

Function and Exterior Design of Verandaed Colonial Houses in New South Wales

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1. Purpose and Methods

Verandaed houses are the most “Australian” of all colonial-time architecture, reflecting distinct characteristics closely associated with its climate and environments. We certainly get the impression looking at the exterior views. And in Australia, Verandaed colonial house have acquired their originality through gradual development. Although Australians have been active in conducting research, measurement surveys, and renovation or conservation of historic buildings¹⁾, few analysis have been done comparing specific case examples. Thus it is important in the sense that we re-discover the identity of colonial houses in Australia, which has been generally overlooked.

This is a study on houses of the early colonial period (between 1788 and 1850) in New South Wales. The purpose of this study is to clarify their specific characteristics from the following key points :

- 1) To analyze the role of the veranda by classifying floor plan shapes based on how verandas are connected to the main building.
- 2) To analyze the role of exterior design by classifying roof style based on the relationship between house and veranda.

For the analysis subjects, I used 41 case examples of verandaed houses from a

1) Dr. James Broadbent remarked in his doctoral thesis “Aspect of Domestic Architectures in NSW 1788 – 1843” on the characteristic examples of Australian colonial houses : The main conditions are French doors, small-scale, symmetry, hipped roof, one-story building, single housing, a mildly-inclined roof, the building unified with the veranda roof or roof of the main house and minimum use of decoration.

book in which architectural historian Rachel Roxburgh had included actual diagrams from her measurement surveys (*Early Colonial Houses of New South Wales*, Lansdowne Press Sydney, 1974). The series of those houses were built in five suburban cities in New South Wales (approximately 100 km radius near Sydney), the first state to be colonized in Australia and the one which continued to expand until the rule of Governor Lachlan Macquarie.

2. Verandaed House in Australia

The first year a veranda was built on to a residential building in the Australian colony was 1793. There is a theory that military person who had been stationed in the British Indian colony moved to Australia and introduced the bungalow style of housing. Exterior space covered with sunshade called colonnade, terrace, loggia, and veranda are also often suggested in pattern books published around 1800 in England. Verandaed colonial houses in New South Wales had large sunshade on one to four sides of house, creating the unique silhouette effect of a mildly-inclined roof. In some cases, the roof was supported by narrow wooden pillars (often converted to iron or open iron pillars later on), thus making the pillar a component of the main structure. The wall of the house was made of wood, brick or stone. For the stone wall, local sandstone was used. Although the original style of colonial house was British, the veranda with a broad sunshade was added as an essential element because of Australia's strong sunlight and sudden squalls. Verandas were installed to the external wall with a 1–to 3–m width. It helped soften the outside light into the house while creating a shaded area outside. A French window was often attached to the opening of the living room facing the veranda, and was opened during the daytime for direct access to the room. Being connected to the living room, the veranda area functioned as not only extended room but also a flow line of the house. Furthermore, veranda balusters and colonnades helped raise the ornate quality, thus with the shape of the sunshade and roof, providing changes in the exterior. Finally, the veranda was also an important element to create distinctive silhouettes of Australian houses.

