METROTUNNEL

Towards a sustainable future

Sustainability
Annual Report 2024

We acknowledge the First Peoples and Traditional Custodians of the land we now call Victoria.

We recognise and respect their continuing connection to land, water, and community, and pay respect to Elders past, present and emerging.

We acknowledge that this land was and always will be Aboriginal land.

Contents

Foreword

Throughout 2024 the Metro Tunnel Project Office (MTPO) continued to build a stronger, healthier, and more connected Victoria, underpinned by the three pillars of MTPO's Sustainability Policy: Environment, Social and Economic. Our project teams continued to focus on positive outcomes for Victorian communities as they delivered the biggest upgrade to Melbourne's rail network in 40 years.

In partnership with our construction contractors, we maintained a strong focus on waste reduction and material recycling, water and energy efficiency and conservation of flora and fauna across our work sites. Together, we implemented several new materials and technologies that enhanced the sustainability of the Metro Tunnel Project and kept us at the forefront of innovation.

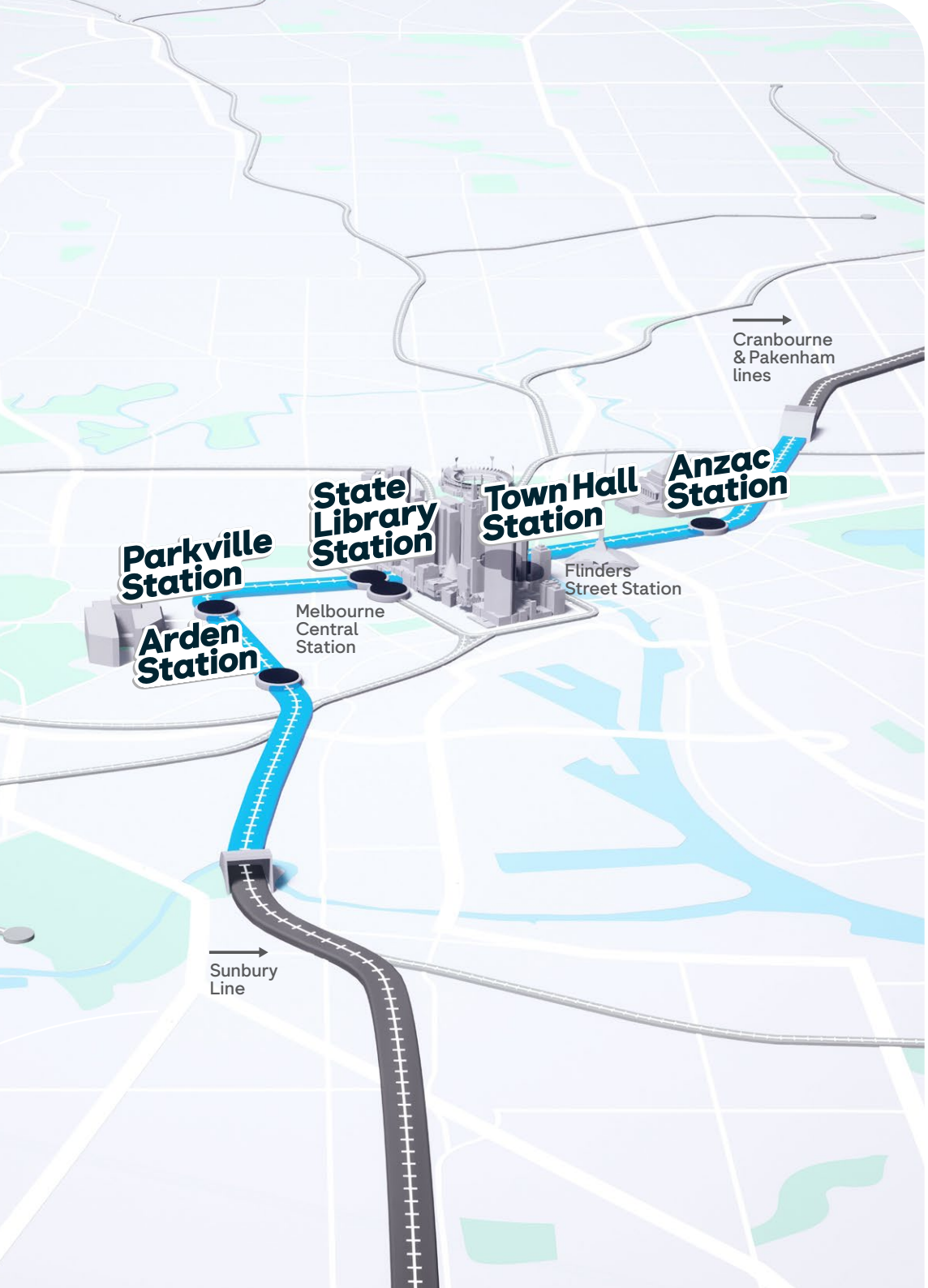
In all our work in 2024, we continued to preserve and celebrate the cultural heritage of the places we work. And we continued to implement ecological and habitat development initiatives, giving back to communities and areas that have been impacted by our works.

