

Waste Reduction Management Plan

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Developed By: Estate Directorate

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WASTE MANAGEMENT AT JCU

James Cook University creates a significant volume of waste each year from a wide variety of sources, much of which is unnecessarily sent to landfill. The University has implemented various programs to manage and reduce waste generation in recent years, however additional and on-going effort is required to minimise waste production and maximise recycling rates, with a long-term aim to reduce total waste production by 20% and improve the recycling rate to 70% by 2030 (from 2010 figures).

The JCU Waste Reduction Management Plan (WRMP) deals with material wastes generated at JCU campuses and facilities that require disposal, reuse or recycling. It does not cover wastes generated as greenhouse gases or water related wastes as these are covered under other plans.

The below charts show the progress JCU has made to date on waste management. Data is for the Townsville Campus only and is estimated based on waste audits conducted several times each year. Waste audits have not been

conducted at the Cairns Campus and thus baseline data is not available.

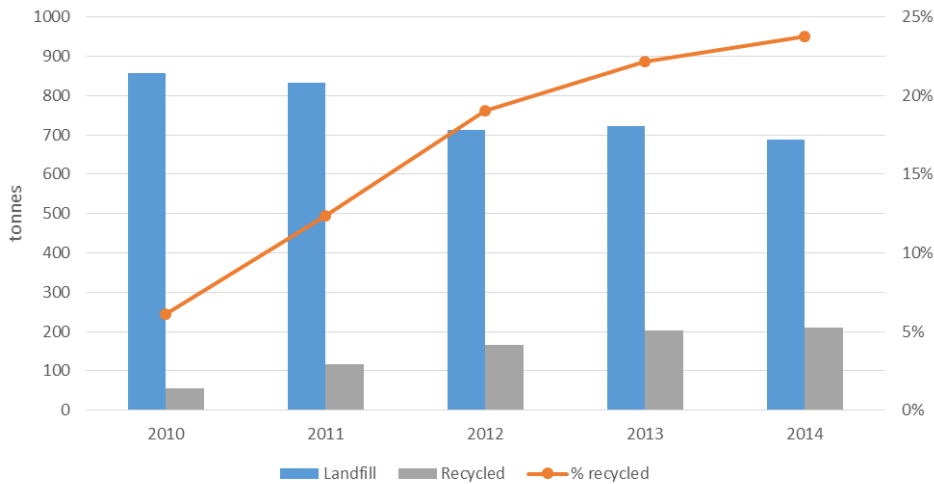
Since 2010 waste to landfill has reduced by 20%, while the recycling rate has increased from 6% to nearly 25%. This is a result of continued efforts to roll out waste management programs and infrastructure to the campus, while working closely with waste contractors, cleaning staff and the JCU community.

Further improvements are possible, and JCU now requires waste contractors to report on waste and recycling totals on a monthly basis to ensure better monitoring and control over waste production.

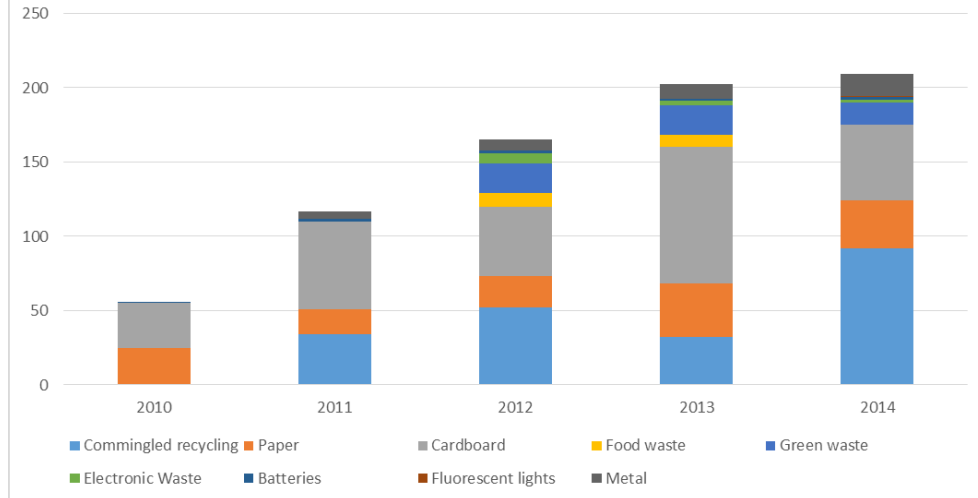
The WRMP outlines practices and procedures that will help to achieve the long term waste and recycling goals of JCU.

