PORTABLE BUILDINGS OF THE NINETEENTH CENTURY
a proposal for World Heritage listing

Portable Buildings World Heritage Nomination Task Force
ttps://www.portablebuildingsaustralia.org/






ICOMOS
Clara Arokiasamy.President ,ICOMOS-UK
Susan Denyer, Secretary, ICOMOS-UK
Dr Jörg Haspel, President, ICOMOS Deutsches National Komitee
Dr Yeo Kang Shu, President, ICOMOS Singapore

Overseas advisers
Marc Braham, Belgium, structural engineer & historian
Dr Tomo Inoue, Kyushu University, Japan, architectural historian
Dr David Mitchell, Glasgow, Director of Conservation, Historic Scotland.
Dr Sara Wermiel, USA, historian of technology

Overseas bodies
Construction History Society (UK): Dr Nina Baker; Michael Heaton

Australian advisers
Sue Balderstone, Melbourne, former ICOMOS World Heritage Advisor
Dr Pedro Guedes, Queensland, architectural historian
Tom Harley, former Chair of the Australian Heritage Commission
The Hon Dr Barry O Jones, former Vice-President of the World Heritage Committee
Prof Priyan Mendis, Professor of Civil Engineering, University of Melbourne
Suzannah Plowman, Snowy-Monaro, NSW, conservation architect,
Dr Jennifer Preston, chair AIA Heritage Committee, NSW
Rosemary Rosario, Western Australia, conservation architect
Paul Stark, South Australia, conservation architect
Dr John Ting, ACT, architect and conservationist
Anne Warr, Sydney, conservation architect
Andrew Winkler, South Australia, convenor of Friends of Torrens Island

Australian bodies
Association for Preservation Technology International, Australasia Chapter: Dr Donald Ellsmore
Australian Centre for Architectural History, Urban and Cultural Heritage (ACAHUCH) University of Melbourne, Professor Philip Goad, Professor Hannah Lewi, Professor Julie Willis
Australia ICOMOS: Peter Romey, Convenor, Australia ICOMOS World Heritage Reference Group
Australian Institute of Architects
NSW Chapter Heritage Committee: Dr Jennifer Preston, chair
Victorian Chapter Heritage Committee: Jude Doyle, chair
Western Australia Chapter Heritage Committee: Kylie Maxfield, Chair
Engineering Heritage Victoria: Guy Hodgkinson, chair
Engineering Heritage Sydney: Frank Johnson, chair; Craig McPherson
Living Legends: Dr Andrew Clarke CEO
Royal Historical Society of Victoria: Professor Charles Sowerwine

Heritage authorities

Botanic Gardens and State Herbarium of South Australia: Tom Chladek, Communications Manager
Department of Environment and Science, Queensland: Nicole Mulholland, Manager, Environmental Policy and Programs
Heritage Branch, Northern Territory: Michael Wells, Director
Heritage Council of Western Australia: Vaughan Davies, Assistant Director General, Heritage and Property Services
Heritage South Australia: Bev Voigt, Manager
Heritage Tasmania, Andrew Roberts; Director; Annita Waghorn, Registrations Manager
Heritage Victoria: Steven Avery, Executive Director
Parks Victoria: Paul Roser, Manager Heritage Partnerships
South Australia Maritime Museum: Paul Rees, Director

National Trusts

National Trust (Northern Territory): Eddie Webber, President
National Trust of Australia (Queensland): Jayme Cuttriss CEO; Stuart Lummis Director and chair, Advocacy Committee.
National Trust of Australia (Victoria), Simon Ambrose, CEO; Felicity Watson, Advocacv Manager; Jennifer Bantow, President Geelong & Regional Branch.
National Trust of South Australia: Dr Darren Peacock, CEO
National Trust of Western Australia: Julian Donaldson, CEO; Leigh Barrett

Local government

City of Greater Geelong: Councillor Peter Murrihy; David Scott, Senior Heritage Planner
City of Port Adelaide Enfield: Claire Boan, Mayor; Tony Kamenjarin, Urban Planner
City of Yarra: Richa Swarup, Senior Advisor City Heritage
Shoalhaven City Council: Jenna Tague, Acting Strategic Planning Manager

Executive

Tony Isaacson (convenor),
Janet Beeston, Miles Lewis, Andrew Muir, Chips Sowerwine

CONTENTS

30.11.22

PORTABLE BUILDINGS OF THE NINETEENTH CENTURY
a proposal for World Heritage listing

.

Recommendation

The Portable Buildings World Heritage Nomination Task Force [PBWHNTF] recommends to the State of Victoria and the Commonwealth of Australia that a submission be made to UNESCO for the World Heritage listing of the imported Portable Buildings of the Nineteenth Century which survive in Australia.

The PBWHNTF also seeks the support of the governments of New South Wales, the Northern Territory, Queensland, South Australia, Tasmania and Western Australia, in all of which examples of these buildings are found.

Rationale

The prefabricated buildings of the nineteenth century, known at the time as ‘portable buildings’, constitute an international phenomenon of historical, economic and technical significance.

The growth of prefabrication was one of the major outcomes of the Industrial Revolution, and these buildings are also associated with historical, episodes of great moment – including exploration, gold rushes (in Australia and the USA), the Crimean War and the development of steam navigation. They are also a reflection of economic conditions, because the trade in buildings required cheaper labour, cheaper materials and/or superior production capacity in the country of origin, as compared with the country of receipt. The trade reacted sensitively to changes in demand or in costs (notably the rise in the price of iron in the mid-1850s).

Prefabrication always stimulates the most advanced building technology, and in this case that technology included:

- the first panelised systems in timber
- various patented systems of cast iron framing components
- carpentry adapting Malay and Chinese traditions to European requirements
- a patent system combining timber and iron
- cladding in sheet zinc
- cladding in corrugated galvanised iron

- continuous arched roofing in corrugated iron, using minimal ties
- cast plate iron with lead-run joints
- patent conical roof vents

Fortuitously, most of the world's surviving examples are in Australia, and especially Victoria. They came mainly but by no means exclusively in response to the gold discoveries of the 1850s, because by the 1850s suppliers were geared up for export, having already sent buildings - in much smaller numbers - to the Californian gold rushes. All of the early Californian examples have since been destroyed, and an interesting side-effect of this is that the Australian buildings best illustrate what was once to be found in San Francisco. Australia not only has more prefabricated buildings of this period than any other country: it has, by a considerable margin, more than the rest of the world combined.

The critical period is approximately 1840 to 1880, because this is when the Australian market was pre-eminent. After this time prefabricated structures are important elsewhere, such as Latin America, although the numbers are far smaller. But if the period 1840 to 1880 were strictly adhered to, it would exclude some extremely significant buildings in Western Australia and the Northern Territory. Therefore the list incorporated in this proposal consists of examples imported up to 1900. It does not include buildings prefabricated within Australia itself.

There are 120 known examples (though some are very fragmentary). 70 of these are in Victoria, 18 in New South Wales, 13 in South Australia, 5 in Tasmania, 3 in Queensland, 9 in Western Australia, and 2 in the Northern Territory. A majority are already protected under the relevant heritage controls, and a number are in public ownership or in accessible uses such as guest houses, restaurants and shops. A significant proportion of them, perhaps 20%, are too fragmentary or altered to be understood visually, but they are nevertheless important to the story of prefabrication in Australia.

The national benefits of World Heritage listing in terms of prestige, tourism and national identity are well understood and have been demonstrated by the previous listings of cultural and natural sites, the former being:

- Royal Exhibition Building and Carlton Gardens
- Sydney Opera House
- Australian Convict Sites
- Budj Bim Cultural Landscape

Philosophy

World Heritage listing in general has evolved from single monuments to include routes, like the Silk Roads of the Chang'an-Tianshan Corridor, and culturally linked categories, like the Qanats of Iran and the Béguinages of Belgium, and international groups like the Prehistoric Pile Dwellings around the Alps (which includes examples from Austria, France, Germany, Italy, Slovenia and Switzerland). The Australian Convict Sites listing is an example of this tendency, and has given Australia experience in multi-site and multi-state listings. But Australia's procedures have not been updated to deal with such listings, and still assume that the initiative is to come from one state. In consequence these existing procedures are a hindrance rather than a help in the nomination process.

It has been stated in the referee's report for the proposed listing of the Persian Caravanserai (2021) that:

> Serial listings present two main options. There may be a case for cherry picking, especially where there are examples of outstanding individual quality. This was (as I understand it) the norm in earlier nominations. For example the listing of the Persian Qanat specifies eleven examples, for to list all surviving remains of thousands of qanats would be not only impossibly cumbersome, but also quite unwarranted on their merits.
>
> Increasingly however, World Heritage listings are being proposed for groups of sites which are important because of their geographical and functional linkages, and every site of substantial relevance is being included. In the case of the Caravanserai the number (56) is not impossibly large. They form part of a coherent network, and the potential for archaeological evidence of trade is as great in the humblest as in the grandest example. It is the *completeness* of the listing is important, and selectivity would not be appropriate.
>
> On the other hand a point can be reached when this approach becomes impracticable, as with the case of the qanats, or where the sheer volume of relatively low grade material will challenge the very concept of World Heritage.

The portable buildings surviving in Australia include a handful of fine examples, but the importance of these is transcended by the value of the group as a conspectus of international technology and trade. The comprehensive nature of the surviving evidence is critical, even where in some cases a manufacturer is represented only by elements which have been disassembled and held in storage. Perhaps the best comparison is with the Prehistoric Pile Dwellings listing already mentioned. It comprises 111 individual sites, not a single one of

which contains a fine monument surviving above ground level. Many consist only of obscure archaeological evidence; they are, as the documentation states ‘mostly completely hidden underwater’; the recovered artefacts have been removed to site museums if not been taken away entirely. In some cases the original structures have been reconstructed on a highly speculative basis.

The present proposal is also international in character. This is not because the sites are in multiple countries, as in the case of the Prehistoric Pile Dwellings, but because the buildings involved are ***from*** different countries, and are of considerable significance to those countries. Therefore the United Kingdom, Singapore, the United States and Germany have been engaged with during the preparation of this proposal..

State lists

For the states we will be dealing with the individual heritage bodies, as listed in:

> Heritage Chairs and Officials of Australia and New Zealand | Department of Agriculture, Water and the Environment

The normal procedure in Australia is for the relevant items to be listed at state level, then submitted for the National List. This is not as simple as it ought to be. The states all have their own procedures and criteria for listing, and they are generally not geared for items of the sort proposed here, and in particular fragmentary or disassembled structures.

This is purely an Australian problem. The World Heritage listings of classical sites, for example, regularly include fragmentary remains, some of which are displaced, incorporated into hypothetical reconstructions. or even held in site museums. Within Australia we are so far dealing with such items only in South Australia and Victoria, and the issues in the two places are different.

In South Australia there is provision under Section 16(2) of the *Heritage Places Act 1993* for the listing of objects

> 16 (2) An object is of heritage significance if -
> (1) It is archaeological artefact, or any other form of artefact that satisfies 1 or more of the criteria set out in subsection (1) or ....

This seems *prima facie* the way to deal with fragmentary remains though it needs to be confirmed that these would be eligible for the national list

The Victorian *Heritage Act 2017* is less helpful, as fragmentary remains can be listed only if they are connected with a place which is itself registered. Section 31 provides::

> 31 Nominations of object integral to places
> (2) A person or body, or the Executive Director, may nominate for inclusion in the Heritage Register an object that is integral to understanding the cultural heritage significance of –
> (a) a registered place; or
> (b) a place nominated for inclusion in the Heritage Register,
> (3) A nomination under subsection (1) may be made –
> (a) in respect of an object whether or not the object is located at the place or under the place; or
> (b) in respect if all archaeological artefacts associated with the place whether or not the
> number, nature or exact location of the
> archaeological artefacts is known; or
> (c) without the extraction of the object from the place.

The ideal solution would be to amend the Victorian Act with a provision similar to South Australia's. But until this is done, or if it is not done, one possible approach is to include them in group listings, such as 'the Singapore cottages of Geelong'. Fragments of a single cottage could then reasonably be considered integral to understanding the cultural heritage significance of the group.[1]

National List

The National list is ridiculously small. In 2003 the Register of the National Estate (managed by the Australian Heritage Commission, which included all buildings that had a National Trust listing, was subsumed into the Commonwealth *EPBC Act.* All properties had to be assessed to see if they would fit into either of two new heritage lists - the Australian National Heritage List and the Commonwealth Heritage List.

[1] We wish to acknowledge that this suggestion, or something like it, originated with Steven Avery, Director of Heritage Victoria, but it was floated in general discussion and we do not seek to represent it as being his considered opinion.

At that time there were 13,000 heritage places on the Register of the National Estate. In 2007 the Register was closed and archived. Any properties that had not been assessed under the *EPBC Act* by that time simply had their heritage status lapse. They were still on the Register, and the Register could still be accessed through the National Heritage Database, but it became non-statutory. In 2012 all references to the Register of the National Estate were removed from legislation Australia-wide and any statutory protection of places on the Register was gone.

As an example, one of the properties covered in the present proposal is the Quaker Meeting House Adelaide The Meeting House listing on the Register is here Australian Heritage Database (environment.gov.au)

The Meeting House, along with many other heritage places across Australia, fell into the 'lapsed' category. This was the result of there being so many properties to assess that the Commonwealth agency responsible was unable to get through all of them. Twice during the grace period the owners attempted to get the Meeting House onto the Priority Assessment List, which was the list of forward work for the agency. On neither occasion was the property even listed for assessment.

The two new lists contain very small numbers of places. The National Heritage list includes 102 sites, and these include built (European and indigenous) sites, as well as natural sites like the West Kimberly and Shark Bay, and geological sites like the ediacaran fossil sites. The Commonwealth Heritage list contains 388 places.

World Heritage Tentative List

The nominated site must be on the Australian Tentative List for at least one year before the World Heritage nomination is submitted. If the Australian Heritage Commission considers that there is a case, it may recommend that the Commonwealth Government add the place(s) to Australia's Tentative List, and may then in due course put forward a formal UNESCO World Heritage nomination. Getting the nomination onto the Tentative List involves coordinating the Commonwealth Government, state government(s), land managers (such as parks), and property owners, all of which is likely to take at least a year.

Some general guidance can be obtained from the Australian Heritage Council documents:

Australian Heritage Council, *Guidelines for the Assessment of Places the National Heritage List* (2009)
https://www.environment.gov.au/system/files/resournces/8b50f335-42e8-4599-b5e0-ac643f75475f/files/nhl-guidelines.pdf

Australian Government, Department of Agriculture Water and Resources, *Managing World Heritage in Australia: an online framework guide to best practice World Heritage management.*
https://www.environment.gov.au/heritage/about/world/management-australias-world-heritage-listed/managing-world-heritage-australia

In relation to this specific proposal, the Hon Sussan Ley, Minister for the Environment, wrote to the National Trust of Australia (Victoria) on 4 June 2020 (*inter alia*):

> The *Australian World Heritage Intergovernmental Agreement (2009),* agreed to by all jurisdictions, outlines the role and responsibilities of Australian state and territory governments in relation to the nomination and management of Word Heritage places, State and territory governments are responsible for the first stage of the nomination process, which involves submitting places to the Australian Government for potential inclusion on Australia's World Heritage Tentative List. Submissions are considered against the requirements of the Operational Guidelines for the Implementation of the World Heritage Convention, as published by the World Heritage Committee. Sites are also required to be included on Australia's National Heritage List before they will be considered for potential inclusion on Australia's Tentative List.

The procedure here described in the Minister's letter does not work;

A. For a nomination involving properties in more than one state.

A different procedure was presumably followed in developing the Australian Convict Sites nomination, and the same must be done in this case. Although it is not normal procedure, there is nothing in the Agreement to prevent the Commonwealth initiating a nomination by referring it to the relevant states and territories for a reaction.

B. For a nomination involving properties which, though they may meet UNESCO criteria, may not meet Australian ones.

In the AHC Guidelines p 102, the Portable Houses, South Melbourne, are cited as an example of a place falling below the National Heritage criterion (c) for their historic heritage significance.' This is because 'The evidence did not support the claim that the houses contributed at a national level to a greater understanding of the migrant experience in Australia in the early 1850s'. Now this may merely reflect the fact that the nomination was defective, but it is important to consider that most countries have a history of immigration

and/or emigration, and those experiences are in no way distinctive at a world level. But the role of prefabricated buildings is very distinctive in terms of the development of international trade and of construction technology, and that is the significance which should have been considered. And the fact that Australian examples almost uniquely survive elevates them even higher.

C. For a nomination process involving fragmentary and stored items.

In the nature of things many prefabricated buildings have been moved during their lifetime, a significant number have been dismantled and stored; and only fragments survive of others. All these form part of the present proposal. To omit them would be similar to excluding from a consideration of the Silk Road a critical deposit of Turkish potsherds found in eastern China. However in some jurisdictions it may be necessary to list such items under different legislation, designed for portable cultural property.

We therefore call upon the Commonwealth to prescribe a procedure by which the present nomination proposal can be advanced. If it is accepted that this proposal is a worthy one, with a good chance of success at UNESCO, and if it is accepted that its success is very much in Australia's interests (neither of which is really in question) the role of the Australian Heritage Council should be to facilitate it. If that requires changes to the existing procedures, which were originally designed for single sites falling within single states, those changes should be made. Specifically:

- The Australian Heritage Council (or other Commonwealth agency) should consider the proposal on a *prima facie* basis.

- When satisfied on this basis, it should refer the proposal to the states (the term is here used to include the Northern Territory) for their reactions.

- It should ask the states to consider for state listing all of the proposed buildings which are not already covered.

- It should ask the states to take into consideration in each case the contribution of the building to the national and international significance of the nomination list as a whole.

- It should ask the states to assess under any other appropriate legislation such items here listed as may not be considered appropriate for listing in the usual way.

- It should be prepared to incorporate in a World Heritage nomination structures and items which will make a significant contribution, even where they may not be state listed.

- It should cooperate with the states in assembling all the necessary data for a World Heritage nomination.

- It should sponsor a major publication dealing with the world history of prefabrication and Australia's part in it.

The submission to UNESCO will require the list provided here to be developed in accordance with the requirements below. How management plans and other measures will apply to a multiple site listing is not entirely clear, but some indication will be obtained from other listings incorporating a number of separate public and private properties, such as that for the Decorated Farmhouses of Hälsingland, Sweden. The essentials will be planning and/or heritage protection for all items, and firm plans for the restoration and interpretation of the major ones.

World Heritage nomination process

[from UNESCO World Heritage Centre - World Heritage List Nominations]

1 Tentative List

The first step a country must take is to make an 'inventory' of its important natural and cultural heritage sites located within its boundaries. This 'inventory' is known as the Tentative List, and provides a forecast of the properties that a State Party may decide to submit for inscription in the next five to ten years and which may be updated at any time. It is an important step since the World Heritage Committee cannot consider a nomination for inscription on the World Heritage List unless the property has already been included on the State Party's Tentative List.

2 The Nomination File

By preparing a Tentative List and selecting sites from it, a State Party can plan when to present a nomination file. The World Heritage Centre offers advice and assistance to the State Party in preparing this file, which needs to be as exhaustive as possible, making sure the necessary documentation and maps are included. The nomination is submitted to the World Heritage Centre for review and to check it is complete.

3 The Advisory Bodies

A nominated property is independently evaluated by two Advisory Bodies mandated by the World Heritage Convention: the International Council on Monuments and Sites (ICOMOS) and the International Union for the Conservation of Nature (IUCN), which respectively provide the World Heritage Committee with evaluations of the cultural and natural sites nominated. The third Advisory Body is the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), an intergovernmental organization which provides the Committee with expert advice on conservation of cultural sites, as well as on training activities.

4 The World Heritage Committee

Once a site has been nominated and evaluated it is up to the intergovernmental World Heritage Committee to make the final decision on its inscription. Once a year, the Committee meets to decide which sites will be inscribed on the World Heritage List. It can also defer its decision and request further information from the States Parties.

5 The Criteria for Selection

[text essentially as below, paras 1-3]

The criteria for selection

[from UNESCO World Heritage Centre - The Criteria for Selection]

To be included in the World Heritage List, sites must be of outstanding universal value, and must meet at least one out of ten selection criteria.

These criteria are explained in the Operational Guidelines for the Implementation of the World Heritage Convention which, besides the text of the Convention, is the main working tool of World Heritage. The criteria are regularly revised by the Committee to reflect the evolution of the World Heritage concept itself.

Until the end of 2004 World Heritage sites were selected on the basis of six cultural and four national criteria. With the adoption of the Revised Operational Guidelines for the Implementation of the World Heritage Convention, only one set of ten criteria exists..

Selection criteria

(i) to represent a masterpiece of human creative genius;

(ii) to exhibit an important interchange of human values, over a span of time, or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning, or landscape design;

(iii) to bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;

(iv) to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;

(v) to be an outstanding example of a traditional human settlement land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;

(vi) to be directly or tangibly associated with events or living traditions, with ideas or with beliefs, with artistic and literary works of outstanding universal significance. (The Committee considers that this criterion should preferably be used in conjunction with other criteria);

(vii) to contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;

(viii) to be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features;

(ix) to be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;

(x) to contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

Nomination Format

The required format for a nomination is described in the document 'Format for the Nomination of Properties for Inscription on the World Heritage List', available for downloading from the World Heritage Site. Some features of it are:

- The name and location of the property
- Geographical coordinates
- Description of the boundaries

- Map showing the property and if applicable the buffer zone
- Details of the official local institution
- Description of the property
- History and development
- Justification for the inscription
- Synthesis
- Statement of integrity
- Statement of authenticity
- Protection and management proposals
- Comparative analysis
- Proposed statement of outstanding universal value
- Present state of conservation
- Development pressures
- Environmental pressures
- Natural disasters and risk preparedness
- Visitation provisions
- Number of inhabitants within the property and buffer zone
- Ownership
- Protective designation
- Means of implementing protection
- Existing planning provisions
- Management plan
- Sources of finance
- Sources of expertise
- Visitor facilities
- Presentation and promotion
- Staffing
- Monitoring
- Photographs and audio-visual material multi-site and multi-state listings

Timeline

The World Heritage nomination must be lodged by 1 February of the relevant year, and the evaluation process (by ICOMOS and/or IUCN) will take one year. There will then be two meetings of the World Heritage Committee. To the first, representatives of the State Party (Australia) will be invited to answer questions &c. Any responses and additional information

are submitted before the second meeting, which decides whether to recommend listing. This process takes a little over one year more and the whole process from beginning to end might take five years.

Role of the Task Force

This proposal was first advanced under the aegis of the National Trust of Australia (Victoria), and Jock Murphy, the Victorian delegate, gave notice of it at the July 2018 meeting of the National Trust of Australia (Australian Council of National Trusts). Since then the Task Force has been established as an independent national organisation, though the Victorian Trust, and others, are actively involved.

The role of the Task Force is to carry the matter forward until it is taken up by the relevant governments. It may also be useful to have a transitional stage in which the Task force is appointed as an advisory committee by one or more governments.

In the meantime:

- The Task Force should undertake activities to promote public awareness and understanding of the subject.

- The Task Force should encourage the development of semi-autonomous groups in New South Wales, South Australia and Western Australia to implement its objectives (the numbers of examples in Queensland, Tasmania and the Northern Territory do not, on present information, warrant such groups).

- The Task force should promote international awareness of, and interest in the proposed nomination.

- .A data base should be maintained.

- All preservation bodies, historical societies &c should be encouraged to bring forward other eligible properties or to suggest corrections to the details on the present list

- Heritage Victoria and the equivalent interstate bodies should review all items and undertake further research or recording where required (if necessary contracting out parts of the work)

- Ownership details, precise GPS locations and curtilage boundaries should be established for each item.

- The present condition of each item should be recorded by inspection and photographs.

- All items should be considered by the Heritage Council of Victoria and equivalent interstate bodies for state listing or registration.

- Necessary planning protection should be put in place where it does not already exist.

- The government of Victoria should take ownership of the proposal and submit it on a preliminary basis to the Commonwealth Government.

Provisional list

NEW SOUTH WALES

002 Carey Cottage, 2-18 Ferry Street, Hunters Hill
003 Post Office General Store, Kurrajong Heights
004 235 Rowntree Avenue, Birchgrove
005 The Chalet, 2 Yerton Avenue, Hunters Hill
006 Wellings Gatehouse, 4 Woodstock Avenue, East Burwood
007 Woolingubrah Inn, Coolumbooka Road, Cathcart
008 John Ryrie house, Maffra via Dalgety
009 Elford house, Davidson Whaling Station, Edrom
010 Wingecarribee, Bowral
011 former church, Numbaa
012 orchid house, Wyoming, 25 Wharf Rd, Birchgrove
013 cast iron reservoir, 147 Ocean St, Dudley
014 Grissell building [former Kent brewery], Waterloo
015 Mint Coining Works, Macquarie St, Sydney
016 Legislative Council Chamber, Macquarie St, Sydney
017 North Shore Gas Co retort house, Platypus Island
former hotel, Numbaa
shed, Numbaa

NORTHERN TERRITORY

019 Pine Creek Post Office & Repeater Station [Burrundie Mining Warden's office], Pine Creek
020 Former Knuckey St Wesleyan Church, Botanic Gardens, Darwin

QUEENSLAND

021 Yeddo, 5 Lynch St, Hinchingbrook
022 Bustard Head lighthouse
023 Sandy Cape lighthouse

SOUTH AUSTRALIA

024 Friends Meeting House, Pennington Terrace, North Adelaide
025 Walkley Cottage [a Manning house], off Pennington Terrace, North Adelaide
026 Manning [maker] house, Ringmer Rd, Burnside
027 Manning [maker] house, Institute Rd, Montacute
028 Manning [maker] house, Blakiston, near Littlehampton
029 Greenock [a Manning house], Gerald Roberts Rd, Marananga
030 Wrigley [maker] house, Quarantine Station, Torrens Island
031 Troubridge Island Lighthouse, Troubridge Shoal
032 Port Adelaide Lighthouse
033 Cape Jaffa (Margaret Brock) Lighthouse, now at 32 Marine Parade, Kingston
034 Tipara (Tiparra) Reef lighthouse, now at Wallaroo Heritage and Nautical Museum
035 Palm House, Adelaide Botanic Gardens
036 Wrigley [maker] house, Waldorf School, 27 Sims Rd, Mount Barker

TASMANIA

037 Currie Harbour lighthouse, King Island
038 Edwin Maw [maker] building, behind the Lucas Hotel, 46 Gilbert St Latrobe
039 Edwin Maw [maker] building, grounds of Longford House, 120 Catherine St, Longford
3 Mason St, Longford

VICTORIA

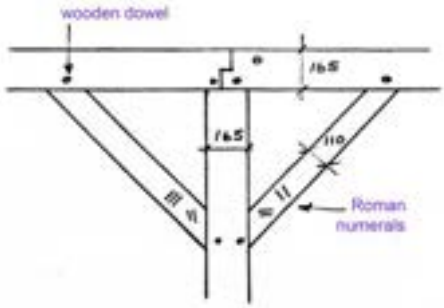
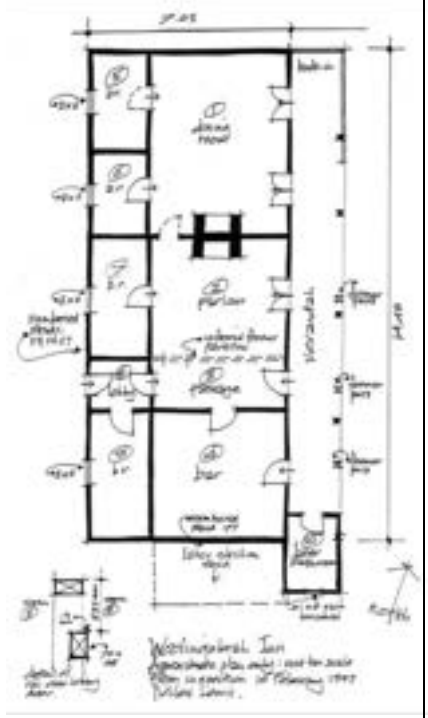
041 Woodlands homestead, Woodlands Drive, Greenvale
042 Woodcot Park, 345 Tannery Rd, Tarraville
043 La Trobe's Cottage [ex Jolimont], Dallas Brooks Drive, Domain, Melbourne
044 Bungalow Cottage, 78 Mercer St Queenscliff
045 Singapore cottage, reconstruction from Brunswick Rd, Brunswick
046 Singapore cottage, The Gums, Woolsthorpe Rd, 12 km east of Penshurst
048 Singapore cottage [ex Hoddle St],136 Sackville St, Collingwood
049 Singapore cottage [ex Henry St],125 Easey St, Collingwood
050 Singapore Cottage [ex Longmore St] 136 Sackville St, Collingwood
051 Former Wattletree Inn, 196 Wattletree Rd, Malvern
052 Sidney Seymour Cottage, 20 Palmer St, Romsey
053 Singapore cottage, 17 Coventry Place, South Melbourne
054 Singapore cottage, 129 Elizabeth St, Geelong
055 Singapore cottage, 7 Wellington St, Geelong West 3218
056 Singapore cottage, 21 Brewongle Ave, Hamlyn Heights 2015
057 Singapore house, 8 Swanston St, Geelong
058 51 Ormond Rd, Moonee Ponds
059 Edinburgh cottage, Carranballac, 5945 Glenelg Highway, Carranballac
060 The Heights, 140 Aphrasia St, Newtown, Geelong
061 Watford Villa [ex Main St, Avoca], 14 Dundas St. Avoca
062 Osborne House, 456-8 Victoria St, North Melbourne
063 16 Ryrie St, Geelong
064 Penola, 222 Alton Rd, Mount Macedon
065 Keyham, 275 Pakington Street, Newtown, Geelong
066 Crimea Hut [ex Crimea], Flagstaff Hill, Warrnambool
067 Lyndhurst Hall, 46 Walhalla St, Coburg
068 Oberon, 2 Lambeth St, St Kilda
069 5 Tranmere St, North Fitzroy
070 American Cottage, 21 Station St, Coburg
071 Fenagh Cottage, 7 Burnett St, St Kilda
072 Japanese Tea House, Marina, 678 Esplanade Mornington
073 former railway waiting room [ex?], Prosper Valley Rd, Budgeree
074 Eastern Shore Light, 650 Point Nepean Rd, McCrae
075 J H Porter [maker] store, Fairfield Park [from 111 Queens Parade, Fitzroy]
076 former 71 Little Malop Street store, Sovereign Hill, Ballarat
077 iron cottage shell 'The Weatherboard', 24 Weatherboard Rd, Inverleigh
078 Bellhouse [maker] house [ex Fitzroy], 399 Coventry St, South Melbourne
079 Walmsley [maker] building, Depot, Royal Botanic Gardens, South Yarra
080 Ranger's house, 161-168 Gatehouse St, Parkville

081 Abercrombie house [ex North Melbourne], 399 Coventry St, South Melbourne
082 Morewood & Rogers [maker] building, Summerhill Farm, 155 Mt Duneed Rd, Mt Duneed
083 St Paul's Op Shop [former corrugated iron church], 30 Fisher St, Gisborne
084 All Saints Parish Hall, 95 King William St, Fitzroy
085 Eudoxus, 34 Fenwick St, Geelong
086 Robert Walker [maker], building, 18 Douglas St, Toorak
087 iron police building, Harricks Rd, Keilor North [relocated from Calder Highway]
088 Marsh House, 7254 Midland Highway, Guildford
089 Tintern, 10 Tintern Avenue, Toorak
090 Sun Foundry [maker] conservatory, Rippon Lea Estate, 192 Hotham St Rippon Lea
091 Corio Villa, 56-58 Eastern Beach Rd, Geelong
092 former Orderly Room, rear 51 McKillop St, Geelong
093 Brown Brothers Store,17-19 Mercer St, Geelong
094 James Hogg house, Old Gippstown, 211 Lloyd St, Moe
095 former service station [originally church], 21 Main St, Bridgewater
096 iron house fragment, rear 306 Bank Street, South Melbourne
097 Robertson & Lister [maker] iron house, 399 Coventry St, South Melbourne
098 iron house, Pioneer Settlement, Monash Drive Swan Hill
099 former Balmoral Hall, Stirling St, Balmoral
100 former Fryerstown hotel [ex Fryerstown], adjoining Diggers Store, 61 Main Rd, Campbell's Creek
101 semi-detached iron house 181 Brunswick Rd, Brunswick
102 semi-detached iron house 183 Brunswick Rd, Brunswick
103 semi-detached iron house 187 Brunswick Rd, Brunswick
104 semi-detached iron house 189 Brunswick Rd, Brunswick
105 former Labassa conservatory 21 Manor Grove, Caulfield
106 former church, 14 Graham St, Bacchus Marsh
107 Conservatory, the Depot, Bendigo
108 The Fulton, components stored at Myrtlebank
former Melbourne GPO [ex Bourke St, Melbourne], Riverside Farm, Whanregarwen
former schoolhouse, Bacchus Marsh

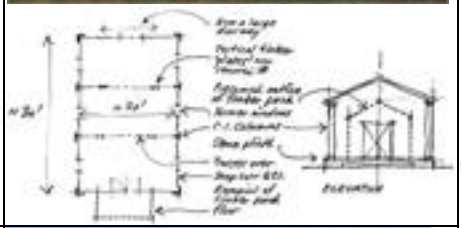
WESTERN AUSTRALIA

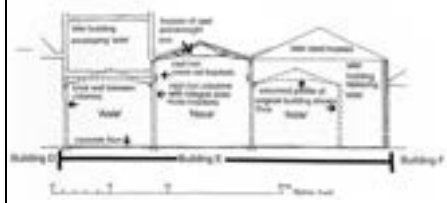
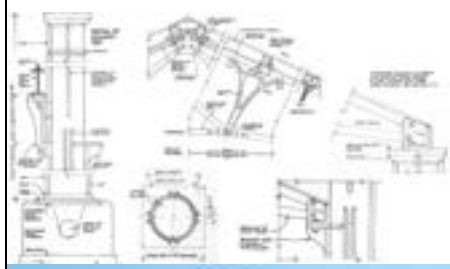
109 Breaksea Island Lighthouse (old), near Albany
110 former cable station, Broome
111 former London and Hamburg Gold Recovery assay office, Kalgoorlie
112 Point Moore Lighthouse, Geraldton
113 Jarman Island Lighthouse, Cossack
114 Artillery Drill Hall, Fremantle
115 Volunteer Drill Hall, Perth
116 35-7 Loch St Derby
117 Cottages, Leschenault homestead

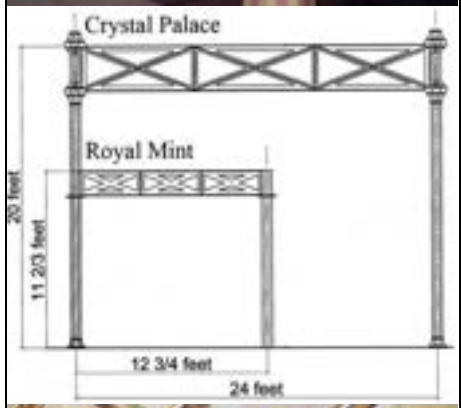
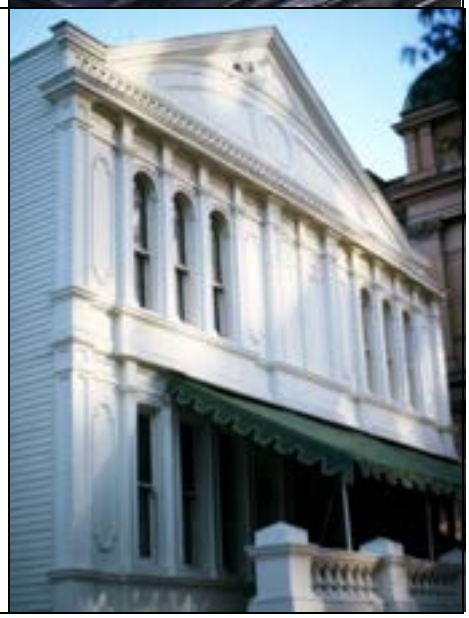
NEW SOUTH WALES				
	LGA	**identity**	**protection**	
002	Municipality of Hunters Hill	Carey Cottage, 18 Ferry St, Hunters Hill, front two rooms before or during the ownership of Foss 1834-60 1860. Possible Henry Manning house (nothing to do with Edye Manning, a later owner).	Hunters Hill LEP 2012-I128	
003	Hawkesbury C Council	Post Office and General Store, 1255 Bells Line of Road, Kurrajong Heights, board & batten cladding. Said to have been shown at the Great Exhibition, London, 1851, but no reference can be found in the catalogue.	Hawkesbury LEP 2012 – 1361	
004	Inner West Council	235 Rowntree Avenue, Birchgrove, originally in Ballast Point Rd Birchgrove, c 1855; moved to the present site c 1877. Attributed to C D Young of Glasgow, 1855	Leichardt LEP 2013 - 1589	 
005	Municipality of Hunters Hill	The Chalet [or Bungalow], 2 Yerton Avenue, Hunters Hill, imported from Hamburg by Léonard Étienne Bordier, 1854, erected 1855-6	SHR 01727 Hunters Hill LEP 2012 - 17	

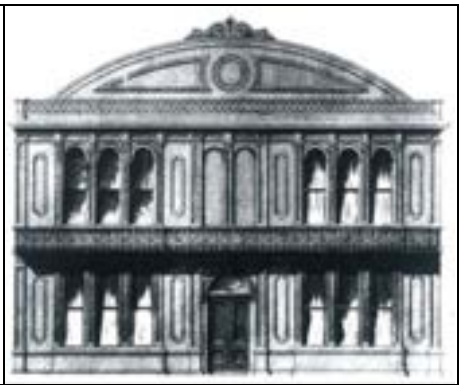
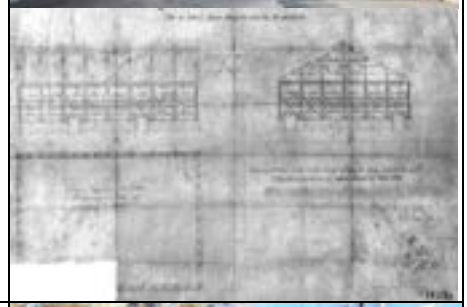
				
006	Municipality of Burwood	Wellings Gatehouse, 4 Woodside Avenue, East Burwood, said to have been made in Germany. Erected as the gatehouse at Passy, Hunters Hill, and moved to Wellings in 1967.	Burwood LEP 2012 - 1119	
007	Bega Valley Shire	Halfway Hotel, later the Woolingubrah Inn, Coolumbooka Road, Cathcart, believed to have been prefabricated in Boston, imported by Caldwell Train & Co, and erected on the present site in about 1861, probably by by R G Massie of Eden.	Proposed to be listed (2004),	 

008	Shire of Cooma-Monaro	Redwood house by William Elford of California, 3745 Snowy River Highway Maffra [via Dalgety] NSW imported by John Ryrie 1884, subsequently moved within the site and used as a garage / laundry	Cooma-Monaro LEP 2013 - 1176	
009	Bega Valley Shire	Redwood house by William Elford of California, Davidson Whaling Station, Edrom, put up in 1883 at the Green Cape Telegraph Station, moved to Edrom 1896.	SHR 00984	 
010	Wingecarribee Shire	Wingecarribee, 8 Willow Rd, Bowral 2576, made by Samuel Hemming of Bristol, possibly for the Melbourne and Colonial House Investment Company. Acquired by J M Oxley, c 1853-4, but not erected until 1857, by H M Oxley	Wingecarribee LEP 2010 - 1075	 

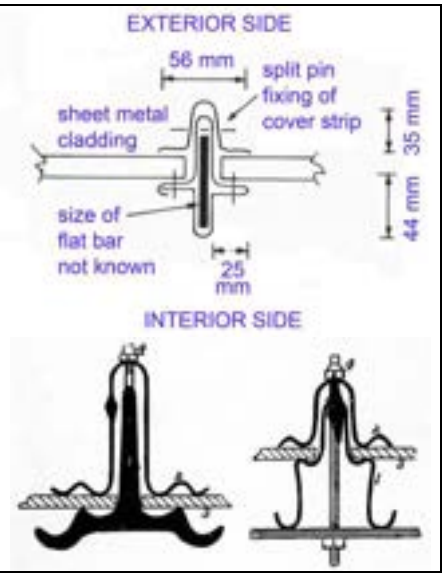
				 
011	City of Shoalhaven	Former church, 590 Comerong Island Road, Numbaa 2541	Shoalhaven LEP 2014 – 419.	 
013	City of Lake Macquarie	cast iron reservoir, 147 Ocean St, Dudley, manufactured by the Birtley Iron Works, Newcastle UK, 1877 for the Walka Water Works, NSW. Moved to the present site 1928.	Lake Macquarie LEP 2014-90	

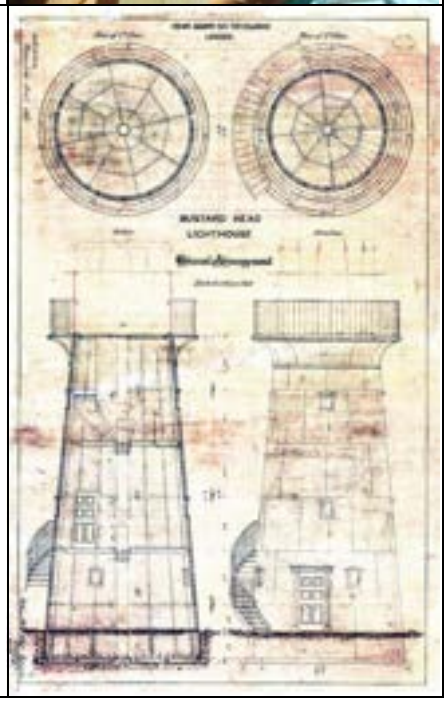
				 
014	City of Sydney	Grissell building [former Kent brewery], 851 South Dowling Street, Waterloo, by H & M D Grissell. London, 1855-6, as reconstructed in 2009	Sydney LEP 2012-I2099	  

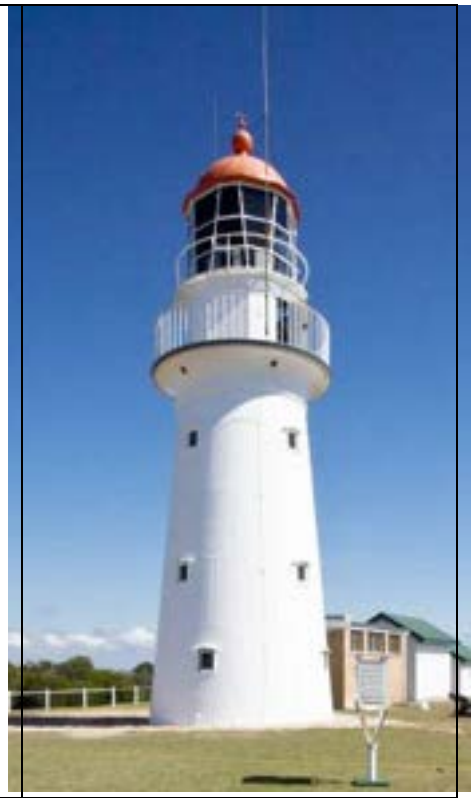
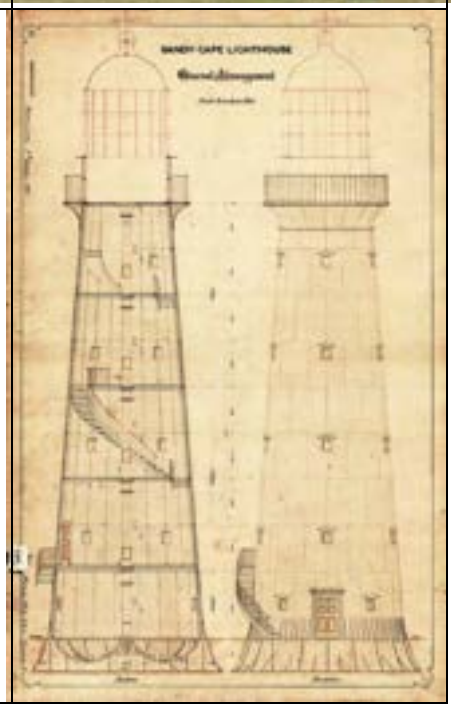
015	City of Sydney	Mint Coining Works, Macquarie St, Sydney designed by Captain Edward Ward, Royal Engineers, and fabricated by John Walker of London (in association with the Horseley Iron Works Staffordshire), 1854-5.	LEP ??I1867 SHR 00190 106103	  
016	City of Sydney	Legislative Council Chamber, Macquarie St, Sydney, designed by Bell & Miller and fabricated by by Robertson & Lister of Glasgow for Maccallum, Graham & Black, and exported to Melbourne Acquired by the NSW Government in 1856. Wrought and cast iron frame originally clad in corrugated iron except for the cast iron façade, which was moved forward 3 metres in 1892	National Heritage List 106103 SHR 01615 Sydney LEP 2012-I1864	

				
017	North Sydney Council	Former North Shore Gas Co retort house, Sub-Base Platypus [building 11] , 1 Kiara Close, North Sydney. By Abbot & Co, Gateshead-on-Tyne, 1886.	North Sydney LEP 2013-I0859	 
018	Edward River	Iron cottage, attributed to Morewood & Rogers, Hartwood Station, c 1853	unlisted	
tba	City of Shoalhaven	Former hotel (and shed if surviving), 590 Comerong Island Road, Numbaa	unlisted	

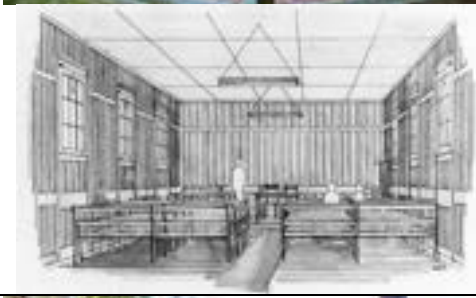
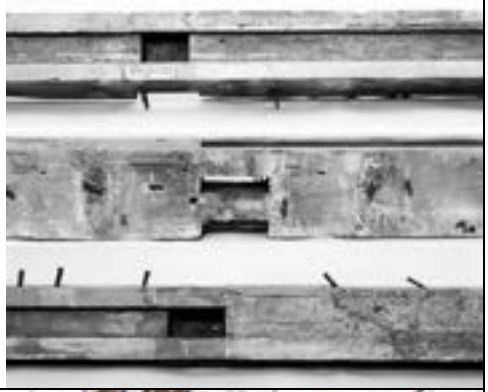
NORTHERN TERRITORY				
	LGA	**identity**	**protection**	
019	Victoria Daly Region	Pine Creek Post Office & Repeater Station [former Burrundie Mining Warden's Office], 1889, now at Pine Creek. English, possibly Frederick Braby & Co.	Permanent declaraton	 
020	Darwin	Former Knuckey St Wesleyan Church, 1893, now in the Botanic Gardens, 55 Mitchell St, Darwin. Probably on the Helliwell Pent Glazing System, USA, fabricated by Simpsons, Adelaide.	[public ownership]	 

				 EXTERIOR SIDE 56 mm split pin fixing of cover strip sheet metal cladding 35 mm 44 mm size of flat bar not known 25 mm INTERIOR SIDE

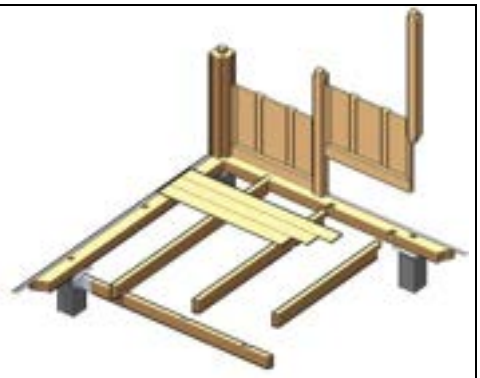
QUEENSLAND				
	LGA	**identity**	**protection**	
021	Hinchingbrook	Yeddo [Ruth Fairfax house], 5 Lynch St, Ingham, 1887, prefabricated in Kobe, Japan, to the order of Judge G W Paul. Erected in New Farm Brisbane, moved to the present site in 1962.	QHR 602193	  
022	Gladstone	Bustard Head Lighthouse, designed by William Pole for the Crown Agents for the Colonies, fabricated by Hennet Spink & Co, Somerset, in 1865; completed on site 1868.	QHR 601260	

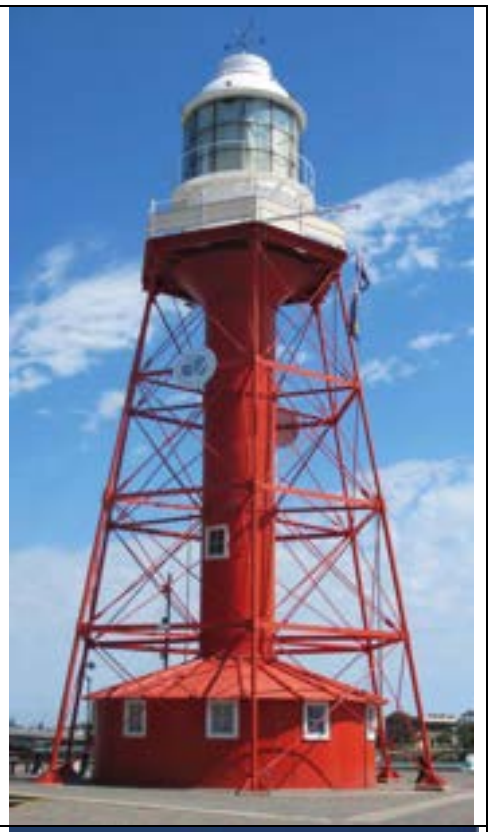
				
	Hervey Bay	Sandy Cape Lighthouse, Fraser Island, fabricated by Kitson & Co of Leeds, 1865-6, completed on site, 1870.	QHR 601712	

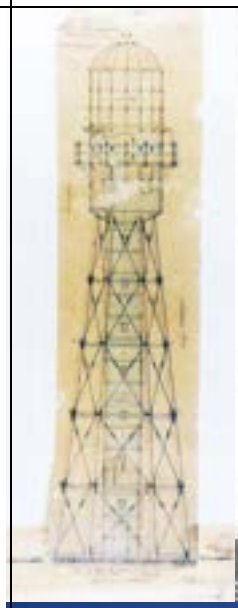
SOUTH AUSTRALIA				
	LGA	**identity**	**protection**	
024	City of Adelaide	Friends Meeting House, 41 Pennington Terrace, North Adelaide, by Manning, 1839-40.	SA Heritage Register no 1456	 
025	City of Adelaide	Walkley Cottage 43-44 Pennington Terrace, North Adelaide, by Manning, 1839, encased in brick shortly after construction	SA Heritage Register no 10756	 
026	City of Burnside	"Ringmer', 2 Ringmer Drive Burnside, detached Manning house and portion of another Manning house (moved from Grenfell Terrace 1863),	State Heritage Place no 1403	

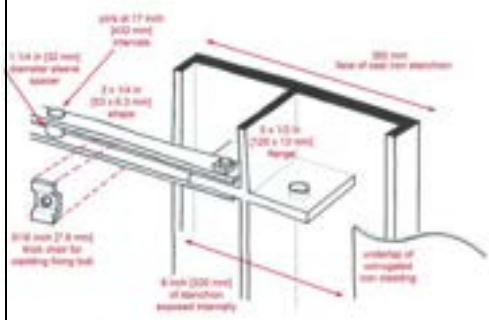
027	Adelaide Hills Council	'Montacute', Institute Rd Montacute' by Manning, originally at Kenton Valley 1844, moved to the present site 1851	State heritage place no 16200	
028	Town of Mount Barker	'Blakiston', Princes Highway Blakiston via Littlehampton, masonry base with a house by Manning as the upper floor	State heritage place no 13944	 
029	Light Regional Council	'Greenock'. Gerald Roberts Rd, Marananga, via Nuriootpa, by Manning	State heritage place no 12291	 
030	na	Wrigley house, Torrens Island		

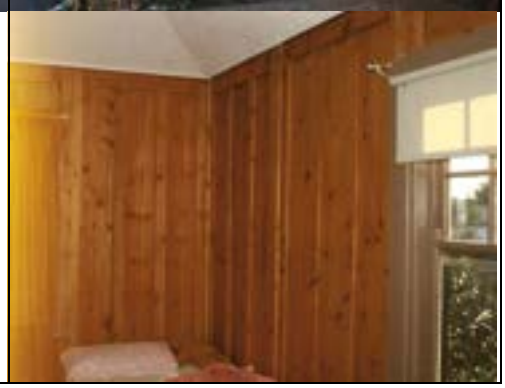
				
031	na	Troubridge Island Lighthouse, Troubridge Shoal, c 1853-4, lit December 1855. Design by Alexander Gordon, London; components cast by W Joyce & Co of Greenwich; lantern by De Ville & Co. Flared brackets at the base probably added 1868.	Commonwealth Heritage List indicative place 105546	
s 032	City of Port Adelaide Enfield	Port Adelaide (Neptune Island) Lighthouse, designed by Alexander Gordon, manufactured by Richard Moreland & Son, London, 1867-70, extended 1875		

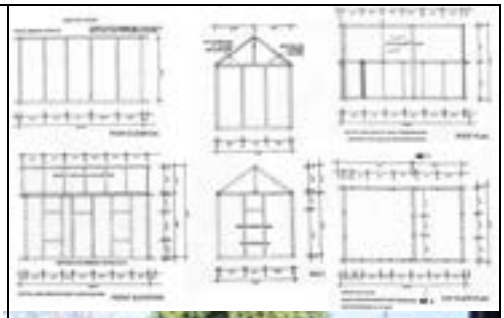
				
033	Kingston District Council	Cape Jaffa (Margaret Brock) Lighthouse, 32 Marine Pde, Kingston, , by George Wells of Westminster, moved oi this site		

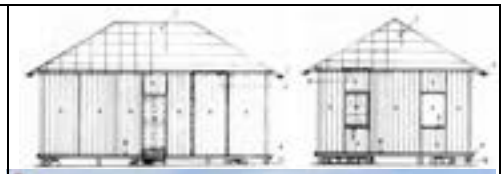
034	Copper Coast Council	Tipara [Tiparra] Reef Lighthosue, now in the Wallaroo Heritage and Nautical Museum, Jetty Road,		
035	City of Adelaide	Palm House (or Tropical House), Botanic Gardens, off North Terrace, Adelaide, designed by Gustave Runge and fabricated by Hoefer of Bremen, 1874-6	Included in state heritage place no 6433	 
036	City of Mount Barker	Wrigley Patent house moved from Torrens Island, Waldorf School, 27 Sims Rd.		

