Building Disaster Resilience
Through Architecture.

Jingana Epicormic Resilient Community Housing Strategy.

When dealing with severe climatic events, nature often has all the answers we need. Jingana (Banksia Aquilonia) is a native species of Banksia that grows in far North Queensland. Annually, this location receives up to 4000 mm of rain, battles sporadic cyclones between November and May and faces the frequent threat of bushfires throughout the Spring and Winter.

The Northern Banksia withstands all of this and has even adapted to prosper due to some of these events. When faced with heat, Jinganas' seed pods will open, dropping the seeds into the earth, allowing for regrowth following the fire.

Through biomimetic adaptation of this phenomenon, the Jingana Epicormic resilient community housing strategy can have populations facing climatic events safe within 24 hours of arrival on-site, allowing affected families immediate shelter and respite from the elements.

Each pod comes fully equipped with everything 12 individuals need to survive the aftermath of a severe climatic event, including waste management, kitchens, food and water for two weeks, basic medical supplies, power through a generator, and bedding. The strategy provides those affected with immediate relief until the construction of ancillary infrastructure and amenities has been completed.

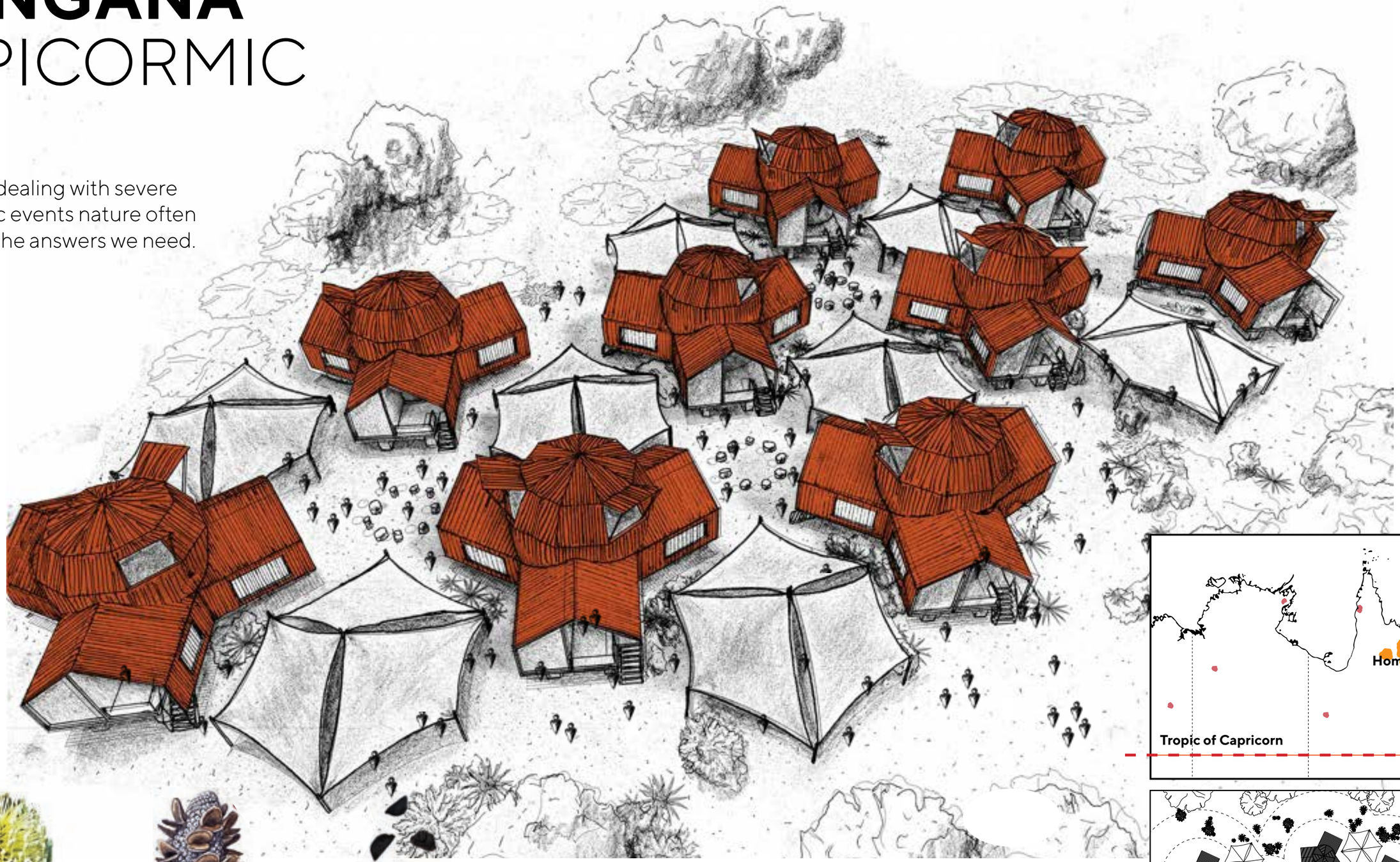
The second stage of airlifted materials—which will be delivered and installed within the next 48 hours—supplies the 18 prefabricated panels required for the residential extensions.

