Stockland

Environmental Data Pack

FY18

Background notes

As a property owner and developer, acquisitions, divestments and development activity within a given year can significantly impact our environmental performance. The table below provides an overview of the activity profile for each of our businesses and how this affects our environmental data.

	ACTIVITY PROFILE	ENERGY AND EMISSIONS	NATURAL RESOURCES
Group operations	Internal corporate operations.	Unless there are significant changes to the tenancies that we operate from, minor fluctuations generally reflect external factors beyond our control. Scope 1: Vehicle fleet fuel. Scope 2: Purchased electricity. Scope 3: Hire car, airline and rental car travel.	The water, waste and other natural resources are typically managed by the base building that we are tenanting. Where we are a tenant within our own building, these resources are reported under the base building.
Commercial Property	Operating our Retail Town Centre, Workplace and Logistics assets.	Unless there are significant changes to our portfolio, or key infrastructure upgrades/installations, changes generally reflect energy efficiency programs and initiatives. Scope 1: Gas consumption, refrigerants. Scope 2: Purchased electricity. Scope 3: Transmission losses, operational waste.	Unless there are significant changes to our portfolio, changes reflect water efficiency programs and initiatives, tenancy mix, water leakages, or changes to asset management arrangements. Water: Potable water consumption. Waste: Operational waste, development construction waste.
Communities	Development of our projects and communities, predominantly undertaken by our residential and retirement living communities contractors.	Increased civil works activity has a direct correlation with increased energy and emissions. In periods where we are actively developing our assets, our emissions profile is higher. Scope 1: Emissions from gas and fuel consumption and explosives reported by our contractors, and our direct gas consumption. Scope 2: Emissions from electricity consumption reported by our contractors, and our purchased electricity. Scope 3: Transmission losses.	Increased civil works activity has a direct correlation with increased water consumption. In periods where we are actively developing our assets, our water consumption, and particularly that of our residential contractors, is higher. Increased finishing works (landscaping and upgrades in our retirement living communities) also contribute to increased water consumption, and retirement living contractors generally undertake these works. Water: Potable and non-potable water consumption reported by our contractors, and our direct water consumption. Waste: Waste generation reported by our contractors. Biodiversity metrics vary and reflect the specific characteristics of our residential communities projects.

In this document you will find:

	ACTIVITY PROFILE	ENERGY AND EMISSIONS	NATURAL RESOURCES
Communities	Operating our retirement living communities.	Unless there are significant changes to our portfolio (e.g. the acquisition of Aevum in FY11 which nearly doubled the size of our Retirement Living business) annual changes generally reflect energy efficiency programs and initiatives, climatic conditions (i.e. milder temperatures reduce energy demand), unit vacancy and development villages opening to residents. Scope 1: Our direct gas consumption (can include our residents' consumption where a village is not sub-metered). Scope 2: Our direct consumption of purchased electricity (can include our residents' consumption where a village is not sub-metered). Scope 3: Transmission losses.	Unless there are significant changes to our portfolio (e.g. the acquisition of Aevum in FY11 which nearly doubled the size of our Retirement Living business) annual changes reflect water efficiency programs and initiatives and development villages opening to residents. Water: Water consumption.

Environmental impacts from transport are not considered material for our organisation. While we report on Scope 3 emissions as it relates to air and ground transport during business hours, we have excluded employee transport to work due to data reporting challenges. Similarly we have excluded our supply chain's movement of goods and materials on our behalf.

Carbon and energy

Carbon and energy data within this document is to be read in conjunction with our Carbon and Energy Deep Dive available on our website.

Boundary and methodology

We report our Scope 1 and Scope 2 emissions according to our operational control boundary under the National Greenhouse and Energy Reporting Act 2007 (NGER Act). We voluntarily report select Scope 3 emissions in accordance with the GHG Protocol Corporate Standard. All of our operations are based in Australia.

SCOPE	BOUNDARY
Scope 1	Direct emissions, i.e. emissions from fuels that are combusted on site (including natural gas, diesel and petrol from fleet) as well as refrigerant leakage. Direct emissions reported by contractors where we have operational control (typically residential community projects). Contractors are required to supply their gas and fuel consumption data as part of monthly reporting. Emissions from gas consumption across the Retail Town Centre, Workplace, Logistics, Residential and Retirement Living assets for which we have operational control. For those assets that have missing invoices estimates are provided. Tenant gas usage is not included except where we are the tenant.
Scope 2	Indirect emissions from the consumption of electricity only. Indirect emissions reported by contractors where we have operational control (typically residential community projects). Contractors are required to supply their electricity consumption data as part of monthly reporting. Emissions from base building electricity across the Retail Town Centre, Workplace, Logistics, Residential and Retirement Living assets for which we have operational control. For those assets that have missing invoices estimates are provided. Tenant electricity usage is not included except where we are the tenant.
Scope 3	Other indirect emissions, including hire cars, rental vehicles and airline travel, transmission and production losses from purchased electricity, gas and fleet fuel and operational waste from our Commercial Property portfolio.

Notes:

- Development contractor resource and energy data is provided to us by third party contractors in accordance with NGER Act reporting requirements.
- Logistics data is predominantly related to vacant spaces or minimal external and internal common area lighting. Due to the high volatility of this energy and water consumption, setting meaningful targets becomes difficult. Additionally there are currently no industry standards and therefore we have decided not to set targets for our Logistics portfolio.

- Stockland has embedded networks within our assets, and the usage of our residents and tenants is removed where the usage is outside of our Operational Control under NGER Act. 24 retail town centres and 21 retirement living communities have embedded networks.

Emissions

TOTAL GREENHOUSE GAS EMISSIONS (tCO_2-e)

	FY18	FY17	FY16	FY15	FY14
Stockland group total Scope 1	25,453	26,884	35,036	26,368	22,102
Stockland group total Scope 2	82,591	87,860	89,881	97,763	99,927
Stockland group total Scope 1+2 emissions	108,044	114,743	124,917	124,131	122,029

TOTAL SCOPE 1 EMISSIONS (tCO_2-e)