Like our project itself, we're building for the future, aiding Victoria's economic recovery by creating jobs and supporting local businesses near our work sites. Through delivery, MTPO and our contractors are training the next generation of rail infrastructure and construction professionals – with hundreds of apprentices, cadets and graduates gaining valuable experience while delivering landmark infrastructure for Victoria.

MTPO's Sustainability Annual Report 2024 allows us to reflect on our achievements over the past year, as we remained committed to our sustainability principles in every aspect of our work. I am incredibly proud of the role MTPO is playing in building a better Victoria through the delivery of the Metro Tunnel Project.

Peter Wilkinson
Coordinator-General
Metro Tunnel Project

Concept Only



Introduction

The Metro Tunnel Project Office (MTPO) is a dedicated project office within the Victorian Infrastructure Delivery Authority (VIDA), responsible for the delivery of the Metro Tunnel. MTPO, and its predecessor RPV, has been responsible for the planning and development of Metro Tunnel Project designs, site investigations, stakeholder engagement, planning approvals and procurement, construction delivery, testing and commissioning over the past 10 years.

Along with this remit, MTPO is now working with the Department of Transport and Planning and operator Metro Trains towards opening the Metro Tunnel Project for passenger services later this year.

Metro Tunnel Project

The Metro Tunnel Project will transform Melbourne's rail network, creating a new end-to-end rail line from Sunbury in Melbourne's northwest to Cranbourne and Pakenham in the southeast.

The project's twin nine-kilometre rail tunnels beneath the Melbourne CBD are complete, along with three of the project's five new state-of-the-art underground train stations – Arden, Parkville and Anzac.

Construction continues on the two remaining CBD stations – Town Hall and State Library, with the project preparing to open to passengers in late 2025. By taking two of the busiest lines on the network out of the City Loop, the Metro Tunnel will create space for more services on other lines across the network in future.

The project's main tunnelling works and five underground stations are being delivered by contractors CYP D&C, a consortium comprising Lendlease, Melbourne Metro, John Holland, Bouygues Construction, John Laing and Capella Capital.

Works at the eastern and western tunnel entrances and the project's rail systems are being delivered by the Rail Network Alliance, a consortium comprising John Holland, CPB Contractors, Alstom, AECOM, Rail Projects Victoria and Metro Trains.

Sustainability Framework

Sustainability Vision

Through delivery of Metro Tunnel Project, we are connecting communities in the healthiest, most sustainable way possible. We will leave a legacy for present and future generations for a more liveable Victoria — environmentally, socially, and economically.

Environment

MTPO aims to minimise the environmental impacts of our project and pursue innovative opportunities to reduce harm and maximise benefits. To achieve these goals, we focus on management of:

— Materials and waste
— Water
— Energy efficiency
— Ecology and vegetation
— Climate change resilience.

Social

MTPO aims to minimise and manage potential impacts of our project on local communities and identify opportunities to work with the community to contribute positively to the social fabric in the areas we work in. We work to achieve these through:

— Cultural heritage
— Education programs
— Creative programs.

