3N			9N		N	Conserve. Relocate to another Bay. (Bay 9N)
134	Genevoise drilling and boring machine	3N			10N		N	Conserve. Relocate to another Bay. (Bay 10N)
135	Genevoise drilling and boring machines	3N			10N		N	Conserve. May relocate to another Bay. (Bay 10N)
137	Brown and Sharpe universal grinder	3N			14		N	Conserve. May relocate to another Bay. (Bay 14N)
138	Herbert twin drill/ borer	3N			12		N	Conserve. Relocate to another Bay. (Bay 12N)
139	Allen Striker	3N			2		N	Conserve. May relocate to another Bay.
140	Cylindrical grinder	3N			TBD		N	Conserve. Relocate to another Bay.
141	Lathe	3N			TBD		N	Conserve. Relocate to another Bay.

9.7 CONSERVE: MAY RELOCATE TO ANOTHER BAY CONT...

NO.	ITEM	Present Location	Remain In Situ	Reposition Within Bay	Relocate to New Bay	Temporary Store Bay 15	Conflict With Devel.	NOTES
201	Trolley	3N			Any		N	Conserve. Relocate to Bay 1S.
204 A-D	Line shafts and counter-shafts	3N			13N		N	Conserve. Relocate to Bay 13N.
104	Churchill grinder	3S			8S		N	Conserve. Relocate to Bay 8S.
115	Four wheeled trolley	3S				15	N	Conserve. Relocate to Bay 1S.
116	Halifax shaper	3S			2S or 10N		N	Conserve. May relocate to another Bay. (Bay 2 or 10)
117	Boring machine	3S			2S or 9N		N	Conserve. May relocate to another Bay. (Bay 2 or 9)
118	Launch's Screw cutting machine	3S			2S or 10N		N	Conserve. May relocate to another Bay. (Bay 2 or 10)
119	Surface grinder	3S			2S or 10N		N	Conserve. May relocate to another Bay. (Bay 2 or 10)
120	Cincinatti milling machine	3S			2S or 11S		N	Conserve. May relocate to another Bay. (Bay 2S or 11S)
121	Bed from Genevoise	3S	N/A		Tool Room		N	Place with 134.
122	Bed from Genevoise	3S	N/A		Tool Room		N	Place with 135.
166	Machine parts	4N			TBD		N	Conserve. May relocate to another Bay.
167	Centre lathe Denham	4N			10N		N	Conserve. May relocate to another Bay. (Bay 10N)

9.7 CONSERVE: MAY RELOCATE TO ANOTHER BAY CONT...

NO.	ITEM	Present Location	Remain In Situ	Reposition Within Bay	Relocate to New Bay	Temporary Store Bay 15	Conflict With Devel.	NOTES
168	Axle journal lathe	4N			9N		N	Conserve. May relocate to another Bay. (Bay 9N)
169	Planning machine	4N			10S		N	Conserve. May relocate to another Bay.
170	Electric motor	4N				15	N	Relocate to Bay 15.
171	Motor generator	4N			15	15	N	Relocate to Bay 15.
174	Grinding table	4N			TBD		N	Conserve. May relocate to another Bay.
177	Single bed vertical borer with oval heads	4N			9N		N	Conserve. May relocate to another Bay. (Bay 9N)
178	Rectifier	4N				15	N	Relocate to Bay 15.
208	Wheel shop crane	4N			TBD		N	Conserve. Relocate in new Bay or externally.
209	Wheel shop crane	4N			TBD		N	Conserve. Relocate to new Bay.
210	Flange press	4N			TBD		N	Conserve. Relocate to new Bay.
211	Wheel press	4N			TBD		N	Conserve. Relocate to new Bay.
212	Pipe bender	4N			TBD		N	Conserve. Relocate to new Bay.
213	Hydraulic press	4N			TBD		N	Conserve. Relocate to new Bay.
215	Air Compressor Ingersoll	4N			1N		N	Conserve. Relocate to new Bay.

9.8 RELOCATE TO A LOCATION OUTSIDE EVELEIGH RAILWAY WORKSHOPS: SCRAP

NO.	ITEM	Present Location	Remain In Situ	Reposition Within Bay	Relocate to New Bay	Temporary Store Bay 15	Conflict With Devel.	NOTES
173	Armatures	4N	Scrap				N	Relocate to a location outside Eveleigh Railway Workshops. Scrap.
175	Electric motor	4N	Scrap		TBD		N	Relocate outside Eveleigh Railway Workshops. Scrap.
176	Electric motor	4N	Scrap		D		N	Relocate outside Eveleigh Railway Workshops. Scrap.

