[redacted]

MULTI-DISCIPLINE CONDITION ASSESSMENT REPORT

REFURBISHMENT OF CARGO WAREHOUSE AND CARGO OFFICES: CONTRACT NO 560.04/2015

Project number: ORT.560.04/2015

Author: [redacted]

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[redacted]

Glossary of abbreviations

Abbreviation	Description
ARC	Architect
DE	Design Engineers
PM	Project Manager (Client)
CPM	Construction Project Manager
[redacted]	[redacted]
ORTIA	O.R Tambo International Airport
QS	Quantity Surveyor
SCM	Supply chain Management - [redacted]
OHS	Occupational Health & Safefety

Reference to other applicable documentation

Name of document	Description	Author
Cargo – Site Layout Plan:		
Architectural drawings No: 1032907C/SP-001	Cargo – Site Layout Plan	[redacted]
Cargo Agents Building: "As Built" Plans		
Architectural drawings No: 1032907C/AB-099	Basement Plan	
Architectural drawings No: 1032907C/AB-100	Ground Floor plan	
Architectural drawings No: 1032907C/AB-101	First Floor plan	
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Architectural drawings No: 1032907C/AB-104	Fourth Floor plan	
Architectural drawings No: 1032907C/AB-105	Fifth Floor plan	
Architectural drawings No: 1032907C/AB-106	Sixth Floor plan	
Architectural drawings No: 1032907C/AB-107	Seventh Floor plan	
Architectural drawings No: 1032907C/AB-108	Eighth Floor plan	
Architectural drawings No: 1032907C/AB-109	Ninth Floor plan	
Architectural drawings No: 1032907C/AB-110	Tenth Floor plan	
Architectural drawings No: 1032907C/AB-111	Eleventh Floor plan	
Architectural drawings No: 1032907C/AB-112	Roof plan	
Architectural drawings	Section	

Name of document	Description	Author
No: 1032907C/AB-200		
Architectural drawings No: 1032907C/AB-300	Elevations	[redacted]
Cargo Agents Building: Recommendations Schedules		
Architectural drawings No: 1032907C/AB/400/01	Recommendations Schedule: Basement: (Sheet 1 of 2)	
Architectural drawings No: 1032907C/AB/400/02	Recommendations Schedule: Basement: (Sheet 2 of 2)	
Architectural drawings No: 1032907C/AB/400/03	Recommendations Schedule: Ground Floor: (Sheet 1 of 2)	
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No: 1032907C/AB/400/23	Tenth Floor: (Sheet 1 of 2)	
Architectural drawings No: 1032907C/AB/400/24	Recommendations Schedule: Tenth Floor: (Sheet 2 of 2)	[redacted]
Architectural drawings No: 1032907C/AB/400/25	Recommendations Schedule: Eleventh Floor: (Sheet 1 of 2)	
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Cargo Agents Building: Door Schedules		
Architectural drawings No: 1032907C/AB-402-01	Door Schedules: Basement	[redacted]
Architectural drawings No: 1032907C/AB-402-02	Door Schedules: Ground Floor	
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Architectural drawings No: 1032907C/AB-402-14	Door Schedules: Roof Plan	
Cargo Air Freight Warehouse: "As Built" Plans		
Architectural drawings No: 1032907C/FW-000	Complete Layout	
Architectural drawings No: 1032907C/FW-100	Zone 1: Ground Floor plan (Grid 1 – 14)	
Architectural drawings	Zone 2: Ground Floor plan (Grid 14 – 26)	

Name of document	Description	Author
No: 1032907C/FW-101		
Architectural drawings No: 1032907C/FW-102	Zone 3: Ground Floor plan (Grid 26 - 35)	[redacted]
Architectural drawings No: 1032907C/FW-103	Zone 4: Ground Floor plan (Grid 35 - 46)	
Architectural drawings No: 1032907C/FW-110	Zone 5: First Floor plan (Grid 1 – 14) Zone 6: First Floor plan (Grid 14 – 26)	
Architectural drawings No: 1032907C/FW-111	Zone 7: First Floor plan (Grid 26 - 35) Zone 8: First Floor plan (Grid 35 - 46)	
Architectural drawings No: 1032907C/FW-200	Section A-A, B-B	
Architectural drawings No: 1032907C/FW-300	East Elevation; North Elevation	
STAGE 2 - ELEMENTAL ESTIMATE REV 00	COST ESTIMATE	
Mechanical Due Diligence Report No: 33338-00-REP-001-RB	Due diligence of the existing mechanical services	
		[redacted]
33338-00-C-REP-001 Civil Condition Assessment Report Rev A	Civil work condition assessment report	
Site Inspection and Assessment Report for the Cargo Offices Rev 1	OHS condition assessment report (cargo offices)	
Site Inspection and Assessment Report for the Cargo Warehouse Rev 1	OHS condition assessment report (cargo warehouse)	
Electrical Building Services and Infrastructure Condition Assessment Report - Report No: 33338-00-E-REP-001	Condition Assessment Report	

Document amendment history

Version	Date	Description of amendment	Amended by

ISSUED BY THE FOLLOWING PSP's

Initials and Surname	Discipline & Pr No	Signature	Date
P. Boer	civil + structural Pr. 20160766		2018/10/01
M G MEYER	PRARCH 20618 ARCHITECTURE		2018/10/01
S. Fox	QS Pr. 4778		2018/10/01
M.S. BAKSH	MECHANICAL + FIRE 20130419		1/10/18
JS MOROASWI	(PR.Eng. 2007201) ELECTRICAL ENG		2018-10-01
G.M. MORGAN	OHS . Pr. CHSA		2018-10-01

ACCEPTANCE

CLIENT ACCEPTANCE

Approved by the Client

Initials and Surname	Role	Signature	Date
Initials and Surname	**Role**	**Signature**	**Date**

EXECUTIVE SUMMARY

The Employer [redacted] wants to undertake the refurbishment of its existing cargo warehouse facilities and the cargo offices building with the intention of extending the life of these buildings by another ten years. The project has been broken down into work pages; work package 1 is the production of as built drawings to assist with the redesign and specification of the work and work package 2 is a condition assessment to determine the current state or condition of the buildings which assist with the determination of the scope for refurbishment. Project service providers in the following disciplines Architectural, Mechanical engineering, Electrical engineering, Civil and Structural engineering and Occupational health and safety were appointed to undertake on a condition assessment. The project service providers have determined in their findings that a refurbishment is required at the cargo warehouse and cargo offices building and have made recommendations based on their findings. The following findings are worth noting and require specific attention in terms of compliance such a provision for disabled facilities at the cargo offices' building there are no disabled ablutions, fire compliance and occupational health and safety compliance. An electrical work refurbishment has also been recommended. The structural integrity is fairly in a good condition; minor repairs to cracks is recommended to concrete structures. A major recommendation of switching over to a building management system (BMS) is highly recommended for better efficiency and management within the cargo facilities. A stage 2 elemental estimate of the budget has been determined to be an amount of R [redacted] including VAT. The approval of the cost estimate based on the multi-discipline condition assessment report will allow the project to move on to the next stage which is the detailing of the designs and appointment of the contractor to carry out the refurbishment.

CONTENTS

PROJECT SCOPE STATEMENT: CARGO WAREHOUSE AND CARGO OFFICES: ORT 560.04/2015

1. INTRODUCTION

1.1. Preambles

The [redacted] herein refer to as [redacted], has appointed a team of built environment professionals to plan, design and manage construction of the refurbishment of the Cargo Warehouse and Cargo Offices over a period of 2 years. Accordingly, Professional Service Providers (PSP's) were appointed with [redacted] being the construction project managers, [redacted] being architects and quantity surveyors, [redacted] being multi-disciplinary engineers in civil, structural, electrical, mechanical, electronics & wet services and [redacted] being OHS Agents.

1.2. Background

[redacted] intends to undertake refurbishment of some of its existing facilities at the Western Cargo Precinct at OR Tambo International Airport. These refurbishment work must entail renewal of the existing building fabric, core structure and services to the present-day standards and performance, with the main aim of extending the life of the building to another 10 years.

In order to carry out refurbishment of the two facilities, the details and extent of the refurbishment work to be carried out needed to be investigated and documented. [redacted] had limited documented knowledge of the current state of the facilities in terms of wear and tear. A detailed condition assessment of the existing fabric and services installed was conducted with the aim of understanding the current state or condition of existing finishes and services. Based on the condition assessment and recommendations of the extent and

details of refurbishment work required, [redacted] will then be able to decide on how to proceed with the project. To achieve this, [redacted] had created work packages which led to recommendations for the refurbishment of the facilities. The following are the work packages:

- **Work package 1 – Production of "as-built" drawings**

  On this phase, the PSP's conducted a detailed survey of both the Cargo Warehouse and Cargo Offices facilities in order to produce a set of "as-built" drawings information of these facilities. The "as-built" drawings are for the following:

  - Internal and external floor plan layout and roof plan layout of the two buildings.
  - Section and elevations (internal and external) of the buildings.
  - Lease space drawings.
  - Existing bulk and intermediary services

- **Work package 2 – condition assessment**

  Proceeding from work package 1, the PSP's conducted further detailed physical and intrusive condition assessment of the existing Cargo Warehouse and Cargo Offices buildings in order to deduce the extent of wear and tear of the fabric, structure, finishes and services (bulk, major and minor) of the facilities. The assessment focused on all internal areas (common use and tenanted spaces), external areas (front and back of house, parking areas, driveways) and the roof areas. Internal and external finishes, services (electrical, water – portable & fire supply networks, fire suppression system & piping, sprinklers, detectors, roller shutter doors, smoke ventilation, air-conditioning, storm water drainage system), building fabric (core structure, roofs, facades, cladding, finishes, signage, circulation spaces, common use areas, ablutions, services tunnels, etc. Extent of none

compliances to current installations, services, floor layouts and common use facilities were assessed as part of the condition assessment.

1.3. Purpose of the Report

The purpose of the document is to provide the detailed scope of works required to bring the infrastructure to the level of functionality required by [redacted] The report presents the status quo findings, recommendation and estimated cost of proposed refurbishment.

1.4. Scope of works development process

The scope development process that was followed involved getting the initial scope for works from the various Stakeholders within the Cargo Unit and conducting site visits, inspecting the facilities, engaging with the End Users to best understand their functional requirements. The Draft Scope document was circulated and discussed with the End users to ensure that all the critical scope is included.

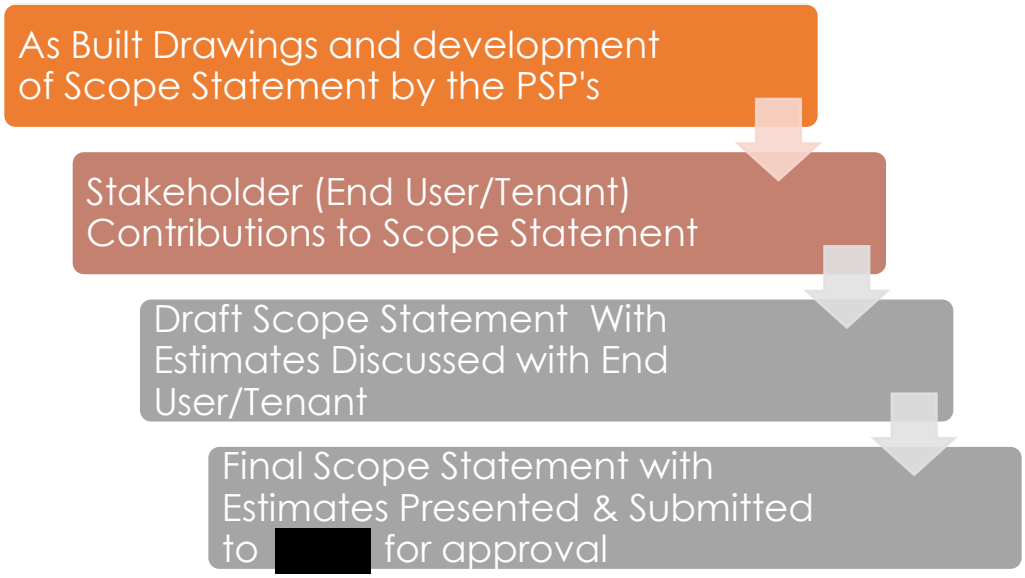


Figure 1: Statement of Work Development Process

2. SCOPE STATEMENT

The initial scope of work as per the [redacted] communication was identified as the refurbishment of the entire Cargo Warehouse and Cargo Offices building infrastructure as outlined during the project brief.

2.1. Building or areas covered

After professional team visited the site to inspect the facility the scope of work that was identified included the refurbishment of the following buildings:

2.1.1. Cargo Offices

- Basement
- Ground floor
- First floor
- Second floor
- Third floor
- Fifth floor
- Sixth floor
- Seventh floor
- Eighth floor
- Ninth floor
- Tenth floor
- Eleventh floor
- Twelfth floor (Roof)
- External façade
- General external area

2.1.2. Cargo Warehouse

2.1.2.1. Ground floor

- Zone 1 - (Grid 1 – 14)
- Zone 2 - (Grid 14 – 26)
- Zone 3 - (Grid 26 – 35)

- Zone 4 - (Grid 35 – 46)

2.1.2.2. First Floor

- Zone 5 - (Grid 1 – 14)
- Zone 6 - (Grid 14 – 26)
- Zone 7 - (Grid 26 – 35)
- Zone 8 – First Floor (Grid 14 – 26)

2.1.2.3. External façade

2.1.2.4. Roof

2.1.2.5. General external area

2.1.3. Substations

2.1.3.1. High Tension Room

2.1.3.2. Low Tension Room

2.1.3.3. Transformer Room

2.1.4. Cable Tunnel

The following areas or items are excluded from this report and do not form part of the refurbishment:

- Refurbishment works to the Distribution boards,
- Refurbishment works to the Security Systems,
- Refurbishment works to the Carports,
- Refurbishment works to the Perishable Goods Warehouse.

2.2. Findings

2.2.1. Cargo Offices

2.2.1.1 Basement floor

Architectural work

Walls

Brick walls

The basement consists mainly of plastered brick walls. While a large part of the walls is in a fair condition, the walls in the Staff areas were found to be in a bad condition. In addition, the existing finishes need to be replaced, it is, therefore, recommended that:

- All walls are to be stopped and painted/tiled as per specification. The Mosaic Tiles feature on the west wall of the Lift lobby is to be removed, and the wall is to be Plaster and paint to in accordance to the colour scheme.
- New S/S corner protectors and Bump Rails to be fitted to areas of high traffic to protect newly refurbish walls from any damage.
- Tiles in Kitchen, Ablution/Toilet and Change rooms to be replaced in accordance to architect's recommendation and specifications

Windows

The buildings are comprised by aluminium external windows, most of which are in the process or have lost integrity, and are not in compliance with the new the energy requirements as set out in SANS 10400 – Part XA. In addition, the profile of the aluminium window frame does not allow for the house of a double-glazing system that is required in order to meet the energy efficiency of part XA of the SANS 10400 regulations. Thus, the following is recommended:

- All external windows to be removed and new windows with a double-glazing system fitted to the building to fully comply with SANS 1400 – Part XA.
- Louvre windows in the Plantrooms to be refurbished to original condition and all louvre slats and vermin proofing to be repaired to the original state.

Note: Access to these areas was limited, therefore, a complete assessment is needed as soon as the design stage commences.

Window sills

The external window sills are moving out of position and away from the building, leaving the building exposed to water penetration and compromising general insulation of the building. Thus, the following is recommended:

- External window sills to be replaced with new window sill tiles, all joints to be properly sealed to prevent water penetration into the walls and building.

Sun louvres

- The Sun Louvres in front of windows are in a state of disrepair. Horizontal slats and framework are loose, and some slats have fallen from the building. This is a concern, as [redacted] will be held responsible for any injuries to persons or damage to property. To renovate these is not possible as the profile of the slats will not be obtainable anymore.
- The entire horizontal Sun Louvres system in front of windows should be replaced with a new louvre sun control system. A powder coating can be done to the aluminium slats to make the external facade more appealing.

Doors

While some of the steel door frames are in a salvageable condition, in certain areas, they require complete replacement. All doors are in a poor condition to

be reused, all the existing aluminium internal and external doors are sagging and not closing properly with the joints pulling away, gaskets and seals loose and glazing beads are not secure enough. In addition, all aluminium external doors frames do not comply with SANS 1400 – Part XA as they do not allow for the housing of a double-glazing system that is required in order to meet the energy regulations. It is, therefore, recommended that:

- New semi-solid timber doors to be fitted with specified ironmonger and accessories
- All existing fire doors to be painted as per specification, all door accessories to comply with fire regulations and in accordance with the specification of the architect.
- In "Staff" areas all door frames and doors to be replaced with new frames and fitted with new semi-solid timber doors.
- The existing aluminium internal and external doors to be replaced with new, external doors to comply with SANS 10400 – Part XA.
- Duct doors to be replaced with fire doors in compliance with the latest fire regulations.
- The steel security gate on the external aluminium doors to be painted, with new ironmongery.

Floors

All floor finishes are in no condition to be reused as they are at their end of life.

- New floor finishes to be installed as per the architect's specifications

Note: A crack in the Lobby area (in front of Main Stairs) is clearly visible, an inquiry/investigation with a full report on the extent of the crack is required.

Ceiling

While ceilings in the basement are restricted to the passages, all passage ceilings are dirty and some broken. The ceiling suspension system also known as "T's" has

rusted in the exposed area. The existing ceiling in passage 1 covers up the north windows creating a dark passage. It is, therefore, recommended that:

- A new suspended ceiling be provided throughout the basement and a bulkhead spaced away from windows and suspended ceiling as infill to cover all ducting in ceiling void to avoid tempering with northern light.
- Plantrooms and Lift Lobby 2 (West) to be painted in accordance to the colour scheme and remain concrete ceilings.
- New plastered ceiling to be fitted to the underside of the Main Stairs in provision for concealing the Fire sprinklers pipework on the underside of the stair.

Joinery

The cupboards and worktop in the Kitchen area are a top only and does not provide for cupboards. The lockers provided for the personnel is damaged, rusted and not uniform in size or shape and presents a space optimisation layout problem. Therefore, it is recommended that:

- A very basic kitchen cupboard (bottom cupboards with shelves only) to be provided in the Kitchen area.
- New lockers to be provided for workers in a central area for each gender.

Sanitary Fittings

All sanitary fittings particularly those in the Male Toilet/Ablution area are all beyond repair, and some are outdated and can no longer be procured from manufacturers, thus it is recommended that:

- All sanitary fittings are to be replaced
- The sink unit to be replaced in the Kitchen area. It should be noted that only cold water is available and provision for hot water should be made if it is feasible.

Ablutions

This floor only provides for male toilet/ablution and these facilities are old, with neglected fittings, some broken, the urinals have been damaged and overall the ablutions are just not in a good condition. The showers are of a concrete floor finish with a canal runoff for wastewater, no shower doors have been provided of privacy the facilities are incomplete with no drying area and storage lockers.

- A complete redesign of the area on the east of the building to provide for male, female and disabled ablution facilities. In addition, provision for storage/locker area.
- Replacement of all ablution fittings

Note: There are currently no disabled Facilities on this floor.

Stairs

Main Stairs

The Main Stairs structure remains in a fair condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- The Main Stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be replaced to match aesthetical quality achieved throughout the rest of the building
- Fire Sprinklers and the water piping feeding the sprinklers visible to the underside of the stairs. (see ceilings)

Back of house Stairs

The back of house stairs remains in a structurally sound condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their

end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- All back-of-house stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be to be removed and replaced with stainless steel handrail.

Signage

- All fire regulating signage to be replaced. The position of these signs to be indicated by the fire engineer.
- New directional signboard to be erected in the Lift Lobby area.
- All doors to receive name board to indicate occupancy of the room.

