



Fire Sprinkler System Survey Report



8 Burnham Street
Petone

Date: 28 September 2022
Survey No: 23665
Site Ref: A1928
Issue: A



Survey Summary

Prepared for	Argus Fire Systems Service Limited
Site	8 Burnham Street
Address	8 Burnham Street, Petone
Inspection Date	28 September 2022
Installing Contractor	AFS Total
Date of Installation	1978
Applicable Standard	NZS4541:1972P
Deviations	None
PFA Number	410823
BWOF Date	June
Next Survey Due	September 2024
Aon Survey Number	23665
Completed By Under the Supervision of	Jamie Scrafton Bryan Madge Aon Authorised signatory
Authorised by	Stephen de Brouwer
Date	29 September 2022
Issued by	Aon Inspection Services
Issue	A

Aon Inspection Services is accredited by IANZ under ISO/IEC17020:2012 for the purposes of inspecting Sprinkler Systems for compliance against NZS4541.

The scope of this report is exclusive to the Sprinkler System and its supplementary hand operated fire-fighting equipment on the date of our site visit. We do not warrant that the sprinkler system is compliant at all times during the building's life cycle.

The scope of this report with reference to NZS4541:2013 and the standard of installation (NZS4541:1972P) is as follows:

- Part 112 Sprinkler system certificate of compliance methodology.
- Part 116 Existing Installations.
- Part 1203 Routine Inspections.
- Appendix F Retrospective Upgrades.

Findings

Explanatory Notes

During our site visit, we observed a number of defects that we have reported on.

Our report separately identifies **Significant Defects** (if any) noted during our site inspection. These defects are ones we consider that if not remedied, could lead to the sprinkler system not meeting its expectations. They include deficient water supplies, storage in excess of system design capability; potentially faulty sprinkler heads significant exposure hazards or significant unprotected areas.

We also report on **General Defects**. These are deficiencies against the Standard that the system was installed to, which should be addressed, to ensure that the system complies with the Standard it was installed to.

We have also included **Potential upgrade items and other observations** these are items noted under duty of care or that modern practices suggest should be reviewed and possibly actioned, to ensure that the sprinkler system will perform to expectations. *These do not affect the issue of certification of the sprinkler system for building warrant of fitness.*

In some cases, the sprinkler system may have been installed in accordance with the standard as modified by the New Zealand Building Code. In such cases, it may not be necessary to address issues such as exposure hazards and inadequate (as measured against NZS4503) hand operated firefighting equipment coverage. In addition, if compliance is measured against the New Zealand Building Code, the level of fire separations may be lower than those required by the published sprinkler standard.

Disclaimer

Our report is restricted to a review of the automatic sprinkler system. We have not reviewed any other fire safety features installed or required within this building, including, but not limited to fire alarm systems, smoke control systems, hydrant systems, special hazard fire suppression systems fire separations and passive fire protection systems.

This report has been prepared only for use in respect of the inspection, testing and maintenance obligations required under the Building Warrant of Fitness regime and Building Act 2004 and is limited to the Scope set out underneath the Survey Summary. The report should not be used or relied upon for any other purpose. Aon accepts no liability if this report is used by anyone for other purposes.

Any queries, please contact us at inspections.admin@aon.com

The following deficiencies when measured against the known installation standard were noted during our site visit:

Significant Defects

1. We could not ascertain the design demands for the Extra Light Hazard office spaces and Niche Modules rear metal work warehouse, therefore we cannot confirm the adequacy of the water supply for these areas.
2. Niche Modular, rear of building: The idle pallets, timber, roofing iron, skip, waste bins, steel beams, plastic container, racking and general building materials are creating a fire hazard for the non-fire rated portions of the building. Refer photos below.



3. The following areas are not sprinkler protected and have electrical connections:
 - a. Niche Modular, rear of building: The double stacked canteen containers. Refer photo 1.
 - b. Niche Modular, rear of building: The Portacom. Refer photo 2.
 - c. Niche Modular, rear of building: Cutting room. Refer photo 3.



Photo 1



Photo 2



Photo 3

5. Niche Modular, warehouse: Modular buildings being constructed within the building. Confirmation required on the change of building use and whether the sprinkler system has been designed for the fire load presented. Refer photos below.



4. Niche Modular, warehouse: Plywood sheets block stacked to approximately 4.2 metres. Above the allowable height for the areas Ordinary Hazard classification. Refer photo below.



5. Niche Modular, warehouse: Under floor insulation block stacked to approximately 4.6 metres. Above the allowable height for the areas Ordinary Hazard classification. Refer photo below.



