

2024

Inspection of Automatic Sprinkler System

ASIB



Inspection of Automatic Sprinkler System

EW1 TI Automotive East London
Industrial Development Zone

Complete

Client/Site Name

EW1 TI Automotive East London Industrial Development Zone

Billing Address

East London Industrial Development Zone SOC Ltd P O Box 5458 GREENFIELDS 5208

Attention:

Mteteleli Zantsi
Camagwini Ngxokolo-Nomatye

Document No

UNC8802

Prepared by

Keith van Onselen

Conducted on

09.05.2024 08:00 SAST

Site Location

Mdubu Road East London EC
5201
South Africa

Disclaimer

We have pleasure in attaching our inspector's report.

Whilst every care is taken in the preparation of the report which describes the conditions as found, such report is not a guarantee carrying responsibility for results and neither this Company nor any of its employees or agents shall be liable for any loss or damage of whatsoever nature and howsoever caused, (whether by actual or alleged negligence or otherwise), in any way arising out of the acts or omissions of the Company and/or its employees or agents aforesaid.

The report is based upon the visual inspection of the external condition of the equipment where accessible without having to provide scaffolding, ladders, staging, lighting and not requiring the removal or displacement of any temporary or permanent structure, fitting or fixture.

If there are any points arising on which you require clarification, kindly communicate with the undersigned. Assuring you of our best attention at all times.

Confidentiality

In order to maintain the integrity and credibility of the inspection processes and to protect the parties involved, it is understood that the inspectors will not divulge to unauthorized persons any information obtained during this inspection unless legally obligated to do so.

Yours faithfully,

THE AUTOMATIC SPRINKLER INSPECTION BUREAU (PTY) LIMITED



Nico van Loggerenberg
Managing Director

1. Report Summary

THE AUTOMATIC SPRINKLER INSPECTION BUREAU (PTY) LIMITED



REGISTRATION NUMBER: 1970/010833/07

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INDEPENDENT
THIRD PARTY
INSPECTION AND
ADVISORY
SERVICE SINCE
1970

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Code

C - Full Protection, Clearance
Certificate not Issued

Clearance certificate withheld due to the following:

Storage - See Report



Sprinkler System - Excessive Fault



Standard

12th Edition

ASIB Contract No

UNC8802

Client Order No

PO-004203

Was the sprinkler system design in order

No

The block plan must be updated to include all of the relevant design requirements

Was the water supplies in order

Yes

Refer to report UNC9004 Estate Pump House conducted on 08/05/2024

Was the pump room in order

No

Refer to report UNC9004 Estate Pump House conducted on 08/05/2024

Was the installation control valves in order

No

Refer to Installation Control Valves - Section 7.

Was the storage in order

No

- Refer to Occupancy & Storage Guidance - Section 3.

- Refer to Storage - Section 8.

2. Hand Fire Appliances

Hose Reels - 30 metres ☒

Number:

13

Hand Fire Appliances - One unit per 100 m² of floor area.

DCP 9 kg ☒

Number:

26

DCP 4,5 kg ☒

Number:

8

Other ☒

Specify

CO2 - 10 kg

Number:

4

Hand fire appliances date of the last service:

02/2024

Are the hand fire appliances due for their service.

No



Photo 1

Clear access to the hand fire appliances must be maintained at all times.

3. Occupancy & Storage Guidance

Percentage Hazard.

% Ordinary Hazard

10
From 0 to 100

% High Hazard

90
From 0 to 100

Stack height signs not less than 500 mm by 500 mm in size must be prominently displayed at the maximum level of the allowable storage height in all storage and process risk areas.

Occupancy / Process Risk

Occupancy/Risk

Occupancy/Risk 1

► **Ordinary Hazard / High Hazard**

High Hazard

► **Select Occupancy / Process Risk**

Process Risk

Storage Risk

Specify Process

Manufacturing
Steel fuel pipes
Plastic fuel tanks

Category

CAT II

Design Density (mm/min)

ESFR

Where goods of differing categories are stored within the same area, it is the stack height limitations of the goods with the highest category that will apply.