This document will help to inform the development of a waste reduction action plan, which will identify specific actions to be undertaken to minimise waste production at JCU.

Townsville Campus annual waste and recycling profile



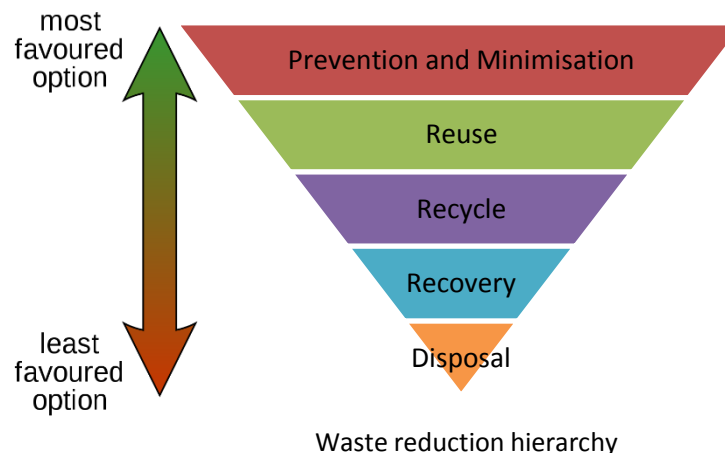
Annual recycling by type (tonnes) - Townsville Campus



The WRMP aims to reduce waste generation at all JCU sites using the waste reduction hierarchy as the basis. This hierarchy is supported State and Federal Government waste management strategies.

Waste Reduction Hierarchy

- **Prevention and minimisation** of waste production at the source
- **Reuse** of resources where possible
- **Recycling** of generated waste
- **Energy recovery** from non-recyclable wastes
- **Disposal** to landfill



The WRMP aims to ensure all waste generated at JCU is properly managed and disposed of through:

- Providing training and education to staff and students on correct disposal and management of various wastes.
- Providing adequate resources and infrastructure for students and staff to reuse and recycle materials at the end of their life.
- Providing easy to access waste management information and procedures via the TropEco website, newsletters, facebook and other communications avenues.
- Encouraging best practice for waste reduction and continually identify areas for improvement in waste management at JCU campuses and sites.
- Support and alignment with State and Federal Government waste management strategies.

Each staff member must take responsibility to reduce their waste production and maximise waste recovery through correct reuse or recycling. The TropEco program can provide resources to assist staff and students with waste management and should be the first contact point for enquiries.

JCU consists of two main Australian campuses at Townsville and Cairns, a Singapore campus, and smaller study centres in Mackay, Mount Isa and Thursday Island. JCU also runs a number of research field stations across North Queensland. The majority of JCU's waste is generated at the Townsville and Cairns campuses. These sites will be the main consideration for the WRMP; however the smaller study centres and research stations still require effective management of waste.

Where effective waste management is critical, such as the Daintree Rainforest Observatory and Orpheus Island Research Station, waste management plans are included in the Environmental Management Plan for the site and should be referred to in the first instance.

For other JCU sites, staff should follow the waste management hierarchy in Section 2 and utilise local recycling services where possible before disposing items to landfill. The Estate Directorate can help with any specific waste enquiries for these sites.

JCU works closely with its waste and recycling contractors and cleaning contractors to minimise waste to landfill and improve recycling rates.

JCU's reporting requirements for waste and recycling generation are expected to increase in coming years and therefore all waste disposed of on its Australian Campuses needs to be monitored. Anyone disposing of waste outside of the regular waste and recycling system should report their activities to the Estate Directorate.

