AUDIO VISUAL

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

DESIGN STANDARDS

Document Register

Issue	Date	Description	Initials
Revision 1	18/12/2021	Project Use	P Saal (Aurecon)

Contents

Disclaimer

Refer to the Disclaimer within the UQ Design Standards.

Reference Documents

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

The designer is to coordinate between disciplines and standards.

01 Introduction

1.1 Introduction

1.1.1 Context

The University of Queensland (UQ) positively influences society by engaging in the pursuit of excellence through the creation, preservation, transfer and application of knowledge. UQ helps shape the future by bringing together and developing leaders in their fields to inspire the next generation and to advance ideas that benefit the world. UQ strives for the personal and professional success of its students, staff and alumni.

UQ operates over 1,670 hectares of real estate across three major campuses at St Lucia, Gatton and Herston; and other sites including research stations, centres of excellence, clinical units and satellite sites such as UQ Brisbane City and Customs House.

UQ's Property and Facilities (P&F) Division manages projects and initiatives across UQ's real estate portfolio that enhance and enrich the experience of UQ sites for students, staff and visitors.

1.1.2 Purpose

This Design Standard forms part of the University of Queensland's suite of Engineering Design Standards.

Unlike other disciplines covered by the Engineering Design Standards, UQ directly undertakes all design for audio visual services inhouse.

At no time should any external designer, consultant, integrator, contractor or other professional attempt to prepare designs for audio visual systems for UQ projects. Such designs will be rejected by the University.

The purpose of this Design Standard is therefore to:

a. Define the University of Queensland's specific requirements for the design of audio visual systems for context only

b. Define project roles and responsibilities

c. Define the method of engagement with the University's Information Technology Services (ITS) Division

d. Inform interface requirements

The purpose of this Design Standard is not to detract from designers' obligations to undertake stakeholder engagement to develop design briefs; follow good design practice; and produce designs for services in connection with audio visual services that address project specific considerations.

The purpose of this Design Standard is not to detract from designers' obligations to seek endorsement of their design from UQ.

The purpose of this Design Standard is not to repeat the requirements of relevant legislation, regulations, codes and standards. Designers shall produce designs in accordance with the requirements of relevant references irrespective of the requirements of this Design Standard.

Where certain requirements are not addressed by this Design Standard, relevant industry-based design and construction standards

should be adopted in consultation and agreement with UQ.

This document must be read and implemented in conjunction with project-specific documentation.

This document must be read and implemented in conjunction with project-specific documentation.

1.1.3 Departures

Departures from these guidelines shall be requested by designers in writing to the contact person(s) nominated at the start of this document. Departures must be approved in writing prior to being incorporated into project designs.

1.1.4 Contractors and consultants

Contractors shall read and comply with the requirements outlined in on the UQ Properties and Facilities Building Contractors and Consultants website, as follows:

https://coo.uq.edu.au/operational-areas/property-and-facilities/pf-staff-and-contractors/building-contractors-and-consultants

1.2 Objectives

The AV Design Standard sets out the University's requirements for the design, installation and testing for all Audio Visual services infrastructure across the University Campuses. The Design Standard shall assist designers, contractors and other professionals involved in the preparation of designs commissioned by UQ to understand the University context.

02 Abbreviations & definitions

For the purpose of interpreting this Design Standard, the abbreviations listed in Table 2–1 apply.

Table 2–1 Abbreviations

Abbreviation	Definition
AS	Australian Standard
AS/NZS	Australian Standard / New Zealand Standard
AV	Audio Visual
AVoIP	Audio Visual over Internet Protocol
BCA	Building Code of Australia, incorporating National Construction Code Series Volume 1: Building Code of Australia Class 2 to 9 Buildings; and Volume 2: Building Code of Australia Class 1 and Class 10 Buildings
FDCIE	Fire Detection Control and Indicating Equipment
ITS	Information Technology Services (Division)
NCC	National Construction Code
P&F	Property and Facilities (Division)
UPS	Uninterruptible Power Supply
UQ	The University of Queensland
WHS	Work Health and Safety

For the purpose of interpreting this Design Standard, the definitions listed in Table 2–2 apply.

