KIMBERLEY CULTURAL & SOCIAL INNOVATION PROJECT
DESIGN PROCESS REPORT / 13 AUGUST 2021

THE UNIVERSITY OF WESTERN AUSTRALIA
SCHOOL OF DESIGN

BIO BASED MATERIALS DESIGN LAB

Department of Local Government, Sport and Cultural Industries
GOVERNMENT OF WESTERN AUSTRALIA

MARRA WORRA WORRA ABORIGINAL CORPORATION

Boab tree, Derby

An invitation to come to Fitzroy Valley to undertake an initial assessment of the physical infrastructure of public areas, at 5 remote aboriginal communities was provided by the Department of Local Government, Sports and Cultural Industries (DLGSC) to the BBMDesignLab team, UWA School of Design in February 2021. The team came on board and the different stakeholders met in Fitzroy for two weeks in June 2021.

The objective of this invitation was to provide an initial assessment and strategies for the future design of social and cultural infrastructure within five remote communities in the region (Bayulu, Junjuwa, Wangkatjunka, Yakanarra and Yungngora). The Kimberley Culture and Social Innovation Project [as it has been named] aims to primarily enhance youth employment, initially focusing on recreational sports, in order to increase social inclusion and mobility and promote environmental and cultural values. The project puts culture and environment at the centre of design and adopts a capability and emancipatory approach to community development.

An additional outcome of this visit was to meet with stakeholders (Marra Worra Worra Aborigial Corporation), local service providers and members of the five communities to provide design conceptual advice on the approved grant (CSRFF) for the construction and refurbishment of 5 basketball courts and to assess the potential participation of UWA School of Design on this already ongoing initiative.

This report provides:

A) The five strategic principles guiding the design within five communities – to be used at the Kimberley Social & Cultural Innovation Project, which is, in alignment with the BBMDesignLab principles and vision.

B) Overall context of five communities:

C) Activities under development in Bayulu by the BBMDesign Lab:

   i) Conceptual design for basketball courts by BBM Design Lab (Bayulu)

   ii) Studio Bayulu - UWA School of Design Master students]:

D) Collaboration Opportunities Mapping

   i) Design Packages

   ii) Collaborative Research Centre (MWW, DLGSC & UWA School of Design)

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BBMDesignLab has been co-founded by Drs Jairo da Costa and Rosangela Tenorio in 2019

THE UNIVERSITY OF
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BIO
BASED
MATERIALS
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BIO BASED MATERIALS DESIGN LAB

At the BBMDesignLab

We RESEARCH

To Produce ground-breaking solutions for social impact

We DESIGN

To Collaborate with industry and solve real-world problems

We INNOVATE

To Create solutions that drive national competitiveness

We EDUCATE

To Promote excellence in graduates that will change the world through kindness and knowledge

BBMDesignLab is an interdisciplinary research design and innovation hub to advance sustainable design and materials application and dissemination through open source solutions to support the transition to a circular economy.

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*Our mission is to create better living environments for people
and regenerate the planet through design*

FIVE PRINCIPLES

01

"Environments may be defined as good to the extent that they are supportive for the people who live in them"

– A. Rappoport [1983]

The 5 Highlighted Communities in the Kimberley region

Derby

FITZROY

Junjuwa

Fitzroy Crossing

Bayulu

RIVER

Yungngora

Yakanarra

Wangkatjunka

The building sector is responsible for almost 40% of the world's GHG emissions. Materials such as cement, steel, concrete, plasterboard, limestone, brick and other ceramics play a key role on embodied emissions of the construction sector in Australia and are normally transported from countries like China, Indonesia and brought from across Australia or overseas to the remote areas of the Kimberley region. The first option on reducing materials embodied energy emissions is the use of alternative building materials, or bio-based materials that are locally manufactured. Innovative building materials such as engineered bamboo and bio-assemblies [e.g. mycelium bricks, Spinifex, etc.], have the potential to replace traditional building components which are carbon intensive. The major barriers are the usual: conservative industry culture and practices, limited availability of product and industry certification, insufficient technical knowledge and skills for production.

In the last decade, manufacturing at a personal level became possible on an unprecedented scale by the democratisation of access to digital fabrication technologies (3D printers, CNC milling machines), the proliferation of distributed production through dedicated makerspaces (Innovation labs, Fab labs) and the dissemination of the Maker Culture (Do-It-Yourself). This paradigm shift in production and consumption enables civil society to participate actively in creating better living and working conditions, in particular the youth. In the Kimberley over 50% of the population is below 35 years old.

This project seeks to enhance regional cooperation on alternative materials energy use and performance in the building construction sector while advancing youth empowerment through the creation of new opportunities for private sector partnerships and investment on climate action.

Closing the Gap 2020 latest data indicate that government targets in school attendance, employment and life expectancy for indigenous people are not on target. Fitzroy Valley Futures Youth Hub Working Group (2019), emphasizes the growing concern surrounding the level of risk affecting local young people. According to Fitzpatrick et al [2017] "30% of children in Fitzroy valley are diagnosed with neurodevelopmental disorders and 20% with some form of Foetal Alcohol Spectrum Disorder (FASD)". High alcohol abuse levels, associated gambling, fighting, domestic violence, youth suicide and crime are all interrelated challenges. Despite extended government efforts, no entity oversees community development projects while undertaking consultation, capacity building and infrastructure development simultaneously and on a consistent basis. Remote communities do not currently have well developed channels of governance to engage with government, service providers, and community members to bring about the required social change they need for implementation of social, environmental and cultural projects from beginning to end. Such a participatory and emancipatory project is needed and welcomed.

The Kimberley Social and Cultural Innovation project aims to identify opportunities, needs and priorities aligned with communities' cultural and environmental values to build capacity, create empowerment, improve wellbeing and support employment for young Aboriginal people while providing enhanced social built infrastructure.

The impact of climate change in remote locations such as the Kimberley regions lies fundamentally in adaptation to vulnerable impacts of climate change, such as wildfires, floods and draughts, promotion of sustainable development and reduction of poverty in particular for indigenous remote communities.

This project addresses such developmental challenges through cultural appropriate design, distributed production and personal fabrication using bio-based materials, where designers and non-designers can increase their ability to affect 'what', 'how', and 'how many' artefacts are produced. The project will promote the adoption of emerging technologies to empowers people [in particular the youth] to play a leading role in transitioning to more decentralised, customisable and sustainable production systems, that can generate employment through culture and making for climate action.

Furthermore, the proposed research aligns with the United Nations Sustainable Development Goal 12 (Responsible Consumption and Production) by addressing sustainable building practices, circularity and education and spurring meaningful change at the individual and community level.

A long-term impact of the project is implementing a collaborative social infrastructure relief model based on income generation, engagement and empowerment that can be used and replicated by other remote communities.

The success will be informed by:

• Reduction in juvenile crime;

• Improved mental health and lowered youth suicide rates;

• Closing the gap into school attendance

• High demand for enrolments in special skills workshops set up by the Vocational Design Hubs [Pop ups BBM Design Lab]

• Increased digital literacy and development of positive social networks;

• Minimum or No levels of vandalism within social infrastructure after project completion

• Activation of public spaces through self-organized events by communities [e.g. art markets, music festivals, community yarning circles]

• Youth participation in design/construction of the architectural interventions

• Youth leading small businesses involving skills developed during co-design process [e.g. furniture making, materials development, low carbon construction industry, carpentry, etc]

• Youth seeking to further developing their skills into vocational training or tertiary education

• Establishment of mentoring system formed by 'graduated' youth, that will take over the training and deployment of activities and will be employed as staff in the co-design and planning strategy.

• Establishment of community led volunteering system

The programme will collect data from first year to form a baseline and continue to benchmark results until its completion. This will ensure accountability, transparency and participation throughout the different phases of the project.

Basketball Youth session at Fitzroy Crossing Courts, June 2021

5
5
4

FIVE PRINCIPLES
FOR
FIVE COMMUNITIES

THE FIVE STRATEGIC PRINCIPLES

The project addresses the needs of regional contexts and remote areas to become autonomous and exercise self-determination through sustainable practices that can empower communities through cultural design, dignified work, while addressing major environmental and societal challenges.

1

CULTURAL DIALOGUE
FROM YOUTH 2 YOUTH

2

ENVIRO DESIGN COLLAB & MAKE
IDENTIFYING PROJECTS & SKILLS

3

INNOVATION IN MATERIALS
INTEGRATE MATERIALS & OPPORTUNITIES

4

EVALUATE & WORK SMARTER
ENTREPRENEUSHIP & DIGITAL ACTION FOR DIGNIFIED WORK

5

LEAD & MULTIPLY
CIRCULARITY FOR REMOTE COMMUNITIES

PRINCIPLE 1: CULTURAL DIALOGUE
FROM YOUTH 2 YOUTH

It is well understood that sports and recreation are at the core of transformation in the Kimberley for the youth. The basketball courts project can trigger a process of consultation and engagement that can lead to much gains and progress for communities. It is through this process that the consultative, participatory design will flourish, allowing other projects to develop as communities express their vision for development. By applying strategies on capability and emancipatory design, the BBM Design lab will learn from communities what means to co-design in culturally sensitive environments such as the remote aboriginal communities. From the youth community members to the youth graduates developing the initial basketball courts projects, to the youth studio designers, working with community members in Bayulu, there are synergies to be explored, and mobility in role playing and perspectives.

The youthful population of the Kimberley is a huge asset for development. The demographic window of opportunity that will last for a few decades, allow for those in productive working years to exceed the portion of dependents, namely children and elderly. Depending on how the regions drives its projects on human development in the present, it will determine a 'youth bulge' shift into a 'youth divident'., and promote economic growth [UNDP, 2018]. One of the preconditions to promote human development and grasp this potential demographic dividend is to invest in child and youth health and education. Based on this understanding, the Kimberley region seeks to reduce youth disengagement from educational and recreational activities, improve access to technology through blending opportunities that are social and educational, enhance essential services to promote quality of education and generate youth employment. The question of affordability of nutritious diet in the Kimberley was well observed by members of the team, with low inclusion of vegetables, intakes commonly based on starchy staple foods, with agriculture practices close to non existent. The region relies on considerable imports for food as much as for building materials and other essential goods.

Tackling the high child malnutrition rates can improve learning outcomes, increase productivity to support a growing economy, nurture a healthy population and provide opportunities for growth in many areas, including related bio-based construction industry.

At the moment the majority of youth are unemployed and remain idle as there are not enough jobs for many young people entering the labour market, not to mention the number of youth that are out of school or have very low attendance rates. These aspects are related to many complex issues, that differ from community to community, but are important to be considered, and identified. The high percentage of youth that is not in education, employment or training remaining idle poses a risk for the region as discouraged and socially excluded youth keep a vicious circle of poverty and exclusion. The investment in human capital, economic diversification need to be embebbed into any design process for social and cultural infrastructure, and needs to run in parallel to create jobs inproductive sectors. Enhancing human capital is critical to generating inclusive growth, reducing poverty and creating a more productive and healthy society.

The sets of interventions to promote youth growth – Youth 2 Youth relies on expanding skills, and emphasizing the range of abilities required to comprehensively prepare children, youth and adults to exercise citizenship and promote life in the twenty-first century. Based on the Delors Report, UNESCO's International Office of Education defined a quality framework for the curriculum required for this century, deepening the focus on the skills of learning to how, learning to do, learning to be and learning to live together, the well- known four pillars of education [Delors et al., 1998]. The process of consultation and principle 1 – Youth 2 Youth, will aim to focus on translating into design practices these principles for engagement of youth. The competency and focus on this principle aims for unleashing the potential of young people in communities as agents of change.


Architect Deepti Wetjen and Master of Architecture student at practical construction workshop on strawbale housing in Perth. [2020]

PRINCIPLE 2: ENVIRO DESIGN COLLAB & MAKE
IDENTIFYING & LEADING PROJECTS & SKILLS

As the knowledge amongst groups are enhanced and the co-design process is established, communities define their priorities and skills are identified. Leadership into gaining and acquiring resources and tapping into opportunities are identified, for funding applications, skills training and design development. A number of potential projects such as the basketball courts in full scale would be completed and further infrastructure and pathways are presented by members and with members. Studio projects are set up based on community needs [e.g.Studio Bayulu already ongoing]. Case studies might come from these experiments,

and design prototypes can be co-designed in connection to basketball courts and recreational facilities/youth hub/ childcare facilities. The availability of environmental knowledge and design skills cultural and social knowledge will play the essential role of fomenting the initiatives, continuity and roadmap for development. Expanding partnerships and leadership at the communities will play a key role during this step. Important to express that the 5 principles here described are not linear, and are meant to unfold processes that are circular by nature. Re-design and co-design is to be an evolving process.
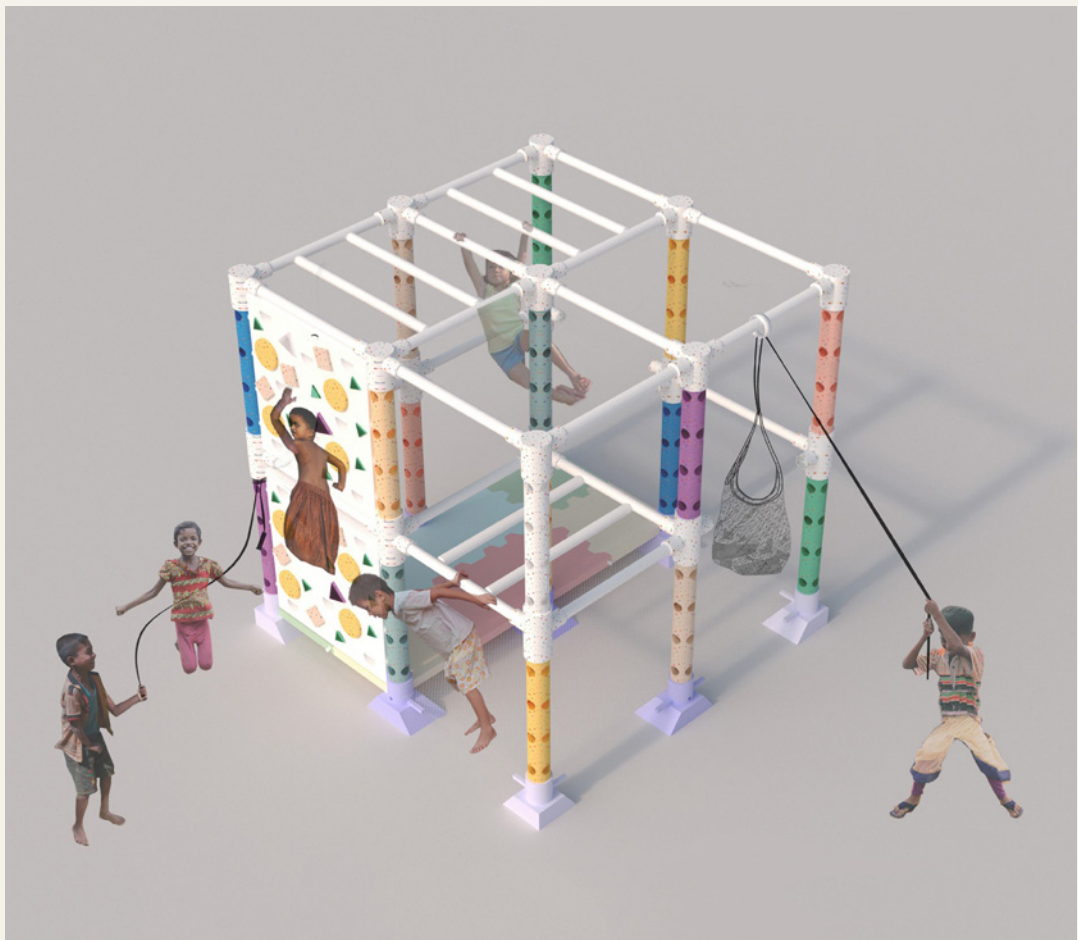
*Toolkit for self–resilience [BBM Design Lab March Students
Calvin Thoo, Lyana Ibrahimm, Nurul Azman, Nur Hafizah Mohammad]*

PRINCIPLE 3: INNOVATION IN MATERIALS
INTEGRATE MATERIALS & OPPORTUNITIES

Bio-materials industry is expanding fast into the 21st century construction and design industry in particular. Products such as spinifex, mycelium and in some areas even bamboo, have large potential for commercial exploration in the Kimberley region [e.g. spinifex map].

'Spinifex' (also known as 'porcupine' and 'hummock' grass) is the generic term used to describe approximately 64 species of perennial evergreen grasses (Poaceae family) within the genus Triodia R.Br. [Jacobs 2004, Lazarides 1997] has been the subject of extensive research in Australia in particular in the East Coast [Amiralian 2014]. Indigenous peoples in Australia have used spinifex for thousands of years for the production of resins, that was used as hafting adhesive on stone knives, spear-tips to wooden handles, foliage for shelter-cladding materials, seed as a food source" [Amiralian 2014], fibres for making nets, bags [figure below], and many other

uses which are well documented in the literature [Pitmann & Wallis 2012]. but as mentioned without commercial applications are well documented.

This along with many other initiatives can be at the core of new opportunities, that will connect remote communities to their land, to their culture and loss practices, and innovating to create new and empowering ways for development in their communities. Nowadays there's extensive need for the development of new bio-resins, that can replace petroleum-based compounds, plastics and composites with substitutes that are non- toxic products. Currently many industries would benefit from such developments, in particular the furniture making and construction industry, for timber coating and termite protection (to name a few). Such industries allow for personal and self-sufficient small businesses to flourish, with particular appeal for remote communities.
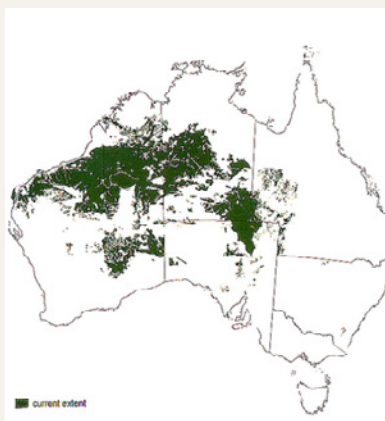
Left: Sources of Spinifex distribution in Australia [PhD Thesis [pag 34]
Right: Workers laying spinifex during road construction in Central Australia 1912-1951. Photograph is part of the Australian Inland Mission Collection (nla.pic-an24666817).
[Image courtesy of National Library of Australia].

Bag made from spinifex fiber collected by Emile Clement from North Western Australia late nineteenth century, now held in the British Museum (Oc1960,11.63)
[Image courtesy of the British Museum]

The location of the Kimberley requires materials and resources to be flown into, as industries are not located in the region. Scarcity of materials and shortage of specialized labour makes construction in the region extremely expensive. Research into local materials that can be locally grown, sourced, are technically advanced, can promote local employment, industry development, environmental resilience and culturally appropriate solutions in the region. lThis is a challenge and an opportunity for a growing industry of biomaterials to flourish, with knowledgeable indigenous peoples that understand their context, and designers that understand the value of such resources and how to translate it into desirable artifacts for a local and international market.

The BBM Design lab has been working with mycelium and exploring its application for bricks production. The hybrid use of substracts for increasing strength, lightness and affordability [e.g. bamboo gridshell structure and hemp/bamboo substracts]. It has also been researching the potential to design parametrically moulds that can be fabricated using 3D printing and CNC milling for modularity, pre-fabrication and more complex formwork.

Researchers and design consultants will partner with communities to provide the technical support, design development and standardisation/tests necessary for the development and training of products that can be developed commercially.

Contemporary examples of development of bio-materials successfully at a commercial scale are extensive and applicable in many areas, from fashion industry, to construction [insulation, bricks] to furniture design.
1: Mycellium growing hyphae
2: Mycellium packaging by Ecovative
3, 4: Mycellium leather by Mycoworks
5: Mycellium chair design
Image sources :
https://ecovativedesign.com
https://www.mycoworks.com
https://wasterush.info/grow-yourself
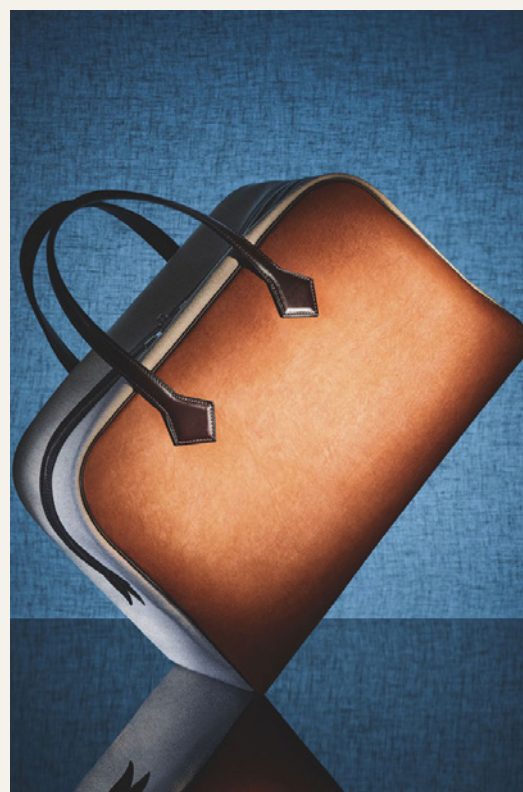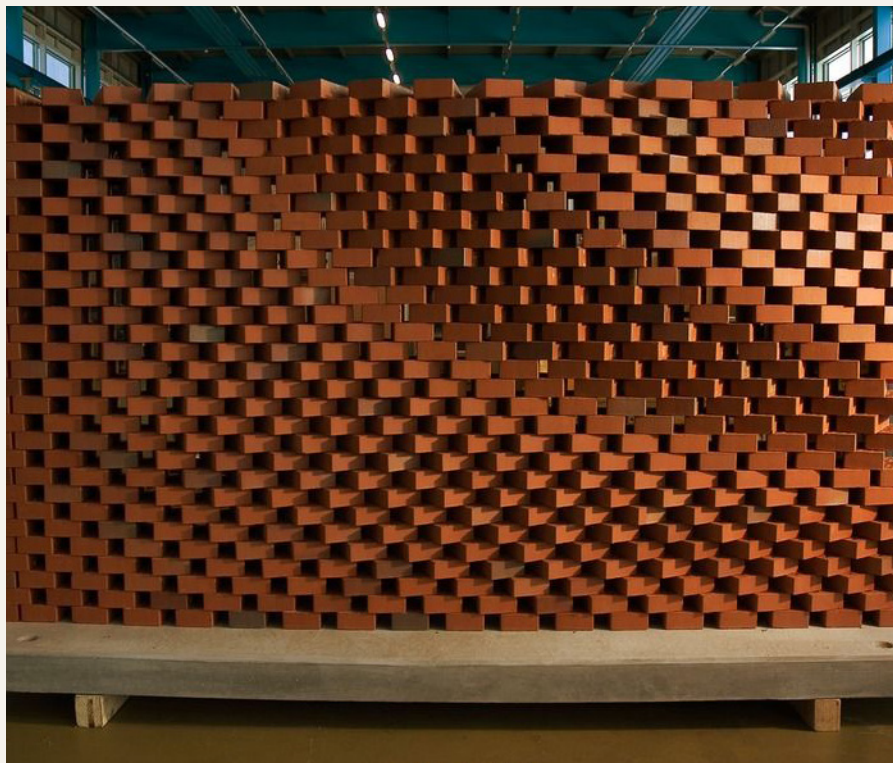
1: Biohm Mycellium Blocks
2: Ecovative
3: Mycellium brick - BBM DesignLab
4: Hi-fi by "The Living' NYC Mycellium pavillion
5: Parametrically designed wall, Rippman Knauss
Image sources:
https://www.biohm.co.uk/mycelium
https://www.arup.com/news-and-events/hyfi-reinvents-the-brick
https://www.buildingcentre.co.uk/news/articles/brick-ecovative-mushrooms-2016
http://www.iaacblog.com/programs/parametric-facade-brick-wall

PRINCIPLE 4: EVALUATE & WORK SMARTER
ENTREPRENEURSHIP & DIGITAL ACTION FOR DIGNIFIED WORK

A key aspect in the development of productive communities is the ability to identify, explore and expand materials but also skills for self-sufficiency. Building upon the maker movement/ DYI, in combination with bio-materials, the possibilities of personal fabrication in the Kimberley, entrepreneurship and self-sufficiency are considerable if the appropriate support and community engagement is in place. At this point, a number of activities are already taking place and communities are on board into the processes set up. Individuals and groups have been identified within the different hubs and the expertise and mentors/champions are well established. Business and entrepreneuship, alongside marketing are available tools to advance the opportunities for communities to expand their work and become hubs or remote centers themselves, with commercially viable entrepreneurships. According to the designed productive spaces and hubs, at this stage the focus is on scaling up production beyond experimentation. Employment within communities are a reality, with the provision of dignified work and specialized opportunities for growth of small and middle scale businesses, using a mix of traditional and modern technologies and skills through partnerships and collaboration.

The digital inclusion has expanded well beyond access to continuous and in depth digital hubs for production.

One example of of partnership on advancing collaboration using such mix of skills, tools and technologies is the one developed by the BBMDesign Lab and the Bamboo Institute in Timor- Leste. This is an established organization founded through a series of government initiatives and international aid funds to support the bamboo industry in Timor-Leste. Today, the institute employs, trains rural workers and advances the use of bamboo by giving incentives for the inclusion of a diverse range of activities within the bamboo supply chain. The BBM Design lab has been working with the Bamboo Institute to design a key product that can be ready for export, based on minimum use of materials, lightness, strength, design for disassembly and use of traditional skills into its manufacturing as well as CNC machinery/milling.

Uma chair and Kadeira Homan [designed by Dr Jairo da Costa, MArch student David Morgan and Dr Rosangela Tenorio] will offer the possibility of an export product, that can attract a considerable higher value due to its flexible, efficient and culturally appropriate design, with superior aesthetics, while connecting with meaning and skills of the place and their traditional owners.

1: Master Carlos, Traditional weaver of Timor-Leste
2: Architecture & Product Design students learning to weave at practical classes, UNNC/UWA China - Australia Workshop
3: Dr Jairo da Costa working on the first version of the Uma Chair Design, at the BBMDesignLab, Brazil

BBM DESIGN LAB

UMA CHAIR 400 x 52 0 x 840

PRINCIPLE 5: LEAD & MULTIPLY
CIRCULARITY FOR REMOTE COMMUNITIES

Circular economies work, and work by keeping materials in use, by avoiding waste and by decoupling growth from the consumption of finite resources. Traditional owners understand this concept well. By applying the 4 previous principles with communities, with a scaled and staged approach of partners [e.g. industry and research], we aim to form a leading and multiplying effect within communities.

We propose to start with 2 pilot communities [Bayulu and Yakanarra] for the first year. This will guarantee that consultation and understanding of contextual aspects [e.g. cultural, economical and environmental, physical] are holistically approached and appropriately addressed. Service providers, government agencies, communities and in particular the youth will be engaged on this process.

The rationale behind the initial 2 communities 'choice' lies primarily in its scale [e.g. population, existing infrastructure, community governance], proximity of Fitzroy crossing and accessibility to resources. By choosing two fairly distinct communities, it is possible to understand the spectrum of possibilities within communities [in-depth] and to advance on the contextual opportunities that each one has to offer. After the initial year, these two communities the BBM Team will be in a position to expand what has been learned to the other 3 communities [Wangkatjunka, Junjuwa and Yungngora]. Business models might start to flourish at a 3rd year stage for replication, and further engagement beyond their own regions and sub-regions. Opportunities for remote-to-remote exchange and collaboration can be established and expanded.

Left: Bayulu Community
Right: Yakanarra, St Georges Mountain range

FIVE COMMUNITIES

02

The following is a compilation of info relevant to the 5 communities visited during the period of 30th May – 13th June 2021, by the BBMDesign Lab team along with information gathered from local councils, agencies and service providers engaged in the Kimberley region. An extensive literature review was also conducted for these 5 communities.

Bayulu, as one of the pilot communities, have been a focus for the team in terms of research through the development of the first Kit for basketball courts + the development of a Masters Design Studio at the School of Design [Semester 2- 2021] For this reason, There is a bigger emphasis on Bayulu on this particular contextual report.

FITZROY CROSSING
(Marra Worra Worra)

Fitzroy Crossing is the regional hub community in the Kimberley region and is situated north-west of the geographic centre. The town of Fitzroy Crossing is home to 5 language groups. They are Bunuba, Gooniyandi, Nyikina, Walmajarri and Wangkatjungka. All communities are members of the Marra Worra Worra Aboriginal Corporation.

The town of Fitzroy Crossing is situated within the Shire of Derby/West Kimberley approximately 2500 km from Perth, along the Fitzroy River and adjacent to the Great Northern Highway. By road, Fitzroy Crossing is 258 km south-east of Derby and 288 km west of Halls Creek. The Fitzroy Valley defines itself in terms of the communities that live there and not on geographical boundaries.

Traditionally, the Fitzroy Crossing area is home to Bunuba, Wangkatjungka, Gooniyandi, Nyikina, Mangala and Walmajarri people. Through these people, many mythological and culturally important sites were established.

Fitzroy Crossing, Town centre Mural Painting

HISTORY

Fitzroy Crossing became a major centre following the closure of Moola Bulla Aboriginal cattle station north of Halls Creek in 1955, which resulted in the movement of Aboriginal people into towns away from traditional lands where they were working. The Kurnangki, Mindi Rardi and Junjuwa communities were established because of the population displacement.

The Pastoral Award in 1969 resulted in over one thousand Aboriginal people being forced to leave the pastoral stations. These people were compelled to live in very poor conditions on the fringes of the Fitzroy Crossing. This separation had a significant negative effect on their cultural customs and lifestyle.

To address this situation the leaders of the five surrounding tribes initiated meetings at the banks of the Fitzroy River with the goal of working together to form a stronger voice to talk to government. By 1978 the meetings became regulated under the name of this meeting place; Marra Worra Worra.

The collaboration of the 5 language groups within Fitzroy Crossing led to efforts to obtain tenure to traditional lands, address the social issues that had arisen throughout a century of oppression and a decade of upheaval, and to begin developing sustainable communities.

