

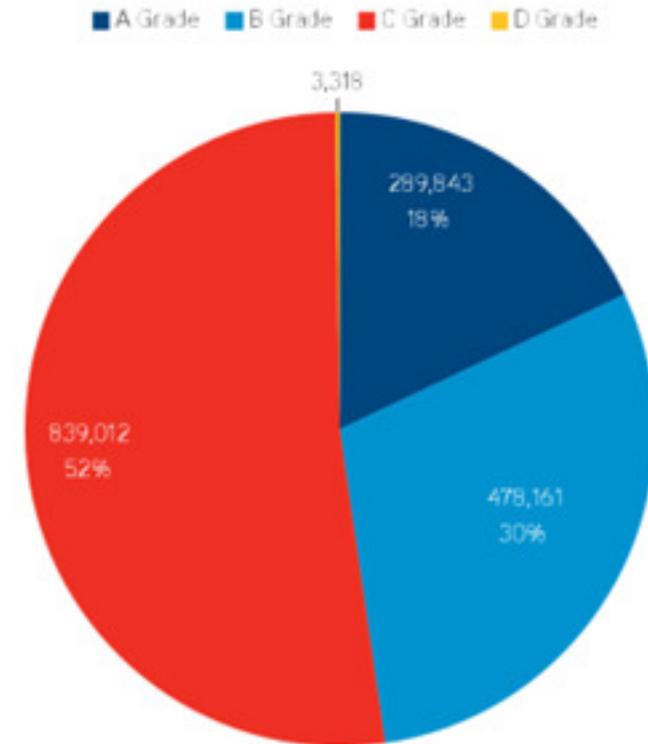


New Zealand's progress in Green buildings

12 April | PREPARED BY MartinBrown-Santirso

Building Stock

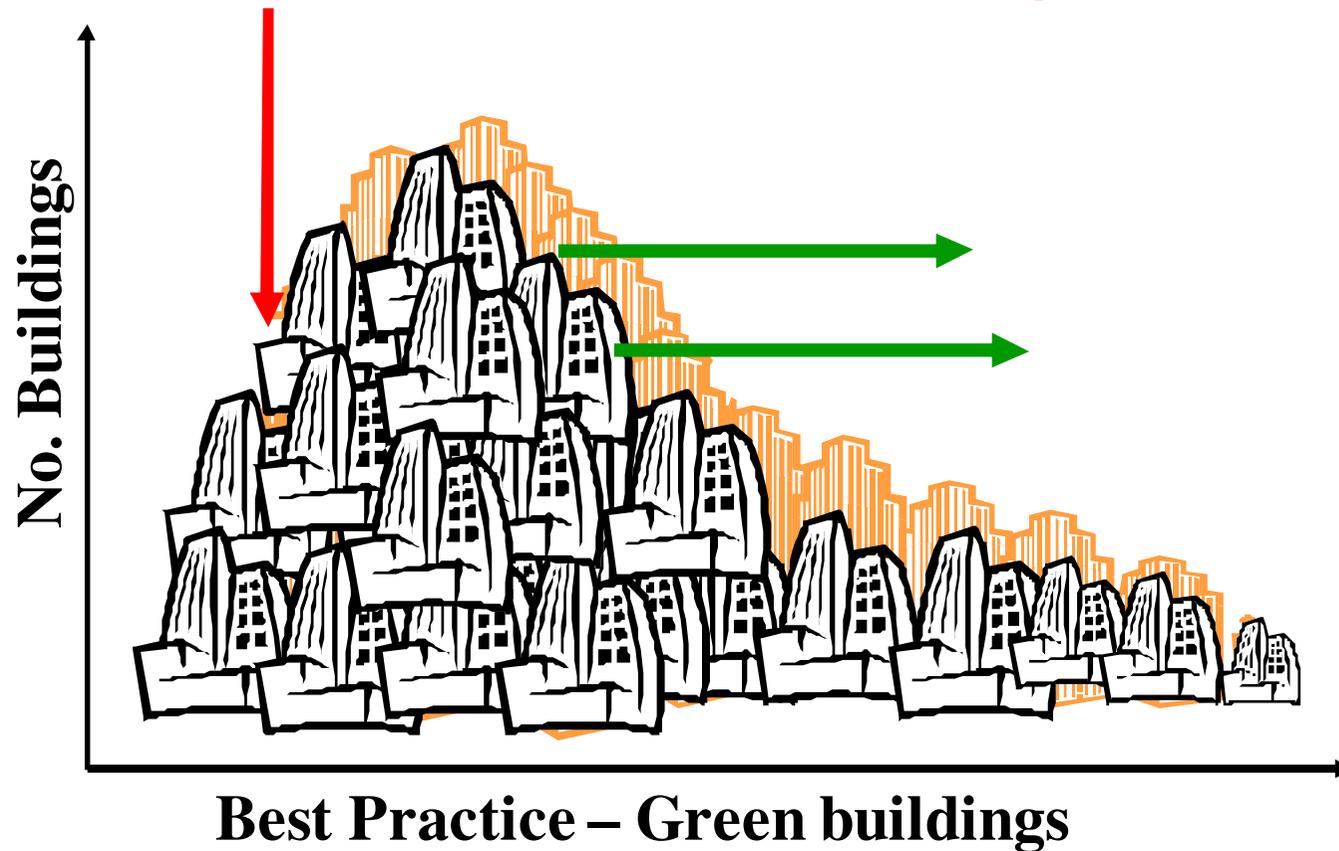
- 🌀 30,000 Office and retail buildings
- 🌀 2,400 schools
- 🌀 1.7 million residential dwellings
- 🌀 Large potential benefits from improving existing stock and ensure new stock is better built
- 🌀 Christchurch Opportunity



