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**Prepared by:** Direct Brigade Alarms / Built Environment Branch  
**Authorised by:** Manager Direct Brigade Alarm, Built Environment Branch  
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## **INTRODUCTION**

This document has been produced to provide clarification on DFES operational requirements with regards to combined sprinkler and hydrant system boosting facility and pressure zone supply pipework following;

- Consultation with DFES Built Environment Branch
- DFES Booster arrangement for multiple pressure zones within a multistorey building
- Combined sprinkler and hydrant systems ring main or pressure zone supply pipework

**This document should be read with reference to AS2118.6 which is required to be read in conjunction with AS2118.1 and AS2419.1.**

## **CONSULTATION WITH DFES BUILT ENVIRONMENT BRANCH**

All wet fire systems with multiple pressure zones should be presented to DFES Built Environment branch prior to building permit submission in the form of in person presentation of fire system schematic and plan layouts. Wet Fire system document shall also be submitted via building permit process to DFES.

Any changes to fire system design post building permit issue should be re-introduced to DFES Built Environment highlighting changes to ensure operational requirements are still met by the latest fire system design as per the requirements of Regulation 18b of the Building Regulations 2012.

Any variance from the requirements of this technical note without agreement from DFES Direct Brigade Alarm or Built Environment Branch may affect the connection of Direct Brigade Alarm Monitoring.

## **OPERATIONS CAPABILITY**

**MULTIPLE PRESSURE ZONE BOOSTER ARRANGEMENT**

AS 2118.6 2012 requires a booster assembly as per Clause 2.9 capable of supplying the combined system demand. Clause 2.9 refers the reader to an informative diagram within Appendix L – Figure L1.

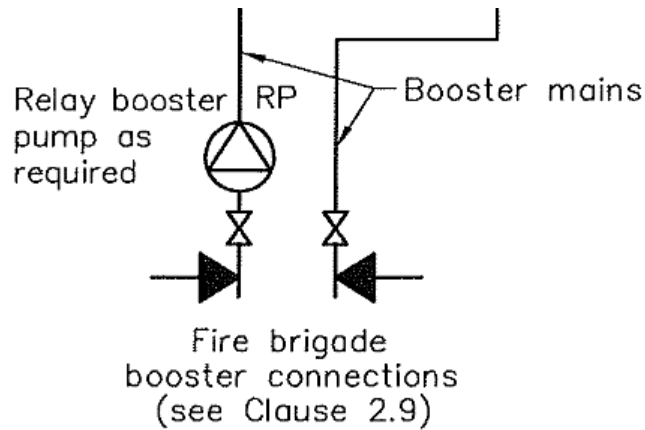


Figure 1.0 - AS 2118.6 Appendix L – Figure L1 Booster Intent

This diagram indicates a separate fire brigade connection for each pressure zone within the building. A typical two (2) pressure zone arrangement is provided in Figure 2.0 below.

