

# Miniature Newcastle

Celebrating  
Newcastle's Rail and  
Industry History

Presentation to Living Histories at  
University of Newcastle

Garry Glazebrook

8 April 2024



# CONTENTS

- Newcastle: Australia's Industrial City
- Ideas from other Museums
- A Unique Opportunity
- Miniature Newcastle
- The Newcastle Station Opportunity
- Conclusions



# Newcastle: Australia's Industrial City

- Australia's first railway (1831)
- The birthplace of our coal industry
- Australia's first export cargo
- Private as well as government railways
- Australia's first Integrated Steel Mill
- World's biggest coal export port
- Numerous manufacturing firms.





# Deserves a Museum of Rail and Industry

Ross Balderson's Newcastle 1899

# Benefits

Build on the existing collaboration to further encourage

- Tourism
- Education
- Research

SPECIAL COLLECTIONS - GLAM X - AUCHMUTY LIBRARY

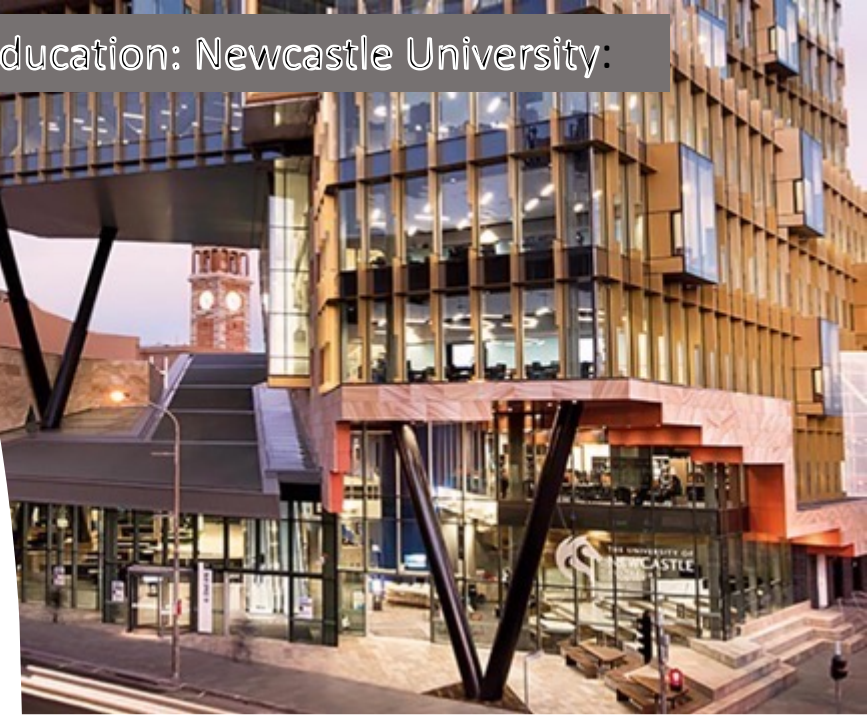
## HUNTER LIVING HISTORIES

ANNUAL REPORT 2021



Collaboration: Hunter Living Histories

Education: Newcastle University:



Research: Hunter Library



Overseas / Interstate Tourism



# Ideas from Other Museums

- Miniature models of cities, railways, maritime and industry can attract significant visitor numbers
  - At one extreme, “Miniature Wonderland” in Hamburg, Germany, has attracted over 21 million visitors since opening 20 years ago and is still expanding.
  - The recently opened Bathurst Rail Museum attracted 34,000 visitors last year with a museum quality layout and other displays.
  - “Newcastle 1899” attracted thousands of visitors on one weekend – and this was relatively tiny but beautifully researched and built diorama.
  - There is a need to further rejuvenate Newcastle CBD and to provide a range of attractions for locals as well as visitors from NSW, interstate and overseas.



# Bathurst Rail Museum



## HENNESSY FAMILY A LASTING LEGACY

In 2008, Paul Hennessy employed master modeller John Brown to build a scale layout of a section of the Great Western Line. After six years of research and construction, a model of the railway from Tarana to Bathurst during the 1950s-60s was finished.

Paul chose this section for its importance as a central portion of the Great Western Line, and also for its connection to his family. His attachment to Bathurst and the railway runs deep, as his forebears, the Locke family, settled here in 1832; they were among the first settlers in the area that would later become Bathurst. Locksley was the site of the Locke family homestead and Brewongle was the location of Paul's grandparents' farm.

Paul and Benny Hennessy.  
Image courtesy of the Oberon Review.

In 2012, on the eve of major heart surgery, Paul formally passed the layout and associated collection to his daughter Siobhan to ensure its ongoing connection to the family. Paul's surgery was successful, however when the time came for the layout to find a new home, the family were keen to share this significant item with the wider community. Understanding its historical and educational value to the public, Bathurst Regional Council accepted the offer of the donation of layout made by Paul and his family in 2014.

The layout was donated by Siobhan Hennessy, and the Hennessy Family through the Australian Government's Cultural Gift Program in memory of Ben Chifley, former Prime Minister of Australia and Siobhan's Great Uncle Maryrn Henry Charles (Dick) Locke OBE, who was President of the Shire of Turon from 1954-1977 and then a long time Councillor on Bathurst City Council.

Volunteers work on the restoration of the Hennessy layout in preparation for the opening of the Bathurst Railway Museum in 2016.



