# More than just a place to live

## Colac Otway Adaptable Precincts

A blueprint for future housing delivery

# A legacy project of the Regional Precincts & Partnerships Program.

**The delivery of the Colac Otway Adaptable Precincts project will provide the Australian Government with eight outcomes:**

- A demonstration of best-practice precinct master planning and local integration within a regional economic centre.
- A shovel-ready, zoned and permitted precinct for Colac, desperately needed to support local industry and community.
- A demonstration of best-practice precinct master planning and local integration within a small, high-amenity township.
- A shovel-ready, zoned and permitted precinct for Apollo Bay, desperately needed to support regional tourism and community on the Great Ocean Road.
- Research and development vital to delivering modular, net zero houses that meet the community's expectations for amenity and local character.
- A rapidly delivered precinct that establishes an immediate and cost-effective housing response to disaster relief, nationwide, using safe materials for all locations.
- A repeatable blueprint to deliver precincts that meet the needs of regional centres and smaller townships throughout Australia for their individual needs.
- A benchmark partnership project between state and local governments, universities and leading private enterprise, backed a team of supporters from throughout the local region.

**The Australian Government's investment in this project will provide a blueprint and pipeline of precincts throughout Australia.**

# The challenge

Home is more than a financial asset or a roof over head. A **good home** connects us to our community and represents a critical foundation for almost everything in life.
It is where we care for children, elders, partners, and ourselves.

Nearly half of all Australian households live under conditions that limit their potential and hold them back in life. In regional Victoria, over 35,900 households are experiencing homelessness or living in overcrowded properties. Many people are paying more than 30 per cent of their weekly income on rent, with the costs of living continuing to rise.

# The need

Addressing Australia`s housing crisis is not a simple matter of producing more homes. We need to rethink how we live and build to design better living environments and provide high quality, healthy homes for the many in future communities that are:

- **Resilient** to the impacts of climate change.
- **Flexible** to adapt to the changing needs of families and communities while embracing emerging technologies.
- **Affordable** and (energy) efficient to reduce the cost of living and environmental impact.
- **Inclusive** to address the needs of everyone regardless of age, ethnicity, or ability.
- **Sustainable** to support a circular, zero-waste and zero emission economy.
- **Liveable**, providing healthy, beautiful, and connected spaces.
- **Foundational**, with homes and communities that support people to thrive in life.
- **Fundable** with new financial models and pathways to ownership.

This needs a holistic, systems thinking approach that is based on the continued implementation and testing of new technologies and concepts to design communities and building solutions that can adapt flexibly to environmental changes and community needs.

# The goal

To build a new community precinct in Colac and Apollo Bay that showcases a new way of thinking centred around building better living environments that benefit both people and the planet. To rethink how buildings can help solve some of the global climate and human health challenges incorporating the best ideas available to deliver high quality affordable housing in community settings that will serve our population now and into the future. To establish a living laboratory for piloting new concepts, continuously informed by world leading research and new developments transposed into an Australian context and evaluated in a real community setting.

# The living lab

The Living laboratory will be a new community that is designed to allow for the rapid implementation and testing of new way-of-living concepts and technologies.

Living laboratories have been already successfully established in many parts of the world but are often limited to specific technology advancements: Green Proving Ground, USA, i-Hub, Australia, DOLL, Denmark.

Colac Otway Adaptable Precincts will create a space where owners, suppliers, users, and researchers can collaborate, create, and reflect on alternative solutions by measuring the wellbeing, health, happiness, and ability to thrive of its occupants.

It is aimed to accelerate the adoption of emerging products and services while at the same time enabling the development and testing of new community concepts to establish healthier, safer, more resilient, and sustainable living spaces.

# The partners

**Colac Otway Shire** will partner with the leading and renown urban design companies, builders, housing providers, Research Institutes and not-for-profit organisations below:

**FormFlow:** Local building company that has developed a highly efficient building system.

**Urbis:** Consultancy that aims to shape cities and communities of Australia for a better future.

**Deakin University:** Research provider that combines expertise in advanced manufacturing, material development and light weight design with Life Cycle Analysis and social networks to address Australia`s housing challenge while promoting zero carbon and a circular economy in buildings.