General Defects

Site Faults

6. *Niche Modular, Metal Work Warehouse: Electrical light attached to sprinkler pipework. Refer photo below.*



Valve and Pump Enclosure Defects

7. *The street valve was not located on the day of inspection, however the flow test results confirm the water supply is adequate for the listed sprinkler system demands (indicating that the street valve is sufficiently open).*
8. *The quadrennial valve overhaul has not been carried out within the last four years.*
9. *No signage on the Fire Sprinkler Inlet (FSI) cabinet door.*
10. *Electric Pump: No legend plate installed so we are unable to confirm whether the pump duty was achieved.*
11. *The sprinkler system is fitted with an automatic jockey pump. With the approval of the SSC an automatic jockey pump and relief valve may be used as a means to overcome thermally induced pressure fluctuations in the sprinkler system. Automatic jockey pumps shall not be used as a means for compensating for leaks.*
12. *Electric Pump: The pump running alarm is not operational.*
13. *The gong cock leaks during operation.*
14. *There is no 'open before pumping' signage on the Fire Sprinkler Inlet (FSI) isolation valve.*
15. *The block plan does not show the design demands for the ELH office space and Niche Modules rear metal work warehouse.*
16. *Electric Pump: The discharge gauge has been removed and isolated.*
17. *The location of the external sprinkler heads is not shown on the block plan.*

Potential Upgrade Items and Other Observations

- A. *The back flow prevention unit was not tested as part of this routine survey.*
- B. *The evacuation alarms were not tested as a part of this routine survey.*
- C. *The current Sprinkler Standard NZS 4541:2013 and previous NZS 4541:2003 introduced a number of additional seismic requirements in order that the sprinkler system be designed and installed so as to remain operational in the event of an earthquake. Sprinkler systems installed prior to this introduction may not meet these requirements and as the system may suffer damage and possible operational failure we recommend that you discuss this matter with your contractor or, if you prefer, we could assist.*
- D. *We note that the routine test records are being maintained electronically. As we could not access these, we cannot comment whether the routine testing complies with the requirements of the standard.*
- E. *No access was gained into the electrical Transformer Room.*

Water Supplies

The water supplies for this site consist of a dual supply, with the primary supply from the Burnham Street town's main, and the secondary supply from an electrical driven centrifugal pump-set from a 72.8m³ water storage tank.

Flow tests were carried out at the Fire Sprinkler Inlet using a Giddens flow meter at 10:16 hours on 28 September 2022.

Aon Reference Gauge: WGTN36

The sprinkler design demands against which we measured the adequacy of the water supply are based on the information provided on the installation block plan.

DP-1 OH3 1064 L/min at 246 kPa

Conclusions

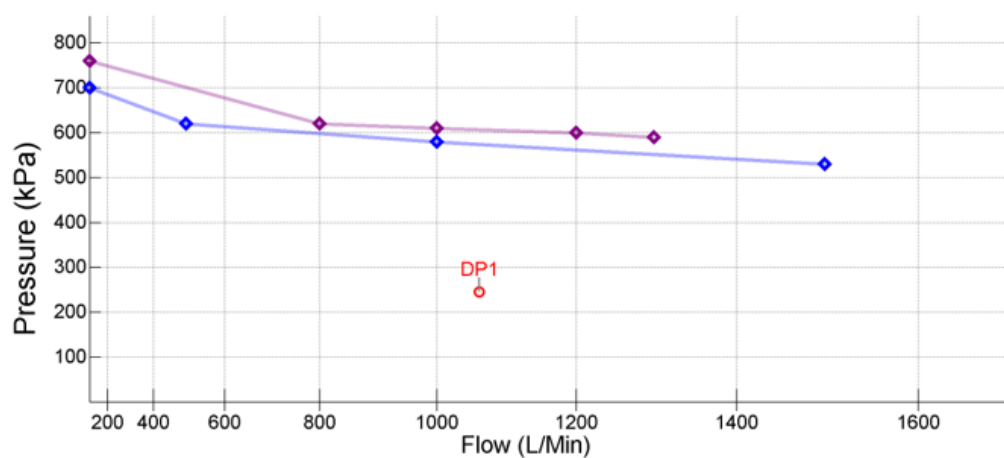
We could not ascertain the design demands for the Extra Light Hazard office spaces and Niche Modules rear metal work warehouse, therefore we cannot confirm the adequacy of the water supply for these areas.

