ARCHIVAL RECORD

WATERFRONT PRECINCT HERITAGE BUILDINGS, MAIN SITE BHP PORT WARATAH STEELWORKS, NEWCASTLE

OPEN HEARTH CHANGE HOUSE

Figure 0.1 View North – East of Open Hearth Bath House showing West and South facades overlaid with the later added B.O.S. scrap feed ramp and pipe-work framing.

Source: Author ref: OH-BH-24

Prepared by:

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1.0 INTRODUCTION

1.1 Background to the project

Major changes have occurred in Newcastle and the Hunter region over the past 20 years. The downsizing and eventual decision to close BHP steel making operations and the rationalisation of the coal industry are a reflection of these changes. The BHP steel making site is strategically placed, not only on a local and regional level, but also on a State and National level. It has been proposed that the existing site be redeveloped as a major Container Handling Terminal servicing the east coast of Australia. The area to be developed as the Container Handling Terminal would require the demolition of all above ground structures located within this area to enable remediation of the land and redevelopment of the site. Development of the remainder of the site at a later stage for industrial /commercial purposes is also proposed.

In light of the above, EJE Architecture has been commissioned to prepare detailed archival records of the buildings proposed to be demolished that are considered to have heritage value. These records involve documenting the relevant buildings and items they contain as well as the industrial processes that took place within them. Designed to help ascertain the heritage significance of the buildings and associated processes, these archival records also form a statement for the future interpretation of this now redundant part of Newcastle's industrial culture.

The following document constitutes the Archival Record of the Open Hearth Change House - an item classified as having a 'Regional level of heritage significance'1.

1.2 Archival Recording Methodology

The approach taken in recording these heritage items and the document format is based on heritage consultant input and current NSW Heritage Office's guidelines including those relating to the preparation of archival records and their photographic recording.

A number of important aspects have been identified in the statement of heritage significance included in the report whose recording was necessary to reflect the item's character and value described. Hence it is this statement that drives the rationale for the report and determines the relevance of information collected. Derived from three main elements - buildings (structure and fabric), the individual items they housed and the processes that took place within them - these aspects are elaborated on in a number of different ways, which reflect their respective social, technical and aesthetic qualities.

As a way of dealing with the items various facets of heritage value, the report is broken into 3 main components:

-Written descriptions (history, process and heritage statement),
-Pictorial descriptions (photographs and working drawings)
-Inventories and other supporting information

Together these components create a comprehensive account of the chronological development of both the buildings and the industrial technologies held within them that have invariably changed throughout their lives. At times the components are incorporated into each other to provide a more coherent and illuminating description. All material is cross-referenced to each other and referenced to archival registers and source publications.

The written descriptions provide a background to the building and the functions that it housed and incorporate relevant photographs. As an essential part of the written component, a statement on the item's heritage significance details why the item is valued.

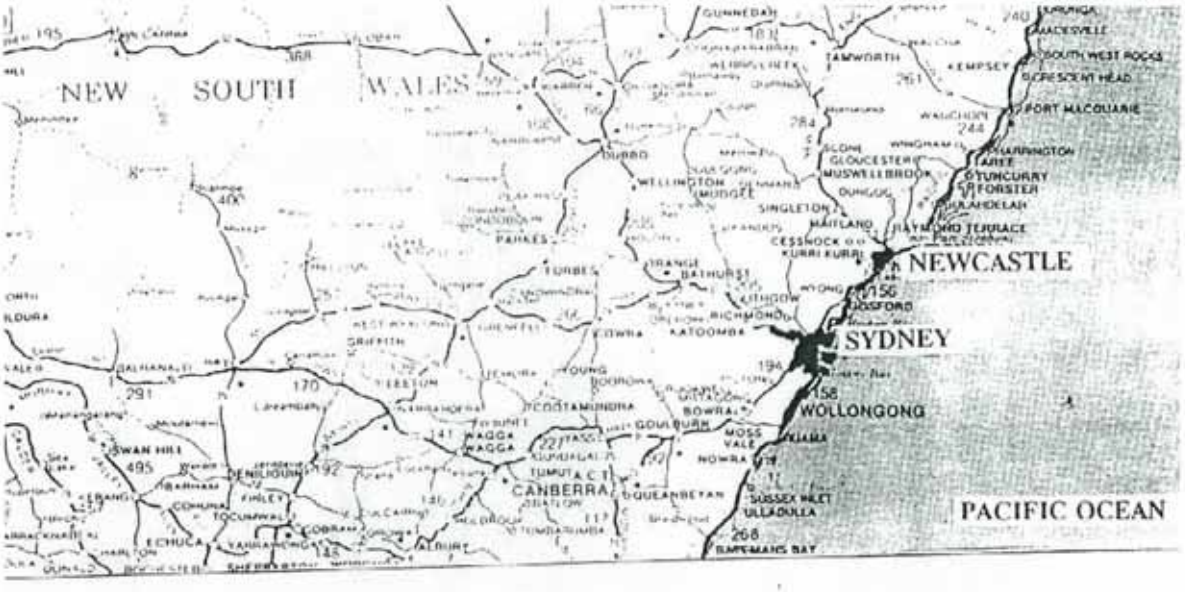
[1] Identified individually within Schedule 4 of The Newcastle Local Environmental Plan 1987 and the Port Waratah Steelworks Conservation Plan 1991.

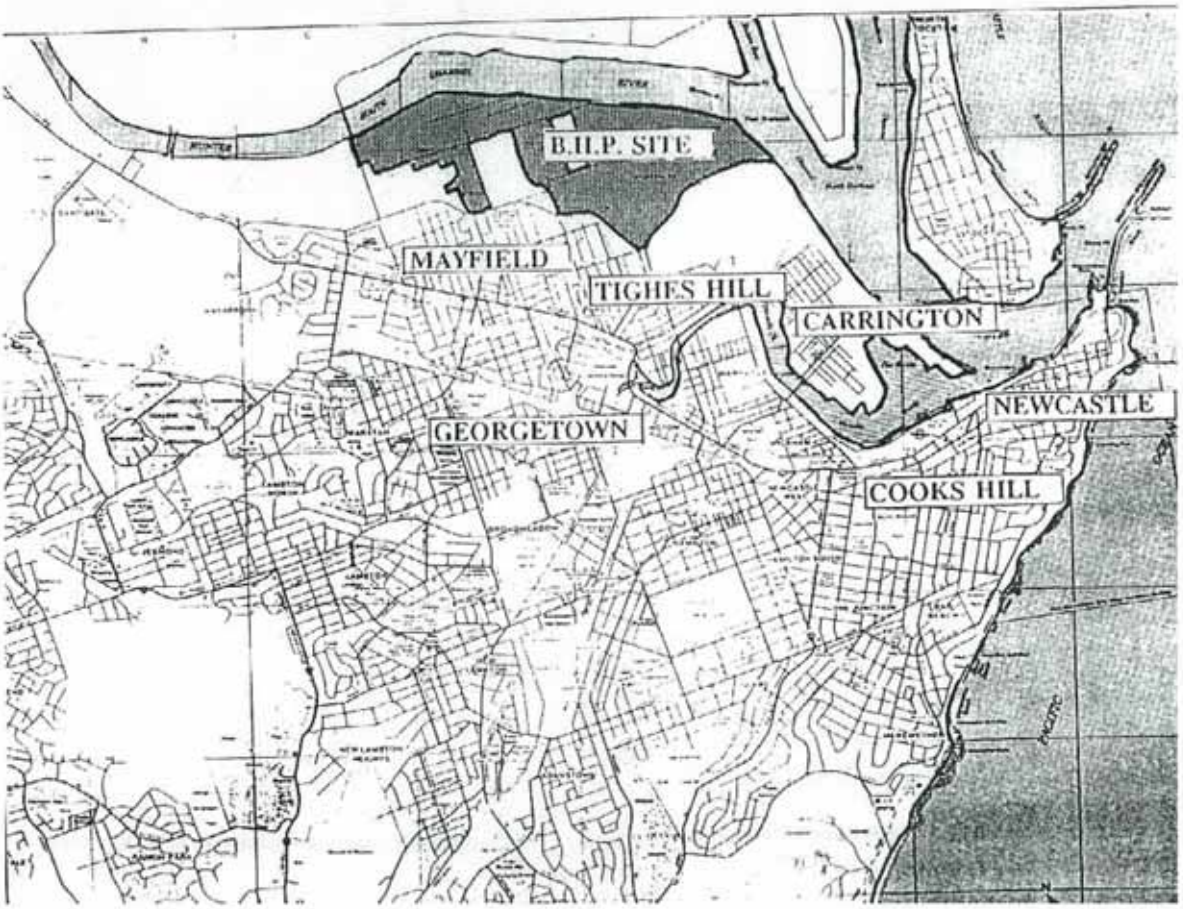
The bulk of the information in this report comes from the pictorial descriptions. Comprising of both historic and contemporary photographs, an account of the building fabric, the various industrial processes contained and the changes that have taken place through time is made. In addition, a selection of original working drawings provide a detailed picture of the construction techniques, structure and fabric details and offer substantial dimensions and measurements, making largely redundant any requirement for contemporary measured drawings or scaled photographs.