Volunteers



# BATHURST RAIL, MUSEUM

Life-Sized Replicas



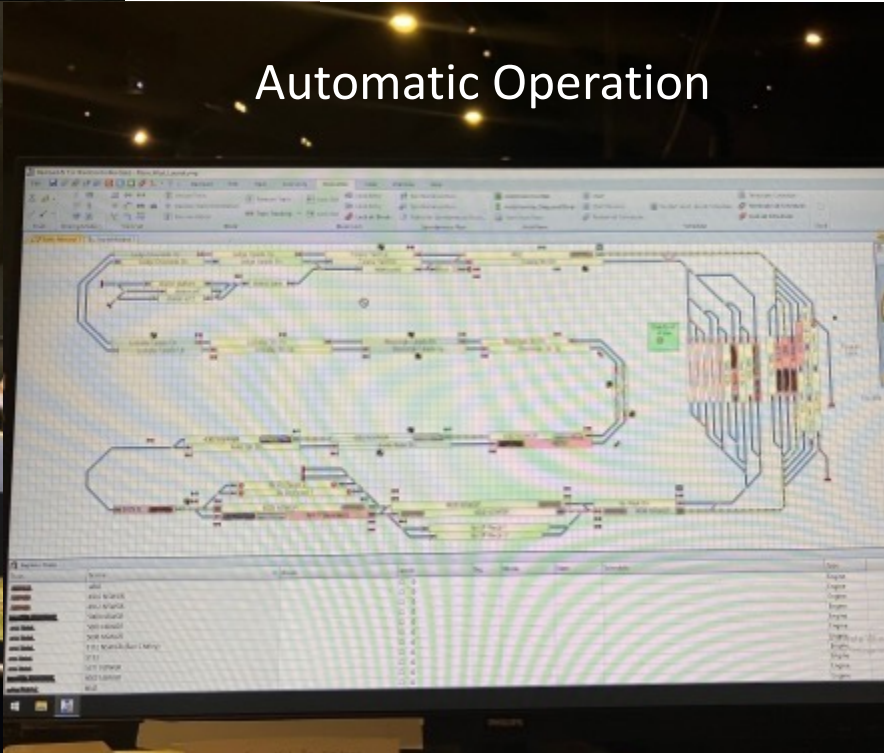
Staging Yards



Kids Workshops



Synchronized Videos



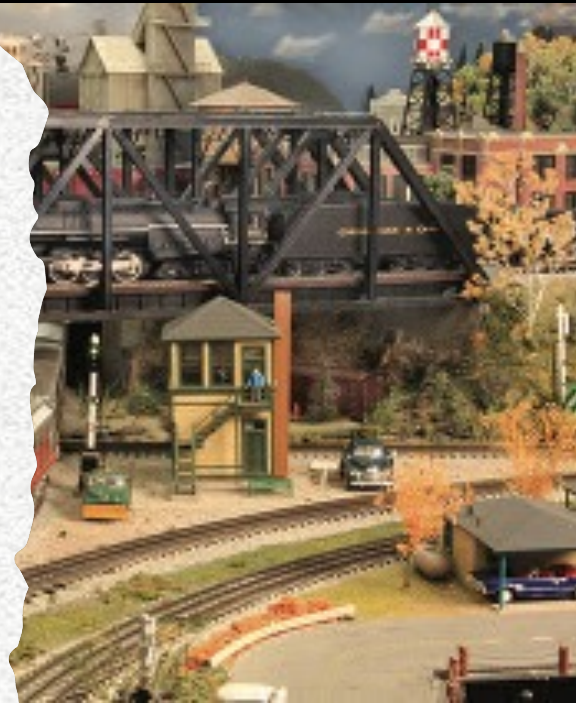
Automatic Operation




San Diego  
Rail Museum

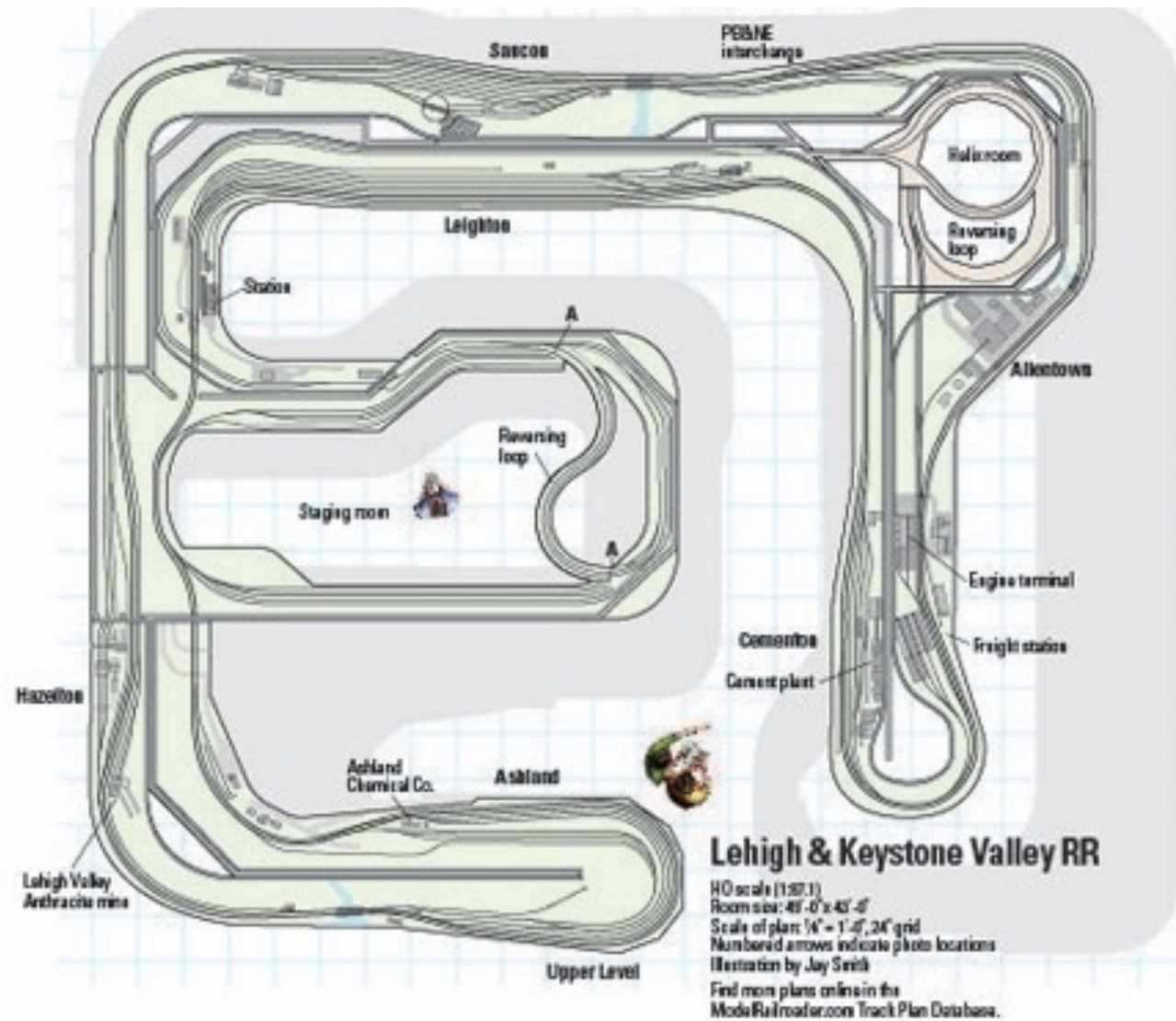
## San Diego Rail Museum

- 2,400 sq. m.
- 4 Model Railway Layouts
- Library, Exhibition Space
- 3 million visitors since 1982

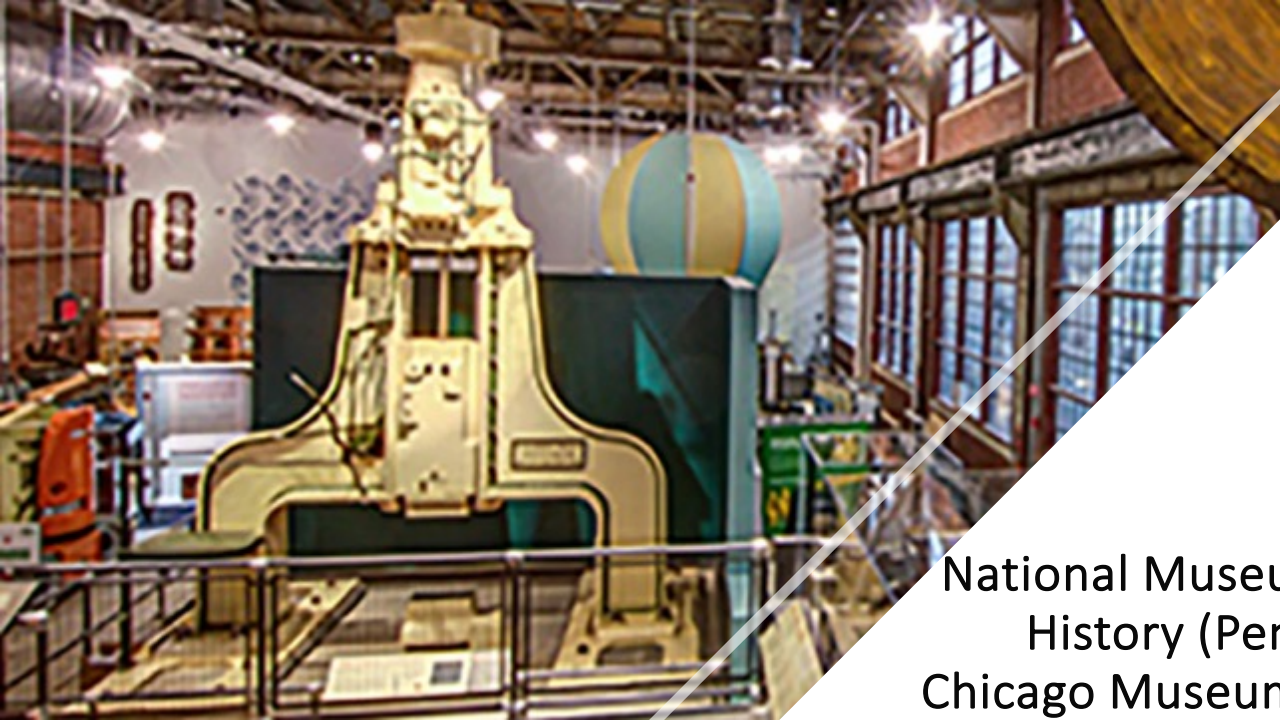




Lehigh and Keystone  
Valley Rail Museum,  
Pennsylvania



**Name:** Lehigh & Keystone Valley  
**Layout designer:** Lehigh & Keystone Valley model railroading club  
**Scale:** HO (1:87.1)  
**Size:** 45 x 60 feet  
**Theme:** Eastern Pennsylvania and western New Jersey  
**Locale:** Pennsylvania's Lehigh Valley  
**Era:** 1950-1970  
**Style:** linear walkaround  
**Mainline run:** 960 feet  
**Minimum radius:** 28"



National Museum of Industrial  
History (Pennsylvania);  
Chicago Museum of Science and  
Industry;  
Auckland Maritime Museum;  
Ipswich Rail Museum





# Franklin and South Manchester

The Franklin and South Manchester Model Railroad, built by master modeler George Selios, depicts industrial north-east America in the great depression era of the 1930's

It is one of the most famous and visited private layouts in the world.

---

# Newcastle 1899



Ross Balderson's Beautiful N-scale model of Newcastle in 1899 tells the story of the city at the turn of the 20<sup>th</sup> century, from the transport and architecture to the local fashions and even advertising signs

## Miniature Wonderland

World's largest model

- 1,040 trains
- 260,000 miniature figures!
- 760,000 hours to construct
- Germany's fifth largest attraction

<https://www.youtube.com/watch?v=LNvZY6cOijo>





# *Why a Miniature Newcastle?*



# It would be a Unique and Authentic Offering

Facility	Location	Auspice	Railway*	Architecture	Maritime	Industry
Bathurst Rail Museum	Bathurst, NSW	Council	Yes*	Yes		
Ipswich Railway Museum	Ipswich, Qld	Qld Rail	Yes*			
Chicago Museum of Science and Industry	Chicago, USA		Yes*	Yes		Yes
Trainworks	Thirlmere, NSW	NSW Rail Heritage	Yes			
San Diego Railway Museum	San Diego, USA	City of San Diego	Yes*	Yes		Yes
Miniature Wonderland	Hamburg, Germany	Private	Yes*	Yes	Yes	Yes
Auckland Maritime Museum	Auckland, NZ				Yes	
Australian National Maritime Museum	Sydney, NSW				Yes	
Bruce Chubb Railway Museum	USA	Private	Yes*			Yes
National Museum of Industrial History	Bethlehem, USA		Yes			Yes
Lehigh and Keystone Valley Model Railroad Museum	Pennsylvania, USA	Private (Non-Profit)	Yes*			Yes
Discovery Museum	Newcastle, UK	Newcastle City Council	Yes		Yes	Yes
Miniature Newcastle (Proposed)	Newcastle NSW	??	Yes*	Yes	Yes	Yes

\* Those with asterisks include a working model railway as a key feature of the facility.

# It would Support Existing Museums

## The proposed Miniature Newcastle would

- **Complement, not compete with, existing museums, including:**
  - Newcastle Museum
  - Richmond Vale Museum
  - Delprat's Cottage
- **Focus on models and small exhibitions** drawn from the collections of the larger, special purpose museums.
- **Foster collaboration** and cross-discipline learning opportunities.
- **Illustrate four themes**, which together made Newcastle unique
  - Railways (public and private)
  - Industry (including steel, shipbuilding, railway manufacturing etc.)
  - Maritime (port and shipbuilding)
  - Architecture (many classic examples of 1850's – 1950's period)



Delprat's Cottage: NIHS





# Themes: Railways

---

- Show how the railways actually moved passengers and freight
- Highlight the steam – diesel transition period
- Show private railways (BHP, Richmond Vale, South Maitland etc.) as well as NSW Government Railways
- Demonstrate how vital railways were to the history of Newcastle and the Hunter.

A large industrial steel mill with rusted pipes and structures. The scene is dominated by massive, rusted steel pipes and structures, likely part of a steel mill. The lighting is dramatic, with a dark sky and bright highlights on the metal surfaces. The overall tone is industrial and somewhat somber.

