UGL REGIONAL LINX

FACILITIES DEFECT MANAGEMENT GUIDELINES

CRN-MAN-CVL-713026361-566

CRN CM 006

LINKING COMMUNITIES. CONNECTING CUSTOMERS.

UGL REGIONAL LINX

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Document Control

Function	Position	Name	Date
Approver	Head of Asset & Engineering	Luke Cunningham	30/06/2023

Revision	Issue Date	Revision Description
1.0	12.11.2021	UGLRL Operational Standards Template applied
2.0	29.11.2021	First approved and issued UGLRL version

Summary of changes from previous version

Section	Summary of change
All	This document is based on the previous rail infrastructure maintainer (RIM). Full revision history is available on request from UGLRL

Chapter 1 Introduction

C1-1 Purpose

This Manual outlines procedures to be followed for the detection, assessment and management of Facilities building defects on the Country Regional Network (CRN).

Buildings include station buildings, storage buildings, canopies and awnings.

C1-2 The Structure of This Manual

This Manual covers the requirements for the overall management of building defects. It includes:

- Classifications to be used for building defects
- Assessment of building defect risks and the associated defect priority
- Recording of defects in the Asset Management System
- Resolving defects in the Asset Management System once repairs have been completed
- Reassessment of defects that have not been resolved within the specified timeframe (REVTAR)
- Approval requirements associated with the extension of repair timeframes.
- Number of REVTAR reviews permitted
- Flowchart of the defect management process (Appendix A)

C1-2 References

CRN CS 101 - Facilities Technical Maintenance Plan

CRN CM 001 - Civil Technical Competencies and Engineering Authority

CRN CM 102 - Facilities Service Schedules

CRN-APP-SQE-001-12 - Enterprise Risk and Opportunity Matrix

CRN – Training Manual: Defects (SP) Application

C1-5 Terminology

The following terminology is also used in this manual:

Facilities Officer:	Person responsible for undertaking examination of buildings, the assessment of condition and the detection, assessment, recording and reporting of building defects.
District Engineer:	Person with Engineering Authority to manage the condition of buildings.
Defect:	Deterioration of a component from its original condition.
Risk Ranking:	The level of risk assigned to a building defect based on the UGLRL Enterprise 6 x 6 risk matrix.
Defect Priority:	The priority of the defect (A to E) based on the assessed risk level.
Repair Priority:	Time frame for the repair of a defect (A to D), or review timeframe of a defect (E).

Chapter 2 Management Requirements

C2-1 Examination Responsibilities

The Area Manager, is responsible for ensuring that all buildings in the CRN are examined.

The examinations shall be carried out by persons with the relevant competencies as specified in Chapter 3.

The examinations shall be carried out in accordance with the requirements of CRN Engineering standard CRN CS 101 - Facilities Technical Maintenance Plan

N CS 101 – “Facilities Technical Maintenance Plan” and CRN Engineering manual CRN CM 102– “Facilities Service Schedules”.

The respective responsibilities of personnel assigned to the examination of buildings are detailed below:

C2-1.1 Facilities Officer

The Facilities Officer is responsible for the following:

- Visual examination of all buildings within the CRN
- Ad-hoc or special examination of buildings where required
- Identification and quantification of defects
- Taking of appropriate action in accordance with the defect categories
- Assignment of repair priorities’
- Preparation and submission of building defects into the Asset Management System
- Preparation of examination reports
- Ensuring defects and examination reports are recorded in the UGLRL CRN’s Asset Management System

The Facilities Officer is required to have with them a copy of the previous examination results as recorded in the Asset Management System when examining each building, this should be obtained from available SharePoint report.

The Facilities Officer is also required to have with them a copy of the current defects for each building as recorded in the Asset Management System when examining each building. All current defects are to be reviewed during the inspection to assess if there are any changes to the defects and whether the current repair/review priority is still correct.

The Facilities Officer should take photographs where appropriate to graphically illustrate degraded components etc., for inclusion in the reports.

C2-1.2 District Engineer

The District Engineer is responsible for the following:

- Ensuring inspection of all structures nominated in the TMP occurs as scheduled
- Entry of inspection results and examination documents into the Asset Management System
- Arranging for suitably qualified contractors to undertake various examinations where in-house resources do not have the necessary competencies. These inspections would include electrical systems, fire systems and air conditioning systems
- Arranging special examinations by specialist consultants and contractors where required
- Assessment of priority A and B defects detected and reported by the Facilities Officer to confirm repair priority

- Risk review of all defects detected during examinations by specialist contractors/consultants to determine repair priorities as described in this document
- Entry of defects detected by specialist contractors/consultants into the Asset Management System
- Referral of defects where necessary to the Area Manager for higher level assessment
- Confirmation of defect priorities assigned by the Facilities Officer
- Authorising extension of repair by dates (REVTAR), for Category A and B defects
- Checking the performance of the Facilities Officer and their reporting
- Ensuring defects and examination reports are recorded in the Asset Management System
- Preparation and implementation of repair programs, including scoping of work and estimating
- Signing-off of repairs and verification of close out of associated defects