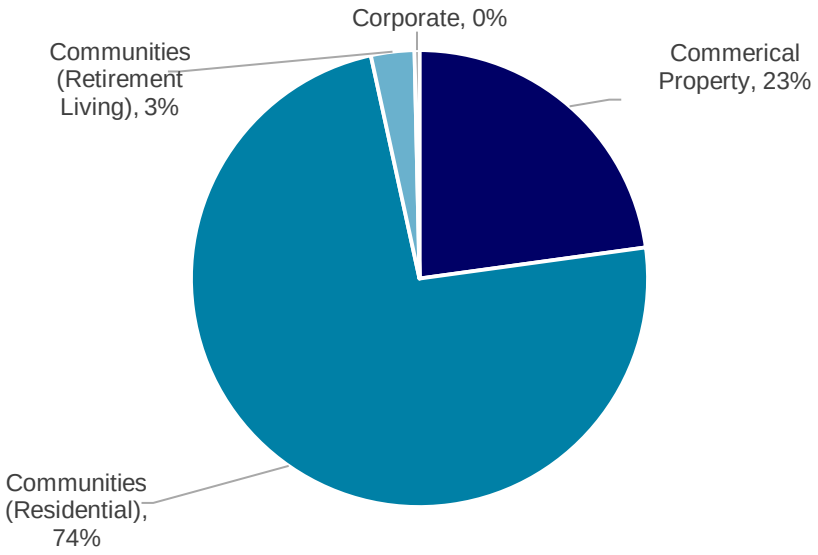
	FY18	FY17	FY16	FY15	FY14
Workplace and Business Parks base building gas	1,160	1,010	1,080	999	832
Logistics centres gas	-	-	–	–	1
Retail Town Centres gas	1,487	1,451	398[1]	185	97
Vehicle fleet fuel	88	84	86	84	87
Refrigerants leaked	3,203	3,224	3,091	2,783	2,380
Residential sites fuel & gas[2]	69	52	10	15	19
Residential contractors fuel and gas	18,666	20,278[3]	29,525[4]	21,626	18,142
Retirement living communities gas	780	745	487	591	377
Retirement living contractors fuel, gas	-[5]	393	360	86	165
Total Scope 1 emissions	25,453	26,884	35,036	26,368	22,102

[1] Gas increase due to the removal of electric duct heaters to efficient central boiler heating system.
[2] FY17 onwards includes fuel (for residential site office usage), whereas previous years only consumed gas.
[3] Construction activities across master planned residential communities transition from civil works in FY16 to residential lots in FY17.
[4] Figures reflect our activity profile: continuing increased development activity on existing and new sites.
[5] No development works in our Retirement Living business were considered to be within our operational control boundary in FY18.

Scope 1 emissions by business unit

Communities (Residential) constitutes the largest proportion of our Scope 1 emissions due to contractor construction activity across our developments.

SCOPE 1 EMISSIONS BY BUSINESS UNIT



TOTAL SCOPE 2 EMISSIONS (tCO_2-e)

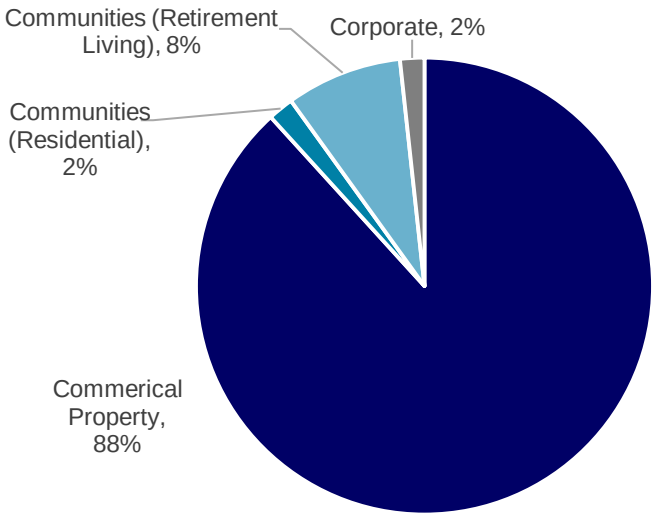
	FY18	FY17	FY16	FY15	FY14
Corporate tenancies electricity	1,421	1,418	1,353	1,372	1,406
Workplace and Business Parks base building electricity	17,603	18,350	19,657	22,981	23,161
Logistics centres electricity	4,254	4,321	1,291	2,048	2,998
Retail Town Centres electricity	51,032	54,327	58,839	63,134[6]	57,957
Residential sites electricity	1,413	1,413	1,515	1,573	1,852
Residential contractors electricity	84	147	299	315	632
Retirement living communities electricity	6,785	7,874	6,918	6,323	11,870
Retirement living contractors electricity	-[7]	8	8	16	51
Total Scope 2 emissions	**82,592[8]**	**87,860**	**89,881**	**97,763**	**99,927**

[6] Retail Town Centre emissions increases in FY15 because of new acquisitions and centre expansions.
[7] No development works in our Retirement Living business were considered to be within our operational control boundary in FY18.
[8] This figure (82,592) varies from the Scope 2 emissions figure provided on page 3 (82,591) because of rounding in this table.

Scope 2 emissions by business unit

Commercial Property constitutes our largest proportion of scope 2 emissions and remains the focus of our strategic energy efficiency initiatives. See our Carbon and Energy Deep Dive for further information on initiatives that contributed to our FY18 performance.

SCOPE 2 EMISSIONS BY BUSINESS UNIT



TOTAL SCOPE 3 (tCO_2-e)

	FY18	FY17	FY16	FY15	FY14
Total transmission and production losses (from purchased electricity, gas and fleet fuel)	13,216	14,675	14,782	17,255	19,861
Waste disposal[9]	14,892	11,990	20,571	NA	NA
Vehicle hire and hire car travel	64	35	42	51	52
Airline travel	5,694	4,415	4,233	3,695	3,644
Total scope 3 emissions	**33,866**	**31,115**	**39,628**	**21,002**	**23,556**

[9] From FY16 we expanded our boundary to include scope 3 emissions from waste generated at our commercial property assets.

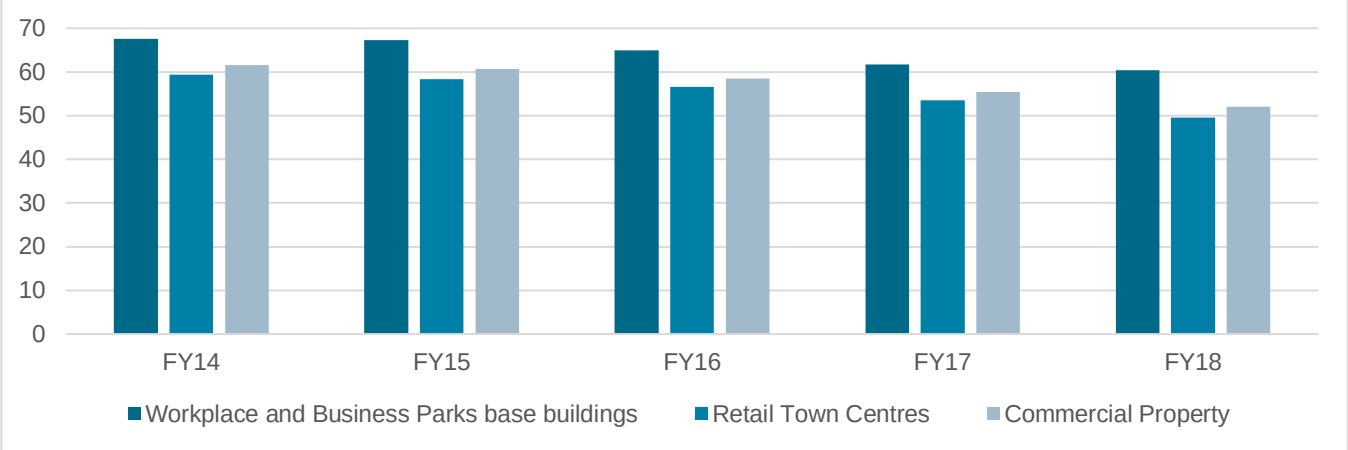
Emissions intensity

We track our emissions on an intensity basis as this helps represent the greenhouse gas emissions from our Commercial Property portfolio in a way that is isolated from the increases and decreases in emissions due to investments, divestments and vacancies. Intensity metrics are based on the standard measures of net lettable area (NLA) or gross lettable area (GLA) in square metres (where appropriate for each asset class). Emissions intensities only apply to stable operating assets such as the Commercial Property portfolio.