► **Product Stored**

Automotive Components:
Steel fuel pipes

Category

CAT I

Storage

Method

Method 1	
Storage Method	Free Standing / Block Storage
Design Density (mm)	ESFR
ESFR K-Factor	
363	
Roof Height (m)	12,4
Storage Height (m)	
10,6	
Method 2	
Storage Method	Shelving
Design Density (mm)	ESFR
ESFR K-Factor	
363	
Roof Height (m)	12,4
Storage Height (m)	
10,6	
Occupancy/Risk 2	
► Ordinary Hazard / High Hazard	High Hazard
► Select Occupancy / Process Risk	Storage Risk
Where goods of differing categories are stored within the same area, it is the stack height limitations of the goods with the highest category that will apply.	
► Product Stored	
Plastic Fuel Tanks	
Category	CAT III
Storage	
Method	

Method 1	
Storage Method	Free Standing / Block Storage
Design Density (mm)	ESFR
ESFR K-Factor	
363	
Roof Height (m)	12,4
Storage Height (m)	
10,6	
Method 2	
Storage Method	Shelving
Design Density (mm)	ESFR
ESFR K-Factor	
363	
Roof Height (m)	12,4
Storage Height (m)	
10,6	

4. Sprinkler System Design

Building

Building 1

Building Name

EW1 TI Automotive East London Industrial Development Zone

Date of First Inspection

December 2019

Original Installer

Fire Sprinkler Installations

Extension By

NA

Building Area m²

Approximately 12000

Height of Building in meters

12,4

Sprinkler Detail

Area

Area 1

► Area & Type of Sprinklers

Roof Sprinklers

Ceiling Sprinklers

Void Sprinklers

Canopy Sprinklers

Number of Sprinklers

1660

Calculations

Hydraulic Calculations

Area of Operation

Area of Operation 1

► Area of Operation

Pump Duty

Flows & Pressures

9000 l/min @ 1000

Area of Operation 2

► Area of Operation

Roof Most Remote Area of
Operation

Flows & Pressures

V1
7430 l/min @ 600 kPa

Area of Operation 3

► Area of Operation

Roof Most Favourable Area of
Operation

Flows & Pressures

V1
7390 l/min @ 495 kPa

Area of Operation 4

► Area of Operation

Roof Most Remote Area of
Operation

Flows & Pressures

V2
7400 l/min @ 580 kPa

Area of Operation 5

► Area of Operation

Roof Most Favourable Area of
Operation

Flows & Pressures

V2
7350 l/min @ 480 kPa

Area of Operation 6

► Area of Operation

Roof Most Remote Area of
Operation

Flows & Pressures

V3
1380 l/min @ 325 kPa

Area of Operation 7

► **Area of Operation**

Roof Most Favourable Area of
Operation

Flows & Pressures

V3
1520 l/min @ 245 kPa

Additional Sprinkler System Designs Required

No

5. Water Supplies

► Water Stored on Site.

Yes

Refer to report UNC9004 Estate Pump House conducted on 08/05/2024

Add Water Storage Tanks

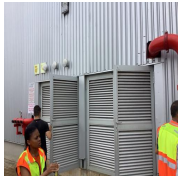
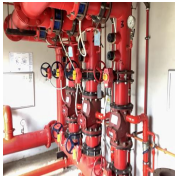

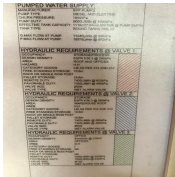
6. Pump Room

Pump Installed on Site

Yes

Refer to report UNC9004 Estate Pump House conducted on 08/05/2024

Add Pump House

7. Installation Control Valve(s)	
7.1 Sprinkler control valves accessible	Yes
Valve Cabinet	
Valve Cabinet 1	
Location:	
Left side. West wall	
<div>   </div> <div> <div>Photo 2</div> <div>Photo 3</div> </div>	
Number of Alarm Valves Installed	1 x 150 mm, 2 x 200 mm
7.2 Sprinkler Valve Location Plate Installed	Yes
7.3 Fire Brigade Booster Pressure Limitation Plate	Yes
7.4 Block Plan Installed	Yes
7.4.1 Is the block plan labelled in accordance with the areas fed by the sprinkler control valve assemblies	Yes
7.4.2 Are the correct installation details recorded on the block plan	Yes
<div>   </div> <div> <div>Photo 4</div> <div>Photo 5</div> </div>	
7.5 Sprinkler Valve Instruction Chart	Yes
7.6 Is a sprinkler spares box present	Yes
7.6.1 Was the spares box contents accessible	Yes
7.6.2 Are the spares quantities correct	Yes
7.7 By Pass Arrangement Installed	Yes

