19.00 Fire Services

19.01 Generally

This Section outlines GU's minimum requirements for the following Fire Detection Systems and Passive Fire Protection;

- Automatic Fire Detection and Alarm Systems.
- Emergency Warning and Intercommunications Systems (EWIS)
- Emergency warning Systems (EWS)
- Hydrants and hose reels.
- First Attack Fire Fighting Equipment (Extinguishers & Blankets)
- Fire Hazard Indices

Each building shall be provided with a system of fire protection in accordance with the relevant Codes and Standards.

In general, all buildings shall be equipped with Automatic Fire Detection & Alarm Systems connected to the Building's Fire Indicator Panel (FIP). The building FIP shall be connected to the Site Master Panel and Site Mimic Panel(s) and the Qld Fire & Rescue Service (QFES), or as otherwise agreed to by the QFES.

19.02 Basic Requirements for Fire Detection & Alarm Systems

All fire detection and alarm systems shall be arranged so that in the event of an alarm condition existing in any protected zone, including the operation of a manual push button alarm, the systems shall provide, but not be limited to, the following functions;

- Illuminate an indicator light for the relevant circuit on the building fire if5.6(i)-7.6(o).-Dbio610dn ->Tj /T9 1 T88
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- Energise alarms.
- Shut down any integrated ventilation systems, operate smoke doors, fire doors,
- emergency exit doors, fire dampers, smoke exhaust systems, make up air facilities, stair pressurisation systems and flammable gas services.
- Transmit a signal to the Pager Alert System (where installed) to activate the Pager System.
- Provide a signal to visual alarms.
- Transmit signal to operate electronic door locks.

The fire alarm system shall also incorporate an emergency warning and communication system to AS 1670-1 and AS 2220-1.

Fire detection and alarm systems shall comply with the Fire & Rescue Service Act 1990 Sections 104D and 104DA, and the 'Fire Alarm a -7lyAlua -7l (D)9.7e(-7lsFi)5.7genGsuaee e Unwanted Alarms' issued by the Ql

Installation of such equipment shall not be regarded as complying with this Section unless it is carried out by the manufacturer of the equipment, or by a Contractor duly authorised by the manufacturer.

19.05 Fire Indicator Panels (FIP)

Each building shall be equipped with a FIP showing all alarm circuits. Each FIP shall have a minimum provision of 10% spare space to allow for future circuit installation.

The maximum number of thermal alarms or smoke detectors that shall be provided on any circuit shall be no greater than 90% as permitted by the Code.

FIPs shall be auto testing and equipped with additional 'LED' indication for ease of circuit identification.

FIPs shall be fitted with a Check Alarm facility which shall be activated on commissioning of the panel.

All new FIPs for buildings on each of the GU campuses shall be as follows;

- Gold Coast, South Bank & Logan – 'Ampac' manufactured panels
- Nathan & Mt Gravatt – A proprietary manufactured panel (e.g. Inertia)

Where an addressable panel is installed as a 'Site Master Panel' or a 'Building Panel', a factory fitted strip type printer shall be integrated into the panel.

The panel manufacturer shall provide to CLF at no additional cost all maintenance tools and

A spring return Fire Service Isolation button shall be fitted to the building FIP for testing purposes.

19.06 Detection Systems

Buildings shall be fitted with thermal and/or smoke detectors in accordance with the requirements of AS 1670 - Automatic Fire Alarms, and be interfaced with visual detectors such as flashing strobe lights to be installed in public areas and rooms with high acoustic isolation.

Detectors shall be 'Hocheki' type in accordance with the requirements of AS 1603.

Thermal detectors shall be of the electro-pneumatic, compensating rate of rise type. Thermo-pile and solid state alarms are also acceptable.

Smoke detectors (combustion type) are to be used where early warning is required in areas such as sub-stations, switch rooms, PABX and MDF rooms, TER rooms and other areas as required by Australian Standards or other Codes. Thermal detection shall be used in other areas approved by the UFO and the QFES.

