



**MACQUARIE**  
University

# Sustainability tour

A SELF-GUIDED TOUR OF CAMPUS SUSTAINABILITY FEATURES

---



Supplied by Chris Stacey

# Introduction



## We adhere firmly to our commitment to the principles of sustainability in all we do

OUR UNIVERSITY: A FRAMING OF FUTURES (2013)

Macquarie Sustainability acknowledges the traditional custodians of the Macquarie University Land, the Wattamattageal clan of the Darug nation, whose cultures and customs have nurtured, and continue to nurture, this land, since the Dreamtime. We pay our respects to Elders past, present and future.

As an institution of higher education, Macquarie University strives to embed the principles of sustainability in all we do: what we teach and research; how we lead, govern and engage our community; and how we run our campus facilities and operations. We hope you enjoy this tour of the campus that highlights some of the physical sustainability features of our campus facilities. For more information about what we're doing on campus and what sustainability is, visit [mq.edu.au/sustainability](http://mq.edu.au/sustainability).

### TAKING THE TOUR

The total time expected to complete this tour, including all optional site stops and a coffee break is two hours. However, a condensed version of the tour can be completed in one hour if the two optional site stops are removed and your coffee is a take-away - bring your reusable mug! There are also stops along the way to drink filtered water from a bubbler or to refill your bottle if you carry one.

| FEATURE   | THUMBNAIL   | SHORT DESCRIPTION  | PAGE | MAP | DISTANCE     | TIME TO WALK   |
|---|---|--|------|-----|--------------|----------------|
| <b>1. LIBRARY, 16 MACQUARIE WALK</b>                            |    | Green building featuring energy, space and water efficient techniques.   | 3    | R17 | -            | -              |
| <b>2. FAIR TRADE UNIVERSITY</b>                                 |   | Joint-first Fairtrade accredited University in Australia and New Zealand. Enjoy a cup!   | 3    | R17 | -            | -              |
| <b>3. AUSTRALIAN HEARING HUB BUILDING, 16 UNIVERSITY AVE</b>    |  | 5 Star Green Star "Design Rating" building. Facilitates research into hearing, speech and language disorders.                      | 3    | S15 | 65m          | 3 min          |
| <b>4. PERMACULTURE DEMONSTRATION GARDEN, 9 HADENFELD AVE</b>    |  | A thriving permaculture garden for teaching, tours, workshops, working bees, and community harvesting.                             | 3    | U5  | 550m         | 7 min          |
| <b>5. MARS CREEK WETLAND</b>                                    |  | An ecologically designed wetland with native plants, swales and pollutant traps.   | 4    | R2  | 220m         | 2 min          |
| <b>6. TAP IT TOWER, 10 GYMNASIUM ROAD</b>                       |  | One of many filtered water stations for the community to refresh and refill.   | 4    | J12 | 900m         | 11 min         |
| <b>7. BUSHCARE@MQ</b>   |  | A campus bushland restoration program involving volunteers.  | 4    | K14 | 90m          | 1 min          |
| <b>8. LEARNING CIRCLE</b>                                       |  | A purposefully built space to honour and share the traditions of the Darug people.   | 5    | F18 | 350m         | 4 min          |
| <b>9. SYDNEY TURPENTINE IRONBARK FOREST</b>                     |  | Two remnant vegetation areas of endangered ecological communities.   | 5    | E18 | -            | -              |
| <b>9A. OPTIONAL: COMMUNITY GARDEN</b>                           |  | Gardening plots for members of the University and the local community.   | 5    | -   | 1km          | 13 min         |
| <b>9B. OPTIONAL: SPORT FIELD WASTE WATER TREATMENT PLANT</b>    |  | A water-recycling scheme combining state of the art technology and natural reed beds to purify and recycle wastewater from campus. | 5    | -   | 500m         | 7m             |
| <b>10. GEOTHERMAL AND ART GALLERY</b>                           |  | Geothermal powers the air-conditioning in the Vice-Chancellor's building.  | 6    | G21 | 1.2km / 450m | 15 min / 6 min |
| <b>11. BIKE HUB</b>   |  | One of two end-of-trip facility designed to assist cycling to campus.  | 2    | M21 | 210m         | 2 min          |
| <b>12. BUSH TUCKER GARDEN</b>                                   |  | A teaching garden featuring traditional food and medicine plants used locally.   | 6    | N24 | 210m         | 2 min          |
| <b>13. E7A REFURBISHMENT &amp; SOLAR PANELS, 12 WALLYS WALK</b> |  | A sustainable refurbishment featuring reuse of an existing building and many energy efficient techniques including solar panels.   | 6    | N20 | 150m         | 2 min          |