GREENHOUSE GAS EMISSIONS INTENSITY ($kgCO_2$-e/m^2)[10]

	FY18	FY17	FY16	FY15	FY14
Workplace and Business Parks base buildings	**60.41**	**61.7**	**64.98**	**67.32**	**67.55**
Floor area (NLA) of buildings in intensity metric (m^2)	310,586	313,830	320,943[11]	356,060	355,073
% portfolio in intensity metric	100%	100%	100%	100%	100%
Retail Town Centres base buildings	**49.54**	**52.92**	**56.58**	**58.32**	**59.34**
Floor area (GLA) of buildings in intensity metric (m^2)	1,056,205	1,054,234	1,047,054	1,014,045	978,257
% portfolio in intensity metric	100%	100%	100%	100%	100%
Commercial Property[12]	**52.00**	**54.93**	**58.55**	**60.66**	**61.52**
Floor area of buildings in intensity metric (m^2)	1,366,882	1,368,011	1,366,279	1,370,119	1,333,330
% portfolio in intensity metric	100%	100%	100%	100%	100%

GREENHOUSE GAS EMISSIONS INTENSITY ($kgCO_2$-e/m^2)



EMISSIONS INTENSITY REDUCTIONS

	ANNUAL INTENSITY CHANGE (%)				
	FY18	FY17	FY16	FY15	FY14
Workplace and Business Parks	-2%	-5%	-4%	0%	-6%
Retail Town Centres	-6%	-6%	-3%	-2%	-4%
Commercial Property	-5%	-6%	-4%	-1%	-5%

[10] Based on scope 1 and 2 emissions, excluding all refrigerants.
[11] Area-weighted intensity combination of Workplace and Business Parks assets.
[12] Combined Workplace, Business Parks, and Retail Town Centres.

Other emissions

Stockland's emissions of ozone-depleting substances are minimal and not considered material for reporting.

NOx and SOx are material for property companies that operate key generation plants including trigeneration. Stockland has Scope 2 exposure to trigeneration, and is not in control of this plant, so we do not report emissions from generation, as per other energy generation.

Energy consumption

This section details the consumption of specific energy types across the three businesses and group operations. These are the sources of the greenhouse gas emissions reported under scope 1 and 2.

Electricity

PURCHASED ELECTRICITY (kWh)

	FY18	FY17	FY16	FY15	FY14
Corporate tenancies	1,665,878	1,648,037	1,556,157	1,538,236	1,564,314
Workplace and Business Parks base buildings	21,644,622	22,255,609	24,120,329	27,759,472	27,627,604
Logistics centres	5,189,496	5,129,175	1,577,286	2,416,170	3,474,882
Retail Town Centres	60,791,065	64,878,522	69,088,256	72,666,207	65,017,061
Residential sites	1,695,059	1,729,655	1,824,740	1,841,916	2,265,986
Residential contractors	102,385	180,211	331,110	437,697	619,789
Retirement living communities	7,887,931	8,876,288	7,859,963	6,888,485[13]	12,045,323
Retirement living contractors	-[14]	7,438	6,962	16,264	73,001
Total	**98,976,436**	**103,242,404**	**106,364,804**	**113,564,446**	**112,687,960**

ELECTRICITY INTENSITY (kWh/m^2)

	FY18	FY17	FY16	FY15	FY14
Workplace and Business Parks base buildings	**69.68**	**70.96**	**75.77**	**77.91**	**77.8**
Floor area (NLA) of buildings in intensity metric (m2)[15]	310,658	313,700	320,097	356,118	354,955
% of portfolio covered in intensity metric	100%	100%	100%	100%	100%
Retail Town Centres	**57.32**	**61.79**	**65.98**	**66.27**	**66.45**
Floor area (GLA) of buildings in intensity metric (m^2)	1,056,145	1,050,411	1,047,054	1,014,074	978,256
% of portfolio covered in intensity metric	100%	100%	100%	100%	100%
Commercial Property[16]	**60.13**	**63.89**	**68.26**	**69.30**	**69.47**
Floor area of buildings in intensity metric (m^2)	1,366,791	1,364,156	1,365,954	1,370,177	1,333,211
% of portfolio covered in intensity metric	100%	100%	100%	100%	100%

[13] Retirement living data source improvements were implemented in FY15. This included drawing electricity consumption data directly from our embedded electricity networks which permits us to separate resident use from Stockland use at villages where we have embedded networks. This has resulted in a noticeable reduction in reportable energy use for the Retirement Living business. In addition, the retirement living asset divestments and exit from the Aged Care business in FY15 accounted for a further 24 per cent drop in electricity consumed compared to FY14.
[14] No development works in our Retirement Living business were considered to be within our operational control boundary in FY18.
[15] NLA – Net Lettable Area; GLA – Gross Lettable Area.
[16] Area weighted intensity combination of Workplace, Business Parks, and Retail Town Centre assets.

ELECTRICITY INTENSITY REDUCTIONS

	ANNUAL INTENSITY CHANGE (%)				
	FY18	FY17	FY16	FY15	FY14
Workplace and Business Parks	-2%	-6%	-3%	0%	-3%
Retail Town Centres	-7%	-6%	0%	0%	-1%
Commercial Property[17]	-6%	-6%	-2%	0%	-2%

RENEWABLES GENERATION

	FY18	FY17	FY16	FY15	FY14
Solar generation (kWh)[18]	3,274,463	2,387,168	1,940,689	292,124	175,374
Solar capacity installed (at period end) (kW)	4,360	2,260	1,360	1,360	50

Fuels

GAS CONSUMPTION (MJ)

	FY18	FY17	FY16	FY15	FY14
Workplace and Business Parks base buildings	22,503,346	19,605,661	20,949,926	19,456,794	16,211,993
Logistics centres	0	0	0	0	27,986
Retail Town Centres	28,850,605	28,164,870[19]	7,726,710	3,607,633	1,898,574
Residential sites	184,905	231,633	196,216	261,852	331,020
Residential contractors	0	0	0	200	2,993
Retirement living communities	15,137,631	14,448,049[20]	9,451,522	7,177,497	7,119,574
Retirement living contractors	0	0	0	0	0
Total	**66,676,487**	**62,450,212**	**38,324,374**	**30,503,976**	**25,592,140**

