



PRELIMINARY WASTE MINIMISATION & MANAGEMENT PLAN
MACQUARIE UNIVERSITY ARTS PRECINCT PROJECT

Macquarie University

August 2017

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1 INTRODUCTION

The Macquarie University Arts Precinct Project (MUAPP) will provide a lifecycle renewal for two existing 50 year-old buildings (Buildings W6A and W6B) located within the Academic core of the Macquarie University Campus. The renewal will include code compliance upgrades, removal of hazardous materials and importantly, will provide a physical environment that enables the Faculty of Arts to achieve its strategic goals and cultural change. A new showcase building is to be built immediately to the south of the W6A Building that will bring together museum and research functions that invites community, student and industry engagement. Internal demolitions of the W6A and W6B are due to commence in the second half of 2017, with demolition of the circulation core of W6A late 2017. Construction is due to commence in 2018. The new Arts Precinct is proposed to be open for Session 1 of 2020.

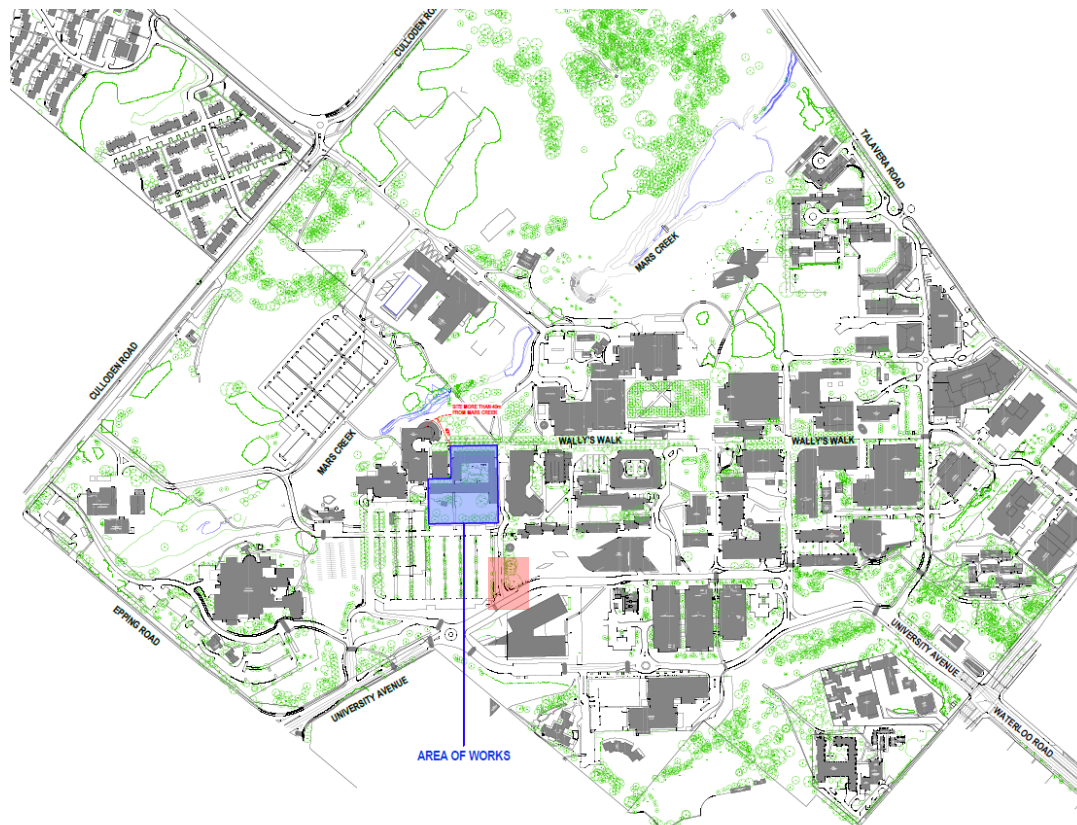
This Preliminary Waste Minimisation & Management Plan describes the waste management requirements and practices to be adopted for the demolition, construction and ongoing operation of the Macquarie University (MQU) Arts Precinct.