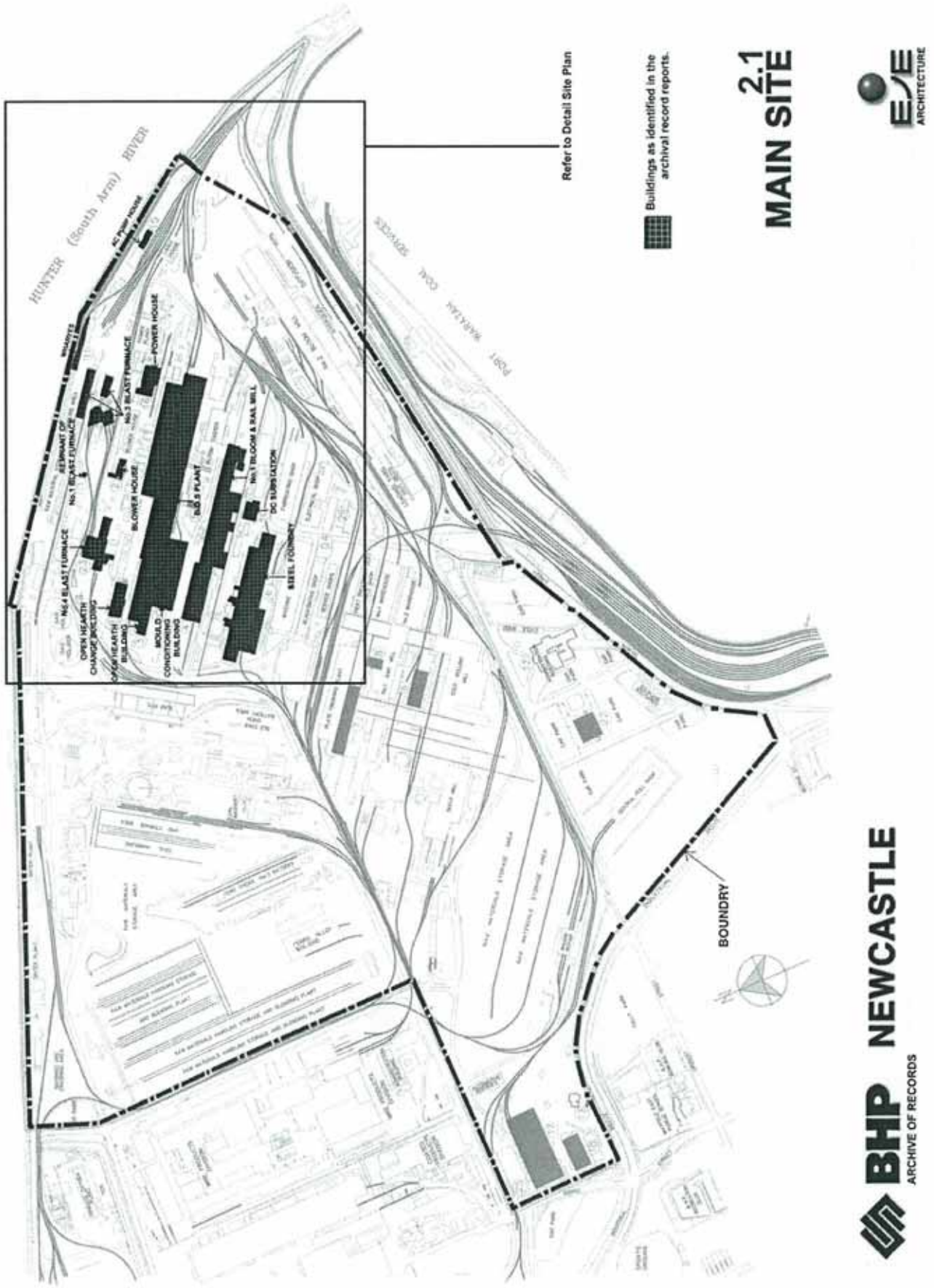
Supporting both the written and pictorial information is a series of inventories and tables which provide details of equipment contained within the building, cross referenced descriptions of photographs and shot locations, and bibliographical information.

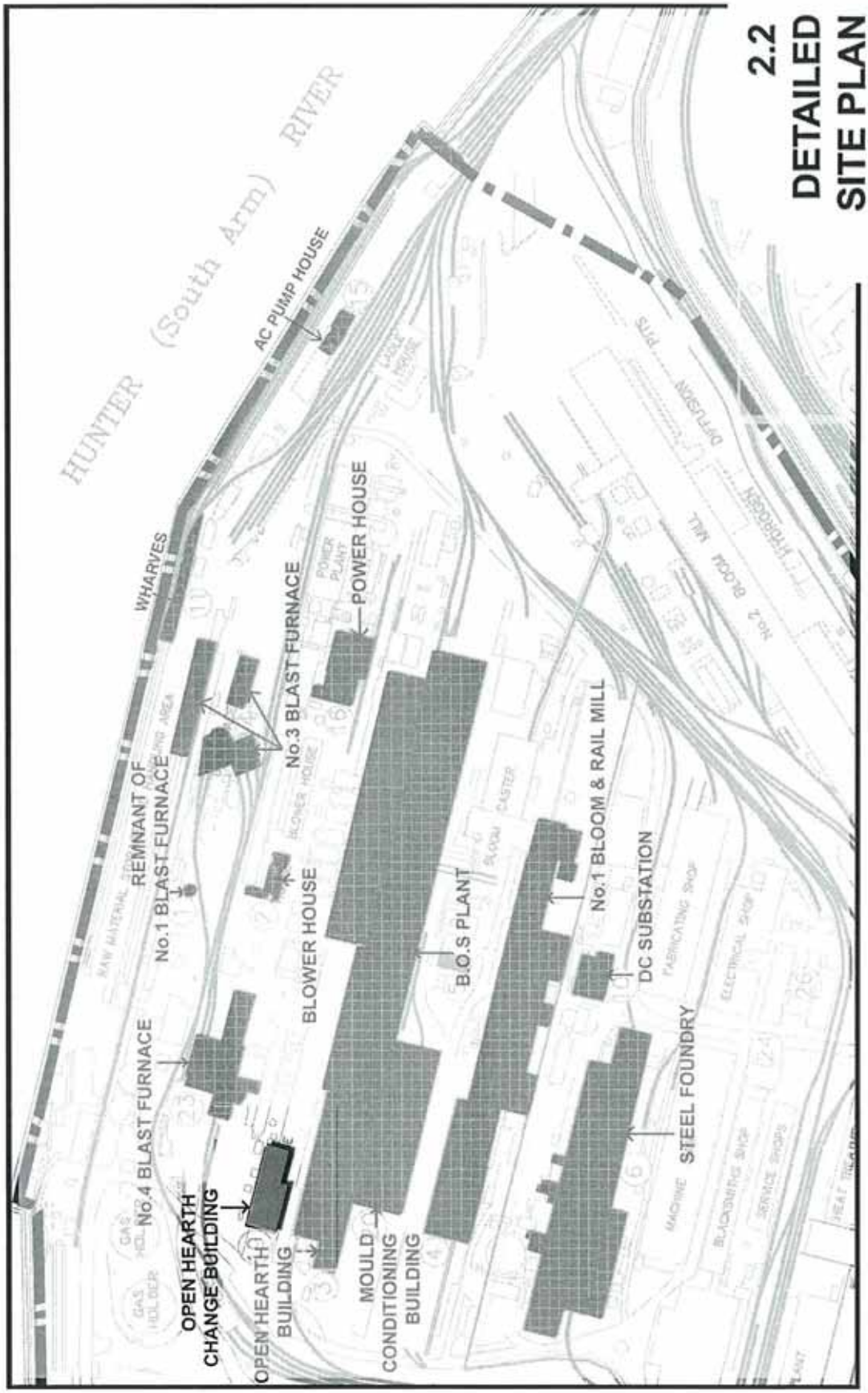
The process of documenting the heritage items involved a number of input teams, of which EJE was the coordinator.

2.0 LOCATION PLANS






HUNTER (South Arm) RIVER
Refer to Detail Site Plan
Buildings as identified in the archival record reports.
2.1
MAIN SITE
EJE ARCHITECTURE
BOUNDRY
BHP NEWCASTLE
ARCHIVE OF RECORDS



2.2
DETAILED SITE PLAN
OPEN HEARTH CHANGE HOUSE

EJE ARCHITECTURE

BHP NEWCASTLE
ARCHIVE OF RECORDS

3.0 OUTLINE OF HISTORY, INDUSTRIAL PROCESS & DESCRIPTION

The Open Hearth Change house was constructed between November 1936 and May 1937 to provide facilities for employees working at the Open Hearth furnaces. Foundation work was completed by BHP and the remainder of the work was let on contract.

As well as providing lockers, bathing and toilet facilities for 800 people, the building contained office accommodation for the departmental office, superintendent and foremen, a store and a workshop.[2]

The original plans for the building show the showers arranged in a series of cubicles in conformity with building regulations at the time. However, an exemption was obtained on the grounds that if this layout was adopted, insufficient facilities could be provided for the number of employees using the change house. As a result, the shower area was built without dividing walls, and a system of overhead pipes with shower roses at regular intervals was installed.[3]

Lockers were provided in separate areas – the east end of the ground floor, and the east and west ends of the top floor – for the three shifts of employees who worked in the department. A lunchroom was situated between the two locker sections on the top floor.

At the eastern end of the change house stood a lean-to machine room containing two air compressors and three tar pumps.[4]

By 1965 pressure was being brought to bear on the Company from the Department of Labour and Industry in relation to the standard of amenities throughout the plant. However, there is no record of any upgrading at the Open Hearth Change house facilities at this time although thought was being given to the building's use following the cessation of open hearth steelmaking.[5]

In 1980 and plant-wide survey of amenities was carried out by Civil and Civic, and a task force of BHP employees was formed to investigate and report on the matter. This exercise marked a turning point in Company thinking in relation to its obligations to employees, and resulted in considerable improvements to change house facilities, including those at the Open Hearth Change house.

New plumbing was provided, floor levels adjusted to allow efficient drainage, exhaust fans installed and non-slip tiles laid on the floors. The new plumbing involved removing the overhead showers, which no longer conformed to government regulations, and installing them in rows along the walls. Pipes were bedded into the walls and covered with cement render. The walls were then tiled, providing a more hygienic surface than the original painted finish but also enabling easier removal of graffiti, which had been a long-time problem in change houses throughout the plant. The amount of graffiti was generally accepted as an indicator of the morale in the department and by this yardstick, morale was extremely low in the Open Hearth Department. When the upgrade was completed, there was a shower and toilet bowl for each 6 employees, surpassing the Department of Labour and Industry requirement of eight employees per facility.

The original lockers were removed and their brick bases, which provided a harbour for rats, were demolished. These lockers were unusually large, being about 18" – 20" square and were made of heavy steel. Standard 12" wide lockers were erected in their place, prompting complaints from employees who resented the reduction in storage space. Fortunately, enough lockers were provided, and the workforce declined sufficiently, to allow two of the new lockers to be allocated to each employee.

Dining facilities were also improved and the original rows of individual seats with attached eating tray, which were very unpopular with the employees, were replaced with conventional tables and plastic chairs. This provided more comfortable dining conditions and allowed more social interaction during mealtimes.[6]

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[2] Reports for six months ended 30 November 1936, p.150 and 31st May 1937, p.4.
[3] Discussions with R. Anschau, former Senior Supervisor, Civil Works, and and V Marten, former Project Engineer, BHP Steelworks.
[4] Discussion with D. Ruddell, former Chief Construction Engineer.
[5] Chief General Manager's Newcastle Business Sheet, 16-20 May 1965, BHPA:W5/13/4.

[6] Information provided by R. Anschau and VSR Marten.

As open hearth steelmaking was phased out and workforce declined, areas of the building were occupied by other departments. In 1965, No.4 Blast Furnace employees were using the change house. This year also saw the amalgamation of the yard bricklayers and Open Hearth bricklayers into one department, which was located in the change house, using the Open Hearth offices for bricklayer supervision. At that time, it was also proposed that the 50-ton BOS and Concast employees would use the change room.[7]

Lubrication and Air Conditioning departments moved into the mechanical workshop and office underneath the change house in 1967, remaining there until 1982.[8]

This building provides a link to the social history of the steelworks, and is also an example of the Company's capacity to adapt redundant accommodation to cater for present needs.

3.1 The Building Description & Structure

The Open Hearth Change House is unusual on the site in being built as a reinforced concrete frame with brick infill; the roof is built from riveted steel trusses.