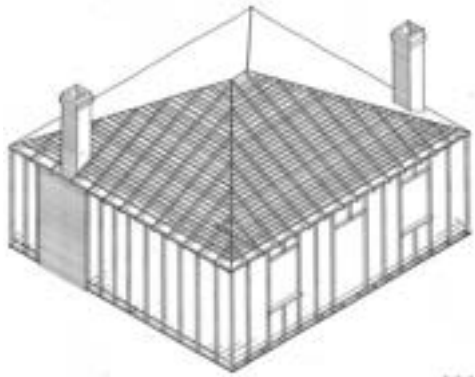
TASMANIA				
	LGA	**identity**	**protection**	
037	King Island Council	Currie Harbour lighthouse, 36 Lighthouse St, Currie, 7256. By Chance Brothers, England 1876-80	Commonwealth heritage list ineligible place 105294 State permanently registered 3514	  
038	Latrobe Council	Edwin Maw [maker] building, behind the Lucas Hotel, 46 Gilbert St Latrobe, 7307. By Edwin Maw, 1850s	[principal property permanently registered 3654]	

				
039	Northern Midlands Council	Edwin Maw [maker] building, grounds of Longford House, 120 Catherine St, Longford 7301. By Edwin Maw, 1850s	[principal property permanently registered 5087]	  
	Northern Midlands Council	3 Mason St Longford, corrugated iron clad building, possibly English		

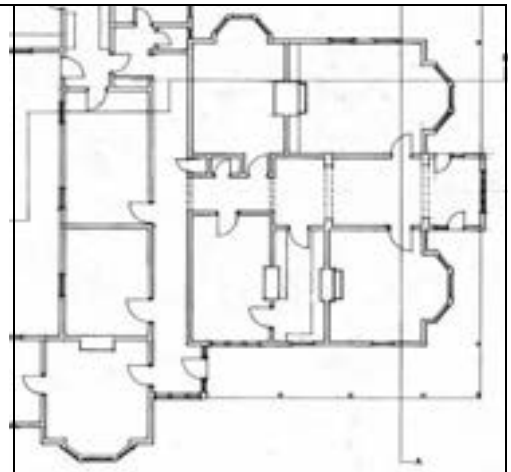
VICTORIA				
	LGA	**identity**	**protection**	
041	Hume	Woodlands homestead, Woodlands Drive, Greenvale, by Peter Thompson of London 1842-5.	**state H1612** – local HO25	
042	Wellington	Woodcot Park, 345 Tannery Rd, Tarraville	**state H0649** local HO18	
043	Melbourne	La Trobe's Cottage [ex Jolimont], Dallas Brooks Drive, Domain, Melbourne, by Manning, London, 1839, now largely a replica	**national** Included in 'Melbourne's Domain Parkland and Memorial Precinct' listed 11/02/2018 Place ID 106305 **state H1076** – local HO398	 
044	Queenscliffe	Bungalow Cottage, 78 Mercer St Queenscliff, by Manning, London 1853, moved from our Yarra c 1860, externally re-clad	local HO11 & HO140 - The Botanic Gardens Precinct	 

045	Yarra	Reconstruction combining elements of timber buildings at the rear of 181-7 Brunswick Road, Brunwicl	local HO134 - Gold Street Precinct	 
046	Southern Grampians	Singapore cottage, The Gums, Woolsthorpe Rd, 12 km east of Penshurst	local HO463	
048	Yarra	Singapore cottage [Harkins house] [ex East Melbourne/Mentone],136 Sackville St, Collingwood	local HO134 - Gold Street Precinct	 
049	Yarra	Singapore cottage [ex 2 Henry St, Prahran],125 Easey St, Collingwood	local HO134 - Gold Street Precinct	

050	Yarra	Singapore Cottage [ex 35 Longmore St St Kilda] 136 Sackville St, Collingwood	**state H0610 -** Singapore Cottage local HO134 - Gold Street Precinct	 
051	Stonnington	Former Wattletree Inn, 196 Wattletree Rd, Malvern	local HO116 - Glendearg Former Wattletree Hotel	
052	Macedon Ranges	Sidney Seymour Cottage, 20 Palmer St, Romsey	**state H2268** - Seymour Cottage local HO194 - Romsey Precinct	 

053	Port Phillip	Singapore cottage, 17 Coventry Place, South Melbourne	state H1958 local HO367 - Emerald Hill Residential Precinct	
054	Greater Geelong	Singapore cottage, 127-9 Elizabeth St (former 25 Candover St), Geelong	local HO1962 Waterloo Heritage Area	
055	Greater Geelong	Singapore cottage, 7 Wellington St, Geelong West 3218	local HO1962 Waterloo Heritage Area	
056	Greater Geelong	Singapore cottage, 25 Brewongle Ave, Hamlyn Heights 2015 (former 22 Coronation St, Geelong)	local HO149 Portable House	 

057	Greater Geelong	Singapore house, 8 Swanston St, Geelong	local HO1639 City East Heritage Area	
058	Moonee Valley	51 Ormond Rd, Moonee Ponds	local HO90	 
059	Pyrenees	Edinburgh cottage, Carranballac, 5945 Glenelg Highway, Carranballac	local HO25	
060	Greater Geelong	The Heights, 140 Aphrasia St, Newtown, Geelong	**state H0429** - The Heights local HO157 - The Heights Residence including interior	

				 
061	Pyrenees	Watford Villa [ex Main St, Avoca], 14 Dundas St. Avoca	**state H2199** - Watford Cottage local HO8 - Avoca Township Precinct (Tunks House)	 
062	Melbourne	Osborne House, 456-8 Victoria St, North Melbourne 063	**state H0101** - Osborne House local HO304	

				
063	Greater Geelong	16 Ryrie St [former 256 Pakington St], Geelong, components of timber house from Caldwell, Train & Co, Boston, c 1854,		  
064	Macedon Ranges	Penola, 222 Alton Rd, Mount Macedon	state file 601514 Application receive	

				 
065	Greater Geelong	Keyham, 275 Pakington Street, Newtown, Geelong	**state H1128** - Keyham local, HO186 and HO1623 'Newtown Hill Heritage Area' applies.	
066	Warrnamb	Crimea Hut [ex Crimea], Flagstaff Hill, Warrnambool		

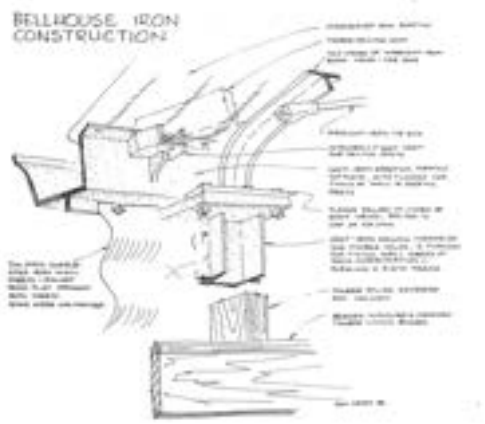
				
067	Moreland	Lyndhurst Hall, 46 Walhalla St, Coburg, from London: erected in Albion Street, East Brunswick, c 1855. moved to the present site 1868..	**state H0964** - Lyndhurst Hall local HO189 - Coonans Hill precinct	 
068	Port Phillip	Oberon, 2 Lambeth St, St Kilda, 1855 from Genoa, erected 1856	local HO6 - St Kilda East Precinct	

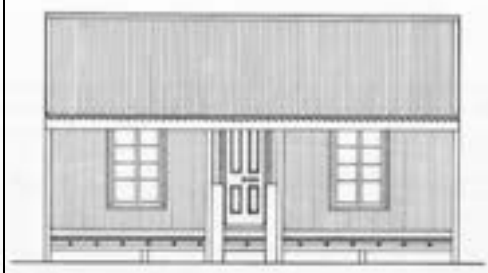
069	Yarra	5 Tranmere St, North Fitzroy, by William Elford of California, USA, 1880s	local HO327 North Fitzroy Precinct (Elford Patent Portable House)	 
070	Moreland	American Cottage, 21 Station St, Coburg	**state H0139** - The American Cottage local HO139 Moreland Railway Station Precinct (American Cottage)	

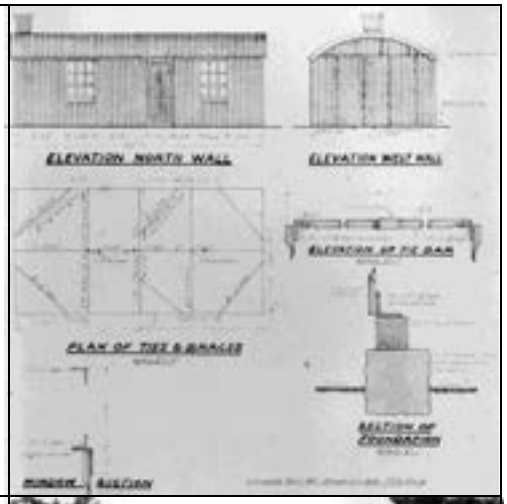
				
071	Port Phillip	Fenagh Cottage, 7 Burnett St, St Kilda	**state H0629** - Fenagh Cottage local HO69 St Kilda Hill Precinct (Fenagh Cottage)	
072	Mornington Peninsula	Japanese Tea House, Marina, 678 Esplanade Mornington	local HO66	
073	South Gippsland	Former railway waiting room [ex?], Prosper Valley Rd, Budgeree, believed to have been imported from England c 1880.		

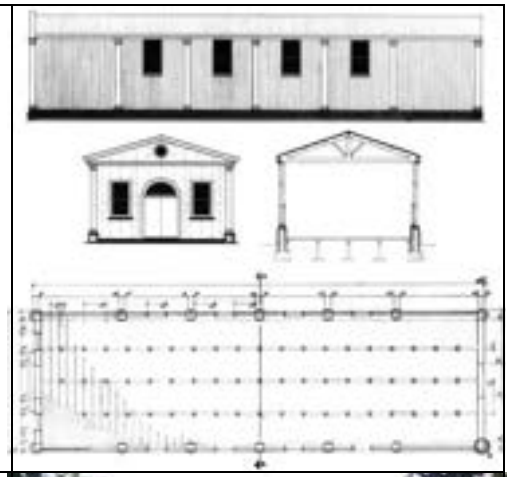
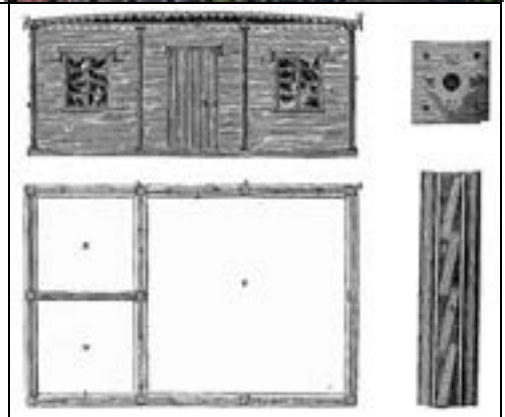
074	Mornington Peninsula	Eastern Shore (South Channel) Light, 650 Point Nepean Rd, McCrae, by Chance Brothers of Birmingham, erected 1884	**state H1516** - Lighthouse local HO164 Eastern Shore Light	
075	Yarra	J H Porter [maker] store, Fairfield Park [from 111 Queens Parade, Fitzroy]	**state H2243** - Porter Prefabricated Iron Store local HO468 (Porter Iron Store)	 

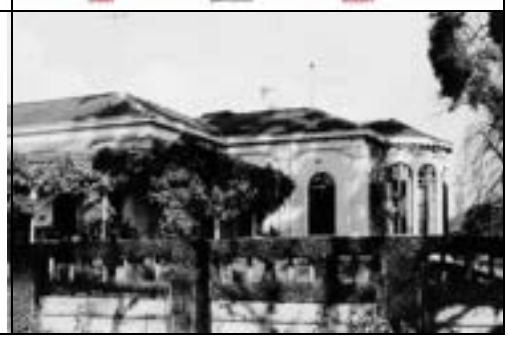
076	Ballarat	former 71 Little Malop Street store, Sovereign Hill, Ballarat	**state H2248** - Porter Prefabricated Iron Store originally in Geelong	  
077	Golden Plains	iron cottage shell 'The Weatherboard', 24 Weatherboard Rd, Inverleigh	**state H0880** - Prefabricated Iron Cottage [ocal HO8	

				
078	Port Phillip	Bellhouse [maker] house [ex Fitzroy], 399 Coventry St, South Melbourne	**State H1888** - Bellhouse Iron House local HO97 & HO458 Emerald Hill Residential Precinct (Portable Iron Houses)	 
079	Melbourne	Walmsley [maker] building, Depot, Royal Botanic Gardens, South Yarra	State H1087 and H1459 ?? maybe local HO6, HO396 and HO402 ??	 

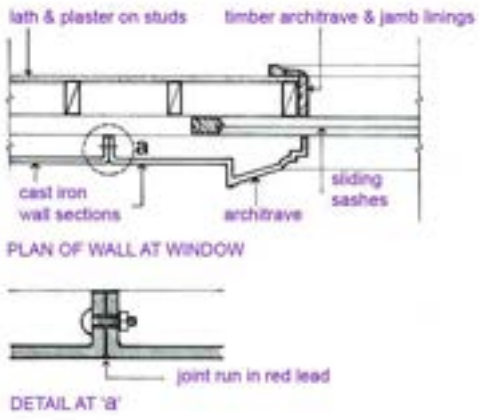
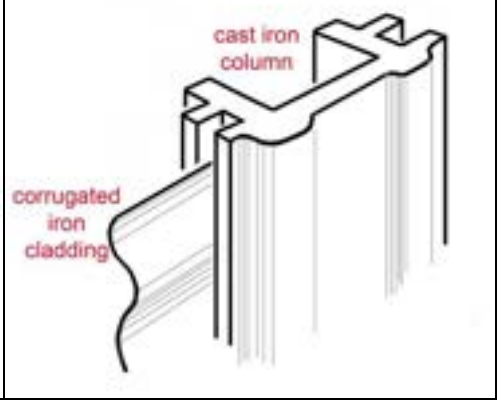
080	Melbourne	Ranger's house, 161-168 Gatehouse St, Parkville	local HO895	
O81	Port Phillip	Abercrombie house [ex North Melbourne], 399 Coventry St, South Melbourne	local HO97 & HO458 Emerald Hill Residential Precinct (Portable Iron Houses)	 
082	Surf Coast Shire	Morewood & Rogers [maker] building, Summerhill Farm, 155 Mt Duneed Rd, Mt Duneed	**state H1131** - Prefabricated Iron Cottage local HO17 Summerhill	

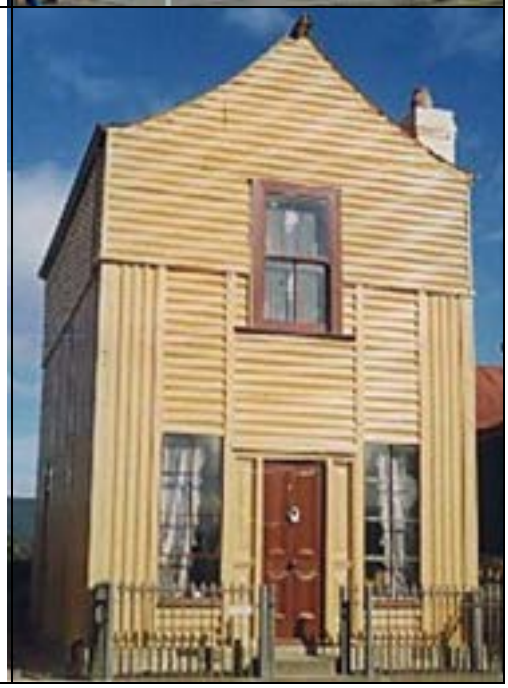
				
083	Macedon Ranges	St Paul's Op Shop [former corrugated iron church], 30 Fisher St, Gisborn		 
084	Yarra	All Saints Parish Hall, 95 King William St, Fitzroy	**state H2172** - All Saints Church Hall Local HO358 - South Fitzroy Precinct	

				
085	Greater Geelong	Eudoxus, 34 Fenwick St, Geelong	**state H1119** – Eudoxus local HO135 City East Heritage Area - (Eudoxus prefabricated iron house including interior)	
086	Stonnington	Robert Walker [maker], building, 18 Douglas St, Toorak, by Robert Walker of Glasgow, c 1853-5.	**state H1299** - Prefabricated cottage local HO35 (prefabricated cottage)	 

087	Brimbank	iron building, Harricks Rd, Keilor North [relocated from Calder Highway], probable Glasgow maker, possibly Chaplin, Dixon & Robbs, c 1853-4. Formerly thought to be a police building.	**state H1971** - Prefabricated Building local HO14 - Corrugated iron, prefabricated, portable building - former Keilor Plains Police Station	 
088	Mount Alexander	Marsh House, 7254 Midland Highway, Guildford, by a Glasgow maker, c 1854-5	**state H0327** - Old Marsh House local HO964 - Marsh House	 
089	Stonnington	Tintern, 10 Tintern Avenue Toorak, Westgarth by P & W Maclellan of Glasgow, about 1854, erected under the supervision of A L Smith, c 1855-6	**state H0208** – Tintern state HO105 - Tintern House	

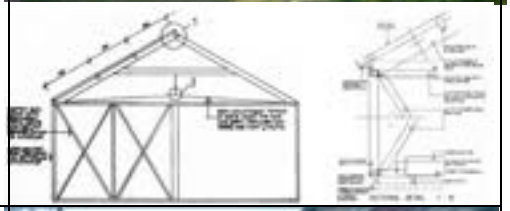
				
090	Glen Eira	Sun Foundry [maker] conservatory, Rippon Lea Estate, 192 Hotham St Rippon Lea, erected in the present position 1897, but earlier in date.	**state H0614** - Rippon Lea [part of] local HO36 - Rippon Lea	

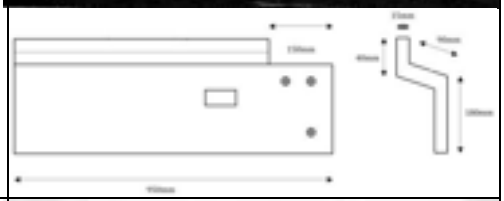
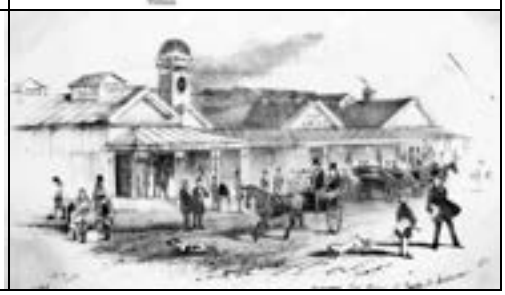
091	Greater Geelong	Corio Villa, 56-58 Eastern Beach Rd, Geelong, designed by Bell & Miller, fabricated by Robertson & Lister, Glasgow, c 1853-4, erected c 1854-5.	**state H0193** - Corio Villa local HO8 City East Heritage Area (Corio Villa house including interior)	  
092	Greater Geelong	former Orderly Room, rear 51 McKillop St, Geelong, by Robertson & Lister of Glasgow c 1853	**state H1173** – Wintergarden [part of] local HO117 & HO118 & HO1641 City South Residential Heritage Area - Winter Garden (former Congregational Church and Prefabricated Iron Building	 

093	Greater Geelong	Brown Brothers Store,17-19 Mercer St, Geelong, , by Robertson & Lister of Glasgow c 1853	state H0742 - Iron Store local HO238 City East Heritage Area - Brown Bros Warehouse (former) including interior	 
094	Latrobe	James Hogg house, Old Gippstown, 211 Lloyd St, Moe, Victoria, by Robertson & Lister of Glasgow c 1853.	**state H1283** – Loren locsal HO5 - Gippsland Heritage Park Precinct [part of]	

095	Loddon	former service station [originally church], 21 Main St, Bridgewater, by Robertson & Lister of Glasgow c 1853	local HO (no number in Hermes) - Portable Iron Building - recommended for heritage overlay	
096	Port Phillip	iron house fragment, rear 306 Bank Street, South Melbourne, by Robertson & Lister of Glasgow c 1853	local HO440 Emerald Hill Residential Precinct	
097	Port Phillip	Robertson & Lister [maker] iron house, 399 Coventry St, South Melbourne, c 1853	State H0220 - Iron House Local HO97 & HO458 Emerald Hill Residential Precinct (Portable iron Houses)	

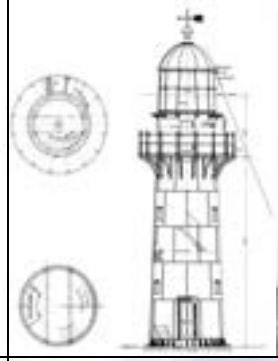
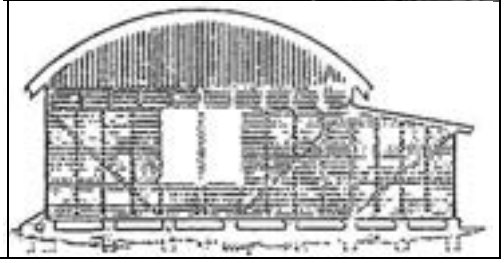
098	Swan Hill	iron house, Pioneer Settlement, Monash Drive Swan Hill, formerly at Montague St, South Melbourne, by Robertson & Lister of Glasgow c 1853	State HV - nomination accepted (no file)	
099	Southern Grampians	Former Balmoral Hall, Stirling St, Balmoral, now at Vasey, fabricated from Davies Crown iron, probably 1880s.		
100	Mount Alexander	former Fryerstown hotel [ex Fryerstown], now adjoining Diggers Store, 61 Main Rd, Campbell's Creek, 1850s, possible zinc building	**state H0839** - Powell's Prefabricated House	 
101	Moreland	semi-detached iron house 181 Brunswick Rd, Brunswick, 1854, attributed to Samuel Hemming of Bristol, reclad in brick	**state H1151** - Iron Cottage Local HO37 (Iron Houses)	
102	Moreland	semi-detached iron house 183 Brunswick Rd, Brunswick, attributed to Samuel Hemming of Bristol, reclad in brick.	**state H1152** - Iron Cottage Local HO38 (Iron Houses)	

103	Moreland	semi-detached iron house 187 Brunswick Rd, Brunswick, attributed to Samuel Hemming	**state H1153** - Iron Cottage Local HO39 (Iron Houses)	
104	Moreland	semi-detached iron house 189 Brunswick Rd, Brunswick, , attributed to Samuel Hemming of Bristol.	**state H1151** - Iron House Local HO40 (Iron Houses)	 
105	Glen Eira	former Labassa conservatory 21 Manor Grove, Caulfield	**state H2005** - former Labassa Conservatory local HO44 - House, fmr Labassa conservatory, 21 Manor Gve	 
106	Moorabool	former church, 14 Graham St, Bacchus Marsh	local HO71 - Dwelling, Webster Brothers yard and the iron church	

				
107	Bendigo	Conservatory originally in the Botanic Gardens. Melbourne, now nm the Adam St council depot Bendigo		
108	Wellington Shire	The Fulton, components stored at the property, 1218 Maffra Rd, Myrtlebank		 
	Murrindindi	former Melbourne GPO [ex Bourke St, Melbourne], Riverside Farm, Whanregarwen		

				
	Moorabool	Former schoolhouse, Bacchus Marsh		 

WESTERN AUSTRALIA				
	LGA	**identity**	**protection**	
109	City of Albany	Breaksea Island Lighthouse [ruin], Breaksea Island, King George Sound, reserve 271614, 1857-8, Alexander Gordon system	Commonwealth heritage list, indicative place 105438 State register 03353	 
110	Shire of Broome	Cable Repeater Station (now Courthouse), 8 Hamersley St, Broome, 1889	State register 00296 Broome municipal inventory grade A	 
111	City of Kalgoorlie-Boulder	London & Hamburg Gold Recovery Assay Office, now part of Kalgoorlie Hospital, 31 Maritana Street, Kalgoorlie [lot 3973], 1898, moved 1923, Also known as the former Brown Hill Mine Laboratory; former Commonwealth Health Laboratory	State register 01313 City of Kalgoorlie-Boulder municipal inventory: exceptional significance	 

112	City of Greater Geraldton	Point Moore lighthouse, 45Marine West End, Geraldton, 1877-8, lantern by Chance Brothers	State register 03927 Geraldton municipal inventory	 
113	City of Karratha	Jarman Island lighthouse, reserve 44103, Jarman Island, Cossack, 1887-8, by Chance Brothers	State register 02337 Karratha municipal inventory category A	 
114	City of Fremantle	Artillery Drill Hall, 1 Holdsworth St, Fremantle WA 6160,. 1896, iron roof structure imported from the UK, incorporating laminated jarrah ribs	Part of state register 00078 City of Fremantle heritage list	 
115	City of Perth	Volunteer Drill Hall, Swan Barracks 2 Francis St, Perth. 1896, iron roof structure imported from the UK	[part of] State register 01980 City of Perth heritage ist1	 

116	Shire of Derby / West Kimberley	The Bungalow (Emanuel house), 35 Loch St, Derby [lot 259]. Imported from Singapore, 1893 The owners have evidence of this date, not revealed to us.	Shire of Derby / West Kimberley municipal Inventory	
117	City of Bunbury	Leschenault homestead, Lot 963 Estuary Dr Vittoria ?Elinor's Cottage, ?Eastern cottage, ?kitchen cottage: 2 imported English buildings moved from Australind 1846	[part of State Register 00344 Bunbury Municipal Inventory: exceptional significance	

Cover illustrations:

1. 'Hemmings Portable House Manufactory, Clift House Bristol. A view of the principal thoroughfare as it appeared the first week of August 1853 shewing the second church executed for the Diocese of Melbourne 1000 sittings'. State Library of Victoria.

2. Iron lighthouse, Port Adelaide, designed by Alexander Gordon, manufactured by Richard Moreland & Son, London, 1867-70, extended 1875, and moved to the present site in recent times. Miles Lewis.

3. Legislative Council Chamber, Macquarie Street, Sydney. Originally a dwelling house and store for MacCallum, Graham & Black, designed by Bell & Miller, and manufactured by Robertson & Lister of Glasgow, c 1854: brought from Melbourne to Sydney c 1856. Miles Lewis.

4. La Trobe's Cottage, the Domain, Melbourne, manufactured by Henry Manning of London, erected at Jolimont, Melbourne in 1839, moved to the present site and extensively reconstructed, 1959. Miles Lewis.

5. London and Hamburg Gold Recovery Company Assay Office, manufactured in Hamburg, erected at Brown Hill, Kalgoorlie, Western Australia, in 1898, moved to Maritana Street, Kalgoorlie, in 1921: Miles Lewis.

6. Corio Villa, Geelong, Victoria designed by Bell & Miller, and manufactured by Robertson & Lister of Glasgow, c 1853, erected in Geelong, 1854: Miles Lewis.

7. Lyndhurst Hall, 46 Walhalla Street, Coburg Melbourne, manufactured in or near London, 1854, erected in Brunswick, Melbourne, 1854; moved to the present site c 1866. Miles Lewis/

SUPPORTING ESSAYS

Singapore Cottage, formerly 1 Hoddle Street, East Melbourne

Edwin Maw Building, Longford House, Longford, Tasmania

Bellhouse House, 399 Coventry Street, South Melbourne

Port Adelaide Lighthouse

John Ryrie House, Maffra, Via Dalgety, NSW

Wesleyan Methodist Church, Darwin

London and Hamburg Company Assay Office, Kalgoorlie, Western Australia

THE MANNING HOUSES

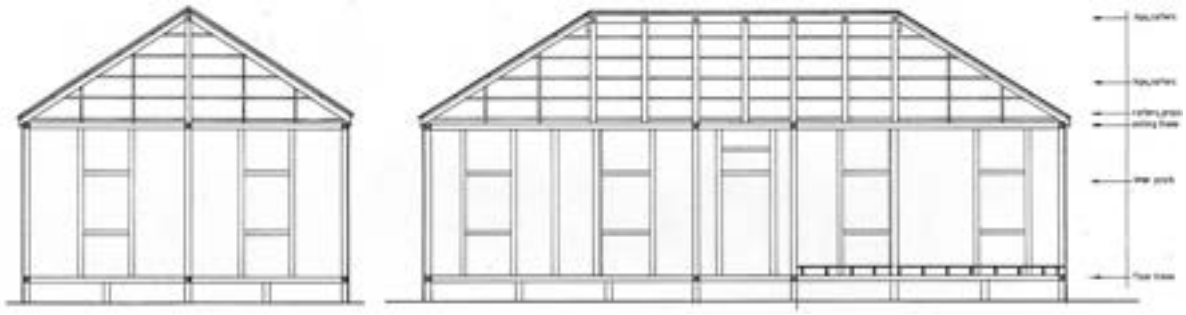
JOHN WALKER

SAMUEL HEMMING

ROBERTSON & LISTER

YEDDO

SINGAPORE COTTAGE, FORMERLY 1 HODDLE STREET, EAST MELBOURNE, c 1853



The fomer 1 Hoddle St, sections: Robert Sands, ‘Pre-fabricated Cottage 136 Sackville Street, Collingwood. Conservation Analysis’ (Robert Sands Pty Ltd, Melbourne 1987), pp 34-5.

The gold rushes of the mid-nineteenth century stimulated the export of house entrepreneurs in Hong Kong and Singapore. The Hong Kong houses in both San Francisco and Melbourne have all disappeared, but a number of Singapore cottages survive in Victoria. Some hundreds of houses from Singapore reached Melbourne and Geelong in 1852-4, in some cases accompanied by Chinese carpenters to erect them, and in one case a foreman, Louis Ah Mouy (1826-1918), who was to become a prominent local citizen.

The houses were generally built of dedaru ('Singapore teak’ or ‘Singapore oak') and meranti (‘cedar’), and were cultural hybrids. The dimensions and room sizes were designed to meet the European tastes of the market; the entrepreneurs were ethnically Chinese, and at least some of the labour was Malay. We know this partially from Chinese inscriptions painted on some of the timbers. Most of the characters are not very helpful, as they translate into words like 'gold', 'birth', 'beauty', 'water', and 'road', and probably served merely to identify individual joints. But there are some which might be construed as instructions, such as 'double', 'connection', 'secure', and 'fixed' and there is one proper name, 'Lee'. There is also some cruder writing in Arabic characters which seems likely to be that of Malay workmen. Most of these houses have or formerly had a series of horizontal members linking the kingposts at between a third and half the height. These have no structural or other apparent function, but are cultural - a version of the - *alang muda tunjuk langgit* in Malay house roof construction.

Former 1 Hoddle St, house frame as reassembled at Collngwood by Andrew Muir: Miles Lewis.

Details of the former 1 Hoddle St: (left) a hooked scarf joint in the base plate, over a stump (the left element decayed), (B) a roof strut or kingpost bearing a Chinese character: Miles Lewis.

A Singapore house at 1 Hoddle Street, East Melbourne was removed in the 1890s to make way for the construction of the Collingwood Railway, and was re-erected at Mentone. When threatened with demolition in 1983 it was rescued by Andrew Muir and re-erected on his property in Collingwood, where he has subsequently collected other examples.

EDWIN MAW BUILDING, LONGFORD HOUSE, LONGFORD, TASMANIA c 1854

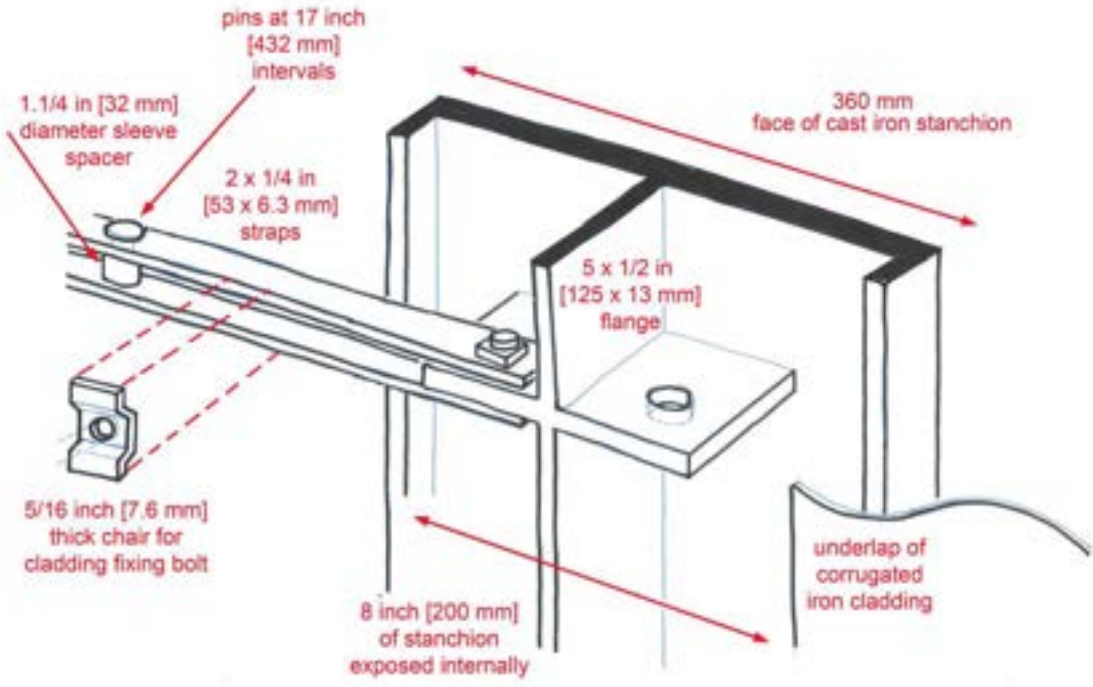
Iron building, Longford House, Longford, Tasmania, view: Miles Lewis

Edwin Maw of Liverpool is first heard of in 1850, when he sent iron buildings to California, and by 1854 he was said to have large premises at the back of the Wallasey Pool for the manufacture of railway wagons, iron houses and other items. Ironfounders were peculiarly susceptible to financial crises, and the sharp increase in the cost of iron at the time of the Crimean War may well have had an adverse effect upon Maw. Be this as it may, he found himself in financial difficulties, and 1854 he became insolvent.

Maw had developed a very unsual system in which the whole structure was tied together with straps somewhat resembling bicycle chains. There are at least six Maw buildings surviving in Australia, but none have been identified elsewhere in the world. The shed at Longford is the most interesting of them because it is the least well preserved, and therefore the structure of the walls, floor and roof can be seen.

Iron building, Longford House, Longford, Tasmania, girt: Miles Lewis.

Iron building, Longford House, Longford, Tasmania, detail of the junction of a column base with a sub-floor tie and two base wall girts; lading mark on the corrugated iron: Miles Lewis.

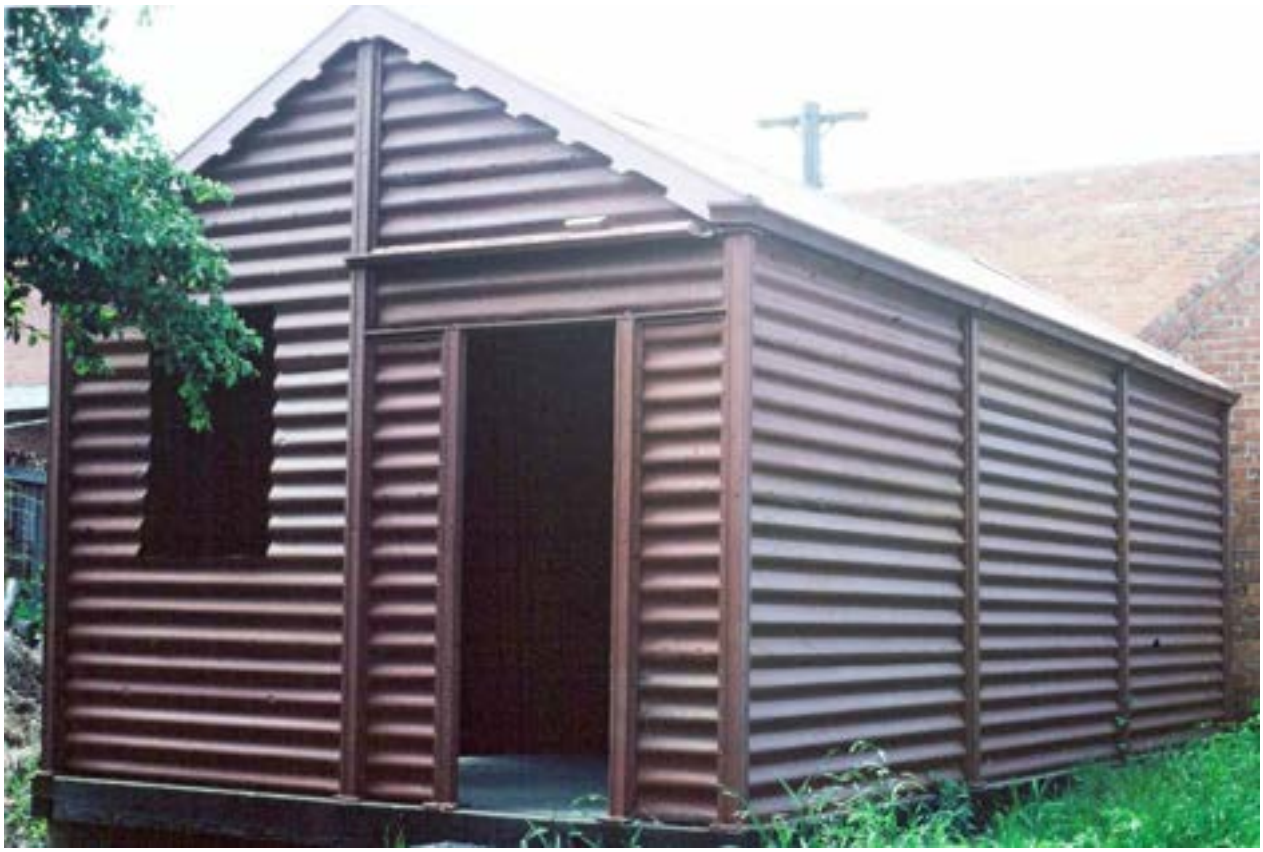


Iron building, Longford, diagram of structure: Miles Lewis.

Former Presbyterian Church, Numbaa, New South Wales, by Edwin Maw, 1855, brand on a cast iron stanchion: Miles Lewis.

The building, which has been moved within the site, is in three bays, divided by pilasters. The flange projecting from the back of the pilaster measures 5 x ½ in [125 x 13 mm]. There are horizontal girts at two levels, each consisting of paired flat bars, and identical chains run across the building linking the bases of opposite columns. The flats of these chains measure 2 x ¼ in [33 x 6.3 mm] and are linked with pins passing through 1.1/4 in [32 mm] diameter spacer tubes at 17 inch [432 mm] intervals. The corrugated cladding is fixed with 5/16 in [7.6 mm] diameter bolts passing through 5/16 in chairs resting between the straps

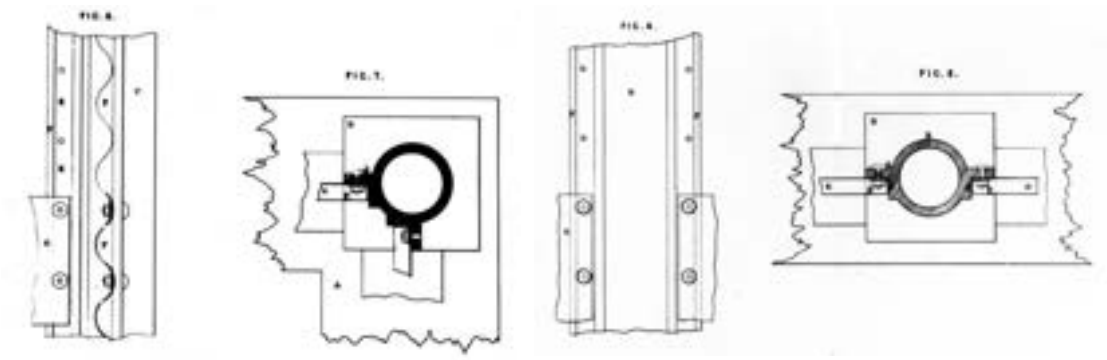
BELLHOUSE HOUSE, 399 COVENTRY STREET, SOUTH MELBOURNE, 1852-6



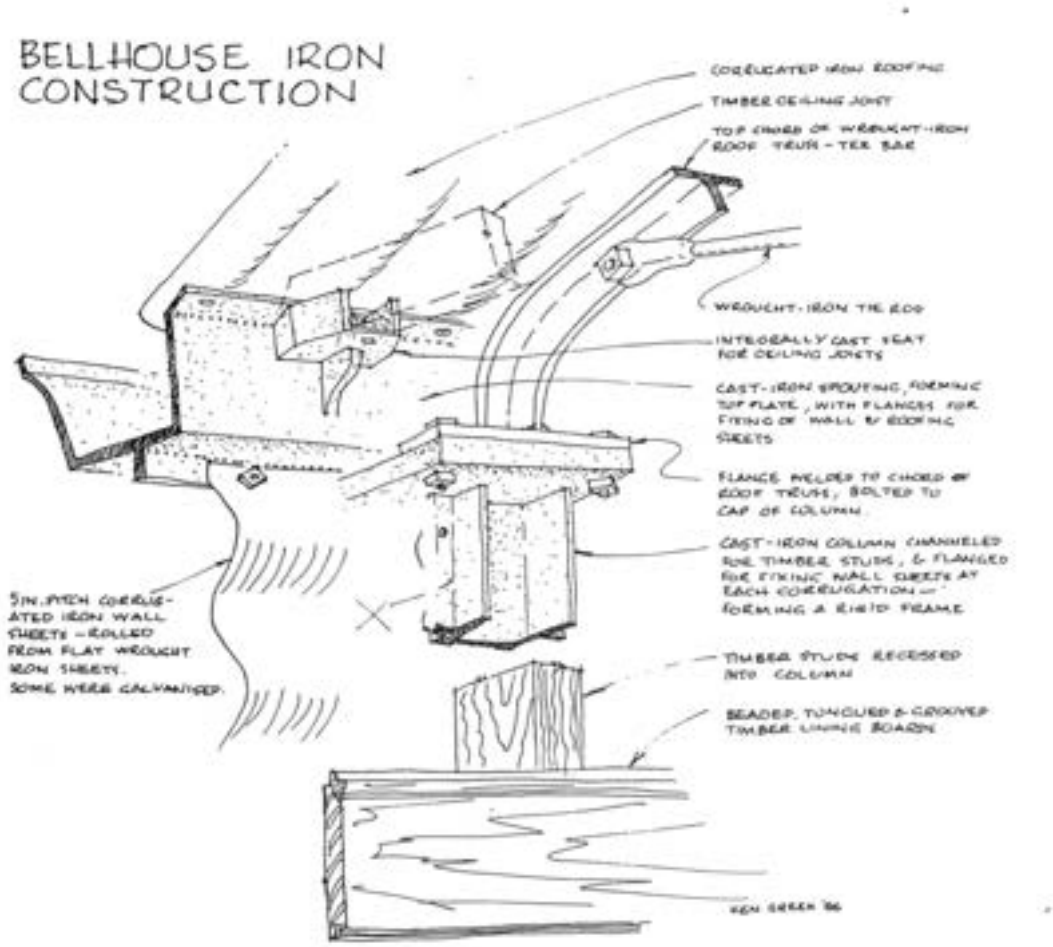
The Bellhouse house, 399 Coventry Street, South Mebourne: Miles Lewis.

