REAL MATERIAL ETHEREAL

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Remote and Regional Architecture: Adaptive Practice

Abstract

On the edge of the Gulf of Carpentaria lies Karumba, population of 600. A former refuelling point for Sydney-London flights in the days Qantas Empire Airways' seaplane journeys, Karumba today relies on tourists, fishing, and mining port services as its main sources of employment. The Les Wilson Barramundi Discovery Centre (LWBDC) has been added to the town, providing a key piece of tourist infrastructure as well as support for an operational barramundi hatchery.

Commissioned to tell the story of the Southern Gulf Barramundi, LWBDC is a 130m long, 1,500m^2 structure built of simple galvanised portal frames. The structure echoes the marine structures of Karumba's coastline and was conceptually informed by the scales of the Barramundi. A simple, pragmatic, and resilient response has been provided for the community's user group needs and its location. This response is delivered by its materiality, a curved plan that shelters a fish pond, and rising portal frames that culminate in a tower-like entry for wayfinding in Karumba's flat savannah landscape.

Alongside this project exposition, the paper reflects on the genesis of the project, revealing what the authors believe is a flexible, agile, and responsive means of commissioning, designing, and building remote and regional architecture in the 21st century. This process is both collaborative and responsive to people and place.

The findings of this approach, tested in the delivery of LWBDC reveal a new form of practice and engagement that takes advantage of the 21st century. Processes were adapted to accommodate a construction site that was 800 kilometres from major materials suppliers and 2,000kms north-west of the practice in Brisbane. The result is an internet-enabled lightweight and adaptive contemporary practice that selectively utilises highly valued, traditional roles of construction — such as the skilled, local builder, and a client-appointed site superintendent.

The Les Wilson Barramundi Discovery Centre

This paper discusses the redevelopment of an existing Barramundi hatchery in a northern Queensland town called Karumba. The hatchery breeds fingerlings of the Southern Gulf Barramundi for release into rivers across northern Australia. Its facilities had grown incrementally since establishment as the business became a local success story. By late-2013 the facility as in need of a strong public presence in order to drive and support growing tourist engagement and outreach. Bud Brannigan Architects became involved in this process at project conception in 2014, delivering the new Les Wilson Barramundi Discovery Centre in 2017 a building that tells the story of the Southern Gulf Barramundi with other community facilities. This paper recounts this journey articulating learnings for small architectural practices that are seeking to engage with remote and regional projects.

Karumba

Karumba sits on the western coast of the Gulf of Carpentaria in North Queensland, its name originates from the Kuthant language of the Kareldi nations. With a population of 531 at the 2016 census, it is 70km north of Normanton at the mouth of the Norman river, a 750km journey west of Cairns.[1] This is a town that is 2,160km north-west of Brisbane, a similar distance as Melbourne is located from the Queensland state capital.

Figure 1. The savannah landscape of the Normanton-Karumba road.

The Gulf Country gold rush of the 1870s brought white colonisation to the area with the construction of a telegraph station, then a post office by the 1880s.[2] The town's location, one of the few inhabitable areas along the coast that is not impenetrable mangrove, means that its economy has historically revolved around its port to land fish. During the 1930s, the town rose to prominence as a refuelling and maintenance point for flying boats of the Qantas Empire

Airways on their Sydney-London route.[3] During the Second World War it was also used as the base for a flying boat squadron.

Figure 2. The distributed scale of Karumba Point, the tourist side of the town.

Karumba, today, is largely a town that is split in two. In its south, is a commercial-industrial centre, here wharves are located along the river, there is a barramundi hatchery and the visitor centre (the extension and redevelopment of which is the focus of this paper), prawn/fish processing facilities, and a loading facility for tailings from Century Zinc Mine (piped into the town from the mine 400kms away). Nearby to this part of the town, is located a local pub known as 'The Animal Bar' that provided inspiration to the Red Hot Chili Peppers' 2006 song of the same name about 'rebirth' reflecting the long dry period of Karumba's winter and the intense summer rain that commonly brings flood conditions to the town.[4] The other face of Karumba is its tourist centre, largely located to the north at what is known as 'Karumba Point', here there is a motel, caravan park, and cafes, and is the point that crocodile and mud crab tours of the Norman river depart from. Both faces of the town contrast architecturally, with the fine grain, small-scale of the tourist side, and the large, tin-sheds of the industrial face.