Waste generation

Waste is generated from a variety of areas across all campuses and sites including:

- Offices
- Laboratories
- Gardens and landscape
- University accommodation
- Food and beverage outlets
- Educational facilities
- Research facilities
- JCU Tenants



Waste types dealt with at JCU include:

- Paper
- Cardboard
- Plastics (recyclable and non-recyclable)
- Confidential waste
- Green waste
- Food waste
- Furniture
- Polystyrene
- Glass
- Electronic waste
- Metal
- Lighting
- Batteries
- Chemical waste
- Clinical waste
- Radioactive waste
- Construction waste
- Sanitary waste



James Cook University is an international University committed to creating a brighter future for life in the tropics. JCU has made a clear commitment to [sustainability](#) – through the inclusion of sustainability in the Statement of Strategic Intent, the University Plan, the JCU Code of Conduct for staff, and most recently, by becoming a signatory to the [Talloires Declaration](#), an international agreement of university leaders for sustainability.

Sustainability finds expression in how we deal with global challenges such as climate change adaptation, diminishing biodiversity, food security, human rights, poverty alleviation, multiculturalism and global security.

Responsible management of waste is one method we employ to ensure that our actions do not limit the range of social, cultural, environmental and economic options open to future generations.

What Sustainability means to JCU – JCU’s Sustainability Vision

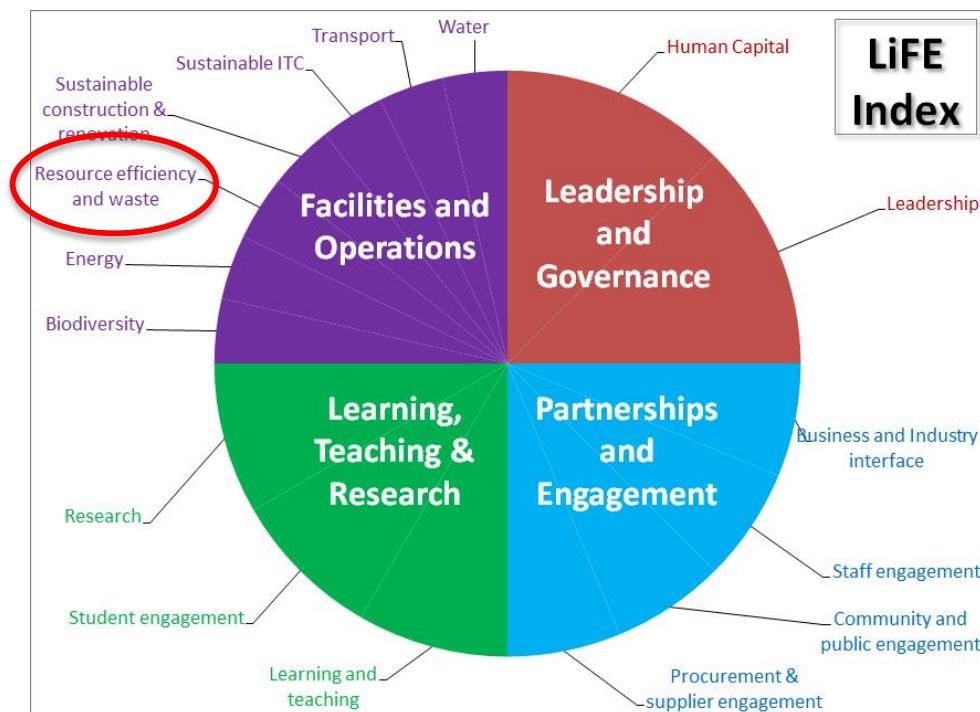
“Committed to the principles of sustainability, we will ensure that our actions today do not limit the range of social, cultural, environmental and economic options open to future generations.

Our sustainability vision is anchored in the belief that social, environmental and economic sustainability must be embedded in our daily practices and integrated in everything we do. Sustainable development is rooted in respect for our natural and social contexts, and in the knowledge that we will be judged by future generations according to our success in realising our sustainability goals.