Fitzroy River: common ancestry place for a number of communities

BAYULU is one of the oldest, most established communities and is located on the western periphery of Gooniyandi country. There is a strong influence of mostly Gooniyandi and Walmajarri speakers in the community. Smaller communities have developed from Bayulu. It is a large Aboriginal community, located 10 km south of Fitzroy Crossing in the Kimberley Region of Western Australia, within the Shire of Derby-West Kimberley.

Bayulu was originally established as part of Gogo Station but was relocated to its current position in 1987.[1]

JUNJUWA is a significant Aboriginal community which is situated in the Kimberley region of Western Australia, it is adjacent to Fitzroy Cross in the Shire of Derby, West Kimberley.

The Junjuwa community was formed in the mid-1970s and over time the mix of tribes and language groups has evolved to form a Junjuwa community which is mainly comprised of the Bunuba people. Junjuwa was the first settlement to be built in Fitzroy Crossing with structured housing built by the Bunuba residents.

This had a role-on effect with the development of Bayulu and Wangkatjungka when they moved back to their homelands in the 80s. Junjuwa is now the largest of six discrete Aboriginal Communities in Fitzroy crossing.

YAKANARRA is a community which is located approximately 60 km south-west of Fitzroy Crossing, on the edge of the St Georges Ranges. Set on a one-square mile excision from Gogo Station, the Yakanarra community was established in 1989 by Walmajarri elder Hanson 'Pampila'. Many residents of Yakanarra have cultural and emotional ties to the old Cherabun station, and the existing community is 20 km south of the old homestead.

NOONKANBAH / YUNGNGORA community is situated on the banks of the Fitzroy River, around 280 km east-south-east of Broome and 100 km southwest of Fitzroy Crossing at the southern end of the Noonkanbah station in the Kimberley region of northern Western Australia. It functions as the headquarters of the Aboriginal-owned station of Noonkanbah, and of the Yungngora Association.

The station was established in the early 1880s by the Emanuel family. After 1967 many people moved away from the station due to government policies, lack of support and poor living and working conditions.

The Yungnora people also moved away until the late 70s when the Yungngora community was established. Noonkanbah station was purchased in 1976 by the Aboriginal Land Fund and the Yungnngora people now run it.

In April 2007 the Yungngora people had their native title recognised.

WANGKATJUNKA is situated 130 km east of Fitzroy Crossing and 20 km from the Great Northern Highway in the Kimberley region of Western Australia and is part of the Shire of Derby-West Kimberley. It is a significant Aboriginal settlement with residents who are Wolmatiarri, Wankatjunaka or Gooniyandi people. The members of the Wanakatjunaka community are mainly Wanakatjunaka speaking people and have all maintained a strong connection with their desert culture.

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[1] "Bayulu — Marra Worra Worra". 2021. Marra Worra Worra. https://www.mww.org.au/bayulu.

COMPARTATIVE STATISTIC ANALYSIS
(2011 & 2016 AUSTRALIAN BUREAU OF STATISTICS)

Note: Estimating and predicting populations & data in the Fitzroy Valley is very challenging because Aboriginal people tend to be mobile in terms of housing and living arrangements. Populations can increase and decrease quite rapidly based on family, cultural or administrative factors.

POPULATION

	BAYULU		WANGKATJUNKA		JUNJUWA		YUNGNORA		YAKANARRA	
Male	144	160	86	110	186	166	113	171	52	70
Female	165	162	99	118	171	160	143	207	50	57
Aboriginal	276	309	166	217	359	323	265	378	99	-
Torres Strait Islander	6	0	0	0	0	0	0	0	0	-
Both	28	13	0	11	6	3	0	0	0	-
Other	0	0	19	0	0	0	0	0	3	-
Median Age	20	21	26	25	23	29	22	22	23	19
Total	310	322	185	228	359	326	256	378	102	127

COMMUNICATION

	BAYULU		WANGKATJUNKA		JUNJUWA		YUNGNORA		YAKANARRA	
English Speaking	10	10	38	30	60	73	46	14	17	-

EDUCATION

	BAYULU		WANGKATJUNKA		JUNJUWA		YUNGNORA		YAKANARRA	
Pre-school	14	0	3	3	16	6	6	0	8	-
Primary School	76	55	12	30	55	35	45	68	19	-
Secondary School	8	29	7	8	15	18	7	26	9	-
Further Education / Tertiary	8	0	3	0	6	0	9	3	0	-
Other	0	0	0	3	3	0	9	0	0	-
Not Stated	12	30	0	7	21	24	13	23	0	-
Total	106	84	25	44	95	59	76	97	36	-

☐ 2011   ▨ 2016

EMPLOYMENT

	BAYULU		WANGKATJUNKA		JUNJUWA		YUNGNORA		YAKANARRA	
Employed in labour force	14	0	3	3	16	6	6	0	8	-
Full-time	76	55	12	30	55	35	45	68	19	-
Part-time	8	29	7	8	15	18	7	26	9	-
Away from work	8	0	3	0	6	0	9	3	0	-
Unemployed / Not in labour force	0	0	0	3	3	0	9	0	0	-
Median age by employment status	12	30	0	7	21	24	13	23	0	-
Median personal income	12	30	0	7	21	24	13	23	0	-
Median weekly household income	12	30	0	7	21	24	13	23	0	-

DWELLINGS

	BAYULU		WANGKATJUNKA		JUNJUWA		YUNGNORA		YAKANARRA	
# Households	58	65	31	53	64	76	39	72	19	20
Avg. People per Household	4.8	4.3	4.2	4	4.2	3.8	5.2	4.9	3.9	5
Avg. # Persons per Bedroom	1.6	1.2	1.8	1.2	1.5	1.2	1.7	1.4	1.3	-
Median monthly mortgage repayment	$0	$0	$0	$0	$0	$0	$0	$0	$0	-
Dwellings owned outright	0	0	0	0	0	0	0	0	0	-
Dwellings owned with a mortgage	0	0	0	0	0	0	0	0	0	-
Dwellings rented	58	65	31	53	64	76	37	72	17	-
Not stated	0	0	0	0	3	3	3	0	3	-
Median weekly rent	$30	$60	$35	$100	$35	$88	$35	$100	$30	$100

☐ 2011   ▇ 2016

Each community in Fitzroy Valley is assigned a language group identity. The cultural factors that influence the formation and location of these communities are closely linked to the language groups.

A 'language group' is a means by which people identify themselves with respect to the language spoken. The names of the language groups refer to the languages that were spoken by the peoples whose traditional countries lie within Fitzroy Crossing. Although all of these languages are still known by the older generations, they are not the everyday languages spoken to communicate with one another. There are several aspects that determine language group identity, the first is ancestry. People identify with the language group of the people from whom they are descended. Most identify with the language of their father's ancestors. Language identity is also a statement about one's relationship to the country to which that language belongs. Their language identity sometimes varies according to the place where they were.

BAYULU Languages: Based on site visits to the Bayulu Community, many members of the community are able to easily communicate with the BBM Lab team in English. However, communication amongst members is mainly conducted in Kriol.

JUNJUWA Languages: Kriol, Bunbua, Walmajarri, Gooniyandi and Manyjilyjarra.

YAKANARRA Languages: Walmajarri is the primary language for Yakanarra.

YUNGNGORA Languages: Kriol, Walmajarri, Nyikina, Bardi and English.

WANGKATJUNKA Languages: Walmarjarri, Wangka, Kukajarr and Gooniyandi.

Fitzroy River. common ancestry place for a number of communities

The Bayulu is situated within Gooniyandi Country that extends from Fitzroy Crossing to the locale of Margaret River Station in the east, north to the King Leopold ranges and south towards the Great Sandy Desert. According to the Gooniyandi Healthy Country Plan (2015), Gooniyandi people are bound together by their lore and customs and have a deep and unbroken connection to their country. [2]

The plan continues to explain that Gooniyandi people identify themselves through their connection to riwi (tracts of land) and their jariny (conception dreaming sites). Their lore and culture is not written down on paper; they have to learn this from their elders and pass down knowledge to their kids and grandkids; The plan explores language, lore and culture, through various components

of the Gooniyandi culture. These components are important in preserving Gooniyandi language which is tightly woven into into their lore and culture. Some of these components include 'Climate', 'Storytelling' and 'Joonba'.

History, culture and country are three imperative components of life for the members of the Junjuwa community. Language is a crucial part of their culture, and their main focus is to keep both language and cultural traditions alive and strong in their community.

"There are about one hundred Bunuba speakers, most of whom are older people now living in Junjuwa. The Bunuba elders are concerned that the language is not being spoken by younger people. It demonstrates a fundamental truth of Bunuba life." [3]

Gooniyandi Country
Source: https://www.notredame.edu.au/majarlin/about/the-kimberley

[2] "Gooniyandi Healthy Country Plan," Gooniyandi Aboriginal Corporation / Kimberley Land Council Online, 2015, ac¬cessed June 13, 2021, https://static1.squarespace.com/static/59fecece017db2ab70aa1874/t/5a7bdc53ec212d¬f82e6b7035/1518066809472/gooniyandi-management-plan-lo-res.pdf
[3] "Jandamarra - Bunuba People". 2021. Jandamarra.Com.Au. http://www.jandamarra.com.au/bunubapeople.html

The fundamental objective of the Yakanarra community is to enable indigenous people to practice and partake in their traditional cultural activities, to teach their children language and cultural knowledge and to take care of "country". The community is located at a distance from the town and is a safe and beneficial place for people to live and raise their families as it is removed from the negative impact of alcohol. The streets in Yakanarra are named after Walmajarri words. (For example; Nyinyijarti – Small bird, Jurnta – bush onion, Jilji – sand hills, Mangunampi – spring water country).

It is evident across all communities, that sport is a powerfully unifying force that binds people together across and within communities, cultures and languages. The fulfillment of this project would be instrumental in contributing towards creating this important connective tissue to bridge the gaps that would otherwise divide communities and create conflict.

The Yungnora community has basketball courts and a football oval. Yungngora also has a football team called the "Noonkanbah Blues" which is part of the Central Kimberley Football League.

Yungngora community hosted the 2018 Sports Festival. Teams from across the Kimberley travelled to Noonkanbah for the festival. It was a successful event and display of sportsmanship during the 3 days of AFL and Basketball. Following the great success of the 2018 Sports Festival, the Garnduwa's Yungngora Community Sport and Recreation Officer Trichelle plans on organising a festival specific to basketball.

Trichelle Laurel - "The festival was a fantastic success and the development and training I have received from Garnduwa certainly gave me the confidence to organise a basketball festival of this size." [4]

Cultural activities are also meaningful regular practices in the lives of the Wangkatjungka community. The most significant activities are hunting, gathering bush produce, hosting other community members, travelling on culture and lore business and partaking in ceremonies. There are 3 different lore areas used by the community: they are located north of the water tower, west of the powerhouse and the largest area from 300 m to the south of the settlement.

COMMUNITY DEVELOPMENT PROGRAM (CDP)

Marra Worra Worra delivers the Community Development Program (CDP) to participants in the Fitzroy Valley. According to the National Indigenous Australians Agency (2021),[5] the CDP is responsible for ensuring skill sets are developed and improved. As per the new '2021-22 Budget Update', the CDP aims to ensure Indigenous Australians are part of the Government's economic recovery plan.

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4 Garnduwa. 2021. Noonkanbah Sports Festival 2018 — Garnduwa. [online] Available at: <https://www.garnduwa.com.au/blog/2018/12/20/noonkanbah-sports-festival-2018> [Accessed 2 August 2021].
5 The Community Development Program (CDP)," Nation Indigenous Australians Agency Online, 2021, accessed June 20, 2021 https://www.niaa.gov.au/indigenous-affairs/employment/cdp

The community Bayulu is managed through its' incorporated body, Bayulu Community Incorporated (BCI). The BCI was incorporated under the Associations Incorporation Act 1987 on 5 November 1975.

All housing and most community infrastructure associated with Bayulu is located on two crown land titles. Although the majority of infrastructure is located on land with secure and appropriate tenure, the sewage treatment ponds are partially situated on the surrounding pastoral station (GoGo Station), which is Crown Land subject to a pastoral lease to GoGo Station Pty. Ltd.

Bayulu is on land which is subject to the Gooniyandi Combined No.2 Registered Native Title Claim (WAD 6008/00, WC 00/10). The claim area is approximately 11,209 km². The Kimberley Land Council (KLC) is the Native Title Representative Body that represents the claimants. The claim is currently in mediation with the National Native Title Tribunal.

The community Yakanarra is managed through its incorporated body, Yakanarra Aboriginal Corporation.[6]

There are two governance bodies within the community of Yungngora; Yungngora Association Inc: The Community and Yungngora Aboriginal Corporation: Traditional Owners.

Despite being comprised by largely the same community members, are two separate bodies incorporated under different legislation with different legal responsibilities, decision-making processes and reporting requirements.

Yungngora Association Inc represents the community via the community Governing Committee, the primary aim of which is to support development of the community in all ways, including health, education, employment and housing. Yungngora Association Inc is responsible for the management of day-to-day operations of the community including instituting the community's by-laws2.

The Yungngora Aboriginal Corporation was incorporated under the Corporations (Aboriginal and Torres Strait Islander) Act 2006 (Cth) in 2008. The Corporation's main objectives and statutory functions are to represent traditional owner interests. The Yungngora Aboriginal Corporation is also to act as the registered prescribed body corporate (PBC) under requirements of the Native Title Act, following the positive determination of traditional rights and interests in 2007.[7]

The community Wangkatjunka is located within the registered Kurungal (WAD6217/98) native title claim area. The community is managed through its incorporated body, Kurungal Inc.[8]

[6] "Supporting | Office Of The Registrar Of Indigenous Corporations". 2021. Oric.Gov.Au. https://www.oric.gov.au/publications/yearbook/oric-yearbook-2017%E2%80%9318/performance-reporting/supporting.
[7] Yungngora Layout Plan 2, Amendment 10," dplh Online, October, 2009, accessed June 30, 2021, https://www.dplh.wa.gov.au/getmedia/0f29fb3d-98bb-41ea-b56c-18f04c03f255/LOP_Yungngora_LP2_Amendment_10_Report
[8] "Kurungal Council". 2021. Kurungalcouncil.Org.Au. https://www.kurungalcouncil.org.au/.

(Primary school) Young children in the Bayulu Community are able to attend the Bayulu Remote Community school from kindergarten to year six. The school is located 15 km from Fitzroy Crossing and according to the Department of Education (2021)7 , the school has a vision of providing a stimulating and safe learning environment for students, in order to encourage them to become resilient, proud and strong members of the community through the assistance of reaching their full academic potential. The Department of Education webpage continues to explain that the school has a firm foundation in ensuring Aboriginal culture is celebrated and embraced.

(High School) Young members within the community have to travel to areas afar to receive education at a high school level. However, there are TAFE Campuses in the region to receive an apprenticeship or traineeship.

(Tafe) TAFE Campuses are present in Fitzroy Crossing, Derby and Broome which offer a friendly training environment for students and staff, as well as offering space to meet the demand for apprenticeship training in support of industry growth. At these cam¬puses, students are able to receive Certifications I - IV Courses, a Diploma, Short Courses and Skill sets in various industries such as: Agriculture, Animals Science and the Environment, Automotive, Business and Finance, Education and Community Ser¬vices; English, Languages and Foundation Studies; Health, Beauty and Fitness; Hospi¬tality, Tourism and Events; Information Technology, Library and Digital.

Education and training is a major priority for the Yakanarra community and therefore it has applied great efforts to ensure they have quality standard education and training facilities in the community.

Yakanarra Community School was opened in 1991 offering classes from pre-school to year 10. It has about 30 primary students and 10 junior secondary students. The majority of funding for the school is from the Aboriginal Independent Schools Association and the Commonwealth Grants Association as well as occasional grants for special projects.

In 2001 an extension of the Karrayilli Adult Education Centre which has its main base in Fitzroy Crossing, was built in Yakanarra. The centre has versatile multifunctional spaces, computers, a library and kitchen facilities. The Kulkarriya Community School is a school that belongs to the Yungngora Community. It was built in 1978 for students from pre-primary to Year 12 and in 2007 had 87 students. The school employs five teachers, a principal and 17 Aboriginal staff.

Wangkatjungka Remote Community School is located in a remote Aboriginal community in the Kimberley region, approximately 110 km from Fitzroy Crossing. The school enrolment numbers have recently ranged from 40 to 60 students and are mainly Aboriginal. The school conducts four multi-aged classes catering for students from Kindergarten to Year 6. There is also a 0-3 early childhood learning program.

1: Sign marking location of original Gogo Cave School site
2: Yakanarra Youth Hub
3: Yakanarra Community School
4: Yungnora Basketball Courts

ACCESSIBILITY

The nearest town to the Bayulu community is Fitzroy Crossing 14 km, the distance also from amenities such as the nearest police station. The Australian Bureau of Statistics (ABS) categorises remoteness of areas in Australia into 5 classes based on measuring relative access of these areas to services. ABS classified the Bayulu community as 'Very remote'.[9]

Due to the remoteness of this community, access is only by vehicle via the Great Northern Highway. The drive to the community is then 1.2 km on a sealed and bituminised road. The Community is serviced by an internal ring road (Jilliyardie Loop and Lamey Ave) which is sealed. All other internal roads to the dwellings are also sealed and kerbed.[10]

Main forms of transport utilised by residents of the communities are their individual vehicles.

The main road access to Yakanarra is via the Cherabun Road, which is 57 km south-east of Fitzroy Crossing along the Great Northern Highway. With reasonable travel to Fitzroy Crossing (1½ hours by road, 15 minutes by aeroplane), residents have the possibility of balancing community life with convenient access to the town services and amenities.

Road access to Yungngora is via Calwynyardah-Noonkanbah Road (70 km). The road is unsealed but graded. The turnoff to the community from the Great Northern Highway is about 90 km west of Fitzroy Crossing. The Yungngora community is the entry point to access other inland communities such as Kadjina and Yakanarra using an unpaved road which cannot be accessed during the wet season." [11]

The road network in the community Wangkatjunka comprises kerbed and sealed formation. The roads are in generally poor condition and require repairs and maintenance. Vehicles still use informal tracks for access through the community and create a dust problem.[12]

[9] Department of Planning, Lands & Heritage, "Aboriginal heritage inquiry system", accessed 10 June, 2021, https://www.dplh.wa.gov.au/ahis.
[10] Department of Planning, Lands & Heritage and Western Australian Planning Commission, "Bayulu Layout Plan 1: Background Report May 2002," last modified August 2017, https://www.dplh.wa.gov.au/getmedia/085b8536-0eb9-4a96-aad2-5c5c95fcfefe/LOP_Bayulu_LP1_Amendment_11_Report.
[11] Yungngora Layout Plan 2, Amendment 10," dplh Online, October, 2009, accessed June 30, 2021, https://www.dplh.wa.gov.au/getmedia/0f29fb3d-98bb-41ea-b56c-18f04c03f255/LOP_Yungngora_LP2_Amendment_10_Report
[12] Wangkatjunka Layout Plan 1, Amendment 11," dplh Online, March, 2006, accessed June 30, 2021, https://www.dplh.wa.gov.au/getmedia/fb07fb6c-c52a-473f-919f-c0b60a736ec8/LOP_Wangkatjungka_LP1_Amendment_11_Report

Within the community of Bayulu, there is a health clinic and a community store. The community store operates on an inconsistent schedule depending on availability of staff. The Health clinic has been vandalised overtime and is currently not being used due to safety reasons for occupancy of personnel and patients.

The site of Yakanarra was chosen for its traditional and sacred meaningful connections to the Wallmajarri people. Many of the residents have sentimental links to the old Cherrabun Station and the community is 20 km south of the old homestead. The dreamtime site "Parnany" which means "old woman", is also close by and many stories have been told about her for many generations. The community has 30 houses to the north and south, in bottom and top camps from the centre. There are community facilities including an independent school, clinic, store, an adult education centre and basketball court. There is a power station to the east of the housing area.

Yungngora has a range of amenities in the community including a community store, which is owned and operated by the community. An office, which is run by an employee of the Yungngora Association Inc. The office administers the local CDEP program, unlike many other communities in the Fitzroy Valley which utilise the services of Marra Worra Worra in Fitzroy Crossing. There is also a community clinic however there are no health workers who live in the community. Registered nurses visit the community four days per week, for five hours per day and a doctor visits the community three times per month. Yungngora also has a school a workshop, recreation centre, two non-reticulated football ovals and a new indoor basketball court.

Wangkatjunka community has a store, a Centrelink agent, health clinic, and Community Care, play group, a school, administration office including community hall and kitchen, football ground and basketball court. The community hall shares the central area with the other community buildings and is a multi-purpose facility which provides a space for community meetings and occasional art activities. The community has a local health clinic which is visited by a nurse 3 days a week. Emergency evacuations are directed by road to the Fitzroy Crossing Hospital. There is also a community mechanical workshop which works to maintain community vehicles and machinery. There is also an undersized football oval which is available in close proximity to the community gym and the store, as well as a women's centre and a local church.

The Western Australian Planning Commission (WAPC) prepared context plans for land uses within the community. (See following pages)

BAYULU
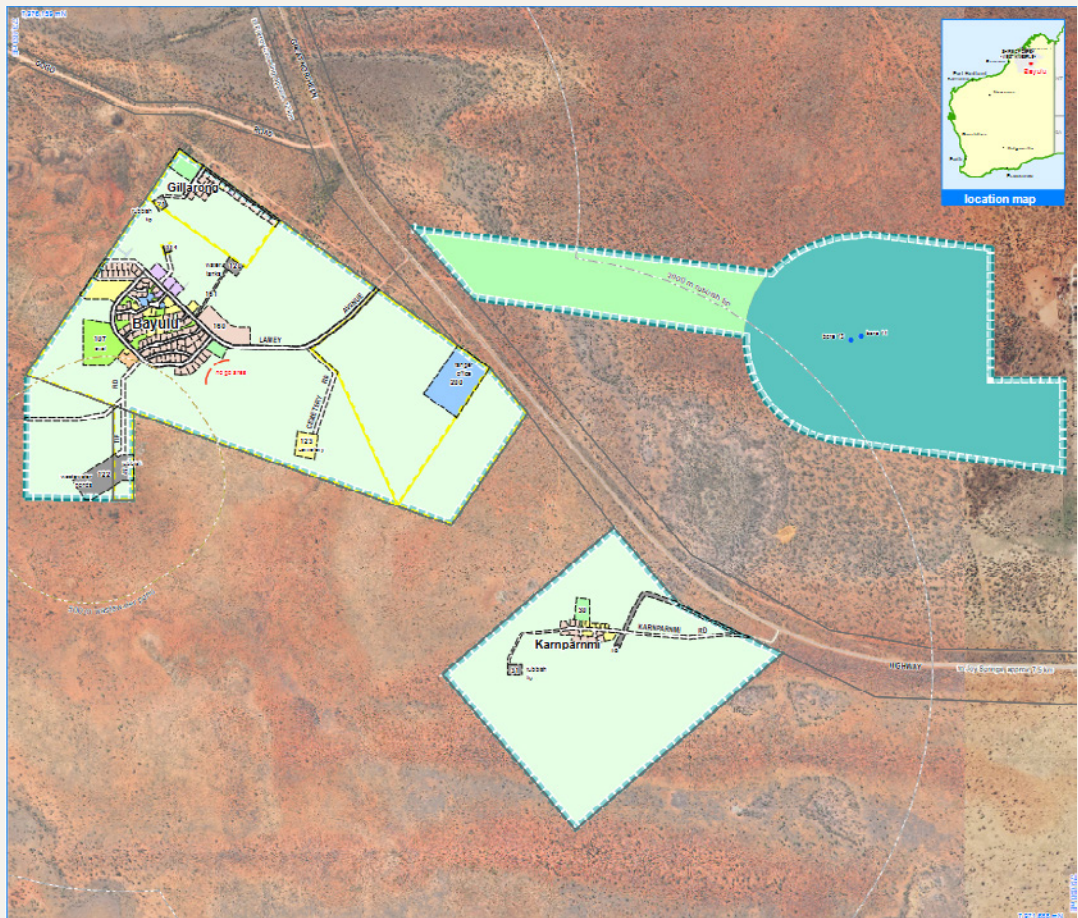
Bayulu women's building. The Wi-fi attracts all members of community and this has become the new community area

YUNGNGORA
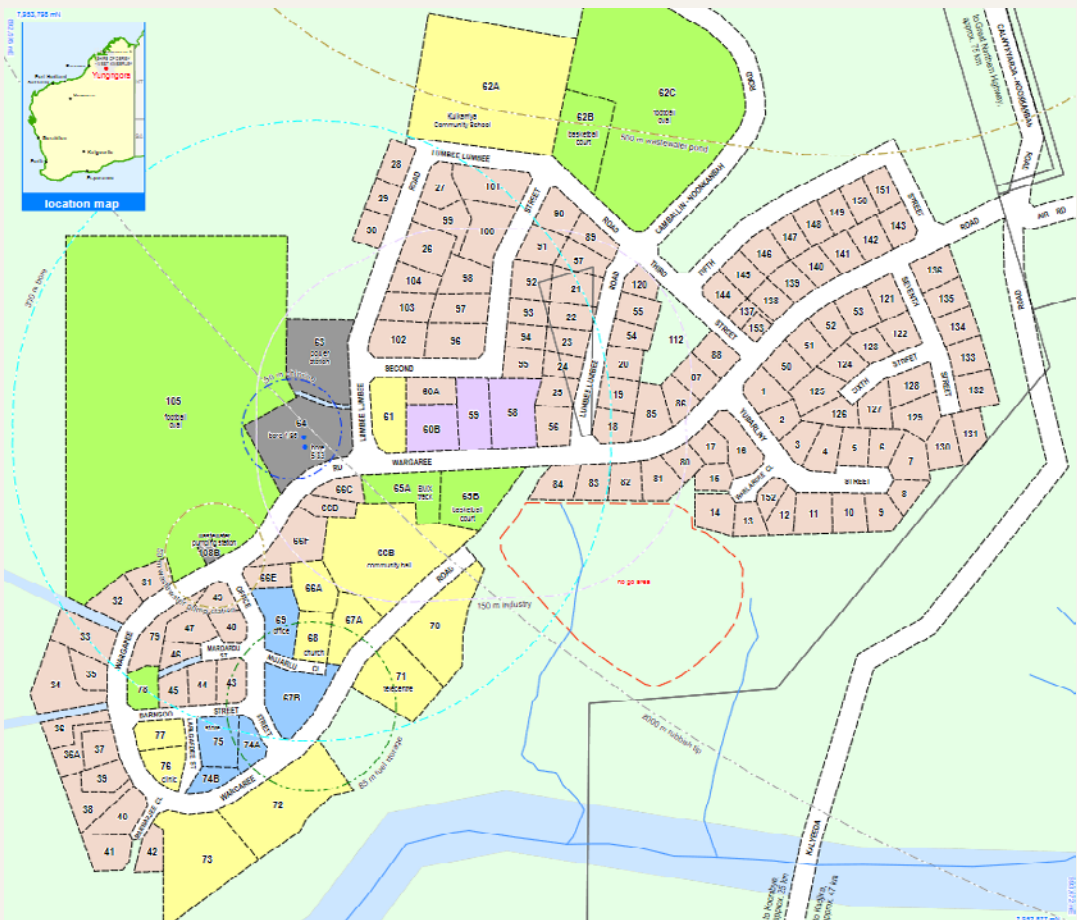
School basketball gym

JUNJUWA
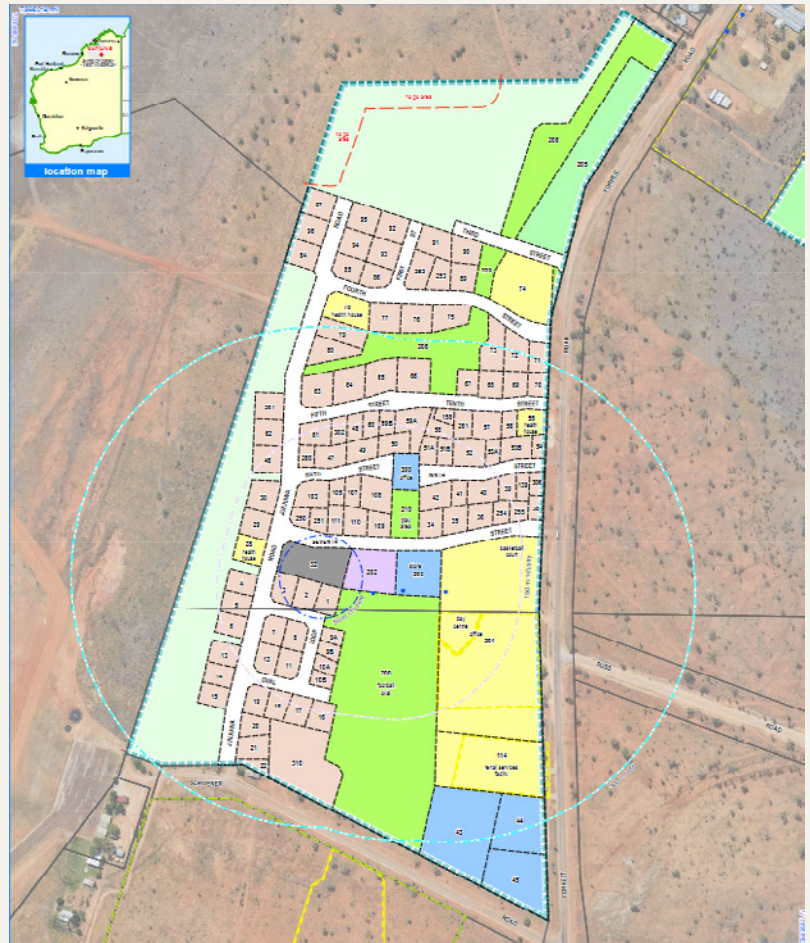
Playground near basketball courts in Junjuwa