Table 2–2 Definitions

Term	Definition
Access for Maintenance	Access required for safe maintenance, inspection, measurement, operation, adjustment, repair, replacement and other maintenance related tasks.
Accredited Testing Laboratory	➢ An organisation accredited by the National Association of Testing Authorities (NATA) to test in the relevant field; or ➢ An organisation outside of Australia accredited to undertake relevant tests by an authority recognised by NATA through a mutual recognition agreement; or ➢ An organisation recognised as an Accredited Testing Laboratory under legislation at the time that the test was undertaken

Term	Definition
Contract Administrator	The University of Queensland's authorised representative for contractual matters, which may be a member of University staff, or a third-party representative appointed by the University.
Critical Electrical Supply	An electrical supply which is backed up by an alternative electrical supply from an Uninterruptible Power Supply. A Critical Electrical Supply may also be an Essential Electrical Supply.
Critical Service	A service requiring a Critical Electrical Supply. A Critical Service may also be an Essential Service. NB: This term has no bearing on the distinction between a General Service and a Safety Service.
Design Life	The period during which a building component is expected by its designers to operate within its specified parameters, with only anticipated maintenance being carried out, and without the need for major repair or replacement.
Designer	Any person commissioned directly or indirectly by the University of Queensland to undertake design activities. Designers are the intended audience for this document.
Economic Life	The period during which a building component is the lowest cost alternative for satisfying its function, with only anticipated maintenance being carried out, and without the need for major repair or replacement.
Essential Electrical Supply	An electrical supply which is backed up by an alternative electrical supply from an electricity generator or secondary low voltage distribution location (eg secondary main switchboard).
Essential Service	A service requiring an Essential Electrical Supply. NB: This term has no bearing on the distinction between a General Service and a Safety Service.
Fire Safety and Rescue Authority	An operational entity in government, established for the purposes of providing fire, rescue and emergency services.
Floor Area	Measurement as defined in Volume 1 of the National Construction Code.
Furnish	See 'Supply'.
General Service	A service which is not defined as a Safety Service.
High-level Interface	Transfer of complex information in a digital format using an open system protocol.
Hold Point	A point in time during the design period where design activities are paused, primarily allowing the Contract Administrator to conduct reviews with the client and other stakeholders; to provide feedback on the design; and to provide a direction for the design to proceed.
Ingress Protection	A rating describing the degree of protection provided by enclosures as defined in AS 60529.
Local (Government) Authority	An administrative entity in local government, established for the purposes of governing an area of the State or Territory.
Low-level Interface	Transfer of binary-type information via terminals and voltage-free contacts.
Main Contractor	See 'Principal Contractor'.
Managing Contractor	See 'Principal Contractor'.
Manufacturer's Recommendations	Recommendations, instructions, specifications and similar expressions provided in written or other form by an equipment manufacturer and/or supplier, relating to the suitability, use, installation, storage, maintenance and/or handling of a product.
Non-essential Electrical Supply	An electrical supply which is not backed up by an alternative electrical supply.

Term	Definition
Non-essential Service	A service requiring a Non-essential Electrical Supply.
Principal Contractor	The primary construction contractor who maintains overall control of a construction site, and who is usually required to engage specialist trade contractors to complete the construction works. For the purposes of this Design Standard, the term 'Principal Contractor' has the same meaning as 'Main Contractor' or 'Managing Contractor'.
Professional Engineer	A Registered Professional Engineer of Queensland (RPEQ).
Proprietary	Something that is used, produced, provided, installed, commissioned or marketed under exclusive legal right of the inventor, designer, owner, manufacturer or supplier.
Prototype	A full-sized or scaled mock-up of components or systems to demonstrate or test construction methods, junctions and finishes, used to define or prove a minimum level of quality.
Referenced Documents	Documents referenced by this Design Standard in Section 03.
Safety Report	A report satisfying the requirements of Section 295 of the Work Health and Safety Regulation (Queensland).
Safety Service	A service as defined in Section 7 of AS/NZS 3000.
Sample	A physical example of a component or system used to define or prove a minimum level of quality.
Statutory Authority	A public sector entity established under legislation, that is, a specific law of the Commonwealth, State, Territory or Local Government.
Supply	'Supply' shall mean to supply only.
Supply and Install	'Supply and Install' shall mean to supply, install, set to work, test, commission and warrant.
Tenant Organisation	An organisation which provides support services to student and staff, which is not involved in teaching or research activities. Data networks of Tenant Organisations shall be connected to UQ's data network by any means.
Trade Contractor	A secondary building contractor, usually engaged by the Principal Contractor to undertake a specialist portion of the construction works.