Figure 3. The large-format nature of Karumba's industrial face.

Figure 4. Montaged aerial view of Karumba and the meandering Norman River. Karumba is spread along the eastern bank of the river — the industrial portion of the town is at the centre of the image, while 'Karumba Point' the tourist centre is the eastern headland at the top of the image.

Karumba's prominence as a fishing port stands in contrast to its physical size. Tourism accounts for a large portion of the town's economy as the town swells to over 3,000 'residents' during winter months. Many of these tourists are 'grey nomads', perpetually traveling retirees, a distinctly Australian phenomenon that sees an older segment of the population travel around

regional areas of the country in RVs and caravans.[5] This segment of tourists in particular spend significant time in locations while stopped, and as such comprised an 'ideal' client envisioned for the redesign of the Barramundi Discovery Centre to provide amenity for such a user group.

Tourism: a regional industry

Between 2013 and 2018, regional tourism in Australia grew by 6.1% an increase of 69.5m 'visitor nights'.[6] This makes regional tourism a 'growth industry' and as such there is significant government focus on attracting investment, developing infrastructure, and supporting the industry especially as so much of Australia's identity is bound to its natural environment. The Australian Government's June 2019 White Paper "Tourism Investment in Regional Australia" formally articulated a strategic direction of development that has growing over the past decade. Five focus areas for infrastructure development were articulated in this document: food and wine, aquatic and coastal, nature and wildlife, culture and heritage, and wellness. These focus areas respond to the demands of international visitors, and while formally articulated this year, have existed informally as was the case in the commissioning of the Les Wilson Barramundi Discovery Centre which the Carpentaria Shire Council were interested in its response to these foci in particular the responses concerning the environment and culture. Carpentaria Shire occupies the north-west pocket of Queensland and is about the size of Tasmania with a population just over 2,000. Carpentaria Shire Council is not unusual among Queensland regional councils in seeking to provide improved tourism infrastructure. Over the past decade, a number of significant projects have delivered tourist infrastructure to remote locations across Queensland, for example: Australian Age of Dinosaurs Museum (2013) and Waltzing Matilda Centre (2018), both in Winton (2013), the Barcaldine Tree of Knowledge Memorial (2011), and the recently announced Qantas Founders Museum Airpark Roof at Longreach (2019).[7] It is in this context of local authority-led regional tourist development that the LWBDC emerged.

The project was conceived of by *Savannah Way*, a limited non-profit company that markets visitor experiences along a tourist driving route of the same name (see figure 2) for the economic and social well-being of communities in the region. The company links its member stakeholders (tourism businesses, state/regional/local tourism organisations, government agencies, and community/environment/development organisations) with the market in order to facilitate regional development by means of research, training, and importantly projects. Savannah Way is designated a State Strategic Touring Route by the Queensland Government meaning that the route is prioritised for tourist market experiences.[8]

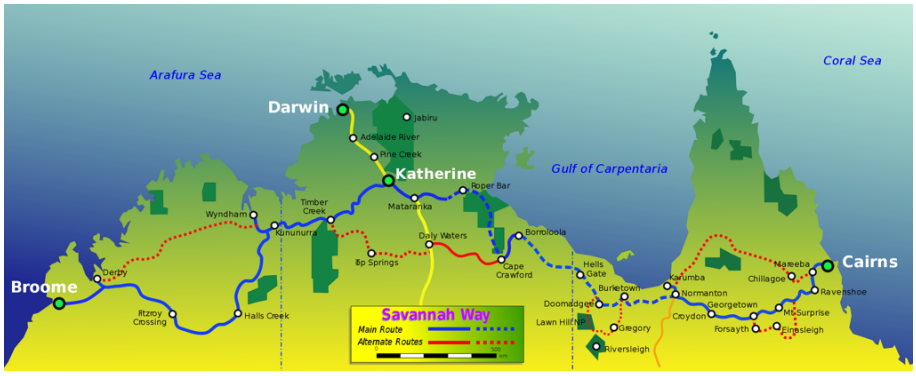

Figure 5. The Savannah Way, linking Broome, Katherine, and Cairns.[9]