NZ Office Buildings	Number of Buildings	Approx Total Area (m2)	Energy Use (GWh pa)	Energy Use (PJ pa)	Economic Potential (PJ pa)
Small (<5,000 m2)	5,253	5,250,000	1,051	3.8	0.6
Medium (5,000 - 10,000 m2)	367	2,750,000	551	2.0	0.3
Large (>10,000 m2)	78	1,400,000	272	1.0	0.1
TOTAL	5,698	9,400,000	1,874	6.7	1.0

Key objectives

Minimum standards; NZ Building Code



Activities

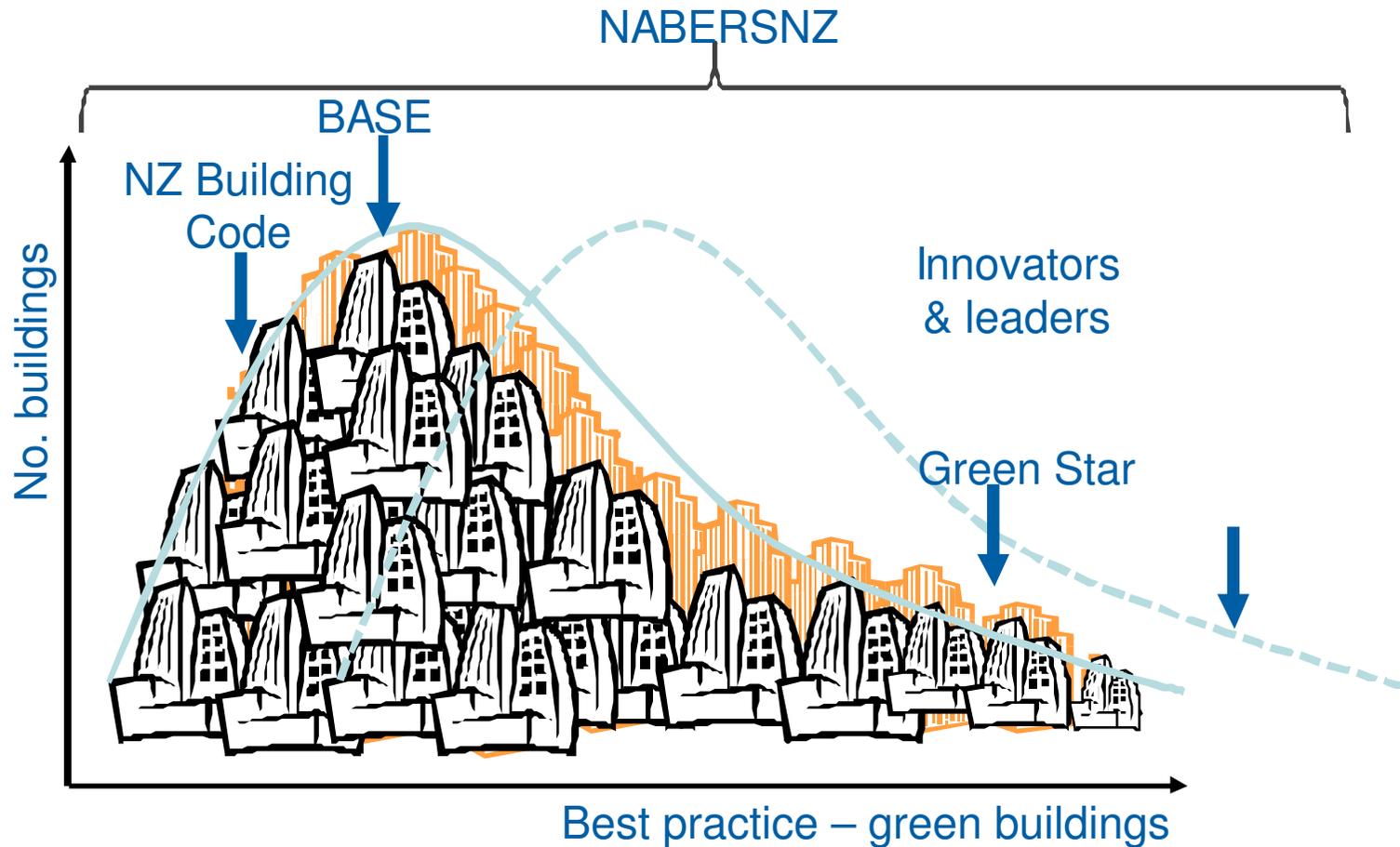
- Largely focused on the season
- Building code
 - Requires minimum performance levels(mandatory)
 - Mainly health and safety focus, little on energy/environmental performance
- Green Star
- NABERS NZ
 - Voluntary programme
 - Performance rating (include new and existing stock)
- BASE
 - Aimed at the Christchurch rebuild
- Education (EECA, NZGBC)