03 Reference documents

3.1 UQ reference documents

This Design Standard shall be read in conjunction with relevant UQ reference documents, including but not limited to those listed in Table 3–1. The designer shall the source the version of the reference document applicable to their design.

Table 3–1 UQ reference documents

Title / description
UQ Design Guidelines
Campuses on Country Design Framework
Sustainability Strategy
Space Planning Documents
Architecture Design Standard
FF&E Standard Documents
Landscape Design Standard
Structural Design Standard
Civil Design Standard
Hydraulic and Wet Fire Design Standard
Mechanical Design Standard
Electrical Design Standard
Dry Fire Design Standard
Fire Engineering Design Standard
Veridical Transportation Design Standard
Acoustic Design Standard
Security Standards Document
Information and Communications Technology Design Standards Documents
Wayfinding and Signage Design Standard
Teaching Standards Documents
Laboratory Design Standards Documents
Environmental Design Standard

Title / description
Climate Risk Assessment Design Standard
Collaborative Learning Space Documents
AV Design Standard
Electrical Metering Standards Documents
Working at Heights Standards Documents
Waste Infrastructure Standards Documents

3.2 Legislation, regulations, codes and standards

This design standard shall be read in conjunction with relevant legislation, regulations, codes and standards, including but not limited those listed in Table 3–2. The designer shall source the version of the reference document applicable to their design.

Table 3–2 Legislation, regulations, codes and standards

Reference	Title / description
Building Act (Queensland) and associated regulations	*An Act to regulate building development approvals, building work, building classification, building certifiers and pool safety inspectors, and to provide for particular matters about swimming pool safety and sustainable buildings, and for other purposes*
Work Health and Safety Act (Queensland) and associated regulations and explanatory notes	*An Act to provide comprehensively for work health and safety, to provide for a new definition of asbestos in particular legislation and for a work health and safety levy, to amend other legislation as a consequence, and to amend the Workers' Compensation and Rehabilitation Act 2003 for particular purposes*
Professional Engineers Act (Queensland) and associated regulations and explanatory notes	*An Act to provide for the registration of professional engineers, and for other purposes*
National Construction Code	*Incorporating National Construction Code Series Volume 1: Building Code of Australia Class 2 to 9 Buildings; Volume 2: Building Code of Australia Class 1 and Class 10 Buildings; and Volume 3: Plumbing Code of Australia*
Fire Safety and Rescue Authority Requirements	*Incorporating technical standards, guidelines and requirements published by the Fire Safety and Rescue Authority, as applicable to the project*
Local Authority Requirements	*Incorporating technical standards, guidelines and requirements published by the Local Authority, as applicable to the project*
Supply Authority Requirements	*Incorporating technical standards, guidelines and requirements published by the Supply Authority as applicable to the project*
-	Association of Educational Technology Managers Design Guidelines for Tertiary Teaching Spaces
AS/CA S008	Requirements for customer cabling products
AS/CA S009	Installation requirements for customer cabling (Wiring Rules)
AS 1428.1	Design for access and mobility Part 1: General requirements for access – New building work
AS 1428.2	Design for access and mobility Part: Enhanced and additional requirements – Buildings and facilities
AS/NZS 3000	Electrical installations (known as the Australian/New Zealand Wiring Rules)
AS/NZS 3820	Essential safety requirements for electrical equipment
AS/NZS 61000 (set)	Electromagnetic compatibility (EMC)

