Sustainability Action Plan

ISSUE DATE: FEBRUARY 2021

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Contents

Message from the Vice-Chancellor

QUT recognises climate change as an existential issue requiring all individuals and organisations to respond. The United Nations landmark agreement reached in Paris in late 2015 highlights the critical need for global response to the threat of climate change. The devastating drought, record high temperatures and the 2019 and 2020 Australian bushfires locally highlight the need for stronger action. Universities are in a unique position to contribute to and meet the challenges that will lead to a more sustainable world.

QUT is committed to living lightly upon the earth and reducing our impact on the environment, while improving our institutional resilience. Sustainability and the Environment, one of the high-level priorities in the university's strategic plan—*Blueprint 6*—reflects our ongoing commitment.

This Sustainability Action Plan supports our institutional commitment and it details our priorities and targets for action across all areas of the university.

With a focus on innovation and education for the next generation, QUT aims to tackle global challenges and achieve sustainability through our research, teaching programs, campus operations and partnerships.

Professor Margaret Sheil AO

Vice-Chancellor and President

1.0 Introduction

Queensland University of Technology (QUT) is a major Australian university with a truly global outlook and a real-world focus.

QUT has two main urban campuses. Gardens Point is our historical inner-city Brisbane campus, located next to the Brisbane River, the Botanic Gardens and Parliament House. It hosts our business, law, science and engineering research and teaching, right in the centre of Brisbane. The Kelvin Grove campus is in Brisbane's inner north, about three kilometres from the centre of the city. It is the main campus for our creative industries, education and health research and teaching and is located in the Kelvin Grove Village.

The Sustainability Action Plan is QUT's overarching plan to move to a low carbon future and protection of our natural environment. It seeks to set challenging new standards for campus performance, expand educational opportunities for students, and provide support for research, teaching, and collaboration.

As an institution of higher learning, QUT is well positioned to meet this challenge. Our academics pursue cutting-edge research in areas such as innovative approaches to reducing waste, alternative energy sources and storage, and developing systematic approaches to environmental land management. Our classrooms engage the minds of the next generation of leaders and our staff manage state-of-the-art facilities.

QUT has created a new role, Pro Vice-Chancellor (Sustainability Strategy), to progress our sustainability commitment. The PVC (Sustainability Strategy) provides academic leadership to the university regarding sustainability and environmental matters, including strategic direction, institutional policy, and research and education programs.

The Sustainability Action Plan identifies opportunities for progress, sets goals and provides a roadmap for achieving goals that will impact not only our campuses, but the wider community. The Sustainability Action Plan is intended to be a 'living document' that will be reviewed on a regular basis.

2.0 Drivers for change and global response

The United Nations landmark agreement reached in Paris in late 2015 highlights the critical need for global response to climate change. In 2015, the United Nations General Assembly also adopted 17 Sustainable Development Goals (SDGs). The SDGs provide a blueprint to put the world on a sustainable path to 2030 and address massive economic, social and environmental challenges.

Universities have a key role to play in the achievement of the Sustainable Development Goals through research, teaching and campus operations. The new Times Higher Education Impact Rankings, introduced in 2018, evaluates university activities against the 17 United Nations Sustainable Development Goals (SDGs). In 2020, 768 institutions received an overall impact ranking—QUT ranked 70th globally, and 12th nationally, in the 2020 impact ranking and appeared in the top 50 globally for three of the SDGs.

QUT aims to lead and set an example of best practice in sustainability. The Sustainability Action Plan supports QUT's contribution to seven of the SDGs that have an environmental focus.

The CSIRO State of Climate 2020 reported that Australia's climate has warmed on average by 1.44 ±0.24 ^{O}C since national records began in 1910, leading to an increase in the frequency of extreme heat events. This has heightened the sense of urgency for action. Droughts and bushfires experienced in Australia in 2019 and 2020 highlights ongoing challenges at the local level. This plan includes measures that address and respond to this heightened need for action.

The table on the following page details the connection between drivers for change and QUT's Sustainability Action Plan.

DRIVERS FOR CHANGE		SUSTAINABILITY PLAN SECTION
Demand for energy, water and resources	Global demand for energy, water and resources is rising while finite natural resources are declining.	4.2 Energy 4.4 Water 4.6 Biodiversity
Growing human population and continued escalation of development	The world's population is growing, ageing and urbanising. Australia's population is highly urbanised, and population growth is largest in our major cities. The challenge is to create infrastructure that enriches communities while being sustainable, resilient and responsive to climate change.	4.8 Built environment
Increased salinity and scarcity of water	Declining water quality and quantity pose major threats to freshwater and coastal marine biodiversity. Many catchments and their river channels are in poor condition and are no longer resilient to extreme weather events. Increased urbanisation places further pressure on ecosystems. Water entering waterways from hard surfaces or drains can be a significant problem for the health of aquatic habitats.	4.4 Water 4.10 Environmental compliance
Degradation of natural environment and ecosystems	Landscapes and ecosystems are under enormous pressure from the growing human population, natural habitat loss, shifting climate zones, changing land-use priorities and increasing competition for resources. Australia is home to between 600 000 and 700 000 species. Changes to the landscape and native habitat as a result of human activity have put many of these unique species at risk.	4.6 Biodiversity
Increased waste and pollution	As the global population grows and the impacts of climate change place additional pressure on natural resources, we need to use materials more efficiently. Pollution can lead to human and ecological health issues associated with the quality of Australia's land, air and water resources. (Australia State of the Environment 2016)	4.5 Waste 4.7 Procurement
Growing number of severe weather events	Australia is projected to experience: • further increases in sea and air temperatures, with more hot days and marine heatwaves, and fewer cool extremes • further sea level rise and ocean acidification • decreases in rainfall across southern Australia with more time in drought, but an increase in intense heavy rainfall throughout Australia. (CSIRO State of Climate 2018)	4.9 Climate adaptation and resilience
Unique opportunity to meet climate goals and fuel economic growth	The International Renewable Energy Agency highlights that renewable energy has entered a cycle of falling costs, increasing deployment and accelerated technological progress. Solar PV module prices have fallen by around 80 per cent since the end of 2009, while wind turbine prices have fallen by 30 to 50 per cent.	4.2 Energy

3.0 Sustainability vision, objectives and guiding principles

QUT's vision is to move towards a low-carbon future and urgently reduce activities that result in emissions of greenhouse gases.

The United Nations' Paris Agreement aims to 'strengthen the global response to the threat of climate change', and its stated goal is to limit the increase in the global average temperature to 'well below 2°C' above pre-industrial levels. In addition, a report from the UN, published in May 2016, concluded that 'much greater emission reduction efforts will be required in the period after 2025 and 2030 to hold the temperature rise below 2°C above pre-industrial levels'. QUT aims to not only meet—but significantly exceed—the reduction targets outlined in the Paris Agreement by 2030.

QUT's strategic plan *Blueprint 6* features Sustainability and the Environment as one of seven priorities. QUT will demonstrate this commitment by:

- enhancing research aimed at mitigating and adapting to the impact of climate change
- extending the public understanding of environmental challenges, including climate change
- partnering with industry to develop new ways of lighting, feeding and moving the world
- embedding sustainability into our curricula and our practices
- measuring and seeking to reduce the environmental impact of operating the university.

The university's commitment also includes a university statement on responsible investment.

QUT's Estate Master Plan supports the university's environmental sustainability commitment. The following principles are fundamental considerations for the whole estate:

- minimise energy and water consumption
- enhance campus biodiversity
- minimise environmental impacts
- maximise the utilisation of space
- implement sustainable transport strategies
- minimise waste to landfill
- climate change adaptation.

4.0 Action plan

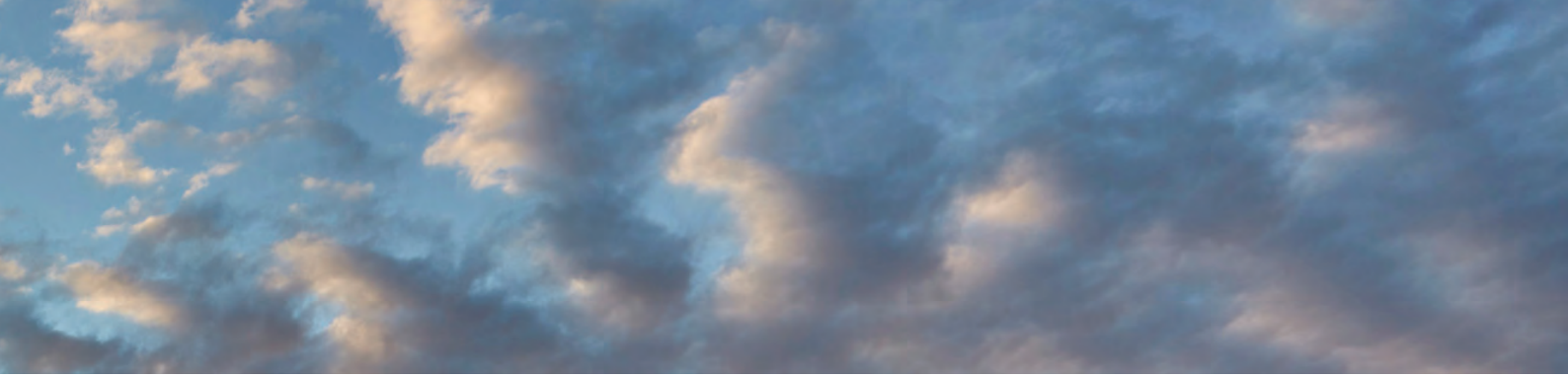
QUT's Sustainability Action Plan provides the roadmap for all areas of the university to initiate and attain positive environmental sustainability outcomes. While this plan focuses on environmental management, it is acknowledged that sustainability also encompasses social and economic dimensions and these are addressed through other university policies. The action plan focuses on all QUT's campuses and distributed sites. Responsibility for the implementation and review of the Sustainability Action Plan lies with Facilities Management in liaison with stakeholders.