Table 1 41 Case Examples of Houses

No.	name	date	veranda style	roof style	main view
1	Elizabeth Farm House (1 st. Period)	1794	1	1 -c	1 -c
2	Experiment Farm Cottage	1800	4	1 -a, 1 -c	1 -c
3	Glenfield	1817	2	1 -a, 1 -c	1 -c
4	Denbigh	1818	2	1 -a	1 -a
5	Dabee	1819	2	1 -c	1 -c
6	Hambledon Cottage	1820	4	1 -c, 2 -a	link
7	Manar	1825	5	1 -c	1 -c
8	Brucedale	1826	3	2 -a	2 -a
9	Norwood	1827	1	2 -a	2 -a
10	Longreach	1827	4	1 -c	1 -c
11	Dunmore	1828	3	2 -a	2 -a
12	Glenrock	1828	4	2 -a	2 -a
13	Segenhor	1828	2	2 -a	2 -a
14	Hovortvill	1829	3	2 -a	link
15	Blackdown	1829	2	2 -a	2 -a
16	Newington	1829	1	2 -a	2 -a
17	Inventry Park	1820 s	4	1 -c	1 -c
18	Invermien	1830	5	2 -a	2 -a
19	Alne Bank	1830	4	2 -a	link
20	Kelvin	1831	3	1 -c	1 -c
21	Bridge House	1831	1	1 -a	1 -a
22	Elizabeth Farm House (3 rd. Period)	1831	4	1 -c, 2 -c	1 -c
23	Horsley	1832	4	1 -a	1 -a
24	Denham Court	1832	4	2 -a	link
25	Roseneath	1833	3	1 -a	1 -a
26	Carwoola	1834	4	2 -a	2 -a
27	Thosby Park	1834	3	2 -c	2 -c
28	Brownloo Hill	1834	2	1 -c	link
29	Macquarie Field House	1835	3	2 -a	2 -a
30	Turalla	1836	1	2 -a	2 -a
31	Cooma Cottage	1836	3	1 -c	1 -c
32	Collingwood	1836	4	1 -a, 1 -c	1 -c
33	Bedervale	1838	2	2 -a, 2 -c	2 -c
34	Strath	1830 s	1	2 -a, 2 -c	link
35	Riversdale	1840	5	1 -c	1 -c
36	Grange	1840	4	2 -a	
37	Fermhill	1842	4	2 -a	2 -a
38	Rose Farm	1843	2	2 -a, 2 -c	1 -a
39	Tomago	1843	3	2 -a	link
40	St. Clair Cottage	1848	1	2 -a	2 -a
41	Burrundulla	1850	5	2 -a	link

Classification of Plan Shapes

I classified 41 case examples of houses into the five types of Straight, L-shaped, Triple Sided, Combined, and Enclosed (Table 1, 2). The first floor plans and verandas of the house were examined. Table two shows the plan shape of the veranda. In classifying veranda shapes, the following are the focal points and details :

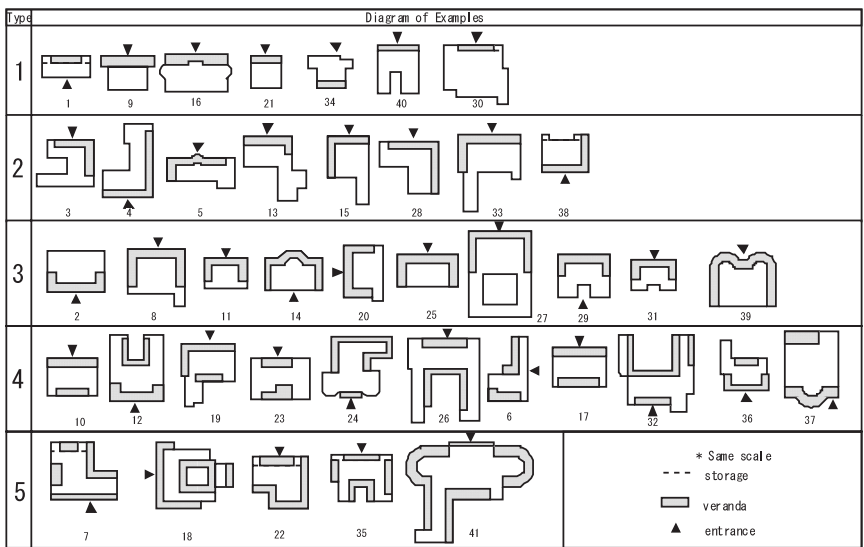
First, I focused on whether there was one continuous veranda or a plural number of verandas. Concerning the case of one continuous veranda, I focused on what number of side of the house the veranda was attached to, and classified them into Straight, L-shaped and Triple-Sided. Concerning the cases of a plural number of independent verandas, we called them Combined. And I called them Enclosed when a veranda was attached on each side of the main residential building.

a) Type-1 Straight

Example : Elizabeth Farm House The First Period (Case No. 1)

A veranda is placed facing the entrance or garden side of the house. When the veranda is built on the front side, it is normally situated in the center. It also plays the role of a relief area between the living space and road in front of the house.