Economic

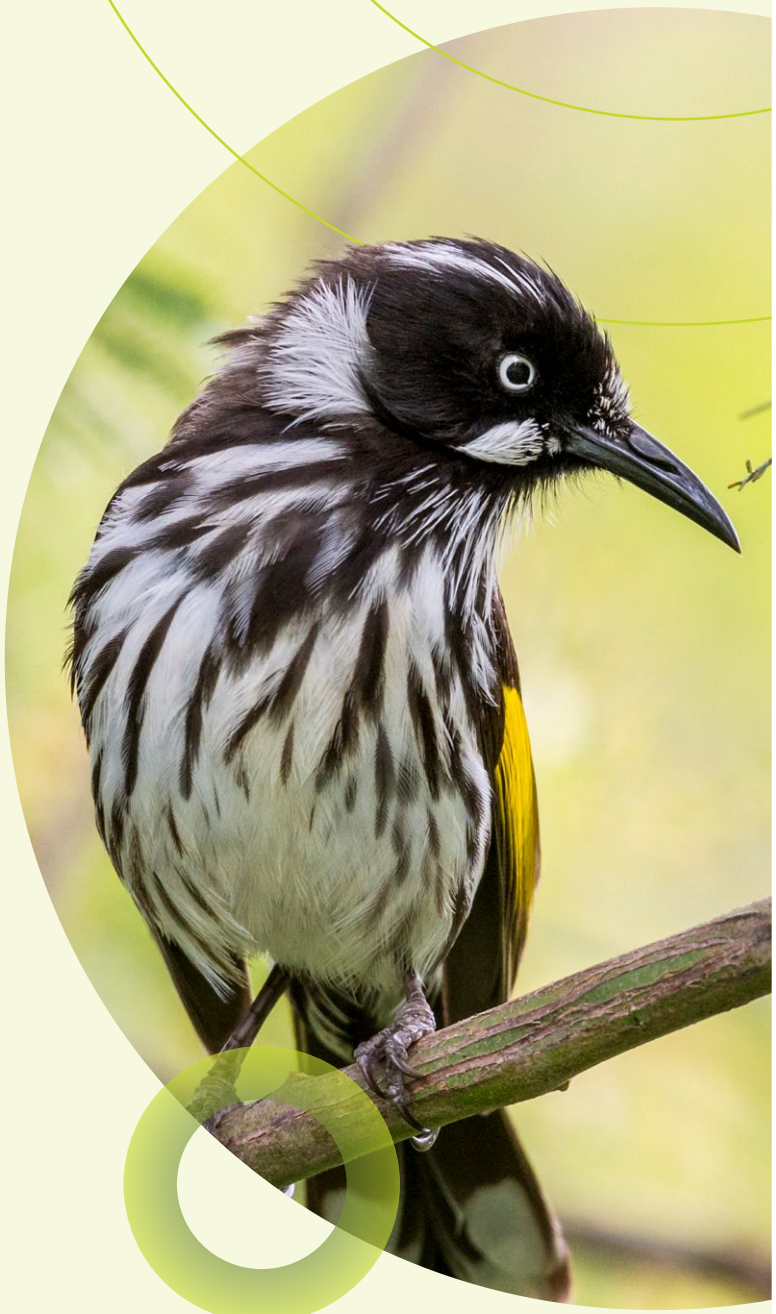
MTPO aims to contribute to a resilient and prosperous economy that offers opportunities for all.

Our initiatives include:

— Employment programs
— Social procurement.

In 2024, MTPO continued to drive outcomes across these three pillars of sustainability – Environment, Social and Economic. This report provides an overview of our progress for 2024.

"We will leave a legacy for present and future generations for a more liveable Victoria — environmentally, socially, and economically."



Sustainability Framework

MTPO's Sustainability Framework provides guidance for implementing the Sustainability Policy for MTP. The Sustainability Framework identifies five focus areas for the achievement of sustainability outcomes.
These are:

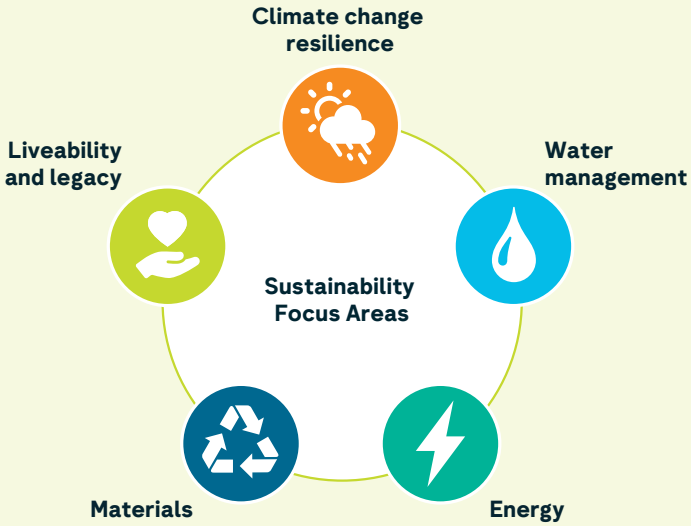
- Materials
- Water management
- Energy
- Liveability and legacy
- Climate change resilience.

The monitoring program includes:

- Collecting and reviewing project sustainability performance reports monthly
- External auditing of processes and systems to provide assurance that sustainability objectives are being met.

MTPO has also applied industry rating tools to set and measure progress towards sustainability targets. These tools include Green Star certification under the Green Building Council of Australia and Infrastructure Sustainability scores under the Infrastructure Sustainability Council (ISC) rating scheme.

Sustainability Focus Areas



Sustainability Governance

The Metro Tunnel Project's sustainability objectives are supported by internal frameworks, processes and broader policies that sit within the Victorian legislative, policy and regulatory context. Our sustainability vision also aligns with the United Nations Sustainable Development Goals (SDGs).

Internal Processes

MTPO has established a Sustainability Policy and Framework to drive industry-leading sustainability outcomes. MTP is:

- Optimising the project's design to ensure sustainable operations
- Managing resources efficiently by embedding energy, water and material saving initiatives into the design, construction, and operation of the project
- Avoiding, minimising, and offsetting harm to the environment and the loss of biodiversity
- Protecting and conserving the natural environment
- Preparing for the challenges presented by climate change.

External Influences

MTPO's sustainability vision aligns with five of the United Nations Sustainable Development Goals and sits within a legislative, policy and regulatory context. This broader context helps frame and guide the integration of sustainability across our projects.

> ***"MTP is managing resources efficiently by embedding energy, water and material saving initiatives into the design, construction, and operation of the project"***

Sustainable Development Goals (SDGs)

The SDGs are 17 interlinked global goals that provide a blueprint to achieve a better and more sustainable future by 2030. They address global challenges, including those related to poverty, inequality, climate, environment, prosperity, and peace.

Policies and Strategies

Climate Change Act 2022 (Commonwealth)

The Commonwealth Climate Change Act 2022 outlines Australia's greenhouse gas emissions reduction target of a 43 per cent reduction from 2005 levels by 2030 and a target of net-zero emissions by 2050.

Climate Change Act 2017 (Victoria)

The Climate Change Act 2017 is a roadmap to net-zero emissions and climate resilience by 2050. The current targets require emissions to be 28-33 per cent below 2005 levels by 2025 and 45-50 per cent below 2005 levels by 2030. The transport sector plays a significant role in achieving these targets and ensuring Victoria's transport system is resilient to the impact of climate change.

Victoria's Climate Change Strategy 2021

Victoria's Climate Change Strategy includes the transport sector emissions reduction pledge which requires substantial reductions in transport sector emissions to support Victoria's target of net zero by 2050.

Victorian Aboriginal Heritage Act 2006

The Victorian Aboriginal Heritage Act 2006 recognises Registered Aboriginal Parties (RAP) as the primary guardians, keepers, and knowledge holders of Aboriginal cultural heritage. RPV works with RAPs to ensure that transport activities, including construction, appropriately protects Aboriginal cultural heritage.

Transport Integration Act 2010

The Transport Integration Act 2010 requires transport agencies to actively contribute to environmental sustainability. This includes minimising transport-related emissions, promoting transport with lower environmental impacts, and adapting to challenges presented by climate change.

Circular Economy (Waste Reduction and Recycling) Act 2021

The Circular Economy (Waste Reduction and Recycling) Act 2021 provides the foundation for Victoria's transition to a circular economy. RPV acknowledges that the government has a pivotal role to play in this transition and looks for opportunities to increase the use of recycled materials in construction projects.

