

ENVIRONMENTAL



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

DESIGN STANDARDS

Document Register

Issue	Date	Description	Initials
Revision 1	18/10/21	Project Use	TM/KC

Definitions

When the word “shall” is used, this indicates the requirement is mandatory.

When the word “should” is used. This indicates the requirement is a recommendation.

Abbreviations

CEMP	Construction Environmental Management Plans
VM Plan	Vegetation Management Plan
FM Plan	Fauna Management Plan
ESC Plan	Erosion and Sedimentation Control Plan
C&DWM Plan	Construction and Demolition Waste Management Plan
WQM Plan	Water Quality Management Plan
NVM Plan	Noise and Vibration Management Plan
AQM Plan	Air Quality Management Plan
CHM Plan	Cultural Heritage Management Plan

Reference Documents

Refer to the UQ Design Standards for the list of documents and associated standards to be referenced for all design work.

The designer is to coordinate between disciplines and standards.

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A1 Environmental Design Standards

This document has been prepared as an appendix to the UQ Design Standards Master Document and provides the minimum environmental management and planning requirements for Contractors engaged by UQ.

1.1 Purpose and Aims

- Purpose

The purpose of these Environmental Design Standards is to support the UQ Design Standards Master Document and provide environmental management requirements for the construction of projects at UQ to further the aims of UQ's Environmental Management Policy.

- Aim

The aim of the Environmental Design Standards is to provide specific and technical environmental standards that shall be implemented during the planning and/or construction of projects at UQ.

Where relevant these standards provide cross-reference to recognised industry standards and best practice guidelines.

- Scope

The Environmental Design Standards are applicable to all UQ campuses and locations.

Environmental factors included in the Environmental Design Standards include:

- Flora and fauna
- Erosion and Sediment Control
- Construction and Hazardous Substances
- Waste and Resources
- Water Quality Management
- Environmental Nuisance (air quality and noise)
- Heritage

The focus of these Environmental Design Standards is the construction phase of projects at UQ. Relevant design or operational requirements are documented in the UQ design standards master document, including:

- Indoor air quality and acoustics
- Water sensitive urban design and stormwater management
- Landscaping
- Sustainability.

The Environmental Design Standards are applicable to all construction projects at UQ..

Prior to construction of the Project, the Contractor should confirm the applicability of these environmental design standards with the UQ Project Manager.

1.2 Environmental Management at UQ

UQ's Environmental Management Policy states the University's commitment to conduct its activities in accordance with the *Environmental Protection Act (Qld) (1994)* and associated legislation.

"The University of Queensland acknowledges the importance of protecting environmental values as part of the global community. Through its planning and practice, the University is committed to ensuring the protection of the environment by keeping environmental harm to a minimum in a sustainable, economically rewarding and technically feasible manner".

Construction Environmental Management Plans (CEMP) are required for construction activities at UQ that have the potential to cause adverse environmental impacts. A

CEMP may not be required for minor building fit-outs and construction activities as determined by UQ Project Manager.

The CEMP is to address the requirements of these standards and is to include a level of detail suited to the environmental risk of the works. The CEMP must incorporate environmental aspects, issues, management measures and relevant legislative requirements for the project. The CEMP is to be provided for approval by UQ prior to works commencing.

1.3 Overview of legislation and planning framework

1.3.1 Applicable Legislation

These Environmental Design Standards apply to all UQ locations across Queensland, and accordingly compliance with relevant planning legislation and environmental regulatory instruments must be achieved. The project CEMP is to identify applicable legislative requirements including but not limited to, the following:

- Environment Protection and Biodiversity Conservation Act 1999 (Cth)
- Native Title Act 1993 (Cth)
- Planning Act 2016 (Qld)
- Planning Regulation 2017 (Qld)
- Environmental Protection Act 1994 (Qld)
- Aboriginal Heritage Act 2003 (Cth)
- Queensland Heritage Act 1992 (Qld)
- Environmental Protection Regulation 2019 (Qld)
- Environmental Protection (Air) Policy 2019 (Qld)
- Environmental Protection (Noise) Policy 2019 (Qld)
- Environmental Protection (Water and Wetland Biodiversity) Policy 2019 (Qld)