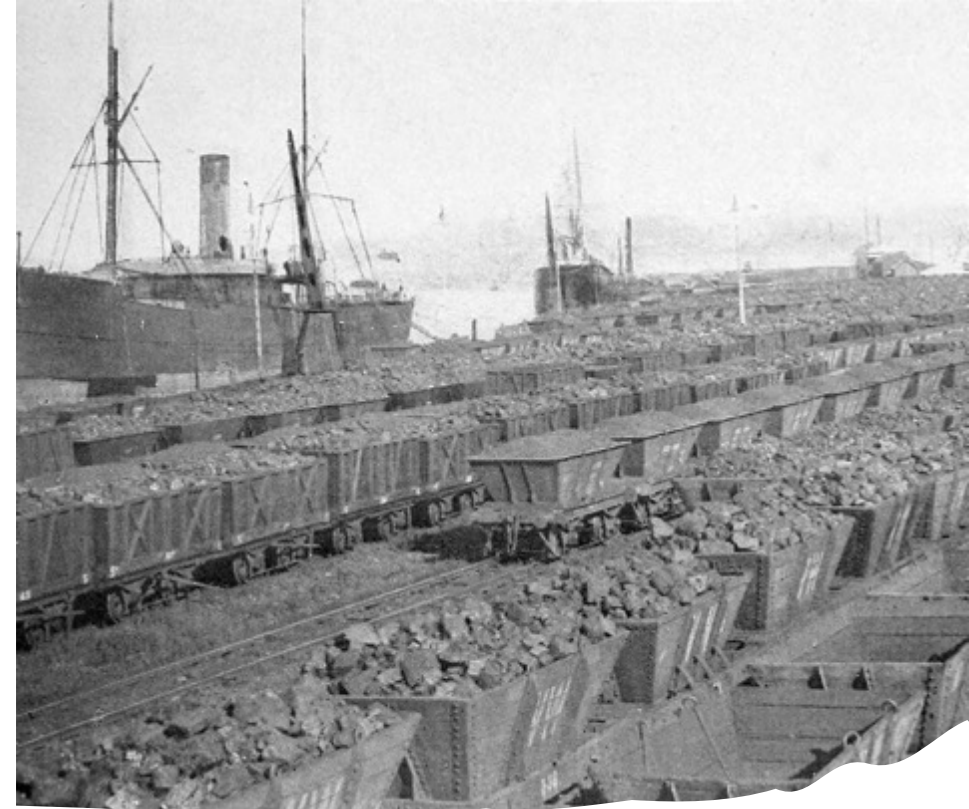
# Industry

- Demonstrate how steel was made and the sheer scale of the steelworks
- Illustrate the importance of coal mining
- Remember other major industries (e.g. Sulphide works, Zara St Power Station, Newcastle Gas and Coke, McIntyre Flour Mills), which have since closed
- Highlight other industries (e.g. railway manufacture and repair) which continue to this day



# Maritime

- Show how the port and shipping evolved from the days of sail to the 1960's
- Highlight the massive investment in Port Waratah as well as the Port of Newcastle
- Show the evolution of ship handling technologies
- Illustrate the shipbuilding industry via the State Dockyard



From the earliest exports through shipbuilding at the the State dockyard to today's massive coal and grain export terminals

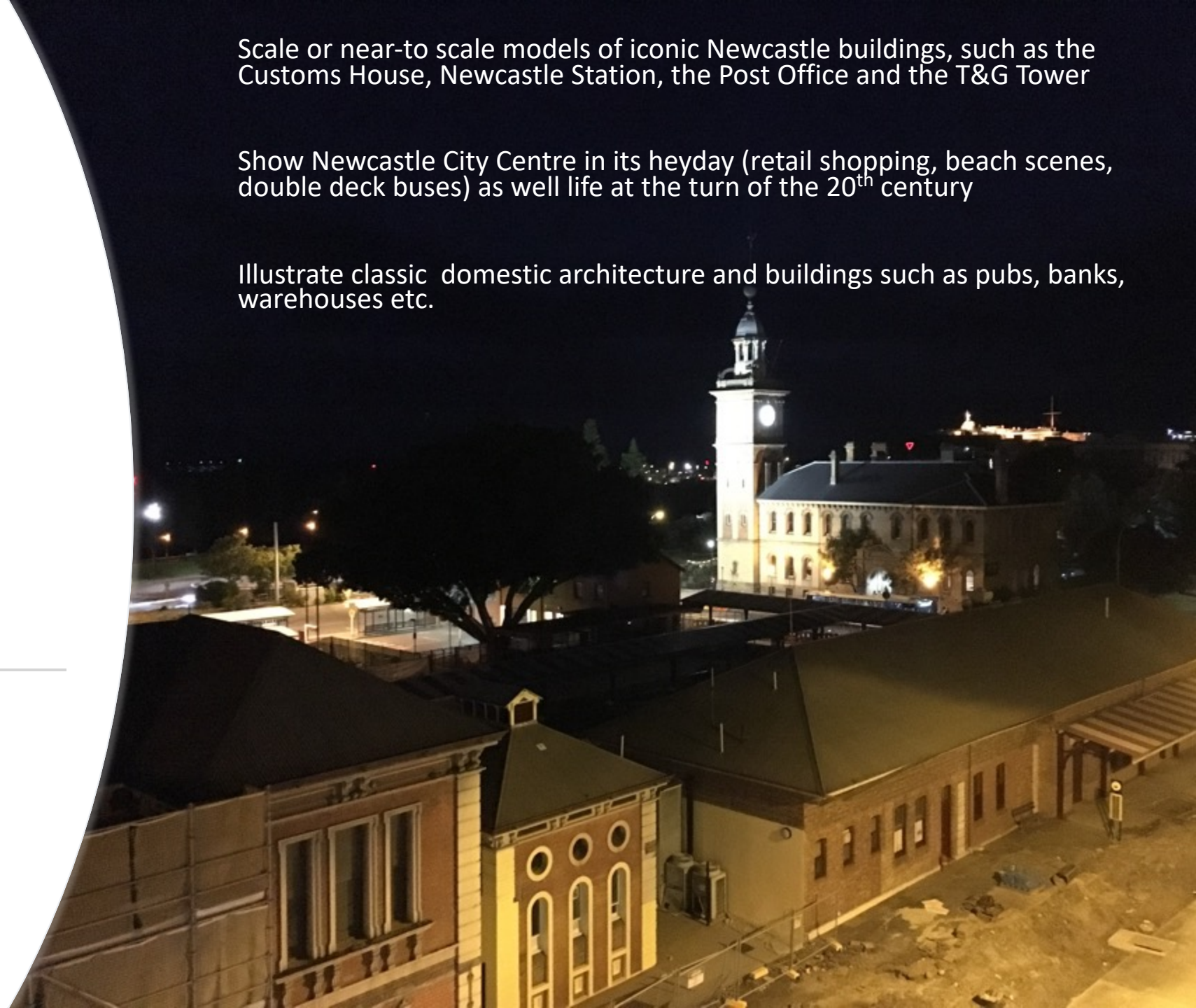
Scale or near-to scale models of iconic Newcastle buildings, such as the Customs House, Newcastle Station, the Post Office and the T&G Tower

Show Newcastle City Centre in its heyday (retail shopping, beach scenes, double deck buses) as well life at the turn of the 20<sup>th</sup> century

Illustrate classic domestic architecture and buildings such as pubs, banks, warehouses etc.

