

Architectural
Physics

**"The essence of
creativity is an act of
generosity"**


Prof. Ken McBryde

Projects with Heart

TRADITIONAL CULTURES X ADVANCED TECHNOLOGIES

Experience in the field has taught us that combining advances in new technology & materials with local vernacular and well established settlement patterns, manifests physical expressions in architecture that seem to resonate with us as humans.

In simpler terms, when we do our work well, employing the best of what is available with careful, patient observation & well-founded judgement, we produce memorable spaces and places in which people & communities thrive.



Global Expertise

ALSACE **Barn Conversion**

We are presently working on the conversion of a historic barn in Alsace. This project will require sensitivity to the specific cultural nuances and context of this historic village context, and its mountain climate. The design process calls for careful intervention to re-life a neglected ancient building for young modern family living.

NEPAL SOLU KHUMBU **Safe Schools**

This multi-award winning school re-build project was the result of a multi-disciplinary collaboration between TTW engineers, a team at Hassell led by Ken McBryde, David Francis Architect and AHF. Masterplanning by DPC. The design facilitated the rebuilding of earthquake resistant schools in remote regions of Nepal by employing lightweight modular components that could be carried in on foot.

BALI **Bali Pro**

The container with the kit we designed for the Bali Pro ended-up ended up stuck in Indonesian customs. When Ken went to visit, he was suddenly redesigning and dreaming-up solutions on the spot to build La Casa from scratch with the local workers. This was a remarkable feat given the lack of skills and lack of equipment, but the pavilion was opened on time for the Bali Pro and was very well received.

JILKMINGGAN **Healing on Country**

Jilkmिंगgan is a community of 300 people on the Roper River, 1.5hrs drive from Katherine, in remote Northern Territory. "Healing on Country" is situated 5km from the troubled community. The picturesque & peaceful setting of the nearby Roper River presents an ideal location for a project that rebuilds families away from the inescapable substance abuse in community.

G-LAND **Bobby's Surf camp**

Working closely with James Murray-Parkes & the team at Brookfield Scientific Solutions Group (BSSG), and indigenous landscape architect Jefa Greenaway, Ken contributed to the concept stage of this major and very challenging project. This reconciliation project comprises extensive public domain including green roofs, and urban lanes that serve a range of public and private mixed-use spaces.

PORT KEMBLA **Coomaditchie**

Since January 2019, Ken and his team have been collaborating with the Surf Lakes executives. Ken is the master architect behind a mixed-use eco-tourism and education facility proposed for Port Kembla, NSW. It has a Surf Lakes facility as it's key draw card and centrepiece. The master plan was done in full consultation with local stakeholders and traditional landowners.

NOOSA **Noosa Festival of Surfing**

Engaged by Nev House, we designed and exciting quick to build beach pavilion which was the centrepiece of the Noosa Surf festival. This is a very similar typology to "Patto's Place" for Surf Lakes in Yeppoon. It captures the beach vibe, with a relaxed lounge and perimeter bar. We design with easy to clean out materials - from sandy feet and dripping boardies.

MEXICO **Infonavit Housing**

Invited by the Government sponsored not for profit housing organisation Infonavit, we prepared designs for medium density affordable single family villas & row housing for Atlitico Puebla, Mexico. Catering for climatic extremes, hot & cold, wet and windy, earthquakes and cyclones our flexible prefab kit of parts allowed additional living areas and bedrooms and to cater for extended families.

**We design for elegant assembly
for the most efficient solutions**

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1. Ken McBryde Corona's La Casa Bali Pro beach pavillion
2.Ken on site with local bamboo specialist.
3. Ken McBryde Corona La Casa Balu pro beach pavillion featuring panoramic beach vista.

Our team engages with local stakeholders and traditional owners from the outset of all of our projects

We work to design with climate
Our process starts with listening. We seek to really understand what is needed in terms of climate and location through our design research process. We know from experience when we do this properly our ideas are worthy, meaningful, memorable.



