

The University of Newcastle
Infrastructure and Facilities Services
Project Briefing Document
Emergency Escape Lighting and Illuminated Exit Signage

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Version 1.3

UON-ESS-104

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1. Scope

This Specification covers the general requirements applicable to the design, manufacture, performance and delivery of Emergency Escape Lighting and Illuminated Exit Signage.

It is not the intention to specify details of design and construction except where necessary to establish performance requirements, nor is it the intention to set forth those performance requirements which are adequately specified by the applicable Standards.

This specification shall be read in conjunction with Standard Specification UON-ESS-101 Electrical Design Criteria.

2. Standards, Specifications and Statutory Obligations

All aspects of design, manufacture, testing, supply, plant, equipment, accessories, materials, construction, erection, installation, operation and performance shall comply with this Specification and the current issue of the relevant Australian Standards, the relevant International Standards, the UON Standard Specifications and Preferred Equipment List, as well as all Statutory Acts, Codes, Regulations and Requirements of the relevant Authorities having jurisdiction over them unless specified otherwise within this Specification.

These shall include but not be limited to:

Australian/International Standards

AS 3000	Wiring Rules
AS 3008	Electrical installations - Selection of cables
AS 2293.1	Emergency escape lighting and exit signs for buildings - System design, installation and operation
AS 2293.2	Emergency evacuation lighting for buildings - Inspection and maintenance
AS 2293.3	Emergency escape lighting and exit signs for buildings - Emergency escape luminaires and exit signs
AS 3017	Electrical installations – Testing and inspection guidelines
AS 3137	Approval and test specification - Luminaires (lighting fittings)
AS 3665	Simple definitions of lighting terms and quantities
AS 3827	Lighting system performance - Accuracies and tolerances
AS 3011	Electrical installations—Secondary batteries installed in buildings
AS 3011.1	Part 1: Vented cells
AS 3011.2	Part 2: Sealed cells
AS 4044	Battery chargers for stationary batteries

University of Newcastle Standards

UON-ESS-101 General Electrical Specification.
UON preferred Equipment List.

Authorities and Statutory Acts, Codes, Regulations and Requirements

BCA
Worksafe NSW
NSW Electrical Licencing & Regulation
NSW Service and Installation rules.

Where the stipulations of this Specification, the data sheets and the drawings do not comply with the minimum requirements of the Australian Standards and Statutory Regulations, the latter shall prevail.

Where the stipulations of this Specification, the data sheets and the drawings are more exacting than the minimum requirements of the Australian Standards and Statutory Regulations, the former shall prevail in the following order:

- a) Data sheets and detail drawings
- b) Specification and standard drawings.

3. Fittings

3.1. General

All Emergency Escape Lighting and Illuminated Exit Signage shall be LED type fitting manufacture to relevant Australian Standards. All fitting shall be as the UON preferred equipment list unless otherwise approved by the UON.

Emergency Escape Lighting and Illuminated Exit Signage fall under two general categories at UON, Monitored and Non Monitored. Monitored systems can be monitored, controlled and tested remotely over a wireless network reducing the need to manually test the equipment in the field. Non Monitored systems require a Technician to physically activate a test switch to complete a system test.

Emergency Escape lighting should generally be ceiling mounted, recessed “Spitfire” or “Satellite” type fittings with all control equipment or power supplies concealed within ceiling space. In areas where the ceiling height would make installation and maintenance difficult, or larger open areas with a lack of infrastructure for mounting recessed type fittings, surface mounted floodlight type fittings may be used. Emergency lighting integral to standard area light fittings can be used in a retrofit installation if required to match surrounding fittings.

Illuminated Exit Signage shall be maintained, internally illuminated and self-contained type fittings.

All Emergency Lighting and Illuminated Exit signage shall display the fitting ID once installed. Fitting ID numbers should be requested from your UON representative.

In areas that are exclusively lit by HID lighting, a delay timer shall be incorporated into the circuit to ensure the Emergency Escape lighting will provide light while waiting for the HID lamps to restrike. The delay time should be set for a minimum of 10 Minutes. As an alternative, non-HID lamps with no restrike delay may be installed to provide light during the restart delay. The level of light produced by the non- delay lighting shall be equivalent to the Australian Standard Light level for Emergency Escape lighting, 0.2Lux.