Savannah Way approached Bud Brannigan Architects early in 2014 to prepare a concept design proposal for a tourist information centre to be located near to an existing Barramundi hatchery in Karumba. The funding that Savannah Way had allowed an initial concept proposal to be completed that gave Carpentaria Shire Council (a member of Savannah Way) the ability to then consult with a wider pool of stakeholders to build project support and momentum to then apply for further design-stage funding to proceed with tender documentation. With this tender package, the local council would then unlock further State and Federal Government funding to proceed with the project build. This 2-stage funding process is common among regional, publicly-funded building projects and builds gradual momentum among communities while demonstrating project viability to upper tiers of government. The project received half of its build cost through the Queensland State Government's Building our Regions program that had prioritised tourism as a jobs creation industry in light of the closure of a mining port operation at the end of 2015.[10]

Figure 6. The existing Barramundi hatching facility.

The design was to be a publicly-facing addition to an existing centre which was an informal collection of temporary buildings and fish tanks that had been added to incrementally over time. Used primarily to breed Barramundi hatchlings for stocking of rivers across Northern Australia, the centre has also established a relationship with researchers from James Cook University.

The new building would formalise the activities of the existing centre while creating a new tourist attraction for Karumba. The 3,700km Savannah Way route brings 53,000 tourists to the Gulf region per year, with around 80% visiting Karumba.[11] With the length of stays increasing in recent years, the new building would provide much needed general tourist infrastructure as well as structuring of business activities and public outreach for the existing hatchling centre. On top of these requirements, the design brief also included community use facilities, a common requirement of regional public buildings to ensure long-term resilience and local support.

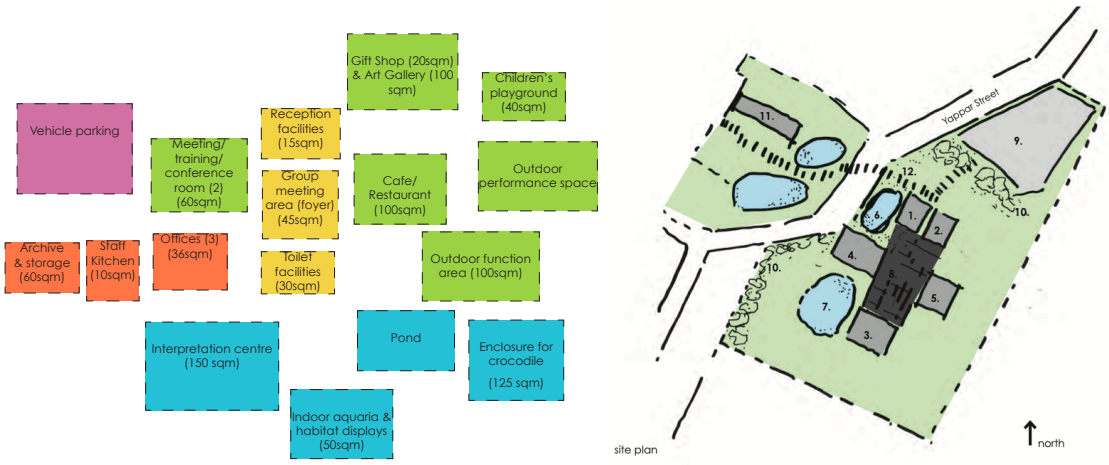

Figure 7. Early pre-design feasibility mapping of stakeholder briefing requirements(left) with the project site (right).