1. Ken McBryde Coomaditchie Masterplan
2. Aerial Shot of Surf Lakes and Traditional stakeholders collaboration.
3. Stakeholder collaboration drawing session.

Our process and design is Culturally sensitive

Ken McBryde has been working internationally across many cultures for the extent of his career. This included measuring the last remaining Tin Camps in Goodooga New South Wales, in collaboration with Research Masters WStephanie Smith . Having Jefa Greenaway, a Kamilaroi man join our team for select projects deepens our level of cultural awareness and First Nations traditional knowledge to a whole new level.



1. Ken McBryde assists ethno-architect Clem Orcher build a fireplace addition to Clem & Isobles' self-built aboriginal tin camp (Humpy) in Goodooga, NSW (2006) .

2. Tanner island chief carries working study model designed by Ken McBride for category 5 cyclone resistant housing in Vanuatu (2016) .

3. School students in Nepal's Solukhumbu Region in the foothills of Mount Everest rejoice in attending their new earthquake resistant schools designed by Ken McBryde and TTW Engineers (2018).

**We invent the necessary tools
To solve unique challenges**

Our Design methodology employs the widest range of techniques and tools to create and inspire design inputs. We use advanced technologies such as augmented and virtual reality, together with hands-on scale model making techniques, and 1:1 full scale prototypes. We invent the tools necessary to explore, test, evaluate, and explain ideas to our clients and stakeholders.



- 1. Aboriginal partnerships team leader John Shipp dons augmented virtual reality headset to explore the design proposals of the entry experience for Cowarra State Forest precinct by Ken McBryde's University students. (8th Oct 2020)**
- 2. Jim Orr one of ken's students from Moree demonstrates ideas using physical models. (8th Oct 2020)**
- 3. World renowned physicist Professor James Murray-Parkes explains the biological circuit of the forest, and the structure of trees to architecture students working on the Cowarra State Forest project. Dan Jagger of Architectural Physics also absorbing the knowledge. (8th Oct 2020)**