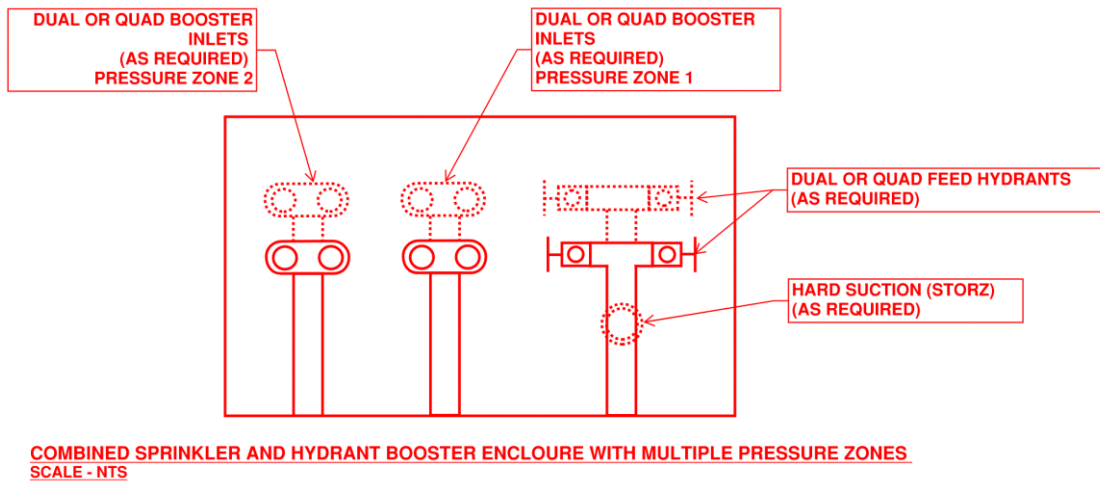
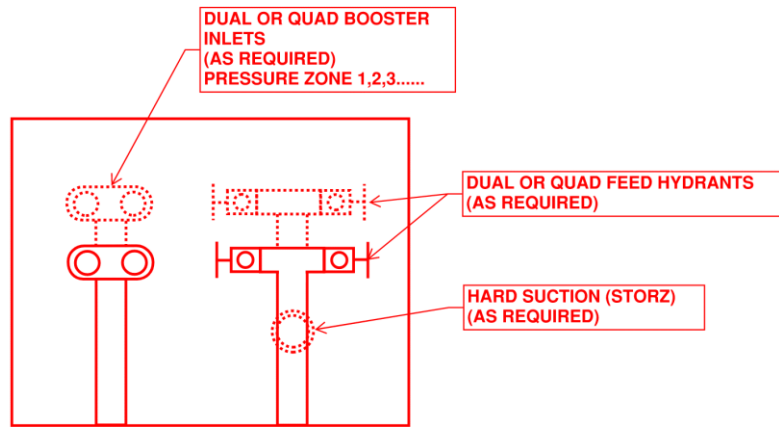


Figure 2.0 - AS 2118.6 Appendix L – Figure L1 Booster Intent

DFES prefer all pressure zones to be boosted through a common set of booster inlets for all pressure zones (dual or quad subject to flow requirements). Pipework is to then split to relevant pressure zone ring main or to relay pump(s) , where applicable. A diagram of this arrangement is provided below, refer Figure 3.0.

**OPERATIONS CAPABILITY**



**DFES PREFERRED - COMBINED SPRINKLER AND HYDRANT BOOSTER ENCLOSEURE WITH MULTIPLE PRESSURE ZONES**  
SCALE - NTS

Figure 3.0 – DFES Preferred Arrangement where Booster is in close proximity to Fire Pump Room

Note: Diagrams provided are not to scale and do not show all ancillary items such as valves pressure gauges, block plans, pump controls, tank level meters etc. They are to represent the boosting arrangement only.

Where a booster assembly is in close proximity to the fire pump room, a single pipe from the “DFES Preferred” combined booster inlets to the fire pump room can be suitable (Figure 3.0).

Where a booster assembly is remote from the fire pump room or relay pump room, separate booster inlets per pressure zone shall be provided (Figure 2.0) with individual pipework to each pressure zone/pump room as indicated in Figure 4.0.

A common booster inlet (Figure 3.0) may be considered for a remote booster assembly if individual booster pipework is provided for each pressure zone between booster and zone ring main or pump room/relay pump(s). Each booster pipe will require isolation valves as indicated in Figure 4.0. Isolation valves should be provided outside booster enclosure where possible.

Where a common relay pump is used to supply multiple pressure zones (Pressure Zone 2, 3 and so on) a single booster pipe between booster inlet and relay pump is acceptable for these zones.

Refer to Figure 4.0 for two configuration options.