7.8 Fire Brigade Booster Connections Installed Correctly and Accessible	Yes
7.9 Are the Installation Control Valves Housed within an Approved Valve Cabinet	Yes
7.10 Flow Switch Installed Correctly	Yes
7.11 Manifold Correctly Supported	Yes
7.12 Riser Mains Correctly Supported	Yes
7.13 Riser Mains Externally Located	No
7.14 Flow Measuring Device Installed.	Yes
Flow Test Results	Pass



Photo 6



Photo 7

Recorded Flow and Pressure

7500 l/min @ 640 kPa

7.15 Correct Pressure Gauges Installed	Yes
7.16 Correct Gauge Cocks Installed	Yes
7.17 Flanges Short Bolted	Yes



Photo 8

The bolts for these flanges must be removed and replaced with the correctly sized bolts so as to ensure that at least two full thread pitches past the chamfer protrude beyond the nut.

7.18 Loose / Missing Bolts, Nuts & Washers	Yes
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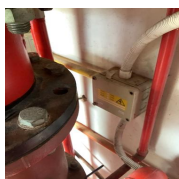


Photo 9

7.19 False Alarm Prevention Pump Installed

N/A

7.20 Drain & Test Pipes Installed Correctly

No

The water motor alarm drain pipes discharge into a common manifold. This must be revised so that the drain pipes are taken separately to waste.



Photo 10

7.21 Weekly tests of the installation control valves alarm bell must be carried out with the alarms sounding for at least thirty seconds.

All water pressure gauge readings must be checked and recorded.

The testing and records should be carried out by a member of staff delegated to do this.

7.22 Trunk Main Pressure (kPa)

760

7.23 Installation Pressure (kPa)

1000

7.24 ASIB Overhaul Date Tag No

Yes

Last Overhaul Date

2024

Next Overhaul Date

2027

7.25 Alarm Motor & Gong Test

Failed

Valve 30

7.26 Are All Valves in the Correct Positions

Yes

7.27 Are All Valves Secured

Yes

Non Compliance - Items

Item

Item 1

Non Compliance Items

► **Description**

Other

Gear operated valves

The lever operated butterfly valves are not ideal and must be replaced.

Recommendation Items

8. Storage

Are the storage heights exceeded.

Yes

Solid shelving is not accepted for use in an ESFR sprinkler protected area and these shelves will require intermediate sprinkler protection at every tier level. Alternatively the solid shelves must be replaced with slatted shelving designed as per this standard.

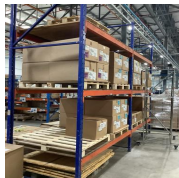


Photo 11



Photo 12



Photo 13



Photo 14

The storage heights must be maintained in accordance with the maximum allowable stack heights as detailed in this report. Should this not be possible, intermediate level protection is deemed to be mandatory.

Are Excessive Height Conditions Applicable

No

Issue

Issue 1

Longitudinal and transverse flu spaces are critical under ESFR protection. There are none on these shelves

Location:

Racking

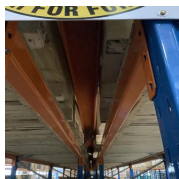


Photo 15

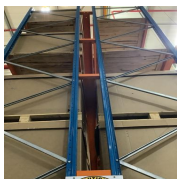


Photo 16

9. Sprinkler System

Sprinkler System

Area

Area 1

Specified Area.

Offices

System Issue

Issue

Issue 1

Finding

Sprinkler Heads

Mix operating temperature sprinklers.



Upright spray pattern sprinklers installed in the pendent position.



Location of Finding.

Reception area beneath stairs



Photo 17

Issue 2

Finding

Sprinkler Spacing

Sprinklers are out of effective working distance.



Location of Finding.

Ground floor outside the first aid room



Photo 18

Issue 3

Finding

Partial Protection /
Communicating Areas

Portion of premises sprinkler protected with communicating sections that are not.



Partial protection can lead to a fire originating in the protected area radiating heat into the unprotected portion of the premises and starting secondary fires. The heat from these fires radiates or spreads back into the protected area causing excessive sprinkler operation.