**The University of Woolongong (UoW)** - Sustainable Buildings Research Centre: Research provider with access to Australia`s only Building Insights Facility for thermal and hygric testing of building components and equipment.

**The Resilient Building Council**: A not-for-profit network of bushfire, cyclone, flood, heatwave and energy efficiency experts working to adapt the built environment for resilient global communities.

**The Salvation Army** (TSA) Victorian Homelessness Stream: A not-for-profit network that operates a suite of homelessness support programs across many regions in Victoria.

**The Johns Lyng Group:** Australia's leading integrated building services provider for rebuild and restoring of properties and contents after damage by insurable events including impact, weather, and fire events.

**Kids Under Cover:** A small not for profit organisation dedicated to preventing and ending youth homelessness.

**Haven Home Safe:** A for-purpose organisation, delivering programs and providing support to people experiencing homelessness or in housing crisis.

# The project plan:

# The project will start Feb 24 and end Dec 24 (11 months)

| Months 2024 | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Milestone 1: Finalise project brief for selected sites** | | | | | | | | | | | |
| KA1: Project initiation and consultation with key stakeholders including project sponsors and partners and Eastern Maar Traditional Owners, Colac Otway Shire Councillors and relevant state government agencies.(Urbis)<br>KA2: Site appreciation to understand the master planning opportunity in relation to cultural heritage, flora and fauna, topography, services, and transport. (Colac Otway Shire and Urbis) | | | | | | | | | | | |
| **Milestone 2: Release concept designs** | | | | | | | | | | | |
| KA3: Concept development to explore the potential scale, function and character of public spaces, landscape and visual elements, key streets, community infrastructure and built form across the site. (Urbis)<br>KA 4: Built form design based on concept development and engagement with community housing providers, government agencies, local industries, and Council to understand the on-site needs of occupants. Technical report to support mater plan. (Urbis/FormFlow/Deakin) | | | | | | | | | | | |
| **Milestone 3: Deliver plan for embedding Future Communities Living Lab principles, and strategies to achieve net zero carbon and digital connectivity as part of the future building and construction of the project.** | | | | | | | | | | | |
| KA 5: Manufacturing process optimisation to improve affordability and sustainability (FormFlow/Deakin)<br>KA 6: Building structure development for thermal performance, sustainability and carbon reduction (UoW/Deakin)<br>**KA 7:** Strategy and response to deliver resilience to Climate change (FormFlow/UoW/Resilient building council)<br>**KA 8: Analyse social impact and confirm integration of social and key worker needs (Deakin - HOME)** | | | | | | | | | | | |
| **Milestone 4: Consultation on Master Plan** | | | | | | | | | | | |
| KA 9: A master plan package that forms the basis of a planning permit application to be supported by a list of technical reports including architectural plans and design response, town planning report, landscape plan, traffic report and reports that address site considerations including cultural heritage, bushfire, native vegetation, waste management, stormwater. (Haven Homes, Finance Institutions,Urbis, FormFlow) | | | | | | | | | | | |
| **Milestone 5: Submit Planning Permit** | | | | | | | | | | | |
| KA 10: A planning permit application that seeks to utilise a streamlined approval pathway via an application to the Department of Transport and Planning via Clause 53.23 Significant Residential Development with Affordable Housing. Clause 53.23 stipulates a four-month assessment timeframe following lodgement, providing greater confidence around acknowledged timeframes. (Haven Homes, Finance Institutions,Urbis, FormFlow) | | | | | | | | | | | |

## Milestone 1: Finalise project brief for selected sites.

**KA1:** will be led by Urbis and the Colac Otway Shire and will involve weekly meetings with all partners, community leaders, government agencies and the Eastern Maar Traditional owners. The meetings will be organised by the Colac Otway Shire and held in Colac. They will include catering and social activities to promote and build a strong partnership between all stake holders. A meeting facilitator and a secretary will be appointed by Urbis to ensure that discussions are targeted, and that outcomes and decisions are captured effectively and communicated to all stakeholders and community members.

