

The Goorawin Shelter

Ed Oribin's Contribution to the Aboriginal Housing Panel.

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Abstract

In 1976, a Yolngu councillor Dick Bandalil wrote a letter in English to the Minister for Aboriginal Affairs in Canberra, requesting housing for his Wulkabimirri Community in Arnhem Land: "Dear Ian Viner. How are you there. I hope you, you getting fine and happy, and also Michael Heppell too. I am very well here Wulkabirrimi, so I want Goorawin shelter". Dick Bandalil went on to ask the Federal Minister to provide, "as soon as possible", six Goorawin shelters. Two Goorawin shelters, supplied by the Aboriginal and Torres Strait Islander Housing Panel (ATSIHP) had already been erected in Ramingining, and Dick Bandalil evidently saw a need for more. The Goorawin shelters were a prefabricated, single-skin plywood-clad structure designed by Cairns architect Edwin Oribin and commissioned by the ATSIHP director Michael Heppell. By 1978, Minister Viner and Heppell were in dispute when the Federal Government brought the ATSIHP to an abrupt end. Established in 1972 by the Royal Australian Institute of Architects, the reputation and architectural legacy of the Panel and its Aboriginal housing projects are mixed. Despite trenchant criticism of ATSIHP projects including the Goorawin (often in reports commissioned by the Panel), Dick Bandalil's letter to the minister suggests a counter narrative. The Goorawin was an unorthodox assembly of lightweight steel frame and plywood panels, part of a series of Oribin's geometric experiments in prefabricated housing. This paper examines Oribin's little-known architectural contribution to the Panel through correspondence, drawings and reports. It places the Goorawin shelter and its variants in the broader activities of the Panel and asks questions about the intentions and reception of Oribin's designs in an inchoate but fertile period of housing design for Indigenous Australians.

Introduction

The Aboriginal Housing Panel (AHP), established by the Royal Australian Institute of Architects in 1972, visited Cairns in September 1974. Secretary Virginia Braden and three members of the AHP - Michael Griggs, Ron Sevitt and Ken Woolley - provided information on the Panel's purpose and activities while seeking regional advice and contributions to an Australian wide effort to improve the design of Aboriginal and Torres Strait Islander housing. Architect Edwin Oribin, already recognized for his work in North Queensland, attended the Cairns meeting with three other architects, government representatives, and members of Aboriginal housing cooperatives.¹

The minutes record Oribin's participation in the meeting and his offer to co-ordinate a North Queensland group on behalf of the AHP in its first phase. Further archival documents describe his contribution to the Panel between 1974 and 1978. Oribin provided designs for a series of transportable dwellings, evaluated desert housing, and served as a member of second phase of the Panel between 1976 and 1978.² During this time, his transportable Goorawin shelter was prototyped and then delivered to 12 remote Aboriginal communities scattered across Australia.

The Goorawin shelter was one of a number of experimental temporary housing solutions that Oribin designed for the Panel. All were variations on folded plate geometry, pre-fabricated, and flat-packed for transport to remote locations. With historical distance, the shelters appear as somewhat indulgent experiments, favouring architectural form over use. Thorough and independent evaluations revealed a range of technical and functional problems with the Goorawin, but the shelters were reasonably well received by Aboriginal people, including Dick Bandalil.

In a period characterised by its failures, how does Oribin's contribution fit into the piecemeal history of Indigenous housing, and what can be learnt from his contribution to the Aboriginal Housing Panel? Using archival material and interviews with his contemporaries, this paper charts Oribin's architectural contribution to the Panel. It attempts to evaluate his design work set against the objectives of the Panel and Aboriginal housing need in the 1970s.

Sources

An archive of AHP documents illuminates a significant and early attempt to contribute solutions to the Aboriginal housing problem. The archive includes copies of Oribin's drawings, correspondence and reports on his Goorawin and other shelters. In contrast to these data, Oribin preserved very few drawings or documents related to his architectural projects, with his attitude to history recorded in his introduction to Martin Majer's undergraduate thesis on his work.

An architect with a sense of history and heritage, who had kept all the detailed records of his work, would have made the job so much easier for him [Majer]. I have none of these attributes being a man of the present and the future, I destroyed all past plans and record as the years went by so has almost no documentation to contribute to Martin's study.³

Majer's thesis and an unpublished autobiography provide an overview of Oribin's life and projects.⁴ In both documents, the design of the Goorawin and work for the Panel receive scant attention.