The first Australian Standard for reinforced concrete was published in 1936 coinciding with the design and construction of this building. From what could be seen where concrete had been chipped from a column, plain round bar was used for both the main and shear reinforcement, not one of the proprietary systems which are noted up to that time. Further research on this building would be warranted, as it may be one of the earliest examples of its type.

Condition

Access was not available to note the condition of neither the roof structure nor its attachment to the concrete frame. However, the building appears to be in good structural condition but with some doubt about the roof and a high likelihood that brick cavity ties are severely corroded.

Steel conditions & protection at BHP Steelworks site

The BHP site in Newcastle is in a "Marine" to "Severe Marine" zone in accordance with AS/NZ 2312:1994 — "Guide to protection of iron and steel against exterior atmospheric corrosion". Now that the localized micro-climate from the operation of the plant has been removed, protection of the steelwork needs to be considered in terms of this Standard.

Observation at the site indicates that none of the steelwork on site has a coating system complying with this Standard for a design life of greater than 5 years. Some of the steelwork, such as the blast furnaces, is not protected at all and has been designed to operate in a hot environment where corrosion is inhibited by high temperatures driving off moisture; other steelwork was designed with extra thickness to form a sacrificial layer. In almost all buildings and in areas nearby the high temperature operations have been successful in keeping the corrosion under control except where steel has been insulated by brickwork which has trapped moisture and corrosion has been severe. There does not appear to be any general galvanic protection (i.e. galvanizing or zinc-rich coating) on major structural elements.

If major structural elements were to be retained on the site for a period in excess of 10 years the Standard gives the following coating systems:

(i) galvanizing plus a two coat paint system (not possible in situ);

(ii) various two and three coat paint systems applied after abrasive blast cleaning and having either a zinc based primer or high-build epoxy;

(iii) a sprayed metal coating followed by a two coat painting system.

Of these, only (ii) is likely to be practical. All would be extremely expensive and require continuing maintenance.

[7] Chief General Manager's Newcastle Business Sheet, 16-20 May 1965. BHPA:W5/13/4.
[8] R. Melville & M. Dunford, *Ex-Spurts: An Anecdotal History of the Fluid Power Department,* Newcastle 1999, p.10.

4.0 STATEMENT OF HERITAGE SIGNIFICANCE

The Open Hearth Change House is identified within the group identification forming Part B of Schedule 4 (Port Waratah – BHP Steelworks and Office) of "The Hunters Heritage" – Hunter Regional Environmental Plan 1989. The Open Hearth Change House is identified within Schedule 4 of The Newcastle Local Environmental Plan 1987 as having an item of Regional – level heritage significance. (This ascribed level of significance is consistent with the level of significance determined in the Port Waratah Steelworks Conservation Plan prepared by EJE Architecture in 1991). This item does not fall within a Conservation Area and is not included on the State Heritage Register. The following Assessment of Significance has been undertaken to reflect current NSW Heritage Act, Heritage Amendment Act and Burra Charter requirements.

Historic Significance

The Open Hearth Change House represents a part of the first element in the construction and later development of the Newcastle Steelworks and also forms a link with the development and growth of shipping into Newcastle from 1913 to the present via its link with the Open Hearth Building. The Change House and the Open Hearth Building are associated with the establishment and evolution of the major integrated Steelworks in NSW, and as such have HIGHEST - level heritage significance.

The Open Hearth Change House retains greater interpretive potential than its parent building (the Open Hearth Building), as it retains clear evidence of purpose: designed and fitted shower and change areas etc. It demonstrates the evolution of a Regionally significant major-industrial-works staff activity and as such must be seen to retain its REGIONAL HISTORIC heritage significance.

Aesthetic Significance

Aesthetically the building is representative of its type and age. The Open Hearth Change House building is a more distinctive building within the site generally, as it is a masonry building, but is neither architecturally distinctive nor associated with creative or technical accomplishment. For this reason it has negligable aesthetic heritage significance.

Social Significance

Like all of the elements on the Steelworks site, the Open Hearth Building and Open Hearth Change House, represent the development of iron and steel making on the Newcastle steelworks site and for its important linkage with the creation of employment in Newcastle and the region. As such, these buildings and the larger site has highest level REGIONAL (and therefore State), SOCIAL Significance.

Technical Significance

The Open Hearth change House has REGIONAL level Technical Significance for its importance as a benchmark building of rarity in the Region and State.

5.0 INVENTORY OF ARCHIVAL DOCUMENTS

The Following list constitutes the archival documents used for this report and other documents that contain related material for this archival record. For archival drawings, the BHP drawings document register (documents located in the BHP archive, Melbourne) may be found on the computer disk located in the appendix.

Melville, R. & Dunford, M. — Ex-Spurts: An Anecdotal History of the Fluid Power Department, Newcastle, 1999

Newcastle Steelworks, Half Yearly Reports, November 1936, May 1937

Discussions with:
R. Anschau, former Senior Supervisor, Civil Works, Newcastle Steelworks
V. Marten, former Project Engineer, Newcastle Steelworks
D. Ruddell, former Chief Construction Engineer, Newcastle Steelworks

6.0 SELECTED PHOTOGRAPHS

Figure 6.1 View West of Open Hearth Change House's Eastern facade. Shows Main 2 storey building with late single storey extension in foreground for tar fuel pump house.

Figure 6.2 View West of upper level detail of original windows at Eastern façade.

Figure 6.3 View North – East of Open Hearth Bath House showing West and South facades overlaid with the later added B.O.S. scrap feed ramp and pipe-work framing.

Figure 6.4 View North of Southern façade showing original windows. Taken from the B.O.S. scrap ramp.

Figure 6.5 View North West of Open Hearth Change House showing Southern façade and roof from B.O.S. scrap ramp. Gas holders seen in background.

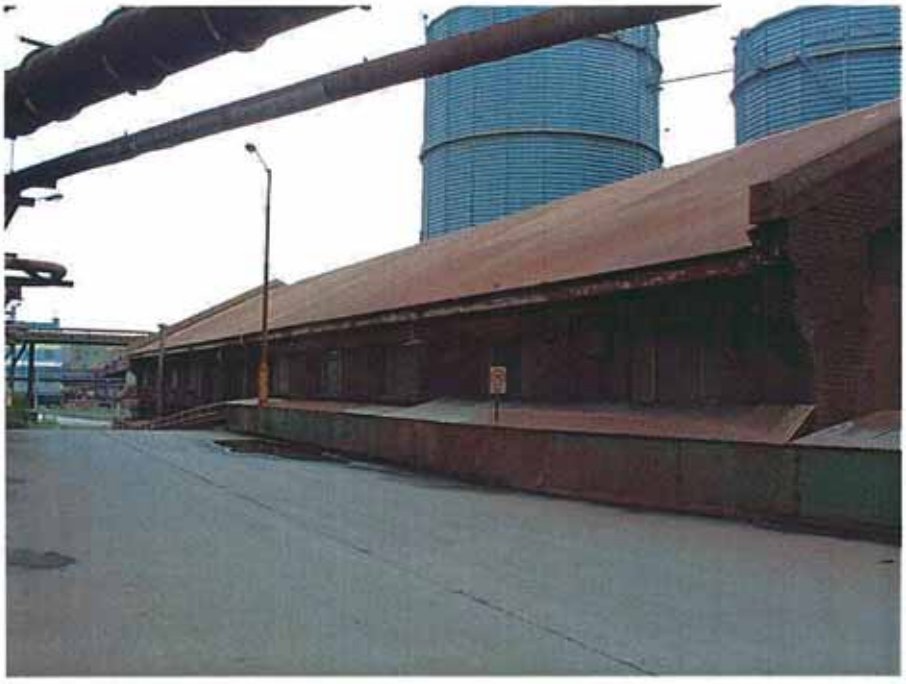


Figure 6.6 View East of Open Hearth Change House Western façade (right portion)

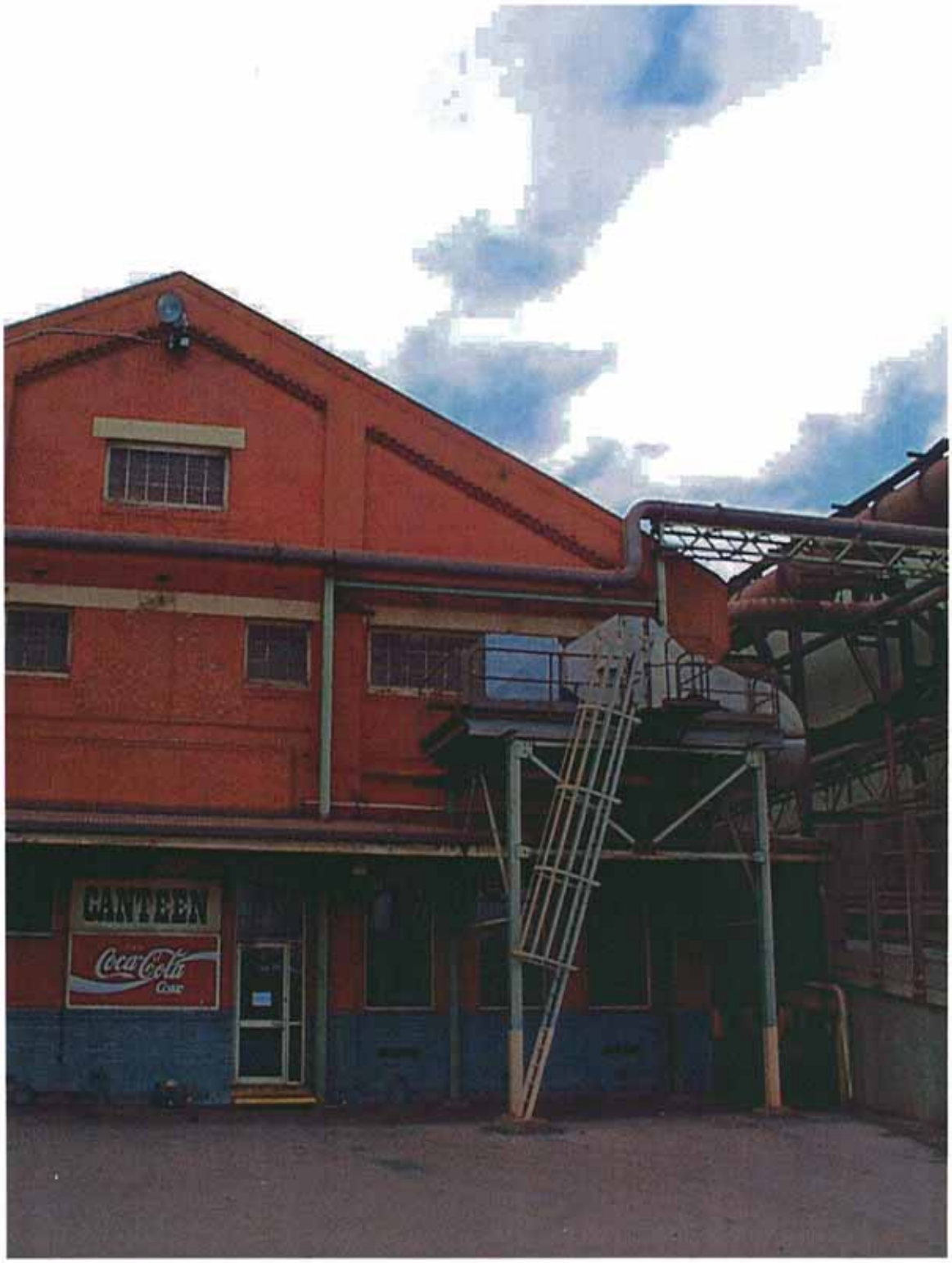


Figure 6.7 View East of Open Hearth Change House Western façade (left portion).

