



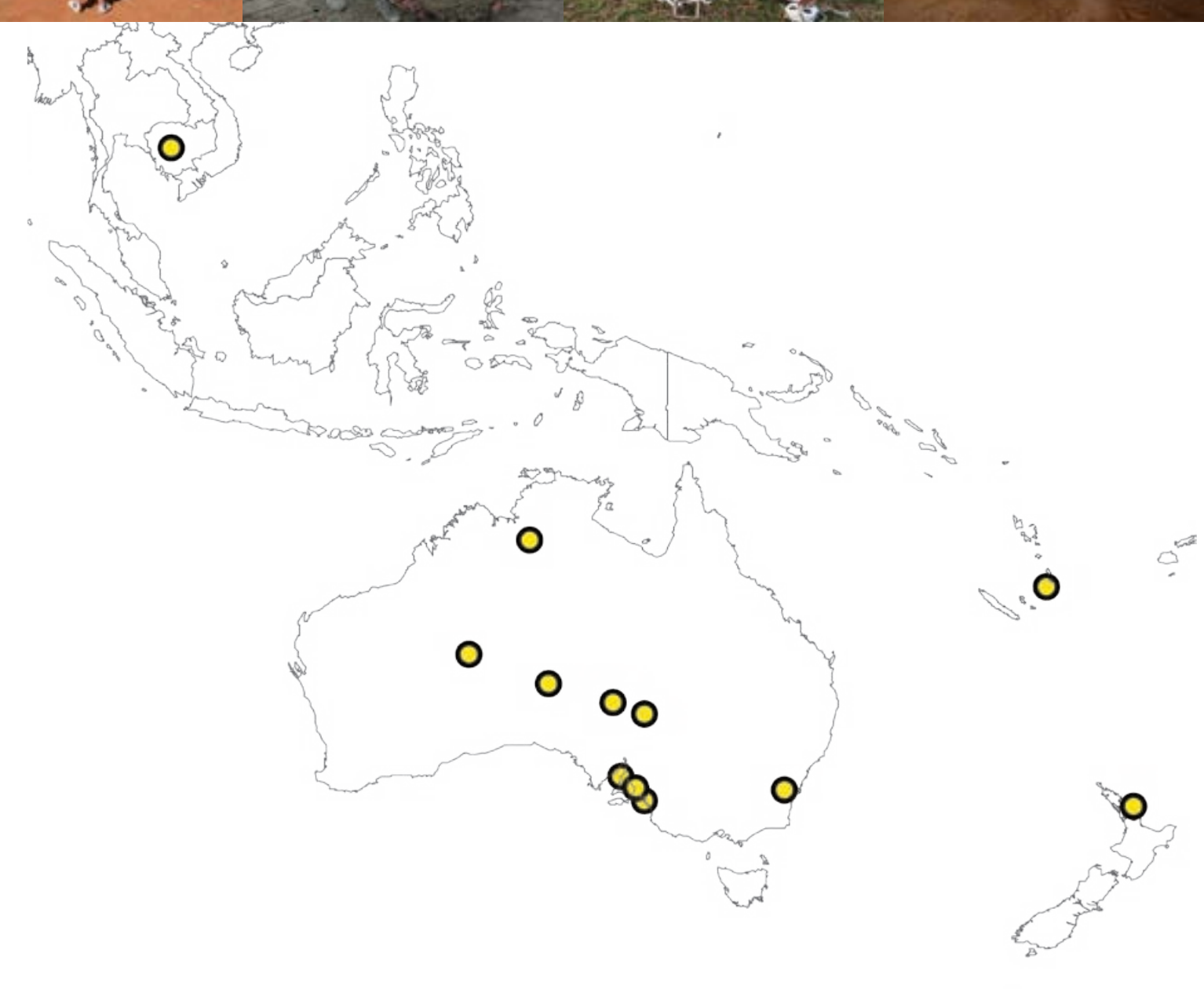
The Story of Design Construct

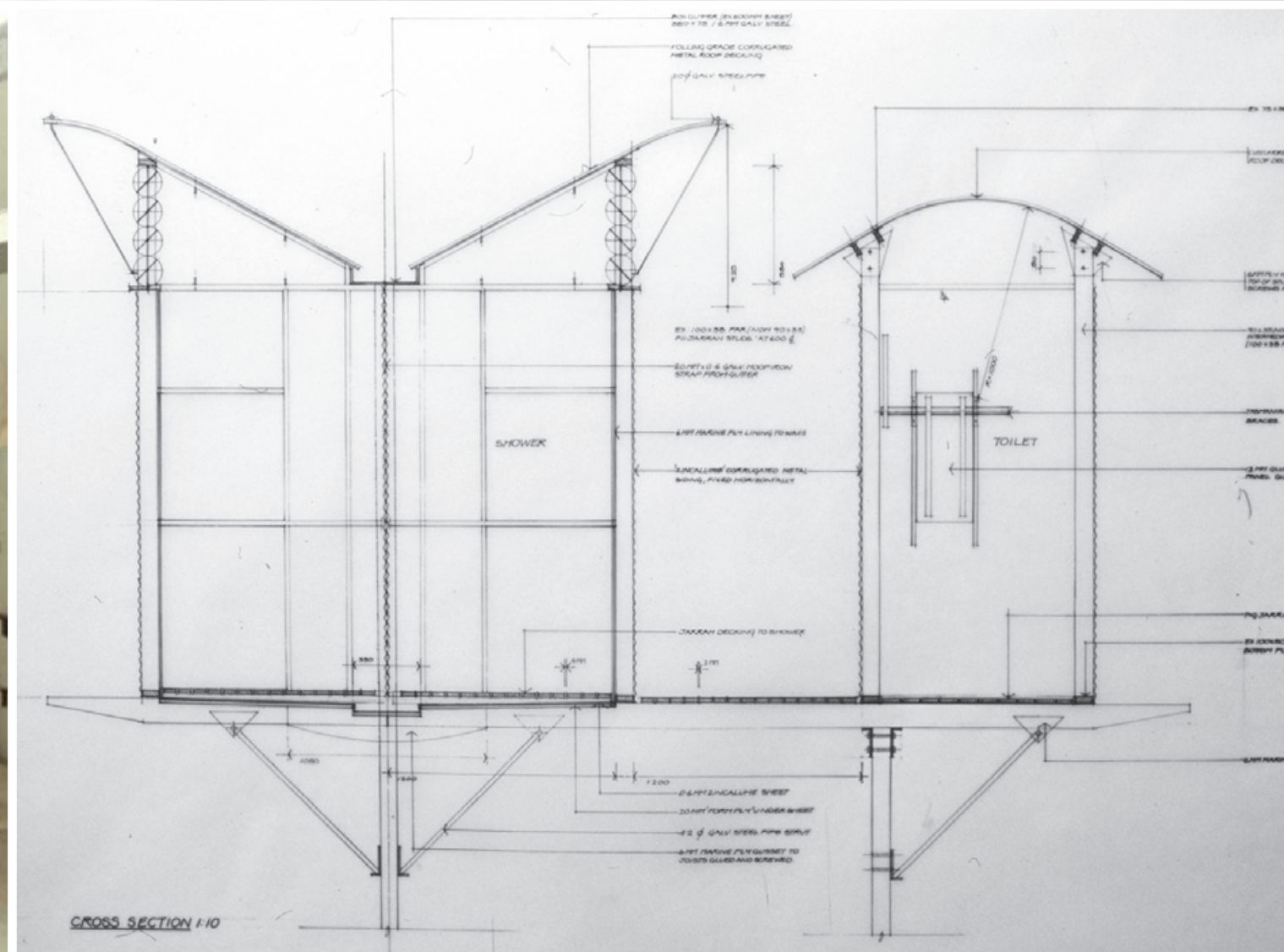
The Design Construct program was initiated in 1993 at the University of South Australia, with the aim of complimenting theoretical architectural education with hands-on construction projects. The program began as an unstructured elective program offered to architecture and design students with limited tools and equipment, often borrowed or provided by staff. As the program became more established, many projects became the focus of core architectural design studios providing students the opportunity to see and participate in the development from schematic designs into detailed documentation drawings, through to prefabrication and on-site construction into finished buildings.

