

Waste and Materials

Why this is important to Stockland

We understand we have a role to play in protecting and enhancing the natural, built and human environment. We acknowledge that the development and operation of buildings account for large quantities of waste and material usage, which we can manage to minimise negative impacts.

Waste treatment and disposal can have a major impact on the surrounding environment. Examples include nutrient pollution of groundwater and waterways, air quality issues from incineration, and greenhouse gas emissions from landfills. We take these impacts very seriously and are committed to managing our waste efficiently. We seek to reduce, reuse and recycle our waste whenever feasible, minimising our contribution to landfill.

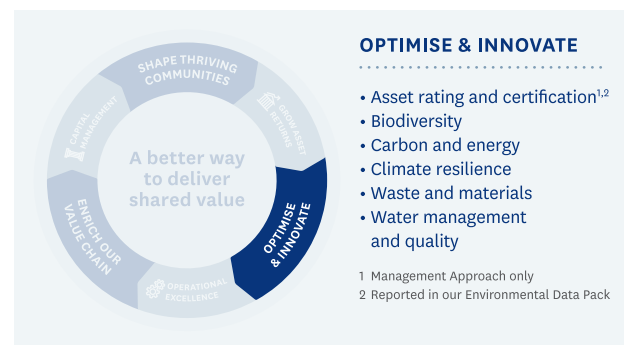
We acknowledge the finite nature of resources and the limited opportunities to dispose of waste. As such, we seek opportunities to implement and transition to a more circular economy, closing material loops by recognising that waste has value and can be designed for reuse and regeneration. We equally acknowledge that the use of virgin materials can have significant impacts on environmental and human health. By identifying recycled, ecologically and health preferable materials, for use in our developments, we are able to deliver tangible environmental, social and business benefits.

This Deep Dive document is a component of our FY20 sustainability reporting suite, which is publicly available on our [website](#). Our sustainability reporting is prepared in adherence to the International Integrated Reporting Framework principles of materiality, stakeholder responsiveness, reliability and completeness; in accordance with the GRI Standards¹(Comprehensive); and is **third party assured**. The material in this Deep Dive is supported by a wider collection of performance metrics contained in our **Environmental Data Pack**.



This Deep Dive is to be read in conjunction with our published approach to waste and materials, available as part of our sustainability reporting suite at **Our Management Approach to Waste and Materials**.

Stockland's Sustainability Strategy



¹ The GRI Standards are global standards for sustainability reporting published by the Global Reporting Initiative (<https://www.globalreporting.org/standards/>)

Our key achievements

- Achieved our target of diverting 90 per cent of construction waste from landfill across our Retail Town Centre developments for FY18-20.
- Diverted 98 per cent of waste from landfill across our Residential developments, outperforming our waste target.
- Recycled 100 per cent of plastic waste from civil works at our Aura (Qld) Residential community.
- Diverted over 90 per cent of waste from landfill at our Shine Birtinya (Qld) and Newport (Qld) Retirement Living developments (both independently certified under Green Star Design & As Built rating).
- Developed new Waste Management Plans for our Retail assets, outlining different waste streams, recycling opportunities and how waste is managed. Waste Management Plans for our Workplace and Business Parks assets to be completed in FY21.

Diverted from landfill

90%

construction waste in Retail developments

Recycled plastic waste

100%

from civil works at Aura

Diverted from landfill

98%

civil contractor waste in Residential

FY20 targets and progress

Commercial Property

Optimise and innovate

Focus area	Target	FY20 progress	Status	Future priorities
Reduce, reuse and recycle waste in operations	Achieve a minimum 45 per cent landfill diversion rate between FY18 and FY20 for Retail Town Centres and Workplace and Business Parks.	<p>Achieved 36 per cent landfill diversion rate for Retail Town Centres and 36 per cent for Workplace and Business Parks for the three-year period FY18-20.</p> <p>The new Waste Options waste and recycling contract will see greater landfill diversion rates across multiple waste streams in FY21.</p>	Not achieved	Achieve a minimum of 45% waste diversion for Retail Town Centres and Workplace and Business Parks.
Reduce, reuse and recycle waste in developments	Achieve a minimum 90 per cent landfill diversion rate between FY18 and FY20 for developments seeking Green Star Design & As Built certification.	Diverted 90 per cent of waste from landfill across four Retail Town Centre developments at Birtinya (Qld) Baringa (Qld), Wendouree (Vic) and Green Hills (NSW) for the three-year period FY18-20.	Achieved	Maintain minimum of 90% waste diversion for developments seeking Green Star Design & As Built certification.