Conversely, a fire originating in the unprotected portion will radiate heat or spread into the protected portion rapidly causing unnecessary sprinkler operation and overwhelming the sprinkler system installed.

Location of Finding.

1st floor server room
Plugged sprinklers must be reinstated



Photo 19

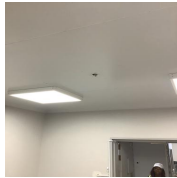


Photo 20



Photo 21

Issue 4

Finding

Sprinkler Spacing

Sprinklers are out of effective working distance.



Location of Finding.

Kurts office

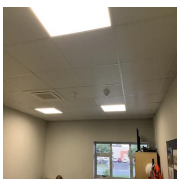



Photo 22

Area 2

Specified Area.	Other
Specify Area	
External	
System Issue	
Issue	
Issue 1	
Finding	Exposure Hazards
Adjacent building within 10,0 metres / 15,0 of the sprinkler protected building. <input checked="" type="checkbox"/>	
<p>Any detached building in the Ordinary Hazard or Extra Light Hazard class, any part of which is within 10,0 m of a protected building, must itself be sprinkler protected.</p> <p>Any detached building in the Extra High Hazard class, any part of which is within 15,0 m of a protected building, must itself be sprinkler protected.</p> <p>Where there are practical difficulties in providing such protection as, for example, when the detached building is in separate ownership or where the detached building is lofty and open-sided, (e.g. timber storage sheds), and the value of standard sprinkler protection is doubtful, it will be required that the sprinkler protection in the protected building be extended to provide external sprinkler protection over window and door openings and over any combustible sections of the wall opposing the exposure hazard.</p> <p>It should be noted that it is the hazard classification of the UNPROTECTED building which determines the required separation and NOT the hazard classification of the protected building.</p>	
Location of Finding.	
West side	
 <p>Photo 23</p>	
Issue 2	
Finding	Other
Specify Other. <input checked="" type="checkbox"/>	

Corrosion is evident on the sprinkler pipe work and must be addressed by your installer.

Location of Finding.

Canopies

Area 3

Specified Area.

Warehouse

Warehouse one production

System Issue

Issue

Issue 1

Finding

Partial Protection /
Communicating Areas

Portion of premises sprinkler protected with communicating sections that are not.



Partial protection can lead to a fire originating in the protected area radiating heat into the unprotected portion of the premises and starting secondary fires. The heat from these fires radiates or spreads back into the protected area causing excessive sprinkler operation.

Conversely, a fire originating in the unprotected portion will radiate heat or spread into the protected portion rapidly causing unnecessary sprinkler operation and overwhelming the sprinkler system installed.

Location of Finding.

New warehouse offices
All internal structures

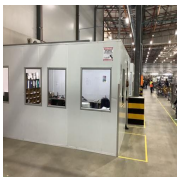


Photo 24

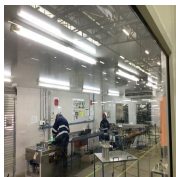


Photo 25



Photo 26

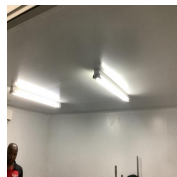


Photo 27

Issue 2

Finding

Other

Specify Other.



Sprinklers exceed 600 mm from isotherm panel wall

Location of Finding.

Iso panel walls



Photo 28



Photo 29

Issue 3

Finding

Sprinkler Spacing

Sprinklers are incorrectly spaced from the draft curtain at roof level.



Where smoke or draft curtains are fitted at ceiling level to separate differing levels of protection, the sprinklers on either side of the smoke or draft curtain shall be equidistant from the smoke or draft curtain. This must be rectified.

Location of Finding.

Roof

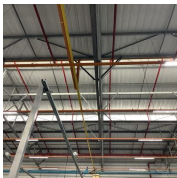


Photo 30

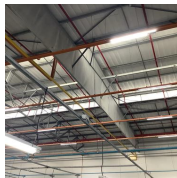


Photo 31

Issue 4

Finding

Other

Specify Other.



To be verified as correct

ESFR Mechanical Ventilation

Mechanical ventilation has been installed in conjunction with ESFR sprinkler protection.

It is imperative that the mechanical vents do not open automatically in a fire situation as the ESFR sprinkler system will be adversely effected which could result in the ESFR system failure.

It is important that the mechanical vents be manually operated and that the Fire Chief in charge of operations during a fire be able to make the decision whether it should be opened or remain closed.

