Government of Western Australia
Department of Fire & Emergency Services

DFES
Department of Fire & Emergency Services

# DFES DBA CONNECTION CODE

## REQUIREMENTS FOR CONNECTION TO THE DIRECT BRIGADE ALARM (DBA)

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# DOCUMENT CONTROL

| DATE | DOCUMENT REVISION | CHANGES MADE |
|---|---|---|
| 2013-02-11 | v2.0 | • Reformatting<br>• Update to DFES from DFES<br>• Inclusion of NFIA Members as Industry Certification Requirement |
| 2013-05-01 | v2.0 | • Content additions/ changes |
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| 2014-02-05 | v3.0 | • Full Document Review<br>• Addition of C7 and C8 information<br>• Update of Contact Details for FAMS |
| 16/01/2020 | V4.0 | • Full Document Review<br>• Updates throughout document with regards to latest versions of Australian Standards<br>• Inclusion of Previous Bulletins Requirements |
| 31/08/2020 | V4.1 | • Section 4.1 Fire Rated Cables Update<br>• Section 5.2 MCP outside Enclosure<br>• Section 4.7 (Added) Fire Pump Remote Control & Tank Indicator Cabling (Boosters) |
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# 1 INTRODUCTION

The purpose of this document is to provide the minimum requirements for a connection to the Department of Fire and Emergency Services (DFES) monitored Direct Brigade Alarm (DBA). These standards are to be used in conjunction with the relevant Australian Standards for the installation of fire alarm monitoring equipment and applicable sections of the National Construction Code (NCC) and Building code of Australia (BCA).

This document is reviewed periodically, and changes made when required. Therefore, fire alarm agents should ensure that they understand the requirements of the latest version, prior to the request for connection to the DBA network or undertaking alterations to an existing alarm.

Any queries regarding this document or the requirements for compliance to connect to the DBA network should be made with the DFES Manager Direct Brigade Alarms at dba@dfes.wa.gov.au

All other queries such as the request for connection or queries regarding the DBA costs should be made with the Fire Alarm Monitoring Services (FAMS) 24/7 Customer Service Centre (refer to the contact details listed in section 14 of this document).

Further information re the DBA and FAMS network may be obtained by visiting:

http://firealarmmonitoringservices.com.au/

# 2 END USER AGREEMENT (EUA)

The DFES DBA monitoring agreement, known as the End User Agreement (EUA), requires that the client comply with this connection code as well as relevant Australian Standards, and the Building Code of Australia (BCA).

Clause 5.1 of the EUA requires that the client shall not make, cause, suffer or permit to be made any alteration or addition to the Alarm without the prior approval of DFES.
DFES requires that the agent notify the DFES DBA Manager prior to any works being undertaken.
DFES require the DFES C8 form to be submitted for review prior to all works being initiated on any detection or warning system connected as a DBA.
DFES reserve the right to object to any changes to a DBA connected system and to inspect any modification works.
This includes any system connected to the DBA system such as dry fire (fire/smoke detection, emergency warning, intercom, occupant warning systems), wet fire suppression systems (fire hydrant, hose reel, sprinkler, drenchers, mist etc.), gas/foam suppression and smoke management systems.

# 3 FIRE ALARM AGENT QUALIFICATION/REGISTRATION

Fire alarm technicians must be employed by a company registered with the Fire Protection Association of Australia (FPAA), and/or the National Fire Industry Association (NFIA). Membership of a fire alarm industry peak industry body is mandatory.

Failure of fire alarm agents to comply with applicable standards and NCC/BCA may result in the fire alarm agent being reported to the FPAA (or NFIA).

# 4 CABLING REQUIREMENTS

Fire detection cabling shall comply with latest/applicable requirements of AS 1670.1, AS 1670.4 and AS 1668.1.

## 4.1 TWO HOUR FIRE RATED CABLE

DFES expect fire detection, emergency warning, occupant warning and intercom/warden intercom system cabling, fittings and fixtures to be fire rated as per AS 1670.1 2015/2018 clause 3.26 and AS 1670.4 2015/2018 Clause, 3.6.8, 3.6.7, Appendix D - Figure D.2 and D.3 with a rating of WS5XW as defined by AS/NZS 3013.

Mechanical equipment that forms part of a smoke management systems shall be provided with cabling fixtures and fittings in compliance with AS 1668.1, clause 4.10.2, Table 4.1, Appendix D and AS/NZ 3013

AS 1670.1:2015 and AS 1670.1:2018 require that the entire transmission path (including departing, in-between and return paths of cable) for any of the below systems, to be 2-hour fire rated WS5XW as defined in AS/NZS 3013.

Clause 3.26 requires the following to have fire rated transmission paths:

a) Power Supply Equipment (Power supply equipment such as batteries located remote or external to the FDCIE or EWCIE Enclosure)
b) Interface cabling FFCP-MCC, to mechanical switchboard and from mechanical switchboard to mechanical equipment controlled by FFCP or required to operate as part of a smoke management system.
c) Networked FDCIE
d) Distributed FDCIE
e) Non latching supply air detectors.
f) EWCIE external to FDCIE enclosure
g) Fire Suppression systems initiating devices (e.g. sprinkler pressure or flow switches)
h) Fire Suppression system actuating devices (e.g. gas/foam/wet chemical suppression systems)
i) Smoke detectors initiating zone pressurisation systems*

*Zone pressurisation systems refer to as AS1668.1 systems such as sandwich press or zoned smoke control/exhaust systems which activate specific to each zone and can change as a fire develops. Common smoke exhaust or smoke control systems such as stair pressurisation, lift pressurisation, purge or common smoke exhaust systems which serve the entire building and multiple compartments and are not subject to change based on activation of detection in other zones do not require protection as per Clause 3.26.

Fire Detection falling under Clause 3.26 (i) requires fire rated cabling to first and last device within each fire compartment and short circuit isolators on first and last device within each compartment if loop protects more than one fire compartment or a single short circuit isolator at the end of each zone within a fire rated enclosure. See Figure B.2.1 & Figure B.2.2 from AS 1670.1 (2018).

DFES will not accept the combination of smoke detection zones or other devices with sections of non-fire rated cabling and devices requiring fire rated cabling in accordance with AS 1670.1 2015/2018 Clause 3.26 on the same loop except for the use of conventional zone/spur off detection systems similar to Figure B.2.2 and below circumstances regarding fire isolated stairs/exits.

AS 1670.1:2018 Clause 3.26 offers a concession where if the transmission path is installed within a fire rated/isolated stair or exit having an FRL not less than -/120/120, then the cable may not be fire rated within fire isolated stairwell, however all other parts of the transmission path, i.e. from the fire isolated stairwell to the FIP shall be fire rated, and this includes both ends of the transmission path loop where it enters and exit's the fire isolated stairwell.

The above concession applies to fire isolated stairs and exits only, it does not apply to fire rated or fire isolated rooms, risers, shafts etc. The above-mentioned concession also excludes AS 1670.4 transmission path protection requirements.

Any premises requiring a DBA connection shall comply with the latest prescribed version of AS 1670.1, and the latest published version of the DFES DBA Connection Code or technical bulletins. Failing with these requirements will have DBA connection application withheld/delayed until compliance is achieved.

## 4.2 NON-FIRE RATED CABLE

All fire detection cabling not referred to in section 4.1 can be minimum red ELV Fire 2 core 0.75 $mm^2$ WSX1 TPS cable. DFES recommends use of 1.5 $mm^2$ to avoid loop resistance problems, the FAA shall also check equipment installation requirements and manufacturer's recommendations.

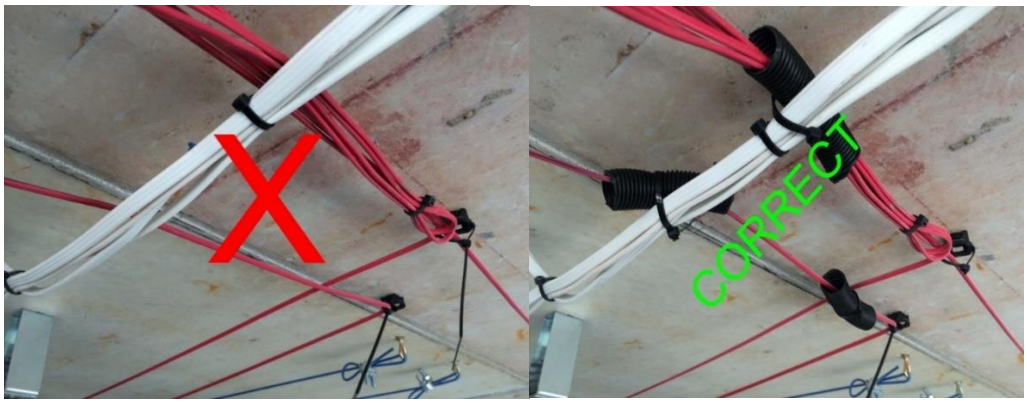
## 4.3 CABLE SEGREGATION

AS/CA S009 (2013) Clause 16.3.1 states that the permanent separation may be achieved by one of the following methods:

(a) a minimum distance of 50mm

(b) Subject to the requirements of AS/CA S009 Clause 16.3.2, a barrier of durable insulating material or metal

Note 1: Compliance with item (b) may be achieved by the enclosure of either the cable or LV cable in conduit.




**Note: LV & ELV cabling within FIP/OWS/EWIS enclosure should be provided with adequate segregation via conduit, trunking or segregation.**

## 4.4 CABLE MARKINGS

All fire detection cabling shall be marked or identified as per the requirements of AS 1670.1 & AS1670.4 where not located within conduits.
ELV cabling to be red sheath marked with "ELV Fire" label every 2m
LV cabling to be red sheath marked with continuous white stripe and "LV Fire" label every 2m.
Cabling such as optical fiber/ multicore not available with markings shall have cable markings attached minimum 25mm wide spaced every 2m where not installed in conduit.

## 4.5 TCA1 FORM

DFES DBA Connection Code requires that the cabling be certified by a Registered Cabling Installer, hence the requirement for a ***copy*** of the TCA1 form.

It is therefore the responsibility of the individual signing the TCA1 to ensure compliance with AS/CA S009 (2013). DFES accept no responsibility for delays to the DBA network due non-compliance to AS1670.1 and/or AS/CA S009.

Fire alarm agents and installers should also be aware that, regardless of what the DFES DBA Connection Code requires, completion of a TCA 1 form is a mandatory requirement of a cablers cabling registration. Failure to comply with this requirement could result in the cabler being fined and or prosecuted under the Telecommunications Act 1997 – this requirement is mandated by section 4.5 (2) of the Telecommunications Cabling Provider Rules 2000 (http://www.comlaw.gov.au/Details/F2012C00402)

The TCA1 form addresses this requirement and includes a statement that the installation complies with AS/CA S009.

There are some instances where a TCA1 form is not required – please refer to the following ACMA web page:

http://www.acma.gov.au/Industry/Telco/Infrastructure/Cabling-rules/how-to-complete-tca1-forms-cabling under the heading “When a TCA1 form is not required”

Fire alarm agents are strongly encouraged to contact DFES and advise the DBA Contracts Manager of breaches of the installation requirements where noticed.

## 4.6 COMMUNICATIONS EARTH SYSTEM (CES)

### 4.6.1 Earth

The DFES Alarm Signalling Equipment (ASE) requires a Lightning Protection Earth (LPE) installed from the FIP ASE Terminal Strip directly to the Communications Earth Terminal (CET) in accordance with AS/CA S009.

### 4.6.2 Wiring

The earth conductor from FIP ASE Terminal Strip forming part of CES must have a minimum cross-sectional area of 6 $mm^2$ green/yellow insulation and must be permanently labelled as CES. The installation of this conductor shall comply with the requirements of AS/CA S009.

In accordance with AS/CA S009 clause 20.11.2.4, the equipotential bonding resistance of the communications bonding conductor shall not exceed 0.5 Ω between FIP ASE Terminal Strip and to the main earthing bar, main earthing conductor or sub-main earthing conductor of the electrical installation where CET is bonded to. This maximum resistance requirement of 0.5 Ω should not be confused with CES maximum resistance allowed of 1 Ω.

### 4.6.3 Surge Suppression for the Protection of Customer Equipment

Where mobile antenna (normally high gain antenna) is installed on top of the building above the roof line or apex, the RF surge suppression device shall be installed on coaxial cable connecting to the ASE. The minimum cross-sectional area of any earthing/bonding conductor shall not be less than 2.5 $mm^2$. The earthing/bonding conductor should be as short as possible (preferably no longer than 1.5 m) for more effective equipment protection. The earthing/bonding conductor is to be connected to FIP ASE Terminal Strip CES/LPE.

## 4.7 FIRE PUMP REMOTE CONTROL & TANK INDICATOR CABLING (BOOSTERS)

Fire rated control cabling for remote pump controllers are only required the cable route has to cross though other compartments on the from the pump room to the booster enclosure. Control cabling to remote fire pump controllers do not require fire rated cabling if they are contained within conduit located underground or cast into concrete.

Tank level indication within booter cabinets do not require fire rated cable.

# 5 SPECIFIC REQUIREMENTS

## 5.1 QUICKPOLL & BACKUP COMMUNICATION

### 5.1.1 QuickPoll

DFES provides a mobile wireless communications technology which has been assessed by the CSIRO as compliant to AS 4428.6 and the applicable sections of AS 1670.3. This technology is known as **"QuickPoll"**.

Where the site reliability required by AS1670.3 is being achieved using QuickPoll, DFES will no longer require a PSTN or NBN connection. A cable provision is required to the location of PSTN or NBN location to future proof against any reduction in cellular reception.

Where a site has poor wireless (3G/4G) signal strength that a signal booster cannot address, the client/end user will need to make allowance for DFES to connect to the NBN ensuring compliance to AS1670.3. Prior to making that decision, DFES will require that all solutions have been utilised prior to connecting to the NBN.

DFES requires the FAA to install a coaxial antenna cable to the main entry strobe location or similar external to the building which shall be easily accessible and does not require use of Elevated Working Platforms (EWP). Where cellular signal strength is low a coaxial cable to the roof may be required to achieve network reliability as required by AS1670.3.

The FAA is to install an IP55 rated junction box above the external strobe or mount to top of strobe where facility is provided, antenna and cable will be joined on external walls. For roof installations, the junction box is not required.

### 5.1.2 ASE Antenna Location

During the initial ASE installation, Fire Alarm Monitoring Services (FAMS) will always attempt to install the ASE Antenna on external strobe/junction box. However, if the signal strength is poor, FAA may be required to run coaxial antenna cable to the roof of the building. Refer to signal strength selection below to measure signal strength. If signal strength is close to or below the minimum (CSQ 14), please contact FAMS or DFES to officially check reception measurement and determine suitable location for antenna.
Antenna locations other than above main entry strobe or roof are also permitted, however they are not to be considered as standard installations and therefore additional installation cost will be recovered from the requestor. Such locations are to be reviewed by the DFES contractors, and a quote shall be provided to the requestor before commencing the work.