Communities

Optimise and innovate

Focus area	Target	FY20 progress	Status	Future priorities
Reduce, reuse and recycle waste in operations	Achieve a minimum 60 per cent waste diversion from landfill for all new Residential civil construction contracts by FY20.	Diverted 98 per cent of civil contractor waste from landfill. Achieved over 90 per cent diversion from landfill since 2015.	Achieved	Achieve a minimum 90 per cent waste diversion from landfill for all new Communities civil construction contracts.
	Embed new contract with Waste Options and implement three new waste initiatives across portfolio in FY20.	Embedded new contract with Waste Options across multiple villages.	In progress	Identify three new waste management initiatives for delivery across the portfolio.
	Set a portfolio waste diversion target for FY21 across villages to be included in Waste Options contract.	Contract negotiation and review of opportunities for Retirement Living villages delayed the establishment of a portfolio waste diversion FY21 target.	Not achieved	Set a portfolio waste diversion target for FY21 across villages to be included in Waste Options contract for implementation in FY22.
Reduce, reuse and recycle waste in developments	Expand application of our sustainability contractor schedule from civil contracts to include built form contracts.	Stockland's development process has been reviewed during FY20. A full sustainability review of each stage is underway and will be complete in FY21, helping us to identify the most effective ways to contract waste initiatives with our builders.	In progress	Review feasibility of inclusion of waste targets or initiatives into built form contracts.
	Conduct a minimum of one life cycle assessment (LCA) on a Retirement Living development project in FY20.	There were no new RL developments delivered during the year, however we are conducting an LCA on medium density homes at Altrove and Elara (NSW).	In progress	Explore opportunities to continue to conduct LCA assessments to better understand life cycle, embodied energy and supply chain impacts based on learnings from current assessment.

Transitioning targets for FY21

Due to the business challenges associated with the COVID-19 pandemic, we have delayed the launch of our new 2030 Sustainability Strategy and its associated long-term targets. Our new strategy and next three-year cycle of waste and materials targets (FY22-24) will be launched in FY21. Where feasible, we have rolled over our FY20 three-year targets for an additional year to maintain our focus on sustainable outcomes for our stakeholders.

FY20 performance and case studies

Development waste

Commercial Property

Our Retail Town Centre development projects in FY20 included the final stages of construction at Stockland Baringa on the Sunshine Coast. The project is registered for a Green Star Design & As Built rating, targeting 5 stars. Construction waste targets are a core commitment for the development, with a target diversion rate of 90 per cent.

For FY20 the project achieved a landfill diversion rate of 83 per cent in its final month of construction, however for the

whole of the project, a rate of 95 per cent was achieved, exceeding the target set.

For the three-year period FY18-20, we diverted 90 per cent of construction waste from landfill across four Retail Town Centre developments at Birtinya (Qld), Baringa (Qld), Wendouree (Vic) and Green Hills (NSW), achieving our target commitment.

Our next project will be commencement of the first stage of our M_Park Workplace campus development in Macquarie Park in Sydney. Construction is expected to commence in the first half of FY21 and will be completed in 2022.

Retail Development Waste Profile (tonnes)

	FY18-FY20	FY20	FY19	FY18	FY17	FY16
Total waste	5,284	35	878	4,371	1,396	3,253
Waste recycled	4,768	29	829	3,910	678	2,684
Waste to landfill	152	6	50	461	718	569
Diversion from landfill	90%	83%	94%	89%	49%	83%
Developments included (% by project value)	100%	100%	100%	100%	96%	100%

Communities

Our FY20 diversion from landfill rate for residential masterplan developments was 98 per cent, exceeding our target rate of 60 per cent. There has continued to be an increase in the diversion of waste from landfill due in part to improved management of waste on site and because several larger residential community projects no longer require the export of large amounts of debris from site. We have a number of excellent individual project results, such as Aura (Qld) where 100 per cent of plastic waste from civil works was able to be recycled.

