

# 'The Hill': An Archaeological Survey of a Queensland House

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*Vernacular buildings can be interesting subjects for archaeological investigation as many such buildings are constructed in stages, or show signs of alteration or addition. Pam Blackman, a teacher from Ipswich, Queensland, reports on a survey of a vernacular building, a farmhouse constructed in the late nineteenth to early twentieth century in south-east Queensland. The house was built in three distinctive styles and the paper describes these styles, and discusses the sequence of construction and building methods. This building sequence suggests possible changes in the social and economic situation of the family concerned and changes in building fashion and technology over the construction period.*

## INTRODUCTION

'The Hill' is a farmhouse at Clarendon, near Lowood, Queensland, built on land originally selected by the Patrick family in the late 1860s (Fig. 1). This Patrick land, some 830 ha, was situated on both sides of the Lockyer Creek, and though owned by individual members, was run as a single property. Additional land, almost 3000 ha, was held at Mount Hallen, 25 km distant, and at Coominya. The family was involved in cattle raising and horse-breeding but with the arrival of dairying in the 1890s they expanded into dairying together with agriculture on the fertile flats.<sup>1</sup>

As its name 'The Hill' suggests, the house is situated near the crest of a hill, a relatively imposing hill when viewed from the site of the original Patrick family home across the creek. The house faces the north, commanding an impressive view of the Brisbane Valley. Its first stage was built for Thomas and Amelia Patrick prior to their marriage in 1887 and was constructed on land owned by Thomas' brother Daniel. Over the next fifteen years it was extended twice, reaching its final form in 1901 or 1902. It continued to serve as a family home until it was abandoned in 1983. From its appearance it is obvious that the house was not built as one episode (Figs 5-8) and it is therefore ideal for a study of changes in building style and technology over time.

Vernacular buildings form part of the record of the lives of ordinary people. Such buildings are of a mainly functional nature but the individuality of the people involved may be revealed through the presence of particular features. The study of vernacular buildings has the potential to reveal evidence of the needs and desires of the occupants, and these buildings can tell us about the constructional techniques used by the builders. The former provides information which may complement historical evidence of the era, and the latter should contribute to a data base for the study and comparison of other buildings of a similar era.

In my investigation of 'The Hill', my intention was to determine the constructional sequence of the house and by using historical evidence, to approximately date each building phase. For each building phase, materials and constructional techniques will be briefly described and the changing function of the building discussed. Some features of the final stage of building in particular may reveal the ingenuity of the builder and the social life and attitudes of the occupants.

## THE SURVEY

The survey discussed in this paper was limited to non-destructive methods. Measured drawings were made of the four elevations of the building, using a horizontal base-line string (Figs 5-8). A floor plan was prepared from measurements of the outer dimensions of the building and from room measurements. This floor plan was then used as the basis for the underfloor plan of stumps, bearers and joists (Figs 2 & 3). Measurements of the roof-pitch lengths allowed the calculation of roof heights and pitch angles. It was also possible to record how the roof of Stage 3 was connected to the Stage 1 building, and to investigate the use of different types of roofing nails. Access to the ceiling was restricted to a 30 cm-wide ventilation hole in Room 7 (Stage 2) and although this allowed the observation of some of the techniques used for joining Stages 2 and 3, little measurement was possible. The walls of Stage 2 had been extended upwards during the construction of Stage 3, so that the view within the roof space was virtually restricted to the Stage 2 area. An approximation of the layout of the roof was made but no accurate recording could be done. There was no means of observing the internal junction of Stages 1 and 3 and no possible access to the roof space of Stage 1.

From the data gathered during the survey of this building, it was possible to reveal its structural history and throw light on the building techniques. It was also possible to gain glimpses of the lives of the people who had lived in the house during the early decades of this century.

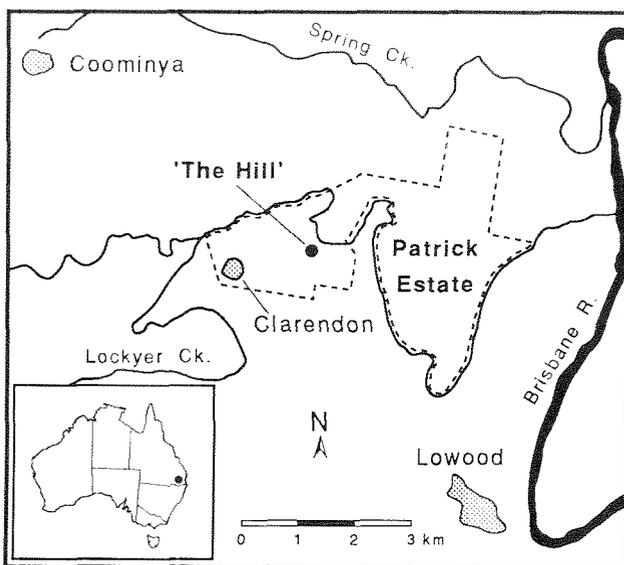


Fig. 1: The location of 'The Hill' at Clarendon, near Lowood, Queensland. Stippled areas represent settlements, the broken line shows the extent of Patrick holdings on Lockyer Creek.