In seeking a brighter future for people in the tropics worldwide, JCU staff and students will work to ensure that our actions today do not limit the range of social, cultural, environmental and economic options of future generations. Through our scholarship and practices, JCU seeks to meet the challenges that affect the tropics, and in doing will materially contribute to sustainable development, world-wide.”

The LiFE Index- planning for a sustainable JCU

As part of its commitment to a sustainable university, JCU has implemented the LiFE Index system to benchmark and develop action plans to embed sustainable practices in all its operations. The LiFE Index breaks down the relevant areas into Priority Areas and Frameworks in order to focus on specific activities required for a sustainable University. *Resource efficiency and waste* is one of the Frameworks under the *Facilities and Operations* Priority Area, and this document represents the management plan for waste reduction at JCU. Additional management plans and action planning is occurring for other Frameworks within the LiFE Index.



Target setting is an important part of progress toward minimising waste production and maximising recycling efforts. JCU sets targets according to the SMARTER principle, specific, measurable, achievable, relevant, and time-targeted objectives which are evaluated and re-evaluated.

Annual waste reduction and recycling targets become more specific through quantification or enumeration, or by defining certain tasks that need to be completed. Target setting creates an official commitment to reduce waste and increase recycling and attracts the allocation of resources to achieve the agreed targets.

In the case of waste management, creating reductions in waste volumes and increasing recycling rates will result in immediate savings to JCU.

The major barrier for waste reduction is behaviour change from staff and, to a lesser extent, students. Most of the required infrastructure is already in place and it is a matter of educating and encouraging a cultural shift in waste management practices to create changes in procurement and disposal practices.

TropEco, the Sustainability Advisory Committee and Sustainability Action Group have a major role to play in creating the cultural shift.

Targets will focus on a reduction in total waste volume (waste and recycling combined) and an increase in the recycling rate, with the key objective to reduce total waste volume and maximise recycling rates for the remaining waste.

All targets refer to the Townsville and Cairns Campuses only, as data collection from other JCU sites is difficult and waste volumes are minor compared to the major campuses. As better data becomes available, other sites may develop their own targets that can be added to the WRMP.

The baseline year for all targets is 2010.

Short-term targets (1-5 years)

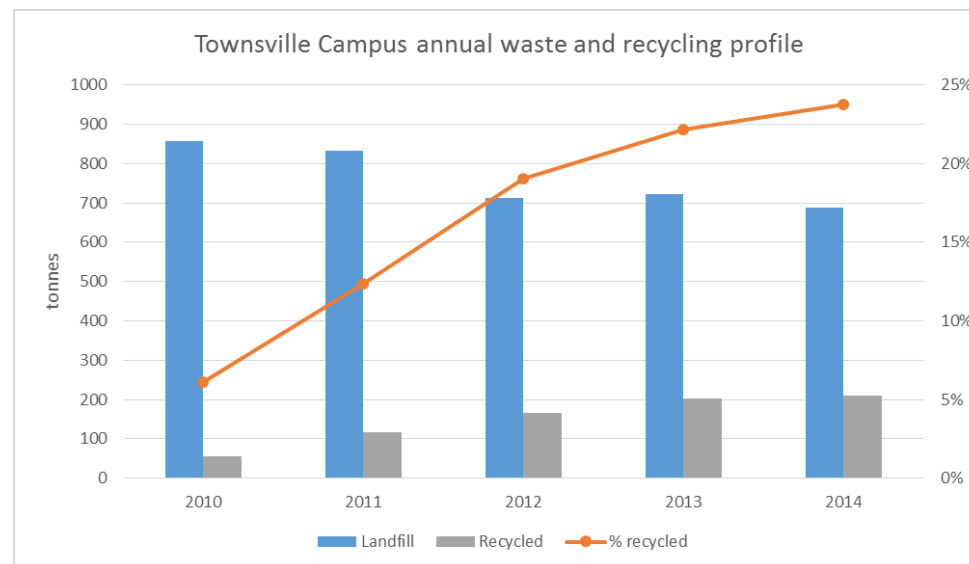
- No net increase in total waste production (waste and recycling combined)
- Continuous improvement in recycling rates