General

- All locks to be on a master key system or keyed alike.
- All fire escape doors, routes, extinguishers and hose reels to be designed by the Fire Engineer in accordance with latest fire regulations.
- A water seeping/leak is present in the Uniformed Staff Change Room (next to Toilet area) requires further investigation.
- Required redesign and extensions for the provision of Male and Female Toilets / Ablution facilities, locker areas and disabled facilities can be provided for in the area on the east of the building. This will result that workers will use the provided facilities and not "hang around" the building during lunch times.

Mechanical Works

HVAC:

- Door grilles missing/damaged
- Extraction in shower area not working or low specification
- AHU not working

Ducting systems:

- Ducting in service ducts in relatively good condition
- Insulation is damaged

Kitchen equipment:

- N/A

Wet services:

- Cold water pipe is galvanised steel (old specification)
- Hot water piping uninsulated
- Drainage piping is cast iron, badly damaged and leaking
- 50 l geysers, in good condition

Sprinklers:

- No sprinklers in corridor

Lifts:

- Lifts in good working order but reaching end of life
- 1 line of call point points not working (Southern Side)

Electrical & Electronics Works

Power skirting and conduits

Power skirting installations and conduits in the basement were found to be generally concealed. Where visible, conduits installations were intact, safe and acceptable.

Suspended cable tray was found to be intact and the installation was found to be of an acceptable standard.

Light fittings

The following types of light fittings were found in the basement:

- T8 LED surface-mounted light fittings
- T12 fluorescent surface-mounted light fittings
- T5 fluorescent recessed light fittings
- CFL bulkhead

Most lights fittings were found to be in good condition regarding the functional aspect, however light fittings found in the SARS office/store room were outdated.

Light tubes were not regularly replaced leading to some areas.

Switches

The following types of switching devices were found in the basement:

- Single lever light switch
- Motion sensor
- Isolators

Most of the light switching devices were found to be funtional and in a fair condition. However, in some areas, like the fan coil unit room, a damaged light switch cover with exposed wires was found posing a high risk in getting electricuted.

None of the light switches, motion sensors and/or Isolators were labelled.

Sockets outlets

The following types of socket outlets were found in the basement:

- Surface-mounted single socket outlet
- Recessed single socket outlet

Socket outlets were found to be generally inadequate.

Surface-mount socket outlet in the lift lobby area and change rooms were not functional and considered unsafe.

No labelling was found on any socket outlets.

Telecomunication and IT

There were no telecomunication points spotted in the basement. It seemed like the tenants use their personal cellphones for communication.

Fire Detection System

The following fire safety fascilities were installed at the basement:

- Smoke detectors
- Glass break unit/call point
- Siren

All smoke detectors seemed to be deactived as the LED found on the device was at a constant off state.

Glass break unit/call point found at the fan coil room seemed actived as the LED found on the device was at a constant on state.

Siren found on the passage leading to the changing rooms was damaged, wires exposed increasing the risk of being electricuted.

OH&S Considerations

Emergency Preparedness and Response:

On the 6th April 2018, a Health and Safety Site inspection and assessment was conducted at [redacted] Cargo Office Building.

The inspection was based on the requirements as set out in the Occupational Health and Safety Act, Act 85 of 1993 and the SANS On 10400, National Building Regulation.

We were well received by the tenants of the Cargo Offices who shown a keen interest in joining us with the walkabouts and acknowledged areas of improvement.

Key findings:

- Poor stacking and storage
- Poor housekeeping
- Poor maintenance
- Safety information missing or not visible (notices and signs)
- Fire fighting equipment missing
- Smoking in the building
- Emergency exit routes at times were compromised

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)
- No signage, contact name and number for the First Aid box – Ref GR.3(6)
- REF: SANS 10400

Fire Management:

- All in order
- REF: ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- Poor housekeeping

- REF: SANS 0400

Ventilation:

- All in order
- ERW 5

Storage:

- Inadequate stacking & storage space

- REF: GSR 8

Building and Structures:

- Poor maintenance, renovation is needed
- Unsafe condition

- REF: SANS 10400

2.2.1.2 Ground floor

Architectural work

Walls

Brick walls

The ground floor consists mainly of plastered or tiled brick walls with some aluminium shop fronts. While a large part of the walls is in a fair condition, the walls in other areas (Aerobites Catering) are in a state of disrepair. In addition, the existing finishes need to be replaced. Due to the irregularly small toilet stalls

opening, the door does not open fully at 90º or strikes the wall tiles causing damage, it is, therefore, recommended that:

- All other walls to be stopped and painted/tiled as per specification.
- A new granite/porcelain wall tiling architrave at the lift doors to enhance the aesthetical perspective of the Main Entrance to the building. This will also have a longer lifespan than paints and can be easily cleaned on a day-to-day basis.
- All wall finishes to be removed and re-plastered/painted or tiled to architect's recommendation and specification
- New S/S corner protectors and Bump Rails to be fitted to areas of high traffic to protect newly refurbish walls from any damage.

Partitioning walls

The structure of all partition walls and the cladding is beyond repair due to damage caused by chairs, desks, trolleys and general wear and tear. The lower part of the wall below the window sill was removed in the Department of Conservation office area. The Power Skirting is currently suspended between the columns with a void area between it and the external wall.

- Partitioning walls in offices to be replaced. Partitioning to be constructed as per specification and cladded with "High Impact Resistant Grade Plaster Board" to prevent damage to wall caused by office furniture.
- New Stainless-Steel Corner Protectors and Bump Rails to the walls to protect future damage to it once renovations are completed.
- The power skirting can be incorporated in the joinery. (see note Joinery).

Windows

The existing external windows are aluminium windows, most of which are in the process or have lost integrity, and are not in compliance with the new the energy requirements as set out in SANS 10400 – Part XA. In addition, the profile of the

aluminium window frame does not allow for the house of a double-glazing system that is required to meet the energy efficiency of part XA of the SANS 10400 regulations. Thus, the following is recommended:

- All external window frames to be removed and new double-glazed windows to be fitted to the building to in compliance with SANS 1400 – Part XA.

Window sills

The external window sills are moving out of position and away from the building, exposing the building to water penetration and compromising the general insulation of the building. Thus, the following is recommended:

- External window sills to be replaced with new window sill tiles, all joints to be properly sealed to prevent water penetration into the walls and building and ensure watertight building.

Sun louvres

- The Sun Louvres in front of windows are in a state of disrepair. Horizontal slats and framework are loose, and some slats have fallen from the building. This is a concern, as [redacted] will be held responsible for any injuries to persons or damage to property. To renovate these is not possible as the profile of the slats will not be obtainable anymore.
- The entire horizontal Sun Louvres system in front of windows should be replaced with a new louvre sun control system. A powder coating can be done to the aluminium slats to make the external facade more appealing.

Doors

Most of the steel doors frames are still in good conditions and just would require refinishing, but in certain areas, they require complete replacement. All timber doors are either in a poor condition to be reused or substandard door spec, all

the existing aluminium internal and external doors are sagging and not closing properly, seals loose and glazing beads are not secure. In addition, all aluminium external doors frames do not comply with SANS 1400 – Part XA energy regulations. It is, therefore, recommended that:

- New semi-solid timber doors to be fitted with specified ironmonger and accessories as per specifications.

- All existing fire doors to be painted as per specification, all door accessories to comply with fire regulations and in accordance with the specification of the architect and fire engineer. In addition, all doors are to comply with SANS 10400 Part T – Fire protection regulations.

- The existing aluminium internal and external doors to be replaced with new, external doors to comply with SANS 10400 – Part XA.

- Duct doors to be replaced with fire doors in compliance with the latest fire regulations.
- The steel security gate on the external aluminium doors to be painted, with new ironmongery.

Floors

Porcelain Floor Tiles

While the existing Porcelain Floor tiles in the Entrance Foyer and surrounding area is in a reasonable condition with a few cracked tiles, previously repair and maintenance work done has resulted in an ununiformly shaded floor, the skirting has also been damaged.

- All floor finishes to be removed and new floor finishes to be installed as per the architect's specifications and [redacted]'s colour scheme.
- Skirting tiles to be replaced and new bottom protector rails to protect skirting tiles and walls.

Carpet

Carpets floor tiles are worn out, and some areas have a half a room Carpet tiles and the remainder of the room Porcelain Floor Tiles this might have been because of a change in the partitioned wall layout.

- Install new carpet tiles in offices and other areas. New skirtings to be allowed for in areas receiving new Carpet Tiles.

Vinyl Floor Tiles

Vinyl Floor tiles are worn out with different colours as repair/patchwork performed in the past. Some office areas have Vinyl floor tiles which are not in compliance with [redacted] guidelines and general office design.

- All Vinyl Floor Tiles to be replaced in accordance with the architect's recommendation and specifications.
- All vinyl floor tiles in office areas to be removed and replaced with carpet to architect's recommendation and specifications and [redacted] guidelines and general office design
- In the passages vinyl to be replaced with porcelain tiles.

Epoxy Flooring

- Ducts to receive an epoxy finish on all floors.

Ceiling

The Existing ceilings installed in all areas are dirty, some broken with mismatched ceiling panels as replacements, the ceiling "T's" are dirty and sagging out of level. Lift lobby 2 does not have a ceiling at all. The existing ceiling Bulkhead in Lift Lobby 1 exposes mechanical services and piping, the following is recommended:

- The Existing ceilings to be replaced with new suspended ceiling systems and bulkheads to architect's approval in order to conceal all mechanical services and new recessed lights can also replace the existing surface mounted lights fitted to the underside of the stairs. Enhance the aesthetical perspective of the Main Entrance to the building
- All offices to receive new suspended ceilings without bulkheads.
- New suspended ceilings in the Kitchen area that can withstand the heat and steam generated in the kitchen and other areas.
- Duct rooms to have painted ceilings as per specifications.
- New plastered ceiling to be fitted to the underside of the Main Stairs in provision for concealing the Fire sprinklers pipework on the underside of the stair.

Joinery

The existing desk edging is loose, and portions are broken. This new desk should be equipped to match the latest security measures installed in the building.

- The 900mm high horizontal ducting below the windows on the external windows to be removed and new worktops with cupboards to be installed where ducting is removed.
- New power skirting to be incorporated in the cupboard design.
- A new security desk to be provided for the main security in the Entrance area.

Sanitary Fittings

Sanitary fittings in all ablutions/toilets facilities are still in a working condition, yet do not meet the objectives of the project and acceptable lifespan. The sink's provided in the kitchen are not as hygienic as the splash-backs provided are not suitable for these sinks making cleaning difficult.

- It is recommended that all sanitary fittings be replaced.

- New sanitary fittings in the Kitchen and Wash-up (Aero Bites Coffee Shop & Restaurant) areas be provided (pot-wash and preparation sinks).
- As a health requirement, a hand wash basin should also be installed in the Kitchen and Wash-up (Aero Bites Coffee Shop & Restaurant) areas.
- Installation of a floor drain system with a fat trap and open grids in the Kitchen area (Aero Bites Coffee Shop & Restaurant) Or as an alternative an enzyme dozing drain system can also be installed if fat trap is not possible, but this system should be monitored on a daily base, therefore we would not recommend that system for this kitchen.

Ablutions

All ablutions/toilets facilities are in reasonable condition but do not meet the objectives of the project and acceptable lifespan. The wall tiling is broken in some places and Joint sealant is worn out.

- Provision for Disabled Facilities to be made to comply with SANS 10400 Part S – Facilities for Disabled.
- Incorporation of a Small 'Cleaners' store facilities could also be in the bathrooms. Enough ducting is available to discharge waste.

Note: No Toilet for Disabled in this area, which is a requirement as per SANS 10400 Part S – Facilities for Disabled.

Note: This is the only level that has ablutions/toilet facilities for the public.

Stairs

Main Stairs

The Main Stairs structure remains in a fair condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- The Main Stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be replaced to match aesthetical quality achieved throughout the rest of the building
- Fire Sprinklers and the water piping feeding the sprinklers visible to the underside of the stairs. (see ceilings)

Back of house Stairs

The back of house stairs remains in a structurally sound condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- All back-of-house stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be to be removed and replaced with stainless steel handrail.

Signage

- All fire regulating signage to be replaced. The position of these signs to be indicated by the fire engineer.
- New picogramme guidance signs to regulate public and restrict movement in the Entrance Foyer.
- New directional signboard to be erected in the Lift Lobby area to indicate all the tenants on each floor.
- All doors to receive name board to indicate occupancy of the room.

General

The Entrance Foyer / Access Control area does not have a waiting area for public or persons waiting to be escorted into the building. Public waiting causes

overcrowding in the entrance area. This is an obstruction for the staff working in the building. The concrete paving slab on the outside the Main Entrance is cracked where previous concrete benches were removed. The remainder of the paved area consists of 5 (five) different types of paving blocks and a small amount of weed between the pavers.

- A small waiting area in the Entrance Foyer area with fixed chairs to be provided. This will keep the entrance area clear and staff would move more freely into the building.
- The paved area outside the Main Entrance to be re-paved with paving bricks for uniformity. The existing pavers can be re-used and a pattern can be incorporated into the paving area to use the existing brick together with new paving bricks as keep fruitless expenditure to a minimum.
- A new ramp on the outside for persons with disabilities to be designed to the entrance of the building. This ramp should comply with SANS 10400-Part S.
- A new ramp for persons with disabilities to be designed in the entrance foyer. This ramp should comply with SANS 10400-Part S.
- All locks to be on a master key system or keyed alike.
- All Fire hose reels and Fire extinguishers to be serviced. Secure extinguishers and signage.
- All fire escape doors and fire escape routes to be confirmed by the Fire Engineer that all conform to the latest fire regulations.
- In the Kitchen area (Aero Bites Coffee Shop & Restaurant), all surface mounted pipes, conduits electrical boxes (excluding gas pipes) to be recessed into walls before any other wall finishes commences.
- Gas pipes should be rerouted to run from the ceiling directly down to gas appliance. This should restrict the build-up of fat and together with all other modifications should keep the kitchen more hygienic.

Mechanical Works

HVAC:

- Fresh air system not working
- No make up air to extract system
- Some indoor units not in working order
- Chilled water piping insulation damaged

Ducting systems:

- Ducting in service ducts in relatively good condition
- Insulation is damaged
- Redundant wall ducting noted

Kitchen equipment:

- Kitchen equipment is in relatively good condition
- Cold rooms not working. This is considered a user client fitout
- Extract hood not in working order

Wet services:

- Hot water piping uninsulated
- Cold water piping is galvanised steel
- Drainage is cast iron, not in good condition
- Geyser in good working order

Sprinklers:

- In good condition and layout

Lifts:

- Lifts in good working order but reaching end of life
- 1 line of call point points not working (Southern Side)

LPG:

- Location and maintenance of LPG system is not good (Safety risk because of proximity to drain and smokers)
- Piping painted hence cannot be identified

Electrical & Electronics Works

Power skirting and conduits

Power skirting installations and conduits were found to be generally concealed. Parts of the power skirting installations was not intact with openings in some areas and this was considered to be unsafe and unacceptable.

Where visible, wire ways were found filled to capacity leading to cable spillage and broken covers rendering the installation untidy. Power skirting installations and conduits were found to be generally concealed. Parts of the power skirting installations was not intact with openings in some areas and this was considered to be unsafe and unacceptable.
Where visible, wire ways were found filled to capacity leading to cable spillage and broken covers rendering the installation untidy.

Light Fittings

The following light fittings were found at ground floor:

- T12 fluorescen surface-mounted light fittings
- T8 LED surface-mounted light fittings
- T8 fluorescen recessed light fittings
- T5 fluorescent recessed light fittings
- T5 LED recessed light fittings
- CFL bulk head
- LED downlight

Light fittings in most areas were found to be in a fair condition and good working condition. However, it was observed that the fittings were not suitable for the intended application in the kitchen, which requires vapourproof type.

None of the light fittings were labelled.

Switches

The following types of switching devices were found at ground floor:

- Single lever light switch
- Motion sensor
- Isolators

Most of the switches were found to in a fair physical condition and good working condition.

None of the light switches, motion sensors and Isolators were labelled.

Sockets outlets

The following types of socket outlets were found at ground floor:

- Power skirting mounted socket outlets
- Surface-mounted socket outlets
- Recessed socket outlets

Socket outlets were found to be generally adequate.

Parts of the installations in the Department of Environmental Affairs offices were found to be open, therefore considered unsafe and unacceptable. Some surface-mount socket outlets found in the passage were also found to be open and unsafe.

No labelling was found on any of the socket outlets.

Telecomunication and IT

Telephone and data points installations were only spotted in the offices of the Department of Environmental Affairs. Telephone and data points were found to

be generally inadequate. The installations concerned were considered unacceptable due to parts of the power skirting being open with wires exposed.

Telephone and data points were labelled.

Fire Detection System

The observations of the fire protection fascilities on the ground floor were similar to those on the basement and this applies to the rest of the floors in the Cargo Offices building.

Structural works

The structural elements with defects and unique to the ground floor are as follows:

- Retaining walls
- Bund walls
- Storm water culverts.

Structural defects:

The drain pit at ground floor has a short bund wall around, this bund wall have damaged concrete surface areas at the corners.

- **Remedial:** Refer to defect D1 solution and descriptions.

Figure 1 Cracked and exposed concrete walls

- The concrete upstand beams and retaining walls damaged: the damage is in the form of the concrete surface damage. All of the 6 photos below was taken at different positions in the walls.
    - **Remedial:** Refer to defect D1 solution and descriptions.

Figure 2 Concrete upstand beam and retaining walls failure

- A cable trench was constructed next to the Northern retaining wall, this trench has precast covers to cover the trench (see Figure). The first picture show covers sitting at a higher level than the external concrete pavement:
    - **Remedial:** The covers have to be reconstructed and replaced.

Figure 4 Concrete covers failure

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)
- REF: SANS 10400

Fire Management:

- All in order
- REF: ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- All in order
- REF: SANS 0400

Ventilation:

- All in order
- ERW 5

Storage:

- Inadequate stacking & storage space
- REF: GSR 8

Building and Structures:

- Poor maintenance, renovation is needed
- REF: SANS 10400

2.2.1.3 First floor

Architectural work

Walls

Brick walls

The first-floor brick walls are in a fair condition, however existing wall finishes require attention, it is, therefore, recommended that:

- All other walls to be stopped and painted/tiled as per specification.
- A new granite/porcelain wall tiling architrave at the lift doors to enhance the aesthetical perspective of the Lift Lobby to the First Floor. This will also have a longer lifespan than paints and can be easily cleaned as day-to-day maintenance.
- New S/S corner protectors and Bump Rails to be fitted to areas of high traffic to protect newly refurbish walls from any damage.
- All firewalls above the ceiling to be inspected that fire insulations are still intact and that there is no damage to any insulation which might cause any failure to the fire seal (including all ducting, electrical / data cables, piping, etc…) are present.

Partitioning walls

The first-floor brick partitioning walls are still in good condition.

- The existing partitioning walls to be protected during remedial work being executed.
- Stainless Steel Corner Protectors and Bump Rails to the walls to protect future damage to it once renovations are completed.

Windows

The existing external windows on this floor are aluminium windows, most of which have lost integrity, and are not in compliance with the new the energy

requirements as set out in SANS 10400 – Part XA. In addition, the profile of the aluminium window frame does not allow for the house of a double-glazing system that is required to meet the energy efficiency of part XA of the SANS 10400 regulations. Thus, the following is recommended:

- All external window frames to be removed and new double-glazed windows to be fitted to the building to in compliance with SANS 1400 – Part XA.