DFES requires the use of the following coaxial antenna cables based on cable length between antenna location and the FIP.

| Cable length | RFI Cable Type | Nominal Loss |
|---|---|---|
| 0 m – 15 m | Cellfoil 9006 | 2.95 dB |
| 15 m + | LDF4-50 | 2.2 dB |

If distance exceeds 15 m from the FIP to the antenna location, a high gain antenna is required. In addition, the LDF4-50 coaxial cable shall be used. This should be discussed with architects or building owner as to the acceptance of locating for high gain antenna installation.

### 5.1.3 QuickPoll Signal Strength

**Signal Strength required for ASE monitoring antenna range for 850 Mhz**
CSQ Scale Acceptable Range 15 to 31
Reading below CSQ 14 require a high gain antenna.

RSSI Scale - 85 dBm to - 51 dBm
Reading below RSSI - 85dBm require a high gain antenna.

**Preliminary Signal strength can be checked onsite by using mobile phone to assess signal strength.**
For Android
Settings – Connections – Mobile Networks – Network Mode – Set 3G Only – Return to Settings – About Phone – Status – SIM card status – Signal Strength shown in dBm. Ensure measurement is taken from Antenna proposed location. Return Mobile Network to LTE/3G/2G (auto connect once finished.

For iPhone
Settings – Mobile Data – Mobile Data Options – Voice & Data – Select disable 4G.
Phone app - dial *3001#12345#* - converting the signal strength dots on the top left into numbers - Exit the Field Test Mode with home button. Return Voice & Data – Enable 4G.

If signal strength is close to or below the minimum, please contact FAMS or DFES to have reception checked and determine suitable location and antenna type.

### 5.1.4 Backup Line to MDF/NBN

DFES require a connection from the FIP ASE Terminal Strip to the PSTN or NBN Secondary Communications Path, meaning the provision of a cable from the FIP ASE Terminal strip to a junction box located at MDF or NBN.

The cable shall be flat red ELV 2 core 0.75 mm² WSX1 TPS cable. The use of FLAT 4C, CAT3, CAT5 and CAT6 Communicational cable is not permitted to be used between FIP and MDF/IDF/NBN.

The TPS cable shall be terminated with pressure plated connectors in a j-box which should have at least one (1) free 20 mm screwed entry for DFES cabling to the MDF/NBN. The j-box shall be a double entry j-box with 20 mm screwed entry points to allow for (1) the cable from the FIP, and (2) the DFES connection to the MDF/NBN. In addition, the cable must only enter through the manufacturer specified entry points, no cabling is to enter through the rear casing or the lid of the junction box. The j-box must use opposite entry points, not 90 degree to each entry point.

The j-box must be mounted within 500 mm of the MDF/NBN service to allow for the connection of the DFES patch cord. Additionally, there must be at least 200 mm of tail left in the junction box with external insulation stripped back level with the gland for use by the DFES technicians. The j-box to be located at a height between 1200 mm – 2000 mm AFL.

The j-box can be made from plastic or metal material.

***Diagram:*** *Refer to Appendix A for the required PSTN Installation diagram.*

## 5.2 FIP/OWS/EWIS ENCLOSURE

FIP/OWS/EWIS Enclosures are to comply with the requirements of AS 1670.1 & 4.

There shall be 500 mm clear either side of panels regardless if they are within an enclosure/cupboard or not. The distance between panels and surrounding walls may be reduced once doors swing complies with AS 1670.1 & 4. There shall not be any obstruction next to enclosure within 500 mm of the panel edges.

All Fire Panel Enclosures with cupboard doors shall be provided with signage complying with AS 1670.1 & 4. The doors shall be fitted with D-Handle for ease of firefighter's access.

Where the FIP/FDCIE is located within an enclosure, ensure a manual call point (MCP) is located external to the enclosure within the main entry. The manual call point located on the front of the panel within an enclosure is not acceptable.

## 5.3 EQUIPMENT

### 5.3.1 Manual Call Point (MCP)

System having no detection, but MCP, may be connected to a Fire Indicator Panel (FIP). The FIP must be installed as per the requirements of applicable AS1670.1.

In addition, each individual MCP shall be identified on the FIP and Zone Plan as an individual alarm zone for prompt and easier identification and location.

### 5.3.2 Warden Intercom Points (WIP)

Warden Intercom points are to be provided as part of AS1670.4 system. Each warden intercom point is to be provided with a traffolyte or similar label identifying the WIP number at the EIS Panel. Warden intercom and numbers to be included/nominated on Evacuation block plan.

### 5.3.3 FIP Master Alarm Function Requirements

Fire Panels connected in Western Australia may not have a MAF Isolate Relay that is capable of isolating all (FIRE, FAULT, ISOLATE) outputs to the Alarm Signalling Equipment. The ASE is capable of being placed into 'TEST' or 'ISOLATE', thus ensuring any signals to the fire brigade can be isolated.

Additionally, no FIP may be fitted with door micro switches capable of isolating any functions on the FIP, be it OWS, sounder, or MAF outputs.

## 5.4 FIRE INDICATOR PANELS & OCCUPANT/EMERGENCY WARNING PANELS

### 5.4.1 Alarm Signalling Equipment (ASE) Mounting

The ASE main unit shall be mounted inside the FIP lockable doors.

The ASE shall be mounted by DFES or approved technicians only.

DFES require that any Fire Indicator Panel (FIP) being considered for connection to the DBA have adequate room within the FIP for the ASE.

The ASE controls and indicators or ASE Display shall be installed at a height no lower than 750 mm or more than 1850 mm from the floor.

If the FIP is recessed, DFES will continue to use the FIP side panels to secure the ASE mounting bracket on it by the use screws or rivets.

However, if the Fire Panel is not recessed, or flush mounted, DFES will not be able to install the ASE mounting bracket as the exposed screws and/or rivets are visible from outside.

It is the fire alarm agent's responsibility to ensure there is adequate room available within the FIP for the ASE. If this requires a battery enclosure to be installed to allow space for the ASE, then it is strongly recommended that this be considered.

For further advice re this issue, contact the FAMS on1300 793 722.
**Diagram:** Refer to Appendix B for the current ASE physical drawing.
The image below is an example of the ASE installation using the back plane of the FIP.

The image below is an example of the ASE installation using the side panel of the FIP. This will not occur if the FIP is not recessed within the wall.

**Warning:** Under no circumstance will fire alarm agents be allowed to mount the ASE unless written approval is obtained from the DFES DBA Manager. This includes removing the ASE from one FIP to mount in a replacement FIP.

### 5.4.2 Fire Indicator Panel / Designated Building Entry Point (DBEP) Strobe

All FIP's must have a strobe complying with AS1670.1. A fire bell is no longer mandatory for the FDAS. A fire bell may be required as part of the sprinkler installation.

Sub Indicator Boards connected to an FIP that is monitored by DBA shall also comply with this requirement. Please contact the DFES DBA Manager to confirm this requirement prior to installation.

Strobe light provided at DBEP shall be red and have red framing/backing.

The signage is to comply with requirements of applicable version AS 1670.1, wording "FIRE" 50 mm white lettering on red background shall be used.

For Complex Entries multiple strobes and Directional Signs may be required to satisfy DFES requirements. For further advice, contact DBA representative.

The bell and strobe shall be installed such that they face onto the street or DBEP and be visible from two directions (up and down the street for multiple approaches. Where only a single approach is possible the strobe should face this direction or be visible from that approach.

The strobe shall not be mounted on horizontal surfaces, vertically only.
Strobe to be installed between 2.7 m and 3 m AFL.
Any variation to these height requirements must be approved by a DBA representative.

Below are two examples of **incorrect** installation.


### 5.4.3 Data Gathering Panels

Data Gathering Panels may be used in networking various alarm systems back to a single FIP. Where a DGP is used, then it must have its controls blanked off and be marked –

**DATA GATHERING PANEL – NON-FIRE BRIGADE USE**

The wording shall be white lettering on a red background and the lettering shall be no less than 25 mm in height.

### 5.4.4 FIP Detection Zones/Zoning

Zoning of detection to comply with requirements of AS1670.1. All monitored valves, flow/pressure switches tank and pump signals shall be programmed as an individual zone and nominated on detection zone plans.

### 5.4.5 Zone Plans (Detection & Evacuation)

All FIP's shall have a Zone Plans located adjacent to the FIP or within a fire control room and be clearly visible and labelled as a Zone Plan. The Zone Plan shall comply with the requirements of AS1670.1.

The Zone Plan shall be a minimum A3 size and easily readable be mounted in a picture frame securely mounted to the wall. For larger buildings a larger zone plan shall be provided where necessary to maintain readability.

The Zone Plan shall be mounted securely to the wall in such a manner that it cannot be removed easily. The use of a picture type hook and hanging the Zone Plan from this hook is not acceptable.

The zone plan shall be in colour. DFES require that all individual alarm zones be identified with coloured areas, as per example attached.

The zone plans are to identify minimum;

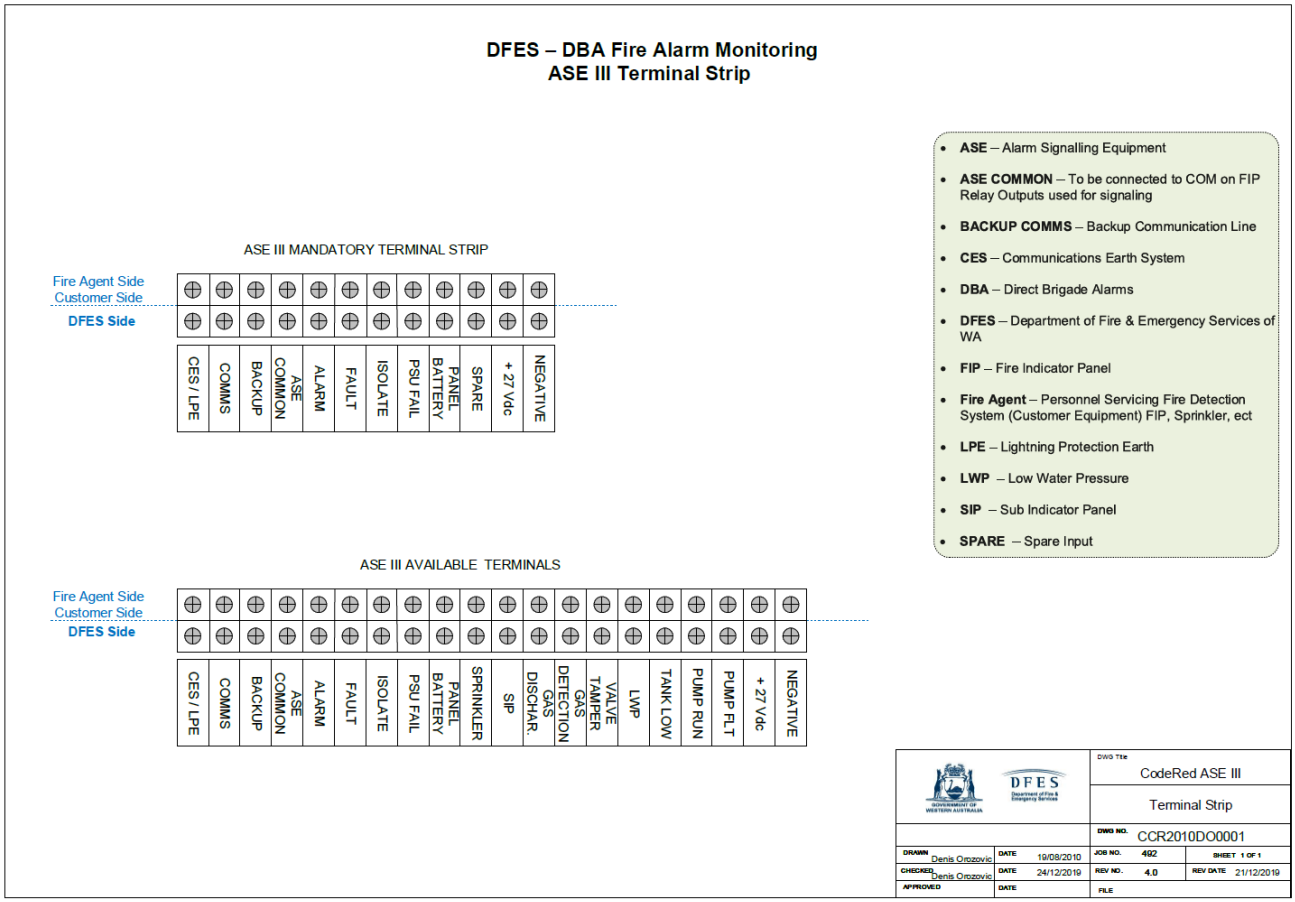
- Building Name & Address
- Colour contrasting detection zones nominated by callout.
- FIP location with "you are here" indication.
- Plans orientated in a manner that matches building layout as you stand looking at plans.
- Main Electrical Switch Board nominated by callout
- Main Distribution Frame (MDF) where applicable
- Manual Call Point (MCP)
- Monitored Valves
- Sprinkler Pressure/Flow Switches & Stop Valves
- Fire Service Pump Room Interfaces
- Emergency/Occupant Warning Zones
- Warden Intercom Points (WIP) (Include WIP Number)
- Emergency Call Point (ECP)
- North Point/Indication
- Year/Month of Installation

- Installation Contractor Details
- **IN THE EVENT OF A FIRE RING 000 TO ENSURE FIRE SERVICE RESPONSE** in red bold text or contrasting white text on red background

Refer to Appendix F – Zone Plans for example of detection and evacuation zone plans

### 5.4.6 FIP Terminal Strip

The FIP shall have a pressure plated terminal strip located within 400mm of the ASE to allow for the connection of the ASE Main Unit cables to the FIP. The terminal strip shall be permanently labelled with clearly written labels.




Where a hinged panel is to be used, the ASE Display shall be mounted on the panel. Cabling from the ASE main unit to the display should be sufficient to allow the hinged panel to open fully with minimal cable duress.

### 5.4.7 OWS/EWIS Installation Requirements

The OWS/EWIS CIE shall be compliant to the installation requirements of AS1670.1 and AS1670.4.

All OWS/EWIS Control & Indicating Equipment (CIE) shall be co-located with the FIP CIE
All BOWS and EWIS systems shall have a single point of control.

Where the EWIS CIE is remote from the FIP CIE, then prior installation approval shall be sought from DFES re the location of the EWIS CIE.

OWS & EWIS zones shall not exceed 2000m² and shall not serve more than one (1) level.