3.2. Monitored Systems

Some areas within the UON have restricted access due to sensitive experiments, information or Equipment. Other controlled areas on site are dangerous for untrained personnel. These areas require Monitored Emergency Escape Lighting and Illuminated Exit Signage to allow testing to be completed remotely rather than entering these sensitive or controlled areas to complete manual testing.

Monitored Systems connect to an existing site wide wireless network and allow the testing to be completed from any PC on the UON enterprise network. Monitored Emergency Escape Lighting

and Illuminated Exit Signage is required in areas shown on the map in Appendix B and listed in Appendix C.

If the installation of the Emergency Escape Lighting and Illuminated Exit Signage are in any of the areas shown in Appendix B or listed in Appendix C, a monitored fitting shall be used. Monitored fittings shall also be installed in all Electrical Switchrooms.

The Monitored System used by the UON is a Nexus system. Monitored fittings must be logically configured before they can be remotely accessed. Although monitored fittings can be installed by any electrical contractor, the configuration of these fittings shall be completed by the fitting supplier in consultation with the UON. To enable the configuration of these fitting specific information shall be collected from the fitting when completing the installation. Appendix A contains the document to be completed upon the installation of each monitored fitting. Once completed this document is to be given to the Project Manager or UON Representative.

4. Installation

Emergency Escape Lighting and Illuminated Exit Signage shall be installed in such a way that it is readily accessible for maintenance purposes. The fitting shall be accessible from permanently installed access infrastructure such as gantries or walkway or, in a position that can be accessed by a standard 1800mm step ladder or 2400mm platform ladder set up on standard level flooring or ground.

All Emergency Escape Lighting and Illuminated Exit Signage fitting shall be install on a designated circuit. There shall be no means of isolating the Emergency circuit without the use of a Key. This can be achieved by the use of a key switch or placing the Isolation/Test Facility behind a door or within an enclosure with a restricted, key access.

All fitting shall include an Identification number that is unique to the building, the first digit of this number shall indicate the floor where the fitting is located. The ID number should be attached to the fitting, black numbers with a minimum height of 6mm on a white background and clearly visible when standing beneath the fitting.

Any vertically installed fastener shall be directly attached to the building support structure and shall not use an additional interference fit device such as a wall plug, dowel or Gyproc anchor to complete the installation. In the event that no suitable structure is available in the required location and additional support for the fitting cannot be fabricated, a mechanically attached device such as a toggle bolt may be used. Fasteners installed horizontally may use an additional interference fit device providing the fastener and attachment device are capable of supporting the sheering load of the fitting.

All Emergency Escape Lighting and Illuminated Exit Signage circuits shall be fitted with a manual test switch regardless of any automated Emergency Lighting Monitoring/Control system (Such as Nexus) that may be used on that circuit.

5. Location

5.1. Emergency Escape Lighting

The location of Emergency Escape Lighting depends upon the class of the building, the size of the building and the directive by the BCA including Section E4.2 to Section E4.4. The BCA has 10 major classes of building and several subclasses. Each of these Building Classes have different requirements regarding Emergency Escape Lighting. When designing Emergency

Escape Lighting the use of the building and associated Building Class shall be establish prior to design. Building Class information for all buildings at the UON is kept on the UON ARCHIBUS system. The Project Manager or UON Contact should be contacted prior to design to provide the building classification to allow compliant Exit and Emergency Escape path lighting.

All toilets shall have Emergency lighting.

5.2. Illuminated Exit Signage

Illuminated Exit Signage shall be installed as per BCA requirements including Sections E4.5 to Section E4.8. When designing Illuminated Exit Signage the use of the building and associated building class shall establish prior to design. Building Class information for all buildings at the UON is kept on the UON ARCHIBUS system, your Project Manager or UON Contact provide this information upon request.

6. Drawings and Data

When installing new or modifying the location of existing Emergency Escape Lighting or Illuminated Exit Signage, Electrical Drawings will be updated to reflect the changes. Where the majority of fittings in a given area are to be relocated, a new drawing shall be produced.

When installing monitored fittings, a "Nexus Fitting Commissioning Data" sheet as per Appendix A shall be completed and submitted to the UON Project Manager or Representative.