Sun louvres

- The Sun Louvres in front of windows are in a state of disrepair. Horizontal slats and framework are loose, and some slats have fallen from the building. This is a concern, as [redacted] will be held responsible for any injuries to persons or damage to property. To renovate these is not possible as the profile of the slats will not be obtainable anymore.
- The entire horizontal Sun Louvres system in front of windows should be replaced with a new louvre sun control system. A powder coating can be done to the aluminium slats to make the external facade more appealing.

Doors

The condition of all doors is generally good. Due to the irregularly small toilet entrance stalls opening a direct result of narrow passages and door closures that do not allow for the door to open fully at 90° striking the wall tiles causing damage

- The existing aluminium internal doors to be protected during construction.
- All existing fire doors to be painted as per specification. All door releases and door coordinators to be serviced and to verify that they are in a 100% working condition.
- Duct doors to be replaced with fire doors to comply with the latest fire regulations.

- The existing roller shutter door at the Reception area to be serviced to a 100% good working condition to Mechanical Engineer supervision.

Floors

Porcelain Floor Tiles

While the existing Porcelain Floor tiles in the Entrance Foyer and surrounding area is in a reasonable condition with a few cracked tiles, previously repair and maintenance work done has resulted in an ununiformly shaded floor, the skirting has also been damaged.

- All floor finishes to be removed and new floor finishes to be installed as per the architect's specifications and [redacted]'s colour scheme.
- Skirting tiles to be replaced and new bottom protector rails to protect skirting tiles and walls.

Carpet

The existing carpets are in a fair condition but will need replacing on completion of the construction work carried out.

- New carpets to be installed after all work has been completed.

Vinyl Floor Tiles

Existing vinyl floor tiles in the Cleaner store and Tea Kitchen areas are worn out at the back of house.

- Vinyl Floor Tiles to be removed and replaced according to Architects recommendation and specification.

Epoxy Flooring

- Ducts to receive an epoxy finish on all floors.

Ceiling

The Existing ceilings installed in the office spaces are in good condition. The existing ceiling Bulkhead in Lift Lobby 1 does not cover the mechanical piping and services, messy junctions of ceiling around the existing roller shutter door

- The Existing ceilings to be replaced with new suspended ceiling systems and bulkheads to architect's approval in order to conceal all mechanical services and to tie in with the existing ceiling and bulkhead layout that was previously done. Enhance the aesthetical perspective of the building.
- A new ceiling bulkhead at the existing roller shutter door to neatly finish the ceiling and roller shutter door.
- Duct rooms and Lift Lobby 2 (West) to have painted ceilings as per architect's specifications.
- New plastered ceiling to be fitted to the underside of the Main Stairs in provision for concealing the Fire sprinklers pipework on the underside of the stair.

Joinery

- The 900mm high horizontal ducting below the windows on the external windows to be removed and new worktops with cupboards to be installed where ducting is removed.
- New power skirting to be incorporated in the cupboard design. Repair in all trades.
- New kitchen cupboards in Tea Kitchen area at the back of house.

Sanitary Fittings

Sanitary fittings in all ablutions/toilets facilities are still in a working condition, yet do not meet the objectives of the project and acceptable lifespan.

- In the Tea Kitchen (Back of house – West) area a new sink, worktop with bottom cupboards to be installed. New sanitary fittings throughout.

- In the Cleaner (the Back of house – West) area a new slop hopper with broom rack and stainless-steel shelf be installed. New sanitary fittings throughout.

Ablutions

All ablutions/toilets facilities are in reasonable condition but do not meet the objectives of the project and acceptable lifespan. The wall tiling is broken in some places and Joint sealant is worn out.

- Provision for Disabled Facilities to be made to comply with SANS 10400 Part S – Facilities for Disabled.

Note: No Toilet for Disabled in this area, which is a requirement as per SANS 10400 Part S – Facilities for Disabled.

Stairs

Main Stairs

The Main Stairs structure remains in a fair condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- The Main Stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be replaced to match aesthetical quality achieved throughout the rest of the building
- Fire Sprinklers and the water piping feeding the sprinklers visible to the underside of the stairs. (see ceilings)

Back of house Stairs

The back of house stairs remains in a structurally sound condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their

end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- All back-of-house stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be to be removed and replaced with stainless steel handrail.

Signage

- All fire regulating signage to be replaced. The position of these signs to be indicated by the fire engineer.
- New picogramme guidance signs to regulate public and restrict movement in the Lift Lobby.
- New directional signboard to be erected in the Lift Lobby area.
- All doors to receive name board to indicate occupancy of the room.

General:

- The only work in the office area will be in compliance with SANS 10400 (duct doors and toilet facilities to include persons with disabilities).
- All locks to be on a master key system or keyed alike
- All Fire hose reels and Fire extinguishers to be serviced. Secure extinguishers and signage.
- All fire escape doors and fire escape routes to be confirmed by the Fire Engineer that all conform to the latest fire regulations.
- A dumbwaiter was installed on this floor leading to the second floor. This unit is not in use anymore. It is recommended that this dumbwaiter is removed, and all trades be repaired. The accesses hole in the Second-Floor slab to be repaired as per Structural Engineers specifications. All this needs to be discussed with the end-user before a final decision can be made.
- All existing shopfronts, existing ceilings, walls, etc… to be thoroughly cleaned on completion.

Mechanical Works

HVAC:

- Fresh air system not working
- Some indoor units not in working order
- Chilled water piping insulation damaged

Ducting systems:

- Ducting in service ducts in relatively good condition
- Insulation is damaged
- Redundant wall ducting noted

Kitchen equipment:

- N/A

Wet services:

- Hot water piping uninsulated
- Cold water piping is galvanised steel
- Drainage is cast iron, not in good condition
- Geyser in good working order

Sprinklers:

- In good condition and layout

Lifts:

- Lifts in good working order but reaching end of life.
- 1 line of call point points not working (Southern Side)

Electrical & Electronics Works

Power skirting and conduits

Power skirting installations and conduits were found to be generally concealed. Steel power skirting installation was found to be intact and in a fairly acceptable state in most areas.

Cables were correctly supported through their run. Although the installation is acceptable, the power skirting cover in the server room was found damaged and require minor repairs.

Light Fittings

The following types of light fittings were found at first floor:

- T8 LED surface-mounted light fittings
- T8 fluorescent recessed light fittings
- T5 fluorescent recessed light fittings
- T5 LED recessed light fittings
- CFL bulk head
- CFL downlight

Most light fittings were found in the offices to be in good physical and working condition as they were recently installed during the recent refurbishment done by the tenant, SARS. Those at the lobbies and common area were found to be generally in a fair condition.

None of the new light fittings was ofund labelled, though.

Switches

The following types of switching devices were found at first floor:

- Single lever light switch
- Motion sensor

- Isolators

None of the light switches, motion sensors and isolators were labelled.

All light switches were found to be in a good state, except the one in the UPS and server room, which was found to be have damaged cover with exposed wires.

Sockets outlets

The following types of socket outlets were found at the first floor:

- Power skirting mounted socket outlets
- Surface-mounted socket outlets
- Pedestal mounted socket outlets
- Recessed socket outlets

Socket outlets were found to be generally adequate. Socket outlets were found to be relatively new as they were recently installed by the tenant. Installation was deemed safe and acceptable.

Not all socket outlets were labelled, though.

Telecomunication and IT

The following types of Telecommunication and IT fascilities were found at first floor:

- Power skirting mounted telephone and data points
- Surface-mounted telephone and data points
- Recessed telephone and data points

Telephone and data points were found to be adequate. Installations were considered to be in a fairly acceptable state. However, power skirting telephone and data point cover in open planned office was not intact.

The telephone and data points were not labelled.

Fire Detection System

Similar observations as those in the basement

Structural works

Structural works general Assessment Introduction

The Cargo Office Building is a twelve storey reinforced concrete structure consisting of one basement level, ground floor to eleventh floor & a flat concrete roof. The building is in an L-shape form with approximate dimensions as follows:

- Long leg - 67m x 12.2m
- Short leg -13m x 15m

The short leg consists mainly of stair wells, lift shafts and lobby areas. The long leg is occupied by offices and ablution facilities. The typically reinforced concrete column size is 300mm x 600mm and rectangular in shape. The suspended slabs are a mix between trough and flat slabs with the trough spanning 11m. Additional concrete shear walls are located on both sides of the long leg to enhance the structure's lateral stability of the building.

No existing "As-Built" structural information was obtained; thus no foundation details are known.

Most of the structural findings on the Cargo Office Building are applicable to external elements (elements exposed to the weather or moisture) and have common solutions. For ease of reference the findings are listed per level with a common defect, which occurs across the entire building, given in Table 1.

Table 1 Cargo offices structural defects with their proposed solution

Defect no	Defect image example	Defect description, possible causes and modification
D1		**Concrete surface cracks** can form where no proper vibration happened during casting, the concrete over tensions in these areas. The weak spots can then cause a scaling effect (freezing and thawing of the weak spots). The failure is a surface crack failure, the reinforcement cover decreases. In some areas the reinforcement is exposed. **Remedial:** The concrete must be repaired with a high strength quick setting and approved concrete repair mortar, applied as per manufacturer's specifications.

Cargo Office general summary and conclusion:

The Cargo Office building is in a good general structural state. Only minor structural repairs are required to be able to extend the building life by the mandatory 10 year period. The majority of structural repairs on this building is pertaining to the patching on concrete.

Structural defects:

- Concrete plinths are located in the AC plantroom which support the mechanical equipment. The plinths in question have edge protection plates which shown sign of deterioration (refer to Figure 1).
    - **Remedial:** The plate must be replaced with a new angle (chemically doweled in to existing plinth).

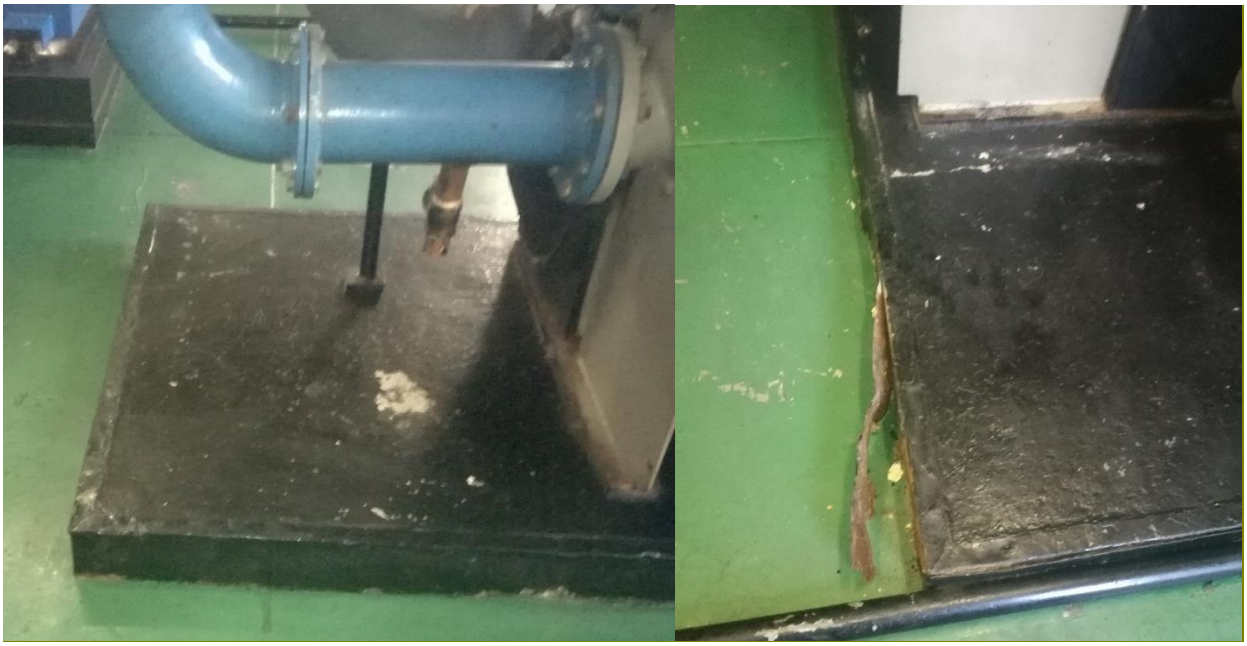


Figure 4 Damaged edges on plant room plinths

The first floor to the tenth floor have similar structural findings. All these floors have limited structural issues to report on. This section will deal with common issues for these floors and each situation are applicable to almost all of them (from first to eleventh floor).

Structural defects:

- Below are photos showing the external elevations of the office building. The external walls were constructed with a specific groove pattern. The concrete is damaged at building edges. The damage forming at these edges can ultimately expose the reinforcement, this will cause corrosion of the reinforcement. The degraded reinforcement compromises the building strength and is classified as a common defect for the building (see **Error! Reference source not found.** Defect D1).

Figure 5 Elevation photos of Cargo offices

- Damage to the concrete shear walls can be seen through the windows at the staircase on the west side of the building. Other isolated areas are also present on the building, the large shear walls (east wall and west wall) cannot be visibly inspected through windows. It is unclear if there would be cracks for these and other walls. The damaged concrete edges have been marked up on the master drawing and is fairly repetitive over the height of the building.
    - **Remedial:** Repair should be carried out as per preferred solution D1 (**Error! Reference source not found.**).

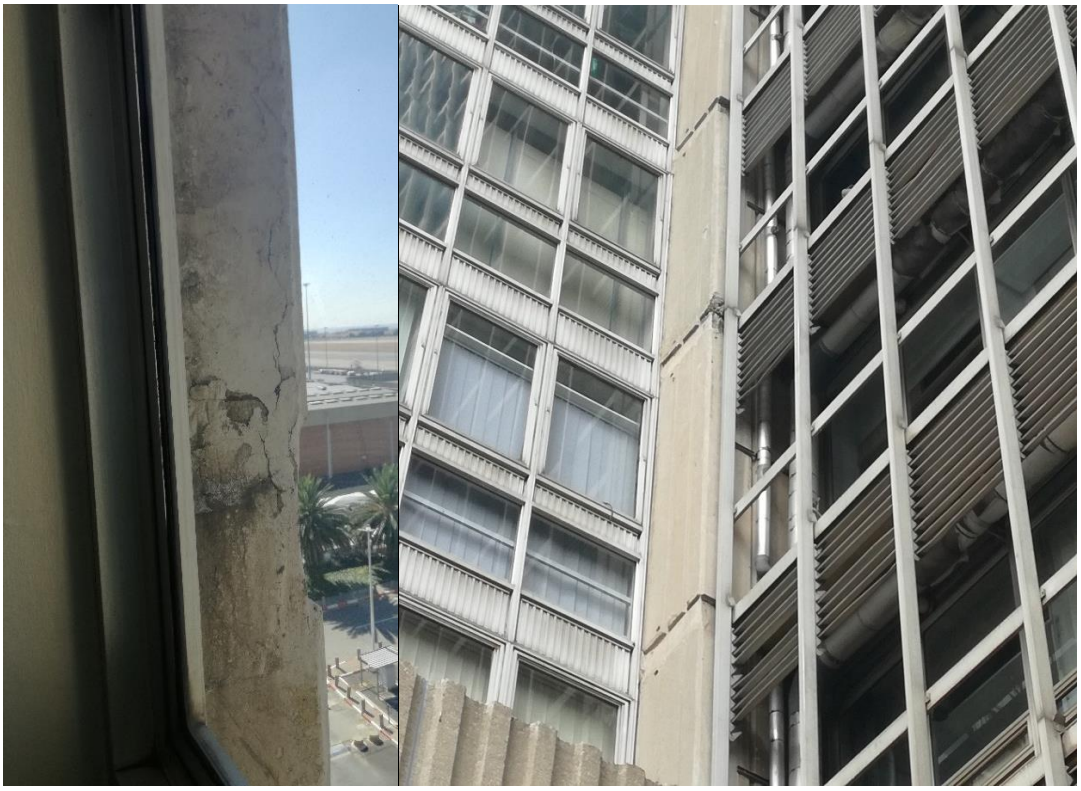


Figure 6 Concrete damage on building corners

- Concrete canopies were constructed over windows. A drip slot is provided to the edge of the canopy slab soffit, it seems that rainwater runs past the slot and deteriorates the concrete canopy. This specific canopy (in the picture below) was seen on the Third floor, the soffit of most of the concrete canopies is not visible from the inside of the building. There may be many similar canopies with similar defect throughout the building.
    - **Remedial:** Refer to Defect D1. Defect D1 is applicable to vertical walls, however the same principals and techniques apply for horizontal surfaces also.

Figure 7 Slab soffit concrete damage

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)
- REF: SANS 10400

Fire Management:

- All in order
- REF: ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- All in order
- REF: SANS 0400

Ventilation:

- All in order
- ERW 5

Storage:

- Inadequate stacking & storage space
- REF: GSR 8

Building and Structures:

- Poor maintenance, renovation is needed
- REF: SANS 10400

2.2.1.4 Second floor

Architectural work

Walls

Brick walls

The second-floor brick walls are in a fair condition, however existing wall finishes require attention, it is, therefore, recommended that:

- All other walls to be stopped and painted/tiled as per specification.
- A new granite/porcelain wall tiling architrave at the lift doors to enhance the aesthetical perspective of the Lift Lobby to the First Floor. This will also have a longer lifespan than paint and can be easily cleaned as day-to-day maintenance.
- New S/S corner protectors and Bump Rails to be fitted to areas of high traffic to protect newly refurbish walls from any damage.
- All firewalls above the ceiling to be inspected that fire insulation is still intact and that there is no damage to any insulation which might cause any

failure to the fire seal (including all ducting, electrical / data cables, piping, etc…) are present.

Partitioning walls

New partitioning walls with ceiling high windows in passage side only are required.

- Partitioning walls in offices to be replaced. Partitioning to be constructed as per specification and cladded with "High Impact Resistant Grade Plaster Board" to prevent damage to wall caused by office furniture.
- New Stainless-Steel Corner Protectors and Bump Rails to the walls to protect future damage to it once renovations are completed.

  The power skirting can be incorporated in the joinery. (see note Joinery).
- This floor to receive a "makeover" on completion of the renovations to repair all damage caused by tenants while using this floor as temporarily offices.
- A generic floor layout to be designed and used as temporary offices during the upgrading process.

Windows

The existing external windows on this floor are aluminium windows, most of which have lost integrity, and are not in compliance with the new the energy requirements as set out in SANS 10400 – Part XA. In addition, the profile of the aluminium window frame does not allow for the house of a double-glazing system that is required to meet the energy efficiency of part XA of the SANS 10400 regulations. Thus, the following is recommended:

- All external window frames to be removed and new double-glazed windows to be fitted to the building to in compliance with SANS 1400 – Part XA.

Sun louvres

- The Sun Louvres in front of windows are in a state of disrepair. Horizontal slats and framework are loose, and some slats have fallen from the building. This is a concern, as [redacted] will be held responsible for any injuries to persons or damage to property. To renovate these is not possible as the profile of the slats will not be obtainable anymore.
- The entire horizontal Sun Louvres system in front of windows should be replaced with a new louvre sun control system. A powder coating can be done to the aluminium slats to make the external facade more appealing.

Doors

The use of chain and padlocks to secure fire doors leading to the west fire escape does not comply with SANS 10400 Part T (Fire Protection). All the existing aluminium internal and external doors are sagging and not closing properly, seals are loose and glazing beads are not secure. Due to the irregularly small toilet entrance stalls opening a direct result of narrow passages and door closures that do not allow for the door to open fully at 90° striking the wall tiles causing damage

- The existing aluminium internal double door at the Entrance to be replaced with new doors.
- The existing doors in the Lift Lobby area to be cleaned and new ironmongery fitted as per door schedule (new locks on the master key system).
- All existing fire doors to be painted as per specification. All door releases and door coordinators to be serviced and to verify that they are in a 100% working condition.
- Duct doors to be replaced with fire doors to comply with the latest fire regulations.