Location of Finding.

Roof

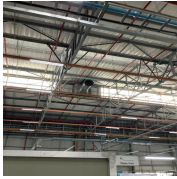


Photo 32

Issue 5

Finding

Sprinkler Heads

Sprinkler heads must be correctly aligned.



Location of Finding.

Receiving

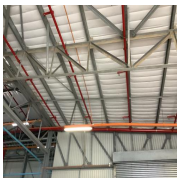


Photo 33

Issue 6

Finding

Pipe Support

Hangers have come adrift and must be re-fixed to their original positions.



Location of Finding.

End of main above receiving

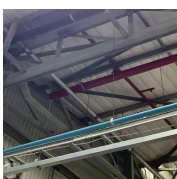


Photo 34

Area 4

Specified Area.

Warehouse

Warehouse 2

System Issue

Issue

Issue 1

Finding

Other

Surfaces exceeding 1,0 metre in width.



Surfaces which exceed 1,0 metre in width will obstruct the water discharged from the sprinklers above which could result in an ignition beneath these surfaces not being controlled or extinguished.

The general obstruction is classed as 1,000 mm therefore sprinkler protection is required beneath any such obstruction which includes, but is not limited to;



Walkways, solid or open grid, and Work tables.

Location of Finding.

Various



Photo 35



Photo 36



Photo 37

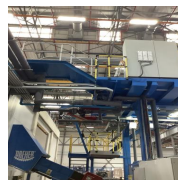


Photo 38

Issue 2

Finding

Sprinkler Spacing

Sprinklers are incorrectly spaced from the draft curtain at roof level.



Where smoke or draft curtains are fitted at ceiling level to separate differing levels of protection, the sprinklers on either side of the smoke or draft curtain shall be equidistant from the smoke or draft curtain. This must be rectified.

Location of Finding.

Roof

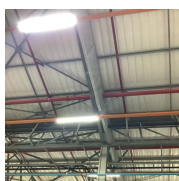


Photo 39

Issue 3

Finding

Partial Protection /
Communicating Areas

Portion of premises sprinkler protected with communicating sections that are not.



Partial protection can lead to a fire originating in the protected area radiating heat into the unprotected portion of the premises and starting secondary fires. The heat from these fires radiates or spreads back into the protected area causing excessive sprinkler operation.

Conversely, a fire originating in the unprotected portion will radiate heat or spread into the protected portion rapidly causing unnecessary sprinkler operation and overwhelming the sprinkler system installed.

Location of Finding.

Sequencing office

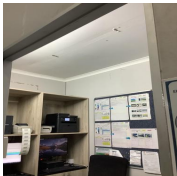


Photo 40

Issue 4

Finding

Partial Protection /
Communicating Areas

Enclosed structures not sprinkler protected.



A fire originating within an unprotected area will burn in an uncontrolled manner without alerting the sprinkler system unit until such time as it breaks out of the structure. The subsequent release of heat will operate multiple sprinklers at roof level above the fire area and remote from it causing massive damage.

Location of Finding.

Pit under moulding machine



Photo 41

Issue 5

Finding

Exposure Hazards

Storage too close to building.



Drencher heads required which are purpose made sprinklers designed to spray water over a surface to provide protection against fire exposure. It is not acceptable to use standard sprinkler heads with the fusible elements removed for the purpose of providing wall or face wetting. The drencher system must extend along the walls of the protected building to a distance of 15.0 metres beyond each end of the stored goods. The feed for the drenchers must be taken from the underside of the valves and not from the downstream side of the installation. The stop valve controlling the drencher installation shall be located near to the sprinkler control valves, but must be at least 10,0 metres from the goods stored or from the area where they are expected to operate.

Location of Finding.

Raw material silos

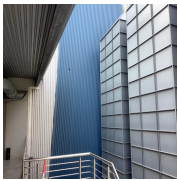


Photo 42



Photo 43

Issue 6

Finding

Other

Specify Other.



To be verified as correct

ESFR Mechanical Ventilation

Mechanical ventilation has been installed in conjunction with ESFR sprinkler protection.

It is imperative that the mechanical vents do not open automatically in a fire situation as the ESFR sprinkler system will be adversely effected which could result in the ESFR system failure.

