INFORMATION SESSION FOR SCHOOLS
FIRE SYSTEM MAINTENANCE AND FIRE RESPONSE

Government of South Australia

Catholic Safety Health & Welfare

METROPOLITAN FIRE SERVICE SOUTH AUSTRALIA

Session Topics

1. Fire hydrant system maintenance requirements
2. Fire hydrants in schools
3. Fire Response to schools – MFS Perspective
4. Conclusion
5. Q & A

Fire Hydrant System Maintenance

- Existing schools required to have essential safety provisions (ESPs) maintained.
- Typically SA Minister's Specification SA76(2000) applicable
- Fire hydrant system is an ESP covered in Section 3.5 (b) and (c)
- AS1851.3 – 1997 and AS1851.4 – 1992 referenced

Development Act 1993

Minister's Specification SA 76
January 2000

Maintenance and testing of safety installations. Schedule of essential safety provisions.

Fire Hydrant System Maintenance

3.5 Fire-Fighting Services and Equipment

(a) Fire pump sets	AS 2941 or as approved by the relevant authority	As prescribed in AS 1851.14
(b) Fire main, booster, static water supply and associated equipment	Part E1 of Vol 1 of the BCA, AS 2118 and AS 2419.1 or CFS Policy 0014	Annual inspection and three yearly flow test to the requirements of AS 1851.3
(c) Fire hydrant installations	Clause E1.3 of Vol 1 of the BCA and AS 2419.1	As prescribed in AS 1851.4

Double headed fire hydrant

Fire Hydrant Booster (4 x 4)

Fire Hydrant System Maintenance

- Fire booster components:-

TABLE 4.1 (*continued*)

Item	Component or function	Action required	Frequency			
			Weekly (Level 1)	Quarterly (Level 2)	Annually (Level 3)	3-yearly (Level 4)
18	Isolation valves	Operate and check all system and water supply valves	—	✓	✓	✓
19	Non-return valves	Check that all water supply non-return valves are correctly seated	—	✓	✓	✓
20	Strainer	Clean the strainer and oil the external alarm water motor	—	✓	✓	✓

Fire Hydrant System Maintenance

- Fire booster components:-

		from the original test readings				
24	Fire brigade booster connection	Check access, availability and signage, clean caps and plugs ensuring caps are free and lubricate threads on caps and plugs	—	✓	✓	✓
25	Kitchen hoods and ducts	Inspect and clean sprinklers	—	—	✓	Refer Item 48
26	Water supply flow test	Test water supply to verify that the system pressure/flow requirements are satisfied	—	—	✓	✓
		Operate alarm valve(s) by opening the				
41	Local water motor alarm	jet, flush drain, renew gasket, check operation of main spindle and striker, remove excess grease and then lubricate	—	—	—	✓
42	Non-return valves	Renew water supply non-return valve seatings and gaskets, check seating and spindle	—	—	—	✓
43	Retard chamber and drain pipe	Check operation of retard chamber and drain pipe	—	—	—	✓

APPENDIX B
SUMMARY OF MAINTENANCE SCHEDULES
(Informative)