### 5.4.8 FIP/OWS/EWIS Emergency Lighting Requirements

AS1670.4 requires emergency lighting compliant to AS2293.1. However, AS2293.1 does not define the minimum LUX reading for this emergency light. Therefore, to assist the industry with this requirement, DFES have determined that an Emergency Light must be installed no further than 3 meters (celling level distance) from the FIP/EWIS.

### 5.4.9 Smoke/Fire Door Detection

AS1670.1 requires smoke detectors to be installed on either side of the fire/smoke door/shutter in line with the centre of the door opening where held open and self-closing. Smoke detector to be not less than 300mm and no more than 1500mm horizontal distance from the door opening.

It does NOT require the detectors to be installed immediately above the door opening where the ceiling is at a considerable height above the top of the door frame.

Smoke & Fire Door detectors shall be installed at ceiling/soffit height, irrespective of the door frame height.

## 5.5 FIP SIGNALS

### 5.5.1 FIP Signalling

**Required Dedicated Signalling**

- **a)** Thermal, Smoke, Manual Call Point MCP Signal
- **b)** Panel Fault Signal
- **c)** Panel/Zone Isolate Signal

**Where Provided Below Signals are also required**

- **d)** Sprinkler systems activation Signal
- **e)** Valve Monitored/Tamper, mandatory if Sprinkler system is installed
- **f)** Gas systems gas discharge Signal
- **g)** Gas Detection – Leak Detection Ammonia, Chlorine etc
- **h)** Sub Indicator Boards Alarm Signal
- **i)** Where dedicated fire service pumps are provided onsite,
    a. Pump Run Signal
    b. Pump Fault Signal
    c. Low Tank Level Signal

(Note: where pumps and tanks are shared across multiple lots/strata monitoring will not be provided, only where pumps and tanks are the sole responsibility of one DBA Customer)

**Optional Signalling**

- **j)** Panel Battery signal can be monitored by ASE, only if Fire Agent programs FIP relay to output Low Battery Signal.
- **k)** Low water pressure – For wet fire system leak detection. May be required if supplied from a town's main water supply.
- **l)** Other - Another signal monitoring not described above.
- **m)** An ASE can monitor up to 42 alarm signals as required. However, additional expansion boards will be required for FIPs with more than 6 alarm signals. Additional installation labour and equipment will be applicable for these types of systems.

**Future Signalling**

- **a)** Battery signal can be monitored by ASE, changes to future versions of AS 7240.4. will likely require panel battery monitoring.
- **b)** PSU Fail signal can be monitored by ASE, changes to future versions of AS 7240.4. will likely require power supply unit/battery fail monitoring.

When the FIP is powered on and in Normal Condition (no alarms – active inputs), all relay contacts are to be in the normally open state, they shall also be voltage free. Some signals like Panel Fault and Panel Battery might be configured in failsafe arrangement and they can be normally closed state.

**Diagram:** Refer to Appendix D for the Fire Agent Wiring diagrams.
**Note:** FIP's must only provide a panel voltage of either 12V DC or 24V DC only.
**Warning:** All FIP circuits must be protected from accidental voltages appearing on the terminal strip which could activate or operate any system attached to the FIP, i.e. automatic smoke vents.

### 5.5.2 Sprinkler Signalling

Pressurised wet fire systems such as automatic fire sprinkler or drencher systems installed with a pressure switch connected directly to a town main water supply shall be provided with a retard chamber to ensure town mains pressure fluctuations will not trigger false alarms through the system pressure switch or must be fitted with a low-pressure indication using normally closed contacts from a differential pressure switch.

Pressurised systems in addition to the DBA pressure switch shall also be fitted with a differential pressure switch indicating "Low Pressure" fault signal. It shall be set to an early warning of a leak or drop in water pressure, i.e. approximately 200 KPA above the DBA pressure switch setting.

### 5.5.3 Gas Signalling

- **a)** Gas systems connected directly to a Fire Control Station shall provide two signals to the Fire Control Station. One to indicate a common alarm signal if one or more zones have activated,

and a gas discharge signal, if the gas has been discharged. They shall also meet the requirements of all associated standards.

**b)** Gas systems connected via a sub indicator board (SIB) shall also provide two signals to the Fire Control Station. One to indicate SIB activation, and the other to indicate actual gas discharge.

### 5.5.4 Gas Detection/Leak Detection (Ammonia/Chlorine etc.)

**a)** Gas Detection/Leak Systems can be connected to the FDCIE for monitoring and or ASE signalling once the system is setup as follows:

**b)** Gas Detection/Leak System will need to provide multiple levels of detection signals to differentiate between the severity of leak and required responses.

**c)** Gas Leak management plan to be provided for review, plan to include levels of detection and required responses, Minimum response levels;

a. Level 1 - Staff attendance/intervention, (No Signal to FDCIE ASE)
b. Level 2 - Dedicated contractor response (Service and Maintenance)
c. Level 3 - Emergency Services Response (Signal to FDCIE ASE)

Deviations from above should be discussed with DBA Team prior to implementation. System design shall not signal emergency response for activations of Gas Detection/Leak Systems which do not require emergency service response.

### 5.5.5 High Rise Buildings

**a)** Only in High Rise Buildings (HRB) will the grouping of sub systems be allowed. Therefore, if a HRB has more than one (1) sub board, gas, or sprinkler system, then grouping of those systems will be allowed provided each group is of a similar group, i.e. sprinklers cannot be grouped with gas and so forth.

**b)** However, each group must still provide its own dedicated signal to the ASE.

**c)** Each sub system shall have its own dedicated zone allocated on the FIP. The outputs of these systems may be grouped for ASE indicating purposes only.

The reasoning for this, the FRS on SIB signalling will always try to respond directly to the site of the SIB activation. On all sites except HRB's this will reduce the operational response and total incident time, thus allowing more time to respond to other incidents if required. However, for HRB sub board activation, the attending appliance can still only park at the main entrance to the HRB. Very little time gain is achieved by having multiple SIB signals in a HRB, therefore grouping of sub board outputs to the ASE is permitted, and on the provision each sub system has its own zone or group identified on the FIP.

### 5.5.6 Sub Indicator Boards

With the advances in telemetry technology available to DFES, the FRS and DFES are discouraging SIB signalling to a FIP, preferring sub boards as a separate DBA connection or the use of Data Gathering Panel where suitable. However, SIB signalling is still allowed in accordance with AS 1670.1, the exception being the practice of connecting one SIB to another SIB.

The principle objection is distance for the attending FRS appliance to travel from the FIP to the SIB. If the distance involved is such that the attending crews have to travel to the SIB with their appliance from the FIP, then DFES may reject the connection on such grounds that the initial response time is too great to affect an adequate response to an incident involving life within the building encompassing the SIB;

It is strongly recommended that all agents and consultants request information on this issue whilst the pending alarm is still in the planning/design stage. Information and advice can be obtained from the DFES DBA Manager.

**a)** All sub indicator boards connected to an FIP shall comply with AS1670.1 and all requirements of this connection code.

**b)** All SIB's shall have their own zone or group allocated on a FIP and be clearly labelled or indicated as such.

**c)** Each SIB shall provide its own dedicated signal to the ASE, except HRB's, which may group the SIB's signals, or where authorised by the DFES DBA Manager.

**d)** All SIB's shall be indicated on a ZONE Fire Plan at the FIP and a ZONE Fire Plan shall also be provided at the SIB.

**e)** Under no circumstances, regardless of AS1670.1, no sub indicator board shall be connected to another sub indicator board. Data Gathering Points (DGP) may be connected provided there is no requirement for the attending FRS appliance to ever attend that DGP to affect any purpose.

**Shopping Centres**

**f)** For operational reasons, DFES will not allow SIB's to be installed in Shopping Centres. If a Tenancy requires a SIB, then PRIOR written approval must be obtained from the DFES DBA Manager before the SIB is installed.

**g)** Shopping Centre tenancies shall have no control over the Building Occupant Warning System. All BOWS shall be controlled from the Shopping Centre Fire Indicator Panel. A public address facility may be connected to SIB or DGP but must be overridden by OWS system operations.

### 5.5.7 Multiple ASE Installation

Where a site has multiple buildings requiring connection to a Fire Control Station as dictated by the BCA, then additional ASE(s) will be required to be installed.

### 5.5.8 AS 3786 Smoke Alarms

Residential smoke alarms that are 240v AS 3786 compliant devices are not allowed to be connected to a AS 1670.1 Fire Indicator Panel monitored by Direct Brigade Alarm (DBA).

Whilst AS 1670.1 does allow for those types of devices to be connected to a FIP, the restriction is that they must not transmit a DBA signal. DFES experience is that whilst this may be configured correctly upon commissioning, over time, the configuration is eventually modified, and these devices do activate a DBA signal.

Therefore, DFES will not allow AS 3786 devices to be connected to any DBA monitored FIP.

## 5.6 FIRE DETECTION IN CONCEALED SPACES

Concealed Space protection is required as part of AS 1670.1.

Concealed space smoke detection is required in concealed spaces regardless of fire sprinkler protection provisions.

Concealed spaces not requiring protection are nominated within AS 1670.1

Electrical equipment within the concealed space of a SOU ceiling does not require smoke/fire detection. AS 1670.1 detection requirements for SOU's are provided in a separate section.

Where concealed spaces contain electrical equipment a smoke detector shall be provide within 1.5m of the equipment in addition regardless of ceiling depth.

Electrical equipment includes but not limited to;

a) HVAC Equipment – Fans, Fan Coil Units, Heating Coils, VSD's, Condensation Pumps etc.
b) Hydraulic Equipment – pumps, hot & cold-water units etc.
c) Electrical Equipment - Controllers, Power distribution, types of lighting etc.

All concealed space detection shall be provided with access panels for maintenance and visual checks by Fire Brigade. Minimum access dimension 450mm x 350mm. Access panels where required to be secured or locked shall be done by 10mm square budget lock.

## 5.7 SMOKE DETECTION IN CARPARKS

Where buildings are subject to smoke management systems AS 1670.1 Section 7 requires smoke detection throughout circulation spaces of carparks and loading docks to initiate certain mechanical or smoke management ventilation systems below:

- Carpark Ventilation Systems
- Shutdown Systems
- Zone Pressurization Systems (Zone Smoke Control Systems)
- Fire-isolated Exit Pressurization Systems
- Lift Shaft Pressurization Systems

Refer to layout of smoke detection throughout carpark circulation spaces in Figure 7.5.2.2 (C)

Smoke detection is required where Pressurised Exits or Pressurised Lifts or Non-pressurised lifts open into a carpark or internal loading dock area.

Thermal detection is not a substitute for required smoke detection implemented to initiate smoke management systems.

Alarm verification facility (AVF) with a maximum delay of 60 seconds can be implemented to minimise false alarms.

Where the NCC/BCA does not require smoke management systems within a building and only contains carpark ventilation with no other form of smoke management, smoke detection throughout circulation spaces of the carpark is not required unless specified otherwise.

## 5.8 FIP & EWIS POWER SUPPLY REQUIREMENTS

### 5.8.1 Compliance to AS/NZS 3000

DFES requires the electrical installation to comply with AS/NZS 3000.

Battery backed up Fire Detection and Emergency/Occupant Warning systems do not require fire rated electrical supply cabling from main electrical switch board (MESB) to FIP or EWIS.

Main switch suppling FDAS may be once removed from MESB as per AS/NZS 3000 and be connected on supply side of general electric installation main switch on distribution board (DB). It is DFES preference to supply all fire safety services from MESB where practical.

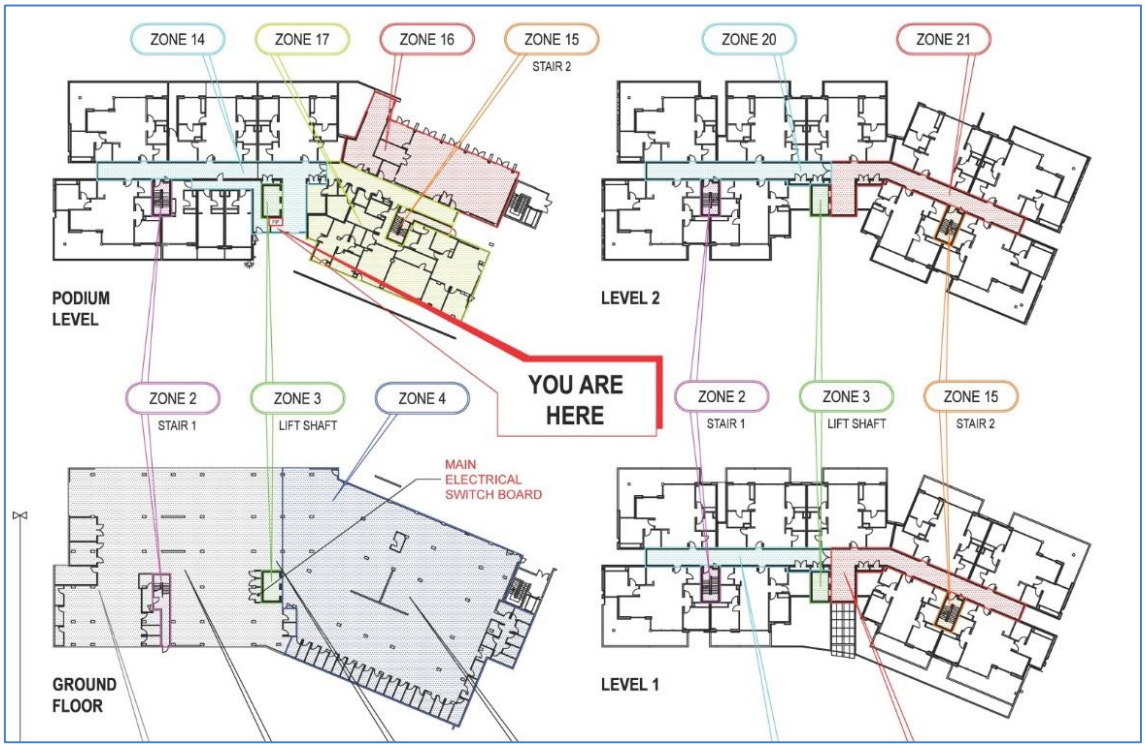
Main switches shall be selected such that a fault on one safety service or a fault on the general electrical installation will not result in loss of supply to other safety services. Therefore, independent supply shall be provided for following fire safety services:

1. FIP
2. EWIS
3. DUTY PUMP
4. STANDBY PUMP

These requirements are not the obligation of the fire alarm agent, but the electrician, and the contractor connecting the electrical supply. Fire alarm agent to co-ordinate with electrical trade and head contractor to ensure compliant mains supplies are provided to fire safety services.