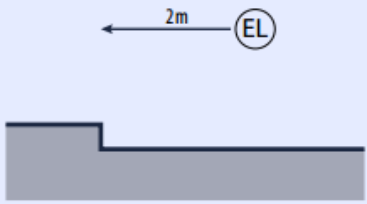
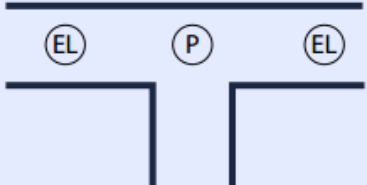
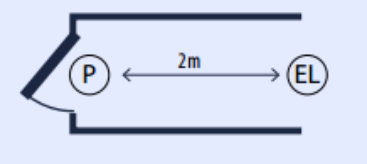
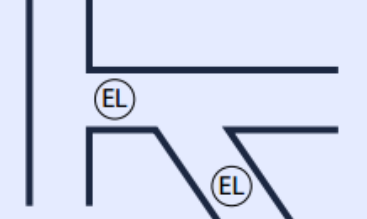
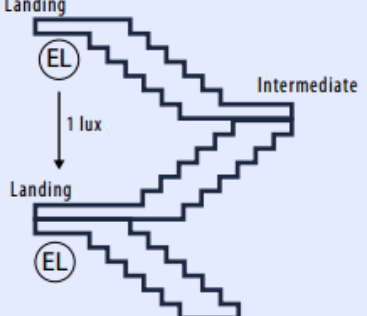
7. Defect Liability Period

The minimum Defect Liability Period for the project shall be twelve months.

8. Miscellaneous

Pay all fees to authorities in connection with applications, inspections and approvals.

Once the works is complete the area is to be cleaned to the point that there is no sign of the work having taken place.

<p>An emergency luminaire is required within 2m of any change of floor level (located on the low side)</p>	
<p>Emergency luminaires located within 2m of intersecting corridors having an intersection of centre lines. Further emergency luminaires may be required to provide appropriate levels of escape lighting.</p>	
<p>An emergency luminaire is recommended within 2m approaching the exit.</p>	
<p>In relation to intersecting / change of direction in corridors one emergency luminaire may be used as long as it is not greater than half of the maximum spacing it provides in its approved C0 / C90 classification.</p>	
<p>Stairwell Lighting</p> <p>Enclosed stairwells shall receive no less than 1 lux in emergency. This includes each flight of stairs including associated landings. Note: An intermediate landing does not need to receive direct light provided the landing is not more than 2m in length.</p>	

9. Appendix

9.1. Appendix-A



Nexus Fitting Commissioning Data

To Be completed by Installer

Name of Contractor:	<input type="text"/>
Name of Technician:	<input type="text"/>
Date Installed:	<input type="text"/>
Type of fitting replaced:	<input type="text"/>
Campus:	<input type="text"/>
Building:	<input type="text"/>
Floor:	<input type="text"/>
Area Description:	<input type="text"/>
Room:	<input type="text"/>
Distribution Board:	<input type="text"/>
Circuit Breaker:	<input type="text"/>
UoN Drawing:	<input type="text"/>
Part Number:	<input type="text"/>
Unit Type:	<input type="text"/>
Mac address:	<input type="text"/>

To be completed by Commissioner.

SPU_ID:	<input type="text"/>
Group ID:	<input type="text"/>
IP address:	<input type="text"/>
Grid Reference:	<input type="text"/>
Associated Router:	<input type="text"/>
Commissioning completed by:	<input type="text"/>
Date commissioned:	<input type="text"/>

Wednesday, 9 September 2015

9.2. Appendix-B

Below is a list of UON building that require Nexus fitting to be fitted for all Emergency Escape Lighting and Illuminated Exit Signage

Building	Campus	Building Code
Animal House - Central	Callaghan	AN
Architecture and Built Environment Workshop	Callaghan	ABEW
Basden Theatre	Callaghan	BA
Biological Sciences	Callaghan	B
Birabahn	Callaghan	SAS
BSC Building	Callaghan	BSC
Ceramics	Callaghan	CE
Chemistry Building	Callaghan	C
Child Care Centre - Kintaiba	Callaghan	KIN
Child Care Centre - Koowinda	Callaghan	KOO
Child Care Centre - Wonnyaba Childcare	Callaghan	WOM
Drama Building	Callaghan	DB
Drama Studios	Callaghan	DS
East Campus Switchroom	Callaghan	CALSUB1801
Edwards Hall - Administration Services	Callaghan	EHA
Edwards Hall - Burnett house	Callaghan	EHB
Edwards Hall - Burnett House North	Callaghan	EHBN
Edwards Hall - Callaghan House	Callaghan	EH
Edwards Hall - Convocation	Callaghan	EH
Edwards Hall - Cuttler House	Callaghan	EH
Edwards Hall - Cuttler House North	Callaghan	EH
Edwards Hall - Forsythe	Callaghan	EH
Edwards Hall - Friends	Callaghan	EH
Edwards Hall - Tunra	Callaghan	EH
Engineering - Electrical and Computing (E)	Callaghan	EE