#### OPERATIONS CAPABILITY

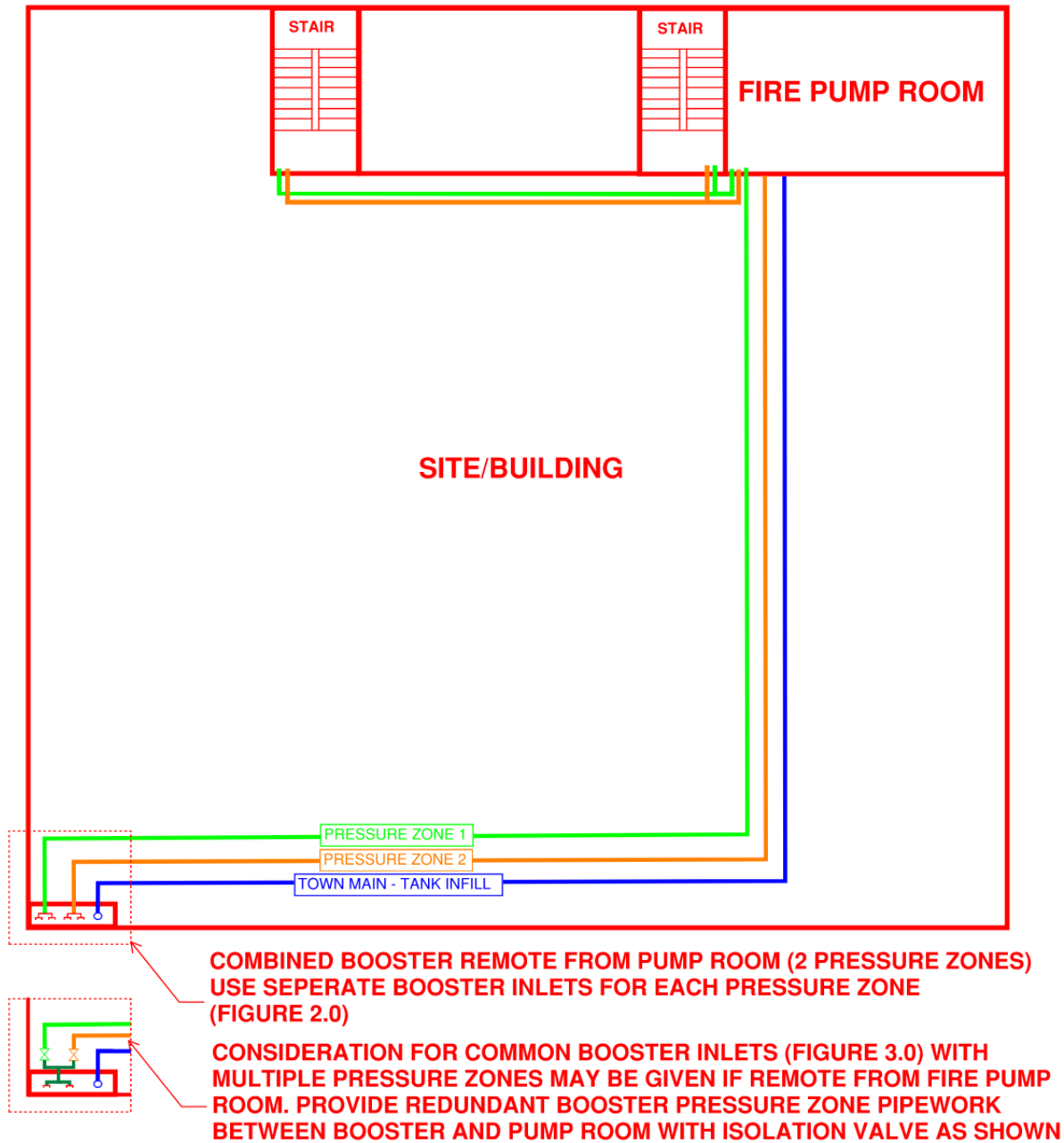


Figure 4.0 – Remote Booster from Fire Pump Room – Booster Pipework Arrangement

**OPERATIONS CAPABILITY**

**COMBINED SPRINKLER AND HYDRANT SYSTEMS RING MAIN OR PRESSURE ZONE SUPPLY PIPEWORK**

The inclusion of a ring main in a design will increase the reliability of a fire hydrant system and result in a fire hydrant system that provides attending fire brigade crews with a multitude of options from which to initiate a fire attack through the locating of fire hydrants around and throughout the building. DFES require all pressure zones within a multistorey building be provided with redundant pipework rising up the building within separate fire isolated stairwells or fire isolated shafts to supply each pressure zone ring main. Below AS 2118.6 2012 Appendix L – Figure L1 with notes indicating how each pressure zone and ring main should be fed from booster assembly and fire pump room.