It is important that the mechanical vents be manually operated and that the Fire Chief in charge of operations during a fire be able to make the decision whether it should be opened or remain closed.

Location of Finding.

Roof

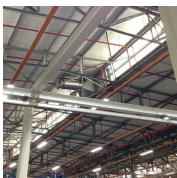


Photo 44

Issue 7

Finding

Pipe Support

Distribution rise/drop pipes shall be secured directly to the building structure or by hangers securing horizontal distribution pipes within 300 mm of the riser.



Location of Finding.

Risers to high bay

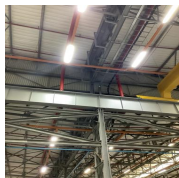
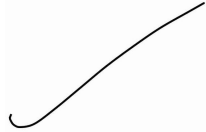


Photo 45

10. Proof of Inspection

Proof of inspection.

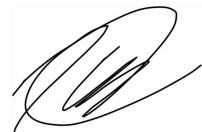
For and on behalf of client:



Camagwini Ngxokolo-Nomatye
11.06.2024 07:48 SAST

Proof of inspection.

ASIB Inspector:



Keith van Onselen
11.06.2024 07:48 SAST

WARNING

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The primary function of the ASIB is to protect the interests of the end user and as a result, we constantly update the list of registered suppliers and installing companies.

These companies have proven that they are capable of installing, extending and servicing fire sprinkler systems to the correct standards.

We have had occasion to remove companies for valid reasons which are not confidential and include, but are not limited to, poor workmanship, design, fabrication, incorrect advice, lack of skilled staff, fraudulent quotations and financial instability.

It is important to note that if a company is not listed with the ASIB and carries out work on a sprinkler system we will not be in a position to issue a Clearance Certificate for the premises which, in turn, may place you at risk.

In selecting your service provider, it is important to appreciate that the ASIB is not seeking to infer that a non-listed service provider is necessarily not capable of offering the required service to an appropriate standard. What the ASIB is saying, is that the ASIB is not in a position to give you the assurance that a non-listed provider concerned has demonstrated that it complies with the ASIB standards. In addition, because the ASIB is unable to fully inspect an installation (which by its nature has many inaccessible components), you will appreciate that the ASIB is also unfortunately not in a position to issue a Clearance Certificate in relation to an installation done by a non-listed company.

We advise you to check the listing status of the service provider you choose especially if there is any uncertainty.

You can access our website at <http://www.asib.co.za> which is current or phone our offices at 011 642 1703 for verification.

Email:

Email: 1

Recipient

Mteteleli@elidz.co.za

Email: 2

Recipient

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Media summary



Photo 1

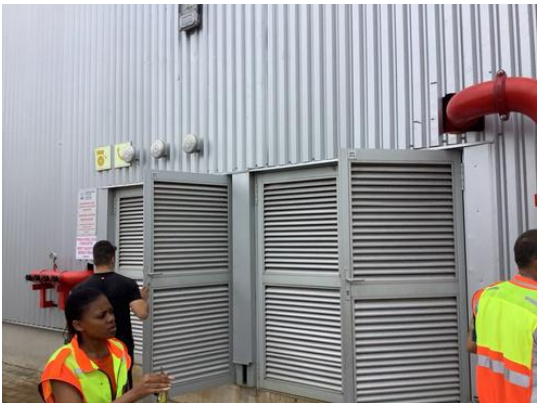


Photo 2



Photo 3

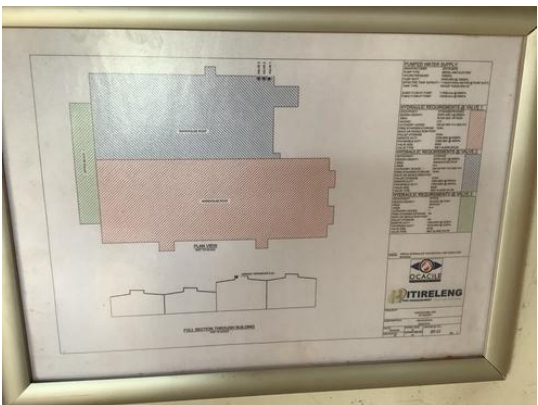


Photo 4

PUMPED WATER SUPPLY:	
MANUFACTURER:	SPR PUMPS
PUMP TYPE:	DIESEL AND ELECTRIC
CHURN PRESSURE:	1040kPa
PUMP DUTY:	9000L/MIN @ 1000kPa
EFFECTIVE TANK CAPACITY:	1119m ³ 124mm WATER @ PUMP DUTY
TANK TYPE:	ROUND TANKS 50% K2
Q MAX FLOW AT PUMP:	11540L/min @ 895kPa
P MAX FLOW AT PUMP:	10375L/min @ 963kPa