This plan outlines the wider context for waste management at the university, as well as discussing any requirements relating to the construction of the Arts Precinct Project. Site specific demolition and construction Waste Minimisation & Management Plans will be prepared by the Demolition and Main Works Contractor. A site specific Operational Waste Minimisation & Management Plan (OWMMP) will be prepared prior to commissioning of the Arts Precinct. The OWMMP will be a living document that will be monitored and updated as required.

2 SITE DESCRIPTION

The site is located near the western centre of the University at 25 Wally's Walk, in the Arts/Social Sciences precinct. W6B is bounded by Wally's Walk to the north, Lotus Theatre to the west, and W5A-C to the east. W6A is separated from W6B by a courtyard to the north, X5B to the west, W5A-C to the east and W4 car park to the south.

Figure 1: Location of works



3 WASTE MANAGEMENT AT MQU - OVERVIEW

Macquarie University has two primary waste management streams: Paper and cardboard; and General waste. 100% of our paper and cardboard is recycled by our current contractor Australian Paper Recycling and our general waste is managed by Doyle Bros (Faralga Pty Ltd). Sims Metal Recycling manages our e-waste stream on an as needed basis.

Macquarie University utilises a one bin waste management system to ensure the most sustainable outcomes. Our waste management contractor Doyle Bros collects the waste and transports it to their Materials Recovery Facility (MRF) which successfully recovers recyclable/reusable materials including plastic, paper and cardboard, organics and metals. This System is, on average, achieving a 90% diversion from landfill rate. Doyle Bros have eleven waste collection points across campus that are on a collection schedule.

Other contractually bound services provided by Doyle Bros include conducting waste audits and supplying regular reports containing data pertaining to the collection and disposal of waste. Relevant data from these reports is directly input into The Universities Enterprise Sustainability Platform (ESP). The current ESP consolidates the universities water, energy and waste data for trending and progress tracking.

In addition to the good outcomes achieved through our contractual arrangements with Doyle Bros, Macquarie University's sustainability team works with departments and individuals through developing and delivering behaviour change programs, with an objective to reduce waste across campus.

4 WASTE DURING CONSTRUCTION

The Demolition and Main Works Contractor will be required under the contract to prepare a Construction Management Plan that shall include a Waste Minimisation & Management Plan (WMMP). The WMMP will describe how the contractor will manage waste produced by themselves and their sub-contractors throughout the demolition and construction process. The WMMP will cover waste produced during any site preparation activities, hazardous materials removal, internal and external demolitions, as well as during the construction process itself. The Contractor for each of these stages is responsible for arranging and paying for removal of any project-related waste (refer the Preliminary Construction Management Plan for specifics).

Waste should be managed in such a way as to maximise the diversion from landfill. This may be done either through on-site segregation of recyclable components, or through off-site sorting by specialist waste contractors. Recycling rates of 80%+ of construction and demolition rates are now quite achievable following the success of industry programs such as Green Star. The Waste Reduction target for this project is 90% of construction and demolition waste (refer ESD Report by Wood & Grieve).

General Services within Facilities Management operate a furniture reuse program which may be utilised for any project-related furniture or equipment in good condition which would otherwise be disposed of (refer "Furniture" in Appendix 1).

5 OPERATIONAL WASTE MANAGEMENT FOR ARTS PRECINCT (BUILDINGS 25WWA-C)

The Arts Precinct Project includes the redevelopment and expansion of a three storey building (W6B), an eight level building (W6A) and a new 5 level "showcase" building which includes Museum and specialised functions. Once completed, the Arts Precinct will have a total gross floor area of approximately 17,000m². It is anticipated that the building will house some 600 work points for staff and HDR students.