Context: informing design

At the close of the 20th century, Glenn Murcutt argued that there was no such thing as a uniquely Australian way of building but rather that each project should respond to its specific local context.[12] Murcutt's comments came at the close of a period during which Australian architects and critics had been engaged in debate about the impact of globalisation on regional expressions of architecture. Philip Cox in his 1984 AS Hook address had reflected on the preceding decades of cultural cringe and called for a new approach to seeking an Australian architecture, while Rory Spence considered regional responses to be essentially expressions

about quality of life but warned of the dangers of these responses being “kitsch or abstruse and elitist”.[13]

The LWBDC does not attempt to make grand gestures in response to the region, but rather draws on its immediate context, as has been the architectural approach of the practice’s other works to date. Karumba’s isolated location means that surrounding built forms have emerged in pragmatic response to harsh conditions and the technical limitations of delivering construction materials. Bud Brannigan Architects have chosen to respond directly to this context in order to achieve the design of the LWBDC referring to the built fabric of neighbouring sites, planning requirements of stakeholders, and the climate of Karumba. Thus, the design arrives at what Robert Haddon noted in 1908, that simply by considering Australia’s geographical context in the world would result in a design that is suited to its place using climate and building materials in response to the requirements of life, business, and habitat.[14]

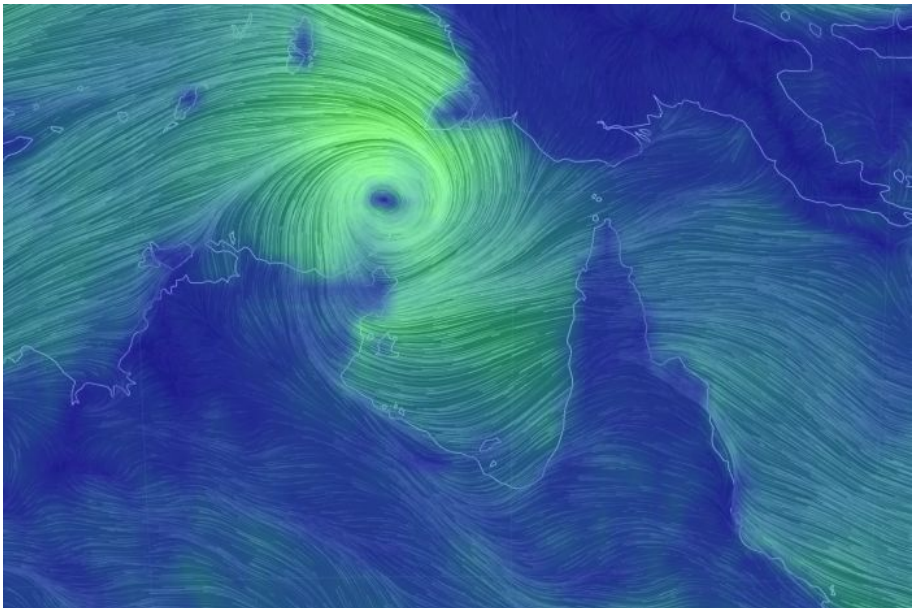

Figure 8. 2018's Cyclone Nora that made landfall near Karumba highlights the extreme and harsh conditions that Karumba is subject to, particularly over the summer months.[15]

These contextual factors of the immediate region provided a primer for the architectural response. The *remote* location of Karumba presents a harsh, corrosive environment. The dramatic *seasonal variation* means that the site regularly floods. While the *neighbouring sites* present a large-format pragmatic and functional industrial built-form aesthetic.

Responding to the remoteness and lack of local building material supply, steel portal frames were prefabricated in Townsville and delivered to site. The galvanised steel provides a robust

finish that is easy to maintain with a simple assembly strategy allowing construction work to be completed effectively within the dry season. As the Norman river regularly floods (the road to the town is commonly cut off for a period each summer), the building was required to be raised by half a metre above a nominal flood level. Hardwood timber joists and flooring enabled this level to be achieved by a suspended floor. In response to the large, pragmatic, and industrial aesthetic of neighbouring structures (the most prominent of which is the Century Mine tailings facility around 200m north — see figure 3), the LWBDC provides a generous facility to accommodate the diverse range of stakeholder programmatic needs.