### Outcomes:

- A strong team of partners that has established a relationship built on trust and respect and the common goal of establishing community precincts of the future in Colac and Apollo Bay.
- A preliminary master plan for community needs to support **KA2-4.**

**Note** that after **Milestone 1. KA1**, there will be regular meetings to review progress and to discuss and make decisions on future project direction.

**KA2:** Urbis, with members of the Colac Otway Shire, Urbis will review both building sites to understand the master planning opportunity considering, topography, services, and transport. They will strongly rely on the Eastern Maar Traditional owners to provide vital input in relation to cultural heritage, flora and fauna. Individual meetings will be organised with the First Nations leaders on both building locations.

## Milestone 2: Release concept designs.

**KA 3:** Urbis will consolidate the information and feedback gathered in **KA1** and **KA2** to develop an urban design concept that addresses potential scale, function and character of public spaces, landscape and visual elements, key streets, community infrastructure and built form across the site. They will work with all partners, community leaders, government agencies and the Eastern Maar Traditional owners to consolidate the plans.

**KA 4:** will develop a housing design response that suits the urban design concept proposed in **KA 3** while ensuring that the community need has been addressed. **KA 4** will heavily rely on expertise and feedback provided by community housing providers and government, local industry and council. Continuous feedback will be received through regular meetings organised, hosted and led by Urbis, FormFlow and Deakin University that will be combined with individual interviews and question-and-answer-sessions performed by Deakin`s **HOME** research group.

## Milestone 3: Deliver plan for embedding Future Communities Living Lab principles, & strategies to achieve net zero carbon & digital connectivity as part of the future building and construction of the project.

**KA 5:** Prototypes of selected components and building elements will be manufactured by FormFlow and tested for ease of assembly, maintenance, relocation, and refurbishing. This will also highlight potential shortcomings in the manufacturing and module assembly process and will allow for process optimisation in collaboration with the Deakin team. This task will involve one of FormFlow`s senior design engineers who will closely work with Deakin`s advanced manufacturing specialist

A/Prof Matthias Weiss from the Institute for Frontier Materials (IFM). The focus will be on streamlining supply chains and production steps to reduce waste, time and labour while considering changes and further simplifications to the building design.

**KA 6:** FormFlow will work with their team of in-house and commercial architect partners to develop building designs for the housing topologies identified in M3. FormFlow will standardise and simplify its building module designs to reduce material and improve ease of manufacture and assembly. This task will involve one of FormFlow`s senior design engineers to review FormFlow`s current building designs and to apply the new concepts. The FormFlow design engineer will work closely with a Deakin Engineering research specialist who will provide CAD and FEA support for the analysis, validation, and further optimisation of the new concepts. The Deakin Architecture team will apply computer simulation to determine the carbon footprint of a FormFlow home over the full lifecycle including material processing, building manufacture, use and end of life. They will work closely the University of Wollongong's (UoW) Sustainable Buildings Research Centre (SBRC) who will test key building components to validate thermal and hygric performance.

**KA 7:** The Resilient Building Council (RBC) recently developed an in-house analysis tool to access the resilience level of existing building structures to fire so that they can be upgraded to improve resilience. They will work with the Sustainable Buildings Research Centre (SBRC) of UoW on expanding the analysis tool to establish a resilience rating for newly constructed buildings.

The SBRC and the RBC will work with The Johns Lyng Group to ensure that the precinct addresses current and future requirements for community resilience and climate change.

**KA 8:** will be led by Deakin`s multidisciplinary research group, HOME who will work with the Salvation Army, Kids Under Cover and Haven Homes to evaluate and enhance the potential for positive social impact, and successfully integrate social and key worker needs in both community sites at Colac and Apollo Bay.

## Milestone 4: Release masterplan.

**KA 9:** Urbis will consolidate the work completed in (KA 5-8) and (KA 1-4) into a master plan package that will form the basis of a planning permit application to be supported by a list of technical reports including architectural plans and design response, town planning report, landscape plan, traffic report and reports that address site considerations including cultural heritage, bushfire, native vegetation, waste management, stormwater. Urbis will work with Haven Homes in developing a business case for housing providers and with financial institutions making the plans investment ready.