Recycled First Policy 2020

Victoria's Recycled First Policy requires the construction sector to incorporate recycled and reused materials in new projects. This includes a requirement to report on the types and quantities of recycled products used on infrastructure projects. Implementation of the policy supports Victoria moving to a more circular economy and the establishment of new Victorian businesses supplying more sustainable materials.

Other relevant driving policies, frameworks, and legislation

- The Environment Protection Act 2017 describes Victoria's prevention-based approach to environmental protection and the General Environmental Duty requires businesses to manage risks of harm to human health and the environment.
- The Victorian Social Procurement Framework details principles including supporting direct and indirect purchases of goods, services and construction from Victorian social enterprises, Victorian Aboriginal businesses, and other social benefit suppliers.
- The 2018 National Waste Policy provides a framework for waste and resource recovery in Australia and principles to enable the transition to a circular economy.

Environment

Climate Change Resilience

MTPO undertook climate risk assessments for the Metro Tunnel Project to plan for the challenges presented by climate change. These challenges include an increase in extreme rainfall events, increased carbon in the atmosphere, increasing instances of fire weather conditions, and more frequent heatwaves. As part of the risk assessment process, adaptation measures were implemented to ensure that the Metro Tunnel is more resilient to the influences of a changing climate.

Materials and Waste

MTPO tracks material use and waste production against industry leading targets. This activity supports Victoria's move towards a circular economy.

Key sustainability metrics that are tracked include recycled materials (and reduction in the use of virgin materials), construction waste, office waste and soil diverted from landfill, reduction in Portland cement and the use of responsibly sourced steel.

Sustainable improvements modelled for operations and tracked in construction are compared to a baseline of the project implementing contemporary industry standard practices[1]. This helps track how our projects have performed.

Material carbon emission reductions (tCO_2)

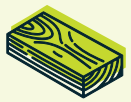
186K+

to date

Portland cement reduction (m^3)

125K+

to date



Certified and re-used timber use

97%

to date

Certified steel use (tonnes)

26K+

to date

Construction and demolition waste diversion from landfill

90% diverted

to date

Total diversion from landfill

95% diverted

to date

1. *Sustainable improvements in construction and operation are tracked based on a comparison to the project's base case. This base case constitutes contemporary standard practices for an infrastructure project as defined by the Infrastructure Sustainability Council (ISC), or the Green Building Council of Australia (GBCA).*

Sustainable concrete achievements

Metro Tunnel major contractor CYP Design & Construction has demonstrated exceptional leadership in sustainable concrete innovations, including a world-first sustainable concrete mix.

CYP D&C's commitment to circular economy objectives has been showcased in a collaboration with industry partners to develop a concrete mix replacing virgin sand with processed glass waste, which was then successfully trialled as part of temporary construction works to build the new State Library station.

The innovative, structural grade concrete mix replaces 25 to 50% of the usual virgin sand component with 'vortex-processed' glass waste, addressing the unsustainable consumption of industrial sand globally.

