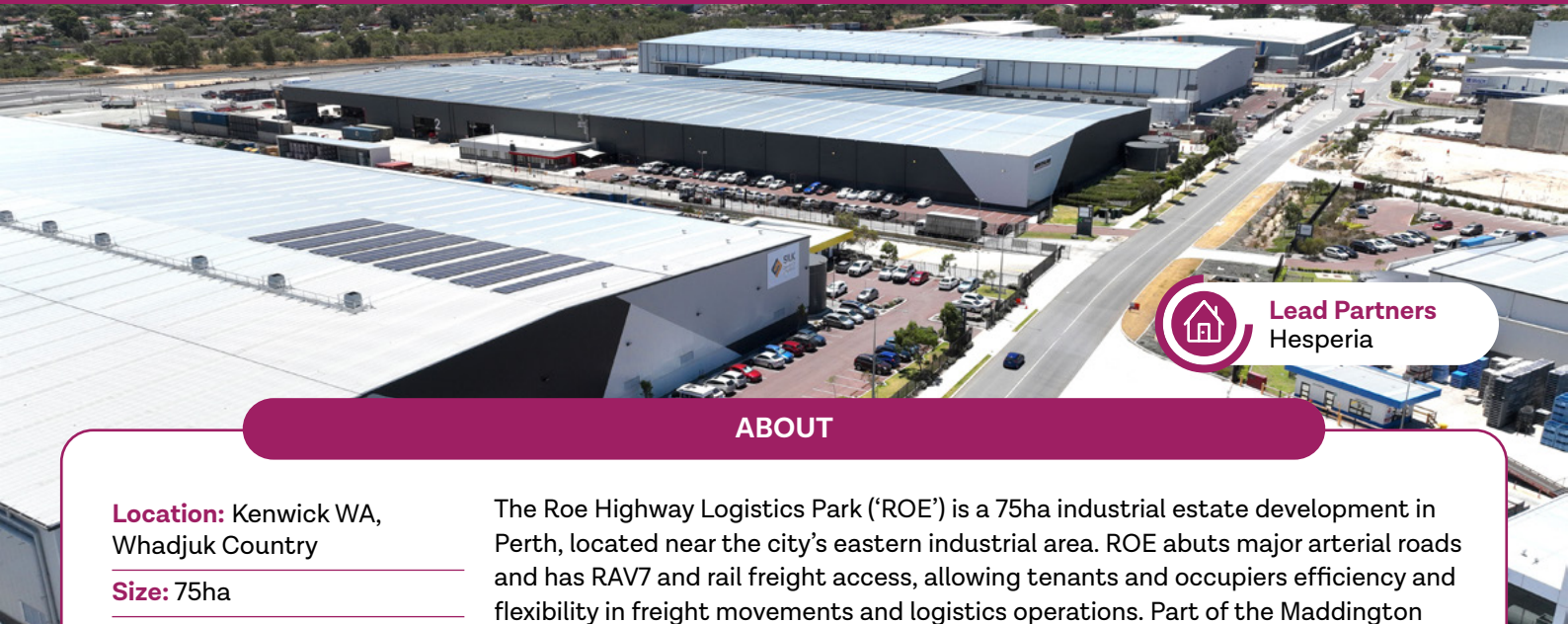




Lead Partners
Hesperia

ABOUT

Location: Kenwick WA,
Whadjuk Country

Size: 75ha

Typology: Light Industrial

Status: In operation

The Roe Highway Logistics Park ('ROE') is a 75ha industrial estate development in Perth, located near the city's eastern industrial area. ROE abuts major arterial roads and has RAV7 and rail freight access, allowing tenants and occupiers efficiency and flexibility in freight movements and logistics operations. Part of the Maddington Kenwick Strategic Employment Area (MKSEA) and led by development manager Hesperia, ROE involved the acquisition, amalgamation and rezoning of over 40 parcels of land, and significant research and investment to support an innovative carbon-neutral strategy.

The carbon reduction strategy focuses on minimising upfront and operational carbon through planning and design, and the use of low-carbon materials. Throughout the precinct, energy-efficient practices reduce overall energy demand, while smart technologies enable tailored solar and battery solutions for tenants.

ROE demonstrates how stakeholders (including investors, developers, and tenants) can maintain a carbon-neutral vision for a transport and logistics precinct through close working relationships.

HIGHLIGHTS

01

Developers of ROE, Hesperia, have an ambition to make ROE the first carbon-neutral industrial estate in Western Australia.

02

There are only two 6-Star Green Star (Design & As-Built) industrial facilities in Western Australia – both are at ROE.

03

In 2021, the Clean Energy Finance Corporation (CEFC) selected ROE to be the CEFC's first direct investment to reduce embodied carbon in property construction, with a \$95 million investment.

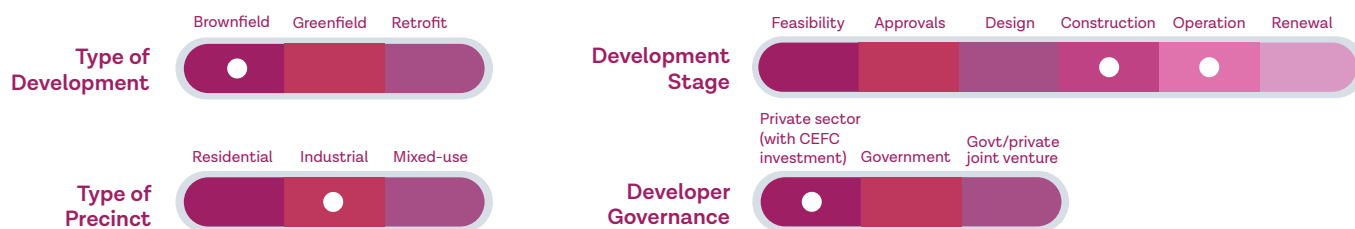
KEY RESEARCH QUESTIONS

What does a net zero-aligned trajectory look like for an urban industrial precinct? What are the key net zero attributes to consider?