FUEL CONSUMPTION[21]

	FY18	FY17	FY16	FY15	FY14
Diesel (L)	6,770,937	7,356,552	10,344,491	7,714,541	6,597,215
Bio diesel (L)	2,395	2,070	525,463	566,473	236,637
Petrol (L)	133,092	129,554	169,636	257,135	155,275
Ethanol (L)	8,636	8,451	4,689	2,102	5,486
LPG (L)	1,375	246	556	26	81
Oil (L)	37,291	42,802	71,973	94,981	63,939
Grease (kg)	17,386	32,592	66,070	65,703	32,541

[17] Area-weighted intensity combination of Workplace, Business Parks, and Retail Town Centre assets.
[18] Figures relate to total electricity generation from photovoltaic power within financial year.
[19] Increase due to additional meters being found during embedded network assurance exercise.
[20] Increase in retirement living village gas consumption primarily associated with villages transitioning from externally managed to internally managed and villages under development transitioning to operational facilities.
[21] Comprises corporate fleet fuel, and residential and retirement living contractor fuel consumption.

Biodiversity

Biodiversity data presented in this section is to be read in conjunction with our Biodiversity Deep Dive available on our website.

BIODIVERSITY IMPACT AND MANAGEMENT

	FY18	FY17	FY16	FY15	FY14
PORTFOLIO					
Total projects with masterplan approval[22]	30	36	31	39	42
Total land area (ha)	9,088	10,312	8,637	12,302	7,303
BIODIVERSITY IMPACT					
Total projects with areas of significant biodiversity value[23]	20	25	25	30	20
Total land area of significant biodiversity value (ha)	1,410	1,972	1,332	1,736	1,198
Total land area of significant biodiversity value to be cleared (ha)	576	587	425	639	655
Total land area to be conserved for biodiversity, including onsite and offsite (ha)	2,202	1,972	1,750	NA	NA
BIODIVERSITY MANAGEMENT					
Total projects with areas of significant biodiversity value that have a biodiversity management plan	85%	48%	58%[24]	100%	100%
Total land area to be regenerated, revegetated, restored or rehabilitated on ground or through offsets (ha)	1,671	1,567	1,641	1,581[25]	358.5
Total projects working with community and non-governmental organisations	3	3	6	5	1

PROJECTS WITH AREAS OF SIGNIFICANT BIODIVERSITY VALUE

The below table shows residential communities projects with areas of significant biodiversity value that have an approved masterplan. The change in biodiversity value refers to projects that have been assessed under our biodiversity calculator since it was developed in FY15.

REGION	DEVELOPMENT	LOCATION	TOTAL LAND (HA)	TOTAL BIODIVERSITY AREA APPROX (HA)	CHANGE IN BIODIVERSITY VALUE[26]
Victoria	Allura	Truganina	140	17.5	
	Cloverton	Kalkallo	1141	300	+18.05
	Edgebrook	Clyde North	65.118	1	+8.62
	Highlands	Craigieburn	978.4	43.9	
	Mernda Villages	Mernda	202.47	41.15	
	Mt Atkinson	Truganina	319.4	38.66	+11.94
	The Grove	Tarneit	235	29	+4.11

[22] Our biodiversity results are representative of our residential projects that have received masterplan approval and/or were active developments as at 30 June 2018.
[23] As defined by the relevant state or federal legislation. All of our projects that with significant biodiversity on site are required to develop a biodiversity management plan (see Biodiversity Deep Dive).
[24] This has decreased from FY15 as the previous year's reporting included a commitment to prepare a biodiversity management plan. Since FY15 we have reported on the percentage of those projects that have actually prepared a biodiversity management plan as at 30 June 2018. Note that all of our projects without a biodiversity management plan have made a commitment to develop one and will do so at the appropriate phase of the development.
[25] In FY15, this section has been expanded to include land onsite and offsite offsets as this is the key method in balancing the provision of ecological habitats with development activities.
[26] The biodiversity calculator is only used in projects that are approved from FY15. Projects without a change in biodiversity value were approved prior to FY15.

REGION	DEVELOPMENT	LOCATION	TOTAL LAND (HA)	TOTAL BIODIVERSITY AREA APPROX (HA)	CHANGE IN BIODIVERSITY VALUE[26]
Western Australia	Amberton	Eglington	198	20	
	Calleya	Banjup	145	12.2	+3.2
	Sienna Wood	Perth	330	7.4	
	Vale (WA)	Aveley	541	50	
New South Wales	Altrove	Sydney	50	1	+2.7
	Willowdale	Leppington	350	100	+1.32
Queensland	Augustine Heights	Augustine Heights	183	47	
	Bokarina Beach	Sunshine Coast	30	5	+3.68
	Aura	Caloundra	1595	300	
	Foreshore	Coomera	116	51	+7.02
	North Shore	Burdell	1031	275	
	Pallara	Brisbane	122.462	32	+27.59
	Vale (Qld)	Waterford	54.4	37.77	

Water management and quality

Water data in this section is to be read in conjunction with our Water Management Deep Dive available on our website.

Boundary and methodology

We report our water consumption according to our operational control boundary under the NGER Act. Communities water consumption results are provided by collecting and collating water use from invoices. Where invoices are unavailable or extend across financial years, estimates are provided for relevant periods. Water consumption by contractors operating on our development sites is compiled using invoice data and estimates, supplied by contractors through monthly health, safety and environment reports. Data has been reported for 100 per cent of properties this year. These figures are based on a combination of contractor estimates and invoice data. Reported non-potable consumption includes rainwater tanks and bore water.

Water consumption

COMMUNITIES WATER CONSUMPTION (kL)

Communities water data varies from year to year due to activities such as filling lakes in large developments and location specific variables such as natural rainfall, project life cycles, market conditions, site management techniques and local landscaping requirements set by councils.