The location of the main electrical switch board shall be shown on the Zone Plan. The wording shall be specifically '***MAIN ELECTRICAL SWITCH BOARD'*** and not MSB, MEB, or MAIN SWITCH BOARD.

Please see below example.




### 5.8.2 Labelling of Electrical Circuit Breakers for Fire Safety Services

Labelling to be provided to each fire safety service switch nominating the service (made from traffolyte or engraved plastic, normally black text on white background) and "IN THE EVENT OF FIRE DO NOT SWITCH OFF" (made from traffolyte or engraved plastic, normally white text on red background), like image and table below.


| | |
|---|---|
| **FIP** | **IN THE EVENT OF FIRE DO NOT SWITCH OFF** |
| **EWIS** | **IN THE EVENT OF FIRE DO NOT SWITCH OFF** |
| **DUTY PUMP** | **IN THE EVENT OF FIRE DO NOT SWITCH OFF** |
| **STANDBY PUMP** | **IN THE EVENT OF FIRE DO NOT SWITCH OFF** |
| **JACKING PUMP** | **IN THE EVENT OF FIRE DO NOT SWITCH OFF** |

Deviations from the above should be discussed with DFES DBA team.

## 5.9 FALSE FIRE ALARMS

### 5.9.1 False Fire Alarm Introduction

Department of Fire and Emergency Services (DFES) charge a fee for false fire alarm attendances to DBA premises since 11 January 2016. This was implemented due to a high number of false fire alarm callout using causing excess use of DFES resources tor non fire or emergency events.

Each DBA premises are provided with 3 free false alarms per year to cover events which are often out of building management control and to allow for a certain amount of human error. A waiver process is also available, if building management can prove the false alarm was out of their control e.g. vandalism etc.

The fire alarm, fire protection, fire safety engineering and building surveyor industry may be asked by many clients to alter existing smoke detection systems in a bid to mitigate false fire alarm fees.

Many existing and new buildings suffer from poor system design in relation to fire detection, cooking facilities, ventilation and general management practices in relation false fire alarms. If engaged to undertake these review/modifications all aspects causing false alarms must be first reviewed beyond the fire detection system and addressed accordingly.

- Management processes to be reviewed and amended where required. Signage, Procedures, Policies etc.
- Ventilation provisions to be checked for adequacy Natural or forced ventilation, system maintenance, commissioning, system capacity etc.
- Cooking Facilities – relates to ventilation provisions, location of detectors, detector types.
- Showers – relates to ventilation provisions above and locations of detectors.
- Fire detection – detector type, detector location, delay facilities.

### 5.9.2 DFES Approval

Changes to DBA fire detection alarm system requires consultation and approval by DFES DBA team and DFES Fire Safety Engineers where performance solutions are implemented. Any change/modification to the operation of life safety system triggers the requirement for a building permit from the local government authority. The fire alarm agent must submit a DFES C8 form to DFES for any changes to a fire system which is connected to the DBA network.

Any changes made to an alarm system connected as a DBA, without DFES approval, are in breach of the DBA End User Agreement. The consequences to the breach can be significant and include the alarm being 'OFF-LINED' and the DFES Disconnection Process being initiated.
DFES reserve the right to refuse any such changes irrespective of any other Approvals issued by the Permit Authority or the Building Surveyor.

### 5.9.3 Heat Detection

Heat detection is not a direct replacement for spaces which require smoke detection. Heat detection should only be used in compliance with applicable AS 1670.1 and the requirements of applicable BCA.
Heat detection may be added to an area in combination with compliant smoke detection provisions.

### 5.9.4 AS 3786 Smoke Alarms

AS 3786 Smoke Alarms are also not a direct replacement for smoke detection required by BCA and AS 1670.1. AS 3786 Smoke Alarms may be used in areas deemed suitable by the BCA or in combination with other required smoke/fire detection.

### 5.9.5 Alarm Delay

Clients may also consider a delay be incorporated into the Fire Indicator Panel (FIP) programming, so the Master Alarm Function (MAF) does not initiate the alarm relay to the Alarm Signalling Equipment (ASE) immediately upon alarm activation.

This is permissible in certain extenuating circumstances under AS1670.1 provides various options for alarm delays, i.e. AVF, AAF, ADF and AIF.

**Alarm Verification Facility (AVF)** – is a programming feature for smoke detection where the detector detects smoke or similar partials and resamples within 30-60 seconds to confirm particles are still present. Delay system is based on natural dispersal on particles caused by non-fire events such as aerosols, small amounts of steam or dust etc.

**Alarm Acknowledgment Facility (AAF)** – Is a manual push button facility which will delay the main alarm function of smoke detection for a period of time to allow occupant to clear particles causing false alarm. Requires occupants to be aware and competent in its operation to function correctly Requires management/induction procedures and occupant familiarity to be effective.

**Alarm Delay Facility (ADF)** - is a programming feature for smoke detection where the detector detects smoke or similar partials and delays the main fire alarm function for a fixed time period between 0-5 minutes after which it resets and will trigger main alarm function if particles still remain. System based on natural or forced dispersal on particles caused by non-fire events such as aerosols, steam, dust, cooking activities etc.
It is recommended to use ADF in combination with addressable smoke multisensory smoke/thermal detection. Addressable Sounder Base to inform occupant an alarm has been activated and action is required to prevent main fire alarm function and DBA signal. Thermal Detection should automatically initiate main fire alarm function.

**Alarm Investigation Facility (AIF)** – is a facility which allows a time delay to the main alarm function for building management to initiate an investigation period, the alarm is investigated to assess if a false alarm or actual fire event is present, the fire alarm can be acknowledged if false or manually initiate main fire alarm function if fire is present. This delay function is not suitable for most buildings and requires a stringent application process through DFES prior to approval.

**OWS/EWIS Delay**
No delay facility shall be provided to OWS or EWIS system. All delay facilities are to be a function within the FDCIE.

# 6 AS1668.1/AS 1670.1 SMOKE MANAGEMENT SYSTEMS

AS1668.1 & AS 1670.1 details the compliance required for smoke management systems.

DFES will require copies of all compliance documents where a smoke management system has been installed to AS1668.1 & AS 1670.1

All smoke management system commissioning and testing documentation shall include Sound Pressure Level results while systems are in operation to ensure maximum acceptable sound level is not exceeded. Noise levels shall not exceed 65 dB(A) in occupied spaces or 5 dB(A) above the ambient noise levels to a maximum level of 80 dB(A). Noise levels in fire-isolated exits shall not exceed 80 dB(A).

Smoke management air schematics are to be provided at FIP location. Fire Fan Control Panel (FFCP) instructions are to be provided along with a cause and effect matrix detailing operation of smoke management and air handling plant controlled by fire alarm system.

# 7 FIRE SAFETY ENGINEERING REPORT (FSER)

## 7.1 FSER POST COMPLETION REPORTS (PCR)

DFES requires that where a building is subject to an FSER, then an FSER Post Completion Report (PCR) shall be provided by the fire engineer author prior to the DBA connection being authorised.

The FSER PCR shall state that it is an FSER Post Completion Report and shall include a post completion inspection with nominated time and date PCR shall list all Performance Solutions that the FSER contains and confirm all requirements to achieve performance solution have been implemented onsite. This confirmation may be partly based on contractor's certificates where confirmation is not easily achieved through visual inspections, in which case, those certificates shall form part of the FSER PCR.

DFES Built Environment Branch (BEB) has published a guideline in relation to FSER's and it is recommended that this guideline be reviewed to ensure BEB compliance has also been achieved.

## 7.2 FSER PERMANENT NOTICE

DFES requires that any building subject to an FSER / Performance Solution in its design or construction shall have a permanent notice mounted adjacent to the Fire Indicator Panel (FIP) advising that the building is subject to a Fire Safety Engineering Report (FSER), with a clear description of the Performance Solution/s provided on the notice.

This notice shall be of a minimum A4 size, mounted within a permanent frame and securely fastened to the wall adjacent to the FIP or Zone Plan.

# 8 EXISTING CONNECTIONS

## 8.1 UPGRADING/RELOCATION

Fire Alarm Agents are required to submit a C6 form for any of the following planned work:

a) FIP Replacement (changeover) – same location
b) FIP Replacement/ Relocation – new location

Any work which may compromise the DBA compliance of a site must be preceded by the submission of a C8 form. A C8 form is required where a contractor (fire alarm agent or other) is making any changes to the fire system that result in a modification to the As Builts, Block/Zone Plan or compromise continuity of DBA compliance to all relevant standards. This includes:

a) Addition, removal, relocation of devices or fire system components
b) Addition to, or modification of existing FIP, detection or suppression system

A C8 form is not required for:

- Repairs to FIP components
- Repair/ replacement of fire system devices (of same type, in same location)
- System maintenance

Replacing or upgrading the FIP will usually involve removing and re-installing the ASE. Under no circumstances are agents or their servants to re-install the ASE. A C6 form will need to be lodged with the FAMS Customer Service Centre who will organise a compliance check with the DFES DBA Team and re-install the ASE to ensure the integrity of the connection.

The C6 form should be lodged no later than 72 hours prior to the anticipated changeover date to allow for scheduling. Where this is not possible emergency appointments may be possible but are not guaranteed.

It is recommended that DFES requirements for monitoring be prepared beforehand on the FIP so that the ASE can be changed over early in the upgrade so that the customer can have almost continuous monitoring during an extensive circuit change over period.

If the FIP is merely being moved from one location to another and the FIP and the ASE retain their integrity, i.e. they are not removed from each other, then DFES will only be required to conduct an inspection after the move and will not be required during the changeover. However, DFES will be required to be advised of the new FIP location so that their turn out records can be suitably amended:

**a)** FIP relocations are subject to DFES compliance approval.
**b)** Agents have 10 working days upon completion of the ‘upgrade’ or ‘relocation’ to submit all final certifications/drawings/commissioning & test results to the DFES DBA Team. Failure to comply may see the alarm placed OFFLINE.

## 8.2 ADDITIONS OR MODIFICATIONS

Any modifications, additions, or changes to a DBA connected FIP, must comply with all the associated requirements BCA, Australian Standards and other sections of this Connection Code. This includes advising the FAMS Customer Service Centre or the DFES DBA Team of these changes prior to them being implemented:

a) Fire Alarm Agents are required to submit a C6 form for any of the following planned work.
b) FIP Add Function – modification or addition to monitored signals/ systems.
c) The C6 form should be lodged no later than 72 hours prior to the anticipated changeover date to allow for scheduling. Where this is not possible emergency appointments may be possible but are not guaranteed.
d) FIP add functions are subject to DFES compliance approval.
e) Agents have 10 working days upon completion of the ‘upgrade’ or ‘relocation’ to submit all final certifications/drawings/commissioning & test results to the DFES DBA Team. Failure to comply may see the alarm placed OFFLINE.

C8 form is required where a contractor (fire service agent or other) is making any changes to the fire system that result in a modification to the As Builts, Block/Zone Plan or compromise continuity of DBA compliance to all relevant standards. This includes:

a) Addition, removal, relocation of devices or fire system components.

b) Addition to, or modification of existing FIP, detection or suppression system.

A C8 form is not required for:

- Repairs to FIP components.
- Repair/ replacement of fire system devices (of same type; in same location).
- System maintenance.

| | FIP Upgrade | FIP Relocation<br>FIP Input Modification |
|---|---|---|
| **Perth Metro Area (within 100km of Perth GPO)** | 3 working days from submission and acceptance of C6 form | 3 working days from receipt of DFES Compliance Approval |
| **Regional Service Centre Area (within 100km of Service Centre GPO)** | 3 working days from submission and acceptance of C6 form | 3 working days from receipt of DFES Compliance Approval |
| **Regional Service Centre Area (101km - 300km from Service Centre GPO)** | 4 working days from submission and acceptance of C6 form | 4 working days from receipt of DFES Compliance Approval |
| **Remote Area* (>300km from Service Centre GPO)** | 7 days from submission and acceptance of C6 form | 7 days from receipt of DFES Compliance Approval |

# 9 COUNTRY CONNECTIONS

**a)** All country connections shall follow the same standards as the metropolitan connections;

**b)** Costs in relation to regional/rural DBA connections, quotes can be obtained by contacting the FAMS Customer Service Centre.

# 10 FAILURE TO COMPLY

**a)** In order to maintain the highest standard of the DBA network, the DFES reserves the right under Clause 8.1 of the “agreement” between DFES and the client, to “offline” the alarm if it is found that any of the requirements indicated in this code are breached.

**b)** DFES maintains the right to reject an alarm for connection to the DBA network for any pending alarm failing to meet any of the requirements indicated in this code.

**c)** For those alarms failing to meet the requirements of this code, if the client or the agent fails to address the issues raised by DFES, then the matter will be referred to the DFES Built Environment Branch (BEB), the Principle Building Surveyor of the Authority Having Jurisdiction (AHJ).

**d)** Agents have 10 working days upon completion of the ‘upgrade’ or ‘relocation’ works to submit all final certifications/drawings/commissioning & test results to the DFES DBA Contract Manager. Failure to comply may see the alarm placed OFFLINE.

# 11 AGENTS RESPONSIBILITIES

It is the fire alarm agent’s responsibility to ensure that any work they complete on a fire alarm system connected to the DBA network, is compliant with all aspects of this connection code.

Any work which may compromise the DBA compliance of a site must be preceded by the submission of a C8 form.

