

2024

# Inspection of Automatic Sprinkler System

**ASIB**



## Inspection of Automatic Sprinkler System

Yekani - East London Industrial  
Development Zone

Complete

### Client/Site Name

Yekani - East London Industrial Development Zone

### Billing Address

IDEC Financial Services (Pty) Ltd  
P O Box 432  
EAST LONDON  
5400

### Attention:

Mteteleli Zantsi  
Camagwini Ngxokolo-Nomatye

### Document No

UNC.8029

### Prepared by

Keith van Onselen

### Conducted on

08.05.2024 12:26 SAST

### Site Location

East London IDZ  
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

A handwritten signature in black ink, appearing to read 'Nico van Loggerenberg', written in a cursive style.

Nico van Loggerenberg  
Managing Director

## 1. Report Summary

### THE AUTOMATIC SPRINKLER INSPECTION BUREAU (PTY) LIMITED



REGISTRATION NUMBER: 1970/010833/07

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CNR LOUIS BOTHA AND  
TUDHOPE AVENUES  
BEREA  
JOHANNESBURG  
2198

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P O BOX 3139  
HOUGHTON  
2041

INDEPENDENT  
THIRD PARTY  
INSPECTION AND  
ADVISORY  
SERVICE SINCE  
1970

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#### Code

B - Full Protection, Clearance  
Certificate Issued

Please Note:

The Clearance Certificate is issued subject to the items in the report being attended to.

#### Standard

11th Edition

#### ASIB Contract No

UNC.8029

#### Client Order No

PO-004203

#### Was the sprinkler system design in order

Yes

#### Was the water supplies in order

Yes

Refer to Pump Room Report

#### Was the pump room in order

No

Refer to Pump Room Report

#### Was the installation control valves in order

No

Refer to Installation Control Valves - Section 7.

#### Was the storage in order

Yes

2. Hand Fire Appliances

Hose Reels - 30 metres ☒

Number:

31

Hand Fire Appliances - One unit per 100 m<sup>2</sup> of floor area.

DCP 9 kg ☒

Number:

282

Hand fire appliances date of the last service:

11/23

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

There is no occupancy indicated for this area as the building was vacant at the time of the inspection