Oribin's architectural practice

Oribin's work from the late 1950s to the early 1970s is highly regarded for good reason, with inventive projects that earned him an esteemed position in Queensland's architectural history. This includes four 1960s buildings listed on the Queensland heritage register, an entry in the *Encyclopedia of Australian Architecture*,⁵ and the Eddie Oribin award for the Institute's North Queensland building of the year. Recognition of his slightly anomalous body of work came relatively late with his Cairns-based practice parochial enough for Oribin to have been described as "self-taught" and a "maverick".⁶

Although Oribin was circumspect about discussing his work and legacy, the buildings and extant documents confirm his interests and architectural influences on the noteworthy design work between 1958 and the late 1960s. Non-orthogonal geometry, combined with inventive structures and novel construction techniques, distinguish his designs for three churches, the Mareeba Shire Hall, several houses and his own studio. The projects were enriched by Oribin's willingness to experiment with traditional and novel materials, and his inquisitiveness about different building crafts and techniques, an approach reflected his designs for Aboriginal shelters.

Oribin acknowledged the influence of Frank Lloyd Wright on his work - evident in the geometries and materials of his churches and houses - subscribing to American journals and to *Japan Architect*.⁷ Oribin's aeronautical interests were germane to his architectural ideas and experimental approach to form. An experienced pilot, aerodynamic principles influenced his ideas about plan forms and ventilation, while his model-making and craft skills informed his practice and communicated his intentions (he competed in model aircraft tournaments from an early age).⁸ Scale models and full-size prototypes were clearly integral to developing the geometries for the range of Aboriginal shelters including the Goorawin.⁹

In 1969, Oribin ended his commercial architecture practice, frustrated by the meagre returns from an intensive period of work.¹⁰ The hiatus in his architectural practice was partly filled by regular trips to document Aboriginal rock art on Cape York Peninsula with Percy Trezise and Aboriginal artist Dick Roughsey.¹¹ With these trips and his regional practice, Oribin would have been exposed to the problems of Aboriginal housing: both Trezise and Roughsey attended the AHP Cairns meeting with Oribin in 1974.¹² Oribin left Cairns in 1978 to begin a peripatetic architectural career that pursued, unsuccessfully, an attempt to manufacture and distribute the Oribin Five Minute Tent, which had evolved from his design work on transportable Aboriginal housing.¹³

The AHP and ATSI-HP

The Panel operated in two distinct phases. From 1972 until mid-1975, the AHP was committee of the Royal Australian Institute of Architects. Outgrowing its dependency on volunteer members, the Panel was incorporated in July 1975, becoming the Aboriginal and Torres Strait Islander Housing Panel Inc. (ATSI-HP). Under the new director Michael Heppell, a chartered accountant and anthropologist, the Panel was restructured to include five Aboriginal members, who were influential in reshaping the operational focus.¹⁴ By 1976, two full-time architects were employed by the Panel, with a third joining in 1977. The Commonwealth Minister for Aboriginal Affairs Ian Viner abruptly ceased its funding in September 1978.¹⁵

Under its initial broad terms of reference, issued in 1972, the objective of the Panel was "to investigate and contribute to the implementation of solutions to problems related to Aboriginal housing".¹⁶ Early documents describe its purpose as a national advisory body that aimed to promote consultation with Aboriginal people and organizations, collate data and conduct research on housing. Its modest budget, funded by the Department of Aboriginal Affairs (DAA), allowed for volunteer members to travel to Indigenous communities around the country and attend meetings in and beyond its Canberra base.

Panel members developed individual research topics and organised working groups to evaluate housing options, designs and construction technologies. Research topics included industrialization and prefabrication, self-constructed housing and the distribution of Aboriginal housing societies.¹⁷ In the first AHP phase, state and regional branches of the panel were formed to work housing conditions and climate types. Both phases of the Panel maintained an active dialogue with the DAA, offering advice and seeking direction.

