DOCUMENT CONTROL

REVISION LOG

Current Issue

(September 2016)

Previous issues

<table>
<thead>
<tr>
<th>Version</th>
<th>Author(s)</th>
<th>Description</th>
<th>Date completed</th>
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<tbody>
<tr>
<td>1.0</td>
<td>Campus Management</td>
<td>UWA Design and Construction Standards: Fire Services and Fire Safety Engineering - G</td>
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REVISION MANAGEMENT

It is envisaged that revisions to this document will be undertaken at intervals of not more than two (2) years.

ENDORSEMENT BODY

To be determined.

OWNER

Director, Campus Management

AUTHOR(S)

The Standards have been developed by Campus Management with the assistance of UWA staff, external consultants, contractors and colleagues from other education institutions.

CONTACT PERSON

Associate Director Capital Works, Campus Management

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# TABLE OF CONTENTS

1 **Introduction** ......................................................................................................................................................... 3  
1.1 **Purpose** ............................................................................................................................................................... 3  
1.2 **Services** ............................................................................................................................................................... 3  
1.3 **Related Documents** ............................................................................................................................................... 4  
   1.3.1 University Documents ........................................................................................................................................ 4  
   1.3.2 Relevant Legislation ........................................................................................................................................ 4  
   1.3.3 Manufacturer Specifications and Data Sheets .................................................................................................. 4  
   1.3.4 Project Specific Documentation ....................................................................................................................... 4  
1.4 **Discrepancies** ....................................................................................................................................................... 5  
1.5 **Departures** ........................................................................................................................................................... 5  
1.6 **Professional Services** .......................................................................................................................................... 5  
1.7 **Structure of Document** ....................................................................................................................................... 5  
1.8 **Definitions** ........................................................................................................................................................... 6  

2 **General Requirements** ........................................................................................................................................... 7  
2.1 **Fire Safety Services Scope** ................................................................................................................................ 7  
2.2 **Standards and Codes** .......................................................................................................................................... 7  
2.3 **BCA Compliance** ............................................................................................................................................... 8  
2.4 **Baseline Data** ....................................................................................................................................................... 8  
2.5 **New or Replaced Equipment** ............................................................................................................................ 8  
2.6 **Fire Detection System** ....................................................................................................................................... 9  
   2.6.1 General .............................................................................................................................................................. 9  
   2.6.2 Occupant Warning System .......................................................................................................................... 10  
   2.6.3 System Interface ............................................................................................................................................. 10  
   2.6.4 Direct Brigade Alarm (DBA) ........................................................................................................................ 10  
2.7 **Fire Hydrant and Fire Hose Reel System** ........................................................................................................ 10  
   2.7.1 Hydrant ........................................................................................................................................................... 10  
   2.7.2 Fire Hose Reels .............................................................................................................................................. 11  
   2.7.3 Pipework and Valves ...................................................................................................................................... 11  
2.8 **Sprinkler and Drencher Systems** ..................................................................................................................... 12  
   2.8.1 General ........................................................................................................................................................... 12  
   2.8.2 Water Supplies ............................................................................................................................................. 12  
2.9 **Specialised Extinguishing System** .................................................................................................................. 12  
2.10 **Portable Fire Extinguishers** .......................................................................................................................... 13  
   2.10.1 General .......................................................................................................................................................... 13  
2.11 **Mechanical System** .......................................................................................................................................... 13  
   2.11.1 Smoke Exhaust System .................................................................................................................................. 13  
2.12 **Passive Fire Barriers** ........................................................................................................................................ 13  
   2.12.1 Fire and Smoke Barriers .................................................................................................................................. 13  
   2.12.2 Fire Dampers .................................................................................................................................................. 14  
   2.12.3 Smoke Dampers ........................................................................................................................................... 15  
   2.12.4 Fire Doors ...................................................................................................................................................... 15  
   2.12.5 Smoke Doors ................................................................................................................................................ 15  
   2.12.6 Fire and Smoke Curtains ............................................................................................................................ 15  

3 **Checklist for Project Team** .................................................................................................................................... 16  

**Abbreviations** ............................................................................................................................................................ 19  

**References** ................................................................................................................................................................. 20  

**Appendix A – FIP Information (As of August 2016)** ................................................................................................. 21
1 Introduction

1.1 PURPOSE

The UWA Design and Construction Standards (the Standards) outline UWA’s expectations for its built forms in order to achieve consistency in the quality of the design and construction of those built forms. They are aligned with the UWA’s Campus Plan 2010 planning principles and UWA’s requisites for aesthetic appeal, maintainability and environmental sustainability, while ensuring that there is sufficient scope for innovation and technological advancements to be explored within each project.