# Architecture

---



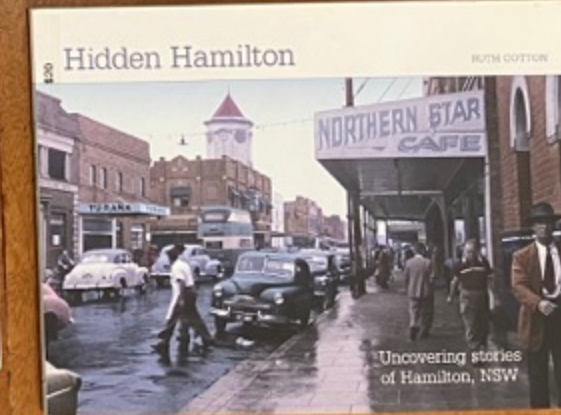
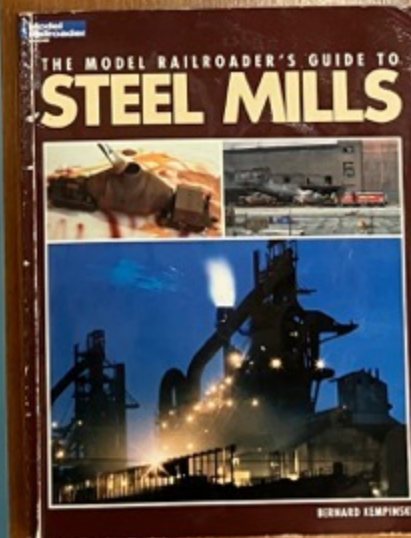
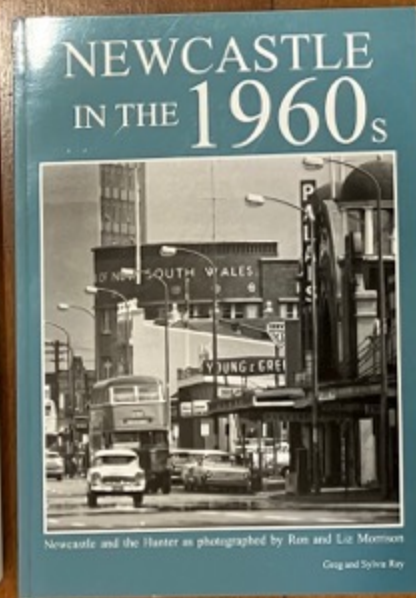
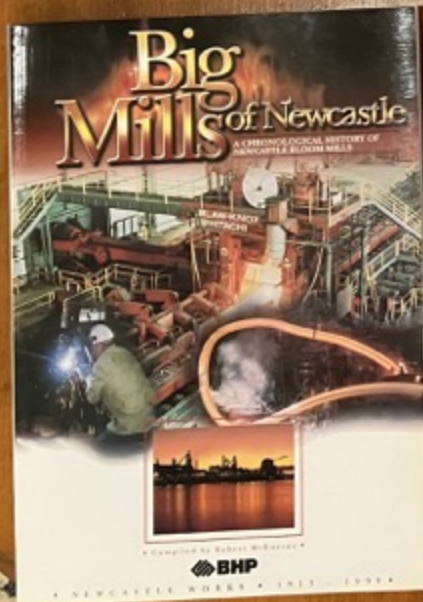
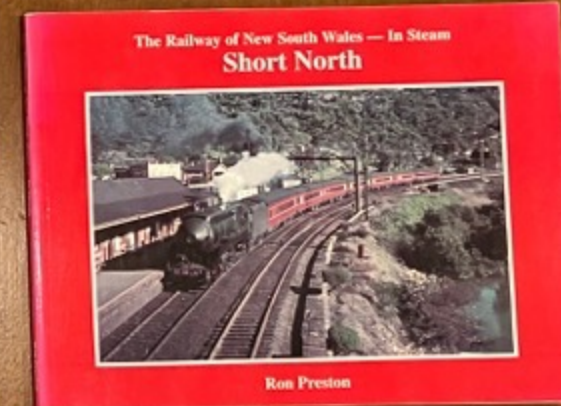
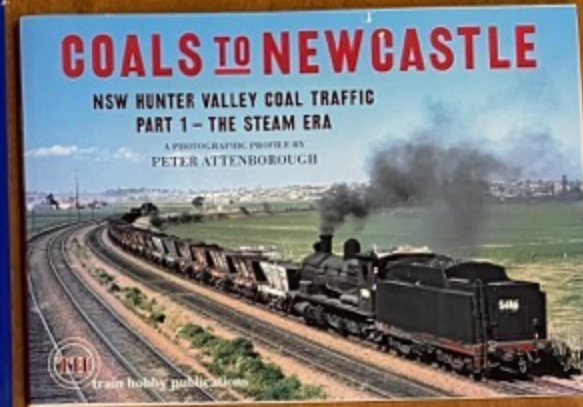
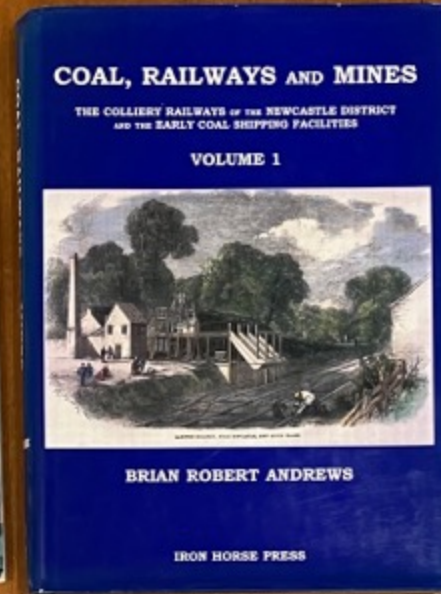
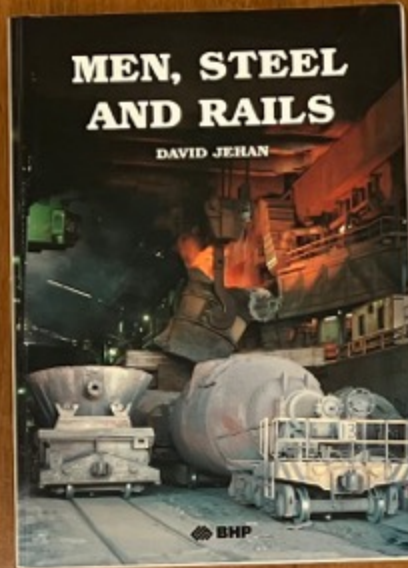
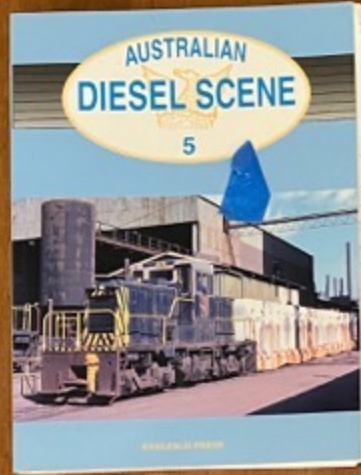
# Research...

Small selection of books used to date in building the Newcastle – Fassifern Layout.

Fortunately, there is a wealth of resources available :

- Numerous highly detailed and well researched publications, many by local authors.
- Digitized photos and other material held by the University and Council Libraries.
- Organisations such as ARHS, Living Histories, the Newcastle industrial Heritage Association etc.
- Websits such as “Muster Point”, “Lost Newcastle” etc.
- Digitized plans and designs of railway buildings, rollingstock etc. from records held by Goninans and other sources.
- Working timetables and other official railway archives

This reflects the deep interest by people in Newcastle and the Hunter in their unique history.



# Design Ideas

Working  
Layout as  
Centrepiece

Display Areas  
for Different  
Themes

Ancillary  
Facilities

Housed in an  
Appropriate  
Building

Staffed  
Primarily by  
Volunteers

Supported by  
Key  
Organisations

# Miniature Newcastle

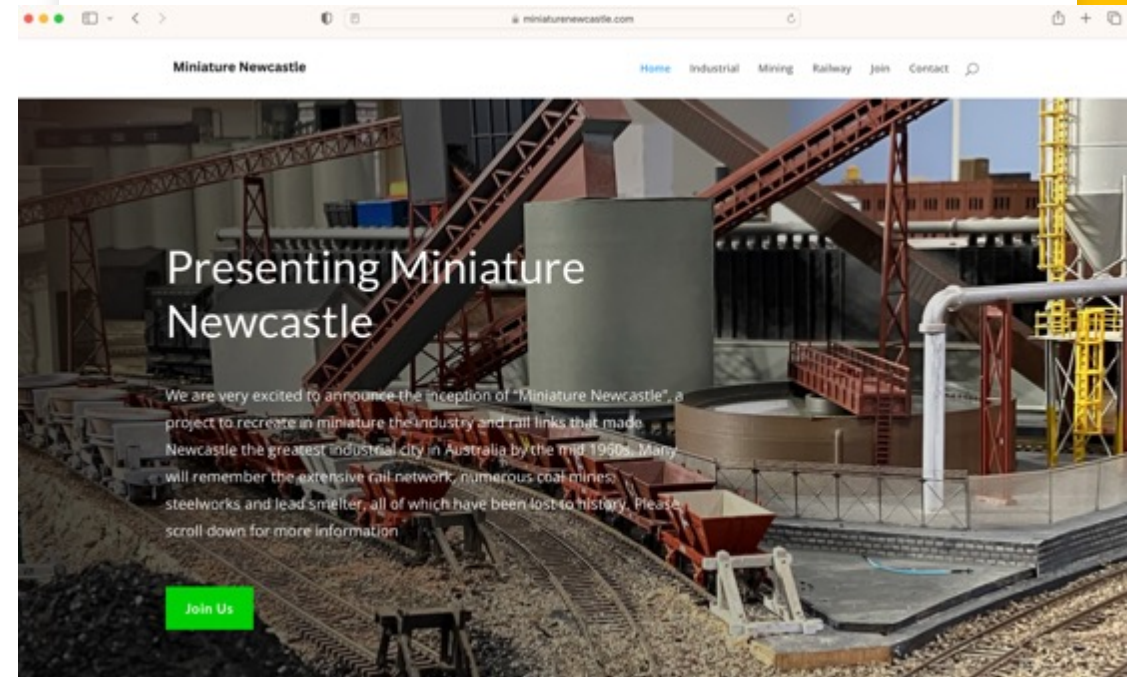
Miniature Newcastle is a not-for-profit Community Association formed in 2023 to develop the concept. Its Vision is:

- To develop a **museum-quality layout**:
  - Represents Newcastle and the Lower Hunter as it was in the 1960's\*, in HO Scale
  - Based on the historical railways, industries, buildings and locations at that time
  - Replicates actual rail operations from the period
  - Forms a working public display and an operating "club" layout
  - Has high standards of construction, electrical / control systems, structures and rollingstock
- To encourage **collaboration, educational and learning** opportunities for its volunteers and for the public.
- To provide a **key element in a wider museum network**, encompassing the history of Newcastle and the Lower Hunter, in particular its rail, industrial, maritime and architectural heritage.

\* The 1960's would be the main focus, as it included the last major main-line steam operations in Australia, and was a time of major expansion for the BHP steelworks and industry generally in the Hunter.



[https://www.youtube.com/watch?v=qs\\_V-Rpq7TU&t=21s](https://www.youtube.com/watch?v=qs_V-Rpq7TU&t=21s)