How can developers enable a net zero-aligned trajectory for an industrial precinct through precinct planning and design?

How can developers enable net zero-aligned trajectory for an industrial precinct in which built form outcomes are negotiated with tenants?

CASE STUDY FEATURES OF INTEREST



1. A CULTURE OF SUSTAINABILITY

Hesperia, the Development Managers responsible for delivering ROE, have an ambition to make ROE the first carbon neutral industrial estate in Western Australia and were awarded a \$95million investment by the CEFC at a reduced financing rate tied to carbon and energy performance outcomes. The CEFC subsequently divested from ROE as institutional investors took over the portfolio. Hesperia is committed to aligning to net zero in operations and project delivery and has been a certified B-Corp since 2021.



2. AVOIDING UNNECESSARY CARBON EMISSIONS IN UTILISING LAND

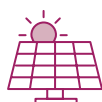
To develop ROE Hesperia acquired, amalgamated and rezoned over 40 parcels of primarily vacant rural land at a location close to major arterial roads, and the Kenwick Freight Rail Facility. This design and location of ROE minimised emissions relating to land clearing and continues to minimise emissions relating to tenant transport to and from the precinct.



3. SHIFTING TO LOWER CARBON EMISSIONS IN DEVELOPMENT PROCESSES

Having identified concrete as the main contributor to embodied carbon emissions at the site, Hesperia collaborated with Boral, and ROE became the first location in Western Australia to use Boral ENVISIA®, a reduced embodied carbon concrete product. Stakeholder collaboration, across investors, developers, and tenants at ROE has been essential in enabling reductions in embodied and operational carbon.

Two 6 Star Green Star – Design & As Built industrial facilities have been delivered at ROE. In this case, the use of certification as a means of aligning the decarbonisation goals of the developer and tenant in an industrial park has been critical.



4. IMPROVING PERFORMANCE WITH LOWER CARBON TECHNOLOGIES

Throughout the precinct, energy-efficient practices reduce overall energy demand, while smart technologies enable tailored solar and battery solutions for tenants, backed by Hesperia's subsidiary, Empowered.

The ROE developers committed to minimum 40kW solar installation on all tenanted warehouses, and promoted the uptake of solar PV systems for warehouses to ensure each warehouse had sufficient power generation capacity to offset each tenant's daytime energy usage. By the beginning of 2025 1,716-kWp of solar capacity has been installed across 12 buildings, along with 857 kWh of battery storage across 3 buildings at ROE.

ROE uses solar consumption metering to maximise solar benefits and to allow use of data to help achieve operational efficiencies and informed decisions. The use of smart inverters and smart metering, with power factor correction and voltage control, enables ROE to work with WA's main electricity network, the South-West Interconnected System (SWIS). Green power is purchased to cover any shortfall of energy not generated onsite.

Warehouses are the primary built form in the precinct design and these are oriented to allow for maximisation of solar, with most large sheds having a 50% north-facing roof.

At the Silk K2 facility at ROE, the container-rated hardstand employs SigmaSlab technology, which combines fibre-reinforced concrete with a post-tensioning system. This approach reduces the number of slab joints and minimises slab depth, and benefits including carbon reductions, better durability and lower maintenance costs.

INITIAL LEARNINGS

DEVELOPMENT STAGE	PRELIMINARY INSIGHTS FROM THE CASE STUDY
Overall	ROE demonstrates how planning and collaboration with tenants, suppliers, and builders can achieve reductions in upfront and operational carbon in the construction and in-use stages of the development of an urban industrial estate.
Feasibility/ Business Case	Green finance and investment can be a powerful enabler for innovations for net zero attributes in precincts.
Approvals/ Planning	The creative amalgamation of land parcels in strategic locations can help developers minimise emissions from land clearing.
Design	Hesperia considered emissions associated with importing sand fill and worked with civil engineers to calculate the thickness of pavements at future warehouse sites, thus avoiding or reducing the need for imported fill.
Construction	Substituting traditional concrete with low-embodied carbon alternatives can significantly reduce emissions in the development of industrial precincts like this one.
Operation	- The use of smart inverters and smart metering, with power factor correction and voltage control, helps achieve operational efficiencies and enables developers to work directly with energy utilities and retailers to make informed energy decisions in an increasingly distributed energy network. - Certification can be a valuable mechanism for aligning the decarbonisation goals of both developers and tenants within an industrial park

FURTHER INFORMATION

[Pathways to Net Zero Precincts Website – Roe Highway Logistics Park Case Study](#)

[Hesperia's Net Zero Carbon Report for Roe Highway Logistics Park](#)

[ROE Highway Logistics Park Carbon Emissions Report](#)

[Roe Highway Logistics Park Website](#)

[Clean Energy Finance Corporation's "Landmark Buildings and Greener Industrial Precincts" document](#)



Curtin's support includes the CISCO Curtin Centre for Future Networks

Image by J Wyld

The preliminary findings set out in this document are part of ongoing research and are not final. No liability is accepted for any actions taken based on them.