The Standards are intended for use by any parties who may be involved in the planning, design and construction of UWA facilities. This includes external consultants and contractors, UWA planners, designers and project managers as well as faculty and office staff who may be involved in the planning, design, maintenance or refurbishment of facilities. These Standards also provide facility managers, maintenance contractors and other service providers with an understanding of UWA services in order to assist in the maintenance and operation of facilities.

1.2 SERVICES

The UWA Design and Construction Standards for Fire Services and Fire Safety Engineering (this document) are a part of UWA Design and Construction Standards set of documents (the Standards). The Standards are divided into the following service documents for ease of use, but must be considered in its entirety, regardless of specific discipline or responsibilities:

A Building and Architecture
B Mechanical Services
C Electrical Services
D Communication Services
E Hydraulic Services
F Security Services
G Fire Services and Fire Safety Engineering (this document)
H Structural Works
I Civil Works
J Irrigation Services
K Sustainability
L Vertical Transport
1.3 RELATED DOCUMENTS

1.3.1 University Documents

The Standards are to be read in conjunction with the following relevant University documents:

- UWA General Preliminaries Document
- UWA Specification for As-Constructed Documentation
- Relevant UWA planning and policy documents such as the UWA Campus Plan, Commercial Masterplan, Landscape Vision and Integrated Infrastructure Strategy, University Policy on Alterations to University Buildings, etc.
- Relevant UWA operational and maintenance documents such as preferred vendors lists, room data sheets, operational and maintenance manuals, etc.
- Other documents as referenced within the UWA Design and Construction Standards.

1.3.2 Relevant Legislation

The planning, design and construction of each UWA facility must fully comply with current relevant legislation, including but not limited to:

- Relevant Australian or Australian / New Zealand Standards (AS/NZS),
- National Construction Code (NCC),
- Occupational Safety and Health (OSH) legislation,
- Disability Discrimination Act (DDA),
- Accessibility Aspiration Design Factors, and
- Local council and authority requirements.

1.3.3 Manufacturer Specifications and Data Sheets

All installation must be carried out in accordance with manufacturer specifications and data sheets to ensure product performance over its intended life and so as not to invalidate any warranties.

1.3.4 Project Specific Documentation

Requirements specific to a particular project, campus or other variable, will be covered by project specific documentation, such as client briefs, specifications and drawings. These Standards will supplement any such project specific documentation.

The Standards do not take precedence over any contract document, although they will typically be cross-referenced in such documentation.

Extracts from the Standards may be incorporated in specifications, however it must remain the consultant’s and contractor’s responsibility to fully investigate the needs of the University and produce designs and documents that are entirely ‘fit for purpose’ and which meet the ‘intent’ of the project brief.
1.4 DISCREPANCIES

The Standards outline the University’s generic requirements above and beyond the above mentioned legislation. Where the Standards outline a higher standard than within the relevant legislation, the Standards will take precedence.

If any discrepancies are found between any relevant legislation, the Standards and project specific documentation, these discrepancies should be highlighted in writing to the Associate Director Capital Works, Campus Management.

1.5 DEPARTURES

The intent of the Standards is to achieve consistency in the quality of the design and construction of the University’s built forms. However, consultants and contractors are expected to propose ‘best practice / state of the art’ construction techniques, and introduce technological changes that support pragmatic, innovative design.

In recognition of this, any departures from relevant legislation, or the Standards, if allowed, must be confirmed in writing by the Associate Director Capital Works, Campus Management.

Any departures made without such written confirmation shall be rectified at no cost to UWA.

1.6 PROFESSIONAL SERVICES

For all works, it is expected that suitably qualified and experienced professionals are engaged to interpret and apply these Standards to UWA projects. Works cannot be carried out by unqualified and unlicensed consultants or contractors.