10.0 INTERPRETIVE CONCEPT

10.1 BACKGROUND

The machinery and relics conservation policy presented in Section 7.0 identifies compatible re-use, education and display as appropriate future uses for the machinery and relics in the following policy statement.

> *The collection of significant equipment and machinery, the majority of which is currently in Bays 1-4A of the Locomotive Workshop, should be conserved in ways which protect and enhance its cultural significance, continue its useful life and contribute to the activities at Eveleigh as both an engineering and educational resource.*

A focus group met at Eveleigh Locomotive Workshops on March 1, 1996. The group was made up of invited representatives of interested organisations and the study team (See Appendix H.) Mr Tom Forgan, ATPSL made an introductory speech outlining the vision for the future development of the site. In the course of his talk he made the following points:

- there is no existing budgetary allocation for interpretation of the site;
- if a proposed interpretive approach is believed to be appropriate and to have potential to contribute to the site financially and/or by enhancing its image and raising its profile then efforts could be directed at raising the necessary sum; and
- no specific direction or constraints were provided in relation to interpretive options for the Eveleigh machinery collection.

As a result the following interpretative approach has been prepared by Richard Flanagan to a budget estimate and with no particular constraints. A major difficulty was that the project program required that the interpretive approach be prepared before the historical research was completed. This has meant that some of the historical assumptions have been made and are not accurate in detail. However as the proposed approach seeks, above all, to be challenging and stimulating controversy over the assumptions is a desirable and appropriate response. If this interpretive approach were to be adopted, it should also be reviewed in the light of current information and re-assessed according to budgetary and spatial constraints.

The findings of the focus group are documented in Appendix H and were a consideration in the development of the following interpretative approach.

10.2 INTERPRETIVE APPROACH

Implicit in the notion of using focus groups is the aim of arriving at a consensus of which, by definition, all approve, or at least all can live with. The consequences for interpretation are obvious enough: one gets recommended an approach that will be safe, worthy and which will meet with the tacit approval, if not enthusiasm of most. It will be non-controversial. There are virtues, mostly political and bureaucratic, that flow from this. The options arising from the focus group are going to be the easiest to win initial support and finance for, because they are more of the same. But they do not necessarily make for the most interesting, the most stimulating or the most popular forms of interpretation. Nor do they make for an interpretation that is firmly grounded in coherent thought. Grouping together similar sounding subjects under particular banners of this or that major 'message', avoids examining the contradictions and distinctions between various subjects, that have to be examined and understood for an interpretation of any significance to be created. Confusion, far from being cleared up, is in this way carried over into an interpretation that makes little overall sense. The question arises: do we wish for an interpretation that challenges, confronts, makes people think and rethink, or one that gives them something that possesses only the virtue of being acceptable to the sensibilities of 1996?

The following discussion will examine in more detail some of the issues raised under various banners by the focus group, as well as some issues not considered by it, to try and identify what it is that the site most powerfully tells us about, and from that propose one possible scenario for interpretation, to give an idea of how the site could be imaginatively developed to give tongue to its many stories.

The first and most obvious subject that needs to be given thought are the machines themselves.

10.2.1 The Machines

The machines are both what makes the site unique, yet also what makes interpretation of it difficult. Their significance has been well established and documented by others with the appropriate expertise. Recognition is advised regarding the dangers of making a fetish of the machinery as significant in itself to the exclusion of the human story that is at the heart of Eveleigh. If what we end up with - whatever the medium, be it written, electronic, audio - are simply the details of the unique interior workings and mechanical job of each machine we will have an interpretation that is both dull and historically false in regards the world in which the machines were made and in which the machines were made to work. A second -

and related - problem is that the machinery we are left with by and large comes from one part only of that vast industrial complex that was the Eveleigh Railway Yards. So if we seek only to honour these particular machines we would be untrue to the vast world of sub-divided labour, both mechanical and human, that made up the railway yard.

10.2.2 Working Machinery

Perhaps the most difficult issue to resolve is that of whether or not the machinery ought be restored to full working condition. This has very considerable implications for budget, type of interpretation and management.

This is an issue that goes beyond the aegis of those responsible for interpretation, yet impacts profoundly upon the nature, scope and budget for interpretation.