The Faculty of Arts consists of 12 departments, 7 of which are located within the existing W6A building (that will be re-developed into "25WWB"). The Faculty of Arts will continue to occupy

25WWB but will have expanded office, teaching, showcase and research space in 25WWA (former W6B) and 25WWC (new showcase building) in order to collocate ten of the twelve departments into the one precinct. The Precinct will also be supported by a new retail cafe on the ground floor.

Waste collection will be daily (on weekdays) after hours. No centralised rubbish collection area is required other than for the Café – all other rubbish is taken out by trolley in black plastic bags after hours directly into small vehicles accessing Western Road and is not stored on site.

The eastern side of 25WWB will include storage for 240L Sulo bins for the Café that is externally accessible behind roller doors. A new loading bay will be constructed on the western end of 25WWC allowing loading of (large E-waste) and other items.

Spare bins for general waste and paper recycling will be housed in the secure cleaner's storage room on the ground floor of 25WWB.

There has been no dangerous goods waste identified to date, however, if required, will be collected in approved hazardous waste containers (available from E8 store) and stored locally adjacent to wet teaching spaces that use them in an approved Australian Standards cabinet. Dangerous goods waste can be transported to the appropriate secure dangerous goods waste collection point enclosure as identified in the Specific Laboratory Waste Management Schedule or else the dangerous goods waste contractor will pick up waste directly from these cabinets for disposal. A manifest must be completed and emailed to FM General Services prior to collection (this process can also be conducted via an online portal).

Refer to **Appendix 2** – MQU Arts Precinct Proposed Waste Collection Points.

The following processes will be employed to manage the various waste streams:

Waste stream	Process
General waste (office)	Under-desk bins are no longer provided by the University. Larger bins are located centrally and in convenient location so that staff can regularly access and deposit their general waste. Contract cleaners will empty kitchen and general waste bins on a daily basis (weekdays only). Waste is taken out by trolley in black plastic bags after hours directly into small vehicles accessing Western Road and is not stored on site.
Paper and cardboard	A number of blue 240L recycling bins will be provided throughout the building, at least one on each floor, particularly near photocopiers. An additional 660L bin for paper and cardboard will be stored in the ground floor waste room for bulky paper/cardboard waste (e.g. cartons etc). MQU General Services staff are responsible for collecting paper for recycling and will visit the site periodically (frequency to be determined but nominally weekly). Full bins can also be picked up upon request by raising a service request.
Commingled recyclables	Commingled recyclables (glass bottles, cans and plastic but NOT paper) can be included in the general waste bins as they will be sorted off-site for recycling at a Materials Recovery Facility. The exception being the Cafe on the Ground floor of 25WWB and at designated Teapoints located through the three buildings that will have co-mingled waste and general waste bins.
Chemical waste	Any chemical waste (if required) is collected by a specialist contractor, but must be 'booked in' by Faculty staff prior to collection. For more information refer the - Specific Laboratory Waste Management Schedule.

For information on how other waste types are managed, refer to Appendix 1.

A site specific Operational Waste Minimisation & Management Plan will be prepared as part of the Change Management process prior to commissioning of the Arts Precinct. The OWMMP will be a living document that is monitored and updated to adjust to the operation of the Arts Precinct.

6 APPENDICES

Appendices	Title
Appendix 1	MQU Management Responsibility for Waste Streams
Appendix 2	MQU Arts Precinct – Proposed Waste Collection Points

