



LUNDGREN CHAIN RESERVE

**OPTIMISED,
SUSTAINABLE
& COMPLIANT**

CASE STUDY

Lundgren Chain Reserve

LOCATION

BURWOOD, VIC

END USER

LOCAL COMMUNITY

ELECTRICAL CONSULTANT

ARCADIS

CHALLENGES

ACHIEVE COMPLIANCE WITH
PATHWAY LIGHTING STANDARD

MINIMISE LIGHT ON NEARBY HOUSES

SOLUTION

ORCA SOLAR LIGHTING AVERO

RESULT

ENHANCED PEDESTRIAN SAFETY

ALL NIGHT COMPLIANCE

MINIMAL OBTRUSIVE LIGHT
ON NEIGHBOURING PROPERTIES

A More Sustainable Approach to Lighting.

Lundgren Chain Reserve is a linear park and playground located in Burwood in Melbourne's eastern suburbs.

Opening in 2023, the park was constructed as an alternative to nearby Sinnott Street Reserve which was needed for the construction of a new railway station as part of the Suburban Rail Loop (SRL) project.

Designed in close consultation with the local community, Lundgren Chain Reserve now features a new playground, seating, soft surfacing and landscaped areas. Existing mature vegetation was also retained. Lighting was identified as a desired amenity during the community engagement process.

Advanced Lighting Technologies were commissioned to design and supply a pathway solar lighting solution that would extend the usability of the park and help users and residents feel safer when walking after dark. We had the perfect solution - the Avero Solar Lighting System from Orca Solar Lighting.

Solar offers a more **sustainable, environmentally friendly** approach to lighting. Using renewable energy from the sun produces no greenhouse gas emissions and minimises the system's carbon footprint.

Beyond sustainability, solar lighting offers many other advantages over traditional lighting systems, including less design and planning requirements, no cabling or trenching and fast, easy installation. Being completely removed from the electrical grid also means no ongoing energy costs and no disruption during power outages.



Challenges

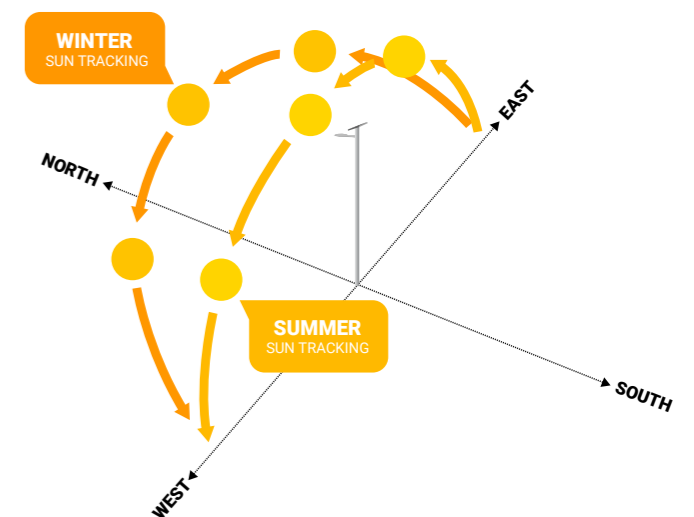
The solar solution supplied to Lundgren Chain Reserve needed to meet the light technical parameters recommended in the relevant Australian Standard for pathway lighting (AS/NZS 1158.3.1:2020 Subcategory PP3) which would help to ensure a safe environment for pedestrians and other pathway users at night. While some situations call for public lighting to be dimmed during periods of inactivity, Lundgren Chain Reserve required constant, compliant illumination from sunset to sunrise.

Minimising spill light was also an area of concern. The park is surrounded by residential properties on both sides of the pathway, so any proposed solution had to ensure compliance with AS/NZS 4282:2019 (Control of the obtrusive effects of outdoor lighting). This was of great importance considering the light output would not reduce overnight, even during the early hours.

Existing trees scattered around the park meant pole spacings and locations had to be carefully considered to ensure sunlight capture was maximised, while a solar solution with

the right battery had to be selected to store and cycle captured energy, especially during Melbourne's winter months when sunshine levels can be low.

Considering these factors, any proposed solution had to be carefully contemplated and chosen.



Solution

Orca Solar Lighting are the experts in solar lighting, designing and building solutions specifically for Australian conditions. Orca's in-depth site analysis and calculations go above and beyond industry norms to provide a solar lighting system customised to suit both your lighting needs and the location's requirements.



Avero

SOLAR LIGHTING SYSTEM

Orca Solar Lighting's Avero system was specifically built for pathway lighting, providing exceptional illumination results for suburban and rural level compliance with AS/NZS 1158:2020.

Designed in Australia and available in a range of pole heights, the Avero generates up to 2,000 lumens of warm 3000K illumination. A 60W multi-directional monocrystalline photovoltaic solar module ensures maximum sunlight capture while a premium LiFePO4 battery provides up to 5 days autonomy / battery back-up.

Built-in adaptive lighting controls mean the Avero can also be programmed to reduce or increase light levels based on set times or the presence of movement in the area. Changes can be made in the field using the remote control (optional).