Examples of waste reduction and diversion through civil and landscape works include:

- **Timber:** Timber salvaged from project sites is commonly mulched and reused for landscape and conservation area establishment, weed management, and soil and stream stabilisation. Timber is also reused on site to create nature playspaces, such as at Sienna Wood (WA), or to create landscape furniture, for example at Willowdale (NSW). Timber and excess rock has also been used in natural area rehabilitation works at North Shore, Bokarina Beach and Foreshore (Qld), and as riparian corridor restoration and nesting box construction at Willowdale (NSW).
- **Topsoil and fill materials:** We manage materials onsite through reuse of fill materials, for example at Kalina, Pallara and Foreshore (Qld), where civil works materials

were balanced across the site. We also reuse topsoil removed from roadways and construction areas to improve soil quality and depth at landscape and open space areas. Where we have surplus concrete or asphalt, we have crushed and reused it onsite, for example in retaining walls and by our community partner Earthcare in the construction of community gardens, such as at Calleya (WA).

- **Plastics:** Returning plastic potting containers to nurseries rather than including them in waste landfill is becoming more common, for example at Highland Reserve and Riverstone Crossing (Qld) where pots from landscaping and conservation revegetation works are collected by the suppliers for washing and reuse. At Highland Reserve, plastic material from construction activities are being reused to create fauna nesting and habitat islands. At our Aura project (Qld), specific recycling targets have been achieved onsite during FY20, including 100 per cent of plastic waste from civil works and 90 per cent of polypipe.
- **Buildings and materials:** We will often reuse or repurpose our sales centres instead of removing them once they are no longer required. For example, we have recently rebranded our North Lakes (Qld) Retirement Living village sales and information centre to support our residential Promenade project at Rothwell (Qld).

The table below summarises the waste streams from our greenfield Communities developments.¹

Communities Development Waste Profile (tonnes)

	FY20	FY19	FY18	FY17	FY16
Total waste	49,567	41,093	19,625	41,237	35,424
Waste diverted from landfill	48,633	40,430	18,441	39,923	33,881
Waste sent to landfill	934	663	1,184	1,314	1,542
Diversion from landfill	98%	98%	94%	97%	96%

¹ Data on construction waste generated by contractors at sites where we do not have operational control (e.g. brownfield or sites with a single principal contractor) is not collected or reported. Note that due to the nature of greenfield developments, the waste figures generated on a per-year basis do not necessarily reflect the level of activity for that year as waste can be stored for a period of time onsite until reused or exported offsite to landfill when the space becomes unavailable.

Operational waste

Commercial Property

In FY20 we continued to monitor and analyse our waste data streams to understand where opportunities exist to further improve the levels of recycling at our Retail Town Centre, Workplace and Business Park sites. Our Retail Town Centre operations diverted 36 per cent of waste from landfill, while our Workplace and Business Parks operations diverted 36 per cent of waste from landfill, falling short of our 45 per cent diversion targets. One of the reasons for the shortfall was the delay in the appointment of our new waste contractor, Waste Options.

As part of a group-wide tender, including Retail Town Centres, Workplace and Logistics assets and a number of Retirement communities, we completed a national tender to engage a head contractor responsible for waste and recycling services under an integrated waste management services contract. The new national waste contract with Waste Options was formally agreed during FY20 and will track performance against contract criteria for reporting and landfill diversion, and allows for standardised reporting across the portfolio, optimisation of costs and monthly commentary on anomalies. Our continued focus on waste management across our portfolio, combined with enhanced data quality and completeness, will assist us to meet our FY21 target of 45 per cent diversion.

Operational waste (tonnes)

The quality of our waste data is dependent on the quality of information provided to us by our waste contractors. This

is why we have been working closely with Waste Options over the last year to incorporate the new Better Buildings Partnership (BBP) Operational Waste Reporting Guidelines, developed through an industry partnership with the City of Sydney, contractual performance targets and potential initiatives to improve our diversions. Having one national contractor for waste provides consistency in the quality and standard of the data being reported across our portfolio.

In FY20 new Waste Management Plans have been developed for our Retail Town Centre assets. These plans outline different waste streams, recycling opportunities and how waste is managed. Waste Management Plans for our Workplace and Business Parks assets are to be completed in FY21. Opportunities outlined in the Waste Management Plans will be reviewed in FY21 to determine the viability of each initiative and what should be implemented.