Aim of building rating tools

- Benchmark
 - Enable building owners to know how their buildings perform
- Manage
 - Enable to target areas of action
- Set targets
 - Visualise aims
- Drive improvement without government funding
 - Enables building owners/tenants to actually understand the benefits.

Aim of building rating tools



Building Code

- Minimum requirements
- Focused on health and safety
- Latest version updated in 2000, no further improvements in the agenda.
- New Zealand mainly a non-regulatory environment

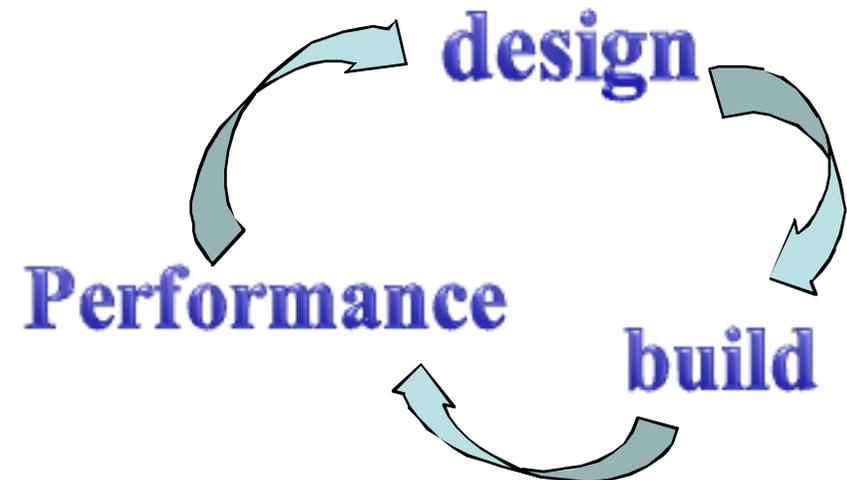


- Voluntary Programme
 - Provides a framework
 - Build
 - Design
 - Rating scheme
 - Start system
 - Benefits:
 - Improved return on the assets
 - Improved quality of tenants
- Largely aimed at high end office buildings