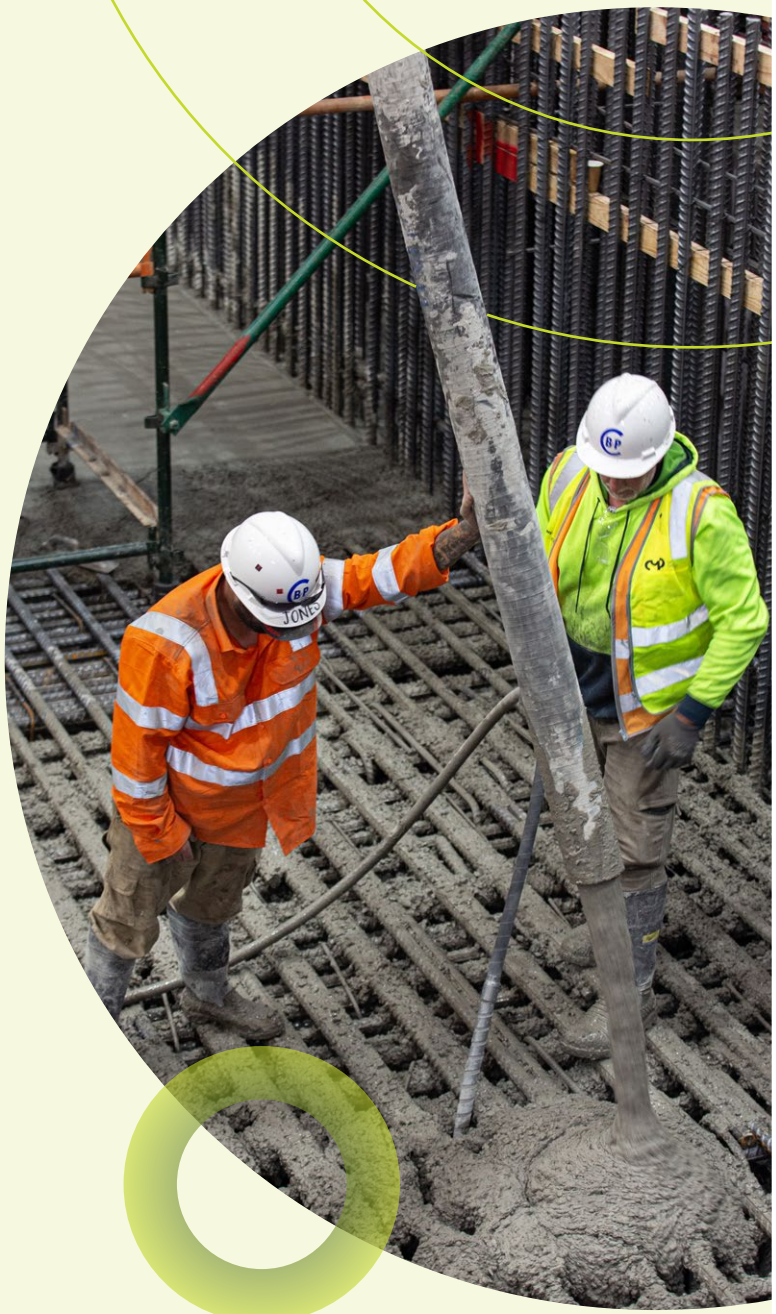
It is the first time this circular innovation has been used anywhere in the world for a major infrastructure project.

Another major initiative has focused on reducing carbon emissions by using recycled industrial byproducts such as fly ash and blast furnace slag as cement replacement in concrete. Up to 90% of the greenhouse gas emissions associated with concrete are due to the energy used to manufacture Portland cement – a key component of concrete mixes. Replacing Portland cement with these alternative materials saves energy and carbon emissions, and utilises byproducts that would otherwise contribute to waste.

Overall, the project has achieved a 52% reduction in Portland cement to date (when compared to the Green Building Council of Australia's concrete mix reference case).

CYP D&C has surpassed the project's original Portland cement reduction target of 36%, which has resulted in avoiding 156,000 tonnes of CO_2 emissions to date.

"It is the first time this circular innovation has been used anywhere in the world for a major infrastructure project."



Water Management

MTPO aims to reduce the amount of potable water consumed by the project and manage the adverse impact of stormwater drainage from our construction sites on natural waterways. MTPO tracks water consumption and non-potable water reuse against industry standard practices to gauge how it is performing[1].

Materials & Waste MTP-CYP

Total water used (ML)

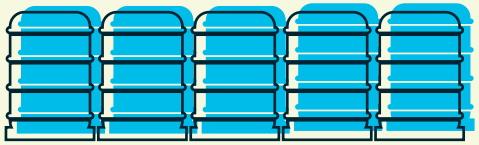
2.2M+

to date

Non potable water use compared to total water use during construction

30%

to date



Reclaimed water tanks installed at all stations

1. *Sustainable improvements in construction and operation are tracked based on a comparison to the project's base case. This base case constitutes contemporary standard practices for an infrastructure project as defined by the Infrastructure Sustainability Council (ISC), or the Green Building Council of Australia (GBCA).*

Anzac Station canopy rainwater capture

The massive timber roof canopy at Anzac Station makes an architectural statement – but also needed to meet the relevant Australian Standards for drainage.

The CYP D&C project team came up with a customised solution, designing a system that could manage a 1 in 100 year rainfall event.

The Anzac Station canopy drainage system needed to divert surface rainwater run-off from the canopy toward a stormwater drainage sump – a below-ground pump station for managing stormwater.