Table 2 Classification of Plan Shapes



When placed facing the garden, it becomes an intermediate area between the garden and living room and also becomes living space expanded to the outside area. Elizabeth Farm House is well known as the oldest existing house in Australia as well as a typical housing example during colonial times. The Elizabeth Farm House First Period has a typical straight veranda that faces the house.

b) Type-2 L-Shaped

Example : Glen Field (Case No. 3)

The veranda is placed in an L-shape on the two sides of the main house building. There are many examples where service spaces such as kitchen are linked to living spaces such as dining room, living room or bedroom. When the veranda faces the kitchen, the veranda functions as a service space, when facing the workroom, it functions as a living space expanded to the outside. At the same time, the veranda plays the role of a service flow lines much like hallways in the house. An L-shaped veranda was installed to the Glen Field house facing the bedroom and living room and functioning as a living space expanded to the outside.

c) Type-3 Triple-Sided

Example : Macquarie Field House (Case No. 29)

In this case of a veranda with three sides connected to the house, similar to the Straight type, it is common to have a symmetrical house plan. As with Roseneath (Case 25), when the veranda is attached to the house at the corners, it is likely to face both a service space and a living space. The veranda also has the function of a service space flow line. Thus, via French windows, it plays the role of an expanded living space towards the outside. Moreover, the veranda is an important element in emphasizing the frontal and symmetrical qualities.

d) Type-4 Combined

Example : Hambleton Cottage (Case No. 6, Fig. 5, Table 3)

In this case, we observed two rows of the straight linear veranda as seen in Longreach (Case No. 10) and Inventory Park (Case No. 17), and the combination of L-Shaped and Straight as in Alne Bank (Case No. 19), the combination of triple-Sided and Straight as seen in Carwoola (Case No. 26), and the veranda scattered in three different places or more. In the Combination style, because a plural number of

verandas are independent, the degree of function varies depending on the character of living room the veranda faces. In Hambledon Cottage, flow lines from the entrance to the living room, kitchen and dining room are all connected to the veranda facing the garden. One can also see that the Straight-type veranda facing the dining room, living room and bedroom function as an outside living space.

e) **Type-5 Enclosed**

Example : Elizabeth Farm House The Third Period (Case No. 22, Fig. 4, Table 3)

In this case, much of the main building is enclosed by veranda. This trend is relatively common in large-scale houses. There were no case example of totally enclosed by a continuous veranda. This is because if all the sides of the building are 100% enclosed with veranda, the house scale (roof area) will expand unnecessarily and lose the frontal quality of the house. Also this is because south side of the building is always behind sunlight in Australia. In the Elizabeth Farm House The Third Period, and Burundulla (No. 41), the veranda is facing a service room and living room continuously, and has both functions of a service flow line and an expanded living space. In Riversdale (Case No. 35) and Manar (Case No. 7), the veranda is scattered through adjunct rooms. Depending on the character of the room it faces, the function of the veranda varies.

4. Classification of Roof Styles

The roof framing between the housing body and verandas can be classified into two groups of Unified and Separate types (Fig. 1, 2).

1) **Unified Type (1-a~d, Fig. 1)**

The roof is placed without separating the roof of the house and the roof of the veranda. As seen in the floor plan of the house and cross section of the roof truss, the veranda is built in the concave area of the house plan. And the veranda pillars are part of the housing structure of the main house. In those case, the roof is thatched in a unified manner and the house has an exterior of the large roof style.