Floors

Floor Slab

In "Office 204" a hole of ± 1m x 1.2m was cut in the floor slab for the dumb-waiter from the First Floor.

- This hole to be repaired strictly to engineer's specification and make good with all finished.

Porcelain Floor Tiles

The existing Porcelain Floor tiles in the lift lobby and surrounding area is in a reasonable condition with a few cracked tiles, but previously repair and maintenance work done has resulted in an ununiformly shaded floor, the skirting has also been damaged. The existing office area is stripped of all floor finishes.

- All floor finishes to be removed and new floor finishes to be installed as per the architect's specifications and [redacted]'s colour scheme.
- Skirting tiles to be replaced and new bottom protector rails to protect skirting tiles and walls

Carpet

The existing office area is stripped of all floor finishes.

- New carpets to be installed after all work has been completed as per the architect's specification.
- New skirtings to be allowed for in areas receiving new Carpet Tiles.

Vinyl Floor Tiles

Existing vinyl floor tiles in the Cleaner store and Tea Kitchen areas are worn out at the back of house.

- Vinyl Floor Tiles to be replaced with full bodied porcelain tiles.

Epoxy Flooring

- Ducts to receive an epoxy finish on all floors.

Ceiling

The Existing ceilings installed in the office spaces are in good condition. The existing ceiling Bulkhead in Lift Lobby 1 does not cover the mechanical piping and services, messy junctions of ceiling around the existing roller shutter door

- The Existing ceilings to be replaced with new suspended ceiling systems and bulkheads to architect's approval in order to conceal all mechanical services and to tie in with the existing ceiling and bulkhead layout that was previously done. Enhance the aesthetical perspective of the building.
- A new ceiling bulkhead at the existing roller shutter door to neatly finish the ceiling and roller shutter door.
- Duct rooms and Lift Lobby 2 (West) to have painted ceilings as per architect's specifications.
- New plastered ceiling to be fitted to the underside of the Main Stairs in provision for concealing the Fire sprinklers pipework on the underside of the stair.

Joinery

- The 900mm high horizontal ducting below the windows on the external windows to be removed and new worktops with cupboards to be installed where ducting is removed.
- New power skirting to be incorporated in the cupboard design. Repair in all trades.
- New kitchen cupboards in Tea Kitchen area at the back of house.

Sanitary Fittings

Sanitary fittings in all ablutions/toilets facilities are still in a working condition, yet do not meet the objectives of the project and acceptable lifespan.

- In the Tea Kitchen (Back of house – West) area a new sink, worktop with bottom cupboards to be installed. New sanitary fittings throughout.
- In the Cleaner (Back of house – West) area a new slop hopper with broom rack and stainless-steel shelf be installed. New sanitary fittings throughout.

Ablutions

All ablutions/toilets facilities are in reasonable condition but do not meet the objectives of the project and acceptable lifespan. The wall tiling is broken in some places and Joint sealant is worn out.

- Provision for Disabled Facilities to be made to comply with SANS 10400 Part S – Facilities for Disabled.

Note: No Toilet for Disabled in this area, which is a requirement as per SANS 10400 Part S – Facilities for Disabled.

Stairs

Main Stairs

The Main Stairs structure remains in a fair condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- The Main Stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be replaced to match aesthetical quality achieved throughout the rest of the building
- Fire Sprinklers and the water piping feeding the sprinklers visible to the underside of the stairs. (see ceilings)

Back of house Stairs

The back of house stairs remains in a structurally sound condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- All back-of-house stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be to be removed and replaced with stainless steel handrail.

Signage

- All fire regulating signage to be replaced. The position of these signs to be indicated by the fire engineer.
- New picogramme guidance signs to regulate public and restrict movement in the Lift Lobby.
- New directional signboard to be erected in the Lift Lobby area.
- All doors to receive name board to indicate occupancy of the room.

General

- This floor is currently vacant and has been stripped of all floor finishes. All internal walls also removed.
- 32 Split aircon units on this floor fitted below ceiling level. Mechanical engineer to advise if these units are re-used or removed.
- All locks to be on a master key system or keyed alike.
- All Fire hose reels and Fire extinguishers to be serviced. Secure extinguishers and signage.
- All fire escape doors and fire escape routes to be confirmed by the Fire Engineer that all conform to the latest fire regulations.

- A dumbwaiter was installed on the First Floor leading to this floor. This unit is not in use anymore. It is recommended that this dumbwaiter is removed, and all trades be repaired. The accesses hole in the Second-Floor slab to be repaired as per Structural Engineers specifications. All this needs to be discussed with the end-user before a final decision can be made.

Mechanical Works

HVAC:

- Fresh air system not working
- Some indoor units not in working order
- Chilled water piping insulation damaged

Ducting systems:

- Ducting in service ducts in relatively good condition
- Insulation is damaged
- Redundant wall ducting noted

Kitchen equipment:

- N/A

Wet services:

- Hot water piping uninsulated
- Cold water piping is galvanised steel
- Drainage is cast iron, not in good condition
- Geyser in good working order

Sprinklers:

- In good condition and layout

Lifts:

- Lifts in good working order but reaching end of life

- 1 line of call point points not working (Southern Side)

Electrical & Electronics Works

Power skirting and conduits

Power skirting installations and conduits were found to be generally concealed. Steel power skirting installation was found to be intact and in a fairly acceptable state in most areas. Cables were correctly supported through their run.

Light Fittings

The following light fittings were found at the second floor:

- T12 LED surface-mounted light fittings
- T5 fluorescent recessed light fittings
- T5 LED recessed light fittings
- CFL downlight

Light fitting located on the vacant open plan floor were found to be in a fairly good state and it seemed like minor repairs and maintenance were recently conducted in the area. Fittings located on the passage leading to the elevators lobby were found to be in bad state.

None of the light fittings were found labelled.

Switches

The following types of switching devices were found on the second floor:

- Single lever light switch
- Motion sensor
- Isolators

Single lever light switch located in ducts on floors one to eleven were outdated.

None of the light switches, motion sensors and isolators were labelled.

Sockets outlets

The following types of socket outlets were found on second floor:

- Power skirting mounted socket outlets
- Surface-mounted socket outlets
- Recessed socket outlets

Socket outlets were found to be adequate. Socket outlets installations was found to be intact and in an acceptable state.

However, none of the socket outlets were found labelled.

Telecomunication and IT

There were no telecommunication points installed yet in the vacant office area.

Telecommunication and data points were found to be adequate for the occupied office area next to lift lobby. Installation was found to be generally intact and in fairy good state.

However, none of the telephone and data points were labelled.

Fire Detection System

Similar observations as those in the basement.

Structural works

Refer to the First-floor Structural works findings (under section 2.2.1.3) for the structural findings of this floor. The structural findings in section 2.2.1.3 are applicable to this floor.

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)
- Emergency exit door was inoperable

- Floor plan was in order
- REF: SANS 10400

Fire Management:

- Emergency exit door inoperable

- REF: ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- All in order , adequate urinals

- REF: SABS.0400

Ventilation:

- All in order
- ERW 5

Storage:

- All in order
- REF: GSR 8

Building and Structures:

- Poor maintenance, renovation is needed
- REF: SANS 10400

2.2.1.5 Third floor

Architectural work

Walls

Brick walls

The third-floor brick walls are in a fair condition, however existing wall finishes require attention, it is, therefore, recommended that:

- All other walls to be stopped and painted/tiled as per specification.
- A new granite/porcelain wall tiling architrave at the lift doors to enhance the aesthetical perspective of the Lift Lobby to the First Floor. This will also have a longer lifespan than paints and can be easily cleaned as day-to-day maintenance.
- New S/S corner protectors and Bump Rails to be fitted to areas of high traffic to protect newly refurbish walls from any damage.
- All firewalls above the ceiling to be inspected that fire insulation is still intact and that there is no damage to any insulation which might cause any failure to the fire seal (including all ducting, electrical / data cables, piping, etc…) are present.

Partitioning walls

The third partitioning walls are still in good condition

- The existing partitioning walls to be protected during remedial work being executed.
- Stainless Steel Corner Protectors and Bump Rails to the walls to protect future damage to it once renovations are completed.

Windows

The existing external windows on this floor are aluminium windows, most of which have lost integrity, and are not in compliance with the new the energy requirements as set out in SANS 10400 – Part XA. In addition, the profile of the aluminium window frame does not allow for the house of a double-glazing system that is required to meet the energy efficiency of part XA of the SANS 10400 regulations. Thus, the following is recommended:

- All external window frames to be removed and new double-glazed windows to be fitted to the building to in compliance with SANS 1400 – Part XA.

Sun louvres

- The Sun Louvres in front of windows are in a state of disrepair. Horizontal slats and framework are loose, and some slats have fallen from the building. This is a concern, as [redacted] will be held responsible for any injuries to persons or damage to property. To renovate these is not possible as the profile of the slats will not be obtainable anymore.

- The entire horizontal Sun Louvres system in front of windows should be replaced with a new louvre sun control system. A powder coating can be done to the aluminium slats to make the external facade more appealing.

Doors

The fire doors that were installed on the eastern side of the building have been removed either during renovations or might have been removed by another party. Only an aluminium smoke and draft door is present at the Main Lift Lobby, posing potential fire-related complications for the whole building. Due to the irregularly small toilet entrance stalls opening a direct result of narrow passages and door closures that do not allow for the door to open fully at 90º striking the wall tiles causing damage.

- New fire doors to be installed with all ironmongery as specified by the architect and to the fire engineer's approval.
- The existing "Bitcon" fire doors to be painted and serviced as per Arch door schedules and Fire engineers' specifications. Fire engineer to approve of this door.
- The existing aluminium double door to the Reception Area to be cleaned and new ironmongery fitted as per door schedule (new locks on the master key system).
- The existing aluminium doors in the Lift Lobby area to be cleaned and
- Duct doors to be replaced with fire doors to comply with the latest fire regulations.
- All existing fire doors to be painted as per specification. All door releases and door coordinators to be serviced and to verify that they are in a 100% working condition.
- Duct doors to be replaced with fire doors to comply with the latest fire regulations.

Floors

Timber Laminated Flooring

The Timber Laminated Flooring in the office area is in good condition.

- Timber floors to be protected for the duration of the renovation

Porcelain Floor Tiles

The existing Porcelain Floor tiles in the lift lobby and surrounding area is in a reasonable condition with a few cracked tiles, but previously repair and maintenance work done has resulted in an ununiformly shaded floor, the skirting has also been damaged. The existing office area is stripped of all floor finishes.

- All floor finishes to be removed and new floor finishes to be installed as per the architect's specifications and [redacted] s colour scheme.
- Skirting tiles to be replaced and new bottom protector rails to protect skirting tiles and walls

Epoxy Flooring

- Ducts to receive an epoxy finish on all floors.

Ceiling

The Existing ceilings installed in the office spaces are in good condition. The existing ceiling Bulkhead in Lift Lobby 1 does not cover the mechanical piping and services.

- The Existing ceilings to be replaced with new suspended ceiling systems and bulkheads to architect's approval in order to conceal all mechanical services and to tie in with the existing ceiling and bulkhead layout that was previously done. Enhance the aesthetical perspective of the building.
- A new ceiling bulkhead at the existing roller shutter door to neatly finish the ceiling and roller shutter door.
- Duct rooms and Lift Lobby 2 (West) to have painted ceilings as per architect's specifications.

- New plastered ceiling to be fitted to the underside of the Main Stairs in provision for concealing the Fire sprinklers pipework on the underside of the stair.

Joinery

- New kitchen cupboards in Tea Kitchen area at the back of house

Sanitary Fittings

Sanitary fittings in all ablutions/toilets facilities are still in a working condition, yet do not meet the objectives of the project and acceptable lifespan.

- In the Tea Kitchen (Back of house – West) area a new sink, worktop with bottom cupboards to be installed. New sanitary fittings throughout.
- In the Cleaner (Back of house – West) area a new slop hopper with broom rack and stainless-steel shelf be installed. New sanitary fittings throughout.

Ablutions

All ablutions/toilets facilities are in reasonable condition but do not meet the objectives of the project and acceptable lifespan. The wall tiling is broken in some places and Joint sealant is worn out.

- Provision for Disabled Facilities to be made to comply with SANS 10400 Part S – Facilities for Disabled.

Note: No Toilet for Disabled in this area, which is a requirement as per SANS 10400 Part S – Facilities for Disabled.

Stairs

Main Stairs

The Main Stairs structure remains in a fair condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life.

Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- The Main Stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be replaced to match aesthetical quality achieved throughout the rest of the building
- Fire Sprinklers and the water piping feeding the sprinklers visible to the underside of the stairs. (see ceilings).

Back of house Stairs

The back of house stairs remains in a structurally sound condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- All back-of-house stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be to be removed and replaced with stainless steel handrail.

Signage

- All fire regulating signage to be replaced. The position of these signs to be indicated by the fire engineer.
- New picogramme guidance signs to regulate public and restrict movement in the Lift Lobby.
- New directional signboard to be erected in the Lift Lobby area.
- All doors to receive name board to indicate occupancy of the room.

General:

- All locks to be on a master key system or keyed alike.

- All Fire hose reels and Fire extinguishers to be serviced. Secure extinguishers and signage.
- All fire escape doors and fire escape routes to be confirmed by the Fire Engineer that all conform to the latest fire regulations.
- The entire building does not cater for persons with disabilities.

Mechanical Works

HVAC:

- Fresh air system not working
- Some indoor units not In working order
- Chilled water piping insulation damaged

Ducting systems:

- Ducting in service ducts in relatively good condition
- Insulation is damaged
- Redundant wall ducting noted

Kitchen equipment:

- N/A

Wet services:

- Hot water piping uninsulated
- Cold water piping is galvanised steel
- Drainage is cast iron, not in good condition
- Geyser in good working order

Sprinklers:

- In good condition and layout

Lifts:

- Lifts in good working order but reaching end of life

- 1 line of call point points not working (Southern Side)

Electrical & Electronics Works

Power skirting and conduits

Power skirting installations and conduits were found to be generally concealed. Power skirting was deemed intact, safe and in an acceptable state. Cables were found to be correctly supported through their run.

Light Fittings

The following light fittings were found on the third floor:

- T8 fluorescent surface-mounted light fittings
- T5 LED fluorescent surface-mounted light fittings
- T5 LED recessed light fittings
- LED downlight
- Carbon filament pendents

Light fittings on the third floor were found to be a very good state as they were recently installed. Records of the latest installation done in the year 2015 by the tenant were provided.

However, light fitting located on the passage leading to the elevators lobby were in bad state.

The light fittings were found to be without labels.

Switches

The following types of switching devices were found on the third floor:

- Single lever light switch
- Motion sensor
- Isolators
- Light switch blanks

Switches were found to be in a good state as they were recently installed.

None of the light switches motion sensors and isolators on the third floor were labelled.

Single lever light switch located in ducts on floors one to eleven were outdated.

Sockets outlets

The following socket outlets were found on the thrid floor:

- Power skirting mounted socket outlets
- Surface-mounted socket outlet
- Recessed socket outlet

Socket outlets installation found in the third floor was recently installed. Socket outlets were found to be adequate and the installations were considered safe and in an acceptable state.

However, newly installed socket outlets mounted at 300mm were neatly labelled but socket outlet on power skirting were not labelled.

Telecomunication and IT

The following types of telephone and data points were found on the third floor.

- Power skirting telephone and data points
- Recessed telephone and data points

Telecommunication and IT points were found to be adequate. The recently installed communication sockets were found to be in a good state and therefore acceptable.

Fire Detection System

Similarobservations as those in the basement.

Structural works

Refer to the First-floor Structural works findings ((under section 2.2.1.3)) for the structural findings of this floor. The structural findings in section 2.2.1.3 are applicable to this floor.

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)
- First Aid box was to be in order

- REF: SANS 10400

Fire Management:

- Inadequate number of fire extinguishers
- Fire extinguisher was missing

- REF: ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- All in order
- REF: SANS 0400

Ventilation:

- All in order
- REF: ERW 5

Storage:

- All in order
- REF: GSR 8

Building and Structures:

- Poor maintenance, renovation is needed

- REF: SANS 10400

Fourth floor

Architectural work

Walls
Brick walls

The fourth floors brick walls are in a fair condition, however existing wall finishes require attention, it is, therefore, recommended that:

- All other walls to be stopped and painted/tiled as per specification.
- A new granite/porcelain wall tiling architrave at the lift doors to enhance the aesthetical perspective of the Lift Lobby to the First Floor. This will also have a longer lifespan than paints and can be easily cleaned as day-to-day maintenance.
- New S/S corner protectors and Bump Rails to be fitted to areas of high traffic to protect newly refurbish walls from any damage.
- All firewalls above the ceiling to be inspected that fire insulation is still intact and that there is no damage to any insulation which might cause any failure to the fire seal (including all ducting, electrical / data cables, piping, etc…) are present.

Partitioning walls

The existing fourth-floor partitioning walls are still in a good condition

- The existing partitioning walls to be protected during remedial work being executed.
- Stainless Steel Corner Protectors and Bump Rails to the walls to protect future damage to it once renovations are completed.

Windows

The existing external windows on this floor are aluminium windows, most of which have lost integrity, and are not in compliance with the new the energy requirements as set out in SANS 10400 – Part XA. In addition, the profile of the aluminium window frame does not allow for the house of a double-glazing system that is required to meet the energy efficiency of part XA of the SANS 10400 regulations. Thus, the following is recommended:

- All external window frames to be removed and new double-glazed windows to be fitted to the building to in compliance with SANS 1400 – Part XA.

Sun louvres

The Sun Louvres in front of windows dilapidated. The horizontal slats and framework are loose, while some slats have already fallen from the building. To refurbish these is not possible as the profile of the slats will not be obtainable from the manufacturer anymore It is, therefore, advised that:

- The entire horizontal Sun Louvres system in front of windows be replaced with a new louvre sun control system, all to the specifications of the architect.

Note: [redacted] can potentially be held responsible for any injuries to persons or damage to property caused by the falling of these slats.

Doors

The no fire doors installed on the eastern side of the building, the use of chain and padlocks to secure fire doors leading to the west fire escape does not comply with SANS 10400 Part T (Fire Protection). Due to the irregularly small toilet entrance stalls opening a direct result of narrow passages and door closures that do not allow for the door to open fully at 90° striking the wall tiles causing damage.

- New fire doors to be installed with all ironmongery as specified by the architect and to the fire engineer's approval.
- The existing "Bitcon" fire doors to be painted and serviced as per Arch door schedules and Fire engineers' specifications. Fire engineer to approve of this door.
- The existing aluminium double door to the Reception Area to be cleaned and new ironmongery fitted as per door schedule (new locks on the master key system).
- The existing aluminium doors in the Lift Lobby area to be cleaned and
- Duct doors to be replaced with fire doors to comply with the latest fire regulations.

Floors

Porcelain Floor Tiles

The existing Porcelain Floor tiles in the lift lobby and surrounding area is in a reasonable condition with a few cracked tiles, but previously repair and maintenance work done has resulted in an ununiformly shaded floor, the skirting has also been damaged.

- All floor finishes to be removed and new floor finishes to be installed as per the architect's specifications and [redacted]'s colour scheme.
- Skirting tiles to be replaced and new bottom protector rails to protect skirting tiles and walls.

Carpet

The existing carpets are in a fair condition but will need replacing on completion of the construction work.

- New carpets to be installed after all work has been completed.

Vinyl Floor Tiles

Existing vinyl floor tiles in the Cleaner store and Tea Kitchen areas are worn out at the back of house.

- Vinyl Floor Tiles to be replaced with full bodied porcelain tiles.

Epoxy Flooring

- Ducts to receive an epoxy finish on all floors.

