CITIES & OUR URBAN FOOTPRINT

EIANZ 18th October 2010

Cities & our urban footprint

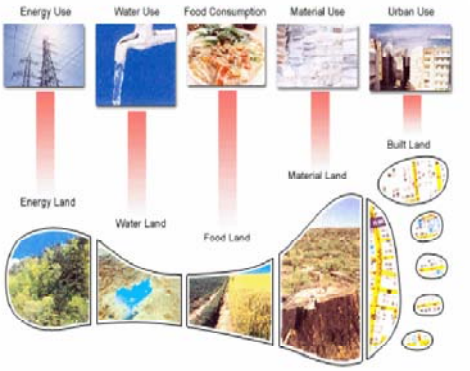
Imagine a future of climate positive, sustainable cities that provide affordable places to live, work and play.

How do we transition to green precincts addressing our urban footprint, liveability, climate change and housing affordability.

- Built Environment in context
- Key Challenges & Opportunities
- Transition Pathway

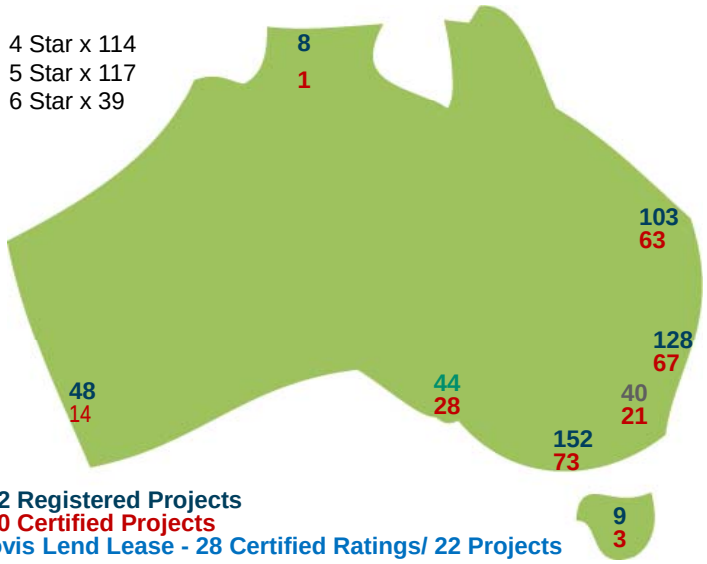
Built Environment - Ecological footprint

- Buildings account for:
  - 30-40% of greenhouse gas emissions
  - Up to 40% world's solid waste
  - 30-50% of world's resources
  - 8-12% of the world's water use