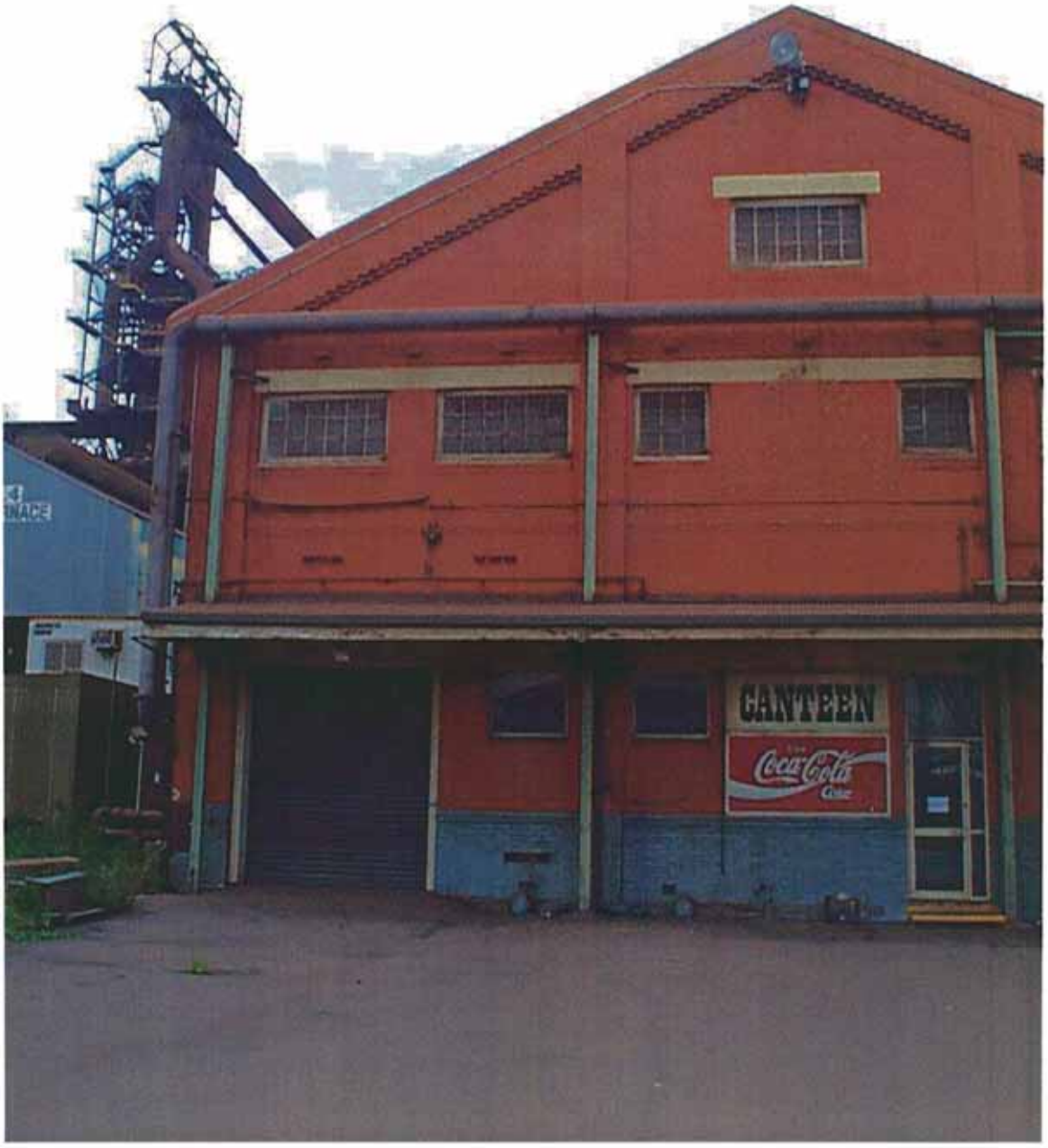


Figure 6.8 View of lunch area and bench within Open Hearth Bath House.

Figure 6.9 Close-up of "cedar" lunch room bench within Open Hearth Bath House. Note: Detail drawings of bench, differs from original detail drawings.

Figure 6.10 View East along North side of showers to Open Hearth Bath House. Showers have been heavily modified to run East – West. Showers originally ran North – South with division wall at each. Wall panel at centre / external wall pier.

Figure 6.11 Internal view of Open Hearth Bath House locker room. Shows original heavy plate steel lockers with original clothing hangers. Note foot board on bench seat and possible shoe box.

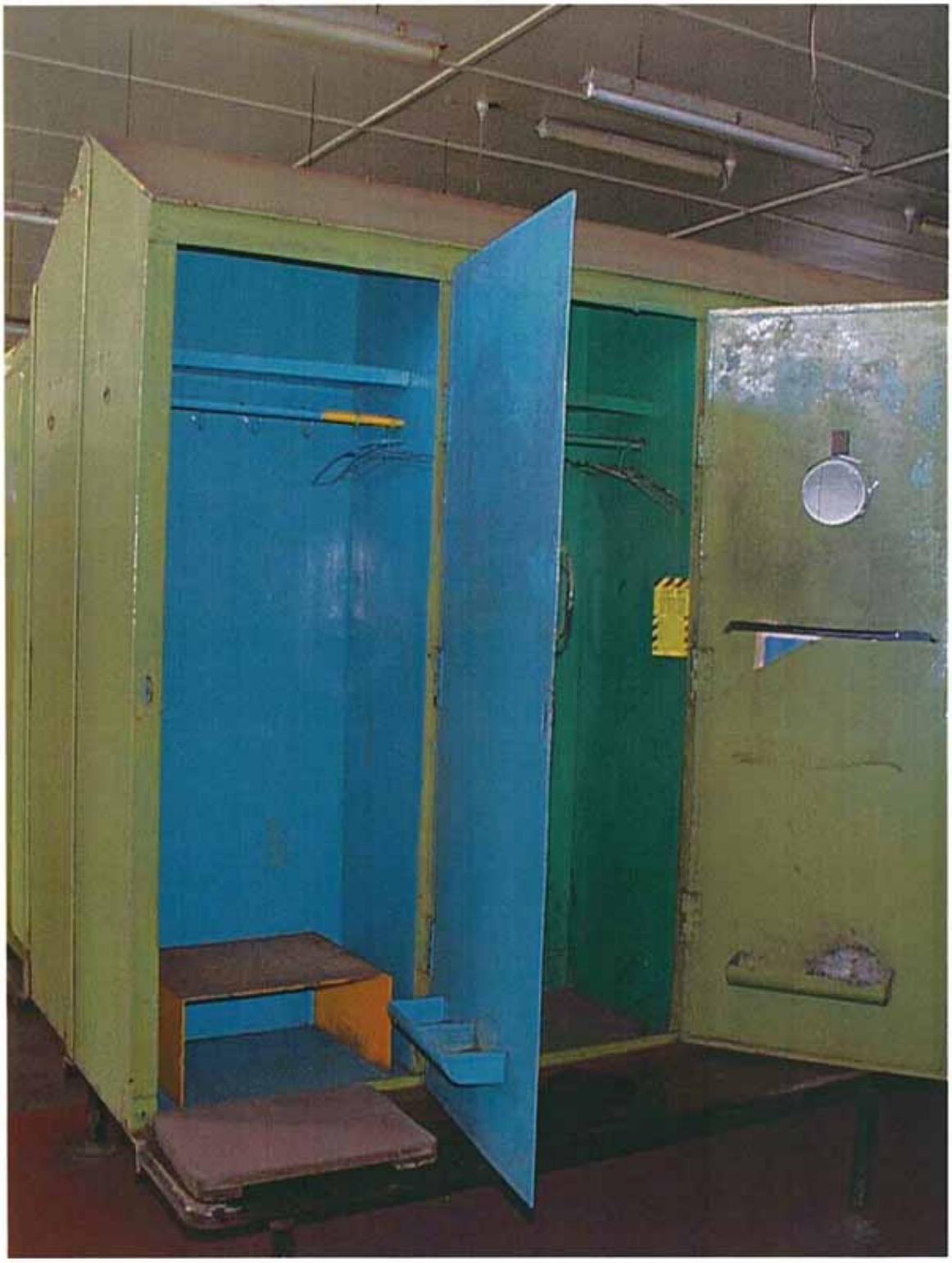


Figure 6.12 View looking west of locker room east wing in Open Hearth Bath House. Shows locker rows and access from central door. Note: Locker numbers differ from original layout.