Reference	Title / description
ANSI/INFOCOMM 3M	Project Image System Contrast Ratio
ANSI/INFOCOMM 4	Audiovisual Systems Energy Management
AVIXA A102.01	Audio Coverage Uniformity in Listener Area
AVIXA F501.01	Cable Labeling for Audiovisual Systems
AVIXA V202.01	Display Image Size for 2D Content in Audiovisual Systems

04 Design life

Building components and systems shall meet the requirements for design life as listed in Table 4–1.

Table 4–1 Design life

Element	Minimum design life
Amplifiers and digital signal processors	10 years
AVoIP systems	10 years
Batteries	10 years
Control equipment surfaces	5 years
LED / LCD monitors	10 years
Projectors	7 years
Public address speakers	10 years
Structured cabling systems	20 years
Uninterruptible power supplies	10 years

05 Design criteria

5.1 Health and safety

5.1.1 General

5.1.1.1 Legislated obligations

Designers shall meet their obligations under the Work Health and Safety Act (Queensland) and Work Health and Safety Regulation (Queensland).

Particular attention is drawn to Section 22 of the Work Health and Safety Act (Queensland) – *Duty of persons conducting businesses or undertakings that design plant, substances or structures*.

Particular attention is drawn to Section 295 of the Work Health and Safety Regulation (Queensland) – *Designer must give safety report to person who commissions design*.

Designers requiring additional information regarding their legislated obligations should contact the relevant Local Authority.

5.1.1.2 Safety in design

Irrespective of their legislated obligations, designers shall:

a. Consult with UQ and its nominated stakeholders throughout the design process about how to ensure that risks to health and safety arising from the design during the construction work are eliminated, so far as is reasonably practicable; or if it is not reasonably practicable to eliminate the risks, minimised so far as is reasonably practicable. This consultation shall occur not less than once during each separate design phase

b. Provide a Safety Report to UQ not less than once during each separate design phase

c. Provide a Safety Report to the Principal Contractor, when appointed

5.1.2 Access

All plant and equipment shall be positioned to allow safe and ready access.

Any access provisions for operation and maintenance of audio visual equipment requiring a ladder, platform or similar shall be approved by the Contract Administrator.

Audio visual equipment shall not be located behind the open position of any door or access cover.

5.1.3 Safe working clearance

Safe working clearance shall be provided for all audio visual equipment as required by the reference documents listed in Table 3–2.

Required safe working clearances shall be documented on plan layout drawings.

5.2 Sustainability

5.2.1 Materials

5.2.1.1 Equipment and components

All audio visual equipment and components shall achieve RoHS compliance to minimise

the presence of hazardous materials, including:

a. Lead (Pb): < 1,000 ppm
b. Mercury (Hg): < 1,000 ppm
c. Cadmium (Cd): < 100 ppm
d. Hexavalent Chromium (Cr VI): < 1,000 ppm

5.3 Acoustics

Refer to the Acoustic Design Standard for acoustic requirements and treatments required in connection with audio visual services. This includes:

a. Noise levels and other acoustic criteria relating to the operation of audio visual services and equipment
b. Mounting details for wall outlets to preserve acoustic ratings
c. Methods of sealing
d. Selection of sealants

06 Technical requirements

6.1 General roles and responsibilities

The general roles and responsibilities on UQ projects, for UQ ITS, designers, the Principal Contractor, and the audio visual contractor, shall be as outlined in Table 6–1. The role of a designer may be undertaken by a consultant or contractor depending on the procurement methodology of the project.

The principles outlined in Table 6–1 shall generally take precedence over further detailed requirements in this design standard.