In 1999, the program expanded its scope by undertaking its first Aboriginal project in an extremely remote and arid location in the Gibson Desert of Western Australia. This project and subsequent Aboriginal and remote projects resulted in specialisations in cross-cultural consultation,

prefabrication, transportation, remote service technologies and passive design strategies for extreme arid, alpine and tropical climates, which carry into current projects in Vanuatu and Cambodia. As the scope of projects has widened so has the range of professional disciplines students are drawn from including engineering, construction management, building and urban and regional planning.

By the end of 2011 the growth of the program had exceeded the capacity of workshop facilities, which was addressed in 2016 by the construction of University funded purpose made fabrication facilities at the Mawson Lakes campus. With the University's continued support over 24 years, the program has become the longest running and largest practice-based teaching program of its type in Australasia and continues into Adelaide University. The following pages show past projects from the program.





Kanmantoo Mine Facilities

Timeline: 1993 - 1995

Client: University of South Australia

Location: Kanmantoo, South Australia

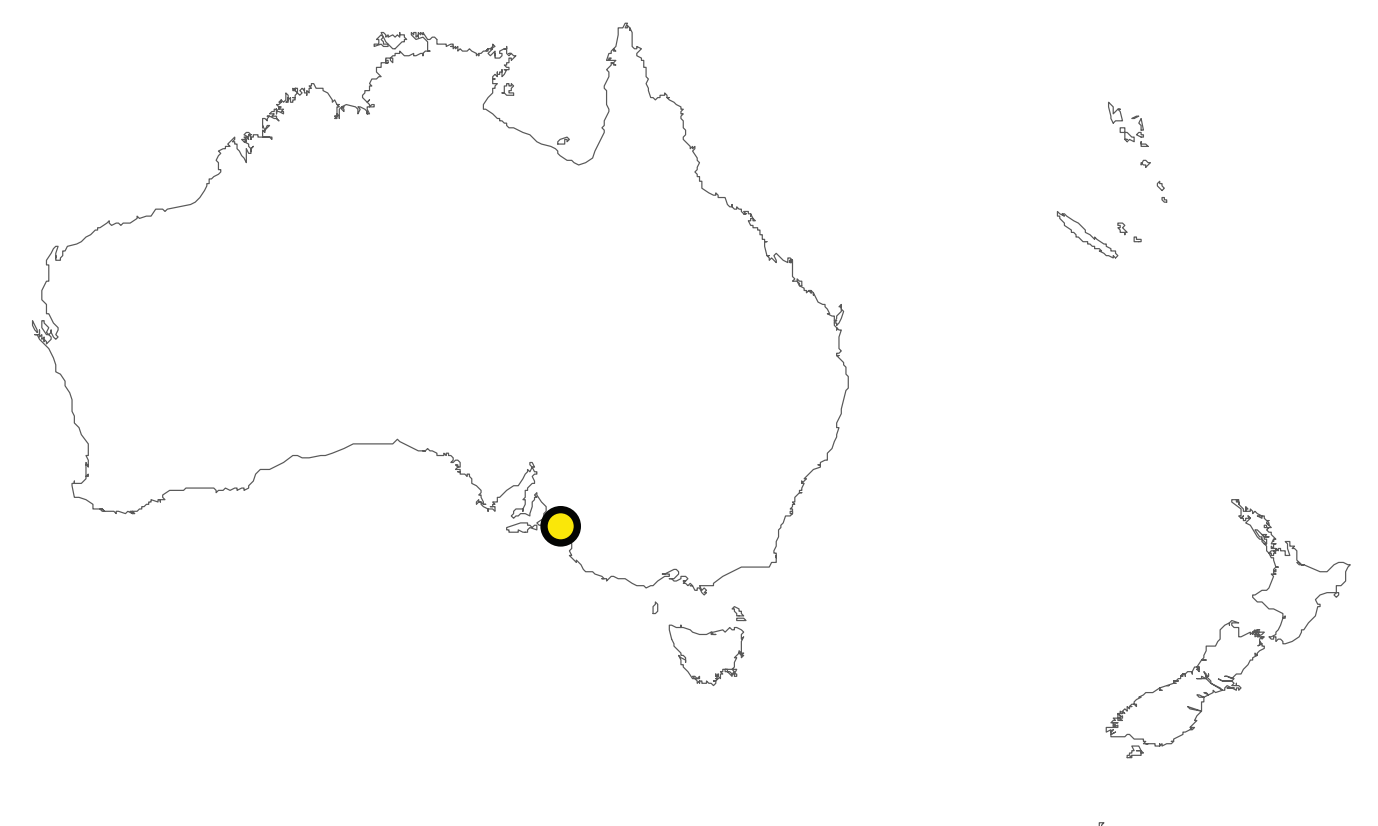
Funding: University of South Australia

The first student project of the newly established Design Construct program involved the design and construction of amenities on a disused mine site in the eastern Adelaide Hills at Kanmantoo, 75km from Adelaide.