Edward Taylor Bellhouse of Manchester, a cotton mill engineer and colleague of William Fairbairn, entered the prefabrication trade to supply buildings to the Californian gold rush. By 1851 he had developed and patented an integrated system in which cast and wrought iron columns, and cast iron gutters and ridging, were shaped to fit the adjacent corrugated iron sheets. This attracted the attention of Prince Albert, who ordered a ballroom for the royal estate at Balmoral. That ballroom, and the Melbourne building, are the only surviving works of Bellhouse. He patented the system in March 1853.

The Melbourne building was put up in what is now Fitzroy in 1856, though it would have been manufactured no later than 1853. In 1971 it was threatened with demolition, and was removed by the National Trust to its present site. As originally erected it did not conform fully to the intended system, and it had suffered alterations over time: for these reasons the Trust did not attempt a full restoration, but preserved the shell in a manner designed to reveal the technical details.



Details of stanchion from E T Bellhouse's British patent, 609 of 1853.



Bellhouse house, sketch of the construction system, by Ken Green, 1986.

The former ballroom at Balmoral: Miles Lewis.

PORT ADELAIDE LIGHTHOUSE, 1867-70

The Neptune Island (formerly Port Adelaide) light, designed by Alexander Gordon, manufactured by Richard Moreland & Son, London, 1867-70, extended 1875: Gordon Reid, *From Dusk till Dawn: a History of Australian Lighthouses* (Macmillan Australia, South Melbourne 1988), p 170.
The lighthouse on its present site at Port Adelaide: Miles Lewis.

In 1865 the South Australian government sought designs and prices for a lighthouse to be placed at the entrance of the Port River, and their Agent-General in London, G S Walters, approached Alexander Gordon, Lighthouse Engineer to the Board of Trade. Gordon proposed something quite unlike the solid trunk type for which he was best known – an iron tube, the submarine part of which was filled with concrete, and the short projecting portion surrounded by a platform. The platform was to be carried on conventional wooden piles shod with iron, as Gordon was an opponent of the screw pile. However George Wells, who now held the rights to Mitchell's screw piles (though the patent itself must have been long expired), heard that a lighthouse was required at Port Adelaide, and requested permission to send in a design, which the Agent-General somewhat grudgingly agreed to forward to Adelaide.

What followed is astonishing. The Agent-General sent out together the plans and specifications for the two proposals, but that of George Wells was subsequently 'lost', never to be found again, and Gordon's proposal was the only one to come before the Marine Board. This did not pass unchallenged. Percy Wells, George's

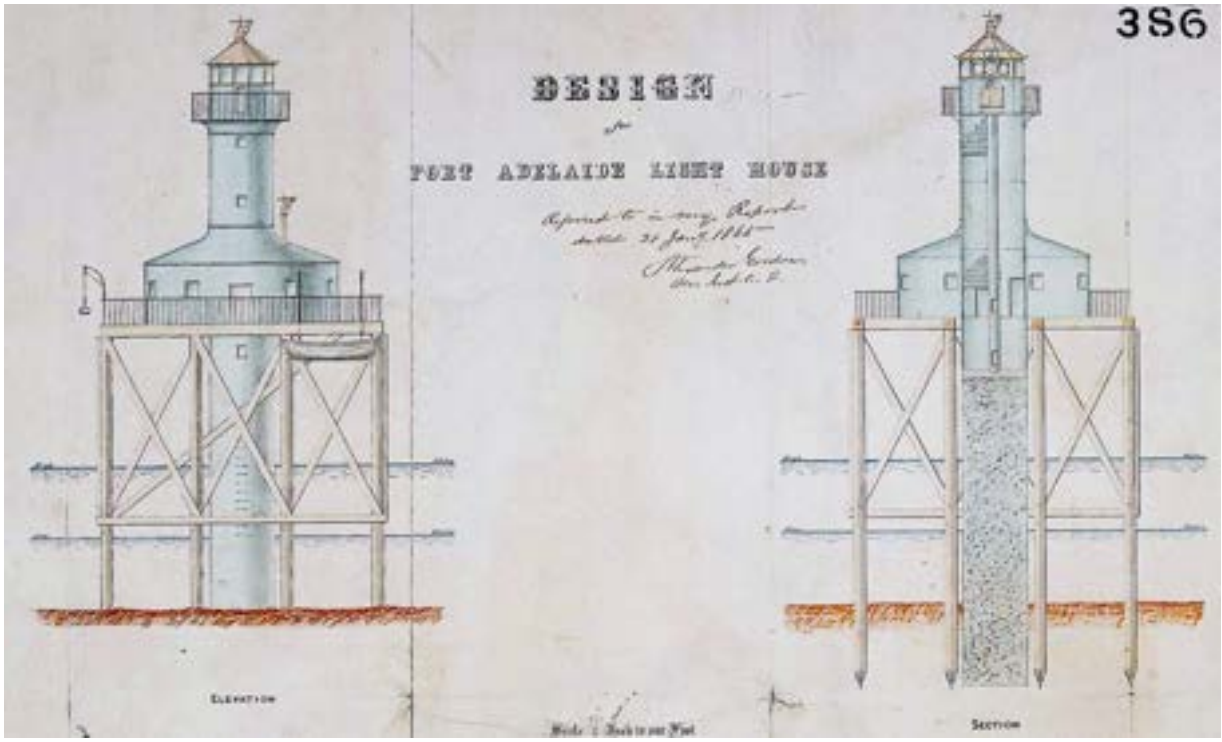
brother, was in Adelaide, and formed a partnership with the local architect Edmund Wright. Wright & Wells wrote back to England for replacement documents, and (according to their account) obtained an undertaking from the Commissioner of Public Works that no decision would be made in the meantime. However a few months later there was a change in the ministry, after which an order was put in for the lighthouse as recommended by Gordon. Wright & Wells were notified of this only the day after the letter had gone.

The ironwork for the Port Adelaide Lighthouse was manufactured by Richard Moreland & Son of London, and construction began when the components arrived from England in 1867. As described:

> It is one on Mr. Alexander Gordon's principle, the main portion being composed of a cylinder of wrought-iron sunk down to the limestone rock, and filled to about 15 feet [4.5 m] above high-water mark with cement concrete. This cylinder is continued to the height of [?80] feet [24m] in cast-iron, and at the top will be placed the lantern which was ordered for Point Marsden. The lighthouse-keeper's quarters are to be erected on a stage of 50 feet [15 m] square, 40 feet [12 m] above the level at high water, and supported by piles of jarrah timber screwed into the limestone rock through 18 feet of sand. The whole will be bolted and braced firmly with cast-iron shoes and sockets, so as to render the whole structure secure and proof against sea and weather.

It was lit in January 1869, but there were immediate complaints about the poor visibility of the light, and the tower was substantially rebuilt in 1874-5. It was considerably increased in height and the light changed from fifth order to first class, necessitating a considerable increase in the diameter of the lantern, which was achieved by adding a flared top to the tower. To support what would now be a spindly, top-heavy structure it was surrounded by a structure of iron pillars and diagonal braces, fortuitously giving it much the appearance of a conventional openwork lighthouse in the tradition of Carysfort Reef, USA.

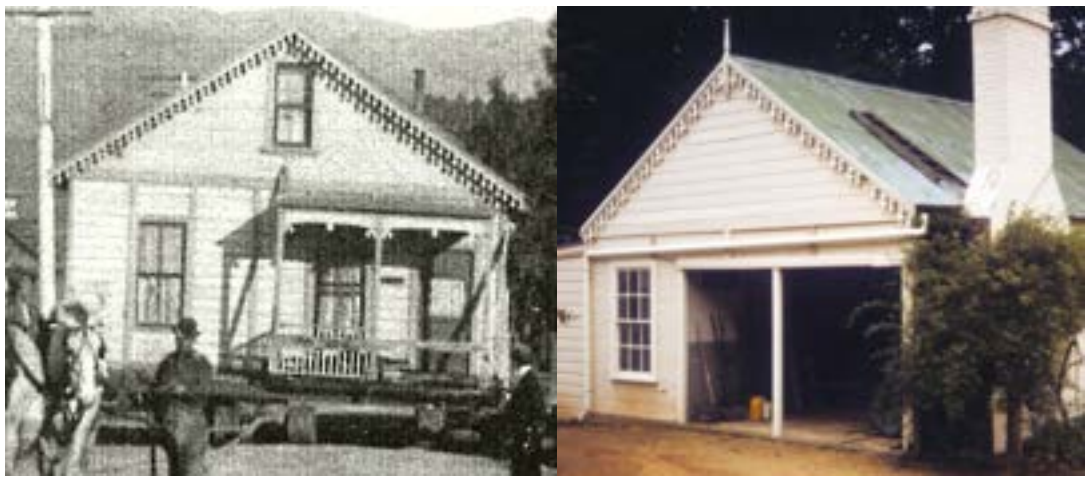
In 1890 the Port Adelaide Light was replaced by a new structure in a nearby location, which re-used the same lantern. The existing structure was moved to South Neptune Island and fitted with a new second order dioptric lens. It operated on the new site from 1900 to 1985 when it was acquired by the South Australian Maritime Museum, and moved to its present location. Despite being enlarged at an early date, and moved twice, it is well-preserved. The lower part of the shaft is believed to be the 1869 structure, and the upper part, the flared top and the openwork surrounding frame that of 1875 (making it much more like a typical openwork lighthouse than it had been when first built), and the lantern that of c 1900. The wrought iron plates are simple curved sheets bolted to an angle iron framework, unlike the distinctive flanged cast iron tray construction used in Gordon's solid trunk lighthouses.



Port Adelaide Lighthouse, designed by Alexander Gordon, fabricated by Richard Moreland & Sons of London 1865-9, elevation, section & plans, National Archives of Australia A9568 4/1/2. Design for Port Adelaide Lighthouse. Control symbol 4/1/2. Citation NAA A9568 4/1/2, detail.

Iron lighthouse, Port Adelaide, interior detail; a base detail of the 1875 frame. Miles Lewis.

JOHN RYRIE HOUSE, MAFFRA, VIA DALGETY, NSW, 1884

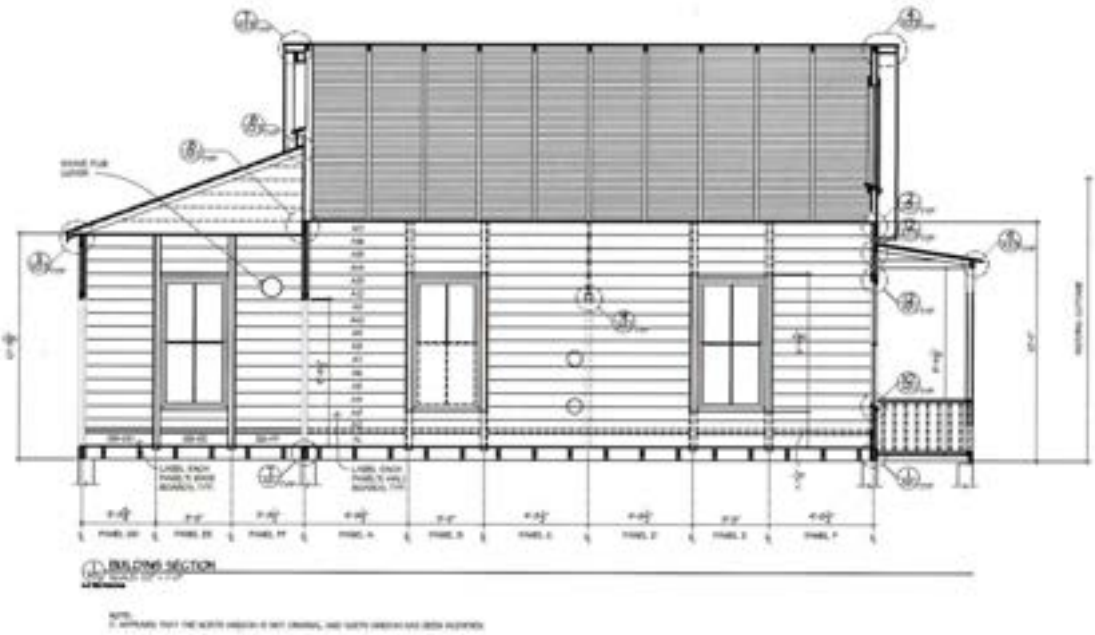


The Kenney Cottage, Berkeley, California, c 1881, during removal in 2003 from 2114 Addison St to 1725 University Ave, Berkeley Architectural Heritage Association: http://www.berkeleyheritage.com/berkeley_landmarks/landmarks.html.
John Ryrie's house, Maffra via Dalgety, NSW, an Elford patent portable house of Californian redwood, imported from the United States c 1884: Miles Lewis..

In 1883 a Melbourne firm was offering at auction a number of Elford's Patent Portable Houses. They were said to consist of three rooms, measuring in all 20 by 24 feet (6 x 7.2 m), made mainly of Californian redwood, and with the pieces numbered so that they could be built by unskilled labour. The patentee was William Elford of Oakland, California, but he is elusive, and the patent we know of is later than his houses in Australia, so that it probably represents some development of his original system. The only Elford building surviving in the United States, the Kenney Cottage, has been moved twice, dimantled, and is now in storage, whereas three Elford buildings survive in Australia, standing on their original sites.

In 1884 John Ryrie bought from George King & Co of Sydney an American-made redwood building which is identified in his correspondence as an Elford house, at a cost of £100. He put it up in March-April 1884 and it still stands at his property at Maffra, via Dalgety though it was moved to its present position on the site not long after it was first erected. It is a simple gable-roofed structure with an ornamental barge board, weatherboard cladding, and twelve-paned double-hung windows. The back end has been opened out to admit a vehicle, but the structure is in sound condition, contains three rooms, and has the same overall dimensions as the advertised houses. The wall construction consists of 180 x 29 mm tongued and grooved planks set horizontally between grooved posts 85 to 90 mm square. The short side was divided into four such panels of 5 ft [1.5 m] each, and the long side into four of 6 ft [1.8 m]. Ceiling joists run lengthwise from each of the end posts, and a boarded ceiling spans the 1.5 m intervals between them. The whole roof structure is lightweight, with rafters at 3 ft [0.9 m] centres, and an angled brace running back from the peak of each gable back down to the central ceiling joist.

The barge board is consistent with Elford's work in the USA, and as the verandah valance matches this, the verandah is probably part of the original package as well.
.



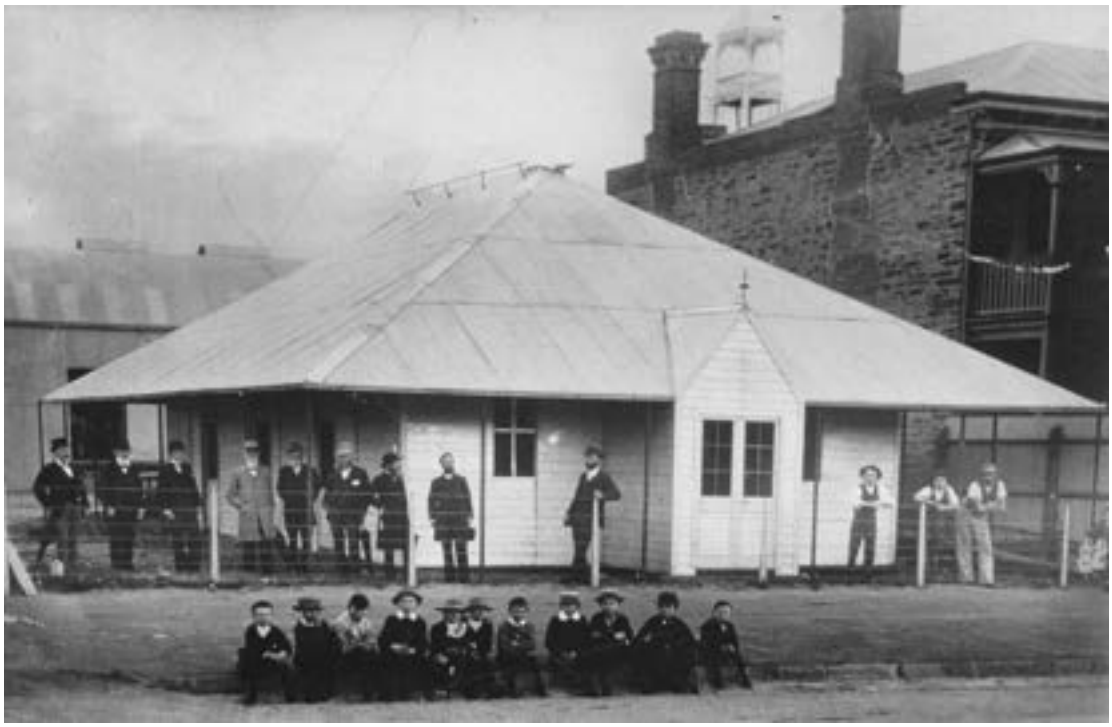
The Kenney Cottage, Berkeley, California, section: surveyed by the Berkeley Architectural Heritage Association, drawing A3.1.

WESLEYAN METHODIST CHURCH, DARWIN, 1898

Knuckey Street church on its present site in the Botanic Gardens, by Bidgee, 2008, Wikimedia Commons. [cropped].

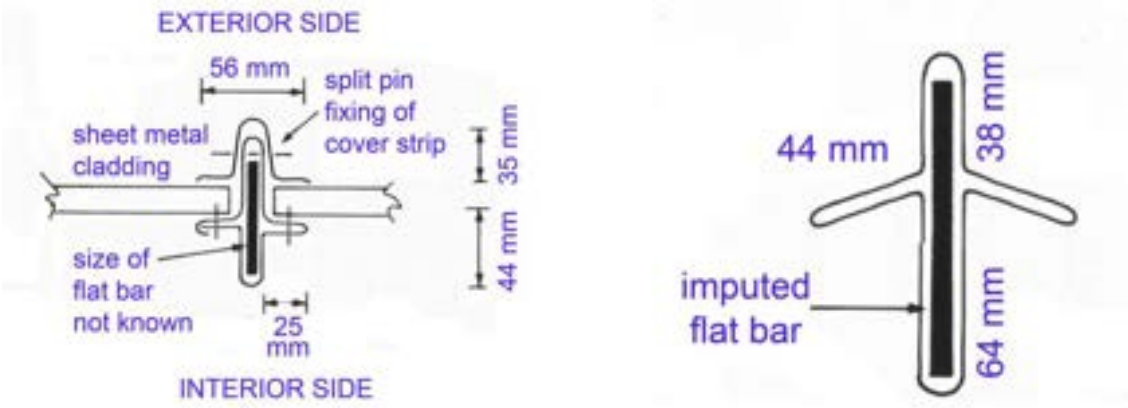
The Wesleyan Methodist church at Darwin was destroyed by a cyclone in 1897, and replaced in the following year with a building which was supplied from Adelaide, but which was clearly of overseas, and probably Usonian origin. It has been moved in recent times and reconstructed in the Darwin Botanic Gardens without the transepts, which were additions.

The building is of extraordinary technical interest. It is steel framed and clad in galvanized iron sheeting of weatherboard profile, something virtually unknown in Australia outside South Australia and the Northern Territory (but common in the USA). It had a very large ridge vent in response to the tropical climate, and specific cyclone protection measures such as cable anchors at the corners and hook bolts fixing the roofing iron to the purlins. But the most remarkable aspect is the lightweight framing created by wrapping galvanized sheeting around flat steel bars. The concept seems to relate to the Helliwell Patent Glazing used in the USA for greenhouse construction.

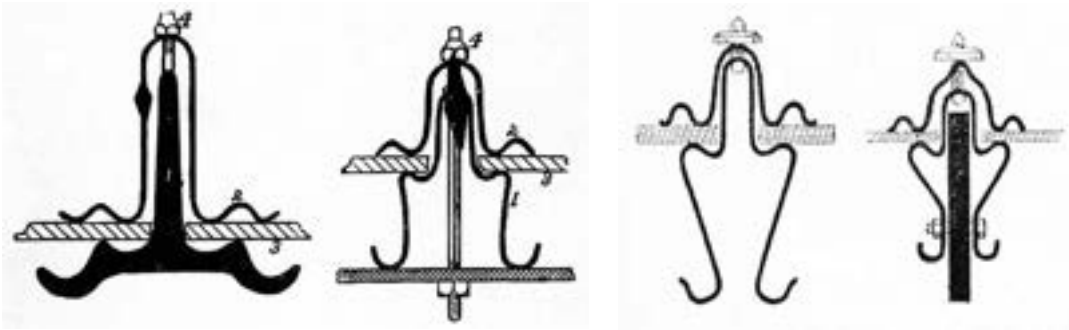


Knuckey St church, view at Simpsons' yard in Wakefield Street, Adelaide:
photo in the possession of the Rev Stafford.

Wesleyan Church, Knuckey Street, Darwin, 1897: detail of imitation weatherboard cladding, seen from inside. Miles Lewis



Knuckey Street church: composite stud and cladding fixing system; approximte form of hip rafter: Miles Lewis.



Helliwell Patent Glazing, left with a steel bar, second left with a zinc or copper bar: L R Taft, *Greenhouse Construction: a Complete Manual on the Building, Heating, Ventilating and Arrangement of Greenhouses, &c* (Orange Judd, New York 1894), p 46.
Third and fourth, Système Helliwell. Arthur Vierendeel, *La Construction Architecturale en Fonte, Fer et Acier* (A Uystpruyst, Louvain 1901), p 365

LONDON AND HAMBURG COMPANY ASSAY OFFICE, KALGOORLIE, WA, 1898
[also known as the former Commonwealth Health Laboratory]

London and Hamburg Gold Recovery Company assay office, 1898, now in the grounds of Kalgoorlie Hospital: Miles Lewis.

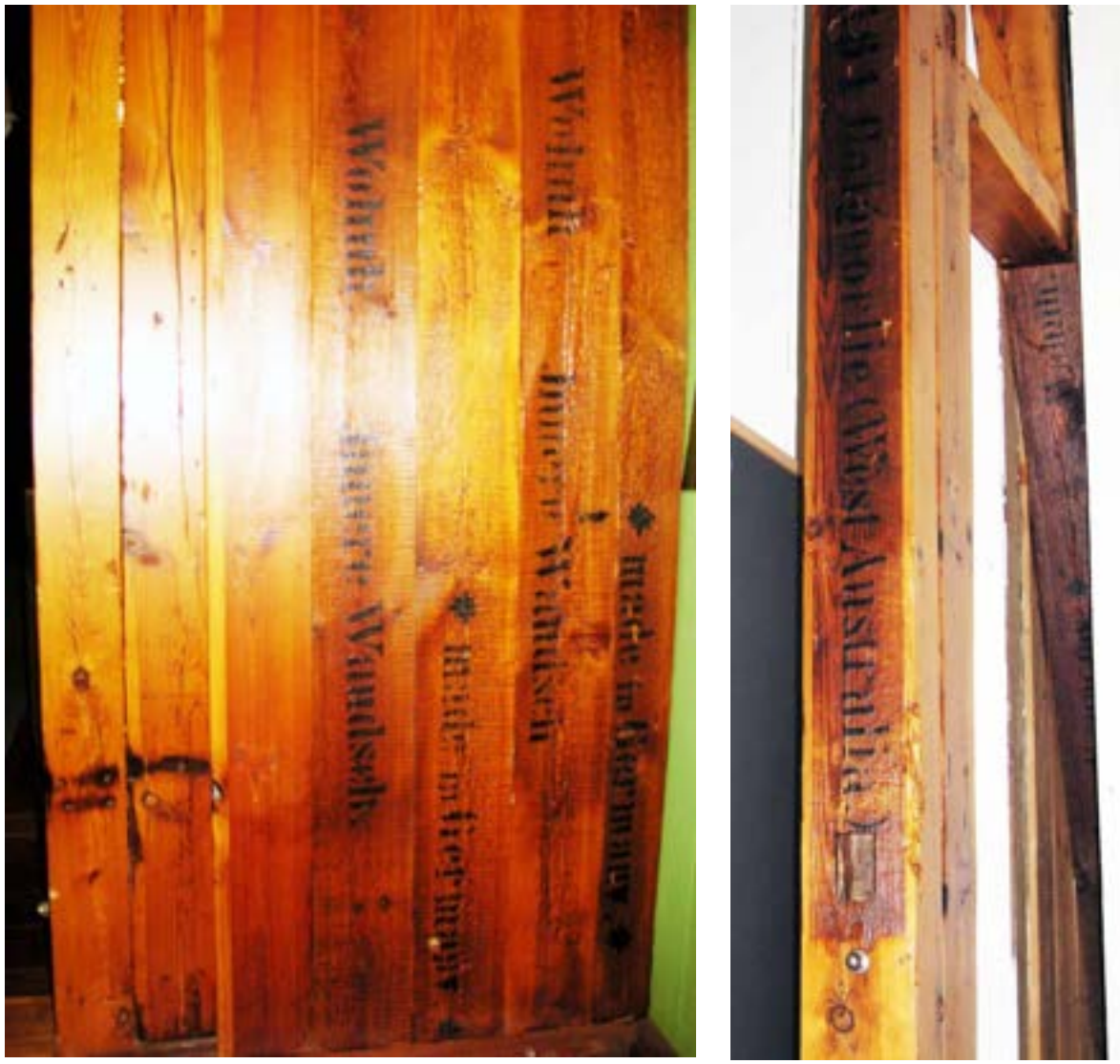
The assay office of the London and Hamburg Gold Recovery company on Hannan's Brown Hill mining lease near Kalgoorlie, Western Australia, was imported from Hamburg and put up in 1898. It was bought by the Commonwealth government in 1921 and moved to the Commonwealth Health Laboratory in Kalgoorlie, where it still stands off Maritana Street, and is now part of Kalgoorlie Hospital. The external walls are framed in steel and there is a steel beam around the periphery of the verandah floor, but the bulk of the building is of timber

London and Hamburg Gold Recovery Company assay office, detail of the periphery beam showing the rolling mark: Miles Lewis

The steel is labelled

PEINER WALZWERK NP18 1897

Peiner Walzwerk was in Peine, between Hanover and Wolfsburg, and NP 18 is Normprofil (standard profile) dimensions for I shapes.



London and Hamburg Gold Recovery Company assay office, stencilled markings on the boarding and the posts: Miles Lewis

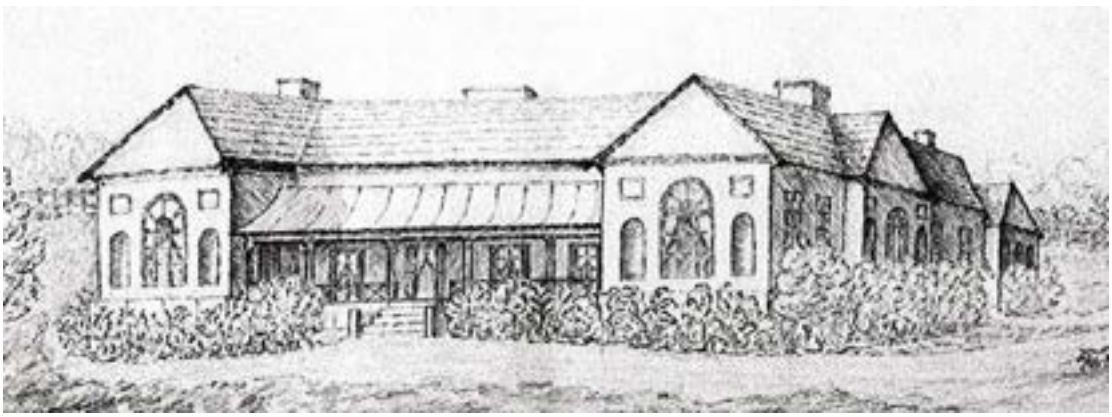
The inside is framed in square posts with vertical board partitioning. Some of the timber boards (probably the top board in each bundle) bear the stencilled label ‘Wohnli Innerere Wandsch’, and the posts have ‘L. & H. 64 Calgoorlie (West Australia)’. The roof is double with a substantial space between the two layers, totally open around the periphery (apart from mesh), and the building stands upon cast iron pillars which incorporate cups for ant poison.

London and Hamburg Gold Recovery Company assay office, vermin-proof pillar: Miles Lewis

THE MANNING HOUSES
Miles Lewis & Paul Stark

024 Friends Meeting House, Pennington Terrace, North Adelaide
025 Walkley cottage, Pennington Terrace, North Adelaide,
026 'Ringmer', 2 Ringmer Drive Burnside, South Australia
027 'Montacute', Institute Rd Montacute, South Australia
028 'Blakiston', Princes Highway Blakiston, South Australia
029 'Greenock', Gerald Roberts Rd, Marananga, South Australia
043 La Trobe's cottage, Melbourne
044 'Bungalow Cottage', 78 Mercer St, Queenscliff, Victoria

Easily the most important of the English prefabricators in timber were the carpenters and builders John and Henry Manning, father and son. They were not only by far the most prolific and influential makers, but they also developed a distinctive system of construction which was subsequently copied by others. They can be regarded as the first system builders in the modern sense, as distinct from most other prefabricators, whose work differed little from traditional carpentry. However, the Mannings manufactured traditionally carpentered houses as well.



'Napoleon's New House at Longwood, St Helena' [on reverse], drawing by J B East, 3 April 1822, Royal Musuems, Greenwich, bound with PAF2693-PAF2718, PAF2720 [cropped].

The founder of the business, John Manning, was allegedly the builder of the house intended for the use of Napoleon during his exile at St Helena,[1] which was completed in 1819, though Napoleon remained in Old Longwood House until his death. It is not clear whether Manning was involved at this time an independent contractor or as an employee at the Woolwich Naval Dockyard. But he later claimed to have begun supplying emigrants' houses some time

[1] John Stacpoole, *William Mason* (Auckland 1971), p 32, ref *Bell's Weekly Messenger* [London], 28 December 1839.

about 1823,[2] He certainly had his own business ten years later, when his son, William Alfred Manning, emigrated to Fremantle, Western Australia[3] with a number of four-roomed panelised cottages, which seem to have been an innovation at this time

Details of the family have been researched by Megan Martin.[4] John Manning, died in about 1832, and Henry succeeded to the business. W A Manning, remained at Fremantle until 1847, when he returned to London. Another son, Charles Alexander, was in Fremantle from 1854 until his death in 1869, and it seerms that the family held land and stock there [5] The Mannings exported to Western Australia, Victoria [Port Phillip], and most of all to South Australia. They had little impact in Van Diemen's Land or in New South Wales other than the Port Phillip District, because these places had a well established building industry during the relevant period.

The earliest examples we hear of were of four rooms, asd a number of them were despatched to the Swan River Settlement, Western Australia. A visitor to the ship *Medina* in December 1829 saw 'the wooden houses, consisting of four good sized rooms, all packed neatly up; the whole pannelled, and to be fixed up, I understand, with screws.[6] William Manning possibly travelled on the same ship, for he too arrived at the settlement in 1830.

---

2 *Nelson Examiner,* 22 July 1843, where he claims twenty years experience in furnishing supplies to emigrants, quoted in S Northcote-Bade, *Colonial Furniture in New Zealand* (Wellington 1971), p 21.

3 J C Loudon, *Encyclopædia of Cottage, Farm and Villa Architecture and Furniture, &c* (London 1846 [1833]), § 513, p 256.

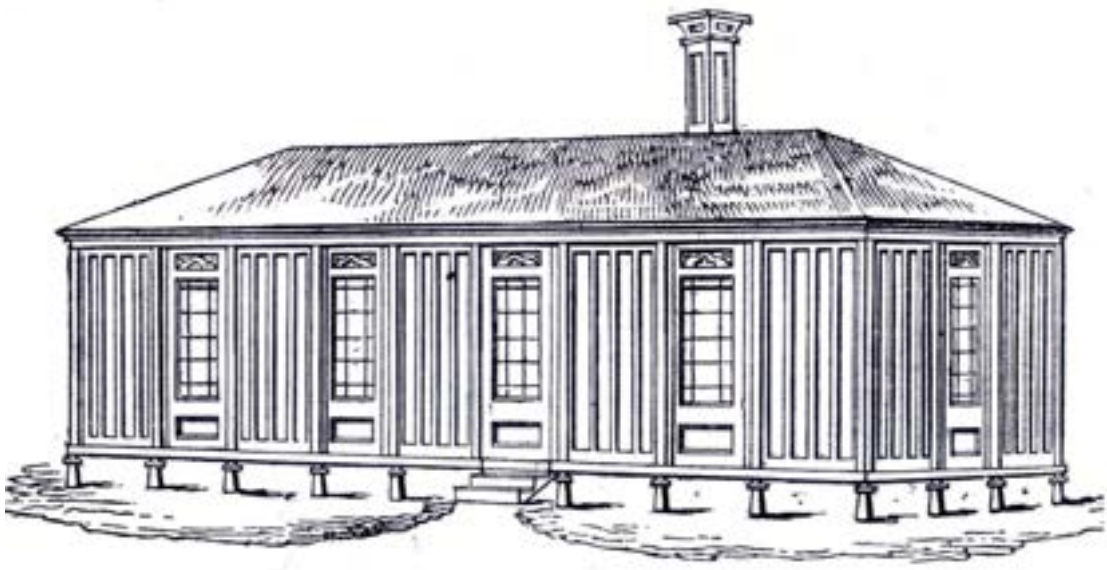
4 Information from Megan Martin in emails from 30 October 2009 to 22 January 2010. David Hutchinson, then Curator of History at the West Australian Museum, told me in 1976 that C A Manning of Fremantle was a former West Indian merchant, and that his marriage certificate identified his father as John Manning, architect.

5 *Nelson Examiner,* 22 July 1843, p 1.

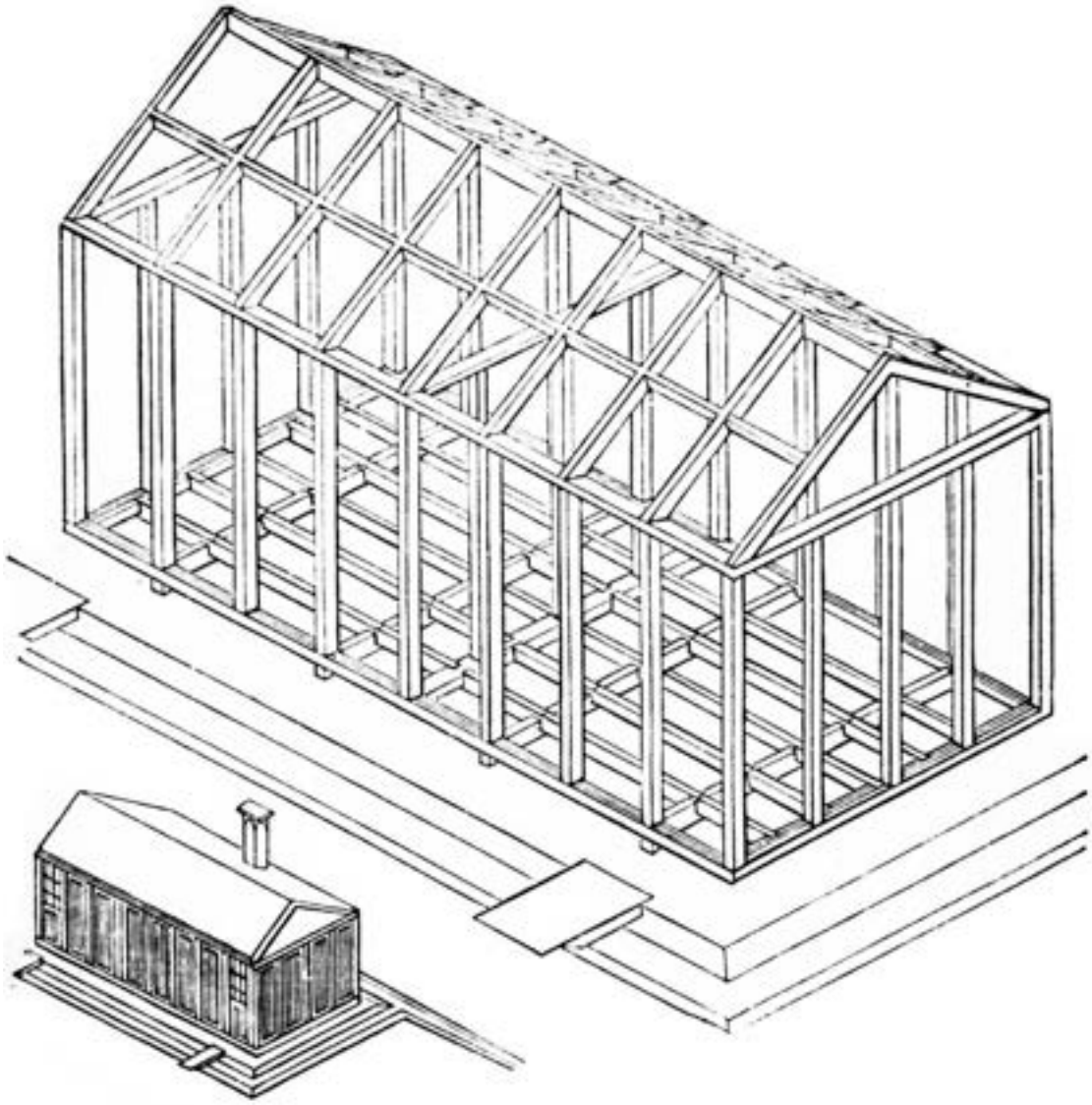
6 *Nottingham Review and General Advertiser for the Midland Counties*, 1 January 1830, p 4.

'Mona Cottage', house of Thomas Helms, Perth, built in the 1830s, photo by A H Stone c 1861: Western Australian Museum.

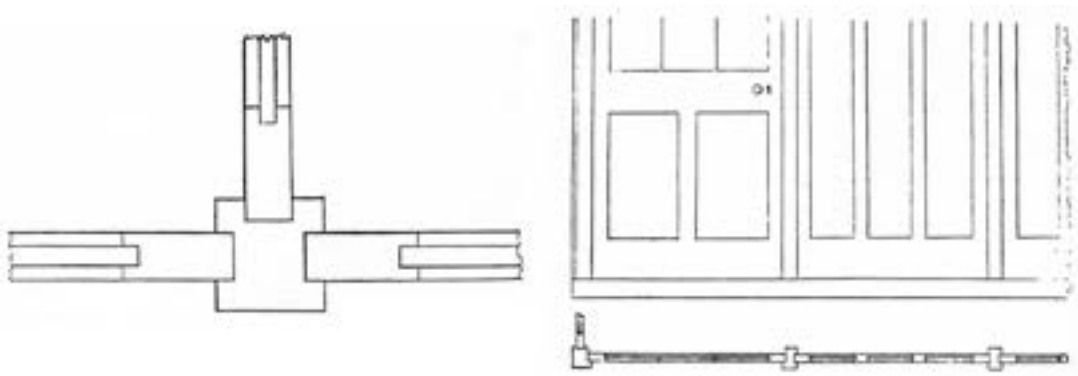
Although there are a number of references to Manning houses in Western Australia the only one of which a good illustration survives, 'Mona Cottage', in Perth, is atypical, and it seens unique, in that it has an attic storey. Although it was built in the 1830s it would not have been one of the original batch which arrived on the Medina. But the panelised system is clearly that of the Mannings.



House on Henry Manning's panelised prefabrication system: J C Loudon, *An Encyclopædia of Cottage Farm and Villa Architecture* (London 1846 [1833]), p 256.

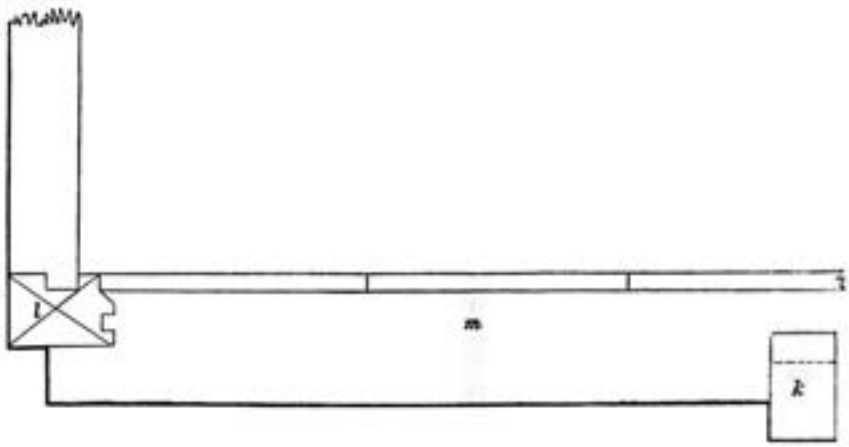


Diagrams of a building on Manning's system: J C Loudon, *Encyclopædia of Cottage, Farm and Villa Architecture and Furniture, &c* (London 1846 [1833]), p 255.



Detals of Manning's system: J C Loudon, *Encyclopædia of Cottage, Farm and Villa Architecture and Furniture, &c* (London 1846 [1833]), p 255, 254.

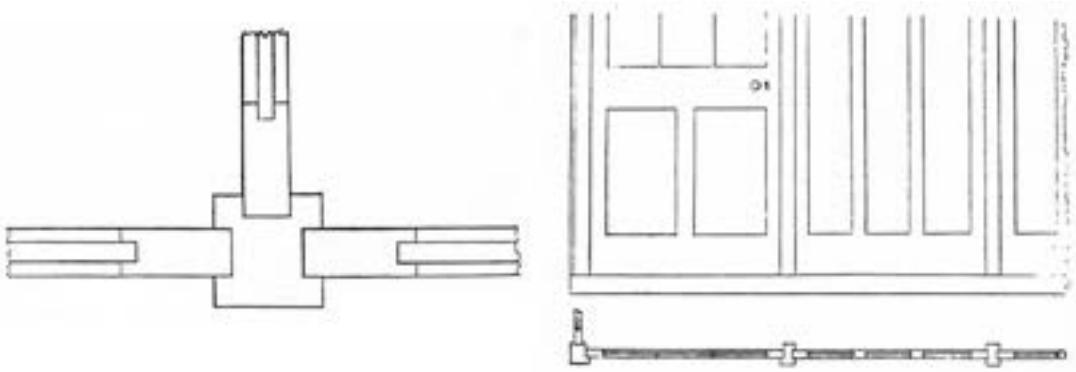
A two room cottage, first reported by Loudon in 1833, was said to have as its principal object ‘to supply emigrants with comfortable and secure lodgings immediately on their arrival at a foreign settlement’. It consisted of two rooms each measuring 12 feet [3.6 m] square internally, with a connecting door between them. They were eight feet [2.4 m] high, and one might be fitted with a stove in the corner - of wrought iron, for lightness - from which the flue ran up with 50-80 mm clearance inside a square wooden or iron box, so as to avoid setting fire to the tarpaulin which was provided as a temporary roof.



The cantlevered end of the cottage, in which *k* is a sleeper and *m* a joist;: J C Loudon, *Encyclopædia of Cottage, Farm and Villa Architecture and Furniture, &c* (Longmans, London 1846 [1833]), p 253

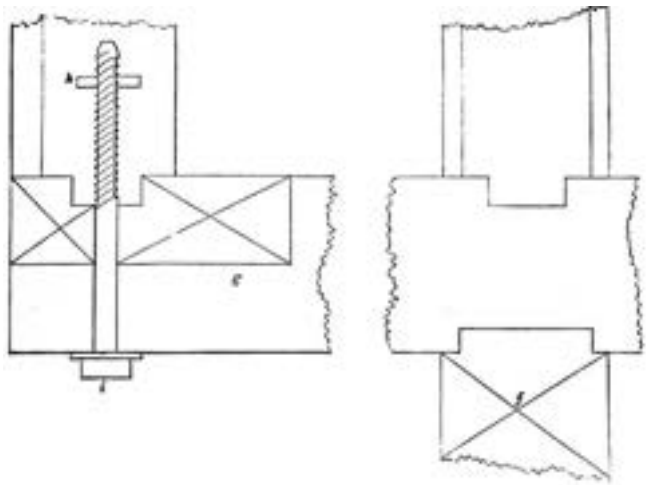
The foundation consisted of four sleepers of five by three inches [127 x 76 mm] laid on edge, thirteen feet [3.9 m] long and spaced about six feet [1.8 m] apart, so that the ends of the building would cantilever out nearly a metre beyond the outermost sleepers.

The walls were built onto five by three inch [127 x 76 mm] grooved plates, laid flat, two of them about 25 feet [7.7 m] long laid across the ends of the sleepers, and forming the necessary cantilever at each end of the building. Thirteen foot [3.9 m] plates were placed transversely at the ends, apparently halved into the longitudinal plates which supported them, and another of the same size supported the internal partition. The floor joists measured five by two inches [127 x 51 mm] on edge, and there were five in each room, spaced 0.6 m apart and, and deeply rebated where they crossed the sleepers, which were themselves deeply rebated to receive them. The joists were thus set low enough for the flooring to finish flush with the upper surfaces of the wall plates, and where they butted into the transverse plates, both members were cut in somewhat complicated shapes so as to key together.



Detals of Manning's system: J C Loudon, *Encyclopædia of Cottage, Farm and Villa Architecture and Furniture, &c* Longmans, (Longmans, London 1846 [1833]), pp 255, 254.

The essence of the system, however, lay in the panelled work: the standard panel or wall section was about three feet [0.9 m] wide and fitted into the grooves of the base plate and of I-section posts which were placed between them. These panels were internally divided into three recessed vertical panels, though there was to be some variation in this over time. These posts measured $3^1/_2$ inches by $2^1/_4$ [89 x 576 mm], except the corner ones which was three inches [76 mm] square so as to accommodate grooves on adjacent sides, and 8 ft 6 in [2.55 m] thick.



Left, the cantilevered corner with a bolt rising though the joist, *g,* and the plate, into the corner post' right, of the sleeper, *f,* with the joist checked over. it and a post or stud tenoned in: J C Loudon, *Encyclopædia of Cottage, Farm and Villa Architecture and Furniture, &c* (Longmans, London 1846 [1833]), p 253

The corner posts had nuts let into them so that a bolt could be inserted through the wall plate from below and screwed up to join the two members, thus making use of the free access underneath the corner of the building due to the cantilevered construction. Once the posts and panels were all in position the

grooved top plate could be bolted down similarly to the corner posts, and make the whole assembly firm.

Manning house, 2 Ringmer Drive, Burnside, South Australia, moved to the present site in 1863: Miles Lewis.

One two roomed house, probably the earliest surviving Manning building in South Australia. was put up in Grenfell Street, Adelaide, probably in 1838, and moved in 1863 to Burnside, where it still stands.[7] This example most closely matches the 'portable colonial cottage' described by Loudon, and retains the twelve paned glazed door and hopper ventilating panels. By the time of this cottage sash windows had been introduced, and the door and window each use the adjoining posts as direct structure, from which the door is hinged and locked, and the window hung.

By the time of later Manning houses, the inclusion of doors and windows had been formally resolved into a truly modular system. The extant Manning houses at Greenock and Blakiston in South Australia, show doors and windows within their own sub-frames to form panels the same overall dimension as standard wall panels, thus enhancing the coherence and flexibility of Manning's 'peculiar plan', as he described it. Manning also said, By the time of the Greenock and Blakiston houses, below, doors and windows have been formally resolved into part of a truly modular system. They were supplied in their own sub-frames to form door and window panels, and these were then set between standard posts within the same module as the usual wall panels, increasing the coherence and flexibility of thec system building - his 'peculier plan'. He said,

> These cottages can be removed from one station to another, struck and erected again in a matter of a few hours. They are panelled throughout, painted inside and outside, with doors and fastenings, glazed folding windows, floors, joists, and roofing complete.[8]

---

7 'Ringmer' at Burnside, also illustrated in Robert Moore & Sheridan Bourke, *Australian Cottages* (Port Melbourne 1999), p 37.

8 *South Australian Record*, III, passim, eg no 1 (4 July 1840), p 15.

Adelaide was founded somewat later than Perth, but houses 'of panels screwed together' - presumably meaning Manning's system - are supposed to have been used there in 1836.[9] One of the first documented examples was that brought by John Barton Hack and erected at Holdfast Bay (Glenelg) according to his diary in one day, on 21 February 1837.[10] Hack had brought a second Manning house, which he put up in Adelaide[11] by himself, and wrote to his father in April 1837 with a sketch plan, showing the parlour 4.2 metres square.[12] He advised 'let no one come to a new colony without one of Mr. Manning's nice portable wooden houses'.[13] His brother Stephen asserted that such buildings 'were the most convenient places possible, and taking the climate into consideration are quite as comfortable as any brick house in England.'[14]

Manning – now Henry not John - advertised in the *South Australian Record:*

PORTABLE COLONIAL COTTAGES

> H. MANNING, 251, HIGH-HOLBORN, London, manufacturer on the most simple and approved principles, pack in a small compass, may be erected with windows, doors, and locks, painted inside and outside, floors, &c. complete for habitations in a few hours after landing. price £15. and upwards. They may be taken to pieces and removed as often as the convenience of the settler may require.
>
> H.M. made those now occupied in the colony, by the Rev. C.B. Howard, J.B. Hack, esq. and others from whom testimonials have recently been received of the superiority of those over all others. ...[15]

Other South Australian settlers who bought buildings from Manning were, according to another advertisement, Robert Gouger, the Colonial Secretary; T B Strangways, the Acting Colonial Secretary; G S (later Sir George) Kingston, Colonial Surveyor - all of whom had ordered a second cottage after their

---

9 John Stephens, *The Land of Promise* (London 1839), p 109.

10 F Goldney, *The Quaker Meeting House* (Adelaide 1968), p 7. See also J Gilchrist, 'John Barton Hack', sv in *Australian Dictionary of Biography,* I; ref G C Morphett, *John Barton Hack: a Quaker Pioneer* (Adelaide 1943). Hack must be the anonymous 'Pioneer' quoted in J W Bull, *Early Experiences of Life in South Australia, and an Extended Colonial History* (London 1884), p 246, who arrived early in 1837 with two Manning cottages, one of which he put up at Holdfast Bay [Glenelg], and the other at Adelaide, opposite North Terrace. Gilbert Herbert wrogly assumes that it was the same house, put up first at Glenelg and then moved to the Adelaide parklands: Gilbert Herbert, 'A Short, Impressive Campaign – the Manning Cottage in the Settlement of South Australia 1835-1842, *Historic Environment,* 4, 1 (1984), p 23.