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**

Ordinary Hazard

► **Select Occupancy / Process Risk**

Life Safety

**Specify Occupancy**

Offices

**Specify Occupancy / Process**

Offices

**Category**

CAT I

**Design Density (mm/min)**

5 mm/min

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**

Empty warehouse

Category

CAT I	CAT II	CAT III
		CAT IV

Storage/process details to be added once a new tenant occupies the premises

Storage

#### 4. Sprinkler System Design

Building

Building 1

##### Building Name

Yekani Manufacturing East London Industrial Development Zone

##### Date of First Inspection

January 2020

##### Original Installer

Fire Sprinkler Installations

##### Extension By

Fire Sprinkler Installations

##### Building Area m<sup>2</sup>

Approximately 23000

##### Height of Building in meters

8,2

Sprinkler Detail

Area

Area 1

##### ► Area & Type of Sprinklers

Roof Sprinklers

Ceiling Sprinklers

Void Sprinklers

Canopy Sprinklers

##### Number of Sprinklers

4959

Calculations

Hydraulic Calculations

Area of Operation



## Area of Operation 1

### ► Area of Operation

Pump Duty

### Flows & Pressures

9000 l/min @ 1050 kPa

## Area of Operation 2

### ► Area of Operation

Roof Most Remote Area of  
Operation

### Flows & Pressures

V1  
1860 l/min @ 220 kPa

## Area of Operation 3

### ► Area of Operation

Roof Most Favourable Area of  
Operation

### Flows & Pressures

V1  
1800 l/min @ 150 kPa

## Area of Operation 4

### ► Area of Operation

Roof Most Remote Area of  
Operation

### Flows & Pressures

V2  
6020 l/min @ 460 kPa

## Area of Operation 5

### ► Area of Operation

Roof Most Favourable Area of  
Operation

### Flows & Pressures

V2  
6025 l/min @ 325 kPa

## Area of Operation 6

### ► Area of Operation

Roof Most Remote Area of  
Operation

### Flows & Pressures

V3  
6020 l/min @ 470 kPa

## Area of Operation 7

### ► Area of Operation

Roof Most Favourable Area of Operation

### Flows & Pressures

V3  
6030 l/min @ 320 kPa

## Area of Operation 8

### ► Area of Operation

Roof Most Remote Area of Operation

### Flows & Pressures

V4  
3390 l/min @ 715 kPa

## Area of Operation 9

### ► Area of Operation

Roof Most Favourable Area of Operation

### Flows & Pressures

V4  
3390 l/min @ 300 kPa

## Area of Operation 10

### ► Area of Operation

Roof Most Remote Area of Operation

### Flows & Pressures

V5  
3305 l/min @ 335 kPa

## Area of Operation 11

### ► Area of Operation

Roof Most Favourable Area of Operation

### Flows & Pressures

V5  
3325 l/min @ 280 kPa

## Area of Operation 12

### ► Area of Operation

Roof Most Remote Area of Operation

### Flows & Pressures

V6

6020 l/min @ 480 kPa

Area of Operation 13

► **Area of Operation**

Roof Most Favourable Area of  
Operation

**Flows & Pressures**

V6  
6015 l/min @ 325 kPa

**Additional Sprinkler System Designs Required**

No

5. Water Supplies

Town Main - Flow Test Results

Town Main Diameter (mm)

100

Street / Road

Umthiza Road

Flow Recorded in Flow Test (l/min)

No test apparatus installed

► Water Stored on Site.

Yes

Refer to Pump Room Report

Add Water Storage Tanks

6. Pump Room

Pump Installed on Site

Yes

Refer to Pump Room Report

Add Pump House

## 7. Installation Control Valve(s)

### 7.1 Sprinkler control valves accessible

Yes

Valve Cabinet

Valve Cabinet 1

#### Location:

Opposite pump house



Photo 2



Photo 3



Photo 4

### Number of Alarm Valves Installed

2 x 200 mm, 1 x 150 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



Photo 5



Photo 6

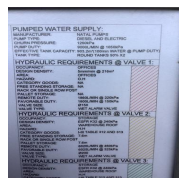


Photo 7



Photo 8

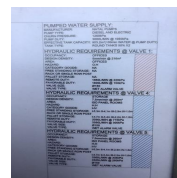


Photo 9

### 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

No

Installations must be fitted with fire brigade booster connections which will enable the fire brigade to pump water into the installation using their own equipment.

It appears that the booster connection piping to the main distribution riser is too long, which may restrict the opening of the booster plunger into the main distribution riser, this will prevent effective boosting of the sprinkler system and must be revised.



Photo 10

## 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

Fail

## Recorded Flow and Pressure

Could not test. Needs to be rerouted to enable testing

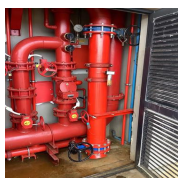


Photo 11

## 7.15 Correct Pressure Gauges Installed

Yes

## 7.16 Correct Gauge Cocks Installed

Yes

## 7.17 Flanges Short Bolted

No

## 7.18 Loose / Missing Bolts, Nuts & Washers

No

**7.19 False Alarm Prevention Pump Installed**

N/A

**7.20 Drain & Test Pipes Installed Correctly**

No



Photo 12

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.

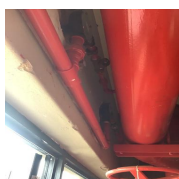


Photo 13

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)**

1000

**7.23 Installation Pressure (kPa)**

1480

**7.24 ASIB Overhaul Date Tag No**

Yes

**Last Overhaul Date**

2021

**Next Overhaul Date**

2024

**7.25 Alarm Motor & Gong Test**

Passed

**7.26 Are All Valves in the Correct Positions**

Yes

**7.27 Are All Valves Secured**

Yes

Valve Cabinet 2



**Location:**

Opposite security entrance



Photo 14



Photo 15



Photo 16

**Number of Alarm Valves Installed**

2 x 200 mm, 1 x 150 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

See first valve chamber

**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**

No



Installations must be fitted with fire brigade booster connections which will enable the fire brigade to pump water into the installation using their own equipment.