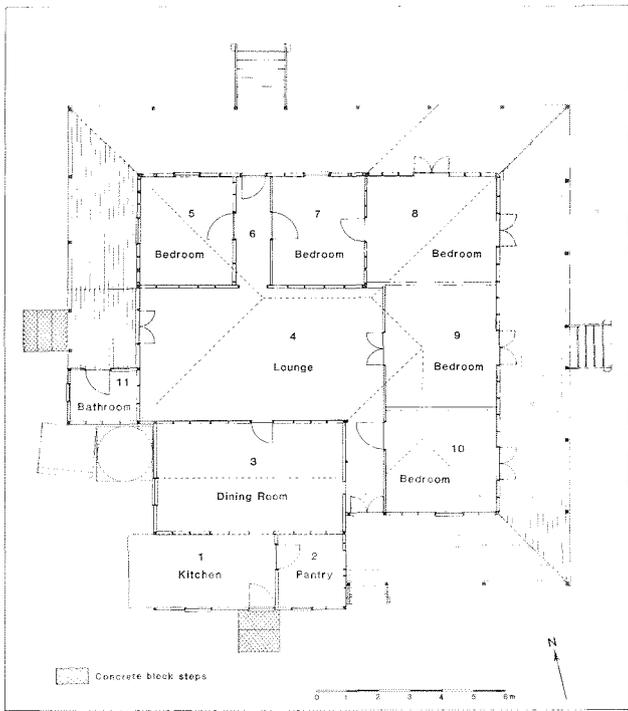


Fig. 2: Floor plan of the house.

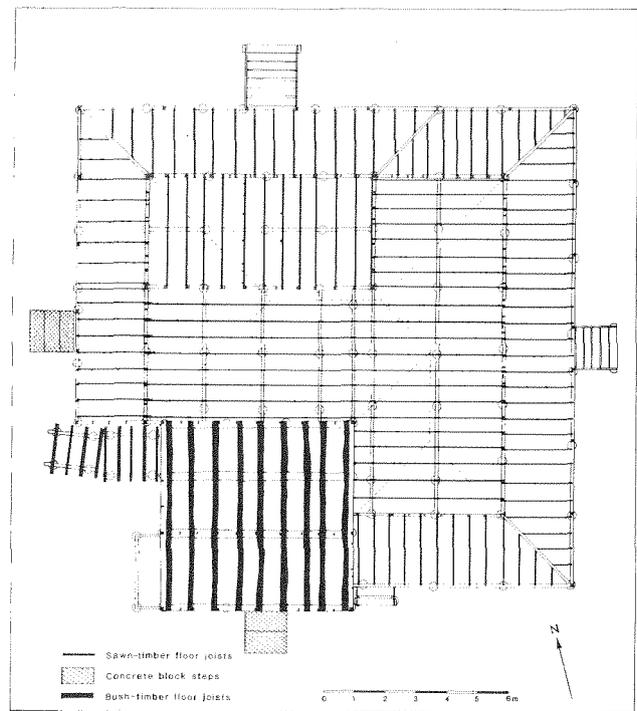


Fig. 3: Plan of bearers and joists under the house.

### SEQUENCE OF CONSTRUCTION

From the underfloor plan and the elevation drawings (Figs 3 & 5–8), three phases of construction can be identified. On the underfloor plan (Fig. 3), the section built with bush timber is obviously of a different era from those sections built with sawn timber. The contrast in building styles between this section containing Rooms 1, 2 and 3 and the rest of the building can be seen from Figures 7 and 8. The use of bush timber bearers and joists and the weatherboard construction with gable roof and skillion would suggest that this section was constructed first.

Looking at the underfloor plan, it is apparent that the section containing Rooms 5, 6 and 7 does not belong to the adjacent sections. The bearers and joists run in different directions and the joist spacing of these core rooms and their attached verandah is different from that of the adjoining section. This is verified by a photograph from about 1895 (Fig. 9) showing the section containing Rooms 5, 6 and 7 with a gable roof and surrounding verandahs, and also from the change in timber width and bracing pattern on the northern elevation (Fig. 5). Rooms 5, 6 and 7 plus adjacent verandahs, indicated by joists in the floor in Figure 2, formed Stage 2 of the building.

From the underfloor plan (Fig. 3) it is apparent that the remainder of the building was constructed in one episode (Stage 3). The floor joists run the width of the core of the house and some of the verandah floor joists run under part of the core. The hip-roof was also constructed in one episode, following the removal of the gable roof of Stage 2.

The construction of the house therefore commenced on its southern side, and it was then extended in two stages, to the north and east. The sequence is represented in Figure 4.