- Vegetation Management Act 1999 (Qld)
- Water Act 2000 (Qld)
- Fisheries Act 1994 (Qld)
- Land Act 1994 (Qld)
- Nature Conservation Act 1992 (Qld)
- Natural Assets Local Law 2003 (Brisbane City Council)
- Biosecurity Act 2014 (Qld)
- Biosecurity Regulation 2016 (Qld)

1.3.2 Applicable UQ Policy and Procedures

The UQ Sustainability Strategy outlines clear commitments and targets for all Projects at UQ. All new Projects are to be delivered to meet the latest version of the UQ Sustainability Strategy. The strategy must be read in conjunction with these Design Standards.

There are a number of additional UQ policy and procedures that will apply to the various environmental aspects detailed below. These can be accessed by contacting the UQ Project Manager.

The Contractor is required to comply with relevant UQ policies and procedures in conjunction with applicable legislation.

1.3.3 UQ Planning Framework

The UQ St Lucia Campus, Gatton and Herston Campuses and Pinjarra Hills Research Facility are designated as Community Infrastructure under the Queensland Integrated Planning Act 1997 (now the *Planning Act 2016*).

Development on these campuses is required to be in accordance with the University's Site Development Plan (SDP) approved by the University Senate and needs to comply with the purpose for which the site has been designated and the conditions of designation.

Other UQ locations that are not designated as Community Infrastructure are subject to relevant local planning requirements.

1.4 Flora and Fauna

1.4.1 Flora and Fauna Objectives and outcomes

- Impacts on native flora and fauna species, vegetation communities and fauna habitats within and adjacent to the project are minimised.
- No native fauna or vegetation protected under legislation or local bylaws is harmed or disrupted.
- No unauthorised clearing of vegetation (ie without approval from UQ and/or regulatory authorities where required).
- No injury or death of fauna during construction.

1.4.2 Vegetation Management Plan

- For any project that requires vegetation clearing, the Contractor is responsible for the preparation and implementation of a Vegetation Management Plan (VM Plan) for the construction stage as part of the CEMP.
- The VM Plan must identify project objectives, key risks, mitigation measures, and monitoring and reporting responsibilities.
- The VM Plan must provide measures to protect and clearly define/mark vegetation to be retained or avoided.
- The VM Plan is to identify requirements for arborist assessment where necessary to avoid impacts to specific trees.
- The VM Plan must identify any invasive species and detail measures to manage these species.

1.4.3 Fauna Management Plan

- For any project that requires vegetation clearing or disturbance of potential fauna habitat, the Contractor is responsible for the preparation and adoption of a Fauna Management Plan (FM Plan) for the construction stage, as part of the CEMP.
- The FM Plan must identify project objectives, key risks, mitigation

measures, and monitoring and reporting responsibilities.

- The FM Plan must identify any habitat logs, tree or other fauna shelters or breeding places prior to clearing works, and where possible relocate to non-impacted areas, in accordance with relevant permit requirements under the Nature Conservation Act 1992
- The FM Plan must provide for a suitable licensed Fauna Spotter Catcher to assess vegetation prior to clearing, be present during all tree clearing activities and handle fauna relocations if required.
- The FM Plan must include a requirement to assess the potential for occurrence of fire ants and report all suspected occurrences to the Project Manager. The Contractor must assess the Fire Ant Biosecurity Map for South East Queensland (or equivalent) for each Project. Where earthworks are required for a Project, soil movement must comply with the Biosecurity Act 2014 and Biosecurity Regulation 2016.
- The FM Plan is to identify opportunities for habitat creation or enhancement as part of the project.

1.5 Erosion and Sediment Control

1.5.1 Objectives and outcomes for Projects

- Stormwater run-off during construction is managed in accordance with the Environmental Protection Act 1994 (EP Act).
- Erosion and sediment control is implemented in accordance with Best Practice Erosion and Sediment Control Guidelines (International Erosion Control Association)
- There is no uncontrolled releases of contaminants into local waterways, and drainage lines.
- Erosion and sediment controls remain in place until the site is stabilised.