Medium term targets (5-10 years)

- 10% reduction in total waste volume by 2025
- Recycling rate of 35% by 2020
- Recycling rate of 50% by 2025

Long term targets (10 - 20 years)

- 20% reduction in total waste volume by 2030
- Recycling rate of 70% by 2030



Effective monitoring and evaluation of waste disposal is essential to ensure accurate reporting and planning. Monitoring is done through waste auditing, which looks at total volume and/or weight of waste and recyclables disposed, as well as a breakdown of the types of waste disposed of in general waste, in order to identify the opportunities for additional recycling or reuse. Monitoring of contamination rates in recyclables is also important to ensure users are utilising the services appropriately.

Prior to 2015, waste audits were conducted on an irregular basis due to the lack of technology available to weigh skips by the waste contractor. This has resulted in rough estimates of waste and recycling totals based on limited surveys.

Due to the time consuming nature of waste auditing and the need for more accurate monitoring and reporting, the Estate Directorate is introducing reporting requirements in all waste and recycling contracts in order to ensure accurate and timely reporting on waste and recycling volumes/weights.

Two types of waste audits need to be conducted to get an accurate understanding of waste management practices - a volume/weight audit as a qualitative measurement and a waste type/contamination audit as a quantitative measurement.

Volume/Weight Audit

To assess the **volume/weight of disposal** to landfill or recycling, it is desirable to have the waste contractor provide actual data following collection. This has been the case for the Townsville campus waste and recycling contract since December 2014 and was implemented for the Cairns campus waste and recycling contract from November 2015.

For waste streams where this is not possible a regular audit should be done on each bin or skip for that waste stream. At a minimum, one audit should

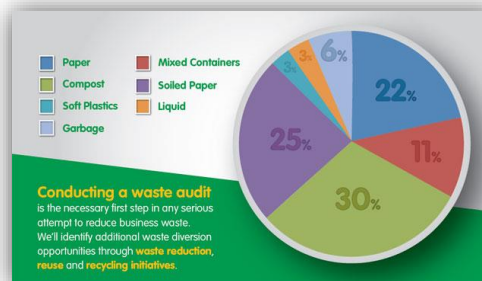
be performed twice yearly; once during semester and once during semester break. The audit should be conducted on all bins/skips at the same time, as close as possible to the collection day/time to ensure all waste disposed of is accounted for. Liaison with cleaning and/or waste contractors may be required to ensure accurate results.

Waste Type/Contamination Audit

Auditing the **waste types** being disposed of in general waste bins should be done at least once per year on a representative sample of bins/skips on each campus. This involves taking a sample of waste from several skips, sorting it into waste types and weighing each waste type. This is to identify the amount of waste that could potentially be recycled and allows targeted communication programs and waste infrastructure changes to ensure maximum diversion of waste to recycling.

An audit on recycling contamination rates should also be conducted on each major recycling stream at least once per year on a representative sample of bins/skips for each campus. This should identify the percentage of contamination in bins and a breakdown of the types of contaminants.

All audits must be conducted in a safe manner and ensure a risk assessment has been conducted prior to commencement and appropriate PPE is worn.



Effective procurement plays a large role in minimising unnecessary waste production. The JCU Procurement Policy states that:

“The University will strongly contribute to the advancement of corporate, community, local industry and environmentally sustainable outcomes through all of its procurement activities. To achieve this we will use our best endeavours to do business with ethical and socially responsible suppliers.”

JCU will reduce waste going to landfill by applying purchasing principles that includes, avoiding, reducing, reusing, recycling and then finally disposal to landfill, of products used by JCU.

Staff should:

- Ensure suppliers minimise packaging and request that all packaging can be recycled. Staff should also consider the life-cycle of any product purchased and ensure it has a long-life and can be reused or recycled at the end of its life.
- Avoid waste by not purchasing items that are not needed, or are obsolete, not sustainably produced, or are not of a quality which will last.
- Reuse items instead of disposing to landfill. This may include reusing items such as office supplies, stationary, furniture, machinery and paper within the workplace or finding an alternative opportunity for reuse.
- Recycle materials such as paper and cardboard, plastic containers, glass jars and bottles, steel cans ,and aluminium cans, printer and toner cartridges, green waste, construction/demolition materials and E-waste. Preference should be made for items that are recycled through existing recycling processes and systems.