**It appears that the booster connection piping to the main distribution riser is too long, which may restrict the opening of the booster plunger into the main distribution riser, this will prevent effective boosting of the sprinkler system and must be revised.**





Photo 17

<b>7.9 Are the Installation Control Valves Housed within an Approved Valve Cabinet</b>	Yes
<b>7.10 Flow Switch Installed Correctly</b>	Yes
<b>7.11 Manifold Correctly Supported</b>	Yes
<b>7.12 Riser Mains Correctly Supported</b>	Yes
<b>7.13 Riser Mains Externally Located</b>	No
<b>7.14 Flow Measuring Device Installed.</b>	Yes
  	
<b>Flow Test Results</b>	Pass
<b>Recorded Flow and Pressure</b>	6020 l/min 1140 kPa
<b>7.15 Correct Pressure Gauges Installed</b>	Yes
<b>7.16 Correct Gauge Cocks Installed</b>	Yes
<b>7.17 Flanges Short Bolted</b>	No
<b>7.18 Loose / Missing Bolts, Nuts &amp; Washers</b>	No
<b>7.19 False Alarm Prevention Pump Installed</b>	N/A
<b>7.20 Drain &amp; Test Pipes Installed Correctly</b>	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 21

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)

1000

#### 7.23 Installation Pressure (kPa)

1300

#### 7.24 ASIB Overhaul Date Tag No

Yes

#### Last Overhaul Date

2021

#### Next Overhaul Date

2024

#### 7.25 Alarm Motor & Gong Test

Passed

#### 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

The incorrect bolt sizes have been used on the flanges in both valve chambers. This must be addressed by your installer



Photo 22

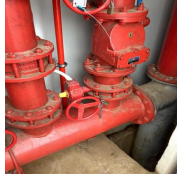


Photo 23

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## Recommendation Items

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8. Storage

No storage was taking place at the time of inspection. ☒

Are the required clearances being maintained.	Yes
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Are the storage heights exceeded.	No
-----------------------------------	----

At the time of inspection the storage heights were being adhered to and found to be in order.

## 9. Sprinkler System

### Sprinkler System

#### Area

#### Area 1

#### Specified Area.

External Canopies

#### System Issue

#### Issue

#### Issue 1

#### Finding

Other

#### Sprinkler remote test valves.



A sprinkler remote test valve must be installed with a location plate fixed to the wall adjacent to it. The valves must be secured in the closed position by means of a light chain and/or padlock.

#### Location of Finding.

Left side loading canopies. Requires signage

#### Issue 2

#### 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.

Dropper to fire escape at generator room



Photo 24

#### Area 2

#### Specified Area.

Staff Facilities

## System Issue

### Issue

#### Issue 1

##### 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.**

Fridge and freezer in canteen kitchen

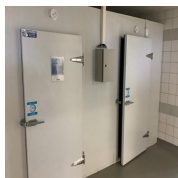


Photo 25

#### Issue 2

##### Finding

Other

##### **Extraction Canopies.**



Extraction canopies where these are designed to extract grease laden vapours or heat through a ventilation system must be fully sprinkler protected, inclusive of exhaust ducts and exhaust plenum chambers, using 141° Celsius operating temperature spray pattern type nozzles unless alternative protection is installed.

##### **Location of Finding.**

Kitchen

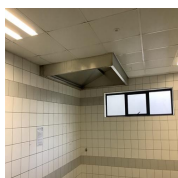


Photo 26

#### Area 3

**Specified Area.**

Offices

## 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.**

Room OB14

## Issue 2

**Finding**

Sprinkler Heads

**The protective covers must be removed from sprinklers.****Location of Finding.**

Room OB130

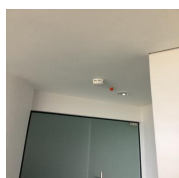


Photo 27

## Issue 3

**Finding**

Pipe Support

**Sprinklers dropped below level of the ceiling.**

Sprinklers must be re-fixed to their original intended operating position. The hanger supporting it must be checked and, if necessary, re-secured.