The three stages of construction can be dated approximately using historical and some archaeological data. The Stage 1 section had commercially-produced dish-shaped stump caps, introduced in about 1880.<sup>2</sup> The original lead-headed nails used on the roof had flat heads, and were not the cup-shaped lead-headed nails introduced in

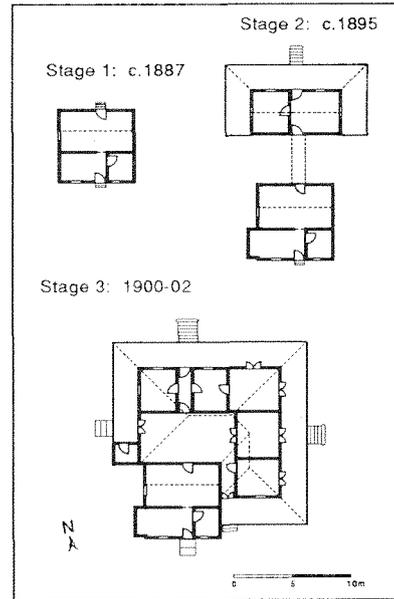


Fig. 4: Construction sequence of 'The Hill'.

late 1887.<sup>3</sup> These nails are illustrated in Figure 12. This evidence gives a probable date of 1880–1887. From historical evidence, Amelia Patrick went to the house as a bride in June 1887.<sup>4</sup> Until 1885, Amelia's future husband was officially residing at Mount Hallen, some 25 km distant, as part of a land selection agreement.<sup>5</sup> This gives a probable construction date of 1885–1887.

For Stage 2 there is the historical evidence of a photograph taken in about 1895, a date based on the estimated ages of the children present (Fig. 9). This gives an approximate date of 1895 as the latest possible time of construction.

For Stage 3 there is also historical evidence, namely that the son, Stuart Patrick, was the first child born in the new home in 1902.<sup>6</sup> The previous child was born in 1900, so the construction was apparently carried out in the period 1900–1902.

### DESCRIPTION OF THE HOUSE

Stage 1 of the house was built on low stumps, the bearers and joists being of bush timber. Where the bearers could be seen, they had been squared off and a section had been removed where each bearer rested on a stump. The corner joints of the bearers were halved joints with squared-off protrusions beyond the joint (Fig. 11). The floor-boards were of hardwood.

The wall studs were mortised into the bearers, as were the 100 x 100 mm corner posts. They were clad with weatherboards attached with rose-headed nails (Fig. 12). The walls were originally unlined, as the ceiling may also have been. However, the ceiling is now lined with 140 mm-wide tongue-and-groove boards, perhaps from a later period, and the walls are lined with 'Masonite', definitely from a later era.

There were two vertically-sliding sash windows and one casement window. The corrugated iron of the window hood (Fig. 8) was attached with cup-shaped lead-headed nails, so belongs to either Stage 2 or 3. The roof is of corrugated galvanised iron. The northern side of the gable roof and the ridge cap have been attached with cup-



Fig. 5: Northern elevation (above).

Fig. 6: Eastern elevation (below).