<https://miniaturenewcastle.com>

# Resources and Plans

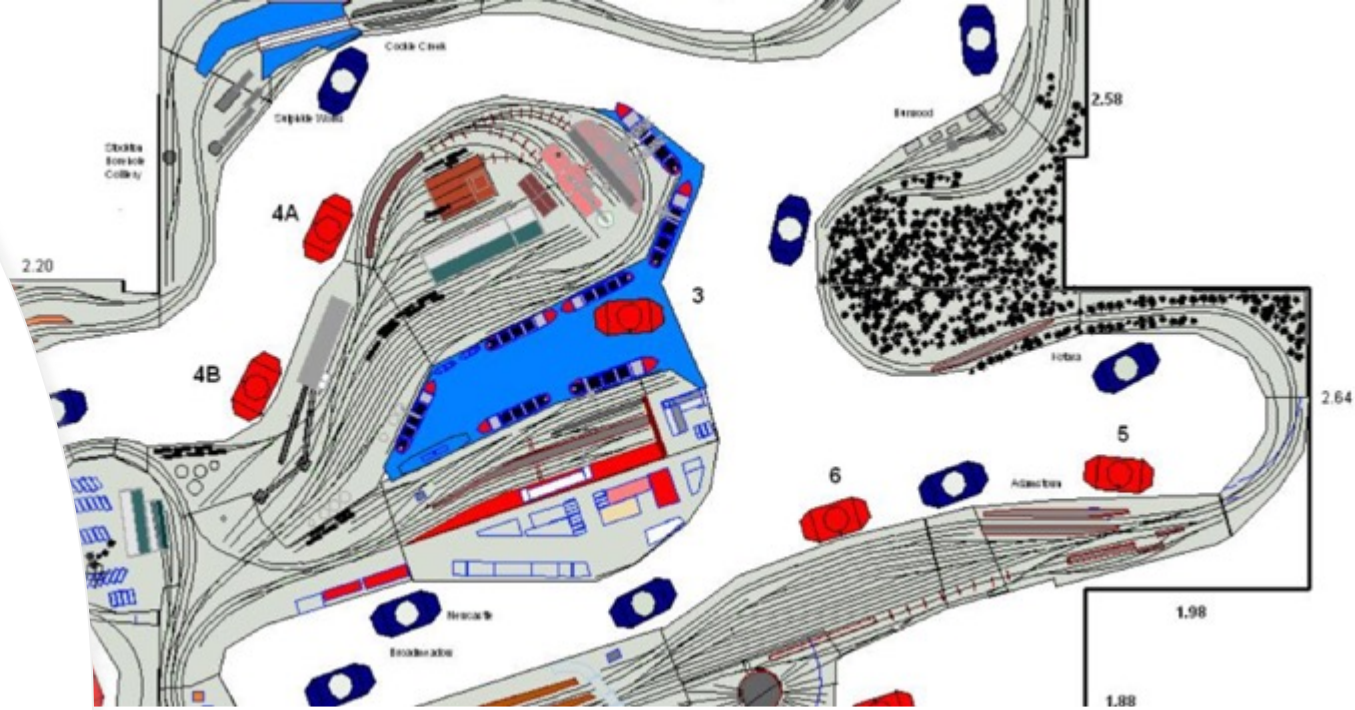
---

- Experienced Modelers with interest in Newcastle and the Hunter.
- Range of Skills and knowledge:
  - history and research
  - 3D printing, electronics, model-building
  - railway operations, museum management etc.
- Existing layouts as building blocks
- Staged Implementation Plan
- Potential Locations



# Newcastle-Fassifern Layout

- Existing 100 sq. m. HO Scale layout, 80% complete.
- Models Newcastle City Centre, BHP Steelworks, Port, Broadmeadow and suburban areas
- Based on the real industries, trains and locations.
- Designed as a modular layout – can be moved and modified.
- Could form the basis of a larger museum-quality layout.





An extensive model of the BHP steelworks, and the adjacent Port Waratah Yard, is nearing completion. This includes a blast furnace, power/blower house, ore yard and bridge, gas holder, basic oxygen mill, rolling mill, coke ovens, refinery, coal washery and lime kilns.

This could be further extended and enhanced in the future by the addition of additional blast furnace(s) and gas holder, a sinter plant, additional rolling mills, administration building etc, to produce a faithful representation of the Newcastle works.



Newcastle CBD and Station



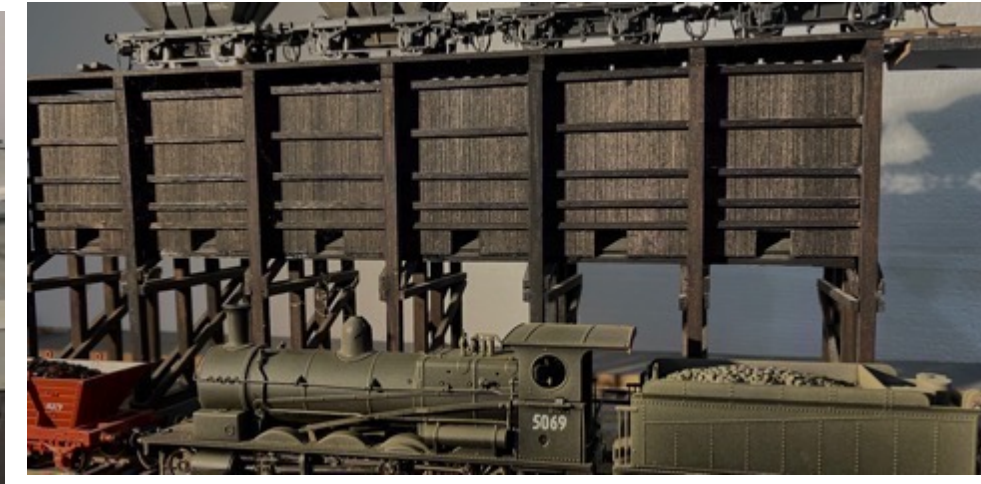
# Broadmeadow Yard at Night in Steam Days

---





Broadmeadow Yard and Depot in Steam Days





Beyer-Garratt emerging from Tickhole Tunnel near Kotara – Prototype on the right, model on the left.



Newcastle Gas and Coke (above) and McIntyre Flour Mill (top right).

. Model version

# Burwood Mine



# Other Layouts

## Chris Lord's Newcastle Station Layout

- Historically accurate model of Newcastle Station in HO Scale
- Includes detailed interiors, lighting etc
- Can support rail operations
- Can integrate with Newcastle-Fassifern layout.

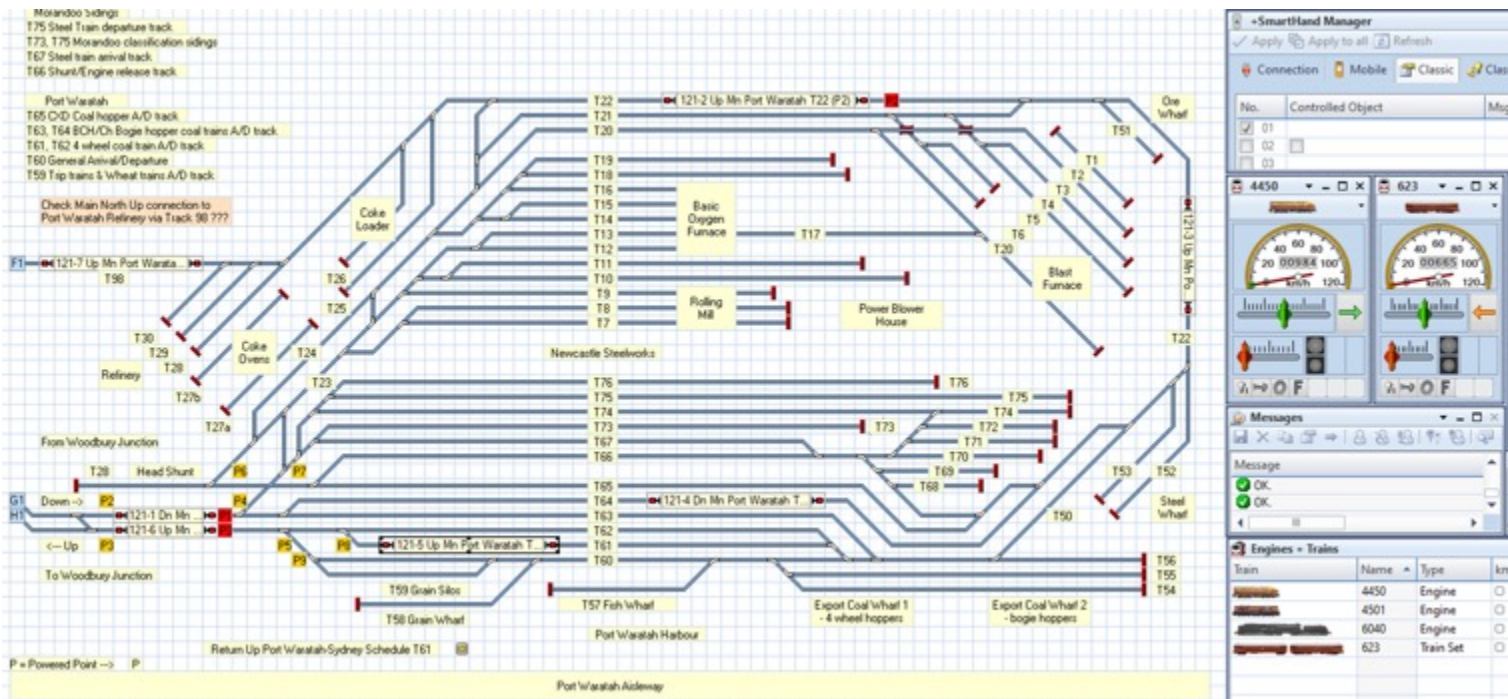
## John Gaydon's Lower Hunter Layout

- Covers Fassifern to Maitland area
- Includes detailed models of stations
- Replicates real rail operations in the 1960's



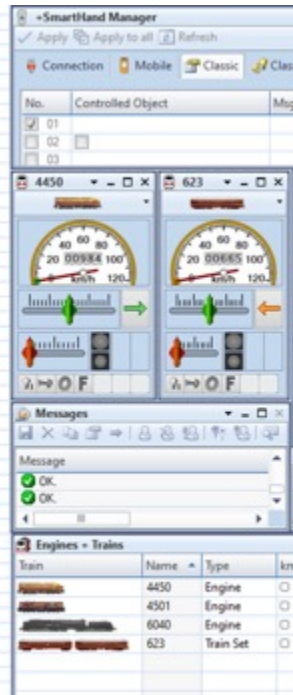


Bennett Hotel in Hamilton (Top left) and 3D Printed version (Top Right)  
Trackplan of Port Waratah in Traincontroller software (below)