1.7 STRUCTURE OF DOCUMENT

This document is structured into 4 parts:

Part 1 Introduction (this Section)
Part 2 General Requirements – outlines the general requirements or design philosophies adopted at UWA
Part 3 Checklist for project team (if applicable) – checklist of items for consideration at various stages of a project
Part 4 Specifications (if applicable) – materials specifications and/or preferred lists for materials, processes or equipment used by UWA.
1.8 Definitions

For the purpose of this document, the following definitions apply:

**Can:** Implies a capability of possibility and refers to the ability of the user of the document, or to a possibility that is available or might occur.

**May:** Indicates the existence of an option.

**Shall:** Indicates that a statement is mandatory.

**Should:** Indicates a recommendation.
2 General Requirements

2.1 FIRE SAFETY SERVICES SCOPE

Fire safety services covered in this document include:

- Detection and occupant warning system
- Fire hydrant
- Fire hose reel
- Fire sprinklers
- Fire extinguishers
- Fire doors
- Smoke doors
- Fire and smoke dampers
- Smoke seals
- Smoke exhaust
- Specialised fire-fighting system (e.g. gas suppression system)
- Fire services interface

2.2 STANDARDS AND CODES

All fire safety works shall comply with current Statutory Regulations, Australian Standards, Supply Authority regulations and any other Authority having jurisdiction over the works or portion of the Works. Examples of these are:

- AS/NZS 3000
- Telecommunications Cabling Provider Rules 2000 (as amended)
- Regulations and requirements of the local Supply Authority
- Building Code of Australia
- Department of Fire & Emergency Services (DFES)
- Any other regulations that apply directly or indirectly to such installations in the locations.

Where Australian Standards and Codes do not exist, the relevant International Standard or Code shall apply. Where conflict arises between this document and any of the applicable Acts, Codes or Standards, the highest standard of materials and workmanship shall prevail.

A list of references is provided in the References section of this document.
2.3 BCA COMPLIANCE

Under the current legislation, buildings shall comply with the requirements of the Building Code of Australia (BCA) either via the Deemed to Satisfy (DTS) Provisions or on a performance basis via Performance Solutions.

A number of buildings on the campus are subjected to previous Performance Solutions. Prior to undertaking design, construction or maintenance, check with UWA to ascertain if there are any Alternative Solutions applicable to the building. Where Alternative Solutions are present, ensure a UWA approved fire engineer is consulted (via UWA) to ensure there are no implications on the previously approved Solutions.

Where the building is a DTS compliant building, ensure fire safety systems comply fully with the BCA and referenced standards.

Older buildings are likely to comply only with DTS Provisions of an earlier version of the BCA or the Uniform Building By Law (UBBL). Where works are undertaken in the building, ensure system is upgraded as far as practicable to comply with current DTS requirements and standards. Where this is not practical, liaise with UWA approved fire engineers to address issues on a performance basis (i.e. Alternative Solutions) as appropriate.

Where a building design involves Alternative Solutions, a copy of the Fire Safety Engineering Report (FSER) shall be handed over to UWA for record. All FSERs shall clearly outline the following in a separate section to the main section of the report:

1. Specific Non-compliance
2. Fire safety strategies
3. Specific maintenance and Management In Use requirements

Requirements from the FSER which requires specific fire system design which is over and above BCA requirements shall be clearly outlined for coordination with services consultants.

2.4 BASELINE DATA

In accordance with AS 1851, base line data for all fire safety systems shall be clearly documented in the As-Built documentation. The information shall be used as a basis for all maintenance works in accordance with recommendations outlined in AS 1851.

2.5 NEW OR REPLACED EQUIPMENT

Where new equipment is installed or replaced, ensure information is provided to UWA for update of the maintenance and asset register (i.e., Maximo database). This shall include operation and maintenance manual and as-built drawings. Consult with UWA regarding the format of the asset register required.


2.6 FIRE DETECTION SYSTEM

2.6.1 General

The existing detection system serving the overall UWA campus currently consists of a mixture of brands and is of different capabilities. The intent in the long run is to have a standardised system throughout each building on the campus. This will in turn provide the benefit of a more standardised maintenance approach and the ability for the site wide panels to be networked.

The following is a summary of the various brands and types of systems currently installed on the campus.