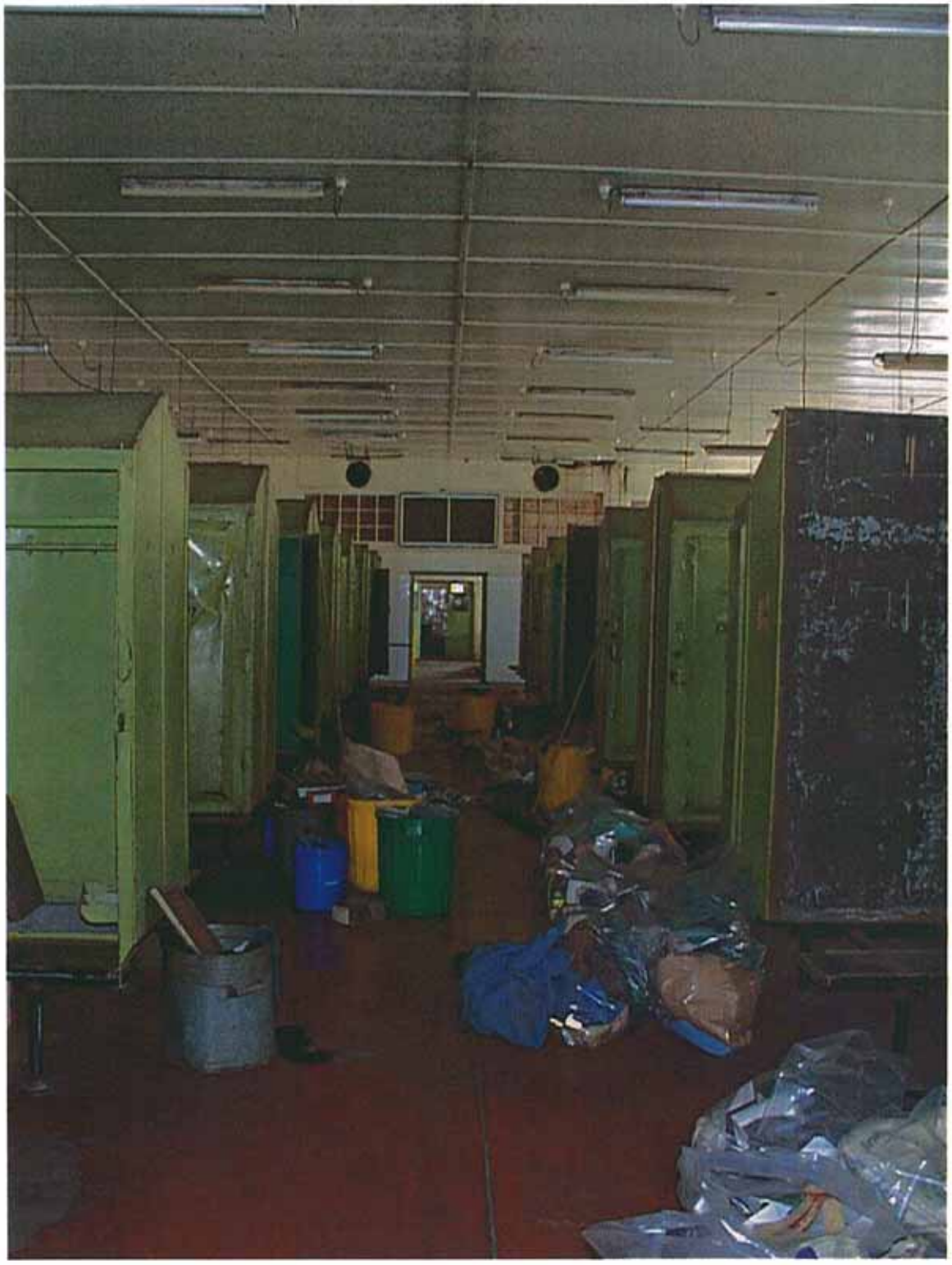
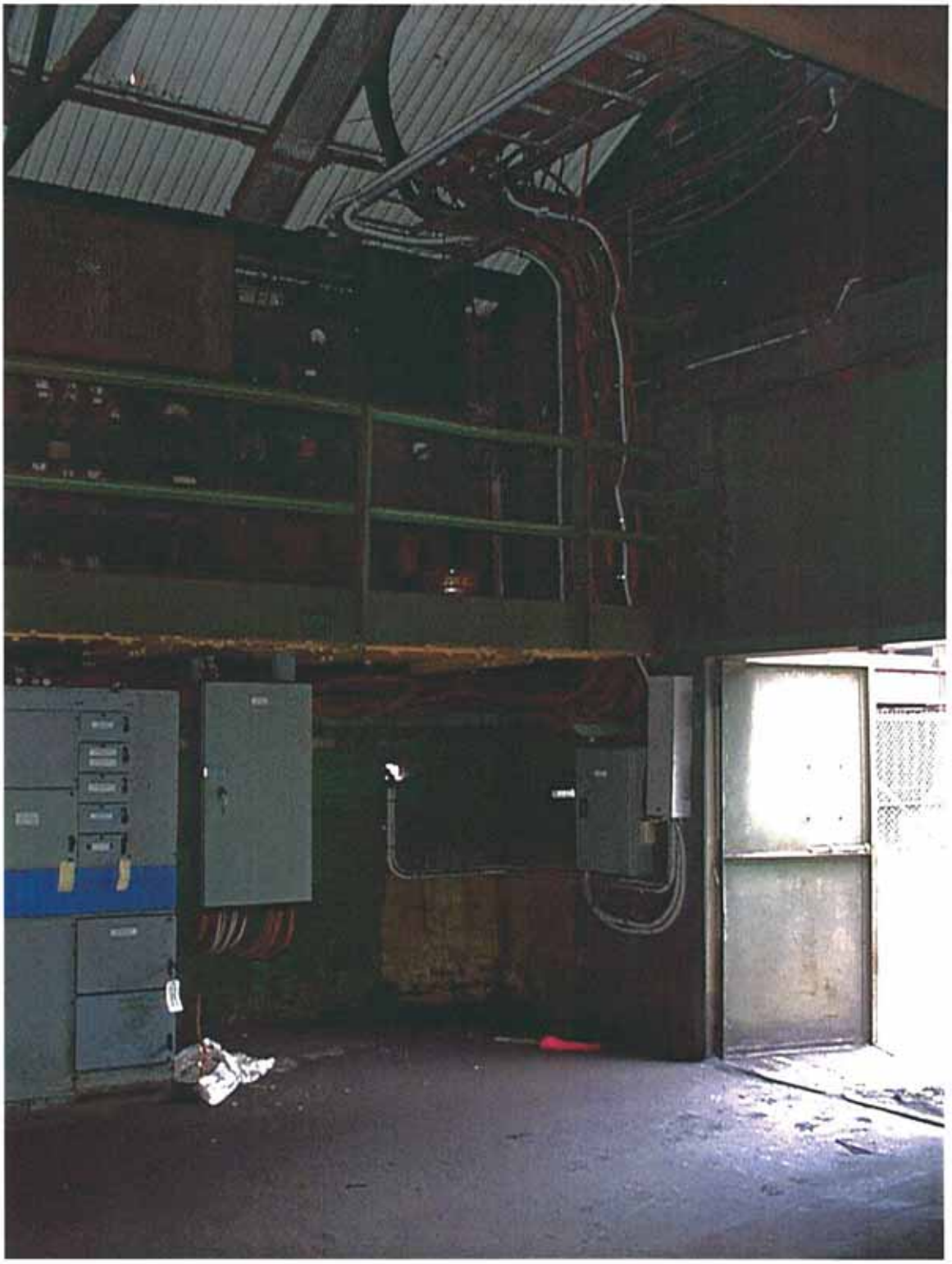


Figure 6.13 View - East of Tar Pump House in Open Hearth Bath House. Shows access doors to East wall and electrical panels and breaker board above.



7.0 NEGATIVE REFERENCE LIST

The following information relates to the complete set of negatives taken for the recording of this building. Under each Roll Number is a table containing the negative numbers and a description of each frame taken of that roll. The roll and negative numbers, position and direction of frame taken are referenced in the plan in section 8.0 – photographic reference plan. The numbers in the column titled "Figure No." relate to the selected photographs in section 6.0 of this report. Items marked with a dash in this column have prints located in the appendix along with the complete set of negatives.