QUT'S SUSTAINABILITY ACTION PLAN–ACCOUNTABILITIES

QUT Sustainability Theme	QUT Theme Champion
Carbon	Executive Director, Facilities Management (Sustainability Manager and Energy Manager)
Energy	Executive Director, Facilities Management (Energy Manager) Director, Learning Environments and Technology Services, Digital Business Solutions Associate Director, Service Operations, Digital Business Solutions
Transport and travel	Director, Campus Services and Procurement (Manager, Integrated Transport Services)
Water	Executive Director, Facilities Management (Associate Director, Operations)
Waste	Executive Director, Facilities Management (Associate Director, Operations) Director, Learning Environments and Technology Services, Digital Business Solutions
Biodiversity	Executive Director, Facilities Management (Associate Director, Estate Planning and Associate Director, Operations)
Built environment	Executive Director, Facilities Management (Associate Director, Estate Planning)
Climate adaptation and resilience	Executive Director, Facilities Management
Procurement	Director, Campus Services and Procurement (Associate Director, Strategic Procurement)
Environmental compliance	Director, Health, Safety, Environment (Senior Environment Partner)
Engagement and behavioural change	Executive Director, Facilities Management (Sustainability Manager)
Education for sustainability	Director, Curriculum Quality and Standards Pro Vice-Chancellor (Digital Learning) Pro Vice-Chancellor (Sustainability Strategy)
Research for sustainability	Pro Vice-Chancellor (Sustainability Strategy)

Targets at a glance

Carbon	• Carbon neutral by 2030 (Scope 1,2,3 emissions).	• Scope 1 and 2 emissions to zero by 2023.
Energy	• Reduce energy consumption by 10% from 2017/18 levels of 0.57 GJ/m^2 (GFA) by 2023.	• Maximise deployment of solar PV on campus by 2022.
Transport and travel	• Measure travel-related emissions and develop an Emissions Reduction Strategy by 2022. • Reduce single occupancy car trips to campus by 10% by 2023.	• 5% more QUT staff and students use public transport to commute to campus by 2023. • 5% more QUT staff and students use active transport to commute to campus by 2023.
Water	• Maintain or reduce water consumption at 0.63kL/m^2 GFA and 5.41kL/student (EFTSL + FTE). • Increase total campus rainwater capture and storage capacity by 10% by 2023.	• Use 100% non-potable water (captured or recycled) for irrigation and external cleaning (wherever possible).
Waste	• Reduce waste to landfill by 15% of 2018 levels by 2022. • Reduce recyclables going to general waste by 5% of 2018 levels by 2021.	• All green and back-of-house organic waste to be composted by 2021. • Understand quantity of construction waste generated and have guidelines in place to ensure correct disposal.
Biodiversity	• Develop and implement a Public Realm and Landscape Plan by 2022. • Develop and implement a Tree Management Plan by 2021.	• Implement a campus biodiversity monitoring and reporting program by 2021.
Procurement	• Roll out training to at least 200 key users and staff (annually) on sustainable procurement practices. • Achieve the priority actions identified, including visible evidence in place.	• Develop an action plan for five key suppliers across QUT (including Winc) that demonstrate clear achievement of sustainable outcomes achieved through good procurement practices. • Develop case studies of achievements to influence additional outcomes across procurement activities.
Climate adaptation and resilience	• Climate adaptation reflected in QUT's Design Standards and Guidelines. • Extreme weather events reflected in Emergency Management, Counter Disaster, Crisis Management and Business Continuity Plans.	• Signal detection systems identified and implemented. • Updated emergency communications and alert systems.



	Built environment	• All new developments to be designed and built to the intent of a minimum five-star Green Star – 'Design and As Built' and aiming toward six-star Green Star rating as applicable. • All new furniture procured for QUT will have certification from the Good Environmental Choice Australia (GECA) and/or the Australasian Furnishing Research Development Institute (AFRDI) Green Tick certification schemes or an equivalent.	• Utilisation, flexibility and adaptation of space will be continually improved. • Update the university's Estate Master Plan, Asset Management Plan and Design Standards and Guidelines to reflect the targets of the Sustainability Action Plan by the end of 2022.
	Environmental compliance	• No notifiable environmental incidents (ongoing). • 100% compliance with environmental licence, permit and approval conditions (ongoing).	• Year-on-year increase reporting of environmental hazards and near misses identified in the HSE Hub.
	Education for sustainability	• In 2021, establish Education for Sustainability Project, a five-year, university-wide project to inspire and support the inclusion of sustainability into curriculum. • Map level of current teaching of sustainability in curriculum and implement sustainability as a 'design feature' in CourseLoop to identify units and modules.	• Develop university-wide inter-disciplinary curriculum exploring sustainability, drawing upon the expertise from all faculties and institutes. • By 2026, all QUT undergraduate degrees demonstrate (at the course or major level) that core curriculum elements enable students to develop and apply sustainability knowledge and values in their field.
	Research for sustainability	• Establish the first phase and develop strategy for a renewable energy hydrogen pilot plant. • Demonstrate a toluene electrochemical hydrogenation procedure with industry partners. • Develop and implement sustainable practices in agriculture. • Contribute towards the creation and maintenance of sustainable environments for humans and other life forms.	• Develop innovative ways to reduce waste and communicate to industry and schools. • Ensure strong links between QUT's sustainability research community and campus operations. • Showcase the work of QUT research centres through engagement events and promotion of sustainability research. • Translate QUT research into practice, both internally and externally.
	Engagement and behaviour change	• Develop an annual Engagement and Behaviour Change Program.	• Update Sustainability website to align with Sustainability Action Plan.

4.1 Carbon

Strategy: Measure and mitigate QUT's carbon emissions.

Greenhouse gas emissions

- Greenhouse gases (GHG) include carbon dioxide, methane, nitrous oxide, ozone and some artificial chemicals such as chlorofluorocarbons, which often in this context, are just referred to as 'carbon' or 'carbon equivalent'. The amount of 'carbon' emitted or attributed to an organisation is referred to as its 'carbon footprint'.
- Emissions from burning fossil fuels continue to increase and are the dominant contributor to the observed growth in atmospheric CO_2.
- Under the Paris Agreement, Australia has a goal to reduce its carbon emissions across all sectors by 28 per cent from 2005 levels.
- QUT submits an annual report on its Scope 1 and 2 greenhouse gas emissions (natural gas, transport fuels, stationary fuels and purchased electricity) to the Australian Government in accordance with the National Greenhouse and Energy Reporting (NGER) regulations.
- QUT's carbon inventory incorporates greenhouse gases that are categorised into Scope 1, 2 and 3 emissions (see Figure 1).

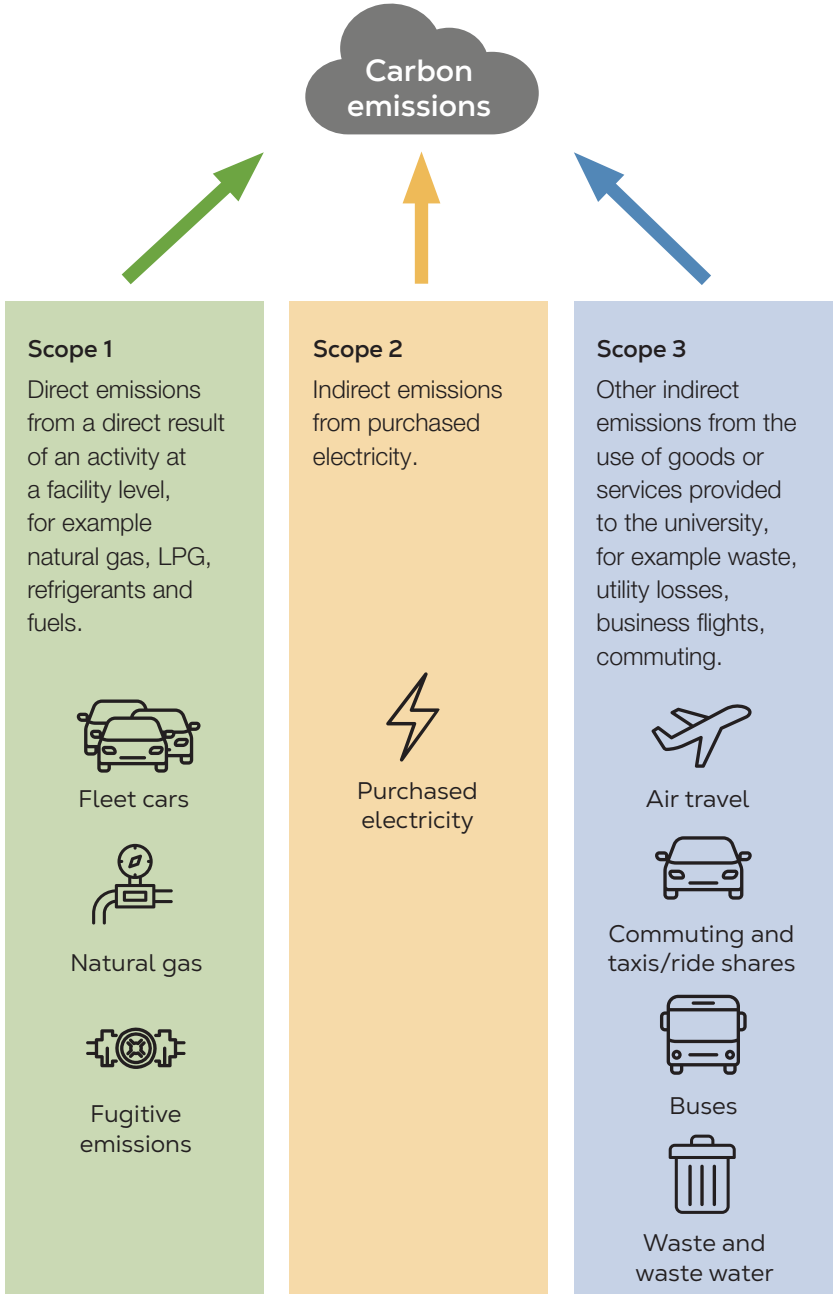
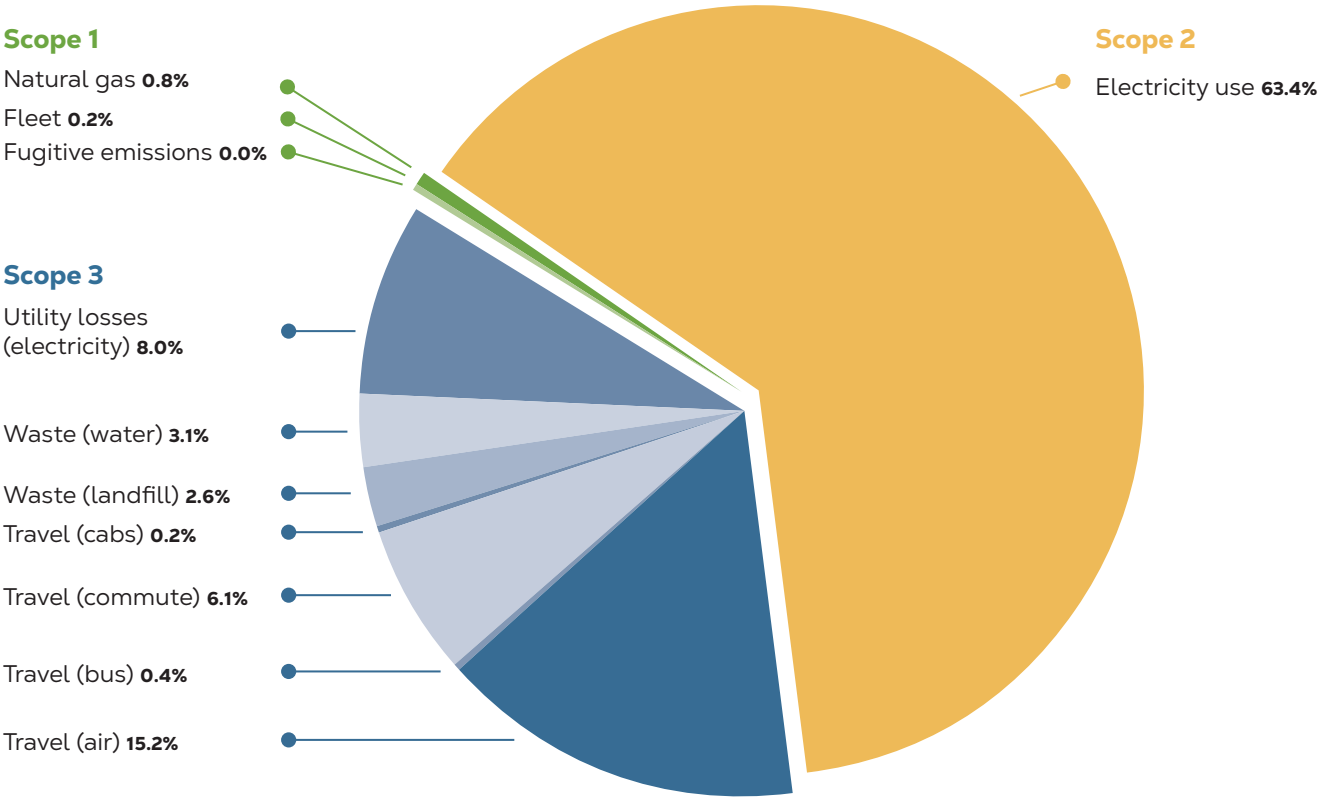