These extensions offer a modular adaptation of the core living quarters, providing a canvas for inhabitants to customize according to their specific needs and desires. This adaptability empowers the community to shape their living spaces as they see fit.

Airlifting allows for a light touch to be applied to the site, meaning that in moments of destruction, spaces can remain unimpacted. Following the six-month period in which affected individuals have recovered and no longer require this intervention, it can be packed away and taken to the next location.

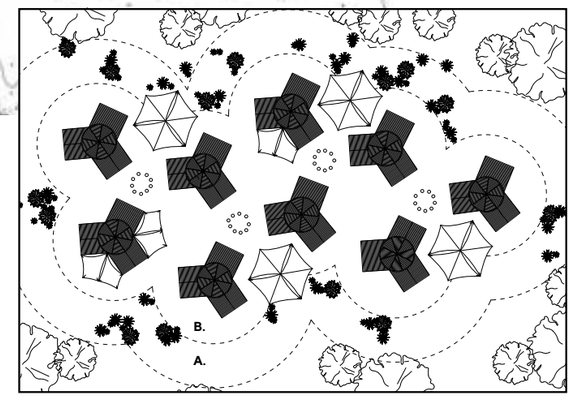
JINGANA
EPICORMIC

When dealing with severe climatic events nature often has all the answers we need.



Jingana (Northern Banksia) natural disaster response.

The Jingana is a beautiful flower found North Queensland, and has adapted to thrive in harsh environments - even surviving the various natural disasters. As disaster strikes, the flower of the Jingana acts as a first line of defense, offering protection. As this layer is removed, there is a strong protective pod within which the life giving seeds are sheltered. Once the disaster has abated, the seeds are released, where they can bring new life and regenerate the environment or something.



Zone A = Recommended Exclusion Zone for Large Trees (Fire). **Zone B =** Small Tree Exclusion Zone.