The AHP identified a need for both short and longer-term solutions to an ill-defined housing crisis - the first major report commissioned by the panel collated quantitative data on Aboriginal housing need. Seeking new types of transportable dwellings, the panel tested a range of experimental designs for temporary shelters that could replace self-constructed humpies and suit the needs of traditionally mobile groups. In addition to Oribin's designs, the AHP sought and tested other temporary shelters including canvas-covered, steel-framed wiltjas and geodesic domes.¹⁸

The appointment of full-time director Michael Heppell in 1975 heralded a change in organization and shift in its focus. The composition of the Panel changed and Heppell, influenced by the new Aboriginal members, employed three full-time architects who could spend time in Aboriginal communities to develop housing projects. With limited funds, Heppell continued to employ consultants to evaluate the built projects.

Oribin and the AHP

Ed Oribin's design work and consulting for the panel bridged its two organizational phases. It began at the AHP Cairns meeting in 1974, when he agreed to act as the Panel's coordinator for North Queensland chapter. In the meeting's wide-ranging discussion on the design challenges, Oribin's technical focus was evident. He showed less interest in the social and cultural influences on housing or an interdisciplinary approach favoured by attendees Paul Memmott and Merfyn Edwards.¹⁹

At the time of the meeting, Oribin was working on a design for Aboriginal housing at Laura, the base for his Quinkan rock art recording. Commissioned by Aboriginal Historical Places Trust, which was chaired by Dick Roughsey, Oribin had designed a transitional house, describing it as a dwelling as a between humpy and "a fully completed and furnished home". Planned as two parts connected by a screened and roofed breezeway, the slab-on-ground hardwood framed and clad building was a nod to prefabrication: "The whole house can be pre-cut, pre-finished in the factory and assembled on this site with a portion of local aboriginal labour under supervision".²⁰

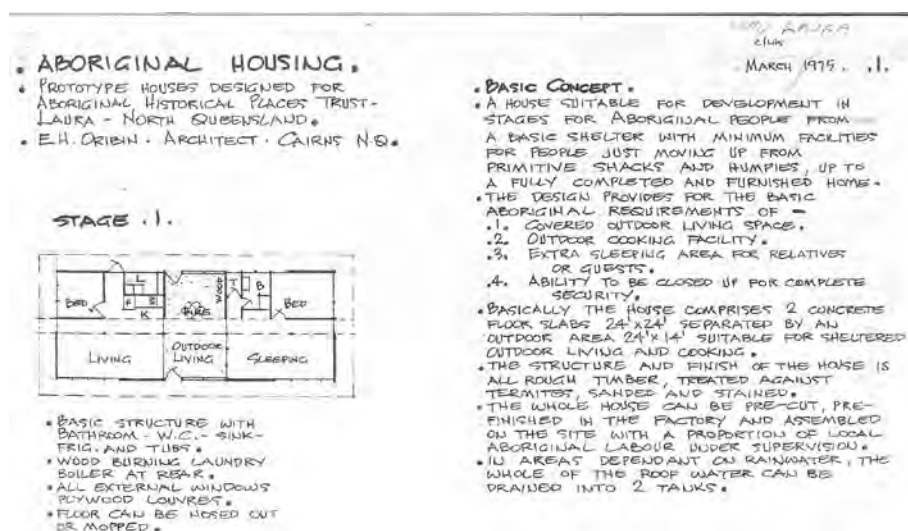


Figure 1. Oribin's proposal for housing at Laura (AIATSIS: MS3254)

Whether through observation, or, more likely, the advice of Roughsey, Oribin included a covered outdoor living space, outdoor cooking, extra sleeping area for relatives or guests and a lockable screen for complete security.²¹ The design was robust and acknowledged the climate. Less than one month after the Cairns meeting, the AHP sent a letter to the DAA, advocating for funding of the Laura housing project.²² The houses were not built although the design was Oribin's first foray into Aboriginal housing.²³

Rebuilding the membership of the Panel in late 1975, Heppell flew to Cairns to meet Oribin. (Heppell had fallen out with the RAIA members of the AHP and was seeking to appoint an architect to the Panel outside of the Sydney establishment.) Oribin impressed Heppell who invited him to join the Panel, with Nugget Coombs and Ted Mack as the non-Indigenous members.²⁴

Conceived as a portable housing solution for Aboriginal town camps and outstations, Heppell commissioned the Goorawin project as a rapid response to housing need in the more traditionally orientated, remote communities and outstations. More permanent housing, Heppell realised, required a different approach to the temporary solution. ATSI-HP architects employed by Heppell spent extended periods in communities to develop trust and the type of knowledge that would translate into houses tailored to communities and individual needs. From its inception, the Panel supported the prototyping and testing of architectural solutions for a transportable shelter deliverable to very remote places.²⁵ In many such places, Aboriginal families were highly mobile within settlements or camps and between locations.²⁶ Ideally, shelters could be relocatable once erected. Oribin's Goorawin was architecturally the most ambitious of these designs, which included a steel-framed canvas tent (the James Wiltja) and a geodesic dome. All were designed as a prefabricated kit-of-parts to be assembled on site.