11 - Halse, *An Account of John Barton Hack of Australia, c. 1840 ff* (Bedford 1930), quoted in Gilbert Herbert, *Pioneers of Prefabrication* (Baltimore [Maryland] 1978], p 13.

12 Colin Kerr, *'An Exelent Coliney'* (Adelaide 1978), p 75, citing South Australian Archives 394.

13 Geoffrey Dutton, *Founder of a City* (London 1960), p 218, quoted in Herbert, *Pioneers of Prefabrication,* p 13.

14 Stephen Hack in the *South Australian Record,* 8 November 1837, quoted in Herbert, *Pioneers of Prefabrication,* p 13.

15 *South Australian Record,* 27 November 1837, p 1.

experience of the first - and also Captain Hindmarsh, the late Governor; Lt E C Frome, Surveyor-General; Judge (later Chief Justice Sir Charles) Cooper; Captain Chesser, and many others.[16] By December 1839 Manning had added the list notabilities in other colonies - Sir James Stirling, late Governor of Western Australia; C T La Trobe, Lieutenant-Governor of Port Philip [actually C J La Trobe, Superintendent of Port Phillip]; Lieutenant Smith, R E, Surveyor General of New Zealand;. Dr Evans, Chairman of New Zealand Association; R Stokes, H St Hill, and other unnamed members 'of the Survey Departmmt, New Zealand'. [17]

'Vale Farm', E C Frome's property, Walkerville, South Australia, watercolour by S T Gill. Art Gallery of South Australia [detail].

Frome's house was at his 'Vale Farm' at Walkerville. It has disappeared but there is a sketch of it by Frome himself, of the late 1840s,[18] and two excellent paintings of it by S T Gill, done prior to 1851, in the Art Gallery of South Australia.[19]

---

16 Henry Capper, *Capper's South Australia* (3rd ed, London 1839 [1837]), advertisements, p 12. The same list appears in his advertisement in the *South Australian Record,* 13 February 1839, p 10, in which it appears that Cooper's house, 'a Cottage, on a large scale', has been the most recently completed. See *Australian Dictionary of Biography*, svv, for Gouger, Kingston, Hindmarsh, Howard, Frome and Cooper.

17 *South Australian Record,* 2 December 1839, p 11.

18 E & R Jensen, *Colonial Architecture in South Australia* (Adelaide 1980), p 100.

19 My information is from Sir Edward Morgan, then Chairman of the Gallery.

'Residence of Mr Fairbank, North Terrace' [west corner of Stephen Place], by S Dempster, c 1844: Sate Library of South Australia B7262 [cropped].

A Manning house in North Terrace must have been built before 1839, when it was occupied briefly by John Luther Yeates, who died in March.[20] This is only one example of what was in fact a widespread phenomenon, and according to an emigrants' guide of 1839:

> Wooden houses, ready made and prepared to put up, may be purchased of Manning of Holborn, of from one room to six; or you may have one made by any carpenter of common ingenuity. Those built by Manning are covered with a kind of tarpauling; but if they are intended to be used for any length of time, they should, as soon as possible, be more substantially roofed with either shingles or [?]roods.[21]

However Alexander Tolmer was exaggerating when he said that the greater number of the houses in Adelaide, in about 1840, 'consisted of wood, brought out from England by the emigrants themselves, called "Manning's houses".'[22]

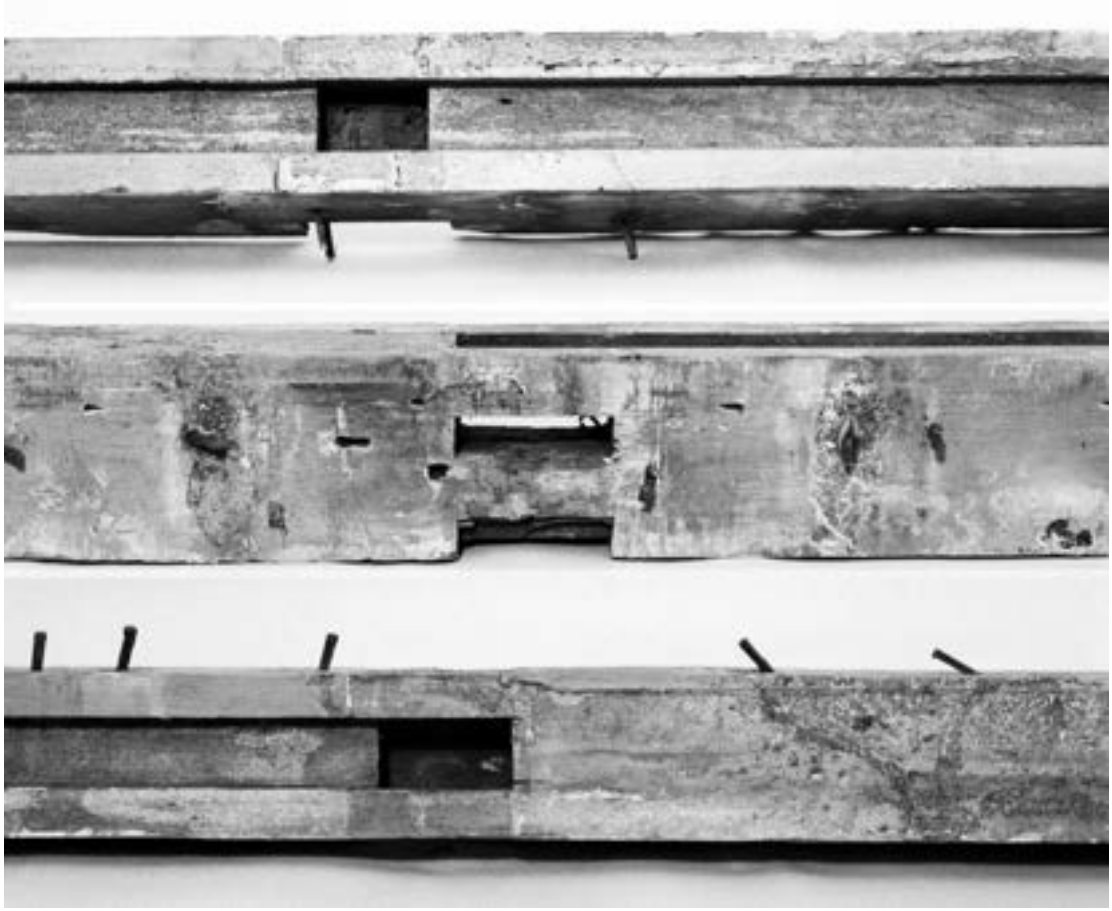
---

20 Catalogue information from the State Library of South Australia.

21 Thomas Tegg, *Handbook for Emigrants: Containing Useful Information and Practical Directions on Domestic, Mechanical, Surgical, Medical and other Subjects* (London 1839), p 4, quoted in Peter Freeman, *The Homestead: a Riverina Anthology* (Melbourne 1982), p 59.

22 Alexander Tolmer, *Reminiscences of an Adventurous and Chequered Career* (2 vols, London 1882), I, p 131.

Walkley Cottage, 43-4 Pennington Terrace, North Adelaide, built 1839, encased in brick soon afterwards: Adelaide Explorer [edited].



Details of studs from Walkley Cottage: Paul Stark [edited].

Our information on the surviving Manning houses in South Australia derives largely from the work of Paul Stark (researcher to the late Gilbert Herbert). In Pennington Terrace, North Adelaide, a Manning cottage was built in 1839 by Henry Watson, bother-in-law of J B Hack. However, Watson found it inadequate for the extremes of heat and cold in Adelaide, and within a year he had encased it in brick, in which form it substantially remains today[23] as Walkley Cottage, Pennington Terrace.[24]

Stark has recorded it, including details of some of the timbers, several of which appear to be horizontal plates. It seems likely that some time after the cottage was encased in brick, repairs were needed after termite attack, with some removal of Manning fabric. In the early 1980s, for example, several wall panels, posts and plates were replaced but this work also revealed a typical gable panel still encased in the roof. Interestingly, one of the removed bottom plates appears to have acted as a threshold to a pair of french doors. It is not grooved

---

23 D W Berry & S H Gilbert, *Pioneer Building Techniques in South Australia* (Adelaide 1981), pp 77-8, citing letters of Henry Watson to English relatives, 1838-43, in the Archives Department of the State Library of South Australia. Apparently Watson migrated in December 1837, and his three bedroom house reached Adelaide on the *Henry Porcher* three months after he did. Information from Watson's descendant, Peter T C Watson of Colchester, England, 21 December 1988.

24 Information from Paul Stark, 17 March 2001,.

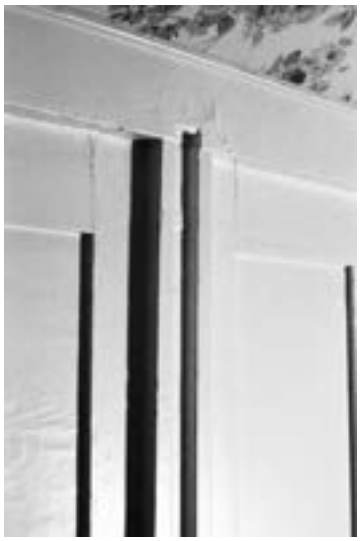
and the wear pattern and remains of a keeper for the passive sash give rise to speculation about Manning's strict adherence to a standard module for all panels: The french door opening has a dimension between post centres of some 1030 mm [40½ in], considerably wider than the previously noted distance between posts of just over 760 mm [30 in].

Another Manning house, or a portion of it, stands at Institute Road, Montacute. It is believed to have been acquired by John McLaren in about 1844 and put up on his land at Kenton Valley, then moved in 1851 to his new property at Montacute.[25]

Blakiston House, near Littlehampton, built 1839, photograph c 1900: State Library of South Australia B 36147..

[25] Yvonne Reynolds, 'Provisional Entry in the State Heritage Register of Dwelling - "Manning" house, Institute Road, Montacute', SHA Docket No: 16200 (Adelaide 1997).


‘Blakiston’, upper floor interiors: Paul Stark.



‘Blakiston’, details: Paul Stark.

'Blakiston', at Blakiston near Littlehampton, was built in 1839 for Captain Francis Davison, and is unusual in that the imported building stands on top of a masonry ground floor structure. It is known that Davison brought out two houses,[26] and as significant Manning fabric survives it is most likely that both were by Manning. And there is some possibility that the compoments of both were used here, as there are more windows than was normal in one Mannng house.

[26] The Official Returns of the Mount Barker District, published on 7 August 1841 list ‘Blakiston, Francis Davidson (*sic*), two wooden dwelling houses and one tent’: Rodney Cockburn, *Pastoral Pioneers of South Australia* (2 vols, Publishers Ltd, Adelaide, 1925), 2, pp 172-3.

'Greenock', Barossa Valley, South Australia: Paul Stark

'Greenock', Barossa Valley, South Australia. Gordon Young, Ian Harmstorf & Donald Langmead, *The Barossa Survey* (2 vols, Adelaide 1977), II, p 176 [reformatted].

'Greenock', interior: Paul Stark

'Greenock', base details: Paul Stark

The farmhouse 'Greenock', Gerald Roberts Road, Marananga.[27] The latter has been surveyed by a team from the South Australian Institute of Technology, and is a simple building of only six panels by four with no internal partitioning, and with a surrounding verandah.[28]

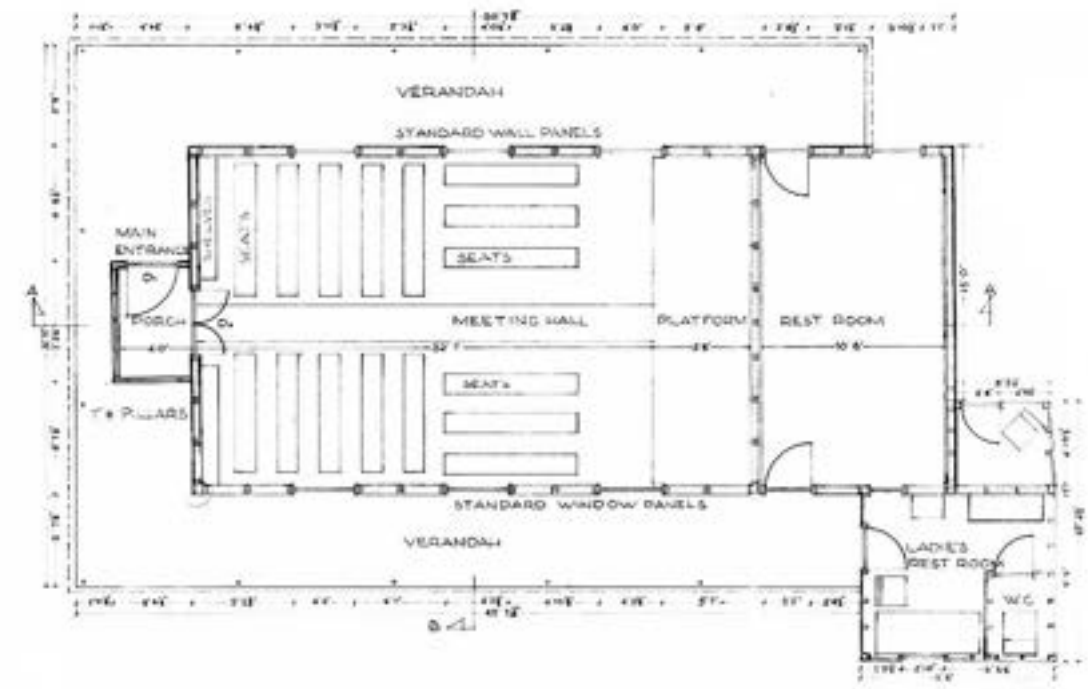
---

27 Yvonne Reynolds, 'Provisional Entry in the State Heritage Register of Dwelling - "Manning" house, Institute Road, Montacute', SHA Docket No: 16200 (Adelaide 1997).

28 Gordon Young, Ian Harmstorf & Donald Langmead, *The Barossa Survey* (2 vols, Adelaide 1977), II, p 176. The illustration here has been reformatted to omit the structural detail. which apears to be totally incorrect.

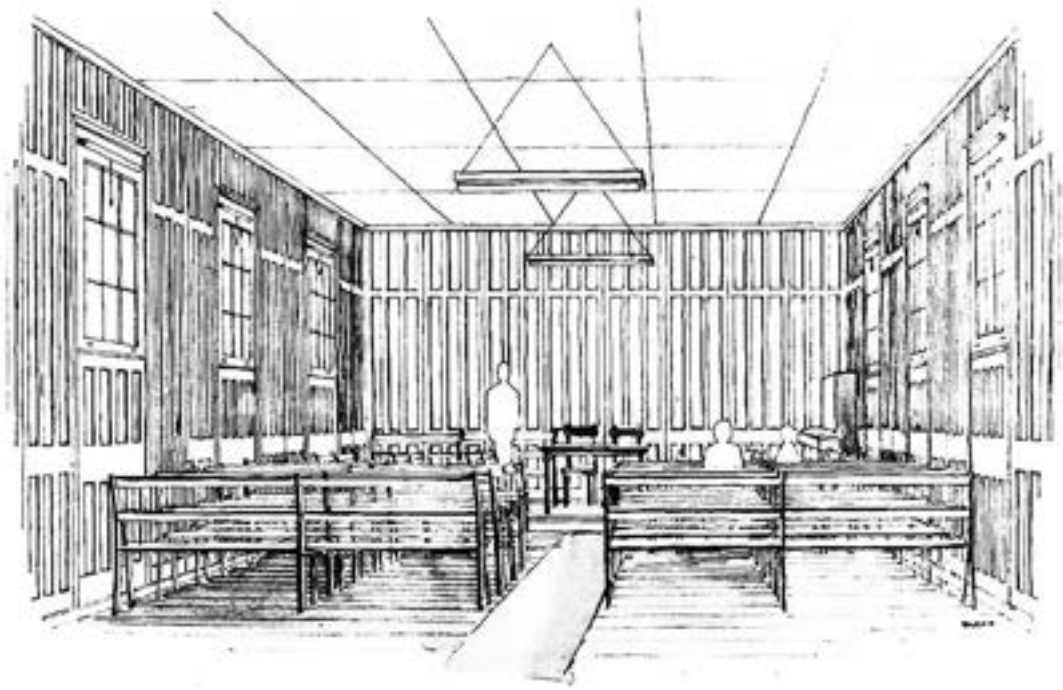
Friends Meeting House, Pennington Terrace, North Adelaide, view: G E Laikve [ed], 'Survey Report on the Meeting House of the Society of Friends. Pennington Terrace. North Adelaide' (University of Adelaide, Adelaide, no date [1963]), p 9.

Friends Meeting House, Pennington Terrace, North Adelaide: Andrew Winkler.



Friends Meeting House, Pennington Terrace, North Adelaide, plan: G E Laikve [ed], 'Survey Report on the Meeting House of the Society of Friends. Pennington Terrace. North Adelaide' (University of Adelaide, Adelaide, no date [1963]), p 11.

Friends Meeting House, Pennington Terrace, North Adelaide, south and north elevations: G E Laikve [ed], 'Survey Report on the Meeting House of the Society of Friends. Pennington Terrace. North Adelaide' (University of Adelaide, Adelaide, no date [1963]), pp 12. 13.



Friends Meeting House, Pennington Terrace, North Adelaide reconstruction view of the interior: G E Laikve [ed], 'Survey Report on the Meeting House of the Society of Friends. Pennington Terrace. North Adelaide' (University of Adelaide, Adelaide, no date [1963]), p 16.

A building not typical of Manning's work is the old Quaker Meeting House in Pennington Terrace, North Adelaide, which was apparently sent out, almost unsolicited, by the Quakers of London. They had raised £400 for the purpose, as they advised J B and Stephen Hack, in a letter of 16 October 1839, which must have arrived only slightly ahead of the building itself.[29] The meeting house is panelise,d but does not conform to Manning's standard system and imensions, and has 'iron pillars' supporting the verandah, which is unusual. The *South Australian Record* of 10 July 1839 reported:

> MEETING HOUSE FOR THE SOCIETY OF FRIENDS. – Mr Manning, of Holborn, has just completed a building intended as a place of worship for the Society of Friends in Adelaide. We understand this building, which is about 34 feet by 22, is capable of accommodating about 150 persons, and is being sent out to the colony as a present from a body of the society in this country to those at Adelaide. The building has been put up in the West India docks, at Kyan's anti-dry-rot tanks, and may be viewed during the present and in [*sic*] ensuing week. [30]

It was displayed at Kyan's Anti-Dry Rot Tanks because the timbers had been Kyanised, or impregnated with bichloride of mercury ['corrosive sublimate'], to

---

29 Stock, 'Adelaide Meeting House', p 3. This does not support Herbert's suggestion that it was ordered through Hack's influence: *Pioneers of Prefabrication,* p 21.

30 *South Australian Record,* 10 July 1839, quoted in Stock, 'Adelaide Meeting House', p 8.

preseve them.[31] It was then despatched from London on board the *Rajasthan*,[32] and was described by Samuel Barton as

> a Wooden Framework Meeting House, with verandah and Iron Pillars complete, packed and numbered with contents of each package, as per list of particulars - a plan and elevation will also accompany for your guidance in erecting .... The 3,300 slates for the roof were shipped on board the 'John' (Capt. Smith). [33]

The *John* arrived first, on 5 February 1840, and the *Rajasthan* on the following day, with the ninety-six packages containing the wooden sections and iron pillars. The meeting house was put up on land donated by Hack, and it is a small rectangular structure with a verandah on all sides and a gablet roof.[34] As Hack himself said, 'a very handsome building it is. Manning has done full justice to it.'[35] However the costs incurred in transporting, erecting and finishing it burdened the Society for some years.[36]

The windows are about 4 ft 3½ in [1.31 m] wide, and the wall sections between are typically 5 ft 1½ in [1.56 m] wide. The windows are single sashes set high, and apparently able to slide down in front of solid panels below them, to about mid-height. These fixed window panels are in four vertical divisions. The wall panels are about 780 mm wide, in three vertical divisions, but these are clad externally in weatherboard and visible only inside.[37] An unusual feature is that the building still contains the pews supplied as part of the package, the only identified Manning furniture in existence.[38]

One of the last references to Manning in South Australia was in 1853, when a three roomed Manning cottage formed part of a structure at the Government Farm, Belair.[39]

In 1839 Manning prepared a cost estimate for a house for Lieutenant-Governor Hobson of New Zealand, based upon the house which he had already supplied

---

31 Stock, 'Adelaide Meeting House', p 12, n 24.

32 The complete bill of lading is reproduced in G E Laikve [ed], 'Survey Report on the Meeting House of the Society of Friends. Pennington Terrace. North Adelaide' (BArch, University of Adelaide, no date [1963], no page.

33 Goldney, *The Quaker Meeting House,* pp 6-7.

34 Goldney, *The Quaker Meeting House,* pp 6-7; this refers on pages 9-10 to a survey of the building which had been made by architecture students of the University of Adelaide under the guidance of Mr J Schiott: this in fact he work reported in Laikve, above.

35 Marsden, *Heritage of the City of Adelaide,* p 373.

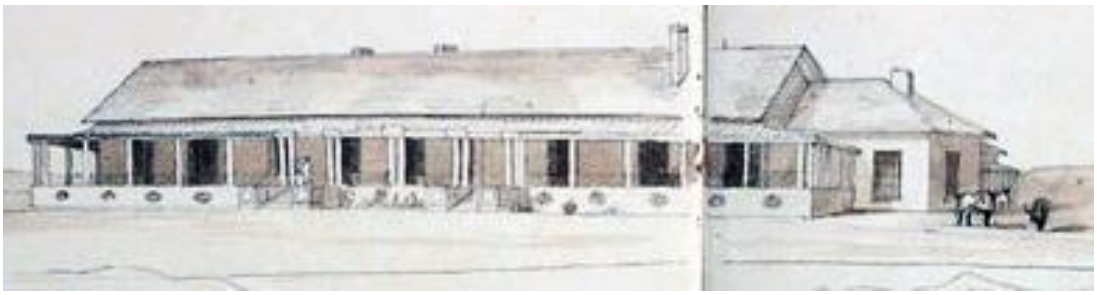
36 Stock, 'Adelaide Meeting House', p 3.

37 G E Laikve [ed], 'Survey Report on the Meeting House of the Society of Friends. Pennington Terrace. North Adelaide' (BArch, University of Adelaide, no date [1963], passim.

38 Stock, 'Adelaide Meeting House', pp 4, 9.

39 *Government Gazette* [South Australia], 28 April 1852, quoted in Jensen, *Colonial Architecture in South Australia,* p 133. This was a house built by Nicholas Foott, a squatter on Crown land, who added three or four rooms of stone, but was evicted in 1840 and compensated for his improvements. The site became part of the Government Farm, and the house was occupied by the first keeper, John McLaren, and his family. The last remnants of the cottage were removed in the 1960s from what was now Belair National Park. Reynolds, 'Manning house'.

to Governor Hindmarsh of South Australia, of £1,200 plus a further £630 for furniture for the drawing room, working room, entrance hall and water closet. This was accepted,[40] and the house was constructed under Manning's direction at the carpentry workshop of one Richardson in Commercial Road, London. It was reportedly even larger, more commodious and more substantial than the house formerly made for Napoleon on St Helena. It was 120 by 50 feet feet by 24 feet high [36.58 x 15.24 x 7.32 m]. Superb Norwegian deal was been used in its construction, and the carpentry, including the framing and the pillars, was assembled with bolts and screws, so as to enable the building to be quickly disassembled and reassembled. The side cladding boards were flush, with scarcely visible joints, so that when painted they would perfectly simulate good stonemasonry The roof covering was double, the first layer of deal boarding, and the second, to be carried out in New Zealand, oak shingles.[41]



Government House, Auckland, 1840, view from the north-by Edward Ashworh, c844: National Library of New Zealand E-042-030/031.

The building was approved for despatch by the Board of Ordnance, and was put up at Auckland in 1840 under the supervision of William Mason. It contained a total of sixteen rooms, with a 'terrace verandah' all along one side, supported by iron columns (perhaps similar to those of the Quaker Meeting House in Adelaide). The verandah is not mentioned in the report above, so it may have been a change in the design, or even an addition made in New Zealand. The building was destroyed by fire in 1848.[42]

For this earlier period our information of other Manning buildings in Melbourne is limited, but one which was advertised for sale in December 1841 was much grander than the standard panelised cottage.

London Built Portable Cottage

---

40 Robert McNab, in *Historical Records of New Zealand,* vol I (Wellington 1908), p 744, quoted in S Northcote-Bade, *Colonial Furniture in New Zealand* (Wellington 1971), p 21.

41 *Revue Générale de l'Architecture et des Travaux Publics,* vol 1 (1840) column 124, credited to the *Globe.*

42 Stacpoole, *William Mason,* p 32, gives the cost as £2,000, and cites *Bell's Weekly Messenger* [London), 28 December 1839, and *New-Zealander* [Auckland], 2 August 1848. The Napoleon connection is relevant because Hobson had the task of escorting him to St Helena, in the ship *Peruvian.*

> A very superior cottage built by Manning of London (private sale) 59 ft x 20 ft 1 storey Gothic style dining & drawing room, 5 bedrooms, one dining room, storeroom , w.c. (patent apparatus) and an attic 59 ft x 13 ft (i.e. for sleeping apartments). There are slates and lead for the roof and plaster lath for the ceiling and all fittings. The most complete and [?arranged] cottage yet sent out ...
>
> Dunlop, McNab & Co.[43]

C J La Trobe, Superintendent of the Port Phillip District, patronised Manning just as had governors Hindmarsh, Stirling and Hobson, but the difference was that he was using his own money rather than that of the government. He brought with him small Manning house as a stopgap, meant to be followed out by a larger and more elaborate one. In his own words,

> I planned a small panelled cottage capable of being easily put together which was to be prepared to be shipped off without delay direct to P.P. with tents and a variety of stores such as I was instructed by my advisers to be indispensable or convenient. The plan of the framework and fittings of a more substantial and permanent cottage was (also decided upon and the work put in hand, to be completed and forwarded to the colony as soon as might be after my departure ...[44]

On his arrival in October La Trobe made immediate arrangements to put up 'my portable cottage and whatever offices were indispensably necessary' on government land from which he might be forced to move, though in the event he was able to buy it. On 7 February 1840 the *William Barras,* Captain Norrie, arrived from London by way of Adelaide with eighty packages of building materials and 328 'battins' consigned to La Trobe, undoubtedly the more substantial house which he had been expecting from London. He seems to have made arrangements to sell it even before it arrived, but then changed his mind, and it was put up at the north-east corner of his dite at Jolimont, and it was let out from early 1841 onwards.

---

43 *Port Phillip Patriot*, December 1841, p 13, quoted by Richard Moshel & John Witorz, 'Building Materials imported into Victoria from the First Settlement until 1856' (BArch, University of Melbourne, 1971).

44 *Trust Newsletter,* no 1 (June 1959). According to Helen Botham, *La Trobe's Jolimont: a walk around my garden* (La Trobe Society, Port Melbourne 2006), p 55, this is from an undated draft memorandum by La Trobe, 'Ex-Colonial Governors: a page of facts', Gipps-La Trobe correspondence, LaTrobe Australian Manuscripts Collection, State Library of Victoria, H7553 (547).

'Jolimont' by Henry Manning, 1839: pastel, by G A Gilbert: State Library of Victoria no H527.8.

La Trobe’s cottage, Jolimont, reconstruction by John & Phyllis Murphy, architects, 1963: State Library of Victoria H2014.1038/8.

La Trobe’s cottage as reconstructed on the Domain, Melbourne: Miles Lewis.

At La Trobe's cottage it is necessary to distinguish firstly the building supplied by Manning from the modifications made by the local builder, George Beaver, and seiondly, the parts which were destroyed and have been replicated in moder times – which are in fact most of the present builing, For instance the added room at one end, which is weatherboarded but not panelled, was built by Beaver, but has casement windows matching the others in the house, perhaps taken from the external wall which was eliminated by the addition.

In the rest of the structure addition it is still easy to recognise the grooved posts, 3 1/2 inches [89 mm] across and at 3 ft 1 1/2 inch [0.95 m] centres, and the panels of Loudon's illustrations. The external panels are different in that they have a weatherboard facing, but all appear to be framed up with 3 1/2 by 1 1/4 inch [89 x 32 mm] styles at each side and two intermediate muntins of nearly 3 by 1 1/4 inches [76 x 32 mm], between which are flat panels set back about 9.5 mm. The windows are designed to fit into the space of a normal panel, each consisting of a pair of outward opening casement sashes and each sash divided with fine glazing bars, five horizontal and one vertical, in addition to small bars forming a pair of pointed gothic arches to the two top panes. The glazing bars appear to be formed of sheet metal folded into a cruciform section.

The cottage and the attached dining room remained at Jolimont after La Trobe’s estate was subdivided, but it was destroyed in stages until in 1963 it was acquired by the National Trust, which moved it to a site in the Domain and reconstructed the missing portion as a simulacrum In 1998 the cottage was moved again to a new site in the Domain. What survives now is the simulated cottage, incorporating about three panels and one window of the original cottage, plus the dining room, which includes two Manning windows transferred into it at the time of construction. The dining room is significant in its own right, in the history of stud frarne construction, but this is not relevant to the issue of prefabrication.

Two pages from the journal of Samuel Bradford Vaughan, courtesy Mrs W J Kendall.

La Trobe's house was roofed in shingle, but had probably been supplied initially with the tarpaulin roof common to Manning's other buildings. By 1852, when Samuel Vaughan brought to Victoria a 'rough house' and a panelled house made by Manning, they were supplied with boarding and with floorcloth to be laid over it. In his journal Vaughan lists sizes of the packages he brought and their contents in such detail that it is possible to deduce the salient features of the two buildings: The rough house appears to have measured 19 ft 9 in by 18 ft 6 in [5.93 x 5.64 m], with a gabled roof running the length, and an eaves height of something over 2.1 m. No flooring wax provided except in the store-room.


Bungaow Cottage, 78 Mercer Street, Queenscliff, by Henry Manning, 1853: built in Mona Place, South Yarra, moved c 1859-63: Miles Lewis.

The more important of Vaughan's buildings is the panelled house, which was put up in Mona Place, South Yarra and subsequently moved to Queenscliff, where it still stands in Mercer Street,[45] though altered beyond recognition but for a small amount of panelling visible inside. No sleepers are mentioned, but the ground plates again measured 4 1/2 by 3 inches (not grooved as in Manning's earlier buildings), and on them walls were built of alternated grooved posts and framed panels. The panels measured 7 ft 8 in by 3 feet by 1 1/2 inches [2.3 m x 0.9 m x 38 mm], and the posts were typically 3 inches [76 mm] square with a one inch [25 mm] deep groove down each side to receive the panels, so that the centre-to-centre distance was 3 ft 1 in [0.93 m], and the whole system varied little from that used in La Trobe's cottage. Special posts were provided for the corners, with the grooves on adjacent sides, and three-grooved posts (not used in the house described by Loudon) for points at which one wall butted into another. The panels, described as 'framings', were of three types, 'sash framings', 'bead and butt framings' which were apparently used for external walls, and 'square panelled framings', which are the type visible at Queenscliff. These last are of the same design as La Trobe's, framed with what appear to be 3 by 1 1/2 inch [76 x 38 mm] styles and muntins, between which are 200 mm wide recessed panels running the full height and apparently formed of board about 13 mm thick. The top plates were the same size as the bottom plates, but grooved, so that once fixed down they stabilised the whole of the walls, and the gable ends (unlike La Trobe's) were panelled on the same principle as the walls, but in .45 m [1 ft 6 in] sections, and with lighter posts.

Thus much for Manning's structural system. This particular building appears to have measured eleven modules by seven, or about 10.2 x 6.6 m (the lengthwise plates were made in two parts and only joined on site), with a plain gabled roof in the long direction pitched to rise a further 2.3 m. There was a three foot passage across the centre, and on each side of it two rooms, one of five modules by four and the other of five by three. Four 'sash framings' were provided, which would allow one window to each room, in addition to which a

45 My information on these points is from Vaughan's granddaughter, Mrs W J Kendall, who has kindly shown me Vaughan's papers and allowed free use of the journal. The owner of the panelled house at Queenscliff, Mrs Bradley Reed, was also most obliging in letting me look at the building.

separately packaged 'cottage window' may or may not have been incorporated in this building (without it the number of panels, sashes and doors is just right for the plan described but that two of the exterior 'bead and butt framings' are replaced by two superfluous 'square panelled framings'). Of the eight doors provided we must assume that one opened at each end of the passage, and four others opened off the passage into the rooms at either side: there must then have been two further external doors or connecting doors between adjacent rooms. Floor joists were either 4 1/2 by 2 or 3 by 3 inches [114 x 51 or 76 x 76 mm], and were spaced at 152 mm [1 ft 6 in] centres and floored with 280 by 25 mm [11 x 1 inch] boards. No ceiling was provided. Rafters measured 5 1/2 by 1 1/2 or 5 by 1 inches [140 x 38 or 127 x 25 mm] at the gable ends: however the total number, sixty-four, suggests a spacing of little more than 0.3 m, and the area of boarding provided to cover them is also excessive. These boards measured 280 x 16 mm [11 x 5/8 inches] and came in lengths of 3.15 and 6.9 m, so that one of each type placed end to end would run the length of the building: there was, however, about ten square metres extra of each type. The house was accompanied by a detached water closet, also of prefabricated panels, and measuring 4 by 3 feet [1.2 x 0.9 m] in plan.

Vaughan entered in his journal the directions for erecting the panelled house:

> Directions for erecting my Wooden House. (Portable Panell'd made by Mr Manning of Holborn)
>
> _____
>
> First look out the ground plates or cills and knock them together, take care to bring the corners together as they are marked - next place the corner posts according to their respective marks into the bottom plates + put the nuts on screws from the underside + screw them tightly up - next put in the middle posts those that are fastened with screws + screw them from the underside very firmly; next knock the top plates together according as they are marked (these plates are grooved the bottom are not) + lift them up bodily + place the same upon the top of posts already screwed in. then screw the top plates down to the posts but not close down at first until you get all the panelled framings + posts in all round which you must do by first placing in a framing then a post and the last (when you come to close the last two) must be sprung in thus **[sketch]**. You must take care to place the doors and windows in the places where you want them to be before you screw down the top plates *firmly* + put in the cross partitions - i.e. in a similar way to the external enclosures. The cross plates are marked at each end which you must be particular in looking to. having got all properly down screw up all the nuts very firmly - next put in the Rafters + nail two or three braces across the underside of the Rafters to keep them in their places - then nail on Board covering for the Roof - *and last of all* put down the Floor Boards.
>
> The gable Enclosures are put in similarly to the panell'd framing. Note. the Bottom plates are painted *Black.*[46]

---

[46] Samuel Vaughan's journal, as quoted above. Among Vaughan's letter of introduction, he also transcribed into his journal, is of 26 September (1852) from Lord Desart to the

A number of Manning houses survive in whole or in part, of which seven in South Australia and two in Victoria have been mentioned. A mysterious building which looks like a Manning house is Carey Cottage, 18 Ferry Street, Hunters Hill, Sydney. It has the panels divided into four rather than three strips, like some but not all of the original illustrations in Loudon, but unlike any other identified Australian examples except the Quaker Meeting House, Adelaide. To make it more confusing it was owned from 1860 by Edye Manning, not known to have been related to the manufacturer.[47]

Henry Manning's influence, it appears, spread even further than his buildings. In 1840 a Baltimore architect, James Hall, published *A Series of Select and Original Modern Designs for Dwelling Houses,* illustrating a cottage of interchangeable wooden panels, some solid and some glazed. The house had two rooms of twelve feet [3.6 m] square and was to be bolted together on the site and covered by a tarpaulin if there was not time to make a shingle roof. In other words it was Manning's design, copied from Loudon's *Encyclopedia*.[48]

In 1856 a building which was apparently panelised appears in an illustration from the Crimean War,[49] and by this time, as we shall see, panelised buildings of a sort were being made in Victoria. In 1861 Skillings and Flint, a firm of New York lumber dealers, took out a United States patent for a another panelised system, which will be discussed below. C E Peterson has suggested that Manning's influence is again seen in the houses of Richards, Norris and Clemens of Chicago, described in their catalogue of 1872 as being constructed in panels 3 ft 6 in [1.05 m] wide.[50]

Manning's own activities were not confined to emigrants' houses: a major work for which he was responsible was the pavilion used in different parts of England for meetings of the Agricultural society which, in the form in which it stood at Derby on one occasion, measured 48 x 45 metres and was constructed in five bays in the transverse direction, with a gable roof over the central one, stepping

---

Officers of the Depot at Melbourne, the latter to provide storage for Vaughan's property, as he was bringing 'a large quantity of goods among wch. is a wooden house', and another from John Dewrance & Co. of London (per W Healy) to a Mr Wheatley: 'It has occurred to us that as he is taking a house with him your Services and Experience may be of value to him and in return he no Doubt may do you a good turn.'

47 The date of the building is unknown, but the grant was of 1834 and it was transferred in the same year to one Foss, who held it until 1860 and who had a two roomed dwelling there: *Old Buildings of Hunters Hill* [National Trust of New South Wales (originally produced by the Hunters Hill Trust)] (1978), p 63.

48 C E Peterson, 'Early American Prefabrication', *Gazette des Beaux-Arts,* 6th series, XXXIII (1948), p 41. This is probably the same portable cottage 'for the use of new settlers and others' reported in the second edition of 1848: John Hall, *A Series of Select and Original Modern Designs for Dwelling Houses, for the use of carpenters and builders adapted to the style of building in the United States* (2nd ed, Baltimore 1848 [1840]), cited in Charles B Wood III Inc, *Architecture Part I (A-M)* [catalogue 77] (New York 1992), p 65.

49 Mr B D Stuart's Army Stores for the Fourth Division, Cathcart's Hill, before Sebastopol. *Illustrated London News*, XVIII, 782 (2 February 1856), p 109.

50 C E Peterson, 'Prefabs for the Prairies', *Journal of the Society of Architectural Historians,* XI, 1 (March 1952), p 29.

down in a 1.2 metre clerestory to the skillion roofs of the adjacent bays, and stepping down again to those of the outermost bays. It was light in appearance but strongly constructed, with ten tonnes of iron in the roof, and there were 150 framed canvas windows in the clerestories which could be opened for ventilation. When it was first used is not clear (the Society first met in 1838) but in 1842 Sir Robert Smirke suggested the addition of diagonal ties to the roof structure because of the exposed position on which it was to be erected that year, on the heights at Clifton near Bristol.

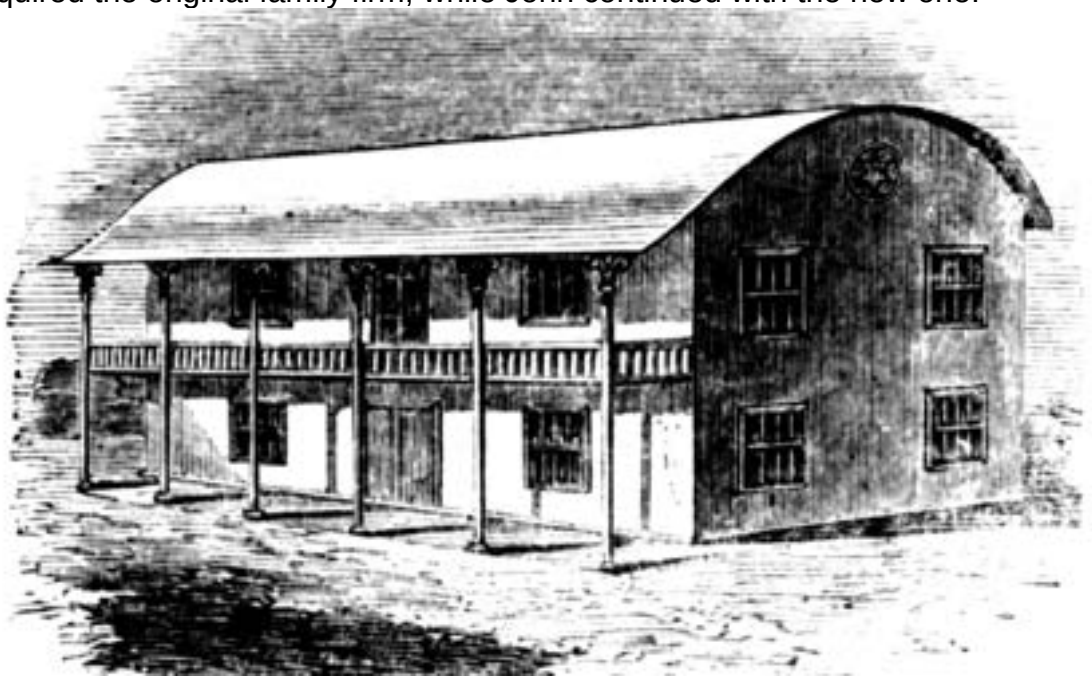
Manning's panelised houses seem to have had a life of about twenty-five years, as they are not mentioned after the mid 1850s. The business itself continued in some form, though less prominently. One of John Manning's daughters, Henrietta, married a baker called James Blott, and their son Walter Blott became a carpenter, went into Henry Manning's firm, and upon Henry's death in 1871, inherited the business andpremises in High Holborn.[51]

[51] Information from Megan Martin as above.

JOHN WALKER

015 Mint Coining Works, Macquarie St, Sydney
077 iron cottage shell 'The Weatherboard', 24 Weatherboard Rd, Inverleigh, Victoria
079 Walmsley labelled building, Depot, Royal Botanic Gardens, South Yarra
080 Ranger's house, 161-168 Gatehouse St, Parkville
085 Eudoxus, 34 Fenwick St, Geelong

The original British patent for the use of corruated iron in building was taken out in 1829 by Samuel Robinson Palmer.[52] Richard Walker, a builder who worked for Palmer at the London Docks, almost immediately acquired the rights and became the first to manufacture corrugated iron for building purposes. It appears that two sons, Richard junior and John, joined his firm, but that they later started their own business. Richard junior may have subsequently acquired the original family firm, while John continued with the new one.



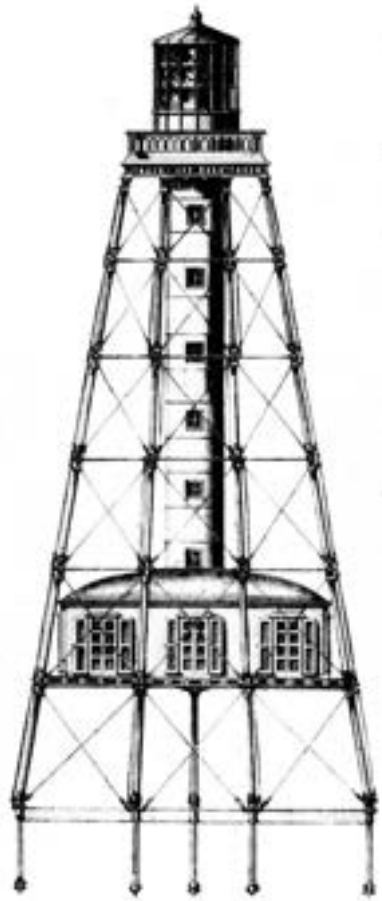
One of nine iron 'houses' for California, made by John Walker, July 1849: *Illustrated London News*, 14 July 1849, p 20.

By 1849 John Walker was advertising improved corrugated sheets measuring 8 ft 0 in by 3 ft 2 in [2.44 x 0.97 m] and an improved method of making 'elliptical' roofs. He was to be an important prefabricator, and his first recorded essay in the field appears to have been the manufacture of nine two-storeyed corrugated

---

[52] Great Britain, patent no 5786, to Henry Robinson Palmer, 28 April 1829. For the technical history of corrugating and galvanizing, see also H W Dickinson, 'A Study of Galvanised and Corrugated Sheet Metal', *Transactions of the Newcomen Society,* XXIV, 1943-1944 & 1944-1945 [London 1949], pp 27 ff.

iron houses which were sent to California in July 1849.[53] In 1850 Walker manufactured a hotel for Natal, South Africa.[54]



Lighthouse at Sand Key, Key West, Florida, by I W P Lewis, 1851. *Expositor,* 8 February 1851, p 233.

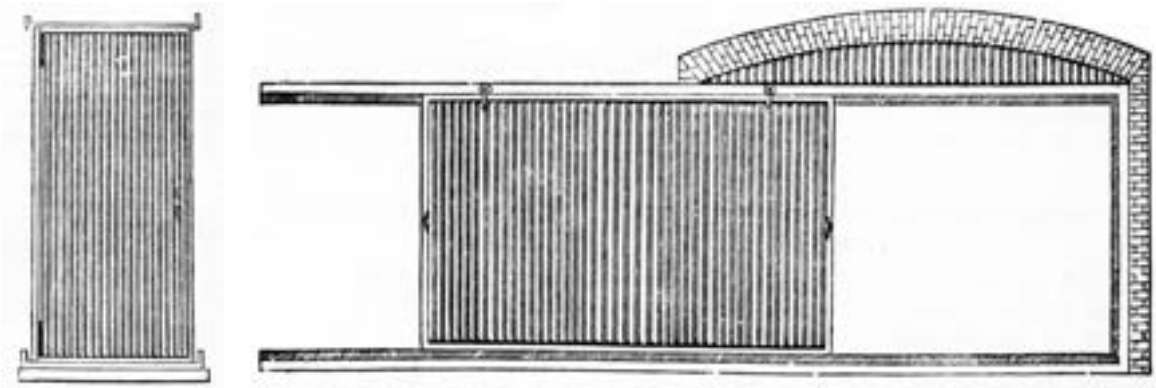
John Walker's next important work was a lighthouse, or part of one, for Sand Key, south of Florida.[55] Here the dwelling and the central shaft (though not the lantern itself) were made for the United States Government by Walker. A 13.5 m square platform was raised on piles to a height of 4.5 m above the bedrock, and on this was built an 11.4 m square dwelling, and above it a 2.1 m diameter tower continuing to a height of about 27.3 m, braced and supported by an openwork frame extending from the outer edges of the platform to the top of the tower, on which was to be placed the lantern. The house was 3.3 m high and contained nine rooms, the internal and external walls alike being of two layers of corrugated iron sheets, 813 mm wide by 10 mm [$^3/_8$"] thick, with a 130 mm air space between them. The roof was of the arched type, and the tower was

53 *Illustrated London News,* XV, 380 (14 July 1849), p 20.

54 *Illustrated London News,* April 1850, p 274; A F Hattersley, *The British Settlement of Natal* (1950), p 203; Brian Kearney, *Architecture in Natal* (Cape Town 1973), p 13..

55 We know that Walker's lighthouse was in Florida, and the date and description of it coincide very closely with that at Sand Key, illustrated in the *Expositor,* 8 February 1851, p 233, reproduced in Giovanni Brino, *Crystal Palace* (Genoa 1995), p 178.

double-walled like the house, and built in semi-circular sections in 1.8 m rises. All the wall junctions and corners, doors and windows, were fitted with angle iron. The system was analagous to half-timbering: ‘In a wooden house the angle iron is represented by the timbers, and the corrugated plates by the boarding.’[1]



Corrugated iron doors manufactured by Richard Walker J C Loudon, *An Encyclopædia of Cottage, Farm, and Villa Architecture* (Longmans, London 1846 [1833]), pp 358, 359.

This approach, of using an angle iron frame within which the corrugated iron is an infill, seems to be unique to Walker and to originate in doors first made by his father.

In 1853 Walker supplied a two-storeyed house to the Royal Mail Steam Packet Company to house their superintendent and other officers at the port of Chagres, Panama. Walker had assembled the lighthouse at Shepherd and Shepherdess Fields, New North Road, Hoxton, but the Chagres buildings were at what was described as his factory, Mill Wall, Poplar. This seems already to have been a very substantial establishment, for it covered 1.2 hectares and employed over 400 men at a weekly cost of £800. Of particular interest is the fact that he was also in the course of constructing thirty-six iron houses 'for the residences of emigrants sent out by Government to Australia.'[56] These were in fact imported by the Victorian government for its own employees, and it is possible to trace their history in reasonable detail from official records.