Retirement Living

The new waste contract with Waste Options includes 31 Retirement communities. We will work with our national waste contractor to establish a portfolio performance baseline to monitor, reconcile and interrogate the waste and recycling data and further improve the accuracy and quality of the information that is provided by our contractors. This information will be used to develop future portfolio-wide diversion targets and to identify possible additional waste separation streams, such as e-waste and battery recycling opportunities, to help improve waste diversion rates.

Operational waste (tonnes)

	Retail Town Centres					Workplace and Business Parks				
	FY20	FY19	FY18	FY17 ¹	FY16	FY20	FY19	FY18	FY17 ¹	FY16
Total waste	14,367	17,265	17,577	17,351	17,895	531	1,007	1043	1,193	1,182
Total waste to landfill	9,212	10,768	11,730	11,969	10,858	339	712	661	739	680
Total waste recycled	5,155	6,497	5,846	5,382	7,038	192	295	383	454	502
Diversion from landfill (%)	36%	38	33	31	39	36%	29	37	38	42
% portfolio reporting	97	97	97	95	95	70	85	85	85	100

¹ FY17 data restated due to contractor reporting error.

Materials

There has been continued industry attention on non-conforming and non-compliant building materials as well as materials that carry a lower environmental footprint, both in the context of supply chain verification and asset management. We undertake comprehensive materials verification processes in our construction projects, including applying the Stockland Materials Schedule. This materials schedule outlines the minimum verification and certification requirements regarding the materials' quality, human rights practices, environmental standards and health standards. We have also been responsive to new and anticipated legislation relating to façade cladding on our existing asset portfolio.

Initiatives implemented in FY20 to reduce the impacts of materials in our developments include:

- Establishing a baseline suite of sustainability initiatives in our sustainability contractor schedule required in new civil contracts, including opportunities for project-specific initiatives to be delivered through our contractor partners. The schedule enables us to be clear on our waste management and product and material selection expectations for each development.
- Utilising 'green concrete' or concrete where traditional aggregates are substituted for fly ash on our Western Australian projects. Similar products, Ultramax and

E-crete, are being used at Cloverton and Highlands (Vic). We also began investigating options for substituting raw materials such as aggregates from coal by-products and recycled plastics in our construction processes, such as roadways and pavements. At Whiteman Edge (WA) we delivered 1km of roadway using Reconophalt. Reconophalt uses recycled plastic as a substitute for raw materials in road asphalt (refer to case study).

We have established an internal working group to look at how we can drive greener asphalt products into our projects across the country and will continue to work with suppliers in FY21 on product availability and appropriateness for use on selected projects.

- Trialling other sustainable products, including a bio-diesel substitute in lieu of traditional diesel at Cloverton (Vic). At our North Shore (Qld), Altrove (NSW) and Highlands (Vic) projects we are installing recycled plastic landscape elements such as garden edging bollards and seating. At Foreshore we have successfully trialled a water-based prime in paving construction instead of traditional oil-based prime, reducing contamination risk to the surrounding wetland.
- Developing the "Sustainable Procurement for your Supply Chain" online education module in partnership with the Supply Chain Sustainability School. This module is aimed at project teams who want to improve their knowledge of Sustainable Procurement opportunities.

CASE STUDY

WHITEMAN EDGE RECONOPHALT TRIAL

As a real estate owner, manager and developer, we recognise the choices we make can help solve some of society's most pressing environmental issues. One issue we are working to help solve is the issue of plastic pollution. Of the 8.3 billion metric tons of plastic ever produced, 6.3 billion metric tons has ended up as waste and of that, only 9% has been recycled. Civil construction is the second largest industry sector driving demand for plastic, accounting for 19% of all plastic in the world.

In response to this and to help limit our impact, Stockland have been trialling a new 'green asphalt' known as Reconophalt. Our Whiteman Edge Reconophalt trial in Western Australia has delivered 1 kilometre of road, replacing traditional asphalt with a product made of 30% recycled content, diverting the equivalent of 500,000 plastic bags, 165,000 glass bottles and 12,000 printer toners from landfill.

The benefits of Reconophalt are not limited to saving plastic. When compared to traditional asphalt, Reconophalt will result in an increase in asset life and performance, a 30% carbon emission reduction, and a cost neutral outcome based on whole of life.

In order to leverage the success of the Whiteman Edge trial, a National Asphalt Review is underway with the objective of delivering a roadmap to 2030 that introduces a sustainable alternative to traditional asphalt whilst maintaining volume, cost and time certainty in delivery.