Figure 1: Scope 1, 2, and 3 emissions

Carbon inventory

QUT's overarching plan is to move to a low-carbon future. QUT's carbon inventory incorporates Scope 1, 2 and 3 emissions.

Our carbon inventory



Priority actions

- Implement strategies to be carbon neutral by 2030.
- Investigate appropriate offsetting models over coming year.
- Identify data for measuring, monitoring, reporting and managing Scope 3 emissions at QUT.

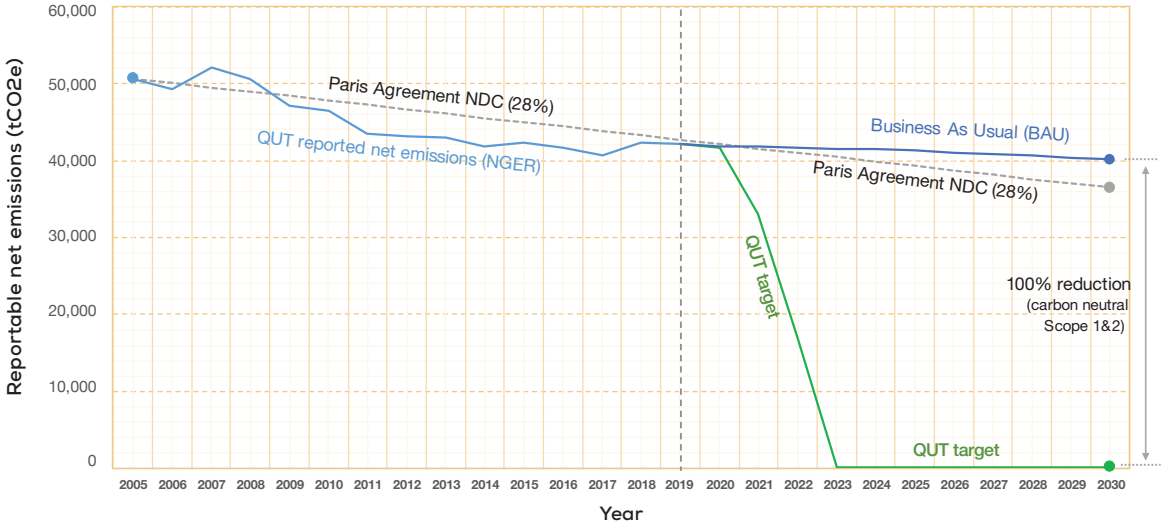
TARGETS
1 Carbon neutral by 2030 (Scope 1,2,3 emissions).
2 Scope 1 and 2 emissions to zero by 2023.

4.2 Energy

QUT is committed to reducing energy consumption and increasing production of renewable energy.

QUT's campus operations consume various forms of energy, but it is electricity consumption (sourced from the grid) that contributes to approximately 95 per cent of QUT's Scope 1 and 2 carbon emissions.

Scope 1 and 2 emissions



Priority actions

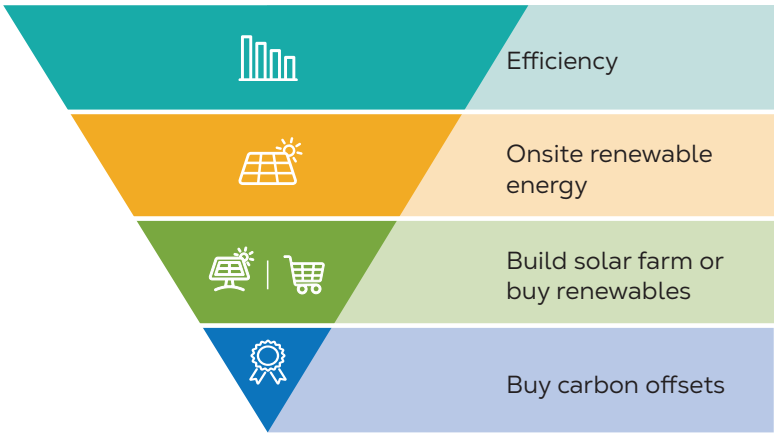
- Retrofit existing inefficient lighting with energy efficient LED lighting technology and smart lighting control systems and sensors.
- Replace inefficient Mechanical Services plant with newer, more efficient technologies and incentivise heating, ventilation and air conditioning (HVAC) contractors to identify where more efficient technologies are available.
- Optimise building control systems to reduce energy wastage through data analysis and tuning, utilising the existing Building Management System (BMS) and Energy Monitoring System (EMS).
- Undertake night audits by Security staff to identify after-hours energy wastage, including lighting, computers, audio visual (AV) equipment, etc.
- Reduce energy consumption of university equipment and appliances e.g. fridges and freezers.
- Audit energy metering capability to improve energy consumption data.
- Develop a program of ongoing energy audits of each building to identify both active and passive energy reduction opportunities commencing 2021.
- Develop and implement a program to increase levels of student and staff engagement and awareness of energy use to drive behavioural change.
- Explore opportunities for investing in off-site solar photovoltaic (PV) farms.
- Information technology energy reduction measures:
  - projectors in central teaching spaces power down after 240 minutes of non-use
  - staff computer screens are set to sleep by default after 10 minutes of non-use
  - maintain or reduce energy consumption in campus data centres through the procurement of energy efficient IT infrastructure and consumption of cloud-based services.

QUT can make a significant reduction to its carbon footprint by continuing to reduce our consumption of grid electricity, as well as increasing our production of renewable energy.

Opportunities to reduce energy use (and associated carbon emissions) can be divided into the following three categories (listed in order of priority):

1. reduce energy demand
2. produce and consume on-site renewable energy
3. facilitate production of, and purchase, off-site renewable energy.

Through ongoing energy management strategies—such as metering and monitoring, energy audits, retrofitting buildings and services, and sourcing renewable or low-carbon sources—continuous improvements will be made in reducing energy use and reducing QUT's carbon footprint.



TARGETS

1
Reduce energy consumption by 10% from 2017/18 levels of 0.57 GJ/m² (GFA) by 2023.

2
Maximise deployment of solar PV on campus by 2022.

SUSTAINABILITY IN ACTION

QUT has signed a contract that will see 50 per cent of its energy being sourced from a new solar farm in Columboola until 2028.

CS Energy will buy 100 per cent of the output of the solar farm from owners Luminous Energy and on sell it to QUT, Griffith and CQU.

This will significantly reduce QUT's carbon footprint and provide a pathway to achieve full carbon neutrality on our total electricity consumption.

In addition, the university has nine solar PV arrays on buildings across Gardens Point and Kelvin Grove campuses. Total capacity: 885kW. All solar energy produced is consumed on site—reducing the need for grid electricity—thereby reducing costs and associated carbon emissions.


Columboola Solar Farm, 335 km north-west of Brisbane


QUT—Kelvin Grove campus

4.3 Transport and travel

QUT's Estate Master Plan provides the overarching objective for transport.

Objective: Provide a superior experience to all groups accessing QUT's estate and positively contribute to congestion management and reduced carbon emissions related to transport activities across South East Queensland.

QUT's Estate Master Plan also highlights that estate design and development should include infrastructure to promote active transport, increase use of public transport and ride share options, and promote the use of zero and low emissions vehicles.

The sustainable transport principles outlined in our Estate Master Plan are embedded into a Transport and Mobility Policy.

QUT undertakes a bi-annual travel survey which provides information about some staff and student travel, however associated CO_2 emissions are not currently measured. Measuring travel-related emissions, including domestic and international travel, is a priority.

Priority actions

- Develop and implement a comprehensive Travel Behaviour Change program which raises awareness and increases the use of sustainable transport options including carpooling, public transport, the inter-campus shuttle bus and active travel.
- Advocate for improved public transport services and active transport connections to, between and surrounding QUT campuses and sites.
- Work with the Inter-campus bus service provider to continually improve emission standards of QUT shuttle buses.
- Improve end-of-trip facilities for active travellers at key locations on both campuses and provide additional bike parking.
- Develop a QUT Vehicle Procurement strategy that includes minimum emission standards for QUT's fleet.
- Accurately measure QUT's travel-related emissions (domestic and international) and develop strategies to reduce emissions.

SUSTAINABILITY IN ACTION

Fifty-five per cent of QUT staff and students use public transport to get to and from campus.

Twelve per cent use active travel options.

In 2019 over 730 000 passengers used QUT's free Intercampus shuttle bus.

TARGETS

1
Measure travel-related emissions and develop an Emissions Reduction Strategy by 2022.

2
Reduce single occupancy car trips to campus by 10% by 2023.

3
5% more QUT staff and students use public transport to commute to campus by 2023.

4
5% more QUT staff and students use active transport to commute to campus by 2023.

Liftango, a free carpooling app, was introduced in 2019 to reduce single vehicle trips to QUT campuses and sites.

The app assists QUT staff and students to share their ride, helping to reduce carbon emissions and congestion. Between March and August 2019, 1305 trips were shared saving 5000Kg of CO_2.

4.4 Water

QUT is committed to water conservation, capture and reuse.