Item	Component	Function	Clause reference	Weekly	Monthly	Quart.	Yearly	Three-yearly	Six-yearly
1.	Brigade alarm	Operation	3.3.3(b)			✓	✓	✓	✓
		Wiring and connectors	3.3.4(d)				✓	✓	✓
2.	Hydrants	Accessible	3.3.2(c)		✓	✓	✓	✓	✓
		Presence of water	3.3.4(b)				✓	✓	✓
		Leaks	3.3.2(d)		✓	✓	✓	✓	✓
		Hose supply	3.3.2(e)		✓	✓	✓	✓	✓
		Fittings & blanking caps	3.3.2(f)		✓	✓	✓	✓	✓
		Cabinets	3.3.2(g)		✓	✓	✓	✓	✓
3.	Water supply	Gauge pressure	3.3.1(d)	✓	✓	✓	✓	✓	✓
		Tank level	3.3.2(h)		✓	✓	✓	✓	✓
		Flow test	3.3.5(b)					✓	✓
		Tank inspection	3.3.4(f)				✓	✓	✓
		Tank clean	3.3.5(e)					✓	✓
4.	Valves	Set and secured	3.3.2(b)		✓	✓	✓	✓	✓
		Overhaul	3.3.5(c)					✓	✓
		Pressure reading	3.3.3(d)			✓	✓	✓	✓
	Pressure reducing	Overhaul	3.3.5(d)					✓	✓
	Non-return	Operation	3.3.4(e)				✓	✓	✓
		Overhaul	3.3.5(d)					✓	✓
	Isolation	Operation	3.3.2(b)		✓	✓	✓	✓	✓
5.	Flow switches	Operation	3.3.5(b)					✓	✓
6.	Pipework	Clean and maintain	3.3.4(c)				✓	✓	✓
7.	System	Hydrostatic test	3.3.6(b)						✓
8.	Batteries	Corrosion	3.3.1(c)(i)	✓	✓	✓	✓	✓	✓
		Electrolyte level	3.3.1(c)(ii)	✓	✓	✓	✓	✓	✓
		Voltage per cell	3.3.1(c)(iii)	✓	✓	✓	✓	✓	✓

Fire Hydrant System Maintenance

- "Triennial" flow testing can be done by MFS or any other licenced fire system testing agent.
- Please send flow test report in to our office (Level 3 Fire Safety) for our record keeping.
- All building owners required to submit completed annual **Form 3** to local council for their records.

Fire Hydrant System Maintenance

- If system fails you must undertake investigations to determine:-
  - Fire hydrant system internal issues (blockages, closed valves),
  - Blockage/issue at fire service connection (SA Water)
  - Towns main reduced performance (SA Water)

- Notify MFS and meet to discuss resolution

Backflow Prevention (OTR)

Figure 1

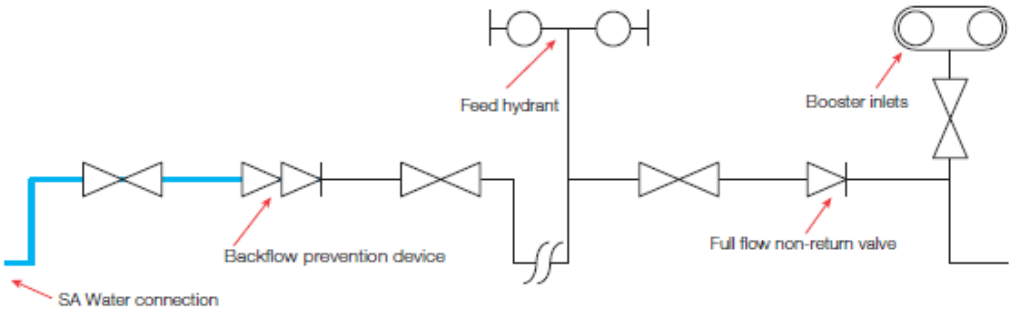


Figure 2

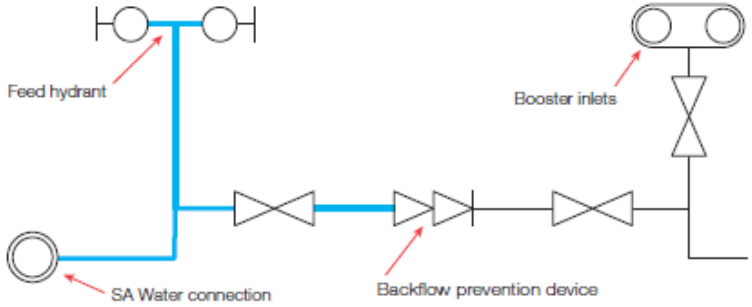
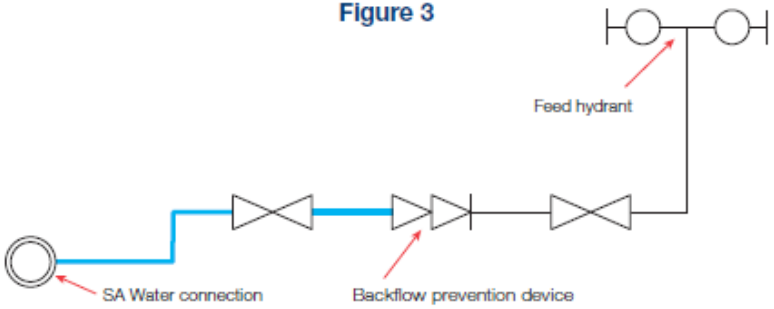