Twenty-eight steel portal frames each gradually taller than the other, rise to provide a 12m entry tower that acts as a 'waypoint' in the town's flat savannah landscape. This tower shelters an entry and events verandah and gives the building presence among these neighbouring structures. The portal frames are spread out over 130m, radiating around a pond that is stocked with the Southern Gulf Barramundi with tourists to be invited to fish in the pond as part of their visitor experience. This linear arcing form gives the eastern verandah, used for external circulation and events, shelter from the western sun which the building 'turns its back on'. This verandah is screened by high level perforated steel, that provides protection to the building's internal spaces, the screening is supported by angled columns each changing pitch by 1º through to the centre of this eastern verandah creating a dynamic pedestrian experience.

Figure 9. The chosen site.

This pragmatic and functional response to context has been apparent in many of Bud Brannigan Architects regional public buildings. The 1996 Ravenshoe Gallery was a stand-alone timber and tin structure on stumps that was in keeping with the main street of a northern Queensland country town. In 2000, the Cooktown Art Gallery set close to the town's botanical

garden was a structure that used a simple material palette to complement the planting with a series of external spaces providing access to the tropical environment. Prior to the LWBDC project, the Tweed Art Gallery provided a raised, linear concrete and steel structure to take advantage of the long mountain range views provided by Murwillumbah, culminating in the 2011 Margaret Olley Art Centre extension that housed the relocated artists' home studio environment in a simple, yet responsive to this unique insertion, gallery extension.

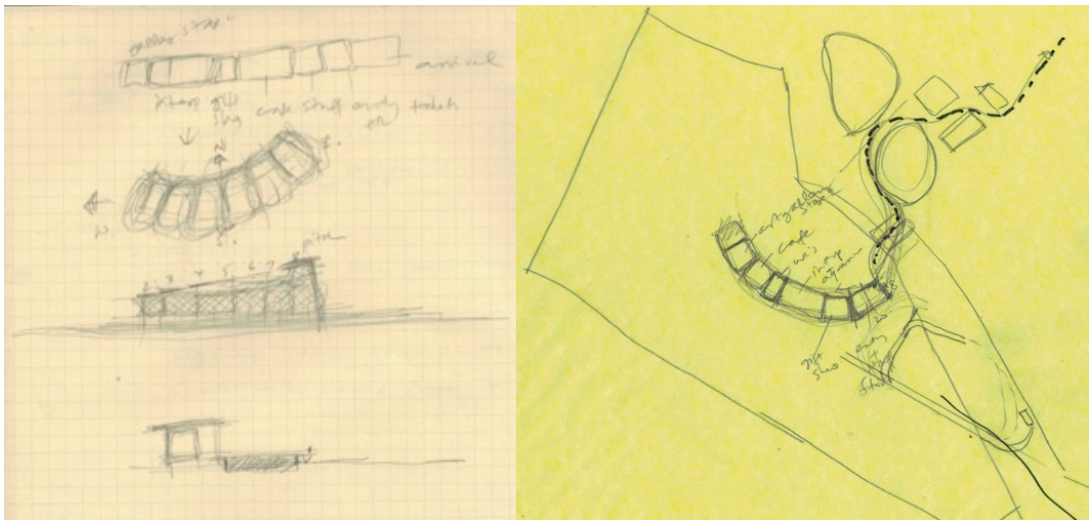

Figure 10. Early design sketches by the architect.

The Centre

Underpinning the design was a significant body of community consultation work. Between 2013 and 2014, prior to design activities commencing, Savannah Way Ltd conducted a series of community consultation exercises with over 27 local stakeholders comprising local community organisations, indigenous representatives and land council, the town's businesses, local government, and Karumba's public facilities such as the school.

Figure 11. The LWBDC designed around a 2,500m^2 pond.[16]

The local authority's Carpentaria Community Plan set out goals for economic diversity and the environment that provided core aims for the design. This plan articulated that the design should contribute to year-round economic activity in its provision of opportunities for tourists and that it provides the basis of support for the region's focus on sustainable fishing practices and the continuation of the Barramundi Centre.[17]

This framework of community consultation and local authority leadership established the basis for the architectural design work. The practice engaged directly with a selected group of project stakeholders at the start of 2014 to generate an initial concept design to demonstrate project feasibility in order to apply for full design service funding. When this funding application was successful, in mid-2014 Bud Brannigan Architects applied through a tendering process to undertake the full design work required to create a tender set of documents that would enable high-level project funding to be applied for the building phase. The practice was successful in their design tender application, and formal design work commenced on creating a tender package across late 2014/early 2015. Full construction funding was secured by mid-2016 and work started onsite towards the end of 2016.