In the early 1990's, the disused copper mine at Kanmantoo was bequeathed to the University of South Australia which the University was keen to develop for teaching and research programs. This presented an opportunity for the Design Construct program to design and build basic amenities to support an ongoing building program funded by the University. This first project was designed and documented by hand before the widespread adoption of computer based drawing. The buildings were modest in scale due to the program's limited

tools and equipment but nevertheless experimental in the use of lightweight monocoque construction employing steel wall and roof cladding as the principle means of achieving structural integrity. The building frames were constructed of kiln dried jarrah hardwood and the handles, hinges and hardware fabricated by students in the School of Architecture and Design workshops.

In 1995, due to a rationalisation of assets, the University sold the mine and the project was not completed.





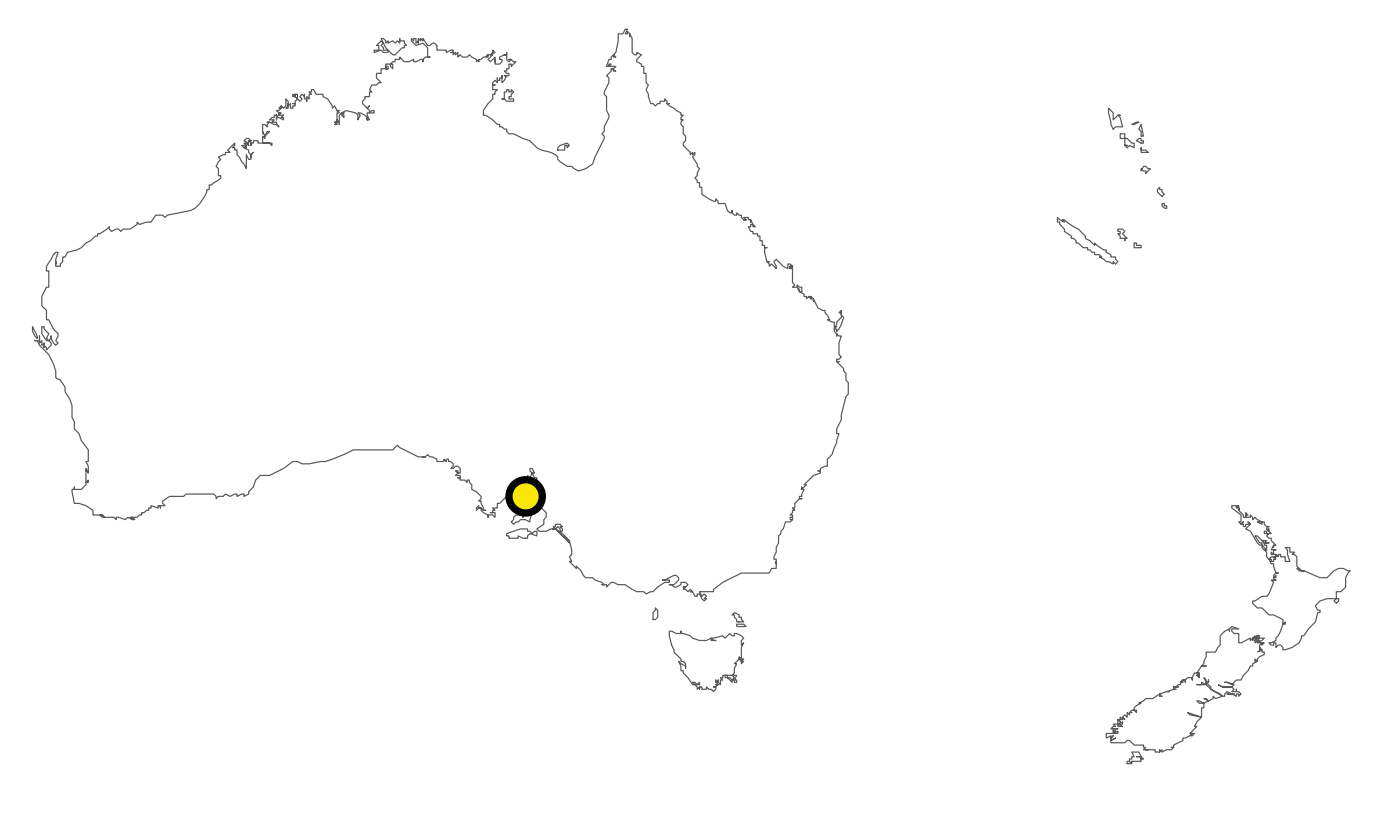
Western Mining Corporation Visitor's Centre

Timeline: 1995 - 1998
 Client: Council of the Copper Coast
 Location: Moonta, South Australia
 Funding: Western Mining Corporation

In 1995, in recognition of previous experience building on a mine site, the Design Construct program was invited by the Council of the Copper Coast to design and construct a Visitor's Centre at the disused Wheal Hughes mine near Moonta, about 175km from Adelaide. The design for the project evolved from a third year architectural design studio from which the Council selected a student proposal which combined contrasting construction strategies to achieve a large open span visitor assembly and interpretive area using cross braced steel framing with a more enclosed office and ablution facilities using braced plywood timber framing. Prefabrication of the project began in 1996 and students were encouraged to utilise the full capacity of the workshop to design and manufacture a large range of the building hardware such as balustrades,

innovative door latches and locks, glazing frames and lighting fixtures. Construction on site followed in 1997 involving students and staff in numerous two week intensive elective courses.

The project was opened by the then Premier of South Australia the Hon. John Olsen in 1998, and in 1999, the Western Mining Corporation Visitor's Centre was awarded an Architectural Design Commendation by the then Royal Australian Institute of Architects.