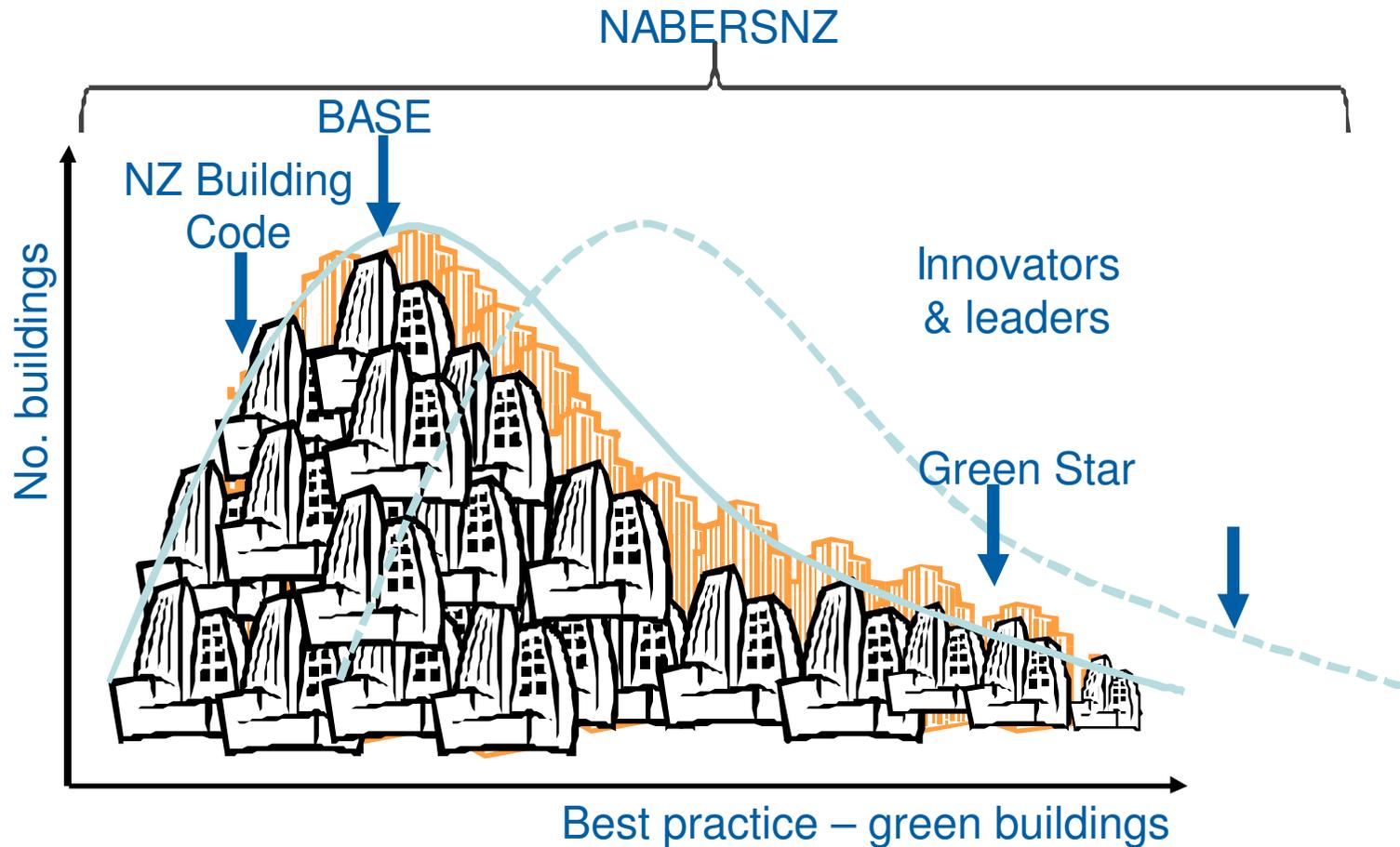


NABERS NZ

- Created in Australia
 - Highly successful mandatory programme
 - Adapted to NZ requirements, voluntary.
- Performance Based tool
 - Provides a framework for the assessment of building performance
 - Focused on office energy performance, water to be included later
 - Provides information on how to improve performance
 - Free assessment tool
- Covers a variety building types:
 - Retail, hotels/motels, data centres, etc