# Miniature Newcastle – Current Work Program

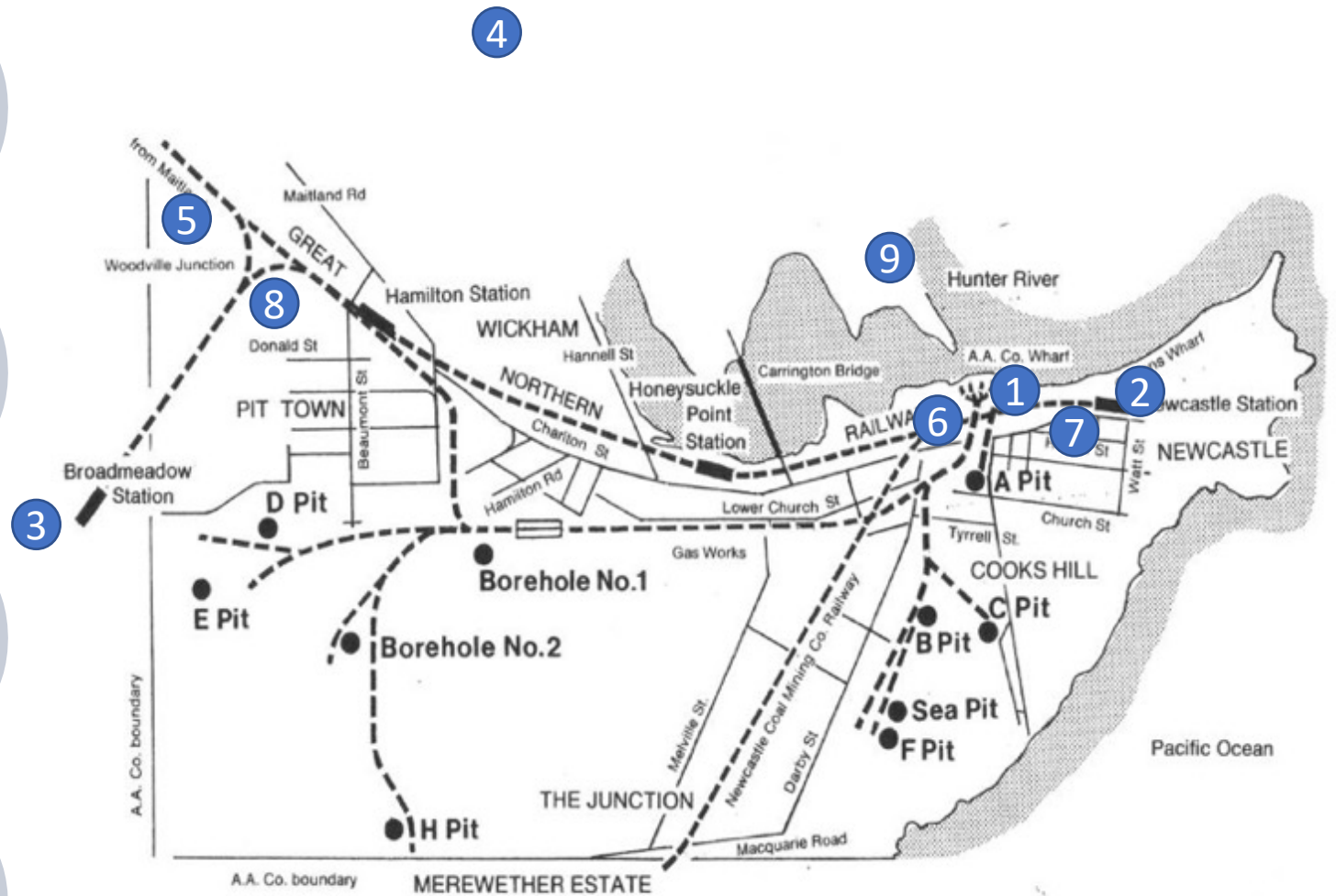
- Establish Organisation
  - Registered with NSW Fair Trading
- Outreach to widen the Membership
  - Website, video completed
  - Discussions starting (ARHS, Council, University, Clubs etc)
  - Outreach via “Lost Newcastle” and Newcastle Herald
- Establish a “Starter Layout”
  - Based on Chris Lord’s Existing Model of Newcastle Station
- Modelling Activities
  - 3D printing of historic buildings, ships, rollingstock commenced
  - Newcastle-Fassifern Layout Automation
- Long-Term Venue and Funding
  - Initial Site(s) located and discussions commenced
  - Funding and Business Plan to be developed.



# Potential Locations

Ideally a site could be found which:

- Integrates with History of Newcastle
- Is near early coal mines, port, key rail facilities and industries
- Has access to Public Transport and space for parking
- Is walkable to other Tourist Sites and Museums
- Has a Secure Long-Term Lease




- |   |  |   |                               |
|---|--|---|-------------------------------|
| 1 | First railway and port                                 | 5 | Newcastle Gas and Coke *      |
| 2 | Newcastle Station *                                    | 6 | Newcastle Museum *            |
| 3 | Broadmeadow Loco Depot *                               | 7 | CBD                           |
| 4 | Former Steelworks and Delprat's Cottage* (NIHA Museum) | 8 | Former Macintyre Flour Mill * |
|   |  | 9 | Former Newcastle Dockyard     |

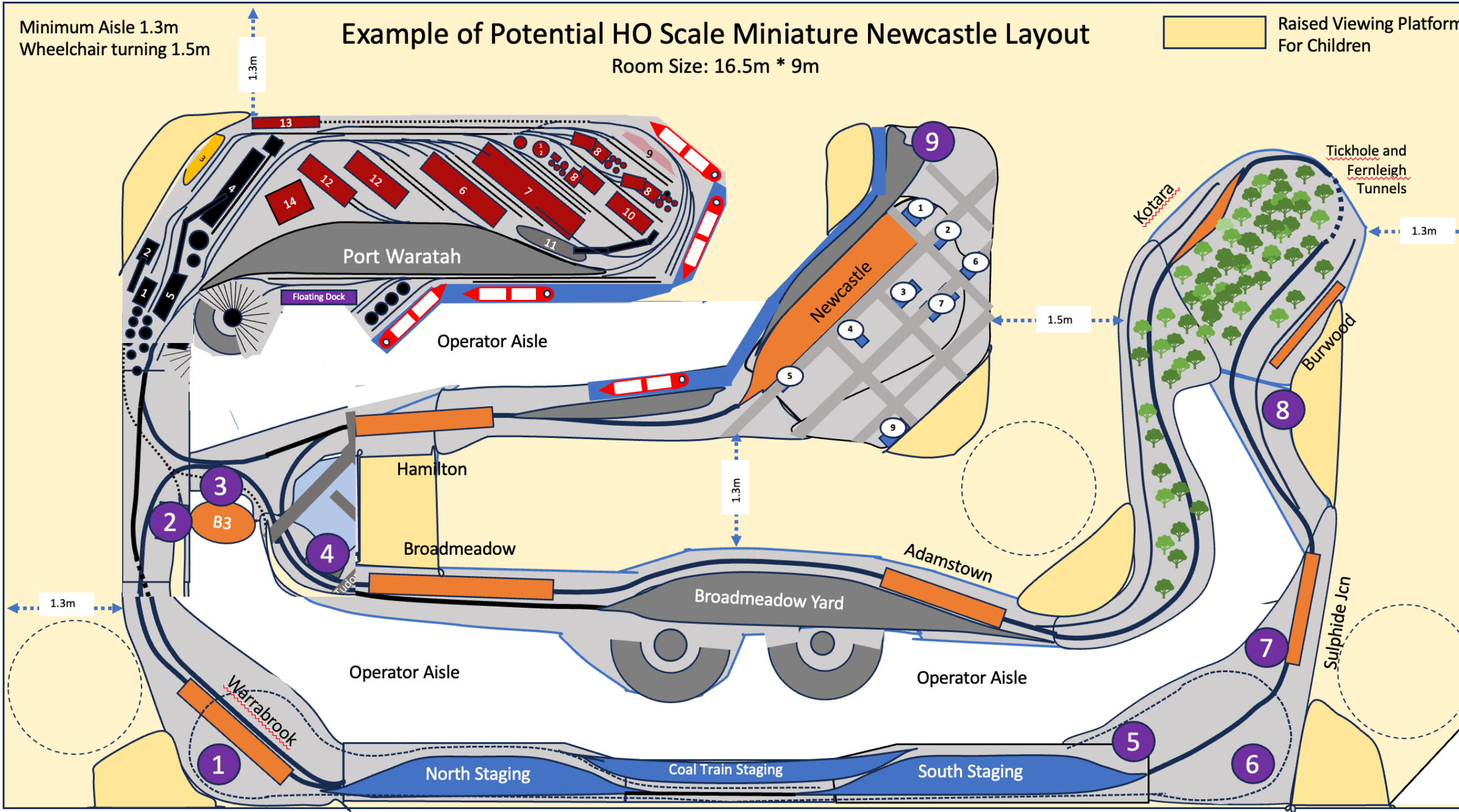
\* Recycled or potentially restored former industrial Buildings

Minimum Aisle 1.3m  
Wheelchair turning 1.5m

# Example of Potential HO Scale Miniature Newcastle Layout

Room Size: 16.5m \* 9m

 Raised Viewing Platform For Children

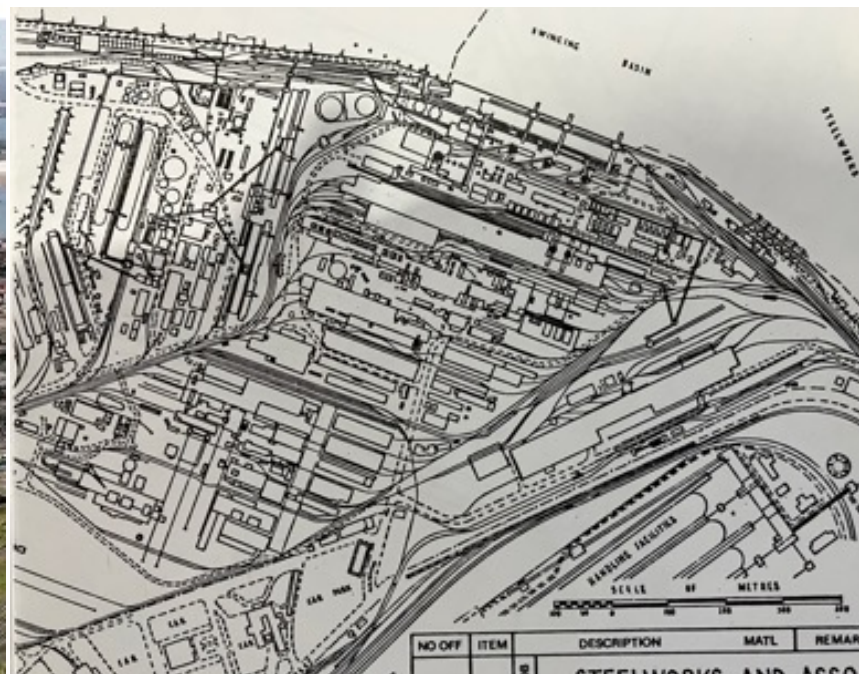


# An authentic Representation: Newcastle CBD

The proposed layout in the CBD area includes not only a scale model of Newcastle Station buildings and platforms, but space for many key buildings including:

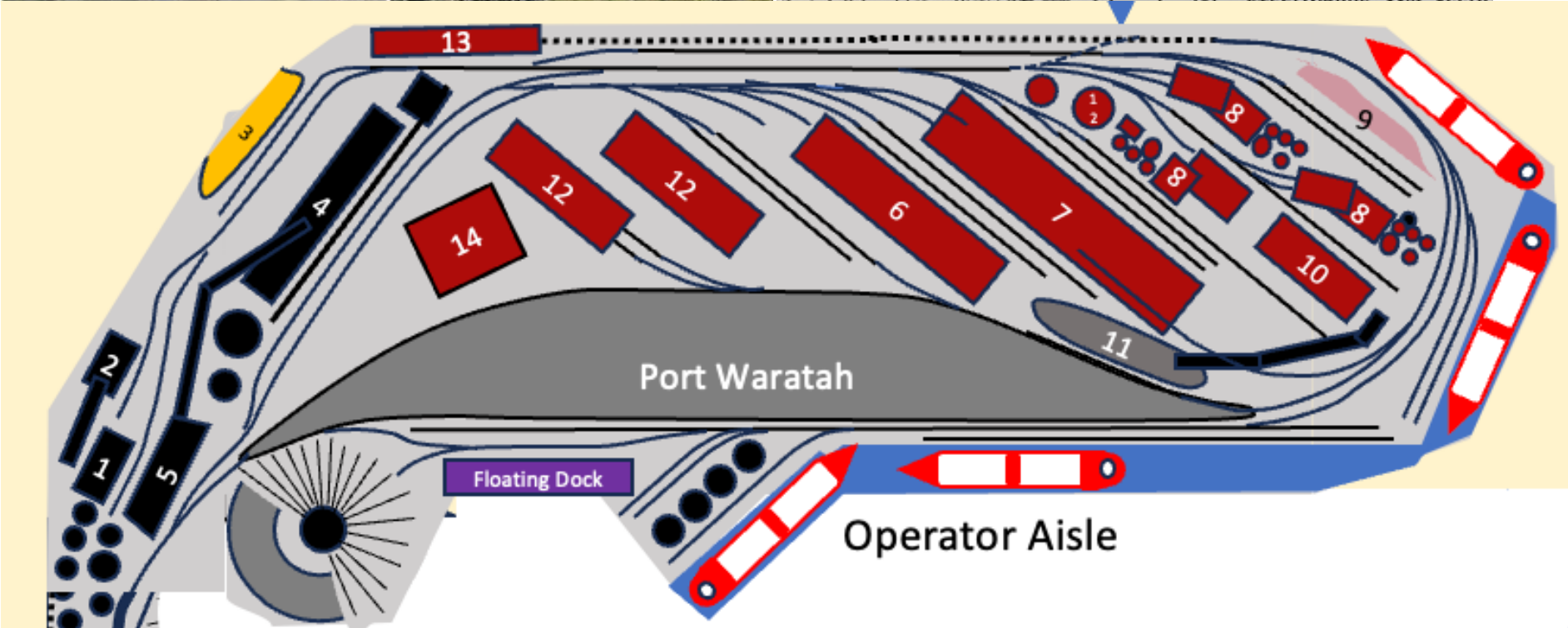
1. The Customs House
2. Great Northern Hotel
3. Post Office
4. Warehouses
5. Warehouses
6. T&G Building
7. Commercial Buildings
8. Zara St Power Station
9. Newcastle Cathedral





# BHP Steel

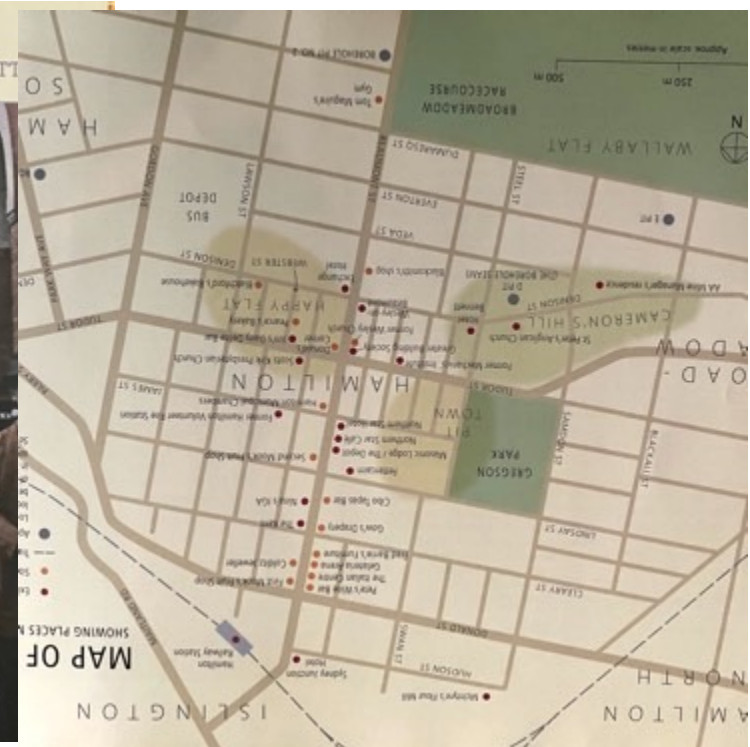
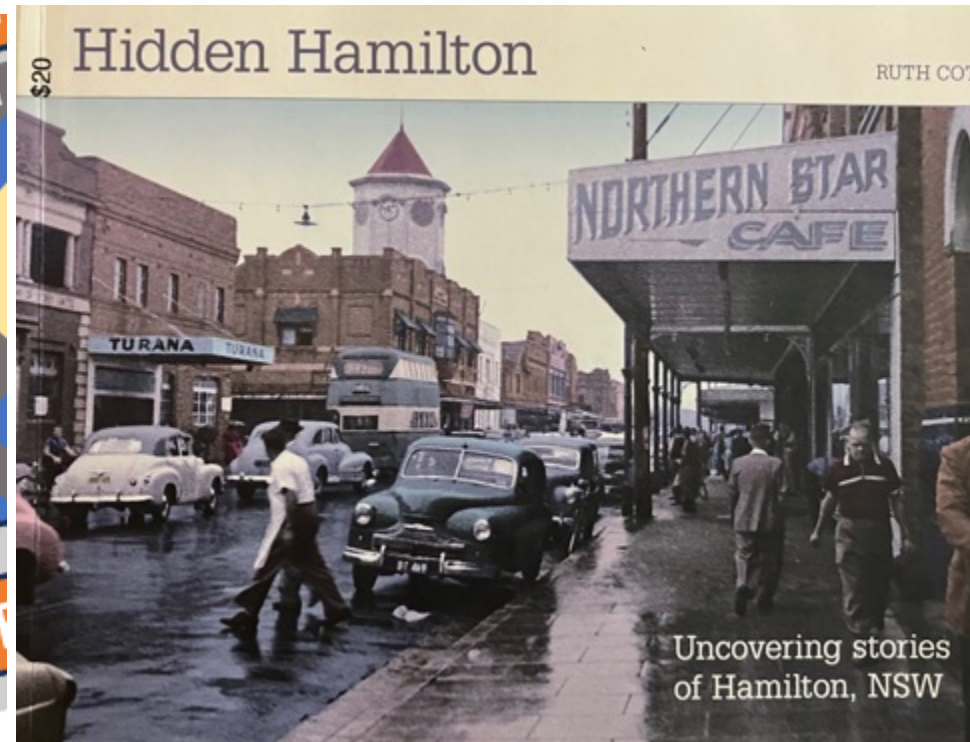
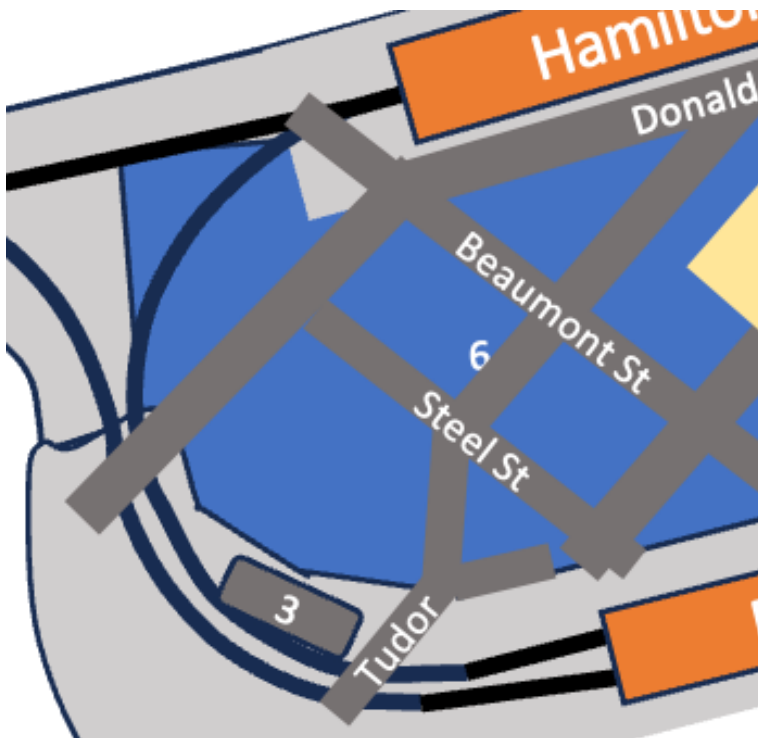
The proposed layout would enable a prototypically-based steel works, as it was in 1965, in the midst of a major expansion phase.



No	Facility
1	Refinery
2	Lime Kilns
3	Slag Dump
4	Coke Ovens
5	Coal Washery
6	Bloom Mill
7	Basic Oxygen Furnace
8	Blast Furnaces
9	Ore / Limestone Stockpile
10	Power and Blower House
11	Coal Stockpiles
12	Rolling and other Mills
13	Sinter Plant
14	Administration Building

# Hamilton

The Hamilton area would also be a key feature, including many of its historic pubs, churches and other buildings, particularly in the area of Tudor and Beaumont Streets.