What happens to the machines is first and foremost an argument about conservation, which is outside the scope of this study. But it is clear that two positions will arise from within the conservation camp: one that says simply leaving the machines as they are and ensuring that they degrade no further is sufficient, while the other says that the machinery ought be restored to full working condition. There would seem to be an unsolvable division. However some points can be made in relation to the interpretation.

First with regard to budget, no-one knows how much it will cost to restore the machinery, but it will undoubtedly be in the order of some millions of dollars. Once restored the maintenance cost is said to be low, but the costs consequent upon the type of use the machines are put to and associated management problems (noise, safety of operators and more particularly thousands of visitors) would have to be presumed to be considerable. This means that a significant amount of the budget for running the final interpretation will go simply in managing the working machinery.

And yet, the nature of the machinery is such that it cannot be hoped that Eveleigh may be resurrected as an industrial working museum. At best the machinery - if fully restored - would operate only intermittently, perhaps once or twice a day. For the rest of the time it is static, from the point of view of what interpretation can be offered, no different than if the machines were not in working order.

Restoring the machinery pushes the interpretation away from a more general issues based interpretation into a more specific nuts and bolts, this machine did this job this way, is a wonderful example of this type of technology etc type of interpretation, and pushes the whole interpretation into a more specific working museum type scenario, which could be regarded as missing the boat somewhat. The story of the machines ought to be told in the interpretation but only as part of (and where it illustrates) the larger human stories of Eveleigh. The problem with

restoration is that it will create an institutional dynamic for a limited type of interpretation, unless management is very conscious of the distinction between the need for restoration and the entirely separate need to have a powerful interpretation. Unless this is understood, once millions of dollars are spent upon preservation, it would be a very courageous and enlightened management that did not become seduced by the story of restoration and of the machines' archaic intricacies, that did not want to justify, glorify and celebrate the way it has spent such considerable sums upon restoration, and see this as the number one job of the interpretation to tell.

A sense of what Eveleigh was and what it meant is then not necessarily best experienced through the occasional working of steam machinery and the associated constraints and biases that would follow in the wake of such operation. The point here is that as far as interpretation is concerned, that there are more effective, interesting and challenging ways of presenting Eveleigh and conveying its full significance.

10.2.3 The Site

The nature of the site offers both limitations and possibilities. Being enclosed, the exhibition doesn't have to be weatherproof, nor does the budget have to account for the cost of housing the overall exhibition.

The site size is reasonable, but by no means large. Perhaps 4000>~square metres at the most in extent, its useable size is considerably reduced- by the amount of machinery contained within it. Balancing this is the vast amount of vertical space available because of the very high ceiling, space that could be used in a number of interesting ways, some of which are suggested below.

To my way of thinking, the site is relentlessly masculine, in its scale, its design, its grittiness, its smells, its particular dirt, its muscular machinery. It is dingy and many people's first impression will be that this is a rather awful place to visit. Now this is no bad thing, but I think it ought to be acknowledged before going any further, because not to acknowledge it is to presume that heavy machines and nineteenth century factories have equal appeal to us all. In fact they don't. They appeal to the old and to some men. I think the challenge here is neither to sanitise the site, nor, pun intended, emasculate, it, but rather exploit its very nature to explore what it meant once and what it means now to be a man. Immediately we located the site in something at once very contemporary - the debate about gender confusion, and something very historically specific, what it meant to be a man working in a heavy industrial site such as Eveleigh, where to be a man was to be defined by one's capacity for and ability at physical work.

10.2.4 Significance of the Site

There is a perfectly fine statement of significance for this site. Yet there is need for some clarity. The site in itself is not significant, by which is meant it was simply one of many industrial sites that once scattered Australia, and indeed the globe. Eighty years ago it may have been the biggest site of its type in Australia, but in every other way it was unremarkable. Its significance resides in that it and a considerable amount of its machinery remains, where nothing of its ilk does elsewhere. The aim of the interpretation, in this light, is not then to make out arguments for the special nature of Eveleigh, but use it to explore a world that has very largely vanished in which places such as Eveleigh were ubiquitous rather than, as they are today, unique.

In terms of cultural tourism, the aim ought be to establish Eveleigh as the pre-eminent site nationally and internationally for interpreting our recent but now almost entirely vanished industrial past, culturally, economically, socially, politically, and technologically.

10.2.5 Interpretation Methods

There was much discussion at the focus group meeting upon the relative merits of various methods of interpreting, from computer simulations to theatre to static displays. There was also discussion about light and sound shows, which I do not deal with here for the reason that I think such a show, whatever its merits, can only exist as an albeit spectacular adjunct to some form of standing exhibition. Without some permanent interpretation, a light and sound show seems a somewhat hollow exercise, a trailer for a movie that doesn't exist. The example most frequently quoted is that of the Sovereign Hill light and sound show, and the moral there seems obvious.