It was clear that a business-as-usual sump design would not be able to manage the amount of run-off expected from the canopy, potentially leading to water pooling in the station and tram platform below.

That meant a unique design solution was needed, and CYP D&C collaborated with subcontractors to develop potential solutions.

A comprehensive scenario analysis was conducted, comparing a business-as-usual design and the proposed solution, including building a full-scale model to analyse the flow path and profile of water flowing from the station canopy - a process beyond usual design testing.

The design incorporated two curved fins into the drainage, directing stormwater flow towards the siphonic inlets, which rapidly drain water. The fins limit the development of turbulent flow, ensuring water doesn't overflow.

This means the system has been designed to cope with a one-in-500-year rainfall event.

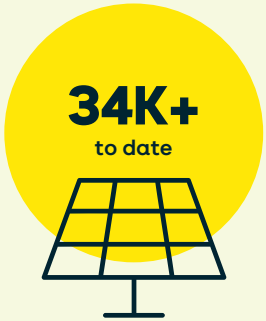
The drainage system also harvests rainwater for toilet flushing, effectively meeting 55% of the station's total water demand (potable and non-potable water).

This innovative design responds to climate risks and supports the project's goal of maximising rainwater capture for reuse. Overall, this initiative is an example of good design and sustainability outcomes being delivered through strong collaboration with the supply chain.

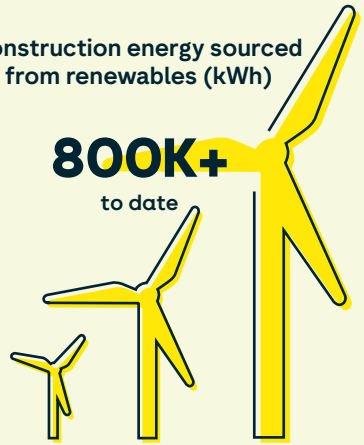
Energy efficiency

MTPO aims to reduce energy use and greenhouse gas emissions during the construction and operation of the Metro Tunnel. MTPO tracks its energy use, including the extent of replacement of traditional fossil fuel generated electricity and vehicles with renewable options[1].

Greenhouse emissions reduction (tCO_{2e}) during construction



Construction energy sourced from renewables (kWh)



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125 kW Solar Panels at Arden Station

A 125kW solar photovoltaic array has been installed on the extensive roof space at Arden Station.

The renewable energy generated by the solar panels will be used to power the station's lighting, ventilation, escalators and lifts during operation.

It is estimated that over 150 MWh of solar electricity will be generated by the panels each year, equivalent to powering 34 homes.

Modelling indicates that this initiative will save over 200 tonnes of carbon emissions each year – equivalent to more than 10% of the emissions likely to be associated with Arden Station when it is operational.

This aligns with the Victorian Government's commitment to achieve 100% renewable electricity for government operations, facilities and services by 2025.

The solar panels will also help to reduce strain on Victoria's electricity network during peak times by delaying the time of peak grid electricity demand from the afternoon to later in the evening.

It is anticipated that the Green Building Council of Australia will recognise this scale of renewable energy generation as innovative under their Green Star rating system in two categories.

The first due to reduced greenhouse gas emissions from renewable sources and the second as result of the peak energy demand benefits the solar generation provides.

MTPO Public Engagement

Metro HQ

Metro HQ is the project's award-winning interactive information centre, that aims to educate the Victorian public about public transport projects.

HQ is in the heart of the city on Swanston Street and is open seven days a week, with free entry all year round. It offers multiple interactive activities, including Virtual Reality tours of the project, and has staff available to answer people's questions about the project.

HQ had more than 100,000 visitors in 2024 and has had more than 450,000 visitors since opening in 2018. An event in December 2024, 'Santa Comes to Metro Tunnel HQ' drew a crowd of more than 1,000 people in a day.

Community Program

The Community Program provides bespoke presentations on the Metro Tunnel Project, tailored to meet the specific interests and needs of each community group, regardless of their age, English language proficiency, cultural background or physical and intellectual abilities.

In collaboration with educators and disability groups, staff have facilitated low-sensory experiences for autistic individuals, immersive activities for children with intellectual disabilities, and specialized programs for socially disadvantaged youth attending camps.