Figure 3



Backflow Prevention (OTR)

Image 2: *Full-flow valve installed in 'H' pattern*

Image 3: *Copper tube upstream of SCVT in 'H' pattern*

Backflow Prevention (OTR)

- Recent changes for more “testable” backflow prevention new and old system upgrades.
- Driven by Office of Technical Regulator.
- “Watermarked” devices.
- Responsibility of the property owner.

Image 4: *Stainless steel upstream of SCVT*

Government of South Australia

Why do we want reliable systems?

METROPOLITAN FIRE SERVICE SOUTH AUSTRALIA

Why do we want reliable systems?

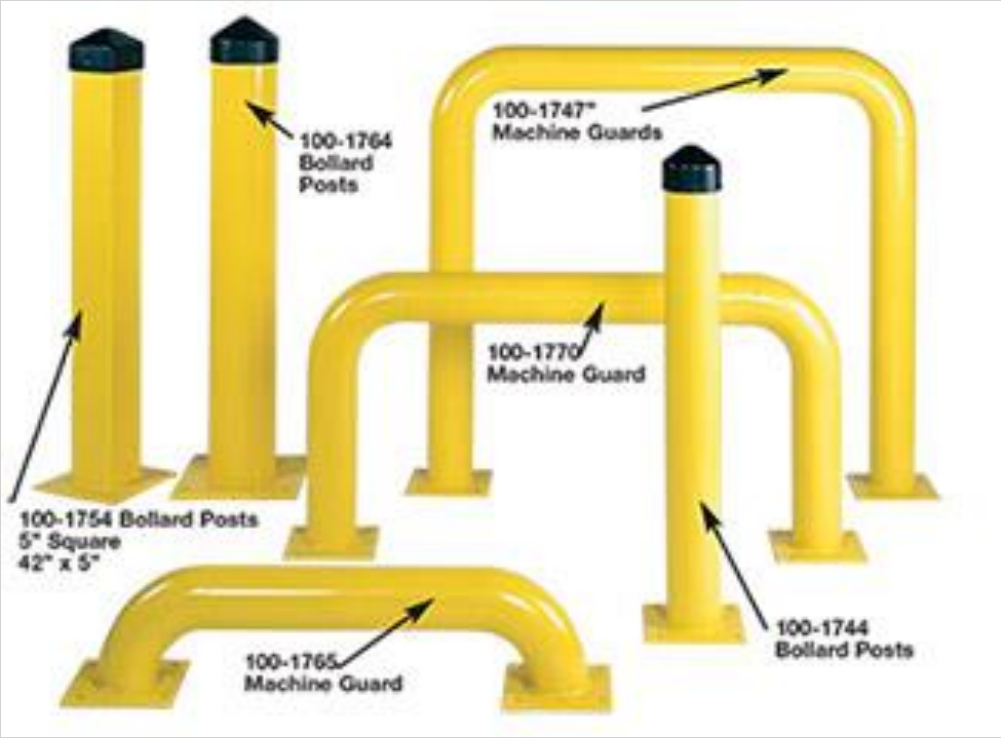
Why do we want reliable systems?