<table>
<thead>
<tr>
<th>Brand</th>
<th>System Type</th>
</tr>
</thead>
</table>
| Notifier | - Currently the main brand installed  
| | • Mixture of addressable and conventional systems  
| | • Oldest panel dating back to 2000 (15 years)  
| | • Some system are DVC ready but a number of system are not |
| Siemens | - Currently only installed in 3 buildings  
| | • No information available for this system  
| | • System is likely to be addressable |
| Simplex | - Currently only installed in 2 buildings  
| | • No information available for this system  
| | • System is likely to be addressable |
| Vigilant | - Currently only installed in 5 buildings  
| | • No information available for this system |
| Ampac | - Currently only installed in 3 buildings  
| | • No information available for this system but likely to be conventional system |
| FFE | - Currently only installed in 5 buildings  
| | • No information available for this system but likely to be conventional system |

A summary of the fire detection systems currently installed (as of August 2016) is detailed in Appendix A of this document.

UWA’s requirement is to have all new and replaced systems installed as Notifier. This is to allow a site wide high level interface. All new FIPs must allow for connection to UWA V-LAN site network.

Where refurbishment works occur, ensure existing zone plans are updated to reflect any changes.

All detectors are to be selected and located in a manner which allows easy access for maintenance.

Cabling systems for Fire Detection and Alarms systems, smoke control and the like should be separate from other ELV cabling. Naming protocols, routing and containment for this cabling should be installed to the same standard as, and coordinated with, the requirements for Communications Systems. Refer UWA Design and Construction Standards – Communications Services.
2.6.2  **Occupant Warning System**

The occupant warning system currently installed on the campus provides only localised warning within each building. However, a number of newer systems have been installed with the capability to interlink all systems to allow a campus wide evacuation strategy should the need arise. The capability involves inclusion of a site wide digital voice command (DVC) function to fulfil this requirement.

The full capability of the existing system is currently not realised as the system will need to be networked and a front end terminal will need to be installed within the campus security control room for control of individual panels. However, all new systems shall allow for this capability.

The Occupant Warning System should be coordinated with the other communications sound systems, such as AV, public address and IT. Wiring should be separate from the other communications systems.

2.6.3  **System Interface**

A fire interface matrix shall be provided for all projects to ensure that connections between services are clearly outlined. Examples of these include:

- Mechanical system fire mode operation.
- Electric door lock release (where required).
- Emergency warning and intercommunication system.
- Fire or smoke curtains

In cases where there are Alternative Solutions, requirements from the Fire Safety Engineering Report (FSER) shall be accounted for in the system interface with a clear reference to the specific FSER.

Where the fire detection systems interface with other building systems ensure the new systems accommodate these interconnections and maintain reliable modes of operation.

2.6.4  **Direct Brigade Alarm (DBA)**

The fire detection system is to be linked into the DFES monitoring system where required or unless otherwise advised.

Liaise with DFES regarding the modification of the existing monitoring systems and pay any associated costs.

2.7  **FIRE HYDRANT AND FIRE HOSE REEL SYSTEM**

2.7.1  **Hydrant**

The entire installation to be installed is to comply with AS 2419.1 and tested to the requirements of DFES. For the Crawley campus, fire booster systems are to be supplied from the fire engineered irrigation/bore system and will require campus system to be activated for testing purposes.
External fire hydrants shall be supplied from campus mains water ring main unless required to be integrated to a building boosted system.

Prior to the commissioning of a new fire system, DFES is to be contacted and a booster test is to be organised. UWA Campus Management is to be made aware of the booster test to ensure testing is integrated with the fire/irrigation system.

External fire hydrants to be Galvin Engineering 65mm Sydney pattern type with top BIC coupling, red plastic protection cap and brass securing chain. Provide and install galvanised chain with heavy duty Lockwood type padlocks to hydrant wheels to prevent opening of hydrants by unauthorised persons. Hydrants shall be dual type mounted on a single 100 diameter steel riser and fixed to a GWI purpose made hydrant support frame concreted in-ground. Bollards to be provided as required. Additional signage shall be provided indicating water pressure (in kPa) at each hydrant.

Internal fire hydrants to be Galvin Engineering 65mm Sydney pattern type with top BIC.

