



**Location** Melbourne, VIC, Australia  
**Completion** 2020  
**Client** Mirvac

**Accreditations** Targeting 6 Star Green Star and 5 Star NABERS energy rating, 4 Star NABERS water rating, Platinum Core and Shell WELL Pre-Certification for base building (first in Australia)

**Project Partner/Lead** Neil Stonell/ Tim Cox  
**Project team** Grimshaw, Arup, AECOM, RBIS, UAP, Fyotgreen

## SUSTAINABILITY AND REGENERATIVE DESIGN CASE STUDY

Olderfleet is a 58,000 sq.m PCA Premium Grade office tower located in the centre of Melbourne's CBD. Set back from three heritage-listed buildings in Collins Street, the 38-storey office can accommodate over 5,000 people. A series of third spaces create a rich experience through a combination of retail offerings, business lounge, wellness centre and childcare centre complemented by best in class end-of-trip facilities to support and enrich the day-to-day lives of its tenants. The site is sloped towards the south from Collins Street to Flinders Lane and features views across the Yarra River to Port Phillip Bay. It is well located for convenient access to Melbourne's public transport system with several tram lines along Collins Street, and in close proximity to both Southern Cross and Flinders Street stations.

**Sustainable design performance summary**  
 The project achieved a WELL Core and Shell Platinum rating. This includes the incorporation of numerous health and well-being initiatives including a feature staircase internally to promote active workplaces, health stations for tenants and access to the building's wellness centre, carefully selected interior materials.

A 5 star NABERS Energy Base Building Commitment Agreement has also been achieved. The building's high-performance double-glazed and triple-glazed façade with external shading and a high degree of solar control work to minimise energy demand. The HVAC equipment selected is consistent with best practice and the LED lighting design averages at 3 W/m2.

The building features a centralised HVAC system with water cooled chillers and high efficiency condensing gas-fired boilers serving the majority of the development.

The greenhouse gas emissions are further reduced through the incorporation of a PV array on the roof of the development, maximising the space available and a gas-fired cogen engine. Other initiatives include an 80m2 green roof, rainwater harvesting, sustainable materials and a white roof.

**What we did differently**  
 The tenant-focused design incorporates a 'vertical village' concept, with the tower split into three separate neighbourhoods which respond to specific tenant requirements and provides them with a unique identity within the overall building.

**Project design solutions in regional context**  
 The project integrates with the existing Olderfleet Buildings (Gothic style from 1889-90), restoring them for future uses and preserving their heritage significance. The project also includes a public art piece titled 'Solar' by internationally renowned artist Wolfgang Buttress. The project contains heritage interpretation panels and digital fields which engage with visitors and building users to celebrate the history of the Olderfleet buildings.



End-of-Trip ↑ Facilities



Olderfleet Buildings ↑ Integration and preservation

### Alignment with UN Sustainable Development Goals

- SDG 3 GOOD HEALTH AND WELL-BEING**  
WELL building standards have been incorporated achieving a Platinum rating. Low volatile organic compounds materials, improved air quality, access to nature and recreation facilities such as childcare and wellness centre.
- SDG 6 CLEAN WATER & SANITATION**  
Project harvests rainwater from the roof with rainwater stored in a 50 kL tank. A 34% reduction compared to standard practice benchmark.
- SDG 7 AFFORDABLE AND CLEAN ENERGY**  
An 80 kWp PV array is implemented on the roof of the building with a specified performance target of 75 MWh/yr.
- SDG 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE**  
The project provides 22 electric car charging spaces with provision for 57 additional spaces by pre-installing wiring.
- SDG 10 REDUCED INEQUALITIES**  
Gender neutral facilities incorporated in the end-of-trip facility and the anchor tenant premises.
- SDG 11 SUSTAINABLE CITIES & COMMUNITIES**  
The project features a high-performance façade, energy efficient LED lighting (~3 W/sq.m), water cooled chillers, variable speed drive pumps, energy efficient air movement technology, a PV array on the roof and a cogen system which all combine to significantly reduce peak electrical demand compared to the reference building.
- SDG 12 RESPONSIBLE CONSUMPTION AND PRODUCTION**  
The improvement of the proposed compared to the benchmark represents a 42% improvement of the embodied carbon compared to the reference building.

### Key Sustainability Facts

- CLIMATE ZONE**  
6 - Mild temperate
- OPERATIONAL ENERGY/CARBON**  
 > EUI: 2800 kWh/m2/year  
 > Energy/fuel types: grid + on-site renewables (15% solar energy)  
 > Reduction of Energy Consumption per year and Peak Electricity Demand Reduction from an Equivalent New Building: 8% mj/year, 31% PED  
 > Reduction of Embodied Carbon from a Baseline Scenario: 42%
- EMBODIED CARBON**  
 > 5,295 kg-CO<sub>2</sub>e/m<sup>2</sup>