A C8 form is required where a contractor (fire service agent or other) is making any changes to the fire system that result in a modification to the As Builts, Block/Zone Plan or compromise continuity of DBA compliance to all relevant standards. This includes:

- Addition, removal, relocation of devices or fire system components
- Addition to, or modification of existing FIP, detection or suppression system

A C8 form is not required for:

- Repairs to FIP components
- Maintenance works

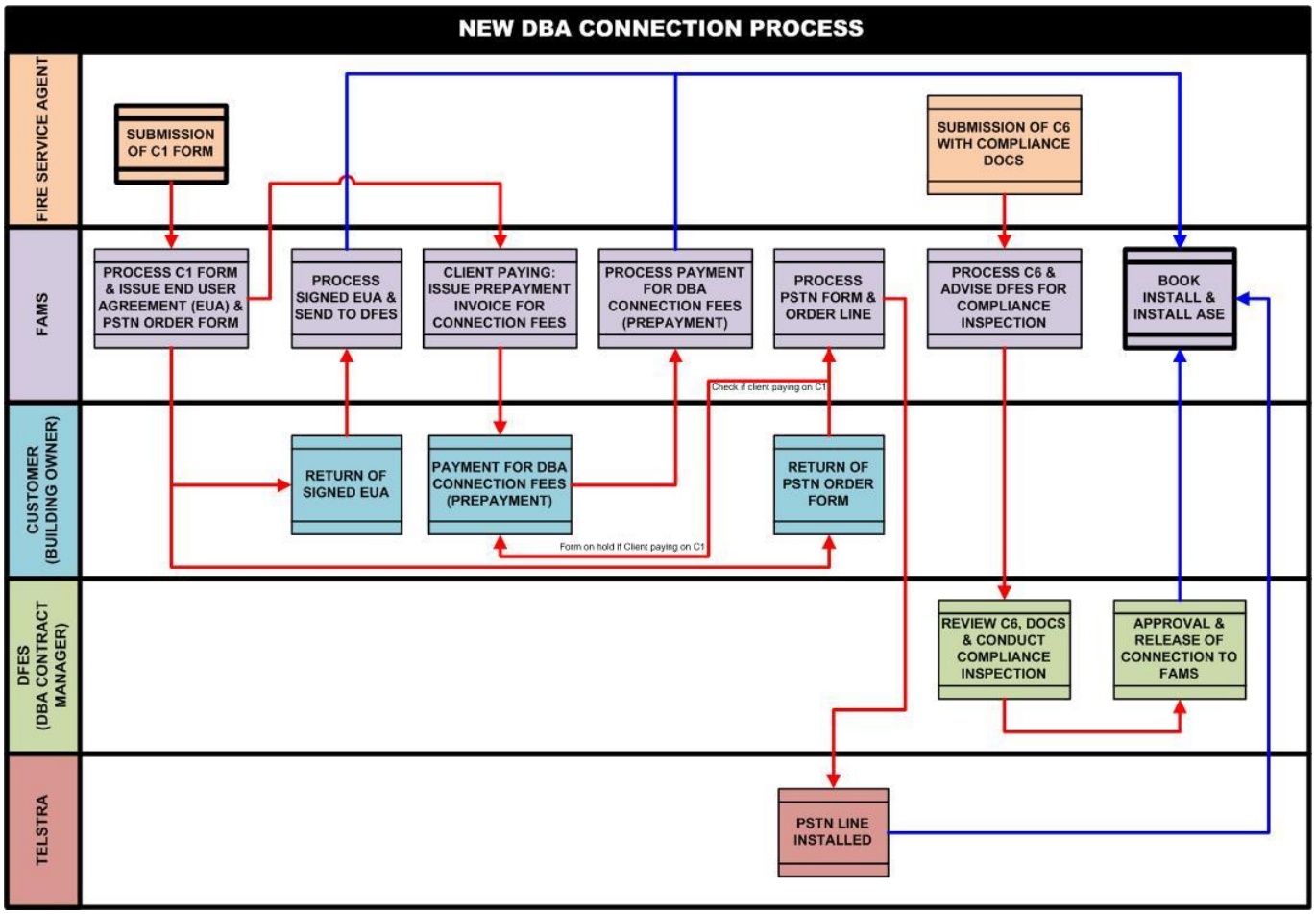
- Change of detection device type in line with latest AS 1670.1 requirements and AS 1670.1 Guide for selection of detectors.
- Repair/ replacement of fire system devices (of same type; in same location)

Failure to meet this requirement may result in the alarm being placed offline till compliance can be assured. The compliance requirements are the fire alarm agent's responsibility to supply to DFES.

# 12 REQUEST FOR CONNECTION

Agents can request connection to the DBA network by completion of a C1 & C6 form.
Refer to section 13 for a complete list of documentation required for submitting to the FAMS Customer Service Centre.

> ***Note:*** *A DBA application form (C1) must be completed prior to the submission of the connection request form (C6).*




## 12.1 PSTN LINE ORDER PROCEDURE & PSTN ORDER AUTHORISATION FORM

The PSTN lines are no longer available to order. This process will be site specific where mobile signal strength is too low.

# 13 COMPLIANCE DOCUMENTS

Most Australian Standards require that the compliance documents either be supplied to the client or left at the Fire Indicator Panel or Sprinkler Valve Set.

DFES require ***copies*** of those documents in order to ensure that compliance has been achieved.

DFES reserve the right to require that compliance documentation be completed to a level and standard that is of such a quality that review of such documents is not inhibited by poor completion, i.e. hand-written documents will not be accepted. Documents must be completed either with WORD or a similar application.

In addition to the connection request (C6) form, the following documentation is required by the DBA Team for Review where applicable.

| **Direct Brigade Alarm Documentation Submission** | |
|---|---|
| **Document Name** | **Document Description** |
| Fire Detection & OWS/EWIS | |
| TCA1 | ACMA TCA1 Cabling Advice |
| C6 | DFES C6 request for connection form |
| AS 1670.1 E & G | AS 1670.1 Appendix E (FAMS Website) & G (FAMS Website) |
| AS 1670.1 Battery Log | AS 1670.1 – Battery Log |
| Zone Plan (Detection)<br><br>Zone Plan (Evacuation) | Zone Plan Fire Detection/ Zone Plan Evacuation Zones Refer to zone plan for requirements |
| AS 1670.4 E & G | AS 1670.4 Appendix E (FAMS Website) & G (FAMS Website) |
| AS 1670.4 Battery Log | AS 1670.4 – Battery Log |
| As Built | As Built drawings (combined into one pdf)<br><br>As build drawings shall be in colour, colour/line types to differentiate between FR cable, TPS cable, Coax Cable, power cable, OWS/EWIS Cable FR, OWS/EWIS TPS Cable and WIP Cabling. As built drawings to show locations of short circuit isolators (SCI) for each fire compartment, sound levels/STI and access hatches. |
| As Built Schematic | As Built drawings (combined into one pdf) Single line diagram, Linetypes consistent with above. |

| | |
|---|---|
| AS 3013 | AS 3013 Compliance Certificate (include data sheets of materials used including cabling, tray, fittings and fixtures. |
| Cause & Effect Matrix | Provide Cause & Effect Matrix which identifies the operation of the fire detection system, OWS/EWIS system, all mechanical functions of smoke management/shutdowns. Wet Fire interfaces and any interfaces with lift/escalators and security systems. Kitchen suppression system interface with Gas shutdown etc. |
| Sub Indicator Panel (SIB) | AS 1670.1 E & G, Zone Plan, As Built, Battery Log |
| Aspirating Smoke Detection | As Built Drawings and Manufacturer Design/Calculations. |
| <u>Wet Fire Documentation</u> | |
| Wet Fire Installation Cert | Wet Fire Installer Compliance certificate - AS 2118.1/4/6, AS 2419, AS 2441 etc. |
| 3rd Party Cert | AS 2118.10 3rd Certificate for any installed sprinkler / drencher systems; |
| C7 | C7 Sprinkler Certification form for any installed sprinkler / drencher systems |
| Hyena Calcs | Hydraulic Calculations |
| As Built (Wet) | As built drawings combined into 1 pdf for wet fire drawings including schematics & details |
| Block Plans | Wet Fire Block Plans to be provided in pump room and booster enclosure |
| Monitored Device Schedule | Schedule of wet fire monitored devices or include on Block plans. |
| Pumps | Commissioning Reports |
| Hydrostatic Test Certificate | Certificate nominating system has been hydrostatically tested in accordance with AS 2118 and or AS 2419 |
| Booster Test Report | If competed by a private booster test contractor. |
| Drencher Only | Minimum 3rd Party Cert & include on Detection Zone Plan - location of isolation valve, flow switches etc. |
| <u>Gas/Foam Suppression Documentation</u> | |
| Gas Suppression Cert | Gas Suppression Installer Compliance Certificate AS 4214 / AS 4487 |
| Commissioning Checklist | AS 4214 Appendix B (TABLE B1) & AS 4487 Appendix B |

| | |
|---|---|
| Gas Installation License | Provide Gas Installer License |
| Room Integrity Test | Provide Room Integrity Test Report/ Certify Room will hold Gas for required time period |
| Fire Safety Engineering Report (FSER) Documentation | |
| FSER | Provide latest FSER |
| FSER Notice | Provide FIP FSER Notice/List of Performance Solutions |
| FSER PCR | Provide FSER post completion report. |
| Smoke Management Documentation | |
| Stair Pressurisation Commissioning | Special attention shall be paid to the mechanical services compliance documents required by AS1668, these including Sound Pressure Levels (SPL) readings for all mech services in tenable areas. |
| AS 1668.1 Schematic | A Fire Fighter Control Panel (FFCP) mechanical services schematic to be installed at the FIP. |
| FFCP Instructions | A FFCP Operator Instructions to be installed at the FIP. |
| AS 3013 (Mech) | AS 3013 Compliance Certificate (include data sheets of materials used including cabling, tray, fittings and fixtures. |

All documents are required to be typed and submitted electronically. Hand written documentation will not be accepted.
DFES will not accept any compliance documents that are dated more than 90 days old from the date of compliance submission.
Where compliance documents are rejected and required to be resubmitted, then the date of the revision will be required to be placed on each page and initialled.

Agents shall allow a minimum 10 working days in the Perth metropolitan area for the compliance check to be performed by the DFES DBA team and the ASE connection to be completed by the Fire Alarm Monitoring Services Western Australian country area installation will require at least 20 days warning in order for travel arrangements to be made.

# 14 SPRINKLER COMPLIANCE DOCUMENTATION (3RD PARTY CERTIFICATE)

DFES require a 3rd Party Certificate for all sprinkler systems when the systems are installed within a DBA protected building, irrespective of the type of system installed, the number of heads installed, or if its connected or not connected to the Fire Indicator Panel.

The sprinkler 3rd Party Certifier shall word their 3rd Party Statement in such a way that there is no ambiguity as to the level of compliance.

The Certification must clearly identify as a 3rd Party Certification, i.e. it must state 'SPRINKLER 3rd PARTY CERTIFICATE'

The 3rd Party Certificate must include the following statement:

The sprinkler system installed at 'x' has been 'designed, installed, & commissioned to' the 'Australian Standard xx'

The third-party certificate shall include a list/table of items checked as part of the third-party review.

- Shop Drawing & As Built Documentation Reviewed
- Block Plan Reviewed
- Hydraulic Calculations Reviewed
- Commissioning Documentation – Pumps, Annubar/Flow Test, Hydrostatic Testing
- Booster Test Attended / Report Reviewed (Combined Systems)
- Site Inspection Conducted

A typical example of a correctly worded 3rd Party is:

*The Wall Wetting Drencher System has been designed, installed and commissioned in the 'DFES Emergency Services Centre at 20 Stockton Bend Cockburn Central' in accordance with Australian Standard 2118.2 (2010) "Automatic fire sprinkler systems Part 2: Drenchers systems" and the Building Code of Australia.*

*The Statement should include, where required or necessary:*

*BCA and relevant standards, Australian Standards (list the applicable Australian Standards), & Fire Engineered Performance Solution Report (Ref Number and Date).*

# 15 CONTACT DETAILS

## 15.1 FIRE ALARM MONITORING SERVICES (FAMS)

Customer Service Centre (24/7)
Phone: 1300 793 722
Fax: (08) 9499 7885
Email: wacsc@chubb.com.au
Post: PO Box 3238 Success WA 6964
Deliveries: 120 Cutler Rd Jandakot WA 6164

## 15.2 DFES

Direct Brigade Alarm Manager
Name: Brendan O'Regan
Mobile: 0455 478 494
Email: brendan.o'regan@dfes.wa.gov.au

Direct Brigade Support Specialist
Name: Denis Orozovic
Phone: 08 9395 9855
Mobile: 0401 457 720
Email: denis.orozovic@dfes.wa.gov.au

# 16 STANDARD FORMS

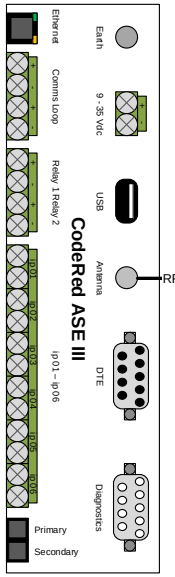
The following table lists the required forms for DBA application, connections, compliance and change. Up to date copies can be obtained from the FAMS Customer Service Centre

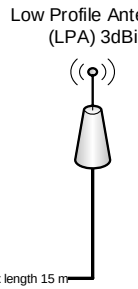
| Reference | Name | Description |
|---|---|---|
| C1 | DBA Request | Application for DBA Connection |
| C2.1 | DBA Owner Transfer/Change of Details | Notice of Change to DBA Ownership / change to DBA Details |
| C4 | DBA Disconnection | Application to Request DBA Disconnections |
| C6 | DBA Commissioning | Application to commission a DBA Alarm |
| C7 | Sprinkler Certification | Application to Connect Sprinkler/ Drencher System |
| C8 | DBA Amendment | Notice to Change/ Amend DBA System |
| C10 | iButton Request | Request for Technician iButtons |

# APPENDIX A – COMMUNICATION INSTALLATION DIAGRAMS

## DFES – DBA Fire Alarm Monitoring
## ASE III Wireless Comms Installation

**0 – 15 m from the FIP and ASE**




RFI 9006 CellFoil or CWD195 - RG58 50 OHM Low Loss Coaxial Cable max length 15 m

**Please Note:**
The LPA is normally installed on top of the square J-Box or square strobe housing, recommended J-Box shall be IP55 or above, 90x90x50 mm. The J-Box shall be mounted within 2.7 to 3 m above floor level, and have 450 mm minimum clearance above it to allow the LPA installation. The J-Box can be installed on external wall close to the Fire Panel and doesn't need to be at DBEP near the strobe (VAD).

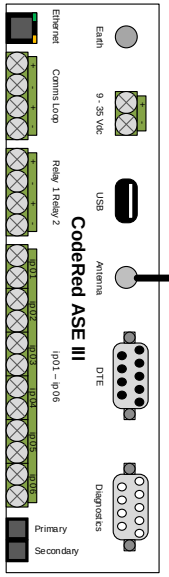
When location is chosen the minimum Channel Signal Quality (CSQ) also known as Signal Quality Measure must be 14, which also can be shown as Received Signal Strength Indicator (RSSI) value. i.e. RSSI:-85dBm(14)

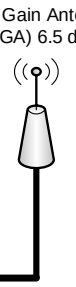
The maximum cable length with the LPA is 15 m, this length is already including tolerance as manufacturer's recommendation is 10 m. Do not exceed 15 m as LPA won't have enough gain to supply same CSQ or RSSI signal back to the ASE due to cable loss.

The Fire Agent is responsible to provide and install appropriate cable (RFI 9006 CellFoil or CWD195) from the Fire Panel. The LDF4-50 Heliax should not be used with the LPA as there is no performance improvements due to loss with additional joints and patch leads. DFES contractor will organise cable termination and connection.

This installation is considered standard "DBA Alarm Connection and Equipment Installation" with no additional cost.

**15 m and above from the FIP and ASE**




LDF4-50 Heliax 50 OHM above 15 m

**Please Note:**
Where cable distance is over 15 m from the Fire Panel, the HGA shall be used as the LPA won't have enough gain to supply signal back to the ASE. Also cable shall be upgraded once distance is over 15 m to LDF4-50 Heliax.