Ceiling

The Existing ceilings installed in the office spaces are in good condition. The existing ceiling Bulkhead in Lift Lobby 1 does not cover the mechanical piping and services.

- The Existing ceilings to be replaced with new suspended ceiling systems and bulkheads to architect's approval in order to conceal all mechanical services and to tie in with the existing ceiling and bulkhead layout that was previously done. Enhance the aesthetical perspective of the building.
- Duct rooms and Lift Lobby 2 (West) to have painted ceilings as per architect's specifications.
- New plastered ceiling to be fitted to the underside of the Main Stairs in provision for concealing the Fire sprinklers pipework on the underside of the stair.

Joinery

- The 900mm high horizontal ducting below the windows on the external windows to be removed and new worktops with cupboards to be installed where ducting is removed.
- New power skirting to be incorporated in the cupboard design. Repair in all trades.
- New kitchen cupboards in Tea Kitchen area at the back of house.

Sanitary Fittings

Sanitary fittings in all ablutions/toilets facilities are still in a working condition, yet do not meet the objectives of the project and acceptable lifespan.

- In the Tea Kitchen (Back of house – West) area a new sink, worktop with bottom cupboards to be installed. New sanitary fittings throughout.
- In the Cleaner (Back of house – West) area a new slop hopper with broom rack and stainless-steel shelf be installed. New sanitary fittings throughout.
- In the Tea Kitchen (Back of house – West) area a new sink, worktop

Ablutions

All ablutions/toilets facilities are in reasonable condition but do not meet the objectives of the project and acceptable lifespan. The wall tiling is broken in some places and Joint sealant is worn out.

- Provision for Disabled Facilities to be made to comply with SANS 10400 Part S – Facilities for Disabled.

Note: No Toilet for Disabled in this area, which is a requirement as per SANS 10400 Part S – Facilities for Disabled.

Stairs

Main Stairs

The Main Stairs structure remains in a fair condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- The Main Stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be replaced to match aesthetical quality achieved throughout the rest of the building
- Fire Sprinklers and the water piping feeding the sprinklers visible to the underside of the stairs. (see ceilings)

Back of house Stairs

The back of house stairs remains in a structurally sound condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- All back-of-house stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be to be removed and replaced with stainless steel handrail.

Signage

- All fire regulating signage to be replaced. The position of these signs to be indicated by the fire engineer.
- New picogramme guidance signs to regulate public and restrict movement in the Lift Lobby.

- New directional signboard to be erected in the Lift Lobby area.
- All doors to receive name board to indicate occupancy of the room.

General

- All locks to be on a master key system or keyed alike. Handrails on both stairs to be removed and replaced with new.
- All Fire hose reels and Fire extinguishers to be serviced. Secure extinguishers and signage.
- All fire escape doors and fire escape routes to be confirmed by the Fire Engineer that all conform to the latest fire regulations.
- The entire building does not cater for persons with disabilities.
- All existing shopfronts, existing ceilings, walls, etc… to be thoroughly cleaned on completion.

Mechanical Works

HVAC:

- Fresh air system not working
- Some indoor units not In working order
- Chilled water piping insulation damaged

Ducting systems:

- Ducting in service ducts in relatively good condition
- Insulation is damaged
- Redundant wall ducting noted

Kitchen equipment:

- N/A

Wet services:

- Hot water piping uninsulated

- Cold water piping is galvanised steel
- Drainage is cast iron, not in good condition
- Geyser in good working order

Sprinklers:

- In good condition and layout

Lifts:

- Lifts in good working order but reaching end of life
- 1 line of call point points not working (Southern Side)

Electrical & Electronics Works

See discussion of findings of Floor 1.

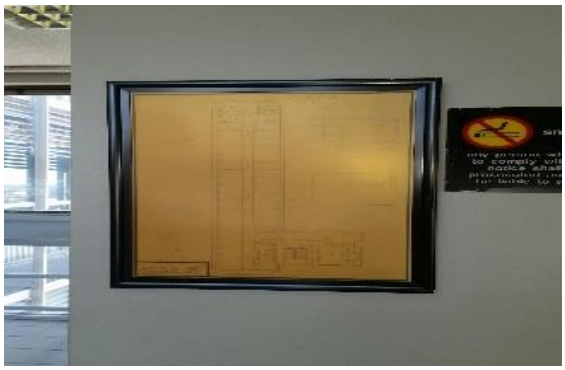
Structural works

Refer to the First floor Structural works findings (under section 2.2.1.3) for the structural findings of this floor. The structural findings in section 2.2.1.3 are applicable to this floor.

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)
- No signages and notices
- Emergency Exit Floor plan in order



- GSR.2(b)
- REF: SANS 10400

Fire Management:

- No signages and notices

- REF: ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- All in order
- REF: SANS 0400

Ventilation:

- All in order
- REF: ERW 5

Storage:

- All in order
- REF: GSR 8

Building and Structures:

- Poor maintenance, renovation is needed
- Exposed live electrical wires

- REF: SANS 10400

2.2.1.6 Fifth floor

Architectural work

Walls

Brick walls

The fifth-floor brick walls are in a fair condition, however existing wall finishes require attention, it is, therefore, recommended that:

- All other walls to be stopped and painted/tiled as per specification.
- A new granite/porcelain wall tiling architrave at the lift doors to enhance the aesthetical perspective of the Lift Lobby to the First Floor. This will also have a longer lifespan than paints and can be easily cleaned as day-to-day maintenance.

- New S/S corner protectors and Bump Rails to be fitted to areas of high traffic to protect newly refurbish walls from any damage.
- All firewalls above the ceiling to be inspected that fire insulation is still intact and that there is no damage to any insulation which might cause any failure to the fire seal (including all ducting, electrical / data cables, piping, etc…) are present.

Partitioning walls

New partitioning walls with ceiling high windows in passage side only are required.

- Partitioning walls in offices to be replaced. Partitioning to be constructed as per specification and cladded with "High Impact Resistant Grade Plaster Board" to prevent damage to wall caused by office furniture.
- New Stainless-Steel Corner Protectors and Bump Rails to the walls to protect future damage to it once renovations are completed.

Windows

The existing external windows on this floor are aluminium windows, most of which have lost integrity, and are not in compliance with the new the energy requirements as set out in SANS 10400 – Part XA. In addition, the profile of the aluminium window frame does not allow for the house of a double-glazing system that is required to meet the energy efficiency of part XA of the SANS 10400 regulations. Thus, the following is recommended:

- All external window frames to be removed and new double-glazed windows to be fitted to the building to in compliance with SANS 1400 – Part XA.

Sun louvres

- The Sun Louvres in front of windows are in a state of disrepair. Horizontal slats and framework are loose, and some slats have fallen from the building. This

is a concern, as [redacted] will be held responsible for any injuries to persons or damage to property. To renovate these is not possible as the profile of the slats will not be obtainable anymore.

- The entire horizontal Sun Louvres system in front of windows should be replaced with a new louvre sun control system. A powder coating can be done to the aluminium slats to make the external facade more appealing.

Doors

The existing aluminium internal and external doors are sagging and not closing properly, seals are loose and glazing beads are not secure. Due to the irregularly small toilet entrance stalls opening a direct result of narrow passages and door closures that do not allow for the door to open fully at 90° striking the wall tiles causing damage.

- The existing "Bitcon" fire doors to be painted and serviced as per Architects recommendations and Fire engineers' specifications. Fire engineer to approve of this door.
- The existing steel security gate to some of the offices to be removed and replaced with a foldable gate. The existing security gates are an obstruction to the "clear path of travel" to the fire escapes. This is in contradiction with SANS 10400 Part T.
- The existing aluminium internal double door at the Entrance to be replaced with new.
- Duct doors to be replaced with fire doors to comply with the latest fire regulations.
- The existing aluminium doors in the Lift Lobby area to be cleaned and new ironmongery fitted as per door schedule (new locks on the master key system).

Floors

Porcelain Floor Tiles

The existing Porcelain Floor tiles in the lift lobby and surrounding area is in a reasonable condition with a few cracked tiles, but previously repair and maintenance work done has resulted in an ununiformly shaded floor, the skirting has also been damaged.

- All floor finishes to be removed and new floor finishes to be installed as per the architect's specifications and [redacted]'s colour scheme.
- Skirting tiles to be replaced and new bottom protector rails to protect skirting tiles and walls

Carpet

Carpets floor tiles are worn out in the office and other areas.

- Install new carpet tiles in offices and other areas. New skirtings to be allowed for in areas receiving new Carpet Tiles.

Vinyl Floor Tiles

Vinyl Floor tiles are worn out with different colours as repair/patchwork performed in the past. Some office areas have Vinyl floor tiles which are not in compliance with [redacted] guidelines and general office design.

- All Vinyl Floor Tiles to be replaced in accordance with the architect's recommendation and specifications.
- All vinyl floor tiles in office areas to be removed and replaced with carpet to architect's recommendation and specifications and [redacted] guidelines and general office design
- In the passages vinyl to be replaced with porcelain tiles.

Epoxy Flooring

- Ducts to receive an epoxy finish on all floors.

Ceiling

The Existing ceiling installed in Passages. These ceilings old, dirty and do not line up. The existing ceiling Bulkhead in Lift Lobby 1 does not cover the mechanical piping and services.

- The Existing ceilings to be replaced with new suspended ceiling systems and bulkheads to architect's approval in order to conceal all mechanical services and to tie in with the existing ceiling and bulkhead layout that was previously done. Enhance the aesthetical perspective of the building.
- New suspended ceilings in offices without bulkheads in Offices and Passages.
- Duct rooms and Lift Lobby 2 (West) to have painted ceilings as per architect's specifications.
- New plastered ceiling to be fitted to the underside of the Main Stairs in provision for concealing the Fire sprinklers pipework on the underside of the stair.

Joinery

- The 900mm high horizontal ducting below the windows on the external windows to be removed and new worktops with cupboards to be installed where ducting is removed.
- New power skirting to be incorporated in the cupboard design. Repair in all trades.
- New kitchen cupboards in Tea Kitchen area at the back of house.

Sanitary Fittings

Sanitary fittings in all ablutions/toilets facilities are still in a working condition, yet do not meet the objectives of the project and acceptable lifespan.

- In the Tea Kitchen (Back of house – West) area a new sink, worktop with bottom cupboards to be installed. New sanitary fittings throughout.
- In the Cleaner (Back of house – West) area a new slop hopper with broom rack and stainless-steel shelf be installed. New sanitary fittings throughout.
- In the Tea Kitchen (Back of house – West) area a new sink, worktop

Ablutions

All ablutions/toilets facilities are in reasonable condition but do not meet the objectives of the project and acceptable lifespan. The wall tiling is broken in some places and Joint sealant is worn out.

- Provision for Disabled Facilities to be made to comply with SANS 10400 Part S – Facilities for Disabled.

Note: No Toilet for Disabled in this area, which is a requirement as per SANS 10400 Part S – Facilities for Disabled.

Stairs

Main Stairs

The Main Stairs structure remains in a fair condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- The Main Stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be replaced to match aesthetical quality achieved throughout the rest of the building

- Fire Sprinklers and the water piping feeding the sprinklers visible to the underside of the stairs. (see ceilings).

Back of house Stairs

The back of house stairs remains in a structurally sound condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- All back-of-house stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be to be removed and replaced with stainless steel handrail.

Signage

- All fire regulating signage to be replaced. The position of these signs to be indicated by the fire engineer.
- New picogramme guidance signs to regulate public and restrict movement in the Lift Lobby.
- New directional signboard to be erected in the Lift Lobby area.
- All doors to receive name board to indicate occupancy of the room.

General

- This floor is currently occupied by various tenants. Office configuration was done to their individual needs. All locks to be on a master key system or keyed alike
- All Fire hose reels and Fire extinguishers to be serviced. Secure extinguishers and signage.

- All fire escape doors and fire escape routes to be confirmed by the Fire Engineer that all conform to the latest fire regulations.
- The entire building does not cater for persons with disabilities.
- All existing shopfronts, existing ceilings, walls, etc… to be thoroughly cleaned on completion.

Mechanical Works

HVAC:

- Fresh air system not working
- Some indoor units not In working order
- Chilled water piping insulation damaged

Ducting systems:

- Ducting in service ducts in relatively good condition
- Insulation is damaged
- Redundant wall ducting noted

Kitchen equipment:

- N/A

Wet services:

- Hot water piping uninsulated
- Cold water piping is galvanised steel
- Drainage is cast iron, not in good condition
- Geyser in good working order

Sprinklers:

- In good condition and layout

Lifts:

- Lifts in good working order but reaching end of life

- 1 line of call point points not working (Southern Side)

Electrical & Electronics Works

Power Skirting

Power skirting installation and conduits were found to be in generally concealed. However, a significant part of the power skirting installation was not intact as some of the covers were found open and the wires were exposed. These installations were therefore considered to be unsafe and unacceptable.

Where visible, wire ways are filled to capacity leading to cable spillage in areas were covers were open rendering the installation untidy.

Light Fittings

The following types of light fittings were found on floors 5 to 10:

- T8 fluorescent surface-mounted light fittings
- T5 LED fluorescent surface-mounted light fittings
- T5 LED surface-mounted light fittings
- Dari LED recessed light fittings.
- LED downlight
- CFL downlight
- CFL bulkhead

Light fitting located in all office on both North and south wing in good state, the light fittings appear fairly new.

Light fitting located on the passage leading to the elevators lobby were in bad state.

The light fittings were not labelled.

Switches

The following types of switching devices were found on Floors 5 to 10:

- Single lever light switch
- Motion sensor
- Isolators

In some cases, there was one motion sensor for the two separate rooms utilised by the different tenants. This was found to be quite inconvenient for the tenants concerned and caused serious irritation.

Single lever light switch located in ducts on floors one to eleven were outdated.

None of the light switches motion sensors and isolators on the fifth floor were labelled.

Power sockets:

The following socket outlets were found on floors 5, 7, 8, 9 and 10:

- Surface-mounted socket outlets
- Recessed socket outlets
- Power skirting mounted socket outlets

Socket outlets were found to be inadequate for the number of the appliances and devices found in most offices. To make matters worse, some of the socket outlets were found to be faulty. Hence, many tenants would use extension cords to reticulate power in their offices for numerous appliances as they wish.

It was also found that some tenants made their own private installations of the socket outlets to complement the original installation. This unregulated power reticulation and consumption pose a serious risk of overload and subsequent fire. The socket outlets in the areas concerned were therefore considered to be unsafe and unacceptable.

No labelling was found of these incompliant installations.

Telecommunication and IT

The following telephone and data points were found in Floors 5, 7, 8, 9 and 10.

- Power skirting telephone and data points
- Surface-mounted telephone and data points.

Telephone and data points found on the power skirting in most offices were found to be dysfunctional and in a bad state.

Most tenants resorted to the use of privately acquired communication facilities (i.e. wireless modems, cell phones, etc.) from various network operators. The installation is considered unsafe and unacceptable.

Fire Detection System

Similar observations as those from basement.

Structural works

Refer to the First floor Structural works findings (under section 2.2.1.3) for the structural findings of this floor. The structural findings in section 2.2.1.3 are applicable to this floor.

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)

- REF: SANS 10400

Fire Management:

- All in order
- REF: ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- Inadequate waste storage area

- REF: SANS 0400

Ventilation:

- All in order
- REF: ERW 5

Storage:

- All in order
- REF: GSR 8

Building and Structures:

- Poor maintenance, renovation is needed

- REF: SANS10400

2.2.1.7 Sixth floor

Architectural work

Walls

Brick walls

The sixth-floor brick walls are in a fair condition, however existing wall finishes require attention, it is, therefore, recommended that:

- All other walls to be stopped and painted/tiled as per specification.
- A new granite/porcelain wall tiling architrave at the lift doors to enhance the aesthetical perspective of the Lift Lobby to the First Floor. This will also have a longer lifespan than paints and can be easily cleaned as day-to-day maintenance.
- New S/S corner protectors and Bump Rails to be fitted to areas of high traffic to protect newly refurbish walls from any damage.
- All firewalls above the ceiling to be inspected that fire insulation is still intact and that there is no damage to any insulation which might cause any failure to the fire seal (including all ducting, electrical / data cables, piping, etc…) are present.

Partitioning walls

New partitioning walls with ceiling high windows in passage side only are required.

- Partitioning walls in offices to be replaced. Partitioning to be constructed as per specification and cladded with "High Impact Resistant Grade Plaster Board" to prevent damage to wall caused by office furniture.
- New Stainless-Steel Corner Protectors and Bump Rails to the walls to protect future damage to it once renovations are completed.

Windows

The existing external windows on this floor are aluminium windows, most of which have lost integrity, and are not in compliance with the new the energy requirements as set out in SANS 10400 – Part XA. In addition, the profile of the aluminium window frame does not allow for the house of a double-glazing system that is required to meet the energy efficiency of part XA of the SANS 10400 regulations. Thus, the following is recommended:

- All external window frames to be removed and new double-glazed windows to be fitted to the building to in compliance with SANS 1400 – Part XA.

Sun louvres

- The Sun Louvres in front of windows are in a state of disrepair. Horizontal slats and framework are loose, and some slats have fallen from the building. This is a concern, as [redacted] will be held responsible for any injuries to persons or damage to property. To renovate these is not possible as the profile of the slats will not be obtainable anymore.
- The entire horizontal Sun Louvres system in front of windows should be replaced with a new louvre sun control system. A powder coating can be done to the aluminium slats to make the external facade more appealing.

Doors

The existing aluminium internal and external doors are sagging and not closing properly, seals are loose and glazing beads are not secure. Due to the irregularly small toilet entrance stalls opening a direct result of narrow passages and door closures that do not allow for the door to open fully at 90° striking the wall tiles causing damage.

- The existing "Bitcon" fire doors to be painted and serviced as per Architects recommendations and Fire engineers' specifications. Fire engineer to approve of this door.
- The existing steel security gate to some of the offices to be removed and replaced with a foldable gate. The existing security gates are an obstruction to the "clear path of travel" to the fire escapes. This is in contradiction with SANS 10400 Part T.
- The existing aluminium internal double door at the Entrance to be replaced with new.
- Duct doors to be replaced with fire doors to comply with the latest fire regulations.
- The existing aluminium doors in the Lift Lobby area to be cleaned and new ironmongery fitted as per door schedule (new locks on the master key system).

Floors

Construction Joint

A new construction joint in the floor at the double aluminium door to the offices is needed.

- The Structural Engineer first to determine the cause of this movement before any further work commences.
- Once remedial work is completed the new construction joint to be installed flush with the finished floor level.

Porcelain Floor Tiles

The existing Porcelain Floor tiles in the lift lobby and surrounding area is in a reasonable condition with a few cracked tiles, but previously repair and maintenance work done has resulted in an ununiformly shaded floor, the skirting has also been damaged.

- All floor finishes to be removed and new floor finishes to be installed as per the architect's specifications and [redacted]'s colour scheme.
- Skirting tiles to be replaced and new bottom protector rails to protect skirting tiles and walls

Carpet

Carpets floor tiles are worn out and dirty.

- Install new carpet tiles in offices and other areas. New skirtings to be allowed for in areas receiving new Carpet Tiles.

Vinyl Floor Tiles

Vinyl Floor tiles are worn out with different colours as repair/patchwork performed in the past. Some office areas have Vinyl floor tiles which are not in compliance with [redacted] guidelines and general office design.

- All Vinyl Floor Tiles to be replaced in accordance with the architect's recommendation and specifications.
- All vinyl floor tiles in office areas to be removed and replaced with carpet to architect's recommendation and specifications and [redacted] guidelines and general office design
- In the passages vinyl to be replaced with porcelain tiles.

Epoxy Flooring

Ducts to receive an epoxy finish on all floors.