Figure 2. Goorawin panels in transit at Aurukun, 1976. Photograph Mike Heppell (AIATSIS, HEPPELL.M01.CS).

In his scant recorded comments on the design, Oribin emphasised its transportability:

One of these designs was called the Goorawin Shelter, and it was made of hinged plywood panels which could be folded up and carried on the back of a truck and very quickly erected by unskilled people using simple tools that are normally carried in a Land Rover in the Bush.²⁷

The Goorawin was also informed by observations on the use of humpies and houses. Having learnt from the failure of the inward-looking Laverton House, the Goorawin was designed to permit 360° surveillance from within the dwelling.²⁸ To achieve this, all walls were operable. Hinged at the top, the wall panels could be propped open, creating shade around the dwelling. Adjustability would permit adaptation to changing local climatic conditions. Fully closed, the dwelling was to provide security for inhabitants and lockable storage when away from camp. Without servicing, it was expected that internal fires would be used regularly in the Goorawin. The flammability and specification of the single skin cladding was an ongoing concern for Oribin and the Panel.

The final design was developed from full-scale prototypes. Leo Spork, who manufactured building elements in Brisbane, worked closely with Oribin to develop the first prototype in 1975. Spork developed the details of the shelter including a rubber hinge that waterproofed the flexible joint. The first Goorawin and its extension were assembled for review outside of the DAA offices in Canberra in early 1976. In 2016, Leo Spork recounted the rationale for the design, based on “complete flow through ventilation, 360 degree vision, must be able to be shifted to a new location by a small family (say like a tent), an ability to hang carcasses out of the way of dogs, maximum shade, robust in construction, simple to erect, be able to be secured at night (keep the quinkans out), have only one (1) secure space, and more”.²⁹



Figure 3. A cruciform Goorawin prototype without hinged walls.
Photograph Mike Heppell (AIATSIS, HEPPELL.M02.CN).

The Goorawin shelter had cross-in-square plan with four intersecting gable roofs (see figures 3 and 4). The cruciform plan could be extended in four directions with a rectangular-plan extension, which also served as a stand-alone shelter. Plywood roof and wall panels were clipped to a steel-framed structure that was assembled with a mallet and spanner. The plywood panels were stiffened with pine battens with mastic sealant used to waterproof the joints. The operable wall panels (all 12 in the cruciform type) were hinged to the roof panels with a continuous rubber strip. This allowed all of the walls to be raised and supported by stays. The Goorawin were low to the ground, with the openings set at 4'6" (1372 mm) and the ridge height at 7'6" (2286 mm). The low height assumed no furniture, with the expectation that inhabitants would continue to live on the ground.

Heppell sought comment and critical responses to the Canberra prototypes from a range of people familiar with remote communities including several anthropologists (see figure 4). Joseph Reser, who had conducted research on dwellings in Arnhem Land, was positive in his response:

My overall impression of the Goorawin was that it is far more suitable for remote areas than any other prototype which I have seen. While it has many selling points, the principal and most critical feature would be its maximal potential for resident control. Not only can it be modified in size or altered in location to accommodate extended family and special subgroup situations (e.g. widow's camp), but it can be quite readily modified to accommodate wind, rain, and sun conditions, optimal fire location, sleeping requirements, interpersonal disputes, simple preference, etc.³⁰

QUOTATION: What does history have in store for architecture today?