### Location of Finding.

Room OB130



Photo 28

#### Issue 4

#### Finding

Sprinkler Spacing

**Sprinklers spaced too far apart. (The protection must be revised in this area so that the following spacing is achieved: Sprinklers must be spaced a maximum of 4,0 meters apart. Each sprinkler must cover a maximum area of 12 m<sup>2</sup>)**



### Location of Finding.

Room OB118



Photo 29

#### Area 4

#### Specified Area.

Warehouse

System Issue

#### Issue

#### Issue 1

#### Finding

Sprinkler Spacing

**Sprinklers exceed 600 mm from walls of a cold room or freezer (11th Edition).**



### Location of Finding.

Various where ISO panels are installed



Photo 30



Photo 31

## Issue 2

### Finding

Pipe Support

**Terminal hangers on distribution pipes are exceeding the maximum distance of 450 mm from the end of the distribution pipe.**



### Location of Finding.

Far right corner from office



Photo 32

## Issue 3

### Finding

Sprinkler Heads

**Pendent spray pattern sprinklers installed in the upright position.**



### Location of Finding.

Enter stairs to ceilings



Photo 33



Photo 34

## Issue 4

### Finding

Pipe Support

**The sprinkler pipe work must be correctly supported.**



### Location of Finding.

Composite panel ceiling protection

Pipe work must be supported independently from the composite panel, and the dry dropper must not be attached to the fabric of the cold room with mastic or insulating material that permanently bonds the dropper to the refrigerated structure.  
In the event of collapse of the cold room, the cold room material must drop away from the sprinkler system.

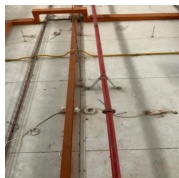


Photo 35

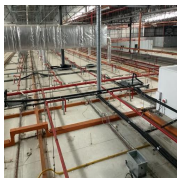


Photo 36

Issue 5

Finding

Pipe Support

The sprinkler pipe work must be correctly supported.



Belt-to-belt hangers utilized.



Belt-to-belt hangers must be removed and the pipe work correctly supported.

Location of Finding.

Main feed to second valve  
It must be verified that the correct threaded rod has been used.

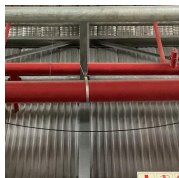


Photo 37

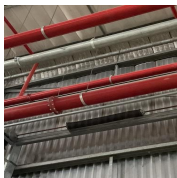


Photo 38



Photo 39

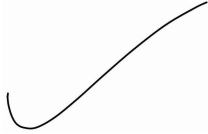
General Notes

No

## 10. Proof of Inspection

Proof of inspection.

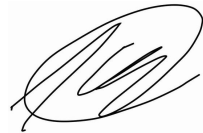
For and on behalf of client:



Camagwini Ngxokolo-Nomatye  
09.06.2024 18:46 SAST

Proof of inspection.

ASIB Inspector:



Keith van Onselen  
09.06.2024 18:46 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**