QUT understands that water is a precious resource that must be conserved. It is a resource that is in demand due to population growth and as a result of Australia's dry climate. QUT is a significant consumer of water, and effective water management is necessary to shape our ability to survive and thrive in a climate-challenged environment.

QUT has been actively involved in water management for many years. In 2003, as a result of the millennium drought, a significant number of water initiatives were implemented, resulting in a reduction in water consumption of over 45 per cent or 180 000 kL per year and has remained low despite an overall increase in gross floor area.

Our Water Efficiency Management Plan (WEMP) includes conservation, capture and re-use of water around QUT's campuses. It details how sites are working to achieve best-practice water management.

QUT's energy conservation initiatives also help to save water, as energy generation is the largest single user of water in Queensland.

SUSTAINABILITY IN ACTION

Water-saving features support the landscape in the Education building at Kelvin Grove campus.

QUT's new Education building at Kelvin Grove is an example of the changing internal landscape.

While the building boasts the Sphere and provides contemporary flexible and technology-equipped teaching spaces, it also houses indoor plants and features external landscaping to provide a relaxing atmosphere for students.

Water-saving features to maintain the internal and external landscapes include water supply from harvested rainwater with potable water backup.

Priority actions

- Embed effective system for water metering and monitoring into normal operations.
- Update Water Efficiency Management Plan (WEMP).
- Undertake regular auditing of water use as per the WEMP to identify further water-saving measures.
- Complete a major condition and operational audit of all cooling towers and identify issues / opportunities and schedule into upgrade works program.
- Inscribe the use of drought tolerant planting into the Public Realm and Landscape Plan.
- Ensure future projects incorporate water tanks where feasible and accessible.
- Develop an action plan for irrigation of established plants including limiting to non-potable water and switching off irrigation systems when the tanks are dry.
- Ensure future projects incorporate re-use of water for toilet flushing etc. where possible.
- Develop and implement a program to increase levels of student and staff engagement and awareness of water use to drive behavioural change.
- Develop a program to increase stormwater storage capacity across QUT campuses and sites.

TARGETS

1
Maintain or reduce water consumption at 0.63kL/ m^2 GFA and 5.41kL/student (EFTSL + FTE).

2
Increase total campus rainwater capture and storage capacity by 10% by 2023.

3
Use 100% non-potable water (captured or recycled) for irrigation and external cleaning (wherever possible).

Rainwater harvesting and storage

Across the two campuses, QUT has installed rainwater collection tanks with a total capacity of 750 000 litres.

The collected rainwater is primarily used for toilet flushing and irrigation purposes, and reduces potable water use by approximately 9 000 000 litres per annum.

Collection and use of rainwater not only reduces potable water consumption, but also reduces utility costs and helps reduce stormwater management costs.

Two rainwater tanks at H Block. Kelvin Grove campus hold a total 68 000 litres (34 000 litres each tank).

4.5 Waste

QUT is committed to sustainable waste management.

The university is keen to participate and help develop the circular economy for Queensland. We have an important opportunity to contribute to reducing the generation of waste and educate staff and students in ways of reducing waste.

Recycling at QUT

QUT recycles many different streams throughout the campuses including:

- organic waste
- coffee/Boost Juice cups
- stationery recycling
- fluorescent tubes when replaced by LEDs
- batteries
- mobile phones
- e-waste
- toner cartridges
- Nespresso pods
- white goods.

Composting diverts waste from landfill

In 2019 QUT introduced a new composting system.

Initially a food waste audit was conducted in campus cafes and food outlets to identify waste generated and associated contamination levels.

This led to a rollout of organic waste bins to these outlets for compostable food and serveware.

To date over 106 tonnes of organic waste has been composted and diverted from landfill.

Priority actions

- Coordinate and formalise an Integrated Waste Management System.
- Ensure waste minimisation considerations are incorporated into procurement decisions and FM contracts.
- Engage with retailers to develop strategies for reducing packaging and single-use items.
- Formalise and improve controls for disposing of bulk goods including computers and white goods.
- Identify and integrate areas currently not included in organic waste collection system.
- Increase awareness and education on waste avoidance.
- Explore and implement the re-use of office furniture during projects and identify opportunities to recycle office furniture throughout the university.
- Develop guidelines for construction waste and ensure all waste removal is reportable and reducing construction waste to landfill through appropriate project management guidelines.
- Increase the number of water bottle refill stations on campus to minimise the use of plastic water bottles.
- All Digital Business Solutions (DBS) enterprise print devices are set to double-side black and white print by default
- All DBS IT equipment is sent to an approved sustainable e-waste facility for redeployment or disposal.

TARGETS

1
Reduce waste to landfill by 15% of 2018 levels by 2022.

2
Reduce recyclables going to general waste by 5% of 2018 levels by 2021.

3
All green and back-of -house organic waste to be composted by 2021.

4
Understand quantity of construction waste generated and have guidelines in place to ensure correct disposal.

SUSTAINABILITY IN ACTION

Coffee cup recycling program

Each year Australians use more than one billion disposable coffee cups, with every cup ending up in landfill.

In 2018, QUT was the first Australian university to join forces with Closed Loop and their Simply Cups initiative to remove take-away coffee cups from our waste stream.

Since conception, QUT has diverted over 183 000 coffee cups from landfill.

To decrease more waste to landfill, Boost Juice cups are now also recycled via the coffee cup recycling program.

4.6 Biodiversity

QUT is committed to maintaining and improving campus biodiversity.

Biodiversity is the variety of all life forms on earth—the different plants, animals and micro-organisms and the natural ecosystems of which they are a part.

The university has two main urban campuses: Gardens Point is our inner-city Brisbane campus and Kelvin Grove campus is in Brisbane's inner north, about three kilometres from the centre of the city.

QUT's Samford Ecological Research Facility is an important distributed site. This 51-hectare property in north Brisbane provides refuge to native plants and animals that are under increasing pressure from urbanisation. Seventy per cent of the property is covered with vegetation protected under the Vegetation Management Act 1999.

QUT's Estate Master Plan includes the fundamental principle to enhance campus biodiversity. This includes:

- natural ecosystems on the estate should be preserved
- native vegetation and ecosystems and their contribution to ecological processes and services should be treated as valuable assets
- manage campuses and distributed site landscapes to protect and support species endemic to a particular campus or site, and minimise pest species
- provide for the restoration of the ecological and environmental condition of estate land where necessary.

TARGETS
1 Develop and implement a Public Realm and Landscape Plan by 2022.
2 Develop and implement a Tree Management Plan by 2021.
3 Implement a campus biodiversity monitoring and reporting program by 2021.

Priority actions

- By 2022 develop and implement a Public Realm and Landscape Plan that incorporates strategies to enhance natural ecosystems and campus biodiversity.
- Develop and implement a contemporary Tree Management Plan that protects native trees and incorporates an annual audit program.
- Actively monitor and report on-campus native flora and fauna using tools such as campus biodiversity audits, and promotion of the use of app technologies such as eBird and Quest-a-Game.
- Actively enhance campus biodiversity through activities that protect and enhance habitat for flora and fauna, and plantings that showcase Australia's unique ecosystems.
- Increase interpretive signage around Gardens Point and Kelvin Grove campuses to promote campus biodiversity and its importance for traditional owners and current users.
- Organise at least one on-campus biodiversity student event each year.
- Partner with faculties and institutes to integrate research and learning and teaching opportunities into the promotion, monitoring and enhancement of biodiversity on campus.

SUSTAINABILITY IN ACTION

New habitat on Kelvin Grove campus attracts Bush Stone-curlews

In 2019 Facilities Management, with assistance from our service partners Ecosure, designed new landscaped gardens around H Block at Kelvin Grove campus, to entice a breeding pair of Bush Stone-curlews to return after the construction of a new lab space.

Not only did the original curlews return to enjoy their new habitat, another breeding pair of curlews also set up home around the area.

Bush Stone-curlews are found in open woodland, grasslands, mallee and mangroves but can also be found in modified environments such as golf courses, parks and roadsides. While they are considered as common in Queensland, they are listed as endangered in New South Wales and considered threatened in Victoria.

4.7 Procurement

QUT is committed to reducing environmental impacts and improving social impacts of our purchases through sustainable procurement.

Sustainable procurement is a process whereby organisations meet their needs for goods, services and capital projects, in a way that achieves value for money on a whole of life basis in terms of generating benefits not only to the organisation, but also to society, the economy and the natural environment. (Adapted from the UK document "Procuring the Future", Department of Environment, Food and Rural Affairs, June 2006)

QUT is committed to doing business with ethically, environmentally and socially responsible suppliers, and providing a fair and reasonable opportunity for Queensland suppliers, including local suppliers and small and medium enterprises.

QUT will pursue these objectives in its procurement decision making by engaging businesses and industries that demonstrate sustainability.

While procurement will be used as a lever for a range of initiatives throughout this plan, holistically, Strategic Procurement will provide leadership and guidance to ensure sustainable outcomes are a clear consideration for procurement activities at QUT.

TARGETS
1 Roll out training to at least 200 key users and staff (annually) on sustainable procurement practices.
2 Achieve the priority actions identified, including visible evidence in place.
3 Develop an action plan for five key suppliers across QUT (including Winc) that demonstrate clear achievement of sustainable outcomes achieved through good procurement practices.
4 Develop case studies of achievements to influence additional outcomes across procurement activities.

New policy embeds sustainable outcomes through purchasing

In 2019, QUT introduced a revised, principles-based procurement policy based on five principles. Principle two states that QUT will:

Advance local, socially responsible, Indigenous, environmental and sustainable outcomes.

This enables and supports QUT to clearly pursue sustainable objectives in its procurement decision making, both holistically and in individual procurement activities.

It also provides the clear platform for QUT to actively seek to improve sustainable development by engaging businesses and industries that demonstrate sustainability.

Priority actions

- Embed a sustainability impact assessment into QUT's strategic procurement planning process for significant procurement activities (high value/high risk) to build an understanding of the whole-of-life environmental and social impacts associated with the goods and services being procured.
- Update QUT's Request for Offer and Quotation templates (and associated procurement documentation) to ensure suppliers must respond to questions on their sustainability management (directly and throughout the supply chain) for significant procurement activities (high value/high risk).
- Develop an approach to assess suppliers' sustainability credentials when evaluating offers (and score/weight accordingly) to review the effectiveness of their practices across:
  a. environmental policies and management (such as systems, packaging, carbon emissions, logistics and energy/water/waste)
  b. sustainable sourcing (directly and through their supply chain)
  c. sustainability improvements and innovation.
- Embed sustainability management strategies, targets and outcomes within QUT's contract management and strategic supplier relationship management practices to ensure suppliers deliver against their commitments.
- Track and report on sustainable, social and local outcomes achieved directly and indirectly through procurement.
- Develop and implement tools, guidance, videos, training, templates and exemplars specifically on sustainable procurement.