	FY18	FY17	FY16	FY15	FY14
Residential sites	620,654	546,670	600,623	353,620	297,826
Retirement living communities	1,683,353	1,463,459[27]	58,158	48,500	162,930
Contractors – Residential	392,940	577,592[28]	1,948,614	1,469,853[29]	351,046
Contractors – Retirement Living	0[30]	573[31]	8,985	49,285	216,910
Total	**2,696,947**	**2,588,294**	**2,616,380[32]**	**1,921,258**	**1,028,712**

COMMUNITIES WATER CONSUMPTION – POTABLE AND NON POTABLE (kL)

			POTABLE		
	FY18	FY17	FY16	FY15	FY14
Residential sites	149,872	173,841	171,830	53,233	16,562
Retirement living communities	1,683,353	1,463,459	58,158	48,500	162,930
Contractors – residential	113,264	232,585	829,592	644,034	127,198
Contractors – retirement living	0[29]	327	8,682	38,897	188,000
Total	**1,946,489**	**1,870,212**	**1,068,262**	**784,664**	**494,690**
			NON-POTABLE		
	FY18	**FY17**	**FY16**	**FY15**	**FY14**
Residential sites	470,782	372,829	428,793	300,387	281,264
Retirement living communities	0	0	0	0	0
Contractors – residential	279,675	345,007	1,119,022	825,820	223,849
Contractors – retirement living	0[29]	246	303	10,388	28,910
Total	**750,457**	**718,082**	**1,548,118**	**1,136,594**	**534,023**

[27] A combination of more operational sites and increased data capture in FY17 has translated to an increase in comparison to previous years for Retirement Living.
[28] Large civil works in FY16 for master planned communities have reduced in FY17 across developments such as Aura (Qld), Cloverton (Vic) and Calleya (WA).
[29] Residential contractor water data varies from year to year due to activities such as filling lakes in large developments and location specific variables such as natural rainfall, project life cycles, market conditions, site management techniques and local landscaping requirements set by councils. Furthermore, contractors self-report water data, which means we do not review each contractor's data collection processes. In FY15, we completed a comprehensive review of data sets provided to us by contractors, which provided a higher level of accuracy than in previous years.
[30] No development works in our Retirement Living business were considered to be within our operational control boundary in FY18.
[31] Decrease in Retirement Living contractor consumption due to management of site and reporting by principal contractor.
[32] We experienced an increase in both potable and non-potable water consumption due to new residential developments that commenced at the close of FY15 and during FY16.

COMMERCIAL PROPERTY WATER CONSUMPTION (kL)

	FY18	FY17	FY16	FY15	FY14
Workplace and Logistics	202,002	223,328	220,704	232,249	271,905
Retail Town Centres	1,097,238	1,112,672	1,153,565	1,096,808	1,077,563
Total Commercial Property	**1,299,240**	**1,336,000**	**1,374,269**	**1,329,057**	**1,349,468**

Water consumption intensity

Intensity figures in Commercial Property are derived from the total water consumption for each asset class over the year divided by the total floor area. Retail Town Centre and Workplace assets without a full 12 months of data include estimates for the missing months.

COMMERCIAL PROPERTY WATER CONSUMPTION INTENSITY (kL/m^2)

	FY18	FY17	FY16	FY15	FY14
Workplace and Business Parks	0.55	0.62	0.65[33]	0.58	0.63
Retail Town Centres	1.04	1.09	1.11	1.1	1.1
Total Commercial Property[34]	**0.94**	**0.98**	**1**	**0.96**	**0.98**

COMMERCIAL PROPERTY WATER CONSUMPTION INTENSITY REDUCTIONS

	ANNUAL INTENSITY CHANGE (%)				
	FY18	FY17	FY16	FY15	FY14
Workplace and Business Parks	-11%	-5%	12%	-8%	0%
Retail Town Centres	-5%	-2%	0%	0%	7%
Total Commercial Property	**-4%**	**-2%**	**4%**	**-2%**	**7%**

[33] Water usage increase due to various water leaks and an increase in irrigation due to new landscapes.
[34] Consumption Intensity data calculated based on Workplace and Business Parks, and Retail Town Centre consumption figures only. Does not include Logistics.

Waste

Waste data in this section is to be read in conjunction with the Waste and Materials Deep Dive available on our website.

Boundary

We report against the same NGER Act operational control boundary that we use for energy and water. We report on all properties within this boundary, with the exception of some properties where our tenants run their own waste contracts. We also report on a small number of additional properties that fall out of our NGER Act boundary, but where we manage the waste contract for service provision purposes. Data provid/ed by waste contractors is based on estimates (bin volumes converted to tonnes rather than weighed).

Operational waste

OPERATIONAL WASTE (TONNES)

	RETAIL TOWN CENTRES					WORKPLACE AND BUSINESS PARKS				
	FY18	FY17[35]	FY16	FY15	FY14	FY18	FY17[35]	FY16	FY15	FY14
Total waste	17,577	17,351	17,895	16,717	16,809	1043	1,193	1,182	1,298	1,607
Total waste to landfill	11,730	11,969	10,858	11,537	11,549	661	739	680	806	763
Total waste recycled	5,846	5,382	7,038	5,181	5,260	383	454	502	491	944
Diversion from landfill (%)	33	31	39	31	31	37	38	42	38	53
% portfolio reporting	97	95	95	95	95	85	85	100	80	100

Development waste

Commercial Property

Our Commercial Property development construction waste is calculated based on the total number of projects for which we are the developer. Active waste is tracked through the builders, as for these sites the principal contractor has active control.

There have been no significant workplace developments since FY12.

RETAIL TOWN CENTRES DEVELOPMENT WASTE (TONNES)

	FY18	FY17	FY16	FY15	FY14
Total waste	4,371	1,396	3,253	6,428	4,453
Waste recycled	3,910	678	2,684	5,940	3,778
Waste to landfill	461	718	569	487	924
Diversion from landfill	89%	49%	83%	92%	85%
Developments included (% by project value)	100%	96%	100%	100%	100%

[35] FY17 data restated due to contractor reporting error.

Communities

All Communities waste data was provided by contractors operating on our development sites during the reporting period. Data is estimated by contractors and is collected from monthly health, safety and environment reports submitted to us by our contractors for all developments within our operational control.

COMMUNITIES CONTRACTOR WASTE (TONNES)

	FY18	FY17	FY16	FY15	FY14
Total waste	19,625	41,237	35,424	82,033	80,135
Waste diverted from landfill	18,441	39,923	33,881	78,415	78,149
Waste sent to landfill	1,184	1,314	1,542	3,617	1,986
Diversion from landfill	94%	97%	96%	96%	98%

Asset ratings and certifications

The tables below list ratings and certifications achieved across our portfolio, focusing on Green Star and NABERS[36] rating tools. Information on achievements specific to FY18 are provided in our Asset Rating and Certification Deep Dive. Information on our use of ratings and certifications across our portfolio is provided in Our Management Approach to Asset Rating and Certification.

Green Star – Performance

Green Star – Performance is a voluntary certification that rates building performance in operation.

GREEN STAR – PERFORMANCE, RETAIL TOWN CENTRES

BUILDING NAME	POTABLE WATER (kL/m²/ANNUM)	GHG EMISSIONS (kg/CO_2-e/ANNUM)	POINTS AWARDED	RATING
Stockland Jesmond (NSW)	1.21	58	31.5	3 Star
Stockland Bathurst (NSW)	0.57	41	30.5	3 Star
Stockland Glendale (NSW)	0.89	14	40	3 Star
Stockland Baulkham Hills (NSW)	1.72	76	28	2 Star
Stockland Forster (NSW)	0.62	9	40.5	3 Star
Stockland Nowra (NSW)	0.61	38	35	3 Star
Stockland Rockhampton (Qld)	1.65	111	27.5	2 Star
Stockland Caloundra (Qld)	0.54	41	34.5	3 Star
Stockland Green Hills (NSW)	1.08	72	30.5	3 Star
Stockland Shellharbour (NSW)	1.55	80	29.5	2 Star
Stockland Townsville (Qld)	1.58	135	29	2 Star
Stockland Gladstone (Qld)	1.1	33	34.5	3 Star
Stockland Cairns (Qld)	1.28	95	32.5	3 Star
Stockland Burleigh Heads (Qld)	0.6	82	33.5	3 Star

[36] NABERS is the National Australian Built Environment Rating System (www.nabers.gov.au).