2) **Separate Type (2-a~c, Fig. 1)**

The roof of veranda is placed on the housing body independently. As seen in

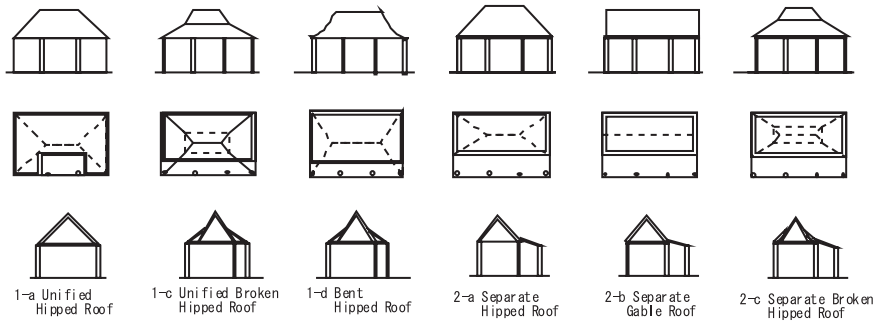


Fig. 1 Roof Framings

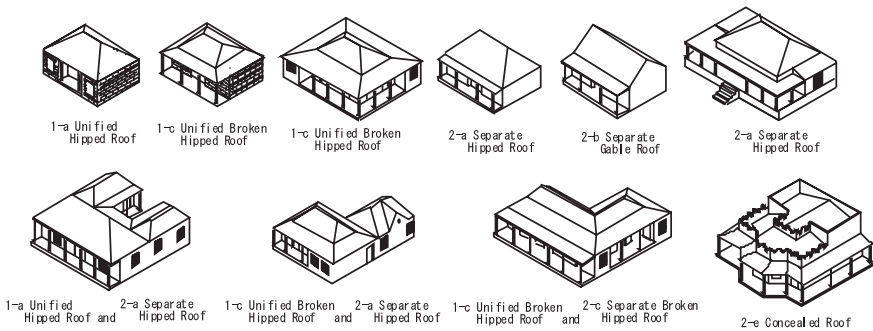


Fig. 2 Exterior Designs of Verandaed Houses

the floor plan of the house and cross section of the roof truss, the roof of veranda is placed with contact with the wall surface of the housing body. Veranda pillars support only the roof of veranda. This style is more efficient than the Unified type in terms of structure and construction.

The ridge style is classified into five types: a) hipped roof, b) gable roof, c) broken hipped roof, d) bent hipped roof and e) concealed roof.

a) Hipped Roof (1-a, 2-a, Fig. 1)

Considering the rainfall in New South Wales and that the wall surface is rectangular, this type is the most efficient and most commonly seen among houses from the early colonial period. The conceivable types based on the aforementioned classification are “Unified Hipped Roof” and “Separate Hipped Roof”. However, the former is rarely seen in the New South Wales colony because as the housing scale increase, it becomes more difficult to secure an effective height of the tip of veranda.

As indicated in 1-a, the type with a veranda on a concave area on the housing plan is commonly seen in the Indian British colony. It is believed that some soldiers who had been stationed in India moved into the Australian colony²⁾. In the Australian colony, however, the roof height decreased, rather than increased, as the housing scale and veranda area expanded. In that respect, the Separate Hipped Roof is most efficient and is conspicuously observed.

b) Gable Roof (2-b, Fig. 1)

The overall number of houses with gable roof is small. Houses with hipped roof are overwhelmingly favored. There are two reasons for this. One is to protect the exterior walls against the wind from every direction and against squalls. The other is to give priority to the continuity of the roof of veranda since the veranda was often added in an L-shaped or U-shaped design on the side of the main building. There are few cases of Unified Gable Roof (1-b) because they would have to built the main structural pillar at the veranda, which is structurally untenable. The case of Separate Gable Roof (2-b) is more commonly seen as a storage building attached to the house.

c) Broken Hipped Roof (1-c, 2-c, Fig. 1)

The inclination of a hipped roof changes from the midpoint. As seen in the floor plan and the diagram of the roof truss, rafters are placed from the center of the four sides of the roof truss. This roof consists of a slightly steep top and a mildly sloping lower part. This bottom-wide silhouette is one of the distinct exterior elements of the New South Wales early colonial houses.

d) Bent Hipped Roof (1-d, Fig. 1)

In contrast to the roof truss of the Broken Hipped Roof, this roof is thatched on the curved surface. It has no broken line on the roof surface, thus creating an elegant exterior. There are few examples of this type in the colony. One of the reasons is that once the curvature of the roof surface is decided, when one tries to add a new quarter, it is difficult to have a good balance on the entire building.

2) Freeland, J. M., *Architecture in Australia*, Penguin Books Australia, 1968, p. 32.