SUSTAINABILITY IN ACTION

In 2019, QUT moved to 100 per cent recycled and 100 per cent carbon neutral paper across campuses, facilities, institutes and divisions. On an annual basis, this change will:

- increase the tonnes of CO_2 landfill emissions saved from 32 to 295 tonnes
- increase the local office waste paper recycled (and diverted from landfill) from 10.8 to 101 tonnes
- increase the greenhouse gas emissions offset from 173 to 243 tonnes
- support more than 5780 Australian local and regional jobs through preferencing local suppliers.

4.8 Built environment

QUT is committed to developing a built environment that minimises environmental impacts.

The built environment is the single largest contributor to greenhouse gas emissions and is a significant contributor to water consumption and waste generation. The development and refurbishment of QUT's building assets represents a significant opportunity for the university to minimise its impact on the environment.

QUT applies the university's Estate Master Plan and Design Standards and Guidelines to all built work which integrate sustainability principles throughout.

The university is also implementing its *Campus to Country: Positioning Strategy* that is built on the premise that aboriginal culture, engagement and connections to country through design are an integral part of QUT's core values.

Priority actions

- Review and update the university's Estate Master Plan.
- Embed Environmentally Sustainable Design (ESD) principles throughout new projects.
- Asset Management Plan and Design Standard Guidelines (DSG) to reflect the targets of the Sustainability Action Plan.
- Review all existing buildings against the targets of the Sustainability Action Plan
- Ensure physical infrastructure is designed to withstand the impacts of extreme weather events.
- Ensure comfort building conditions can be maintained in longer and hotter summers.
- Establish policies and procurement processes to mandate the procurement of furniture with certification from the Good Environmental Choice Australia (GECA) and/or the Australasian Furnishing Research Development Institute (AFRDI) Green Tick certification schemes or an equivalent.
- Undertake regular utilisation audits of the university's estate. Review all aspects of the university's Design Standards and Guidelines to ensure that they support flexibility and adaptability of space.

SUSTAINABILITY IN ACTION

QUT's Science and Engineering Centre has a five-star Design Education VI certified rating from the Green Building Council of Australia. The building has a 200 kW solar PV array. Part of this array features three dual-axis trackers to align the modules throughout the day to achieve maximum power generation. When excess power is being generated, it can be fed into other buildings on campus.

Tracks and sites of cultural significance

QUT's inner city campuses sit on Country with Aboriginal history and embedded culture.

Layers of settlement patterns, points of significance, and pathways provide insight as to where and how these areas were occupied for generations, prior to colonisation.

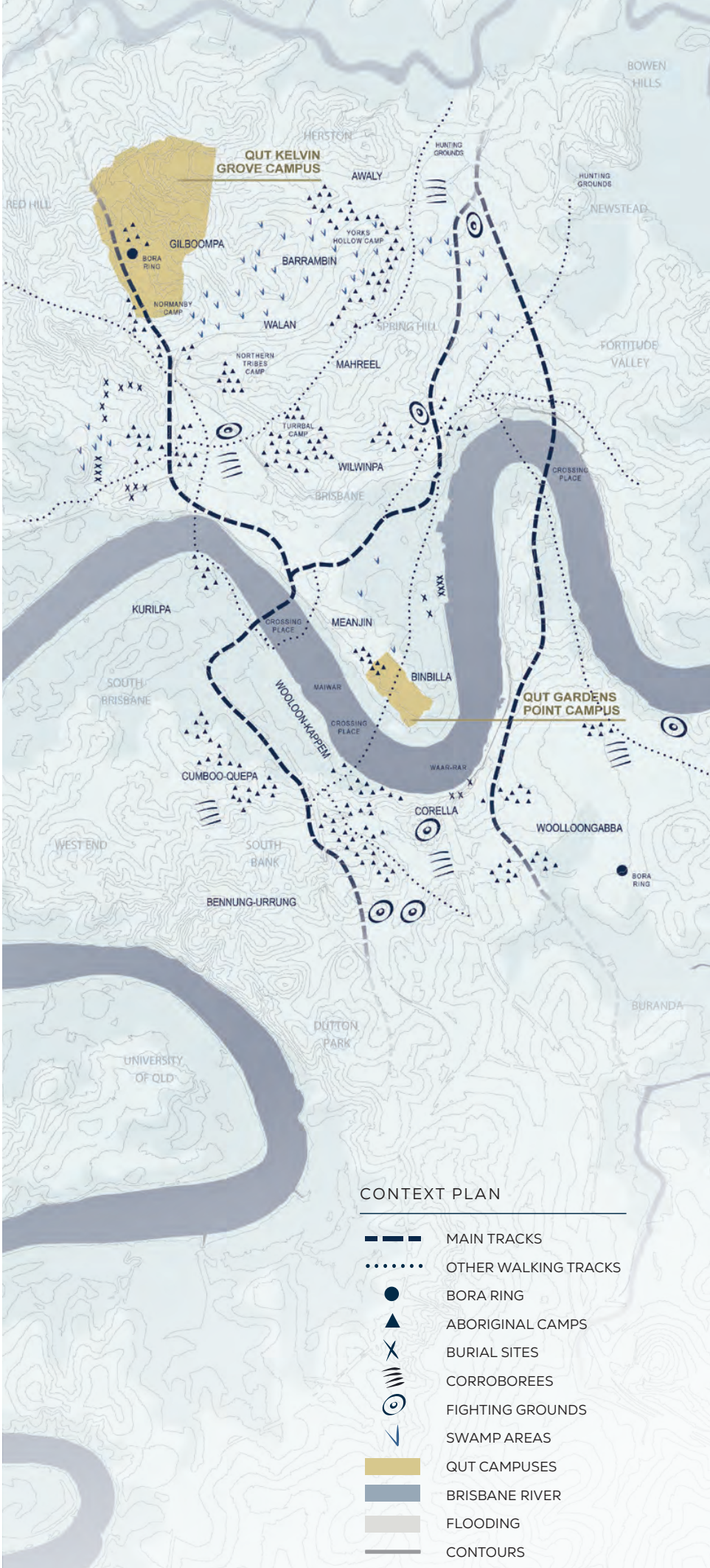
TARGETS

1
All new developments to be designed and built to the intent of a minimum five-star Green Star 'Design and As Built' and aiming toward six-star Green Star Rating as applicable.

2
All new furniture procured for QUT will have certification from the Good Environmental Choice Australia (GECA) and/or the Australasian Furnishing Research Development Institute (AFRDI) Green Tick certification schemes or an equivalent.

3
Utilisation, flexibility and adaptation of space will be continually improved.

4
Update the university's Estate Master Plan, Asset Management Plan and Design Standard Guidelines to reflect the targets of the Sustainability Action Plan by end 2022.

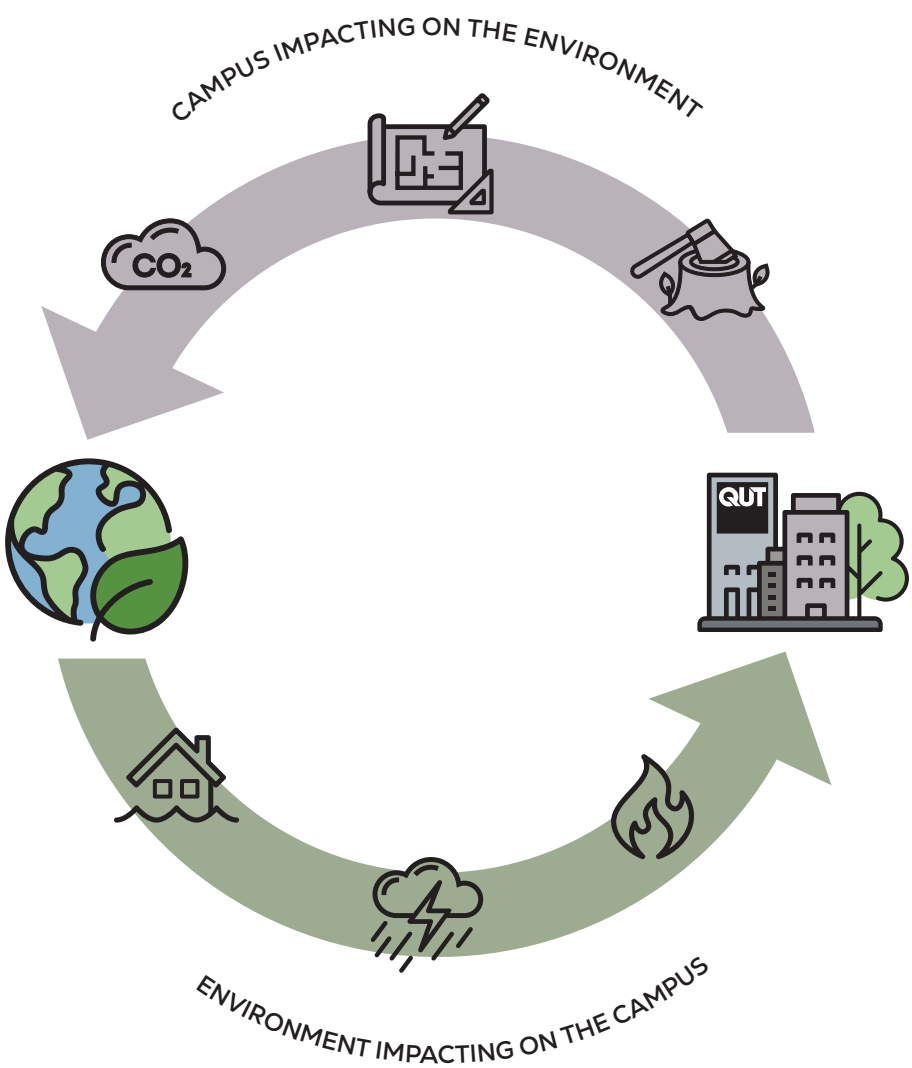


NOTE: This image is adapted from the work of Dr Ray Kerkhove

4.9 Climate adaptation and resilience

The impacts of climate change are already being felt and the higher education sector has a crucial role to play in tackling this global challenge through its teaching, research and operations.

Traditional university environmental and sustainability programs focus on minimising the impacts of the campus on the natural environment. Contemporary programs need to take into consideration the environment impacting on the campus in the form of extreme weather events.



