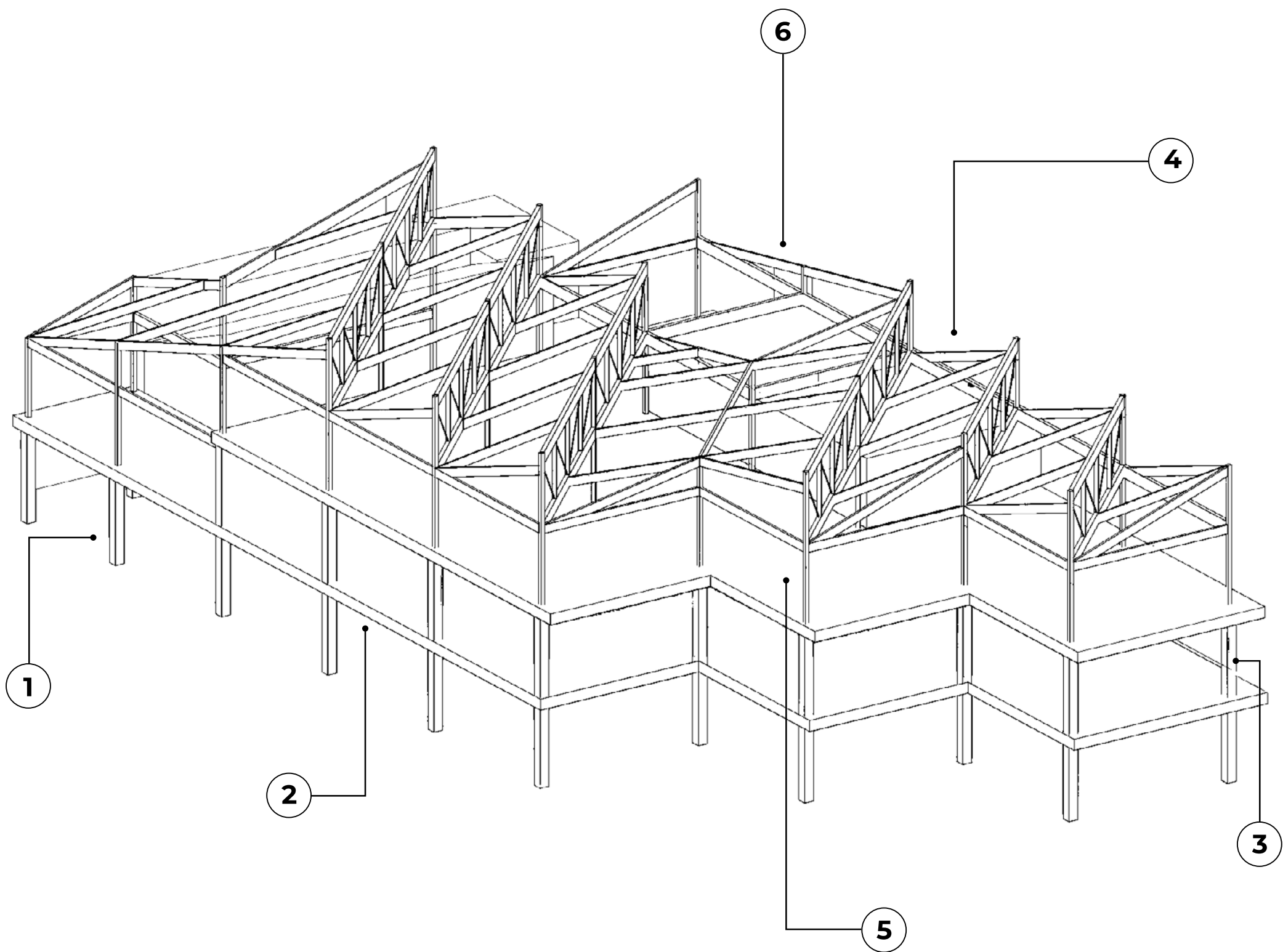


## River's Edge

# Designed-in sustainability

The University of Tasmania has a focus on holistic sustainability and local procurement for local jobs, including within our built environment as reflected in the major sustainability features of the River's Edge building:

1. Designing-in sustainability through a range of initiatives has delivered a 33% reduction in upfront carbon compared to a reference building. The largest impact was from using locally produced lower carbon concrete to avoid 519 t CO<sub>2</sub>-e emissions.
2. The foundations of this building use 77 disused natural gas pipeline segments averaging 14 m long or over 1 km in total. Using reclaimed pipeline instead of concrete pilings or treated timber avoided 238 t CO<sub>2</sub>-e emissions and, through smarter material use, avoids groundwater contamination.
3. This building has been designed to be energy efficient, including solar control windows to minimise heat gain.
4. Cooling in the atrium comes from the use of spill air from air-conditioned spaces on the upper levels. As a result, the building operates at 20% below the National Construction Code 2019 energy efficiency requirements.
5. Timber was prioritised for the stairs and walls to replace steel structural elements, which avoided 153 t CO<sub>2</sub>-e emissions and sequestered 40 t CO<sub>2</sub>-e. Our focus on the use of timber also delivered upskilling in the design, construction, and supply services market across Tasmania.
6. Using underfloor heating beneath a timber floor rather than the usual concrete or tiles is an innovative design feature.
7. By choosing sustainable products for flooring and wall linings, we avoided 122 t CO<sub>2</sub>-e emissions. Sustainable procurement also focuses on delivering circular economy outcomes, such as recycling materials.
8. As refrigerant gases are potent greenhouse gases, central heat pumps that distribute heated and chilled water rather than refrigerants reduces the risk of refrigerant gas leaks.



## Inveresk Library

# Designed-in sustainability

The University of Tasmania has a focus on holistic sustainability and local procurement for local jobs, including within our built environment as reflected in the major sustainability features of the Library building.

1. The use of 98 disused natural gas pipeline segments (average of 17 meters each or over 1.3 km in total) in place of concrete pilings or treated timber for the building foundation, which avoided carbon emissions.
2. A reduction in upfront carbon compared to reference buildings with the most impactful initiative being the use of locally produced lower carbon concrete to avoid carbon emissions.
3. Prioritising the use of timber in walls and ceiling and as a replacement for steel structural elements, which avoided carbon emissions and sequestered carbon. Our focus on the use of timber also delivered upskilling in the design, construction, and supply services market across Tasmania.
4. Low energy design delivered through solar control glazing fitted throughout to minimise heat gain. The building outperforms National Construction Code 2019 energy efficiency requirements.
5. Choosing sustainable products for flooring and wall linings, which avoided carbon emissions. Sustainable procurement also focuses on delivering circular economy outcomes.
6. Selecting central heat pumps that distribute heating and chilled water, rather than using refrigerant gases with high Global Warming Potential reduced emissions and avoided the risk of refrigerant gas leakage.

# Carbon neutral bricks

By intentionally choosing locally made certified carbon neutral bricks in this building, we avoided 43 t of CO<sub>2</sub>-e emissions. Sustainable procurement also supports local industry and jobs.



## Three bin system

By adopting the Australian coloured bin standard, we ensure our community can contribute to the circular economy by minimising contamination of the recycling and composting streams. If in doubt use the red landfill bin.

# Hand dryers vs paper towels

While recycled paper towels are better than those made from virgin fibers, hand dryers still come out ahead in terms of overall environmental impact.

# Water bottle filling stations

On average, a single filling station can prevent hundreds of plastic bottles from being used each week which helps reduce plastic waste and cuts down on carbon emissions from the production and transportation of bottled water.

# Riawunna Garden

Welcome to our gathering place, created for all to enjoy. The garden was designed with Tasmanian Aboriginal artists and community members and is grounded in traditional knowledges.



All areas

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# Biodiversity through native plantings

This building is an excellent example of adaptive re-use in sustainable architecture. Here the existing historical industrial architecture was re-purposed when it was redesigned with modern and accessible building features.





# Water tanks

These 55,000 litre tanks collect rainwater from the roofs of nearby University and QVMAG buildings for use in the Community Gardens. The water is piped to two distribution points within the garden.

# On-site composting

This is the first small-scale in-vessel composting machine in Tasmania and takes up to 75kg of the precinct's organic and food waste each day, converting it into compost in as little as two weeks.

The composter was partially funded through a grant from the Northern Tasmania Waste Management Group in 2022. Once removed from the machine, the compost is cured in the external bays, with worms helping to further refine the compost prior to it being used in the nearby community garden beds.

# Glasshouse

This glasshouse enables the propagation of fruit, vegetable and flower seedlings for use in the Community Garden. All seedling trays and pots are reused and watering is via an electronically controlled irrigation system.

The vents in the glasshouse roof open and close automatically without energy use. The vents use a mechanical system with opposing springs and wax-filled struts that expand when heated.

# Community garden

Here more than 650m<sup>2</sup> of raised garden beds provide ample space for growing edible fruits, vegetables and herbs, as well as pollinator-attracting flowers. Gardening sessions are held weekly for students, staff and community members to learn, grow and share fresh food.

While addressing food insecurity, urban agriculture also contributes to sustainability by enabling food to be produced close to where it is consumed, reducing food miles and packaging.

# Water sensitive urban design and native plantings

The drainage swales in this area have been intentionally designed to highlight the rise and fall of water levels that mirror tidal rivers. The native plantings in these spaces are fed by rainwater harvested from the historic industrial rooflines of Inveresk and provide habitat for native animals, birds and insects.

# Adaptive re-use

This building is an excellent example of adaptive re-use in sustainable architecture. Here the existing historical industrial architecture was re-purposed when it was redesigned with modern and accessible building features.