

SECTION 12

STAIRCASES/RAMPS/LADDERS

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P1	09/05/14	WA	Preliminary Issue for review
2	19/8/14		Issue to web
	10/03/15	Manager, Infrastructure Services	Cross referenced with other sections
V3	02/07/18	Manager, Infrastructure Services	2018 general review update

12.0 STAIRCASES/RAMPS/LADDERS

This document is a sub-section of the James Cook University (JCU) Design Guidelines and is not to be read in isolation. Consultants and Contractors are required to comply with all sections of the JCU Design Guidelines.

12.1 Approvals Required during Design

Approval shall be obtained from the Deputy Director – Planning and Development in SD for the:

- Design of External Stairs / Ramps

Approval shall be obtained from the Deputy Director – Planning and Development in DD for the:

- External stair steelwork coatings if not hot dip galvanised (HDG) in entirety, or
- Balustrade panels constructed of stainless steel mesh or any material not listed in 12.5.

12.2 General

Where fire stairs are to be used as communicating stairs, compliant door hold open devices or viewing panels are to be incorporated. Handrails shall comply with BCA and shall be galvanised and not painted in fire stairs.

Internal and external stairs and ramps shall comply in all respects with the requirements of the BCA and AS 1428 Part 1: New Buildings.

Ramps shall be provided externally as required to provide access to buildings for people with disabilities. The use of ramps internally as a means of interconnecting floors is not an acceptable alternative to providing a lift.

JCU will not accept designs which combine maximum height risers with minimum width treads. Treads widths and riser heights shall generally comply with the requirements of AS 1428.2, with goings a minimum of 280mm wide.

Stairs shall be designed to conform to the requirements of the BCA and other relevant Codes. In general, treads should be not less than 280mm, and risers should not exceed 180mm and must be consistently dimensioned throughout each flight. Stairs shall have a non-slip surface, be readily cleanable, and have a 50mm strip of contrasting colour on nosings.

12.3 PWD Access

Stairs and ramps for disabled access to building, including handrails, kerbs and the like shall comply with the requirements of AS 1428.1.

Designs that incorporate ramps with gradients less than 1:20 are preferred; to reduce the requirement for associated handrails.

Provide contrasting stair tread nosings as recommended in AS 1428. Refer Section 10 for stair treads finishes.

Tactile ground surface indicators should be installed in accordance with Section 32 of these Guidelines.

Fire Stairs may, in some instances, be approved for use as communication stairs for the day-to-day functioning of the building if approved by the JCU Estate Directorate, Deputy Director, Planning and Development.

When such use is approved, door hold-open devices or clear viewing panels are to be incorporated. Where fire stairs are approved to be used for intercommunication between floors, and not solely for escape, the standard of finish in these stairs must be equivalent to adjacent public areas.

12.4 Internal Stairs

There shall be a general circulation stair to access all levels of the building to minimise the use of lifts. This circulation stair may be a fire isolated stair provided all access doors are controlled with magnetic hold open devices connected to the fire alarm system. The following points are to be considered in the design and placement of circulation stairs:

- Placement of stairs to maximise their visibility and use;
- Comply with the requirements of AS 1428.2;
- Design of stairs to be social spaces where conversations can occur;
- Design of stairs to act, where appropriate, as natural ventilation shafts;
- Stairs shall be provided with natural light if possible.

Fire isolated stairs shall be provided to satisfy the requirements of the BCA and AS 1428.2. These stairs may be fully enclosed within the building envelope, or may be open stairs external to the building façade.

Internal general access stairs, including fire isolated stairs for general access, shall have stainless steel handrails to both sides.

Where the general access stairs are in an open well with exposed strings to flights, then a balustrade incorporating glass, perforated metal or other approved solid panels is desirable.

Handrails and balustrades to fire isolated stairs which are not general access stairs, may be galvanised steel.

12.5 External Stairs / Ramps

All external stairs and landings over two floors in height must be designed to prevent self-harm from jumping. Designs must be sympathetic to the fabric of the building and the surrounding built environment, and must be approved by JCU Estate Directorate, Deputy Director, Planning and Development.

Steelwork to all stairs exposed to the atmosphere shall as a minimum requirement be prepared and hot dip galvanised (HDG) in entirety, in accordance with AS 4680. "Zinc stick" and cold galvanizing do not constitute acceptable practice without approval by JCU Estate Directorate, Deputy Director, Planning and Development.

Balustrade panels to all stairs exposed to the atmosphere shall be constructed of:

- steel HDG as per above
- perforated powder coated aluminium
- stainless steel mesh by approval JCU Estate Directorate, Deputy Director, Planning and Development.
- Glass
- other material with a high level of durability particularly with regard to resistance to deterioration and corrosion due to weathering and environmental effects (Only with approval from JCU Estate Directorate, Deputy Director, Planning and Development)

Where possible avoid steps in footpaths in external areas and no single steps in the external landscape areas.

Where required, external steps generally shall have 150 mm risers and 305 mm treads; the riser to have 30 raking face. Treads to be non-skid with contrast colour nosings.

Handrail material to be stainless steel at main entrance/access ways, hot dip/ galvanized handrails may be acceptable in certain external locations with approval from JCU Estate Directorate, Deputy Director, Planning and Development. Fixing details to be provided by structural engineer. Generally open hook ends to be closed off.

12.6 Ladders and Walkways

All access stairs, ladders and walkways shall comply with AS 1657. Inclined step ladders are to be used wherever possible in preference to vertical rung ladders, and shall include a fall arrest system. Roof Access refer to Section 8 Roofs

12.7 Floor finishes

See Section 10 of these Design Guidelines.