Ceiling

The Existing ceiling installed in Passages. These ceilings old, dirty and do not line up. The existing ceiling Bulkhead in Lift Lobby 1 does not cover the mechanical piping and services.

- The Existing ceilings to be replaced with new suspended ceiling systems and bulkheads to architect's approval in order to conceal all mechanical services and to tie in with the existing ceiling and bulkhead layout that was previously done. Enhance the aesthetical perspective of the building.
- New suspended ceilings in offices without bulkheads in Offices and Passages.
- Duct rooms and Lift Lobby 2 (West) to have painted ceilings as per architect's specifications.
- New plastered ceiling to be fitted to the underside of the Main Stairs in provision for concealing the Fire sprinklers pipework on the underside of the stair.

Joinery

- The 900mm high horizontal ducting below the windows on the external windows to be removed and new worktops with cupboards to be installed where ducting is removed.
- New power skirting to be incorporated in the cupboard design. Repair in all trades.
- New kitchen cupboards in Tea Kitchen area at the back of house.

Sanitary Fittings

Sanitary fittings in all ablutions/toilets facilities are still in a working condition, yet do not meet the objectives of the project and acceptable lifespan.

- In the Tea Kitchen (Back of house – West) area a new sink, worktop with bottom cupboards to be installed. New sanitary fittings throughout.
- In the Cleaner (Back of house – West) area a new slop hopper with broom rack and stainless-steel shelf be installed. New sanitary fittings throughout.
- In the Tea Kitchen (Back of house – West) area a new sink, worktop

Ablutions

All ablutions/toilets facilities are in reasonable condition but do not meet the objectives of the project and acceptable lifespan. The wall tiling is broken in some places and Joint sealant is worn out.

- Provision for Disabled Facilities to be made to comply with SANS 10400 Part S – Facilities for Disabled.

Note: No Toilet for Disabled in this area, which is a requirement as per SANS 10400 Part S – Facilities for Disabled.

Stairs

Main Stairs

The Main Stairs structure remains in a fair condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- The Main Stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be replaced to match aesthetical quality achieved throughout the rest of the building
- Fire Sprinklers and the water piping feeding the sprinklers visible to the underside of the stairs. (see ceilings)

Back of house Stairs

The back of house stairs remains in a structurally sound condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- All back-of-house stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be to be removed and replaced with stainless steel handrail.

Signage

- All fire regulating signage to be replaced. The position of these signs to be indicated by the fire engineer.
- New picogramme guidance signs to regulate public and restrict movement in the Lift Lobby.
- New directional signboard to be erected in the Lift Lobby area.
- All doors to receive name board to indicate occupancy of the room.

General

- All locks to be on a master key system or keyed alike.
- All Fire hose reels and Fire extinguishers to be serviced. Secure extinguishers and signage.
- All fire escape doors and fire escape routes to be confirmed by the Fire Engineer that all conform to the latest fire regulations.
- The entire building does not cater for persons with disabilities.
- All existing shopfrontts, existing ceilings, walls, etc… to be thoroughly cleaned on completion.

Mechanical Works

HVAC:

- Fresh air system not working
- Some indoor units not In working order
- Chilled water piping insulation damaged

Ducting systems:

- Ducting in service ducts in relatively good condition
- Insulation is damaged
- Redundant wall ducting noted

Kitchen equipment:

- N/A

Wet services:

- Hot water piping uninsulated
- Cold water piping is galvanised steel
- Drainage is cast iron, not in good condition
- Geyser in good working order

Sprinklers:

- In good condition and layout

Lifts:

- Lifts in good working order but reaching end of life
- 1 line of call point points not working (Southern Side)

Electrical & Electronics Works

Power skirting

Power skirting installation and conduits were found to be generally concealed. Most part of the power skirting installation was found to be intact and in an acceptable state. Cable were correctly supported through their run.

Light fittings

Similar findings to those from fifth floor.

Switches

Similar findings to those from fifth floor.

Socket outlets

The following types of socket outlets were found on the sixth floor:

- Recessed socket outlet
- Power skirting mounted socket outlets

Socket outlets were found to be adequate for the devices/ equipment needing power in the offices. Socket outlets installations were found to be old and in a fair condition.

None of the socket outlets were found labelled.

Telecommunications and IT

Telephone and data points on this floor seemed to be from the original installations and most of the were functional. However, some of the offices were found to be without the telephone and data connection points.

None of the telecommunication and data points were labelled.

Fire Detection System

Similar observations as those from basement.

Structural works

Refer to the First floor Structural works findings (under section **Error! Reference source not found.**3) for the structural findings of this floor. The structural findings in section **Error! Reference source not found.**3 are applicable to this floor.

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)
- No emergency door keys
- Exposed electrical wiring

- ERW.9
- REF: SANS 10400

Fire Management:

- All in order

- REF: ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- Defective showers facilities and taps
- REF: SANS 0400

Ventilation:

- All in order
- REF: ERW 5

Storage:

- All in order
- REF: GSR 8

Building and Structures:

- Poor maintenance
- No labelling

- REF: SANS10400

2.2.1.8 Seventh floor

Architectural work

Walls

Brick walls

The seventh-floor brick walls are in a fair condition, however existing wall finishes require attention, it is, therefore, recommended that:

- All other walls to be stopped and painted/tiled as per specification.
- A new granite/porcelain wall tiling architrave at the lift doors to enhance the aesthetical perspective of the Lift Lobby to the First Floor. This will also

have a longer lifespan than paints and can be easily cleaned as day-to-day maintenance.

- New S/S corner protectors and Bump Rails to be fitted to areas of high traffic to protect newly refurbish walls from any damage.
- All firewalls above the ceiling to be inspected that fire insulation is still intact and that there is no damage to any insulation which might cause any failure to the fire seal (including all ducting, electrical / data cables, piping, etc…) are present.

Partitioning walls

New partitioning walls with ceiling high windows in passage side only are required.

- Partitioning walls in offices to be replaced. Partitioning to be constructed as per specification and cladded with "High Impact Resistant Grade Plaster Board" to prevent damage to wall caused by office furniture.
- New Stainless-Steel Corner Protectors and Bump Rails to the walls to protect future damage to it once renovations are completed.

Windows

The existing external windows on this floor are aluminium windows, most of which have lost integrity, and are not in compliance with the new the energy requirements as set out in SANS 10400 – Part XA. In addition, the profile of the aluminium window frame does not allow for the house of a double-glazing system that is required to meet the energy efficiency of part XA of the SANS 10400 regulations. Thus, the following is recommended:

- All external window frames to be removed and new double-glazed windows to be fitted to the building to in compliance with SANS 1400 – Part XA.

Sun louvres

The Sun Louvres in front of windows dilapidated. The horizontal slats and framework are loose, while some slats have already fallen from the building. To refurbish these is not possible as the profile of the slats will not be obtainable from the manufacturer anymore It is, therefore, advised that:

- The entire horizontal Sun Louvres system in front of windows be replaced with a new louvre sun control system, all to the specifications of the architect.

Note: [redacted] can potentially be held responsible for any injuries to persons or damage to property caused by the falling of these slats.

Sun louvres

- The Sun Louvres in front of windows are in a state of disrepair. Horizontal slats and framework are loose, and some slats have fallen from the building. This is a concern, as [redacted] will be held responsible for any injuries to persons or damage to property. To renovate these is not possible as the profile of the slats will not be obtainable anymore.
- The entire horizontal Sun Louvres system in front of windows should be replaced with a new louvre sun control system. A powder coating can be done to the aluminium slats to make the external facade more appealing.

Doors

The existing aluminium internal and external doors are sagging and not closing properly, seals are loose and glazing beads are not secure. Due to the irregularly small toilet entrance stalls opening a direct result of narrow passages and door closures that do not allow for the door to open fully at 90° striking the wall tiles causing damage.

- The existing "Bitcon" fire doors to be painted and serviced as per Architects recommendations and Fire engineers' specifications. Fire engineer to approve of this door.
- The existing steel security gate to some of the offices to be removed and replaced with a foldable gate. The existing security gates are an obstruction to the "clear path of travel" to the fire escapes. This is in contradiction with SANS 10400 Part T.
- The existing aluminium internal double door at the Entrance to be replaced with new.
- Duct doors to be replaced with fire doors to comply with the latest fire regulations.
- The existing aluminium doors in the Lift Lobby area to be cleaned and new ironmongery fitted as per door schedule (new locks on the master key system).
- The Fire engineer to advise if the security gate to Office 700A is permittable or not.

Floors

Porcelain Floor Tiles

The existing Porcelain Floor tiles in the lift lobby and surrounding area is in a reasonable condition with a few cracked tiles, but previously repair and maintenance work done has resulted in an ununiformly shaded floor, the skirting has also been damaged.

- All floor finishes to be removed and new floor finishes to be installed as per the architect's specifications and [redacted] s colour scheme.
- Skirting tiles to be replaced and new bottom protector rails to protect skirting tiles and walls

Carpet

Carpets floor tiles are worn out and dirty.

- Install new carpet tiles in offices and other areas. New skirtings to be allowed for in areas receiving new Carpet Tiles.

Vinyl Floor Tiles

Vinyl Floor tiles are worn out with different colours as repair/patchwork performed in the past. Some office areas have Vinyl floor tiles which are not in compliance with [redacted] guidelines and general office design.

- All Vinyl Floor Tiles to be replaced in accordance with the architect's recommendation and specifications.
- All vinyl floor tiles in office areas to be removed and replaced with carpet to architect's recommendation and specifications and [redacted] guidelines and general office design.
- In the passages vinyl to be replaced with porcelain tiles.

Epoxy Flooring

- Ducts to receive an epoxy finish on all floors.

Ceiling

The Existing ceiling installed in Passages. These ceilings old, dirty and do not line up. The existing ceiling Bulkhead in Lift Lobby 1 does not cover the mechanical piping and services.

- The Existing ceilings to be replaced with new suspended ceiling systems and bulkheads to architect's approval in order to conceal all mechanical services and to tie in with the existing ceiling and bulkhead layout that was previously done. Enhance the aesthetical perspective of the building.
- New suspended ceilings in offices without bulkheads in Offices and Passages.

- Duct rooms and Lift Lobby 2 (West) to have painted ceilings as per architect's specifications.
- New plastered ceiling to be fitted to the underside of the Main Stairs in provision for concealing the Fire sprinklers pipework on the underside of the stair.

Joinery

- The 900mm high horizontal ducting below the windows on the external windows to be removed and new worktops with cupboards to be installed where ducting is removed.
- New power skirting to be incorporated in the cupboard design. Repair in all trades.
- New kitchen cupboards in Tea Kitchen area at the back of house.

Sanitary Fittings

Sanitary fittings in all ablutions/toilets facilities are still in a working condition, yet do not meet the objectives of the project and acceptable lifespan.

- In the Tea Kitchen (Back of house – West) area a new sink, worktop with bottom cupboards to be installed. New sanitary fittings throughout.
- In the Cleaner (Back of house – West) area a new slop hopper with broom rack and stainless-steel shelf be installed. New sanitary fittings throughout.
- In the Tea Kitchen (Back of house – West) area a new sink, worktop

Ablutions

All ablutions/toilets facilities are in reasonable condition but do not meet the objectives of the project and acceptable lifespan. The wall tiling is broken in some places and Joint sealant is worn out.

- Provision for Disabled Facilities to be made to comply with SANS 10400 Part S – Facilities for Disabled.

Note: No Toilet for Disabled in this area, which is a requirement as per SANS 10400 Part S – Facilities for Disabled.

Stairs

Main Stairs

The Main Stairs structure remains in a fair condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- The Main Stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be replaced to match aesthetical quality achieved throughout the rest of the building
- Fire Sprinklers and the water piping feeding the sprinklers visible to the underside of the stairs. (see ceilings)

Back of house Stairs

The back of house stairs remains in a structurally sound condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- All back-of-house stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be to be removed and replaced with stainless steel handrail.

Signage

- All fire regulating signage to be replaced. The position of these signs to be indicated by the fire engineer.
- New picogramme guidance signs to regulate public and restrict movement in the Lift Lobby.
- New directional signboard to be erected in the Lift Lobby area.
- All doors to receive name board to indicate occupancy of the room.

General

- This floor is currently occupied by various tenants. Office configuration was done to their individual needs.
- All locks to be on a master key system or keyed alike.
- All Fire hose reels and Fire extinguishers to be serviced. Secure extinguishers and signage.
- All fire escape doors and fire escape routes to be confirmed by the Fire Engineer that all conform to the latest fire regulations.
- The entire building does not cater for persons with disabilities.
- All existing shopfronts, existing ceilings, walls, etc… to be thoroughly cleaned on completion.

Mechanical Works

HVAC:

- Fresh air system not working
- Some indoor units not in working order
- Chilled water piping insulation damaged

Ducting systems:

- Ducting in service ducts in relatively good condition
- Insulation is damaged
- Redundant wall ducting noted

Kitchen equipment:

- N/A

Wet services:

- Hot water piping uninsulated
- Cold water piping is galvanised steel
- Drainage is cast iron, not in good condition
- Geyser in good working order

Sprinklers:

- In good condition and layout

Lifts:

- Lifts in good working order but reaching end of life
- 1 line of call point points not working (Southern Side)

Electrical & Electronics Works

See discussions on Floor 5.

Structural works

Refer to the First floor Structural works findings (under section 2.2.1.3) for the structural findings of this floor. The structural findings in section 2.2.1.3 are applicable to this floor.

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)
- Emergency signages and notices damaged

- ERW.9
- REF: SANS 10400

Fire Management:

- All in order
- REF: ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- All in order
- REF: SANS 0400

Ventilation:

- All in order

- REF: ERW 5

Storage:

- All in order
- REF: GSR 8

Building and Structures:

- Poor maintenance, exposed electrical wires

- REF: SANS10400

2.2.1.9 Eighth floor

Architectural work

Walls
Brick walls

The eighth-floor brick walls are in a fair condition, however existing wall finishes require attention, it is, therefore, recommended that:

- All other walls to be stopped and painted/tiled as per specification.
- A new granite/porcelain wall tiling architrave at the lift doors to enhance the aesthetical perspective of the Lift Lobby to the First Floor. This will also

have a longer lifespan than paints and can be easily cleaned as day-to-day maintenance.

- New S/S corner protectors and Bump Rails to be fitted to areas of high traffic to protect newly refurbish walls from any damage.
- All firewalls above the ceiling to be inspected that fire insulation is still intact and that there is no damage to any insulation which might cause any failure to the fire seal (including all ducting, electrical / data cables, piping, etc…) are present.

Partitioning walls

New partitioning walls with ceiling high windows in passage side only are required.

- Partitioning walls in offices to be replaced. Partitioning to be constructed as per specification and cladded with "High Impact Resistant Grade Plaster Board" to prevent damage to wall caused by office furniture.
- New Stainless-Steel Corner Protectors and Bump Rails to the walls to protect future damage to it once renovations are completed.

Windows

The existing external windows on this floor are aluminium windows, most of which have lost integrity, and are not in compliance with the new the energy requirements as set out in SANS 10400 – Part XA. In addition, the profile of the aluminium window frame does not allow for the house of a double-glazing system that is required to meet the energy efficiency of part XA of the SANS 10400 regulations. Thus, the following is recommended:

- All external window frames to be removed and new double-glazed windows to be fitted to the building to in compliance with SANS 1400 – Part XA.

Sun louvres

- The Sun Louvres in front of windows are in a state of disrepair. Horizontal slats and framework are loose, and some slats have fallen from the building. This is a concern, as [redacted] will be held responsible for any injuries to persons or damage to property. To renovate these is not possible as the profile of the slats will not be obtainable anymore.
- The entire horizontal Sun Louvres system in front of windows should be replaced with a new louvre sun control system. A powder coating can be done to the aluminium slats to make the external facade more appealing.

Sun louvres

- The Sun Louvres in front of windows are in a state of disrepair. Horizontal slats and framework are loose, and some slats have fallen from the building. This is a concern, as [redacted] will be held responsible for any injuries to persons or damage to property. To renovate these is not possible as the profile of the slats will not be obtainable anymore.
- The entire horizontal Sun Louvres system in front of windows should be replaced with a new louvre sun control system. A powder coating can be done to the aluminium slats to make the external facade more appealing.

Doors

The existing aluminium internal and external doors are sagging and not closing properly, seals are loose and glazing beads are not secure. Due to the irregularly small toilet entrance stalls opening a direct result of narrow passages and door closures that do not allow for the door to open fully at 90° striking the wall tiles causing damage.

- The existing "Bitcon" fire doors to be painted and serviced as per Architects recommendations and Fire engineers' specifications. Fire engineer to approve of this door.

- The existing steel security gate to some of the offices to be removed and replaced with a foldable gate. The existing security gates are an obstruction to the "clear path of travel" to the fire escapes. This is in contradiction with SANS 10400 Part T.
- The existing aluminium internal double door at the Entrance to be replaced with new.
- Duct doors to be replaced with fire doors to comply with the latest fire regulations.
- The existing aluminium doors in the Lift Lobby area to be cleaned and new ironmongery fitted as per door schedule (new locks on the master key system).
- The Fire engineer to advise if the security gate to Office 800A&B is permittable or not.

Floors

Porcelain Floor Tiles

The existing Porcelain Floor tiles in the lift lobby and surrounding area is in a reasonable condition with a few cracked tiles, but previously repair and maintenance work done has resulted in an ununiformly shaded floor, the skirting has also been damaged.

- All floor finishes to be removed and new floor finishes to be installed as per the architect's specifications and [redacted]'s colour scheme.
- Skirting tiles to be replaced and new bottom protector rails to protect skirting tiles and walls

Carpet

Carpets floor tiles are worn out and dirty.

- Install new carpet tiles in offices and other areas. New skirtings to be allowed for in areas receiving new Carpet Tiles.

Vinyl Floor Tiles

Vinyl Floor tiles are worn out with different colours as repair/patchwork performed in the past. Some office areas have Vinyl floor tiles which are not in compliance with [redacted] guidelines and general office design.

- All Vinyl Floor Tiles to be replaced in accordance with the architect's recommendation and specifications.
- All vinyl floor tiles in office areas to be removed and replaced with carpet to architect's recommendation and specifications and [redacted] guidelines and general office design
- In the passages vinyl to be replaced with porcelain tiles.

Epoxy Flooring

- Ducts to receive an epoxy finish on all floors.

Ceiling

The Existing ceiling installed in Passages. These ceilings old, dirty and do not line up. The existing ceiling Bulkhead in Lift Lobby 1 does not cover the mechanical piping and services.

- The Existing ceilings to be replaced with new suspended ceiling systems and bulkheads to architect's approval in order to conceal all mechanical services and to tie in with the existing ceiling and bulkhead layout that was previously done. Enhance the aesthetical perspective of the building.
- New suspended ceilings in offices without bulkheads in Offices and Passages.
- Duct rooms and Lift Lobby 2 (West) to have painted ceilings as per architect's specifications.

- New plastered ceiling to be fitted to the underside of the Main Stairs in provision for concealing the Fire sprinklers pipework on the underside of the stair.

Joinery

- The 900mm high horizontal ducting below the windows on the external windows to be removed and new worktops with cupboards to be installed where ducting is removed.
- New power skirting to be incorporated in the cupboard design. Repair in all trades.
- New kitchen cupboards in Tea Kitchen area at the back of house.

Sanitary Fittings

Sanitary fittings in all ablutions/toilets facilities are still in a working condition, yet do not meet the objectives of the project and acceptable lifespan.

- In the Tea Kitchen (Back of house – West) area a new sink, worktop with bottom cupboards to be installed. New sanitary fittings throughout.
- In the Cleaner (Back of house – West) area a new slop hopper with broom rack and stainless-steel shelf be installed. New sanitary fittings throughout.
- In the Tea Kitchen (Back of house – West) area a new sink, worktop.