Figure 12. Exposed structure of the entry tower.

The concept of the build was informed by the aforementioned contextual conditions combined with experience of working on remote and regional projects, but also by the desire to provide a welcoming space and a waypoint for the local community. Inspired by ghost nets and the barramundi fish itself, the building's materiality is left raw, creating a long silvery structure that contrasts with surrounding red soil. On approach, from Yappar Street (a street that runs from

the entry of Karumba to the industrial end of the town, parallel to the Norman River), the tower structure highlights the centre and its entry and at night provides a beacon of activity. The curvilinear form hugs the 2,500m^2 barramundi-stocked pond while sheltering occupants from the western sun, and clearly articulates the simple circulation as visitors step onto a verandah that curves around in exaggerated perspective. A straightforward sectional design is repeated throughout the building providing a rhythm of service-public function-verandah from west to east.

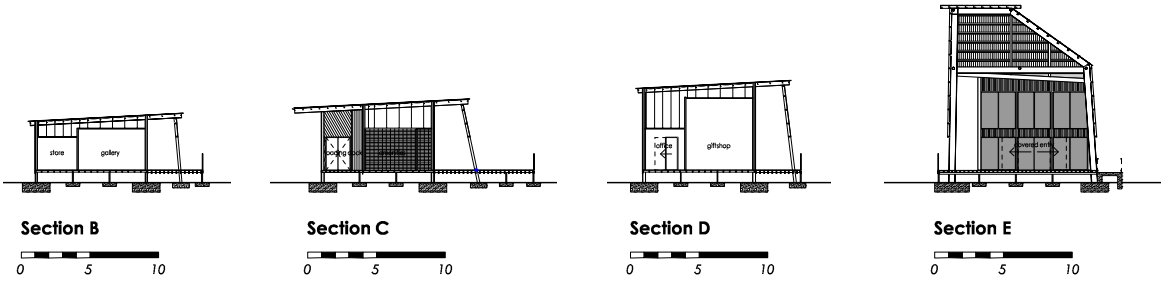

Figure 13. Short sections through the centre.