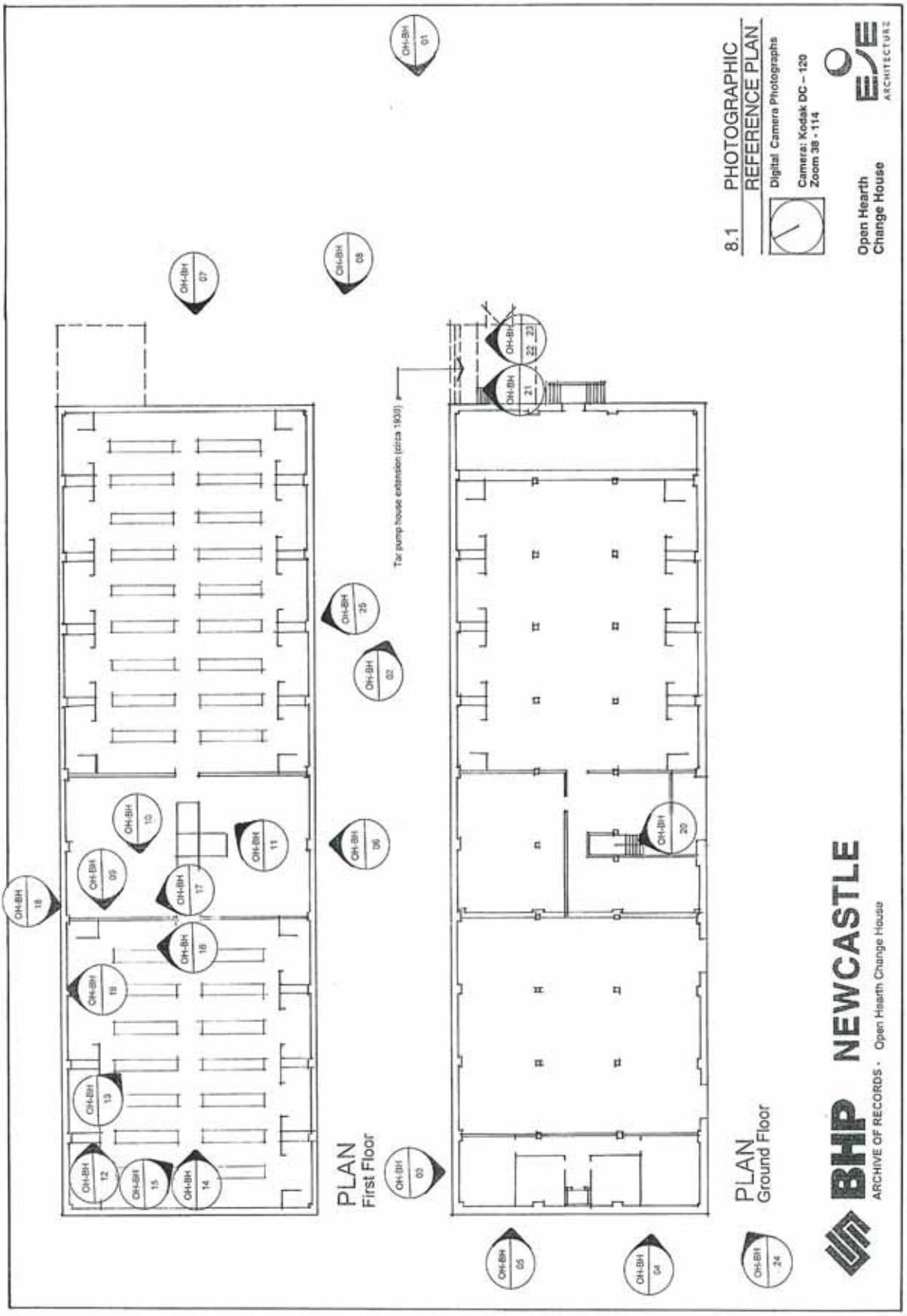
Digital photographs

Camera: Kodak DC-120 Zoom 38 – 114

Photo No.	Figure No.	Description
OH-BH-01	6.1	View West of Open Hearth Change House. Shows Main 2 storey building with late single storey extension in foreground for tar fuel pump house
OH-BH-02	-	View South/East of Open Hearth Change House. Note modified and bricked up windows.
OH-BH-03	-	View South of Open Hearth Change House Western end wall with late boiler flue addition.
OH-BH-04	6.6	View East of Open Hearth Change House Western façade (right)
OH-BH-05	6.7	View East of Open Hearth Change House Western façade (left)
OH-BH-06	6.4	View North of Southern façade showing original windows. Taken from the B.O.S. scrap ramp.
OH-BH-07	6.2	View West of upper level detail of original windows at Eastern facade
OH-BH-08	6.5	View North West of Open Hearth Change House showing Southern façade and roof from B.O.S. scrap ramp. Gas holders seen in background.
OH-BH-09	6.9	Close-up of "cedar" lunch room bench within Open Hearth Bath House. Note: Detail drawings of bench, differs from original detail drawings.
OH-BH-10	-	View West of lunch room inside Open Hearth Bath House showing full length of bench and part doorway to showers / lockers.
OH-BH-11	-	View looking North East of lunch room to Open Hearth Bath House. Shows original brickwork and windows with modified hand washing to the left.
OH-BH-12	6.10	View East along North side of showers to Open Hearth Bath House. Showers have been heavily modified to run East – West. Showers originally ran North – South with division wall at each. Wall panel at centre / external wall pier.
OH-BH-13	6.11	Internal view of Open Hearth Bath House locker room. Shows original heavy plate steel lockers with original clothing hangers. Note foot board on bench seat and possible shoe box.
OH-BH- 14	6.12	View looking west of locker room east wing in Open Hearth Bath House. Shows locker rows and access from central door. Note: Locker numbers differ from original layout.
OH-BH-15	-	View of locker room West wing within Open Hearth Bath House. Shows electric coil fan heater mounted to ceiling.
OH-BH-16	-	View of West wing looking East within Open Hearth Bath House. Shows urinal and hand wash area. (Note: Not original.)
OH-BH-17	6.8	View of lunch area and bench within Open Hearth Bath House.
OH-BH-18	-	View of lunch area and bench within Open Hearth Bath House.
OH-BH-19	-	View North in West wing of showers within Open Hearth Bath House. Shows original service pipe "D" fittings to suit original shower layout.

OH-BH-20	-	View from ground level access doorway on South side within Open Hearth Bath House. Shows stairs and access to first floor lunch and shower areas.
OH-BH-21	-	View North of Tar Pump House in Open Hearth Bath House. Shows electrical cabling boxes and material / breaker panel on platform above.
OH-BH-22	-	View North of Tar Pump House in Open Hearth Bath House. Shows electrical cabling boxes and material / breaker panel on platform above.
OH-BH-23	6.13	View - East of Tar Pump House in Open Hearth Bath House. Shows access doors to East wall and electrical panels and breaker board above.
OH-BH-24	6.3	View North – East of Open Hearth Bath House showing West and South facades overlaid with the later added B.O.S. scrap feed ramp and pipe-work framing.
OH-BH-25	-	View North at the Open Hearth Bath House showing detail of South façade with part view of vent louvre to wall with original wall light fitting.

8.0 PHOTOGRAPHIC REFERENCE PLAN



9.0 DIAGRAMMATIC RECORD AND DRAWINGS

Figure 9.1: Open Hearth Change House – General Arrangement (Floor Plans) & Location Plan (1936)

Source: BHP drawing. Ref – 13523

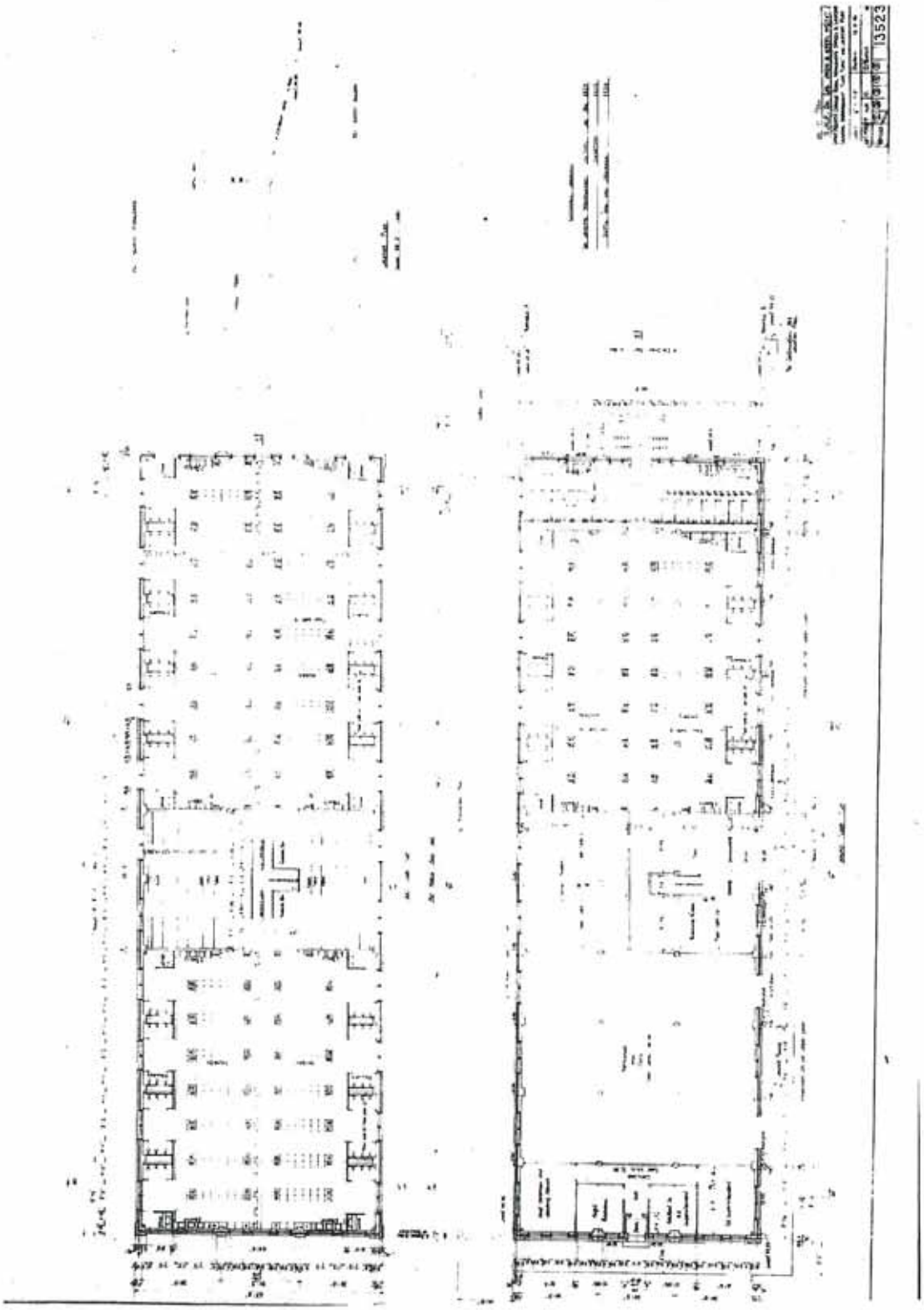


Figure 9.2: Open Hearth Change House - General Arrangement (Sections) (1936)

Source: BHP drawing. Ref – 13524

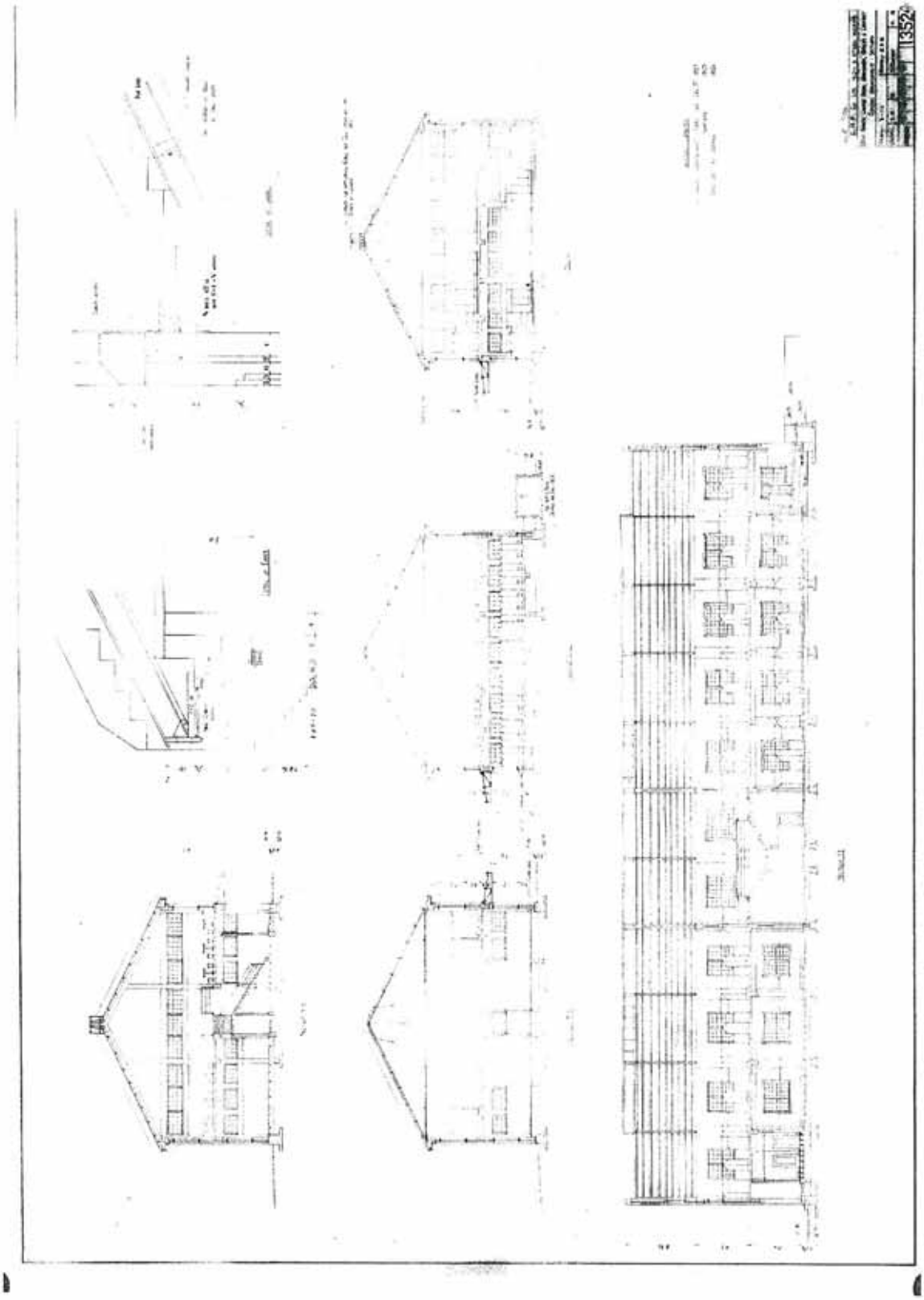


Figure 9.3: Open Hearth Change House - General Arrangement (Elevations)