Table 6–1 General roles and responsibilities

Project phase	UQ ITS	Designers	Principal Contractor	Audio visual contractor
Design	➢ Briefing of all audio visual services ➢ Design of all audio visual services ➢ Documentation of all audio visual services ➢ Coordination of audio visual services with all other design disciplines (including architecture and interior design)	➢ Design of all audio visual interface requirements (refer Section 6.3 below) ➢ Documentation of all interface requirements (refer Section 6.3 below) ➢ Coordination of all design disciplines (including architecture and interior design) with the audio visual services	➢ Overall coordination role (in the case of a Managing Contractor engagement)	
Tender	➢ Tendering of the audio visual design ➢ Appointment of the audio	➢ Provision of interface discipline tender documentation	➢ Overall coordination role (in the case of a Managing	

Project phase	UQ ITS	Designers	Principal Contractor	Audio visual contractor
	visual contractor	for information of tenderers	Contractor engagement)	
Construction	➢ Supervision of construction activities relating to audio visual services	➢ Supervision of construction activities relating to interface requirements	➢ Delivery of interface requirements in accordance with the audio visual contractor's program or as otherwise agreed with UQ ➢ Coordination with audio visual contractor for site access ➢ Provision of secure, finished space for storage of audio visual equipment	➢ Delivery of audio visual services in accordance with Principal Contractor's construction program or as otherwise agreed with UQ ➢ Coordination with Principal Contractor for site access
Commissioning	➢ Supervision / witnessing of commissioning activities for audio visual services ➢ Final acceptance of audio visual services	➢ Supervision / witnessing of commissioning activities for interface requirements ➢ Final acceptance of interface requirements	➢ Management of all commissioning activities for interface requirements	➢ Management of all commissioning activities for audio visual services

6.2 Engagement with UQ ITS

As the designer for all audio visual services, UQ ITS shall form a core part of the project team. As such, designers for other disciplines shall engage with UQ ITS as they would for any other designer or consultant.

UQ ITS shall be engaged during the early stages of projects, as would occur for any other designer or consultant, to ensure audio visual requirements are captured in briefing and scoping discussions.

Contact UQ ITS at itsavprojects@its.uq.edu.au.

6.3 Design interface requirements

6.3.1 General

Design submissions shall be made as described in Table 7–2.

6.3.2 Electrical

6.3.2.1 Power

During the design phases of the project, UQ ITS, as the audio visual designer, shall provide power interface requirements to the electrical designer for incorporation into the electrical design.

The electrical designer shall incorporate these requirements into documentation for the electrical design.

The information provided by UQ ITS will include documentation informing:

a. The required type of power supplies (eg socket outlets, hardwired supplies, etc)

b. The required location of power supplies

c. The required rating of power supplies, including whether supplies are required to be single-phase or three-phase

d. The expected operating power of each piece of equipment, for incorporation into the project's maximum demand calculation if requested

6.3.2.2 Cable containment

During the design phases of the project, UQ ITS, as the audio visual designer, shall provide cable containment interface requirements to the electrical designer for incorporation into the electrical design.

The electrical designer shall incorporate these requirements into documentation for the electrical design.

The information provided by UQ ITS shall include documentation informing:

a. Requirements for cable containment and support for primary cable reticulation (eg cable tray)

b. Requirements for cable reticulation and support for secondary cable reticulation (eg conduit, catenary wire)

c. Details of dedicated audio visual cable containment that will be supplied by the audio visual trade, and that should therefore be omitted from electrical documentation

Audio visual cabling shall be segregated from low voltage cabling to meet the requirements of the reference documents listed in Table 3–2.

6.3.3 Lighting

6.3.3.1 Lighting layout

In spaces that provision for screens and/or projectors, luminaires shall be selected, positioned and/or controlled to ensure light does not fall on to screens during presentations.

6.3.3.2 Lighting control

Spaces requiring lighting scenes to be interfaced with audio visual equipment (eg projection, video conferencing, presentations, etc) shall be provided with one of the approved proprietary intelligent, networked and addressable lighting control systems listed in Table 7–1 or an equivalent approved by the Contract Administrator.

The audio visual and lighting control systems shall be interfaced by way of an ethernet gateway integration device.