YAKANARRA
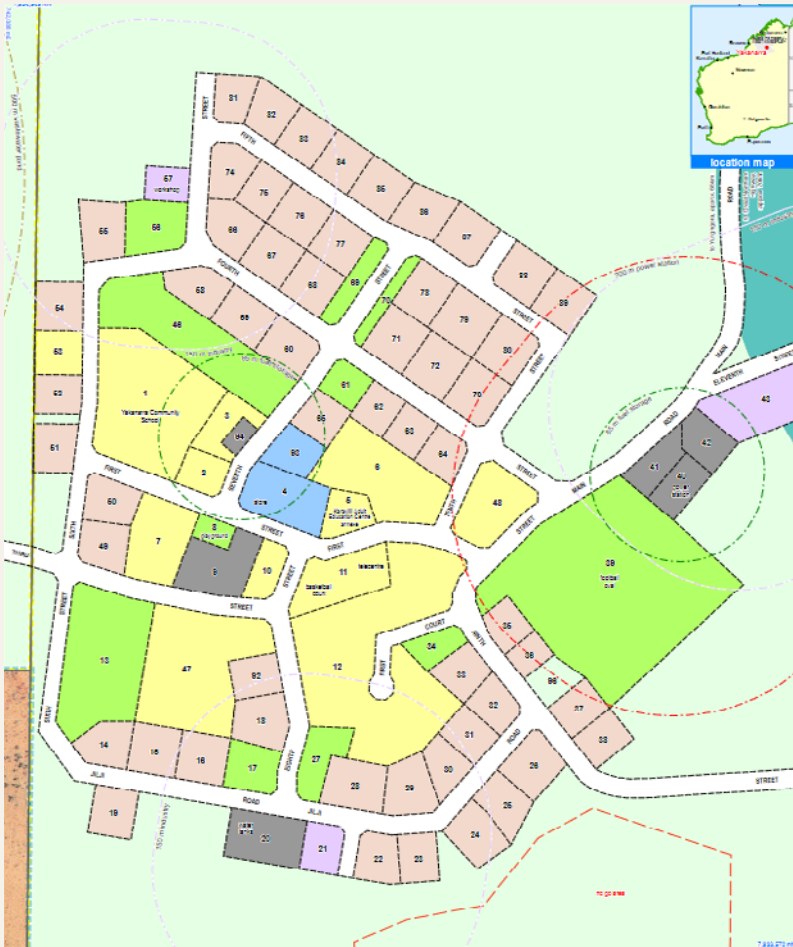
Childrens' monument in Yakanarra

WANGKATJUNKA
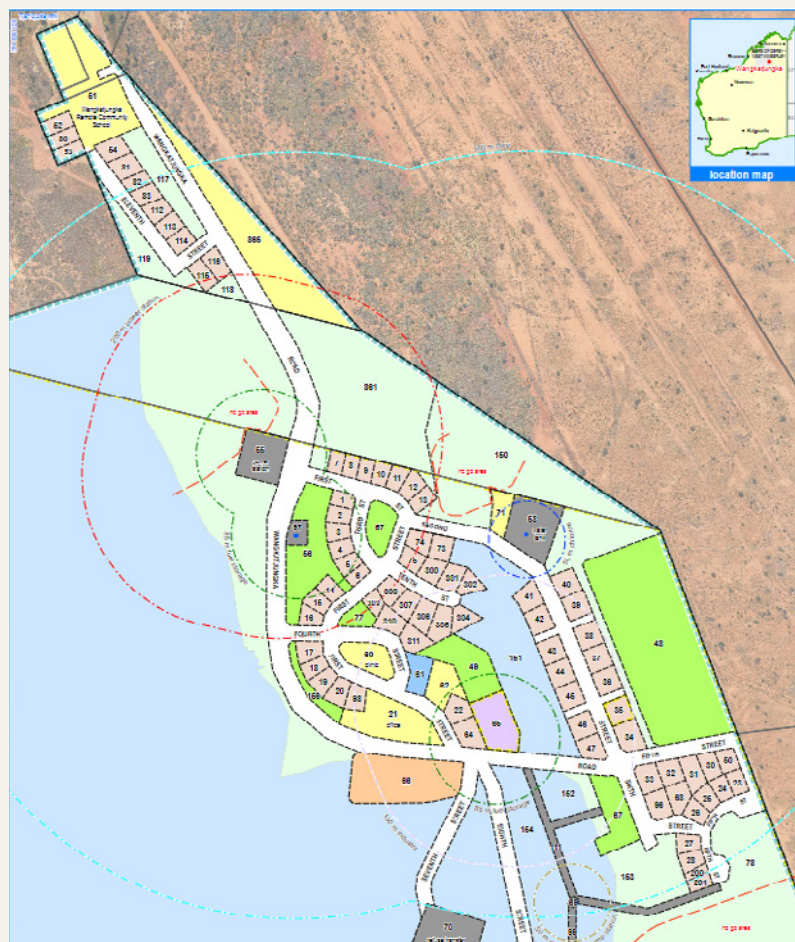
Wangkatjunka community leader Antony and Dr Rosangela Tenorio, Krissie Dickman, June 2021

WASTE MANAGEMENT

As per DPLH report titled "Bayulu Layout Plan 1: Background Report May 2002":

"waste at the tip facility is predominantly comprised of household rubbish and would generally be consistent with the Department of Environment and Conservation's Landfill Class II classification (putrescible, nonhazardous and nonbiodegradable inert waste). The rubbish tip is not licensed by the Department of Environment and Conservation. The existing sewerage ponds (which were previously used as the tip) were filled in May 2009. As of July 2009, a new fenced tip, with two pits has been constructed." [13]

The Yakanarra community manages their own rubbish tip, with the help and advice from the Shire of Derby / West Kimberley Environmental Health Officer The rubbish tip is situated to the west of Yakanarra, adjacent to the wastewater treatment ponds.

The community Yungngora operates a sewer system which is made up of a pump station and is located outside the northern boundaries of the community. The community's rubbish tip is located approximately 1.5 km from the main residential area to the north of the community.

The Wangkatjunka community collects and disposes of solid waste to a disposal area located around 2–3 km south of the community. During periods when access to the tip is restricted by floodwaters, solid waste is collected and stored in an area located within the community and later transferred to the tip site. This holding area is found less than 50 m from existing dwellings, which is not ideal for the residents.

Left: Community built facility for selective rubbish collection and burning later on
Right: Selective rubbish bins at Yakanarra Community

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[13] Department of Planning, Lands & Heritage and Western Australian Planning Commission, "Bayulu Layout Plan 1: Background Report May 2002," last modified August 2017, https://www.dplh.wa.gov.au/getmedia/085b8536-0eb9-4a96-aad2-5c5c95fcfefe/LOP_Bayulu_LP1_Amendment_11_Report.

WASTEWATER MANAGEMENT

Remote communities in Western Australia utilises waste stabilisation ponds which allows natural micro-organisms and algae to assist in the breakdown and settlement of degradable organic matter.

Bayulu has a reticulated, gravity-fed, deep sewerage system. Wastewater is disposed into evaporative sewage treatment ponds located approximately 550 m south of the community.

In the community of Yungngora Wastewater is disposed of via a gravity-operated sewerage system, linking household septic tanks to effluent ponds located 500 m to the west of the nearest house. The wastewater is reticulated to the sewage pump station (SPS) located in Lot 108B Wargaree St (within the community) and subsequently pumped via a DN100 PVC pressure main to the WWTP.

All houses in the Wangkatjunka community are connected to a deep sewer system via in-line septic tanks. The sewer system comprises gravity mains and manholes which connect to a single pump station located 1km the south of the community. The sewerage collection system is generally located within the front property boundaries on an alignment conforming to the road and housing layout.[14]

[14] Wangkatjunka Layout Plan 1, Amendment 11," dplh Online, March, 2006, accessed June 30, 2021, https://www.dplh.wa.gov.au/getmedia/fb07fb6c-c52a-473f-919f-c0b60a736ec8/LOP_Wangkatjungka_LP1_Amendment_11_Report

WATER

As per DPLH report titled "Bayulu Layout Plan 1: Background Report May 2002":

The Department of Housing, through the Remote Area Essential Services Program (RAESP), has operational responsibility for water quality at Bayulu. Bayulu and Gillarong receive their drinking water supply from two production bores (Bore 13 and Bore 14) located approximately 3 km east of the community on GoGo Station leasehold land. Groundwater from the bores is pumped into two elevated water tanks located on a hilltop between Bayulu and Gillarong. Water from the tanks is gravity fed into the community reticulation system. Disinfection occurs via a gas chlorination disinfection system at the bores. [15]

Through new community initiatives by the Departments of Communities and Water Corporation in 2019, three remote Aboriginal communities including Bayulu, received upgraded water services. The community has access to reliable drinking water that meets Australian Drinking Water guidelines and wastewater services.

Yakanarra's drinking water is supplied from bores that are located approximately 800 m to the east of the settlement. Two production bores with electric pumps and water usage meters fitted to each. Water use at Yakanarra is monitored by KRSP, who test the quality of the water every 4 weeks. The test results for Yakanarra have been consistently good and it is generally considered to be good quality water. Because it is a natural permanent water supply, Aboriginal people have used this as a campsite for hundreds, maybe thousands of years. Yakanarra's drinking water comes from two production bores with electric pumps, situated about 800 m east of the community. They are also fitted with a water usage meter each. The water usage is monitored by KRSP who also test the quality of the water once a month. The tests have shown that the water is consistently of good quality. The water supply is natural and permanent. This site has been used by Aboriginal people for thousands of years. [16]

The community Yungngora has two water bores which are near the power station and these pump into the ground tank. The bores pump water up from about 100 m below ground level, even though the community is located on the Fitzroy River. A transfer pump station then pumps the water in the high level tank. The water that is pumped out is between 50°C.-60°C and hence cooling towers are used to cool the water.

Wangkatjunka community water supply is from an electric bore located within the tank compound which is from the community power station. A second standby diesel driven bore is located on the western side of the community. This bore was not operational at the time of inspection.

[15] Department of Planning, Lands & Heritage and Western Australian Planning Commission, "Bayulu Layout Plan 1: Background Report May 2002," last modified August 2017, https://www.dplh.wa.gov.au/getmedia/085b8536-0eb9-4a96-aad2-5c5c95fcfefe/LOP_Bayulu_LP1_Amendment_11_Report.
[16] Yakanarra Layout Plan 1, Amendment 4," dplh Online, March, 2006, accessed June 30, 2021, https://www.dplh.wa.gov.au/getmedia/f04bc827-2924-4174-ae25-a1ed4a2a093c/LOP_Yakanarra_LP_1_Amendment_4_Report

ENERGY

Bayulu is located within Horizon Power's 'Fitzroy Crossing Electricity Licence Area'. Horizon Power is responsible for the generation, distribution and retail of electricity to Bayulu. The community's energy generation source is gas. "Horizon Power will install hundreds of kilowatts of solar and battery energy storage systems in six Kimberley communities including Kalumburu, Warmun, Ardyaloon, Beagle Bay, Djarindjin, and Bidyadanga as part of the Remote Communities Centralised Solar Project. This project will help deliver significant environmental benefits with a reduction of CO2 emissions by more than 2000 tonnes each year, which is the equivalent of taking 425 cars off the road. It will also reduce the cost of supplying electricity to remote towns." [17]

In an interview with a Horizon representative on the 4th of June 2021, they suggested that Bayulu has the capacity to implement the Remote Communities Centralised Solar within their community infrastructure. Additionally, they have also proposed the community store to create an account with Horizon for proposed basketball courts. The account will be set up as a prepaid account and payment can be managed through one representative in Bayulu — consolidation of accounts and payments through one entity which is the Community Store.

Yakanarra's power is supplied via a system of diesel generators located to the east of the settlement. The station is 200 m from the nearest house.[18]

Yungngora community's electricity supply is managed by Horizon Power as part of the state government-funded Aboriginal and Remote Community Power Station Project. The power supply is reticulated to the community via overhead cabling. The power station has four 300kW Scania diesel engines and a 200kW solar photovoltaic array and uses battery storage to adjust any inconsistencies with the solar supply.

Residents and businesses within the community use pre-paid cards for electricity and will qualify to receive electricity at special government rates.

Electricity supply in the Wangkatjunka community is currently regularised and now managed by Horizon Power, under the state government-funded Aboriginal and Remote Community Power Station Project. The power station has four 300kW Scania diesel engines and a 200kW solar photovoltaic array (fixed). It uses battery storage to smooth any fluctuations in the solar output.[19]

[17] ESD News, "How Horizon Power is powering regional communities," accessed June 14, 2021, https://esdnews.com.au/how-horizon-power-is-powering-regional-communities/
[18] Yakanarra Layout Plan 1, Amendment 4," dplh Online, March, 2006, accessed June 30, 2021, https://www.dplh.wa.gov.au/getmedia/f04bc827-2924-4174-ae25-a1ed4a2a093c/LOP_Yakanarra_LP_1_Amendment_4_Report
[19] Yakanarra Layout Plan 1, Amendment 4," dplh Online, March, 2006, accessed June 30, 2021, https://www.dplh.wa.gov.au/getmedia/f04bc827-2924-4174-ae25-a1ed4a2a093c/LOP_Yakanarra_LP_1_Amendment_4_Report

The Fitzroy Valley climate is characterised as sub-tropical with monsoonal wet and semiarid dry seasons. The wet season is usually from November to April and has high humidity and frequent thunderstorms, often resulting in the flooding of river systems in the Fitzroy Valley. The average maximum temperature exceeds 35°C. Summer rainfall accounts for most of the annual rainfall. Prevailing winds during the wet season are from the west as moist air is sucked up from the warm ocean before heavy precipitation inland. The dry season is from approximately May to October. The average maximum temperature during the dry season is 30° C with prevailing winds at this time from the east which can blow dust from the dry, sandy interior toward the community.

Fitzroy weather (Top to bottom):
1: Average Temperature & Precipitation
2: Cloudy, sunny, and precipitation days
3: Maximum Temperatures
4: Precipitation amounts
5: Wind Speed
via meteoblue.com

03
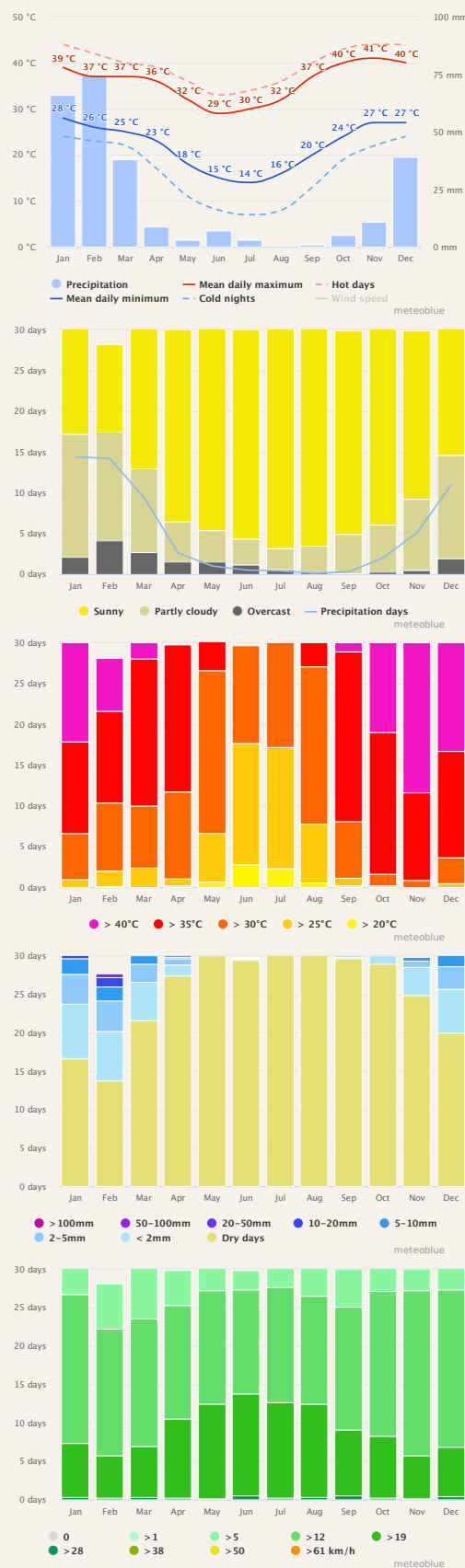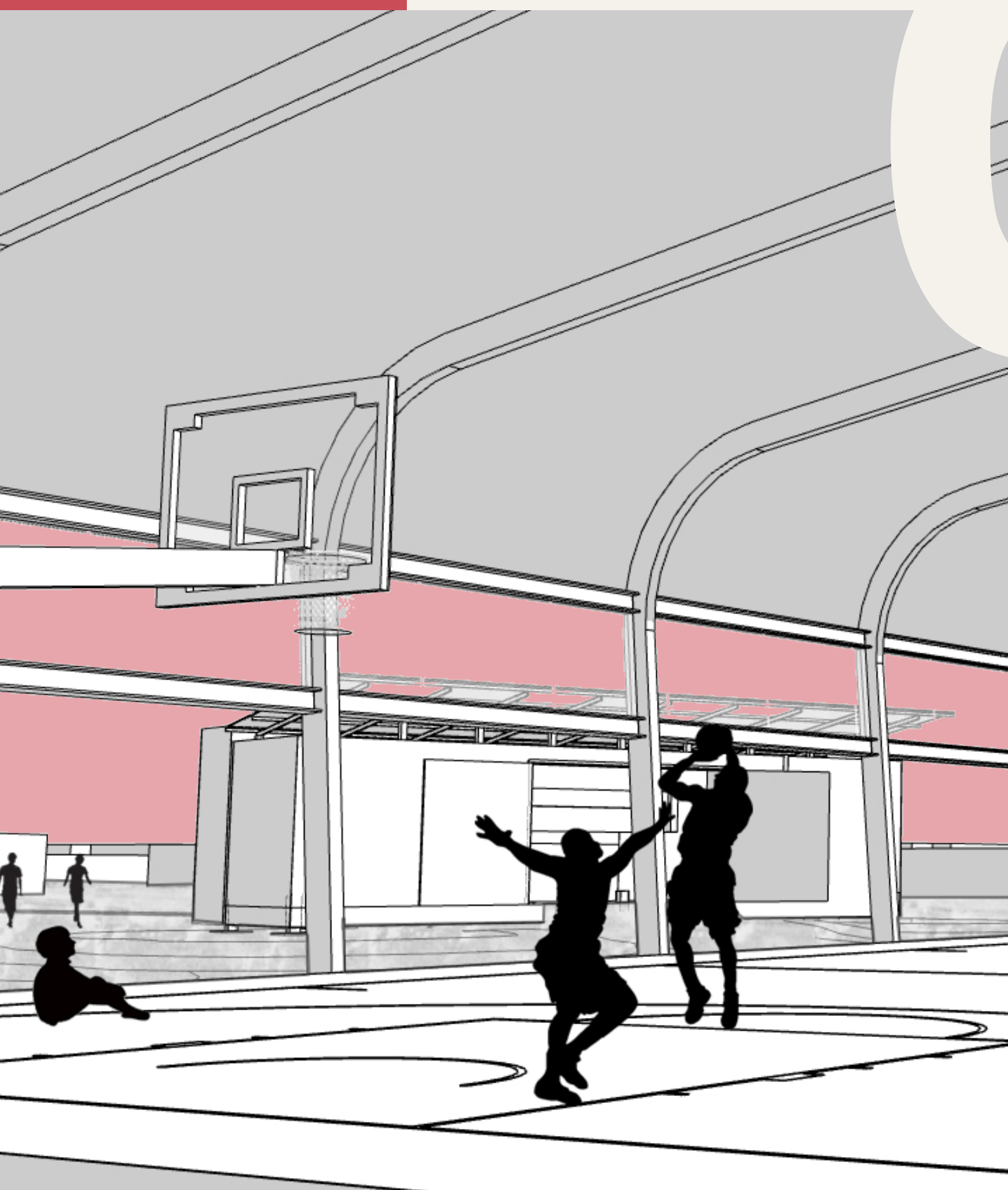
PILOT PROJECTS
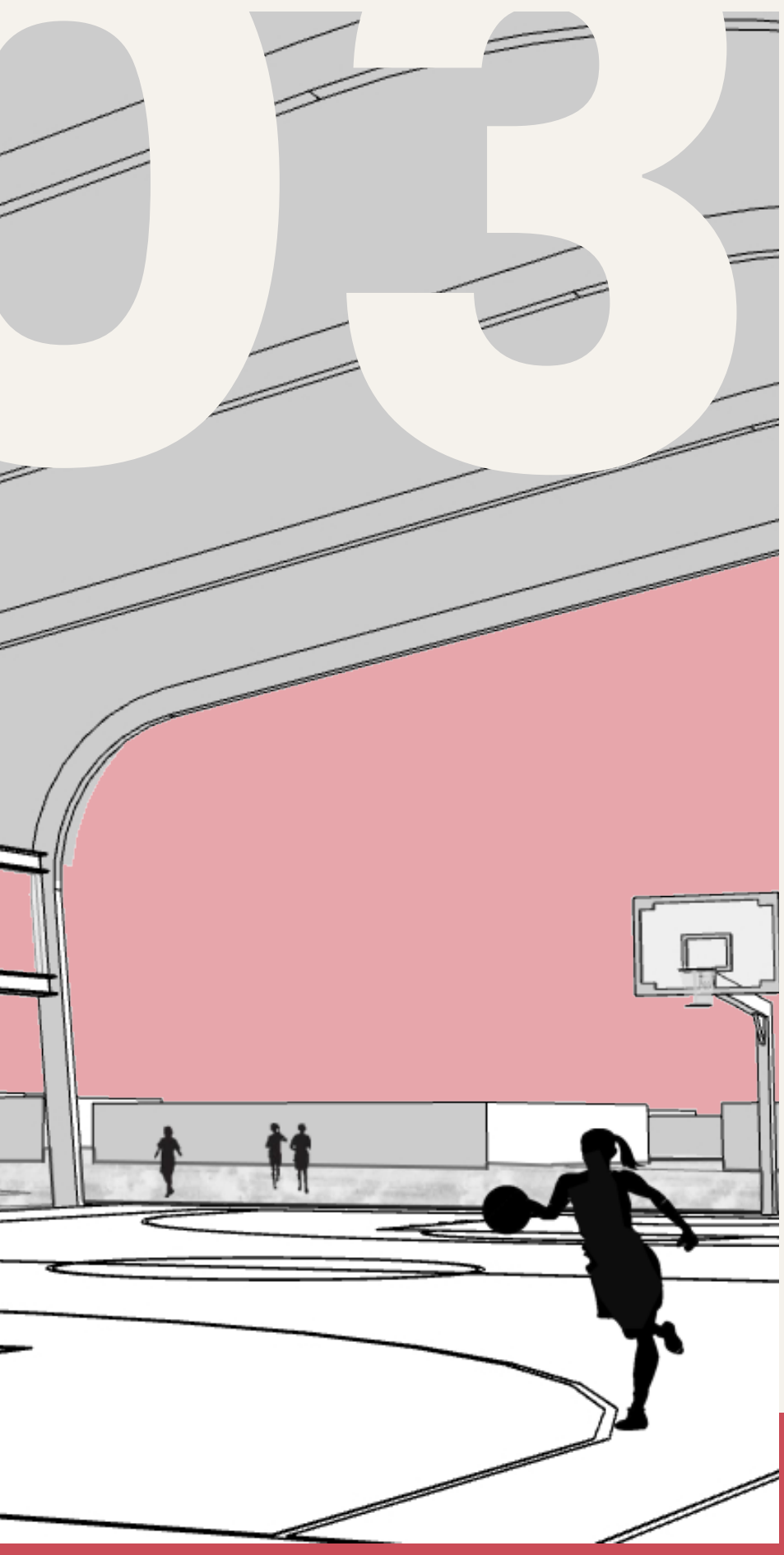
Existing Site

ACCESS AND SIGNIFICANT TOPOGRAPHICAL & BUILT

SCALE 1:10,000

Access

Lamey Avenue

Great Nothern Highway

1

4

FORM

LEGEND

1. Bayulu Community
2. (Current) Bayulu Remote Community school
3. (Old) GOGO Cave School
4. Significant entry hill (to Bayulu community)

PILOT COMMUNITY ONE

The community of Bayulu has been identified as one of the 2 remote communities [Bayulu and Yakanarra] that will pilot the strategies and principles for the Kimberley Cultural and Social Infrastructure project.

As such, two design initiatives have been identified as starting points: **The design of the basketball courts** tailored for Bayulu Community and the opportunities for expansion of such design and infrastructure at Bayulu through **Studio Bayulu**.

The BBMDesignLab have developed a conceptual design for the courts [presented on the 13th August to DLGSC and MWW [MS Teams] and here it is presented the relevant research/documentation analysis.
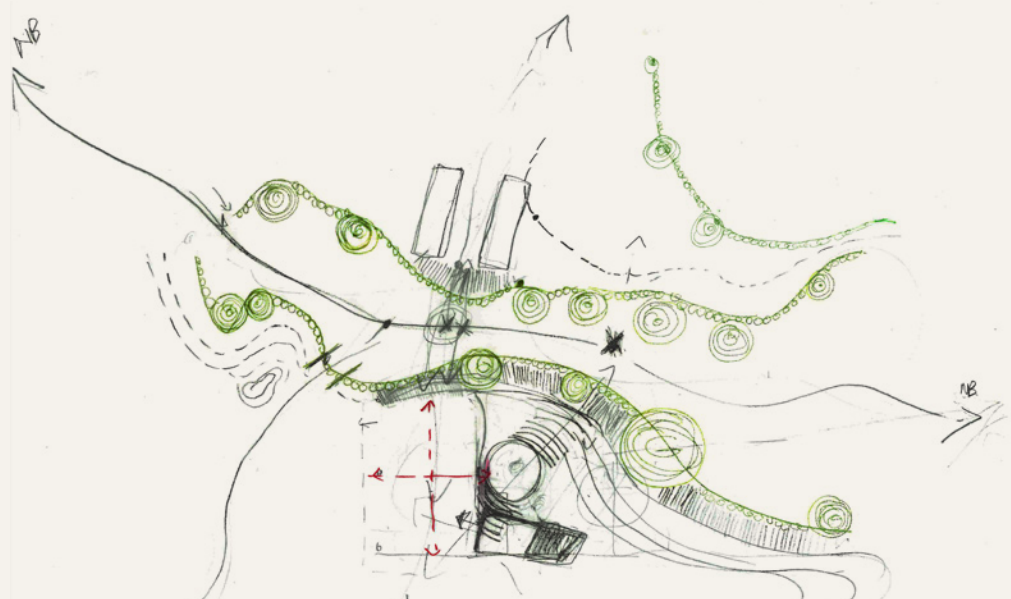
Top: Current Bayulu basketball courts
Bottom: Early masterplan sketches

The basketball courts have occupied a central space in the history of most communities visited, from its diverse uses (i.e. used for funerals, carnivals, major events, markets, sports, etc.) as well as from its prominent physical central position within the community. It was a constant in all communities visited to talk about the different moments of joy and memories that those basketball courts have offered to communities. Today, most of these courts are in a poor state of conservation, in need of repair or complete reconstruction. Signs of vandalism are evident (i.e. fire, rocks, graffiti, cracked concrete, broken backboards, the absence of hoops, lack of line markings, no lighting or poor lighting, damaged switchboards, broken seating, large amounts of rubbish, etc.). Most importantly however is the complete absence of roof coverings or any shade, in a climate where torrential rain is common from November to March along with excessive heat and high temperatures. From the 5 courts,

Yakanarra and Wangkatjungka have been assessed as potentially good for resurfacing only. In one meeting with a basketball coach during the field work:

"It's hard to go to places like Bayulu or Junjuwa. We don't even have water for the kids, a place to store our sports equipment, or somewhere where we can give a brief to the kids on what our planning strategy is. Not to mention the heat in these places, without a roof cover, and this is actually all year around. The sun is too hot for any after school activity or any activity at all".

The team at the BBM Design Lab have developed a conceptual design that can be replicated within the 5 different contexts, given the necessary adjustments and consultation with communities. This is a flexible and adaptable design that offers individuality and opportunities for social gatherings and sports recreation and developmental activities.

The Bayulu community has a high number of children and youths. According to the ABS census in 2011, approximately 111 children are between 5 and 19 years old. To reduce juvenile antisocial behaviour and help improve the physical health of indigenous community residents, Marra Worra Worra has identified the need for a suitable and functional sports facility. Therefore, the project will provide the social and physical infrastructure for facilitating a safe place for members of the community to participate in physical activities. It is important to note that the basketball courts are a point of reference for the majority of service providers involved in partnerships with the Bayulu Community.
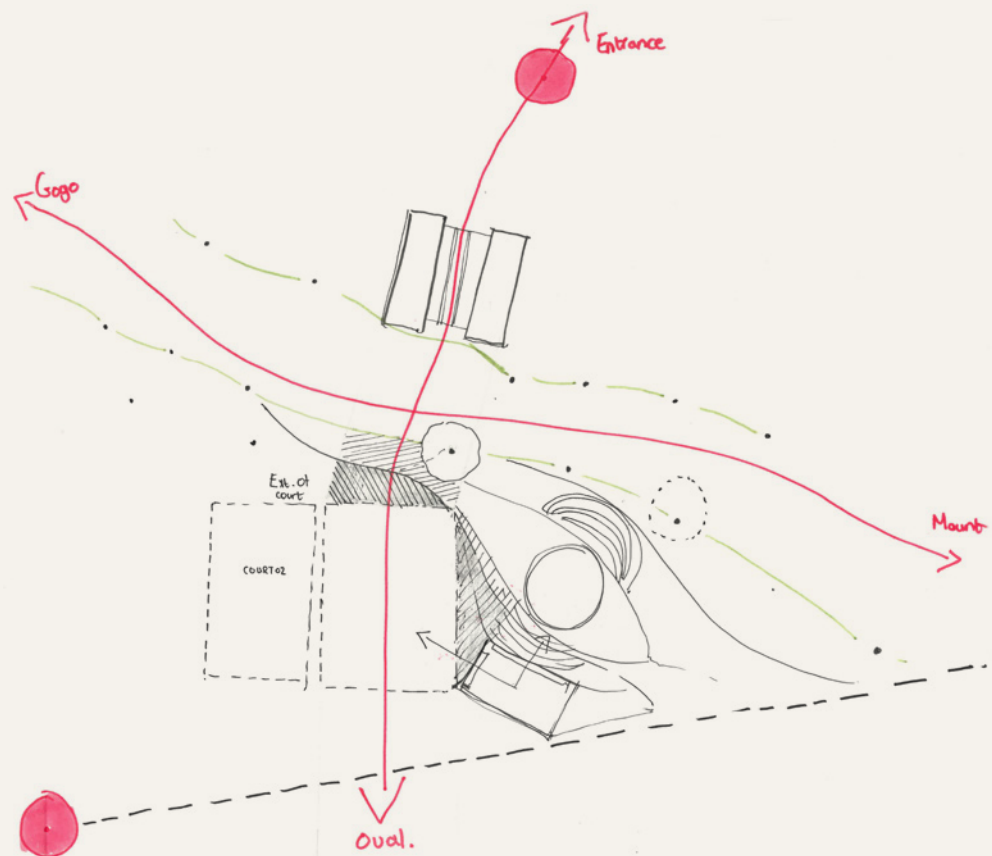
Top: Cave at the old Gogo school
Bottom: Masterplan + formbuilding sketches

FUNCTIONALITY AND CONCEPTUAL DESIGN TIMELINE

Below we describe our methodological approach to design, the considerations made as part of the initial design process and the functionality and amenities considered given the client's advice [MWW/DLGSC] and communities' initial consultation:

Essential Functions:

The basketball courts should carry out a minimum function of space for sporting, recreational and communal activities for members by providing:

- An adequate court surface
- Adequate lighting
- A shaded structure
- Storage
- Stage
- Integrated artwork from community schools and / or local artists
- Basic landscaping
- Defined pathways, paving adjacent to courts, access/dividing walls, levels, planting and seating

In addition, the basketball courts should allow for functions that incorporate indigenous language, lore and culture.

