



Australian Government



Clean energy and Australian seniors living

How can clean energy deliver lower emissions and enhanced energy efficiency for Australian seniors living?



Sustainability targets

- Drive best-in-class sustainability measures in the seniors' living market, to target 50 per cent lower emissions compared with a 2016 National Construction Code baseline
- Demonstrate the potential to repurpose commercial building stock, avoiding the carbon and financial costs of demolition and new construction, to deliver 'second-life' properties
- Use sustainability initiatives to address resident concerns over energy 'bill shock', thermal comfort levels and environmental impacts. LDK's pricing model covers resident utility use, and by investing in sustainability measures, LDK potentially reduces its operating costs which can help provide lower cost of living to residents.

The investors

LDK Healthcare is a specialist senior's living provider, that takes its name from its vision: to treat seniors with "love, decency and kindness". LDK is jointly owned by the Cromwell Property Group and the Aspire Group, a senior living operator. Greenway Views is the largest asset in the LDK portfolio.

Cromwell Property Group is a real estate investor and manager that owns, manages and invests in commercial property. At 31 December 2019, Cromwell had a market capitalisation of \$3.1 billion, and total assets under management of \$11.9 billion across Australia, New Zealand and Europe.

The CEFC is a specialist investor across the built environment, working to improve the energy performance of buildings in diverse developments, including seniors, student, community and build-to-rent housing, as well as hotels and commercial properties.

The investment

The CEFC has invested \$60 million with Cromwell Property Group to transform a disused Canberra office park into an energy efficient seniors' living village.

The \$180 million Greenway Views development will have more than 380 apartments, and feature a range of self-contained community amenities, including a greengrocer, state-of-the-art auditorium, cafes and care hub.

Sustainability and seniors

The Greenway Views project is the CEFC's first investment in retirement living and aged care, a sector that is increasingly important as Australians seek to live longer and healthier lives.

Sustainability measures can create value for both operators and residents. Operators can directly benefit from reduced energy costs as well increasing the marketability and desirability of their villages through a differentiated product that highlights the sustainability features such as solar and passive design. Residents stand to benefit from lower energy bills, more comfortable indoor environments, and a sense of contributing to environmentally sustainable outcomes.

The diverse range of sustainability measures incorporated in the Greenway Views development demonstrates the potential for Australia to reduce emissions across the built environment, particularly through the refurbishment of existing buildings.

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Greenway Views is our flagship project. It is delivering LDK Healthcare's vision for the future of seniors' living and is our greatest opportunity to show the rest of Australia how we should be treating our seniors.”

Byron Cannon
CEO, LDK Healthcare



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This investment is a great example of how we can cut emissions across every sector of our economy. It's also exciting to see the property sector recycling buildings, giving large-scale assets such as commercial office buildings a second life in an environmentally-friendly manner.”

Ian Learmonth
CEO, CEFC

Greenway Views sustainability features

1 Improved lighting and HVAC system

- LED lighting and lighting controls to dim and extinguish lighting when areas are unoccupied, targeting a Lighting Power Density of 3-5W/m², compared to the minimum NCC of 7-10W/m²
- Digital Addressable Lighting Interface (DALI) offering customisable settings for all light fittings, provides the ability to reduce energy and improve lighting to meet individual resident needs
- Variable Refrigerant Flow (VRF) reverse-cycle air conditioning systems in resident apartments enable the sharing of heat and cooling modes between apartments and reduce energy used when compared with stand-alone systems
- Heat recovery systems in common areas maximise the efficiency of the air conditioning systems
- Magnetic bearing chillers for energy efficient space cooling; allowances have also been made for chilled water storage, to further increase efficiencies
- Hot water heat pumps that are up to two to three times more efficient than conventional electric hot water systems

The increased energy efficiency of the refurbished building allowed Greenway Views to remove one of three existing electrical substations, freeing up space to expand the planned dementia ward.

2 Improved building fabric

- Enhanced building fabric insulation to walls, roofs and floors, including 5,500m² under floor areas that are exposed to external conditions such as spaces above car parks
- Additional roof sheeting and ceiling insulation of R1.5 and R5.0 respectively, made possible due to roof sheeting upgrades required for the solar PV installation
- High performance double glazing installed where windows and doors were introduced or replaced
- External shading hoods where suitable to reduce heating loads

Upgrading the roof structure to enable solar PV installation provided the opportunity to more easily increase roof insulation.

3 Solar array installation

- 700kW rooftop solar PV system to generate 964,000kWh per year, to power common areas and resident homes
- During peak generation up to 15 per cent of the solar energy generated can be exported to the grid, based on predicted energy consumption profiles
- Future battery storage allowances have been included in the design of electrical infrastructure to support peak demand load control

4 Embodied carbon benefits

- Repurposing the existing building structure and façade displaced carbon associated with the production of new steel, concrete and other building materials
- Initial Life Cycle Assessment (LCA) estimates, based on similar projects, indicate the adaptive reuse of the building will result in a 20 per cent reduction in upfront embodied carbon, equivalent to four per cent of whole-of-life emissions and five years of operational emissions.