Aim of building rating tools



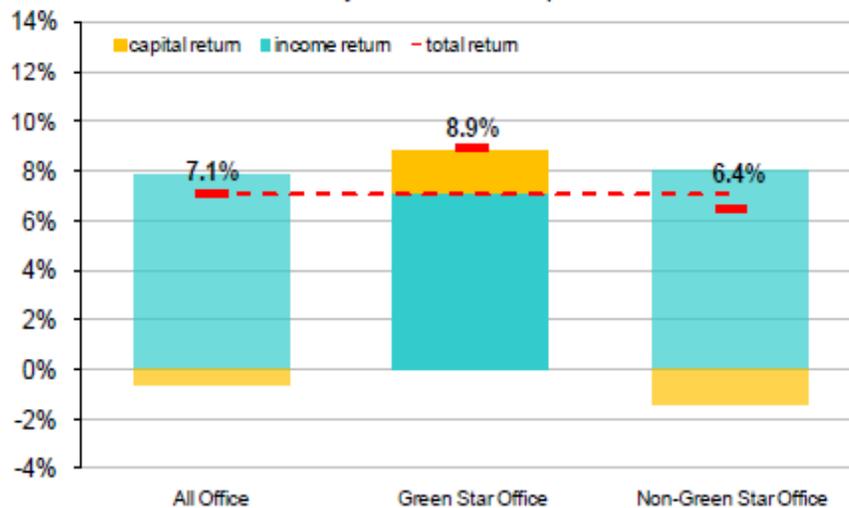
Residential

- 1.7 Million households
- Largely build before 1978 went insulation first became mandatory
- Poorly performing stock
- Activities:
 - Improved building code 2000
 - Education
 - Energy Spot
 - Insulation retrofit programmes
 - Warm Up New Zealand
 - \$347 million insulation retrofit programme
 - 230,000 retrofitted homes
 - Homestar rating programme



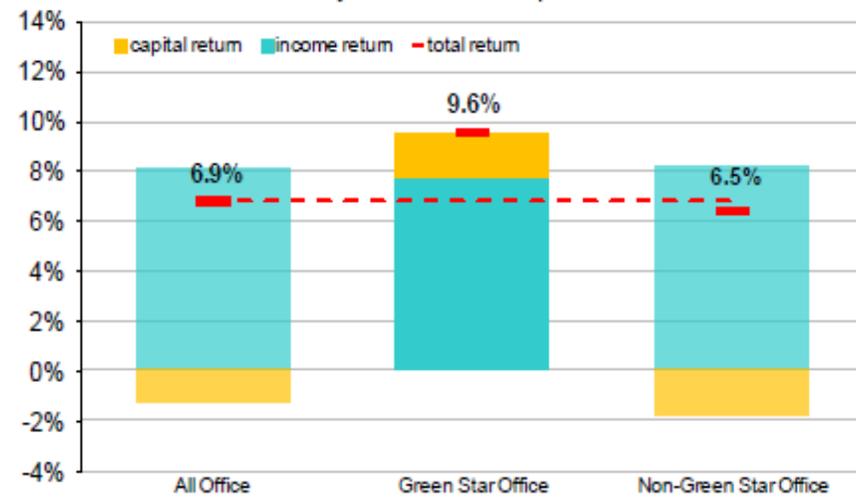
Key benefits: commercial benefits

Green Star: returns for NZ office
 annualised 1 year returns to September 2012



Source: NZGBC & IPD Research.

Green Star: returns for NZ office
 annualised 2 year returns to September 2012



Source: NZGBC & IPD Research.

Key benefits: Energy Benefits

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Key benefits: Residential Benefits

Cost

\$347 million

Benefit

\$1.37 billion