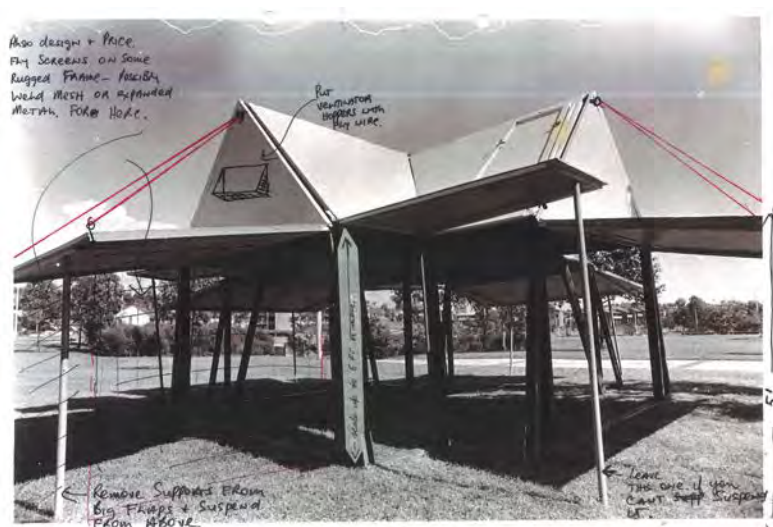


Figure 4. Goorawin prototype in Canberra with suggested improvements by Peter Willis. Source AIATSIS, MS3254.

Ralph Symonds was awarded a contract to manufacture Goorawin shelters with adjustments based on the evaluation and critique in Canberra. With the final design settled, 17 Goorawin and 17 extensions were sent to 12 remote settlements, determined in consultation with the DAA. Although the design was more for arid regions, the distribution was widespread and the sites climatically diverse: Aurukun and Ramangining in the monsoon tropics to the desert communities of Warburton, Jigalong and Fregon.³¹

A comprehensive report on the Goorawins was planned but adequate funding from the DAA was not forthcoming. Heppell, however, arranged four independent evaluations of the in situ Goorawins at Alice Springs, Aurukun outstations, Wulkabimirri near Ramangining, and one report on Fregon and Waite Creek (near Yuendumu).³²



Figure 5. A Goorawin under construction at Aurukun, 1976.
Photograph Mike Heppell.

The reports indicated that the shelters were relatively successful with respect to transportability, the ease of erection, and the sturdiness of the steel frames. But the observed technical flaws were relatively consistent across all four reports. The plywood wall panels were insufficiently rigid and prone to twisting, which compromised the latches required to secure the closed panels: “the hinged

panels were not strong enough nor sufficiently rigid for their function, and they were not lined with a fire shield as had been suggested".³³ The panels were stiffened with poor quality pine battens that had been fixed to the plywood with adhesive and staples..

Clips used to secure the panel to the steel frame were not up to the task and all reports agreed "the clipping system must be radically altered".³⁴ The poor quality of the panels was the responsibility of the manufacturer, but many of the defects were related to the design. The reports enumerated the defects but also offered solutions. Some of the technical defects could be remedied but internal fires, and thermal comfort in general, were ill-suited to a single-skin plywood cladding. Heppell did not think the Goorawin were suited to the tropics or sub-tropics from the outset.³⁵

Perhaps more telling were the observations and evaluation of the use of the Goorawins by the recipients. In Wulkabimirri (near Ramingining), the Goorawin "were received enthusiastically by the residents of the community".³⁶ The two types of Goorawin (cruciform and extension) were accepted and used at Fregon and Waite Creek although at Waite Creek outstation the community was more concerned with securing a reliable water source at the time.³⁷

The reports criticised the lack of overhead storage options in the Goorawin, "a rather serious problem" according to Reser who stated that, "in fact the principal function of a shelter is often storage".³⁸ In one of the extension Goorawins, "a traditional forked stick platform was built inside the unit two days after the erection, and some goods were stored there". This Goorawin was only ever used for storage.³⁹ A larger cruciform Goorawin in the same camp was used for sleeping but it too housed a traditional platform structure. Walker noted a similar perception of the shelters at the Yuendumu outstation: "The Walbiri at Waite Creek referred to the Goorawins as 'yuwali' and stated they felt the main use for the shelters was during rain time, cold time and for storage".⁴⁰

The operable panels were rarely used as intended. Initially impressed by the Canberra prototypes, Reser's observations of the in situ Goorawin recorded the types of domestic behaviors that would challenge designers for decades to follow:

Finally a serious design problem which was not initially foreseen is that the raising and lowering of the side flaps with any frequency seriously disrupts any organisation of, or structurally defined space (i.e. with respect to the placement of goods, blankets, foodstuffs, or the construction of a shade or lean-to), and a large clearance area is needed. This is a real problem because people tend to live around not in their dwellings, and external space is physically structured and organised to this end.⁴¹

Although the Goorawin was clearly flawed, Heppell's insistence on evaluation produced useful data on design parameters and need for temporary dwellings. Oribin responded with designs for a Goorawin 2 and a range of transportable modular buildings, based on a revision of the panel geometry.