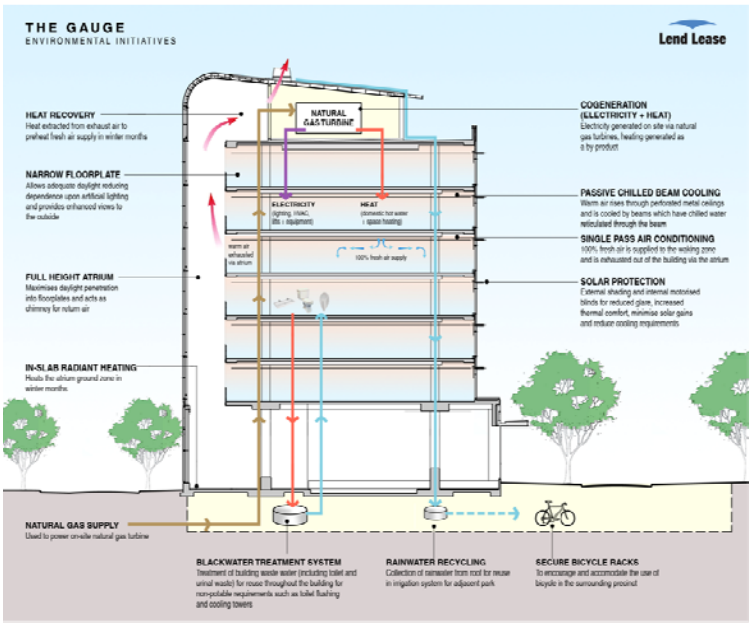


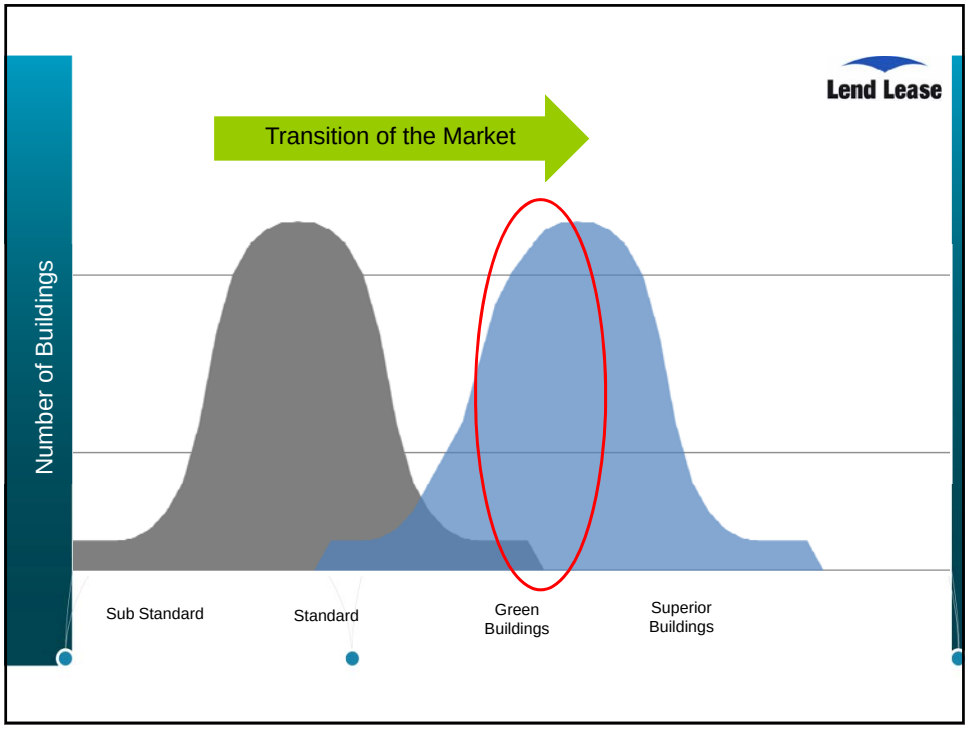
Sept 2010 - Green Star Projects

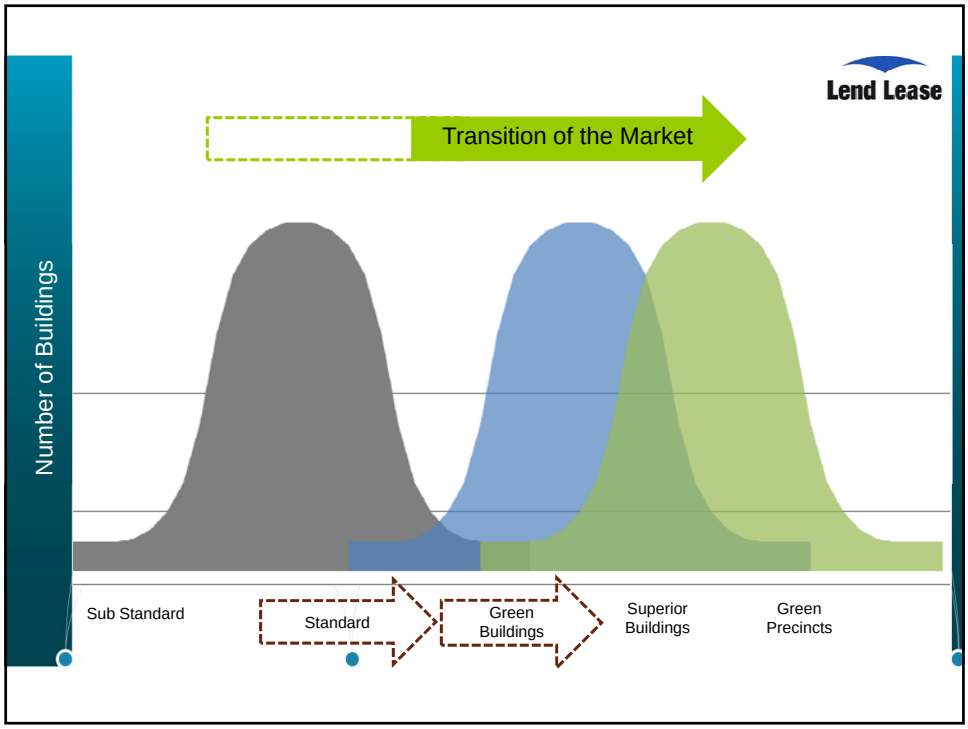
4 Star x 114
5 Star x 117
6 Star x 39



532 Registered Projects
270 Certified Projects
Bovis Lend Lease - 28 Certified Ratings/ 22 Projects




Lend Lease
Transition of the Market
Number of Buildings
Sub Standard
Standard
Green Buildings
Superior Buildings


Lend Lease
Transition of the Market
Number of Buildings
Sub Standard
Standard
Green Buildings
Superior Buildings
Green Precincts

30% Complete as at 2009

Lend Lease

Precinct Initiatives

Lend Lease

Services

- Community facilities e.g. childcare
- Retail and Entertainment
- Transport Initiatives

- Energy supply
- Water supply
- Stormwater management