Ablutions

All ablutions/toilets facilities are in reasonable condition but do not meet the objectives of the project and acceptable lifespan. The wall tiling is broken in some places and Joint sealant is worn out.

- Provision for Disabled Facilities to be made to comply with SANS 10400 Part S – Facilities for Disabled.

Note: No Toilet for Disabled in this area, which is a requirement as per SANS 10400 Part S – Facilities for Disabled.

Stairs

Main Stairs

The Main Stairs structure remains in a fair condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- The Main Stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be replaced to match aesthetical quality achieved throughout the rest of the building
- Fire Sprinklers and the water piping feeding the sprinklers visible to the underside of the stairs. (see ceilings)

Back of house Stairs

The back of house stairs remains in a structurally sound condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- All back-of-house stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be to be removed and replaced with stainless steel handrail.

Signage

- All fire regulating signage to be replaced. The position of these signs to be indicated by the fire engineer.
- New picogramme guidance signs to regulate public and restrict movement in the Lift Lobby.
- New directional signboard to be erected in the Lift Lobby area.
- All doors to receive name board to indicate occupancy of the room.

General

- This floor is currently occupied by various tenants. Office configuration was done to their individual needs.
- All locks to be on a master key system or keyed alike.
- All Fire hose reels and Fire extinguishers to be serviced. Secure extinguishers and signage.
- All fire escape doors and fire escape routes to be confirmed by the Fire Engineer that all conform to the latest fire regulations.
- The entire building does not cater for persons with disabilities.
- All existing shopfronts, existing ceilings, walls, etc… to be thoroughly cleaned on completion.

Mechanical Works

HVAC:

- Fresh air system not working
- Some indoor units not In working order
- Chilled water piping insulation damaged

Ducting systems:

- Ducting in service ducts in relatively good condition
- Insulation is damaged
- Redundant wall ducting noted

Kitchen equipment:

- N/A

Wet services:

- Hot water piping uninsulated
- Cold water piping is galvanised steel
- Drainage is cast iron, not in good condition
- Geyser in good working order

Sprinklers:

- In good condition and layout

Lifts:

- Lifts in good working order but reaching end of life
- 1 line of call point points not working (Southern Side)

Electrical & Electronics Works

See discussions on Floor 5.

Structural works

Refer to the First floor Structural works findings (under section 2.2.1.3) for the structural findings of this floor. The structural findings in section 2.2.1.3 are applicable to this floor.

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)
- REF: SANS 10400

Fire Management:

- Signages and notices in place

- REF: SANS 10400

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- All in order
- REF: SANS 0400

Ventilation:

- All in order
- REF: ERW 5

Storage:

- All in order
- REF: GSR 8

Building and Structures:

- Poor maintenance, renovation is needed
- REF: SANS10400

2.2.1.10 Ninth floor

Architectural work

Walls

Brick walls

The ninth floor brick walls are in a fair condition, however existing wall finishes require attention, it is, therefore, recommended that:

- All other walls to be stopped and painted/tiled as per specification.
- A new granite/porcelain wall tiling architrave at the lift doors to enhance the aesthetical perspective of the Lift Lobby to the First Floor. This will also have a longer lifespan than paints and can be easily cleaned as day-to-day maintenance.
- New S/S corner protectors and Bump Rails to be fitted to areas of high traffic to protect newly refurbish walls from any damage.
- All firewalls above the ceiling to be inspected that fire insulation is still intact and that there is no damage to any insulation which might cause any failure to the fire seal (including all ducting, electrical / data cables, piping, etc…) are present.

Partitioning walls

New partitioning walls with ceiling high windows in passage side only are required.

- Partitioning walls in offices to be replaced. Partitioning to be constructed as per specification and cladded with "High Impact Resistant Grade Plaster Board" to prevent damage to wall caused by office furniture.
- New Stainless-Steel Corner Protectors and Bump Rails to the walls to protect future damage to it once renovations are completed.

Windows

The existing external windows on this floor are aluminium windows, most of which have lost integrity, and are not in compliance with the new the energy requirements as set out in SANS 10400 – Part XA. In addition, the profile of the aluminium window frame does not allow for the house of a double-glazing system that is required to meet the energy efficiency of part XA of the SANS 10400 regulations. Thus, the following is recommended:

- All external window frames to be removed and new double-glazed windows to be fitted to the building to in compliance with SANS 1400 – Part XA.

Sun louvres

- The Sun Louvres in front of windows are in a state of disrepair. Horizontal slats and framework are loose, and some slats have fallen from the building. This is a concern, as [redacted] will be held responsible for any injuries to persons or damage to property. To renovate these is not possible as the profile of the slats will not be obtainable anymore.
- The entire horizontal Sun Louvres system in front of windows should be replaced with a new louvre sun control system. A powder coating can be done to the aluminium slats to make the external facade more appealing.

Doors

The existing aluminium internal and external doors are sagging and not closing properly, seals are loose and glazing beads are not secure. Due to the irregularly small toilet entrance stalls opening a direct result of narrow passages and door closures that do not allow for the door to open fully at 90° striking the wall tiles causing damage.

- The existing "Bitcon" fire doors to be painted and serviced as per Architects recommendations and Fire engineers' specifications. Fire engineer to approve of this door.
- The existing steel security gate to some of the offices to be removed and replaced with a foldable gate. The existing security gates are an obstruction to the "clear path of travel" to the fire escapes. This is in contradiction with SANS 10400 Part T.
- The existing aluminium internal double door at the Entrance to be replaced with new.
- Duct doors to be replaced with fire doors to comply with the latest fire regulations.
- The existing aluminium doors in the Lift Lobby area to be cleaned and new ironmongery fitted as per door schedule (new locks on the master key system).
- The Fire engineer to advise if the security gate to Office 800A&B is permittable or not.

Floors

Porcelain Floor Tiles

The existing Porcelain Floor tiles in the lift lobby and surrounding area is in a reasonable condition with a few cracked tiles, but previously repair and maintenance work done has resulted in an ununiformly shaded floor, the skirting has also been damaged.

- All floor finishes to be removed and new floor finishes to be installed as per the architect's specifications and [redacted] s colour scheme.

- Skirting tiles to be replaced and new bottom protector rails to protect skirting tiles and walls

Carpet

Carpets floor tiles are worn out and dirty.

- Install new carpet tiles in offices and other areas. New skirtings to be allowed for in areas receiving new Carpet Tiles.

Vinyl Floor Tiles

Vinyl Floor tiles are worn out with different colours as repair/patchwork performed in the past. Some office areas have Vinyl floor tiles which are not in compliance with [redacted] guidelines and general office design.

- All Vinyl Floor Tiles to be replaced in accordance with the architect's recommendation and specifications.
- All vinyl floor tiles in office areas to be removed and replaced with carpet to architect's recommendation and specifications and [redacted] guidelines and general office design
- In the passages vinyl to be replaced with porcelain tiles.

Epoxy Flooring

- Ducts to receive an epoxy finish on all floors.

Ceiling

The Existing ceiling installed in Passages. These ceilings old, dirty and do not line up. The existing ceiling Bulkhead in Lift Lobby 1 does not cover the mechanical piping and services.

- The Existing ceilings to be replaced with new suspended ceiling systems and bulkheads to architect's approval in order to conceal all mechanical

services and to tie in with the existing ceiling and bulkhead layout that was previously done. Enhance the aesthetical perspective of the building.

- New suspended ceilings in offices without bulkheads in Offices and Passages.
- Duct rooms and Lift Lobby 2 (West) to have painted ceilings as per architect's specifications.
- New plastered ceiling to be fitted to the underside of the Main Stairs in provision for concealing the Fire sprinklers pipework on the underside of the stair.

Joinery

- The 900mm high horizontal ducting below the windows on the external windows to be removed and new worktops with cupboards to be installed where ducting is removed.
- New power skirting to be incorporated in the cupboard design. Repair in all trades.
- New kitchen cupboards in Tea Kitchen area at the back of house.

Sanitary Fittings

Sanitary fittings in all ablutions/toilets facilities are still in a working condition, yet do not meet the objectives of the project and acceptable lifespan.

- In the Tea Kitchen (Back of house – West) area a new sink, worktop with bottom cupboards to be installed. New sanitary fittings throughout.
- In the Cleaner (Back of house – West) area a new slop hopper with broom rack and stainless-steel shelf be installed. New sanitary fittings throughout.
- In the Tea Kitchen (Back of house – West) area a new sink, worktop

Ablutions

All ablutions/toilets facilities are in reasonable condition but do not meet the objectives of the project and acceptable lifespan. The wall tiling is broken in some places and Joint sealant is worn out.

- Provision for Disabled Facilities to be made to comply with SANS 10400 Part S – Facilities for Disabled.

Note: No Toilet for Disabled in this area, which is a requirement as per SANS 10400 Part S – Facilities for Disabled.

Stairs

Main Stairs

The Main Stairs structure remains in a fair condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- The Main Stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be replaced to match aesthetical quality achieved throughout the rest of the building
- Fire Sprinklers and the water piping feeding the sprinklers visible to the underside of the stairs. (see ceilings)

Back of house Stairs

The back of house stairs remains in a structurally sound condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- All back-of-house stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be to be removed and replaced with stainless steel handrail.

Signage

- All fire regulating signage to be replaced. The position of these signs to be indicated by the fire engineer.
- New picogramme guidance signs to regulate public and restrict movement in the Lift Lobby.
- New directional signboard to be erected in the Lift Lobby area.
- All doors to receive name board to indicate occupancy of the room.

General

- This floor is currently occupied by various tenants. Office configuration was done to their individual needs.
- All locks to be on a master key system or keyed alike.
- All Fire hose reels and Fire extinguishers to be serviced. Secure extinguishers and signage.
- All fire escape doors and fire escape routes to be confirmed by the Fire Engineer that all conform to the latest fire regulations.
- The entire building does not cater for persons with disabilities.
- All existing shopfronts, existing ceilings, walls, etc… to be thoroughly cleaned on completion.

Mechanical Works

HVAC:

- Fresh air system not working
- Some indoor units not in working order
- Chilled water piping insulation damaged

Ducting systems:

- Ducting in service ducts in relatively good condition
- Insulation is damaged
- Redundant wall ducting noted

Kitchen equipment:

- N/A

Wet services:

- Hot water piping uninsulated
- Cold water piping is galvanised steel
- Drainage is cast iron, not in good condition
- Geyser in good working order

Sprinklers:

- In good condition and layout

Lifts:

- Lifts in good working order but reaching end of life
- 1 line of call point points not working (Southern Side)

Electrical & Electronics Works

See discussions on Floor 5.

Structural works

Refer to the First floor Structural works findings (under section 2.2.1.3for the structural findings of this floor. The structural findings in section 2.2.1.3 are applicable to this floor.

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)
- REF: SANS 10400

Fire Management:

- All in order
- REF: ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- All in order
- REF: SANS 0400

Ventilation:

- All in order
- REF: ERW 5

Storage:

- All in order
- REF: GSR 8

2.2.1.11 Tenth floor

Architectural work

Walls

Brick walls

The tenth-floor brick walls are in a fair condition, however existing wall finishes require attention, it is, therefore, recommended that:

- All other walls to be stopped and painted/tiled as per specification.

- A new granite/porcelain wall tiling architrave at the lift doors to enhance the aesthetical perspective of the Lift Lobby to the First Floor. This will also have a longer lifespan than paints and can be easily cleaned as day-to-day maintenance.
- New S/S corner protectors and Bump Rails to be fitted to areas of high traffic to protect newly refurbish walls from any damage.
- All firewalls above the ceiling to be inspected that fire insulation is still intact and that there is no damage to any insulation which might cause any failure to the fire seal (including all ducting, electrical / data cables, piping, etc…) are present.

Partitioning walls

New partitioning walls with ceiling high windows in passage side only are required.

- Partitioning walls in offices to be replaced. Partitioning to be constructed as per specification and cladded with "High Impact Resistant Grade Plaster Board" to prevent damage to wall caused by office furniture.
- New Stainless-Steel Corner Protectors and Bump Rails to the walls to protect future damage to it once renovations are completed.

Windows

The existing external windows on this floor are aluminium windows, most of which have lost integrity, and are not in compliance with the new the energy requirements as set out in SANS 10400 – Part XA. In addition, the profile of the aluminium window frame does not allow for the house of a double-glazing system that is required to meet the energy efficiency of part XA of the SANS 10400 regulations. Thus, the following is recommended:

- All external window frames to be removed and new double-glazed windows to be fitted to the building to in compliance with SANS 1400 – Part XA.

Sun louvres

- The Sun Louvres in front of windows are in a state of disrepair. Horizontal slats and framework are loose, and some slats have fallen from the building. This is a concern, as [redacted] will be held responsible for any injuries to persons or damage to property. To renovate these is not possible as the profile of the slats will not be obtainable anymore.
- The entire horizontal Sun Louvres system in front of windows should be replaced with a new louvre sun control system. A powder coating can be done to the aluminium slats to make the external facade more appealing.

Doors

The existing aluminium internal and external doors are sagging and not closing properly, seals are loose and glazing beads are not secure. Due to the irregularly small toilet entrance stalls opening a direct result of narrow passages and door closures that do not allow for the door to open fully at 90º striking the wall tiles causing damage.

- The existing "Bitcon" fire doors to be painted and serviced as per Architects recommendations and Fire engineers' specifications. Fire engineer to approve of this door.
- The existing steel security gate to some of the offices to be removed and replaced with a foldable gate. The existing security gates are an obstruction to the "clear path of travel" to the fire escapes. This is in contradiction with SANS 10400 Part T.
- The existing aluminium internal double door at the Entrance to be replaced with new.
- Duct doors to be replaced with fire doors to comply with the latest fire regulations.

- The existing aluminium doors in the Lift Lobby area to be cleaned and new ironmongery fitted as per door schedule (new locks on the master key system).

Floors

Construction Joint

A new construction joint in the floor at the double aluminium door to the offices is needed.

- The Structural Engineer first to determine the cause of this movement before any further work commences.
- Once remedial work is completed the new construction joint to be installed flush with the finished floor level.

Porcelain Floor Tiles

The existing Porcelain Floor tiles in the lift lobby and surrounding area is in a reasonable condition with a few cracked tiles, but previously repair and maintenance work done has resulted in an ununiformly shaded floor, the skirting has also been damaged.

- All floor finishes to be removed and new floor finishes to be installed as per the architect's specifications and [redacted] s colour scheme.
- Skirting tiles to be replaced and new bottom protector rails to protect skirting tiles and walls

Carpet

Carpets floor tiles are worn out and dirty.

- Install new carpet tiles in offices and other areas. New skirtings to be allowed for in areas receiving new Carpet Tiles.

Vinyl Floor Tiles

Vinyl Floor tiles are worn out with different colours as repair/patchwork performed in the past. Some office areas have Vinyl floor tiles which are not in compliance with [redacted] guidelines and general office design.

- All Vinyl Floor Tiles to be replaced in accordance with the architect's recommendation and specifications.
- All vinyl floor tiles in office areas to be removed and replaced with carpet to architect's recommendation and specifications and [redacted] guidelines and general office design
- In the passages vinyl to be replaced with porcelain tiles.

Epoxy Flooring

- Ducts to receive an epoxy finish on all floors.

Ceiling

The Existing ceiling installed in Passages. These ceilings old, dirty and do not line up. The existing ceiling Bulkhead in Lift Lobby 1 does not cover the mechanical piping and services.

- The Existing ceilings to be replaced with new suspended ceiling systems and bulkheads to architect's approval in order to conceal all mechanical services and to tie in with the existing ceiling and bulkhead layout that was previously done. Enhance the aesthetical perspective of the building.
- New suspended ceilings in offices without bulkheads in Offices and Passages.
- Duct rooms and Lift Lobby 2 (West) to have painted ceilings as per architect's specifications.
- New plastered ceiling to be fitted to the underside of the Main Stairs in provision for concealing the Fire sprinklers pipework on the underside of the stair.

Joinery

- The 900mm high horizontal ducting below the windows on the external windows to be removed and new worktops with cupboards to be installed where ducting is removed.
- New power skirting to be incorporated in the cupboard design. Repair in all trades.
- New kitchen cupboards in Tea Kitchen area at the back of house.

Sanitary Fittings

Sanitary fittings in all ablutions/toilets facilities are still in a working condition, yet do not meet the objectives of the project and acceptable lifespan.

- In the Tea Kitchen (Back of house – West) area a new sink, worktop with bottom cupboards to be installed. New sanitary fittings throughout.
- In the Cleaner (Back of house – West) area a new slop hopper with broom rack and stainless-steel shelf be installed. New sanitary fittings throughout.
- In the Tea Kitchen (Back of house – West) area a new sink, worktop,

Ablutions

All ablutions/toilets facilities are in reasonable condition but do not meet the objectives of the project and acceptable lifespan. The wall tiling is broken in some places and Joint sealant is worn out.

- Provision for Disabled Facilities to be made to comply with SANS 10400 Part S – Facilities for Disabled.

Note: No Toilet for Disabled in this area, which is a requirement as per SANS 10400 Part S – Facilities for Disabled.

Stairs

Main Stairs

The Main Stairs structure remains in a fair condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- The Main Stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be replaced to match aesthetical quality achieved throughout the rest of the building
- Fire Sprinklers and the water piping feeding the sprinklers visible to the underside of the stairs. (see ceilings)

Back of house Stairs

The back of house stairs remains in a structurally sound condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- All back-of-house stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be to be removed and replaced with stainless steel handrail.

Signage

- All fire regulating signage to be replaced. The position of these signs to be indicated by the fire engineer.
- New picogramme guidance signs to regulate public and restrict movement in the Lift Lobby.
- New directional signboard to be erected in the Lift Lobby area.
- All doors to receive name board to indicate occupancy of the room.

General

- All locks to be on a master key system or keyed alike.
- All Fire hose reels and Fire extinguishers to be serviced. Secure extinguishers and signage.
- All fire escape doors and fire escape routes to be confirmed by the Fire Engineer that all conform to the latest fire regulations.
- The entire building does not cater for persons with disabilities.
- All existing shopfronts, existing ceilings, walls, etc… to be thoroughly cleaned on completion.

Mechanical Works

HVAC:

- Fresh air system not working
- Some indoor units not in working order
- Chilled water piping insulation damaged

Ducting systems:

- Ducting in service ducts in relatively good condition
- Insulation is damaged
- Redundant wall ducting noted

Kitchen equipment:

- N/A

Wet services:

- Hot water piping uninsulated
- Cold water piping is galvanised steel
- Drainage is cast iron, not in good condition
- Geyser in good working order

Sprinklers:

- In good condition and layout

Lifts:

- Lifts in good working order but reaching end of life
- 1 line of call point points not working (Southern Side)

Electrical & Electronics Works

See discussions on Floor 5.

Structural works

Refer to the First floor Structural works findings (under section 2.2.1.3) for the structural findings of this floor. The structural findings in section 2.2.1.3 are applicable to this floor.

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)
- REF: SANS 10400

Fire Management:

- All in order
- REF: ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- All in order
- REF: SANS 0400

Ventilation:

- All in order
- REF: ERW 5

Storage:

- All in order
- REF: GSR 8

2.2.1.12 Eleventh floor

Architectural work

Walls
Brick walls

The eleventh-floor brick walls are in a fair condition, however existing wall finishes require attention, it is, therefore, recommended that:

- All other walls to be stopped and painted/tiled as per specification.
- A new granite/porcelain wall tiling architrave at the lift doors to enhance the aesthetical perspective of the Lift Lobby to the First Floor. This will also have a longer lifespan than paints and can be easily cleaned as day-to-day maintenance.
- New S/S corner protectors and Bump Rails to be fitted to areas of high traffic to protect newly refurbish walls from any damage.
- All firewalls above the ceiling to be inspected that fire insulation is still intact and that there is no damage to any insulation which might cause any failure to the fire seal (including all ducting, electrical / data cables, piping, etc…) are present.