TARGETS

1
Climate change adaptation reflected in QUT's Design Standards and Guidelines.

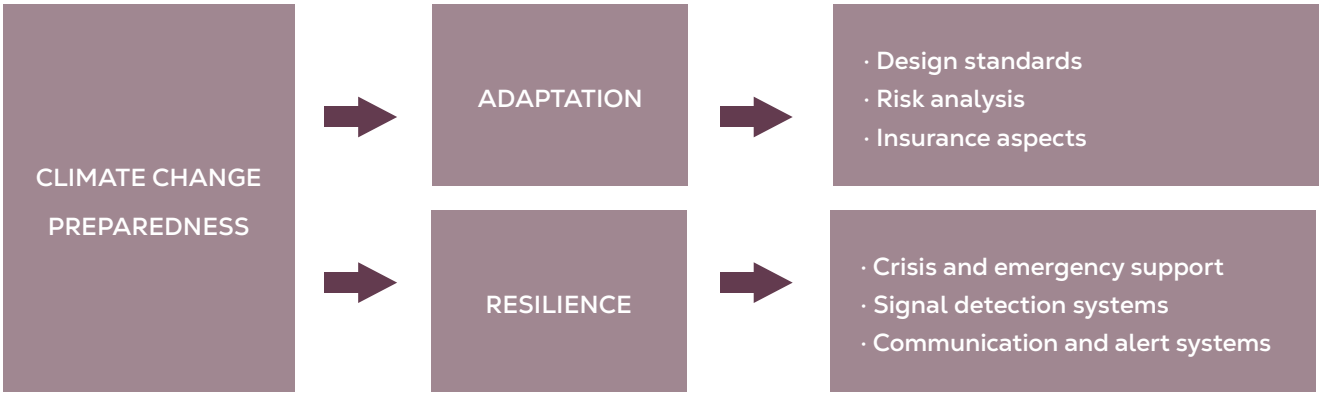
2
Extreme weather events reflected in Emergency Management, Counter Disaster, Crisis Management, and Business Continuity plans.

3
Signal detection systems identified and implemented.

4
Updated emergency communications and alert systems.

To prepare for these potential impacts of climate change on the campus, the university has a two-pronged approach:

1. **Adaptation** – designing and building our infrastructure in the context of increasing risks such as flooding, bush fires and gale force winds.
2. **Resilience** – implementing signal detection systems for early warning of extreme weather events and having the capability to respond effectively to these events.



Priority actions

- Annually review the university's Design Standards and Guidelines in the context of adaptation for extreme weather events and other potential impacts from climate change.
- Ensure the Emergency Control Organisations (ECO) are trained in how to be first responders in these types of events.
- Continue to review and enhance the university's Crisis Management Plan, Emergency Management Plan and Business Continuity Plan.
- Include at least one extreme weather event crisis scenario in annual crisis management training and practice activities.
- Continually undertake risk assessments around extreme weather events, and identify and implement appropriate early warning signal detection systems where possible.
- Continually review and enhance emergency communications and alert systems.

4.10 Environmental compliance

QUT has established its commitment to managing environmental compliance obligations in all of its activities in the Manual of Policies and Procedures (MOPP) Chapter A/9.1 Health, safety and environment framework.

Objective: To minimise the risk of environmental damage and non-compliance by identifying environmental hazards, laws, regulations and other requirements through a risk management program.

The Department of Health, Safety and Environment maintains the Health Safety and Environment Management System (HSEMS) to support the QUT community in realising this objective. The HSEMS provides controls and procedures for common risks and the framework for managing unique and emerging risks.

Minimising the environmental risks of QUT's day-to-day activities increases the protection for our local, regional and global environment, enhances real-world research outcomes and our environmental reputation.

QUT's environmental performance is continually improved through ongoing monitoring and review of the HSEMS and auditing program, and tracking of risks in the Health, Safety and Environment (HSE) Hub.

The implementation of the HSEMS is also supported by a network of HSE professionals and volunteers across all faculties, institutes and divisions.

Priority actions

- Maintain a Health, Safety and Environment Management System that supports the QUT community in identifying and managing their environmental risks.
- Avoid notifiable environmental incidents through comprehensive planning and implementation of hazard control measures.
- Identification of emerging environmental regulatory and licencing requirements for research projects through early engagement with HSE professionals.
- Early intervention and resolution of environmental risks by identification of near misses and hazards through the HSE Hub.

TARGETS
1 No notifiable environmental incidents (ongoing).
2 100% compliance with environmental licence, permit and approval conditions (ongoing).
3 Year-on-year increase reporting of environmental hazards and near misses identified in the HSE Hub.

4.11 Education for sustainability

Education for sustainability develops the knowledge, skill and values to support people to contribute to more sustainable ways of living within an organisation, an industry and their own community.[1]

QUT's *Blueprint 6* commits to 'living lightly on the earth' and reducing our impact on the environment by embedding sustainability into our practices and our curricula. Across all disciplines there is an increasing awareness of society—nature interactions and the urgent need to move towards a more sustainable future.

The university recognises the important role the higher education sector will play in ensuring that the generation set to meet the challenge of the climate emergency receives the skills it needs. To achieve this, our Real World Learning Vision outlines clear aspirations for our graduates, who will:

- contribute to, and impact on, the world around them in inclusive, ethical and sustainable ways
- reflect upon their own practice and make decisions consistent with the principles of sustainable development [2]
- deal with sustainability issues in their field of work
- contribute to a sustainable future with the confidence to act and with the knowledge that their actions will affect a positive change.

[1] Australian Government, Department of the Environment, Water, Heritage and the Arts, 'Living Sustainably: The Australian Government's National Action Plan for Education for Sustainability' (2009) https://webarchive.nla.gov.au/awa/20130905205827/http://www.environment.gov.au/education/publications/pubs/national-action-plan.pdf

[2] Threshold Learning Outcomes for Environment and Sustainability

We currently provide many opportunities for students to learn and apply sustainability knowledge through our courses and we have embedded sustainability curriculum in key disciplines such as science, engineering, fashion, architecture, business, law and urban development.

Undergraduate courses with sustainability in the curriculum include:

- Bachelor of Business
- Bachelor of Design (Architecture)
- Bachelor of Design (Landscape Architecture)
- Bachelor of Design (Industrial Design)
- Bachelor of Design (Fashion)
- Bachelor of Education (Secondary)
- Bachelor of Engineering (Hons)
- Bachelor of Laws (Hons)
- Bachelor of Public Health
- Bachelor of Property Economics
- Bachelor of Science (Earth Science)
- Bachelor of Science (Environmental Science)
- Bachelor of Science (Biological Sciences)
- Bachelor of Urban Development (Hons)

University-wide units offered as electives, or as part of a minor or second major, also provide an opportunity for students to explore sustainability from other disciplines. Students are able to study sustainability in different disciplines, from examining sustainability from a human rights angle to sustainability in fashion or the interaction between people and the built environment.

Priority actions

Sustainability will be embedded into all undergraduate degrees at either course or major level. We will achieve this by committing to a five-year project, Education for Sustainability (EfS), as significant university-wide action will be required. The project will seek to inspire the development of curriculum that explores sustainability in context of disciplines and professional practice.

The Learning and Teaching Unit will:

- lead EfS and communicate a clear vision of how knowledge and values for sustainability can be incorporated into curriculum with relevance
- ensure appropriate leadership of the project
- with faculties, map current courses and subjects that develop knowledge of sustainability
- support faculty-based Education for Sustainability leaders and activities
- provide professional development for Education for Sustainability.

Academic governance, through Curriculum Standards Committee and University Academic Board, will:

- ensure all formal course proposals and reviews identify how graduate skills in sustainability are developed in courses, units and modules.

Faculties will:

- ensure mechanisms are in place to enable the design and integration of sustainability in curriculum
- ensure Associate Deans (Learning and Teaching) and equivalents have responsibility for Education for Sustainability and work with staff and students to lead the embedding of sustainability in courses
- review course curriculum to ensure sustainability values and knowledge are fostered through core curriculum in ways that are relevant to the profession or discipline
- promote the study of sustainability options to potential and current students and employers.

SUSTAINABILITY IN ACTION

- EGB100 Engineering Sustainability and Professional Practice introduces first year engineering students to the concept of sustainability and how it impacts current and future engineering ventures.
- DYB124 Design Consequences may be studied as part of a university-wide minor. The unit explores how the twenty-first century presents designers with a challenging context characterised by the increasingly dramatic effects of climate change, growing levels of inequality, and destabilised geopolitical conditions. The unit introduces students to a range of ideas, methods, and approaches necessary to understand design not only as products, environments, services and experiences but also as a social, cultural, political and economic agent.
- The Bachelor of Science (Environmental Science) offers first-hand experiences to support students' understanding of the environment and the importance of managing natural systems now and into the future.

TARGETS

1
In 2021, establish the Education for Sustainability Project, a five-year, university-wide project to inspire and support the inclusion of sustainability into curriculum.

2
Map level of current teaching of sustainability in curriculum and implement sustainability as a 'design feature' in CourseLoop to identify units and modules.

3
Develop university-wide inter-disciplinary curriculum exploring sustainability, drawing upon the expertise from all faculties and institutes.

4
By 2026, all QUT undergraduate degrees demonstrate (at the course or major level) that core curriculum elements enable students to develop and apply sustainability knowledge and values in their field.

- The School of Design's mission is informed by the United Nations' Sustainable Development Goals. Design is a field which has a strong focus on sustainability, and each of the majors addresses sustainability in the Course Learning Outcomes, and individual units relevant to specific fields of practice, from Architecture through to Fashion.

SUSTAINABLE DEVELOPMENT GOALS

- QUT Business School is a partner in the Globally Responsible Leadership Initiative, global responsibility involves contributing to the achievement of Sustainable Development Goals and creating impact at the organisational and systematic levels through leadership. To meet the needs of the present without compromising the needs of future generations.

4.12 Research for sustainability

Research performance at QUT has improved significantly over the past two decades. The 2019 Nature Index ranked QUT as the eighth fastest rising university in the world for scientific research.

One of QUT's seven institutional priorities, outlined in Blueprint 6, is Sustainability and the Environment. In the Australian Research Council's 2018 Excellence in Research for Australia (ERA) Report, QUT was rated 5 (well above the world standard) in the field of environmental sciences.

QUT's research on sustainability is diverse and seeks to meet global, national and local challenges. Collectively the research centres and research groups across the university address all 17 of the United Nations (UN) Sustainable Development Goals:

Many of our research centres and groups explore questions, problems and opportunities related to the environmental aspects of sustainable development. How can we produce enough food, water and energy for a growing global society while preserving the world's ecosystems and biodiversity? Our researchers are seeking answers to this question – and applying them in the real world – in collaboration with government, industry and the community.

Research centres focused on environmental sustainability problems

- Centre for Agriculture and the Bioeconomy
- Centre for the Environment
- Centre for Clean Energy Technologies and Practices
- Centre for a Waste-Free World

Research centres with environmental sustainability applications

- Centre for Robotics
- Centre for Materials Science
- Centre for Data Science
- Centre for Future Enterprise
- Design Lab
- Centre for Future Mobility
- Centre for Behavioural Economics, Society and Technology
- Centre for Decent Work and Industry

Other research groups exploring aspects of environmental sustainability

- Air Quality and Health
- Ecological Justice
- Ocean Governance
- More-than-Human Futures
- Econometrics of Energy and the Environment
- Non-Financial and Sustainability Reporting
- Service Thinking for Social Problems
- Early Childhood Education for Sustainability

Other research centres and groups at QUT investigate the social, economic, legal and political aspects of sustainable development. Our Institute of Health and Biomedical Innovation, for example, conducts a wealth of research aligned with twelve Sustainable Development Goals through research centres devoted to healthcare transformation, biomedical technologies, genomics and personalised health, immunology and infection control, and vision and eye disorders, as well as major collaborations in areas such as skin cancer, breastfeeding and sustainable pharmaceuticals and medical devices.

