Getting to the Sweet Spot: Financial Performance and Net Zero Carbon Buildings

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LENDLEASE

Is one of the leading **fully integrated** property solutions providers in the world

Has more than **50 years** of operation

Approximately 12,000 employees

Develops, constructs, and/or manages **large, complex projects**

Specializes across **multiple asset classes**

Is committed to creating and buildings **innovative and sustainable** solutions

Operates **Incident & Injury Free**

**Sustainability at Lendlease**

As a Global leader, we understand the importance of building communities that stand the test of time, enrich people’s lives and foster economic growth.

“Companies must start justifying their worth to society, with greater emphasis placed on environmental and social impact rather than straight economics.”

**Dick Dusseldorp**

Founder of Lendlease, 1973
The Climate Positive Development Program is a recognition based effort under C40’s Urban Planning & Development Initiative of the world’s most ambitious low carbon projects. The Program supports the creation and implementation of large scale urban communities that reduce greenhouse gases and serve as models for cities to grow in environmentally sustainability and economically viable ways.

Lendlease has three projects participating in this global initiative.
- Barangaroo South, Sydney
- Elephant & Castle, London
- Victoria Harbour, Melbourne
URBAN REGENERATION PROJECT HIGHLIGHT
Barangaroo South, Sydney, Australia

Be carbon neutral
- Carbon neutral by minimising consumption through great design, delivering green infrastructure, and then investing in carbon offsets

Be water positive
- Rainwater tanks in each tower capture and recycle rainwater
- Zero waste responsible waste management, diversion from landfill and zero waste emissions

Create zero waste emissions
- Offsite renewable energy sized to offset remaining carbon footprint

Incorporate community wellbeing
- Office buildings have achieved 6-Star Green Star rating
- Residential buildings have achieved 5-Star Green Star rating

Solar shading on facade includes vertical fins to manage natural light and heat load
Recycled water from blackwater treatment plant will supply the precinct with water for toilet flushing and irrigation
Chilled water and harbour heat rejection system used throughout
Green travel options encourage cycling, walking and public transport links
12 acre site, 7 acres of land area
TOD: Adjacent to Maverick T & Lewis Street Water Terminal
Parking Ratio: 0.57

478 Residential Units in 2 Phases:
Phase I: 284 Apartments
  80 Condominiums
Phase II: 114 Apartments or Condos

Targeted LEED Platinum
(LEED for Homes Mid-rise)
Delivery Fall of 2018
Climate Resiliency Measures

- Elevated ground floor, moving building elements out of flood plain, and flood barrier systems for at-grade lobbies and retail environments
- Reconstructed salt marsh wetland at shoreline
- Comprehensive storm water management plan
- Seawall design to foster wave dissipation in storm events
- On-site energy to keep building operational in power shortage
- Building egress paths well above 100-year flood levels
Lendlease’s military community business is the nation’s leader in public/private community development. With a focus on creating sustainable value, Lendlease creates communities that regenerate our environment, enrich people’s lives and foster economic growth.

Portfolio Statistics
• 10 projects, 18 sites, across 13 states
• Nearly 41,000 detached and semi-detached family homes
• 65 million total sq. ft.
• Nearly 15,000 new homes
• Average age of homes is 28.8 yrs.
• Total population over 121k
• 35k+ active duty military members
MILITARY HOUSING PORTFOLIO HIGHLIGHT

Carbon Reduction Strategies

ENERGY EFFICIENCY

Legacy Homes
- **Green Retrofits** – 26,000 homes
  HVAC replacements, housing envelope improvements, residential and street lighting upgrades
- **Resident Education & Billing** – portfolio wide
- **Technology:**
  - Sub-Metering – portfolio wide
  - Building Energy Management Systems - 4,456 homes

Lendlease Built Homes
- **Energy Star** – 15,000 homes
- **Achieved LEED Certification** – 500 homes
- **Zero Energy Homes** – 3 homes

RENEWABLE ENERGY

- **Solar Photovoltaic** – System size: over 34 MW
  - 3.28MW solar ground mount in Arizona
  - 31.5MW rooftop solar in Arizona, California, Colorado, and Hawaii
  - Two of the largest solar-powered communities in the US (Soaring Heights Communities, AZ and Island Palm Communities, HI)
- **Solar Thermal** – 7,000 homes
  Hawaii and North Carolina
- **Geothermal** – 3,000 homes
  Mostly in Kentucky and North Carolina
**CARBON REDUCTION**
Since FY2014, the portfolio has reduced emissions by 17%, equal to 184M tons of CO2 emissions.

**ENERGY USE INTENSITY**
34% EUI improvement in the portfolio since 2008.

**RENEWABLE ENERGY**
Generated 42.7GWh of solar energy in FY18, enough to provide electricity to 4,762 homes for one year – over 8% of the portfolio.

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**Results**

**Strategy Overview**

**ENERGY EFFICIENCY**

**Construction & Investments**
- Development Work
- Capital Improvements
- Operation & Maintenance
- Technology Improvements

**Education & Engagement**
- Collaboration with Property Management and Facility Management
- Resident Engagement Strategies

**RENEWABLE ENERGY**
- Power Purchase Agreements (over 29 MW)
- Capital Investment (over 5 MW)
- Innovative Engineering & Design
Thank You