Source: BHP drawing Ref – 13525

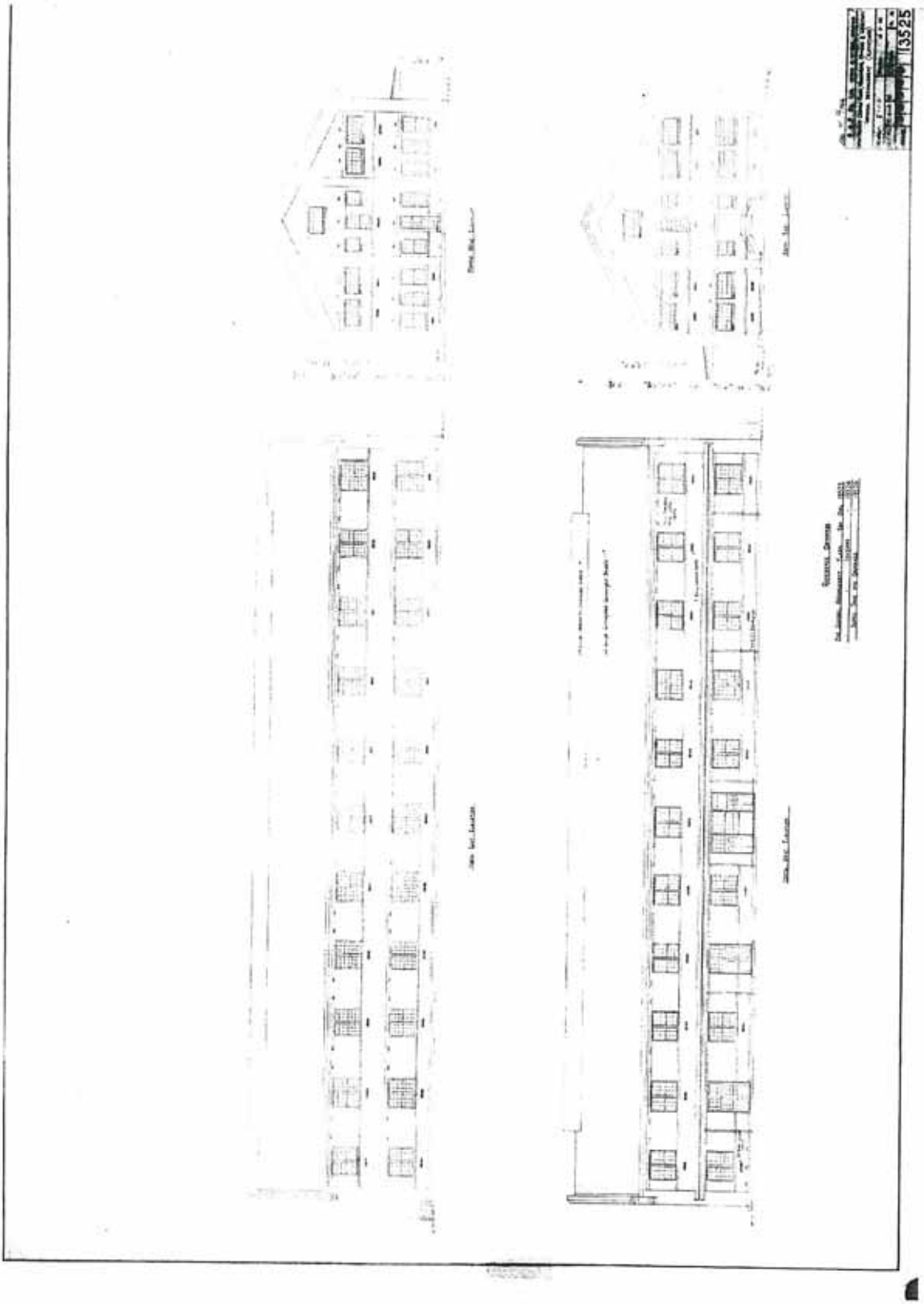


Figure 9.4: Open Hearth Change House – Lavatory, Septic Tank & Drains (1936)

Source: BHP drawing Ref – 13526

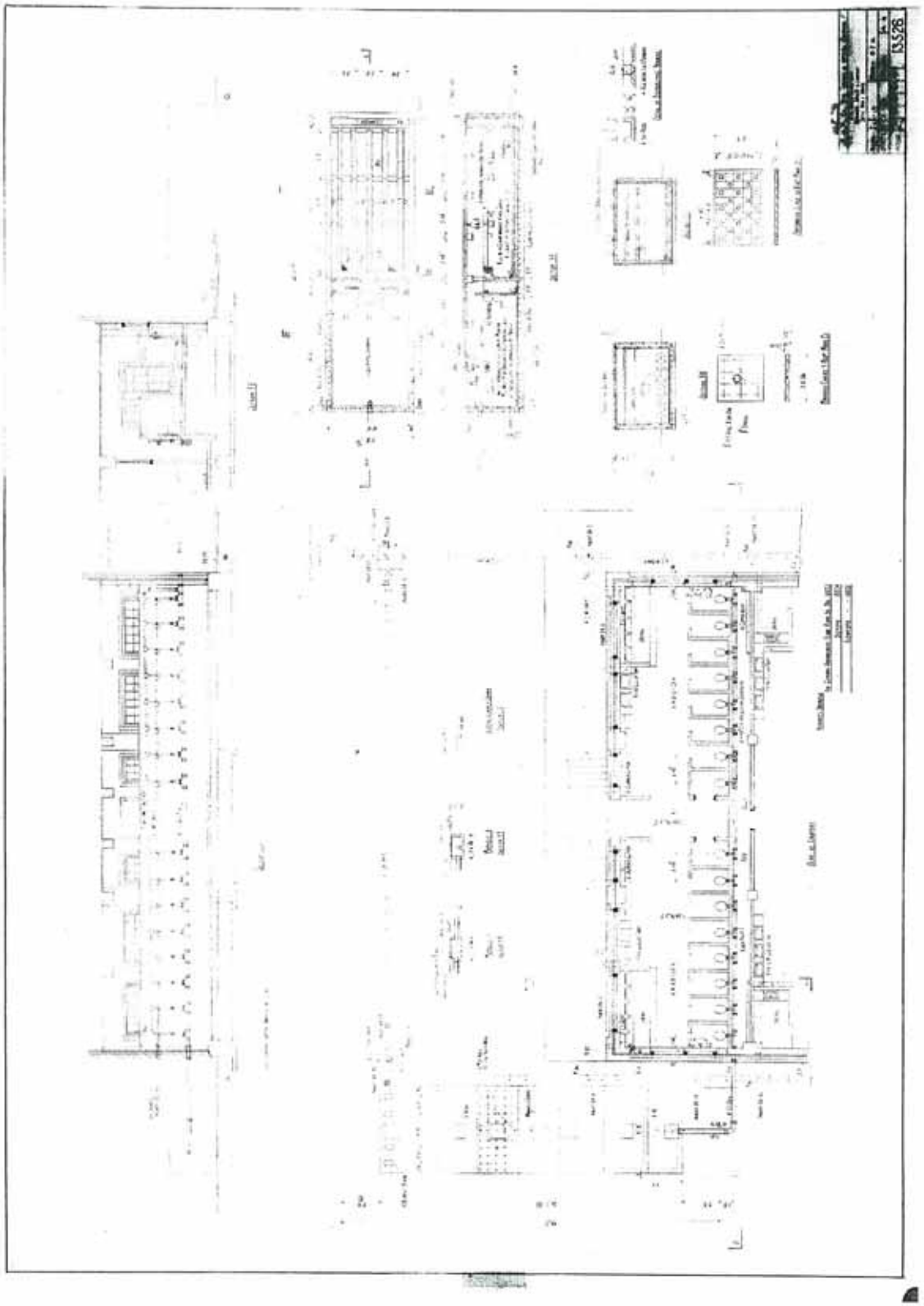


Figure 9.5: Open Hearth Change House – Marking Diagram & Details of Roof / Awning Trusses. (1936)

Source: BHP drawing Ref – 13529

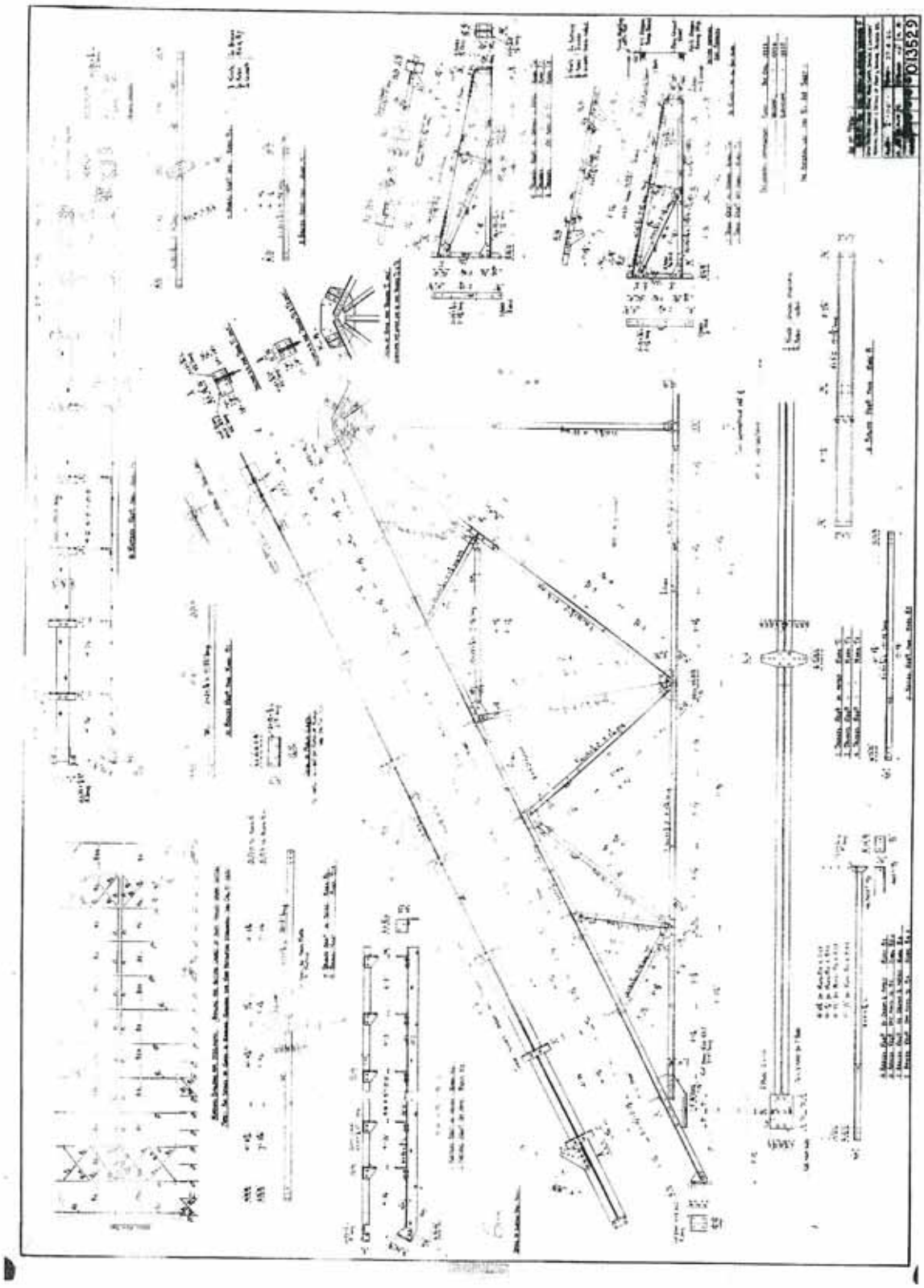


Figure 9.6: Open Hearth Change House – Dining Room Seating (Plans /Elevation /Section) (1937)