Patjarr Community Visitor's Centre

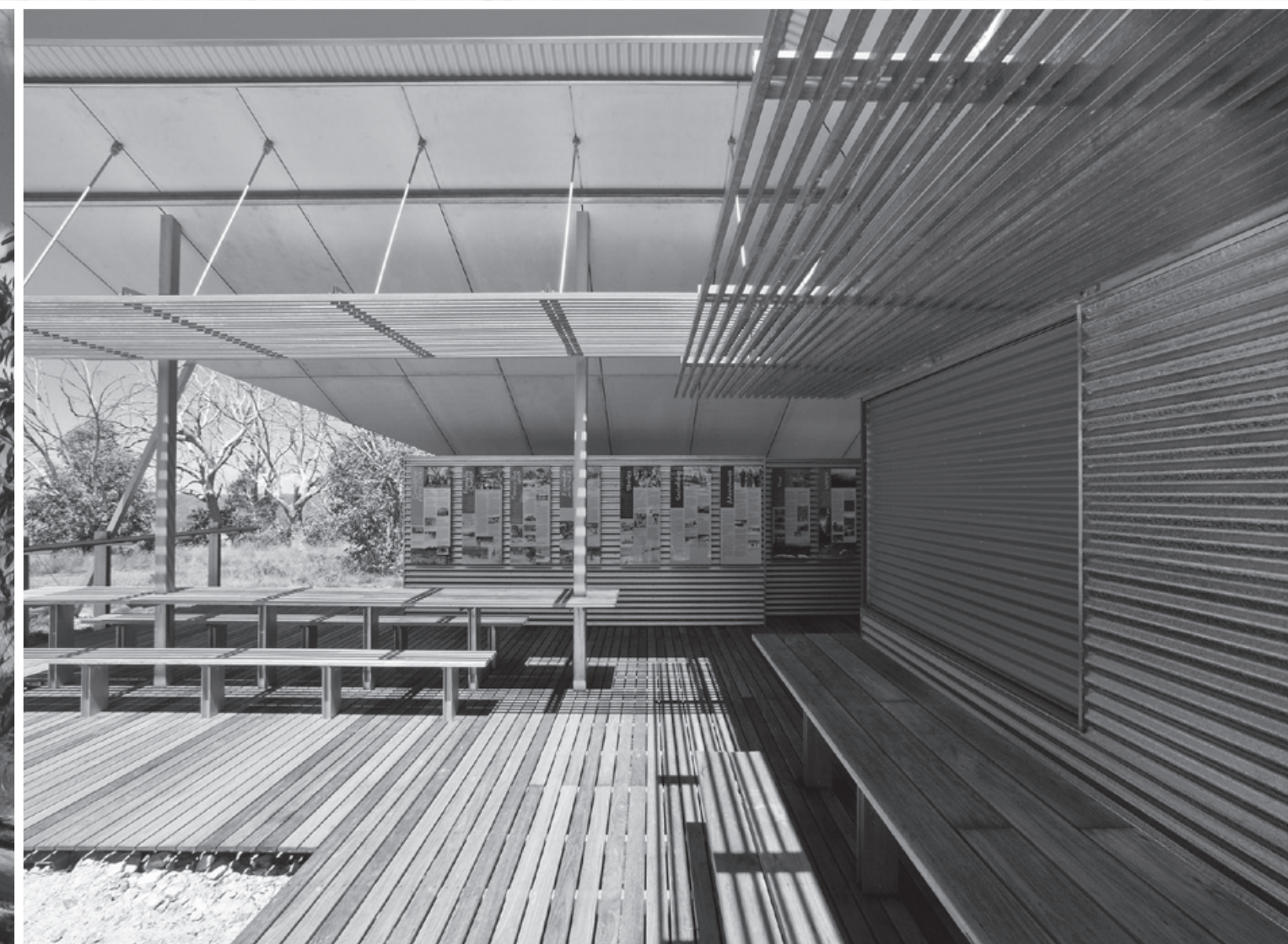
Timeline: 1999 - 2003
Client: Patjarr Aboriginal Community
Location: Patjarr, Gibson Desert, Western Australia
Funding: Western Australian Lotteries Commission

In 1999, architecture students from the Universities of South Australia and New South Wales were invited to collaborate in various design projects in and around the remote Aboriginal community of Warburton, Western Australia. This was the first engagement the Design Construct program had had with an Aboriginal community and the plight of an ancient culture disrupted by the influences of the modern world. One of the student designs that was further developed was a Visitor's Centre and Gallery for the Patjarr Aboriginal Community for the sale of art and artefacts to fly-in visitors to the community. This project, being located north of Warburton in the Gibson Desert, 2,400km from Adelaide required the Design Construct program to develop specialised methods of prefabrication, transportation and construction appropriate for the

arid desert environment and the long distances over extremely rough roads. The building was almost entirely prefabricated to minimise construction time on site and packed into a 12m container for transport by semitrailer.

Students, who were camped on site, completed the project over 3 weeks in 2003. In 2004 the Patjarr Aboriginal Community Visitor's Centre was awarded the Colorbond Steel Award by the Royal Australian Institute of Architects.





Mt Franklin Visitors Centre

Timeline: 2005 - 2007

Client: ACT Parks and Conservation Service

Location: Mt Franklin, Namadji National Park, Australian Capital Territory

Funding: Department of the Environment, Australian Capital Territory

In 2003, devastating bushfires destroyed many historic buildings in the High Country of Victoria, NSW and the ACT including the memorable Mt Franklin Chalet. Following the fires the Design Construct program was invited by the Namadji National Park in the ACT to design and construct a Day Visitor and Search and Rescue Facility adjacent to the old chalet site. This project presented new design challenges, particularly for a building on a remote alpine site exposed to extreme climatic variations including snow, gale force winds and bushfires.

The design for this project was the focus of a third year architectural design studio from which the ACT Parks and Conservation Service selected a proposal which combined day visitor shelter, amenities and

interpretive information with an internal space for search and rescue operations and historic displays of artifacts retrieved from the old chalet. The project employed a hybrid construction system combining the thermal insulation properties of timber with the structural strength of steel to achieve high levels of insulation and lightweight structural framing. The building was prefabricated in the University workshops in Adelaide, transported by container and completed on site during 2007.

In 2008 the Mt Franklin Visitor's Shelter was awarded the Australian Institute of Architects Small Project Award and the Colorbond Steel Award.