camagwini@elidz.co.za

Media summary

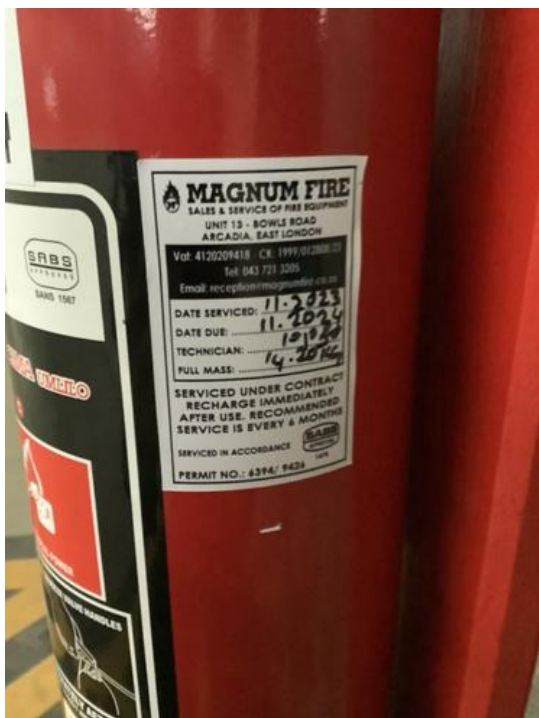


Photo 1



Photo 2



Photo 3



Photo 4





Photo 5

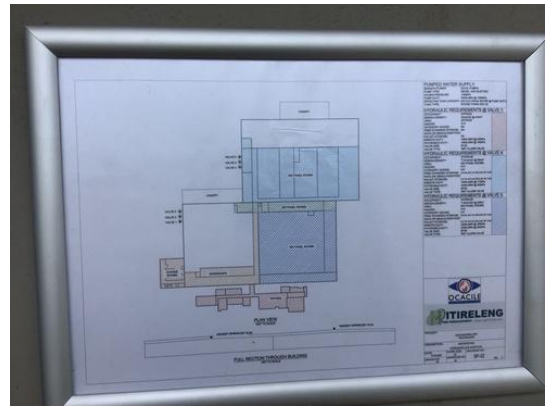


Photo 6

<b>PUMPED WATER SUPPLY:</b>	
MANUFACTURER:	NATAL PUMPS
PUMP TYPE:	DIESEL AND ELECTRIC
CHURN PRESSURE:	1260kPa
PUMP DUTY:	9000L/MIN @ 1050kPa
EFFECTIVE TANK CAPACITY:	903.2m³/100min WATER @ PUMP DUTY
TANK TYPE:	ROUND TANKS 50% X2
<b>HYDRAULIC REQUIREMENTS @ VALVE 1:</b>	
OCCUPANCY:	OFFICES
DESIGN DENSITY:	5mm/min @ 216m²
AREA:	OFFICES
HAZARD:	O.H
CATEGORY GOODS:	NA
FREE STANDING STORAGE:	NA
RACK OR SINGLE ROW POST:	NA
PALLET STORAGE:	NA
REMOTE DUTY:	1860L/MIN @ 220kPa
FAVORABLE DUTY:	1800L/MIN @ 150kPa
VALVE SIZE:	Ø150
VALVE TYPE:	WET ALARM VALVE
<b>HYDRAULIC REQUIREMENTS @ VALVE 2:</b>	
OCCUPANCY:	STORAGE
DESIGN DENSITY:	ESFR K32 @ 240kPa
AREA:	WAREHOUSE ROOF
HAZARD:	H.H
CATEGORY GOODS:	I-III TABLE 312 AND 313
FREE STANDING STORAGE:	7.6m
RACK OR SINGLE ROW POST:	7.6m
PALLET STORAGE:	7.6m
REMOTE DUTY:	6020L/MIN @ 460kPa
FAVORABLE DUTY:	6025L/MIN @ 325kPa
VALVE SIZE:	Ø200
VALVE TYPE:	WET ALARM VALVE
<b>HYDRAULIC REQUIREMENTS @ VALVE 3:</b>	
OCCUPANCY:	STORAGE
DESIGN DENSITY:	ESFR K32 @ 240kPa
AREA:	WAREHOUSE ROOF
HAZARD:	H.H
CATEGORY GOODS:	I-III TABLE 312 AND 313
FREE STANDING STORAGE:	7.6m
RACK OR SINGLE ROW POST:	7.6m
PALLET STORAGE:	7.6m
REMOTE DUTY:	6020L/MIN @ 460kPa
FAVORABLE DUTY:	6015L/MIN @ 325kPa
VALVE SIZE:	Ø200
VALVE TYPE:	WET ALARM VALVE