Discussions about interpretative methods are really somewhat pointless, 'how long is a piece of string', type debates until we know what sort of money is being talked about. What first needs to be determined is an approximate budget for initial interpretation and ongoing management, as well as a business plan as to how it will or won't pay for itself.

I think some very rough figures would be helpful and would suggest that a good exhibition could be installed anywhere from $1,000,000 upwards, and am presuming, for the purpose of what follows, that the maximum that would be spent would be $5,000,000.

What follows later is a description of the type of exhibition that could be aimed for with that type of budget. Essentially it is a static display using various methods, involving a marriage of art and technology.

What is more important than any particular method used is the quality of people employed to tell the story. ATPSL ought advertise a competition for design concepts for the interpretation, and look at both the quality of the design concepts submitted, and their proposed teams.

10.2.6 Aims of the Interpretation

The interpretation should aim:

- to provide an experience for visitors that is not totally visual and literal, that goes beyond the presentation of two dimensional images with accompanying words. The interpretation should seek to engage all of the visitor's senses. Once inside the exhibition they ought to smell the heaviness of the workshop, rub their palms upon the machinery, feel the micro-climate of the huge factory building, feel the dust and dirt beneath their feet. While the interpretation will be designed as a circuit, it ought be expected and hoped that many visitors will experience it not as a logical progression, but as a place of inter-related objects some of which they discover in the most unexpected places. The connections between these different objects and displays is not made bluntly by the interpretation but left to the visitor to make. The role of art in relation to this aim is not so much to interpret Eveliegh, as to tell stories about it, which like all stories are not a final, fixed position, but an invitation to explore and understand, a message with many different and changing meanings;

- to have visitors go beyond their preconceptions toward exploring the complex reality of our industrial past and post-industrial future. Too much interpretation acts merely to reinforce old lies about the places they seek to promote, impoverishing and denying what ultimately is important and unique about such areas in the process. By presenting the preconceptions and then turning them upon their head, the interpretation will challenge visitors not to accept what they have been told to think about our industrial past, but seek to explore what they find interesting about it, and make connections with this and their future; and

- to make visitors aware that Eveleigh would reward many further visits. For this reason the interpretation ought not have one storyline, but many storylines, building up layers of narrative whose meaning can never be entirely unravelled. The principal object ought not be to reduce this wonderful site to a series of cliches, but to make people aware of the riches of the site.

10.2.7 The Interpretation in a Nutshell

The central subject is technology but this is approached from several different angles. The themes will be presented in a layered manner, so that can be understood on three major levels, and innumerable levels in between, for:

- the visitor who spends 2-5 minutes quickly browsing: obvious and immediate visual and sensory impressions;

- the visitor who spends 5-15 minutes skimming the circuit: instead of interpretation panels per se, the major headings of text in a variety of media. This text as much as is possible avoids direct commentary and instead talks through the voices of others, using quotations; and

- the visitor who spends 30-60 minutes becoming acquainted with the interpretation intimately: for such a visitor there will be available for hire cassette walkman packs, and for sale booklets that contain detailed discussion of the interpretation's themes. Even without such aids the interpretation will be sufficiently richly layered that an interested visitor after an hours visit will feel that there is still much to take in, and that Eveleigh will reward repeated visits. Above all else the interpretation should imbue the visitor with curiosity: about Eveleigh, about technology past, present and future, about their own worlds.

Each theme would be constructed as a sort of visual essay, and like any essay needs considerable research, contemplation and structuring before its shape becomes obvious. The brief description given of each theme in the next section therefore remains of practicality a sketch.

10.3 A WALK AROUND THE LOCO SHOP

What is proposed is an overarching idea for how the site can be interpreted that is at once cohesive, workable, yet sufficiently varied to catch the complexity of the stories it has to tell. It is of necessity only a rude outline, but one that hopefully carries the charge of a strong idea. If it were adopted, it doesn't preclude other forms of interpretation being used later, but rather provides a firm base - intellectually, imaginatively, administratively - for other developments such as guided outside walks, commissioned theatre, or a sight and sound show.

There is a need for an enigmatic name for the interpretation, such as the one used for the purposes of this report - The Loco Shop - which allows the interpretation and site to be developed after their own particular pattern, and not suffer the burden of prejudgment that goes with labels such as 'museum' or exhibition' or 'visitor centre'.