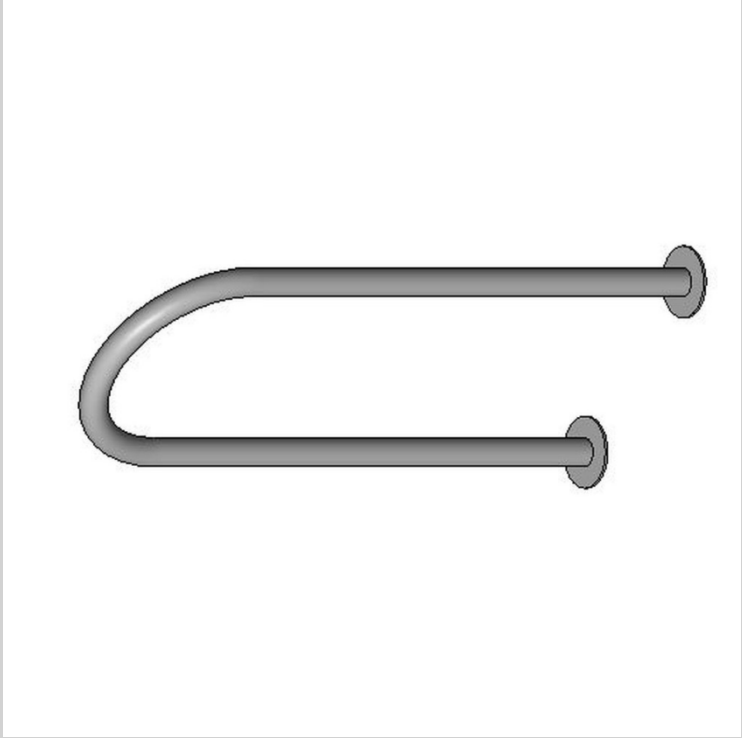
Fire Hydrants in Schools

- Common query as to how to mitigate risk of injury
- If school is secure, replace hand wheels

Fire Hydrants in Schools

- Relocate out of trafficable areas
- Bright painting / hazard stickers
- Provide a “smart” bollard system





Fire Response to Schools

Government Schools –

- typically no MFS direct monitored alarm system
- 240v smoke alarms or security smoke alarms
- SAPOL Protective Security Services (PSS) “private alarm”
- PSS officer will attend with keys and meet MFS
- “000” call from staff/passer-by

Fire Response to Schools

Private Schools –

- Direct MFS monitored – where a fire indicator panel / sprinkler system installed - **We <u>will</u> have keys**
- "Private Alarm" response via security dispatch –

  We <u>will not</u> have keys
- "000" call from staff/passer-by
- **Will** cut gate chains to gain access as required
- May not have keys for internal buildings – **may not wait** for keyholders to gain entry

Fire Response to Schools

Private Schools – Business Hours

- Two appliances from available closest station
- May be remote from local fire station due to other incident
- We will NOT stop prior to arrival, however, may reduce response numbers or “Priority 2” response (slow)

Ideally:-

- Met by chief fire warden / principle
- Receive credible information relating to:-
  - Location of fire / what is on fire?
  - Persons “reported”?
  - Evacuation in progress / completed?
  - Building – storeys contained/usage?
  - Best access route – can we follow someone?
  - Water supplies / hydrants?

Fire Response to Schools

MFS Incident Command

- First Arrival Officer is initial "Incident Controller"
- Confirmed fire typically a "*2nd alarm B Class risk*" response
- 6 x pumpers
- 1 x aerial / ladder
- Breathing Apparatus Support Vehicle
- Incident Command Vehicle
- Metropolitan Commanders x 2 (incident control/safety supervisor)
- Fire Cause Investigator
- Assistant Chief Officer (incident senior advisor)
- Medial Liaison Officer notifications
- SA Ambulance and SAPOL response

Fire Response to Schools

MFS Incident Command

- Each fire appliance (Pumper) has:-
  - 1 x Officer (supervisor)
  - 2 x firefighters for search and rescue etc
  - 1 x driver for water & pumping
- Driver also:
  - sends radio messages
  - prepares triage area
  - sets up BA entry control

Fire Response to Schools

Conclusion

- Existing schools required to have essential safety provisions (ESPs) maintained.
- Fire hydrant system is an ESP
- Poor hydrant system impedes our operational response and effectiveness leading to:-
  - Increased risk to firefighters
  - Increased property loss
  - Increased impact on Community

THANK YOU

QUESTIONS ?