Photo 7

<b>HYDRAULIC REQUIREMENTS @ VALVE 3:</b>	
OCCUPANCY:	STORAGE
DESIGN DENSITY:	ESFR K32 @ 240kPa
AREA:	WAREHOUSE ROOF
HAZARD:	H.H
CATEGORY GOODS:	I-III TABLE 312 AND 313
FREE STANDING STORAGE:	7.6m
RACK OR SINGLE ROW POST:	7.6m
PALLET STORAGE:	7.6m
REMOTE DUTY:	6020L/MIN @ 470kPa
FAVORABLE DUTY:	6030L/MIN @ 320kPa
VALVE SIZE:	Ø200
VALVE TYPE:	WET ALARM VALVE
<b>HYDRAULIC REQUIREMENTS @ VALVE 6:</b>	
OCCUPANCY:	STORAGE
DESIGN DENSITY:	ESFR K32 @ 240kPa
AREA:	WAREHOUSE ROOF
HAZARD:	H.H
CATEGORY GOODS:	I-III TABLE 312 AND 313
FREE STANDING STORAGE:	7.6m
RACK OR SINGLE ROW POST:	7.6m
PALLET STORAGE:	7.6m
REMOTE DUTY:	6020L/MIN @ 460kPa
FAVORABLE DUTY:	6015L/MIN @ 325kPa
VALVE SIZE:	Ø200
VALVE TYPE:	WET ALARM VALVE

Photo 8

<b>PUMPED WATER SUPPLY:</b>	
MANUFACTURER:	NATAL PUMPS
PUMP TYPE:	DIESEL AND ELECTRIC
CHURN PRESSURE:	1200kPa
PUMP DUTY:	3000L/MIN @ 1050kPa
EFFECTIVE TANK CAPACITY:	903.2m <sup>3</sup> /100min WATER @ PUMP DUTY
TANK TYPE:	ROUND TANKS 50% X2
<b>HYDRAULIC REQUIREMENTS @ VALVE 1:</b>	
OCCUPANCY:	OFFICES
DESIGN DENSITY:	5mm/min @ 216m <sup>3</sup>
AREA:	OFFICES
HAZARD:	O.H
CATEGORY GOODS:	NA
FREE STANDING STORAGE:	NA
RACK OR SINGLE ROW POST:	NA
PALLET STORAGE:	NA
REMOTE DUTY:	1860L/MIN @ 220kPa
FAVORABLE DUTY:	1800L/MIN @ 150kPa
VALVE SIZE:	Ø150
VALVE TYPE:	WET ALARM VALVE
<b>HYDRAULIC REQUIREMENTS @ VALVE 4:</b>	
OCCUPANCY:	STORAGE
DESIGN DENSITY:	7.5mm/min @ 260m <sup>3</sup>
AREA:	ISO PANEL ROOMS
HAZARD:	H.H
CATEGORY GOODS:	H.V
FREE STANDING STORAGE:	14.3m B-4.1m B-2.9m IV-1.6m
RACK OR SINGLE ROW POST:	14.7m B-3.4m B-2.2m IV-1.6m
PALLET STORAGE:	14.7m B-3.4m B-2.2m IV-1.6m
REMOTE DUTY:	3390L/MIN @ 715kPa
FAVORABLE DUTY:	3390L/MIN @ 300kPa
VALVE SIZE:	Ø150
VALVE TYPE:	WET ALARM VALVE
<b>HYDRAULIC REQUIREMENTS @ VALVE 5:</b>	
OCCUPANCY:	STORAGE
DESIGN DENSITY:	7.5mm/min @ 260m <sup>3</sup>
AREA:	ISO PANEL ROOMS
HAZARD:	H.H
CATEGORY GOODS:	H.V
FREE STANDING STORAGE:	14.3m B-4.1m B-2.9m IV-1.6m
RACK OR SINGLE ROW POST:	14.7m B-3.4m B-2.2m IV-1.6m
PALLET STORAGE:	14.7m B-3.4m B-2.2m IV-1.6m
REMOTE DUTY:	3305L/MIN @ 335kPa
FAVORABLE DUTY:	3320L/MIN @ 280kPa
VALVE SIZE:	Ø150
VALVE TYPE:	WET ALARM VALVE