BUILDING NAME	POTABLE WATER (kL/m²/ANNUM)	GHG EMISSIONS (kg/CO_2-e/ANNUM)	POINTS AWARDED	RATING
Stockland Bundaberg (Qld)	0.91	43	34.5	3 Star
Stockland Bull Creek (WA)	NA	31	27	2 Star
Stockland Riverton (WA)	NA	36	29	2 Star
Stockland Hervey Bay (Qld)	0.85	81	33.5	3 Star
Stockland Point Cook (Vic)	0.9	119	27	2 Star
Stockland Traralgon (Vic)	0.77	77	31	3 Star
Stockland The Pines (Vic)	1.04	101	24.5	2 Star
Stockland Wendouree (Vic)	0.59	55	33	3 Star

GREEN STAR – PERFORMANCE, WORKPLACE AND BUSINESS PARKS

BUILDING NAME	POTABLE WATER (kL/m²/ANNUM)	GHG EMISSIONS (kg/CO_2-e/ANNUM)	POINTS AWARDED	RATING
110 Walker Street (NSW)	0.872	63	31.5	3 Star
16 Giffnock Avenue (NSW)	0.695	90	28.5	2 Star
2 Victoria Ave (WA)	-[37]	-	18	1 Star
40 Cameron Avenue (ACT)	0.651	75	26	2 Star
601 Pacific Highway (NSW)	0.682	67	31.5	3 Star
66 Waterloo Road (NSW)	0.469	54	34	3 Star
77 Pacific Highway (NSW)	0.560	68	32.5	3 Star
80-88 Jephson Street (Qld)	0.779	133	23	2 Star
Durack Centre (WA)	-[38]	62	23	2 Star
Macquarie Technology Centre (NSW)	3.073	155	17	1 Star
Optus Centre (NSW)	0.720	84	31.5	3 Star
Satellite Corporate Centre 350 Wellington Road (Vic)	1.04	122	21	2 Star
Satellite Corporate Centre 352 Wellington Road (Vic)	0.546	140	23.5	2 Star
Satellite Corporate Centre 690 Springvale Road (Vic)	0.726	357	15	1 Star
Triniti Business Campus Building T1 (NSW)	0.805	72	37	3 Star

[37] Water and emissions figures for 2 Victoria Avenue (WA) were not provided as part of the Green Star – Performance rating because we did not have a NABERS Water or NABERS Energy rating for this asset at the time of submitting the Green Star – Performance application.
[38] Water figures for Durack Centre (WA) were not provided as part of the Green Star – Performance rating because we did not have a NABERS Water rating for this asset at the time of submitting the Green Star – Performance application.

BUILDING NAME	POTABLE WATER (kL/m²/ANNUM)	GHG EMISSIONS (kg/CO_2-e/ANNUM)	POINTS AWARDED	RATING
Triniti Business Campus Building T2 NSW)	0.805	83	36	3 Star
Triniti Business Campus Building T3 (NSW)	0.805	63	38	3 Star
133 Castlereagh Street (NSW)			31	3 Star
222 Pitt Street (NSW)			33.5	3 Star
135 King Street (NSW)			28.5	2 Star

Green Star – built form rating tools

Our Green Star ratings achieved using built form rating tools including Green Star – Design & As Built, Green Star – Communities, and Green Star – Interiors, are provided in the table below.[39]

ASSET TYPE	ASSET	DESIGN RATING (STAR)	AS BUILT RATING (STAR)	GREEN STAR TOOL
Retail Town Centre	Stockland Highlands (Vic)	–	4	Retail Centre v1
	Stockland North Shore (Qld)	4	4	Retail Centre v1
	Stockland Townsville (Qld)	4	4	Retail Centre v1
	Stockland Merrylands (Stages 3 & 4) (NSW)	4	–	Retail Centre v1
	Stockland Shellharbour (NSW)	4	4	Retail Centre v1
	Stockland Hervey Bay (Qld)	4	4	Retail Centre v1
	Stockland Baldivis (WA)	4	4	Retail Centre v1
	Stockland Wetherill Park (NSW)	5	5	Retail Centre v1
	Stockland Harrisdale (WA)	4	4	Retail Centre v1
	Stockland Green Hills (NSW)	5	-	Retail Centre v1
Workplace	Triniti, Building A, 39 Delhi Road, North Ryde, NSW	–	5	Office v2
	Triniti, Building B, 39 Delhi Road, North Ryde, NSW	–	5	Office v2
	Triniti, Building C, 39 Delhi Road, North Ryde, NSW	–	5	Office v2
	2 Victoria Avenue, Perth, WA	6	5	Office v2
	Sydney Head Office, L22-29, 133 Castlereagh Street, Sydney, NSW	–	6	Interiors v1.1
Communities (Residential)	Aura (formerly Caloundra South) (Qld)	6		Communities Pilot
	Altrove (NSW)	5		Communities

[39] The percentage of our portfolio with a Green Star built form rating is 19 per cent for Commercial Property (Green Star – Design & As Built), 14 per cent for Residential (Green Star – Communities), and six per cent for Retirement Living (Green Star – Design and/or As Built).

ASSET TYPE	ASSET	DESIGN RATING (STAR)	AS BUILT RATING (STAR)	GREEN STAR TOOL
	Willowdale (NSW)	6		Communities
	The Grove (Vic)	5		Communities
	Cloverton (Vic)	6		Communities
	Calleya (WA)	6		Communities
	Newport (Qld)	5		Communities
	Waterlea (formerly Stamford Park) (Vic)	6		Communities
Communities (Retirement Living)	Affinity Clubhouse at Affinity Retirement Village, Baldivis (WA)	5	5	Public Building Pilot
	Selandra Rise Retirement Village (Vic)	4	–	Custom
	Mernda Retirement Village (Vic)	4	–	Custom
	Willowdale Retirement Village (NSW)	4	–	Custom

NABERS

We undertake NABERS Energy and NABERS Water ratings on the base building across Retail Town Centre, Workplace and Business Parks assets. NABERS maintains an eligibility requirement specifying that assets under 15,000 square metres cannot be rated. NABERS ratings are completed on a calendar year basis.