Always seeking to absorb
the most diverse range of perspectives

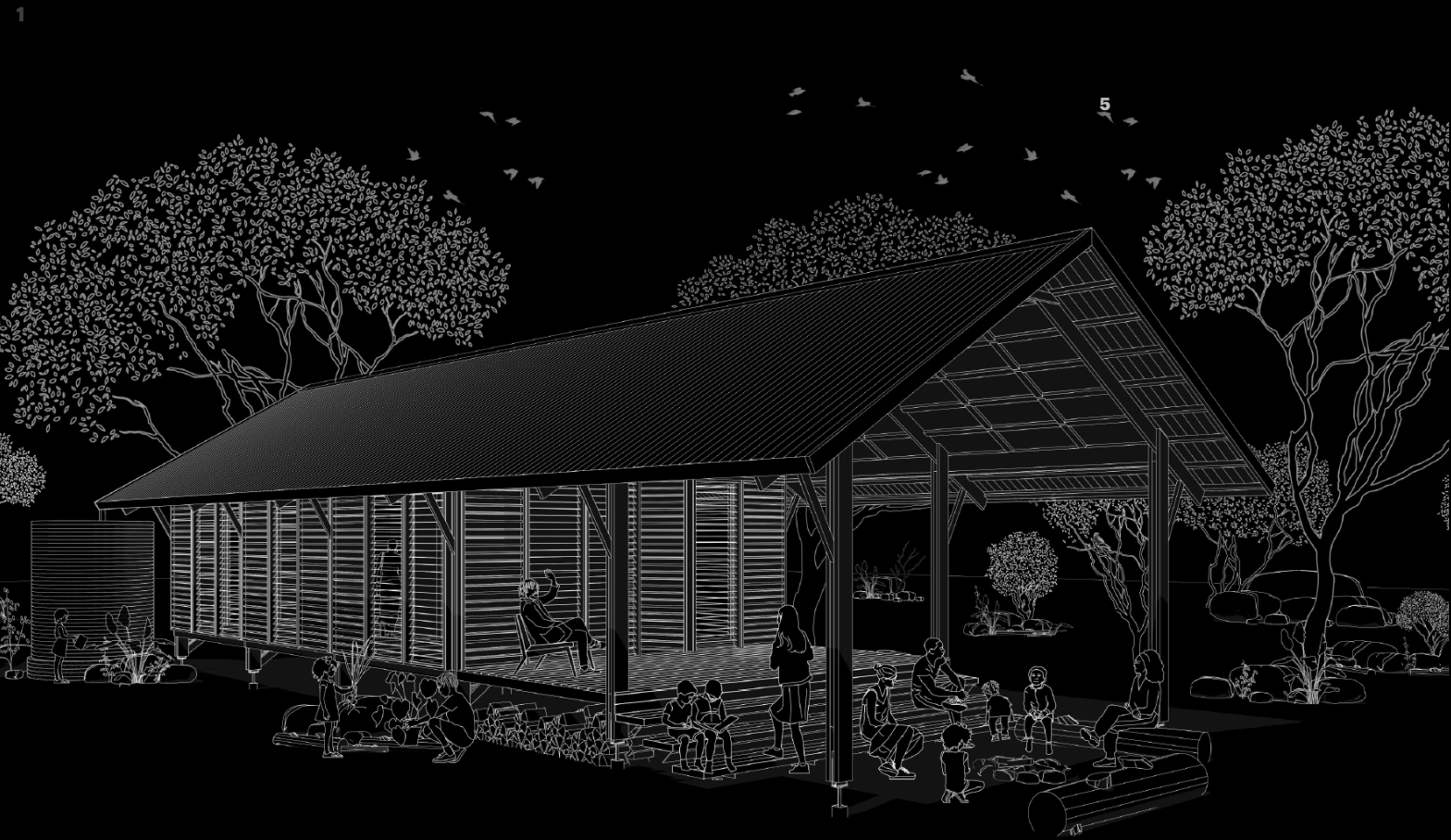
Our aim is to build enduring social capital to underpin our construction projects. We take great care before going into communities. Therefore, typically, just like this project for Tanna Island, I started by working with Anthropologist & Linguists Dr. Murray Garde who in an expert with the Ni-Vanuatu communities.



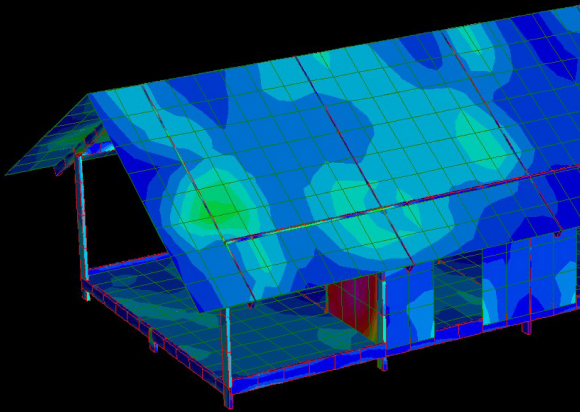
- 1. Phase 1 Project Ceremony, Tanna VU**
Physical models help reduce language barriers, and attract engagement from stakeholders.
- 2. Absorbing information, Tanna VU**
Ken seeks to gain deep understanding from locals about their preferred building practices and available skills.
- 3. Communicating ideas, Tanna VU**
We seek to invent appropriate tools to communicate ideas to overcome language limitations.