Source: BHP drawing Ref – 13536 F

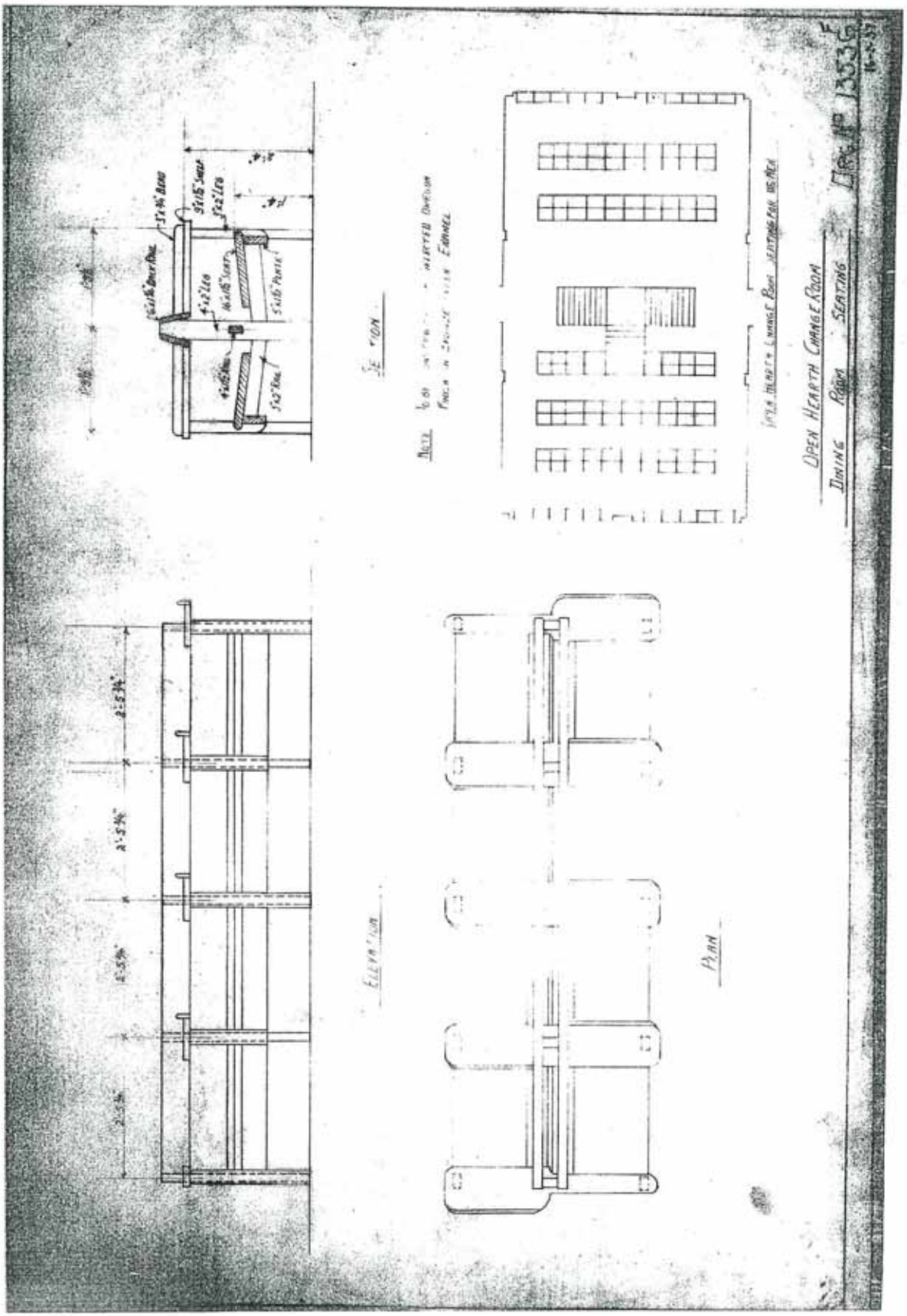


Figure 9.7: Open Hearth Change House – Detail of Louvres for Roof Ventilators. (1936)

Source: BHP drawing Ref – 13531

10.0 HISTORIC PHOTOGRAPHIC RECORD

Note: No historic photographs of the Open Hearth Change House were found during the compilation of this report.

11.0 FULL FORMAT PHOTOGRAPHIC RECORD

Note: There were no full format photographs located at the time of compiling this report.

12.0 INVENTORY OF EQUIPMENT, FITMENTS & FINISHES

ITEM	DESCRIPTION
Toilet & Shower Block	Re-modelled since the 1937 original shower & toilets, the existing shower block (c.1980) runs East – West, 90 degrees to the original layout. The existing showers are open plan as opposed to the cubicle design of the original showers. The showers have wall tiles, non-slip floor tiles, towel rails and shower heads along wall.
Seats & Integral Crib Table	Located on the first floor in the central room the remaining cedar bench seat was built as documented in1937.
Lockers	Original steel plated 18"-20" square lockers, built up on legs and fitted with built in coat hangers, foot board & bench seat. The lockers are situated throughout the first floor
Tar Pump House	Containing two air compressors & three tar pumps, the lean-to machine room (at the eastern end of the changehouse) also houses a mezzanine for electrical panels & breaker board.

13.0 APPENDICES

Appendix A: Manual camera negatives and photos

Appendix B: Digital images Proof Page and disk

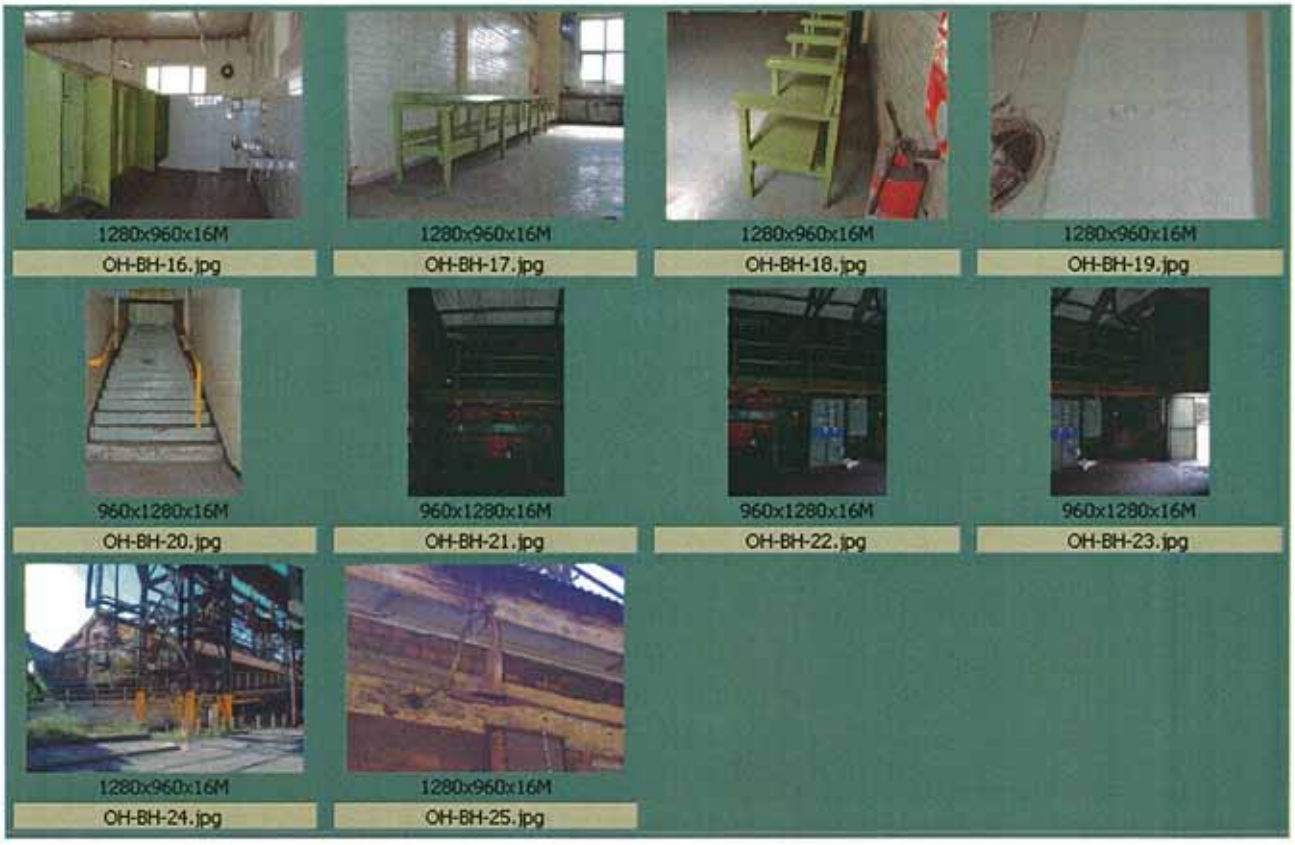
Appendix C: Archive Drawing Register Disk

13.1 Appendix A:Manual camera negatives and photos

Refer to the final Archive Report master copy, to be submitted to the NSW Heritage Office, for negatives and additional mounted manual photographs.

13.2 Appendix B:Digital images Proof Page and disk

Refer to the final Archive Report master copy, to be submitted to the NSW Heritage Office, for the digital images disc.


1280x960x16M
OH-BH-16.jpg
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1280x960x16M
OH-BH-18.jpg
1280x960x16M
OH-BH-19.jpg
960x1280x16M
OH-BH-20.jpg
960x1280x16M
OH-BH-21.jpg
960x1280x16M
OH-BH-22.jpg
960x1280x16M
OH-BH-23.jpg
1280x960x16M
OH-BH-24.jpg
1280x960x16M
OH-BH-25.jpg

13.3 Appendix C:Archive Drawing Register Disk

Refer to the final Archive Report master copy, to be submitted to the NSW Heritage Office, for the drawing register disk. Also accompanying the master copy shall be full size prints of the drawings as included in Section 9.0 -"Diagrammatic Records & Drawings".