The Goorawin Family

In 1976, with the Goorawin prototyping and manufacture underway, Oribin designed additional prefabricated buildings that were partly to do with Aboriginal housing, but also advanced his interest in architectural form suited to modular construction. Different systems were outlined in the five-page document titled "A segmented foldable building system", dated August 1976.

The Wurundi sleeping shelter was similar to the Goorawin extension except that its gable end walls incorporated shelving and storage space. Intended for the tropical north, it could be constructed on the ground or on a raised (450 mm) timber platform. Dated December 1976, it preempted Reser's observations from Arnhem Land.⁴² In the same month, Oribin drafted the Manggalili shelter. Another

“single unit sleeping shelter”, it was 6’6” (1350 mm) square in plan and constructed with eight triangular plywood panels”.⁴³ The Maymaru shelter used a triangular “kite” element that varied in size and materials to cover either a 4.3 m square plan or reduced for a sleeping shelter (see Figure 6) - a modular system that Oribin clearly intended for mainstream housing applications.

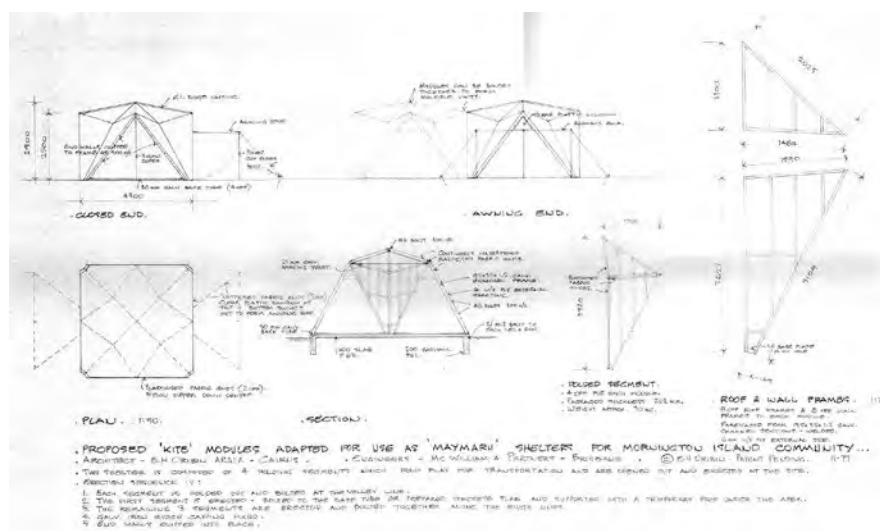


Figure 6. Oribin’s drawings for the Maymaru shelter, which was prototyped in Cairns (AIATSIS, MS3253).

In May 1977, the DAA approved a grant of \$15,000 to prototype and test two Wurundi, one Maymuru, and one Manggalili shelter.⁴⁴ Correspondence in January 1978 indicates that three Manggalili and one Maymuru shelters were built as prototypes in Cairns, testing plywood as well as an inflammable polyester fabric. None of these shelters appear to have made their way to Aboriginal communities. After much advocacy, Oribin resigned from the Panel in 1978, clearly frustrated by the DAA’s lack of interest in continuing support for his designs. To Heppell he wrote: “Many thanks for your trust and assistance in this programme - I think it needs a re-rethink, a serious discussion with the DAA and the Minister and then possibly a new direction”.⁴⁵

Conclusion

In discussing Oribin’s contribution to the Panel, Peter Martin described him as the “ideas technician,” The conditions, particularly in very remote outstations, challenged architects and encouraged experimentation, and Oribin responded with characteristic enthusiasm. In such places, communities received little to no housing aid and it is unsurprising that Aboriginal people were initially eager for the Goorawin. But Oribin’s focus on prefabrication, transportability and tectonics overrode his interest in the particular ways in which the shelters were used, or not used. These and other shortcomings were clearly documented in the evaluations of the Goorawin. His subsequent design innovations were interesting formal experiments but the design response to the users’ preferred lifestyles, which varied in different places and climates, was slight.