2.7.2 Fire Hose Reels

The system shall be compliant with AS 2441. Fire Hose Reels to be Galvin Engineering 36 metre swing fire hose reels with fixed water ways and swing guide arm.

Fire hose reels located within cupboards to be Galvin Engineering 36 metre swing fire hose reels with flexible water ways mounted on galvanised bolted down mounting post. Install GE-507040 wall mounted swing arm. Fire hose reels located on walls other than masonry are to be reinforced to be capable of withstanding a force of 1kN and in accordance with AS/NZS 1221.

On completion, fire hose reels are to be tagged as per AS 1851.1. As per AS 1851.2, fire hose reels are to be inspected and serviced at each 6 month intervals until end of defect liability. Records of such shall be forwarded to UWA.

2.7.3 Pipework and Valves

In ground fire service pipework and valves shall be as follows:

- 25 to 63 diameter inclusive - PE Auspex
- 100 diameters and over - ACUTEC PE PN16
- Valves 25 – 50 inclusive to be stainless stell ball, stem and handle.
- Valves 100mm or larger to be Norcast Rislant” nylon 11” coating as standard, with key head.

All valves to be located in 250 mm x 250 mm cast iron valve box painted white with “Fire” embossed in cover.
2.8 SPRINKLER AND DRENCHER SYSTEMS

2.8.1 General

Compliance is required with the following Australian standards:

- AS 1851 - Maintenance of Fire Protection Systems and Equipment
- AS 2118.1 - General
- AS 2118.2 - Drenchers
- AS 2118.3 - Deluge Systems
- AS 2118.4 - Residential

Automatic sprinkler system signals shall be connected to the UWA BMCS, with the following signals required to be provided, sprinkler alarm, sprinkler isolate, sprinkler pump, running, sprinkler pump fault, sprinkler pump low fuel level, sprinkler stop valve closed. Where a FIP is installed within the building these signals shall also be connected to the FIP and provided with individual LED indicators.

Where works are undertaken, ensure all on site documentation and equipment required by AS 2118.1 and AS 1851 are revised and/or provided to suit all system refurbishments and new works. This includes but is not limited to the provision of block plans, fire system interface diagram/matrix, pressure gauge schedules, water supply information, spare sprinklers and spanners.

The sprinkler control valves shall be located in a position accessible to responding Brigade appliances. Clear directions to the sprinkler control valve location shall be posted adjacent the FIP. A location plate indicating the position of the sprinkler control valves shall be installed on the outside of an external wall.

2.8.2 Water Supplies

When designing and installing new fire sprinkler systems, or upgrading existing systems, the existing water supply pressure/flow shall be tested with results incorporated into design. It is imperative that the building hydrant demand is allowed in addition to the building sprinkler demand to ensure that both systems can operate simultaneously from the water supply provided to the building.

All fire services test water shall discharge into on site soak wells or back to storage tank when applicable.

Test drains, sumps and soak wells of appropriate size shall be provided to enable water flow testing.

2.9 SPECIALISED EXTINGUISHING SYSTEM

Some communications, data and electrical rooms may require specialised extinguishing system which is not addressed in the BCA. Where this is required by UWA to protect equipment, the design shall comply with relevant manufacturer’s requirements. Prior to nominating the specific extinguishing system, consideration shall be given to budget, type of equipment, space constraints and maintenance costs.
Where a multi-point aspirated detection system is required to activate the system, the design shall comply with AS1670.1 and manufacturer’s requirements.

### 2.10 PORTABLE FIRE EXTINGUISHERS

#### 2.10.1 General

Portable fire extinguishers shall be selected, located and distributed in accordance with AS 2444. Dry powder extinguishers shall be provided unless specific risks (e.g., cooking oil fires) warrant a different type of extinguisher in the location of the hazard. All extinguishers shall be signed in accordance with AS 2444.

Extinguishers shall be sized to ensure they do not exceed 5kg in overall weight to ensure it is useable by majority of occupants.

### 2.11 MECHANICAL SYSTEM

#### 2.11.1 Smoke Exhaust System

Smoke exhaust fans shall be selected and sized to comply with NCC Specification E2.2b requirements. Smoke baffles shall also be provided to comply with NCC requirements.

Where a performance based exhaust system is to be provided, a copy of the Fire Safety Engineering Report shall be provided to UWA for record purposes.