Category 5 Cyclone Rated Designed for the tropics

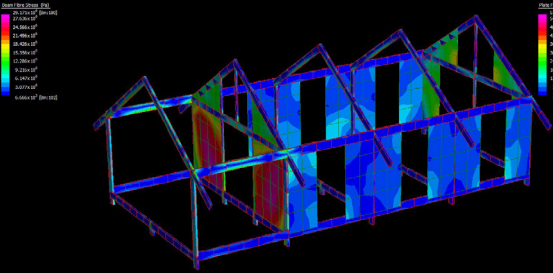
This project is underway and has successfully shown we can design Cat 5 cyclone rated flat-packed homes, school rooms and clinics. They are timber framed, termite resistant, and can be assembled in about 4-5days. For specific locations, we work with stakeholders and the community to understand the user needs then design specifically to suit those needs and the local



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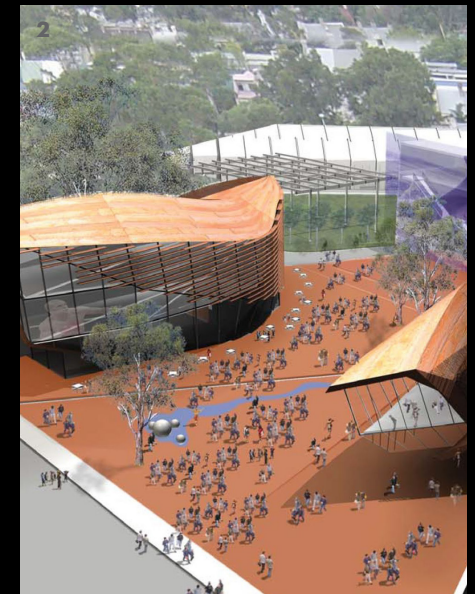
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- 1. Flat Pack Home for Indigenous communities**
We have provided a generous outdoor living room. Part earth floor for outdoor food preparation.
- 2. Finite Element Analysis (FEA)**
We are team of internationally recognised, highly skilled architects and engineers who choose to use our considerable skills to help those who need it most.
- 3. FEA Frames and Bracing walls**
This advanced analytical tool allows us to refine designs to achieve Cyclone Ratings in the most cost effective way. We have now been able to further reduce the volume of timber in the structural frames.

Memorable spaces & gathering places rejuvenate and uplift spirits.

Learning from existing settlement patterns and local vernacular informs our design responses. Gathering spaces that serve a wide range of purposes are common findings from our field research. We discovered the school quadrangle is also the weekend soccer pitch, so it's a natural progression for us to design the classroom verandas to also serve as sheltered "bleachers" for watching the soccer games.



- 1. Safe Schools Rebuild, Solu Khumbu NP**
Locally laid stone plinths not only hold down the lightweight earthquake resistant prefab buildings in the high wind affected mountainous terrain, but also stitch them architecturally into the local village context.
- 2. Red Place Redfern, Sydney AU**
A vision masterplan was prepared for the Aboriginal Housing Company to assist in initial capital raise.
- 3. Awataha, Auckland NZ**
Traditional ceremonial practices informed the masterplan of this multi-cultural marea that unifies traditional heritage with creative urban vibes. Images include experience gained under engagement with former practices.

Everything we do is about building social capital.

We are determined that a by-product of our work is building social capital for the people and communities with which we work. This means we strengthen the community’s well-being & resilience during the process of design and delivery of the project. We make it our business that the communities are fully engaged and have a sense of ownership, and agency in the commissions we accept.



1. A rare historical event: 12 tribes, that are hostile to each other, came together to celebrate the delivery of 14 nakamal (community buildings) on Tanner Island designed by Ken McBryde Architectural Physics. (Aug 2015)
2. Ceremonial gathering in the Solokumbu region of Nepal after the 20 earthquake resistant prefabricated schools we designed for the Australian Himalayan Foundation were completed. (Nov 2017)
3. This modest little prefabricated flat pack building will play an important role in the future of the Jilkminggan community NT. We conceived & designed “Healing on Country”: a prototypical house for families to rebuild their lives away from the trauma in community. (Sept 2019)

**Appropriate technologies
to deliver culturally sensitive outcomes.**

We study locally available skills, materials & traditions and seek to integrate optimised technology. Best of both worlds. This way we build community ownership & pride in the project, and deliver the benefits of current technologies. *We aim for every element to serve at least 3 purposes.