Image of significant hill at the entry of the Bayulu community.
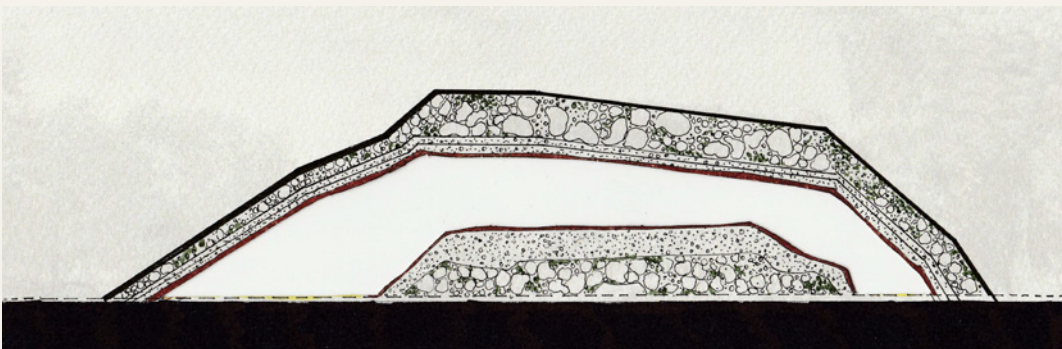
Abstract drawing translation of image (above).

The basketball courts will have the following potential list of uses by providing:

- Space for hosting recreational community events, such as carnivals
- Space for bands to play music
- Space for members of the community to dance
- Space for funeral proceedings
- Space for after school activities by external service providers (i.e. art events, health checks, etc.)

The following represents the functional areas considered:

- Basic landscaping
- Integrated artwork from community schools
- A stage
- Storage
- Lighting
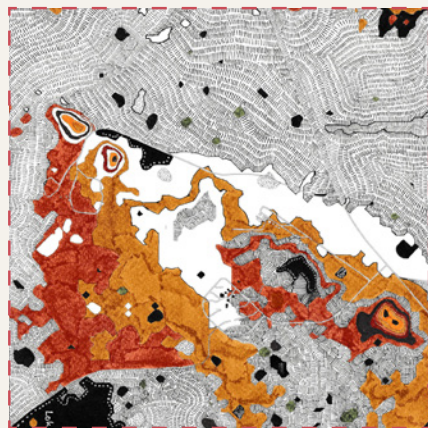
Conceptual map of Bayulu
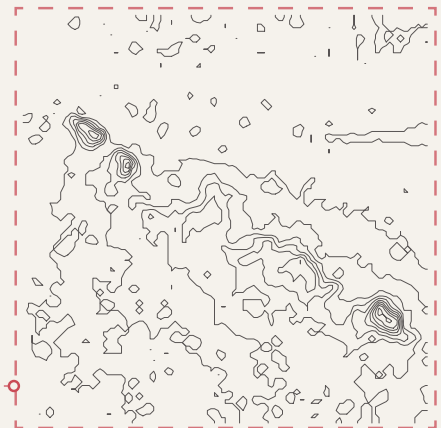
Existing contours surrounding Bayulu

Adopted & Re-interpreted

Landscaping design after re-interpretation

Conceptual interpretation evolves into more detailed site planning

Methodology:

The UWA team have established as part of its project methodology the following steps:

- Literature review
- Engaging consulting partners
- Registered architects, research assistants, specialist partners
- Site visit to communities
- Identifying stakeholders, context, location
- Meetings and discussions with key stakeholders
- Fitzroy Valley, Broome, Perth
- Revised/extended literature review (post site visit)
- Development of project report — Pilot community
- Meetings with consulting members
- Design development of return brief
- Team meetings/Review of progress
- Design reviews
- Development of preliminary design concept and feedback from the client

Lists of event milestones are represented in the form of a timeline below. This includes the date and duration of each event.

Field work preparation/Contractual arrangements [emails, phone calls – DLGSC/MWW/UWA]	1st March – 29th May 2021
Field work - Kimberley	30th May – 13th June 2021
Design Development Client/ Return brief [emails/phone calls]	14th June – 13th August 2021
QS Engagement & Consultation [Emails/Phone calls]	21st July – 13th August 2021
UWA Concept Design team meetings {emails/calls/face to face meetings] & Design Development	14th June – 13th August 2021
UWA Concept Design Presentation	13th August 2021
UWA Design Process Kimberley Report	13th August 2021

PROJECT TEAM DELIVERABLES

The team delivered a set of conceptual drawings for the two basketball courts in Bayulu for the UWA preliminary presentation on the 13th August. This has allowed for an understanding of the Courts 'Kit of Parts design" development. The additional 4 locations will receive a similar tailored approach during the next stage of the basketball courts – [pending on agreement for continuation of the work by clients [MWW and communities] . Below lists the deliverables that have been completed as part of stage 1 and presented to client during MS Teams meeting on the 13th August 2021

- Site plan
- Layout plan
- Roof plan
- 3D renders
- Diagrams / Sketches
- Mood board including reference images
- QS order of probable estimates

A report on Bayulu was produced specifically to highlight the initial process of consultation with community, before the engagement of the team. We welcome the opportunity to present this complete design concept proposal to Bayulu Community members and to continue the design process towards construction and full implementation. Please refer to extended report on Bayulu community **[Appendix 1]**

The 4 other communities [Yakanarra, Wangkatjunka, Yungngora, and Junjuwa] were also visited and preliminary drawings and contextual photographs are attached.for each location.
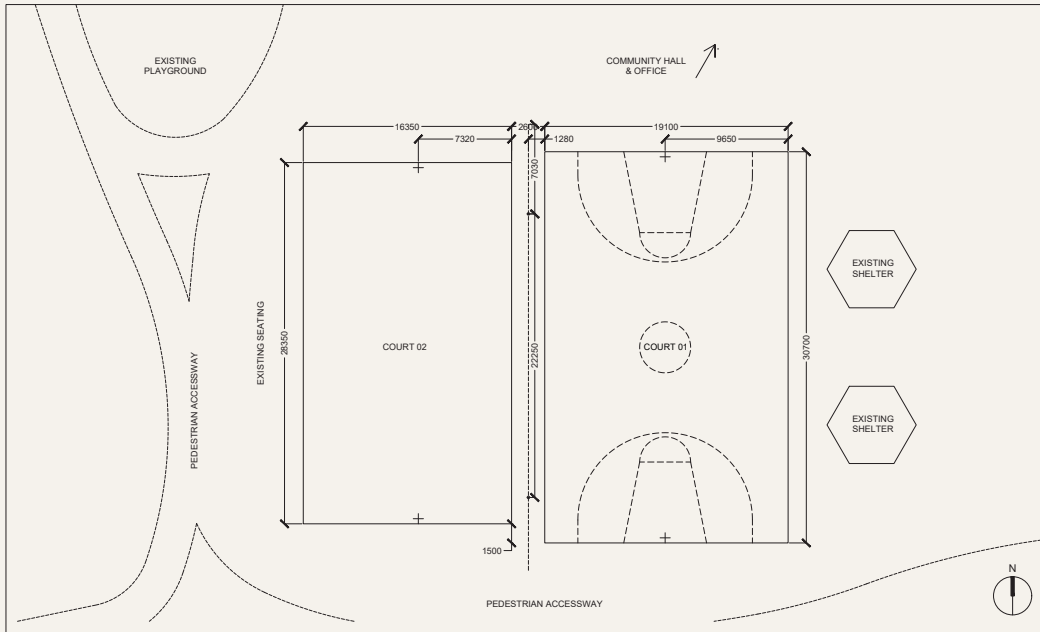
Bayulu

Junjuwa

Yungngora

ROAD ACCESS

6200
2700
TOILET
3100
CONCRETE
SLAB
9500

11300

ROAD ACCESS

ROAD ACCESS

COURT

16000

28000

1800
650

N
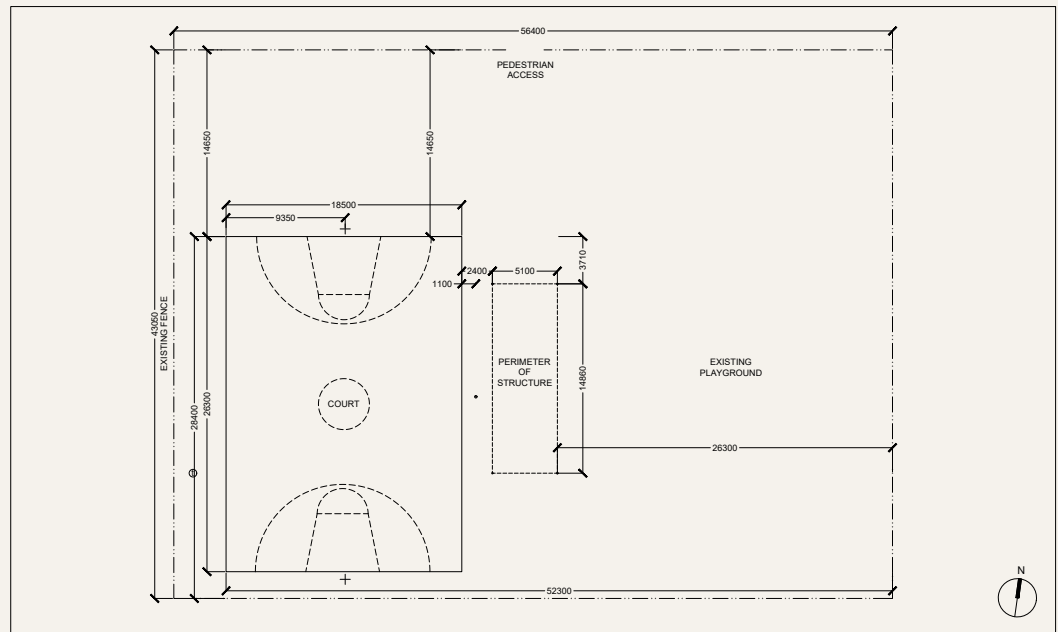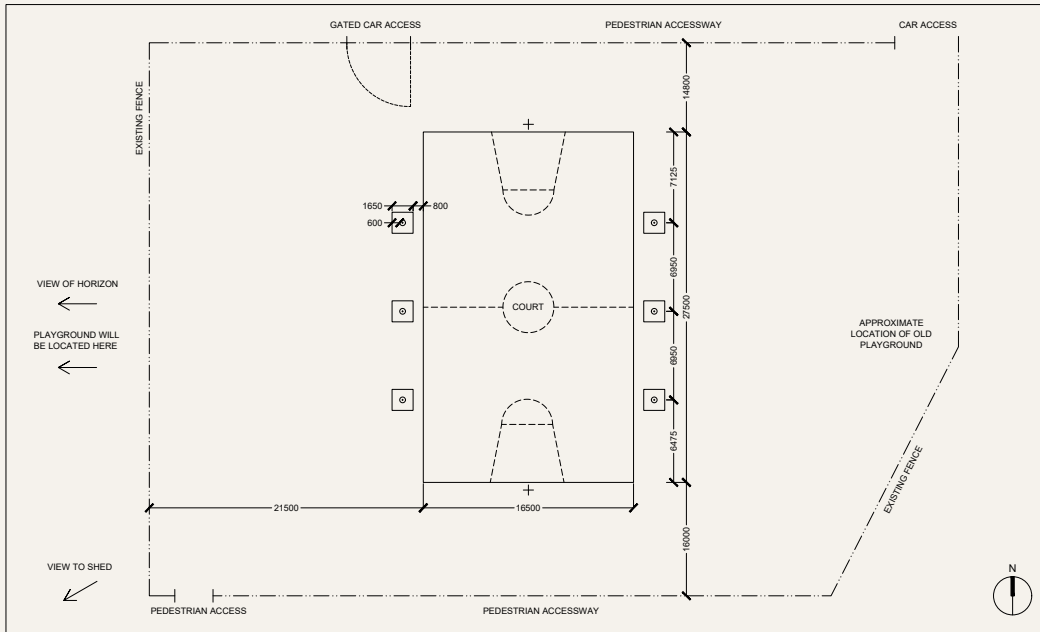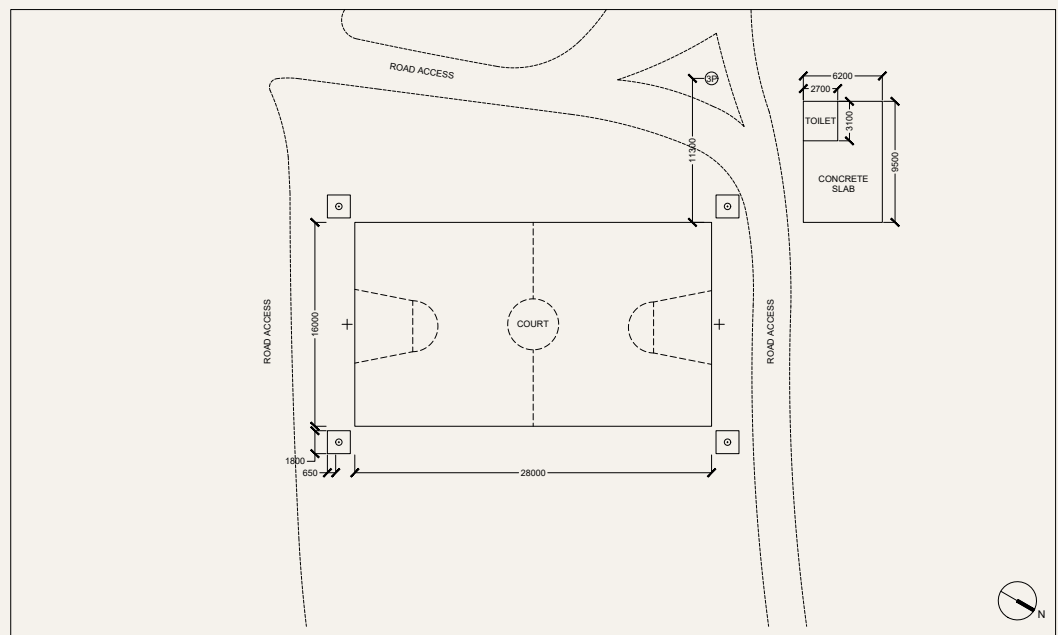
Wangkatjunka
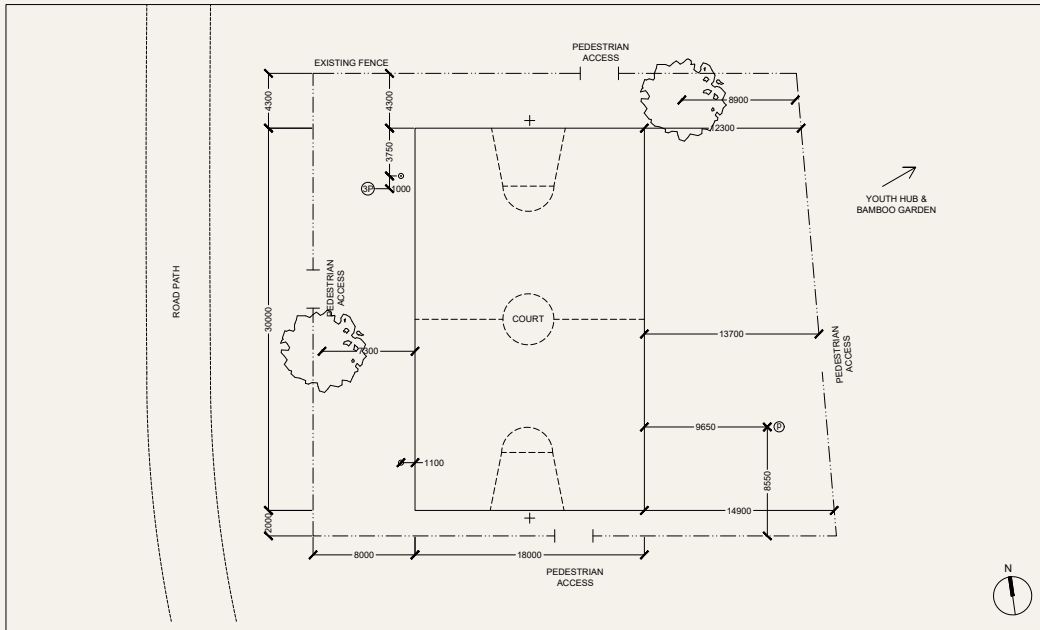
Yakanarra

The second initiative carried out by the UWA School of Design is STUDIO BAYULU

This is a collaboration between the Department of communities, The DLGSC , as part of a Masters studio design research investigation, to develop enhanced planning and design strategies for masterplanning and building design in Bayulu. Such investigations are meant to be opportunities for community consultation, future grant applications and infrastructure development while developing real learning opportunities for architectural design students. The studio have started in July 2021 and will be completed by November 2021.
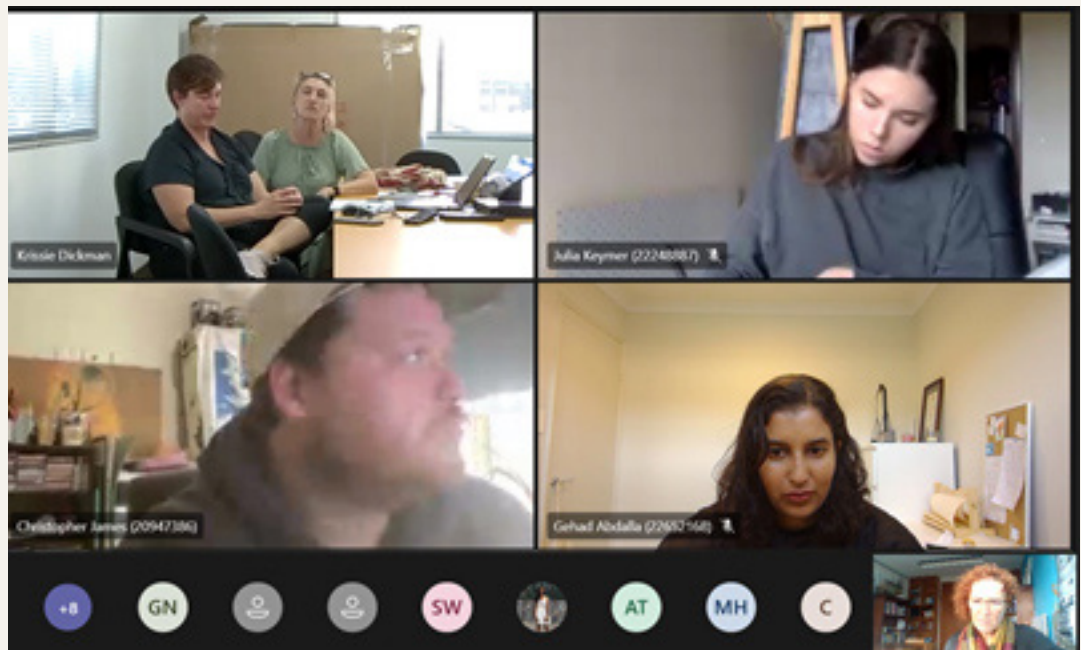
Above: Conceptual collage by Julia Keymer, Master of Architecture Student [Studio Kimberley – Bayulu], August 2021
Below: MS Teams meetings [Krissie Dickman, Nicole Barthomeuf and UWA School of Design students and staff Christopher James, Julia Keymer, Gehad Abdalla and Dr Rosangela Tenorio

Studio **Kimberley** | Masters of Architecture |

Online Studio: Semester 2| 2021
Studio Coordinator: Dr Rosangela Tenorio
Unit Coordinator: Andrea Quagliola
Date/Time: Mondays and Thursdays, 2-4pm

Overview | Background

This studio will give a contribution to a larger current research project based in Fitzroy valley [Kimberley Social and Cultural Innovation Project] carried out by the Bio-Based Materials Design Lab, School of Design – UWA. The project involves three main stakeholders: the Department of Local Government, Sport and Cultural Industries [DLGSC] Marra Worra Worra Aboriginal Corporation [MWW] and 5 remote aboriginal communities [Bayulu, Junjuwa, Wagnkatjunka, Yakanarra and Noonkanbah]. This studio is a first of a series of studios that are planned to work with these communities on a collaborative co-design plan for empowerment through the development of social and cultural infrastructure in the next years. The community of Bayulu has been chosen as a pilot initiative and it is the topic of our studio.

Studio Outline | Addressing Needs for a pilot project in Bayulu

The project directly responds to challenges faced by young Indigenous people in the Fitzroy Valley's communities. Closing the Gap 2020 latest data indicate that government targets in school attendance, employment and life expectancy for indigenous people are not on target. Fitzroy Valley Futures Youth Hub Working Group (2019), emphasizes the growing concern surrounding the level of risk affecting local young people. According to Fitzpatrick et al [2017] "30% of children in Fitzroy valley are diagnosed with neurodevelopmental disorders and 20% with some form of Foetal Alcohol Spectrum Disorder (FASD)". High alcohol abuse levels, associated gambling, fighting, domestic violence, youth suicide and crime are all interrelated challenges. Despite government efforts, no entity oversees community development/ undertakes capacity building and infrastructure development projects. Local communities do not currently have the means to engage with government to bring about the required social change. Such a participatory and emancipatory project is needed and welcomed.

The Studio Kimberley 1 [Bayulu Pilot Project] aims to identify opportunities, needs and priorities aligned with communities' cultural and environmental values to build capacity, create empowerment, improve wellbeing and support employment for young Aboriginal people while providing enhanced social infrastructure. The "pilot project" will be designed, ensuring that it allows replication and future upscaling within all concerning communities. For this, the studio aspires to start this co-design process with the following principles at its core:

Create a shared understanding and consensus so that mutual agreement can emerge about action to be taken (shared vision) for building a community that offers access to a healthy and active lifestyle leading to physical, social, emotional and cultural wellbeing;

Develop a social infrastructure comprised of sports and recreation facilities developed as multi-purpose structures designed to be built and run by the local communities;
Identify employment opportunities and facilitate training programmes for young people to grow and develop, leading to creating youth empowerment through capacity building and leaders within the community;

Implement urban interventions that create spaces where people feel safe and have a sense of belonging through a celebration of local culture and language;

Studio Learning Outcomes |

The studio will focus on the remote aboriginal community of Bayulu, located 10km of Fitzroy crossing, in the Kimberley region. Design proposals are thought to develop a masterplan for the entire community and the design development of particular buildings within the community, which are meant to have a particular impact on the empowerment of the youth. UWA students will have choices on what typologies and focus areas they will work with, according to their understanding and evaluation of the challenges and issues brought up by their research and stakeholders consulation. Refurbishment, relocation are considered as part of the redesign of areas, as well as complete redevelopment with the proposal of new structures. The studio has at its core values the use of environmentally friendly materials, processes and methods of construction. Students will be supported on the development of their design choices, and will be encouraged to search for design alternatives that are culturally appropriate and socially impactful for communities.

Students taking this studio will:
- have an in-depth understanding of the complexities of responding to social, environmental and economic challenges affecting indigenous communities and synthetise at a professional level a resolved design brief at both masterplanning and building scales;
- Demonstrate how design can be a trigger for change through elegant solutions that are circular, resourceful, empowering, affordable and replicable;
- Integrate a series of fundamental theorethical skills such as design research, critical analysis, capability approach into the formation of architectural propositions;
- conceptualise, resolve and communicate the potential of design as an agent for social and environmental change, through professional level advanced technical, historical and environmental knowledge;
- Synthetise a full range of architectural communication skills at a professional level;

Work required |
Students will be required to engage on four levels of design research and development for this studio, with a fifth phase [optional]:

A] Contextual Research [Level of detail: Project Briefing/Pre-Design, individual/group] by week 2
B] Master planning [Level of detail: Conceptual Design, groupwork] by Week 4
C] Building design [Level of detail: Schematic Design, individually] by week 8
D] Building design [Level of detail: Schematic + Detailed Design, individually] by week 13

A fifth level of design development might be available in mid-October [design consultation – Week 12 - TBC], pending upon permits/restrictions [Covid-19] at the time on access to remote aboriginal communities and on the level of engagement open to us.

The studio will also encourage students willing to continue their work and studies within the areas of social and environmental content, to apply for a WIL opportunity for summer or semester 1-2022. Contact your UC [A/P Rosangela Tenorio] to discuss opportunities and to chat with previous Masters students that have already engaged on such activities.

Students undertaking this studio, are able to get credit towards their area of specialization: Social Impact Design Focus Area. Please contact the student office [Design] to learn more about this.

Photo by Rosangela Tenorio, June 2021 [Bayulu, Fitzroy Valley]

COLLABORATION & OBJECTIVES

04

This section addresses the ways in which the different principles and strategies [5₄5] allow for staged approaches and different design packages possibilities considering collaborating partners and the context within and beyond the 5 communities

OVERALL OBJECTIVES
KIMBERLEY CULTURAL AND SOCIAL INNOVATION PROJECT

- Create a shared understanding and consensus so that mutual agreement can emerge about action to be taken (shared vision) for building a community that offers access to a healthy and active lifestyle leading to physical, social, emotional and cultural wellbeing.

- Develop social infrastructure comprising of sports and recreation facilities developed as multi-purpose structures designed to be built and run by the local communities.

- Identify employment opportunities and facilitate training programmes for young people to grow and develop, leading to creating youth empowerment through capacity building and leaders within the community.

- Implement urban interventions that create spaces where people feel safe and have a sense of belonging through a celebration of local culture and language.

- Establish partnerships with three levels of government and create regional service networks to develop, implement and monitor sustainable development initiatives linking remote communities.

- Implement circular design understanding in all aspects of the project, exploring the practical potential of cultural and environmental growth to create enhanced lifestyles, prosperity and healthy living throughout remote aboriginal environments.

MAIN STAKEHOLDERS FOR 2 PILOT COMMUNITIES

Marra Worra Worra — Aboriginal corporation:
Shaun Fowler, CEO of Marra Worra Worra
E: shaun.fowler@mww.org.au
W: https://www.mww.org.au/

Department of Local Government, Sport and Cultural Industries:
Krissie Dickman, Regional Manager Kimberley
T: 0419 140 369
E:krissie.dickman@dlgsc.wa.gov.au

Yakanarra Primary School:
T: (08) 91917164
E: principal@yakanarraschool.wa.edu.au
Alexander Dunon, Principal
Shella Bonnie, School officer
E: shella.bonnie@yakanarraschool.wa.edu.au

Bayulu Remote Community School
T: (08) 9191 5093
E: Bayulu.RCS@education.wa.edu.au
Jane Salt, Principal
T: (08) 9191 5093
E: jane.salt@education.wa.edu.au

DEVELOPMENT: 5 COMMUNITIES

DESIGN PACKAGE 1 [1 YEAR]

- Consultation [6 sessions*] [2 pilot communities – Yakanarra & Bayulu]
- Masterplanning [2 pilot communities]
- MASTERS dedicated Design Studios [2] First studio already under development [Bayulu] Theme of second studio to be determined with communities.
- Basketball court consultation to all 5 communities [included as part of 6 sessions]
- Basketball court design documentation [5 communities]
- Co-design, design documentation & Grant application with community [for youth hub or other similar scale project identified by community – 2 pilot communities]. The 5 BBM described principles will be at the forefront of this design process.

Timeline: September 2021 – September 2022

DESIGN PACKAGE 2 [2 YEARS]

- 1st year [as per Design package 1]

+

- 2nd year [Mirroing of Design Package 1] for 3 other communities [Wangkatjunka, Noonkanbah and Junjuwa]

BASKETBALL COURTS ONLY

DESIGN PACKAGE 3 [4 MONTHS]

- Basketball court consultation [5 communities – 2 sessions]
- Basketball court design documentation [5 communities]

Timeline [1st September – 15th December 2021]

DESIGN PACKAGE 4 [4 MONTHS]

- Basketball court consultation [5 communities – 1 session]
- Basketball court design documentation [5 communities]

Timeline [1st September – 15th November 2021]

* each session = 1 week

Ps. We understand that only slabs will go for tender by the end of this year, and additional resources towards roof construction and other aspects of the brief are yet to be funded. Therefore, initial option of Design + Construct have not been included on these options. Design fees for all 4 packages are available upon confirmation [from MWW and without the direct confirmation of communities by MWW on behalf of communities], of design objectives, funding, brief, programme/timeline of project and feedback on the presented conceptual design [13th August 2021]. Contractual agreement would be issued for MWW to sign so these phases could proceed. Please note that in particular packages 3 & 4 have limited opportunity to happen after 15th December 2021, due to unavailability of consultants, collaborators and project team leader to commit to these initiatives if delayed until 2022.

An initial meeting have taken place on the 9th August 2021, with the presence of UWA School of Design [Rosangela Tenorio] and Kristina Dickman [DLGSC] also representing Shaun Fowler [MWW].

This is a 10 year project initiative, led by Charles Darwin University, which is in direct alignment with the Kimberley Cultural and Social Innovation Project. {Please refer to website] below.