It is recommended that the HGA is installed on the roof above apex, but it can be installed on side of the building. Where the HGA is installed above the roof line, DFES contractor will install additional RF surge protector also known as lightning surge arrestor or suppressor.

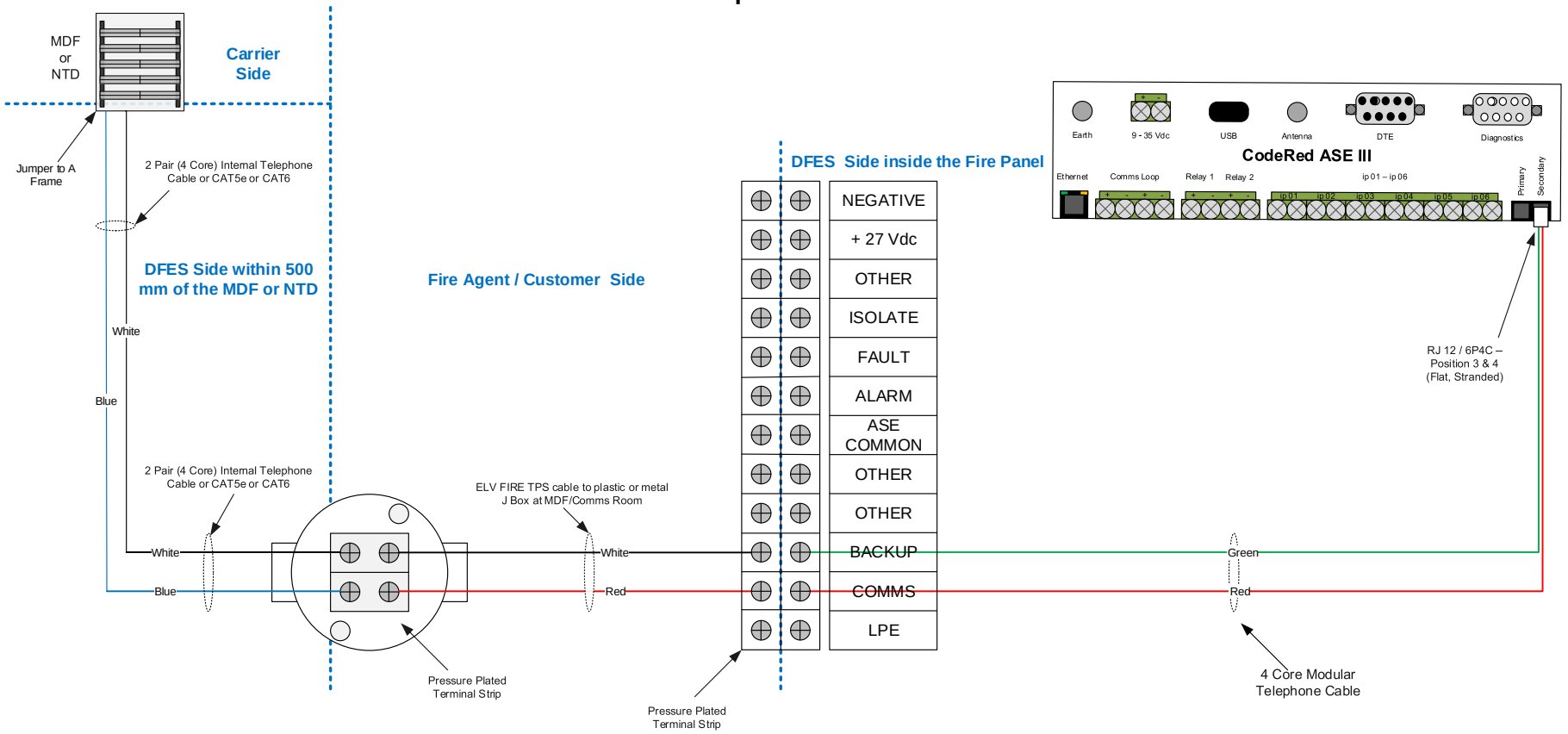
The HGA its installed with mounting bracket to suite type of the roof, in some cases whole assembly can be over 3 m high, this should be considered when location is chosen.

The Fire Agent is responsible to provide and install appropriate cable based on the distance from the Fire Panel, DFES contractor will organise cable termination and connection.

Where the HGA is installed on the roof, access shall be considered, also this type of installation is not considered standard and additional cost will apply and quote will be prepared for required party by DFES contractor.

| | | | |
|---|---|---|---|
| GOVERNMENT OF WESTERN AUSTRALIA / DFES Department of Fire & Emergency Services | | DWG Title | CodeRed ASE III |
| | | | Comms Installation |
| Wireless Comms Diagram | | DWG NO. | CCR2010DO0005 |
| DRAWN Denis Orozovic | DATE 20/08/2010 | JOB NO. 492 | SHEET 1 OF 2 |
| CHECKED Denis Orozovic | DATE 16/01/2020 | REV NO. 3.0 | REV DATE 16/01/2020 |
| APPROVED | DATE | FILE | |

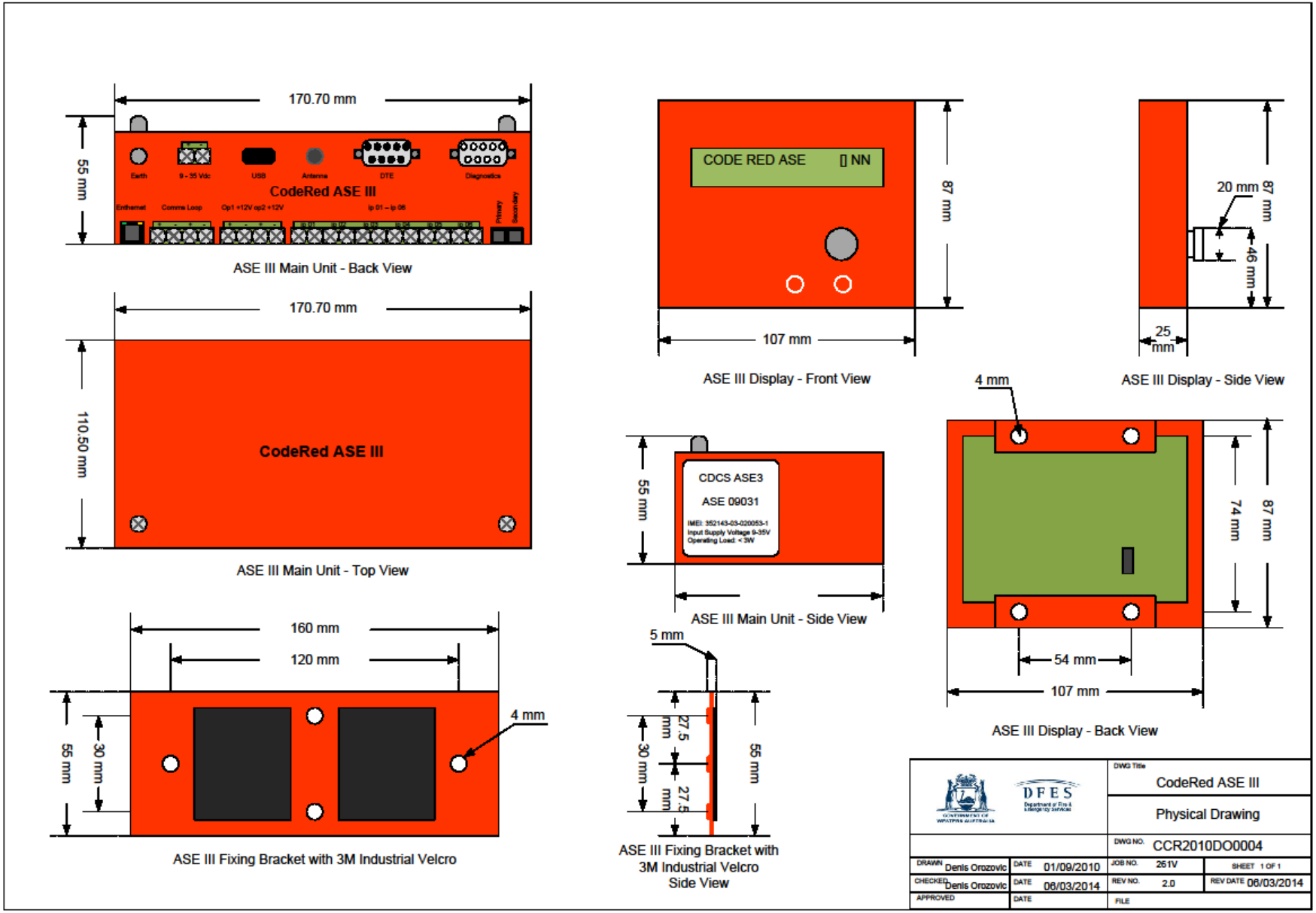
# DFES – DBA Fire Alarm Monitoring
# ASE III Backup Comms Installation




**Please Note:**
The J-Box shall be mounted within 500 mm of the MDF/NTD to allow for DBA connection. Additionally, there must be at least 200 mm of tail left in the J-Box for use by the DFES contractor. Also the external insulation must be stripped back, levelled with gland.
In addition, cable shall not enter J-Box except through the manufacture specified entry points. eg: Not through the rear casing or the lid of the J-Box.
The J-Box must use opposite entry points, not 90 degree, each entry point shall be 20mm threaded.
The J-Box can be either metal or plastic and pressure plated terminal strip shall be provided by Fire Agent.

| | | | |
|---|---|---|---|
| GOVERNMENT OF WESTERN AUSTRALIA / DFES Department of Fire & Emergency Services | | DWG Title | CodeRed ASE III |
| | | | Comms Installation |
| Backup Comms Diagram | | DWG NO. | CCR2010DO0005 |
| DRAWN Denis Orozovic | DATE 20/08/2010 | JOB NO. 492 | SHEET 2 OF 2 |
| CHECKED Denis Orozovic | DATE 16/01/2020 | REV NO. 3.0 | REV DATE 16/01/2020 |
| APPROVED | DATE | FILE | |

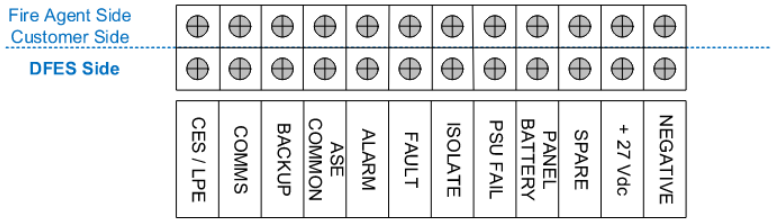
# APPENDIX B – CODE RED ASE III PHYSICAL DRAWING



# APPENDIX C – TERMINAL STRIP DIAGRAM

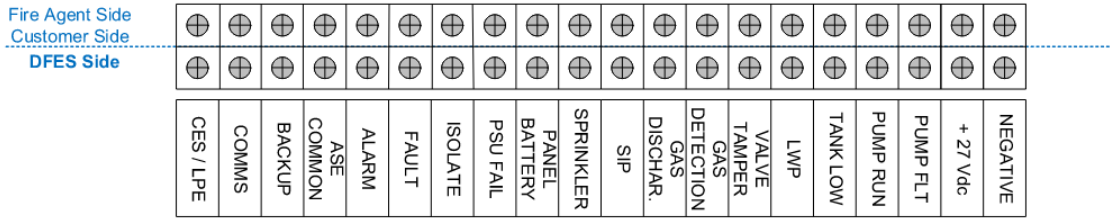
## DFES – DBA Fire Alarm Monitoring
## ASE III Terminal Strip

ASE III MANDATORY TERMINAL STRIP



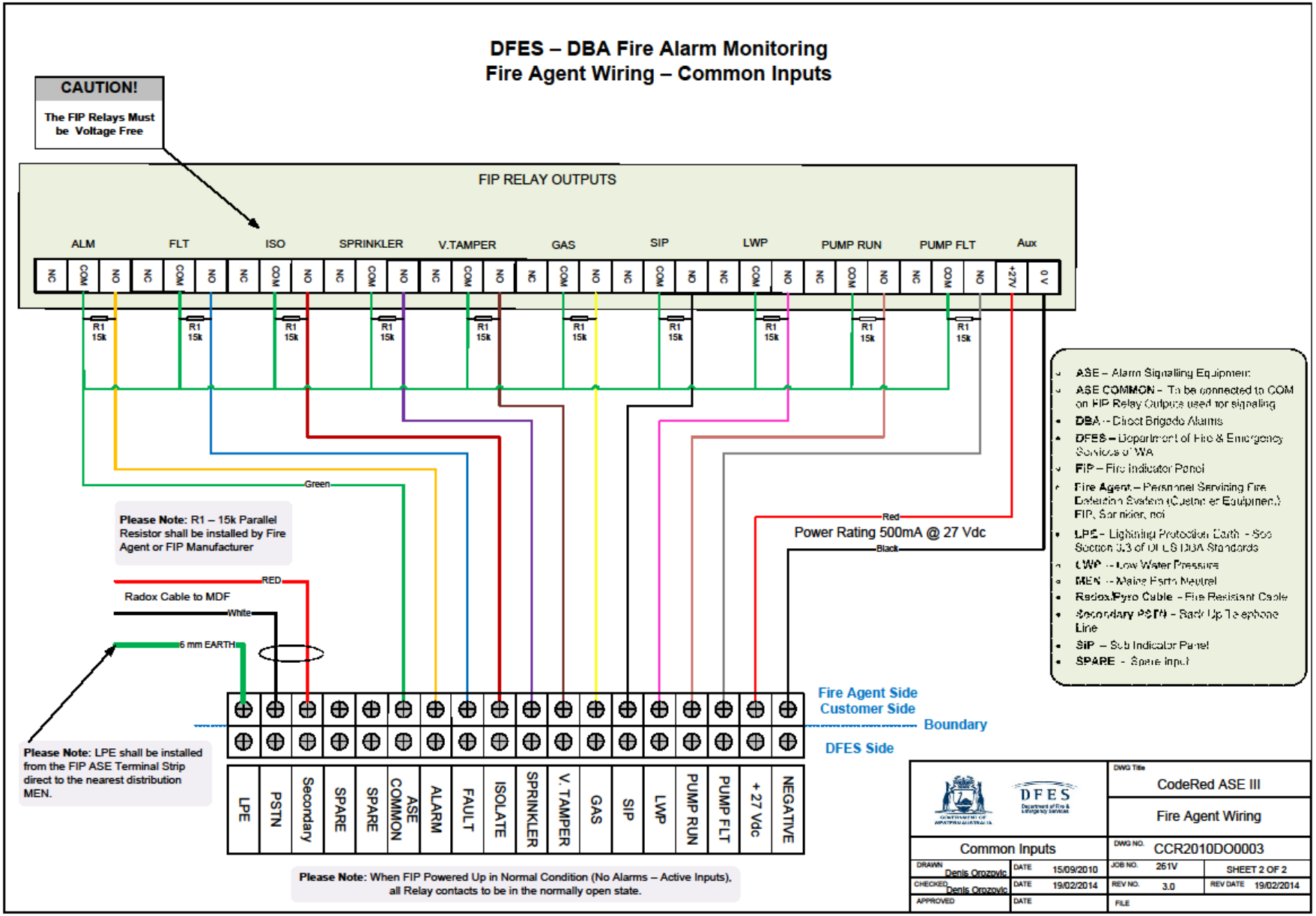

- **ASE –** Alarm Signalling Equipment
- **ASE COMMON –** To be connected to COM on FIP Relay Outputs used for signaling
- **BACKUP COMMS –** Backup Communication Line
- **CES –** Communications Earth System
- **DBA –** Direct Brigade Alarms
- **DFES –** Department of Fire & Emergency Services of WA
- **FIP –** Fire Indicator Panel
- **Fire Agent –** Personnel Servicing Fire Detection System (Customer Equipment) FIP, Sprinkler, ect
- **LPE –** Lightning Protection Earth
- **LWP –** Low Water Pressure
- **SIP –** Sub Indicator Panel
- **SPARE –** Spare Input