Driving successful outcomes

Early involvement

Engaging with the head contractor from the beginning of the project enabled a coordinated approach between the design and construction teams – Northrop Consulting Engineers, Gray Puks and Architects, and FDC Fitout and Construction.

A better understanding of the design intent meant the contractor met the project’s sustainability targets while accommodating LDK Healthcare’s focus on resident wellbeing.

The engagement of a dedicated ESD engineer at project commencement allowed the building performance to be modified during design to maximise sustainability outcomes.

Collaboration with the care provider

LDK Healthcare inducted various subcontracted tradespeople so that they understood the needs and care of future occupants and the relevance of their work on the site to the future wellbeing of the residents.

Additionally, collaboration throughout the design and construction phase allowed LDK Healthcare to better understand the building design to maximise the benefits to residents.

Greenway Views is expected to benefit from reduced electricity demand resulting in a forecast reduction in greenhouse gas emissions of 56 per cent compared to a 2016 National Construction Code baseline.

Emissions savings by technology

Initiative	Whole of building annual emissions savings
Lighting	13%
HVAC equipment	23%
Building fabric	6%
Large scale solar	14%
Total expected saving	56%
Targeted saving	50%

The reduced electricity needs can reduce resident living costs and operator expenses.

Indicative costs and savings

Initiative	Incremental capital cost	Annual saving	Simple payback
Lighting	\$1m	\$200k	5 years
HVAC equipment	\$2m	\$340k	5.9 years
Building fabric	\$500k	\$60k	8.3 years
Large scale solar	\$1.2m	\$133k	9 years
Total	\$4.7m	\$733k	6.4 years average



Australia's aging population

The latest *Older Australia at a glance* report, issued by the Australian Institute of Health and Welfare (AIHW), said the 3.8 million Australians aged 65 and over represented 15 per cent of the population in 2017.

By 2057, it projected there would be 8.8 million older people in Australia – representing 22 per cent of the population. And by 2097, 12.8 million older people would represent 25 per cent of the Australian population.

The 2019 Retirement Census, conducted by PwC and the Property Council of Australia, forecast:

- 1 Ongoing growth in the sector, with more than 2,000 units expected to be built each year from 2020-21 to 2023-24
- 2 Growth would be across a mix of new villages and new stages of development in existing villages
- 3 Retirement villages were increasingly offering an extensive range of recreational facilities and health and wellbeing services
- 4 The average tenure of residents in retirement villages ranges from 7-9 years.

Buildings and emissions

Research from ClimateWorks Australia released in March 2020 found that residential and commercial buildings, including their electricity emissions, comprise around one fifth of Australia's emissions.

The ClimateWorks Australia *Decarbonisation Futures* report, said the technology required for a zero-emissions building sector – deep energy efficiency and electrification powered by renewables – was already available. The key challenge for the sector was to achieve widespread deployment.

Critical factors in reducing building energy consumption included:

- incorporating at construction phase technologies such as lighting, heating and cooling that have the lowest possible energy requirements, while including insulation, draught-sealing and passive design
- installing the most energy efficient equipment, including LED lighting, HVAC, solar hot water, appliances and other equipment
- optimising the use of building equipment through the installation of smart systems, demand response and lighting controls.



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As today’s investors factor in ESG considerations as part of their decision making, this approach is becoming the expected minimum standard of good investment practice.”

Rob Percy
CIO, Cromwell Property Group

Low emissions living

New homes built today will be in use for decades to come, whether in retirement villages, apartments or free-standing homes. The CEFC, working with industry, supports the use of the strongest clean energy and energy efficiency measures to deliver the smallest carbon footprint possible.

The CEFC has a strong track record of investing in a diverse range of cleaner, greener residential options, from build-to-rent to masterplanned communities, to student accommodation and community housing.

Reflecting the CEFC’s unique role as a clean energy investor, this finance is supporting the adoption of best in class clean energy standards in residential accommodation, from design to construction, and extending to fittings and energy efficient appliances.

About the CEFC

The CEFC has a unique mission to accelerate investment in Australia’s transition to net zero emissions. We invest to lead the market, operating with commercial rigour to address some of Australia’s toughest emissions challenges. We’re working with our co-investors across renewable energy generation and energy storage, as well as agriculture, infrastructure, property, transport and waste. Through the Advancing Hydrogen Fund, we’re supporting the growth of a clean, innovative, safe and competitive hydrogen industry. And as Australia’s largest dedicated cleantech investor, we continue to back cleantech entrepreneurs through the Clean Energy Innovation Fund. With \$10 billion to invest on behalf of the Australian Government, we work to deliver a positive return for taxpayers across our portfolio.