As early as August 1851 the Colonial Architect, Henry Ginn, had recommended that tenders for government buildings should be called in England, that parts such as joinery should be prefabricated there, and that the labour for the rest should be brought out. He estimated that the cost would be about half that current in Melbourne, and his scheme was partially approved but set aside 'for the present' by the Legislative Council.[57] Ginn's report on this proposal, placed before the Executive Council on 1 March 1852, envisaged wooden houses of four rooms, each fifteen feet [4.6 m] square and containing a fireplace. The

---

56 *Builder* (London), 2 July 1853), p 422.

57 Ginn to Colonial Secretary, 31 August 1851: Col Sec C52/3335, PRO.

cost including erection would be about £250..[58] The next development was in August, when he was required to report on the possibility of iron houses, and recommended that thirty be obtained..[59] He wasin fact authorised to prepare a requisition for thirty-six houses to be obtained through the Colonial Agent in London. This requisition, for thirty-six iron houses 'to be rented by Government Employés' was forwarded by Ginn to the Colonial Secretary on 24 August 1852,[60] and it was presumably upon this basis that the order was sent to England, early in 1853.[61] These were clearly the same thirty-six houses for 'emigrants sent out by Government to Australia' as were referred to in Walker's advertisement.

The houses do not appear to have arrived until March or April 1854, when La Trobe expressed surprise at their number, being under the impression that only twelve had been called for. Of those that arrived, two were put up in William Street for the Colonial Surgeon and the Registrar General, and one was allocated to the Steam Navigation Board. The costs were, per house,

	£
Invoice Cost	405
Freight	184
Lighterage	29
Cartage &c	17
	635

The cost of erection and fitting of the three mentioned was £550 each, making a total of £1,185. Ten were appropriated for the Police Barracks at Richmond, where their erection was estimated to cost £400 each, and most of the others were allocated to the Commissariat Department. James Balmain, the Chief Architect, estimated that the average all-in cost would be no less than £1200.[62] 'I am afraid a very bad speculation' noted La Trobe, suggesting that the Colonial Agent General had not been judicious in his purchase, and that even the cost of the houses in England had been unduly high.[63]

---

58 Report by Ginn, untitled, annotated as an item for the Executive Council, 1 March 1852: . Col Sec C52/3335, PRO.

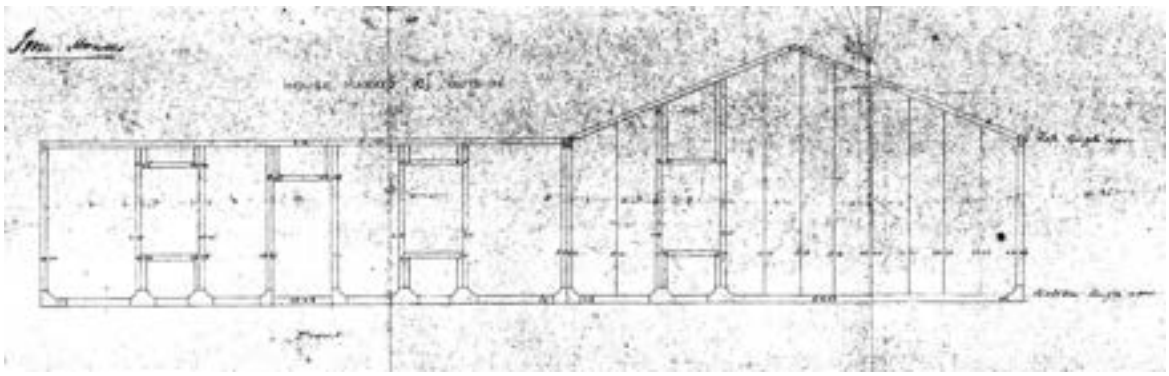
59 Ginn to Colonial Secretary, 11 August 1852: Col Sec C52/3335, PRO.

60 Ginn to Colonial Secretary, 24 August 1852.

61 Responding to a question in the Legislative Councl on 31 December 1852, the Auditor-General conceded that the order had not yet been sent: *Argus* (Melbourne), 1 January 1853, p 5.

62 James Balmain, Chief Architect, Minute of Cost +c of Iron Houses Imported from England'.

63 Memo by C J La Trobe on 52/3421, 21 April 1854 Col Sec Series B, 52/642, &c, to 52/3241, PRO. Copies provided to me by courtesy of the late Peter Alsop.



Contract drawing for the erection of iron houses at the Police Depot, Richmond,: Public Works Department, 18 May 1854: Public Record Office, Victoria, police file, series 937 (1852-), 'The Depot', box 141 no 3, detail The drawing combines one long elevation and on end elevation,

There survives a specification of April 1854 by the Colonial Architect's Office for the erection of ten iron houses in the Richmond Police Paddock, signed as a contract document by Edward Blake & Partner on 18 May. However it is a standard printed text with only minor additions and amendments, and it does not name the maker or convey much about the buildings beyond the facts that the parts were numbered, and that the manufacturer was the same as for the Colonial Surgeon's office in William Street.[64] A sheet of drawings also survives, and it shows the building itself as well as the system of numbering applied to its components.[65] The structure is framed in angle iron with vertical corrugated iron infill, just as described in the case of the Sand Key lighthouse, which leads to the conclusion that the buildings supplied were on Walker's already established system. The drawing therefore must be an *ex post facto* representation of the buildings as supplied and not an original design by the Colonial Architect's office.

64 Victoria, Colonial Architect, 'Specification of Work Required in Erecting Iron Houses in Richmond Paddock' (Melbourne 1854).

65 Police files, PRO Series 937 (1852-), 'The Depot', Box 141, no 3, kindly made available by Mr Ted Collins, Police Historian.

Iron house at ‘The Weatherboard’, Inverleigh, fabricated by John Walker, c 1853-4: Miles Lewis.

Maker’s plate on the house at Inverleigh: Miles Lewis.

Details of the house at Inverleigh, gusset base joint, corner angle labelled ‘60/A’: Miles Lewis.

The one building which can definitely be attributed to Walker carries two cast iron plaques bearing his name and the address of his works, Millwall, Poplar, and conforms pretty exactly to this drawing, though the numbers are different by one digit from those illustrated. It was built on the sheep station called 'The Weatherboard', and still stands near Inverleigh. None of floors, partitions, lining, doors, nor any other woodwork except some part of the windows survives, but the shell, consisting of the corrugated sheets, angle iron framing, and connecting gussets, remains in excellent condition with the galvanizing intact. The only rusting is on a few connecting straps and brackets which were apparently not galvanized.

There was no attic, and the absence of the partition walls makes it impossible to determine the plan from what remains, but we know that it was originally intended to have four rooms and a central passage. It is below the end windows that the plaques are found. This Inverleigh house represents a considerable advance towards true system building. The top and bottom plates, corners and jambs are of 2 by 2 inch [51 x 51 mm] angle iron with one flange pointing inwards and the other appearing on the face, so as to overlap the infill panels of corrugated iron. The jambs, on either side of every window and door, run the full height of the wall, and the spandrel panels above and below the openings are inserted separately, and are framed in angle iron on three sides. For example, in the spandrel above a window the angle runs across to form the window head, with the flange on the face of the building

pointing away from the opening so as to overlap the corrugated iron above it. At either end the angle is actually bent upwards in a right angle - a triangle is cut out of the face flange, so that when the angle is bent the two cut edges meet in a mitred joint. A spandrel below a window is likewise three-sided, forming a sill-piece and two edges, and in every case the edges have the inward-pointing flange backing against that of the jamb angle, so as to have the combined effect of a T-section. At the top of the walls the angle which forms the top plate is allowed simply to overlap the vertical members, but the angle at the bottom is in each case connected with flat gussets which appear on the outer face - either L-shaped or T-shaped as the joint demands, but cut with curves rather than sharp re-entrant angles.

The two long sides of the building are connected at the centre by a wrought iron tie rod of about 19 mm diameter, with forked ends and a turnbuckle at the centre. At the third points there are two trusses, or rather pairs of T-section rafters linked in each case by a collar tie consisting of an ungalvanised strap of 1 1/2 by 1 in [38 x 25 mm] iron. Close to the ridge, and about half way down the slope, are purlins of 1 5/8 by 1 5/8 mm [41 x 41 mm] angle. The corrugated iron sheets measure 2.13 by 0.78 m, and have a pitch of only 4 1/4 in [108 mm]. The roof has no eave at the ends or along one side, but on the other the sheets continue out about one metre and are trimmed at the end with a piece of angle. This overhang was originally a verandah supported on rather extraordinary spindly posts consisting of a wrought iron rod bent double, with the bend at the bottom, and the two ends at the top finished in a pair of ornamental scrolls. One of these posts survives elsewhere on the property. Inside the angle jambs of the windows are fitted with 4 by 3 in [102 x 76 mm] pieces of timber, apparently to trim for the wooden sash windows, but on the outside faces of the jambs are hinges which originally carried iron shutters to close the opening. Some of these hinges also survive.

This building was on the site by March 1855, when it was mentioned in an advertisement for a mortgagee's sale.

> The improvements consist of a weatherboard house, four-roomed iron house, kitchen, overseer's cottage, men's huts, stockyard, large paddocks, &c.[66]

This indicates that the house was put up either for William Harding, the then proprietor of the Weatherboard run, or for his immediate predecessor J H Mercer. A photograph of about 1890 shows a timber structure which was attached to the Inverleigh house, but this was subsequently moved to higher ground, because the old site was flood-prone.[67]

Given its close conformity to the Ginn drawing one must ask whether Harding had been able to acquire one of the houses imported by the Victorian government. But there is no specific evidence to suggest that any of those

---

66 *Argus* (Melbourne), 21 March 1855, p 3..

67 Information 2016 from Chris Ganly [mailto:chris_ganly@hotmail.com]. He believes that the present family, the McCallums, have had the property since the 1880s.

houses found their way into private hands before 1881, when the Richmond depot was broken up and the the remaining stock sold, as discussed below.

The ranger's huse, 161-168 Gatehouse St, Parkville by [Benjamin] Walmsley (or John Walker) fabricated c 1853, erected by 1862: Miles Lewis..

The ranger's house in Parkville[68] which matches that at Inverleigh, was indeed in government use. It was moved from the city in March 1858,[69] suggesting that it was probably one of those which had been put up in William Street for the Colonial Surgeon and the Registrar General. In 1862 it became the house of Francis Meaker, a zoo employee, and later the Royal Park ranger and Crown lands bailiff of Royal Park. For at least the next seventy years the house was occupied by Meaker and his family, for his son succeeded him as ranger.[70] Various stories which have become attached to the house - that it is made of Scotch iron, that it was built for the mounted police, and that it was regularly visited by the local Aborigines, stem mostly from a fanciful report in the Melbourne *Argus* in 1923,[71] and have been quite irresponsibly promulgated by modern consultants.

68 161 Gatehouse St, Parkville, near Royal Parade.
69 *Age* (Melbourne), 17 March 1858, p 2.
70 W A Sanderson, 'Royal Park', *Victorian Historical Magazine,* XIV, 3 (May 1932), p 17.
71 *Argus* (Melbourne), 28 August 1923, p 7..

The ranger's house, Parkville, detail of the Walmsley plaque and a gusset connection: Miles Lewis.

.

The ranger's house was almost certainly made by Walker, not by Walmsley. There is no record of the Victorian government importing any iron houses other than the thirty-six by Walker, and it is most unlikely to have done so, given that the Walker houses themselves arrived only after the accommodation crisis had receded, and that they cost more than four times the original estimate. However at least three other buildings of the original thirty-six bore Walmsley's plate The Richmond Police Depot, where ten of the houses were built in 1854, was cleared out in 1881. By that time only three of the houses survived, all of them attributed to Walmsley (the full details appear below).

The fact that the ranger's house in Parkville and the house at Inverleigh were largely (if not entirely) identical raises the question of whether the design should be attributed to the Colonial Architect, Henry Ginn, to John Walker or to Benjamin Walmsley. Ginn had first proposed the importation of wooden houses for government purposes, and his later report upon the possibility of iron houses proposes their dimensions and suggests a slate roof. But there is no indication and little likelihood that he was involved in the technical details. Indeed, that would be hardly possible, as the unusual construction of corrugated iron sheets set in an angle iron frame is the same as that which Walker had previously used in his Sand Key Reef lighthouse, and is not known to have been used by any other manufacturer.

Benjamin Walmsley, of 127 London Road, Southwark, was a retail ironmonger, not a manufacturer.[72] He could no doubt have supplied corrugated iron sheets, but he does not appear to have been a fabricator of buildings, and certainly had nothing approaching Walker's large works and four hundred employees. Even if he had, he could not have made buildings on the same system as Walker unless they had an agreement. The probability is that there was an agreement - not an agreement that Walmsley should manufacture the buildings but that he

[72] His identity was first established by the South Yarra historian Oscar Slater, and he has since been more fully researched by Simon Reeves. Walmsley was born in 1812. By 1850 he was a retail ironmonger at 127 London Rd, and the business expanded to take in the adjoining shops 126 and 128 before disappearing in 1858: Simon Reeves, 'The Walmsley House at Royal Park: La Trobe's Other Cottage', *La Trobeana*, 7, 3 (November 2008), p 13.

should put his name to them. It seems likely that he was a front man, to give the appearance of competitive tendering, and it also seems likely that the Colonial Agent, who placed the order, was complicit in this. The arrangement is almost the reverse of that at the Sydney Mint, discussed below, where the Horseley Company was the successful tenderer, but appears to have subcontracted the work to Walker.

We have seen that ten of the government's imported iron houses were put up in the Richmond Police Paddock, later known as the Richmond Police Depot, under a contract of May 1854. In 1881, when the depot was abolished, three of these houses remained, together with other buildnigs, some of which probably incorporated corrugated iron cannibalised from the demolished houses. An advertisement listed for sale:

Lot 1. Bluestone building used powder magazine; spouting, ridging, downpipes, &c, are of Copper
2. Wooden and Iron sheds and outbuildings.
3. Wood and iron building forming stable and hay loft, fencing and pitching.
4. Three roomed wooden building, Iron roof.
5. Two storied brick building (nearly new), bluestone foundations, slate roof.
6. Long wooden building, new iron roof, used as stable, with loose boxes, harness, and chaff rooms, &c.
7. Two roomed wooden building, with fences; also, smithy and wheelwrights' shops, &c.
8. Main store, iron on stone foundations, wood floors, in excellent order, and easy of removal.
9. Four old wood and iron lockups.
10. Brick building, stone foundations, slate roof.
11. Iron cottage, by "Walmsley," of London, on stone foundations, with outbuildings and fencing; easily removed and re-erected.
12. Brick chimney, and stone foundations of cottage, and riding-school, and fencing.
13. Iron house, by "Walmsley," of London, stone foundations, verandah and outbuildings, brick detached kitchen, forming three distinct cottages, separate entrances.
14. Iron and paling fencing, adjoining lot 13.
15. Iron house by "Walmsley," stone foundations, in good order, verandah, porches, &c., portable bathhouse, &c., divided into cottages, fencing, &c
16. Newly erected brick building, stone foundations, slate roof.
17. Lavatory and bathhouse, brick, slate roof stone foundations, in good order.[73]

With one exception, we do not know what happned to these buildings, or even whether they were scrapped or re-erected.

---

[73] *Argus* (Melbourne), 16 April 1881, p 2.

The Walmsley labelled building, Royal Botanic Gardens, Melbourne, view, and detail of one of the plaques: Miles Lewis.

The exception is a building now in the nursery complex at the Royal Botanic Gardens. It was apparently acquired at some date between 1875, when it does not show on a map of the gardens,[74] and 1883, when it does.[75] It is a simple gable-roofed structure clad in three inch corrugated iron, with timber casement

74 'Plan of the Melbourne Botsnic Garden', Crown Lands Office, August 1875: State Library of Victoria MAPS 821.08 MELBOURNE 1875.

75 Information 2021 from Colin Walker, Supervisor of Facilities at the Gardens..

windows glazed in three panes per sash, and with roof battening (visible at the ends), spaced for slates or shingles rather than the present iron. Nothing about it suggests prefabrication except that it carries two metal plates the same as that at Parkville, naming the manufacturer as Walmsley of London.

The probability is that it is one of the buildings from the Richmond Police Depot, disposed of in 1881, and specifically the main store building identified as lot 8 in the advertisement. If so, it is a locally built timber frame clad in iron recycled from the demolished houses. It carries the Walmsley plaques simply because it was easier and less destructive to leave them attached to the corrugated iron sheets. The windows bear some resemblance to those at Parkville, and may also have been recycled.

'Eudoxus', 34 Fenwick Street, Geelong, originally a semi-detached pair by John Walker, erected 1854: photo from the Victorian Heritage Register [cropped].

There are a number of references to non-government buildings by Walker, and one of these survives in Geelong. The drapers Towle & Turpin had a large iron store attached to their premises, probably dating from 1853,[76] and they built another in 1854 when they moved to set up a wholesale establishment elsewhere.[77] These may or may not have been Walker buildings, but the

[76] *Geelong Advertiser,* 19 January 1854, p 2. It was described as a 'recently-erected commodious Iron Store … capable of storing hundreds of tons of merchandise'.

[77] *Geelong Advertiser,* 18 January 1854, p 3.

partners did invest in a pair of houses by Walker which they offered for sale in a partly completed state. They were, most unusually, a two storey semi-detached pair:

> 2 VERY Elegant Galvanised Iron COTTAGES, each containing Four Rooms, about 12 feet 6 inches by 14 feet, lined and floored throughout, with sashes (glazed), doors, Venetian blinds, paper, canvass, water closets, porch, locks, bolts, &c, complete.
>
> These Cottages are two stories each, and the pair are made to stand upon an allotment of ground having 25 feet frontage.
>
> They were built by the celebrated John Walker, of Mill Wall, Popler [*sic*], by the order and under the inspection of an old colonist.
>
> A fortnight would complete the two erections, at a comparatively trifling expense.[78]

The houses are now united as the single building ‘Eudoxus’, 34 Fenwick Street, Geelong, with a verandah and balcony added.

A certain amount is known of Walker's later history. In 1853 he constructed what was described as 'the completest iron building yet sent to the colonies', a coaling station for steamers at Capetown, measuring 45 by 15 m and consisting of 'corrugated iron plates, fastened by iron tie-rods of great strength, with strong girders outside to support the building'.[79] In April 1854 he advertised that a number of buildings had been erected and were available for inspection at his works at Millwall, Poplar

> consisting of all sizes, in dwellings, shops, with mahogany sashes and plate-glass fronts, equal to many in our best streets in London; stores of all sizes, two, three, and four stories high, one in particular, 300 feet long by 150 feet wide [90 x 45 m], acknowledged to be the finest ever manufactured; wooden houses of all sizes, of most tasteful designs. The Royal Branch Mint at Sydney, an iron bridge of 100 feet [30 m] span, and several other important structures in the course of erection for Australia.[80]

So far as the Sydney Mint is concerned, Walker's claim is somewhat exaggerated. The Mint building proper was the southern part of the old Rum Hospital, converted to its new use in 1853. To this were added certain buildings of stone with a prefabricated iron internal structure, housing offices, factory, smelting house and workshops, and completed in 1855. Three such structures survive today: the coining room, the engine room, and one other.

---

78 *Geelong Advertiser,* 6 June 1854, p 7.

79 *Illustrated London News,* 21 January 1854, p 48. The building was apparently constructed at Millwall, not at the new Gillbrook works (see below). It was for the firm of Walton and Bushell, and cost about £1,200 including erection.

80 *Illustrated London News,* 29 April 1854, p 403.

Tenders were invited in 1853 for works including about two hundred squares of roof framing, roofing, a large cast iron cistern, thirty-three cast iron sashes and frames, twenty-four columns, girders, &c.[81] The Horseley Company was the successful tenderer, but appears to have subcontracted the work to John Walker, probably because of his more extensive involvement in iron building manufacture. On 28 January 1854 Walker wrote to Captain Ward to say that the remainder of the boards for the Mint roofs were now at the wharf alongside the *Hannibal* (the ship by which the materials were sent) awaiting inspection. A few days later he reported that the roofs for the workshop, one of the flat roofs, tank plates, tank girders, thirty foot girders, stores and ranges, were all at his Mill Wall factory, awaiting inspection.[82] One year later the building was reported to be 'in course of erection',[83] and on 14 May 1855 it was opened to receive gold bullion.[84]

The Royal Mint, Sydney,` framing system: Miles Lewis.

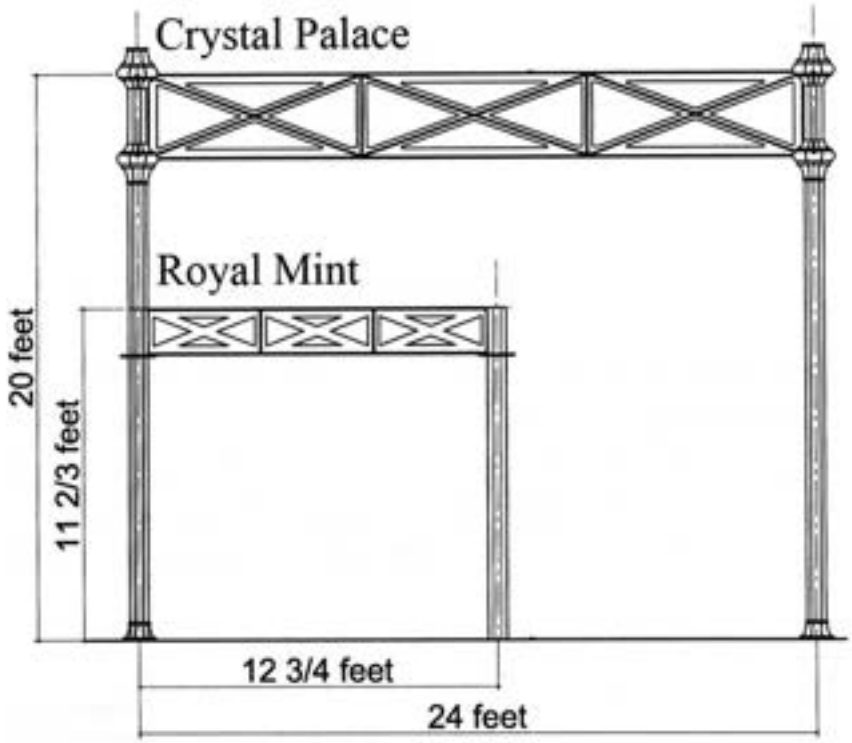
81 Captain E Ward to the Horseley Company, 9 September 1853, Archives Office of New South Wales, 2/783, quoted in Fiona Starr et al, *The Royal Mint, Sydney (1853-1926): a Survey of the Documents Associated with the Mint* (Sydney 2001), p 20.

82 John Walker to Captain E Ward, 24 January & 2 February 1854, Archives Office of New South Wales, 2/764.

83 *Sydney Morning Herald,* 26 January 1855, p 4..

84 *Maitland Mercury and Hunter River General Advertiser* (NSW), 16 May 1855, p 2..

The Royal Mint framing system, detail: Robert Griffin.



Dimensional comparison of the Royal Mint, Sydney and the Crystal Palace: Yosuke Komiyama, 'Tracing the Construction of the Crystal Palace: towards architectural construction history' (PhD, University of Tokyo, 2018), p 116 [modified].

In general the records and the surviving structure show that what Walker supplied was the iron interior frame, including the girders to carry an upper floor over a small part of the plan area, the iron roofing, including similar girders in some areas, the glass for the skylights, and presumably the skylights themselves.[85] The columns are cruciform and the girders are of the Howe truss type, with cross-cross bracing in each panel, and all apparently of cast rather than wrought iron,[86] very similar to the system of Paxton's Crystal Palace, London. The resemblance is probably explained by the fact that the Mint's designer, Edward Ward, had an official role at the Great Exhibition as Secretary to the Department of Jurors.[87]

85 The buildings are described in the *Illustrated Sydney News*, 28 April 1854, p 203. The surviving records are the Royal Mint, Sydney Branch: Letters received 1853-1855, Archives ref 2/763-2/765, at the Mitchell Library, Sydney. The Deputy Mitchell Librarian has kindly had the material checked.

86 Inspection with Eddie Butler-Bowdon & David Dolan of the Powerhouse Museum, 1994. Since that time the structures have been further investigated, and Mike Bogle of the Historic Houses Trust has advised, May 2001, that there are three prefabricated structures of 1854. The coining factory has Crystal Palace-like construction. The Engine Room has a bow truss, with ties bonded to the iron walls. The third building had a geometric frame and skylights in the roof, but the roof was subsequently raised to create a clerestory.

87 Great Exhibition of the Works of Industry of all Nations, *Reports by the Jurors on the Subjects in the Thirty Classes into which the Exhibition was divided* (Royal Commission, London 1852), p xxv.

The Royal Mint, roof trussing: Miles Lewis.

Royal Mint, Sydney, slate slab roofing: Miles Lewis.

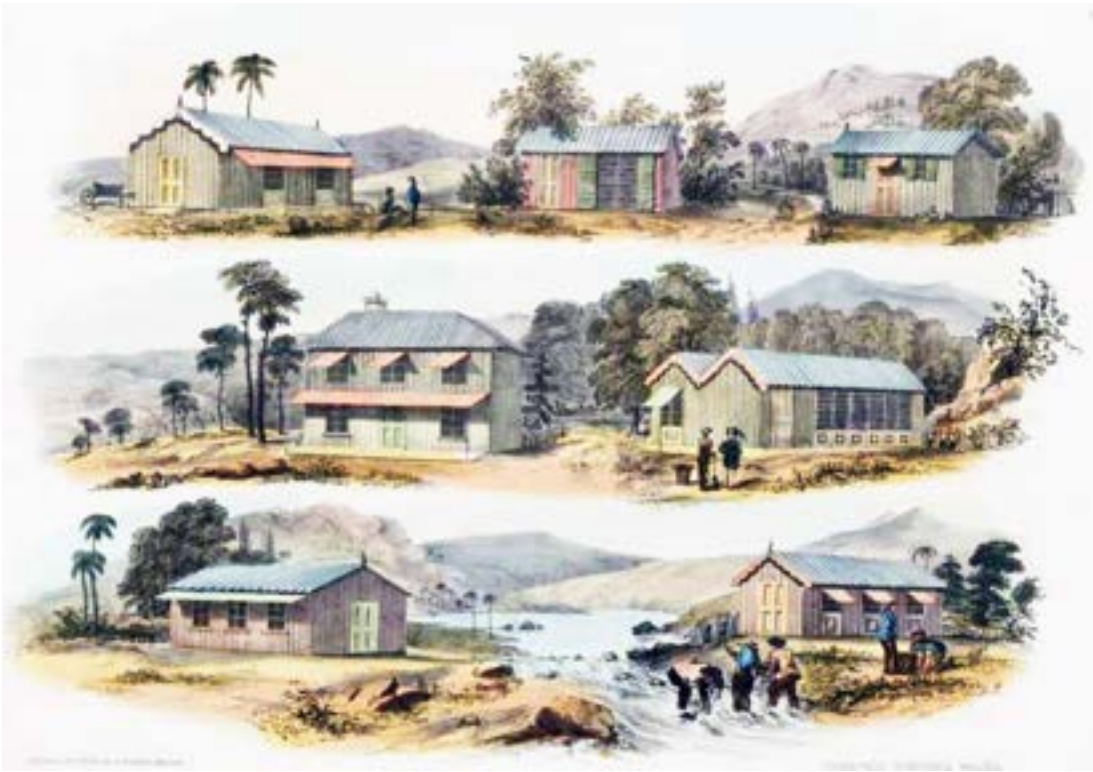
The roofing was 'of wrought-iron, of great strength, neatly trussed, and possessing every facility for the admission of light and the circulation of air.' The lighting was 'by means of skylights, in iron frames', but these have gone

and no illustration survives. Much or all of of the roofing consisted of slate slabs set between iron joists, with a layer of concrete, and possibly one of asphalt, on top.

SAMUEL HEMMING

010 Wingecarribee, Bowral, NSW
083 St Paul's Op Shop [former corrugated iron church], 30 Fisher St, Gisborne, Victoria
101 semi-detached iron house 181 Brunswick Rd, Brunswick, Victoria
102 semi-detached iron house 183 Brunswick Rd
101 semi-detached iron house 187 Brunswick Rd
101 semi-detached iron house 189 Brunswick Rd

Three buildings made by Samuel Hemming of Bristol are known to survive in Australia, while there are none anywhere else in the world (two in Canada are more probably by his son). Hemming was enormously prolific, but his buildings have not survived well because they are timber-framed, unlike most of the iron-clad buildings made in Britain in the mid-nineteenth century.



Hemming's portable houses for Australia, lithograph by A Pocock, Bristol, probably 1853: National Library of Australia [cropped].

Samuel Hemming (c 1799-1876) was said to have started his business after successfully constructing a light portable house for a son who was emigrating to Australia[88] though it is unclear which son this might be. By October 1852

[88] *Builder* (London), 2 April 1853, p 214; *Illustrated London News,* 30 April 1853, p 320. The latter report, which does not specify Australia as his destination, is also quoted in the *Lady's Newspaper,* 11 June 1853, p 376.

Hemming had constructed his first prototype, and was seting up his works in the Bristol suburb of Bedminster.[89] In March of 1853 thirty iron houses, which must have been Hemming's, reached Melbourne from Bristol on the *Elizabeth.*[90]

According to reports in April 1853, Heming was producing 'scores of snug, compact, uniform little dwellings' for emigrants.[91] The houses were simple in construction – timber frames with galvanised corrugated iron walls and roofs, a three inch [75 mm] wall space, and an internal lining of half inch [13 mm] boarding covered in canvas. They were assembled with iron screws and bolts, and it was claimed that even an inexperienced person could do this in four hours. The cheapest one-roomed cottage cost £35, and furniture could be provided for £10. The houses packed compactly to save freight, in a crate which was made of one inch [25 mm] floorboards intended to be used in the builing.

Portable town for Australia, by Samuel Hemming of Bristol: National Library of Australia an8713100.

Hemming was soon making larger buildings as well. One was a lodging house measuring 114 by 46 feet [34.2 x 13.8 m]. with fourteen bedrooms and fifty-six beds, two sitting rooms of 20 by 20 feet [6 x 6 m], a luggage room and other spaces, costing in all £1,500. Another was a parsonage reportedly ordered by the Bishop of Melbourne (Charles Perry), and yet another a church which, as it turned out, was to be the first of a series.[92] By February 1854 Hemming's works were said to give the impression of a town rising and falling in a week, leaving behind it only trim packages awaiting shipment.[93]

---

89 *Bristol Times and Mirror,* 23 October 1852, p 8.
90 *Argus* (Melbourne), 12 March 1853, p 4 .
91 *Builder* (London), 2 April 1853, p 214; *Illustrated London News,* 30 April 1853, p 320
92 *Builder,* XI, 530 (2 April 1853) p 214; *Lady's Newspaper,* 4 June 1853, p 353.
93 *Illustrated London News,* 18 February 1854, p 141.

'Villa residence to be erected at Sydney for Messrs. B.L. Lloyd & Co.' (but formerly designted for the Melbourne and Colonial House Investment Company) Hemming's Patent Improved Portable Houses, Clift house, Bedminster, W Simpson, engraver. Broadsheets held at the Baillieu Library, University of Melbourne; also Rex Nan Kivell Collection, National Library of Australia, NK 482.

A number of illustrations of Hemming buildings survive, both engavings and colour lithographs. Some of the buildings shown are rather myseriously designated as being for the Melbourne and Colonial House Investment Company. This enterprise took an interest not only Hemming's but in various other types of prefabrication, but it seems to have failed almost at the outset. There is no clear confirmation that it ultimately bought any of Hemming's buildings, and nor is there evidence that it actually managed to send any buildings to Australia at all. It seems that designs which Hemming had prepared for the company simply remained on his books and were offered to subseqent customers.

Cottage No 1 containing a bedroom and parlour, view and plan [reformatted]: Hemming's Patent Improved Portable Houses, Clift House, Bedminster: broadsheets held at the Baillieu Library, University of Melbourne.

Two Hemming no 1 houses then surviving at 19 Byron St, North Melbourne, photographed by Oswald Barnett in the 1930s [detail]. Melbourne Library Service ID 18921.

But Hemmings buildings reached Australia in their hundreds. The smaller ones were apprently seen as replacemets for tents, and so were very rudimentary. His Cottage no 1 had only one combined door and window, and it is not surprising that two of these which survived into the twentieth century incurred the wrath of the slum reformers.

There was an important relationship between Samuel Hemming and Caroline Chisholm, the philanthropist and reformer, but the available information about it is vague. An article in the *Lady's Newspaper* in 1853 reports that Caroline

Chisholm has made two visits to the Hemming factory.[94] Later in 1853 the Clift House works advertised a prefabricated migrant hostel for Australia, said to be a Gothic building of wood and iron, built to a plan 'suggested by Mrs Chisholm', and apparently a gift from Hemming.[95]

'View of an Emigrants' Home to accommodate 72 persons ... on the plan suggested by Mrs Chisholm' [?1853], Day & Son, lithographers. Rex Nan Kivell Collection, National Library of Australia, NK 479 U2595.

There seems to have been a second such gift, for an illustration exists of a patently non-Gothic emigrant hostel which seems rather to be the home for forty-eight described as being under construction at Hemmng's works February 1854:

> ... a Female Emigrants' Home, intended by the benevolent proprietor as a gift to the colony. It comprises a large common room; four bed-rooms, with twelve comfortable beds in each; detached lavatories and water-closets on one side; on the other, cooking and store-houses, with a separate dwelling for the superintendent - the whole with the best arrangements for ventilation.[96]

The fate of these buildings is unknown, for Chisholm did not establish a Female Immigrants' Home in Melbourne as she had in Sydney.[97] She did did however establish tents for immigrants at the foot of Lonsdale St and her husband,

---

94 Broadsheets held by the Baillieu Library, University of Melbourne. The extract is undated, but it appears to be a reworking of an article im the *Lady's Newspaper* of June 1853.

95 This is possibly the same building as is mentioned by H G Turner, *History of the Colony of Victoria* (2 vols, London 1902), I, p 370, as having been erected by the Immigrants Aid Society on the wharf, for the luggage of new arrivals seeking a domicile.

96 *Illustrated London News*, XXIV, 669 (18 February 1854), p 141.

97 Margaret Kiddle, *Caroline Chisholm* (Melbourne UP, Melbourne 1950), pp 35 ff.

Captain Archibald Chisholm, was one of the founders of the Immigrants Aid Society when it was established in Melbourne in 1853, though he did not remain active. Another of the founders was William Jarrett, a Congregationalist turned Presbyterian minister,[98] who acquired a Hemming building apparently as a private investment .

Jarret built two pairs of semi-detached houses at 181-3 and 187-9 Brunswick Road, in the Melbourne suburb of Brunswick, probably by modiying what had been intended as a continuous terrace of four houses (as has been astutely recognised by Andrew Muir). Dividing the terrace meant that two extra end walls were required, and these were built locally in brick. These houses were first studied in detail by Helen Lardner in 1996, but only now have we recognised them as being the work of Hemming.

The most intact of the four houses. 189 Brunswick Road, Brunswick [Melbourne], 1854, attributed to Samuel Hemming.

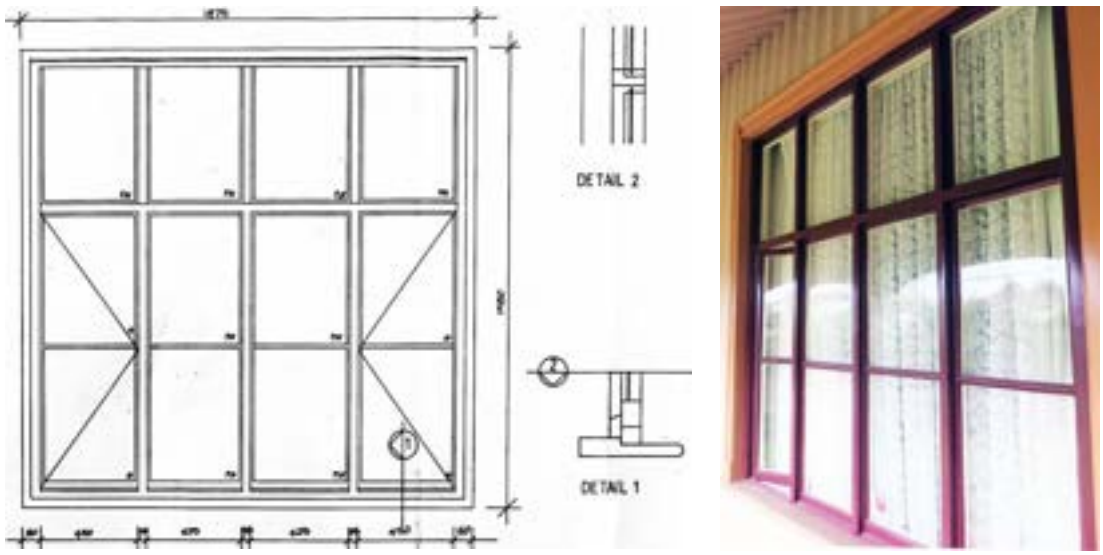
98 *Argus* (Melbourne), 6 February 1855, p 4.

187 Brunswick Road.

Portable town for Australia, by Samuel Hemming of Bristol: National Library of Australia an8713100 [detail].

Although they do not specifically correspond to any of Hemming's published illustrations, they do generally resemble his work. Moveover, Hemming was the only British maker in the 1850s who regularly built structures in terrace rows and virtually the only maker of the time who produced timber frames clad in corrugated iron. Moreover the bargeboards (which survive only on the west end of no 189) resemble Hemming's as illustrated, but for the fact that they are perforated. The large windows are also similar to some of those used by Hemming.

189 Brunswick Road, nortn wall cladding and gable: Miles Lewis.

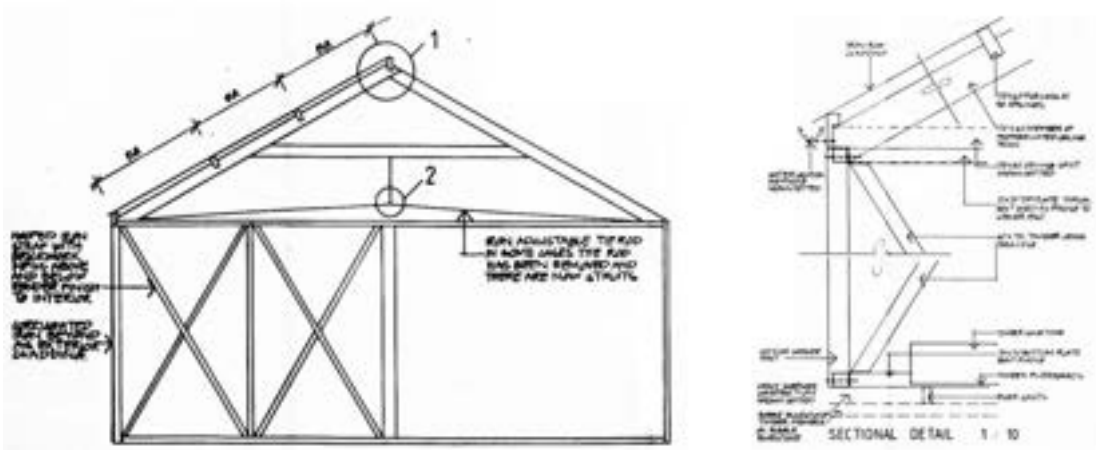


Brunswick Road cottages, window details**: Helen** Lardner**,** *Brunswick Iron Cottages* (Helen Lardner Conservation & Design, Fitzroy [Victoria] 1996), no page.
View: Miles Lewis

The cladding is in broad pitch corrugated iron. There is no visible corner member, and the sheeting simply wraps around the angle (which is reminiscent of Porter's patent). The sheets have been rivetted together in the lengthwise direction, probably while on the ground, and only later joined laterally. There can also be seen the slotted domed heads of bolts, and the square heads of very large screws, which seem to be the means of connecting the iron to the

major timber framing members. The roof sheeting, though of a greater width, was assembled the same way and, according to Lardner, is marked with numbers at the joints of each sheet. Generally these numbers match those on adjoining sheets in the direction of slope, while there is no numbering system in the transverse direction. The roof is framed with coupled rafters (not trusses, as stated by Lardner), of which there are four per house. These are numbered one to sixteen and stencilled accordingly, usually in red on the north part and black on the south.[99]

Lardner refers to the letters 'JC' as appearing 'on some of the fabric',[100] and Andrew Muir notes that these are in fact on the corrugated iron and are stencils. Such lettering would normally be a consignment mark, and it would suggest that the structure was sent to a Melbourne mercantile house and sold on, rather than being ordered by Jarrett direct from Hemming.



Brunswick Road cottages, construction: Helen Lardner, *Brunswick Iron Cottages* (Helen Lardner Conservation & Design, Fitzroy [Victoria] 1996), no page [reformatted].

The most stylish element is an elegant wrought iron verandah balustrade of a criss-cross pattern. The elements of most technical interest are the timber framing and the wrought iron tie rods. The timber framing consists of criss-cross braced panels, which does not seem to be Hemming's standard practice. The tie rods, just above the ceiling, cross the roof at the centre of each cottage and at the party walls. They are hitched up at the centre in an way which seems to have been a fairly common practice at the time.[101]

Apart from the end walls of 183-5 which had to be built of brick, quantity of other brickwork was incoporated into the construction. It was used as nogging within

---

99 Helen Lardner, *Brunswick Iron Cottages* (Helen Lardner Conservation & Design, Fitzroy [Victoria] 1996), p 30.

100 Helen Lardner, *Brunswick Iron Cottages* (Helen Lardner Conservation & Design, Fitzroy [Victoria] 1996), p 15.

101 The same form was used under a laminated arch in a Parisian building of about 1844: *Builder* (London), 16 May 1850, p 232.

.

the timber framing of the exterior walls, a possibliity always envisaged in reports of Hemming's system. And it was used to create party walls dividing each pair. Some or all the north-south or passage walls are also of brick, The eastern houses, 183 and 185, were given an outsidle cladding of brick in about 1912. The floors and ceilings were apparently not supplied, for they include dedaru and Australian hardwood, which would have been obtained locally. The same is true of the meranti skirtings of nos 183-5, which Muir believes to have been cut from weatherboads.

The Iron House, Kirribilli, by Conrad Martens, painted 1856; ie The Dingle, built c 1855: State Library of New South Wales FL876313

The Dingle, view during demolition, 1939, Alec Iverson, photographer: State Library of New South Wales ON 388/box 054/item 093 [cropped].

Recent work by Peter Emmett enables us to attribute to Hemmikng a Sydney building which does not survive but which appears in a well-known painting by Conrad Martens. It is The Dingle, at Kirribilli, the house of the barrister Charles Riley, who lived there from 1855 to 1862. It was demolished in 1939.[102] The rather romantic painting by Martens showed it to be clad in corrugated iron, but was lacking in technical detail. Emmett, however, ha identified three photos in the State Library of New South Wales which were taken at the time of its demoltion. The timber framing, and other details consistent with the work of Hemmng, are visible.

[102] A more detailed history has been compiled by Peter Emmett.who also discovered .

.

'Hemmings Portable House Manufactory, Clift House Bristol. A view of the principal thoroughfare as it appeared the first week of August 1853 shewing the second church executed for the Diocese of Melbourne 1000 sittings'. State Library of Victoria H30511..

A coloured lithograph survives of Hemming's manufactory, entitled 'A View of the principal thoroughfare as it appeared in the first week of August 1853 showing the second Church erected for the Diocese of Melbourne. - 1000 sittings'.[103] By February 1854 there was also another church ready for shipment,[104] and soon after this Hemming advertised that there could now be seen at his works four churches and chapels, an unspecified number of two-storeyed hotels, and an emigrants' home for 72 people.[105]

When Bishop Perry planned to import churches to Melbourne he was fortunate in obtaining the approval of the Society for Promoting Christian Knowledge, which made a grant to assist the project.[106] Perry then approached the Birmingham manufacturer J H Porter, who quoted £3 a seat as his minimum price, but Hemming halved this by offering a church for six hundred at £1,000, for eight hundred at £1,250, and for one thousand at £1,500.[107] 'We may soon be gratified,' according to an English report, 'with the novel spectacle of

---

103 Historical Collection, La Trobe Library, SLV.

104 *Illustrated London News,* 18 February 1854, p 141.

105 *Illustrated London News,* 1 April 1854, p 229. It is mentioned that the timber work is seasoned in the extensive drying houses at Clift House. Enquiries are invited at the works (Clift House, Bristol), as well as at Mr N Hemming's, 93 Gracechurch St, London; Baker St Bazaar, London; Josias F Browne and Co, Glasgow; T Mather, Newcastle; Messrs M'Donald, Belfast; T Ferris, Londonderry.

106 *Geelong Advertiser,* 22 August 1853, supplement p 1; Goodman, *The Church in Victoria*, p 205.

107 Turner to Bishop Perry, printed in the *Church of England Messenger,* 1853, p 189; quoted Lewis and Lloyd, 'Portable Buildings', p 12, and see also p 13.

clergymen leaving our shores from time to time for Port Phillip, each of these taking his church and parsonage house with him.'[108]

Before being despatched the first church was opened for a one-off service at Hemming's works on 15 May 1853. It consisted

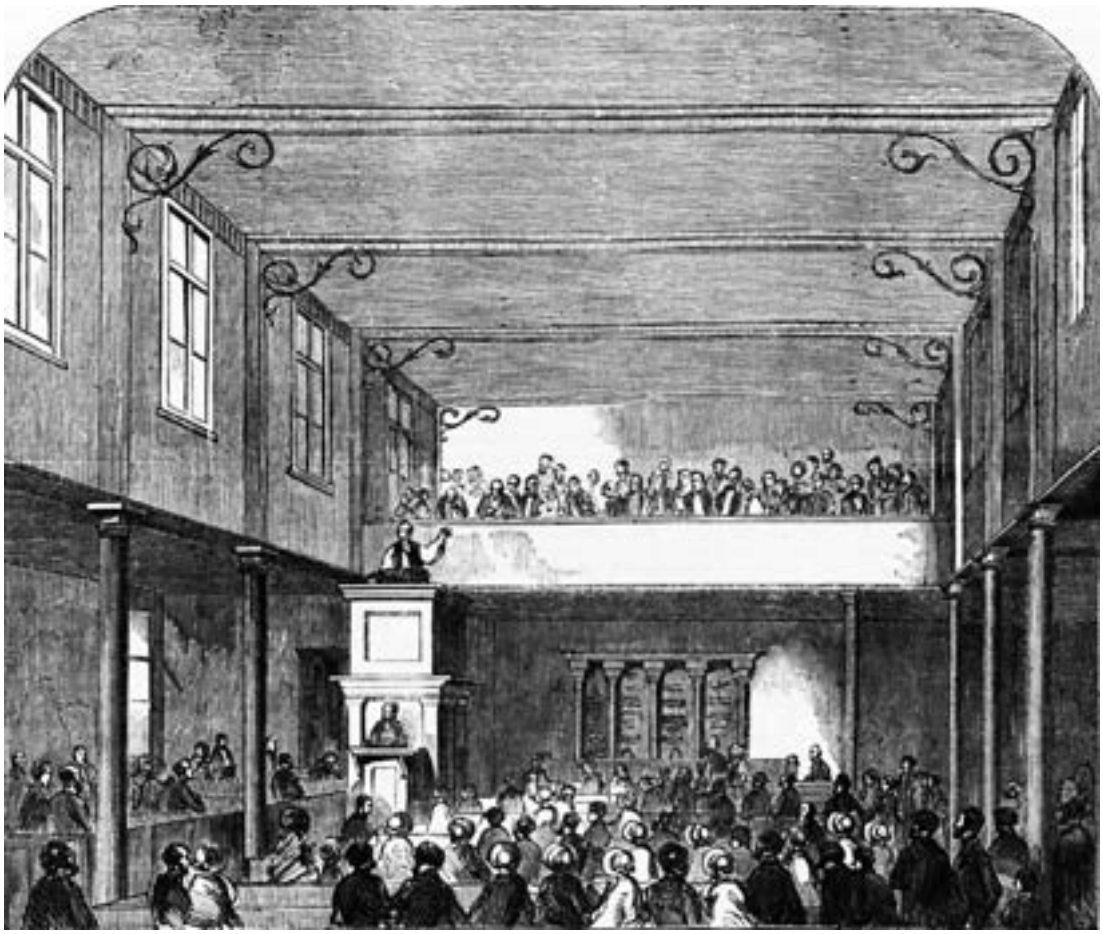
> of a framework of timber, cased on the outside with galvanised corrugated iron, and lined with boards, leaving a space of four inches and a half or more between, to be filled up afterwards with any convenient non-conductor - such as straw, sawdust, wool, or sun-burnt bricks. The ceiling under the roof, which is of iron, is lined with inodorous felt, as a non-conductor of heat with an under ceiling of canvas, with paper, which to the eye has the appearance of an ordinary ceiling of lath and plaster: the space between the felt and galvanized iron roof to be filled with straw or thatch. The lining of boards is further lined with strong canvas, and covered with a suitable marble paper. The floor consists of oak sleepers, with an inch and a half boards; the lower frame of the building is also of oak. The church ls of a pleasing appearance outside, with a small belfry-tower in front; it has a nave, and two aisles, the roof of the former being higher by some feet than that of the latter. The seats arc all open and moveable; the divisions and other fittings are of a light open ironwork.'