ASE III AVAILABLE TERMINALS

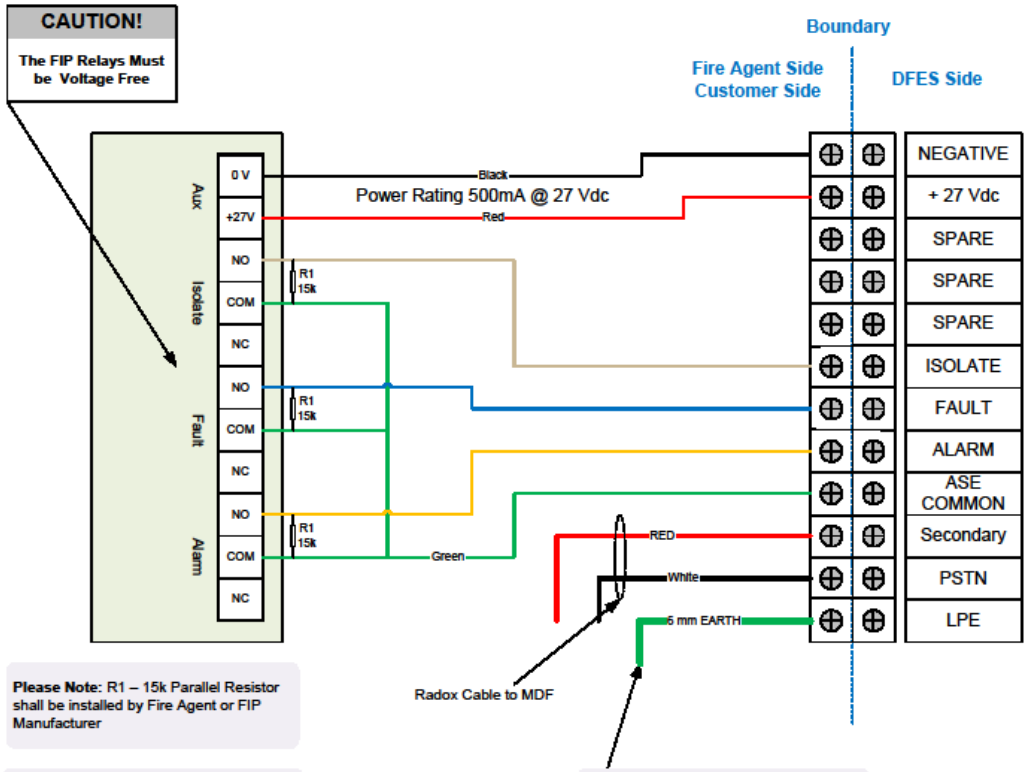



| | | | |
|---|---|---|---|
| GOVERNMENT OF WESTERN AUSTRALIA / DFES Department of Fire & Emergency Services | | DWG Title | CodeRed ASE III |
| | | | Terminal Strip |
| | | DWG NO. | CCR2010DO0001 |
| DRAWN Denis Orozovic | DATE 19/08/2010 | JOB NO. 492 | SHEET 1 OF 1 |
| CHECKED Denis Orozovic | DATE 24/12/2019 | REV NO. 4.0 | REV DATE 21/12/2019 |
| APPROVED | DATE | FILE | |

# APPENDIX D – FIRE AGENT WIRING DIAGRAM



# DFES – DBA Fire Alarm Monitoring
## Fire Agent Wiring - Alarm, Fault and Isolate




- **ASE** – Alarm Signalling Equipment
- **ASE COMMON** – To be connected to COM on FIP Relay Outputs used for signaling
- **DBA** – Direct Brigade Alarms
- **DFES** – Department of Fire & Emergency Services of WA
- **FIP** – Fire Indicator Panel
- **Fire Agent** – Person/s Servicing Fire Detection System /Customer Equipment FIP, Sprinklers)
- **LPE** – Lightning Protection Earth – See Section 2.3 of DFES DBA Standards
- **LWP** – Low Water Pressure
- **MEN** – Mains Earth Neutral
- **Radox/Pyro Cable** – Fire Resistant Cable
- **Secondary PSTN** – Back Up Telephone Line
- **SIP** – Sub Indicator Panel
- **SPARE** – Spare Input

**Please Note:** R1 – 15k Parallel Resistor shall be installed by Fire Agent or FIP Manufacturer

**Please Note:** When FIP Powered Up in Normal Condition (No Alarms – Active Inputs), all Relay contacts shall be in the normally open state.

**Please Note:** LPE shall be installed from the FIP ASE Terminal Strip direct to the nearest distribution MEN.

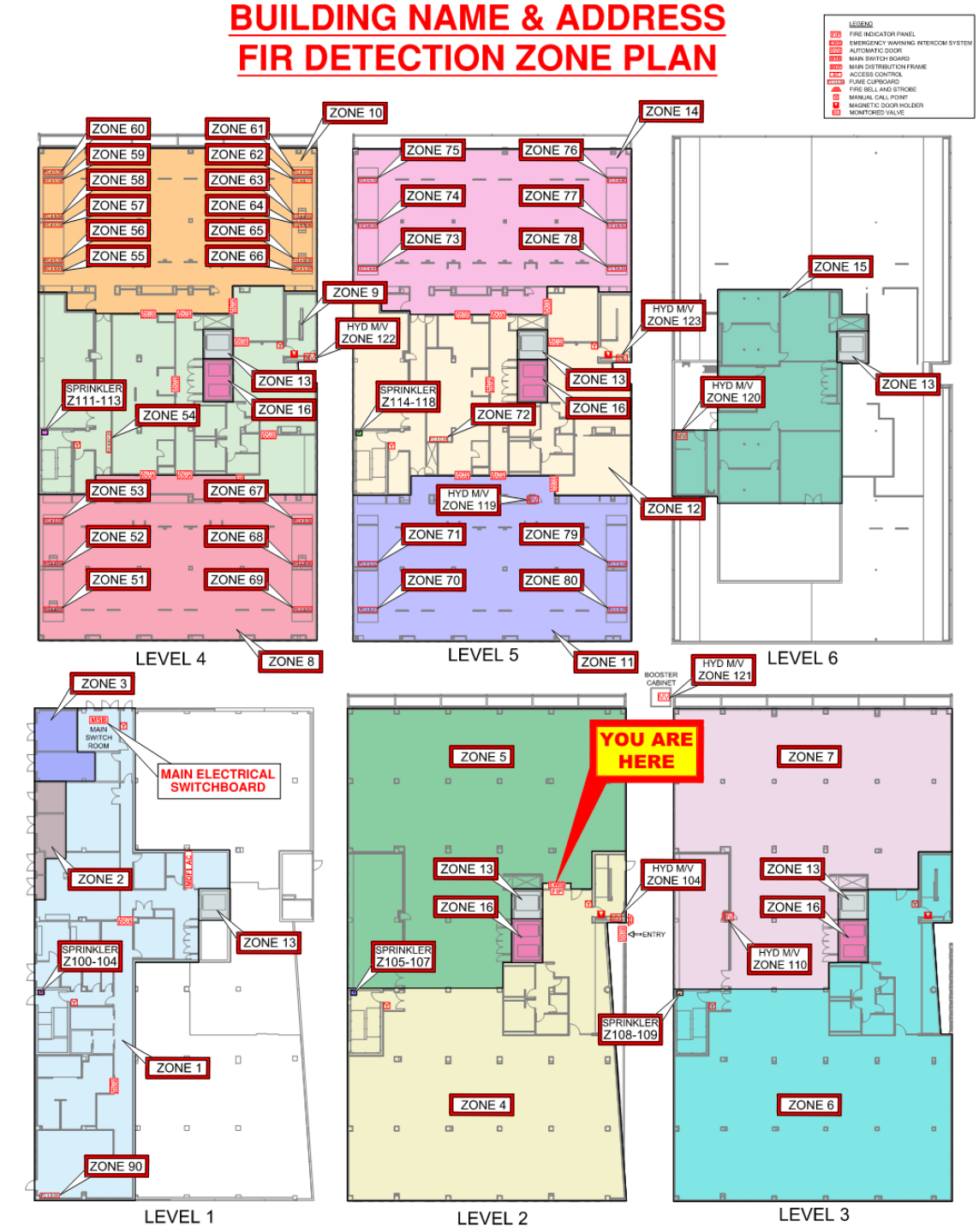
| | | | |
|---|---|---|---|
| DFES | | DWG Title | CodeRed ASE III |
| | | | Fire Agent Wiring |
| Alarm, Fault & Isolate | | DWG NO. | CCR2010DO0003 |
| DRAWN Denis Orpzovic | DATE 01/09/2010 | JOB NO. 261V | SHEET 1 OF 2 |
| CHECKED Denis Orpzovic | DATE 12/02/2014 | REV NO. 3.0 | REV DATE 12/02/2014 |
| APPROVED | DATE | FILE | |

# APPENDIX E – ABBREVIATIONS

| | |
|---|---|
| ACMA | Australian Communications and Media Authority |
| AFL | Above Floor Level |
| AHJ | Authority Having Jurisdiction |
| AS | Australian Standards |
| ASE | Alarm Signalling Equipment |
| BCA | Building Code of Australia |
| BEB | Built Environment Branch |
| CCM | Customer Cabling Manual |
| CES | Communications Earth System |
| CET | Communications Earth Terminal |
| CIE | Control & Indicating Equipment |
| DBA | Direct Brigade Alarm |
| DBEP | Designated Building Entry Point |
| DFES | Department of Fire & Emergency Services |
| DGP | Data Gathering Point |
| EUA | End User Agreement |
| EWIS | Emergency Warning Intercommunication System |
| FAA | Fire Alarm Agent |
| FAMS | Fire Alarm Monitoring Services |
| FDAS | Fire Detection Alarm System |
| FIP | Fire Indication Panel |
| FRS | Fire & Rescue Service |
| FSA | Fire Service Agent (same as FAA) |
| J Box | Junction Box |
| LGA | Local Government Authority |
| LPA | Low Profile Antenna |
| LPE | Life Protective Earth |
| HRB | High Rise Building |
| HGA | High Gain Antenna |
| MCP | Manual Call Point |
| MDF | Main Distribution Frame |
| MEN | Mains Earth Neutral |
| MIMS | Metal Insulated Metal Sheath |
| NBN | National Broadband Network |
| NCC | National Construction Code |
| OWS | Occupant Warning System |
| PA | Public Address |
| PSTN | Public Switched Telephone Network |
| SIB | Sub Indicator Board |
| SIP | Sub Indicator Panel |
| SOU | Sole Occupancy Unit |
| TFP | Tactical Fire Plan |
| TRC | Telecom Reference Conductor |
| WIP | Warden Intercom Point |

# APPENDIX F – ZONE PLANS

## BUILDING NAME & ADDRESS
## FIR DETECTION ZONE PLAN




**SPRINKLER ZONES**

LEVEL 1
ZONE 100 - SPRINKLER PRESSURE SWITCH
ZONE 101 - SPRINKLER M/VALVE
ZONE 102 - HYDRANT M/VALVE
ZONE 103 - SPRINKLER DRY PIPE M/VALVE
LEVEL 2
ZONE 104 - HYDRANT M/VALVE
ZONE 105 - SPRINKLER PRESSURE SWITCH
ZONE 106 - SPRINKLER M/VALVE
ZONE 107 - HYDRANT M/VALVE

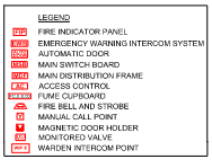
LEVEL 3
ZONE 108 - SPRINKLER PRESSURE SWITCH
ZONE 109 - SPRINKLER M/VALVE
ZONE 110 - HYDRANT M/V
LEVEL 4
ZONE 111 - SPRINKLER PRESSURE SWITCH
ZONE 112 - SPRINKLER M/VALVE
ZONE 113 - HYDRANT M/VALVE
ZONE 122 - HYDRANT M/VALVE

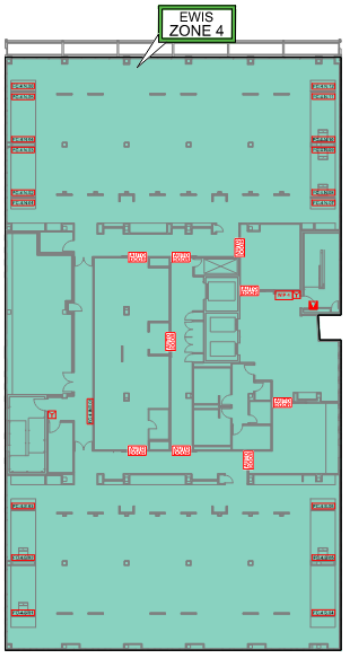
LEVEL 5
ZONE 114 - SPRINKLER PRESSURE SWITCH
ZONE 115 - SPRINKLER M/VALVE
ZONE 116 - HYDRANT M/VALVE
ZONE 117 - SPRINKLER PRESSURE SWITCH
ZONE 118 - SPRINKLER M/V
ZONE 119 - HYDRANT M/V
ZONE 123 - HYDRANT M/V
LEVEL 6
ZONE 120 - HYDRANT M/VALVE
BOOSTER
ZONE 121 - TOWN WATER M/VALVE