On this note, we would like to thank DLGSC, MWW and Communities for the opportunity to work with you. We are looking forward to MWW and DLGSC's feedback on this report, and on the concept design proposal presented. This completes our work for this stage and we hope to continue to work with you in the future.

BBMDesignLab Team / UWA School of Design

ABOUT EPIC:

EPIC is a new initiative that aims towards a comprehensive agenda to empower indigenous peoples in Australia. More information on the development of such initiative will be coming up by the end of August 2021.

https://www.epiccrc.com

Economic Participation of Indigenous Communities CRC's (EPIC CRC) vision is for a just, equitable and reconciled Australia.

The CRC's mission accordingly aligns with that of Reconciliation Australia: namely, to help promote and facilitate reconciliation by undertaking research and extension activities that assist in building relationships, respect and trust between the wider Australian community and Aboriginal and Torres Strait Islander peoples by promoting Indigenous economic participation.

The EPIC CRC bid will be supported by a wide range of stakeholders, including private and public companies, government agencies, Indigenous businesses, community groups, universities, and other relevant organisations. EPIC is endorsed by Reconciliation Australia, who will be a partner in the CRC.

Economic Participation of Indigenous Communities CRC

Introduction

Our nation holds extraordinary resources in our people, knowledges, lands and waters; however, Australia's strong industry growth is under threat from labour and skills shortages.

Indigenous communities and businesses offer the opportunity to address these gaps, as well as to promote and achieve a more equitable share of the benefits of participation in the Australian economy.

Collaborative research and development through the EPIC CRC will address both this national imbalance and industry opportunity, while achieving the powerful promise that reconciliation offers Australia.

Australia's Indigenous population is expected to reach 1.1 million by 2031 (ABS 2019).

The Indigenous employment rate for 15- to 65-year-olds has remained relatively unchanged between 2008 - 2019, at 49% compared to around 75% for non-Indigenous Australians

Significant economic benefit from increased employment of Indigenous Australians, with a $6.5 billion national gain by 2031 by closing the gap in remote areas alone and a $24 billion national gain if closed nationally.

Our purpose and objectives

The 2016 State of Reconciliation in Australia report published by Reconciliation Australia revealed how in the last two decades the promotion of reconciliation entered the political arena for purposes not entirely consistent with reconciliation's intrinsic intent to unite all Australians. The intention of this report was "to spark a renewed national conversation about how, over the next 25 years, we can move towards becoming a reconciled, just and equitable Australia".

One year later the Aboriginal and Torres Strait Islander Referendum Convention's Uluru Statement from the Heart addressed this crisis within Australia and detailed aspirations "for a fair and truthful relationship with the people of Australia": in other words, aspirations for reconciliation.

The Statement also identified the need for substantive change and reform and issued an invitation "to walk with us in a movement of the Australian people for a better future".

This CRC will take its guidance on its key priorities from Reconciliation Australia. We believe that reconciliation in Australia cannot be achieved without economic justice and full participation by Indigenous communities. Accordingly, the CRC will provide a vehicle to help reach that end, specifically by assisting in the empowerment of Indigenous peoples in Australia to more fully participate in, contribute to, lead, and enjoy the benefits of the Australian economy.

About EPIC CRC

Economic Participation of Indigenous Communities CRC's (EPIC CRC) vision is for a just, equitable and reconciled Australia.

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The EPIC CRC bid will be supported by a wide range of stakeholders, including private and public companies, government agencies, Indigenous businesses, community groups, universities, and other relevant organisations. EPIC is endorsed by Reconciliation Australia, who will be a partner in the CRC.

CRC bid team

Dr Tony Peacock
Chair Elect, EPIC CRC

Dr Tony Peacock FTSE FAICD is highly experienced in the development, governance, and operations of Cooperative Research Centres, having led the Cooperative Research Centres Association for 10 years to the end of 2020.

He is a Fellow of both the Australian Academy of Technology and Engineering and the Australian Institute of Company Directors and was the 2014 Monash University Churchill Fellow studying university-business relationships. He is one of Australia's most experienced managers of innovation, being CEO of Cooperative Research Centres from 2001-2010 and a statutory Rural R&D Corporation from 1996 to 2000. Tony chairs antibiotic development company Wintermute Biomedical Australia Pty Ltd, as well as its parent Wintermute Biomedical Inc. and spin-off disinfectant company Ten Carbon Chemistry Pty Ltd. He also chairs the Australasian Pork Research Institute and is Deputy Chair of the Australian Vaccine Response Alliance.

Professor Peter Radoll
Acting Chief Executive Officer, EPIC CRC

Professor Peter Radoll is the inaugural Pro Vice-Chancellor, Indigenous and Director of the Ngunnawal Centre at the University of Canberra. He is a proud descendant of the Anaiwan people of northern New South Wales, and is a leading National advocate for the advancement and inclusion of Aboriginal and Torres Strait Islander people in education and research.

He is currently the Deputy Chair and Director of the Board of the Australian Indigenous Leadership Centre (AILC), visiting Fellow at the Centre for Aboriginal Economic Policy Research at Australian National University, Director of the Advisory Group for the CSIRO Indigenous Young Women's STEM Academy and Director of The Smith Family Board.

Professor Tom Calma AO
Independent Adviser
EPIC CRC

Professor Tom Calma is an Aboriginal Elder from the Kungarakan (Koong ara kan) tribal group, member of the Iwaidja (Ee wad ja) tribal group, and is the current Chancellor of The University of Canberra.

Professor Calma was the Deputy Chair, then Chair of the CRC for Remote Economic Participation from 2010 to 2017. He is the present Chair of Ninti One Ltd, Co-Chair of Reconciliation Australia and is the inaugural member of the Charlie Perkins Trust that supports Aboriginal and Torres Strait Islander scholars to study at Oxford and Cambridge Universities.

Professor Calma was awarded an Order of Australia; Officer of the General Division (AO) for distinguished service to the Indigenous community (2012) and was recipient of the ACT Australian of the Year Award (2013).

Karen Mundine
Interim Director
EPIC CRC
Karen Mundine is from the Bundjalung Nation of northern NSW. As the CEO at Reconciliation Australia, Karen brings to the role more than 20 years' experience leading community engagement, public advocacy, communications and social marketing campaigns.

Over the course of her career she has been instrumental in some of Australia's watershed national events including the Apology to the Stolen Generations, Centenary of Federation commemorations, Corroboree 2000 and the 1997 Australian Reconciliation Convention.

Ms Mundine holds a Bachelor of Arts in Communication from the University of Technology Sydney and is a Director of the Gondwana Children's Choir Board.

Previous roles include Mary Mackillop Board Director, Deputy Chief Executive and General Manager Communication and Engagement, Reconciliation Australia; Senior Consultant, CPR Communications; senior public affairs and communications roles with federal government departments including Prime Minister and Cabinet and Foreign Affairs and Trade.

Co-operative Research Centre grant opportunity

The Australian Government's CRC Program supports industry-led collaborations between industry, researchers and the community. The program aims to:

- Improve the competitiveness, productivity and sustainability of Australian industries, especially where Australia has a competitive strength, and in line with government priorities.
- Foster high quality research to solve industry-identified problems through industry-led and outcome focussed collaborative research partnerships between industry entities and research organisations.
- Encourage and facilitate small and medium enterprise (SME) participation in collaborative research.

Since its inception in 1990, the CRC program has committed $4.6 billion in funding to support the establishment of over 221 CRC grants and 76 CRC-P Grants - a total of 297 collaborations funded over the program's lifetime.

Value proposition

By participating in the EPIC CRC you will:

- Have access to cost effective applied research through leverage of the grant income and research partner cash and in-kind contributions;
- Have the opportunity to network with Indigenous businesses, and other like-minded industry organisations, leading to further research and collaboration opportunities;
- Tackle large problems that can make a measurable impact on your organisation's ability to benefit and grow;
- Tackle skills and labour shortages, increase employment in regional and remote communities and reduce the requirement of hiring FIFO workers;
- Have the opportunity to support Indigenous businesses to scale-up, provide networking, capital raising and upskilling opportunities for SMEs;
- Influence national solutions to properly and fairly recognise Indigenous IP and knowledge;
- Get access to a pool of Australia's leading researchers focussing on increasing Indigenous economic participation in your sector;

- Enhance your organisation's reputation and be recognised as a leader that supports and delivers change to benefit Australia and Indigenous Australians;
- Leverage PhD candidates to support your organisation through co-working arrangements and potential employees.

EPIC CRC will drive benefits for Indigenous Australians, non-Indigenous businesses, government and research institutions. Research has identified significant economic benefit from increased employment of Indigenous Australians, with a $6.5 billion national gain by 2031 by closing the gap in remote areas alone and a $24 billion national gain if closed nationally.

The Reconciliation Action Plan for the Department of Industry, Innovation and Science recognises that increased participation from Aboriginal and Torres Strait Islander peoples, cultures and perspectives will enhance our knowledge and ultimately benefit our society and the Australian economy

The benefits of joining the EPIC CRC

Becoming a partner of the EPIC CRC will provide significant business benefits, influencing and leveraging opportunities. The EPIC CRC is the largest and highest profile collaboration focused on building economic participation of Indigenous communities. As a partner of the CRC, your organisation will get the rare opportunity to work with world class researchers from some of Australia's leading universities. The CRC is expected to raise between $60 million to $100 million in cash resources, plus in-kind resources over its 10-year lifetime. As a partner of the CRC, you will have influence in how these resources are spent, and will be one of the first to gain access to industry developments, insights and commercial outputs.

The diagram to the right provides an example of how a partner can leverage their investment in EPIC CRC. The example assumes a research project with two industry partners and a research partner. The diagram shows how partner contributions on 1 CRC research project with 2 partners collaborating can be significantly leveraged. Note: at least 70% of the cash budget will be invested in the research program. The remaining 30% will support education and training, technology transfer, communication, governance and management.

$600,000 In-kind from partners* $1,020,000

*(Industry, research and government personnel time and access to labs, workplaces, equipment and other infrastructure and consumables)

Commonwealth ($300,000)	$210,000 cash	$420,000
Research Organisation ($100,000)	$70,000 cash	$210,000
Industry Partner B ($100,000)	$70,000 cash	$144,000
Industry Partner A ($100,000)	$70,000 cash	$72,000
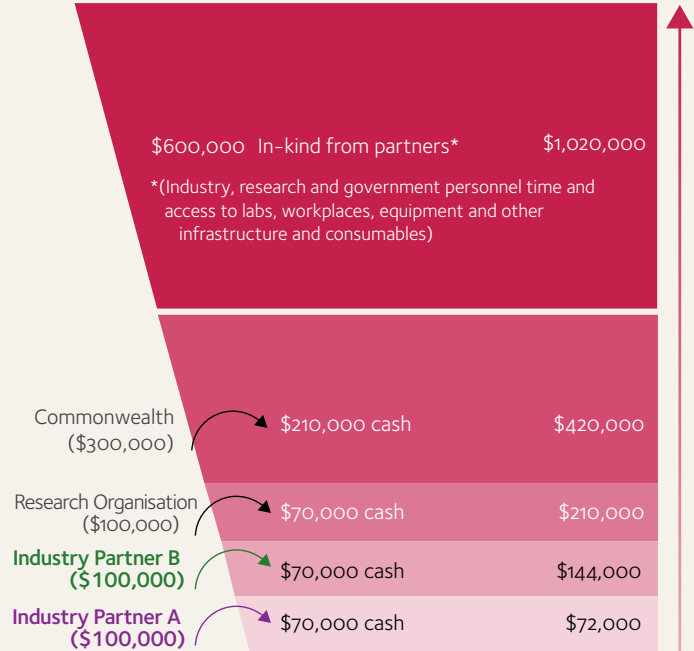
Proposed research programs

Food and Agriculture	Service Industries	Green Industries
• Technology solutions to enhance and grow the first foods sector • Nutrition and food registration for export growth • First foods market analysis and forecasting • First food processing and manufacturing • Skills development including agtech • Nutraceuticals, skin/body care	• Identifying, designing and trailing Indigenous-driven business models • Developing Indigenous tourism market models, skills and capacity building • Integrating technologies and tourism • Increasing Indigenous employment, career advancement and retention in the mainstream services sector	• Diversification of farm income through carbon farming, blue carbon, natural resource management and biodiversity offsets • Renewable energy farms • Construction; sustainable, integrated renewable energy solutions • Asset management including secondments to industry

Sector **Transformation**

- Research to inform policies and systems for land and water management

- Research to develop decision making tools to help communities make the best use of assets and to address barriers to growing sustainable and scalable businesses

- Research on Indigenous Intellectual Property and knowledge, development of approaches to recognition, utilisation and protection of Indigenous IP and knowledge to create economic opportunities

- Market forecasting, analysis for trends & opportunities, consumer preferences access to markets

- Education and training; Accelerator, and EPIC Business Cluster, action-based training; digital skills and literacy, HDR training; Mentor and secondment program, career advancement, recruitment, retention

EPIC Business Cluster

An Business Cluster will be established to represent small and medium Indigenous businesses across all industries as a partner company of the EPIC CRC.
The Cluster will focus on growing Indigenous businesses to national and global scale and will invite membership from businesses interested in participating and having a direct influence on the research directions of the CRC.

The Cluster aims to create opportunities for its members to:
- Collectively identify industry challenges and inform the research priorities of EPIC CRC;
- Gain direct access to participate in research activities and pilot programs promoting business growth and improving business capabilities;
- Establish connections with EPIC CRC partners and potential investors, and
- Access business and sector relevant training programs developed and delivered by CRC partners.

Education and Training

The Indigenous employment rate for 15 to 65 year olds has remained relatively unchanged between 2008 - 2019, at 49% compared to around 75% for non-Indigenous Australians, and the target to halve the gap in employment outcomes within a decade (2008 - 2018) was not met in any state or territory.

The enablers and barriers to Indigenous Australians' participation in employment are multiple and intertwined with social, cultural, geographic and economic factors. Acquiring skills - particularly literacy, numeracy and digital problem-solving skills, is associated with better labour market outcomes (OECD 2019). For those Indigenous Australians with higher levels of education, there was virtually no gap in employment rates with non-Indigenous Australians (AHMAC 2017).

EPIC CRC's education and training program aims to drive social and economic outcomes from increased meaningful employment of Indigenous people. The CRC will work with industry, Indigenous organisations, VET, universities and government to better understand training and education requirements, as well as to implement well-considered and researched Indigenous employment pathways.

EPIC CRC's Education and Training Program will provide the foundation to increase employment outcomes and advance the careers of Indigenous people; and address the CRC's targeted industries' skills gaps. The CRC will design scalable training programs that build critical skills relevant for industry; and train educators, employers and training supervisors to ensure a sustainable system.

Industry linked research training

- 35 PhD candidates over the CRC's ten-year term, with a preference for Indigenous candidates.
- Honours and Masters programs, creating a pipeline of future PhD candidates.
- Co-supervision by industry and end-user leaders, as well as multi-institute academic supervision.
- Candidates will receive training in commercialisation, communicating research for impact, and Supervision for Empowerment - the EPIC CRC Trainer and Facilitator Program.

Action-learning vocational training

- Nationally recognised and accredited action learning qualifications co-designed with Indigenous training institutes and in community.
- Replication and customisation of accredited courses for communities and workplaces will be enabled via a virtual Training Hub, led by SkillsIQ.
- Development of the Supervision for Empowerment course for trainer and facilitator certification to supervise action-learning schemes.

Employer training program

- Co-design, with Indigenous people and workplaces, of workplace strategies that enhance Indigenous recruitment, retention and career advancement.
- Workplace training programs to support the execution.
- Mentorship program for Indigenous employees - as new recruits and employees seeking to advance careers.
- Managers can obtain Supervision for Empowerment certification to supervise action learning schemes.

Business skills for entrepreneurs

- Business skills training provided through the EPIC Business Cluster.
- In addition to business training, the EPIC Business Cluster will work with entrepreneurs on novel business models that optimise scalability and sustainability and mentor programs for participants.
- Potential for mobile delivery of training will be explored.

Governance and Management

EPIC CRC's draft term sheet, which is available upon request, articulates the suggested governance and management of the CRC. Feedback and questions are welcomed.

EPIC CRC will be established as a not-for-profit company limited by guarantee. It will be governed by a skills based and fully independent board. A Research and Commercialisation Advisory Board (comprised of elected CRC members and CRC management, research and commercialisation leads), will be responsible for reviewing research proposals against criteria pertaining to alignment with Reconciliation Australia's priorities, industry need, commercial potential, and scientific basis. Following assessment, the Research and Commercialisation Advisory Committee will make recommendations to the Board for a proposal's approval and / or to the project's participants, for its further development.

The CRC will look will look to secure the maximum benefit to the Australian economy from Project IP, whilst also ensuring appropriate protection, recognition and compensation is provided for Indigenous Intellectual Property and Knowledges. For public good projects where Project IP is intended to be disseminated to the public, Centre IP ownership is proposed (subject to negotiation). For commercial projects, Project IP ownership and commercialisation rights will be negotiated on a project-by-project basis. Commercialisation of IP will not prevent partners from using IP for the non-commercial purposes of research and education.

EPIC CRC will have two partner categories, one for research institutes and the other for industry, government, Indigenous and community organisations. The table below provides a summary of the different types of partnerships with the CRC.

Sub-Committees
- Finance
- Audit and Risk
- Remuneration and nominations

EPIC CRC BOARD
Independent and skills based

Committees Advising the Board (consisting mainly of partners)
- Research and Commercialisation Advisory Committee
- Education and Training
- Access, Equity & Gender

Chief Executive Officer

Education and Training Director

Chief Operating Officer

Executive Officer

Program 1: First Foods - Indigenous food and agriculture

Program 2: Service Industries

Program 3: Green Industries

Industry, Government, Indigenous and Community organisations	Contributions	Member of the CRC company	Voting and nomination rights
Tier 1	Minimum $300k per annum cash. Approximately $400k per annum in kind	Yes	Can nominate up to two independent board member candidates Ability to vote
Tier 2	Minimum $150k per annum cash. Approximately $200k per annum in kind	Yes	Can nominate up to one independent board member candidate Ability to vote
Tier 3	Cash and in-kind as appropriate	No	N/A

Research institutes	Contributions	Member of the CRC company	Voting and nomination rights
Tier 1	Minimum $150k per annum cash. Approximately $200k per annum in kind	Yes	Can nominate up to two independent board member candidates Ability to vote
Tier 2	Cash and in kind scaled appropriate in accordance with cash funding to Research Partner	No	N/A

Next Steps and Timeline

Invitations are now open to partner with EPIC CRC and to help develop the scope and priorities of the research and education and training programs. To determine whether your organisation is interested in learning more about the CRC and / or becoming a partner of the CRC, consider:

- Whether your organisation has an interest in the proposed research areas;
- Whether the consortium approach to research is appealing to your organisation, and;
- Whether there is any feedback you have on the research areas we are proposing for investigation.

We encourage interested organisations to engage with the bid team early to contribute towards a CRC program that addresses end user needs and challenges. If you are interested in learning more, and in providing input to develop the research programs, please contact us.

Round 23 CRC Program has not yet opened, but the anticipated timing of the two-stage application process is provided below.
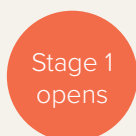
June 2021	August 2021	Dec 2021	Feb 2022	May 2022	Oct 2022
Stage 1 opens	Stage 1 closes	Stage 2 opens	Stage 2 closes	Outcomes announced	Funding issued
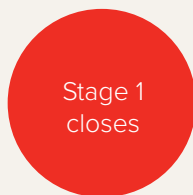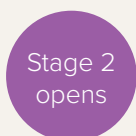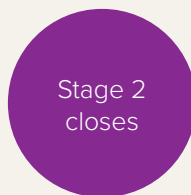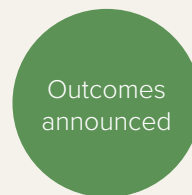
Bid lead contacts:

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Project Bid Manager,
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- **APPENDIX 1** - Example Report_REVA_24062021 (1)

Example Report
'This is a secondary document acting as 'Appendix H' to
the primary document titled 'Return Brief Draft'

(Cover image to be confirmed)

(Cover image to be confirmed)

'01 Bayulu'

Marra Worra Worra
Aboriginal Corporation

'Bayulu is one of the oldest, most established communities and is located on the western periphery of Gooniyandi country. There is a strong influence of mostly Gooniyandi and Walmajarri speakers in the community. Smaller communities have developed from Bayulu.

It is a large Aboriginal community, located 10 km south of Fitzroy Crossing in the Kimberley Region of Western Australia, within the Shire of Derby-West Kimberley.

Bayulu was originally established as part of Gogo Station but was relocated to its current position in 1987'.

Marra Worra Worra (2021)

Contents

01.1 People and Culture

Introduction

According to the Marra Worra Worra Aboriginal Corporation (2021)[1] , the Fitzroy Valley is home to five language groups or tribes which include Bunuba, Gooniyandi, Nyikina, Walmajarri and Wangkatjungka.

Gooniyandi Country

As mentioned before, the Bayulu Community is situated within Gooniyandi Country that extends from Fitzroy Crossing to the locale of Margaret River Station in the east, north to the King Leopold ranges and south towards the Great Sandy Desert. It covers a varied landscape from limestone ranges to floodplains. Gooniyandi Country includes Birndiwa (Mt Huxley), Mimbi (Mimbi Caves), Maanyjoowa (Margaret Gorge), sections of Margaret River, Louisa River, Mary River and Christmas Creek, as well as many smaller creeks and billabongs such as Jiliyardi (Jiliyardie Waterhole) and Goorri (Coorie Billabong). The Marra Worra Worra Aboriginal Corporation continues to explain that Gooniyandi people live in a number of communities including Bayulu, Gillarong, Muludja, Joy Springs, Ngalingkadji, Mimbi, Galeru Gorge, Kupartiya, Moongardie, Gananyi, Yiyili, Pull-out Springs, and Koonjie as well as the townships of Fitzroy Crossing and Halls Creek. Gooniyandi people own and run the pastoral leases of Mt Pierre, Bohemia Downs and Louisa Downs.
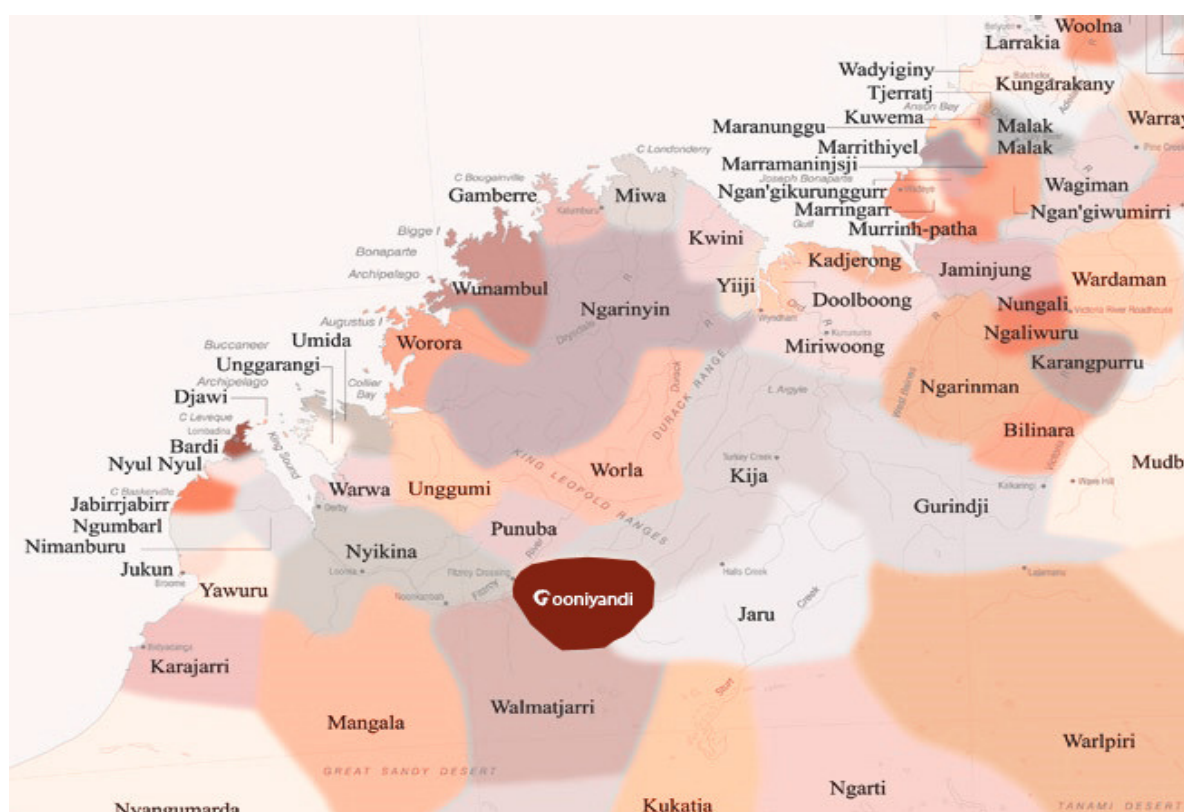
Figure 1: Gooniyandi Country
Source: https://www.notredame.edu.au/majarlin/about/the-kimberley

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History of Bayulu

The remote Aboriginal community of Bayulu played a significant role in the history of education in Western Australia.

The Gogo Cave School

...."Many of our elders, sisters and brothers, went to that school and it was a place of importance especially concerning education"....
Elder Cissy Nugget (2020)

According to an article written by Tyne Logan for ABC Kimberley (2020)[2], the Gogo Cave School was the first school established on a remote pastoral station in Western Australia by Cyril Burcham. The school allowed children in the remote community of Bayulu to attend school in Gooniyandi country as opposed to attending school in a town or mission. The article continues to describe the physical qualities of the school as two caves that were originally carved out for use as an air raid shelter during WWII. The caves are approximately four meters wide and tall enough for an average male to stand up inside them. The caves were utilised as two separate classrooms for up to thirty children between 1957 and 1962.

The cave school's significance to the Bayulu community and the broader role it played in remote education was marked with a plaque, written in the three languages of English, Gooniyandi and Walmajarri:

"This plaque commemorates the location of the first school in this area as an important part of the history of education in Western Australia.

It was in this cave of the Pamarrjarti Hills that Gogo School was established in February, 1957.

The children of the Pamarrjarti people who came to live on Gogo Station were the school's first students.

In 1962 the Education Department built a single classroom and some teacher accommodation on a site 400 meters from this 'Cave School'.

It is on this site that Bayulu School now proudly sits"

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2. "Gogo cave school in central Kimberley recognised for important role in history," Tyne Logan Online, October 24, 2020, accessed June 12, 2021, https://www.abc.net.au/news/2020-10-24/gogo-cave-school-recognised-for-historic-role/12803048

The Gogo Cave School & Spatial Significance through Words

...."It was a very important, special place for our elders,"....
Elder Cissy Nugget (2020)

...."I feel proud and very sad, you know, because this might be the last time I come out here,"....
Billy Chestnut, a previous student of the school on his return to visit the caves (2020)

...."If it wasn't for them, our people wouldn't have learned to read and write."....
Elder Cissy Nugget (2020)

...."It brings back a hell of a lot of good memories [to come here] that I used to have when I was quite younger, you know."....
Billy Chestnut, a previous student of the school on his return to visit the caves (2020)
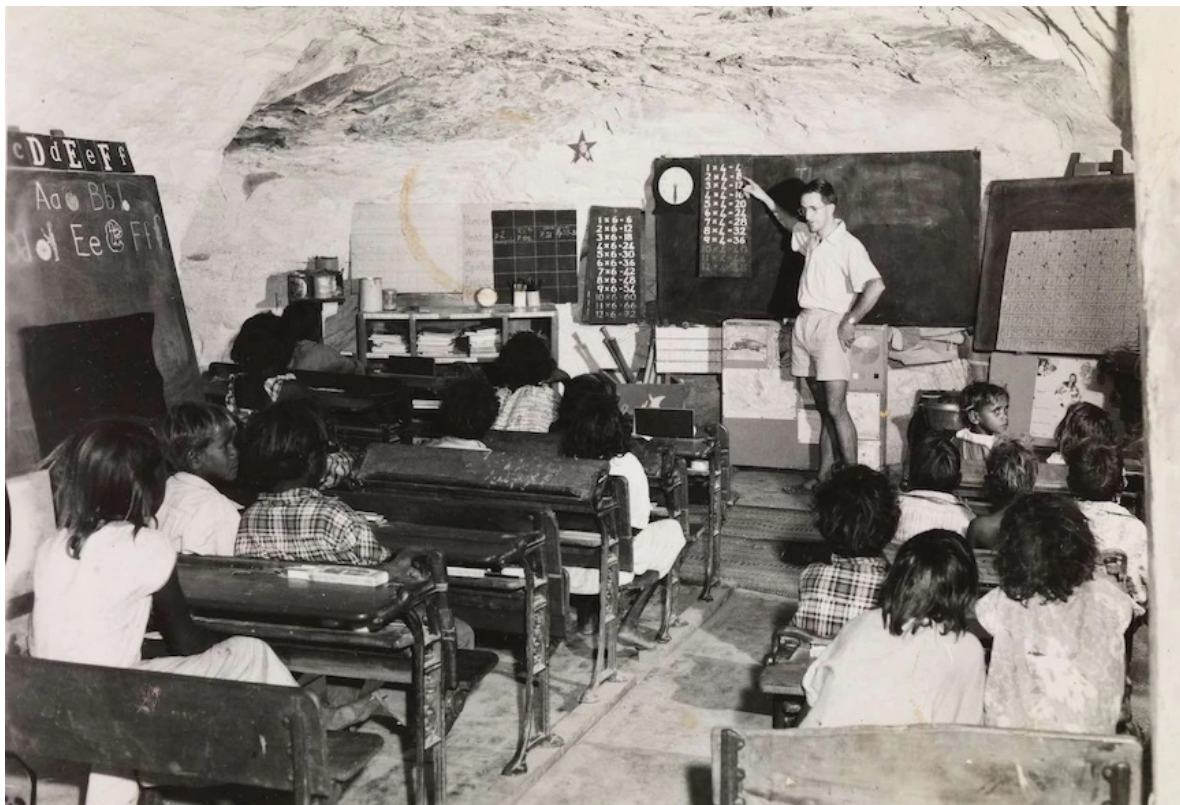
Figure 2: Inside the Cave School - Past
Source: https://www.abc.net.au/news/2020-10-24/gogo-cave-school-recognised-for-historic-role/12803048

Figure 3: The Cave School - Perspective Elevation
Source: Calvin Thoo, 03/06/2021

Figure 4: Inside the Cave School - Present
Source: Calvin Thoo, 03/06/2021

Bayulu Statistics

Population

According to the Bayulu Layout Plan 1 Amendment 11 (2017)[3], it is difficult to estimate and predict populations in aboriginal settlements as Aboriginal people tend to be mobile in terms of housing and living arrangements. Populations can increase and decrease at any given point in time due to certain family, cultural or administrative factors. A significant factor that contributes to the rapidly increasing and decreasing population in Bayulu is members of Bayulu have close affiliations with other settlements in the region and there are regular movements of people between Bayulu, Fitzroy Crossing and the wider Fitzroy Valley region. According to population census in 2011, 40% of the overall 320 people in Bayulu were children whereas 19.7% were youths aged 15-24 years[4]. The youthful demographic of the Bayulu community is a result of lower life expectatncy, premature mortality, higher feritlity rates and increasing inter-ethnic marriage[5].