Benefits

- 1 EFFECTIVE LIGHTING WITH MINIMAL ENVIRONMENTAL IMPACT
- 2 FAST & EASY INSTALLATION NO TRENCHING OR CABLING
- 3 POWERED BY RENEWABLE ENERGY
- 4 DUSK TO DAWN (D2D) OR TIMER AVAILABLE

Features

LUMENS	385L - 2,000L
WATTAGE	5W - 14W
CCT	3000K
CRI	80 CRI
RATINGS	IP67 IK08
OPTIONS	PIR SENSOR
WARRANTY	5 YEARS
COLOURS	BK SV
BATTERY	LITHIUM BATTERY <i>80% depth of discharge to 4000 cycles</i>
POLES	AVAILABLE IN 4M 5M 6M
HIGHLIGHT	UP TO 5 DAYS AUTONOMY*
HIGHLIGHT	QUALITY SOLAR COMPONENTS

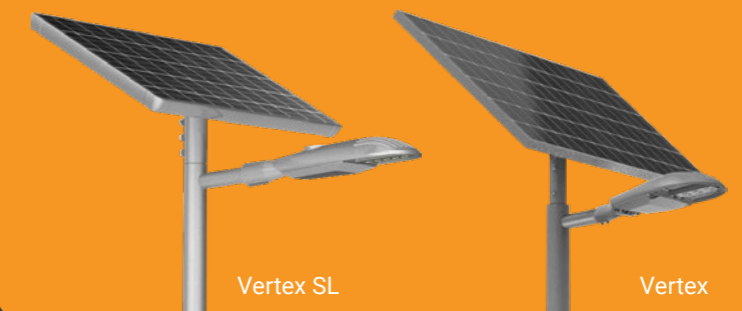
*Length of autonomy/battery backup subject to location requirements
All lumen and wattage figures nominal.

Relevant Australian Standard

AS/NZS 4509.2:2010 Stand-Alone Power Systems

The Avero Solar Lighting System was designed in accordance with the methodologies of the relevant Australian Standard (AS/NZS 4509.2:2010 Stand-Alone Power Systems) to ensure the solar module is adequately sized and the discharge continuity of the battery system is balanced year-round.

Visit adlt.com.au to see our full range of solar poletop lighting solutions today!



Vertex SL

Vertex

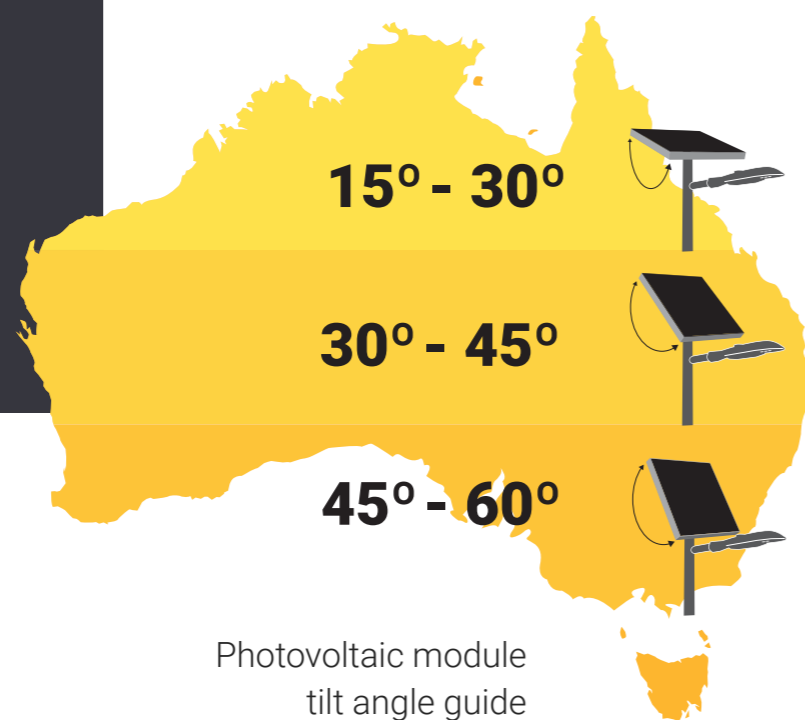


Advanced Lighting Technologies are the pathway lighting specialists. We've provided LED lighting solutions to local councils and organisations across Australia & New Zealand.

Contact us for more information today!

Optimal solar collection

Advanced Lighting Technologies' solar lighting solutions feature pole-top mounted photovoltaic modules which enables full flexibility of orientation and tilt angle adjustment to ensure optimal solar collection, regardless of which way the luminaire is facing.



Results

The Avero provides soft, warm illumination along the pathways at Lundren Chain Reserve. Pedestrians and other pathway users can feel safer at night than ever before thanks to the Avero's Dusk to Dawn setting that generates constant lumen output all night long.

An intelligent lighting design ensured pole locations and spacings across the entire project were optimised, minimising any shadowing or pixelation without requiring additional poles or luminaires that would have exceeded the budget set aside for lighting.

Orca's industry-leading solar calculation methods uses solar radiation data from NASA to ensure the maximum amount of sunshine will be captured all year round, while potential shading from the Park's existing mature trees was also considered.

Compliance with AS/NZS 1158.3.1:2020 Subcategory PP3 was achieved, with the recommended average horizontal

illuminance of three lux met, while the optics selected were also in accordance with the glare limitations found in the same Standard.

Minimising any obtrusive light entering neighbouring properties was also of great importance, and compliance with AS/NZS 4282:2019 was achieved thanks to the Avero's multi-lens directional optics and intelligent luminaire placement.

For additional peace of mind, the Avero comes with a standard 5-year warranty, ensuring the local community will enjoy using Lundgren Chain Reserve after dark for years to come.



Advanced Lighting Technologies are specialists in architectural, commercial and industrial lighting. **Whatever the application, whatever the budget - we'll have a solution that fits your needs.**



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