Mimili Single Men's Housing

Timeline: 2008 - 2011

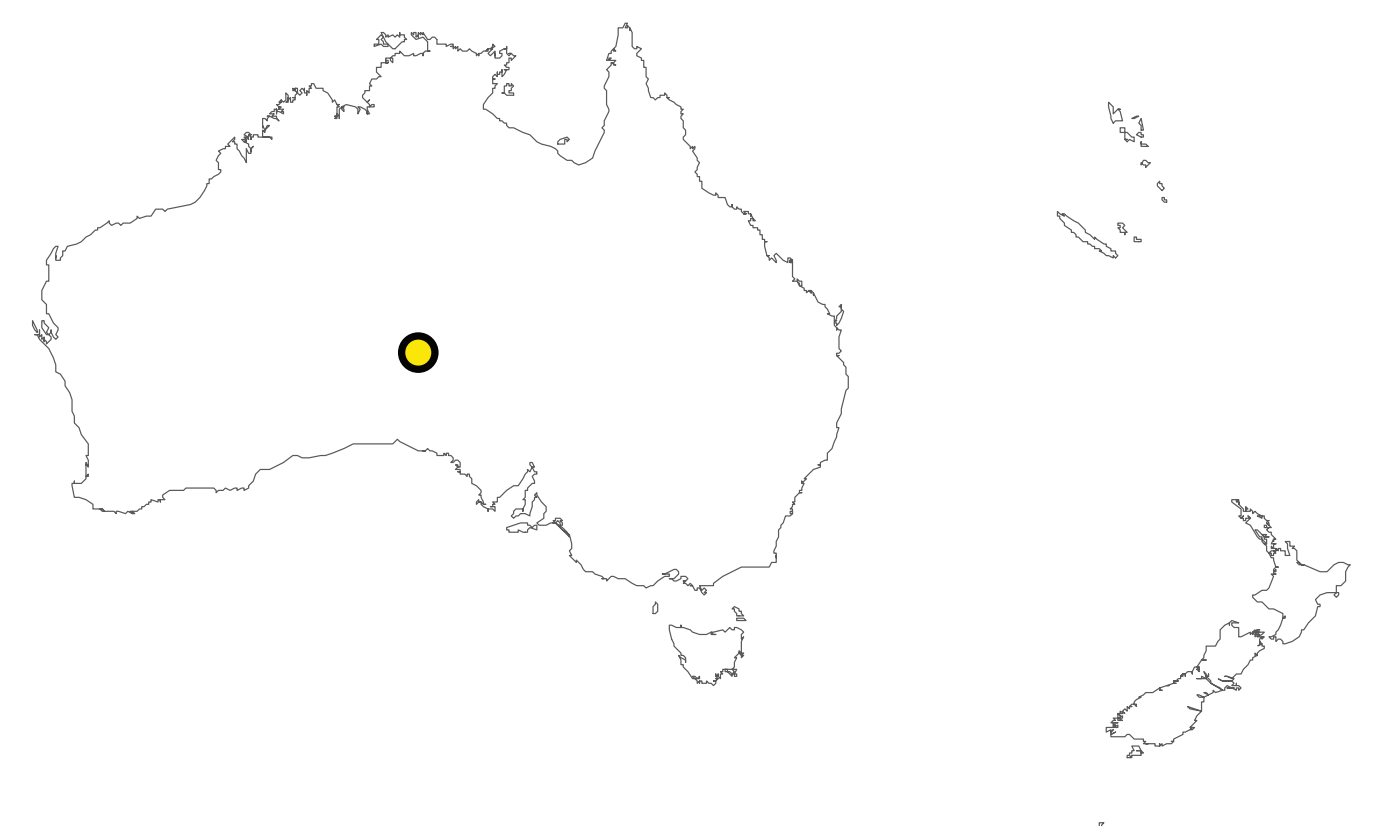
Client: Mimili Aboriginal Community

Location: Anangu Pitjantjatjara Yankunytjatjara Lands, South Australia

Funding: Department of Families and Communities, South Australia

In 2005, following funded research into culturally appropriate methods for consultation, the Design Construct program was engaged by the Department of Families and Communities to design and construct single men's housing for the Mimili Aboriginal Community. This project was aimed at providing culturally appropriate housing for single men who were traditionally separated from extended family groups to learn men's business. Staff and students engaged in lengthy community consultation which identified the need for other housing types including single women's housing and independent living accommodation for the elderly. Of these options the Mimili community requested priority be given to the single men's housing. Prefabrication of the project began in 2008 involving students in 16 intensive two week prefabrication

courses. In response to the arid desert location the housing was constructed of insulated steel frames lined internally with plywood constructed over raised concrete slabs to achieve high thermal mass. In 2009, the first of six intensive on-site construction elective courses began each involving as many as 40 students who worked with the Mimili community to complete the project. In all, the project involved about 500 students many of whom enrolled in more than one of the several courses offered. The project received the Chancellor's Award for Community Engagement in 2009 and was completed in June 2011.





Mobile Art Architecture + Design Studio [MAADS]