Ceiling mounted detectors shall be mounted in accordance with the requirements of Section 14.00 Ceilings .

Detectors are not to be positioned directly above transformers or other electrically energised equipment.

'VESDA' systems shall be installed in areas where nominated in the SDFs.

All thermal and smoke detectors shall have 'L.E.D.' indication. Concealed detectors in areas such as ducts, DB's, lift motor rooms and other small rooms, shall have the remote indicator mounted on the wall over the door. Note - Remote indication is only required for conventional flip panel installations.

Concealed space detectors shall be equipped with remote neon indicators labelled with the type and location of the detector. Concealed detectors should be grouped in the same manner as room detectors and not be installed on a complete circuit extending over the entire floor. Alarm zones shall be arranged to suit the attending Fire Service and the University Fire Officer (UFO)

All detectors shall be identified by labels fixed to the base, identifying the circuit and detector number corresponding to the numbering plan on the as installed drawings and 'Schematic Zone' diagram.

Large rooms/area may be deemed to require Remote Detector indicators for Fire Service advice. Such specific rooms/areas requiring remote indicators shall be determined by Building Surveyor and/or the UFO.

On recent projects, the QRFS has required the installation of thermal detectors not smoke detectors in laboratories and kitchenettes. Prior to designing the detection system in any such spaces, the Fire Services Consultant shall consult with and confirm the requirements of the QRFS.

19.07 Visual Alarm Indicators

All new buildings or any upgrade of an existing building shall have an emergency warning system installed with visual alarm indicators in accordance with AS 1603.11, comprising dual AMBER and RED flashing lights. The AMBER light shall be programmed to flash on an 'Alert' alarm, and

Trays and the duct shall be painted RED in colour where exposed or colour banded where concealed.

Fire Alarm cables shall not run on the same cable trays as electrically energised cables or be installed in Electrical or Data cable risers.

Refer to Section 20.00 Electrical Services for wiring in ceiling spaces and riser ducts.

19.09 Hydraulic Fire Services

19.09.01 Water Supply

The water supply for hydrants and hose reels shall be provided via a separate water service to the building isolated by double check valves located in the Valve Room.

19.09.02 Hydrants

Hydrants including signage and block plans shall be provided in accordance AS 2419.1.

Unless otherwise specified, hydrant systems shall be a' wet pipe' system.

System designs, hydraulic calculations and variations shall be submitted and agreed to with CLF prior to installation.

Hydrant booster installations where required shall meet the requirements of AS 2419.1/2/3.

19.10 First Attack Fire Fighting Equipment

19.10.01 Fire Extinguishers

Fire extinguishers shall be provided to all areas in accordance with the BCA. Only extinguishers approved by SA are acceptable.

In general, the following extinguishers should be used for standardisation and shall be provided under the Contract:

General Office areas (where Hose Reels are not installed)	Air Water	9 litre
Cooking areas (commercial)	Wet Chemical CO2	7.5 litre 3.5 kg
High electrical hazard – main switchboard	Dry Powder	2.5 kg
Plant Rooms	Dry Powder	4.5 kg
Laboratories (adjacent each Fire Hose Reel or in designated “Fire Cabinets”)	Dry Powder	4.5 kg
Fume Cupboards	Dry Powder	2.5 kg of 5b rating

Extinguishers should be used where the risk so demands. All extinguishers shall be provided BT

Final Inspections - Authority for final inspections by QFES Community Safety Officers shall be the responsibility of the Building Surveyor and/or the UFO.

Documentation - The following documentation shall be available at the time of both inspections as required by QFES;

- Installation certificates (fire alarm systems, hydraulics, smoke control, etc).
- Test certificates for installed systems.
- Draft/Final Fire Alarm Zone schematic diagram.
- Draft/Final system 'Block Plan' (if applicable)