C2-1.3 Area Manager

The Area Manager is responsible for the following:

- Responding as appropriate to the defect categories and repair priorities assigned by examination staff and as referred by the District Engineer
- Visual examinations on a sampling basis or in response to a particular report or condition and preparation of inspection notes
- Checking the performance of the District Engineer
- Ensuring defects and examination reports are recorded in the Asset Management System
- Ensuring that all buildings on the CRN are examined by competent persons in accordance with the requirements of the Technical Maintenance Plan

C2-2 Recording and Reporting of Defect Detection and Removal

All building defects that are detected MUST be recorded in UGLRL CRN's Asset Management System

An auditable trail must exist for all actionable defects from detection/notification to investigation, assessment, repair programming, repair action and certification.

The 'System' must include, as a minimum, the following details:

- Defect number
- Defect classification
- Description
- Location
- Date found
- Risk assessment (consequence and likelihood)
- Repair priority
- Action required (includes investigation, assessment, repair)
- Planned action date (includes investigation, assessment, repair)
- Repair action
- Repair date

- Repair certification

The Area Manager must:

1. Ensure that the Asset Management System is satisfactorily managed by the District Engineer.
2. Monitor the level of building defects, assess the impact on building performance and take appropriate action.
3. Review records and defects for trend identification at least annually. The outcomes must be considered in the development of regional maintenance strategies and Asset Management Plans.

   At any time, the Area Manager must be able to demonstrate, through the Asset Management System, current status of all defects recordable on the system.

C2-2.1 Source of Information

The Asset Management System will contain defects from the following formal examination and reporting systems:

- Facilities Examination System
- Field Inspections by Supervising Officers

Chapter 3 Competencies

NOTE: These competencies may enable activities to be carried out in other manuals. For a comprehensive list of all activities that are covered by a given competency see CRN CM 001.

To carry out this work	You need these competencies
Locate & identify defects in buildings	EA Level 2 – Facilities Visual Inspections
Approve extension to repair time (REVTAR) for category C to E defects	EA Level 2 – Facilities Visual Inspections
Approve extension to repair time (REVTAR) for category A to E defects	EA Level 3 – Advanced Facilities Fundamentals
General visual examination of buildings	EA Level 2 – Facilities Visual Inspections
Examination of building electrical systems	Electrical Trade qualifications
Examination of building fire systems	Competent Fire Safety Practitioner (CFSP)
Examination of building hydraulic systems	Plumbing Trade qualifications
Examination of building mechanical systems	Qualified Mechanical Engineer
Building damage assessment	Appropriate Trade qualification Licensed Builder Qualified Civil/Structural Engineer
Hazardous material examination	Safe Work NSW Licensed Assessor

Chapter 4 Defect Classifications

This chapter details the classifications to be used for building defects. The classifications are used to broadly group defects into either one of the various trade groups, and/or into broad building components.

A list of the classifications below and a description of the recommended usage follows:

- Fire Life Safety
- External Surrounds
- Plumbing (Internal)
- Electrical
- Plumbing (External)
- Framing (Roof, Wall, Floor)
- Foundation/Footing and Slab
- Roof Lining
- Internal/External Cladding
- Internal Fitout
- Building Security
- Mechanical/Ventilation
- Pest Control

C4-1 Usage

C4-1.1 Fire Life Safety Defects

This classification is used for defects relating to fire and life safety equipment incorporated with the building.

It includes defects relating to:

- Fire extinguishers
- Fire hoses and reels
- Fire blankets
- Fire alarms and sprinkler systems
- Fire doors
- Emergency exit signage
- Smoke detectors
- Protective screens
- Roof safety harness attachments and cables

C4-1.2 External Surrounds Defects

This classification relates to defects associated with the building surrounds.

It includes defects relating to:

- Paths
- Driveways and access

- Boundary and other fencing

C4-1.3 Plumbing (Internal) Defects

This classification is used for defects relating to the building's internal plumbing.

It includes defects relating to:

- Internal water reticulation system
- Internal gas supply lines
- Internal sewer system

C4-1.4 Electrical Defects

This classification is used for defects relating to the buildings electrical systems, excluding those covered under the Fire Life Safety classification.

It includes defects relating to:

- Internal and external light circuits
- Internal and external power circuits
- Electrical distribution boards

C4-1.5 Plumbing (External) Defects

This classification is used for defects relating to external plumbing systems.

It includes defects relating to:

- Stormwater systems
- Roof plumbing including gutters and down pipes
- Water supply from meter to building
- Gas supply from meter to building

C4-1.6 Framing (Roof, Wall, Floor) Defects

This classification is used for defects relating to roof, wall and floor frames, but excludes floor slabs.