In essence what is outlined below is not a single exhibition, but a number of mini-exhibitions, each with a separate theme, with its own unique design, style and visual elements reflecting that theme. These could be of greater or lesser complexity depending on budget, and though only briefly described, the idea is that each interpretative node takes on a life of its own and can have numerous other features added on, to achieve a richer layering. Some of the mini-exhibitions are

effectively small buildings within their own right, but of such a nature that they can be both built and ultimately removed with minimal impact on existing fabric. Their design and placement would, of course, have to be such as to not in any way compromise the existing machinery, but rather to enhance it, bring the machinery to imaginative life.

All interpretative devices, panels etc ought to pick up on the fabric and construction methods of the workshops and its machines - iron, rivets and so on. There would be myriad possibilities for artists and craftspeople to be involved making work specific to different parts of the interpretation, using the materials and design inspired by this period of engineering.

10.4 THE LOCO SHOP

The visual key to the Loco shop would be a great, high railway bridge running the width of the building's interior upon which sits a loco and carriage. It would be visible upon entering the building as a vast, overpowering presence.

10.4.1 The Station

If it is decided to run the exhibition on some paying basis - which would seem almost certainly the case - then there will be the need for a foyer/reception housing the necessary amenities including reception/shopfront, office, toilets, storeroom, that is formally divorced from the exhibition proper. This could be located on a mezzanine immediately above the side entrance to the building, allowing a clear line of sight along the central axis of the building. From below the foyer/reception looks like a railway station suspended in mid-air, its surrealistic positioning visual acknowledgment of its own incongruity in the building and thereby acknowledging that it is not attempting to replicate the past, but only to seize upon aspects of it to illuminate our understanding. The station would pick up on design elements from the old Redfern station, and posters upon its walls would include pamphlets advertising meetings of the Eveleigh flower club, political polemics dealing with industrial conditions at Eveleigh and so on. At the station the trip through Eveleigh begins. Leading from the station the railway line upon a high steel structured bridge of nineteenth century design upon which sits the huge loco and its carriage.

Access to the station is by an external stairwell, thus separating the flow of visitors from the flow of those who work within the ATP inside. An external access would also help generate the shock of surprise for those who visit. The foyer/reception is both the first and last stop for interpretation in the form of human contact, sale of related publications and marketing ephemera. Both publications and ephemera are too often dismissed as insignificant, whereas they are in some ways the most important aspect of a good interpretation, both in terms of ongoing impact from the

site and as a commercial underpinning. There ought be created out of the interpretation budget:

- a give away pamphlet on Eveleigh;
- a glossy soft cover book on the history of Eveleigh that both relates to the interpretation and builds upon it; and
- ephemera in the form of caps, t-shirts, sweaters, model trains, steam engines, posters, cards, and steel works etc that carry key messages of the interpretation in a way that is both pointed and commercial.

Tickets to the exhibition could be in the form of a time card which visitors must punch into clocks around the exhibition in order to gain access to the next section.

10.4.2 All That is Solid Melts Into Air

Visitors enter a passenger carriage of a type made in Eveleigh. The clackety-clack of a train, coupled to the noise of a steam loco in full flight fill the carriage, along the walls of which are displayed interpretation panels which talk of the recent fascination with the idea of history as worthwhile; the curious modern desire for the past, an idea that came into being with the steam engine; briefly touching upon the story of the industrial revolution and its reliance upon steam power, how people back then in consequence went through similar dislocation to that which we are going through today, of then telling of how in Australia a railway network became essential for the infant economy and how out of the rapid growth of rail in NSW in the late nineteenth century the Eveleigh railway yard came into existence.

Stepping along and out of the carriage visitors walk onto the loco's engine driver's cabin and from there down into an oversized boiler, a time tunnel down which they waltz Inside the gloomy loco interior visitors would be assailed by the noises and steam and smoke of a vast workshop at work, machines screaming, men yelling to be heard over it, steam hammers pounding. A sign at the end of the boiler, just before a hatchway leading to a steel stairwell tells them that they are about to enter a world of lost work.