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

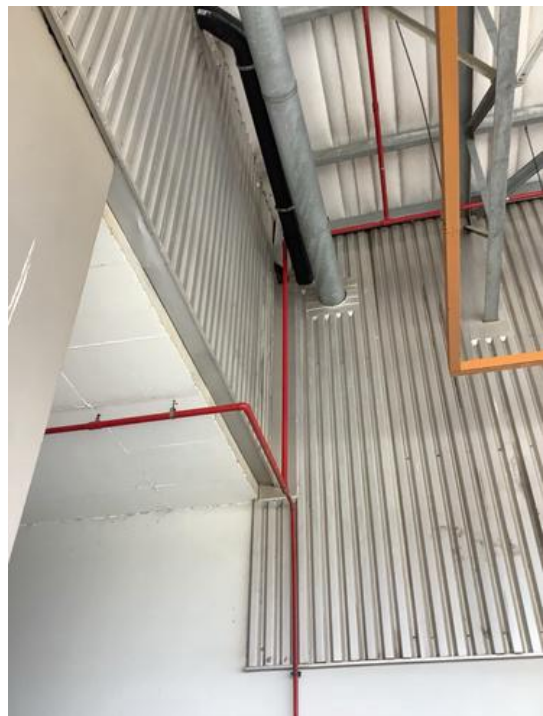


Photo 24



Photo 25



Photo 26



Photo 27



Photo 28



Photo 29



Photo 30



Photo 31



Photo 32





Photo 33



Photo 34

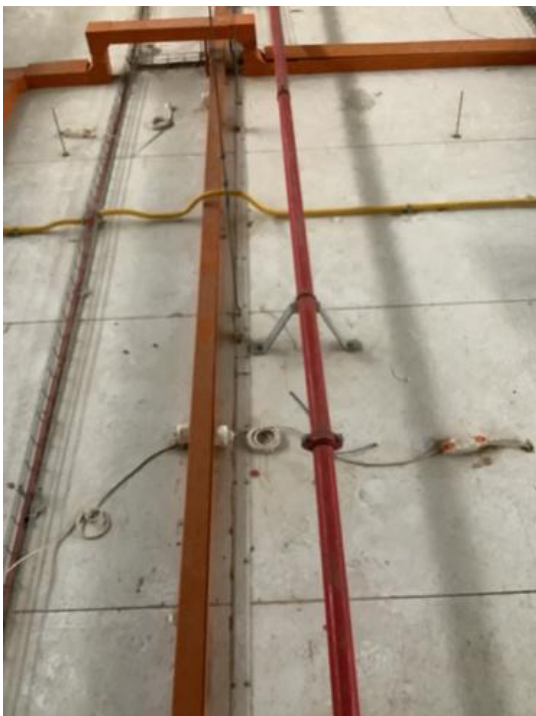


Photo 35

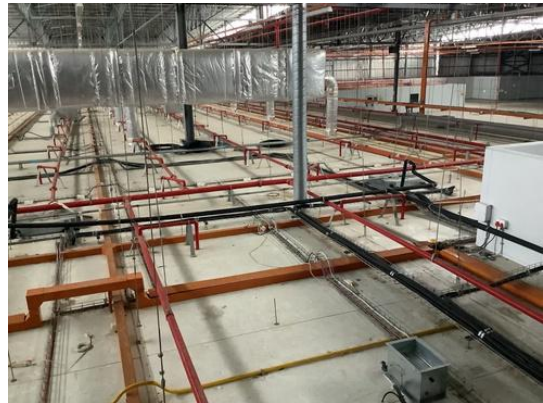


Photo 36



Photo 37



Photo 38



Photo 39