The accompanying parsonage was 'decent-looking', with 'six snug rooms'.[109]

---

108 *Church of England Messenger,* 1853, pp 251, 189 quoted Lewis and Lloyd, loc cit. Another eport gives £525 as the cost of a six room parsonage with flooring and stove, but later in the same report a six roomed house costs £315, giving an estimated total, including feight and erction, not exceeding £500: *Geelong Advertiser,* 22 August 1853 supplement p 1.

109 *Church of England Messenger* (Melbourne) 1853, p 251, quoted in the *Sydney Morning Herald,* 21 October 1853, p 5.



'Interior view of an iron church for Australia': *Lady's Newspaper,* 4 June 1853, p 353.

Trintiy Church Williamstown, by Andrew Rider, photographer, c 1865. State Library of Victoria H86.98/638.

This church was destined, with the parsonage, for the Melbourne suburb of Williamstown.[110] After twenty years a stone church was built at Williamstown, and the iron building was removed to become the Sunday school of St Phillip's, Collingwood,[111] where it remained until it was demolished early in the twentieth century.

110 Goodman, op cit, p 207.

111 *Argus* (Melbourne), 13 October 1875, p 6; Goodman, *The Church in Victoria,* pp 207-8.

St Paul's Church, Gisborne: postcard from the Rose Series, P 4309. State Library of H29126.

The flank of St Paul's, Gisborne, on its later site: Miles Lewis.

A much larger church was sent to Sandridge [Port Melbourne], where it stood until destroyed by a storm in 1898. The third church, the second in order of erection on site, was a much smaller structure,[112] probably of six hundred sittings. It is the only Hemmig church which suvrives – or survives in part - today, It lay unwanted in St James's Church yard in Melbourne, until the

112 *Argus* (Melbourne), 24 August 1940.

packages were carted to Gisborne ant it was put up, with a brick vicarage, on six hectares of land on a hill on the Melbourne side of the town. In 1930 the church was moved to its present more central position at the corner of Fishers and Brantome Streets in Gisborne, and re-opened for service. In 1949 it was declared unsafe and was sold to the Eagley Woollen Mills, which rebuilt the roof, removed the tower, constructed a new brick facade at the west, and otherwise renovated the building, but in 1961 it was re-purchased by the Church of England.[113]

Some other churches were never put up at all, and by the end of the century, the iron churches were regarded as

> hot, ugly and perishable. The scorching sun draws the nails, curls the iron plates, and makes the interior as hot as a baker's oven. The style of architecture is hopelessly unpleasing, and such as suggests the factory or the warehouse.[114]

Congregational Church, Bourke Street, Sydney: *Photographs of Public and other Buildings,* p 89 (no 267)

---

113 *Argus* (Melbourne), 25 January 1930, p 19; *Age,* 28 June 1930; Read, 'Prefabricated Buildings and Structures', pp 39-40, largely quoting a *Back to Gisborne* celebration booklet of January 1954; EG Robertson, *Victorian Heritage* (Melbourne 1960), pp 48-9. There are some discrepancies between the accounts, especially in that Robertson erroneously dates the moving of the church to 1874.

114 Goodman, *The Church in Victoria,* p 208.

Apart from these these Anglican churches, several were reportedly ordered by the Roman Catholics,[115] though they seem not to have eventuated. In Sydney, however, the Congregatonalists put up a Hemming church at Bourke Street, Surry Hills. tt was later moved, and ultimately demolished.[116]

'Portable House for Erection in the Colony. The Melbourne and Colonial House Investment Company, 13, Gresham St. London.' Australian National Library, Rex Nan Kivell Collection, NK 481.

Amongst the surviving Hemmng illustrations is another house supposedly made for the Melbourne and Colonial House Investment Company, referred to above. It is a single storey, box-like building, quite unlike Hemming's earlier works, with the roof pitch concealed behind a parapet on which sixteen classical urns are distributed at intervals, and with classical pilasters articulating the walls. The building is U-shaped in plan, and the view shows the rear, with the internal court fenced off at the open end.[117]

115 *Builder* (London), 17 December 1853, p 764.

116 Lindsay Seers advised me, 1 February 2013, that the building was sold for £95 and moved to Stewart Street to become a 'dance hall and place of entertainment'. It was still standing in 1914.

117 'Portable House for Erection in the Colony. The Melbourne and Colonial House Investment Company, 13, Gresham St. London.' Australian National Library, Rex Nan Kivell Collection, NK 481.

House; 'The Melbourne and Colonial House Investment Company, 13, Gresham St. London'; 'Hemming's portable Building Manufactory, Clift House, Bristol, and Bow Nr. London', view: Baillieu Library, University of Melbourne. The same lithograph, differently titled is in the State Library of Victoria H30150. .

Unlabelled house, design no 43, costing 1,700 [?guineas], plan, apparently the same house as the previous. Broadsheets held by the Baillieu Library, University of Melbourne.

A very similar design (or perhaps even the same design flipped over), is shown in another lithograph, also of a house said to be for the Melbourne and Colonial House Investment Company,n and this building has actually survived The apparent front elevation consists of a central door with two double-hung sash

windows (as they appear to be) on each side, and a simple verandah running the full length on six columns with ornamental cast iron brackets at their tops.[118] The side or long elevation shows the same six classical pilasters as in the previous illustration, but it inclides the main entrance to the house. The plan corresponding with this is labelled as design No 43, costing 1700 [?guineas]. It shows that this main entrance opens into a large lobby, labelled 'hall', twelve feet [3.6 m] square, and thence into a true hall of 12 by 27 feet [3.6 x 8.1 m]. Around this hall are grouped a number of large rooms, while at the back the service rooms form two wings with a yard in between, as in the previous example.[119]

A second copy of the former lithograph is held by the State Library of Victoria, but bears a different (contemporary) caption, reported to be 'Prefabricated House erected for Messrs. J Clinch & Sons, Sydney'.[120] But there was no J Clinch & Sons in Sydney, and it appears the lithograph reference is to John Clinch & Sons of London,[121] proprietors of a private bank, the Oxfordshire Witney Bank.[122] Nothing in its known history links Clinch's bank with the Melbourne and Colonial House Investment Company, but is possible that it was had been acting on behalf of the Australian purchasers, who were the Oxley family. Their house, which stands today, is 'Wingecarribee' at Bowral, New South Wales. Two other villas of the same design are said to have been shipped to Victoria and to Queensland, but they no longer stand,[123] and it may well be that there were minor differences, which might account for the differences in the lithograph views.

---

118 Broadsheets held at the Baillieu Library, University of Melbourne; also Rex Nan Kivell Collection, National Library of Australia, NK 481.

119 Broadsheets held at the Baillieu Library, University of Melbourne.

120 State Libary of Victoria H30510. The caption is concealed by the mount, and the transcription of it is probably incorrect, as the word 'prefabricated' was not in use at the time.

121 The National Museum of Australia holds a document 'Duplicate / Drs Estates Adm'l John Gore Mrs Sarah Gore & Com'r Graham Gore dec'd in Acc't Curr't with John Clinch & Sons', dated 'London 17th Dec'r 1858 / John Clinch & Sons'.

122 *Sun* (London), 29 October 1858, p 3; *London Evening Standard,* 23 December 1860, p 4.

123 Gatis Gregors, 'Prefabrication in Australia 1788-1920' (2 vols, BArch, Sydney University 1981), I, p 67.

Wingecarribee, 8 Willow Rd, Bowral, c 1854-7, view: Miles Lewis.

Wingecarribee, entrance face: Oxley College Alumni [cropped]


Wingecarribee verandah view: Miles Lewis. Corner detail: Bob Irving

The house which became Wingecarribee is supposed to have been ordered in 1853 by J M Oxley, son of the explorer, and to have reached Sydney in 1854.[124] But the Oxley family had second thoughts, as Henry Molesworth Oxley's diary for 15 March 1855 records 'Arranged to have the iron house that we sent for sold if possible.'[125] There can be litte doubt that this advertisemnt, lodged on that exact date, applies:

> FOR SALE, a large Iron House, of nine rooms, with rooms for servants, Imported tor a gentleman who has now no use for it. Plans to be seen and terms made known on application to CAMPBELL and CO., Campbell's Wharf, March 15. [126]

Even this may not have been the first attempt to dispose of it, for an earlier advertisement in the *Sydney Morning Herald* correlates well with the building, and the similar phrasing 'has now no use for it' and 'having no use for it' suggests that the two advertisements are from the same source.

> FOR SALE, an Iron House, which is being landed. It is a pretty villa residence, containing 8 rooms. built by Hemming, of Bristol, whose workmanship Is acknowledged to be the best in England. The

124 Freeland, *Architecture in Australia,* pp 113-114.
125 Information from the Oxley family diaries, Mitchell Library, kindly provided by Megan Marttn, 2012.
126 *Sydney Morning Herald,* 15 March 1855, p 2.

> proprietor having no use for it. is prepared to sell it without reference to profit. The plans may be be [*sic*] seen and particulars known on application to Messrs. GOOLD and FIELD, architects, George street.[127]

This earlier advertisement indicates that the building has only just arrived, whch is difficult to reconcile with an order placed in 1853.

As the house apparently did not sell, the Oxleys finally erected it in 1857.[128] According to H M Oxley:

> The whole of the materials having been imported ready fitted, with a view to saving expense, but in consequence of breakage and various difficulties, the experiment turned out a very troublesome and unsatisfactory one, and little or no saving on the cost of erecting an ordinary brick one.[129]

The house as built differs from the illustrations in that it has a verandah attached to three sides rather than one. But this is a framed timber structure with cast iron brackets and a sheet iron roof, and could easily have been decided upon at the time of erection.

Wingecarribee, interior view in the former courtyard, and detail in one room: Miles Lewis.

127 *Sydney Morning Herald,* 25 January 1855, p 6.
128 Freeland, *Architecture in Australia,* pp 113-114.
129 Maurice Cantlon, *Homesteads of Sothern New South Wales 1830-1900* (Queensbury Hill Press, Carlton [Victoria] 1981), p 102.

The plan accords well with that reproduced above, but for the fact that the open court within the U has been filled in at a later date. A sheet of waxed paper labelled 'Plan No. 1' was still held at Wingecarribbee in 1981, bearing the maker's instructions

> The plan shows all the framework of the outer sides and the marking and numbering. The struts are lettered A B C. A always being the bottom strut and B the next and so on. The uprights are numbered to correspond with the numbers on the bottom sill and are marked near the bottom and facing the number on the sill.[130]

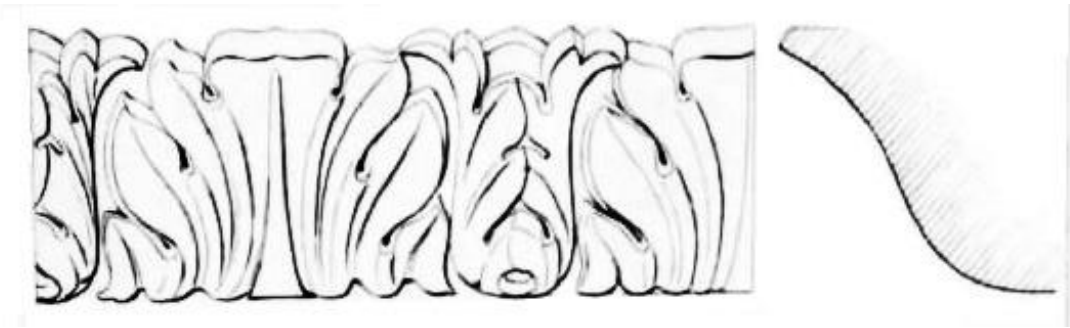
This seems to imply that the struts were noggings placed horizontally between the uprights, or studs. The materials consisted of framing timbers, oak for sills, cedar for ceiling panels (which seems unlikely to have been supplied from Bristol), and 17 gauge [1.4 mm] galvanised iron for the walls, roof and ridge capping. The walls have a cavity space of one foot [300 mm], much larger than was typically provided in Hemming's buildings for insulation. The ceiling was supposed to have been insulated with felt, but this did not reach the site, and stringybark was used instead. The package included six panelled oak doors for use in the interior, external louvred window shutters, and presumably the papier mâché rinceaux ceiling borders which were attached to a timber base.[131]

Wingecarribee, a panelled ceiling with papier mâché border and cornice mould: Miles Lewis.

130 Maurice Cantlon, *Homesteads of Sothern New South Wales 1830-1900* (Queensbury Hill Press, Carlton [Victoria] 1981), p 102..

131 Freeland, *Architecture in Australia,* pp 113-114.

Wingecarribee, detaiul of papier mâché rinceau mounted on a board: Miles Lewis.



A cyma moulding: C F Bielefeld *On the Use of the Improved Papier-Mâché in Furniture, in the Interior Decoration of Buildings, and in Works of Art* (Bielefeld, London c 1835), no pagr

A surviving ceiling shows the system. It is a grid into which the long panels are dropped, resembling the ceilings of some other manufacturers. Around the edge of the ceiling is a margin of flat boards to which a papier mâché rinceau is attached. The board must have been supplied by the maker with the papier mâché already in place, and could be screwed into position. A much smaller papier mâché mouding is attached to the top of the adjoining wall surface The latter is a foliated cyma, identifiable as the work of the leading London manufacturer C F Bielefeld. The rinceau greatly resembles Bielefeld's work, but a specific pattern for it has not so far been identifiedIt s also reported that there are papier mâché egg-and dart mouldings around the door panels.[132]

132 Judith O'Conell, 'Wingecarribbbee Shipped and Shaped', *Highlife* , ?2001, p 44.

In February 1855 Hemming was advertising in New Zealand,[133] which may have become a relatively more promising market after the collapse of the gold boom in Victoria. He also did work for the British Army, constructing barracks at Beggar's Bush and at Trim, in Ireland, and five iron buildings at Shorncliffe to be used as regimental schoolrooms.[134] He then built the Royal Aldershott Clubhouse. But there is no specific evidence to indicate that these buildings were prefabricated, or even made any special use of iron.[135] By now Hemming's works had moved from Clifton in Bristol, to Bow, London. One of his sons, Frederick, had been operting a branch at Birkenhead, Liverpool, and both Hemmings, like many other contractors, supplied large numbers of huts for the Crimean War. Samuel Hemming took on contracts totalling more that £65,000; Frederick Hemming & Co – presumably still at Birkenhead - £9,500[136] Samuel also put forward a proposal for a form of half-buried iron barrack for use in the Crimea, which was considered by government but not apparently adopted.[137]

In 1858 Samuel Hemming continued to be listed at Old Ford, but Samuel Charles Hemming & Co are also shown as iron building manufacturers, of 46 Broad Street Buildings, EC. This Samuel Charles was another son, who had been involved in the business for some time, but now seems to have been operating independently. Then in 1859 Samuel Charles Hemming is listed at Old Ford as well. Nothing more is heard of the Birkenhead factory, and Samuel Charles was for all practical purposes the sole heir to his father's business. His known output is slight, and the last we hear of him as a prefabricator is in 1873.

---

133 *Daily Southern Cross,* 6 February 1855), p 1, a reference kindly supplied by Nerida Campbell. This is erroneously dated to 1865 in Jeremy Salmond, *Old New Zealand 1800-1940* (Auckland 1986), p 29.

134 *Courier* [Hobart], 22 December 1855, p 2, quoting the *Daily News*.

135 *Illustrated London News,* 29 September 1855, p 397. Hemming (referred to in the report as 'Herring') had himself designed the 'chaste and appropriate' decorations. The *Daily News* report had put the cost at only £2000.

136 Great Britain, Parliamentary Papers, *Army Huts. Return to an Address of the Honourable House of Commons, dated 14 May 1857; - for "Returns of the Number of Huts supplied to the Ordnance or War Departments during the Years 1854-5 and 1855-6; the Appropriation of the same; together with the "And, of the Names of the Several Contractors; Amount of each Contract, and Price per Hut, with Dimensions; the present Extent of Hut Accommodation in England and Ireland; and the Number of Troops hutted on the 1st day of April 1857",* pp 5-6.

137 *Courier* [Hobart], 22 December 1855, p 2, quoting the *Daily News*.

ROBERTSON & LISTER

004 235 Rowntree Avenue, Birchgrove, Sydney
016 Legislative Council Chamber, Macquarie St, Sydney
091 Corio Villa, 56-58 Eastern Beach Rd, Geelong
092 former Orderly Room, rear 51 McKillop St, Geelong
093 Brown Brothers Store,17-19 Mercer St, Geelong
094 James Hogg house, Old Gippstown, 211 Lloyd St, Moe, Victoria
095 former service station [originally church], 21 Main St, Bridgewater, Victoria
096 iron house fragment, rear 306 Bank Street, South Melbourne
097 Robertson & Lister [maker] iron house, 399 Coventry St, South Melbourne
098 iron house, Pioneer Settlement, Monash Drive Swan Hill, Victoria

Australia received not only the system-built corrugated iron buildings of the major English manufacturers, but also a few more substantial cast iron structures in the older tradition of iron prefabrication. All of these more impressive works originated in Glasgow, and most of them from the one firm of Robertson and Lister. The designs used by the firm were subsequently taken over by C D Young & Co, which has caused endless confusion.

It is necessary, first of all, to clarify the overall position. The buildings made by or attributable to Robertson & Lister vary from the finest and most architecturally pretentious cast iron facades, down to utilitarian corrugated iron stores and cottages. The documentation is far more specific in relation to the grander buildings, but these present distinctive technical details in common with the next rank down, and those in turn share details with the humblest ones. Many of the grandest ones are illustrated in a catalogue produced by C D Young & Co in 1856, though there is enough documentation to establish that some, and to suggest that all in this category, are the work of Robertson & Lister, whose business, or at least whose catalogue designs, must have been acquired by Young.

There is no evidence – with one possible exception - that Young actually made any prefabricated buildings at all, or anything illustrated in his catalogue other than structures like the Dublin Exhibition building, the Kensington Gore Museum and the Manchester Art Treasures Exhibiition, for which he was a regular building contractor or subcontractor.

The partnership of Robertson & Lister (George Robertson and Alexander Lister[138]) appeared in the Glasgow directory of 1848 as smiths, engineers, millwrights and iron roof constructors, at the Victoria Docks, 69 Mitchell Street. In 1853 they are still listed in this way, but they appear also as iron house builders at 340 Parliamentary Road.

---

138 K R Murdoch, 'Charles D Young Final Report' (Glasgow 2006), p 15.

Their first known building is the Fruit Market which survives in Ingram Street, Glasgow, reputedly designed in February 1852 by John Carrick 'with input from John Baird' (though it seems more likely to have been designed by Bell & Miller), and made by Robertson & Lister at the Victoria Foundry.[139] It is not prefabricated, but bears a generic resemblance to their Dismorr building in Melbourne (discussed below).[140]

By 1854 the business appears as Robertson and Co, smiths, engineers, iron house builders and roof constructors, at the Parliamentary Road address only.[141] The transformation of the firm into iron house builders must have been a major investment decision, because when they were subsequently sold up the range of equipment was astonishing.

The first of their buildings for Australia was commissioned by Macfarlane, Bogle, & Co of Glasgow, and completed early in October 1852. It was two storeyed, with a dwelling on the upper level and store below and measured 38 by 28 feet [11.4 x 8.4 m] and 20 feet [6 m] high at the eaves. The building was of corrugated iron with twenty-four cast iron pillars, and though there is no suggestion of any cast iron front, as in some of their later buildings, there was ‘a neat balcony’.[142] We do not know why the building was required, but the probability is that Macfarlane Bogle were sending a representative to open a branch in Melbourne. As a general rule buildings commissioned in this way seem to precede those sent out as speculations.

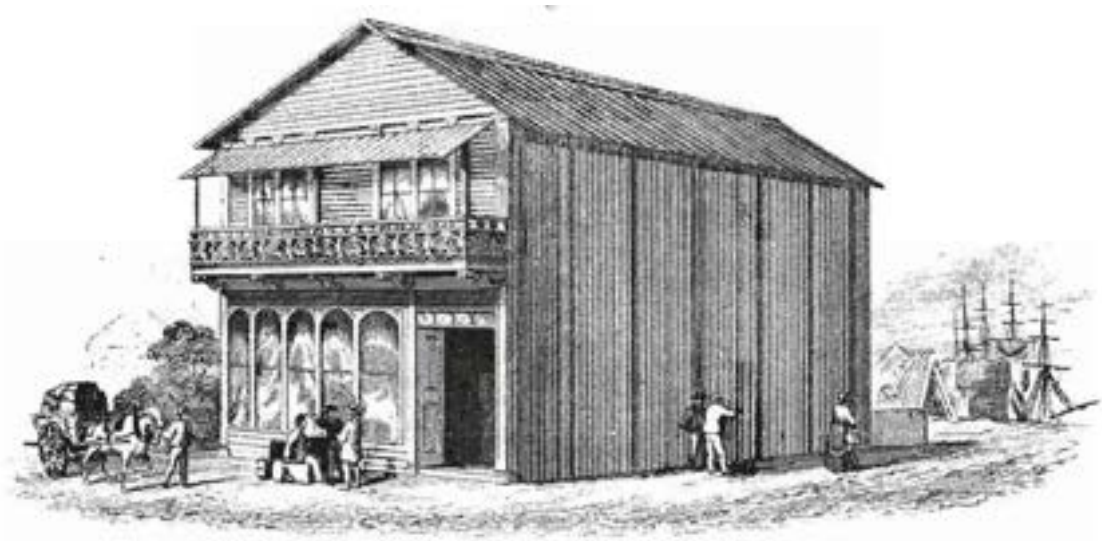
---

139 The building is said to be in good condition: Scottish Ironwork site, http://www.scottishironwork.org.catdetail.asp?ironid=563, consulted April 2004. The information is attributed to Mark Watson, but not otherwise sourced.

140 It is illustrated in Tom Swailes, *Scottish Iron Structures* (Historic Scotland, Edinburgh 2006), pp 5-6, but his suggestion that it resembles the Crystal Palace is absurd.

141 My information is from Mr C W Black, at that time City Librarian, of the Mitchell Library, Glasgow.

142 *Glasgow Herald,* 11 October 1852, p 5. The same report, slightly abridged, appeared in the *Geelong Advertiser,* 23 March 1853, supplement p 1, quoted as being from from an ‘English paper’ and another in the *Sydney Morning Herald,* 10 June 1853, p 2.



One of the ‘shops which have actually been constructed for Melbourne, Adelaide, and other places‘, probably the building completed by Robertson & Lister for William Clapperton & Co in February 1853. Charles D Young & Company, *Illustrated and Descriptive Catalogue … South America and Other Countries* (London & Edinburgh, no date [?1858-9]), plate 25 figure 2.

A second building for Australia was completed in February 1853, and was in many respects similar. It was again commissioned by a Glasgow firm, William Clapperton & Co, and it was consigned to Crombie Clapperton & Co of Melbourne, arriving on the *Clara* on 23 July following.[143] Presumably the Melbourne firm was a branch or offshoot of the Glasgow one, and the building was for their own use. This firm was later listed as Crombie, Clapperton & Findlay, or Clapperton Findlay & Co, drapers and clothiers.[144] The size of this building was almost identical with the previous one, and four similar buildings of various dimensions, nearly complete, were to be seen in Robertson & Lister’s yard.[145]

Robertson & Lister’s more pretentious buildings were quite different in character, with elegant cast iron fronts. Although they continued to produce large numbers of utilitarian corrugated iron buildings as well, their later warehouses no longer had balconies and they mostly had arched rather than pitched roofs. Most or all of Robertson & Lister’s buildings were designed by the Glasgow architects and engineers, Bell & Miller (R D Bell & D Miller[146]).

In May 1853 when Robertson & Lister had fifteen buildings standing at their works (referred to as 346 Parliamentary Road), some of them described as

143 *Argus* (Melbourne), 25 July 1853, p 4.

144 The most useful reference is to 41 Lonsdale street west as the premises lately occupied by Crombie, Clapperton & Findlay: *Age,* 1 October 1856, p 1. But it is unlikely that the iron building was constructed here because the by-laws had been amended to make it difficult to construct iron buildings within the area covered by the *Melbourne Building Act*.

145 *Glasgow Herald,* 4 February 1853, p 5. A slightly abridged version of this report appeared in the *Geelong Advertiser,* 28 June 1853, supplement p1 (and misleadingly implies that all the buildings referred to were made for Clappertons).

146 James Cowan, *Statement of Mr. James Cowan, relative to the Iron Building Sent to Melbourne for use of Free Church there* (Edinburgh 1859).

three storey dwellings measuring 66 by 25 feet [20.1 x 7.6 m] and 33 feet [10 m] high, and others including an 'enormous' warehouse of 83 by 33 feet [25.3 x 10.1 m]. The largest structure was intended as a 'saloon' for the well-known commercial agent, Hart, of Melbourne, weighing 25 to 30 tonnes and costing £600. It was a single room but for two small private apartments partitioned off at one end, and was 'beautifully lined and finished with planking'. In this building Robertson & Lister held a ball, attended by about three hundred people including one Rhind, Hart's local agent. For the occasion the walls were adorned with grand plate glass mirrors and hung with pink drapery and evergreens, the floor covered in white cloth, and a series of superb gaseliers hung from the roof.[147]

These first buildings must still have been of corrugated iron, for nothing is said to the contrary. Robertson & Lister do not seem to have used cast plate iron until later, and they never used it for more than the principal façades of any building. In the *Sydney Morning Herald* of 14 February 1854, Lamont, Carson & Co announced that they had been appointed agents for Robertson & Lister, and they even had an iron building erected at their stores in Lower George Street.[148] Three Robertson & Lister buildings were advertised in Melbourne in March 1855.[149] Buildings attributed to Robertson & Lister were reaching Sydney as late as 21 April 1855:

> IRON HOUSES. - A very superior [*sic*] two-storied galvanized corrugated Iron House is now being landed at Circular Quay; built by Robertson and Lester [*sic*], of Glasgow, also four and two roomed houses, by the same makers. Two only out of the last shipment of iron villa residences remain on hand. C. R. ROBINSON and CO., 35, Hunter-street.[150]

The business failed and was sequestrated on 26 February 1855.[151] We may surmise that a major cause of this was the rise in the price of iron at the time of the Crimean War. The plate iron façades made in Glasgow used iron profligately, and even the corrugated iron was of a heavier gauge than was normal in England. Any manufacturer who was locked into fixed sum contracts would have been drastically affected by the price rise. A secondary but linked cause was the collapse of the Melbourne market. C D Young was to report £1000 lost in bad debts ‘during the late Australian crisis’.[152]

The first of the cast iron fronts made by Robertson & Lister to Bell & Miller's design was probably that of a warehouse destined for the drapery of J S

---

147 *McPhun's Australian News*, 5 (May 1853), p 9.
148 *Sydney Moring Herald,* 14 February 1854, p 8.
149 *Argus* (Melbourne), 24 March 1855, p 2.
150 *Sydney Morning Herald,* 21 April 1855, p 6.
151 *Glasgow Herald,* 2 March 1855, p 7, from the *Edinburgh Gazette,*17 February 1855. See also Murdoch, ‘Charles D Young’, p 14, citing National Archives of Scotland, reference CS 279 / 2137. David Mitchell, of Scottish Ironwork, advises me that the document is Robertson & Lister, Glasgow, sequestration petition, 1855, reference R.33.
152 *Scotsman,* 31 July 1858, p 4.

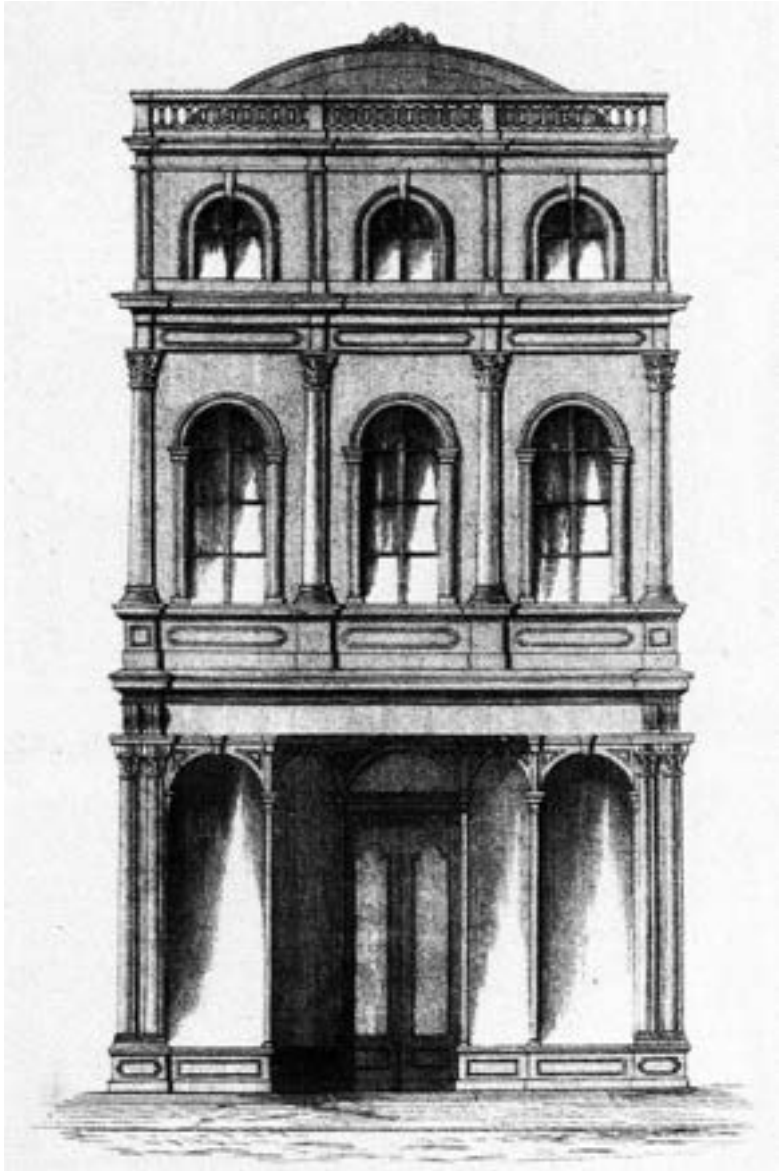
Dismorr in Collins Street, Melbourne.[153] The facade was twenty feet [6.1 m] wide and the side walls of corrugated galvanized iron extended back seventy feet [21.3 m]. The reporter of *McPhun's Australian News,* who was treated to a champagne lunch in the building when it was on the point of being dismantled and packed, retained sufficient of his wits to collect a press release describing the building:

> The first storey is supported on handsome coupled columns, resting on panelled pedestals, and surmounted by bold projecting cornices. Between these columns are slender pillars of polished mahogany. The doorway occupies the centre compartment, and the other compartments are filled with plate glass. The doors are of mahogany, with panels of plate glass, and are fitted with patent self-acting springs, and move both ways on their hinges. The whole front is enclosed by Messrs. Bunnett and Co.'s patent revolving iron shutters. The second storey is sustained by highly ornamental fluted columns, which support a rich entablature and cornice. Circular-headed windows, surrounded by moulded architraves, are placed between the columns. On the third storey is another row of arched windows; and squared pilasters support an ornamental cast iron balustrade along the top of the facade.[154]

---

153 Material collated by the La Trobe Library, State Library of Victoria, from directories, the 1856-7 Electoral Roll, and other sources, sheds some light on Dismorr. A Nathaniel Stewart Dismorr lived in Sydney in the 1840s and was declared insolvent in 1842. James Stewart Dismorr was listed in Collins Street as a haberdasher in 1845 and as a draper in 1847. In 1851 Nathaniel Dismor (*sic*) is at 53 Collins Street, and in 1854 J S Dismore (*sic*) appears at 43 Collins Street East, while Nathaniel Dismoor (*sic*) is still at no 53. In 1855 and 1856 Dismorr and Millar, drapers, are at no 43. There are no such entries for the next three years, but the 1856-7 Electoral Roll shows J S Dismorr as owner of the freehold of 43 Collins Street, though his address is at St Kilda, and Nathaniel Dismorr as being in receipt of a salary from Miller and Dismorr.

154 *McPhun's Australian News,* 7 (July 1853), p 6. Another description, apparently derived from this, appears in the *Civil Engineer and Architect's Journal*, XVI (1853), p 339.



The building made for Miller & Dismorr, or James Dismorr, designed by Bell & Miller, manufactured by Robertson & Lister, and erected in Collins Street, Melbourne by Charles Laing, late 1853, catalogue illustration: Charles D Young & Co, *Illustrations of Iron Structures for Home and Abroad,* no place or date (c 1856), pl 9, design no 15. [Institution of Civil Engineers, London]

The building was novel in that the corrugated iron of the sides, which ran between cast iron pilasters, was galvanized, for the first time in Robertson and Lister's work. The ground floor at the front was occupied by a sale room or saloon, and above it was a mess room for the young men employed in the business, from which rose a stair to their sleeping quarters above. The back part of the building was a full height warehouse, lit by an elegant glass roof,[155] and the front was 20 ft 6 in [6.15 m] wide.[156]

155 *McPhun's Australian News*, 7 (July 1853), p 6.
156 *Argus* (Melbourne), 19 December 1856, p 8.

On 4 November the Melbourne architect Charles Laing called tenders for erecting 'an extensive iron building of 3 storeys in Collins Street for J. S. Dismore [*sic*].'[157] The building was put up for sale in 1856, upon the dissolution of the partnership of Miller & Dismorr.[158] It survived into the early twentieth century as the Collins Street branch of Cole's Book Arcade at 246-250 Collins St.[159]

The Free Presbyterian minister Alexander Cairns, reached Melbourne from Scotland in September 1853 bringing with him the 'very handsome iron house' which was to be put up as his manse. It seems likely to have been by Robertson and Lister, as certainly was the 'splendid iron church,' seating 700, which followed in due course.[160] This church, and its partner, destined for Sydney, were reported in May 1854 to have been completed by the company and opened for divine service before they were shipped::

> The two iron church [*sic*] which have been for some time in progress in the Building Yard of Robertson & Lister, Parliamentary Road, and now about completed, and show, in a striking manner, the applicability of iron to church architecture. These edifices are of the most substantial construction, and from the material of which they are composed, being principally cast iron, the requisites of strength and architectural beauty are combined in a manner that augurs well for the more extensive employment of this material for building purposes, both for the country and the colonies. One of the churches is for the Rev. Dr. Cairns, Melbourne; the other for the Rev. Mr. Salmond, Sydney. They are similar in size and general appearance with the exception that Mr. Salmond's church has got two spires, one at each side, and Dr Cairns' [*sic*] one spire springing from the centre of the pediment. The front elevation presents a handsome facade, the chief feature of which is an arcade of ornamented columns and arches, standing out in bold relief, supporting a pediment, and flanked at the sides by massive towers, in which are placed the stairs leading to the galleries. The lower series of columns is roofed by a balcony, forming an open porch, whence access is had to the church and to the stairs of the galleries. The dimensions of each are seventy-three feet in length and forty-five feet in breadth. The interior is fitted up with galleries and handsome pulpit at one end. It is lighted on each side by a series of circular headed windows, each twenty feet in length; and at the back by two large stained glass windows. The vaulted ceiling, supported on cast iron arched girders springing from the iron columns, rises to a height of forty feet, and has a very fine effect. In the crown of the arched ceiling will be placed iron or zinc perforated gratings, for the purpose of securing proper ventilation, so essential in a warm climate. The external roofing is formed of corrugated iron. A neat vestry house, entered from each end by enclosed porches, is placed at the back of the church. The spires will not be elevated to their places in this country, but are merely erected on the

---

157 *Melbourne Herald*, 4 November 1853, p 3; *Argus* (Melbourne), 5 November 1853, p 1.

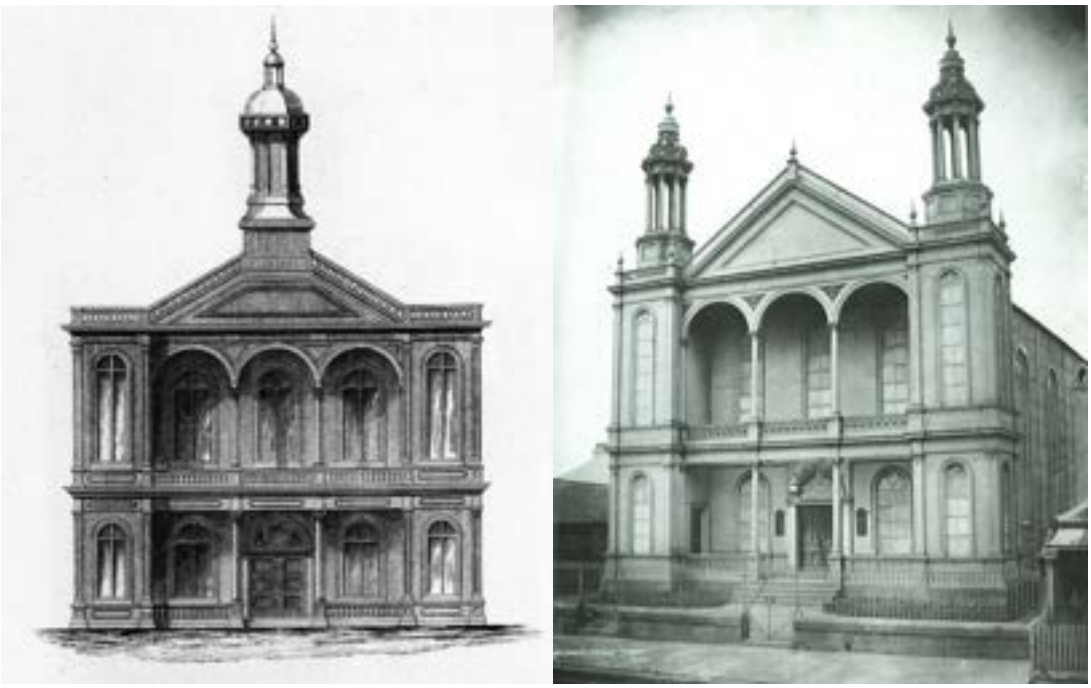
158 *Argus* (Melbourne), 19 December 1856, p 8.

159 It can be seen to the left of Howey House in a photograph in the Howey papers, Melbourne University Archives, LS 5/3/2, prior to its replacement by 'Howey House Extension' or 'Lyric House'.

160 *Banner* (Melbourne), 16 September 1853, p 7.

> ground, in front of the churches, to show their effect. Both of these churches are from the designs of R. B. Bell & D. Miller, civil engineers and architects.[161]

It is easy to identify the two churches which are described. The double-spired one became the Free Presbyterian Church in Sydney, and the single-spired one was sent to the Free Presbyterians in Melbourne, but never put up. The single-spired version is also illustrated in C D Young's catalogue, as previously had been Dismorr's warehouse.



Church made for the Free Presbyterians, Melbourne, designed by Bell & Miller, and manufactured by Robertson & Lister, but never erected: Charles D Young & Co, *Illustrations of Iron Structures for Home and Abroad,* no place or date (c 1856), pl 11, design no 17.
Free Presbyterian Church, Macquarie Street, Sydney, designed by Bell & Miller, and manufactured by Robertson & Lister, later the Lending Library: *Art and Architecture,* 1910, p 123.

---

161 *Glasgow Herald,* 26 May 1854, p 7. Reports based upon this appear in the *Builder*, XII, 593 (17 June 1854), p 326, and the *Civil Engineer and Architect's Journal,* XVII, 244 (July 1854), p 278.

Former Free Presbyterian Church, Macquarie Street, Sydney, during dismantling, 1899: State Library of New South Wales PXE 1077 [cropped].

The Sydney church was put up in Macquarie Street in 1854,[162] and there it was used for twenty years, first as the Macquarie Street Free Church, then as St Stephen's Presbyterian Church until it was bought by the government in 1874. It was dismantled and moved in 1899, and subsequently demolished.[163]

---

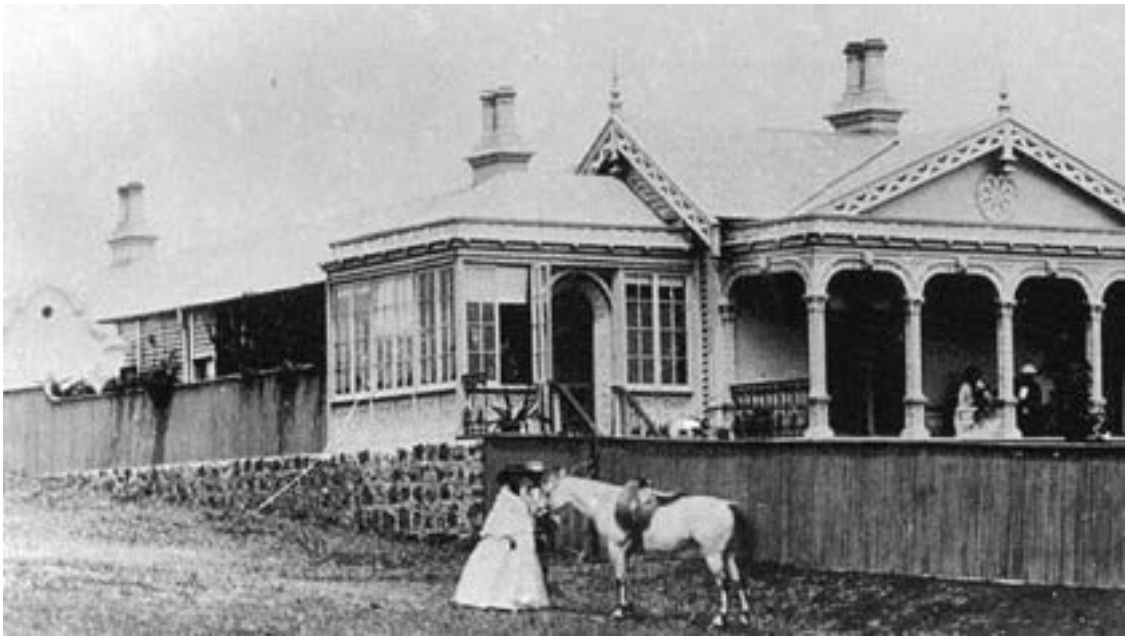
162 *Illustrated Sydney News,* 14 October 1854, p 295, cited in L J Dockrill, 'Developments in Architecture in New South Wales during the Victorian Period' (6 vols, PhD, University of New South Wales, 1983), I, p 73.

163 ** Gilbert Herbert, 'Some Problematic Iron Buildings of the Eighteen-Fifties', pp 12-13, where he cites additional sources: J Campbell Robinson, *The Free Presbyterian Church of Australia* (1947), p 98; an undated newspaper clipping; an advertisement in the Parkes correspondence, volume 22, p 110; and ML document 314, all in the Mitchell Library, Sydney. He points out that the Presbyterian Free Church and St Stephen's Presbyterian Church are one and the same building, not separate ones as implied by E G Robertson, *Sydney Lace* (Melbourne 1962), pp 13 and 16.

Villa for W N Gray, Geelong, designed by Bell & Miller, manufactured by Robertson & Lister. Charles D Young & Co, *Illustrations of Iron Structures for Home and Abroad,* no place or date (c 1856), pl 9, design no 14.

Corio Villa, Geelong, 1853-4, elevation, from a measured drawing survey by R Graham & M Krause, 1981, sheet 2, detail: State Library of Victoria H82.190/2. One curved portico has been moved northwards at the time of erection, and a square porch added at a later date. The Edwardian timber addition is visible at the left.

Coro Villa, Eastern Beach, Geelong, as erected c 1854-5 view c 1861: State Library of Victoria H2177.



Corio Villa, 1860: *Geelong Advertiser,* 21 April 2021.

A building which appears in Young's catalogue as 'a Country Villa, in a neat style of architecture, with Verandas to correspond',[164] was assembled in a slightly modified form,[165] and survives today as 'Corio Villa' at 56-8 Eastern Beach Rd, Geelong. It was ordered by or on behalf the police magistrate W N Gray,[166] and was despatched on the *Nautilus,* which sailed from Liverpool,[167] presumably after loading the house in Glasgow, and reached Geelong in August 1853.[168] The building had been consigned to the Geelong merchant Alfred Douglass,[169] who was presumably acting on behalf of Gray, for Gray himself was stationed some days travel to the west. Indeed this was probably the reason why the house was not forwarded to him, for the cost of transporting it overland would have been enormous. The components must have remained in Douglass's hands in a state of limbo until June 1854, when Gray died at Hamilton in western Victoria.[170]

---

164 Young, Iron *Structures for Home and Abroad,* pp 3-4 and plate 9, design 14.

165 What is now the west elevation had three gables, two at the north end and one at the south, with a semicircular porch attached to those at either end. As built the porch at the south end has been eliminated, and there are two at the north end.

166 E G Robertson, 'Cast Iron Ornamentation', *Victorian Historical Magazine,* XVII, 4 (November 1971), p 692. Allan Willingham has claimed that the order for the house was placed with C D Young's Liverpool branch, a fact attributable to the Grey family's ownership of property near Liverpool, and previous business dealings with Young: information from Allan Willingham, November 2000. But as the house was not made by Young, and his Liverpool branch did not apparently exist at this time, this assertion can be disregarded.

167 Marten Syme, *Shipping Arrivals and Departures Victorian Ports Volume 2 1845-1855* (Roebuck Society, Melbourne 1987), p 423.

168 *Geelong Advertiser,* 17 August 1853, p 2.

169 *Geelong Advertiser,* 17 August 1853, p 2.

170 *Geelong Advertiser,* 20 June 1854, p 5.

It seems that Douglass resolved the issue by buying the components from Gray's estate at a much reduced price[171] and putting it up in Geelong for his own use. A month after Gray's death the architect Andrew McWilliams called tenders for the labour required to erect a nine-roomed iron house at Geelong.[172]

Corio Villa, with its early or original decoration representing ashlar masonry, in a photograph of the H P Douglass family: courtesy of Ian Shearer.

171 In a note of 22 September 1949 Mrs Sampson says 'I believe he bought the house at rather a bargain price'

172 *Geelong Advertiser,* 20 July 1854 p 5..

Bell & Miller's assembly drawing with 'cast iron side wall', 'corrugated iron side wall', 'front corrugated iron wall' and 'back view', copy signed 'N. R. McC.': courtesy of Ian Shearer [digitally restored].

The *Geelong Observer* described the building as

> a beautiful villa residence, in the Italian style, erected by Mr Alfred Douglas [*sic*]: the whole edifice is of cast iron, but so put together, painted, and embellished, as to wear the appearance of some other material, such as stone or brickwork. The rooms inside are capacious and lofty, the appearance outside elegant, light and chaste. The building contains 13 apartments, and has a highly pleasing effect.[173]

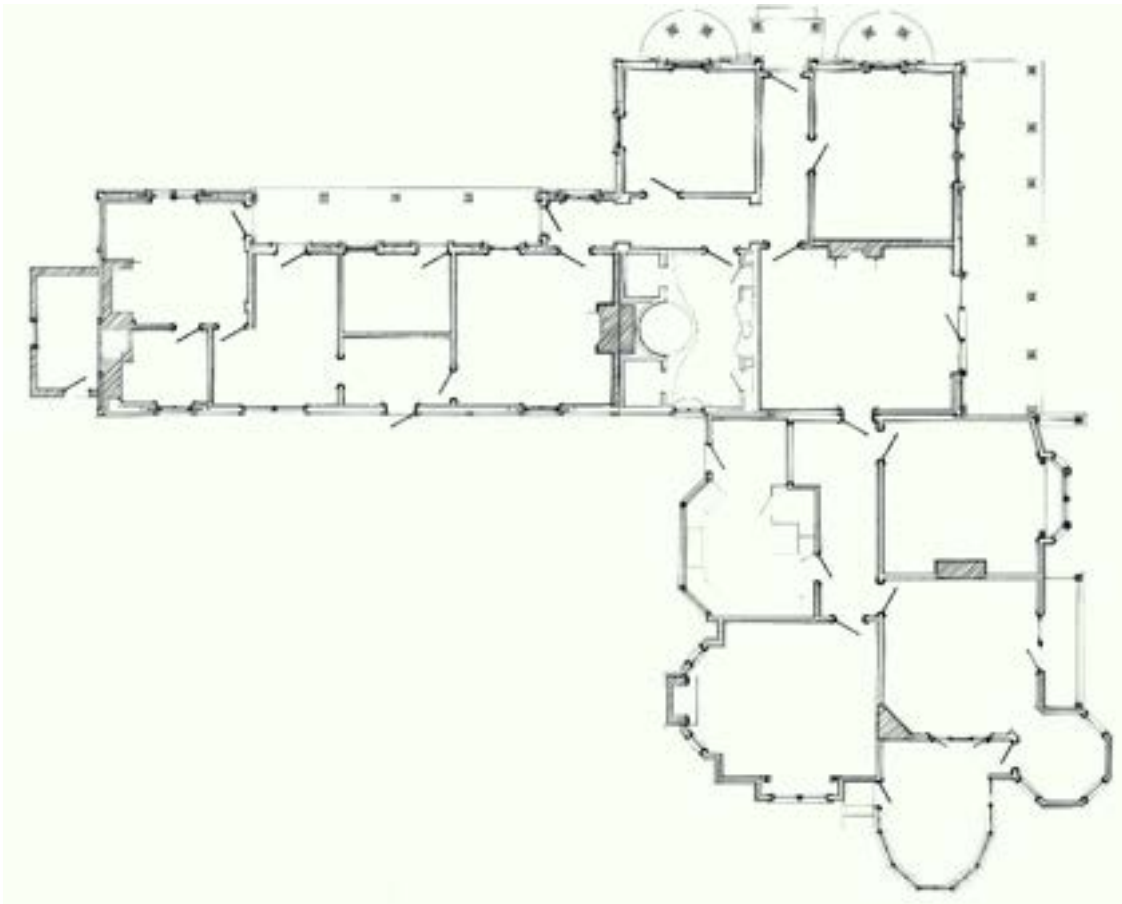
The description is a just one, and it would be difficult today for an observer to establish whether the wall surfaces were iron or cement render. Originally (though perhaps after the *Observer* report) they seem to have been actually coloured in imitation of stone blocks, as shown in a somewhat later photograph, though the joints represented bear little or no relation to the actual joints in the ironwork. This consists of cast iron plates measuring 3 ft x 3 ft x 1/2 in (914 x 914 x 13 mm) with inward pointing flanges around the perimeter, through which they are bolted together.[174] This is essentially the same as the construction of the cast iron facade of the Legislative Council Chamber in Sydney discussed

---

173 Quoted in the *Australian Builder,* 26 (28 August 1856), p 208.

174 Drinnan, op cit, p 6, gives the sizes, and for the flanges I rely on verbal information from Mr Chris Smith of the Historic Buildings Council, and a photograph taken by him. Measured drawings of the house, done by R Graham and M Krause in 1981, are held by the State Library of Victoria.

below,[175] and of some of the early cast iron lighthouses by Alexander Gordon. A drawing showing the assembly of the plates and sheets in the four elevations survives.[176] It is a copy of an original by Bell & Miller, and was held by the Douglass family, demonstrating that one of the myths surrounding the house - that it was put together without the aid of drawings – is at least partially untrue.