10.4.3 Hearth and Home

Climbing down the stairwell visitors find themselves entering via a hole in a roof a Redfern tenement - an Eveleigh worker's house - circa pre-War suspended like the loco in mid air. This sits below and a little along from the loco, sited at a cross angle to the loco. Perhaps the house slowly alters room from room from 1880s to 1980s. Upon entering this house of which see a kitchen and living room we have arrived at the second of the interpretative nodes where the subjects of community and family are dealt with; thereby encompassing themes of women, children and community, and the changing notions of each over Eveleigh's century. This would interpret the story of the women and the children of the Eveleigh workers: their daily lives, hopes, struggles. For example, with regard to community, the gradual disappearance of Eveleigh workers from Redfern to suburbs on the city's periphery would be dealt with, along with the social and political consequences of such relocation. With regard to women it would discuss the working life of working class women, as well as looking at subjects like sexuality and birth control.

Exiting via the back door the visitor finds themselves on an industrial style metal ramp leading downwards. Below they get a better, fuller vision of what they may first have glimpsed as they left the loco and headed down the stairwell into the worker's home, the most extraordinary sight: a factory full of ghosts, a tomb of industrial warriors, after the manner of China's famed ancient site, but here in memory of an industrial rather than an ancient past. Most of some hundreds of these phantoms - all in various aspects of work - would be full size fibreglass models (along the lines used in the Brisbane Expo), all a ghostly ashen colour.

Most would be working, a few would be being burnt or having limbs crushed in horrific industrial accidents, some protesting, most simply engaged on numerous manual tasks. Accentuating the atmosphere of a workshop of ghosts various techniques could be used including:

- lighting design;
- laser show; and
- sound design.

Halfway down is a large landing upon which there is a very large model of the original workshop complex around which visitors can walk. Interpretation panels outline the roles of the different buildings. Parts of the buildings' rooves are absent showing the interior workings of the complex. This macro view comes before the more intimate thematic interpretation that follows on the ground.

10.4.4 Tools

Not a specific site in itself, but all around the workshop floor separate of the other mini-exhibitions there would be interpretation describing and detailing the workings and significance of different machines, working in this way as a separate layer of interpretation.

The mini-exhibitions Scattering The Ashes, Real Blokes, Hard Yakka, Lilywhites, and Techno-tyranny would each be distinguished by several features:

- different design;
- large title banner hanging from ceiling or title panel;
- orientation 'headline' panel, giving a potted summary of what the mini exhibition involves; and
- distinct visual features; eg. in the case of Scattering The Ashes the workers being remoulded and shaped in the Davey Press, in the case of Poms and Pokies the leagues club type decor of one corner in which the row of pokies sit.

10.4.5 Scattering The Ashes

The first node visitors come to centres upon the Davey Press, into one side of which a disparate group of individual ghosts, most children of mid-teens, some clearly of non-Anglo background, are being shoved like pieces of metal into the Davey Press, emerging out of the other side as mass of identical men, a mass working class. This procession of men would age and then end simply as legs and feet in piles of ash, as though they are dissolving into smoke themselves. This section would discuss the making of a working class, of the central role of huge workplaces like Eveleigh in creating a source of identity, as well as an identity of interests and experiences - political, industrial, social, personal. It would tell of the disproportionate number of workers who went on to distinguished political careers. It would look at the way the very physical closeness of Eveleigh led to camaraderie, and how what in one way looked akin to a hell, could become so precious to how people saw themselves that they would on their way to heaven have their ashes scattered within it.

And all this as much as possible told in their own extraordinary ordinary words - quotes on panels, disembodied voices coming out of machines.

10.4.6 Real Blokes

The second node visitors come to down on the workshop floor is Real Blokes, dealing with changing notions of masculinity: it examines the way in which old related notions of physical strength, physical skill and associated masculine values were critically important in finding and retaining employment in industrial workshops and factories. The node could centre upon a steam hammer describing the skill, strength, timing and courage required to operate such a fearsome piece of machinery. Perhaps a hologram ghost appears in the flames of a nearby forge and talks of the need not to feel pain when drawing metal out of a forge. This exhibition would also examine how old masculine values, once so important in the daily battle for bread, now are deemed almost worthless, and by implication, so are those who define themselves through the rise of post industrial work practices (and new technology) in which physical abilities are of no economic advantage.

10.4.7 Hard Yakka

The third node would centre on yet another piece of machinery, preferably a complex large one that needed a number of operatives to work it, and would examine industrial conditions, the process of work itself, the sub-division of labour within the plant, and look at the very definite divisions within the workers between casual labourers and craftsmen, and among craftsmen themselves. In examining craftsmen, it would make the point how Eveleigh really never became a twentieth century style factory with mass assembly lines, but rather remained a nineteenth century workshop where individual pieces were made as required for repair and assembly. This section would also look at the way women were brought in for munitions work, and kicked out after the war ended.