Gender Roles
In the Aboriginal and Torres Strait Islander cultures are the separation of men's and women's business. It focuses on particular roles, ceremonies and Lore specific and sacred to each gender. This cultural practice is not discriminatory or viewed as sexist separation. Additionally, either gender should not know of the circumstances of the opposite gender's business. The rules of men and women's business are strict and have harsh penalties should the rules be broken [6].
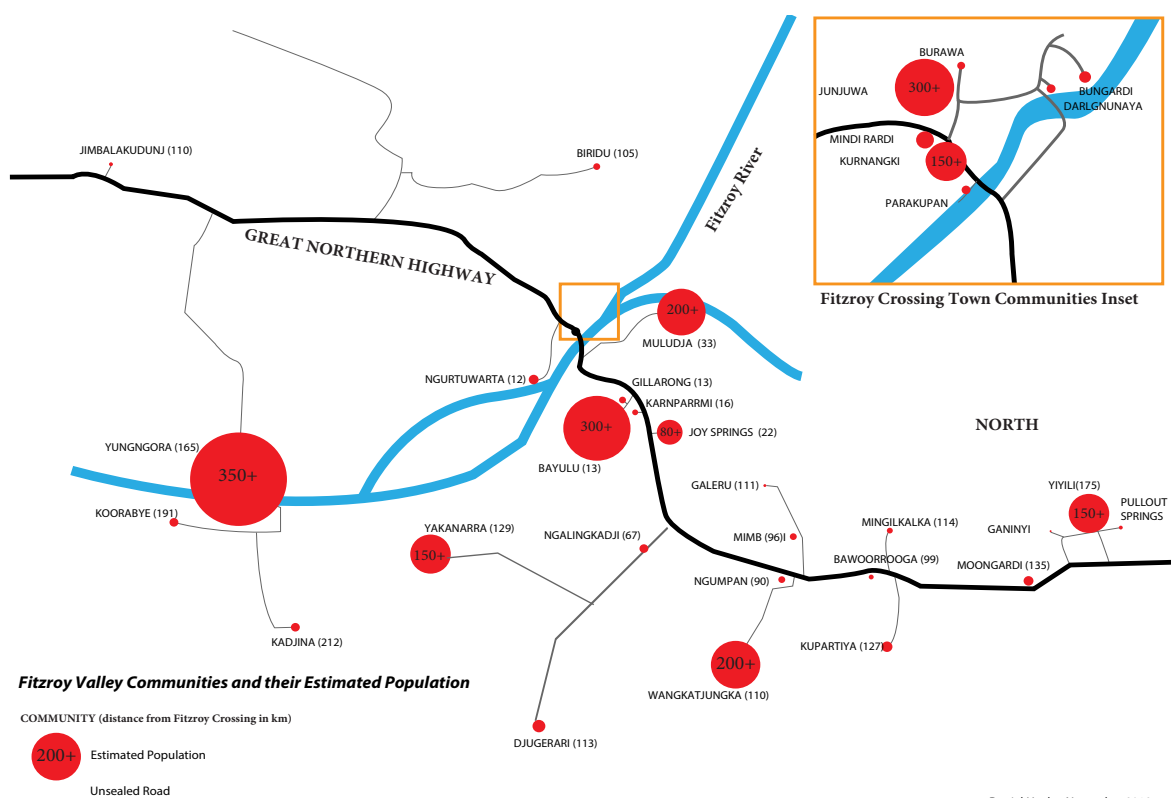
Figure 5: Communities and their Estimated Populations
Source: https://dwer.wa.gov.au/sites/default/files/13a.Marra_Worra_Worra_Aboriginal_Corporation_Appendix_A.pdf

3. "Bayulu Layout Plan 1, Amendment 11," dplh Online, August, 2017, accessed June 12, 2021, https://www.dplh.wa.gov.au/getmedia/085b8536-0eb9-4a96-aad2-5c5c95fcfefe/LOP_Bayulu_LP1_Amendment_11_Report.
4. ABS, " 2011 Census QuickStats: Bayulu (L)", accessed 18 June, 2021, https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2011/quickstat/UCL522003.
5. John Taylor, "Population and Diversity: Policy Implications of Emerging Indigenous Demographic Trends," no. 283 (2006): 6-8, https://openresearch-repository.anu.edu.au/bitstream/1885/145626/1/2006_DP283.pdf.
6. Deadly Story, "Men's and Women's Business," accessed 18 June, 2021, https://www.deadlystory.com/page/culture/Life_Lore/Ceremony/Men_s_and_Women_s_Business.

Census 2011

-People	+/-320	-Families	72
-Male	150	-Average children per family	2.4
-Female	170		
-Median Age	19		

Language
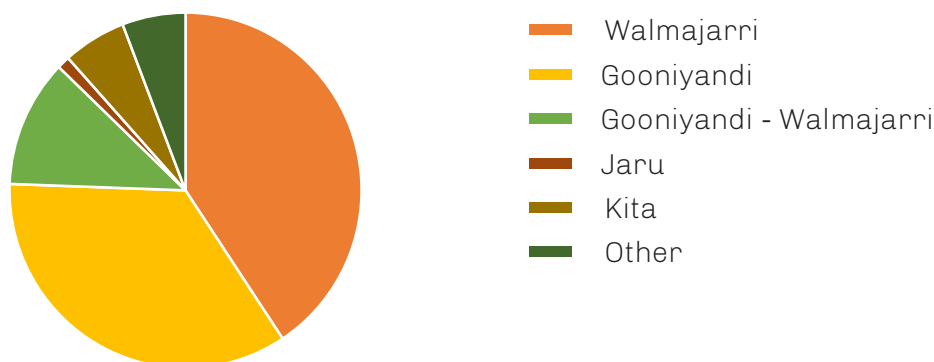
Figure 6: Breakdown of Languages in Bayulu
Source: Calvin Thoo, 12/06/2021

Communication Skills

Based on site visits to the Bayulu Community, many members of the community are able to easily communicate with the BBM Lab team in English. However, communication amongst members is mainly conducted in Kriol.

Education - Primary School

Young children in the Bayulu Community are able to attend the Bayulu Remote Community school from kindergarten to year six. The school is located 15km from Fitzroy Crossing and according to the Department of Education (2021)[7] , the school has a vision of providing a stimulating and safe learning environment for students, in order to encourage them to become resilient, proud and strong members of the community through the assistance of reaching their full academic potential. The Department of Education webpage continues to explain that the school has a firm foundation in ensuring Aboriginal culture is celebrated and embraced.

Education - High School

Young members within the community have to travel to areas afar to receive education at a high school level. However, there are TAFE Campuses in the region to receive an apprenticeship or traineeship.

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7 "Bayulu Remote Community School (5190)," Department of Education Online, 2021, accessed June 20, 2021, https://www.det.wa.edu.au/schoolsonline/overview.do?schoolID=5190

Education - TAFE

TAFE Campuses are present in Fitzroy Crossing, Derby and Broome which offer a friendly training environment for students and staff, as well as offering space to meet the demand for apprenticeship training in support of industry growth. At these campuses, students are able to receive Certifications I - IV, Courses, a Diploma, Short Courses and Skill sets in various industries such as: Agriculture, Animals Science and the Environment; Automative, Business and Finance, Education and Community Services; English, Languages and Foundation Studies; Health, Beauty and Fitness; Hospitality, Tourism and Events; Information Technology, Library and Digital.

Community Development Program (CDP)

It is important to note that whether or not members of the community have acquired an apprenticeship or traineeship through TAFE, there is an option for job seekers to participate in various activities on a voluntary basis or by mutual obligation in-order to build skills, address barriers to employment and contribute to their communities through a range of flexible activities. According to the National Indigenous Australians Agency (2021)[8], the Community Development Program (CDP) is responsible for ensuring skill sets are developed and improved. As per the new '*2021-22 Budget Update'*, the Community Development Program aims to ensure Indigenous Australians are fully part of the Government's economic recovery plan. Currently, members of the Bayulu Community participate in 'Work for the Dole Activities', which may be hosted by non profit organisations or charities; local, state, territory or Australian Government organisations or agencies and the non profit arm of for-profit organisations. According to Department of Education, Skills and Employment (2021)[9], these activities would form part of the Community Development Program that will ensure activities are for the benefit of the Indigenous community, are linked to Indigenous community goals and assist with supporting achievable and meaningful career pathways for Indigenous participants.

Governance, Land Tenure & Native Title

The community is managed through its' incorporated body, Bayulu Community Incorporated (BCI). The BCI was incorporated under the Associations Incorporation Act 1987 on 5 November 1975.

All housing and most community infrastructure associated with Bayulu is located on two crown land titles. Although the majority of infrastructure is located on land with secure and appropriate tenure, the sewage treatment ponds are partially situated on the surrounding pastoral station (GoGo Station), which is Crown Land subject to a pastoral lease to GoGo Station Pty. Ltd.

Bayulu is on land subject to the Gooniyandi Combined No.2 Registered Native Title Claim (WAD 6008/00, WC 00/10). The claim area is approximately 11,209km^2. The Kimberley Land Council (KLC) is the Native Title Representative Body that represents the claimants. The claim is currently in mediation with the National Native Title Tribunal.

8. "The Community Development Program (CDP)," Nation Indigenous Australians Agency Online, 2021, accessed June 20, 2021 https://www.niaa.gov.au/indigenous-affairs/employment/cdp

9. "Work for the Dole," Department of Education, Skills and Employment Online, 2021, accessed June 20, 2021https://www.dese.gov.au/work-dole/information-about-indigenous-specific-work-dole-activities#toc-what-are-indigenous-specific-work-for-the-dole-activities-

Language, Lore and Culture

According to the Gooniyandi Healthy Country Plan (2015)[10] , Gooniyandi people are bound together by their lore and customs and have a deep and unbroken connection to their country. The Gooniyandi language was instilled in the land and waters by the travels of ancestral beings during the time of creation called Ngarranggarni.

Gooniyandi Country

The plan continues to explain that Gooniyandi people identify themselves through their connection to riwi (tracts of land) and their jariny (conception dreaming sites). Their lore and culture is not written down on paper; they have to learn this from their elders and pass down knowledge to their kids and grandkids; The plan explores language, lore and culture, through various components of the Gooniyandi culture. These components are important in preserving Gooniyandi language which is tightly woven into into their lore and culture. Some of these components include 'Climate', 'Storytelling' and 'Joonba'.
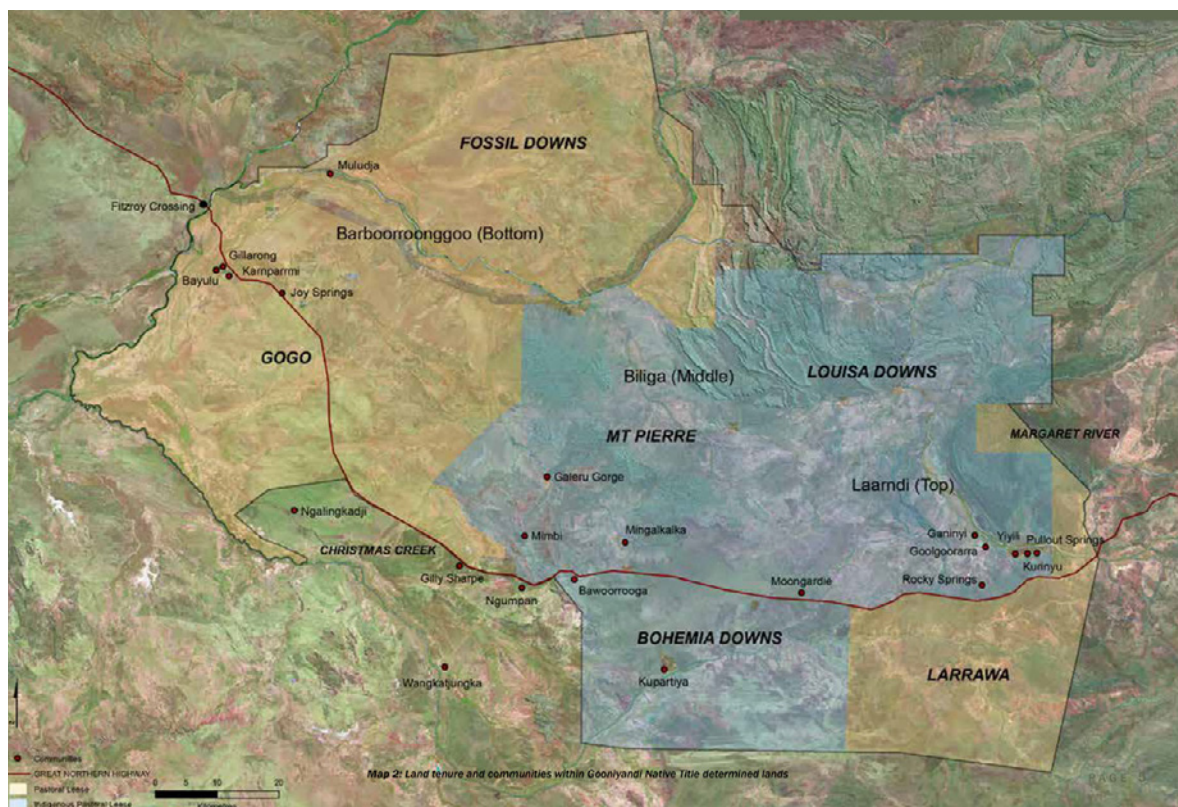
Figure 7: Land tenure and communities within Gooniyandi Native Title determined lands
Source:https://static1.squarespace.com/static/59fecece017db2ab70aa1874/t/5a7bdc53ec212df82e6b7035/1518066809472/gooniyandi-management-plan-lo-res.pdf

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10. "Gooniyandi Healthy Country Plan," Gooniyandi Aboriginal Corporation / Kimberley Land Council Online, 2015, accessed June 13, 2021, https://static1.squarespace.com/static/59fecece017db2ab70aa1874/t/5a7bdc53ec212d-f82e6b7035/1518066809472/gooniyandi-management-plan-lo-res.pdf

Daily Rainfall (2020)

Figure 8: Climate Bayulu- Average Temperature & Precipitation
Source: https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/bayulu_australia_8310670
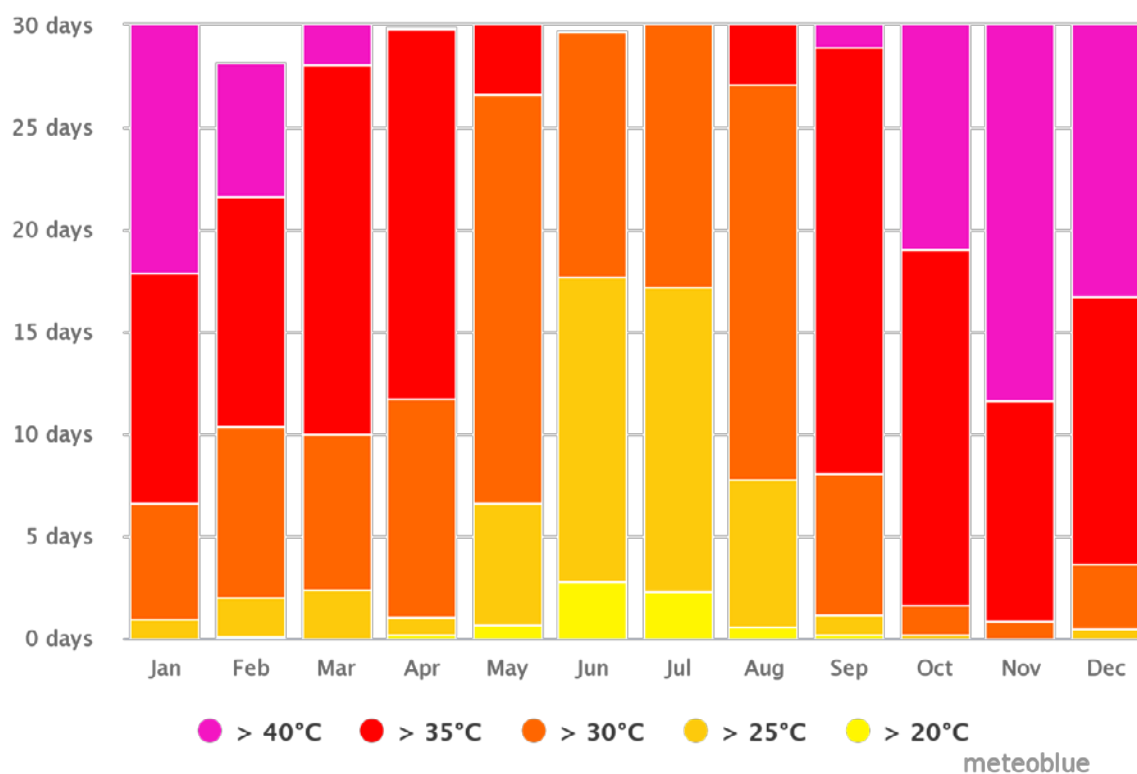
Figure 9: Climate Bayulu- Maximum Temperature
Source: https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/bayulu_australia_8310670
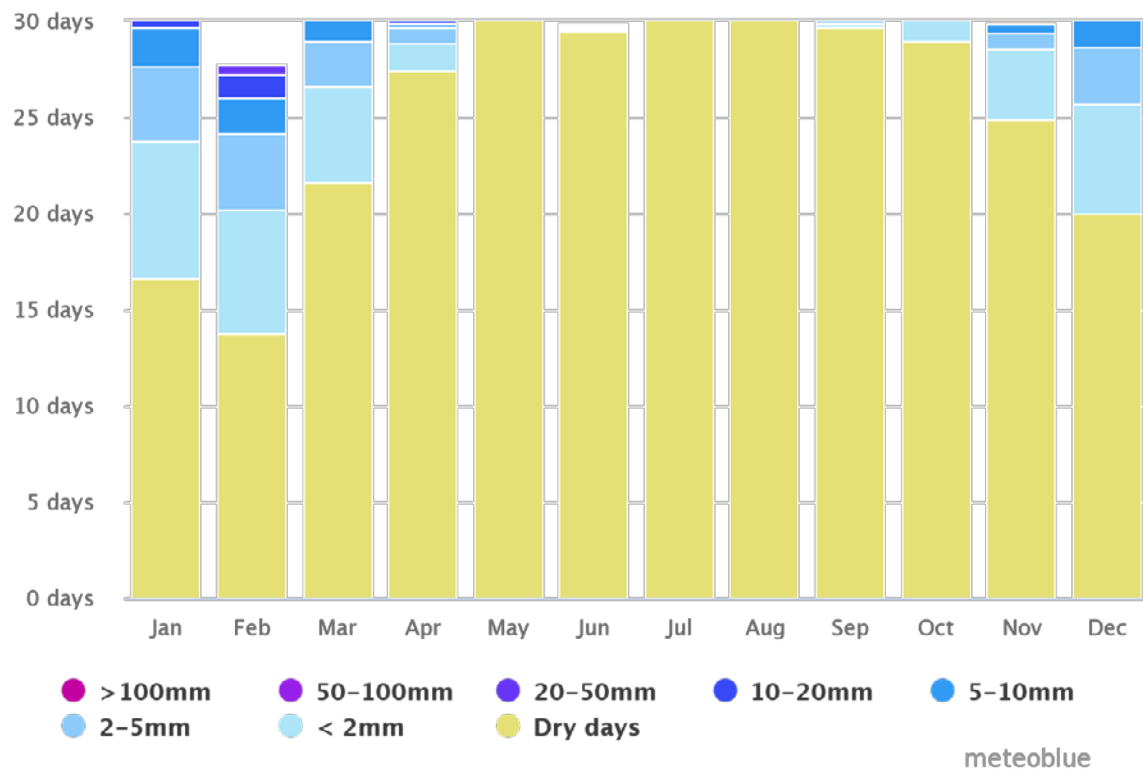
Figure 10: Climate Bayulu- Precipitation
Source: https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/bayulu_australia_8310670
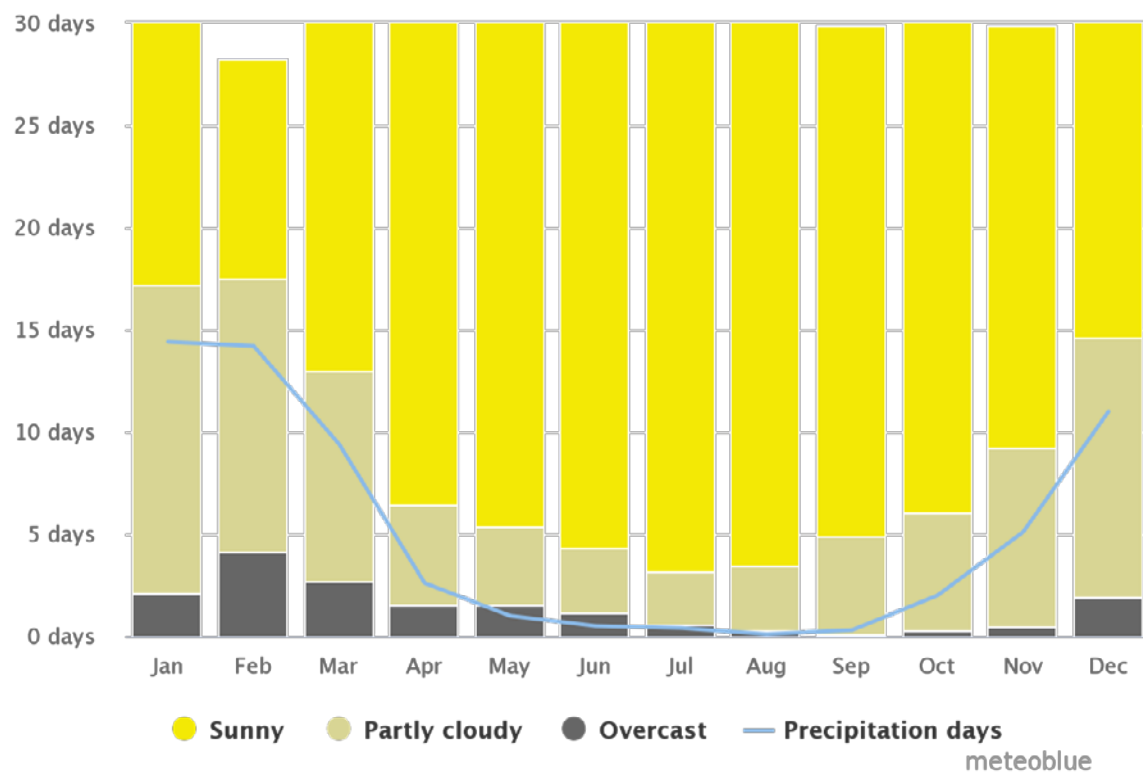
Figure 11: Sunny, Cloudy & Precipitation Days
Source: https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/bayulu_australia_8310670
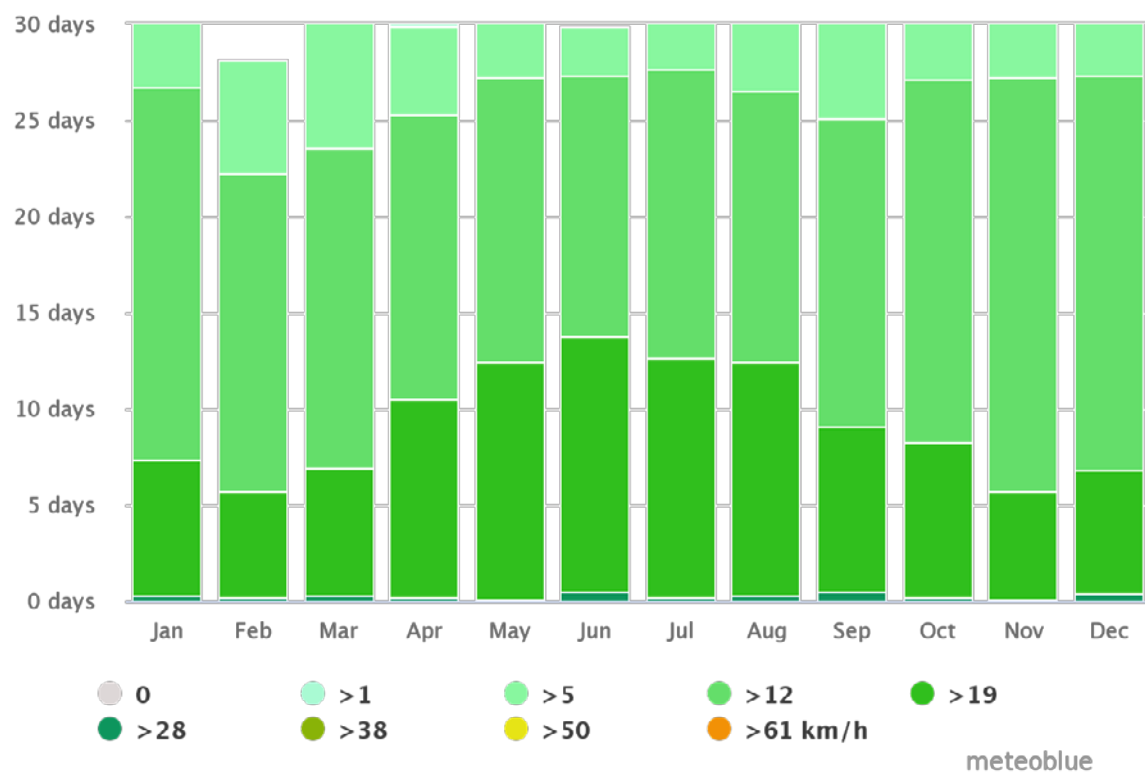
Figure 12: Climate Bayulu- Wind Speeds
Source: https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/bayulu_australia_8310670

Figure 13: Illustration- Wind direction within Bayulu community
Source: https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/bayulu_australia_8310670

Gooniyandi Seasons

According to CSIRO (2021)[11] ,the seasonal cycle recorded on the Gooniyandi seasons calendar follows four main seasons:

- Barranga (very hot weather time).
- Yidirla (wet season time when the river runs).
- Ngamari (female cold weather time).
- Girlinggoowa (male cold weather time).

Gooniyandi people closely follow meteorological events, including wind speed and direction, clouds and rain types, as each event is linked to different behaviors of animals. Gooniyandi people can therefore look to the weather to tell them when it is the best time for hunting and collecting different plants and animals.

The Gooniyandi seasons calendar represents a wealth of Indigenous ecological knowledge. The development of the calendar was driven by a community desire to document seasonal-specific knowledge of the Margaret and Fitzroy Rivers in the Kimberley region, including the environmental indicators that act as cues for bush tucker collection.

Bush Tucker Collection - Bush Medicine

Bush tucker and medicinal plants are according to the Gooniyandi Healthy Country Plan (2015)[12] ,important for Gooniyandi people. When their ancestors lived on country, there were no shops, supermarkets or pharmacies. The elders gathered their food on country, used plants to make tools and knew which plants helped during sickness.

The country is like a calendar to Gooniyandi people. The changing seasons tell us when it is the right time to hunt or collect fruit. When Joowooljidi (Bauhinia) starts to flower, it tells us that the hot season is coming. The honey from the flower is very sweet and can be sucked out of the base of the flower. Garn-gi (Bullwood) flowers at the start of the wet season and during Yidirla (wet season when the river is running) garn-gi fruit is ready to be collected.

The ancestors of Gooniyandi people used country as a dispensary: If you have scabies or sores, seeds of lambi-lambi (cockroach bush) are boiled up and the liquid is used as a disinfectant. For head colds the fruit of Nganyjarli (bush tomato) are collected during Barrangga (the hot season). All the tools used by their elders came from the bush. The gum of marndarra (wild gum), a large tree up to twenty meters tall, is used as glue. the gum is burnt and crushed with added water to make a paste, which is used to bind spearheads to the shaft. Marrorra (Leichhardt pine) is a tree which has many purposes: the fruit is good to eat and is ready when it turns orange and falls to the ground. Its' wood is used to build galwaya (rafts) and the soft wood is often used to carve woomeras and other artefacts.

11. "Gooniyandi seasons calendar," CSIRO Online, 2011, accessed June 13, 2021, https://www.csiro.au/en/research/natural-environment/land/about-the-calendars/gooniyandi
12. "Gooniyandi Healthy Country Plan," Gooniyandi Aboriginal Corporation / Kimberley Land Council Online, 2015, accessed June 13, 2021, https://static1.squarespace.com/static/59fecece017db2ab70aa1874/t/5a7bdc53ec212d-f82e6b7035/1518066809472/gooniyandi-management-plan-lo-res.pdf

Gooroo is the freshwater mangrove (*Barringtonia acutangula*), whose bark is used as a poison to stun fish in small pools. A group will surround a pool and hit the trunk of Gooroo with a stick making bark fall into the water, turning it red. If someone present is the Dawa for that place, they will spear the first fish.

Nyaadi is a bulb like a big onion. During flooding time, certain people will collect and crush Nyaadi before throwing it into the river and billabongs. This ensures that the fish will grow fat all year round.