It includes defects relating to:

- Steel and timber roof frames
- Steel and timber wall frames and structural concrete walls
- Steel and timber floor frames and supported concrete floors
- Doors and windows

C4-1.7 Foundation/Footing and Slab Defects

This classification is used for defects relating to building sub-structures including piers, stumps, strip footings, slab on ground, stiffened raft slabs and waffle slabs.

C4-1.8 Roof Lining Defects

This classification is used for defects relating to the external linings applied to roof frames. It does not apply to items such as prefabricated concrete panels that are combined roofing frames and cladding.

It includes defects relating to:

- Tile and slate roof linings

- Corrugated steel and Colourbond roof linings

C4-1.9 Internal/External Cladding Defects

This classification is used for defects relating to frame linings for floors (floorboards, particle boards), wall linings (boards, metal sheeting, gyprock) and ceiling linings (boards, sheeting, gyprock).

C4-1.10 Internal Fit out Defects

This classification is used for defects relating to trims, cabinets, joinery, appliances and bathroom equipment.

It includes defects relating to:

- Trims such as architraves, cornices and skirting
- Kitchen, laundry and bathroom cupboards
- Kitchen and laundry appliances
- Toilets, showers and basins
- Wet area water proofing

C4-1.11 Building Security Defects

This classification is used for defects relating to security of the building.

It includes defects relating to:

- Building security systems
- Door and window locks
- Graffiti damage

C4-1.12 Mechanical/Ventilation Defects

This classification is used for defects relating to mechanical and ventilation systems.

It includes defects relating to:

- Reverse cycle air conditioners
- Ducted air conditioning systems
- Mechanical roof ventilators
- Exhaust fans
- Rangehoods
- Fixed lifting equipment

C4-1.12 Pest Control Defects

This classification is used for defects relating to pest control.

It includes defects relating to:

- White ants
- Vermin
- Birds

Chapter 5 Defect Categories and Responses

This chapter details the defect categories and responses for building related defects. The methodology for determining the defect category for building defects is covered in Chapter 6.

C5-1 Defect Categories

Defect categories establish standard and consistent response times to various levels of defects found during the examination of buildings.

All defects are categorised in one of five standard defect categories as shown in Table 1.

Defect Category	Defect Category Description
A	Building Defect – Category A
B	Building Defect – Category B
C	Building Defect – Category C
D	Building Defect – Category D
E	Building Defect – Category E

Table 1 - Defect Categories

C5-2 Defect Category Responses

Required staff responses for each defect category are listed in Table 2 below.

Defect Category	Facilities Officer Response	District Engineer Response
A	Implement appropriate controls until corrective action completed. Advise District Engineer of defect details and action taken within 24 hours.	Assess defect immediately on notification. Monitor progress of corrective action. Advise Area Manager of defect details and planned action if defect cannot be rectified within 48 hours of detection.
B	Implement appropriate controls if required. Advise District Engineer of defect details and action taken/proposed within 7 days.	Assess defect once notified. Monitor progress of corrective action. Advise Area Manager monthly of defect details and planned action if defect cannot be rectified within 60 days of detection.
C	Record in Facilities Defect recording system in SharePoint.	Monitor
D	Record in Facilities Defect recording system in SharePoint.	Monitor
E	Record in Facilities Defect recording system in SharePoint.	Monitor

Table 2 - Defect Category Responses

C5-3 Repair and Review Responses

Applicable repair or review responses for Building Defect Categories are listed in Table 3 below.

Defect Category	Response

A	Repair within 24 hours
B	Repair within 30 days
C	Repair within 18 months
D	Repair within 36 months
E	Review within 18 months

Table 3 - Repair or Monitor Priority

Chapter 6 Defect Assessment Process

C6-1 General

The condition of buildings on the CRN network is managed by examination (inspection, recording and assessment), audit and repair processes. The objective of these processes is to ensure that the buildings are maintained in an acceptable and safe condition, or that controls are put in place to protect unsafe buildings until suitable remedial actions are implemented.

Examination of buildings is a necessary part of effective and preventive maintenance. It is an important indicator of condition and is the basis for maintenance and replacement programs. The types and frequencies of these examinations are laid down in CRN CS 101.

C6-2 Background to Defect Prioritisation

Building defect priorities are to be determined using a risk-based approach. The methodology involves using the appropriate consequence types of the UGLRL Enterprise 6 x 6 risk matrix.

From the selected consequence type, a determination is to be made on the consequence outcome and the likelihood of that outcome to determine a risk rating (between 2 and 12). The risk rating is then converted into a building defect priority.

The process is explained further in Section C6.3 below.