All non-essential mechanical system shall shut down in the event of fire.

### 2.12 PASSIVE FIRE BARRIERS

#### 2.12.1 Fire and Smoke Barriers

All fire and smoke walls shall comply with BCA requirements and the relevant standards as follows:

- **Fire wall** – Comply with AS 1530.4 to achieve a FRL
- **Smoke wall** – Comply with AS 1530.1 as non-combustible
- **Floors** – Comply with AS 1530.4 to achieve a FRL

All services penetrations through a fire wall shall be sealed in accordance with BCA C3.15.

All services penetrations through a smoke wall shall be sealed with appropriate fire rated mastic seals.

The area of works shall be clearly labelled and marked with the following information:

- Standards the system is compliant with (i.e. AS 1530.4 and AS 4072.1)
- FRL of the system
- Name and contact details of the installer
• Installation date
• Reference number for the specific area
• Name and contact details of the manufacturer

The following figure is an example of the expected label.

```
SERVICE PENETRATION AND CONTROL JOINT SYSTEM
(TO AS 4072.1)
FRL: —/60/60

Installed by: ....................................................................................................................

(Company/name) (Phone No.)

Installation date: ...........................................................................................................

Installation reference: ...................................................................................................

Manufacturer: ...................................................................................................................

(Name, Address, Phone No.)

CONTACT THE ABOVE IN THE EVENT OF DAMAGE OR IF REINSTALLMENT IS REQUIRED
```

**Documentation**

Upon completion of the works, the area of works shall be inspected to ensure satisfactory completion. The Contractor is required to provide documentation as per AS 4072.1 as follows:

• The system used is identical with the tested specimen; AND
• The system has been correctly installed in accordance with the manufacturer’s specification

In addition to the above documentation, the Contractor shall provide a record of each installation which outlines the following information as noted in AS 4072.1:

• Name, address and contact details of installation company
• Date of final inspection
• Description of system
• Identification of the position of the installation on a drawing
• Photo

### 2.12.2 Fire Dampers

Fire dampers shall be constructed and installed to meet all requirements of AS 1682 and AS 1668. Manufacturer certification of compliance is required.

The free area of any fire damper shall not be less than 85% of the adjoining duct area. Where necessary the duct
size shall be increased above the nominal airway size of the adjoining ductwork to accommodate the fire damper and access openings in the duct to enable the fusible link to be replaced and the damper operation checked. Fire dampers shall not be used for air volume control.

Fire dampers in stud walls, which have not been tested when assembled in that type of wall, shall be independently supported from the soffit of the floor above. Fire damper supports shall be contained within the thickness of the stud wall. Welding these supports to the fire damper is not acceptable.

All dampers above ceiling shall be clearly labelled on the ceiling via a tag or via other means appropriate to UWA.

Dampers shall be located in an accessible location to allow testing and maintenance.

### 2.12.3 Smoke Dampers

Air volume control dampers used for smoke control shall comply with the requirements of AS/NZS 1668.1.

All dampers above ceiling shall be clearly labelled on the ceiling via a tag or via other means appropriate to UWA.

Dampers shall be located in an accessible location to allow testing and maintenance.

### 2.12.4 Fire Doors

Fire doors shall be manufactured and installed in accordance with AS1905.1. Doors shall be tagged on the door frame and door leaf as required under AS1905.1.

Where existing fire doors in refurbishment type projects are not tagged, they shall be core tested to verify fire resistance level (FRL) or where this is not possible, the door and frame shall be replaced.

### 2.12.5 Smoke Doors

Smoke doors shall be compliant with BCA requirements to be at least 35 mm solid core. Smoke seals shall be at least medium temperature seals able to withstand temperatures of up to 200°C.

All smoke doors shall be labelled either via door tag or signage on the door.

### 2.12.6 Fire and Smoke Curtains

As fire and smoke curtains are not a Deemed to Satisfy (DTS) method of protecting openings in buildings under current NCC requirements, they shall be confirmed for use by a fire safety engineer. Justification to allow its use shall be outlined in a Fire Safety Engineering Report.