APPENDIX 1- MQU MANAGEMENT RESPONSIBILITY FOR WASTE STREAMS

Waste Stream	MQU Management Responsibility	Contractor	Details/Comment
Batteries & Media	OFM	External contractor	Collect in special designated plastic lined bin located within each department, alternatively, Media recycling station located at the entrance to the MUSRA office in C10A. This media bin is available for use by staff and students. Items that can be recycled through this bin include batteries, mobile phones, audio tapes, hard drives, computer data / magnetic data, DVDs, CDs, USB sticks, memory cards, tapes, video tapes, micro film, computer diskettes, and laser disks.
Biological waste (including sharps)	OFM	External contractor	Infectious, Biological, Clinical, GMO, human blood or body fluids, infectious animal carcasses or material. For more information refer the - Specific Laboratory Waste Management Schedule.
Building waste	OFM (Project Manager)	Construction contractor	Managed through Facilities Management via construction contract.
Chemicals - laboratory waste	Health & Safety Unit (Chemical Safety Officer)	Chemsal	Acids, Bases, Carcinogens, Heavy Metals, Organic Solvents, Oxidising agents, Peroxides, Poisons and Toxics, Water reactive materials, empty chemical containers. Chemical safety officer to organize the disposal of hazardous waste through Chemsal (NSW EPA approved Hazardous Waste contractor). For more information refer the - Specific Laboratory Waste Management Schedule.
Commingled recyclables	OFM	External contractor	Commingled recyclables (including plastic, aluminium, glass, steel) are only collected separately in high-use public areas (e.g. near food retailers)
E-waste	OFM	Sims Recycling Solutions	Large E-Waste items include desktop and laptop computers, telephone handsets, VCR's, fax machines, DVD players, power supplies, handheld devices (including charges, data projectors, UPS, digital cameras ,scanners, printers photocopiers. E-waste items are disposed of regularly using the University's Service Request System. Items are collected by security, taken to storage, and picked up by Sims Recycling Solutions when there is enough collected to fill a truck.
Fluorescent globes	OFM	Chem Collect	Due to the very small amounts of Mercury present in fluorescent globes, it is illegal in many countries to add these globes to the general waste stream. Fluorescent globes that are changed at Macquarie University are recycled by Chem Collect who safely recovers not only the mercury, but also the glass, phosphor and aluminium contained in the lamps. Recovered mercury is commonly sold to the dental industry, where it is used in amalgam for fillings.
Food and organics	Campus Experience	Campus Experience Production Kitchen & Volunteers	Each week, the Campus Experience Production Kitchen takes approximately 120 kilograms of segregated organic food waste to the community garden. This supports the worm farm and composting on the garden that is used by local community members, staff, students, and the production kitchen itself.

Waste Stream	MQU Management Responsibility	Contractor	Details/Comment
Furniture	OFM	Sims Recycling Solutions	Furniture recycling program where furniture that is no longer required comes to a central store, is catalogued and entered into the on-line database for MQU staff to access. If the furniture is not re-useable, Sims recycling will remove it from Campus, refurbish and on-sell what can be re-furnished and on-sold, and strip down and recycle components of those things which cannot.
Garden waste	OFM	External contractor	Garden organics and tree pruning off cuts mulched and used on gardens as feasible.
General waste	OFM	Doyle Bros (Faralga Pty Ltd)	Waste to landfill is residual after sorting in Materials Recovery Facility
Metals	OFM	Sims Recycling Solutions	Sims Recycling Solutions who also recycle Macquarie University's E-waste and furniture waste also recycles metal waste, including metal furniture.
Paper and cardboard	OFM	Australian Paper Recycling	Paper can be recycled through the personal paper recycling boxes located in office areas or the larger WSN blue paper bins. OFM will pick up heavy cardboards and ensure they are recycled correctly.
Radioactive	Health & Safety Unit (Radiation Safety Officer)	Dependant on material.	Collect radioactive waste material in approved container. Consult Radiation Safety Officer for more information. Transfer to the nominated collection point where they are stored until collection through nominated Hazardous Waste Service.
Toner & Printer cartridges	OFM (Sustainability Officer)	Planet Ark	Collected by Planet Ark for recycling or else place a Facilities Service request: http://facilities.science.mq.edu.au/form.php

APPENDIX 2- MQU ARTS PRECINCT – GROUND FLOOR PLAN AND PROPOSED WASTE COLLECTION POINTS