10.4.8 Lilywhites

The fourth node would deal with deskilling and would have as its focus on the 1917 strike over the introduction of Taylorist management practices. The erosion of craft skill and hence craft status implicit in the ideas of time-management would be shown through the examples of use of particular machines. A possible interactive device would be a simple machine designed such that it had people doing a task, then forced them to speed up when repeating the task, or be chastened by the voice of an efficiency expert. And then, if they still don't speed up, the disembodied voice would tell them that they are to be sacked.

10.4.9 Poms and Pokies

This node would look at Eveleigh as part of the larger changes in the Australian economy. Set up like the corner of a tacky leagues club, it would show the huge importance of such state interventions in the developing infant colonial economy of the nineteenth century, and how such interventions were hailed as evidence of the

worth of state socialism with one of the largest industrial enterprises in the southern hemisphere controlled by the state. It would look at contradictory nature of Eveleigh, seen as a great Australian achievement, yet still very much a product of the imperial age, with both its machines and management imported from Britain. It would also look at the rise of a global casino economy, and the retreat of the state from many areas of the economy. Using the device of a row of poker machines, which when set in motion come up with different aspects of the story of privatisation and the way it spelt the end of Eveleigh. Part of the tale of the decline and fall of Eveleigh, would also be how trade unions were unwilling to embrace new technology because of the erosion of jobs and craft skill that they spelt, coupled to penury on the part of the state government and the consequent growing undercapitalisation.

10.4.10 Techno-tyranny

Around some of the collection of hand tools, there would also be covered in dust and dirt VDUs and key boards of old computers, all as equally redundant as the hand tools. Arsing out of the dust but looking equally archaic and dust covered would be an abandoned office. This section would deal with modern technology, how it is creating a different society, but one as equally grounded in the need for profit as that of Eveleigh, it would discuss both the despair of new technology - the job loss and displacement consequent upon its introduction, as well as the hope it brings - specifically this would be the place where the story of the ATPSL could be told. These stories would be told with the aid of high-tech devices - interactive VDU and bringing the story up to date.

10.4.11 The Blacksmith's Workshop

The journey through the Loco Shop finishes by exiting on a ramp that leads up and over the Blacksmith's Workshop. From a walkway high above, the visitor sees, hears and smells a workshop in action, observing a blacksmith at work with some of the traditional tools of the trade. The walkway loops around and visitors find themselves back in the foyer/reception railway station, where, if keenly desirous of purchasing some ephemera or steel furniture, they can avail themselves of the station's shop.

10.5 CONCLUSION

In the absence of a specific brief it is not possible to make specific recommendations. But it is possible to conclude that ATPSL has with this site the opportunity to create a world class interpretation of our industrial past, that could become a must see item in Sydney, a facility in the vanguard of both public history and cultural tourism.

11.0 MAINTENANCE PLAN

The following Maintenance Plan may deal with the general approach to machinery only. It will be expanded subject to the findings of the Interpretation Focus Group and decisions concerning the feasibility of operation of machinery, formerly part of the steam system, powered by compressed air (see Section 6.14).

Recommended approaches to the maintenance of specific machinery items are addressed on individual inventory sheets.

The maintenance approach below should be followed unless specific circumstances change or unless the Specialist Machinery Supervisor recommends an alternative procedure. Ultimately maintenance procedures will depend on the use to which each item is to be put, its precise final location and its immediate environment.

In the short term the most appropriate procedure is to preserve the item from further deterioration while medium or long term options are determined.

11.1 STAGE 1 - INITIAL SURVEY AND ORGANISATION

1. An initial condition survey should be carried out on each item by a suitably qualified person. Such a survey will address the internal condition of the item as well as its external surface condition.
2. Machinery diaries should be introduced and be kept by the Specialist Machinery Supervisor. The master copy of this diary should be kept with the owner of the item while one up-to-date copy should be kept with the Specialist Machinery Supervisor and one be physically attached to the item itself.
3. A statement of current condition should be entered into all diaries. The diary should be rigorously updated according to the time-frame given in the inventory sheet for each item.
4. The level of preservation work required should be assessed.
5. All work conducted on the item should be assessed and, where necessary, appropriate steps taken to ensure that such work meets the objectives of this plan.
6. Priorities for work to be executed on each item should be agreed on.
7. An appropriate workforce should be identified and updated by the Specialist Machinery Supervisor as necessary.