Corio Villa, Eastern Beach, Geelong, plan, by R Graham & M Krause, State Library of Victoria H82.190/1. The lower or east wing is an Edwardian timber addition, and the square porch at the top an earlier addition in iron. North is to the right. The north and west walls of the iron building are plate iron, the east and south walls corrugated iron.

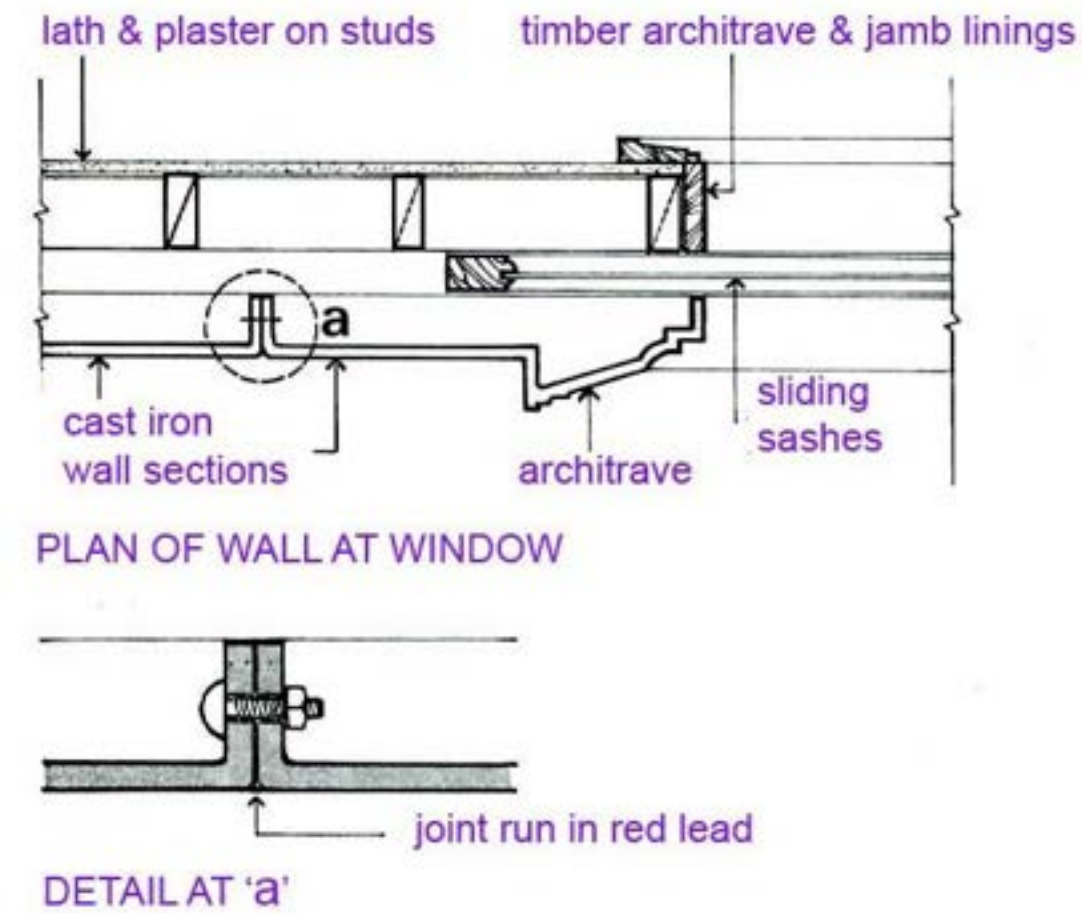
175 Verbal information from David Earle, 28 May 1985.

176 The drawing is a copy, signed 'N. R. McC.', orpossibly 'N. A. McC.' Ian Shearer has kindly provided a scan of it, but the location of the original copy, intended to be deposited in the Melbourne Museum, is unkown.

Corio Villa, Eastern Beach, Geelong, view of west front. Miles Lewis.

Corio Villa, details of the cast ironwork: Miles Lewis.

Corio Villa, Eastern Beach, Geelong, detail of the inside face of the west wall, showing timber studs stripped of lath and plaster, and behind these bolted iron tray construction. Miles Lewis.

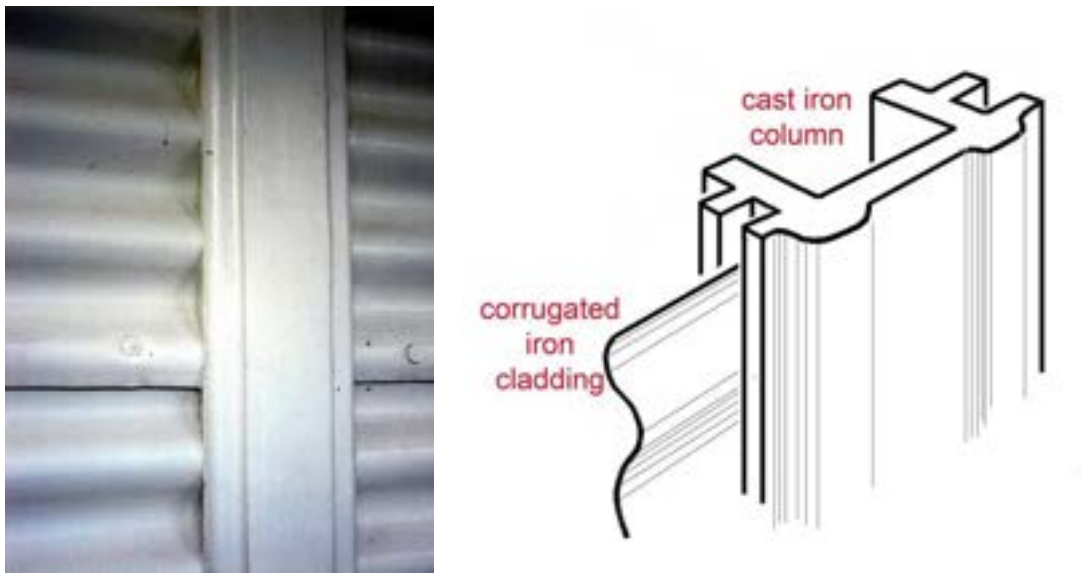


Corio Villa, Eastern Beach, construction of the cast iron plate walls: Geoffrey Drinnan [reworked]. Drinnan's inside elevation of a section of walling, showing 600 x 300 mm panels laid in stretcher bond is incorrect, and is not reproduced here.

The decorative castings of the verandah columns, valance, and especially the barges, are exceptionally delicate in execution, and there is nothing to compare with them in any other prefabricated iron building. The rear walls, by contrast, are simply heavy gauge corrugated iron running horizontally between cast iron stanchions, just like the side walls of the Macquarie Street church as seen in photographs. The internal lining is of lath and plaster, making a total wall thickness of about 230 mm, into which slide the cast iron window sashes.[177] Young's catalogue describes the sashes, as well as the doors, as being of mahogany; the walls (of unspecified material) lined and prepared for paper; and the ceilings of papier mâché. Certainly inspection shows the vegetable ornament on the soffits and reveals of arched openings in the passage to be of papier mâché, notwithstanding Drinnan's description of it as 'fine woodcarving which might well be from the chisel of Grinling Gibbons.'

177 Drinnan, 'Corio Villa', p 6.

Corio Villa, a cast iron stanchion from the rear [corrugated iron] wall, and a cast iron gutter removed from the structure: Miles Lewis.



Corio Villa, detail of the corrugated iron rear wall, and diagram of the construction: Miles Lewis.

The catalogue design for this house is by Bell and Miller, as is the assembly drawing, and there can be little doubt that it was made by Robertson & Lister, rather than C D Young. The order for the house must have been placed before Gray's death on 11 June 1854, which would have been during the period when Robertson and Lister were still making cast iron fronts. There has been some suggestion[178] that the original foundry which made Corio Villa was burnt, and all the patterns destroyed, before 1858, but this seems to be without foundation. What did happen, however, is that Robertson & Lister's business failed in February 1855, as we have seen (and Young's followed in 1857-8). C D Young, who bought the rights to the Robertson & Lister designs (as will appear below) could have bought the complete or incomplete house and exported it in his own name in fulfilment of the original order. But this is very unlikely, as it is not referred to in the sale of Robertson & Lister's assets, and even if it were the case, Young would be unlikely to have fabricated any substantial part of it.

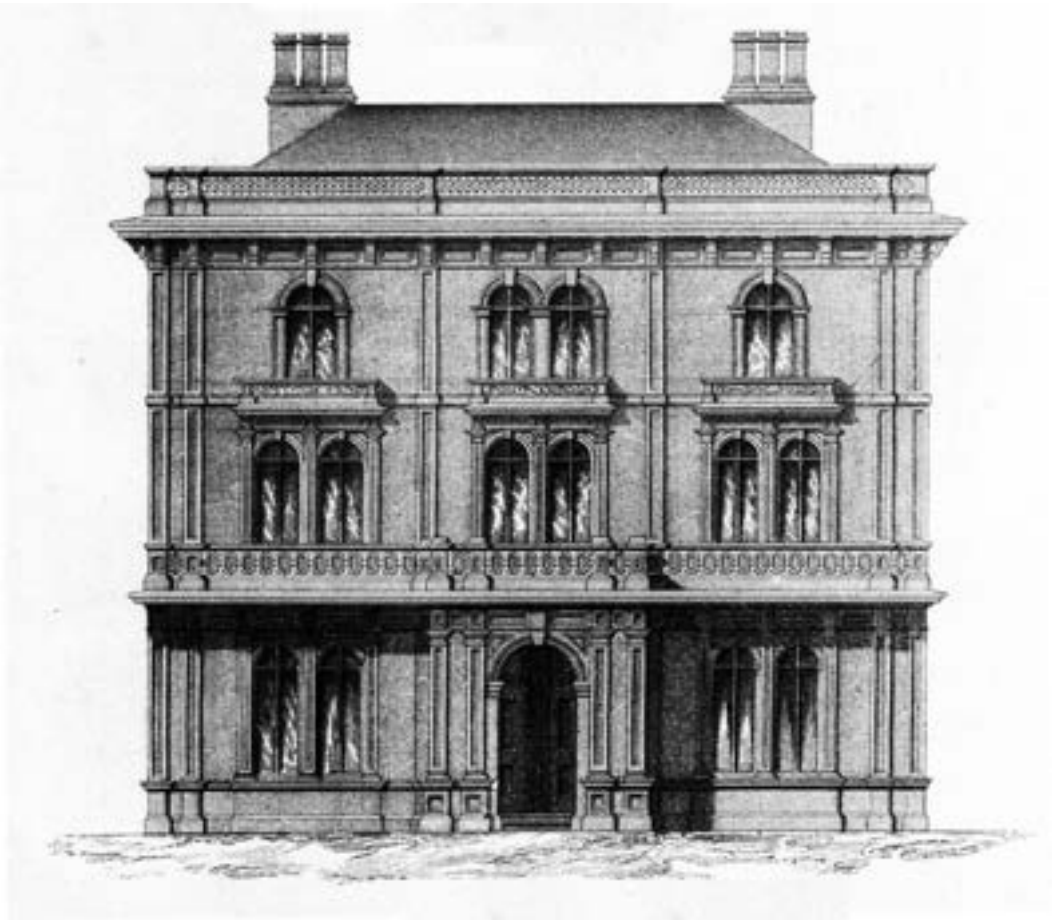
178 Allan, *Victorian Centenary Book*, p 79. See note above.

The subsequent history of the house itself included the addition of a square cast iron porch on the west side, locally made, and a timber wing on the north-east by the Geelong Architects Blake & Tombs in 1891-2.[179] The fine bluestone and cast iron street fence was added in 1872 to the design of Davidson & Henderson.

Young's cataloge comprises a group of corrugated iron buildings which may have been his original product, as he is believed to have made such buildings; then there are seven cast iron-fronted buildings design by Bell and Miller and made by Robertson and Lister. Then follows the cast iron fronted church which came to Melbourne, which we know to have been designed by Bell and Miller and also fabricated by Robertson and Lister. Next come a further ten designs which we have not yet considered.

Because the buildings attributable to Robertson and Lister appear in C D Young's catalogue, it seems certain that Young had taken over this aspect of their business. As the takeover was in 1855 (after the Melbourne market had collapsed) it is almost certain that all the buildings sent to Australia were made before the demise of Robertson and Lister, and that all the cast iron fronts in Young's catalogue were their work.

[179] Ian Shearer holds copies of the Blake & Tombs drawings, dated 16 September 1891.



Dwelling house ordered for Australia but put up in Glasgow. Charles D Young & Co, *Illustrations of Iron Structures for Home and Abroad,* no place or date (c 1856), pl 8, design no 13. [Institution of Civil Engineers, London]

A three storey dwelling said to have been ordered for Australia, but actually put up in Glasgow, can be identified as a structure put for sale from Robertson & Lister's sequestrated estate in March 1855:

> Large Cast-Iron Double Dwelling House (unfinished), consisting of Three Flats, with projecting porch and Ornamental Balcony. This House is 34 feet deep, by 44 feet of front, and 34 feet in height to the Eaves. …
> intended for a first-class Street Dwelling House, designed in one of the best styles of modern Street Architecture, and for effect will bear favourable comparison with any Stone House in our largest Towns.
> The Shell of the House is complete, and as the Flooring and internal arrangements are only commenced, the interior could be fitted up in accordance with the original plan or otherwise; lined with either Wood or Brick it would form a most comfortable Dwelling House, impervious to either *damp* or *cold,* and admirably adapted for the Country, or as a Coast House.[180]

180 *Glasgow Herald,* 23 March 1855, p 8.

Detail of an aerial survey of Dowanhill, Glasgow, in the1930s, showing Richmond House at the centre: courtesy Gordon Urquhart.

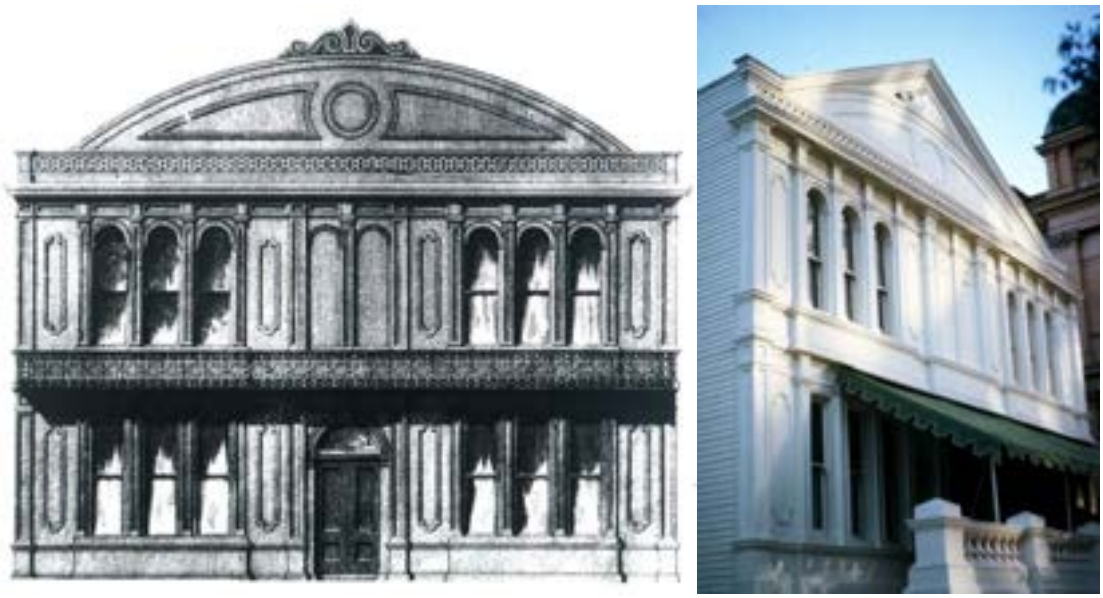
View of Richmond House prior to demolition in 1966:
Frank Worsdall, *The City that Disappeared*
(Molendinar Press, Glasgow 1981).

It failed to sell, and was offered again in April,[181] and then in June (though the stated dimensions differ somewhat):

> LARGE IRON HOUSE AND STORE, BY AUCTION,
> (Belonging Sequestrated Estate.)
>
> Upset Price Reduced. Hutchison & Dixon will Sell, (by order of Walter Mackenzie, Esq..) at 346, Parliamentary Road. Glasgow, on Friday, 8th June, Two o'clock, P.M.. Large THREE-STORY GALVANIZED CORRUGATED IRON HOUSE, with Ornamental Front and Balcony, 40 Feet Deep by 33 Feet Front, and 36 Feet in Height to the Eaves.
>
> The above is of elegant Architectural Design, Wood Lined, with Moveable Panels, and fitted up in superior style. The Ground Floor might be used as a Shop.
>
> May be inspected prior to Sale.
>
> For further particulars, apply to Messrs Aitken & Mackenzie. 66, St. Vincent Street, Glasgow.

181 *Glasgow Herald,* 27 April 1855, p 6.

It must have been bought some time after that for local use. It has been identified by Gordon Urquhart as ‘Richmond House, built by 1858 in Linfern Road, Dowanhill, where it became, appropriately enough, the home of David Laidlaw of the Alliance Foundry. It was demolished in 1966.



Dwelling house and store for Maccallum, Graham & Black of Glasgow, designed by Bell & Miller, and manufactured by Robertson & Lister. Charles D Young & Co, *Illustrations of Iron Structures for Home and Abroad,* no place or date (c 1856), pl 8, design no 11. [Institution of Civil Engineers, London] Legislative Council Chamber, Macquarie Street, Sydney. Photo, Miles Lewis

Yet another Bell and Miller design is for 'an Iron Store and Dwelling-house, with ornamental cast-iron front (the other walls being of corrugated sheets)', said to have been constructed for Maccallum, Graham & Black of Glasgow, and sent out to Australia. This building stands today as the Legislative Council Chamber in Macquarie Street, Sydney. When the bicameral legislature was introduced £10,000 was allocated by the Legislative Council for the provision of the necessary extra accommodation. This proved quite inadequate, so the iron building was bought in Victoria, and delivered to Sydney at a total of £1835. Even after £4000 had been spent on its erection and modification by Thomas Spence, it was considerably cheaper than a conventional building would have been.[182] It is a two-storey structure on a high masonry base, with a strongly

182 *Empire* (Sydney), 22 May 1856, p 4. See also *Old Times,* I, 4 (July 1903), pp 246-7. I was informed by Peter Bridges, personal communication, 23 September 1978, that before 26 February 1856 William Weaver, the Colonial Architect of New South Wales, had accepted the offer of the Sydney merchant and agent James Dean, to deliver the building from Melbourne to Sydney for £1,760. Weaver's successor, Alexander Dawson, on 18 April entered a contract with Thomas Spence, Thomas Dawson and Richard Reilly to build it for £4,475. NSW Government Archives, Colonial Architect's bundles, Boxes 2/605A and B. Gatis Gregors, ‘Prefabrication in Australia 1788-1910’ (2 vols, BArch,

articulated mongrel renaissance facade and a segmental pediment. The segmental shape would have reflected the arched roof form behind, as was the case in many warehouses and in a two storeyed iron dwelling which was later claimed to have been the first house erected in the Melbourne suburb of Heidelberg.[183] But in the Sydney building the arched roof was replaced by a timber pitched roof in 1859. In 1892 the iron front was moved three metres westward, to enlarge the buidling.[184]

These plate iron fronted buildings had side and rear walls of corrugated iron running horizontally between cast iron stanchions. Some more utilitarian buildings which used this construction throughout, and have exactly the same form of stanchion but no plate iron facades, must be presumed to be the work of the same manufacturers. To speak of these as a group is somewhat speculative, because the only surviving example is fragment of a former warehouse- type biilding originally an orderly room, at the rear of the former Congregational Hall, 51 McKillop Street, Geelong. The building is reported to have been first erected on the Artillery Reserve in Ryrie Street in 1863 (though it must have been manufactured well before that date), and moved to the present site in 1879.[185] The other Robertson & Lister warehouses in Geelong were probably similar. This structure in turn has some characteristics - notably a particular form of corner stanchion, which link it with a whole group of buildings of distinctive characteristics.

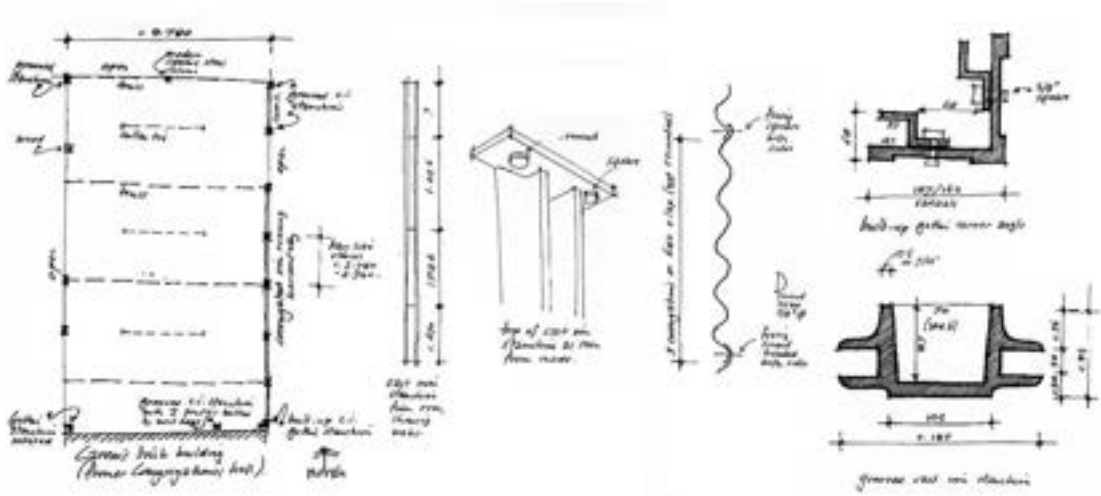
Sydney University 1981), p 26, refers to James Dean as being 'of J B Griffiths', and cites Archives 2/598). W K Charlton (Clerk of Parliaments) in *Journal of the Royal Australian Historical Society,* XXX, part iv (1944), p 256, stated that the structure had been intended for a church at Bendigo, but had been hastily put up in response to the demand for accommodation at Melbourne. It was transported to Sydney on the ship *Callender.* According to Bridges only the facade and a small part of one return wall are of cast iron, and the remainder is brick and timber; the triangular top of the pediment above the segmental arch is of timber, and the boarding of the timber partitions had previously been used for packing cases.

183 *Australasian,* LXII, 1610 (6 February 1897).

184 Conservation management plan by Clive Lucas, Stapleton & Partners 2012, as advised by Jennifer Preston, 2012.

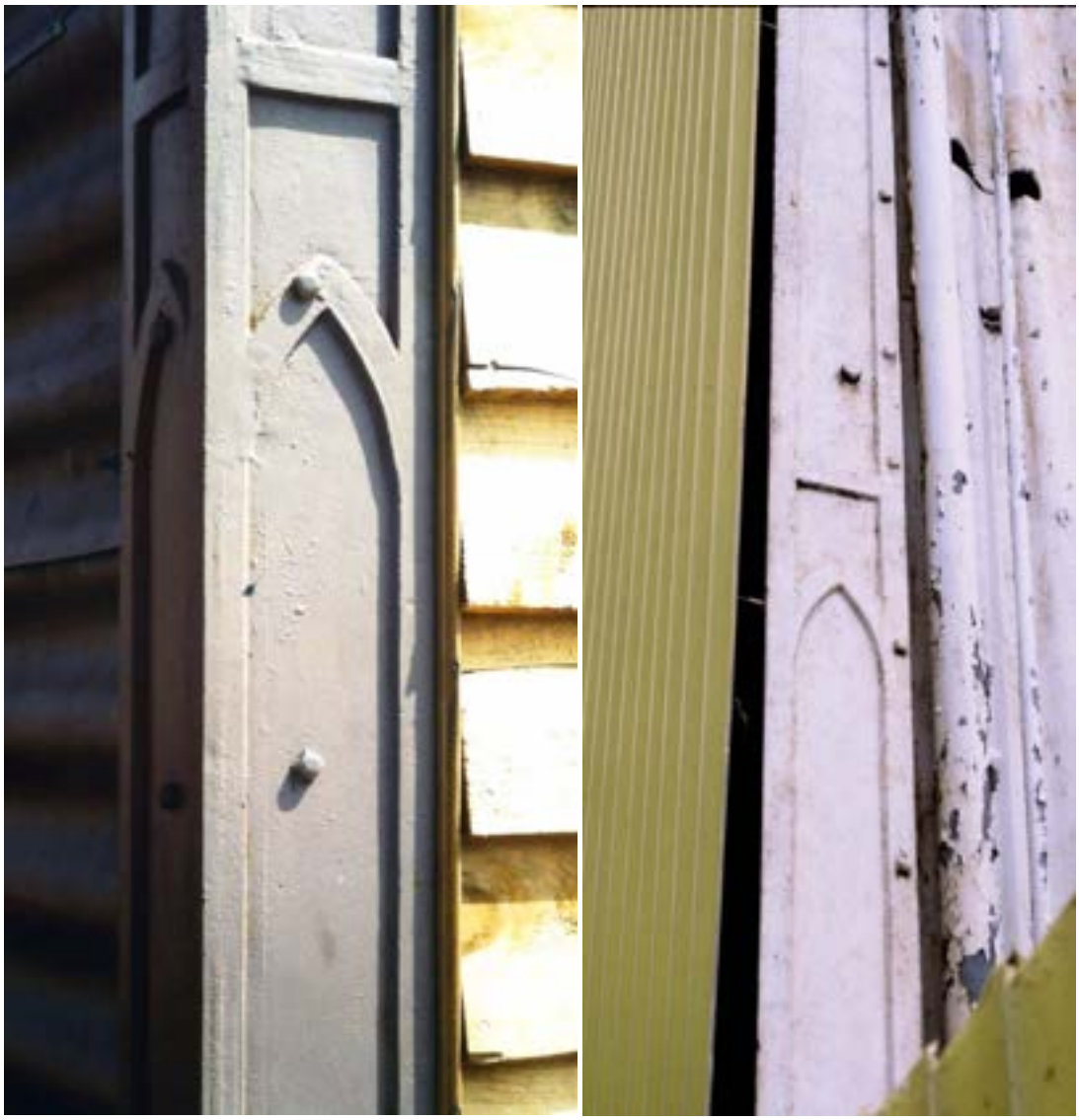
185 From a display at the building.

Store, rear of former Congregational Hall, 51 McKillop Street, Geelong, view prior to reconstruction. Photo, Miles Lewis.



Store off McKillop Street, Geelong, rough survey, 1985: Miles Lewis.

This group of related buildings comprises the Brown Brothers Store, Geelong; a small two-storeyed house formerly in Curzon Street, North Melbourne, but now re-erected by the National Trust at the Moe Museum; a much mauled and moved store or church building which became a service station at Bridgewater, and is currently a garden centre; a collection of dwellings at South Melbourne, of which one remains substantially intact on site and another has been moved to Swan Hill, and three demolished buildings, one at Bank Street, South Melbourne, one at Tennyson, and one at Dunolly. They are framed principally in wrought iron angle and T-sections, between these is corrugated iron running vertically in some panels and horizontally in others, and the windows are casement frames of cast iron, commonly with an arched glazing bar at the head.



Store, rear 51 McKillop Street, Geelong, detail of corner column. Brown Brothers store, Ginn & Mercer Streets, Geelong, detail of column at rear corner (partly concealed by the modern yellow cladding at left: both Miles Lewis.

The corner stanchion at McKillop Street - quite unlike the intermediate ones of the type already discussed - is a symmetrical cast iron angle measuring 165 x 165 x 19 mm [6 1/2 in by 6 1/2 in by 3/4 in], with shallow recessed panels in the face, each with a rudimentary Gothic arched top. Lewis and Lloyd originally pointed out that this was found in both the Brown Brothers store and the house now at Moe,[186] but the McKillop Street building was at that time unknown. At the Brown Brothers building, unlike the McKillop Street store, the intermediate columns are wrought iron T-sections, and this is true of most of the other buildings in this group. This unusual combination of cast and wrought iron supports calls to mind the description of Robertson and Lister's buildings of 1854 with 'strong standards of cast and malleable iron'.

186 Lewis and Lloyd, loc cit.

Brown Brothers store, 17-19 Mercer St, Geelong, from a bill-head of the 1850s: Geelong Heritage Centre 1612/4/50.

Brown Brothers store, front view as restored: Tony Isaacson.

Brown Brothers store, mid-twentieth century side view; Peter Alsop.
Rear view: Miles Lewis

Research by the late Peter Alsop has shown that Warren Hastings Brown reached Victoria in the *Sarah Sands* on 16 December 1852, while his brother and sister-in-law, George and Amelia Brown, left Gravesend in their own chartered ship, the *Ridderkerk,* on 16 November 1853, and reached Port Melbourne on 22 February 1854. George Brown's journal refers to an iron house they had brought with them: 'I hope we may have it as fine [?as] when we have our iron house to put up', and a note in the family papers indicates that this was a two storey iron building which had been shown at the Glasgow Exhibition of 1853, and was bought to be their future home. Although they found a house elsewhere, and therefore did not occupy it, there is little doubt that this refers to the building which survives at Mercer Street.[187]

187 Peter F B Alsop, 'Iron Store - cnr Mercer & Ginn Streets, Geelong' [manuscript note, 29 May 1989). The reference to the Glasgow Exhibition of 1853, unless it is a mistake, for the Dublin Exihibition, may refer to the 1853-4 exhibition of the Art Union of Glasgow, held in the Dilettanti Rooms 151 Buchanan Street. If that is the case it suggests that an illustration was shown, as the building itself was shipped out well before the closure of the exhibition.

Brown Brothers store, roof space showing the queenpost truss suspension system: Miles Lewis.

Brown Brothers store, window pintle and latch: Miles Lewis

The site was acquired by George Brown and Warren Hastings Brown on 16 September 1854[188] and the building was opened in November.[189] Its elegant

188 Title details held by Peter Alsop, Geelong.

189 *Geelong Advertiser,* 2 November 1854: G & W H Browne [*sic*] advertise that they are to open their new establishment on 'Saturday first'. Quoted by the National Trust of Australia (Victoria) in 'Submission for inclusion on the Historic Buildings Register of No. 19 Mercer Street (cnr. Ginn Street), Geelong' (mimeograph report, December 1976), p 1.

façade is illustrated on the bill-head of an invoice of March 1859 of 'Brown Bros., Wholesale and Retail Drapers'.[190] The lower part of the façade was a plate glass shop window now destroyed, but the upper part still has some unusual ornamental features, including large carved wooden consoles and a segmental tympanum divided radially, and surrounded by cable mouldings made literally of rope. Behind this is an arched roof spanning about 9.7 metres, and the roof structure is divided into three bays by two timber queen post trusses. Rods hang from the panel points, two to each truss, to carry the first floor beams, thus allowing a clear span in the ground floor. The upper floor is divided into rooms as living quarters, and the rods are artfully concealed within the partitioning. The side elevations are not visible, one being inaccessible and the other re-clad, but the rear face shows a mixture of vertical and horizontal five inch iron between the wrought iron framing members, but for the corner columns, which are of cast iron, the building being of two storeys. There are cast iron window sashes in this elevation divided by three horizontal and on vertical glazing bar into eight main panes, but with a further semicircular arch bar at the top.

Although we know that the Browns imported their own building, newspaper advertisements in Melbourne described very similar ones made by Robertson & Lister. For example:

> Four commodious iron houses, suitable for shops and warehouses on ground floor, and dwelling houses above, per Abigail, from Glasgow.
> These houses are of a most superior description, being made to order by the well-known firm of Robertson and Lister, of Glasgow, who are justly noted for the substantiality of their work. They were designed and their construction superintended by Messrs. Bell and Miller, iron architects. These houses are made of the best description of corrugated iron, supported on strong standards of cast and malleable iron; are lined, floored, and ceiled with wood; air-spaced and ventilated; and are altogether of a most superior description, and well worthy of the attention of parties requiring a substantial house or store, either in town or country.[191]

These buildings seem in most other respects very similar to the Brown Brothers store, though the dimensions are not stated. They are given for a similar building, which is substantially smaller than Brown Brothers:

> For Sale, ex Kirkman Finlay, Corrugated Iron Warehouse, 22 x 38 x 18, two stories, lined and ceiled with wood, upper floor divided into five rooms, and otherwise complete, by Robertson and Lister, Glasgow.[192]

---

190 The invoice is in the Commercial Memento collection, Geelong Historical Records Centre. There seems to be no foundation for a statement that the iron was imported from Scotland as part of a shipment used in erecting three similar structures, which appeared in an advertisement in the *Geelong Advertiser,* 21 May 1969.

191 *Argus* (Melbourne), 25 March 1854, p 7.

192 *Argus* (Melbourne), 30 June 1854, p 1; similarly, 27 June 1854, p 8.

The buildings in question do not appear to have had shop windows like Brown Brothers, but another advertisement refers to a plate glass window:

> For sale, a corrugated iron Shop, constructed by Robertson and Lister, Glasgow, 22 feet width, 43½ feet length, and 20 feet height to eaves, with handsome front fitted with plate glass, and is lined, floored and ceiled with wood. Has an upper floor divided into six apartments, with two closets, complete with doors, locks, shutters, &c., and one extra plate glass for window in case of breakage.[193]

A Sydney advertisement does not name the maker, but describes a very similar building.

> IRON HOUSE and STORE.- For sale, a galvanised corrugated iron warehouse and dwelling, 23 foot frontage by 37 feet deep, and 16 feet to eaves, with ornamented balcony, plate-glass for front windows, iron spiral staircase, vestibule, mahogany doors with plate-glass, &c, &c.
>
> The dwelling house is in the top story, and contalns 6 rooms and attics above. The walls and roof are timber-lined, and every necessary in the shape of locks, screws, bolts, hinges, &c, is provided.[194]

193 *Argus* (Melbourne), 11 May 1854, p 8.
194 *Sydney Morning Herald,* 22 December 1854, p 8.

James Hogg house, formerly ast 62 Curzon Street, North Melbourne, attributed to Robertson & Lister, c 1853, view on the original site in 1959: Clare Lewis & Mary Lloyd, 'Portable Buildings' (BArch, University of Melbourne 1959), plate 24B. As relocated at Old Gippstown, Moe: from the Old Gippstown web site, 2014.

.

62 Curzon Street, North Melbourne, ground floor plan, west and north elevations, detail of corner column [slightly corrected]. Clare Lewis & Mary Lloyd, 'Portable Buildings' (BArch, University of Melbourne 1959), plates 25-7.

In the building from 62 Curzon St, North Melbourne [‘Loren’], now at Moe, the columns are again T-sections measuring 4 by 2 by 3/8 in [102 x 51 x 9.5 mm], and the cladding is of corrugated sheets measuring 2 ft 9 in by 8 ft 6 in [0.84 x 2.59 m]. The cast iron corner columns are, as previously discussed, the same Gothic panelled type as at McKillop St and the Brown Brothers building The ground floor front windows have cast iron casement sashes measuring 0.7 by

1.8 m and divided into four panes high by two across, identical with those at the brown Brothers store, except for the absence of the arched bar at the top. The cladding again runs partially horizontally, partially vertically, on the end elevation, except that for a metre or so near the top it is all horizontal. On the sides, which has no openings, it is all vertical.

The most extraordinary feature of all is the roof, which is of a basically gabled shape in which the two sloping surfaces are curved concavely so as to give an odd sweeping effect. This is believed to be original, unlike that of the Bridgewater store, below, and there are examples of this type by other manufacturers. However it gives a very clumsy effect, as the stanchions terminate on an arbirary horizontal line rather than on the chord of the pediment as at the rear of Brown Brothers. The use of a timber sash window at this level, and indeed the timber entrance door below, contribute to the *ad hoc* effect. The inner timber framing or nogging for the wall lining was very crude and of varying sizes including 3 by 2 inch [76 x 51 mm], 4 by 3 inch [102 x 76], and studs next to the windows 4 1/2 in [113 mm] wide. The exterior wall, before the building was moved, had vertical 9 by 1/2 in [229 x 13 mm] boarding to a wainscot height of 1.2 m, the remaining part probably having been lined wth canvas, and perhaps papered.

The ground floor ceiling, at a height of 2.7 m, was lined in 6 in [152 mm] tongued and grooved varnished deal with a false groove at the centre in imitation of three inch boarding, but was possibly not original, as gas piping was built in above it. The floor boards were 6 by 1 inch [152 x 25 mm], but these again may not be original - indeed, the building is something of an enigma. At the time it was removed from North Melbourne the iron on the south side had been replaced by a nine inch party wall and chimney, containing various types of machine pressed bricks, while others were found under the floor joists. Some of the bricks in the wall bore the Hoffman brand, which dates them after 1870. It is not impossible that the floor was replaced, or that a timber floor was not originally provided (some of Bellhouse's buildings relied on the owner providing some sort of earth floor). All that can usefully be said of the history of this building is that it first appeared in the Bourke Ward (North Melbourne) rate book of 1854 in the occupation of one James Geddes, and was subsequently occupied by a series of tenants until from about 1880 it seems to have been left vacant for some years. The reconstruction work may date from this period.[195]

[195] Nothing of significance emerges from the history of this building. It stood on Crown Allotment 11, Section 1, Parish of Jika Jika, which was first sold to George Evans on 8 September 1852

Former store, 21 Main St, Bridgewater, Victoria: Mike Butcher.

Former store, Bridgewater, side wall: Miles Lewis.

Former store, Bridgewater, roof structure: Mike Butcher

Of the next Victorian building in what might be called this family, not very much need be said. It is now at Bridgewater and is a retail garden centre, but was formerly a service station, and before that was on a property not far away, and

it is said to have been originally a church in Collins Street.[196] It appears to have been of the arch-roofed type, but in the last move the roofing sheets were inverted to form a gable roof of two concave sections like that of the Curzon Street house: this change seems to be confirmed by the rusting on the present underside or convex side of the sheets. The iron is again of five inch pitch, the framing of wrought iron T-sections, and there are the familiar cast iron sashes to the casement windows, in some case of a plain rectangular paned type, and in others with the arched bar at the top. The portion now standing is not the same size as the original building, as a number of component parts have been discarded, and many members, such as ties, are not original or appropriate.

There are or were two fragmentary examples of the genre, as well as others known only from old photographs. A building first put up at White Hills, Bendigo, but moved to Tennyson, north of Bendigo, in 1875 to become the 'Junction Hotel and Store',[197] consisted at the time of inspection only of a number of components of lying on the ground. However there are or were photographs of the building before it was demolished. It had a pretentious shopfront with panelled stallboards, paned windows and a recessed central doorway. There was an arched roof, but no externally visible framing members. The cast iron sashes were of 2 x 4 lights, like others in this group of buildings, but lacking the arch bar at the top[198] On one piece of iron was a stencilled lading mark consisting of a figure in a diamond adjoined by another figure, resembling the form found on the Patterson houses, below. Given the relative scarcity of such buildings on the goldfields, it seems possible that this was the former Helm Store in Sailor's Gully, which was advertised for sale in 1858 (though referred to as being English). This was two storeyed, measured 22 by 34 feet [6.6 x 10.2 m], and had plate glass windows.[199]

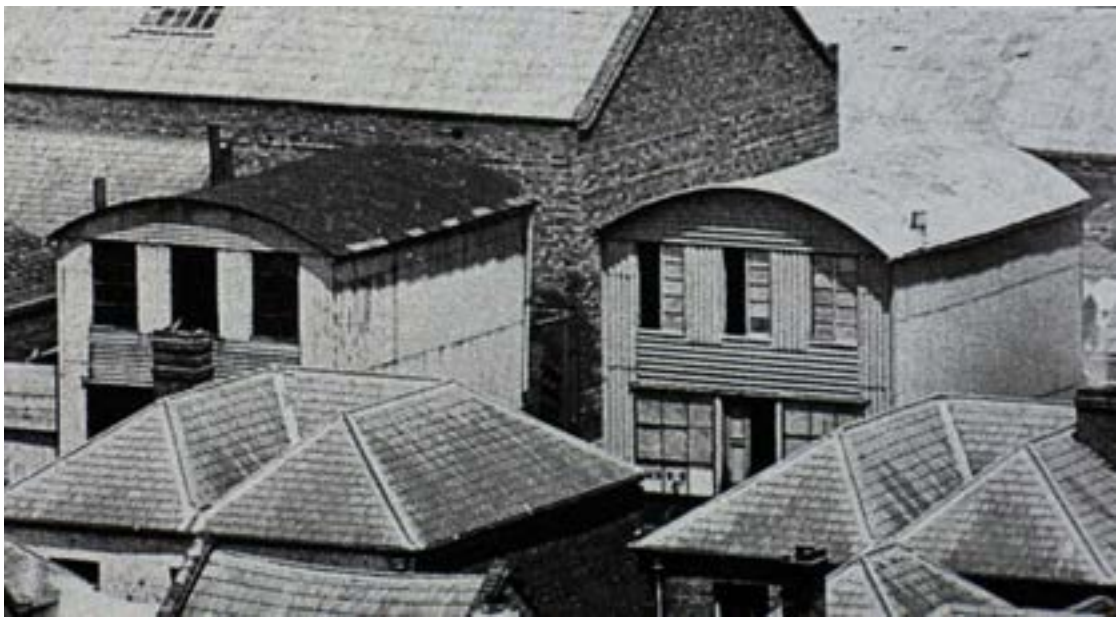
---

196 Mr R W Sinclair advised me on 21 April 1981 that he knew of this building as a Methodist church originally imported for use in Collins Street. According to Mr A E Wylie, in a letter to the National Trust of 21 September 1972, the building was re-erected in December 1898 as an overseer's dwelling on the East Loddon sheep station at Serpentine, owned by Ettershank, Eggleston & Mann. It was later sold to W Bassett, who proposed to use it as a shearing shed on his farm, but the farm was sold and the building was then bought by A E Wylie's younger brother, who put it up on the present site in Main Street, Bridgewater, for his petrol station and agency business. He subsequently sold it to J Lynch.

197 The building is said to have been imported from Scotland and intended as a boot factory, but by 1865 had come the White Hills Hotel, near the corner of White Hills Road and Old Bridge Street, and conducted by David Jack. 'In the Spotlight', undated cutting from the *[?Bendigo Observer*], kindly supplied by Bernie Crumpler, of Tennyson.

198 *Tennyson Heritage Group* [newsletter, April 1989].

199 *Argus* (Melbourne), 25 May 1858, p 8.



Panorama of central Melbourne by John Noone, photographer, 1869, detail of the south side of Little Bourke Street. State Library of Victoria H41470/7.

The appearance of the Tennyson building was virtually identical, at least so far as the upper part of the façade is concerned, with a pair of buildings on the south side of Little Bourke Street, Melbourne, which appear in two panels of John Noone's famous panoramic photograph cycle of 1869.[200] There are three rectangular windows in the upper floor, each with a pair of casement sashes, and each sash divided vertically into five (rather than four) panes. Although the framing members are not visible there is the same odd combination of vertical and horizontal corrugated sheets as in other buildings of this group. Vertical sheets run up either side of the façade as far as the chord of the arched roof, flanking the shop windows below and the outer casement windows above. Vertical sheets also run between the casement windows. Horizontal sheets run continuously across below these windows, and also in the whole of the segmental area below the arched roof.

[200] State Library of Victoria H41470/6 & H41470/7

London Chartered Bank of Australasia, Dunolly, ambrotype by G H Jenkinson, c 1861: State Library of Victoria H26118.

The London Chartered Bank at Dunolly, known only from an ambrotype, was unmistakably of this school, as indicated by the combination of vertical and horizontal corrugated panels, and the other elements of the façade.

House at 306 Bank Street, South Melbourne, exposed rear wall as in 1983, and cast iron window sash: Miles Lewis.

306 Bank Street, South Melbourne, gutter and downpipe brackets, believed to be original: Miles Lewis.

The last example is a house at 306 Bank Street, South Melbourne, where (at the time of inspection in 1983) some of the iron wall survived at the rear, though the building had been given a brick façade later in the nineteenth century, and much altered in other respects. The small area of rear wall surface showed broad pitch vertical corrugated iron, with no particularly distinctive features. However there was a cast iron window sash in eight panes, similar to those of other buildings in this group but lacking the arch bar at the top, just as at Tennyson.

'General Post Office Gt. Bourke St, Melbourne - 1854', by S T Gill, State Library of Victoria H12598 [cropped].

Only a fragment remains, though a fascinating one, of the Melbourne General Post Office extension of 1853. The post office was hastily extended to meet the demands of the gold rush, and Balmain, the Colonial Architect, reported that they had 'half finished the work before we received regular instructions to begin.' [201] The contractor was W C Cornish, and illustrations show that it was of corrugated iron.

[201] Digest of evidence given by James Balmain to the Public Works Committee of Parliament, 13 September 1853: *Geelong Advertiser,* 25 April 1854, p 4.

Marking on the iron of the Whanregarwen building, believed to be from the Melbourne General Post Office 1853: Natica Schmeder.

In 2006 Natica Schmeder discovered the Niagaroon woolshed at Riverside Farm, Whanregarwen, south of Alexandra, Victoria,[202] which according to local tradition is clad in iron from the first Melbourne Post Office. The iron is of five inch pitch, suggesting that it does indeed from the 1850s, and is marked with the single letter 'V' in a diamond - presumably for Victoria.[203] Unless the labelling system used by Robertson & Lister was one in more general use – for which there is no evidence – this points to the firm as the source of the post office, or at least of the iron used to clad it.

This brings us to the small colony of houses which stood in Coventry Street, Montague Street and Patterson Place, South Melbourne, consisting of two basic types, a two-roomed cottage with an attic, and a four-roomed house with a two-room attic. Though there are other partially complete houses and separate components in the vicinity, the only one of these which is substantially intact on its original site is one of the larger type at 399 Coventry Street, restored by the National Trust. Another of the large type has been re-erected at the Swan Hill Pioneer Setlement, and the component parts of two of the smaller type were held at Bendigo for ultimate erection in the Victoria Hill Mining Museum development, but now seem to have disappeared.

---

202 Since identified as Niagaroon Station Woolshed, 4799 to 4849 Maroondah Highway, corner Whanregarwen: Context Ltd [Natica Schmeder et al], *Murrindindi Shire Heritage Study Stage 2 Volume 3 Heritage Place & Precinct Citations* (Context, Brunswick [Victoria] 2013), p 480.