- Fast Response
- Immediate Functionality
- Self Contained

WITHIN 24 HOURS

- Staged Deployment
- Responsive to Climate
- Scaleable

FIRST WEEK

- Modular Design
- Responsive to Community Needs
- Customisable

SECOND WEEK

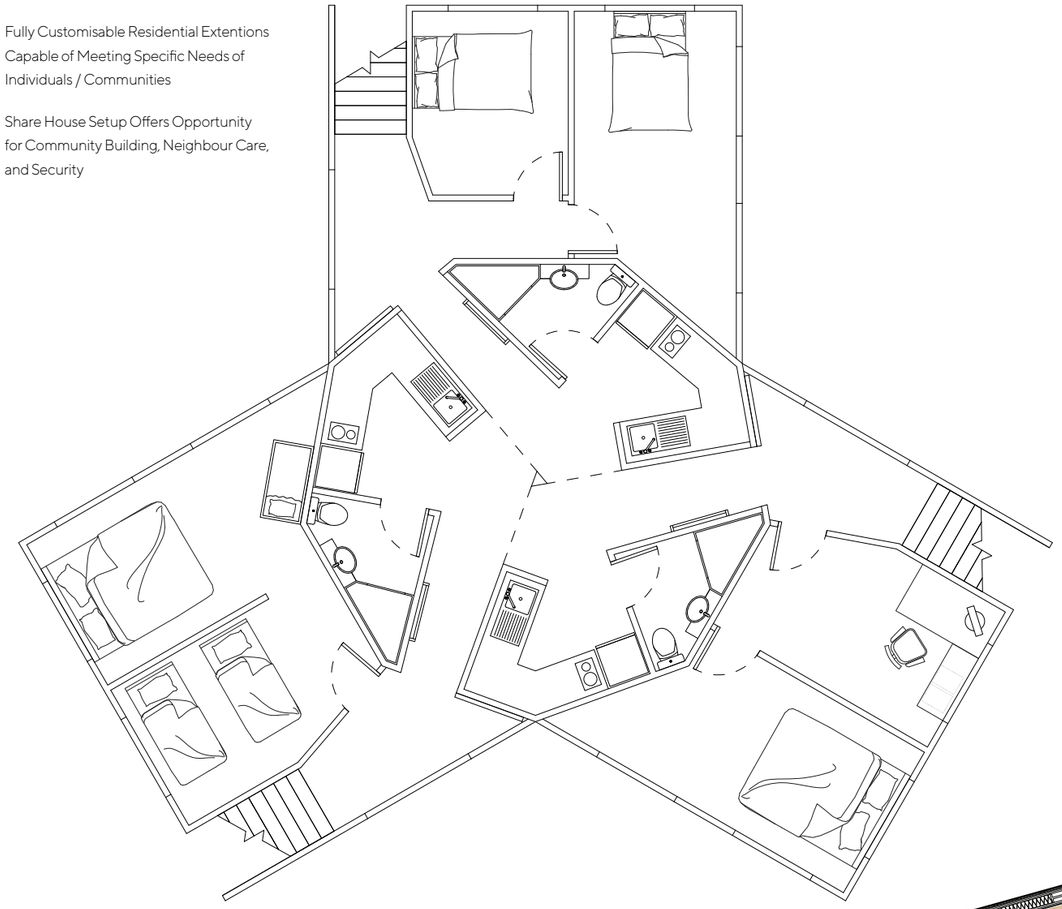
- Resilient to Future Natural Disasters
- Easily Repairable / Upgradeable
- Robust and Versatile

DISASTER MODE

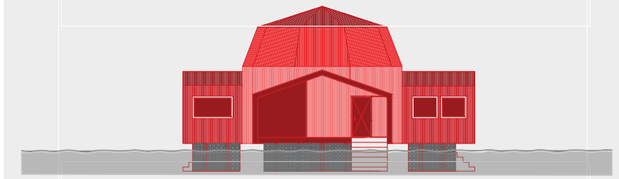
- Big Impact / Light Touch
- Environmentally Conscious
- Portable / Relocatable

POST OCCUPANCY

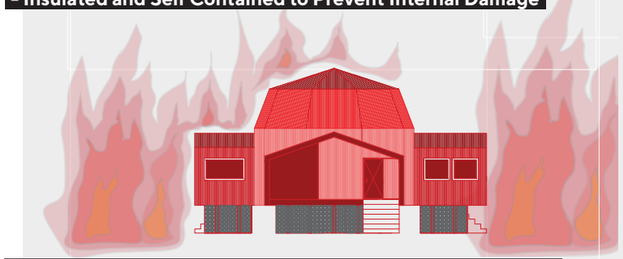
- Central Core Provides Refuge During Disaster
- Fully Customisable Residential Extentions Capable of Meeting Specific Needs of Individuals / Communities
- Share House Setup Offers Opportunity for Community Building, Neighbour Care, and Security



- Aerodynamic Design Helps Mitigate Cyclonic High Winds
- Rigid Construction and Reinforcements
- Weighted / Anchored Footings



- Raised Structure to Mitigate Impact of Flood
- Gabion Walls for Low Resistance Mass (Water can flow through)
- Insulated and Self Contained to Prevent Internal Damage



- Highly Insulated Core (Bunker) Provides Haven During Fire
- Fire Rated / Resistant Materials and Construction Methods
- Easily Replaceable ancillary Structures in the Event of Damage.