Table 3 Plans, Elevations and Main exterior of Three examples

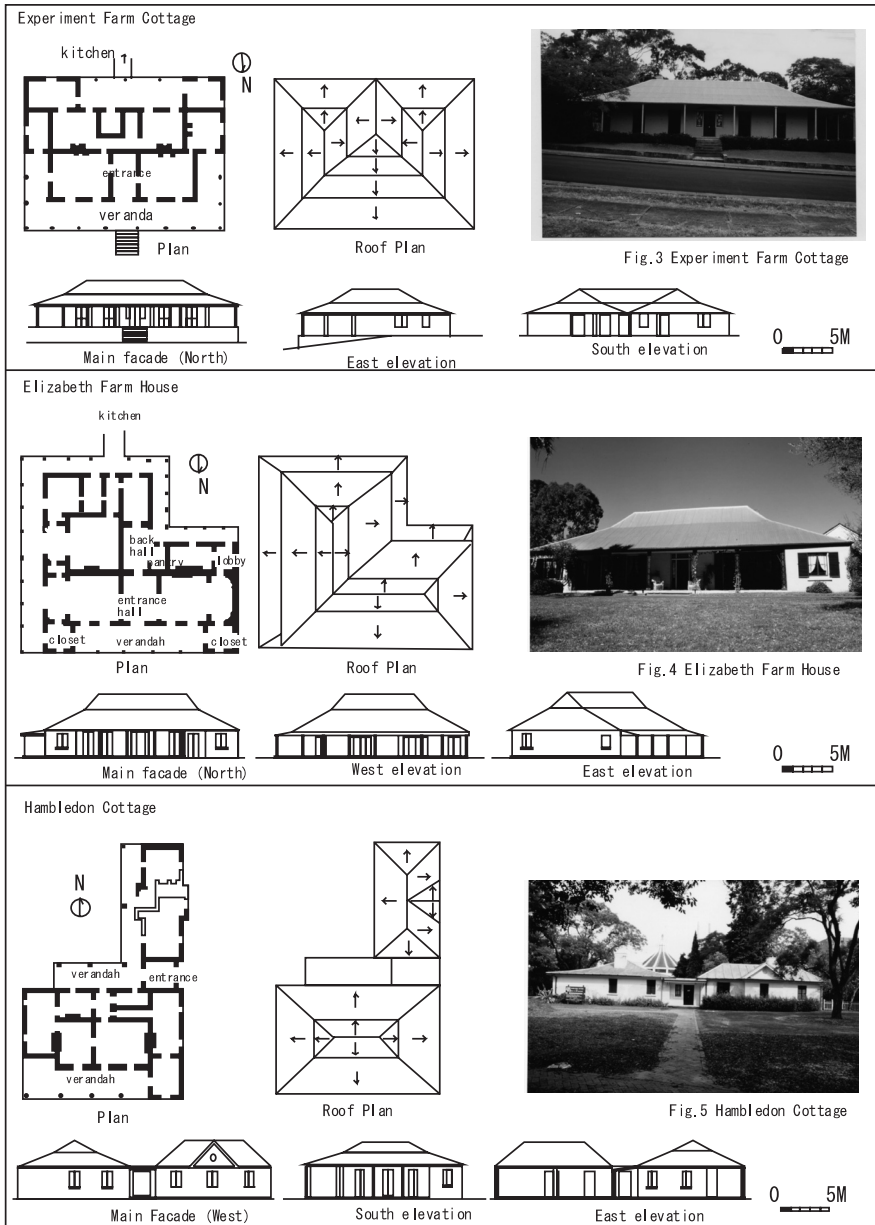


Fig.3 Experiment Farm Cottage

Fig.4 Elizabeth Farm House

Fig.5 Hambleton Cottage

e) Concealed Roof (2-e, Fig. 2)

House with its parapets at the upper part hiding the roof style (Gothic style) were very rare, but seen among upper-class houses from the end of 1840s³⁾. As seen in the “Separate Concealed Type (2-e)”, veranda roof are connected to the outer walls of the main building, creating a distinct exterior view⁴⁾.

5. The Relationship between the Cottage Style and Main Exterior

A detailed analysis on the formation of house exterior was conducted, specifically taking up three existing houses in Parramatta, a suburban city of Sydney (Table 3).