# Self-guided sustainability tour

This self-guided tour is designed to familiarise Macquarie's students, staff and visitors with the sustainability initiatives and practices the University has established over the last decade. For more information about any of the items on the tour visit the Sustainability website: [mq.edu.au/sustainability](http://mq.edu.au/sustainability)

Please note that the tour will take a maximum of two (2) hours to complete, including a coffee break. All photos supplied unless noted.

## START

Commence the tour at the Macquarie University Library, 16 Macquarie Walk. Refer to the map on page 7 for further guidance.

### 1. LIBRARY



Supplied by Chris Stacey

Opened in 2011, the Library building design was inspired by the native parklands of the campus with an emphasis on environmental sustainability, light and connection. The building encompasses energy reduction and water conservation initiatives such as a green roof (covered in lawn and Australian native plants), rainwater collection, storage, treatment and re-use systems.

The Automatic Storage and Retrieval System (ASRS) is essentially a giant (5 storey) vending machine where over 80% of the Library's book collection is stored. This reduces the physical footprint of the Library. Without the ASRS, the Library would need 11,000 sqm extra floor space to hold all our resources. Smaller buildings use far less water, electricity and other consumables.

**Head to the Library Cafe which is on the ground floor, near the entrance to the Macquarie University Library.**

### 2. FAIR TRADE UNIVERSITY

Macquarie University was the joint first Fairtrade accredited University in Australia and New Zealand. Along with Melbourne-based RMIT, Macquarie University received Fair Trade accreditation on 6 May 2009, granted by the Fair Trade Association of Australia and New Zealand (FTAANZ). This means, among other important factors, that all coffee sold on campus comes from suppliers who comply with the Fairtrade certification system, which strives to guarantee fair conditions for Third World Producers. Why not enjoy a cup of Fairtrade coffee at the Library Cafe? The cafe also has organic and gourmet offerings.

**Head west up Macquarie Drive and continue until you see the Australian Hearing Hub Building, 16 University Ave.**

### 3. AUSTRALIAN HEARING HUB



The Australian Hearing Hub (AHH) building is a unique facility, purpose-designed to facilitate collaborative research into hearing and related speech and language disorders. A 5 Star Green Star "Design Rating" was awarded by the Green Building Council of Australia in 2013, followed up by a 5 Star Green Star "As-Built Rating" in 2014. Key sustainability features include: lighting zones and low energy intensity lighting; thermal energy storage tank; reducing discharge to sewer; stormwater treatment; water re-use and smart metering; a focus on the human experience of the building to enhance indoor environmental air quality; providing preferred parking for carpool and hybrid vehicles; saving and re-using site topsoil for landscaping and native gardens; and recycling of building waste.

**Head west until you reach the Sustainability Cottage at Y1A, 9 Hadenfeld Ave.**

### 4. PERMACULTURE DEMONSTRATION GARDEN



Permaculture is essentially an amalgamation of the words "Permanent Agriculture". Permaculture designs incorporate natural elements such as sun, landscape, wind, rainfall, and climate, with the aim of maximising benefits to people and planet. This involves strategic landscaping and crop placement to maximise taste, nutrients and yield whilst minimising effort, inputs and disease. Living in this way also benefits the local environment by enhancing habitat and biodiversity, and minimising water and energy consumption.



The Permaculture Demonstration garden promotes the sustainable use of small spaces by using small-scale permaculture gardening principles. The space is used for teaching, tours, hosting permaculture workshops, working bees, and harvesting the literal fruits of our labour!