AL01 - ENCLOSED ALUMINIUM BUNKER

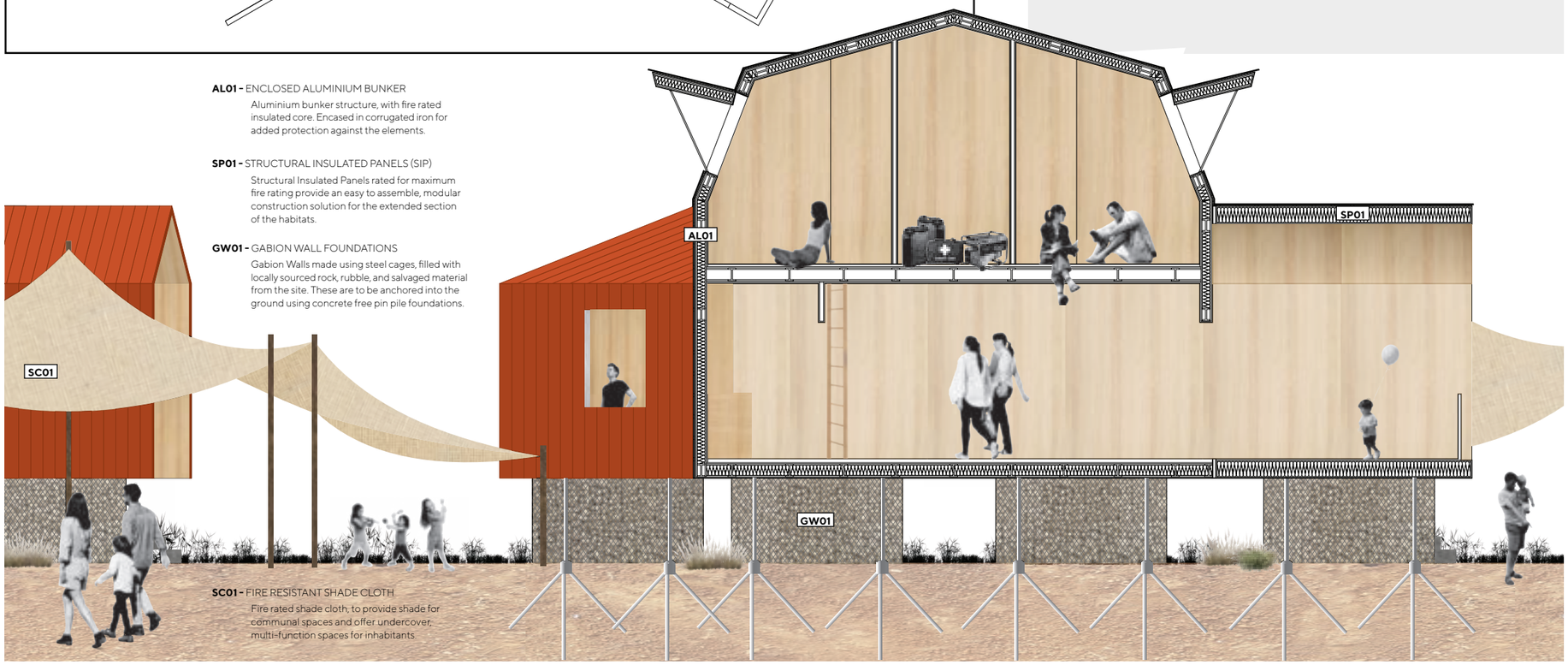
Aluminium bunker structure, with fire rated insulated core. Encased in corrugated iron for added protection against the elements.

SP01 - STRUCTURAL INSULATED PANELS (SIP)

Structural Insulated Panels rated for maximum fire rating provide an easy to assemble, modular construction solution for the extended section of the habitats.

GW01 - GABION WALL FOUNDATIONS

Gabion Walls made using steel cages, filled with locally sourced rock, rubble, and salvaged material from the site. These are to be anchored into the ground using concrete free pin pile foundations.



SC01 - FIRE RESISTANT SHADE CLOTH

Fire rated shade cloth, to provide shade for communal spaces and offer undercover, multi-function spaces for inhabitants.