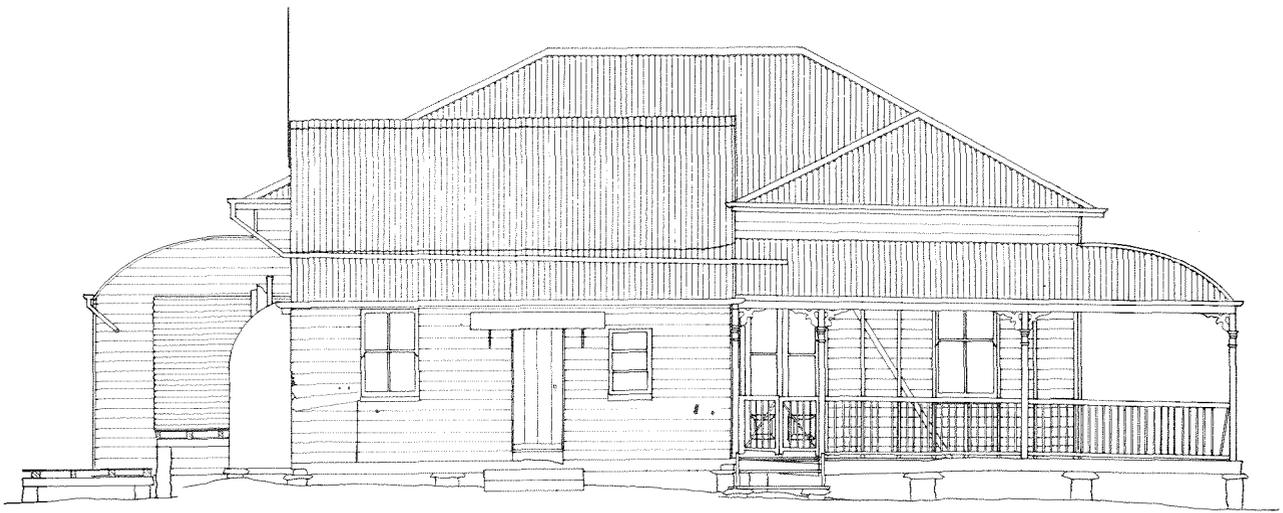
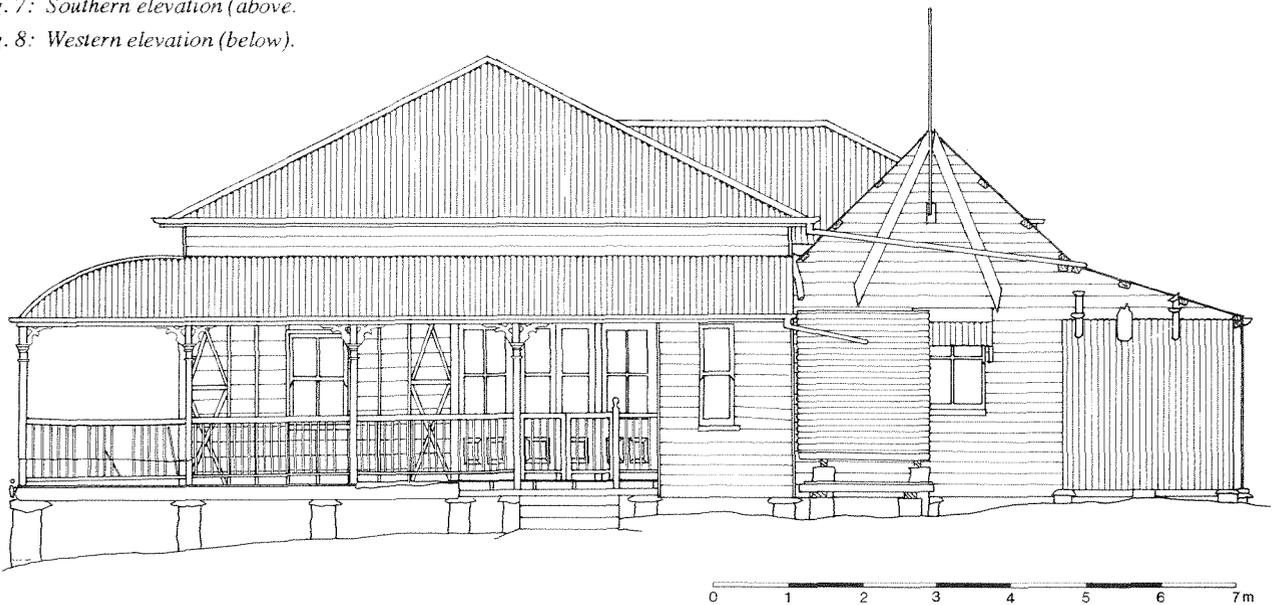


Fig. 7: Southern elevation (above).

Fig. 8: Western elevation (below).



shaped lead-headed nails, while the southern side and the skillion roof have been attached with the older small lead-headed nails. The ridge cap was made from corrugated iron, stamped or punched to make a pattern that allowed it to be bent over the roof ridge (Fig. 12).

The stove recess attached to the western side of the kitchen was not part of the original building, as there was a cooking area at the rear of the house on its southern side.<sup>7</sup> Fire bars and cooking pots from this era can still be seen on the farm. The lead-headed nails used in the recess belong to the post-1887 period, so the recess could date from either Stage 2 or 3.

The first stage of the house was built to fulfil practical purposes, eating and sleeping, as it had a kitchen/living room, pantry and bedrooms. The style and the use of bush timber would seem to be somewhat conservative for the late 1880s: the Queenslander style was widely accepted by that period and sawn timber was readily available by that time. The simple layout and the use of bush timber would suggest the need for economy.

Stage 2 was a two-roomed cottage with verandahs on three sides. It was built on the same level as Stage 1, the two sections probably being connected by a walkway. The bearers were of sawn timber and the flooring was of hardwood.

The building style was Queenslander,<sup>8</sup> with an exposed framework on the outside of the core and horizontal tongue-and-groove cladding on the inside of the framework. Figure 12 shows a section of the cladding. The wall studs were mortised into the bearers and the upper wall plate, with a diamond pattern of bracing in a panel at each end of three of the four walls. There are cut-in diagonal braces on the remaining southern wall. The windows were of vertically-sliding sash type.

Two beams crossed the building at wall plate level, presumably as braces. The roof rested on the wall plates and was of tied-rafter construction, the centre ceiling being higher than the walls. The verandah flooring was of hardwood, attached with rose-headed nails.

Like Stage 1, Stage 2 was built for practical purposes. The expansion of the family can be seen in the photograph dated to about 1895 and this would have necessitated extra space (Fig. 9). The placement of this cottage away from Stage 1 would suggest that this was to be only one stage in an ongoing programme of construction. In the meantime, extra living space was provided by the verandahs. The use of the diamond bracing on the external core framework first appeared in Queensland in the 1870s,<sup>9</sup> so was well established by the 1890s. From the photograph (Fig. 9), the house would appear to have been restrained in style. At a time when decorative verandah post brackets were available, only a simple decoration was used along the edge of the verandah roof.