**KA 10:** After consultation with the Colac Otway Shire, Urbis will lodge the planning permit. It is estimated that the planning permit will take up to 4 months to get approved which represents the finalisation of this RPPP Stream 1 activity.

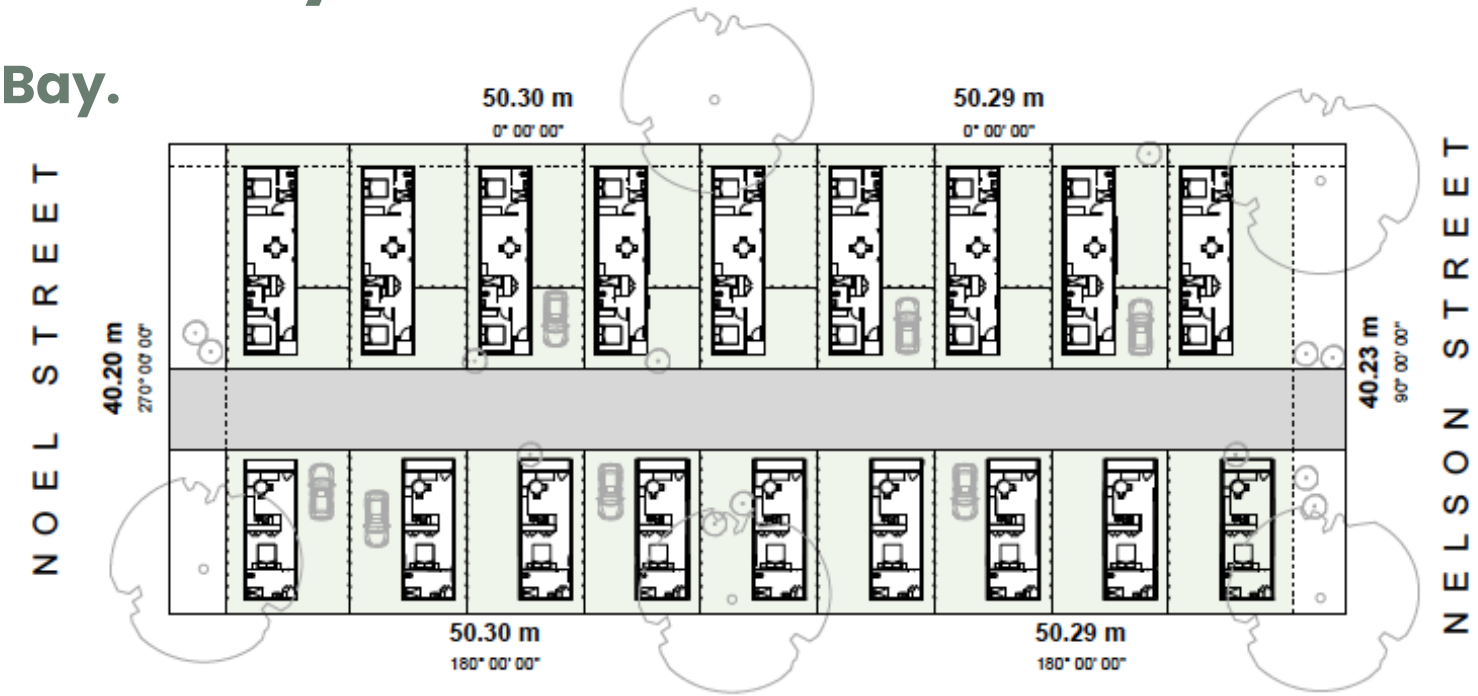
# Future Steps:

It is planned to use the investment ready precinct plans developed in KA 9 to apply for a Regional Precincts and Partnership Program – Stream 2- Project Delivery funding to establish at Colac and Apollo Bay two future community precincts that will address the following key needs:

- Rapid build (within months not years).
- Affordable by enabling a business case that is based on funding income provided by industry and universities to make use of the Community Laboratory for research and technology implementation activities.
- Permanent by being designed and built to be upgradable to suit changing community needs and challenges over time (built to last for centuries not just 50 years).
- Flexible and adaptable without the need for carbon intensive concrete slabs or landscaping. Based on circular economy principles using recycled materials and being designed for reuse and easy maintenance.

