

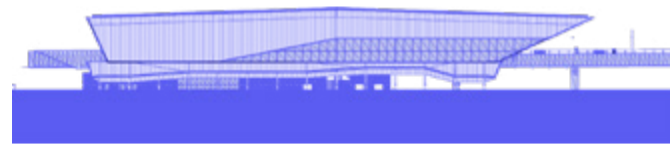
MERENDA STATION



Location Melbourne, VIC, Australia
Completion 2020
Client Level Crossing Removal Authority

Accreditations Excellent Design v1.2 ISCA rating, 4-star Greenstar rating for the new stations. 2020 AIA Vic Chapter wards Commendation in the Sustainability category.

Project Partner/Leads Neil Stonell/ Jason Embley, Matt Hutton
Project Team Grimshaw, KBR, Beca, Wood Marsh, Tract, John Holland



SUSTAINABILITY AND REGENERATIVE DESIGN CASE STUDY

Celebrating the re-introduction of rail to the North-East of Melbourne, Grimshaw's vision for the project was to create a new civic identity for the areas along the corridor with a view to stimulating growth in the future Mernda Town Centre. Connecting the growing communities in Melbourne's inner north corridor to the CBD, the extension project has created three state-of-the-art stations at Middle Gorge, Mernda and Hawkstowe, eight kilometres of new duplicated rail line and five grade separations.

Sustainable design performance

The project speaks to the local character and environment with the roof forms of traditional rural structures, such as the homestead and the shearing shed – recognisable by their distinctive shape and sweeping verandas – inspiring the configuration and identity of the three new stations. Like the buildings they reference, the stations use simple, folded roofs to generate the overall form and scale of the building, while smaller 'veranda' structures create an intimate human dimension over the pedestrian realm. Materials have been carefully selected to reference the local semi-rural environment.

The station buildings cladding use sustainable materials such as basalt rock excavated from the project site reducing the embodied carbon. Corten and galvanised steel materials emphasise the raw, agricultural heritage while reclaimed timber from site and coloured steel soffits provide texture and warmth.

Project design challenges

The project presented many challenges to both the design and delivery team. Community consultation, stakeholder management, environmental protection and strict deadlines all required a carefully considered approach throughout the duration of the project.

Middle Gore Station (Galbion Wall) ↓
 The walls create a 400mm thermal mass in offices and bathrooms.



The project required a multidisciplinary team to manage three stations simultaneously whilst working collaboratively in a project office environment with both the contractors and the engineering & design team. This required detailed planning and an in depth understanding of project scope and timelines.