Ed Oribin’s considerable achievement was to convince both the Panel and the DAA to prototype and manufacture his designs for the Goorawin shelters. The opportunity to learn from Oribin’s revised prototypes and the temporary housing programme ended when Minister Viner abruptly defunded the Housing Panel in September 1978.⁴⁶ By the 1980s, even remote communities expected more permanent solutions to the chronic shortage of housing.⁴⁷

The temporary Goorawin shelters were short lived but the housing designs by the three full-time architectural employees - Peter Martin, Julian Wigley and Wally Dobkins - endured. Under Heppell’s direction, these architects produced settlement plans and housing designs based on extended

consultation within communities often aided by anthropologists. But the contest between mass-produced, prefabricated solutions for acute shortages of housing and a more consultative and customised approach for longer-term solutions would cycle through housing policy for decades after the Panel's untimely demise. Oribin's designs, like much of the Panel's architectural activities, were largely relegated to the archives.⁴⁸ If only to avoid mistakes of the recent past, the Panel's varied concerns, approaches and architectural contribution to Indigenous housing deserve broader recognition.

After the Panel, Oribin returned to Laura and rock art recording. At Laura, he used fencing techniques to construct buildings from bush timber and wire, with roofing in stringybark shingles, adapted from the traditional substrate for Dick Roughsey's paintings.⁴⁹ A radically different approach to folded plate plywood structures, Oribin's fervor for architectural experimentation continued. From the 1980s, Oribin's architectural production tapered, with several interesting houses built before his death in 2016. A small, permanent remnant of the Goorawin family exists in Cairns. His segmented building system was realized in the public park on the Esplanade, where picnic shelters were assembled from glass reinforced concrete prefabricated panels.⁵⁰ Without doubt, many Aboriginal people seeking a transient home for the night on the Esplanade have sheltered in one of Oribin's less transportable buildings.