Timeline: 2011 - 2017

Client: School of Art Architecture and Design

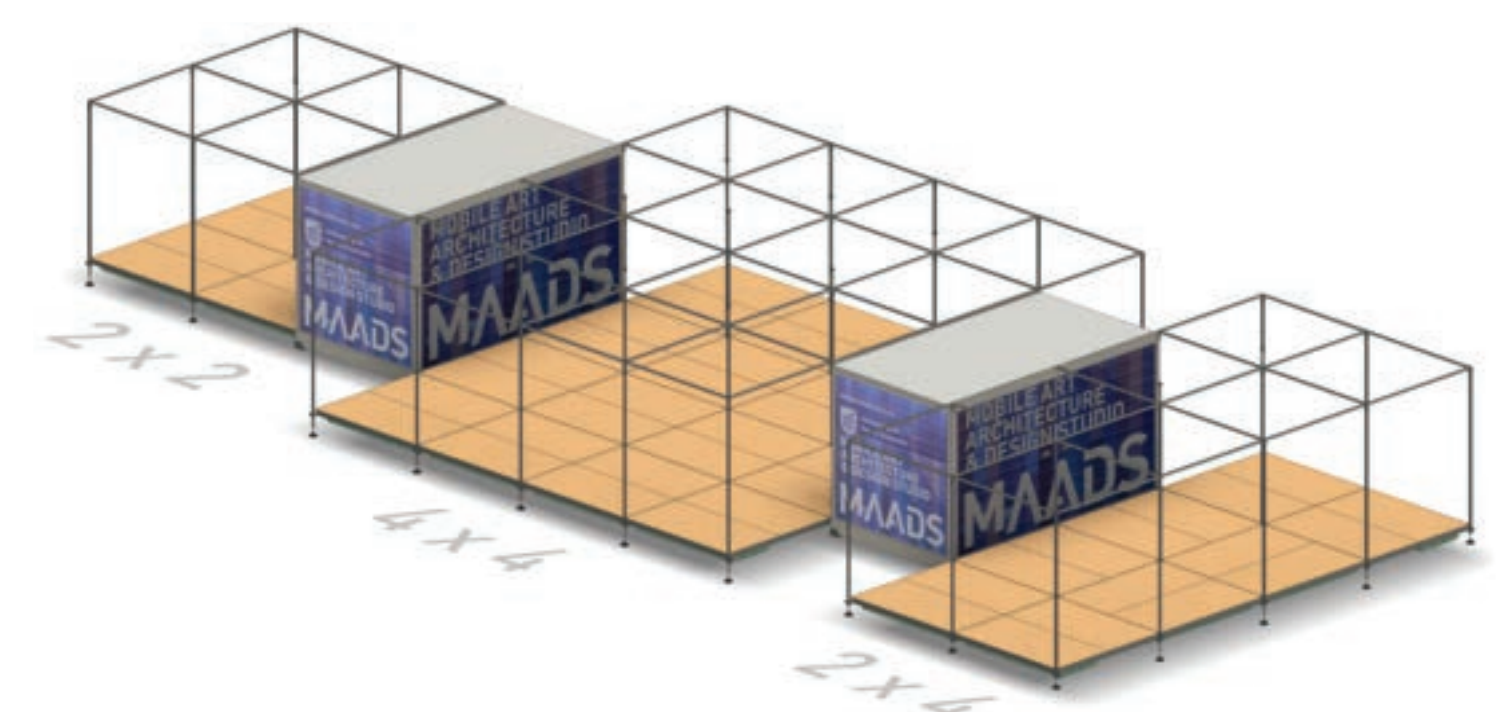
Location: Remote Australian communities

Funding: University of South Australia

In 2011, the Design Construct program was engaged to design and construct a University funded Mobile Art Architecture and Design Studio [MAADS] to support the School of Art Architecture and Design in providing mobile studio, exhibition and site accommodation facilities for student field projects outside Adelaide. The design of MAADS is based around a flatbed truck and crane which transport container-like pods containing modular all weather raised floor tents, display panels, shelving, tables, chairs, kitchen benches, supported when required, by a service pod supplying lighting, power, gas, and hot water. The tent structures can be configured in various combinations to provide up to 128m² of level floor area structurally stabilised by underfloor water tanks which provide ballast in windy conditions. Overall, the MAADS system has incorporated the

design ideas of architecture, interior architecture, industrial design and engineering students to achieve a mobile accommodation system with a level of lightness, flexibility and amenity that commercial systems only partially achieve.

The MAADS project significantly augments the Design Construct program's capacity to engage students in remote design and construction projects by providing on-site accommodation facilities and using the truck and crane for the transportation of materials or the erection of building frames.





Chris Steele Scott Pavilion

Timeline: 2014 – 2015

Client: Friends of the Botanic Garden Foundation

Location: Mount Lofty, South Australia

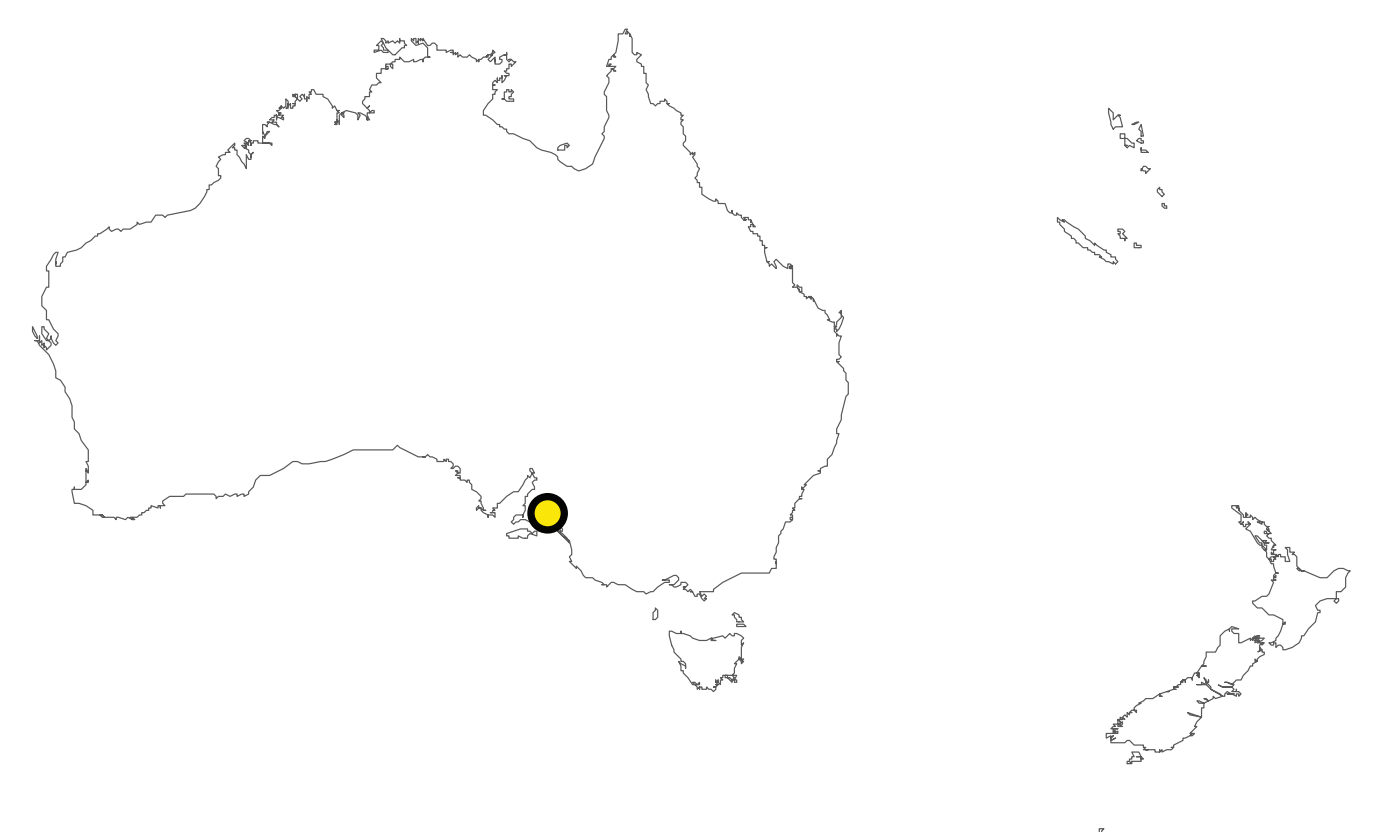
Funding: Friends of the Botanic Garden Foundation

The Chris Steele Scott Pavilion is a collaborative outcome between the Mount Lofty Botanic Garden Support Group and the Design Construct program. A pavilion to encourage and enhance visitor enjoyment of the Garden had been envisaged in master-plans but never realised. In 2012, the Support Group embarked on a fund raising program to finance the project and entered into a partnership with the University of South Australia.