203 Information and photo from Natica Schmeder, 2006.

A Melbourne advertisement describes three four-roomed houses by Robertson & Lister which sound very similar, 'with attics, lined throughout, well ventilated.'[204] Except that the attic rooms are not mentioned, an advertisement in the *Sydney Morning Herald* for sale of six houses seems to suggest the same models:

> Three (3) of two rooms each, contained in 28 packages each house
> Three (3) of four rooms each, contained in 50 packages each house.
> The above are from the celebrated makers, Messrs Robertson and Lister, Glasgow, and are of excellent workmanship and strength. C.R. Robinson and Co., 46. Hunter-street.[205]

Another Sydney advertisement offering two, three, four, five, and six roomed houses, seems likely to refer Robertson & Lister structures, though no detail is given.[206] Twelve houses which reached Melbourne from Glasgow in August 1854[207] were probably of the Robertson & Lister type, and although they were consigned to Begg, Mitchell, & Webb rather than directly to Patterson, they might represent a later instalment of his development.

The South Melbourne cottages were apparently imported in or from 1853 by Robert Patterson, whose initials are found on the lining boards, and the earliest of them were put up in 1853-5[208] on land which he had bought on 26 January 1853.[209] They would have been a speculation by Patterson, who is believed to have been the Scottish squatter Robert Patterson (1811-1859).[210]

The houses first appear in the Lonsdale Ward ratebooks in 1854-5. In 1854 five six-roomed houses each valued at £60 per annum appear in Coventry Street, and in 1855 fourteen of the smaller size, each valued at £30, appear in Patterson Place. Even more seem to have been put up after these dates.[211] The whole property seems to have remained in single ownership until 1874 when it was in the hands of a local estate agent, A J Faram, who subdivided

---

204 *Argus* (Melbourne). 25 March 1854, p 7.

205 *Sydney Morning Herald,* 1 August 1854, p 8.

206 *Sydney Morning Herald,* 16 August 1854, p 6. They are said to be landing from the *Countess of Elgin,* though I can find no clear reference to them in the published report of the ship's cargo. It sailed from Liverpool, but had possibly taken on cargo at Glasgow, as it carried a quantity of fencing by C D Young & Co.

207 *Argus* (Melbourne). 22 August 1854, p 4.

208 A title search undertaken for the National Trust indicates that the subdivision, including Patterson Place itself, appears on the titles only in 1874 after Patterson had sold the whole development to A J Faram, a local estate agent. In fact, however, it was in existence from the earliest years, as has been confirmed by the rate books and other contemporary records checked by Reg Macey in his investigations of the area.

209 Section 11, allotments 16, 17, 18, 19: *Argus* (Melbourne), 29 January 1853, p 5. Put together, these amount to a rectangular block at the west corner of Coventry and Montague Streets. This and other information has been contributed by the research of Andrew Linden in 2022,

210 This is the conclusion of Andrew Linden.

211 See the extracts from the rate books in Lewis and Lloyd, 'Portable Buildings', pp 24, 25. For an illustration of the cottages, in what seems to be a view of Patterson place looking south-west - a row of four in the foreground, and others opposite and in the background - see Victoria, Housing Investigation and Slum Abolition Board 1936-1937, *First (Progress) Report* (Melbourne 1937), p 54.

most of it and put the lots up for sale. He offered six lots in Coventry Street with a seven roomed cottage on each (the seventh room presumably a rear addition); one at the corner of Coventry and Montague Streets which had another seven roomed cottage, but was suggested as a prime site for a hotel, which was in fact to eventuate; a vacant block at the corner of Montague Street and Patterson Place; and six lots in Patterson Place, each with a five-roomed cottage.[212] The latter would represent only one side of Patterson Place, so it seems that the south-west side was not sold at this time, The total then amounts to seven of the larger sized cottages and probably twelve of the smaller.

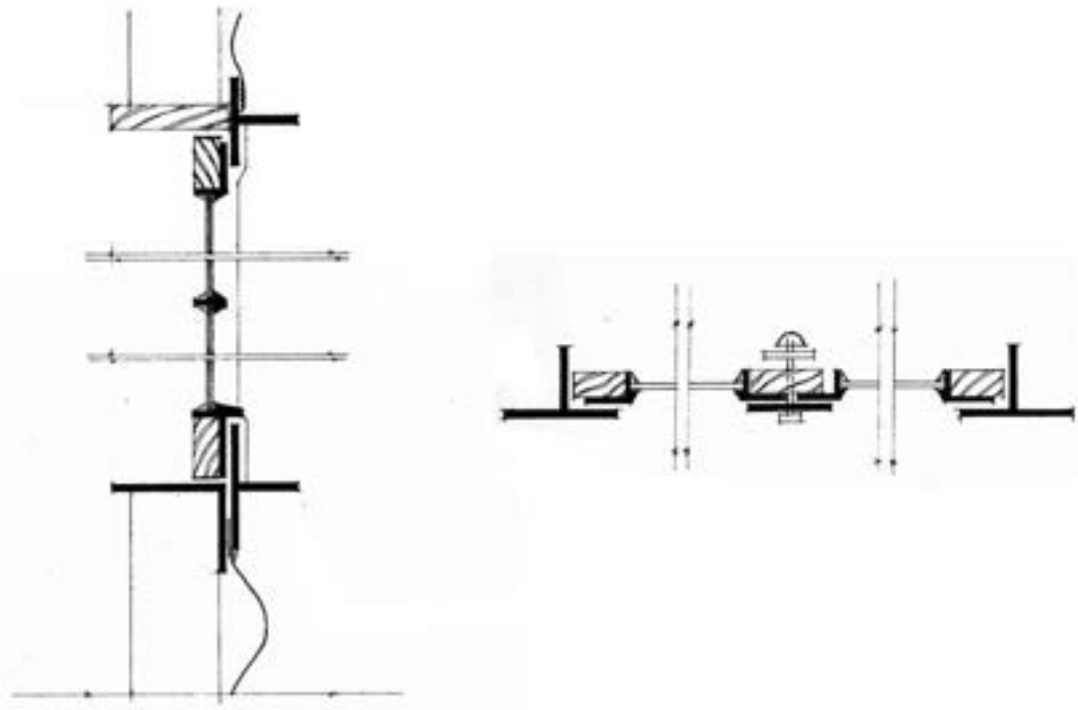
In 1959 Lewis and Lloyd seem to have found four of the six room houses standing in Coventry Street, two of which were over-clad in timber, and an unspecified number of the smaller ones in Patterson Place. By 1966 only numbers 8, 10, 11, 13 and 15 remained in Patterson Place and it was reported that they were being demolished, [213] though in fact one or two houses survived a few years longer.

Patterson Place, South Melbourne, looking east, and showing the row of six iron cottages (nos 5 to 15) on the south side, 1933, photo by J K Moir. State Library of Victoria, no 819570.

212 *Argus* (Melbourne), 21 March 1874, p 2,

213 David Saunders [ed], *Historic Buildings of Victoria* (Jacaranda Press, Melbourne 1966). p 130.

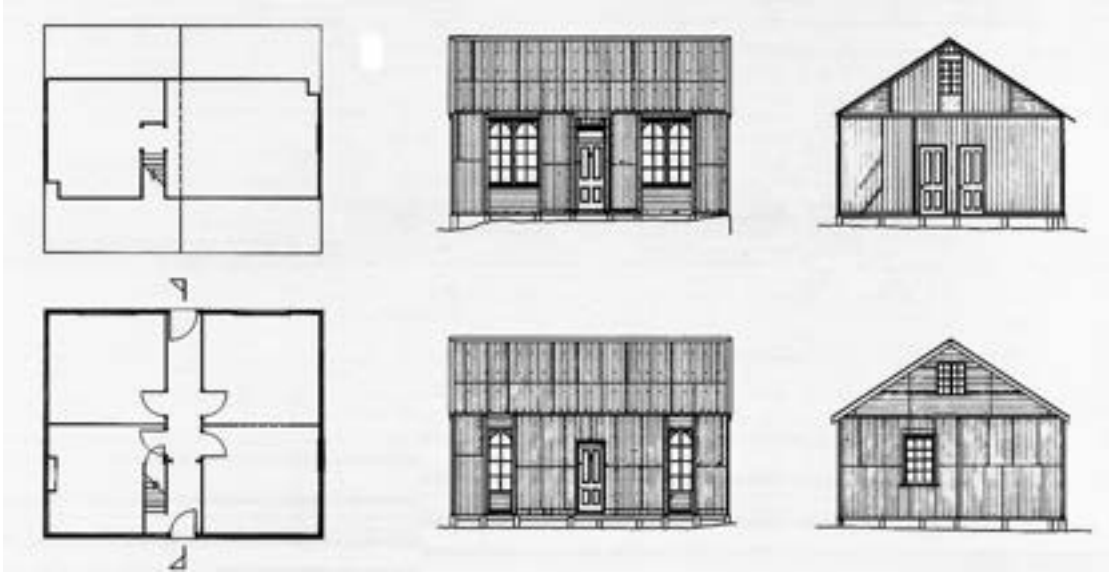
Iron cottage, 15 Patterson Place: Brian or Hilary Lewis.



Iron cottages, Patterson Place, window details, vertical section and plan: Clare Lewis & Mary Lloyd, 'Portable Buildings' (BArch, University of Melbourne 1959), plate 33.

Iron cottage, Coventry Street (probably no 385, moved here c 1875, perhaps from the Patterson Place end of the site), view and survey as in 1959. Clare Lewis & Mary Lloyd, 'Portable Buildings' (BArch, University of Melbourne 1959), plates 29-31.

399 Coventry Street, Miles Lewis.



Iron house, 399 Coventry Street,: front and side elevations, measured and drawn by Pru Sanderson, 1980: State Library of Victoria: H82.189/19.

Iron house, 399 Coventry Street, 'RP' [Robert Patterson] monogram and lading marks, from the internal lining boards. Miles Lewis.

Iron house, 399 Coventry Street, fireplace. Miles Lewis.

Iron house at the Swan Hill Pioneer Settlement, believed to be from the corner of Montague Street and Patterson Place: Miles Lewis.

The smaller houses measure 3.6 by 7.2 m [12 by 24 ft] and consist of two rooms with a ceiling height of 2.1 m, opening off a narrow central passage which also contains the steep stair to the attic, a room lit only by windows in the gable ends. Rather oddly an advertisement appeared in 1880 for the sale of eight iron cottages in Montague Street and Patterson Place, describing them as having three rooms and a large attic.[214] The third ground floor room can only be explained by the rear skillions which are known to have existed on at least some and perhaps all of the cottages.[215] The larger houses vary somewhat in their plans and dimensions but 399 Coventry Street measures 8.1 by 6.75 m [27 ft x 22 ft 6 in], and, like all of them, consists of four ground floor rooms, a passage, and two attic rooms. The plans vary according to whether the entrance is from the gable end or the side, and whether the passage runs right through, with the stair at the side, or stops in the middle of the house, with the stair at right angles.

The exterior walls of the buildings are framed in wrought iron, and the interior is entirely of timber. The base is a wrought iron angle, with the vertical flange rising behind the corrugated iron cladding: from this base rise vertical members consisting of angles at the corners, and T-sections in between with the stem pointing inwards, so that the flanges overlap the sides of the corrugated iron panels. These panels are of 2.4 m by 965 mm [8 ft by 3 ft 2 in] corrugated iron sheets, 127 mm [5 inch] pitch, with the corrugations running vertically, except in the spandrels above doors and above and below windows, where they run horizontally. In the spacing of the wrought iron framing members no special attempt has been made to conform to the sizes of the corrugated sheets. Inside there are timber members, bolted to the iron sheets, to which are nailed thin tongued and grooved lining boards running vertically. The ceilings are also lined in boarding, and internal partitions consist of a single thickness of boarding held in place only by small strips of timber on either side planted onto the ceiling and onto the floor, thus holding the ends of the boards. Above the

214 Argus, 29 May 1880, p 3.

215 By the time of the first Melbourne & Metropolitan Board of Works survey plan all the surviving cottages have rear skillions. Many are full width, almost doubling the plan area, but four of the cottages on the south side of Patterson place have half width skillions (on the east side), suggesting that this was originally the standard form for that row of cottages, and that this skillion was the third room in each case.

ceiling line, and visible in the side spaces of the attic are two tie rods running across the roof span, and probably tying the whole building together.

There is at the 399 Coventry Street house one conventional timber sash window, in one of the end walls, but the windows generally are cast iron paned casement sashes with a timber surround attached to them, and in one case the frame continues to include a lower panel of horizontal corrugated iron, so that the whole opens as a French window or glazed door. This house appears to have had fireplaces in two of the ground floor rooms, and the one surviving consists of a small grate and a shallow mantelpiece, all of iron and built up from separate castings. The front door of this building is an ordinary panelled timber one, and appears to be original, along with the very heavy and crudely dovetailed timber frame surrounding it and the iron fanlight above.

The front windows of the South Melbourne cottages are pairs of cast iron casement sashes opening inwards, each with a rectangular angle iron frame, to the back of which is attached the surrounding timber frame, and each divided by three horizontal glazing bars and a semicircular bar at the top of the rectangle, so as to allow four main panes and two small corner lights above the arch. The South Melbourne buildings are certainly by the same manufacturer as the five buildings mentioned at Geelong, Moe, Bridgewater, Bank Street and Tennyson.

The lining boards carry stencilled and hand painted markings of two types, the initials ‘RP’ in a diamond, indicating the consignee, Robert Patterson, and ‘A#$’ followed by a numeral, the ‘A#’ probably identifying the specific building, and the numeral that of the bundle or package of materials. This links the Patterson buildings not only with the White Hills building and Melbourne General Post Office, both discussed above

In 1854-5 a number of arch-roofed houses were advertised, especially in Sydney.[216] Some, and probably all of these, were by Robertson and Lister. One was described in an advertisement in 1855

> One very superior, strong, and commodious corrugated Iron House, now landing, ex Alan Ker, consisting of four rooms and two attics. The house is 24 feet by 22 feet, and is contained in 72 packages. It was constructed by Messrs. Robertson and Lister, Victoria Works, Glasgow; is of great strength, with malleable iron bars, to which the sheets are secured by bolts, and screws inside, and in addition to the usual wooden framework has the iron framing, which entirely binds and supports the roof and sides, independent of the wooden framing for nailing the lining to; four-corner ornamental iron pillars; the flooring feathered and grooved, &c.
> Dimensions: - Frontage, 24 feet
> Depth back, 22 feet
> Height to eaves, 10 feet
> Rise to attic roof, 7 feet 6 inches.[217]

---

216 *Sydney Morning Herald,* 17 April 1854, three 2 room houses, 10 ft 6 in x 18; 1 four room house 21 x 17; 7 August 1854, p 6; four 2 room houses 12 x 12 ft; 1 one 3 room house 12 x 18 ft .

Two houses in Ballast Point Rd, Birchgrove, Sydney, with a hipped roof and a arched roof respectively, detail from the Panorama of Sydney from the Holtermann Residence c 1871-5, State Library of New South Wales ON Box 61 No C.

A house of this description, but of different dimensions, survives today. Two houses which were at what are now 57, 59 and 59A Ballast Point Road, Birchgrove, are visible in the Holtermann panorama of Sydney in 1875, and have been researched by Ray Stevens, Geoffrey Levey and Peter Emmet. One of them has an arched roof. The other is more conventional in appearance, but the documentary evidence suggests that it was also of iron and was in fact, apart from the roof, a twin of the first.

Rose Adcock, a wealthy spinster and developer, bought this land from Charles Smith in 1853, and must have built the houses no later than 1857, when a neighbouring property is described as being 'close to Miss Adcock's iron houses'.[218] About a year later they were put up for sale as:

> ... two remarkably handsome COTTAGE RESIDENCES, built of corrugated Iron, and containing each - hall, five rooms, and detached kitchen, and store or servant's room, with wide verandah surrounding the house; at the rear, good yards and abundance of water.
> These cottages ... are not erected (as is generally the case with iron houses), in a flimsy manner, but are strongly put together, and will bear inspection as a well-built property.
> The rooms and hall are all lined with wood, canvassed, and neatly papered ... [219]

They were bought (probably at this time or at least before 1868) by the brothers Henry Chamberlain Russell and Robert Russell (whose names appear on an 1868 plan). H C Russell bought a further property at what is now 235 Rowntree Street, from T S Mort on 25 October 1876, and it seems that he moved his iron house to the new site, where it can be seen in a photograph of 1879, and where it still stands today. His brother, Robert Russell, died in 1876, and his widow contiued to live st 57 Ballast Point Rd until about 1884. This house was demolished some yime before 1926

---

217 *Sydney Morning Herald,* 7 August 1854, p 6.
218 *Sydney Morning Herald,* 12 December 1857, p 1.
219 *Sydney Morning Herald,* 28 January 1859, p 7.

House now at 235 Rowntree Street, Birchgrove: detail of a photo of 1879 in the State Library of New South Wales, courtesy Ray Stevens.

235 Rowntree Street Birchgrove modern view: Ray Stevens.

235 Rowntree Street, Birchgrove front view: Miles Lewis.

235 Rowntree Street, Birchgrove, stencilled timber formerly visible at entrance door sidelight: Jisuk Han.
West gable cladding from inside the roof space: Miles Lewis.

Verandah, with reconstructed roof and replicated columns: Miles Lewis.
Front doorway, with largely original joinery: Miles Lewis.
West window bay, central part reconstructed: Miles Lewis.

The surviing house at 235 Rowntree Street, Birchgrove, was first identified by Ray Stevens as that in the 1879 photograph,[220] though it is not easily recognised today. In form the building rather resembles the later catalogue illustrations of Young, but the construction is typical of Robertson & Lister. The end wall is clad in horizontal corrugated iron, now covered over, between what seem to be the characteristic Robertson & Lister cast iron stanchions at the corners, one of which is visible. The pitch of the vertical gable iron, measured from within the roof space, is 122 mm.[221] The the dimensions are 11 x 9.6 m in plan, excluding the verandah; and 5.1 m height from the floor to the top of roof:[222]

After Robertson & Lister's bankruptcy in 1855 all their equipment, some buildings held in stock, and their 'patterns', presumably meaning their designs, were sold up by the trustee.[223] There is no report about the sale of the goodwill of the business, but a trustee in insolvency would have been remiss if he did not attempt to recover something from this. We surmise that the goodwill was sold with the 'patterns', as it would be difficult to separate them. We can reasonably assume that it was Young who bought Robertson & Lister's patterns, as he would not have been able to publish them if they were the property of somebody else. If he also bought the goodwill of the business, this would explain why he could publish these designs as his own works. There is no evidence that he actually constructed any of them.

Although no surviving building reasonably attributable to Young has been identified in Australia, there is some corrugated iron probably attributable to him, and there are other complete buildings which seem to be Scottish and could well be his work. We might infer that he did export some prefabricated iron buildings from the fact that at the time of his bankruptcy in 1858 he attributed a loss of £3226 to 'a San Franciso house', and £1000 to 'Wharton, Caird, & Liddle' of Melbourne.[224] But on the other hand he may have acquired these debts along with the Robertson and Lister business.

Wharton, Caird & Little, as they in fact were, did sell iron buildings which were not attributed to any manufacturer:

> Corrugated galvanized iron houses, of 1, 2, and 4 rooms, lined with wood, floored, glazed, and complete in every other respect.[225]
>
> Iron warehouses –

---

220 Information December 2017 by Ray Stevens, ray@oikos.com.au. The photograph has been dated to 1879

221 Inspected December 2018, courtesy of the owner Jisuk Han.

222 So Jisuk Han tells me, by email of 23 September 2021.

223 *Glasgow Herald,* 25 March 1855, p 8; 30 March 1855, pp 7, 8.

224 *Scotsman,* 31 July 1858, p 4. As mentioned above, Young also refers to £10,000 lost to bad debts 'during the late Australian crisis', but these presumably arose over his whole range of merchandise, not merely his iron builngs

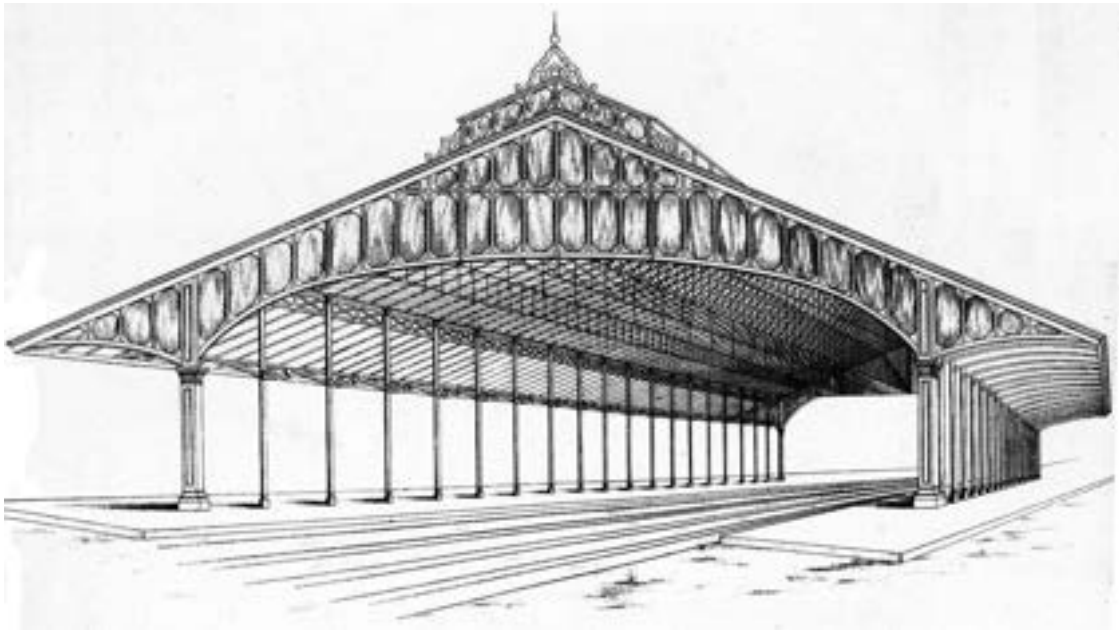
225 *Argus,* 24 September 1853, p 7.

30 x 60, two stories high (of a very superior make)
31 x 63 x 12, one story
25 x 50 x 10, one story.[226]

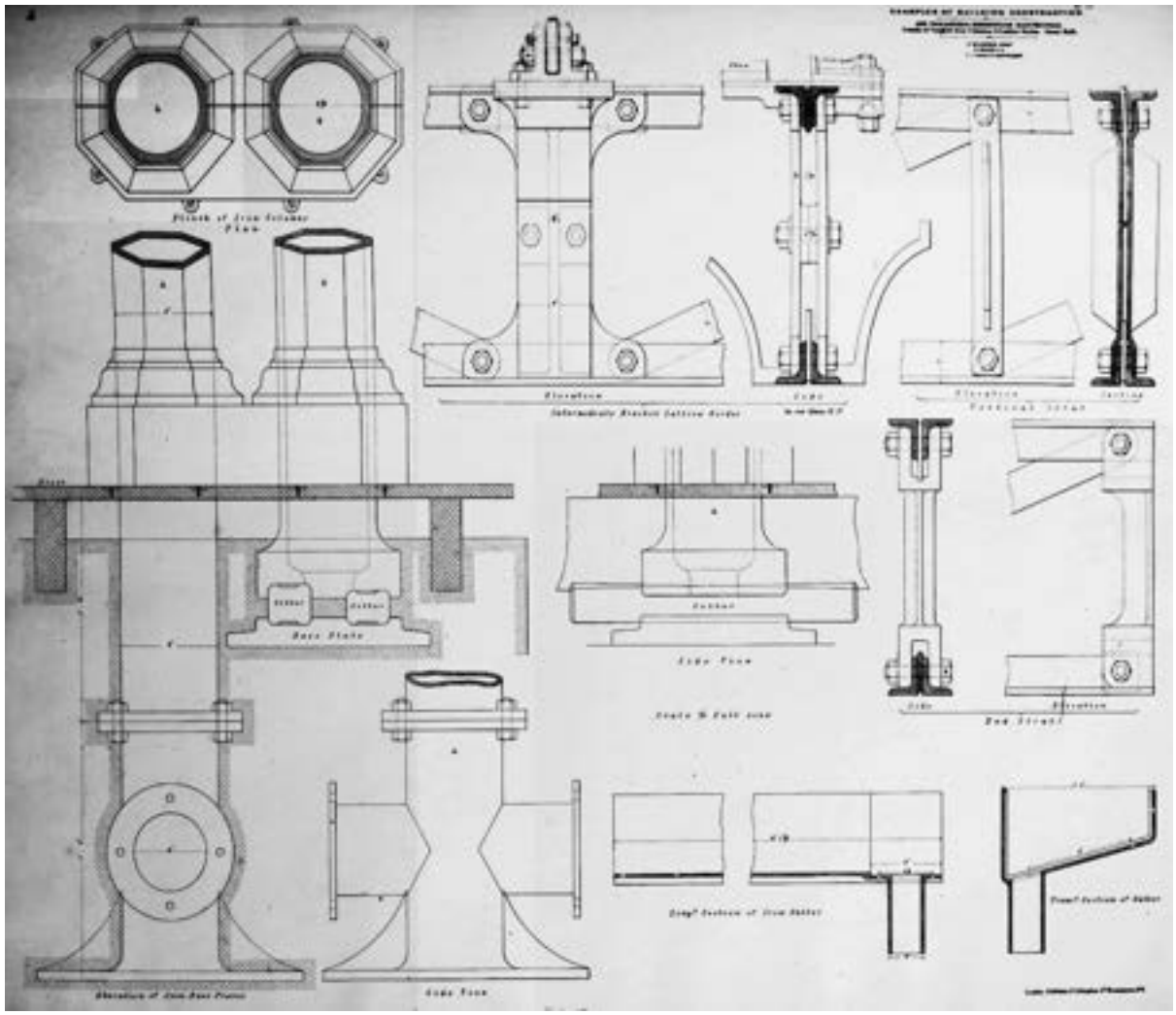
Even more tellingly, the shipping records show that on 16 May 1854 there reached Melbourne, for Wharton, Caird & Little, '92 packages iron house; 40 packages wooden house, 22 iron pillars, 42 battens, 3114 floor-boards, 160 sheets iron'.[227] The 22 iron pillars are very suggestive of Robertson & Lister's two storey stores, one of which had 24 pillars. All of these Melbourne references precede the failure of Robertson & Lister, an event which might well have enabled Wharton, Caird & Little to repudiate the debt, and explain why Young had been unable to enforce it four years later.

While there is no specific evidence of Young as a prefabricator in any normal sense, he was known for his conventional structures, such as the Dublin Exhibition building of 1853, for which he supplied the columns and other cast ironwork,[228] and the Kensington Gore Museum of 1855-6, which he designed and constructed as a package.[229] Young also built barracks, cookhouses, straw stores and other buildings for the military at Colchester and Aldershott.[230] By 1856 he had branches at 19 Great George Street, Westminster; 1 Castle Buildings, Derby Square, Liverpool; 32 St Enoch's Square, Glasgow; and 48 New Buildings, North Bridge, Edinburgh.[231] He was also a contractor for William Dredge's stiffened suspension bridges.[232]

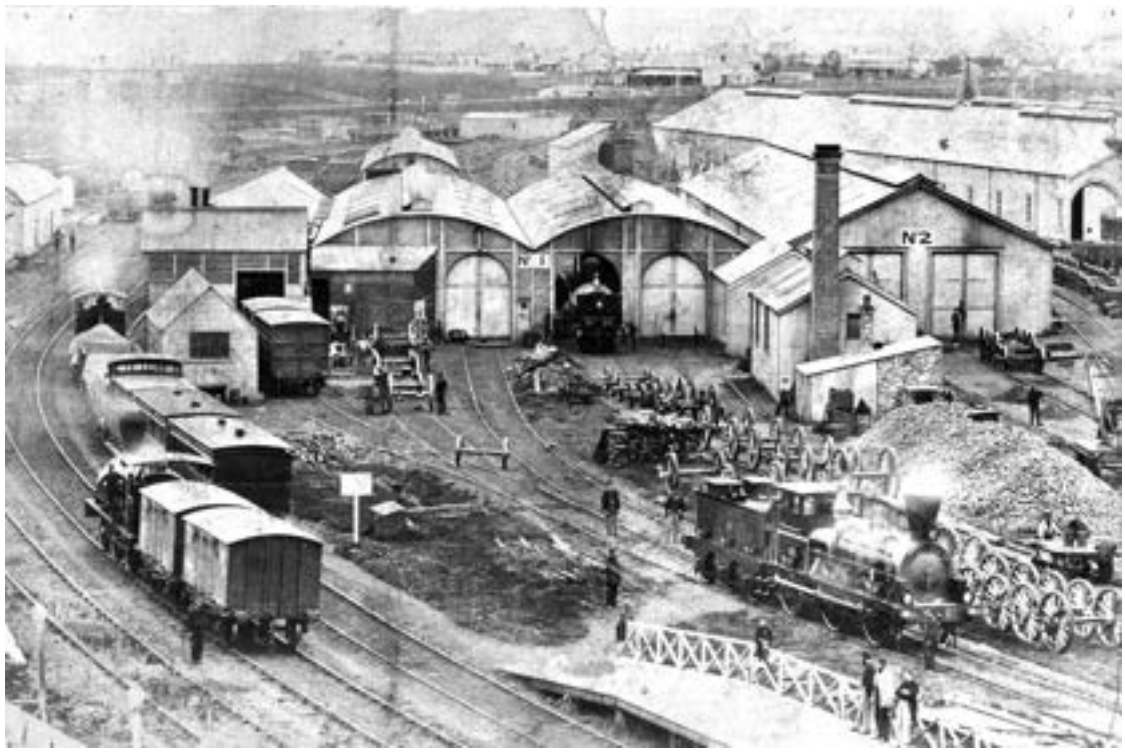
226 *Argus,* 25 September 1854, p 8.
227 On the *Hornet,* from Glasgow: *Argus,* 17 May 1854, p 4.
228 Young, *Iron Structures for Home and Abroad,* p 7; Hitchcock, *Early Victorian Architecture* , I, p 567.
229 Young, *Iron Structures for Home and Abroad,* pp 6-7; Hitchcock, *Early Victorian Architecture,* I, pp 567-8; II, §XVI, pls 42-7.
230 Young, *Iron Structures for Home and Abroad,* p 5.
231 Young, *Iron Structures for Home and Abroad,* title page.
232 Information from Tom Swailes, 17 October 2004.



‘Iron railway station roof’ allegedly constructed by Young: Charles D Young & Co, *Illustrations of Iron Structures for Home and Abroad,* no place or date (c 1856), plate 15. [Institution of Civil Engineers, London]



Iron work details from the Art Treasures of the United Kingdom building, Manchester, by E Salomons, architect and J Dredge, engineer; constructed by C D Young & Co, 1857: [Henry Laxton], *Examples of Building Construction, intended as an Aide-Memoire for the Professional Man and the Operative, being a series of working drawings to a large scale, &c, ...* ([Laxton], London no date), plate 2.58.



Williamstown Railway Workshops, Andrew Rider, photographer, 1858: State Library of Victoria H4023 PCLTAF 30.

A possible example of Young's work was the Williamstown Railway Workshops, Melbourne, begun in 1858. Here the number 1 shed was a building with two spans of arched roofing with ventilating ridges and skylights, and the whole of the corrugated iron cladding ran horizontally between exposed columns. When it was sold in 1924 (for re-erection as a factory in South Melbourne) it was said that

> the galvanised iron sheets were of exceptional thickness and were riveted together. Its width was 93 feet [27.9 m] and its depth from 105 to 190 feet [31.5 to 57.0 m]. The columns were of cast iron and the framing iron and timber.[233]

Young's business now failed. His Glasgow office closed at the end of 1857, leaving only the London branch and his then headquarters in Edinburgh at the time of sequestration. However the books held in London proved to be incomplete, the manager was dispensed with in August 1858, and it was found that over £3,000 was missing. There were a number of bad or overdue debts including amounts due on the Chelsea Bridge and the Westminster Bridge. His business seems to have been chaotic. It appears that staff in both London and Edinburgh were embezzling money (though in the latter case only that to which they felt entitled); his books were not regularly balanced or audited. He attributed his loss of £18,000 on the Chelsea Bridge to alterations required by

---

233 *Williamstown Advertiser,* 30 August 1924, and information and photograph supplied by Mr Wilson Evans. The photograph has been reproduced in Wilson Evans, *Port of Many Prows* (Melbourne 1969), p 137.

the engineer, but which were not accepted by the government, but this suggests a complete disregard for the normal principle of claiming for variations in contracting work. Most remarkably of all, he lost £14,000 on the Manchester Exhibition 'wind having no fewer than seven times blown down part of the work'.[234] The Edinburgh Bankruptcy Court assessed Young's assets at £23,070 and liabilities £116,253.[235] He was discharged on a compositon of 2s 6d in the £.[236]

No buildings by Young are known to survive. By contrast Robertson & Lister, though as yet barely recognised, must be classified amongst the most important of the prefabricators. Their utilitarian buildings are numerous and substantial and of much more technical interest than the timber-framed structures of Samuel Hemming and others. Most of all, however, the firm is important as a pioneer of the architectural cast iron façade. In New York Bogardus was earlier, but his work was of a different character. In Britain, and more particularly in Glasgow, Robertson & Lister were quickly followed by Chaplin, Dixon & Robb; John Baird; P & W McLellan and others, but none of these produced so many buildings of this substantial type.

234 *Scotsman,* 31 July, 1858, p 4.
235 Murdoch, 'Charles D Young', p 4.
236 Murdoch, 'Charles D Young', p 5.

YEDDO

Jill Barker, Jan Cattoni, Miles Lewis, Hugh Markham

021 Yeddo, 5 Lynch St, Ingham Queensland

The Japanese House never ceases to intrigue those who hear about it. The fact that it was built in Japan in 1887 and is a portable house increases the intrigue. It was first relocated from Japan to Brisbane in 1887, and then Brisbane to Ingham in north Queensland in 1962. The moves were not easy nor without significant problems. After experiencing a north Queensland wet season, a traditional Japanese master builder suggested that we may want to consider relocating the house again, somewhere less vulnerable to cyclones and humidity.

Originally, the house was something of an experiment or prototype for a plan to import as many as could be sold. It took considerable research to discover this, and we were lucky to meet artist and historian, Jill Barker (2011) who was able to uncover much about the circumstances in which the house was first built and travelled to Australia.

There is evidence that the house was the equivalent of a display home in that the use of decorative tiles in place of the more customary eave treatment declares the house to be made in Japan. It was built at the height of the Meiji period, which is generally believed to be the height of Japanese craftsmanship, and saw the short-lived opening of Japan to the West.

*Looking at the house in this context one can identify elements of its design that lend themselves to portability. The distinctive sliding doors predominate in the floor plan instead of walls, and the rooms are sized to suit modular floor mats (*tatami*). The roof tiles were originally laid on mud, and not physically fixed to any framing.*

Dismantling of the verandah roof at the Brisbane site in 1962, showing the construction of round pole rafters, transverse boards, and mud, onto which the tiles were laid: Markwell collection.

View of the house frame during dismantling: Markwell collection.

The absence of fixed walls is possible due to the nature of the principal framing, which is essentially a table, the roof being the heavy top which is supported on an array of posts. The door heads are suspended from the roof on shorter timbers which we recently discovered are adjustable to allow for the natural movement of the roof framing over time. The primary roof framing consists of massive beams from which are hung the ceiling and door heads and over which is a latticework of lighter members supporting the roof tiles and substrate. The less modular elements of the house are the more conventional plaster infill walls which were originally constructed with bamboo laths rendered in coloured clay, a treatment which is inexpensive, but requires considerable skill.

Much of what we now know about the house has come about through an arduous almost detective-like process that began with the inherited knowledge of the house

drawn from Hugh's mother Pam Markwell who was responsible for buying and relocating the house to far north Queensland.. We began living in the house in 2007 following her unexpected death. We made our first trip to Japan in 2008 in search of expertise and assistance in the complex restoration of the house. We were fortunate to meet Japanese historians and traditional building restorers who, whilst initially unconvinced that ours was a traditional Japanese house, became enthusiastic following a survey visit in 2010. The Japanese master builder or toryo *who accepted the job, Akira Mitsuda, stated that such a house comes to a master builder usually once in their lifetime and that he anticipated that it could take up to 50 years to adequately restore it.*

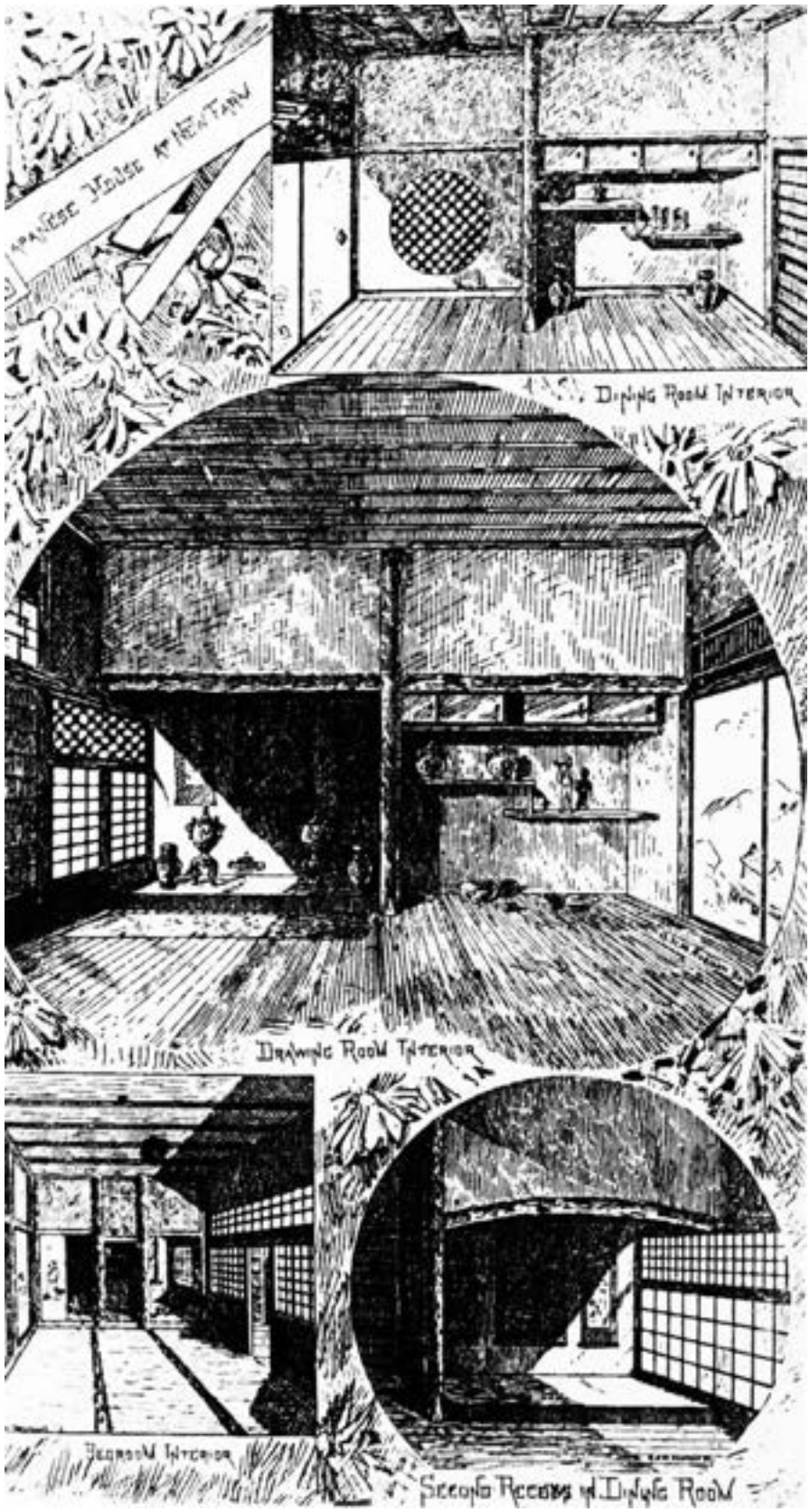
During a complex roof restoration that involved two teams of Japanese craftsmen, much more was discovered about the house, including the suggestion that some of the timbers dated from before 1887, most likely due to a tradition for recycling elements and timber from older structures. We learned that the peony rose decorative roof tiles and the circling verandas are more consistent with Shinto shrines and monks' residences, as opposed to a domestic house. Perhaps these are some of the older elements? The maker's mark on the roof tiles was identified as belonging to a craftsman in Hiroshima, rather than near Kobe where the house was first commissioned. Such have been the secrets that the house continues to slowly yield.

The house was entered into the Queensland Heritage Register in 2003 based on the following significance: "The story of 5 Lynch Street is important in demonstrating the pattern of Queensland's history. It provides evidence of late nineteenth century society's attitudes and interest in other cultures, & …. that it demonstrates a rare building type in Australia and displays the principal characteristics of a Japanese House in the shoin style,[237]

In 2009 the Conservation Management Plan undertaken by Riddell Architects consolidated knowledge of the house up to that time. What we have learned since the CMP is that the house is probably the oldest Japanese building outside Japan. The ongoing work by Japanese craftsmen and the research by the historian and artist Jill Barker in 2011 and 2017 continue to contribute to a bricolage of cultural, historical, and technical knowledge about the importance of this building.

Hugh Markwell & Jan Cattoni (owners)

[237] https://apps.des.qld.gov.au/heritage-register/detail/?id=602193.



'Building a la Jap' [illustrating 'Yeddo'], drawing by G H M Addison, *Boomerang,* 24 December 1887, p 18.

The Queensland judge G W Paul (1839-1909) wasn't looking for a house when he travelled to Japan, but staying in a cool and airy 200 year old Japanese house near Kobe during the summer of 1886 persuaded him of the value of such a dwellling in Queensland.[238]

He believed that 'apart from raising house stumps to escape the ravages of white ants, little has been done towards making Queensland houses suitable for Queensland requirements'. Now he could see that Japanese house design might be a first step towards a new Australian architecture, and 'should help to solve the problem of semi-tropical architecture'.[239] Since Japanese building practices used modular elements and were sometimes taken apart and moved, he decided to have one prefabricated and sent to Brisbane. That house is, it appears, the first Japanese house exported for use as a dwelling.

Paul found that he could order the basic house structure, and add a range of bespoke 'extras' such as interior panels with paintings to divide rooms and carved fretwork ventilators. All the timber for the house would be pre-cut and test assembled, then packed flat and sent on a ship with builders to erect it.

Kanō Jiroemon, a sake maker, was contracted to prepare and test assemble the house. An Englishman named Wilkinson who was living and working in Kobe acted as Paul's agent, and arranged shipping. A Japanese newspaper reported that 'Yeddo', as Paul would later name the house, was a test case to see if building such houses in Brisbane could be a viable business.[240]

The house 'in dovetail' - that is, ready to assemble - arrived in Brisbane in April 1887, together with five Japanese builders, who were a part of the contract. It was constructed at the corner of Langshaw Street and Bowen Terrace, New Farm. It was put up to auction in January 1888,[241] but it failed to sell, so the business venture was abandoned and Paul occupied the house himself, delighting in living in such a fine and unusual space.

The house was single storied and measured about 18 by 14.5 metres, with a surrounding verandah, and was raised off the ground a little higher than customary in Japan, on 72 brick stumps. It was part of a complex, with two servants' rooms, kitchen block etc, linked to the main block by a covered way. The verandah acted as an open flow-through area between inner spaces and the outside. White sliding shutters formed an exterior wall when closed, and could be slid away into built-in storage boxes to open up all or part of the house.

---

238 Damien Dewar, 'A Japanese House in Brisbane' (March, U Queensland 1999). Jill Barker, *A Japanese House: The Story of Building a Home*. *Griffith Review*. 21 November 2018. https://www.griffithreview.com/articles/a-japanese-house/ See also Donald Watson, *The Queensland House* (typescript report, Brisbane 1981), p 9.4, quoting the *Hiogo News,* 3 March 1887.

239 'Building à la Jap', *Boomerang,* 24 December 1887, p 18.

240 'Ordering a Japanese style house (A foreigner in Australia)', **Kobe Yushin Nippo, *no 1065*,** 25 November 1887, p.3.

241 *Brisbane Courier,* 4 January 1888, p 8..

The interior spaces, separated and enclosed with sliding panels below plastered partitions, were described as five bedrooms, two drawing rooms, a dining room, storeroom, pantry, hall, and a bathroom and water closet installed by local builders. The central area could be opened up to form one large space.

Everyone who saw the house when completed was amazed by the quality and finish of the joinery and surfaces, and with the ingenious design elements and the wonderful painting and carving. Journalists in 1887 were most impressed with how beauty and utility were combined: 'extraordinary examples of art applied to a mechanical process'. Strategically placed reflective silver leaf - on cupboard doors or on screens - caught late afternoon light to dispel darkness; and timber carved as fretwork landscapes doubled as ventilation screens, allowing air flow above the room divisions. Delicate paintings on the sliding panels themselves showed flowers and fish, waterfowl and wild ducks, waterfalls and sea views, famed landscapes and aspects of life in Japan, a bathhouse scene and an historic battlefield. One landscape painting continued through from one space to the next.

As described in the Brisbane *Courier* in 1887:

> The frame work of the building cannot be seen, as it is hidden by plastered linings, but it is composed of heavy beams and baulks of a wood which resembles pine, the joints being fitted with an accuracy which might cause many a European cabinet-maker to blush. This strength in the skeleton of the house is required to support the weight of the roof, which, as it is constructed entirely of ornamental tiles, some of which are profusely ornamented with grotesque figures and characters in relief, must be quite forty tons. The odd appearance of the roof of the house is the first thing that attracts the passer-by's attention. The tiles for the most part are the colour of black-lead or else a deep brown, but the numerous angle-pieces and ribs are painted or burned white, and the effect produced is most singular. But for the remarkable appearance of the roof, the exterior of the house would not be very striking, for when the veranda shutters are drawn to, it seems to have four blank staring white walls, without any means of ingress or egress. …The main walls of the building and the principal partitions are constructed of a peculiar sort of plaster work, which on the outside is coloured white and inside is tinted in hues harmonising with the character of the decorations of the various rooms. The main entrance fronts on Langshaw-street. It is covered by a portico, and some half dozen steps lead up to the doorway.[242]

According to the *Telegraph:*

> The floors of the house, as seen on the verandas (for the floors themselves are covered with matting) are of Pinus massoniana, and are fine, large boards, 18 inches wide by fully an inch thick [actually the width varies up to half a metre wide, probably reused from the old house], and

[242] *Brisbane Courier,* 21 December 1887, p 6.

> beautifully worked. The “cramping” must be of the most perfect character, for floors and verandas are as level as a plane surface can be.[243]

And the *Courier* again:

> The joinery work, and even the rough carpentering work, throughout the building, is remarkable. The closest inspection fails to disclose a clumsy joint or a patched-up nail hole, and everything appears to have been done as if it was anticipated that it would be most closely scrutinised and condemned if fault could be found. The timber used in the construction is entirely Japanese, and some of it, especially that which has been put in the ceilings, is beautifully grained and exactly fitted. In the two drawing-rooms a quaint old-fashionedness is given to the appearance of the woodwork by the introduction of an upright and two cross baulks of [cherrywood] timber in the round without either knots, excrescences, or bark being removed. The effect of these timbers contrasted with a dais of beautifully-smoothed wood and lacquer work, and standing out against neutrally-tinted plaster walls, is as pleasing as it is startling. ... It would be difficult to imagine a cooler or more charming dwelling than this Japanese house must be in summer time.[244]

Paul's aim was primarily a practical one, to find solutions for living agreeably in Brisbane's climate. From first planning, there were minor variations in design from the old house 'Yeddo' was modelled on, to allow for a different lifestyle, while keeping its character and charm.

243 *Telegraph (Brisbane),* 21 December 1887, p 2.
244 *Brisbane Courier,* 21 December 1887, p 6.

‘Yeddo’ as erected at New Farm, Brisbane: Photograph c1899 provided by the grandchildren of Mary Elizabeth Elmslie (1873-1959).

‘Yeddo’ as at New Farm, plan and south-east elevation: Emma Scragg & Susan Hill, ‘The Japanese House, 5 Lynch St, Ingham Conservation Management Plan’ (Riddel Architecture, Fortitude Valley [Queensland] 2009), pp 12, 9.

Interior views c1899: Elmslie collection

The moon window from the east during dismantling: W H Carr.
Mary Elmslie at 'Yeddo', c1899: Elmslie collection.

.

‘Yeddo’ in the 1950s: Emma Scragg & Susan Hill, ‘The Japanese House, 5 Lynch St, Ingham, Conservation Management Plan’ (Riddel Architecture, Fortitude Valley [Queensland] 2009), p 16.

The roof framing: Markwell collection.

Detail of the roof sructure during dismanting in 1962: Markwell collection.

View of dismantling: Markwell collection [cropped].

Master builder Akira Mitsuda restoring shoji screens on site Jan Cattoni.

Details of restoration of the eaves and the gablet: Hugh Markwell.

In 1961, when the site was sold for redevelopment, the house was dismantled[245] and re-erected 1,600 km to the north, at Ingham, where it survived in reasonably good condition. Restoration began in 2011 and is ongoing. The roof was fully restored over a period of seven years and received a National Trust silver medal in 2017.

245 W H Carr, 'The Japanese House', *Architecture in Australia,* December 1964, pp 99-100.