1.5.2 Erosion and Sedimentation Control Plan

- For any Project that involves ground disturbance and/or is within 50m of a watercourse, the Contractor is responsible for the preparation and adoption of an Erosion and Sedimentation Control Plan (ESC Plan) for the construction stage as part of the CEMP.
- The ESC Plan must identify project objectives, key risks, mitigation measures, and monitoring and reporting responsibilities.
- The ESC Plan must comply with and adopt recommendations from the Best Practice Erosion and Sediment Control (International Erosion Control Association, 2008).

1.6 Contamination and Hazardous Substances

1.6.1 Objectives and outcomes for Projects

- Hazardous chemicals are stored and transported in accordance with regulatory requirements.
- If contaminated land is present in the project area, specialist advice is obtained and contaminated land is managed in accordance with the Environmental Protection Act 1994, including a Contaminated Land Management Plan if required.
- Soil imported to site is certified free of contaminants.

1.7 Waste and Resources

1.7.1 Objectives and outcomes for Projects

- The waste hierarchy is implemented during project construction:
 - Avoid
 - Reduce
 - Reuse
 - Recycle
 - Recover; and
 - Dispose.
- Waste is adequately stored and disposed of throughout construction,

to prevent adverse environmental impact and nuisance.

- Resource requirements and construction waste are minimised through reuse and recycling and the efficient selection and use of resources
- Relevant UQ waste guidelines or management plans applicable at the time of construction are implemented.

1.8.2 Construction & Demolition Waste Management Plan

- For any Project with demolition works of \$1 million or more in value, the Contractor is responsible for the preparation and adoption of a Construction and Demolition Waste Management Plan (C&DWM Plan) for the construction process:
 - The C&DWM Plan must form part of the Waste Management Plan for the project. The C&D WMP template will be provided by UQ.
 - The C&DWM Plan must contain details for storage, handling, monitoring and reporting of waste generated throughout the course of construction.
 - The C&DWM Plan must detail recycling and/or reuse actions that will maximise *the diversion rate (by weight) from landfill*.
- A diversion rate of 90% of all demolition and construction waste is to be re-used or recycled and this must be incorporated into the C&DWM Plan. Waste shall be separated on site into the following waste streams:
 - Concrete, brick and asphalt.
 - Timber
 - Metal
 - Cardboard & Paper
 - Comingled
 - Fill
 - Landfill.
 - Gypsum
 - Glass
 - Separation and recycling of other waste streams is also encouraged.

1.8.3 Waste Tracking Form

- For all Projects the Contractor must complete a Waste Tracking Form, to document all waste disposal activities throughout construction. UQ will provide the Waste Tracking Form template.
- Supporting evidence including resource recovery/recycling facility and landfill receipts must be kept and maintained by the Contractor to demonstrate the actual percentage (by weight) of each material reused, recycled, disposed and evidence of where these were utilized, sold and disposed.
- The completed Waste Tracking Form and associated Diversion Report and supporting evidence must be submitted to the UQ Project Manager must be updated each month and submitted to UQ Project Manager.

1.8 Water Quality Management

1.8.1 Objectives and outcomes for Projects

- The works minimise the impact on existing water quality within local waterways and drainage lines throughout construction and operation
- Contaminants are prevented from entering surrounding waterways or stormwater drains
- There are no uncontrolled releases of contaminants into local waterways, and drainage lines.
- Relevant UQ water quality guidelines or management plans available at the time of construction are implemented.

1.8.3 Water Quality Management Plan

- For any Project involving works within 50m of a watercourse, or involving discharge to waters, the Contractor is responsible for the preparation and adoption of a Water Quality Management Plan (WQM Plan) for the construction stage.