CONTRACTOR
DETAILS
INSTALL
MONTH/YEAR

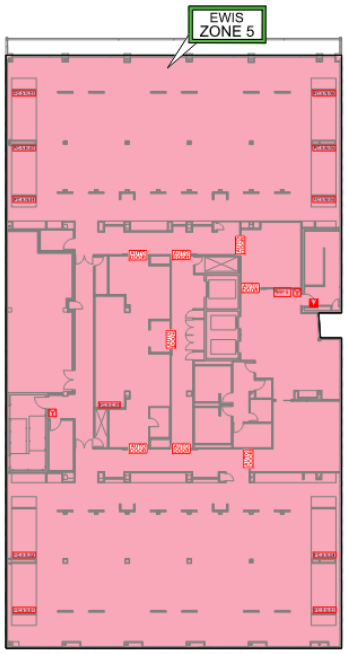
**IN THE EVENT OF FIRE RING 000**
**TO ENSURE FIRE SERVICES RESPONSE**

# BUILDING NAME & ADDRESS
# FIRE EVACUATION ZONE PLAN

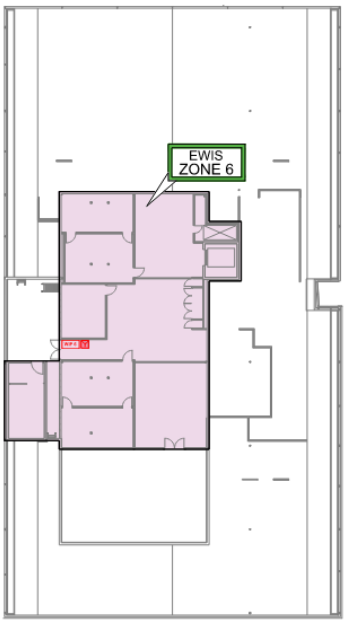


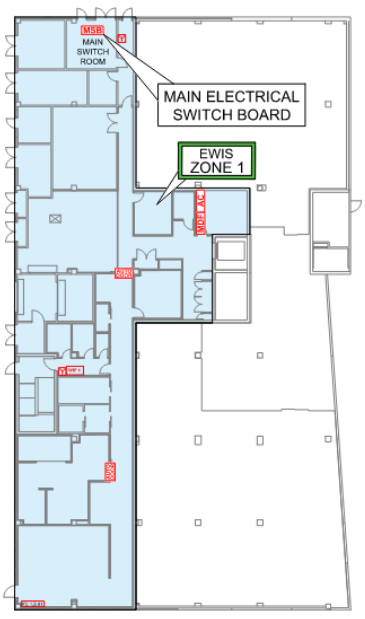

LEVEL 4




LEVEL 5

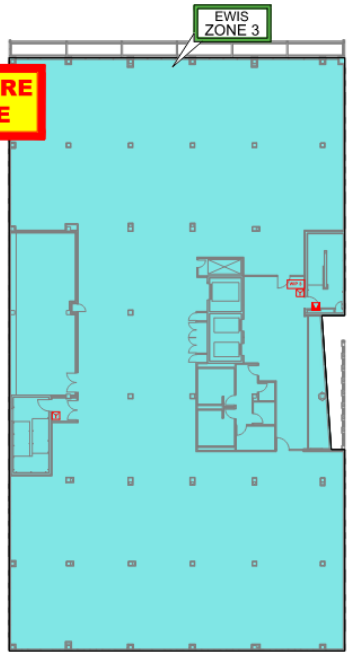



LEVEL 6




LEVEL 1


LEVEL 2




LEVEL 3

CONTRACTOR
DETAILS
INSTALL
MONTH/YEAR

**IN THE EVENT OF FIRE RING 000**
**TO ENSURE FIRE SERVICES RESPONSE**

# APPENDIX G – INSTALLER CERTIFICATION DOCUMENTS

Word versions of AS 1670.1 2018 Appendix E (with additional device table) & G are available for download from FAMS websites and shown below.
Word Version of AS 1670.4 2018 Appendix E & G are available for download from FAMS websites and shown below.
https://firealarmmonitoringservices.com.au/fire-service-agents/fire-service-agents-document-library/

**AS 1670.1 Appendix E**
**Designer's/Installer**
**Statement**

(Include all information as applicable)

I/We confirm *name and/or company* have provided the design, *reference*, for an automatic fire detection and alarm system located at *site name, building name if applicable* address.

The system is an alteration to *an existing system, a new system* and includes equipment of the following type(s): *collective (conventional), addressable, analogue-addressable or any combinations*.

The design criteria is *AS 1670.1:2018*, *Deemed to satisfy provisions of NCC, a performance solution* provided by *engineer's name/company; fire safety engineering report (FSER) report reference*.

(a) We certify the equipment used within the system design:

| | |
|---|---|
| (i) Conforms with the referenced equipment Standards. | Y/N/NA |
| (ii) Is located in an environment for which it is appropriate. | Y/N/NA |
| (iii) Is compatible with the relevant parts of CIE. | Y/N/NA |

(b) We have provided the following design documentation:

| | |
|---|---|
| (i) Design drawings showing the system layout (building plans), equipment type, location and designation. | Y/N/NA |
| (ii) Systems interface diagram. | Y/N/NA |
| (iii) Cause and effect statement for each system interface function. | Y/N/NA |
| (iv) Table of all system components, their location, type, unique system designation and descriptor. | Y/N/NA |
| (v) Table of each system component having a fixed service life, nominating the service life expiry date. | Y/N/NA |
| (vi) Table of any connectable equipment. | Y/N/NA |
| (vii) Manuals for all CIE and system components (as applicable). | Y/N/NA |
| (viii) Aspirating smoke detection design calculations (if applicable). | Y/N/NA |
| (ix) Type of occupant warning equipment. | |
| (x) Amplifier rated output; maximum load impedance (Ω) and power (W) (if applicable). | |
| (xi) Calculated impedance (Ω) and power load | |

| | |
|---|---|
| (W) of each loudspeaker transmission path (if applicable). | |
| (xii) Table of each supplementary warning device. | Y/N/NA |
| (xiii) Details of fire alarm monitoring requirements. | Y/N/NA |
| (xiv) Power supply requirements including — | |
| (a) Power supply source (mains), nominal voltage. | |
| (b) Standby power source type, nominal voltage and capacity required. | |
| (c) System quiescent current (mA), including ASE loads if applicable. | |
| (d) System alarm current (mA), including ASE and occupant warning system loads. | |
| (e) Load current of each ancillary circuit. | |
| (f) Standby time (h). | |
| (g) Alarm time (min). | |

## AS 1670.1 Appendix G
## Commissioning statement

(Include all information as applicable)

I/We *Name and/or company* have commissioned the automatic fire detection and alarm system located at *site name, building name if applicable* address on behalf of *name and/or company/address*.

The system is an alteration to *an existing system, a new system* and includes equipment of the following type(s): *collective (conventional), addressable, analogue addressable or any combination*. The design statement has been provided by *name and/or company/address*.
The installer's statement has been provided by *name and/or company/address*.

The design criteria is AS 1670.1 — 2018, Deemed to satisfy provisions of NCC, a performance solution provided by *engineer's name/company; fire safety engineering report (FSER) reference*.

We certify that the installed system —

(a) meets the design Standard specified;

(b) is correctly installed;

(c) meets the cause and effect matrix requirements;

(d) meets the system interface requirements;

(e) commissioning report is provided; and

(f) the baseline data are provided (see Clause 1.7.2).

Company:

Name:

Position:

Signature:

Date:

| Zone of protection | Number and type of actuating devices | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Heat | | | | | Fire | | Flame | | | |
| Alarm zone† | Number of actuating devices per zone‡ | A | B | C | D | E | Smoke | CO | IR | UV | Manual call point | Other |
| 1 | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | |
| Total Number | | | | | | | | | | | | |

† Add addressable loop number in brackets where applicable.

‡ Indicate with a number in brackets the number of actuating devices in concealed spaces.

Additional Information

……

**AS 1670.4 Appendix E**
**Designer's/Installer**
**Statement**

I/We confirm *Name and/or company* have provided the design, *reference* for an emergency warning *and intercom* system located at *site name, building name if applicable address*.

The system is *an alteration to an existing system, a new system with or without an emergency intercom system*. The design criteria is: *AS 1670.4 — 2018 ; Deemed to satisfy provisions of NCC; a performance solution provided by engineer's name/company; fire safety engineering report (FSER) report reference*, as follows:

(c) We certify the equipment used within the system design:

| | |
|---|---|
| (i) Conforms with the referenced equipment Standards. | Y/N/NA |
| (ii) Is located in an environment for which it is appropriate. | Y/N/NA |
| (iii) Is compatible with the relevant parts of CIE. | Y/N/NA |

(d) We have provided the following design documentation:

| | |
|---|---|
| (i) Design drawings showing the system layout (building plans), equipment type, location and designation. | Y/N/NA |
| (ii) Systems interface diagram. | Y/N/NA |
| (iii) Cause and effect statement for each system interface function. | Y/N/NA |
| (iv) Table of all system components, their location, type, unique system designation and descriptor. | Y/N/NA |
| (v) Table of each system component having a fixed service life, nominating the service life expiry date. | Y/N/NA |
| (vi) Table of any connectable equipment. | Y/N/NA |
| (vii) Manuals for all CIE and system components (as applicable). | Y/N/NA |
| (viii) Type of occupant warning equipment. | |
| (ix) Amplifier rated output; maximum load impedance (Ω) and power (W) (if applicable). | |
| (x) Calculated impedance (Ω) and power load (W) of each loudspeaker transmission path (if applicable). | |
| (xi) Table of each supplementary warning device. | Y/N/NA |
| (xii) Details of alarm monitoring requirements. | Y/N/NA |
| (xiii) Power supply requirements including; | |
| (a) Power supply source (mains), nominal voltage. | |

| | |
|---|---|
| (b) Standby power source type, nominal voltage and capacity required. | |
| (c) System quiescent current (mA), including ASE loads if applicable. | |
| (d) System alarm current (mA), including ASE and occupant warning system loads. | |
| (e) Load current of each ancillary circuit. | |
| (f) Standby time (h). | |
| (g) Alarm time (min). | |

I/we confirm the design includes any changes required during the installation of the system and

that the system meets the design standard required.

On behalf of

*company name*:

Name:

Position:

Signature

: Date:

**AS 1670.4 Appendix G**
**Commissioning statement**

THE EMERGENCY WARNING SYSTEM AND EMERGENCY INTERCOM SYSTEM IS INSTALLED AT: (Cross out what is not applicable) (Premies)

Postcode

Owner or Owner’s Authorized Agent

Postcode

* NEW

* MODIFICATION TO SYSTEM

* ADDITION TO

(* Cross out those not applicable)

Date of commissioning tests

Name and address of commissioning company, company stamp, or company name in “BLOCK LETTERS”

Postcod

Commissioning person

Name (print)

Signature

INSTRUCTIONS:

This form is to be used in conjunction with —

(a) operator's manual;

(b) installer's statement(s); and

(c) "as-installed" drawings;

to provide a complete description of the installed system and its tested performance at the time of its commissioning into service

## SYSTEM INFORMATION

### GENERAL

YES

(a) All system equipment is located and installed in accordance with the “as installed” drawings. ☐

(b) The emergency zone facilities have been correctly labelled and the emergency zone is immediately apparent from the labelling. ☐

(c) All loudspeakers are of the type specified. ☐

(d) The total emergency zone rating does not exceed amplifier capacity. ☐

(e) The WIP locations have been correctly labelled and the emergency zones are immediately apparent from the labelling. ☐

(f) All WIPs are of the type specified. ☐

### WIRING

(a) The AC mains power for the system has been provided in accordance with the requirements of AS/NZS 3000 and Section 3 of AS 1670.4. ☐

(b) The system wiring conforms with the requirements of Clause 3.6 of AS 1670.4. ☐

(c) A fault signal is displayed at the EWCIE when the circuit wiring at the last emergency manual call point on each emergency zone is open-circuited. ☐

### POWER SUPPLY

(a) The PSE functions in accordance with the requirements of Section 3 of AS 1670.4. ☐

(b) The installed battery has sufficient capacity to operate the system. Calculations as per Clause 3.5.6 of AS 1670.4 are attached. ☐

(c) Record the following:

(i) Mains supply voltage.

(ii) Float charge voltage.

(iii) Full load current of system.

(iv) Quiescent current of system.

(v) Rated output current of battery charger. (vi) Battery type and capacity.

(vii) Battery manufactured date.

(viii) Recommended battery replacement due date.

**DOCUMENTATION**

(a) The operator's instructions have been provided. ☐

(b) The "as installed" drawings have been provided and they correctly represent the installation. ☐

(c) The logbook/log has been provided. ☐

**OPERATIONAL TESTS**

(a) A fault signal is displayed at the EWCIE when the circuit wiring at the last loudspeaker on each emergency zone is open-circuited. ☐

(b) A fault signal is displayed at the EWCIE when the circuit wiring at the last loudspeaker on each emergency zone is short-circuited. ☐

(c) Each loudspeaker operates in accordance with the requirements of Section 4 of AS 1670.4. ☐

(d) Alert, evacuation and voice message signals are distributed throughout the ☐ building in accordance with Clause 4.4, Clause 4.5, Clause 4.7, Clause 4.8 and Clause 4.9 of AS 1670.4.

(e) Visual alarm devices, where used, to meet the requirements of Clause 4.6 ☐ of AS 1670.4.

(f) Automatic operation:

(i) If the system is connected to a fire detection and alarm system, a fire alarm including manual call point for each emergency zone on the ☐ FDCIE, correctly initiates the appropriate emergency zone.

(ii) Each separate emergency manual call point, if provided, that is connected to the emergency warning system initiates an alert signal indication at the EWCIE and the alert signal is transmitted to designated emergency zone(s). ☐

(iii) The alert signal changes to an evacuate signal in the specified time. ☐

(iv) The operation of the automatic evacuation sequence, where provided, operates as specified. ☐

(g) The environmental condition in which the equipment is installed enables satisfactory use of the system in accordance with Clause 2.1 of AS 1670.4. ☐

(h) A fault signal is displayed at the EICIE when the circuit wiring at each WIP is open-circuited. ☐

(i) A fault signal is displayed at the EICIE when the circuit wiring at each WIP is short-circuited. ☐

(j) Each WIP operates. ☐

(k) The audible call signal at each WIP conforms with Clause 5.3.5 of AS 1670.4. ☐

**RECORDING RESULTS**

The results of operational tests in each emergency zone are attached to this report and recorded in the log. ☐

| Evacuation zone | Corresponding fire zones | Sound pressure level | | STI Reading | Number of visual warning devices | Number of emergency call points | WIP location | Aural Call Signal level (dBA) | Fault signal at fire CIE |
|---|---|---|---|---|---|---|---|---|---|
| | | Min. | Max. | | | | | | |
| 1 | | | | | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
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