The Community Program also offers personalized tours of the centre and guided visits to the City Square construction site, where participants can observe ongoing work and deepen their understanding of the project.

In 2024 the program attracted 1,807 attendees from 116 groups, representing various areas of Melbourne and regional Victoria.

"HQ had more than 100,000 visitors in 2024 and has had more than 450,000 visitors since opening in 2018."

Economic

Social Return on Investment

Metro Tunnel major contractor CYP D&C has made significant strides in measuring the economic return of social sustainability initiatives, a task often considered challenging for infrastructure projects.

CYP D&C conducted Social Return on Investment (SROI) studies to verify the value of three priority social sustainability initiatives throughout the Metro Tunnel Project up to June 2024. Our focus was on long-term outcomes for:

1. Traineeships, Apprenticeships & Cadets (TACs),
2. Priority Jobseekers, and
3. Social Procurement (Social Enterprises and Aboriginal Businesses).

The team's approach, developed in collaboration with partners Think Impact, goes beyond standard practice. These comprehensive studies have received third-party independent assurance from Social Value International.

The unique aspect of CYP D&C's approach is the active measurement of the legacy value of these initiatives, providing a deep understanding of the social return on investment and the value created for individuals, the community, industry, and government stakeholders.

The study used established methodologies in economics, accounting and social research to compare the cost of delivering the SROI activities with the value of the outcomes for beneficiaries.

This approach has been praised by Social Value International for exceeding standard practice by incorporating stakeholder interviews and interactions across all beneficiaries to validate the study's findings.

"CYP D&C conducted Social Return on Investment (SROI) studies to verify the value of three priority social sustainability initiatives throughout the Metro Tunnel Project up to June 2024."

The study found there was a net positive return on investment (greater than $1 value per $1 spend) for each of the three social sustainability initiatives.

By conducting an earlier 'forecast SROI' on the three initiatives and then following up with 'evaluative SROIs', CYP D&C was able to draw out new insights into these programs. This 'bookend-approach' is considered a world-first on an infrastructure project and has received praise from social value industry specialists including Social Value International.

This innovative and rigorous approach to social return on investment analysis will benefit future priority jobseekers, trainees, cadets, social enterprises, and Aboriginal-owned businesses, demonstrating why industry and government stakeholders should continue to invest in these initiatives.

Employment & Industry Development / Social Procurement & Aboriginal Business

Total apprentice/trainee /cadet hours
176K+

Aboriginal employee hours
147K+

Hours worked by priority job seekers
189K+

Spend on social enterprises
$2.4M+

Spend with Aboriginal businesses
$14.8M+

Number of Apprentices/ trainees/cadets
189 unique ATCs
Equivalent to 67.00 AEE (Annualised Employee Equivalent)

Number of Priority Job Seekers
180 unique PJS
Equivalent to 60.24 AEE (Annualised Employee Equivalent)

VIDA Decarbonisation Strategy

As part of a global pledge to reduce carbon emissions and avoid the worst impacts of climate change, the Victorian government has committed to being net zero by 2045.

Backed by legislated targets, Victoria's transition is underway with significant investment in renewable energy, new transmission lines and energy efficiency initiatives.

The unprecedented investment in Victorian transport sector is both a source of emissions and an opportunity to put in place measures to reduce the footprint of construction, both within the VIDA portfolio and beyond. There is opportunity to leave a lasting legacy, helping the industry to transition to a net zero economy, supporting job creation and new industries.

VIDA's Transport Infrastructure Decarbonisation Strategy sets out our commitments within two distinct streams:

1. Decarbonising corporate operations
2. Decarbonising transport projects in line with the Climate Change Act and net zero 2045 ambitions.

VIDA's focus is on driving efficiency, value engineering and seeking to reduce emissions through smart decision making. With continued support to innovation in industry, the emissions associated with materials and construction techniques are being driven down.

We recognise that we do not act alone. To be successful will require collaboration and coordination from government and asset owners, the construction industry and supply chains.

Work has already begun, but through this strategy we have now identified clear and deliberate actions we will take to support Victoria's journey to net zero.

"There is opportunity to leave a lasting legacy, helping the industry to transition to a net zero economy, supporting job creation and new industries."

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More information

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