Location of fire and smoke curtains shall be clearly indicated via signage to ensure it is not obstructed from closing.
## 3 Checklist for Project Team

<table>
<thead>
<tr>
<th>Activity</th>
<th>Responsibility</th>
<th>Stakeholder(s)</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determine if the building or area of works has previous Performance Solutions.</td>
<td>Services consultants</td>
<td>CM (Engineering Services) / CM (Building Operations)</td>
<td>Gate 2 Feasibility</td>
</tr>
<tr>
<td>Consult with UWA approved Fire Engineer to ascertain impact on previous solutions.</td>
<td>Services consultants</td>
<td>CM (Engineering Services) / CM (Building Operations)</td>
<td>Gate 2 Feasibility</td>
</tr>
<tr>
<td>Determine if an upgrade to current Australian Standards is required for works in existing buildings.</td>
<td>Services consultants</td>
<td>CM (Capital Works)</td>
<td>Gate 2 Feasibility</td>
</tr>
<tr>
<td>If not possible to comply, consult with UWA approved fire engineer to ascertain possible Performance Solutions.</td>
<td>Services consultants</td>
<td>CM (Engineering Services)</td>
<td>Gate 2 Feasibility</td>
</tr>
<tr>
<td>Provide baseline data for all fire safety systems to UWA</td>
<td>Services consultants / Contractor</td>
<td>CM (Engineering Services) / CM (Building Operations)</td>
<td>Gate 3 Planning</td>
</tr>
<tr>
<td><strong>Fire Engineering</strong> Where Alternative Solutions are prepared, ensure a copy of FSER is provided to UWA for record.</td>
<td>Contractor</td>
<td>CM (Building Operations)</td>
<td>Gate 5 Construction</td>
</tr>
<tr>
<td>Ensure FSER clearly outlines information in a separate section outlining list of non-compliances, fire safety strategies, maintenance requirements and Management in Use requirements</td>
<td>Contractor</td>
<td>CM (Building Operations)</td>
<td>Gate 5 Construction</td>
</tr>
<tr>
<td><strong>Detection System</strong> Ensure detection system is Notifier panel with network capability</td>
<td>Services consultants / Contractor</td>
<td>CM (Building Operations)</td>
<td>Gate 3 Planning</td>
</tr>
<tr>
<td>Ensure interface to all existing systems has been retained</td>
<td>Services consultants / Contractor</td>
<td>CM (Building Operations) / CM (Security)</td>
<td>Gate 3 Planning</td>
</tr>
<tr>
<td>Ensure system been programmed to interface with other fire safety system including: - Mechanical system shut down - Secured doors unlocked - Occupant warning system activated - Fire/smoke curtains closing</td>
<td>Services consultants / Contractor</td>
<td>CM (Building Operations) / CM (Security)</td>
<td>Gate 3 Planning</td>
</tr>
<tr>
<td>Activity</td>
<td>Responsibility</td>
<td>Stakeholder(s)</td>
<td>Timeframe</td>
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<tr>
<td>Smoke fans or vents activating.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Occupant Warning System</strong></td>
<td>Services consultants / Contractor</td>
<td>CM (Building Operations) / CM (Security)</td>
<td>Gate 3 Planning</td>
</tr>
<tr>
<td>Ensure system has been provided with a digital voice command (DVC) capability.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Fire Hydrant System</strong></td>
<td>Services Consultant / Contractor</td>
<td>CM (Building Operations) / CM (Security)</td>
<td>Gate 3 Planning</td>
</tr>
<tr>
<td>Ensure system is compliant with AS 2419.1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fire Hydrant Water Supply</strong></td>
<td>Services Consultant / Contractor</td>
<td>CM (Engineering Services) / CM (Building Operations)</td>
<td>Gate 3 Planning</td>
</tr>
<tr>
<td>Coordinate with UWA to test fire / irrigation system.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Fire Hose Reel System</strong></td>
<td>Services consultants / Contractor</td>
<td>CM (Building Operations) / CM (Security)</td>
<td>Gate 3 Planning</td>
</tr>
<tr>
<td>Ensure system complies fully with AS 2441.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Fire Extinguisher</strong></td>
<td>Services consultants / Contractor</td>
<td>CM (Engineering Services) / CM (Building Operations)</td>
<td>Gate 3 Planning</td>
</tr>
<tr>
<td>Ensure dry powder provided unless risks require alternative extinguisher</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Fire Extinguisher</strong></td>
<td>Services consultants / Contractor</td>
<td>CM (Engineering Services) / CM (Building Operations)</td>
<td>Gate 3 Planning</td>
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<tr>
<td>Ensure extinguishers are of appropriate weight not exceeding 5kg.</td>
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<tr>
<td><strong>Mechanical Fire System</strong></td>
<td>Services consultants / Contractor</td>
<td>CM (Building Operations) / CM (Security)</td>
<td>Gate 3 Planning</td>
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<tr>
<td>Ensure smoke exhaust fans are selected and sized to comply with NCC Specification E2.2b requirements</td>
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<tr>
<td><strong>Passive Fire Barriers</strong></td>
<td>Services consultants / Contractor</td>
<td>CM (Building Operations) / CM (Security)</td>
<td>Gate 3 Planning</td>
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<tr>
<td>Ensure barrier complies with AS1530.4 for fire barriers or is considered non-combustible for smoke barriers.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fire / Smoke Walls</strong></td>
<td>Contractor</td>
<td>CM (Building Operations) / CM (Security)</td>
<td>Gate 5 Construction</td>
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<tr>
<td>Tag walls as per requirements outlined in this document.</td>
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<tr>
<td><strong>Fire / Smoke Doors</strong></td>
<td>Contractor</td>
<td>CM (Building Operations) / CM (Security)</td>
<td>Gate 5 Construction</td>
</tr>
<tr>
<td>Tag doors as required by AS1851. In relation to smoke doors, provide signage as appropriate.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Fire / Smoke Doors</strong></td>
<td>Contractor</td>
<td>CM (Building Operations) / CM (Security)</td>
<td>Gate 5 Construction</td>
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<tr>
<td>Where secured during normal operation, ensure interface for door to fail open on alarm has been coordinated.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fire &amp; Smoke Curtains</strong></td>
<td>Services consultants / Contractor</td>
<td>CM (Building Operations) / CM (Security)</td>
<td>Gate 3 Planning</td>
</tr>
<tr>
<td>Activity</td>
<td>Responsibility</td>
<td>Stakeholder(s)</td>
<td>Timeframe</td>
</tr>
<tr>
<td>----------</td>
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<tr>
<td>Ensure use of fire and smoke curtain is accompanied by fire safety engineer’s FSER given it is not a compliant method to protect openings</td>
<td>Contractor</td>
<td></td>
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</tr>
</tbody>
</table>
| **Fire / Smoke Curtain**  
Ensure location of fire and smoke curtains is clearly indicated onsite | Contractor | CM (Building Operations) / CM (Security) | Gate 5 Construction |
Abbreviations