Stage 3 incorporated the core and part of the verandah of Stage 2 and all of Stage 1 in one large house.

Most of the bearers under the core of the house appear to have been re-used, with traces of paint and mortises. The wall studs were mortised into the bearers with diagonal cut-in braces. There were no corner posts, only a stud at each end of the wall. The external walls of the core had horizontal tongue-and-groove cladding on the inside of the framework but internal walls had vertical tongue-and-groove boarding supported by a horizontal centre rail.

The verandah had a convex roof supported at each corner by a curved rafter, and had lead ridge caps at the corners. The wooden brackets at the top of the verandah posts were relatively simple. The verandah flooring was of hardwood, attached with round-headed nails. Within the core, the flooring of Rooms 8, 9 and 10 was of pine, while that of Room 4 and the hallway attached was of hardwood, reputedly Crow's Ash.<sup>10</sup>

Because of the shape of the house, the gable roof was replaced with a hip-roof. The wall height was raised to form a step above the verandah roof and this extra walling was clad externally with chamferboards.

In order to give access to the verandah, a pair of French windows flanked by fixed windows was installed at the western end of Room 4, the lounge built as part of Stage 3. A set of top lights above these

windows added a decorative touch, with red flashed glass forming a border on three sides of each of the three main panes of glass, which were covered with a transfer design, collectively providing a theme of shamrocks and roses (Fig. 13).

The builder had to use some ingenuity to be able to unite the separate earlier buildings into the new building. Stage 1 posed problems, as the gable roof had to be connected to a hip-roof. On the eastern side of Stage 1, two posts were placed beside the weatherboard wall to support the hip-roof. The corner post was mortised into the bearer of Stage 1. A piece of flat iron was then bent to form a shallow gutter, one edge being placed under the edge of the hip-roof and the other under one of the weatherboards of the gable of Stage 1. This led rain-water to the southern guttering of the hip-roof. On the northern wall of Stage 1, the wall had to be extended upwards to form the chamferboard section between verandah roof and hip-roof. The northern side of the Stage 1 roof was removed, the wall extended and the roof batten near the gutter was moved further up the roof line, so that a gutter could be installed between this batten and the chamferboard wall, leading rain-water to the west. The roof was then replaced on Stage 1 and the Stage 3 roof was built so that it partially covered the Stage 1 roof. This explains the observation that more modern lead-headed nails were used on the northern side of the Stage 1 gable roof than on its southern side.

To incorporate Stage 2, its gable roof and verandah roof were removed. Stage 3 walls were higher than Stage 2 walls, so that the intervening gap between the old Stage 2 wall plate and the new verandah support was covered with a chamferboard. The new proportions of the house also required the re-spacing of the verandah posts. The outer bearers must have been replaced, as there are no mortises in the bearers where the posts would have stood in Stage 2 (compare Figures 5 and 9). The outer floor-boards of the verandah were also replaced, as they are attached with the round-headed nails of Stage 3, and this removed any remaining traces of the former arrangement of the verandah posts. Finally, the chamferboard section between verandah and hip-roof was built on to the wall plates of Stage 2, the studs being braced to the tied rafters of Stage 2. Pinpoints of light in the roof suggest the re-use of roofing iron.

Stage 3 shows considerable use of decoration, with the use of transfers on windows, flashed glass and wooden fretwork verandah brackets. This would suggest that the family was more prosperous than at earlier stages and more socially active. This is confirmed by the existence of the lounge, which was to be the social centre of the house, hence the decorated windows and the Crow's Ash floor. Crow's Ash is recognised locally as being a suitable timber for dance floors. Dances and sing-songs around the piano were quite popular.<sup>11</sup> The Patricks had a large family and there were other families nearby. They would gather together and travel to 'The Hill' to dance to the accompaniment of a button accordion.<sup>12</sup>

The completed house contained five bedrooms, a provision for a large family. As well, there was extra space on the verandahs, a necessity with the social activity that was part of the life of the house for the first two or three decades of

Fig. 9: Northern view of Stage 2 of 'The Hill', c. 1895.



the twentieth century. The family diary of 1920–1921 chronicles the constant comings and goings of a stream of visitors.<sup>13</sup> One daughter recalls the time when twenty-three people stayed overnight on one Christmas Eve.<sup>14</sup>

The window decorations using the shamrock and rose were in themselves a social statement, and even perhaps a political statement, the family being of Irish Protestant extraction. The use of such a theme in decoration may also have been part of the builder's style.

However, even though some decoration was included in Stage 3, the building was still completed economically, with the use of second-hand timber bearers, and the re-use of roofing iron, presumably from Stage 2.