**Keep heading north west along Hadenfeld Ave until you see the wetland area.**

## 5. MARS CREEK WETLAND



Mars Creek drains from the suburb of Marsfield and flows for over a kilometre through Macquarie University and directly into the Lane Cove National Park.

Using natural and biodegradable materials, the first 200 metres of Mars Creek have been re-shaped from an 'erosion ditch' into a sinuous pattern of pools and riffles. The gently sloping banks are now softened by dense plantings of native sedges and grasses. A vegetated buffer zone extends along both sides of the rehabilitated creek.

Water filtration and reduction of peak inflows occurs through an onsite 'Treatment Train' (pictured). Storm flows are firstly routed through a 30,000 litre underground pollutant trap, leaving behind most of their litter and sediment. Vegetation 'swales' intercept several smaller storm water pipes, to improve these sources before they reach the creek.

Stream Watch analysis at points along the creek reveals an improvement in many of the attributes of water quality as water testing progresses downstream through the rehabilitated section. Water re-entering the creek from the treatment wetland is in particularly good shape in terms of its salinity, turbidity (mud content) urban nutrient levels, and dissolved oxygen values.

A second basin - the back swamp - provides temporary flood storage and a sedge-land habitat, attractive to frogs and other wildlife.

**Cross over the wetland footbridge and head east down Link Road and be careful crossing the road into the West 5 car park. At the end of the car park, head north east through the grassy area until you reach Gymnasium Road. Walk up Gymnasium Road towards the Sports & Aquatic Centre (at 10 Gymnasium Road) until you see the drinking fountain.**

## 6. TAP IT TOWERS



'Tap it' is an award-winning initiative developed by Macquarie University Sustainability. 'Tap it' aims to increase the awareness of the environmental, social, health and economic issues surrounding the purchase of single-use plastic water bottles. Refill stations have been installed across campus activated carbon filters. The filter reduces chlorine taste, odour and other offensive contaminants that can adversely affect the taste of the water. As a result this improves the taste and helps retain the waters' carbonation.

**Walk down Gymnasium Road until you reach the intersection with Mars Creek.**

## 7. BUSHCARE@MQ



Bushcare@MQ site 2008



Bushcare@MQ site 2012

Bushcare@MQ launched in October 2008. With some tools in hand and a mission in mind, the dedication of the volunteers has transformed the barren riparian zone along Mars Creek into a lush and thriving habitat. The primary aim of the group is to re-establish the riparian zones along the banks of the creek and reducing mowing. Just see the difference in the area from the 2008 photo!



# Self-guided sustainability tour

**Cross over Gymnasium Road - taking care when doing so - and walk in the direction of the Lighthouse Theatre. Continue North-West behind the Lighthouse Theatre along the grass towards the Sydney Turpentine Ironbark forest.**

## 8. THE LEARNING CIRCLE



Supplied by Chris Stacey

The 'learning circle' honours our long-standing relationship with the Darug people, the traditional occupants of the lands on which Macquarie is built, and also to pay respects to the elders both past and present.

Purpose-built to provide a culturally safe place for community to come together to talk, listen and to discuss the business of life (Byalla), the sacred space acknowledges the significance of this style of sharing for Aboriginal people as a way of handing down knowledge.

**Look towards the Sydney Turpentine Ironbark forest.**

## 9. SYDNEY TURPENTINE IRONBARK FOREST AND SANDSTONE GULLY WOODLAND



The University has five areas of remnant vegetation of significance. Bushland within the University includes some areas which have persisted in a natural state from prior to the campus being developed in the 1960s. This particular location contains two representative communities which have been listed under State and Commonwealth environment laws as endangered ecological communities, due to having experienced severe reductions from their original extent since European settlement. These communities are known as the Sydney Turpentine Ironbark Forest, and Shale Sandstone Transition Forest.

**Walk along the grass north-west until you reach the footpath along Culloden Road. Cross over Talavera Road at the round-about. Locate the Community Gardens on the corner of Culloden and Talavera Roads.**

## 9A. COMMUNITY GARDENS



The Community Gardens are jointly run by the University and the North Ryde community. Anyone belonging to the University or surrounding community can request to join and take care of one of the plots. While you are there, see if Mark Hall is around to have a chat to. The Garden won third place at the City of Ryde Spring Garden Competition 2009, Best Edible Garden.