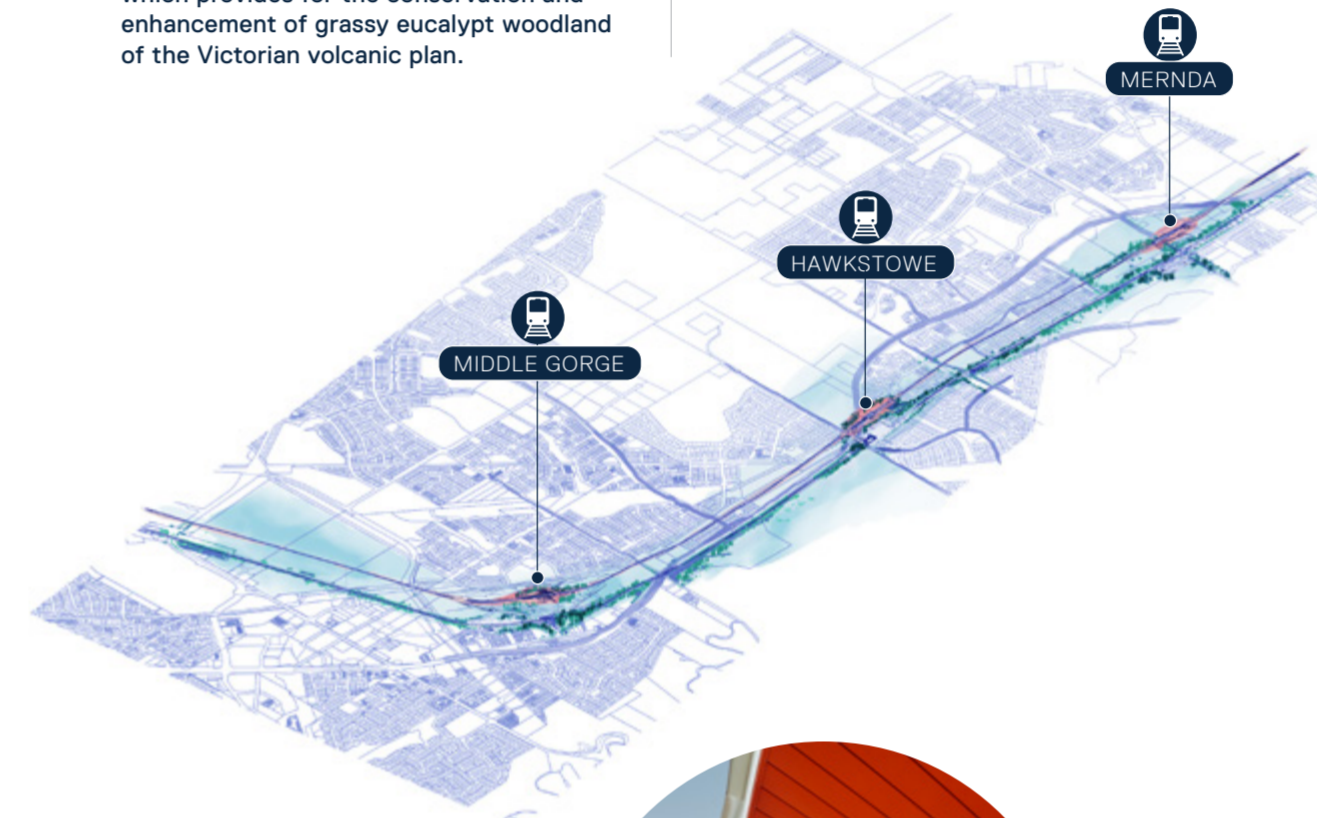
Design solutions

The project has had a key focus on heritage. This included the Bridge Inn Archaeological Dig, aimed at identifying and promoting local heritage values. Several community open days were held throughout the duration of the project together with site visits by local schools and displaying of artefacts, all aimed at sharing local knowledge heritage values. Following this project the City of Whittlesea hosted the National Archaeology Week 2018. Events held included lectures, public displays and an exhibition.

Alignment with UN Sustainable Development Goals

- SDG 3 GOOD HEALTH AND WELL-BEING**
 Stations forecourts are designed as 'place making' civic elements enhancing community development and amenity. Occupants have direct access to new landscaped areas, outdoor gym equipment as well as bike paths nearby.
- SDG 6 CLEAN WATER & SANITATION**
 Rain water collection tanks have been installed in all three stations. Water used for Toilet flushing, cleaning facilities, hose taps and concourse washdown.
- SDG 15 LIFE ON LAND**
 Native vegetation was planted at stations and along the rail corridor a total of 38997 plants for a total area of 11198 m2 approximately. An offset biodiversity management plan has been prepared which provides for the conservation and enhancement of grassy eucalypt woodland of the Victorian volcanic plan.

- SDG 11 SUSTAINABLE CITIES & COMMUNITIES**
 The project integrates with the future Mernda town centre, providing easy access to shopping, entertainment, cafés, restaurants, a library, health and fitness facilities. Transport interchange with bus services, the station's car park areas and bike facilities reduces the need to use private vehicle.
- SDG 12 RESPONSIBLE CONSUMPTION AND PRODUCTION**
 - > **Material Re-use:** Crushed basalt rock was reused from site in station walls and landscaping reducing the need for transportation of other material into site. Native timber and Reclaimed timber from site used.
 - > **LED light fittings** installed to minimize energy consumption.



Key Sustainability Facts

PROJECT SITE
 Greenfield

CLIMATE ZONE
 6 - Mild temperate

REDUCTION OF ENERGY USE INTENSITY FROM AN EQUIVALENT NEW BUILDING
 22%

REDUCTION OF EMBODIED CARBON FROM A BASELINE SCENARIO
 21%



Mernda Station ↑
 Connection to native vegetation and local fauna

“More than 600,000 passengers have used Mernda Station in the last year, taking thousands of cars off the road every day”

12 months of trains on the Mernda Line - Minister for Public Transport Melissa Horne, 2019.

Middle Gorge Station Section →

- Urban Design Strategies** – Passive surveillance including street visibility provided by a concourse which opens directly onto the station forecourt. Landscape design creates no visual impediment along desire lines to entrances.
- Landscape Design** – The landscape elements promote and support the broader regional landscape features promoting views north, to the great dividing range. The landscape reflects old scattered trees such as river red gums, found throughout open farmland and grasslands. Smaller species have been located in closer proximity to the rail alignment. Local vegetation planted as water sensitive design strategies to help filter stormwater before it enters the local drains, allowing for the removal of pollutants from roads and carparks.
- Connected mobility** – The stations provide efficient, safe and appealing public transport experiences. They include carparking, bicycle storage facilities, bus stops, taxi stands and kiss and ride areas connected to user pathways which link the nearby communities ensuring convenience of accessibility to all.
- Weather protection** – The large canopies which encapsulates the sides of the rail act as a windbreak from the prevailing winds. It covers the platform and provides shade during summer.
- Material reuse** – Crushed basalt gabion rock from site used as facades, create a 400mm thick thermal mass wall to the staff and customer facilities, reducing embodied carbon.
- Rain Water Collection Systems** – Rainwater tanks are incorporated at all three stations. The water captured is used for toilet flushing and platform wash down.