A concentrated photovoltaic (CPV) system being tested in a joint QUT and Sumitomo Electric Industries project at the Queensland Government's Redlands Research Facility.

Priority actions

- **Infrastructure**
  Develop research facilities to support cutting-edge research and innovation in agriculture, the bioeconomy, clean energy, waste reduction and the environment.
- **Collaboration**
  Develop partnerships that drive the real-world application of QUT's sustainability-related research and innovation.
- **Communication**
  Promote QUT's sustainability-related research and innovation to the university community and our external stakeholders.

TARGETS

1	Establish the first phase and develop strategy for a renewable energy hydrogen pilot plant.
2	Demonstrate a toluene electrochemical hydrogenation procedure with industry partners
3	Develop and implement sustainable practices in agriculture.
4	Contribute towards the creation and maintenance of sustainable environments for humans and other life forms.
5	Develop innovative ways to reduce waste and communicate to industry and schools.
6	Ensure strong links between QUT's sustainability research community and campus operations.
7	Showcase the work of QUT research centres through engagement events and promotion of sustainability research.
8	Translate QUT research into practice, both internally and externally.

SUSTAINABILITY IN ACTION

The Samford Ecological Research Facility (SERF) is a living laboratory for research and teaching in a range of ecological, engineering and built environment programs. It is a unique facility that gives researchers and students the opportunity to investigate the climate, environment, soil, water, vegetation and wildlife of a peri-urban ecosystem.

The 51-hectare property, located in the Samford Valley around 23 kilometres northwest of Brisbane's CBD, provides refuge to native plants and animals under increasing pressure from urbanisation. Seventy percent of the property is covered with vegetation protected under the Vegetation Management Act 1999.

Research Assistant David Tucker uses a range finder to measure tree height, as part of ongoing vegetation and fauna surveys.

4.13 Engagement and behaviour change

QUT is committed to engaging staff and students in its sustainability agenda.

QUT has a rich community of students, researchers, academic and professional staff. Engaging our community in the university's sustainability agenda aims to inspire commitment, increase participation and foster a culture of best environmental practice.

An annual Engagement and Behaviour Change Program will be developed and implemented to raise awareness and engage staff and students in our sustainability journey. We will build on existing activities and develop new programs and initiatives to involve staff and students in creating more sustainable campuses.

Priority actions

- Promote QUT's Sustainability Action Plan.
- Build community capacity and engagement through events, programs and online.
- Promote sustainability initiatives through newsletters and social media.
- Create promotional collateral for key sustainability themes.
- Review and update QUT's Sustainability website to align with Sustainability Action Plan.

SUSTAINABILITY IN ACTION

Code-A-Bot, an interactive digital game, puts visitors in charge of programming robot workers to collect and sort rubbish, improving the overall efficiency of a waste recycling plant.

The Cube is one of the world's largest digital interactive learning and display spaces.

Housed in QUT's Science and Engineering Centre, with 48 multi-touch screens soaring across two storeys, The Cube has an extensive outreach to schools, including hands-on and interactive workshops and public programs for high school students and QUT undergraduate and postgraduate students.

If you can't get to the Great Barrier Reef, then the new interactive reef exhibition on the giant screens of The Cube at QUT offers the next best thing.

TARGETS

1
Develop an annual Engagement and Behaviour Change Program.

2
Update Sustainability website to align with Sustainability Action Plan.

The Living Reef is a 3D underwater ecosystem that replicates what happens in nature. Twenty different species of fish and marine life swim through the 10 metre tall screens—numbering about 10 000 in total—along with 11 different species of coral.

5.0 Monitoring and reporting

QUT is accountable under various legislation and annually reports its greenhouse gas emissions to the Australian Government in accordance with the National Greenhouse and Energy Reporting (NGER) regulations.

The university also annually benchmarks with the Tertiary Education Facilities Management Association—annually reporting on operational performance.

Our carbon emissions are reported in the university's annual report.

This Sustainability Action Plan provides a structure for advancing our targets and priorities. The plan will be continually reviewed and updated as required.

The Sustainability Action Plan tracking tool will be updated and reported on annually.

Appendix A: Sustainability Action Plan tracking tool

Carbon

Target 1 Carbon neutral by 2030 (Scope 1,2,3 emissions)		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Management (Sustainability Manager)	Implement strategies to be carbon neutral by 2030.	2030
	Investigate appropriate offsetting models over coming year.	2021
	Identify data for measuring, monitoring, reporting and managing QUT Scope 3 emissions.	2021
Target 2 Scope 1 and 2 emissions to zero by 2023		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Management (Energy Manager)	Refer to energy targets below.	2023

Energy

Target 1 Reduce energy consumption by 10% from 2017/18 levels of 0.57 GJ/m² (GFA) by 2023		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Management (Energy Manager)	Retrofit existing inefficient lighting with energy efficient LED lighting technology and smart lighting control systems and sensors.	2021
	Replace inefficient Mechanical Services plant with newer, more efficient technologies and incentivise HVAC contractors to identify where more efficient technologies are available.	Ongoing
	Optimise building control systems to reduce energy wastage through data analysis and tuning, utilising the existing BMS and EMS systems.	Ongoing
	Undertake night audits by Security staff to identify after-hours energy wastage, including lighting, computers, AV equipment, etc.	2021
	Reduce energy consumption of university equipment and appliances e.g. fridges and freezers.	Ongoing
	Audit energy metering capability to improve energy consumption data.	2021
	Develop a program of ongoing energy audits of each building to identify both active and passive energy reduction opportunities commencing 2021.	2021
	Develop and implement a program to increase levels of student and staff engagement and awareness of energy use to drive behavioural change.	2021
Director, Learning Environments and Technology Services, Digital Business Solutions	Information technology energy reduction measures: • projectors in central teaching spaces power down after 240 minutes of non-use • staff computer screens are set to sleep by default after 10 minutes of non-use.	2021
Associate Director, Service Operations, Digital Business Solutions	Maintain or reduce energy consumption in campus data centres through the procurement of energy efficient IT infrastructure and consumption of cloud-based services.	Ongoing
Target 2 Maximise deployment of solar PV on campus by 2022		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Management (Energy Manager)	Explore opportunities for investing in off-site solar PV farms.	2022

Transport and travel

Target 1 Measure travel-related emissions and develop an Emissions Reduction Strategy by 2022		
Accountabilities	**Priority actions**	**Target date**
Director, Campus Services and Procurement (Manager, Integrated Transport Services)	Accurately measure QUT's travel related emissions (domestic and international) and develop strategies to reduce emissions.	2022
	Work with the inter-campus shuttle service provider to continually improve emission standards of QUT shuttle buses.	2021
	Develop a QUT vehicle procurement strategy that includes minimum emission standards for QUT's fleet.	2021
Target 2 Reduce single occupancy car trips to campus by 10% by 2023		
Accountabilities	**Priority actions**	**Target date**
Director, Campus Services and Procurement (Manager, Integrated Transport Services)	Develop and implement a comprehensive travel behaviour change program which raises awareness and increases the use of sustainable transport options including carpooling, public transport, the inter-campus shuttle and active travel.	2021
Target 3 5% more QUT staff and students use public transport to commute to campus by 2023		
Accountabilities	**Priority actions**	**Target date**
Director, Campus Services and Procurement (Manager, Integrated Transport Services)	Advocate for improved public transport services and active transport connections to, between and surrounding QUT campuses and sites.	2021
Target 4 5% more QUT staff and students use active transport to commute to campus by 2023		
Accountabilities	**Priority actions**	**Target date**
Director, Campus Services and Procurement (Manager, Integrated Transport Services)	Improve end-of-trip facilities for active travellers at key locations on both campuses, and provide additional bike parking.	Ongoing

Water

Target 1 Maintain or reduce water consumption at 0.63kL/m² GFA and 5.41kL/student (EFTSL + FTE)		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Management (Associate Director, Operations)	Embed effective system for water metering and monitoring into normal operations.	2021
	Update Water Efficiency Management Plan (WEMP).	2021
	Undertake regular auditing of water use as per the WEMP to identify further water-saving measures.	2021
	Complete a major condition and operational audit of all cooling towers and identify issues/opportunities and schedule into upgrade works program.	2021
	Develop and implement a program to increase levels of student and staff engagement and awareness of water use to drive behavioural change.	2021
Target 2 Increase total campus rainwater capture and storage capacity by 10% by 2023		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Management (Associate Director, Operations)	Ensure future projects incorporate water tanks where feasible and accessible.	Ongoing
	Ensure future projects incorporate re-use of water for toilet flushing, etc where possible.	Ongoing
	Develop a program to increase stormwater storage capacity across QUT campuses and sites.	Ongoing
Target 3 Use 100% non-potable water (captured or recycled) for irrigation and external cleaning (wherever possible)		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Management (Associate Director, Operations)	Inscribe the use of drought-tolerant planting and use of grey water for landscapes into the Public Realm and Landscape Plan.	2022
	Develop an action plan for irrigation of established plants including limiting to non-potable water and switching off irrigation systems when the tanks are dry.	2021

Waste

Target 1 Reduce waste to landfill by 15% of 2018 levels by 2022		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Manager (Associate Director, Operations)	Coordinate and formalise an integrated waste management system.	2021
	Engage with retailers to develop strategies for reducing packaging and single-use items.	2021
	Formalise and improve controls for bulk goods including computers and white goods.	2021
	Increase awareness and education on waste avoidance.	2021
	Increase the number of water bottle refill stations on campus to minimise the use of plastic water bottles.	2021
Target 2 Reduce recyclables going to general waste by 5% of 2018 levels by 2021		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Manager (Associate Director, Operations)	Ensure waste minimisation considerations are incorporated into procurement decisions and FM contracts.	2022
	Explore and implement the re-use of office furniture during projects, and identify opportunities to recycle office furniture throughout the university.	2021
Director, Learning Environments & Technology Services, Digital Business Solutions	All Digital Business Solutions (DBS) enterprise print devices are set to double-side black and white print by default.	2021
	All DBS IT equipment is sent to an approved sustainable e-waste facility for redeployment or disposal.	2021
Target 3 All green and back-of-house organic waste to be composted by 2021		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Manager (Associate Director, Operations)	Identify and integrate areas currently not included in organic waste collection system.	2021
Target 4 Understand quantity of construction waste generated and have guidelines in place to ensure correct disposal		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Manager (Associate Director, Operations)	Develop guidelines for construction waste and ensure all waste removal is reportable and reducing construction waste to landfill through appropriate project management guidelines.	2021