HYDRAULIC REQUIREMENTS @ VALVE 1:	
OCCUPANCY:	STORAGE/PROCESS
DESIGN DENSITY:	ESFR K38.3 @ 2800kPa
AREA:	ROOF AND OFFICES
HAZARD:	H.H
CATEGORY GOODS:	H.H AS PER 312 AND 313
FREE STANDING STORAGE:	10.6m
RACK OR SINGLE ROW POST:	
PALLET STORAGE:	10.6m
REMOTE DUTY:	7430L/MIN @ 650kPa
FAVORABLE DUTY:	7350L/MIN @ 455kPa
VALVE SIZE:	Ø200
VALVE TYPE:	WET ALARM VALVE

HYDRAULIC REQUIREMENTS @ VALVE 2:	
OCCUPANCY:	STORAGE
DESIGN DENSITY:	ESFR K38.3 @ 2800kPa
AREA:	WAREHOUSE ROOF
HAZARD:	H.H
CATEGORY GOODS:	H.H AS PER 312 AND 313
FREE STANDING STORAGE:	10.6m
RACK OR SINGLE ROW POST:	
PALLET STORAGE:	10.6m
REMOTE DUTY:	7400L/MIN @ 560kPa
FAVORABLE DUTY:	7350L/MIN @ 455kPa
VALVE SIZE:	Ø200
VALVE TYPE:	WET ALARM VALVE

HYDRAULIC REQUIREMENTS @ VALVE 3:	
OCCUPANCY:	OFFICE
DESIGN DENSITY:	5mm/min @ 2150kPa
AREA:	OFFICES
HAZARD:	OH
CATEGORY GOODS:	I
FREE STANDING STORAGE:	NA
RACK OR SINGLE ROW POST:	
PALLET STORAGE:	NA
REMOTE DUTY:	1330L/MIN @ 225kPa
FAVORABLE DUTY:	1320L/MIN @ 215kPa
VALVE SIZE:	Ø150
VALVE TYPE:	WET ALARM VALVE

Photo 5



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10



Photo 11



Photo 12



Photo 13



Photo 14



Photo 15



Photo 16



Photo 17



Photo 18



Photo 19



Photo 20



Photo 21



Photo 22



Photo 23



Photo 24



Photo 25



Photo 26



Photo 27



Photo 28



Photo 29

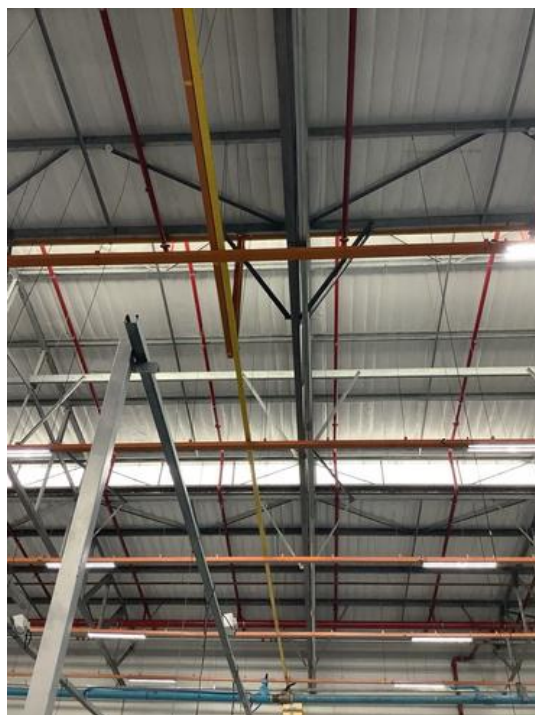


Photo 30



Photo 31



Photo 32



Photo 33



Photo 34



Photo 35



Photo 36



Photo 37



Photo 38



Photo 39



Photo 40



Photo 41



Photo 42



Photo 43



Photo 44



Photo 45