Third year architecture students presented individual schemes from which the client selected a proposal designed by Samuel Chua. Samuel, along with other students further developed the design, working closely with the client representative and project manager, David Gilbert. Building on a strong history of design construct, UniSA collaborated on

all stages of the project, leading students through design, prefabrication and construction.

The pavilion was opened in November, 2015 with a large show of support, which reflected the collective effort which made this small building possible. The pavilion is for many, much more than a shelter. It's a symbol of community collaboration, fundraising, services offered in kind, the realisation of student ideas and lastly, a memorial to the woman who initiated the idea. In 2016 the project received the Australian Civic Trust People's Choice Award.





Port Resolution Project

Timeline: 2012 – ongoing

Client: Port Resolution Community

Location: Tanna Island, Vanuatu

Funding: University of South Australia

In 2012, on the basis of evolving experience with remote Indigenous projects, the Chiefs of Tanna Island invited the Design Construct program to the community at Port Resolution to design and construct an eco-tourism enterprise to generate income for children's education and financial independence to resist foreign land purchases. Port Resolution is a remote and idyllic location surrounded by the crystal waters of the South Pacific. It is typical of outlying island villages, having no reticulated power or water. Food is cooked on open fires and there are only three rudimentary flushing toilets and cold showers, provided primarily for tourists.

The project aims to provide a successful enterprise delivering improved visitor experience, achieved by combining Melanesian and Western knowledge, skills and resources. To that end, the community provide materials, skills and labour and UniSA provide tools, technical hardware, engineering and financial support. The majority of funds have been raised through UniSA students selling cakes, running barbeques, exhibitions, raffles and film nights.

The first bungalow will be ready to take its first visitors in December 2017, providing a small step towards financial independence and a model for the community to replicate. The project received the Chancellor's Award for Community Engagement in 2012.





Fish River Ranger Accommodation

Timeline: 2016 – 2018

Client: Indigenous Land and Sea Corporation

Location: Fish River, Northern Territory

Funding: Indigenous Land Corporation

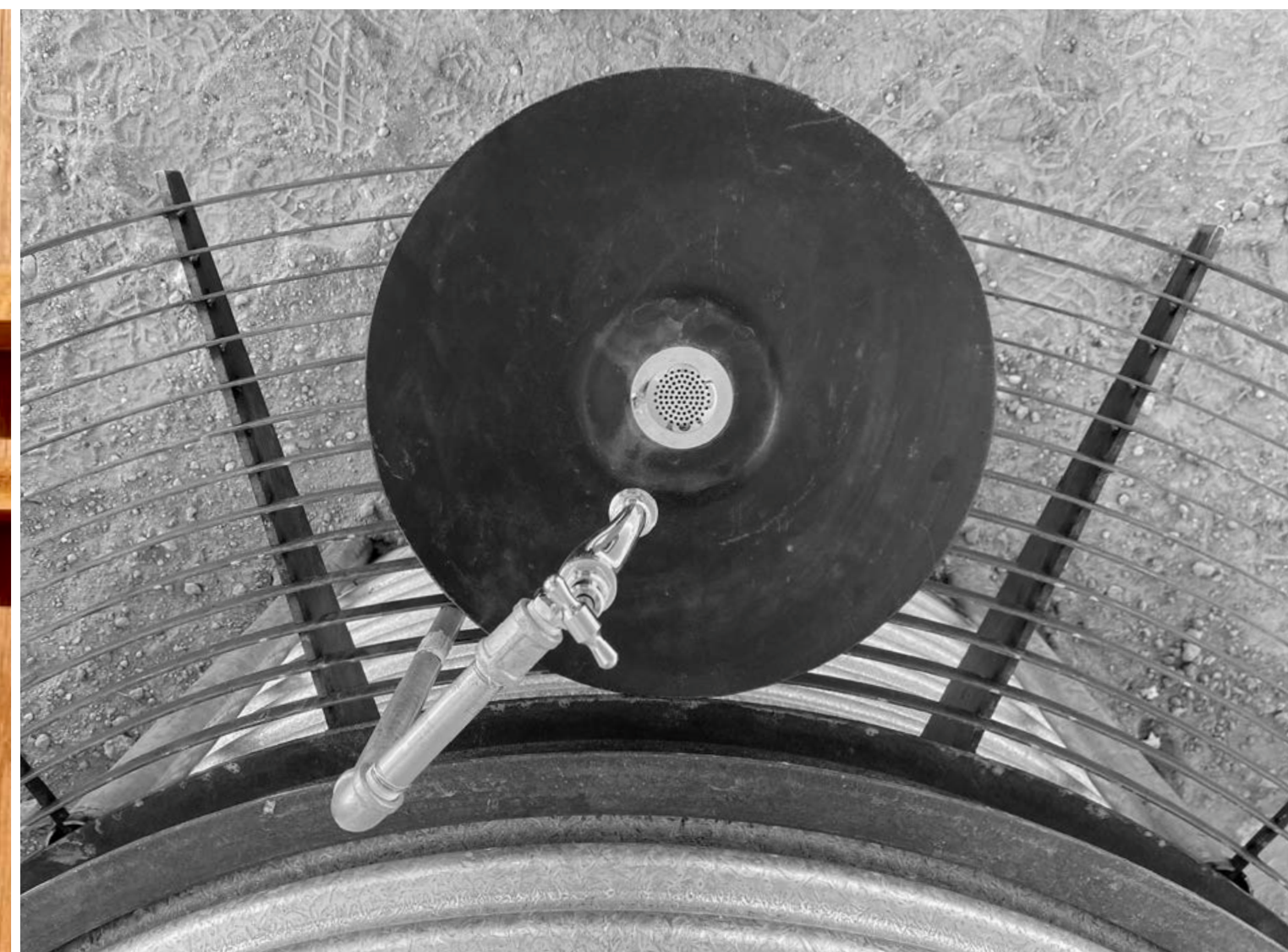
Building on a history of indigenous housing in remote locations, the Indigenous Land and Sea Corporation (ILSC) invited the Design Construct program to propose upgrades to existing ranger accommodation and new kitchen and dining facilities. The Fish River Station was acquired by the ILC in 2010 to manage cultural and natural heritage as part of the Australian Government's Working on Country Scheme and employs Aboriginal rangers from the nearby Daly River community.