11.2 STAGE 2 - PRESERVATION PROCEDURES

The preservation procedures which will be applied to each item, will be determined by a list of priorities. Such priorities will not be known until the decisions have been made for the future location of all items.

It is obvious that the machinery, presently located in Bay 1 and 2 North and Bay 1 and 2 South, should receive priority over most other items. Priority should also be given to items where the internal workings may be subject to rust or corrosion without attention. Smaller items, such as hand tools, and solid implements, such as the balanced tongs for use with the Davy Press, are unlikely to deteriorate in the short term and their preservation is not a priority.

11.3 PRESERVATION APPROACH

11.3.1 General

The preservation procedures adopted for all items, should conform to best museum practice. Precise procedures will depend on materials and processes available at the time and should be determined by the specialist machinery advisor. Advantage should be taken of advances in preparations specially formulated for conservation of metal relics.

The painting and surface finishing of all item should conform, where appropriate, to ASA guidelines.

The following sections are to be taken as guidelines only. Each item will require an individual approach which will depend on its present condition, its previous environment, procedures (or lack of them) undertaken at the time of decommissioning, its physical connection to other items (such as pipes or machine beds), its proposed future environment and whether it is to be operated as a functioning machine or as a demonstration item.

11.3.2 Initial Surface Preparation

- external surfaces should be free from dust, oil, grease and flaky paint, prior to any surface treatment;
- cleaning may include the use of dry brushing, brushing with solvents, light steam cleaning or brushing with a pH neutral detergent in water, depending on the surface contaminant;
- rusted, or heavily rusted surfaces, may require the use of wet or dry abrasive blasting. Blasting should be carried out at low pressure by school tradesmen to prevent further damage to the fabric of the item;

- surfaces cleaned back to bare metal should be appropriately sealed as soon as possible;
- where surfaces cannot be dried using conventional methods, such as in pipework, a water dispersant should be passed through the pipe prior to further sealing;
- lightly rusted areas should be wire brushed to remove flaking pieces. Under no circumstances should adjacent cleaned surfaces be damaged by brushing;
- remaining areas of rust not removed by brushing or blasting, should be thoroughly dried and rust convertor, such as phosphoric acid or commercial products, used. The surface should then be appropriately sealed;
- surfaces where the paint is flaky, should have loose paint removed by a scraper or light abraser. In some cases, a hot air gun should be used although this method has several drawbacks especially when lead paints were applied to items. Sound paint should not be removed as this provides historic evidence of previous colour schemes.

11.3.3 Surface Finishes

It is proposed that most items should retain their worn appearance and that any surface treatment will have the function of protecting it from further corrosion. However, where an item is to be displayed outside, even if under cover, then a painted surface, in former livery colours, is preferred. Painted surfaces require far less tension than other conventional cleaning methods.

When cleaned, all items must be thoroughly dried prior to receiving any surface coating. If conditions are extremely humid, surface coating should be delayed. In some cases where a hot air gun was used to remove paint, a primer may be applied while the metal is still warm.

Appropriate surfaces finish or items to remain inside include light to heavy oiled finishes such as those provided by Shell Ensis Fluid of various grades or Tectyl 506 or polycrystalline wax. This finishes provide protection from one to two years, depending on the position and environment that the item is in. Bright sections of steel will normally be sealed with polycrystalline wax.

11.4 PROTECTION OF INTERNAL SURFACES

Internal surfaces which may require protection are usually those associated with moving parts of the machine or their beds, covers and cowlings which screen the internal workings. Under operating conditions these volumes and mechanisms are usually well covered with oil or grease to prevent friction or the formation of rust.

It is essential that all components within these volumes remain sealed with heavy oil or grease. Normally, where any rust is evident, the item will have to be dismantled. The rust cleaned off using very sensitive methods and the item greased and reassembled. Further surface finishing of the item to ensure complete coverage may then be necessary. It is insufficient to simply open the cowling of an item such as an air compresser and spray the internal surfaces with a light oil. All internal surfaces must be closely inspected at times recommended on the inventory sheets.

It is not possible to use abrasive methods on assembled parts such as gear trains as the abrasive will remain after the piece has been coated. Where items such as steam hammers or steam engines have lain idle since the closure of the Workshops, it is essential that the piston be removed with the surface of the cylinder be thoroughly cleaned and dried, grease applied to the whole of the internal surface of both the cylinder and piston and that the shaft be polished and its surface sealed and that the glands be repacked. Unless this is carried out, the item, in a short time, may be rendered totally inoperable.

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