Biodiversity

Target 1 Develop and implement a Public Realm and Landscape Plan by 2022		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Manager (Associate Director, Operations) Associate Director, Estate Planning	Develop and implement a Public Realm and Landscape Plan that incorporates strategies to enhance natural ecosystems and campus biodiversity.	2022
Target 2 Develop and implement a Tree Management Plan by 2021		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Management (Associate Director, Operations)	Develop and implement a contemporary Tree Management Plan that protects native trees and incorporates an annual audit program.	2021
Target 3 Implement a campus biodiversity monitoring and reporting program by 2021		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Manager (Associate Director, Operations)	Actively monitor and report on campus native flora and fauna using tools such as campus biodiversity audits, and promotion of the use of app technologies such as eBird and Quest-a-Game.	2021
	Actively enhance campus biodiversity through activities that protect and enhance habitat for flora and fauna, and plantings that showcase Australia's unique ecosystems.	2021
	Increase interpretive signage around Gardens Point and Kelvin Grove campuses to promote campus biodiversity and its importance for traditional owners and current users.	2021
	Organise at least one on-campus biodiversity student event each year.	2021
	Partner with faculties and institutes to integrate research and learning and teaching opportunities into the promotion, monitoring and enhancement of biodiversity on campus.	Ongoing

Procurement

Target 1 Roll out training to at least 200 key users and staff (annually) on sustainable procurement practices		
Accountabilities	**Priority actions**	**Target date**
Director, Campus Services and Procurement (Associate Director, Strategic Procurement)	Develop and implement tools, guidance, videos, training, templates and exemplars specifically on sustainable procurement.	2021 (and ongoing)
Target 2 Achieve the priority actions identified, including visible evidence in place		
Accountabilities	**Priority actions**	**Target date**
Director, Campus Services and Procurement (Associate Director, Strategic Procurement)	Embed a sustainability impact assessment into QUT's strategic procurement planning process for significant procurement activities (high value/high risk) to build an understanding of the whole-of-life environmental and social impacts associated with the goods and services being procured.	2021
	Update QUT's Request for Offer and Quotation templates (and associated procurement documentation) to ensure suppliers must respond to questions on their sustainability management (directly and throughout the supply chain) for significant procurement activities (high value/high risk).	2021
	Embed sustainability management strategies, targets and outcomes within QUT's contract management and strategic supplier relationship management practices to ensure suppliers deliver against their commitments.	2021
	Track and report on sustainable, social and local outcomes achieved directly and indirectly through procurement.	2021
Target 3 Develop an action plan for five key suppliers across QUT (including Winc) that demonstrate clear achievement of sustainable outcomes achieved through good procurement practices		
Accountabilities	**Priority actions**	**Target date**
Director, Campus Services and Procurement (Associate Director, Strategic Procurement)	Develop an approach to assess suppliers' sustainability credentials when evaluating offers (and score/weight accordingly) to review the effectiveness of their practices across: a. environmental policies and management (such as systems, packaging, carbon emissions, logistics and energy/water/waste) b. sustainable sourcing (directly and through their supply chain) c. sustainability improvements and innovation.	2021
Target 4 Develop case studies of achievements to influence additional outcomes across procurement activities		
Accountabilities	**Priority actions**	**Target date**
Director, Campus Services and Procurement (Associate Director, Strategic Procurement)	Track and report on sustainable, social and local outcomes achieved directly and indirectly through procurement.	2021

Built Environment

Target 1 All new developments to be designed and built to the intent of a minimum five-star Green Star 'Design and As Built' and aiming toward six-star Green Star Rating as applicable		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Management (Associate Director, Estate Planning)	Embed Environmentally Sustainable Design (ESD) principles throughout new projects.	2021
	Review all existing buildings against the targets of the Sustainability Action Plan.	2021
	Ensure comfort building conditions can be maintained in longer and hotter summers.	2021
Target 2 All new furniture procured for QUT will have certification from the Good Environmental Choice Australia (GECA) and/or the Australasian Furnishing Research Development Institute (AFRDI) Green Tick certification schemes or an equivalent		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Management (Associate Director, Estate Planning) and Associate Director, Strategic Procurement, Campus Services and Procurement	Establish policies and procurement processes to mandate the procurement of furniture with certification from the Good Environmental Choice Australia (GECA) and/or the Australasian Furnishing Research Development Institute (AFRDI) Green Tick certification schemes or an equivalent.	2021
Target 3 Utilisation, flexibility and adaptation of space will be continually improved		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Management (Associate Director, Estate Planning)	Undertake regular utilisation audits of the university's estate. Review all aspects of the university's design standards and guidelines to ensure that they support flexibility and adaptability of space.	Ongoing
Target 4 Update the university's Estate Master Plan, Asset Management Plan and Design Standards and Guidelines to reflect the targets of the Sustainability Action Plan by end 2022		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Management (Associate Director, Estate Planning)	Review and update the university's Estate Master Plan.	2022
	Asset Management Plan and Design Standard Guidelines to reflect the targets of the Sustainability Action Plan.	2022
	Ensure physical infrastructure is designed to withstand the impacts of extreme weather events	Ongoing

Climate adaptation and resilience

Target 1 Climate adaptation reflected in QUT's design standards and guidelines		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Management	Annually review the university's design standards and guidelines in the context of adaptation for extreme weather events and other potential impacts from climate change.	Ongoing
Target 2 Extreme weather events reflected in Emergency Management, Counter Disaster, Crisis Management, and Business Continuity plans		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Management	Ensure the Emergency Control Organisations (ECO) are trained in how to be first responders in these types of events.	2021
	Continue to review and enhance the university's Crisis Management Plan, Emergency Management Plan and Business Continuity Plan.	Ongoing
	Include at least one extreme weather event crisis scenario in annual crisis management training and practice activities.	Ongoing
Target 3 Signal detection systems identified and implemented		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Management	Continually undertake risk assessments around extreme weather events, and identify and implement appropriate early warning signal detection systems where possible.	Ongoing
Target 4 Updated emergency communications and alert systems		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Management	Continually review and enhance emergency communications and alert systems.	Ongoing

Environmental compliance

Target 1 No notifiable environmental incidents (ongoing)		
Accountabilities	**Priority actions**	**Target date**
Director, Health Safety and Environment (Senior Environment Partner)	Maintain a Health, Safety and Environment Management System that supports the QUT community in identifying and managing their environmental risks.	Ongoing
	Avoid notifiable environmental incidents through comprehensive planning and implementation of hazard control measures.	Ongoing
Target 2 100% compliance with environmental licence, permit and approval conditions (ongoing)		
Accountabilities	**Priority actions**	**Target date**
Director, Health Safety and Environment (Senior Environment Partner)	Identification of emerging environmental regulatory and licencing requirements for research projects through early engagement with HSE professionals.	Ongoing
Target 3 Year-on-year increase reporting of environmental hazards and near misses identified in the HSE Hub		
Accountabilities	**Priority actions**	**Target date**
Director, Health Safety and Environment (Senior Environment Partner)	Early intervention and resolution of environmental risks by identification of near misses and hazards through the HSE Hub.	Ongoing

Education

Target 1	In 2021, establish Education for Sustainability Project, a five-year, university-wide project to inspire and support the inclusion of sustainability into curriculum
Target 2	Map level of current teaching of sustainability in curriculum and implement sustainability as a 'design feature' in CourseLoop to identify units and modules
Target 3	Develop university-wide inter-disciplinary curriculum exploring sustainability, drawing upon the expertise from all faculties and institutes.
Target 4	By 2026, all QUT undergraduate degrees demonstrate (at the course or major level) that core curriculum elements enable students to develop and apply sustainability knowledge and values in their field

Accountabilities	Priority actions	Target date
Director, Curriculum Quality and Standards Pro Vice-Chancellor (Digital Learning) Pro Vice-Chancellor (Sustainability Strategy)	The Learning and Teaching Unit will: • lead EfS and communicate a clear vision of how knowledge and values for sustainability can be incorporated into curriculum with relevance • ensure appropriate leadership of the project • with faculties, map current courses and subjects that develop knowledge of sustainability • support faculty-based Education for Sustainability leaders and activities • provide professional development for Education for Sustainability.	2021–2026
	Academic governance, through Curriculum Standards Committee and University Academic Board will: • ensure all formal course proposals and reviews identify how graduate skills in sustainability are developed in courses, units and modules.	2021–2026
	Faculties will: • ensure mechanisms are in place to enable the design and integration of sustainability in curriculum • ensure Associate Deans (Learning and Teaching) and equivalents have responsibility for Education for Sustainability and work with staff and students to lead the embedding of sustainability in courses • review course curriculum to ensure sustainability values and knowledge are fostered through core curriculum in ways that are relevant to the profession or discipline • promote the study of sustainability options to potential and current students and employers.	Ongoing

Research

Target 1	Establish the first phase and develop strategy for a renewable energy hydrogen pilot plant	
Target 2	Demonstrate a toluene electrochemical hydrogenation procedure with industry partners	
Target 3	Develop and implement sustainable practices in agriculture	
Target 4	Contribute towards the creation and maintenance of sustainable environments for humans and other life forms	
Accountabilities	**Priority actions**	**Target date**
Pro Vice-Chancellor (Sustainability Strategy)	Infrastructure Develop research facilities to support cutting-edge research and innovation in the agriculture, the bioeconomy, clean energy, waste reduction and the environment.	Ongoing
Target 5	Develop innovative ways to reduce waste and communicate to industry and schools	
Target 6	Ensure strong links between QUT's sustainability research community and campus operations	
Target 7	Showcase the work of QUT research centres through engagement events and promotion of sustainability research	
Target 8	Translate QUT research into practice, both internally and externally	
Accountabilities	**Priority actions**	**Target date**
Pro Vice-Chancellor (Sustainability Strategy)	Collaboration Develop partnerships that drive the real-world application of QUT's sustainability-related research and innovation. Communication Promote QUT's sustainability-related research and innovation to the university community and our stakeholders.	Ongoing

Engagement and behaviour change

Target 1 Develop an annual Engagement and Behaviour Change Program		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Management (Sustainability Manager)	Promote QUT's Sustainability Action Plan 2021.	2021
	Build community capacity and engagement through events, programs and online.	2021
	Promote sustainability initiatives through newsletters and social media.	2021
	Create promotional collateral for key sustainability themes.	2021
Target 2 Update QUT's Sustainability website to align with Sustainability Action Plan		
Accountabilities	**Priority actions**	**Target date**
Executive Director, Facilities Management (Sustainability Manager)	Review and update content in QUT's Sustainability website to align with Sustainability Action Plan.	2021

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