In such areas:

a. The lighting control system shall not directly respond to commands received from user interfaces, including lighting control panels and lighting control sensors

b. Lighting controls shall primarily be available at the audio visual control panel, which shall call dimming levels associated with logical lighting areas and channels automatically dependent on which audio visual function is selected

Refer the UQ AV Lighting Brief which can be supplied upon request.

Refer also the corresponding interface requirements of UQ's Electrical Design Standard.

6.3.4 Communications

During the design phases of the project, UQ ITS, as the audio visual designer, shall provide communications interface requirements to the communications designer for incorporation into the communications design.

The communications designer shall incorporate these requirements into documentation for the communications design.

The information provided by UQ ITS will include documentation informing:

a. The required type of communications outlets (eg the required category of structured cabling)

b. The required location of communications outlets

c. Details of communications outlets and structured cabling dedicated to audio visual services (eg point-to-point outlets and structured cabling for transmission over HDBaseT protocol) that will be specified by the audio visual trade in the AV Cabling Schedule and to be provided by the communications trade.

Required audio visual racks will be dedicated to audio visual services, and shall be provided by the audio visual trade.

6.3.5 Blinds

6.3.5.1 Blind control

Spaces requiring blind control to be interfaced with audio visual equipment shall be provided with one of the approved, proprietary intelligent and networked blind control systems listed in Table 7–1 or an equivalent approved by the Contract Administrator.

In such areas:

a. The blind control system shall not directly respond to commands received from user interfaces, including blind control panels and blind control sensors

b. Blind controls shall primarily be available at the audio visual control panel, which shall call commands associated with logical blind areas and channels automatically dependent on which audio visual function is selected

6.3.6 Mechanical

During the design phases of the project, UQ ITS, as the audio visual designer, shall provide heat load interface requirements to the mechanical designer for incorporation into the mechanical design.

The mechanical designer shall incorporate these requirements into documentation for the mechanical design.

The information provided by UQ ITS will include documentation informing:

a. The location of audio visual equipment

b. The expected operating heat load of each piece of equipment, for incorporation into the project's air conditioning and ventilation strategy

6.3.7 Dry fire

During the design phases of the project, UQ ITS, as the audio visual designer, shall provide details of any amplified audio present on the project to the dry fire designer.

In response, the dry fire designer shall identify which, if any, amplified audio is to be automatically cut off in the event of the Fire Detection Control and Indicating Equipment (FDCIE) entering an alarm state, to facilitate safe evacuation.

6.4 Supply and installation interface requirements

6.4.1 General

Supply and installation interface requirements between the audio visual contractor, and the Principal Contractor (and subsequent trade contractors) are described in Table 6–2.

Construction submissions shall be made as described in Table 7–2.

Table 6–2 Supply and installation interface requirements

Audio visual contractor (as appointed by UQ ITS)	Principal Contractor (and subsequent trade contractors)
Power	
➢ Final connection of audio visual equipment to power supplies	➢ Supply and installation of all power supplies documented in electrical documentation
	➢ Testing and commissioning of all power supplies documented in electrical documentation
Cable containment	
➢ Supply and installation of audio visual cabling on to / into cable containment	➢ Supply and installation of all cable containment documented in the electrical and communications documentation, complete with suitable segregation to meet the requirements of the reference documents listed in Table 3–2 ➢ Provision of seismic supports for cable containment to meet the requirements of the reference documents listed in Table 3–2
Lighting	
	➢ Supply and installation of all luminaires documented in the electrical documentation
➢ Supply and installation of audio visual control system	➢ Supply and installation of intelligent, networked and addressable lighting control system as specified within contract documents, including relay controllers, power dimmers, signal dimmers, user interfaces, sensors, integration devices, network devices, electrical accessories, and software / applications ➢ Specifically includes supply and installation of ethernet gateway integration device on the lighting control network, and subsequent connection to UQ's Local Area Network
➢ Programming of logical lighting areas, channels and dimming levels into audio visual control system	➢ Provision of logical lighting control area and channel addresses to audio visual contractor for programming
➢ Testing and commissioning of the audio visual control system	➢ Testing and commissioning of the lighting control system
Communications	
➢ Supply and installation of communications outlets and structured cabling dedicated to audio visual services and nominated in audio visual documentation as being supplied and installed by the audio visual trade	➢ Supply and installation of all communications outlets and structured cabling documented in communications documentation
➢ Final connection of audio visual equipment to communications outlets using fly leads supplied by the Principal Contractor	➢ Supply only of communications fly leads for use with supplied communications outlets
	➢ Testing and commissioning of all communications outlets and structured cabling documented in communications documentation
Blinds	