C6-3 Defect Prioritisation Process

Defect priority is obtained by converting the defect risk ranking determined from using the CRN-APP-SQE-001-12 UGLRL CRN Enterprise Risk and Opportunity Matrix L(2) to E(12) into a building defect priority A to E using Table 4 below.

NOTE: Of the seven consequence types defined within the UGLRL Enterprise Risk and Opportunity Matrix, only four of these consequence types are applicable to Facilities defects, namely:

- Financial
- Property/Rail Assets
- Stakeholder/Regulatory Reaction
- Safety, Health

The risk assessment is to be undertaken using the consequence outcomes relevant to the most applicable consequence type for the defect being assessed.

Defect Priority	Response	Risk Categories
A	Repair within 24 hours	H10, E11, E12
B	Repair within 30 days	H8, H9
C	Repair within 18 months	M6, M7
D	Repair within 36 months	L4, M5
E	Review within 18 months	L2, L3

Table 4 - Risk Category/Building Defect priority

Chapter 7 Defect Review and REVTAR Process

C7-1 General

The REVTAR process has been implemented where, due to circumstances outside the maintainer's control, it has not been possible to remove the defect within the required timeframe. In order to maintain control over the level of defects, the following requirements MUST be followed:

C7-2 Unrepaired Defects

Where a defect is not removed prior to the inspect / repair date assigned in C5-2, a Reviewed Target date (REVTAR) is required. The defect must be reassessed prior to the assigned target repair date, and the inspect / repair date updated.

C7-2.1 Assessing and Recording Unrepaired Defects

The assessment of existing unrepaired defects is to follow the same process as for new defects. The defect is risk assessed in accordance with Section C6-3 of this manual to determine the defect's revised repair priority.

C7-2.1.1 No Change to Repair Priority

Where the reassessment results in the defect maintaining the current repair priority , the repair date may be extended by an amount equivalent to that required for that repair priority (e.g. A repair category C defect that has been reassessed and remains as repair category C, may be extended by a maximum of 18 months).

An extension of the repair timeframe by more than the default repair timeframe applicable to the repair priority is NOT permitted.

When updating the defect in the Defect Management System, the following details need to be amended/added:

- For A, B, C & D defects, update the Inspect/Repair By date to the new (extended) date. NOTE: The repair time extension is applied from the date the reassessment was undertaken
- For E defects, update the Review By date to the new (extended) date. **NOTE**: The review time extension is applied from the date the reassessment was undertaken
- Add a Log entry and record the details relating to the application of the revised target date (date reassessed, who reassessed, results of reassessment and the EA certifier)

C7-2.1.2 Higher Repair Priority

Where the reassessment results in the defect moving to a higher repair priority, e.g. a C defect is reassessed as a B repair priority, the following details will need to be updated/added in the Defect Management System:

- For A, B, C & D defects, change the defect Rail Priority AND update the Inspect/Repair By date to the new date based on the new priority. NOTE: The new repair date is calculated from the date the reassessment was undertaken.
- For E defects, change the defect Rail Priority, delete the Review By date and add the new Repair By date based on the new priority. NOTE: The new repair date is calculated from the date the reassessment was undertaken.
- Add a Log entry and record the details relating to the application of the revised target date (date reassessed, who reassessed, results of reassessment and the EA certifier)

C7-2.1.3 Lower Repair Priority

The repair priority for a defect may only be reduced when corrective works have been undertaken which reduce the level of risk. Once the reassessment has been completed, the following details will need to be updated/added in the Defect Management System:

- For A, B, C & D defects, change the defect Rail Priority AND update the Inspect/Repair By date to the new date based on the new priority. **NOTE**: The new repair date is calculated from the date the reassessment was undertaken. If the updated priority is E, then delete the Repair By date and add the new Review By date calculated from the date the reassessment was undertaken.
- Add a Log entry and record the details relating to the application of the revised target date (date reassessed, who reassessed, results of reassessment and the EA certifier). **NOTE**: details of the repair works undertaken that have reduced the risk MUST be recorded.

C7-2.1.4 Status of REVTAR Defects

NOTE: In all cases listed above, when a defect is REVTAR'd for the first time, the status of the defect MUST be changed from NEW to REVTAR.

C7-2.2 Approving REVTAR

The following table lists the minimum Engineering Authority level and number of times a defect can be REVTAR'd.

Defect Category	REVTAR EA Approval Level	Number of REVTAR reviews before escalation
A	Level 3	2
B	Level 3	3
C	Level 2	1(1)
D	Level 2	2(1)
E	Level 2	2(1)

Note 1 Where REVTAR reviews have reached the specified number, escalate to Engineering Authority Level 3 for one additional review

Table 5 - REVTAR Engineering Authority Approval Level

When the above number of REVTARs has been reached, endorsement of the defect management methodology must be provided to the Area Manager for approval.

Appendix A Defect Management Process

Flowchart of the Defect Management process.