**The reliability of a fire hydrant system is increased by the installation of a ring main. Each pressure zone shall be fed from not less than two independent pipe risers.**

APPENDIX L  
SYSTEM LAYOUT  
(Informative)

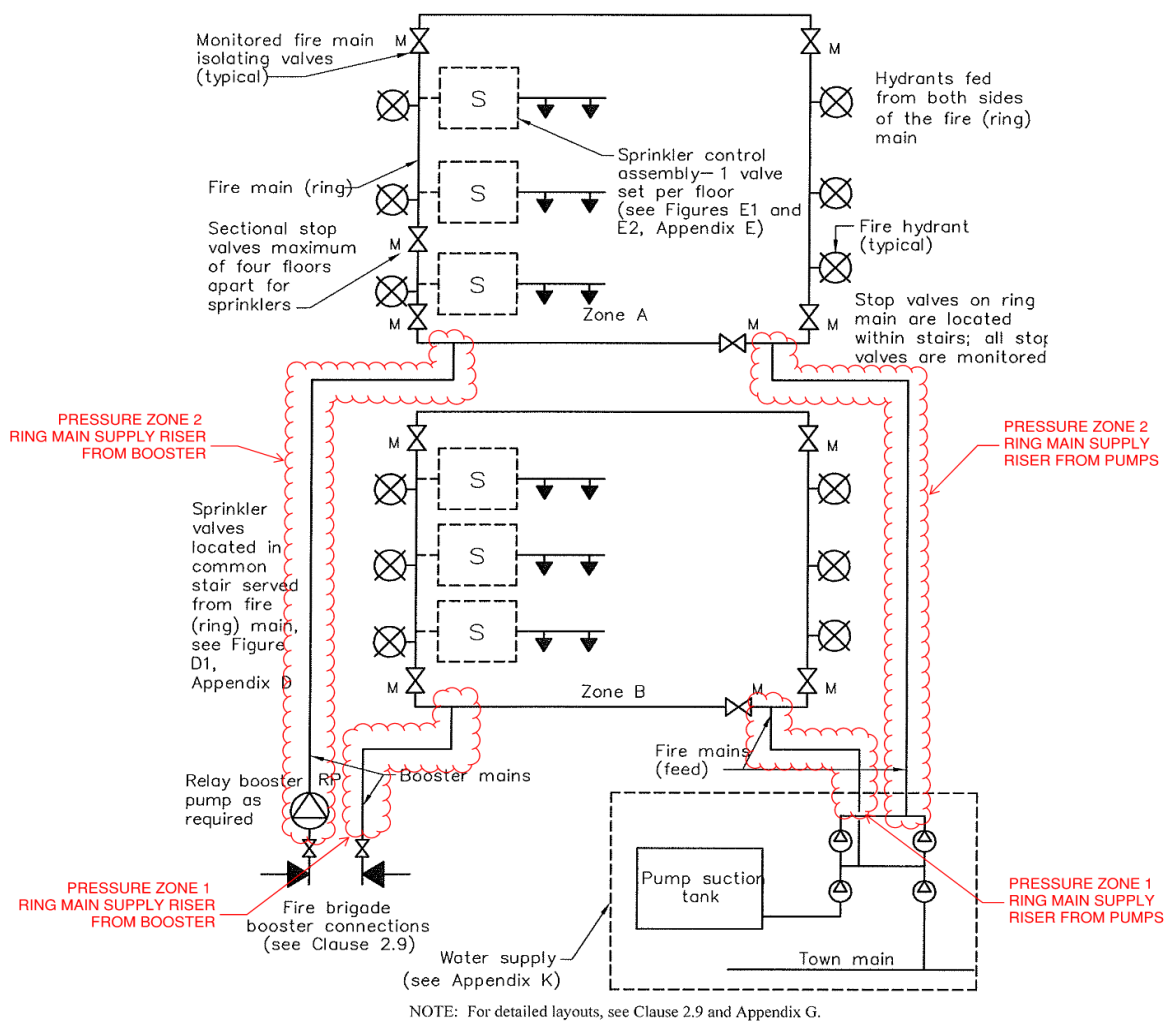


FIGURE L1 TYPICAL SYSTEM LAYOUT

Figure 5.0 – AS 2118.6 Appendix L – Figure L1 Pressure Zone Riser Intent

For a cascade system, a minimum of two risers to the highest-pressure zone are required, with a minimum of two inter connections between each pressure zone below.

**OPERATIONS CAPABILITY**

**Please note:** This is a controlled document. DFES DBA Technical Notes are available on the DFES/FAMS Website: <https://firealarmmonitoringservices.com.au/> under Fire Service Agents, Document Library.

Should the information provided in this technical note require further clarification, please contact DFES Direct Brigade Alarms 08 9395 9300 .

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**OPERATIONS CAPABILITY**