Audio visual contractor (as appointed by UQ ITS)	Principal Contractor (and subsequent trade contractors)
	➢ Supply and installation of all blind hardware documented in the architectural / interior design / electrical documentation
➢ Supply and installation of audio visual control system	➢ Where the blind control system form parts of the lighting control system, supply and installation of relay controllers, power dimmers, signal dimmers, user interfaces, sensors, integration devices, network devices, electrical accessories, and software / applications ➢ Where the blind control system is standalone, supply and installation of controllers, control units and associated communications outlets and structured cabling, as documented in the architectural / interior design / electrical documentation
➢ Programming of logical blind areas and channels into audio visual control system	➢ Provision of logical blind control area and channel addresses to audio visual contractor for programming
➢ Testing and commissioning of the audio visual control system	➢ Testing and commissioning of the blind control system
Mechanical	
➢ Supply and installation of audio visual equipment as documented in audio visual documentation	➢ Supply and installation of mechanical ventilation and air conditioning equipment as documented in mechanical documentation
	➢ Testing and commissioning of mechanical ventilation and air conditioning equipment as documented in mechanical documentation
Dry fire	
➢ Final termination of fire-rated cabling to audio amplifiers	➢ Supply and installation of relay outputs at the FDCIE ➢ Supply and installation of fire-rated cabling to the location of audio amplifiers requiring an audio cut out signal, as documented in the dry fire documentation
➢ Joint responsibility for testing and commissioning of the audio cut out function	➢ Joint responsibility for testing and commissioning of the audio cut out function

07 Schedules

7.1 Nominated proprietary equipment specifications

Table 7–1 Nominated proprietary equipment specifications

Equipment type	Nominated specification	Design Standard reference
Lighting control – lighting control systems	➢ Philips / Dynalite	Section 6.3.3.2
Blind control – blind control system	➢ Philips / Dynalite, by way of relay controllers ➢ Somfy, by way of individual controllers per bank of blinds, and Category 6A structured cabling daisy chained between controllers back to the control unit located at the local main switchboard / distribution board, to be documented by architecture / interior design or eslectrical ➢ Refer also requirements of UQ's Communications Design Standard for all communications services	Section 6.3.5.1

7.2 Design submissions

The submissions listed in Table 7–2 may be undertaken by a consultant or contractor depending on the procurement methodology of the project.

The submission timing noted shall be adjusted as necessary to suit individual project programs.

Table 7–2 Design phase submissions

Submission	Description	Reviewer	Timing (to be aligned with PREM process)	Design Standard Reference
Coordination package	Work-in-progress copy of design documentation for the following disciplines: a. Architecture / interior design b. Electrical c. Communications d. Mechanical e. Dry fire f. Wet fire	UQ ITS	End of each design phase	6.3.1

7.3 Construction submissions

The submissions listed in Table 7–3 should be undertaken the project's Principal Contractor given the level of construction detailing required.

The submission timing noted shall be adjusted as necessary to suit individual project programs.

Table 7–3 Construction phase submissions

Submission	Description	Reviewer	Timing (to be aligned with PREM process)	Design Standard Reference
Coordination package	Summary of: a. Logical lighting control area and channel addresses b. Logical blind control area and channel addresses	UQ ITS	Prior to commissioning	6.4.1

Appendix A – Project specific design standard deviations

This appendix will be supplied in a completed form to describe deviations from these standards that are permitted for specific projects.

Project name and number

Completed by: *name*

Dated: *date*

Design Standard Reference	Approved deviation