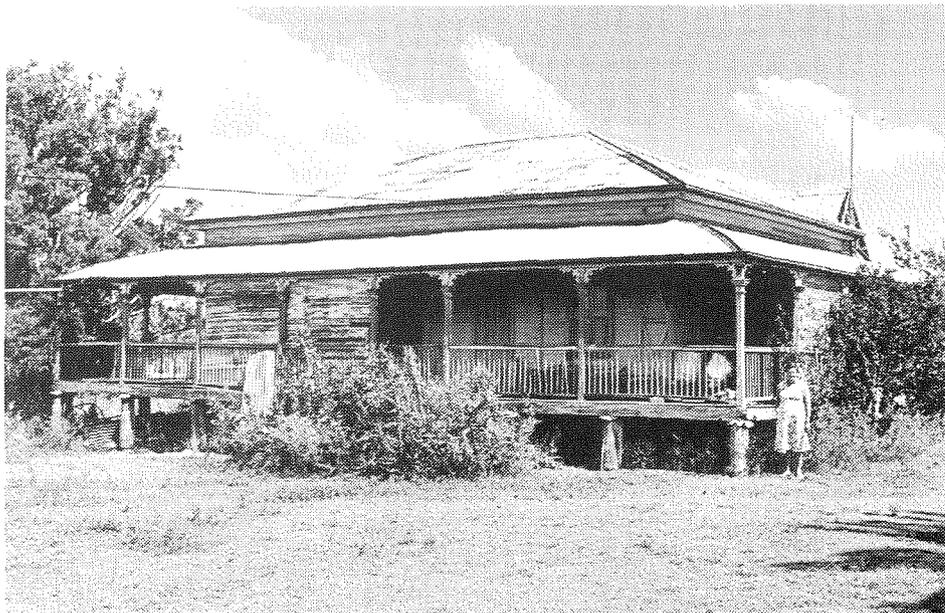


Fig. 10: Northern view of 'The Hill' in 1988.

### COMPARISONS BETWEEN BUILDING STAGES

Some changes in building specifications can be determined from the comparison of measurements in Table 1 and the comparison of construction methods and materials in Figures 11 and 12 respectively.

Once sawn timber was used instead of bush timber, the size of the underfloor materials did not alter from Stage 2 to Stage 3. These were consistent with those measurements laid down by Haddon in 1908 for the construction of timber frame buildings.<sup>15</sup> He recommended joist spacing of 450 mm, closer than that of this building. Comparison of floor joist spacing across the three stages of construction shows a gradual reduction in spacing.

The spacing of wall studs, by contrast, would appear to have increased. This was brought about by the adoption of French windows. If these are excluded, the spacing is 486 mm for Stage 3, representing a reduction from Stage 1 and being close to Haddon's 1908 figure of 450 mm.<sup>16</sup>

The ceiling height, and therefore the roof height, increased over time, from 2.79 m in Stage 1 to 3.49 m in Stage 3. The measurement of ceiling joist spacing is approximate only, as access to the roof space

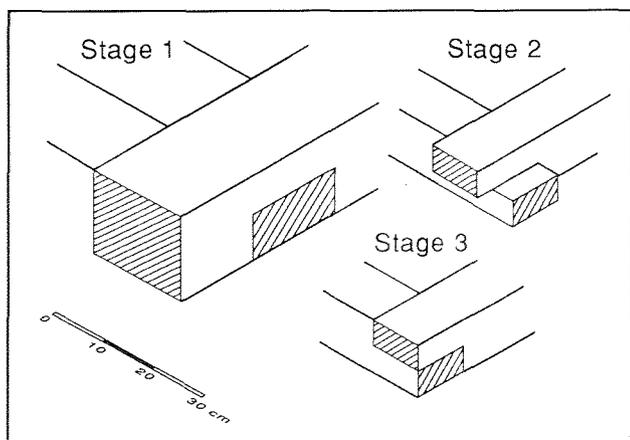


Fig. 11: Isometric views of the corner joints of bearers.

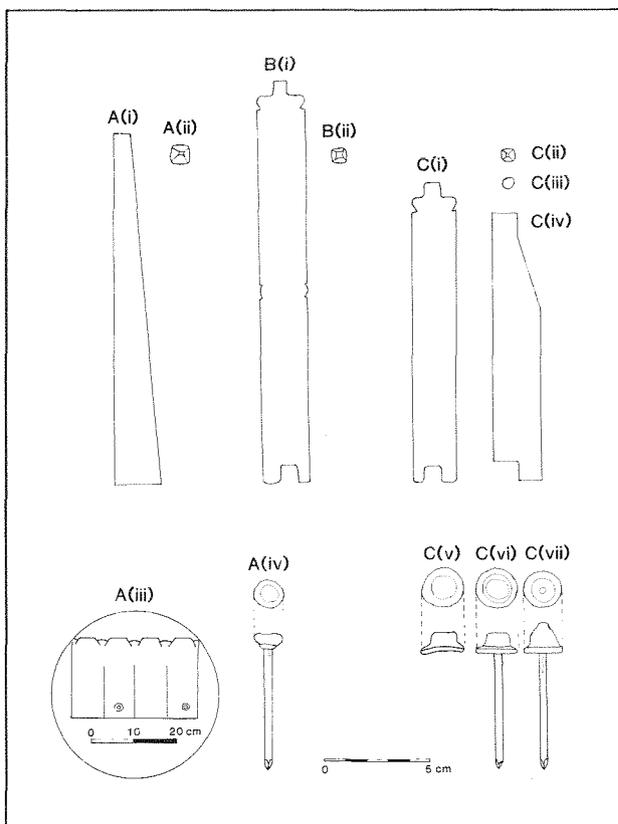


Fig. 12: Some materials used in the building.