- Wastewater treatment
- Waste collection / treatment

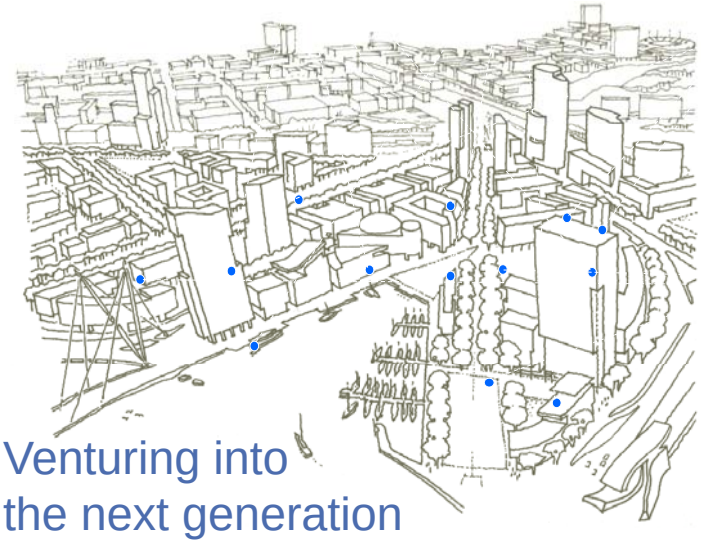
- Landscaping
- Public Spaces
- Water spaces (harbour and river)

Carbon
- Carbon Footprint Study
- Lend Lease Carbon calculator
- Efficient Building Scheme to capture carbon revenue streams

Water
- Lend Lease Ventures and WJP Solutions Pty Ltd - provide onsite blackwater and greywater treatment plants

Social/ Community
- Integrated sustainable open space, public art and play areas

Lend Lease



Energy
- Lend Lease Ventures and Diamond Energy, electricity generator and retailer; owns and operates biogas plants, manages wind generators and retails "green electricity";
- Lend Lease Ventures and First Solar, one of the world's leading solar technology providers.