- The WQM Plan must identify project objectives, key risks, mitigation measures, and monitoring and reporting responsibilities.
- The WQM Plan must detail methods for construction phase water quality monitoring. Unless otherwise instructed by UQ Project Manager, monitoring is required to meet the objectives set out in Australian and New Zealand Environment Conservation Council (ANZECC) Water Quality Guidelines for Fresh and Marine Waters and the Queensland Water Quality Guidelines (Table 8.2.1).
- Sufficient baseline monitoring data must be established prior to construction to manage surface water and groundwater quality.

1.9 Environmental Nuisance

- Refer to Section 17, Acoustic Engineering of the UQ Master Design Standard for additional requirements during construction

1.9.1 Noise objectives and outcomes:

- Construction is planned and scheduled to minimise noise and vibration (including consideration of exam periods, sensitive facilities and laboratories and student accommodation).
- Heritage buildings and other sensitive structures are protected against the effects of vibration.
- Construction noise and vibration achieves the levels specified in the Acoustic Standard.
- Where construction noise and vibration is likely to exceed acceptable levels, with the implementation of all reasonable and practical measures, further mitigation is to be investigated and consultation with impacted sensitive receivers is to be undertaken.

1.9.2 Noise and Vibration Management Plan

- For Projects likely to result in elevated noise and vibration at sensitive receptors,

or as directed by the UQ Project Manager, the Contractor is responsible for the preparation and adoption of a Noise and Vibration Management Plan (NVM Plan) for the construction stage.

- The NVM Plan must identify project objectives, key risks, mitigation measures, and monitoring and reporting responsibilities.
- The NVM Plan must identify noise sensitive receptors adjacent to the site.
- The NVM Plan must identify standard working hours and limit construction works outside of these standard working hours as much as reasonably possible.
- The NVM Plan must detail community consultation and notification procedures (eg. letter box drops, door knock etc) as well as a complaints register and handling process.
- The NVM Plan must identify any real-time monitoring at sensitive locations if necessary.

1.9.3 Air quality objectives and outcomes:

- Ambient air quality is maintained throughout construction.
- Risks to public health from changes to air quality are reduced as far as possible and managed appropriately.
- Reasonable and practicable measures are implemented to manage potential for diminished air quality, including dust and odour.
- Compliance with relevant air quality objectives under the Environmental Protection (Air) Policy 2019 (Qld) applies.
- No burning of waste or vegetation occurs on site.

1.9.4 Air Quality Management Plan

- For any Project likely to generate air emissions (including for example demolition or earthworks), the Contractor is responsible for the preparation and

adoption of an Air Quality Management Plan (AQM Plan) for the construction stage.

- The AQM Plan must identify project objectives, key risks, mitigation measures, and monitoring and reporting responsibilities.
- The AQM Plan must identify air quality sensitive receptors adjacent to the site.
- The AQM Plan must identify measures to limit dust and odour generation.
- The AQM Plan must detail community consultation and notification procedures (eg. letter box drops, door knock etc) as well as a complaints register and handling process.
- The AQM Plan must identify any real-time monitoring at sensitive locations if necessary. Monitoring equipment must be placed in locations that are most likely to be adversely impacted.

1.10 Heritage

1.10.1 Heritage objectives and outcomes::

- Aboriginal and historical heritage values relevant to the project location are identified and assessed.
- Impacts to Aboriginal and historical heritage are avoided or minimised.
- Works comply with the Aboriginal Heritage Act and Duty of Care Guideline and the Queensland Heritage Act.
- The design process incorporates relevant requirements from the UQ "Indigenous Design Principles" document

1.10.2 Cultural Heritage Management Plan

- For any Project that has the potential to impact Aboriginal or historical heritage places, the Contractor is responsible for the preparation and adoption of a Cultural Heritage Management Plan (CHM Plan) for the construction stage, prepared by a suitably qualified heritage specialist(s).

- The CHM Plan must identify relevant heritage values and applicable legislative requirements.
- The CHM Plan must identify project objectives, key risks, mitigation measures, and monitoring and reporting responsibilities.

The CHM Plan must include a 'cultural heritage find procedure' for unexpected cultural heritage finds, including the requirement to cease work immediately, advise UQ, and engage a heritage specialist where require