Stage 1: A (i) Section of weatherboard. A (ii) Nailhead, from wall. A (iii) Ridge cap. A (iv) Lead-headed nail.

Stage 2: B (i) Section of tongue-and-groove board. B (ii) Nailhead, flooring nail.

Stage 3: C (i) Section of tongue-and-groove board. C (ii) Nailhead, from wall. C (iii) Nailhead, flooring nail. C (iv) Section of chamferboard. C (v) Lead-headed nail. C (vi) Modern lead-headed nail: used. C (vii) Modern lead-headed nail: unused.

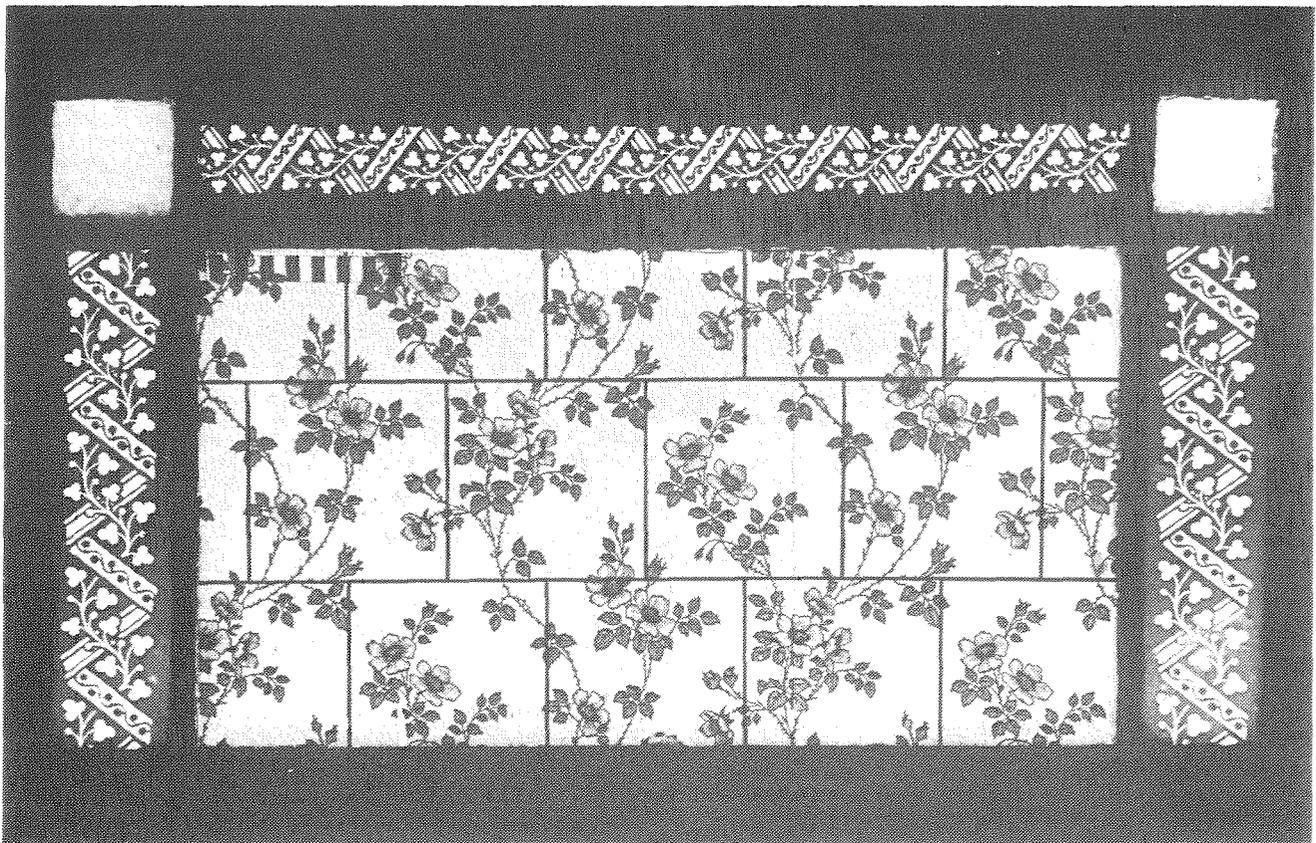


Fig. 13: Window decorated with flashed glass and transfer design. Scale interval 1 cm.

was strictly limited. The measurements do, however, show a trend towards a reduction in spacing but this may be associated with the change from gable to hip-roof. The Stage 3 figure of about 480 mm is relatively close to Haddon's 1908 spacing of 450 mm.<sup>17</sup> The roof angle decreased from Stage 1 to Stage 3, but this could be related to the change from gable to hip-roof and the need for the roof to cover a wider area.