JANGALA
N
NW — NE
JAWALYI W — E **JOONGOORRA**
SW — SE
S
JAWANDI

Figure 14: Gooniyandi Seasons Calender
Source: https://www.csiro.au/eir/research/natural-environment/land/about-the-calendars/gooniyandi

The rain, wind and storms that arrive in Gooniyandi country come from four different directions, are generated by four different snakes, and are of four different skins: **Jangala**, **Joongoorra**, **Jawandi** and **Jawalyi**. The snakes have different tempers and bring different rains and storms. Jangala is the most powerful snake from the north.

TRaCK — Tropical Rivers and Coastal Knowledge
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Mingayoorroo – Manyi Waranggiri Yarrangi

Moonggoowarla – cold weather time

Ngamari is female cold weather

Gooloowa is the rain that falls after the monsoons have finished and as Ngamari (female cold season) starts.

Gawi (fish) are said to shut their mouths as the weather cools and the Moonggoowarla wind starts blowing from the east. This can be a hard time to catch fish.
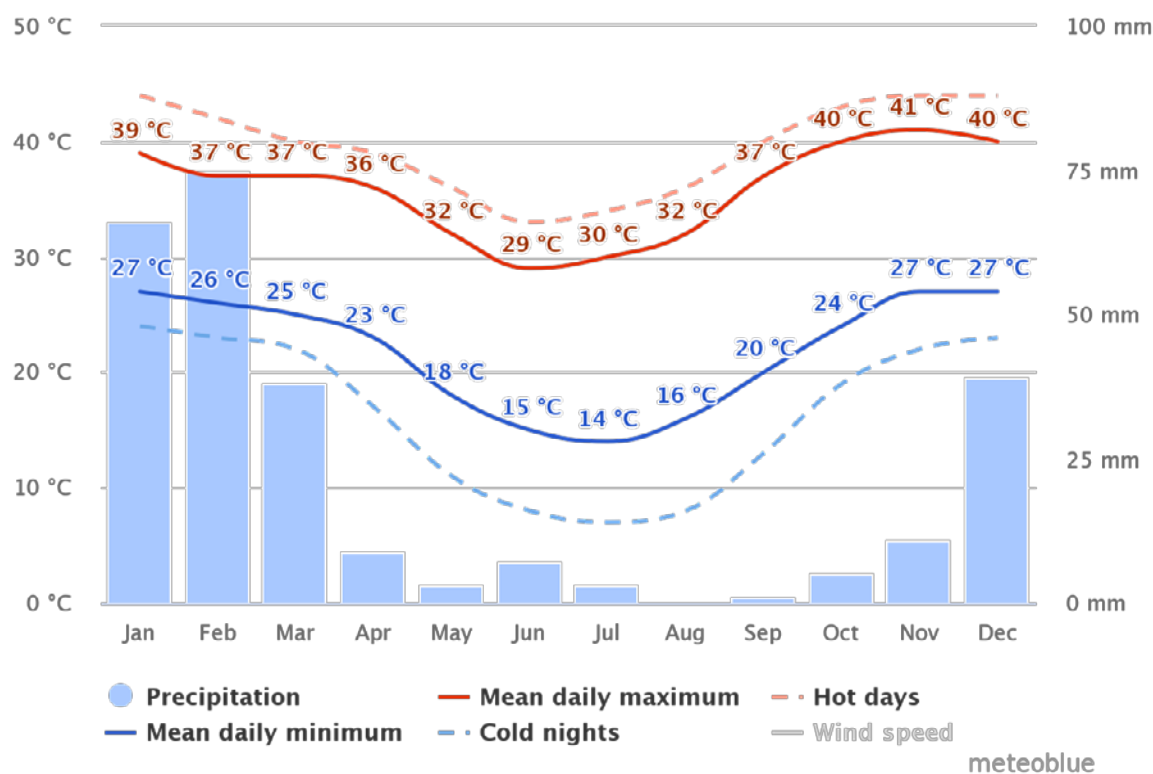
Garn gi, the white currant (*Flueggea virosa*), is fruiting and ready to be collected. Jirloowoo, the river fig (*Ficus coronulata*), is also ripe. The fruit falls into the water when the river flows for the second time, feeding turtles and fish. You have to be quick to get the fruit before the pigs and birds!

Jaloomboo (red dragonflies) appear at the beginning of Moonggoowarla to tell you Galwinyi (saw... crocodile) as they lay their eggs. It is a good time for Laarri (bony bream), Gooloomangarri (...

All kangaroos: Thirwoo (hill kangaroo), Wandjadi (little river kangaroo), Woombana... Goombirna (left-hand nail tail wallaby) and Bandalngarna (red plain kangaroo) are... good time for hunting, but leave those animals carrying joe...

Wawanyi (goanna), Girwili (water goanna), Nyarlangarri (king brown snake), Yilimi (black-headed python) and Nganthanany (rock python) are all fat and ready for hunting.

Joornda, the bush onion (*Cyperus bulbosus*), is an important... straight after the rain and can be dug up until hot weather... attracts animals and a Gooniyandi person might use a s... dreamtime place to ask for Joornda to grow where they... these animals. These places are very significant to Goo...

As the rain finishes... direction – and Garra... the south. The water... time for fishing for G...

(*Adansonia gregorii*), shoots new leaves with the first rains of Yidirla, before flowering... flesh are eaten when dry. Wajarri is good medicine for stomach upsets.

Start dig... Boorngg... Jarrandi (b... and Birl...

The 'knock-em down' rain comes now after 'rain' last big river flow of the wet. This storm from the east is called Joongoorra.

Galamooda, the favoured bush turkey, is fat now after eating grasshoppers during Yidirla. Gananyanja (emu) and Joowooloogoo (whistling duck) are also fat and good eating now.

Co... of J...

Goo... fruits... sw... you... G... yo...

Wajarri, the boab tree (*Adansonia gregorii*), is fruiting during Moonggoowarla. When the fruit is green it is roasted in ashes before eating. The nuts a...

Jawandi is the last rain storm of the Wet and comes from the south.

Moogoomoogo is the quiet rain to go to fish in. After the big wet there is light rain that falls with no wind, thunder or lightning rain called Boolinyji. This is the last rain of the wet season.

Darloo, the bush mango (*Buchanania obovata*) (Buchanania hill country grows and is ripening now.

Wilarrabi and Diwiwi (turtles) lay eggs in the mud on the sides of the river banks when the water is still flowing.

Marroora, the leichhardt pine (*Nauclea orientalis*) is fruiting now.

...opposita), is ripe and is purple-black.

Wirayi is the boomerang shaped cloud that can be seen at the end of Barranggaa. Wirayi warns of a big storm coming. Manyboo are the white 'cotton wool' clouds that come from the spring-country during the middle of the wet season.

Yidirla – can only get tiny batfish (moon grubs) (spawn) and big blue-wing grasshoppers are used for bait.

It is difficult catching Boornda and other bait fish at the beginning of Yidirla – can only get tiny batfish (moon grubs) on hooks. Jaalinyi (moon grubs) and big blue-wing grasshoppers are used for bait.

After the eucalypts' bark has peeled Yidiyidi (cicadas) emerge, while Jaalinyi (moon grubs) come out after the first flood.

Barndiwiri is the first rain storm that arrives from the north. It is associated with the Jangala skin group.

Yilangi, Galadiwa and other eucalypts to peel. The rain causes the bark of Blindi, Walarri, Boorngga, Thalngadi; Bawaloo, the bush carrot (*Portulaca piloso*) is collected now and roasted before eating.

The first rain of Yidirla is called Barrabarra. The rain causes the bark of Blindi, Walarri, Boorngga, Thalngadi; it gets very hot after the first rain.

Yidirla – wet season time when the river runs

When the river and creeks are running it is good fishing for Gooloomangarri (catfish) and bigger fish – try for Baya (stingray), Galwanyi (black bream), Jambinbao (black bream), barlga (barramundi), Wilarrabi, short-necked turtles).

The flowers of Girndi, the black plum (*Vitex glabrata*), fall to the ground with the first light rain. The fruits grow in the creeks. The first rains, before being washed at night (also called Girndi) is flickering of fireflies the fruit and making it ripe.

Gooniyandi Seasons

...ather (cold days, cold nights) → **which turns to Girlinggoowa – male cold weather time (mild)**

...fish) are fat. Goorrjali (marchflies) arrive when all Garwi are fat, and protect Langarra (freshwater catfish), Wilarrabi (long-necked turtle), Barlga (barramundi) and Boornda (spangled perch).

...ngi (short-eared wallaby), ...e fat and breeding. It's a ...eys.

..., the wind changes ...awoorda blows from ...r is high – it's a good ...Galwanyi (sawfish).

... food that grows ...er time. Joornda ...special stone or ...want to hunt for ...oniyandi people.

...g then ...nd fruit

...ging for ...a (yam), ...ush carrot) ...a (yam).

...collect the seed heads and 'chestnuts' ...oomboowa and Garrjari (lilies) and roast in the coals.

...ordida, the bush orange (Capparis umbonata), ...s in the hot weather. The breeze carries the ...eet smell of ripe Goordida, allowing ...u to find the fruit. The leaves of ...oordida are used for smoking babies and ...oung children to keep them strong.

When the crow calls the weather is moving into Girlinggoowa.

Limirri (spinifex wax) is being made by ants and can be collected throughout the year.

As Yirndi (flowers) bloom the Woonggoorroonba searching for nectar and stays until Barrangga.

Gawi (fish) start to carry eggs as they lose their fat.

Janga (honey) comes native bees making hives and Both Woonggoorroonba and janga are eaten now.

When Joolwooljidi (*Bauhinia cunninghamii*) flowers you know it is turning to hotter weather. Drink the nectar from the flowers.

Kangaroos and wallabies are moulting now – getting ready for the hot weather.

Paperbark trees flower all year 'round and bees make Nyarlirya (honey) in the bark. This sugarbag is called Darlarli.

Gawi (fish) start to carry eggs as they lose their fat.

Gooroo, the freshwater mangrove (*Barringtonia acutangula*), is flowering now. It is said that Galwanyi (sawfish) eats the flowers when they fall into the river in the wet season, making them fat and their guts pink.

Nganyjarti, bush tomato (*Solanum chippendalei*), flowering the wet season.

Bambira (*Atalaya hemiglauca*) flowers at the same time that Langarra (freshwater crocodiles) lay their eggs. When the flowers fall to the ground the young are joining their mothers in the river.

A big mob of flies around tells you Biriyali, the conkerberry (*Carissa lanceolata*) is ripe. The wood is used for smoking babies and anyone who is sick.

Goorlibi, the bush banana (*Marsdenia viridiflora*), grows up big in the hot weather.

Yirndil, the black sand fig (*Ficus ... lasiantha*), is flowering.

Butterflies tell you Bambiyi, the wild passionfruit (*Capparis ...*) ready to eat when it turns...

Bawooloo (bush carrot) seeds called Blaywarri are ready to be collected and ground into flour for damper.

Now is a good time to eat mussel), as the hot ... solution drunk to treat cold sick.

During Barrangga trapped Galwanyi the pools in ... Jambinbaroo (black ...

Now is a good time for Nga ... to the banks of the river channel to dry and Barlga (barramundi) won't bite. Good turtle fishing time.

Nganyjarti fruits are ripe when white and soft.

When Lagarndi (witchetty grubs) are ... the season of Barrangga and Bingga (sugar leaf) are both available.

Good turtle fishing time.

Good ... continue to dry and get smaller. When fishing ... while Gooloomangarri (catfish) and Barlga in deeper river sections.

When the red seeds of Jirndiwili (*Erythrina vespertilio*) fall to the ground you know a big rain, the wet season, is coming.

Jambinbaroo (black bream), Gooloomangarri (catfish) and longtom stop biting toward the end of Barrangga.

Boordbara is the hot and humid time during Barrangga. You can see the heat wave dancing, there is no water around and it is hard to dig for soaks. Leaves shrivel and birds can die.

Yirminyi is the very hot time during Barrangga ... air is heavy and it is hot in the shade. People look for lightning in the towering white clouds – this will tell them that rain is on the way.

MARGARET RIVER, FITZROY VALLEY, WESTERN AUSTRALIA

The fat of **Galwanyi** (sawfish) is very soothing to Gooniyandi people, and heals their aches and pains. The soft meat is very good for children to eat.

Balabi is a gall that grows in the fruit of **Mawoorroo** (bloodwood trees). In the past Aboriginal stockmen relied on Balabi for survival, eating big mobs during long droves when there was no water.

Limirri is a wax that comes from spinifex. Ants collect the wax into clumps at the base of plants. It is ground up with water and used for connecting spear and axe heads with kangaroo sinew, and also for softening the mouth of didgeridoos.

When the red seeds of the **Jirndiwili** tree (*Erythrina vespertilio*) fall to the ground Gooniyandi people know that the Jangala rain will start soon. The Jangala snake makes this rain, and brings it in lightning and thick white clouds from the north, making the rivers run.

14

Storytelling

…."I write this poem for myself. What happens between the lines is the most important i.e. the scent of spinifex, the roaring blue of the sky, time seeping away. And for me the sense of having completed a circle. Not simply by returning to this country and her people. But through being claimed, reclaimed by their stories… Our stories…."

Steve Gome (2003)[7]

The Story of Old Man Thirkall

"…it goes something like this … Old Man Thirkall kept an emu chick as a pet at his home in Kurnangi. When it grew to maturity, it left the camp and headed out into the desert to find a mate. And every year, at least once, sometimes twice, it would return to Kurnangi with its new chicks to visit the Old Man. The chicks would approach the camp with caution-the rumbling of the highway and the sun gleaming from the corrugated iron were new and strange. But they followed the father emu through the camp till they found Old Man Thitkall. The Old Man gave them some tucker and water to drink from the same old tin. That Old Man is finished now, poor fella. But his wife still lives in their house in Kurnangi camp. And the emu still comes to visit, still looking for Old Man Thirkall. And the chicks follow the father emu across the highway. Sometimes they eat some chips at the roadhouse. The emu wanders all over town-in the gardens near the hospital, across the footy ground, past the radio station. He even wanders around the.school, looking at the children, avoiding the sprinklers. But he can't find that Old Man. And soon he goes back to the desert. Everyone is excited to hear that Old Man Thirkall's emu is back in town. It is his emu, the emu that I have seen. And over the next few days, when I visit the Bayulu community (now with its own community supermarket, health centre and truck') and go fishing with the two Mollys and their families, people chat to me about the emu. They have already heard-firstly, that it is back and secondly, that I have seen it. Each aspect of the story encases a kernel of meaning particular to the person who is tellingit. For some, the essence of the story is that Old Man Thirkall's wife is still at Kurnangi and that I should go and visit. Others enjoy sharing details of the emu's behaviour, fascinated by the bond that links the emu with the Old Man. For everyone it is a chance to demonstrate their' own involvement in the story as ongoing witnesses. And of course to remember fondly that Old Man, whose name, like the names of all the deceased in tribal communities, may never be uttered again. The story of Old Man Thirkall and the emu teaches me a lot about storytelling and language. I appreciate how much more than the bare facts is communicated each time the story is told,

By telling this story to one another, individuals open up a line of direct personal connection. At the same time, the history of the community is preserved and developed. This story mingles with other tales of family, local news and tribal law. This story, like every other story, ties the tellers to one another and to this place. Because the Old Man knew me as a child 20 years ago, and because upon my return I encountered his emu, I am part of this story. And I am being claimed through its being told."

Steve Gome (2003)[7]

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7. "Hey you tell 'em bout that story again," Steve Gome, last modified June 01, 2003, accessed June 13, 2021, https://search.informit.org/doi/abs/10.3316/ielapa.200306097

Poem - The Old

Poem - The New

The poems below are written by Steve Gnome (2003):

This story is but hours old
Four little girls
Two pairs of sisters
On a tarpaulin
Under some shade
As three elder generations
Tend the fire
Cast an eye over the lines in the billabong
And talk
The little girls play

Playing.
Then...
A gentle shove
Shrieking ...
Some kicking into sand
Some into bone
Teasing
White teeth sinking
Deliberately
Into dark flesh

'Hey you mob
I seen 'em big wild piggy-wiggy
He come and eatum you
Over dere
You betta watch out!'

The gnash of wrestling bodies
Untangle into laps of safety nearby
Teeth reappear in smiles
The" scene stiller than a picture

As bidden, I toast this moment
With a camera
Absorbing its ripeness
Through heart
Through lungs
Through lens

A sigh? A breath?
Well before the camera
Returns to its case
The tumbling cousin·sisters
Renew their grappling embrace

We enmesh ourselves to that moment
To one another
Each time this Story is told
This story which is but hours old

This story he new one
Four little girls
On the ground
Under some shade
Everybody been makin' fire
The old ladies was fishing in the billabong
And little Lyall Lovett was sleeping

The little girls playing
They was kicking sand
They was kicking themselfes
Laughing and running
A little bit biting

'Hey you mob
I seen 'em big wild piggy-wiggy
He come and eatum you
Over dere
You betta watch out!'

The little girls bin hiding
Hiding behind their aunties
Hiding behind their granny
They was sitting in their auntie's lap
Looking for the piggy·wiggy
They was smiling

They was quiet like a photo
No talking

The four little girls was smiling
At my camera
They was very quiet
I make a photo for my mob in Melbourne
I was breathing and looking at everything
So I can remember

After that photo finished
Put away that one camera
The little girls was
fighting and laughing
Straightaway
Straightaway they start again

We tell this little story
'Bout when we was fishin'
We staying together

Maybe this little story get big one
Maybe four little girls bin growed up
They bin alll1ties and grarmies too-long time
They tell'em bout this story again.

The following stories or dialogues are accounts of conversations between Calvin Thoo and 'Marty' on Wednesday the second of June, 2021. The conversations took place prior to an Aboriginal mens' meeting that was held between some of the male members of the Bayulu Community and members of the Nindilingarri Cultural Health Services:

1.'The First Conversation'

'I greeted Marty and he proceeded to offer me a seat on a metal bench that was situated inside the women's center. I was nervous and intimidated by the thought of what may occur during the mens' meeting. Marty and his brother took their seats on the side porch and began conversing in Kriol. I could faintly make out what the conversation was based on... which was a general conversation about what work needed to be done regarding the footy oval. A few more men started to take their seats and converse with Marty and his brother. I could sense an awkward atmosphere and it was very understandable as I was a complete foreigner, who may be falsely promising to deliver certain needs within the community, which was something the community was used to.

I began to look through some notes in my sketchbook, which prompted Marty to start a conversation with me. I proceeded to ask Marty on the links that Aboriginal culture have with their surrounding landscape. He immediately began to tell me the importance of the seasons with regards to the correct time for hunting certain animals on their land. Marty used the term "fat for hunting" to describe when certain animals become fit for hunting based on observing flowers or taking note of the weather and climate. For example I learned that the Goanna can be hunted after the indication of the second rainfall after winter. This is usually around September or October.'

Marty referred to water and land the most throughout our conversation:

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8. "Hey you tell 'em bout that story again," Steve Gome, 2005, accessed June 13, 2021, https://search.informit.org/doi/abs/10.3316/ielapa.200306097

2.'The Flood Ring'

My conversation with Marty continued and he began to refer to water and land as an important element within the community. As he began his story, I could not translate the sense of pride that he shared with the land that he was connected to through his eyes, ears, nose and sense of touch. Marty and the Bayulu Community are not out of touch with the modern world, but share a deep and wise connection to the mother of their people, "Earth".

Marty began his story of the 'The Flood Ring' by asking me a question: "Do you know how we can tell it is going to flood?" He answered this question by explaining that when there is a full, bright moon with a ring or halo around it, a flood will come. There is no doubt that the Bayulu Community and many other communities in the Kimberley region are subject to high volumes of rainfall, but Marty explained that their community is on an island as during the flooding season, their community is surrounded by water. There was a glimpse of excitement in his eyes when he explained the remote nature of Bayulu due to the flooding.
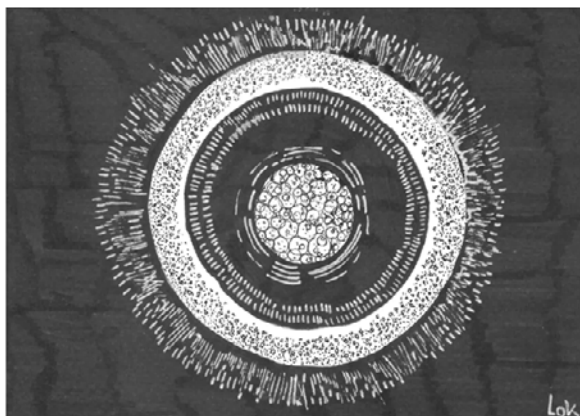
Figure 15: 'The Flood Ring'
Source: Illustration by Calvin Thoo

Figure 16: 'The Living Water'
Source: Illustration by Calvin Thoo

3.'The Living Water'

....."There is living water about one to two kilometers long and is as wide as the distance between the women's center to that white house....."

'Marty' (2021)

4.'The Serpent and the Living Water'

....."If you are not from this land, you have to rub a rock under your armpit... any rock... and throw it in the living water. The serpent in the water smells your sweat and will decide whether or not you will receive fish from the water... Sometimes the serpent gives you fish and sometimes not....."

'Marty' (2021)

Figure 17: 'The Serpent and The living Water'
Source: Illustration by Calvin Thoo

Figure 16: 'The Men's Meeting'
Source: Illustration by Calvin Thoo

5.'The Mens' Meeting'

The time arrived for the mens' meeting to begin, which takes place to bring together the young and old men in the community. Unfortunately, many of the younger men in the community were still asleep and did not attend the meeting. I could tell that the older men were upset and concerned for the transference of knowledge from old to young and there was clearly a missed opportunity for the younger generation to integrate themselves within their understanding of both traditional and modern society. The mens' meeting was something that I could relate to as I felt comfortable and safe throughout what was being discussed in the meeting. It became clear to me that these meetings were far from tribal, but they are an attempt to broaden knowledge on issues surrounding health (COVID Vaccinations, diabetes etc), but most importantly, it was an opportunity to have a 'yarn'.

The art of storytelling becomes an integral factor within many Aboriginal Communities as this enables a sense of pride and identity across the various communities in the Kimberley region. Other forms of story telling include Fire, Joonba and Art.

Fire

According to the Gooniyandi Healthy Country Plan (2015)[9] Gooniyandi people traditionally managed their country with fire. In the old days Gooniyandi ancestors walked the country along the creeks and rivers, lighting small scale fires with garn-gi (bull wood) firesticks to create a mosaic of burned and unburned country. Fire was used in the right season ensuring plants re-grew and that the fires didn't get too hot. Many culturally important plants, like birla (yam) or Jirrirndi (Hakea) used to make boomerangs are harder to find today because they are sensitive to late season fires.

Camp site or water hole		Windbreak	
Boomerang or clouds		Bushfire	
Man sitting		Digging stick	
Woman sitting		Shield	
River, creek etc		Hands (action)	
Spear		Eggs	
Dish		Animal tracks:	
Spear thrower		Kangaroo	
Track, path		Emu	
Man's footprints		Dingo	
Woman's footprints		Goanna	
Smoke or lightning		Snake	
Ants		Rain	

Figure 17: Dreamtime Symbols-Their meanings
Source: Tales of my grandmother Dreamtime' by Naiura (2019)

The plan continues to explain that fire was not only used to manage country. It was also used in a cultural/traditional context. Our ancestors used fires to signal other groups. If someone got into trouble out on country they knew they could light a fire and the smoke would act as a signal. Fire is also used in ceremonies to smoke visitors and new-borns. When our Rangers carry out prescribed burning nowadays, they combine their traditional knowledge with western scientific knowledge and policies. At the beginning of the year we have fire planning meetings with the Traditional Owners, other landowners and government agencies like DFES (Department of Fire and Emergency Services). For good fire-management it is important that everyone works t-ogether: Traditional Owners, Pastoralists and Government agencies.

Joonba

According to the Joonba Junba and Juju Exhibition Guide (2014)[10] Joonba, junba and juju are three names from Kimberley Aboriginal languages for a specific form of performance driven by narrative, which include cycles of song and dance that incorporates painting, theatre, story and history.

Art

Art is important in conveying stories in the Aboriginal culture. In Bayulu, a local artist has painted on an old car bonnet, which is situated at the women's center.

The connection that the Bayulu community have with their land became crucial in understanding the direct link between language, lore and culture. These elements are strongly tied to nature...

*....**"You feel connected when you walk barefoot...."***

'Marty' (2021)

9. "Gooniyandi Healthy Country Plan," Gooniyandi Aboriginal Corporation / Kimberley Land Council Online, 2015, accessed June 13, 2021, https://static1.squarespace.com/static/59fecece017db2ab70aa1874/t/5a7bdc53ec212d-f82e6b7035/1518066809472/gooniyandi-management-plan-lo-res.pdf
10. "Exhibition Guide: Joonba Junba Juju," Kimberley Aboriginal Artists Online, last modified June 03, 2014, accessed June 13, 2021, https://issuu.com/uts-gallery/docs/jjj_catalogue_web

01.2 Context and Analysis

Accessibility

Nearest town to the Bayulu community is Fitzroy Crossing 14 kilometers away. Amenities such as nearest police station The Australian Bureau of Statistics (ABS) categorises remoteness of areas in Australia into 5 classes on the basis of measuring relative access of these areas to services. ABS classified the Bayulu community as 'Very remote'[11].

Due to the remoteness of this community, access is only by vehicle via the Great Northern Highway. The drive to the community is then 1.2km on a sealed and bituminised road. The Community is serviced by an internal ring road (Jilliyardie Loop and Lamey Ave) which is sealed. All other internal roads to the dwellings are also sealed and kerbed[12].
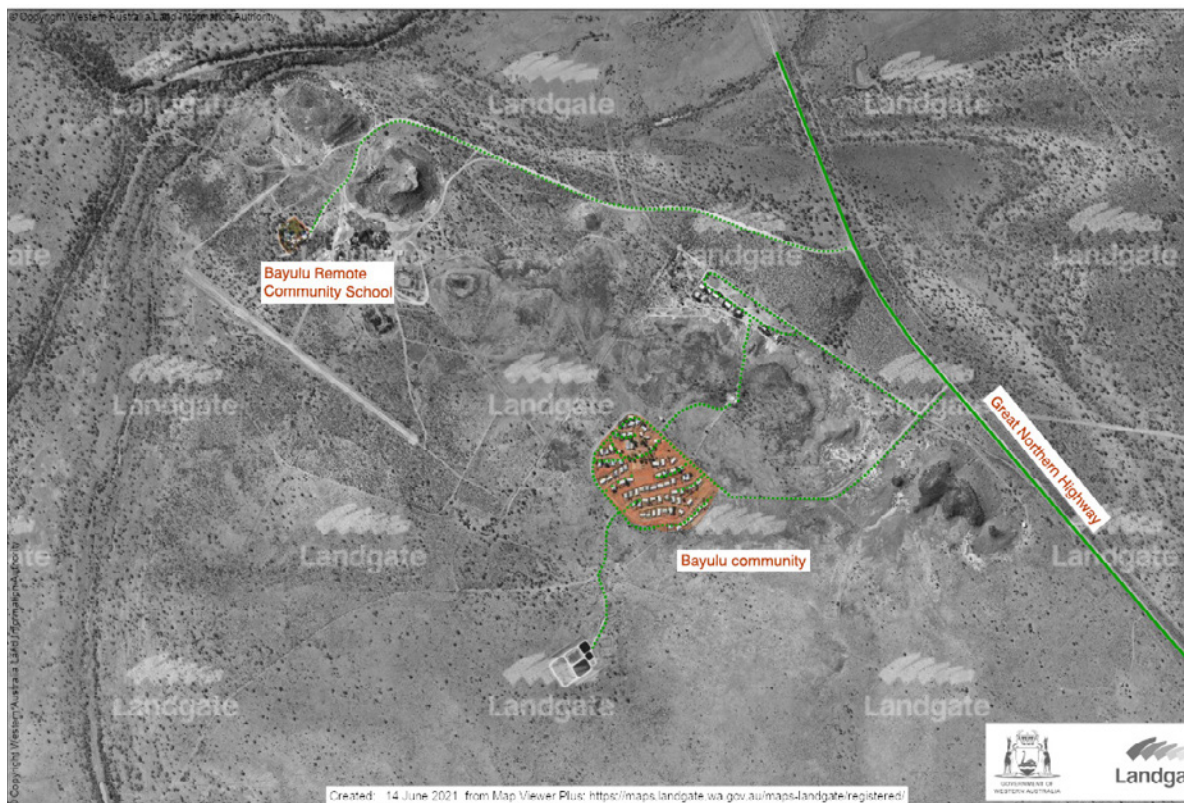
Figure 18: Accessibility and main context diagram
Source: Background image from Government of WA and Landgate

Main forms of transport utilised by residents of the communities are their individual vehicles.

Nearerst school attended by children of Bayulu community is the Bayulu Remote Community School situated approximately 4.9km away. It is a co-ed day school which services the educational need of hundreds of students from prep through year 7. Design team observed Chartered buses fetching the students attending Bayulu Remote School during the site visit dated 3 June 2021.

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11. Department of Planning, Lands & Heritage, "Aboriginal heritage inquiry system", accessed 10 June, 2021, https://www.dplh.wa.gov.au/ahis.
12. Department of Planning, Lands & Heritage and Western Australian Planning Commission, "Bayulu Layout Plan 1: Background Report May 2002," last modified August 2017, https://www.dplh.wa.gov.au/getmedia/085b8536-0eb9-4a96-aad2-5c5c95fcfefe/LOP_Bayulu_LP1_Amendment_11_Report.

Zoning & Amenities

Western Australian Planning Commission (WAPC) prepared context plans for land uses within the community.

Bayulu Layout plan (Amendment 11, 2017):

Legend:
- residential
- commercial
- community
- recreation
- rural
- visitor camping
- industrial
- open space
- public utility

Figure 19: Bayulu: Layout Plan 1-Context (Amendement 11, 2019)
Source: Western Australian Planning Comission (WAPC)

Within the community itself, there is a health clinic and a community store. The community store operates on an inconsistent schedule depending on availability of staff. The Health clinic has been vandalised overtime and is currently not being used due to safety reasons for occupancy of personnel and patients.