# Preliminary yield study

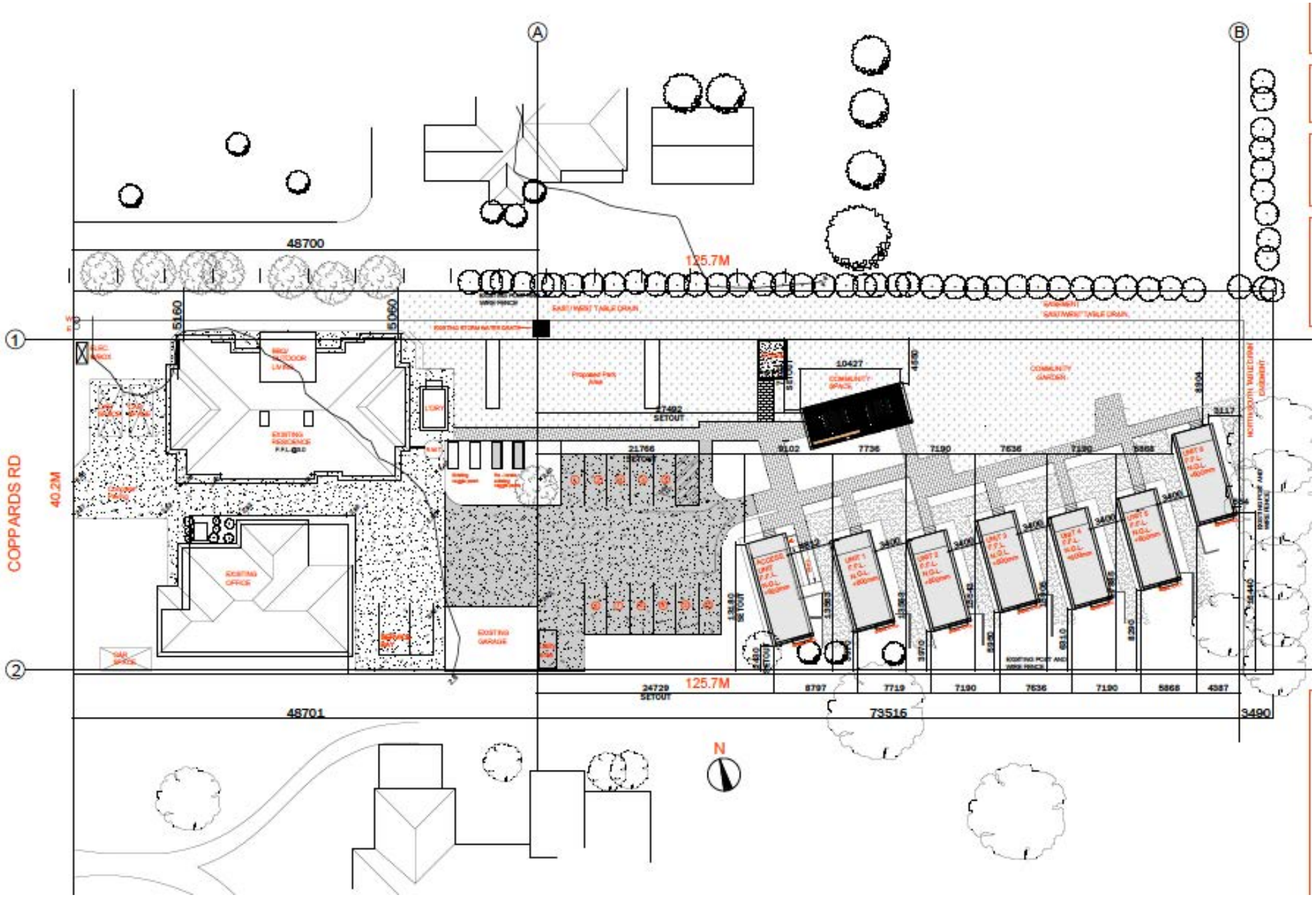
## 69 Nelson St, Apollo Bay.




## 120a Wilson St, Colac.

# Samaritan House

# Samaritan House Site Plan



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Colac Otway SHIRE

DEAKIN UNIVERSITY URBIS FormFlow