## CONCLUSIONS

This survey has revealed some of the changes in fashion of building style, techniques and use of building materials evident in one house, and has given glimpses of the changing social and economic situations of the owners.

This particular house displays the changes in building styles in a country district adjacent to a town. The railway reached Lowood in

	Stage 1	Stage 2	Stage 3
Floor bearers	Bush timber (logs)	95 x 95 mm	95 x 95 mm
Floor joists	Bush timber (saplings)	95 x 50 mm	95 x 50 mm
Mean spacing floor joists	710 mm	603 mm (core) 666 mm (verandah)	516 mm
Mean spacing external wall studs	608 mm	603 mm	643 mm
Floor-board width	140 mm	140 mm	95 mm 140 mm
Wall cladding width	175 mm (weatherboard)	190 mm (tongue-and-groove)	140 mm (tongue-and-groove)
Ceiling height	2.79 m	2.93 m 3.27 m (tied gable)	3.49 m
Ceiling joist spacing	Unknown	c. 820 mm	c. 480 mm
Roof angle	c. 40°	c. 28°	c. 26° c. 28°

Table 1: Comparison of some measurements from the three building stages.

1884 and at about that time the population would have increased relatively rapidly, so that it would be expected that change through communication could increase over time.

By comparing photographs, Stage 1 of this building would appear to be similar in style to the Patrick homestead 'Oaklands' across Lockyer Creek, described in the 1877 selection report as being a weatherboard and chamferboard five-room house with verandah and shingle roof.<sup>18</sup> 'Oaklands' would have been built at the latest in 1877, approximately ten years prior to the building of Stage 1 of 'The Hill'. Within eight years, with the construction of Stage 2, there is the adoption of a completely different style, the Queenslander, with exposed framework, diamond pattern bracing and a tied gable roof. Within a further six or seven years, with the construction of Stage 3, the Stage 2 style was abandoned for another style, with diagonal bracing and a hip-roof. At some time in the fifteen years of construction, with developing technology, or perhaps transport, or the improvement of the owner's financial situation, a stove replaced the open fire for cooking and this activity was moved into the house.

There were some refinements in techniques over the fifteen year period, as can be shown in changes in bearer corner joints. The Stage 1 joint shown in Figure 11 was replaced in Stage 3 by a simple halved joint. Corner posts were not used at all in Stage 3 but the studs were still mortised into the bearers and not into a bottom wall plate.

Considerable ingenuity was displayed in the attachment of the Stage 3 building to the other two buildings. Stage 1 must have presented some problems and the guttering system between the northern section of Stage 1 and Stage 3 proved to be impractical, as it cannot be replaced without demolishing part of the house.

There were some changes in fashion in the timbers used over the fifteen years: from weatherboards, to wide tongue-and-groove boards beaded to give the appearance of two boards, to chamferboards and narrower tongue-and-groove boards. There were also some changes in nail technology and the possibility of the development of commercially-produced ridge capping.

In addition, the structure reveals something of the owners' changing social and economic situation. It would appear that they were restricted economically in the early stages but by the time that Stage 3 was built, they were able to have non-essentials, such as the dance floor in the lounge and the decorative windows. By 1902 they must have been reasonably well established after the difficulties of drought and depression in the 1890s. This did not mean that economy was ignored, as there was the re-use of building materials, namely the bearers and roofing iron. With the growth of the local population and the Patrick family, there was an opportunity for increased social activity, so a house was built to allow for such activity.

This house, therefore, shows some of the changes in building at the turn of the century and something of the lives of ordinary people.

#### ACKNOWLEDGEMENTS

This survey was completed with the assistance of Stuart and Ann Patrick, who allowed free access to 'The Hill' and assisted with the survey. Marie Blackman and Lyndal Briggs also helped with the survey.

#### NOTES

1. Anon. 1905: 32.
2. Bell 1984: 164.
3. Anon. 1887: 358.
4. Information from A. Ulyatt, Mount Hallen, daughter of Thomas and Amelia Patrick.
5. McLean 1885.
6. Information from S. Patrick, Clarendon, present owner of house.
7. Information from S. Patrick.
8. Sumner 1985.
9. *ibid.*: 301.
10. Information from S. Patrick.
11. Information from D. Gagen, Chermside, daughter of Thomas and Amelia Patrick.
12. Information from E. Yesberg, Oxley, daughter of Thomas and Amelia Patrick.
13. Amelia Patrick, personal diary, 1920–21.
14. Information from D. Gagen.
15. Haddon 1908: 327–9.
16. *ibid.*: 329.
17. *ibid.*: 327.
18. Blaine 1877.

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