Endnotes

- ¹ Aboriginal Housing Panel, Meeting 22 minutes, 30 Sept. 1974, MS 3254/1/1/22 (Canberra: Australian Institute of Aboriginal and Torres Strait Islander Studies).
- ² It became incorporated as the Aboriginal and Torres Strait Islander Panel Inc. in 1976.
- ³ Martin J. Majer, "E.H. Oribin: The work of a far North Queensland Architect", B. Arch thesis, School of Architecture, University of Queensland (1997), ii.
- ⁴ E.H. Oribin, "Edwin Henry Oribin", unpublished manuscript (December 2013); Majer, "E.H. Oribin".
- ⁵ Alice Hampson, "Eddie Oribin", in eds Philip Goad and Julie Willis, *Encyclopedia of Australian Architecture* (Port Melbourne: Cambridge University Press, 2012), 519.
- ⁶ Riddell, Robert, "Significant Queensland 20th century architecture", unpublished Report for RAlA Queensland, (April 2005), 16.
- ⁷ Visiting Tokyo for the first time in 1965, Oribin spent his first four nights in Wright's decaying Imperial Hotel; see: Oribin, "Edwin Henry Oribin", 53.
- ⁸ Oribin, "Edwin Henry Oribin", 56.
- ⁹ Majer, 'E.H. Oribin,' 82, 126-129.
- ¹⁰ Majer, 'E.H. Oribin,' 13.
- ¹¹ Paul Memmott, "Roughsey, Dick (Goobalathaldin) (1920–1985)", Australian Dictionary of Biography, (National Centre of Biography, Australian National University, 2012), <http://adb.anu.edu.au/biography/roughsey-dick-goobalathaldin-14193/text25205>, accessed online 1 February 2017.
- ¹² Dick Roughsey and his brother Lindsay attended an AHP meeting in Canberra in 1973: see AHP, Meeting 9 Minutes, May 1973, MS3254/1/1/9 (Canberra: AIATSIS).
- ¹³ Oribin, "Edwin Oribin", 64.
- ¹⁴ Michael Heppell, "Epilogue: The Aboriginal & Torres Strait Islander Housing Panel", in ed. M. Heppell, *A Black Reality: Aboriginal camps and housing in remote Australia* (Canberra: Australian Institute of Aboriginal Studies, 1979), 230-33.
- ¹⁵ Heppell, "Epilogue".
- ¹⁶ AHP, Statement 21 Aug 1972, MS3254/1/1/2 (Canberra: AIATSIS).
- ¹⁷ AHP, Meeting 3 Minutes, 25 September 1972, MS3254 Series 1/1/9 (Canberra: AIATSIS).
- ¹⁸ Michael Heppell, "The Desert Housing Project of the Desert Housing Task Force", Occasional Report 3 (1977).
- ¹⁹ AHP, Meeting 22 minutes.
- ²⁰ E.H. Oribin, Laura House, architectural drawing MS3254/3/4 (Canberra: AIATSIS).
- ²¹ E.H. Oribin, Laura House, architectural drawing MS3254/3/4 (Canberra: AIATSIS).
- ²² AHP, Letter to B.G. Dexter (DAA) 13 November 1974, MS3254/3/52 (Canberra: AIATSIS).
- ²³ Oribin, "Edwin Henry Oribin", 64.
- ²⁴ The Aboriginal membership included Jim Stanley and Ray Nagas.
- ²⁵ Michael Heppell, "The Architect and the Aboriginal Community", Aboriginal Housing Panel Occasional Report 1 (1976), 8.
- ²⁶ See, for example, Robert Tonkinson & Myrna Tonkinson, "Modern housing for sedentarised nomads", in ed. Michael Heppell, *A Black Reality: Aboriginal camps and housing in remote Australia*, (Canberra: Australian Institute of Aboriginal Studies, 1979), 198-200.
- ²⁷ Oribin, "Edwin Henry Oribin", 64.
- ²⁸ Heppell, "The Architect and the Community", 11-14.
- ²⁹ Leo Spork, Letter to author, 1 December 2016, Email.
- ³⁰ Joseph Reser, Letter to Michael Heppell, 25 February 1976, MS3254 (Canberra: AIATSIS), 1.
- ³¹ Michael Heppell, letter to D.O. Hay, 31/12/1976, MS3254, (Canberra: AIATSIS).
- ³² Julian Wigley, "Report on the Goorawin Shelter—17 November 1976", unpublished report, MS3254 (Canberra: AIATSIS); Peter Martin, letter to Heppell, MS3254/6/3/13 (Canberra: AIATSIS); Bruce Walker, "An assessment of the Goorawin Shelters at Waite Creek and Fregon", unpublished report, March 1977, MS3254/6/3/14 (Canberra: AIATSIS); Joseph Reser, "An Interim evaluation of the Goorawin Shelters introduced into the Wulkabimirri Community (Arnhem land Reserve N.T.) in November 1976", unpublished report 12/01/1977, MS3254/6/3/13 (Canberra: AIATSIS).
- ³³ Reser, "Interim evaluation of the Goorawin", 2; see also, Walker, "Assessment of the Goorawin".
- ³⁴ Wigley, "Report on the Goorawin", 1.
- ³⁵ Michael Heppell, personal communication (24/02/2017).
- ³⁶ Reser, "Interim evaluation of the Goorawin", 1.
- ³⁷ Walker, "Assessment of the Goorawin Shelters", 2.

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- ³⁸ Reser, "Interim evaluation of the Goorawin", 2.
- ³⁹ Reser, "Interim evaluation of the Goorawin", 2.
- ⁴⁰ Walker, "Assessment of the Goorawin Shelters", 12.
- ⁴¹ Reser, "Interim evaluation of the Goorawin", 2.
- ⁴² E.H. Oribin, "Sleeping Shelter & Raised Platform Sleeping Shelter", November 1976, MS3254/6/3/20 (Canberra: AIATSIS).
- ⁴³ E.H. Oribin "Single Unit Sleeping Shelter: Manggalili Shelter", December 1976, MS3254/6/3/17 (Canberra: AIATSIS).
- ⁴⁴ J.E.B. Syme (DAA), Letter to M. Heppell, 7/03/1977, MS3254/6/3/20 (Canberra: AIATSIS).
- ⁴⁵ Edwin H. Oribin, Letter to Director ATSIHP, 23/01/78, MS3254 (Canberra: AIATSIS).
- ⁴⁶ Michael Heppell, "Epilogue".
- ⁴⁷ Paul Memmott, personal communication (17 May 2017).
- ⁴⁸ *A Black Reality* by Heppell provides a limited account of the ATSI-HP.
- ⁴⁹ Oribin, "Edwin Henry Oribin", 64.
- ⁵⁰ E.H. Oribin, Drawings, MSS UQFL277, Fryer Library Queensland.