Sustainable procurement considers:

Environmental impacts

E.g. inputs of natural resources, energy and water in the manufacture, use and disposal of goods

Social impacts

E.g. labour conditions in the manufacture, use and disposal of goods or delivery of services

Economic impacts

E.g. costs of operation and maintenance over the life of the goods

JCU will base procurement decisions on the principles of “value for money over life cycle of products” rather than “lowest cost” and will give preference to and purchase energy efficient, water saving and environmentally performing products and services that are cost competitive. Applying a life cycle assessment on products will take into account social, environmental and economic impacts, rather than economic impacts alone.

WASTE & RECYCLING PROCEDURES

Waste & Recycling Procedures have been developed to inform JCU staff and students on managing specific waste and recycling streams on JCU's campuses. All staff should be familiar with the procedures that are relevant to their work environment.

If followed, these procedures are expected to result in a significant reduction in waste to landfill and overall reduction in waste production for JCU, ensuring environmental, social and economic impacts are minimised in relation to waste.

The Estate Directorate is responsible for managing most waste streams on campus and should be the first point of contact for waste and recycling queries.

Staff should ensure they have consulted the relevant information in the [Waste & Recycling Procedures](#) before making any queries.

Any queries should be directed to waste@jcu.edu.au, or for urgent waste related enquiries please contact 4781 5060.



CONTRACT MANAGEMENT

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The Estate Directorate manages waste and recycling contracts for the Townsville and Cairns campuses for the following waste streams:

- General waste
- Commingled recycling
- Cardboard recycling
- Paper recycling
- Confidential waste
- Sanitary waste

In order to ensure high quality of service, JCU requires all contractors to have appropriate systems in place to manage their operations effectively. These include; quality assurance, health and safety, environmental performance and relevant permits and licences.

The Estate Directorate works closely with its contractors to improve resource recovery rates and reduce waste to landfill. Contractors are required to report waste and recycling data for each waste stream on a monthly basis and this information is then used for efficiency planning and reporting.

Currently JCU engages Townsville City Council for waste management in Townsville and Cleanaway in Cairns, with Shred-X carrying out confidential waste management.

Additional waste streams will be managed under contracts as required to ensure appropriate and responsible disposal of JCU's waste, with reuse or recycling of wastes carried out wherever viable.



TropEco is responsible for ensuring staff and students are familiar with the waste and recycling system at JCU and can provide educational material such as signage, posters, handouts and training for anyone requiring more information, tailored for the Cairns or Townsville Campuses.

The TropEco website also contains information on waste and recycling management at JCU.

If you would like further information or resources please contact tropeco@jcu.edu.au or visit the TropEco website: www.jcu.edu.au/tropeco

Your desktop guide to recycling at JCU

For General recycling look for these bins:

- Aluminium Cans
- Plastic Bottles & Containers
- Glass Bottles & Jars
- Newspapers & Magazines
- Small Cardboard Items
- No Plastic Bags or Food Scraps

General waste goes here:

- Plastic bags
- Food scraps
- Non-recyclables

Paper waste goes here:

...and when its full, empty it here

If it's Confidential use me!

Cardboard boxes?
Fold me first... then put me here:

JAMES COOK UNIVERSITY AUSTRALIA
This service is brought to you by JCU's TropEco program:
Contact: tropeco@jcu.edu.au
Phone: 4781 5060
jcu.edu.au/tropeco

TropEco
Sustainability in action

Everyone's using the Ecobin at JCU

By rolling out the ecobin system at JCU we're helping to minimise our environmental impact by reducing the waste we send to landfill.

You now have a red and blue ecobin to replace your old waste bin. The ecobin system is designed to reduce waste in office environments by encouraging staff to avoid, reduce, reuse and recycle.