AV Audio Visual
BMCS Building Management and Control Systems
BCA Building Code of Australia
CM Campus Management
DFES Department of Fire and Emergency Services
DTS Deemed to Satisfy
DVC Digital Voice Command
ELV Extra Low Voltage
FIP Fire Indicator Panel
FRL Fire Resistance Level
FSER Fire Safety Engineering Report
GWI Galvanised Wrought Iron
IT Information Technology
LED Light Emitting Diode
UBBL Uniform Building By Law
UWA the University of Western Australia
VLAN Virtual Local Area Network
References

AS/NZS 1221   Fire hose reels  
AS 1530       Methods for fire tests on building materials, components and structures  
AS/NZS 1668  The use of ventilation and air conditioning in buildings  
AS1670       Detection and occupant warning system  
AS 1682      Fire, smoke and air dampers  
AS 1851      Routine service of fire protection systems and equipment  
AS1905       Fire doors  
AS 2118      Automatic Fire Sprinkler Systems  
AS 2419      Fire Hydrant System  
AS 2441      Installation of fire hose reels  
AS2444       Fire extinguishers  
AS2941       Fire-fighting pumpsets  
AS/NZS 3000  Electrical Installations  
AS 4072      Components for the protection of openings in fire-resistant separating elements  

Building Code of Australia  
Department of Fire & Emergency Services (DFES) Authority  
Telecommunications Cabling Provider Rules 2000 (as amended)
### Appendix A – FIP Information (As of August 2016)

<table>
<thead>
<tr>
<th>Building No.</th>
<th>Building Name</th>
<th>Make</th>
<th>Install Date</th>
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<tbody>
<tr>
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