Building	Campus	Building Code
Engineering - Mechanical (C)	Callaghan	EC
Engineering Administration	Callaghan	EA
Engineering Classrooms (F)	Callaghan	EF
Evatt House Admin Block	Callaghan	EV
Evatt House Block A	Callaghan	EV
Evatt House Block B	Callaghan	EV
Evatt House Block C	Callaghan	EV
Evatt House Block D	Callaghan	EV
Evatt House Block E	Callaghan	EV
Evatt House Block F	Callaghan	EV
Evatt House Block G	Callaghan	EV
Evatt House Block H	Callaghan	EV
Evatt House Block J	Callaghan	EV
Evatt House Block K	Callaghan	EV
Evatt House Computer Tutorial Block	Callaghan	EV
Gallery - School of Fine Art (Graduate Studios)	Callaghan	GS
Industry Development Centre	Callaghan	IDC
International House Block 1	Callaghan	IA
International House Block 10	Callaghan	IM
International House Block 11	Callaghan	IN
International House Block 2	Callaghan	IB
International House Block 3	Callaghan	IC
International House Block 4	Callaghan	ID
International House Block 5	Callaghan	IE
International House Block 6	Callaghan	II
International House Block 7	Callaghan	IJ
International House Block 8	Callaghan	IK
International House Block 9	Callaghan	IJ
International House Common Room	Callaghan	ICR

Building	Campus	Building Code
Life Sciences	Callaghan	LS
Medical Science West	Callaghan	MSW
Medical Sciences Building	Callaghan	MS
Neir Block A	Callaghan	NIER
Neir Block B	Callaghan	NIER
Neir Block C	Callaghan	NIER
Neir Block D	Callaghan	NIER
Neir Block E	Callaghan	NIER
Neir Block F	Callaghan	NIER
Neir Block G	Callaghan	NIER
Neir Block H	Callaghan	NIER
Neir Block I	Callaghan	NIER
Neir Block K	Callaghan	NIER
Neir Block M	Callaghan	NIER
Neir Block N	Callaghan	NIER
Neir Block P (Sub19)	Callaghan	NIER
Neir Block S	Callaghan	NIER
NUSA Building	Callaghan	AE
Physics Building	Callaghan	P
Science Building	Callaghan	SB
Science Theatre	Callaghan	STH
Sculpture Workshops	Callaghan	SW
Services Building (Facilities Management Services)	Callaghan	SER
Student Services Centre	Callaghan	SC
All High Voltage Substations	Callaghan	Calsub 0-22
The Teaching Centre	Callaghan	TC
Tunra Annexe	Callaghan	TA
University Union - Hunter (Bar on the Hill)	Callaghan	UH
VAMS - Visual Arts & Media	Callaghan	VA

Building	Campus	Building Code
BUSINESS OFFICES	Ourimbah	BO
CHILDCARE CENTRE	Ourimbah	CC
CLASSROOM SOUTH	Ourimbah	CS
COMMUNITY COLLEGE ADMINISTRATION	Ourimbah	CCA
COTTAGE (THE)	Ourimbah	CO
EDUCATION AND NURSING BUILDING	Ourimbah	EN
GLEN (THE) NSW SPORTS & REC	Ourimbah	GL
MULTIPURPOSE TEACHING	Ourimbah	MP
SCIENCE LABORATORIES 1	Ourimbah	SL1
SCIENCE LABORATORIES 2	Ourimbah	SL2
STUDENT ACCOMADATION	Ourimbah	EH
STUDENT UNION OFFICES (OURIMBAH HUB)	Ourimbah	SUO
NEWBOLDS ADMINISTRATION	Newcastle City	NEWA
NEWBOLDS LABORATORY	Newcastle City	NEWL
NORTHUMBERLAND HOUSE	Newcastle City	NH
NeW Space	Newcastle City	X
All Buildings	Taree	
All Buildings	Gosford	
All Buildings	Port Macquarie	