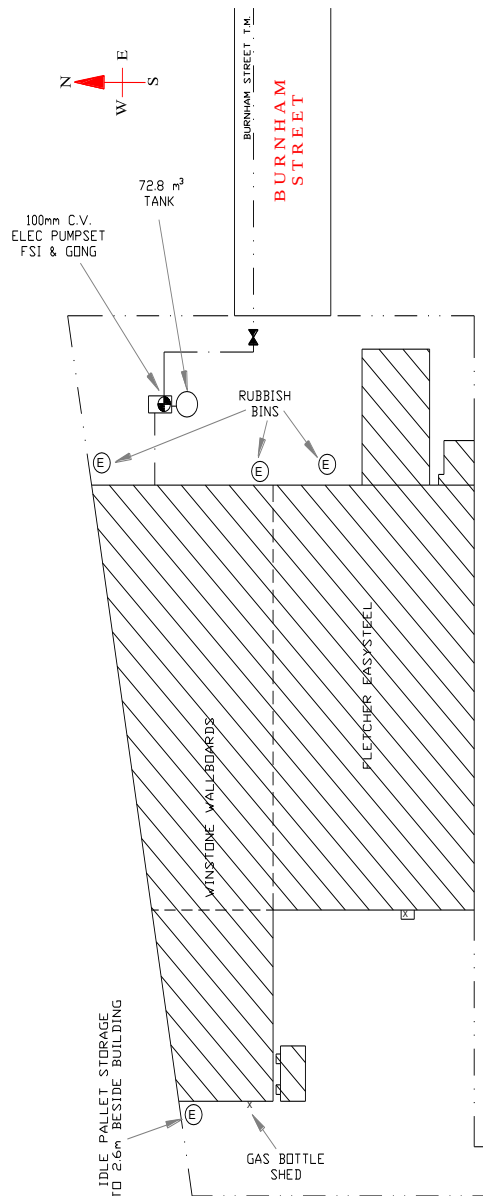
Water Supply Information

Primary (Towns Main)				
Flow L/Min	Pressure (kPa)			RPM
	Installation	Suction	Discharge	
0	700			
500	620			
1000	580			
1500	530			
Test Return		NA	NA	NA
50mm Drain Test		480		

Secondary (Electric pump)				
Flow L/Min	Pressure (kPa)			RPM
	Installation	Suction	Discharge	
0	760	24	0	
800	620	21	0	
1000	610	20	0	
1200	600	20	0	
1300	590	20	0	
Test Return		15	0	NA
50mm Drain Test		560		

○ Design Points ◆ Primary ◆ Secondary





HAZARD CLASSIFICATIONS: OH3
 No OF LEVELS: Two
 HIGHEST HEAD: 8.8m
 OCCUPANCY: Offices, Warehouse, Workshops

LEGEND:

✕	EXTERNAL SPRINKLER HEAD
⊙	CONTROL VALVES
▲	STOP VALVE
▼	NON-RETURN VALVE
○	EXPOSURE HAZARD
FSI	FIRE SERVICE INLET

This SITE PLAN is not intended as a block plan. The information on this SITE PLAN is indicative only. Any persons undertaking work based on this information shall satisfy themselves as to its accuracy prior to commencing any works. Not to scale.

The COPYRIGHT of this SITE PLAN belongs to AON New Zealand.

System Information

SYSTEM ID		One of One
PFA		410823
AREA	m ²	11,200m approx..
HIGHEST DENSITY EHH	mm/Min	NA
K FACTOR		NA
DATE OF INSTALLATION		1995
DATE OF LAST SURVEY		27/07/2020
VALVE OVERHAUL LAST DATE		24/07/2018
CONNECTED TO		FENZ
DBA TYPE		DBA-7
ALARM VALVE SIZE	mm	100mm
ALARM VALVE MAKE		Clearway
MAIN STOP VALVE SIZE	mm	100mm
MAIN STOP VALVE MAKE		Hattersley
AIG TYPE		Electric
INSTALLATION COMPANY		AFS Total
PRIMARY STATIC	kPa	700
SECONDARY STATIC	kPa	760
SYSTEM PRESSURE	kPa	1200
DEFECT PRESSURE	kPa	1030
FIRE PRESSURE DROP	kPa	870
FIRE PRESSURE RISE (TYPE Y)	kPa	NA
PRIMARY START PRESSURE	kPa	NA
SECONDARY START PRESSURE	kPa	700

ELECTRIC PUMPSET		E1
MOTOR MAKE		Higgs
MOTOR MODEL		D160M
PUMP MAKE		Ajax
PUMP MODEL		2L
IMPELLER SIZE		Standard
DUTY RPM		2940
kW		Not confirmed
DUTY FLOW	L/Min	Not confirmed
DUTY PRESSURE	kPa	Not confirmed
DUTY ACHIEVED ON TEST		Not confirmed

TANK SUPPLY		
STORED WATER CAPACITY	m ³	72.8
STORED WATER CAPACITY ADEQUATE		Yes
TANK(S) CRACK FREE WATER TIGHT		Yes
LEVEL IN TANK CORRECT		Yes
WATER CLEAN AND CLEAR		Yes
TANK CLEANED IN LAST 12 YEARS		Yes
AUTOMATIC TOP UP INFILL OPERATIONAL		Yes
REFILLING PROVISION ADEQUATE		Yes
TANK INFILL RATE		Unconfirmed
TANK INFILL ACTUAL L/Min		Unconfirmed
TANK INFILL ADEQUATE		Unconfirmed



DISCLOSURE STATEMENT

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