The project aimed to improve the living conditions of the rangers by retrofitting current structures to address the extreme climatic conditions of the Northern Territory. This included insect screening, improved privacy and passive design principles to avoid reliance on air conditioning systems. UniSA

Masters of Architecture students developed the design following a consultation and site visit in 2016. Construction began with prefabrication in our Mawson Lakes facility in early 2018, moving on-site in July. The project maximised the Design Construct program's prefabrication capacity to deliver an economical solution to this remote site.

In 2019 the Fish River ranger accommodation received the Northern Territory Australian Institute of Architects Yali-Mcnamara Award for Small Project Architecture and the Indigenous Community Architecture award.





Martins Well Campsite Facilities 1

Timeline: 2018 - 2021

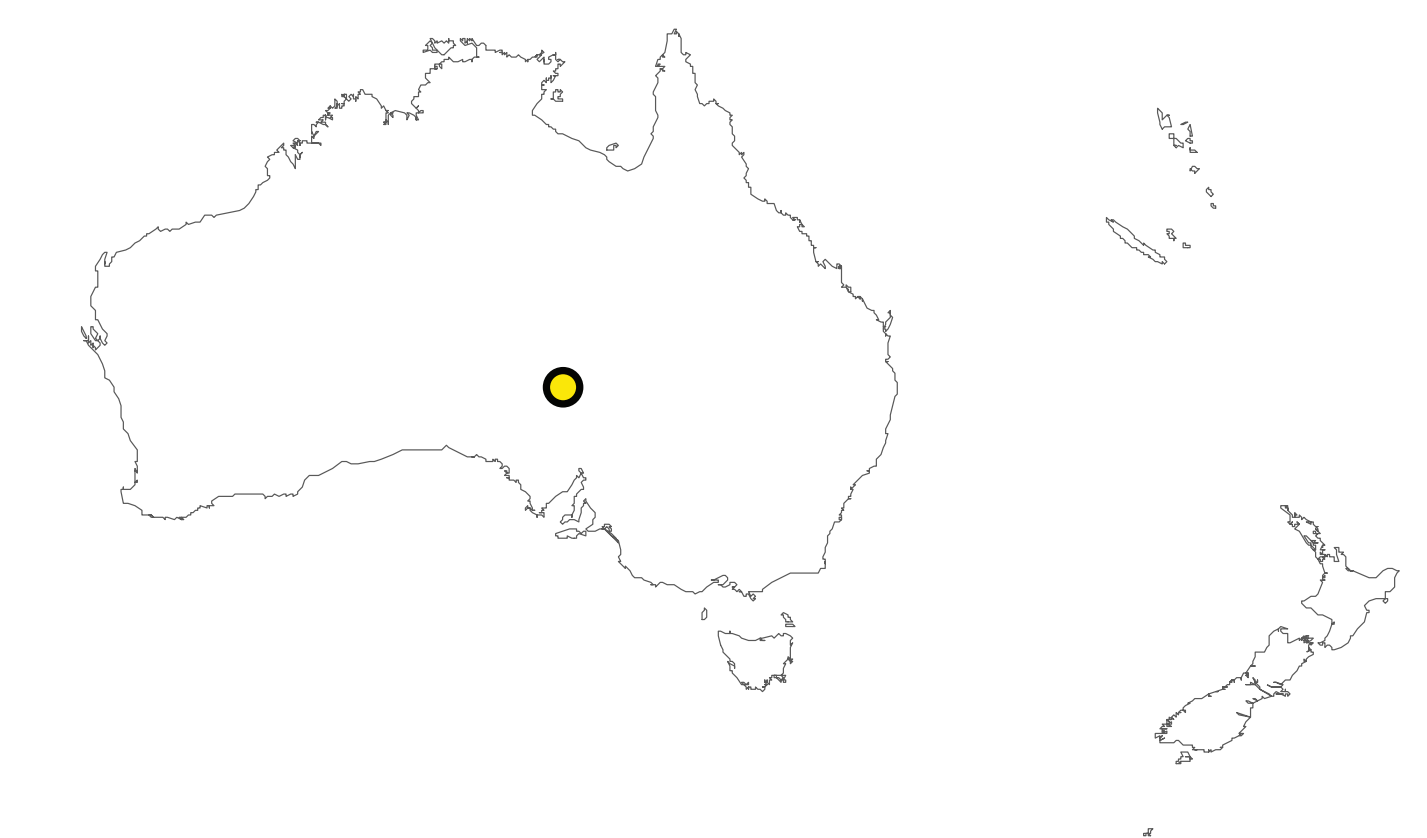
Client: Martins Well Rangeland Reserve

Location: Flinders Ranges, South Australia

Funding: Martins Well rangeland Reserve

Following completion of the new Design Construct workshop at Mawson Lakes in 2017, materials and tools were evicted from the nearby sheds which had accumulated decades of project remnants. Among these, were the components of the Kanmantoo mine facilities; toilets and showers constructed in 1995. The University abandoned the mine and related infrastructure projects and consequently, the prefabricated facilities never made it to Kanmantoo and instead went into storage. A student informed us of a remote station in the Flinders Ranges that was looking to build camp site amenities at the time we were clearing out the old sheds and the solution was clear - dust off the old buildings and see if they could find a new home serving campers off the beaten track.

Students undertook a stock take of components and created digital models in order to produce documentation to achieve planning approvals and updated engineering calculations. Four toilet buildings and a shower block containing M&F showers were assembled in the space afforded by the new workshop before being labelled, packed up and transported to site, where they were installed over a two week period by a group of 25 students and 3 staff.





Martins Well Campsite Facilities 2

Timeline: 2021 - 2024
Client: Martins Well Rangeland Reserve
Location: Flinders Ranges, South Australia
Funding: Martins Well rangeland Reserve

Building on the relationship created through the first project to provide remote campsite amenities at Martins Well, Design Construct was invited back to undertake work at another site.

This project was a new design for a toilet and shower to service a creek side cottage surrounded by towering red gums. Students surveyed the site and developed designs taking inspiration from the nearby corrugated steel shearing shed, the crude, pragmatically beautiful sheep runs and counterweighted ramps, and the Southern Cross windmill, which casts afternoon shadows across the site.

A number of workshop based courses were run to refine and undertake the prefabrication of building

components, which were largely left to students to develop. Only the layout and structural skeleton were documented and fixed at an early stage. The non-structural details and componentry were resolved by numerous groups of students who were given the opportunity to prototype bespoke components such as counterweighted shutters and sliding doors, pivot doors, gutters, exposed plumbing and joinery.

Over 50 students were involved in the construction on site, staged over 3 trips between 2022 - 2024.