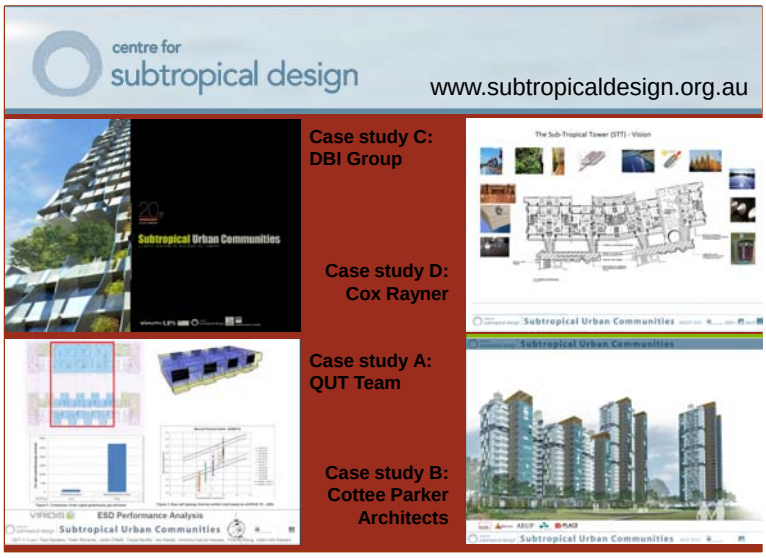
Transport Systems
- Pedestrian and cycle ways feature in all precinct developments.
- Electric car infrastructure.
- Inter-modal Transport hubs

Waste
- Recycling optimised
- Waste to energy infrastructure embe

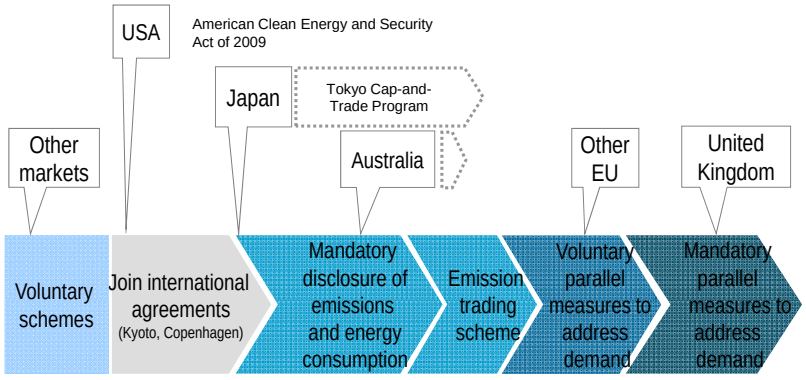
Venturing into the next generation

Buildings › Refurbishment › Infrastructure › Supply Chain › Urban Regeneration

Subtropical residential towers



International Regulatory Trends

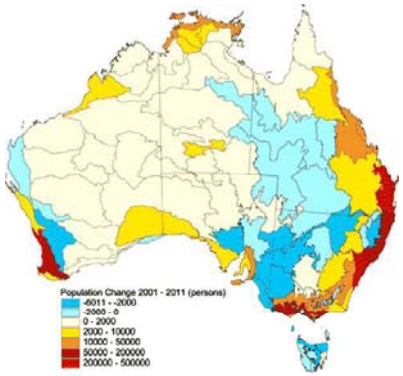


National Legislation Overview

Federal	Energy Efficiency Opportunities Act (EEO) National Greenhouse and Energy Reporting Act (NGER) Carbon Pollution Reduction Scheme (CPRS) Mandatory Disclosure of Commercial Office Building Energy Efficiency Building Code 2010 Energy Efficiency – 6 Star Residential
State	*Towards Q2 - Cleaner Greener Buildings (Qld)* Climate Change and Greenhouse Emissions Reduction Act 2007 (S.A.) Environment and Resource Efficiency Plans (Vic EPA) NSW Energy Efficiency Trading Schemes (NEET) Victorian Energy Efficiency Target (VEET)
Local	Council 2020 Visions, Targets, '2030' Strategies Planning Requirements – City & Neighbourhood

