

Whole life carbon reduced by
61%



Case study

Sustained success at South Eastern Program Alliance



Laing O'Rourke's Union Road & Mont Albert Road Level Crossing Removal Project (UMA), part of the South Eastern Program Alliance (SEPA) in Victoria, has achieved an impressive Infrastructure Sustainability Council (ISC) verified As Built score of 101 points—the **highest score awarded for a Victorian project to date**.

The ISC rating follows the project's recent 6-Star Green Star certification by the Green Building Council of Australia for Union Station, an internationally-recognised rating system that assesses the sustainability outcomes from the design and construction of buildings. **The 6-star rating sees Union Station join the ranks of "world leadership" in building design and construction.**

This project not only removed two hazardous level crossings and built the new premium Union Station but also set new benchmarks in sustainability. The team focused on **reducing material use** and associated carbon emissions, **preserving heritage**, and **managing environmental discharges**

effectively. Several sustainability initiatives from Union Station have since been adopted in subsequent level crossing removal projects.

From the outset, the UMA project applied a build-less approach (the top-tier principle in the decarbonisation hierarchy) as part of its decarbonisation strategy. By consolidating the Surrey Hills and Mont Albert stations into a single facility, Union Station, we not only minimised the need for additional infrastructure but also substantially reduced material use and associated carbon emissions. **The build-less approach demonstrates how strategic planning and design can lead to substantial long-term environmental benefits by focusing on reducing the scale of construction.**

The build less approach and other key initiatives such as a decrease in pile depth, **Victoria's first 70% SCM concrete piling mix**, and a reduction in concrete and steel usage due to changes in alignment resulted in a 32% reduction in embodied greenhouse gas emissions from materials, and a 31% improvement in IS EnviroPoints. A **61%**

lifecycle carbon reduction (14,553 tCO₂e) was realised through combining the two stations, the 70 kW solar array on the station roof, energy-efficient design, and an EV flatbed truck during construction.

The Victorian-first concrete piling mix has shown a **scalable approach to reducing carbon emissions**. The team took these efficiencies to the Dublin, Bedford and Coolstore Road Level Crossing Removal Projects, achieving a reduction of 2,100 tCO₂e from piling to date (compared to the client BAU concrete requirements).

The project also repurposed the historical Mont Albert Station into a heritage deck area with contextually relevant materials and reused a heritage palm tree, preserving the rich history of the area.

The Union Road & Mont Albert Road Level Crossing Removal Project stands as a testament to what can be achieved through innovative design and a steadfast commitment to sustainability.

Case study continued

By setting new benchmarks in environmental performance and heritage preservation, this project not only enhances the safety and functionality of Victoria's transport infrastructure but showcases a model of excellence that will inspire and guide sustainable construction practices for years to come.

Hollie Hynes, General Manager – Sustainability and Environment, Australia



Site establishment and associated compounds generate significant amounts of greenhouse gas emissions. The SEPA team aimed high – setting a goal to achieve net zero on their Ringwood project. To begin, they focused on reducing the emissions associated with site establishment, this saw the development and execution of a 'Site Decarbonisation Checklist'. Bringing this to life, the team collaborated with the local council, and converted a football club into temporary offices, upgrading the facilities and installing a 74.8kwh solar system. This saw the project achieve its net zero goal in the site establishment phase.

This solution provides ongoing benefits to the local community, by providing Ringwood with a football club that is entirely powered with solar electricity, with any excess solar energy returned to the grid. Further initiatives to drive down emissions included installing EV charging stations and using EV trucks. Upon completion SEPA will be leaving the local community with a renewable energy asset legacy and have achieved net zero for site establishment - a total win win.