NABERS RATINGS – RETAIL TOWN CENTRES

	NABERS ENERGY RATING					NABERS WATER RATING				
	2017	2016	2015	2014	2013	2017	2016	2015	2014	2013
Stockland Cairns (Qld)	4.5	5.0	4.0	4.5	4.5	4.0	NA	4.0	4.0	4.5
Stockland Townsville (Qld)	4.5	4.0	3.5	3.5	3.0	4.0	4.0	4.0	NA	NA
Stockland Rockhampton (Qld)	3.5	3.0	3.5	3.5	3.0	2.5	2.5	2.5	3.0	3.0
Stockland Gladstone (Qld)	5.5	5.5	4.5	4.0	NA	NA[40]	NA	3.0	NA	NA
Stockland Bundaberg (Qld)	4.0	4.5	5.0	4.0	NA	4.0	4.5	4.0	NA	NA
Stockland Caloundra (Qld)	4.5	4.5	4.5	4.5	5.0	5.0	5.0	5.0	5.0	5.0
Stockland Hervey Bay (Qld)	4.5	5.0	4.5	NA	NA	5.0	4.0	4.5	NA	NA
Stockland Burleigh Heads (Qld)	4.0	3.5	3.5	3.5	NA	4.5	4.5	5.0	5.0	NA
Stockland Forster (NSW)	6.0	6.0	6.0	6.0	6.0	4.5	4.5	4.5	4.5	5.0
Stockland Green Hills (NSW)	NA[41]	NA	3.5	3.5	3.0	NA	NA	3.0	3.0	3.0
Stockland Jesmond (NSW)	4.5	4.5	4.5	4.5	4.0	2.0	1.0	2.0	3.0	2.5
Stockland Glendale (NSW)	6.0	6.0	6.0	5.5	5.5	3.5	3.5	3.5	3.0	4.0

[40] No water rating was undertaken for Stockland Gladstone (Qld) due to the available water consumption data being less than 12 months due to a main water meter defect. This issue has been rectified and the centre should be assessable next year.
[41] Green Hills was in development for the majority of FY18 and therefore does not have a rating for 2017.

	NABERS ENERGY RATING					NABERS WATER RATING				
	2017	2016	2015	2014	2013	2017	2016	2015	2014	2013
Stockland Bathurst (NSW)	4.0	4.0	4.0	3.5	3.0	4.5	3.5	3.5	3.0	2.5
Stockland Baulkham Hills (NSW)	4.5	4.0	4.0	3.5	3.5	2.0	1.0	0	0.0	1.0
Stockland Wetherill Park (NSW)	3.0	2.5	NA	NA	4.0	3.0	NA	NA	NA	4.0
Stockland Shellharbour (NSW)	5.0	4.0	4.5	4.5	NA	1.0	1.5	1.5	0.0	NA
Stockland Nowra (NSW)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Stockland Traralgon (Vic)	4.0	4.0	4.0	4.0	NA	4.5	4.0	4.0	4.0	NA
Stockland Wendouree (Vic)	4.5	4.0	4.0	4.0	NA	4.5	4.5	4.5	4.0	NA
Stockland Bull Creek (WA)	4.5	4.5	4.0	4.5	NA	NA[42]	NA	NA	NA	NA
Stockland Riverton (WA)	4.5	4.5	4.5	4.0	NA	2.0	1.5	NA	NA	NA
Stockland The Pines (Vic)	2.0	2.0	2.5	NA	NA	3.0	3.0	3.0	NA	NA
Stockland Point Cook (Vic)	2.5	1.5	2.5	NA	NA	4.0	4.0	4.0	NA	NA
Stockland Merrylands (NSW)	4.0	NA	NA	NA	NA	2.0	NA	NA	NA	NA
Stockland Baldivis (WA)	2.5	2.0	NA	NA	NA	2.0	NA	NA	NA	NA
NABERS Retail Portfolio Average	**4.18**	**3.98**	**4.19**	**4.2**	NA	**3.18**	**3.20**	**2.85**	**2.6**	NA

NABERS RATINGS – WORKPLACE AND BUSINESS PARKS[43]

	NABERS ENERGY RATING					NABERS WATER RATING				
	2017	2016	2015	2014	2013	2017	2016	2015	2014	2013
WORKPLACE										
Piccadilly Tower, 133 Castlereagh St, Sydney	5.0	5.0	5.0	5.0	5.0	4.0	4.5	4.5	4.5	4.5
Piccadilly Court, 222 Pitt St, Sydney	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
135 King St, Sydney	4.5	4.0	4.0	4.0	3.5	3.5	3.0	3.0	3.0	3.0
110 Walker St, North Sydney	5.0	5.0	4.5	4.0	3.5	3.0	3.0	3.5	3.0	3.5
77 Pacific Hwy, North Sydney	5.0	5.0	4.5	4.5	4.5	3.5	4.0	1.0	3.0	3.0
601 Pacific Hwy, St Leonards	5.0	5.0	5.0	4.5	5.0	3.0	4.0	4.0	4.5	4.5
40 Cameron Ave, Belconnen	3.5	NA	NA	NA	NA	3.0	3.0	NA	NA	–
80-88 Jephson Street, Toowong	0.0	2.5	2.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Durack Centre, 263 Adelaide Terrace, Perth	4.5	4.5	5.0	5.0	4.5	NA	NA	3.5	4.0	4.0

[42] We were unable to complete a water rating for Stockland Bull Creek (WA) because there had been no meter readings taken on the bore water supply to the centre. The meter is difficult to access and is in a hazardous location which makes reading the meter a challenge.
[43] 63 per cent of our Commercial Property portfolio (including Retail Town Centre, Workplace and Logistics) is covered by one or more NABERS ratings.

	NABERS ENERGY RATING					NABERS WATER RATING				
	2017	2016	2015	2014	2013	2017	2016	2015	2014	2013
2 Victoria Avenue, Perth	0.0	NA	5.0	5.0	5.0	0.0	NA	4.0	3.0	3.0
NABERS Workplace Portfolio Average	**4.52**	**4.61**	**4.59**			**3.55**	**3.98**	**3.71**		
BUSINESS PARKS										
Optus Centre, 1 Lyon Park Road, North Ryde	4.5	5.0	5.0	4.5	4.5	4.0	3.5	3.5	3.5	3.5
Triniti, Building A, 39 Delhi Road, North Ryde[44]	4.5	4.5	5.0	5.5	5.0	3.5	3.5	5.0	4.5	3.5
Triniti, Building B, 39 Delhi Road, North Ryde	4.5	4.5	5.0	5.0	5.0	3.5	3.5	4.0	4.0	4.0
Triniti, Building C, 39 Delhi Road, North Ryde	5.0	5.0	5.0	5.0	5.0	3.5	3.5	3.5	3.5	3.5
66 Waterloo Road, North Ryde	5.5	5.0	5.0	4.5	4.0	4.0	4.5	4.5	3.5	3.5
16 Giffnock Ave, North Ryde	4.0	4.0	3.5	3.0	2.5	3.5	3.5	3.5	3.5	2.5
11-17 Khartoum Road, North Ryde	2.0	2.0	4.0	3.5	5.0	0.0	0	NA	NA	NA
350 Wellington Rd, Mulgrave[45]	3.0	NA	3.0	NA	NA	0.0	NA	NA	NA	NA
352 Wellington Rd, Mulgrave	3.0	3.0	3.5	NA	NA	3.5	3.5	NA	NA	NA
690 Springvale Rd, Mulgrave	2.0	NA	1.5	NA	NA	2.5	NA	NA	NA	NA
NABERS Business Parks Portfolio Average	**4.22**	**4.79**	**4.92**	**4.6**	**4.4**	**3.59**	**3.48**	**3.60**	**3.7**	**3.7**
NABERS Workplace and Business Parks Combined Portfolio Average	**4.35**	**4.74**	**4.76**			**3.57**	**3.69**	**3.66**		
LOGISTICS										
11 Viola Place Brisbane Airport	4.5	NA	NA	NA	NA	NA	NA	NA	NA	NA