1) Experiment Farm Cottage, 1800 (Fig. 3, Table 3)

The Experiment Farm Cottage is rectangular in floor plan and has a U-shaped veranda on the north side and a linear-shaped veranda on the south side. The north elevation consists of roofs and veranda. The veranda pillars are the simple Doric order. The openings facing the veranda are French windows. Observing the ridge style in detail from the roof framing plane and elevation, the ridge is placed in a U-shaped fashion and the back plane is divided into two broken hipped roofs. The inclination was adjusted so that the elevation from the east, north and west looked to be a large ridge. Compared to the layout plan, the site looked higher than the road surface and the inclination of the roof looked milder. This symmetrical and mildly sloping exterior of the large ridge is one of the distinctive features of Australian colonial houses.

2) Elizabeth Farm House the Third Period, 1831 (Fig. 4, Table 3)

Elizabeth Farm House was built as the home of John Macarthur in 1794. The original part of the building is the rectangular section of the drawing room, dining

3) The colony was hit by a depression in 1842, resulting in bankruptcy everywhere. Thus, there were very few wealthy people who could afford ornamental buildings.

4) Although the “All-Inclusive (1-e)” type can be seen among arcades and colonnade architecture in the West, there are none in New South Wales. Thus, we omitted this type.

room and veranda with the current entrance in the middle on the south side. The existing part was added in 1831 for the second time. The main building has an L-shaped plan and verandas are placed as if to surround the three sides of the L-shape. The openings facing the veranda on the north and east are all French Windows. The east veranda is connected to the service area on the south side, functioning as the service flow line. Judging from the roof-framing plan, the initially built northern part was a Unified broken hipped roof (1-c) and the eastern part was a Separate broken hipped roof (2-c). The elevation shows that the elevation facing the north and east gardens was a large ridge broken hipped roof. The inclinations on the north and east sides were adjusted to match the eave height. The layout plan shows the kitchen and storage on the south and east. As with the Experimental Farm Cottage, the ridge form was intentionally adjusted to make the whole exterior look like a large ridge. As for the veranda pillars, highly ornamental cast-iron work⁵⁾ was incorporated into the verandas on the north and east. Narrow square pillars are used at the veranda of the service flow line.

3) Hambledon Cottage, 1824 (Fig. 5, Table 3)

John Macarthur built Hambledon Cottage in 1824 as a second house. The main building has an L-shaped plan with an atrium in the middle. Situated on the atrium side was the L-shaped service veranda and on the south side the I-shaped public veranda. The roof-framing plane indicates that the south building had a Unified broken hipped roof (1-c) and the east building had a Separate hipped roof (2-a). Placed in the center between them was the link dormer, emphasizing the frontal quality. The elevation shows that the south side plane had a large ridge of the Unified broken hipped roof (1-c) type and the east plane had a combination of broken hipped roof and hipped roof. The link dormer once again maintains the balance in elevation. On the atrium side, the north building was connected with the shed roof, and veranda roofs were added later on to further complicate the structure. Here, on the south side are of the simple Doric order. Opening facing the veranda are French windows. Narrow square pillars are used for the veranda on the atrium side.

5) The first time cast-iron was used for architectural decoration in Australia was the late 1820s. The wooden pillars of this house were replaced when they extended the house in 1831.

Discussions and Conclusion

A comparative and typological analysis was conducted on verandaed colonial houses in New South Wales focusing on the function of veranda, combination of veranda type, connection between the main building and roof of veranda and the combination of ridge style. The result shows that the veranda, closely related to daily life, functions as part of the living space expanded to the outside while simultaneously used as a sunshade or awning and service flow line. The veranda plan can be classified into five types: Straight, L-Shaped, Triple-Sided and Combined. Also the result shows that roof framing can be classified into two types: Unified and Separate. The ridge style can be classified into five types: Rectangular hipped roof, Gable roof, Broken hipped roof, Bent hipped roof and Concealed roof. It was found that by using a combination of the above, the roof style of the entire house was formed. The exterior was created through the adjustment of the inclination and connection of the roofs. At first glance, those roofs look simple and functional. Yet, hiding behind those exterior views were sophisticated calculations in terms of architectural design.

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