Figure 20: Closed-off Bayulu Health Clinic

Figure 21: Bayulu Supermarket (Community Shop)

Waste

Waste Management

As per DPLH report titled "Bayulu Layout Plan 1: Background Report May 2002":

"..waste at the tip facility is predominantly comprised of household rubbish and would generally be consistent with the Department of Environment and Conservation's Landfill Class II classification (putrescible, nonhazardous and nonbiodegradable inert waste). The rubbish tip is not licensed by the Department of Environment and Conservation. The existing sewerage ponds (which were previously used as the tip) were filled in May 2009. As of July 2009 a new fenced tip, with two pits has been constructed."

The report also adds that "The pit and other municipal services are managed by a part time Municipal Services Officer (situated in Bayulu) and also a full time officer who is part of a roaming work crew."

Wastewater management

Remote communities in Western Australia utilises waste stabilisation ponds which allows natural micro-organisms and algae to assist in the breakdown and settlement of degradable organic matter[13].

Bayulu has a reticulated, gravity fed deep sewerage system. Wastewater is disposed into evaporative sewage treatment ponds located approximately 550m south of the community.
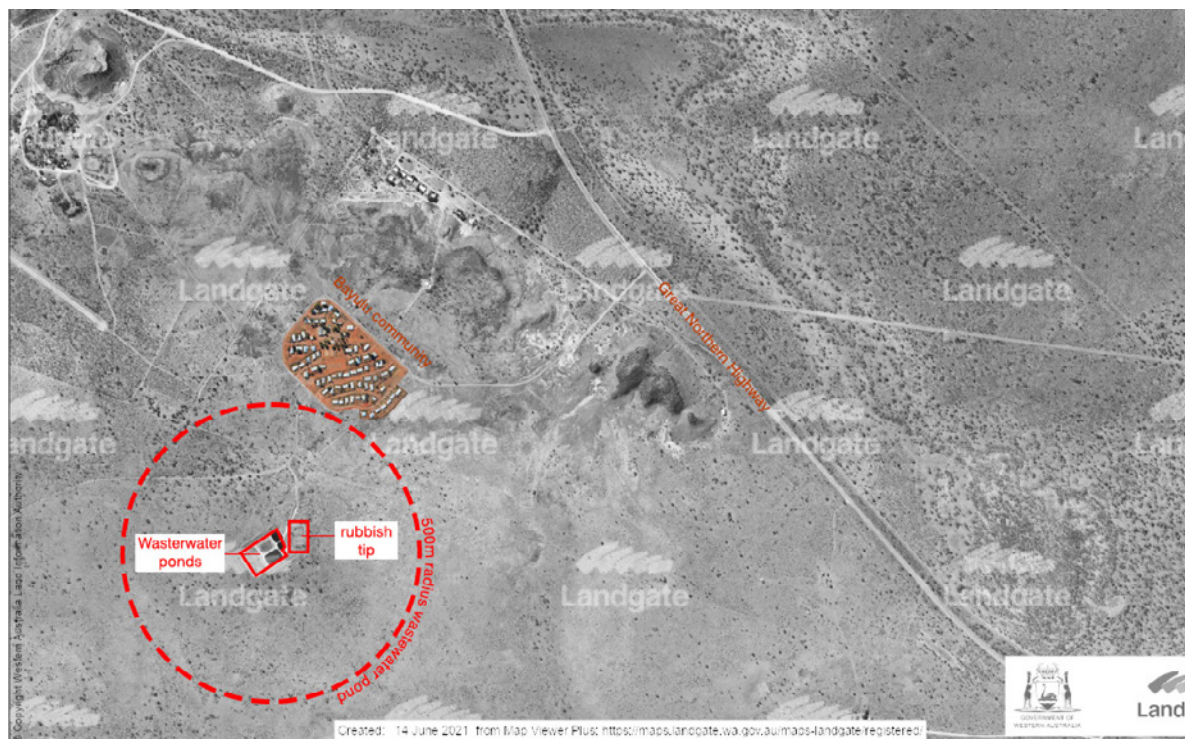

Figure 22: Waste & wastewater management.
Source: Government of WA and Landgate

13. Department of Planning, Lands & Heritage and Western Australian Planning Commission, "Bayulu Layout Plan 1: Background Report May 2002."

Recycling initiatives

Marra Worra Worra runs a recycling program in collaboration with Containers For Change. This recycling program runs within the Kimberley region and it offers a 10 cent incentive in exchange for the collection of each recycable bottle or can. The main collection point for the Bayulu community is at Marra Worra Worra at Fitzroy Crossing[14]. One recylcing bin is provided for this recycling program within Bayulu Community—at the Women's Centre. This recycling program is utilised by the residents although there are still a couple of plastic waste scattered throughout the community.

Figure 23: Collection point at Women's Centre, Bayulu.

1

Collect eligible containers

Most aluminium, glass, plastic, steel and liquid paperboard drink containers between 150ml and 3L are eligible.

2

Take them to a refund point

There are different types of refund points across Western Australia, so find the right one for you.

3

Earn a refund or donate

You'll receive 10 cents for every eligible container you return which you can keep or donate.

Figure 24: Steps for collection on Containers for Change
Source: https://www.containersforchange.com.au/wa/

14. Environs Kimberley, "Recycle and help protect the Kimberley", accessed 15 June, 2021, https://www.environskimberley.org.au/recycle_and_help_the_kimberley.

Water

Potable water

As per DPLH report titled "Bayulu Layout Plan 1: Background Report May 2002":

The Department of Housing, through the Remote Area Essential Services Program (RAESP), has operational responsibility for water quality at Bayulu. Bayulu and Gillarong receive their drinking water supply from two production bores (Bore 13 and Bore 14) located approximately 3km east of the community on GoGo Station leasehold land. Groundwater from the bores is pumped into two elevated water tanks located on a hilltop between Bayulu and Gillarong. Water from the tanks is gravity fed into the community reticulation system. Disinfection occurs via a gas chlorination disinfection system at the bores.

Through new community initiatives by the Departments of Communities and Water Corporation in 2019, three remote Aboriginal communities including Bayulu, received upgraded water services. The community has access to reliable drinking water that meets Australian Drinking Water guidelines and wastewater services.
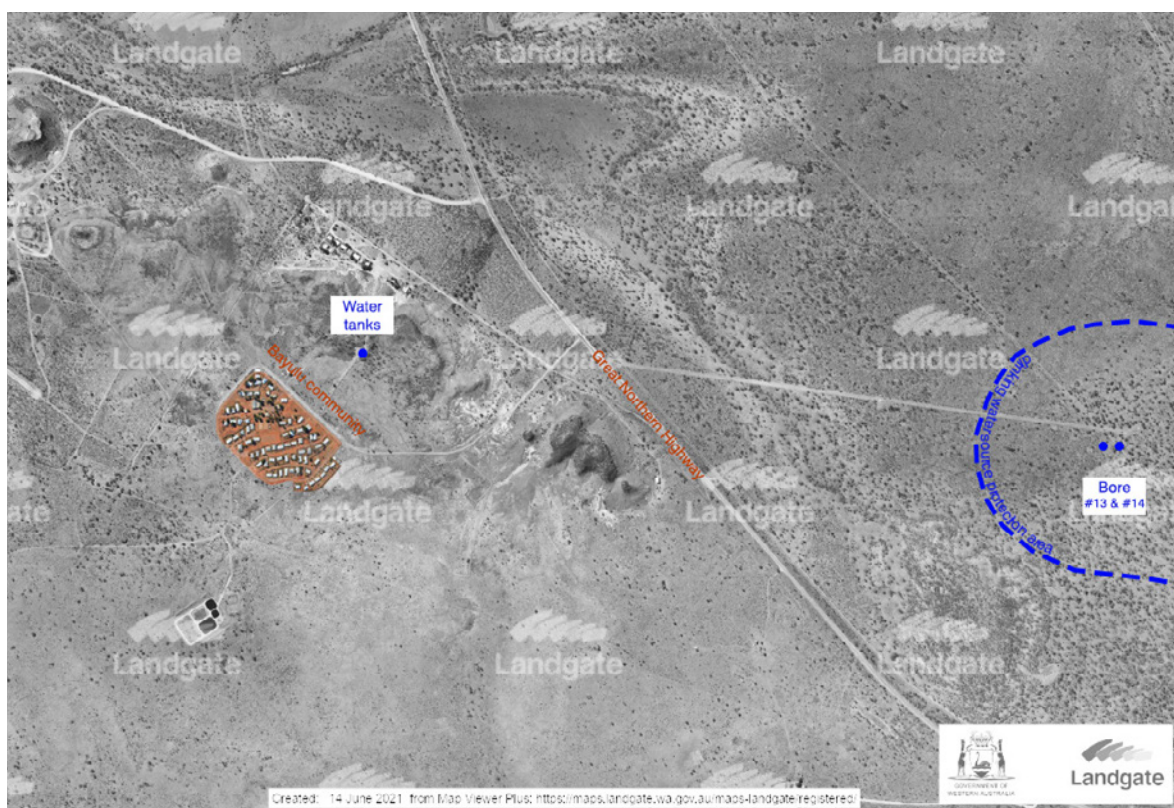
Figure 25: Water services to the Bayulu Community
Source: Government of WA and Landgate

Energy

Bayulu is located within Horizon Power's 'Fitzroy Crossing Electricity Licence Area'. Horizon Power is responsible for the generation, distribution and retail of electricity to Bayulu. The community's energy generation source is gas.

Usage Calculations					
Tariff	Reading Type	Meter Number	Reading Date	Current Meter Reading	Equals Total Units Used
NMI: 80014308554 A2 Residential	Normal	2158111060	09/04/2021	071408	1,762

Current Account Details A2 Residential			
1,762 units @ 26.2026 cents per unit from 10/2/2021	$	461.69	
Supply Charge from 10/2/2021	$	55.42	
GST	$	51.71	
Total	$	**568.82**	▶ $ 568.82
Plus Paper Bill Fee	$	1.09	
GST	$	0.11	
Total	$	**1.20**	▶ $ 1.20
	Total Payable	▶ $	570.02
	Total Includes GST of	$	51.82

Figure 26: Energy usage of Bayulu Supermarket.
Source: Courtesy of Bayulu Supermarket & Horizon Power.

"Horizon Power will install hundreds of kilowatts of solar and battery energy storage systems in six Kimberley communities including Kalumburu, Warmun, Ardyaloon, Beagle Bay, Djarindjin, and Bidyadanga as part of the Remote Communities Centralised Solar Project. This project will help deliver significant environmental benefits with a reduction of CO2 emissions by more than 2000 tonnes each year, which is the equivalent of taking 425 cars off the road. It will also reduce the cost of supplying electricity to remote towns."[15]

In an interview with a Horizon representative on the 4th of June 2021, they suggested that Bayulu has the capacity to implement the Remote Communities Centralised Solar within their community infrastructure. Additionally, they have also proposed the community store to create an account with horizon for proposed basketball. The account will be set up as a prepaid account and payment can be managed through one representative in Bayulu — consolidation of accounts and payments through one entity which is the Community Store.

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15. ESD News, "How Horizon Power is powering regional communities," accessed June 14, 2021, https://esdnews.com.au/how-horizon-power-is-powering-regional-communities/

Materials

Raw Materials

Some potential materials local to the area within Broome are as below. These materials are also found to have been utilised in certain developments around Broome.

Figure 27: Compacted Pindan

Figure 28: Kimberley Stone - Gogo School/Bayulu Cave School

Scrap Materials

A couple of items within the community have been repurposed to serve other functions. Most of these items are used for purposes such as gardening or art.

Figure 29-34: Scrap materials found in Bayulu community

Repurposed Materials

A couple of items within the community have been repurposed to serve other functions. Most of these items are used for purposes such as gardening or art.

Figure 35-37: Repurposed materials found in Bayulu community

Communications

Telstra acts as the only telco providing coverage to the vicinity of the Bayulu community.
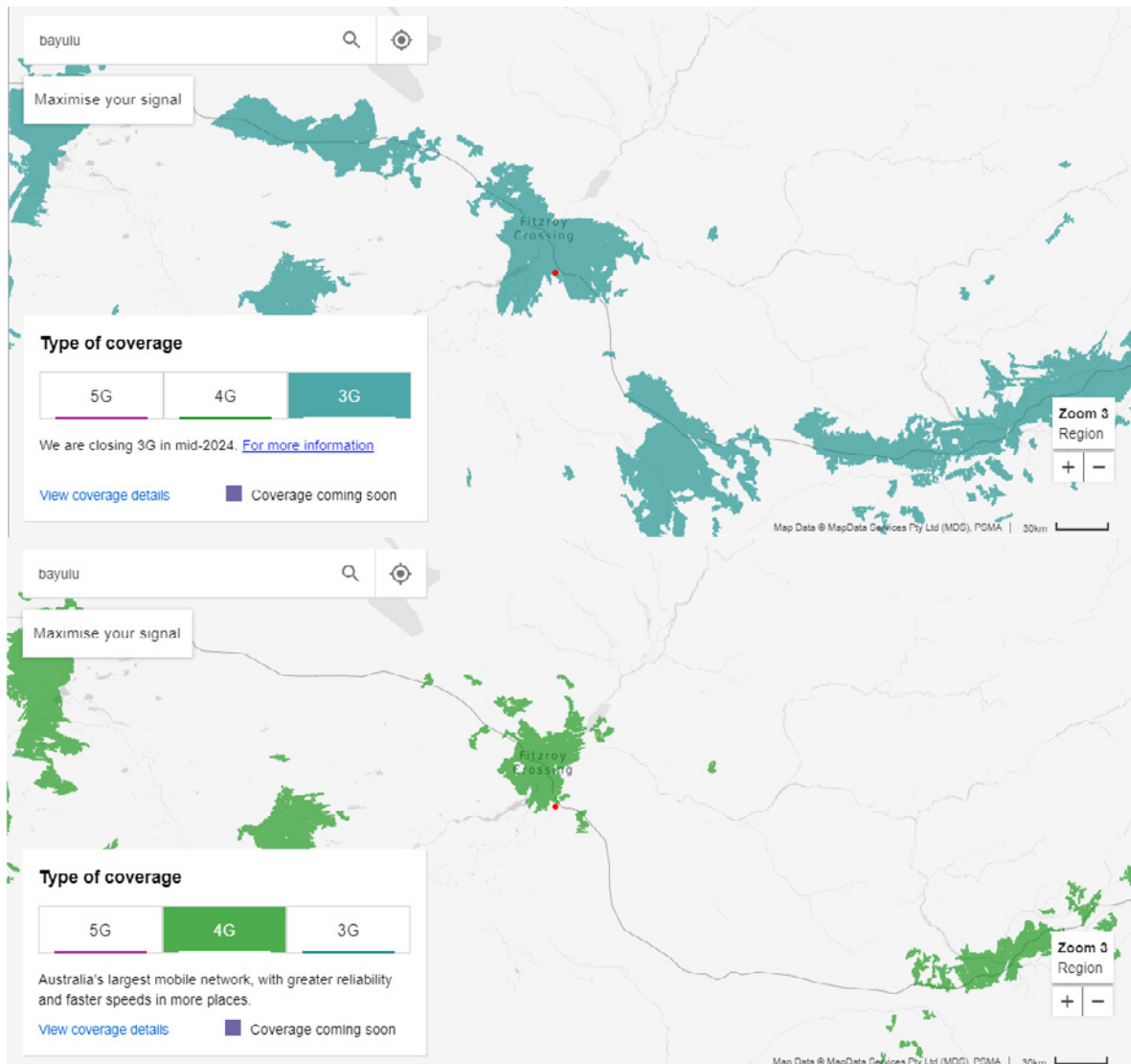
Figure 38-39: Telstra coverage, (Top) 3G coverage, (Bottom) 4G coverage.
Source: Telstra, "Our coverage maps," https://www.telstra.com.au/coverage-networks/our-coverage

Residents of the community congregate every now and then at the Women's Centre, and areas surrounding the Women's Centre such as at the front of the Community Shop and the run down Community Hall.

Figure 40: Working residents having a break together in front of the Women's Centre.

Figure 41: Residents gathering and socialising at the Women's Hall.

01.3 Basketball Courts

Conditions of existing basketball courts

Figure 42: Basketball court 1

Figure 43 Basketball court 2

Figure 44: Condition of concrete slab

Figure 45: Base of hoop post

Figure 46: Area between courts

Figure 47: Edge of court slab

Figure 48: Cracks on court

Figure 49: Condition of existing spectator seating

Figure 50: Condition of existing hoop - Court 1

Figure 51: Condition of existing hoop - Court 2

Specifications of existing courts
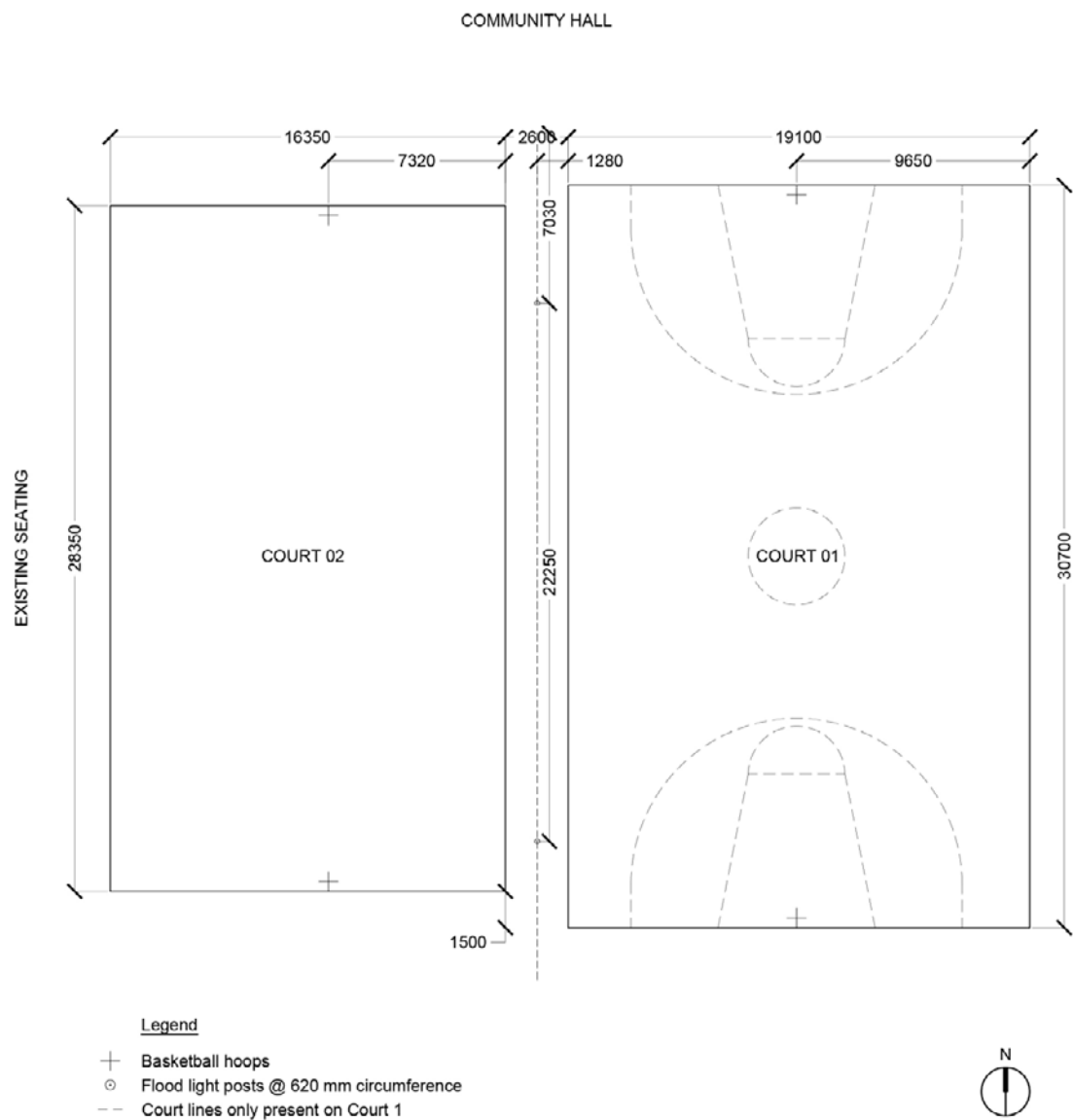
Figure 52: Court specifications

Signs of vandalism on basketball courts
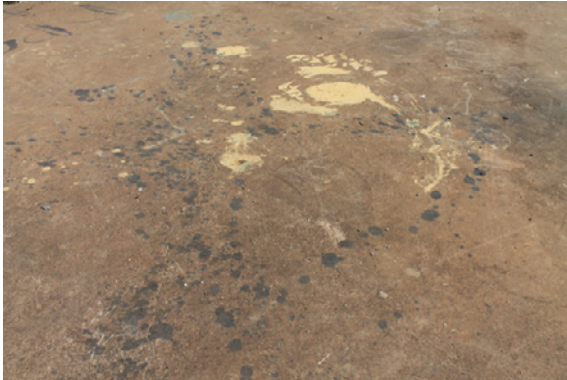
Figure 53-56: Vandalism on courts

Signs of vandalism on basketball courts

Figure 57-62: Types of vandalism ranges from painting, drawing or throwing of items

Existing lighting conditions

Figure 63: 8 floodlights and 6 posts - one on each corner of the courts

Figure 64: Existing floodlights are damaged and inoperable

Figure 65: Power box located near the courts

Lighting concerns

Height of lights   -   to prevent kids from vandalising or damaging them
Material   -   to withstand heat of peak summer sun (melting)
Usability   -   timer-based or ability to operate the lights using tokens

Condition of existing structure and buildings

Figure 66: Communtity Hall

Figure 67-69: Existing structure of the community hall

Figure 70-76: Structure and facilities of community hall

Condition of existing services

Figure 77: Abandoned and disconnected water pipes

Figure 78: Exposed water pipes located next to courts

User patterns

Figure 79: Main roads leading to courts

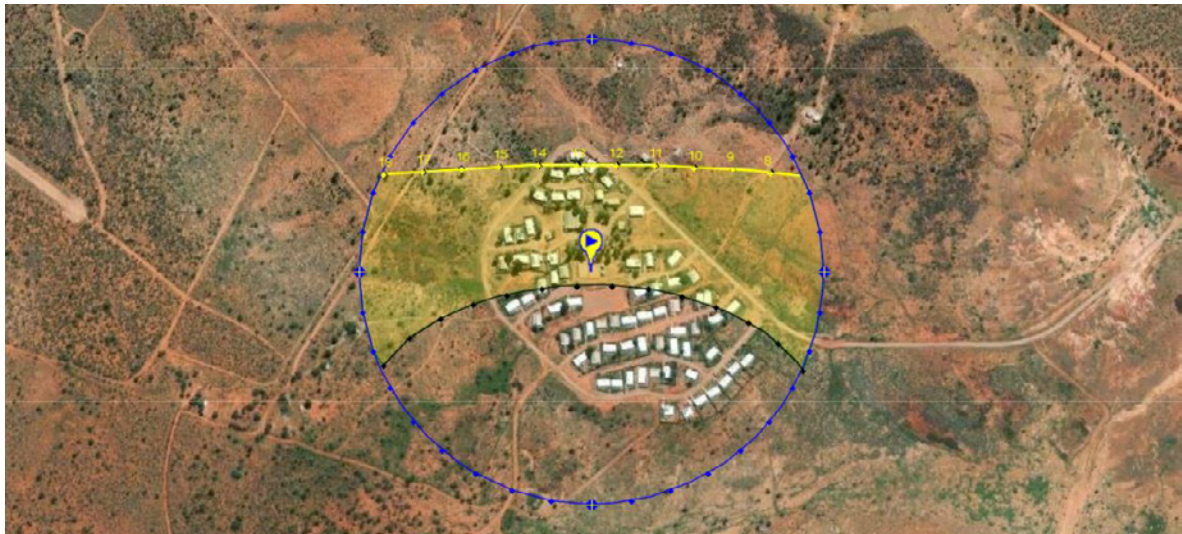Figure 80: Informal roads to, from and surrounding the courts

Sun path

Figure 81: Annual sun path
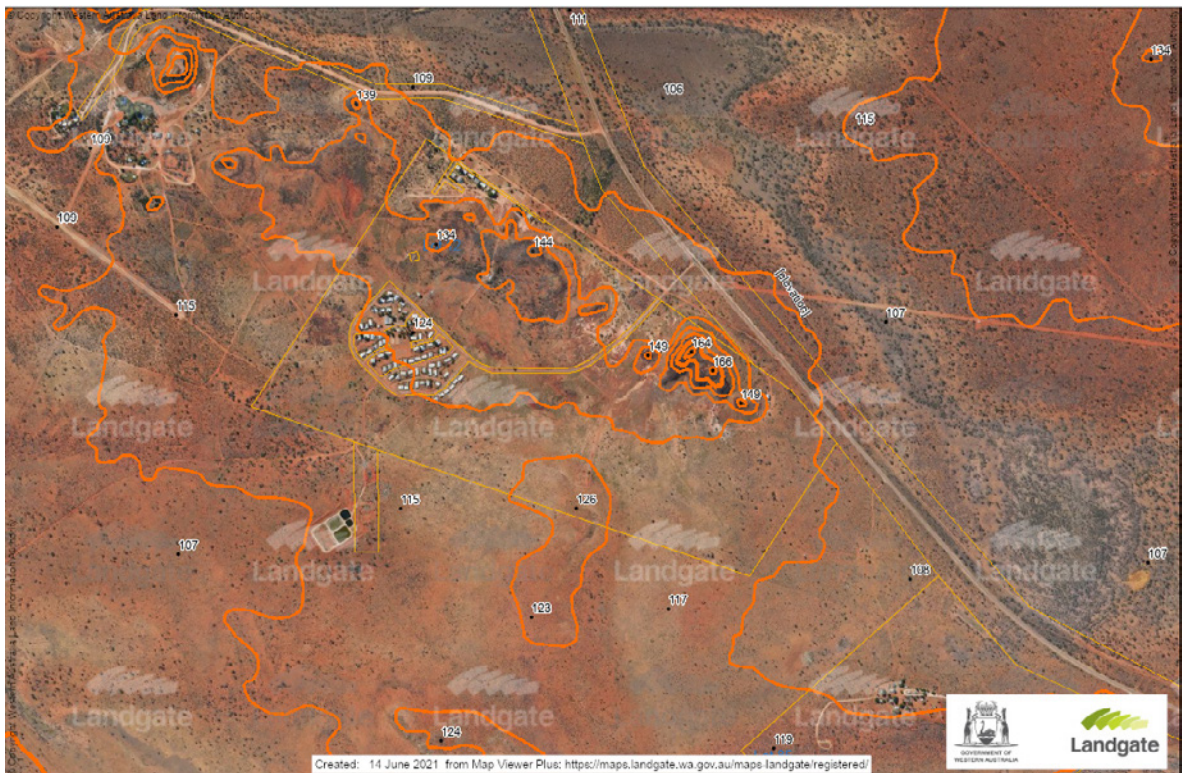Source: Government of WA and Landgate

Topography

Figure 82: Topogrphay of the land aroun Bayulu
Source: Government of WA and Landgate

Opportunities (Broome)

This section demonstrates existing built forms, construction methods or sites of interest in Broom. Examples are visual recordings from the design team's site visit to mulitple areas within the Kimberley region.

Liyan-ngan Nyirrwa

"The Liyan-ngan Nyirrwa was seeded by Nyamba Buru Yawuru as a community project that included; a community garden, a cafe, a workshop, a multi-purpose hall and a language centre. The roots of the project are set within an active pursuit by Yawuru to heal inter-generational trauma within their community."

"The primary design narrative of the Liyan-ngan Nyirrwa is that 'culture is never stagnant'. Rather, culture is a resilient, dynamic, living and resilient teacher." [16]

Figure 83: Fireplace.
Source: https://www.lairdtran.com.au/projects

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16. "Liyan-ngan Nyirrwa," Laird Tran Studio, November 7, 2007, accessed June 14, 2021, https://www.lairdtran.com.au/projects.

Use of perforated sheeting around Broome
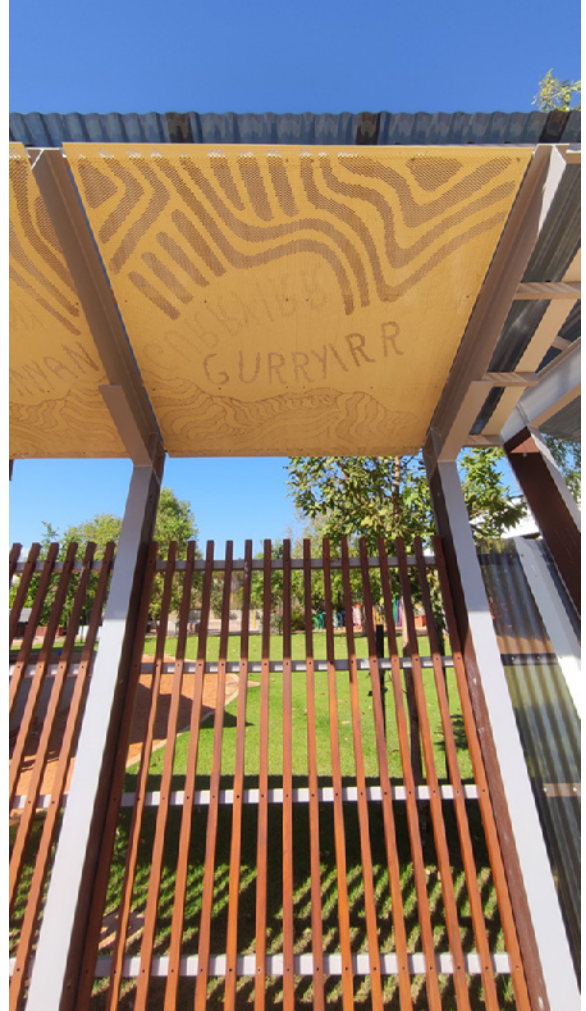
Liyan-ngan Nyirrwa

Figure 84-85: Perforated metal sheeting as shelter

Roebuck Bay Lookout

Figure 86-87: Perforated metal sheeting as overhead shelter

Town Beach Bench

Figure 88: Stone can be used as a bench on its own, or as one with a backrest

Figure 89 (Middle-left)-90 (bottom -left): Stone bench   Figure 91 (Bottom-right): Stone bench and joinery details

Town Beach Playground

Playground is integrated with a skate/bike track around its external parameter following the existing terrain.

Figure 92-93: Track built along the slopes of exsiting terrain

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