Key Challenge - Coastal & Urban Growth

- ¾ of Australians live in urban centres with population > 100,000 people.
- Population growth projected to reach 35.9 million in 2050 (60% rise)
- Distribution of population growth predominantly in capital cities and peri-urban areas
- 90 percent of the population living in the coastal Zone
- Significant population and demographic change with major implications for managing future coastal urban growth



Source: 2006 State of the Environment Report

Key Challenge - Adaptation

- Adaptation costing gap: wide and apparent
- Market Uncertainty on impacts
- Risk Assessments by Councils limited and no aligned practice by private industry
- Legal liabilities uncertainty
- Risk mapping data disclosure
- Mitigation / Adaptation Conflicts
- Differing approaches by Federal, State & Local to implementation
- Liability and future proofing of existing assets for climate change adaptation risks

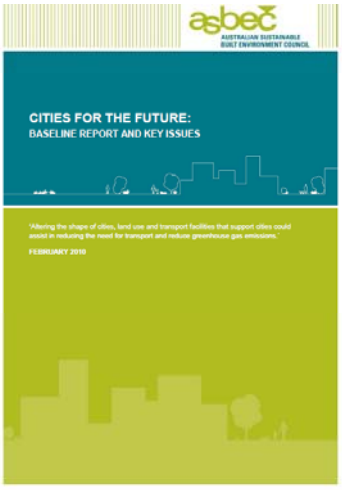
EXAMPLE

SEQ Scenarios: Brisbane, Morton Bay, Gold and Sunshine Coast

- > 2.7m residents, 66% of states population
- Strongest population growth in Qld (71% within the last 5 years)
- Australia's has the highest exposed values concerning Tropical Cyclones's, hence highest accumulated losses.

Key Challenge - Cities for the Future

- Urban centres will become more transport-intensive and less transport efficient
- While households in inner city areas consume less transport energy, they also consume more of other services that raise GHG emissions than households in suburban and rural areas



Key Opportunity for GHG abatement

- Halve electricity use in residential & commercial building stock by 2030 and 70% by 2050;
- Cut the cost of carbon abatement by 14% or $30 per tonne by 2050;
- Return $38 billion each year to the GDP compared to conventional GHG abatement programs by 2050;
- Provide breathing space for the development of clean energy alternatives; and,
- Help the country reduce its carbon footprint faster and with less fuss.

The Second Plank Update:
A review of the contribution that energy efficiency in the buildings sector can make to greenhouse gas emissions abatement

3 June 2010

Commissioned by the ASBEC Climate Change Taskgroup (CCTG)

TRANSITION UNDER CLIMATE CHANGE

PATHWAY TO 2050

Factors DRIVING Progress

- Innovative project delivery
- Governance models for greater sustainable development outcomes (eg.ULDA / OCE Clean Communities).
- Long term urban and regional growth strategies
- Training / Skilling / Standards/ Competencies for Green Buildings, Precincts, Subtropical Design & Energy Modelling
- Leadership exemplar projects
- Green Precincts & Decentralised infrastructure addressing peak energy demand & GHG reduction
- Incentives & leverage funding of scaling up existing buildings retrofit program
- Consistent approach to planning and development assessment across States and Councils on impacts of climate change
- Policy integration on infrastructure & climate adaptation risk management
- Stronger links required between urban and regional planning, coastal management, climate change and disaster management

PATHWAY TO 2050

Factors OBSTRUCTING Progress

- GHG emissions are not priced.
- Lack of awareness and understanding of costs and savings
- Resistance to change for existing owners
- Long lifespan of pre-existing buildings, equipment and appliances
- Low cost of centralised energy versus the high cost of change
- Speed without certainty / safety (eg. insulation roll out)
- Investment Capital & Payback>5yrs
- Growing peak energy consumption and network cost diverting for 1% of Energy load
- Many guidelines for industry but uncertainty on commitment to actions & scaling up
- Cost of living pressures
- Fuel Poverty (>10% of income on Energy)

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