For more information go to:
www.jcu.edu.au/tropeco

Printed on 100% recycled paper - please keep me for reference or return me to TropEco in internal mail so I can be used again

The red ecobin is for non-recyclable waste only.

Remember anything you put in here will end up in landfill.

Cleaning staff will regularly collect any waste in your red ecobin.

Please place all your paper, magazines, books and small cardboard waste in the blue ecobin under your desk.

When it's full you can empty it in your nearest paper recycle bin.

If you have other recyclables, please take them to your nearest general recycling bin (yellow bins) located in tea rooms and public areas

We need everyone to do their bit for a sustainable JCU



Appropriate infrastructure and signage is essential for an effective waste and recycling program. JCU uses standard bin types and signage for most waste streams. The Queensland Government's public place recycling signage has been adopted along with colour coding for major waste and recycling streams to ensure consistency and familiarity with the system. This signage has now been adopted in public places across Australia.

The Estate Directorate can provide additional bin infrastructure, signage, posters, training and educational material to assist areas to reduce their waste production and increase recycling rates.

If a service is lacking in your area or you have suggestions for improvement, please contact tropeco@jcu.edu.au.

Queensland Government Public Place Recycling signage



JCU's cleaners are required to separate recyclables from waste and dispose of recyclables in the recycle skips provided, where recycling bins are provided on campus.

JCU's cleaning contractors have been inducted and trained in the process of disposing of waste and recyclables and the correct procedures should be followed at all times by cleaners.

Where recycling is deemed to be contaminated, recyclables will be disposed of in landfill bins by JCU's cleaners.

If you have any concerns about correct disposal of recyclables or waste by our cleaners please contact the Estate Directorate - waste@jcu.edu.au.

Construction sites often produce a large volume of waste materials. Much of these materials can be recycled or reused when managed properly.

The Estate Directorate and other relevant departments at JCU will work closely with contractors to ensure waste is reduced and maximise recovery of recyclables.

No contractor waste materials may be disposed of in JCU skips or bins without prior approval from the Manager, Environment. Contractors are required to dispose of waste off-site or ensure a skip is ordered through the relevant JCU Project Manager. Recyclable materials should be separated from general waste.

Asbestos materials or materials suspected to contain asbestos must be disposed of in the correct manner by qualified contractors.

The *JCU Design Guidelines - Environmental specifications*, specifies the correct disposal method for most major waste types produced during construction at JCU. Contractors should refer to this document in the first instance.

[Asbestos Policy](#) - relates to management and disposal of asbestos containing materials

[JCU Code of Conduct](#) - Principle 4 - Embrace sustainability and social responsibility - relates to responsible waste management

[Health, Safety and Environment Policy](#) - relates to health and safety requirements for people managing waste on campus

[Risk Management Policy](#) - relates to management and disposal of wastes in a way that minimises risk to people and the environment

ABBREVIATIONS

DEHP: Department of Environment and Heritage Protection

HSE: Health, Safety and Environment

ICT: Information and Communications Technology

JCU: James Cook University

SAC: Sustainability Advisory Committee

SAG: Sustainability Action Group

TCC: Townsville City council

WRMP: Waste Reduction Management Plan

ADDITIONAL RESOURCES

Queensland Government Waste Management website – information and resources on waste and recycling

<http://www.ehp.qld.gov.au/waste/index.html>

Queensland Government - Waste Avoidance and Resource Productivity Strategy 2014 - 2024

<https://www.ehp.qld.gov.au/waste/qld-waste-strategy.html>

Townsville City Council waste and recycling information

<http://www.townsville.qld.gov.au/resident/waste/Pages/default.aspx>

Visy recycling webpage – information about processes and products produced

<http://www.visy.com.au/recycling-about/>

Australian Government – National Waste Policy

<http://www.environment.gov.au/protection/national-waste-policy>

Clean Up Australia – recycling information

<http://www.cleanup.org.au/au/Factsheets/recycling-waste.html>

TerraCycle Australia – recycling services

<http://www.terracycle.com.au/en-AU/>

SITA recycling webpage – facts and information

<http://www.sitawesternrecycling.com.au/resource-centre>