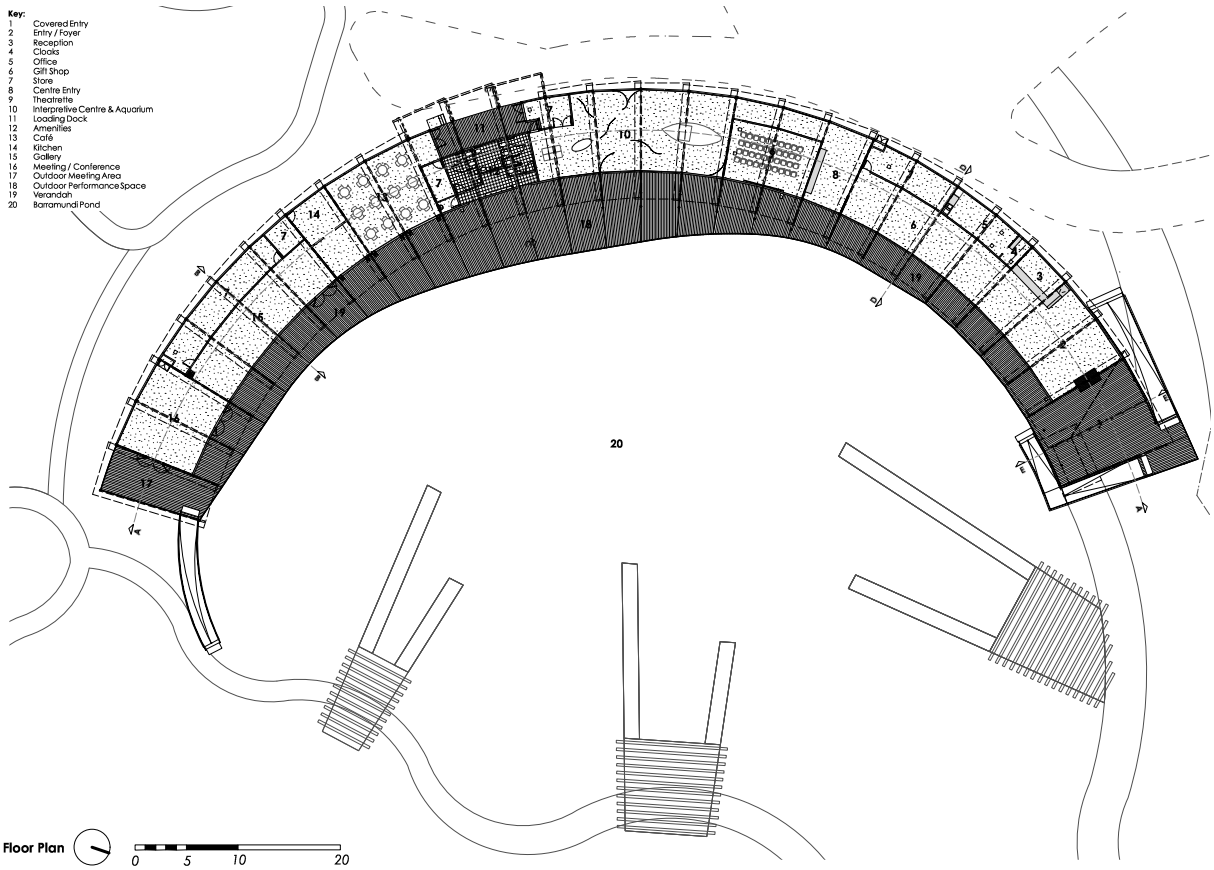

Figure 14. Plan of the centre.

In plan, a similarly simple response is used with programmatic requirements distributed along the length of the building. The most public aspects of these, the reception, shop, interpretive centre, and café are staged closest to the entry tower, followed by the gallery space and community meeting rooms at the building's 'tail'.

Figure 15. The curving verandah with angled columns and perforated steel screening.[18]

Figure 16. LWBDC entry at night.[19]

Process: led by collaboration

A three-way collaboration during construction was key to delivering the LWBDC. Occurring between architect, builder, and project manager the process enabled the effective resolution of issues concerning *design*, *buildability*, and *quality*.

A small practice, Bud Brannigan Architects comprises two staff — simply Director and Associate who have a track record of over a decade's collaboration. With more than 25 years' experience the practice has built a reputation for the effective design and delivery of regional community-focused public buildings. At the heart of these commissions is a collaborative structure where architect and stakeholder come together early in the design process.

This mode of small practice enables a highly responsive mode of design founded on clear and structured communication — both externally with regards stakeholder priorities and internally between director and associate with regards rapid architectural design iteration in response. The practice's focus on regional buildings, means that projects are typically located at significant distance from the practice base in Brisbane. However, this distance is decreasingly considered an issue in stakeholders minds due to advances in information technology and the internet enabling both staff members to design quickly and communicate effectively as they operate from home offices or 'on the road'.

This architectural strategy of structured, consistent, and sustained engagement with stakeholders underpinned early design interactions for LWBDC. This is a strategy that the practice has used consistently over its history and which is now morphing and adapting in response to these new technologies.

A local builder, who lives within 100m of the construction site was appointed by the council following a tender process. The construction team brought significant local knowledge and respect, seeking to build well in order that the local community be delivered a building they would be proud of, enhance Karumba's reputation, and importantly be of a quality that would attract visitors. Augmenting their approach to construction, the builder's experienced team utilised online communication and drones in order to provide feedback to both architect and project manager with regards progress.