# Maritime

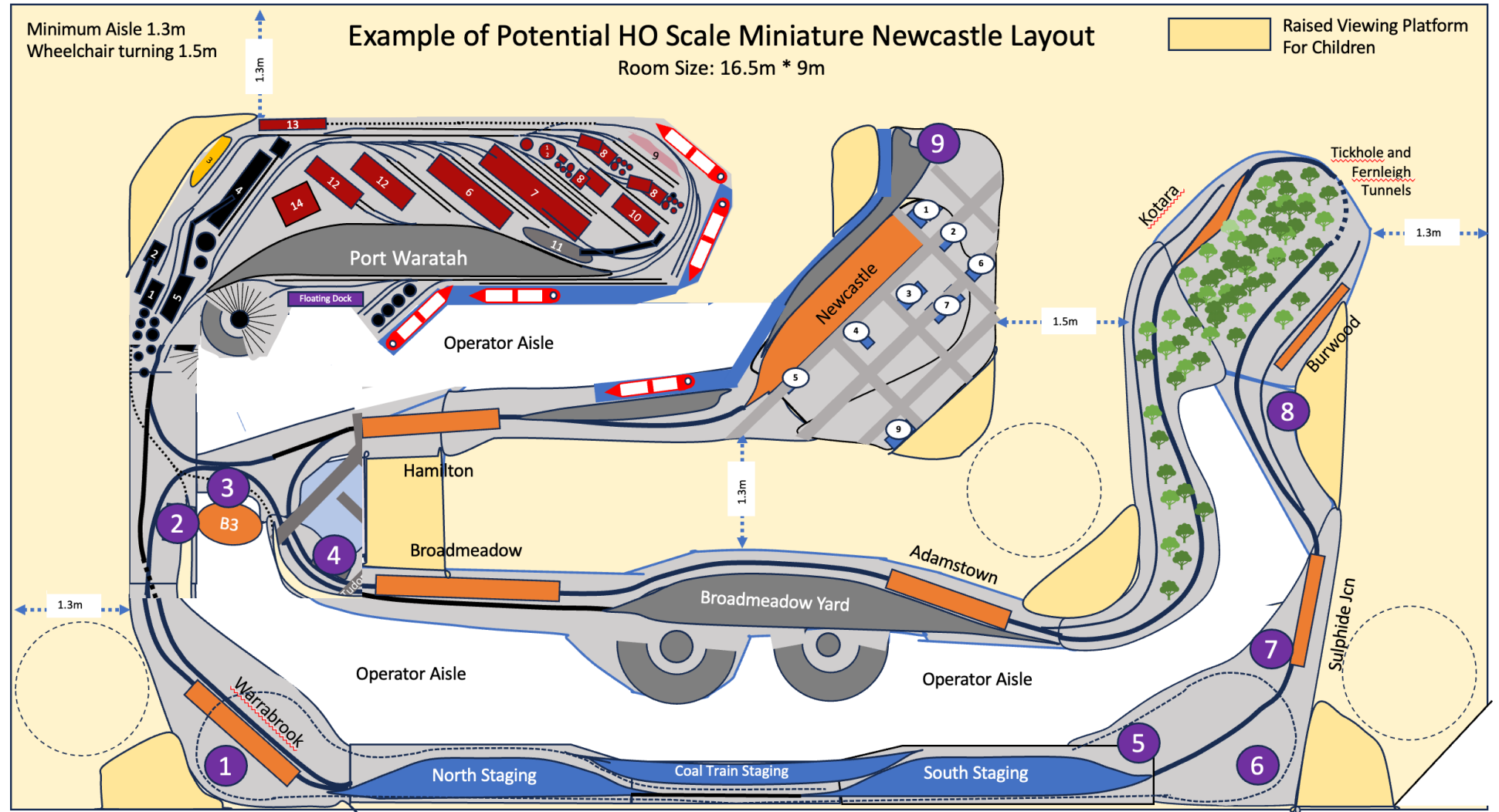


We are currently looking for maritime modelling experts to produce scale waterline models of iconic ships which frequented Newcastle in the mid-1960's, such as the Stockton Punt, steam tugs like the "Heroic", or the "Noongah", which tragically sank off Port Macquarie with a load of Newcastle Steel in 1969. The Harbour Scenes include Port Waratah and Newcastle wharves, hydraulic cranes, grain silos and the Floating Dock.

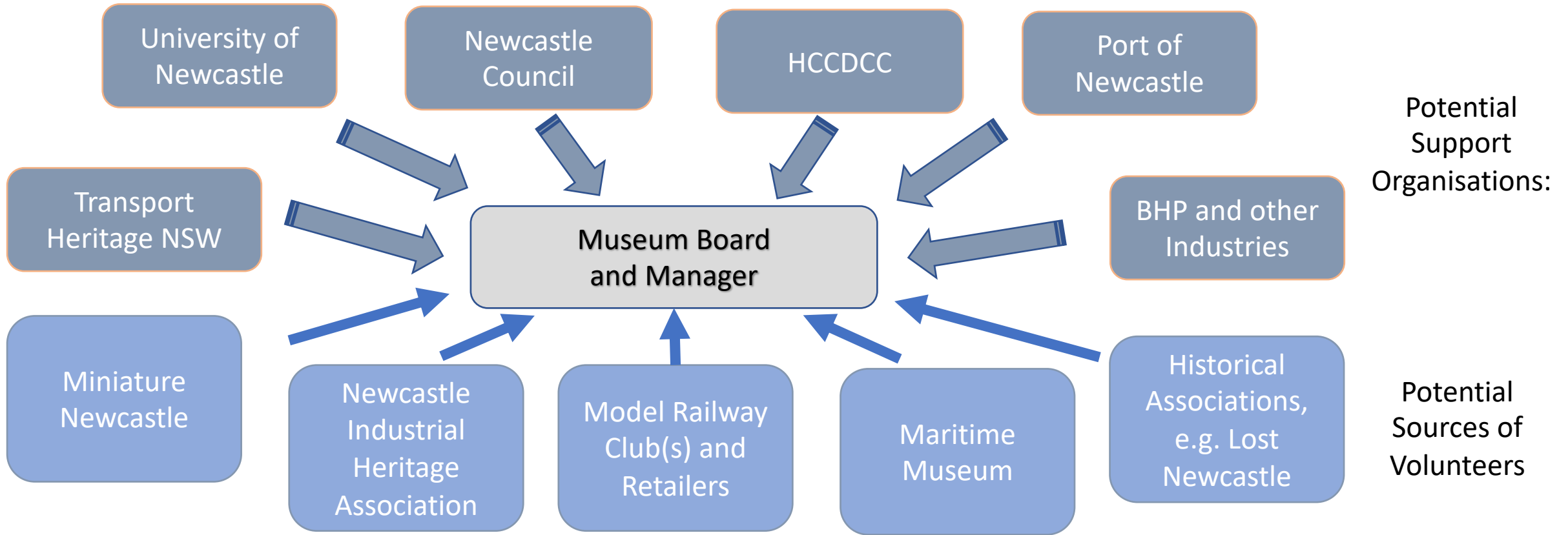
# Other Industries

Newcastle was also home to a range of other key industries, which played a key role in its history, Some of these have already been modeled in the Newcastle – Fassifern layout, and others would be included in the potential Miniature Newcastle layout shown earlier, including:

1. Comsteel
2. Goninans
3. Newcastle Gas and Coke
4. McIntyre Flour Mill
5. Stockton Borehole Mine
6. Sulphide Works
7. Cardiff Workshops
8. Burwood Mine
9. Zara St power Station

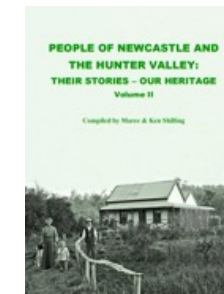
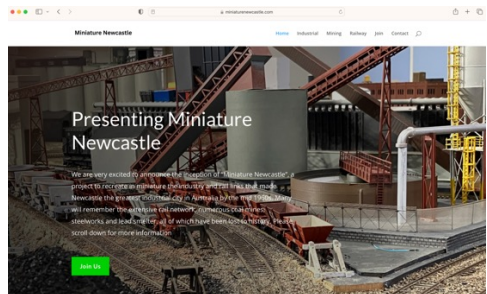


# Possible Organisational Framework



Potential Support Organisations:

Potential Sources of Volunteers



# What would I gain from being involved?

- The satisfaction of helping to build a community project aimed at celebrating Newcastle's unique rail, industrial and maritime history
- The fun of working with others, learning more of the history of Newcastle and learning or passing on new skills, such as
  - Historical research and real-life experiences
  - CAD design and 3D Printing
  - Scratch-building, painting and weathering
  - Animation , electronics and advanced modeling skills
  - Working in multi-disciplinary teams around a common goal

# How can I help?

- **Join Miniature Newcastle.**
- **If you are a modeler** with experience in scratch-building, kit building or 3-D printing, or someone with a **detailed knowledge of the history** of buildings, railways, maritime or other aspects of the Newcastle area, you could
  - **Offer to build** a suitable building, structure, ship or railway rollingstock which will fit with the Miniature Newcastle layout design and theme; and/or
  - **Offer to act as a mentor / lecturer** to undergraduate students to help them learn some of the skills and gain some of the knowledge at your fingertips.
- **If you are a student** in a relevant course, or **anyone with a keen interest** in the subject, you could
  - **apply to undertake a modelling project** related to Miniature Newcastle. This may involve actual construction, singly or as part of a group, of a high-quality model.
- **Any completed models** would be donated to Miniature Newcastle as part of its collection, and could be exhibited publicly by the Newcastle Museum, the University or by Miniature Newcastle as part of their collection.

# Conclusions

- There are now many major model railway exhibits, in either public or private facilities, which are of high enough significance and quality to become tourist attractions.
- Newcastle has the potential for a unique facility bringing together its rail, industry, maritime and architectural history in model form.
- Miniature Newcastle proposes starting this as a small facility, but capable of expansion over time.
- It could also be incorporated as part of a wider museum there if there was sufficient organizational and volunteer support for such an idea.
- For more information:

[Contact G.Glazebrook@bigpond.com](mailto:G.Glazebrook@bigpond.com)

[Or go to miniaturenewcastle.com](http://miniaturenewcastle.com)