1. Nurses Quarters, Tanna Island VU
Shortages of health infrastructure in remote Tanna Island villages are being addressed by this ongoing project.

2. Research Masters: Pilot Project, Gracemere AU
Once the prefab LVL kit roof was up, the rest of the building work was completed by the community under shelter from hot tropical sun and frequent rain.

3. Safe Schools for Sherpa Kids, NP
Relieved parents send their children back to school knowing they are now safe in earthquake resistant classrooms.

Images include experience gained under engagement with former practices.

*From renowned Physicist James Murray-Parkes.

**Working with the climate
to regenerate the community.**

We tap into and with traditional knowledge of passive climatic design for local conditions. This includes use of thermal mass, deep shade & cool-pools to generate thermal stack effects and carefully controlled solar angles to provide comfortable indoor and outdoor environments. Renewable resources and circular economic thinking are strong underlying motivations in our work. Our underlying



1. Classroom, Tanna Island VU
One of 14 Nakamal (multi-purpose community) flat pack buildings delivered to 12 remote villages.

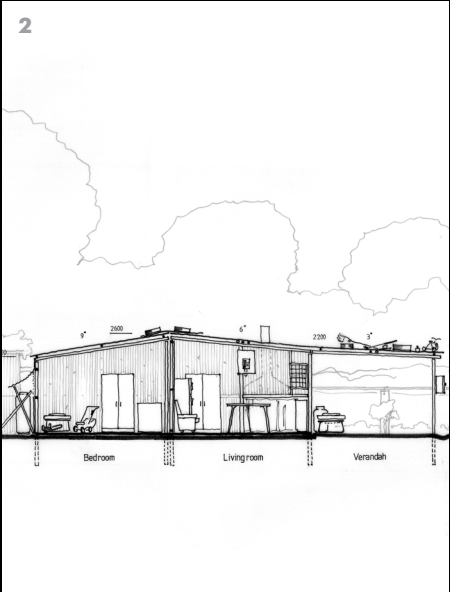
2. Classroom, Tanna Island VU
Large overhangs & full height shutters control privacy, permit ventilation even in hot humid rainy conditions.

3. Research Masters: Pilot Project, Gracemere AU
Ken's research into the applied use of laminated timber in commercial construction was a leader in Australia. High level louvres permit natural ventilation when the building is not in use.

Images include experience gained under engagement with former practices.

Diversity building typologies
nurture human interactions.

A carefully orchestrated, yet apparently informal, hierarchy of spaces facilitate human interaction and chance encounter - crucial ingredients for communities to flourish.
We to set up legible transitions from the public domain, to semi public, through to entirely private spaces that can be encrusted with spontaneous activities. A fertile compost for healthy culture.



1. Study for Cat 5 Indigenous Housing

A generous outdoor “living room” encourages social interaction and provides a transition zone for visitors before the enter the more private interior spaces. This home can come with a mezzanine for additional sleeping or storage space.

2. Tin Camp, Goodooga Northwestern NSW AU

Meticulously measured drawings of every humpy on the reserve provided a deep appreciation of necessary elements for culturally appropriate housing for this community. (Research Masters by Stephanie Smith).

3. Flat Pack Row Housing, Atlixco Puebla MX

A wide range of housing types can be delivered with this highly flexible lightweight flat packed kit of parts.

We're Multi Award winning **for all the right reasons**

Five internationally recognised Good Design Awards have been won by socially motivated projects that Ken McBryde has led: namely Nepal Schools Rebuild. We call these our "Projects with Heart".



1. The moment the Nepal Schools rebuild program awards were announced on the big screen in front of a packed Sydney Opera House (May 2018)
2. Our proud Australian Himalayan Foundation client Tshering Lama O’Gorman at the Sydney Opera House ceremony with three Good Design Awards for the Nepal Schools rebuild program (May 2018)
3. Ken with The Sustainability Award and The Architecture Award (May 2016)