[44] The water rating for **Triniti** (NSW) applies to the whole campus.
[45] The 2015 rating included Green Power – without Green Power the rating would be 2.5 stars.

Climate and community resilience

The tables below summarise the individual climate and community resilience scores for our retail town centres, residential communities and retirement living communities. Note that our community resilience scorecard was launched in FY16 and so there are no community resilience scores available for assets assesses earlier than FY16.

Resilience scores range from 1 (low vulnerability, more resilience) through 9 (high vulnerability, less resilience). Our Management Approach to Climate Resilience provides more detail on our climate and community resilience assessment methods.

CLIMATE AND COMMUNITY RESILIENCE SCORES BY ASSET

LOCATION	YEAR	CLIMATE RESILIENCE RATING	COMMUNITY RESILIENCE RATING
COMMERCIAL PROPERTY			
Stockland Cairns (Qld)	FY12	6.30	–
	FY17	5.81	–
Stockland Rockhampton (Qld)	FY14	6.13	–
	FY17	5.84	–
Stockland Hervey Bay (Qld)	FY12	6.00	–
	FY17	5.29	–
Stockland Townsville (Qlld)	FY14	5.72	
	FY17	5.20	
	FY18	5.00	5.71
Townsville Kmart (Qld)	FY14	5.85	–
	FY17	5.20	–
Stockland Gladstone (Qld)	FY12	5.84	–
	FY17	5.29	–
Stockland North Shore (Qld)	FY14	5.69	–
	FY17	5.49	–
Stockland Bull Creek (WA)	FY14	5.50	–
Stockland Wetherill Park (NSW)	FY13	5.41	–
Point Cook Town Centre (Vic)	FY13	5.30	–
Stockland Green Hills (NSW)	FY13	5.27	5.18
Stockland Wendouree (Vic)	FY14	4.69	–
Stockland Traralgon (Vic)	FY14	4.59	–
	FY18	-	5.18
Stockland Forster (NSW)	FY15	4.48	–

LOCATION	YEAR	CLIMATE RESILIENCE RATING	COMMUNITY RESILIENCE RATING
Stockland Bundaberg (Qld)	FY16	5.69	–
	FY18	-	5.99
Stockland Bathurst (NSW)	FY15	4.23	–
Stockland Nowra (NSW)	FY16	4.21	–
	FY18	4.90	5.05
Durack Centre (WA)	FY12	5.90	–
2 Victoria Avenue (WA)	FY12	5.80	–
601 Pacific Highway (NSW)	FY18	4.52	-
Triniti Business Campus (NSW)	FY18	5.37	-
32 Toll Drive (VIC)	FY18	4.83	-
Commercial Property Average		**5.23**	
COMMUNITIES (RESIDENTIAL)			
Elara (NSW)	FY15	5.2	–
Aura (Qld)	FY15	5.4	–
Willowdale (NSW)	FY16	5.4	5.7
Cloverton (Vic)	FY16	5.6	5.6
The Grove (Vic)	FY16	5.6	5.9
Altrove (NSW)	FY16	5.8	4.7
Newport (Qld)	FY16	5.5	4.7
Calleya (WA)	FY16	5.3	4.9
Birtinya (Qld)	FY17	5.7	5.9
Foreshore (Qld)	FY17	6.3	6.4
Toowong (Qld)	FY17	5.6	5.0
North Shore (Qld)	FY17	5.8	5.9
Pallara (Qld)	FY17	5.6	6.1
Sienna Wood (WA)	FY17	6.2	6.5
Waterlea (Vic)	**FY17**	**5.0**	**4.7**

ASSESSMENTS FROM FY18		RESILIENCE RATING[46]	
Braybrook (Vic)	FY18	5.7	
Kalina (Qld)	FY18	5.7	
Paradise Waters (Qld)	FY18	5.5	
Mt Atkinson (Vic)	FY18	5.4	
Altona North (Vic)	FY18	5.0	
Minta Farm (Vic)	FY18	5.7	
Edgebrook (Vic)	FY18	5.9	
Communities (Residential) Average		**5.6**	**5.5**
COMMUNITIES (RETIREMENT LIVING)			
Highlands (Vic)	FY13	4.8	–
The Village Swansea (NSW)	FY13	6.1	–
	FY17	5.8	5.0
Farrington Grove (Qld)	FY16	4.6	–
	FY17	4.8	5.2
The Cove (NSW)	FY16	6.6	4.8
Maybrook (NSW)	FY16	5.4	5.0
Patterson Lakes (Vic)	FY16	5.7	4.6
Salford Waters (Qld)	FY16	5.4	4.0
Hillsview (SA)	FY16	5.8	5.1
Walnut Grove (SA)	FY16	5.8	4.9
Gillin Park (Qld)	FY17	5.2	5.5
Pine Lake (Qld)	FY17	5.4	4.9
Birtinya, Oceanside (Qld)	FY17	5.3	6.0
Calleya (WA)	FY17	5.6	5.0
Cardinal Freeman (NSW)	FY17	4.8	4.7
The Pines (Vic)	FY17	5.0	5.3
Oak Grange (Vic)	FY17	4.8	5.4
Newport (Qld)	FY17	5.6	4.7

[46] From FY18, as part of our evolving approach to resilience assessment, our climate and community resilience ratings were combined to deliver an integrated resilience rating for our Communities portfolio.

ASSESSMENTS FROM FY18		RESILIENCE RATING[47]	
Bellevue Gardens (NSW)	FY18	5.7	-
Golden Ponds (NSW)	FY18	5.9	-
Wamberal Gardens (NSW)	FY18	5.4	-
Communities (Retirement Living) Average		**5.4**	**5.0**

[47] From FY18, as part of our evolving approach to resilience assessment, our climate and community resilience ratings were combined to deliver an integrated resilience rating for our Communities portfolio.