Figure 17. Construction progress monitored by drone.[20]

The third participant in this collaborative process was the council appointed project manager who liaised locally with the builder and operated in a mode that was akin to the traditional 'clerk of works' or site superintendent rather than contemporary project manager. Recent reviews of construction projects have advocated for such traditional roles to be reinstated in the construction process, yet this role has become increasingly unusual in recent decades.[21] The recent problems experienced on inner-city apartment buildings are attributed to a lack of impartial construction oversight, quality checks, and failures with regards certification of building works, revealing the need for roles that can provide continuity and assurance. This role, and collaboration that it facilitated, was beyond the typical project management role of co-ordinating schedules and payments, instead operating in a way that was highly focused on quality control and design communication between architect, builder, and client — perhaps pointing towards how a future clerk of works role may emerge.

Findings: Adaptive Practice

The LWBDC project points towards important findings for small practices looking to take on engagements for regional and remote architecture. These findings concern: internal working processes, the power of collaboration, new technologies, and the value inherent in traditional roles. Together these findings form an adaptive mode of future practice.

This project revealed the advantage of operating in a manner that is agile and responsive in terms of the practice's internal operations and how the practice engages and collaborates with third parties. This approach is enabled by technological advances that mean that small practice

can comfortably take on projects of scale without needing additional staff. The internet has created new, connected modes of operation that have emerged over the past decade allowing the practice and construction team to operate remotely from a project site or practice base while accessing project data from the 'cloud' and communicating easily through online video conferencing platforms. Other technology, such as remote-control flying drones were used by the construction team of the LWBDC, and enabled the practice to review progress during construction Within the practice, these technologies are balanced by a close personal working relationship between both practice staff meaning that decisions are made easily and autonomously with regards design as well as technical project staging and documentation requirements. This traditional and personal familiarity combined with new technologies makes for a powerful combination.

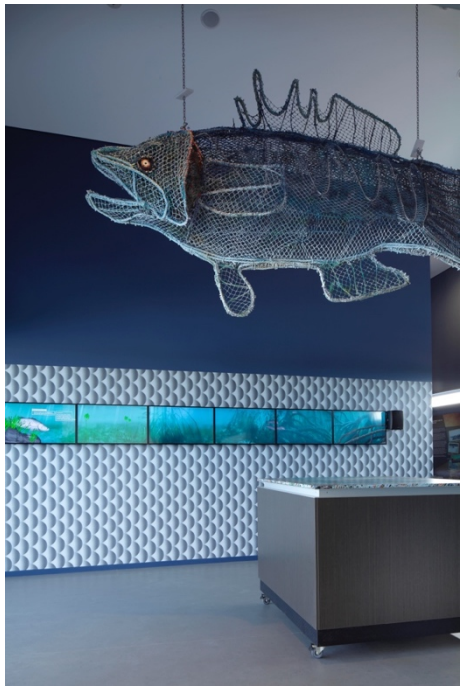

Figure 18. Interpretive Centre interior with barramundi artwork commissioned from the Pormpuraaw Art and Culture Centre, constructed from fishing nets.[22]

For over twenty years, Bud Brannigan Architects has prioritised a collaborative mode of working across their projects. This collaboration is enabled by a consultative approach that is underpinned by clear lines of communication and structured decision making. This structure has a proven track record of results, but also is morphing and responding to increasingly remote and regional sites through the improved communication infrastructure and the prioritisation, by government of investment in regional Australia.

This mode of collaborative practice, combined with accessible technology informs an adaptive mode of practice that can respond to remote and regional architectural opportunities. This approach is founded upon a view of the professional role which values of tradition, yet is adapted and firmly future-focused. The role of architect need not be that of the lone visionary instead it can be recast as a role which is networked in order to collaborate more effectively with project execution teams to ensure buildability and quality outcomes for stakeholders regardless of location. The role of builder need not be one that is simply focused on ease of construction and profit but can be expanded to include a drive for quality that seeks to execute outcomes that deliver for their locality. Meanwhile the re-introduction of oversight-focused roles, such as the Council's project manager in this case, creates the glue that binds the execution of the design and construction.

The LWBDC highlights the value that can be derived from a simple, small scale approach to architectural practice that is responsive and flexible, and that which the authors consider is particularly suited to remote and regional projects regardless of their location. This, we believe is an adaptive practice.

Figure 19. Drone footage of the completed LWBDC looking east towards the outback.[23]

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