**Turn left into Culloden Road and proceed over the bridge across the M2 motorway into the Sports Fields. Once there, take your right following the unsealed road until you reach its end; you will see the Water Project in front of you.**

## 9B. SPORT FIELD WATER PROJECT



The Sports Fields water project is a water-recycling scheme that harvests stormwater, as well as combining the use of state-of-the-art technology and natural reed beds to purify and recycle the wastewater on campus. This initiative saves approximately 21 million litres of water a year. The three-stage system starts with the interception of waste water at the sewer main near Mars Creek. The liquid is then processed through a septic system before being passed through a reed bed system. The treated water is then used to irrigate the 7-hectare playing fields. The project also involves harvesting storm water from the surface and sub-surface drainage system and storing this water onsite to supplement treated water from the reed beds. The treated effluent and storm water harvesting should provide 95 per cent of the sport fields peak irrigation requirements. Pictured above are the stormwater harvesting tanks.

**When you exit the Sports Fields, turn left on Talavera Road. Walk down the hill on the footpath. Re-enter campus via the grassy hill just to the left of the creek. Walk along the grass until you are between the lake and the E11A building, 17 Research Park Drive.**



## 10. GEOTHERMAL AND ART GALLERY



The E11A Building (17 Research Park Drive) is the location of the Vice-Chancellor's office and the Art Gallery. This building's air-conditioning system is powered by geothermal energy. This natural cooling method uses pipes that conduct water ninety metres below the ground, where the temperature is constantly between seven and eight degrees Celsius; the chilled water comes back up and is used to regulate the building's temperature.

**Head South up Eastern Road; on the corner of E7B you will see a Bike Hub.**

## 11. BIKE HUB



The Bike Hubs are a end-of-trip facility designed to assist students and staff in cycling to Macquarie University. There are two Bike Hubs which are located in eastern and western campus. Each Bike Hub includes an undercover bicycle parking enclosure for 26 bicycles as well as 28 lockers and 2 showers. The Bike Hubs are accessed through an electronic swipe-pass administered by the University.

**Head south down Eastern Road, and turn left on Wally's Walk. Head east past E8C until you see the Bush Tucker Garden.**

## 12. BUSH TUCKER GARDEN



The Bush Tucker garden features plants native to the greater Sydney area, some of which were used in traditional food and medicine by the Darug and other Indigenous people. The garden is located at the eastern end of campus between Wally's Walk and building E7B, near the thermal storage tower.

**Head west on Wally's Walk and into the atrium area between E7A and E7B - 12 Wally's Walk.**

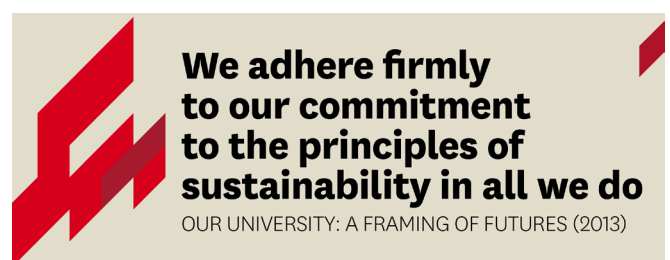
## 13. E7A REFURBISHMENT & SOLAR PANELS



Building E7A – one of the University's oldest buildings - has undergone a major upgrade. The refurbishment showcases sustainable adaptation and reuse of an existing building. Energy efficiency and peak load management is addressed in a number of ways, including energy efficient LED lighting and occupancy sensors; an energy efficient chiller; and onsite generation through use of solar PV arrays.

A 27.72 kW solar PV panel array is installed on the north facing roof. By generating an average of 112kWh per day, the system abates 36,463kg CO<sub>2</sub>e per year. That's the same emissions as travelling 72,927km in an average car - or driving from Sydney to Perth 18.5 times - every year! The panels themselves consist of 99 x 284W photovoltaic modules.

**THE TOUR ENDS HERE.**





**MACQUARIE**  
University