Partitioning walls

This floor has been prepared for specific tenant requirements. The partitioning walls and doors are in very good condition. Client to advise if the partitioning

should be changed or be left "as-is". The assumption hereunder is that the floor layout is left as is.

- The existing partitioning walls to be protected during remedial work being executed. It will be the contractor's responsibility to protect and repair damage to the existing partitioning walls. Walls and glass to be cleaned on completion.

Windows

The existing external windows on this floor are aluminium windows, most of which have lost integrity, and are not in compliance with the new the energy requirements as set out in SANS 10400 – Part XA. In addition, the profile of the aluminium window frame does not allow for the house of a double-glazing system that is required to meet the energy efficiency of part XA of the SANS 10400 regulations. Thus, the following is recommended:

- All external window frames to be removed and new double-glazed windows to be fitted to the building to in compliance with SANS 1400 – Part XA.

Sun louvres

- The Sun Louvres in front of windows are in a state of disrepair. Horizontal slats and framework are loose, and some slats have fallen from the building. This is a concern, as [redacted] will be held responsible for any injuries to persons or damage to property. To renovate these is not possible as the profile of the slats will not be obtainable anymore.

- The entire horizontal Sun Louvres system in front of windows should be replaced with a new louvre sun control system. A powder coating can be done to the aluminium slats to make the external facade more appealing.

Doors

The existing aluminium internal and external doors are sagging and not closing properly, seals are loose and glazing beads are not secure. Due to the irregularly small toilet entrance stalls opening a direct result of narrow passages and door closures that do not allow for the door to open fully at 90° striking the wall tiles causing damage.

- The existing "Bitcon" fire doors to be painted and serviced as per Architects recommendations and Fire engineers' specifications. Fire engineer to approve of this door.
- The existing steel security gate to some of the offices to be removed and replaced with a foldable gate. The existing security gates are an obstruction to the "clear path of travel" to the fire escapes. This is in contradiction with SANS 10400 Part T.
- The existing aluminium internal double door at the Entrance to be replaced with new.
- Duct doors to be replaced with fire doors to comply with the latest fire regulations.
- The existing aluminium doors in the Lift Lobby area to be cleaned and new ironmongery fitted as per door schedule (new locks on the master key system).

Floors

Porcelain Floor Tiles

The existing Porcelain Floor tiles in the lift lobby and surrounding area is in a reasonable condition with a few cracked tiles, but previously repair and maintenance work done has resulted in an ununiformly shaded floor, the skirting has also been damaged.

- All floor finishes to be removed and new floor finishes to be installed as per the architect's specifications and [redacted] s colour scheme.

- Skirting tiles to be replaced and new bottom protector rails to protect skirting tiles and walls

Carpet

The existing carpets are in a fair condition but will need replacement on completion of the construction work carried out.

New carpets to be installed after all work has been completed.

Vinyl Floor Tiles

Existing vinyl floor tiles in the Cleaner store and Tea Kitchen areas are worn out at the back of house.

- Vinyl Floor Tiles to be replaced with full bodied porcelain tiles.

Epoxy Flooring

- Ducts to receive an epoxy finish on all floors.

Ceiling

The Existing ceiling installed in Passages. These ceilings old dirty and do not line up. The existing ceiling Bulkhead in Lift Lobby 1 does not cover the mechanical piping and services.

- The Existing ceilings to be replaced with new suspended ceiling systems and bulkheads to architect's approval in order to conceal all mechanical services and to tie in with the existing ceiling and bulkhead layout that was previously done. Enhance the aesthetical perspective of the building.
- New suspended ceilings in offices without bulkheads in Offices and Passages.
- Duct rooms and Lift Lobby 2 (West) to have painted ceilings as per architect's specifications.

- New plastered ceiling to be fitted to the underside of the Main Stairs in provision for concealing the Fire sprinklers pipework on the underside of the stair.

Joinery

- New kitchen cupboards in kitchenette area (see Sanitary Fittings).
- New kitchen layout to the Eastern side Kitchen.

Sanitary Fittings

Sanitary fittings in all ablutions/toilets facilities are still in a working condition, yet do not meet the objectives of the project and acceptable lifespan.

- In the Tea Kitchen (Back of house – West) area a new sink, worktop with bottom cupboards to be installed. New sanitary fittings throughout.
- In the Cleaner (Back of house – West) area a new slop hopper with broom rack and stainless-steel shelf be installed. New sanitary fittings throughout.
- In the Tea Kitchen (Back of house – West) area a new sink, worktop

Ablutions

All ablutions/toilets facilities are in reasonable condition but do not meet the objectives of the project and acceptable lifespan. The wall tiling is broken in some places and Joint sealant is worn out.

- Provision for Disabled Facilities to be made to comply with SANS 10400 Part S – Facilities for Disabled.

Note: No Toilet for Disabled in this area, which is a requirement as per SANS 10400 Part S – Facilities for Disabled.

Stairs

Main Stairs

The Main Stairs is in a fair condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- The Main Stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be replaced to match aesthetical quality achieved throughout the rest of the building
- Fire Sprinklers and the water piping feeding the sprinklers visible to the underside of the stairs. (see ceilings)

Back of house Stairs

The back of house stairs remains in a good condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- All back-of-house stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be to be removed and replaced with stainless steel handrail.

Signage

- All fire regulating signage to be replaced. The position of these signs to be indicated by the fire engineer.
- New picogramme guidance signs to regulate public and restrict movement in the Lift Lobby.
- New directional signboard to be erected in the Lift Lobby area.
- All doors to receive name board to indicate occupancy of the room.

General

- The shopfront partitioning present is still in very good condition. It is however furnished for specific tenant requirements. Options available are to furnish this floor to a generic layout (32 offices) or leave as is and find tenants that might find this layout suitable. The assumption hereunder is that the floor layout is left as is.
- All locks to be on a master key system or keyed alike.
- All Fire hose reels and Fire extinguishers to be serviced. Secure extinguishers and signage.
- All fire escape doors and fire escape routes to be confirmed by the Fire Engineer that all conform to the latest fire regulations.
- The entire building does not cater for persons with disabilities.
- All existing shopfronts, existing ceilings, walls, etc… to be thoroughly cleaned on completion.

Mechanical Works

HVAC:

- Fresh air system not working
- Some indoor units not In working order
- Chilled water piping insulation damaged

Ducting systems:

- Ducting in service ducts in relatively good condition
- Insulation is damaged
- Redundant wall ducting noted

Kitchen equipment:

- N/A

Wet services:

- Hot water piping uninsulated
- Cold water piping is galvanised steel
- Drainage is cast iron, not in good condition
- Geyser in good working order

Sprinklers:

- In good condition and layout

Lifts:

- Lifts in good working order but reaching end of life
- 1 line of call point points not working (Southern Side)

Electrical & Electronics Works

Power skirting

Power skirting and conduits were found to be generally concealed. Power skirting installation was found to be intact and considered safe and in an acceptable state. Cables were found to be correctly supported through their run.

Light Fittings

The following types of light fittings were found on the eleventh floor:

- T8 LED surface mounted light fittings
- LED downlight

Light fitting located on the vacant open plan floor were found to be in relitively new as they were installed during the refurbishment that was recently done by [redacted] The lux levels measured in these areas were ranging between 650 lux and 800 lux due to the high level of natural level of sun light.

Switches

The following types of switching devices were found on the eleventh floor:

- Single lever light switch
- Dimmable single lever light switch
- Motion sensor
- Isolators

Motion sensors and isolators were labelled.

Single lever light switch located in ducts on floors one to eleven were outdated.

Socket outlets

The following types of socket outlets were found on the eleventh floor:

- Surface-mounted socket outlet
- Recessed socket outlet
- Power skirting mounted socket outlets

The recently installed socket outlets were found to be adequate considering the number of the units installed in each of the unoccupied office space. The installation was therefore deemed safe and acceptable.

Telecommunication and IT

There is no telephone and data points in the floor.

Fire Detection System

Similar findings to those from the ground floor.

Structural works

Refer to the First floor Structural works findings (under section 2.2.1.3) for the structural findings of this floor. The structural findings in section 2.2.1.3 are applicable to this floor.

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)
- REF: SANS 10400

Fire Management:

- All in order
- REF: ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- All in order
- REF: SANS 0400

Ventilation:

- All in order
- REF: ERW 5

Storage:

- All in order
- REF: GSR 8

2.2.1.13 Twelfth floor (Roof)

Architectural work

Walls
Brick walls

The brick walls are in a fair condition, it is, however, recommended that:

- All other walls to be stopped and painted/tiled as per specification.
- New S/S corner protectors and Bump Rails to be fitted to areas of high traffic to protect newly refurbish walls from any damage.
- All firewalls above the ceiling to be inspected that fire insulation is still intact and that there is no damage to any insulation which might cause any failure to the fire seal (including all ducting, electrical / data cables, piping, etc…) are present.

Windows

The existing external windows on this floor are aluminium windows, most of which have lost integrity, and are not in compliance with the new the energy requirements as set out in SANS 10400 – Part XA. In addition, the profile of the aluminium window frame does not allow for the house of a double-glazing system that is required to meet the energy efficiency of part XA of the SANS 10400 regulations. Thus, the following is recommended:

- All external window frames to be removed and new double-glazed windows to be fitted to the building to in compliance with SANS 1400 – Part XA.

Sun louvres

No Sun Louvres fitted on this level.

- It is recommended that new Sun Louvres be taken to this level to protect the windows against sun and to keep design uniformity.

Doors

Most of the steel doors frames are still in good conditions and just would require refinishing, but in certain areas, they require complete replacement. All timber doors are either in a poor condition to be reused or substandard door spec, all the existing aluminium internal and external doors are sagging and not closing properly, seals loose and glazing beads are not secure. In addition, all aluminium external doors frames do not comply with SANS 1400 – Part XA energy regulations. It is, therefore, recommended that:

- New semi-solid timber doors to be fitted with specified ironmonger and accessories as per specifications. (Fire engineer to advise if Fire doors to the Lift Plantroom 1 are required).

- The existing aluminium internal and external doors to be replaced with new, external doors to comply with SANS 10400 – Part XA.
- The steel security gate on the external aluminium doors to be painted, with new ironmongery.

Floors

Porcelain Floor Tiles

The existing Porcelain Floor tiles in the stair lobby and surrounding area is in a reasonable condition with a few cracked tiles, but previously repair and maintenance work done has resulted in an ununiformly shaded floor, the skirting has also been damaged.

- All floor finishes to be removed and new floor finishes to be installed as per the architect's specifications and [redacted]'s colour scheme.
- Skirting tiles to be replaced and new bottom protector rails to protect skirting tiles and walls

Epoxy Flooring

- All Plantrooms to receive an epoxy finish on all floors.

Waterproofing on roof

- New waterproofing on roof slab. All existing screeds to be removed. All existing rainwater outlets and downpipes to be checked and repaired. Waterproofing consists of insulation board on the slab with a new screed laid to falls. A multi-layer waterproofing membrane to be applied directly to screed and painted with an Aluminium paint. A 50mm thick stone layer on top of waterproofing membrane for protection. All service points on the roof to be accessible with a 450x450mm stepping stone walkway. No other traffic access on roof allowed. See notes and details.

Waterproofing in Water tank room

- New waterproofing in Water tank room. All existing screeds to be removed. Waterproofing consists of a new screed laid to falls. A multi-layer waterproofing membrane to be applied directly to screed and painted with Aluminium paint.

Ceiling

The existing suspended ceiling in Stair Lobby should be brought in line with the other floors.

- The Existing ceilings to be replaced with new suspended ceiling systems architect's approval to conceal all cable trays and all pipework
- All Plantrooms to have painted ceilings as per specifications.
- New plastered ceiling to be fitted to the underside of the Main Stairs in provision for concealing the Fire sprinklers pipework on the underside of the stair.

Stairs

Main Stairs

The Main Stairs is in a fair condition, but the floor finish, tiled skirtings and nosing are in no condition to be reused as they are at their end of life. Handrails remain functional but not in a state that will be acceptable for the next 10 years as per project objective.

- The Main Stairs are to be refinished to the recommended specifications. This includes floor finish, skirtings and nosing.
- The handrail to be replaced to match aesthetical quality achieved throughout the rest of the building
- Fire Sprinklers and the water piping feeding the sprinklers visible to the underside of the stairs. (see ceilings)

Signage

- All fire regulating signage to be replaced. The position of these signs to be indicated by the fire engineer.
- New picogramme guidance signs to regulate public and restrict movement in the Stair Lobby.

The stair to the Roof area to be clearly marked as "RESTRICTED" and "AUTHORIZED PERSONNEL ONLY".

- All doors leading to the roof to be clearly marked "RESTRICTED" and "AUTHORIZED PERSONNEL ONLY".
- All doors to receive name board to indicate occupancy of the room.

General

- This floor is leading to the roof and Plantrooms on the roof.
- All locks to be on a master key system or keyed alike.
- All Fire hose reels and Fire extinguishers to be serviced. Secure extinguishers and signage.
- All fire escape doors and fire escape routes to be confirmed by the Fire Engineer that all conform to the latest fire regulations.
- The entire building does not cater for persons with disabilities.
- All existing shopfronts, existing ceilings, walls, etc… to be thoroughly cleaned on completion.

Mechanical Works

HVAC:

- Cooling tower in working order

Ducting systems:

- Kitchen extract fan poor condition and not working
- Extract control system damaged

Kitchen equipment:

- **N/A**

Wet services:

- Water tank in good condition
- Galvanised piping for water supply

Sprinklers:

- In good condition and layout (Where applicable)

Electrical & Electronics Works

Light Fittings

The following types of light fittings were found on the roof :

- T12 fluorescent surface-mounted light fitting
- CFL bulkhead light fittings

Light fittings located on the roof were found to be in fair condition, the original light fittings were still utilized. These fittings appeared unable to distribute sufficient light across the roof. Further, light bulbs were not regularly changed, which was considered to be a sign poor maintenance.

Switches

The following types of switching devices were found on the roof:

- Single lever light switch

The light switches were not labelled.

Earthing and Lightning Protection System

The following components are included in the earthing and lightning protecton:

- Air-terminal conductors
- Down conductors
- Earthing conductors

The earthing and lightning system appears to have been vandalised. Air terminations located on the roof were damaged with parts of the conductors missing. Some down conductor were disconnected to the earthing conductors. The effectiveness of the system was therefore found to be questionable.

Structural works

The concrete flat roof structure consists of a trough slab with perimeter upstand beams. A large water tank and cooling tower is located on this roof. The perimeter upstand beams have various smaller items such as antenna masts and satellite dishes fixed to them.

Structural defects specifically on this floor:

- Some of the masts are very loose and in danger of falling from the roof floor (refer to the two masts in **Error! Reference source not found.**), this poses a major safety risk.
    - **Remedial:** All masts should be inspected on a regular basis, the following must be determined:
        - is it still in use (if not the remove the mast),
        - is the current fixing system compliant (if not, rectify).
- Masts have been removed and no patchwork was done to seal the old anchor holes (see last image below). This can pose as a waterproofing issue.
    - **Remedial:** Anchor holes must be patched up and ensure that the waterproofing is made good.

Figure 5 Condition of network masts on roof floor

- Some of the concrete walls have damaged concrete edges (see images below). These cracks are similar to the cracks discussed in section **Error! Reference source not found.**3 (first floor to eleventh floor common findings). The reticulation pipes from the water tank are penetrating through concrete walls. It is recommended that the patchwork around the pipes should be redone.

- **Remedial:** Refer to defect D1 for concrete patchwork.

Figure 6 Damaged concrete edges

- A short steel staircase is provided for the cooling tower. The steel staircase has started to rust and disintegrate.
    - **Remedial:** The stair must be brushed free of any rust and repainted.

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)
- REF: SANS 10400

Fire Management:

- All in order
- REF: ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- All in order
- REF: SANS 0400

Ventilation:

- All in order
- REF: ERW 5

Storage:

- All in order
- REF: GSR 8

2.2.1.14 External area

Civil works

The Cargo Admin Building has a private vehicle parking area on the northern side and a service road on the southern side. This parking area is 2400 m^2 and is asphalt surfaced. The area has approximately 63 number parking bays, one (1) paraplegic, one (1) off-load area, and six (6) motor cyclist bays. The parking has one a one way system in a clockwise direction. There are 19 number parking bays covered by carports which (though not in the civil engineering works scope) require remedial works. The area is also serviced by water, sewer and stormwater drainage systems as described below.

Road Surface

The area is asphalt surfaced, with a roadway feeding the parking bays. There is also an access road leading to the south of the Cargo Admin Offices Building and the electrical substation road.

- **Findings**: The asphalt surfaced area has cracks with visible previous crack repairs.
- **Recommendations:** Seal surface cracks and construct a new asphalt overlay

The typical road surface is shown in Figure 2 below.

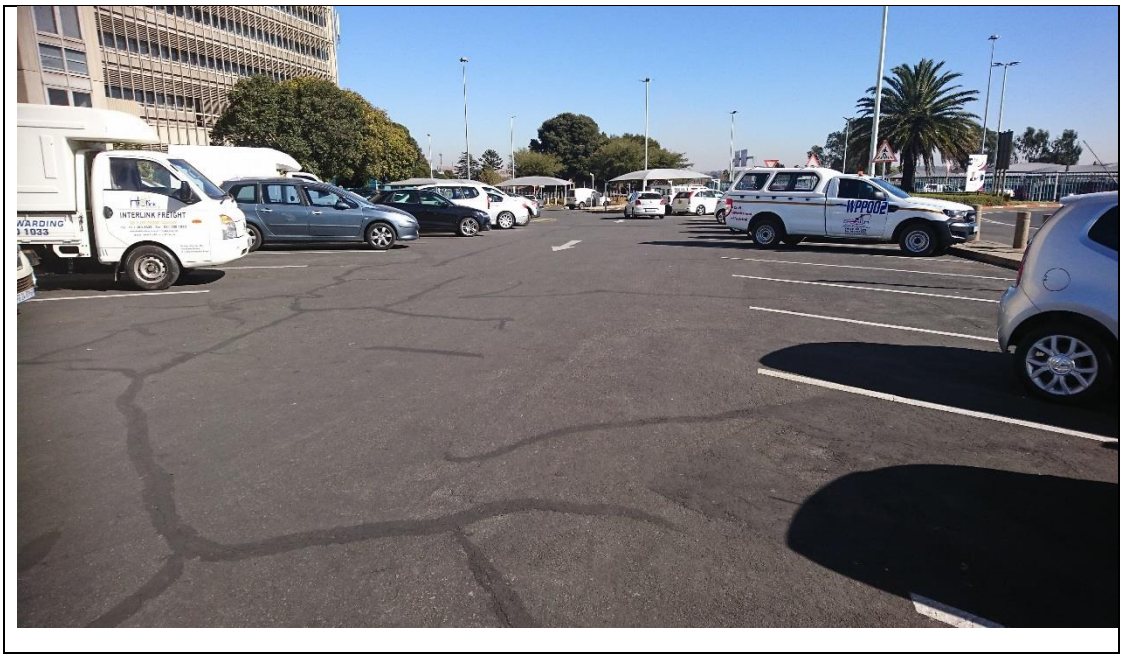


Figure 7 Cargo Parking Area 2

Ancillary Roadworks

Ancillary roadworks comprising if road markings, road signs and kerbs were assessed. The following is a summary if the assessment findings;

- Road markings

- **Findings**: All road markings are cracked

- **Recommendations**: Remove existing markings and repaint.

See Figure 8 below.

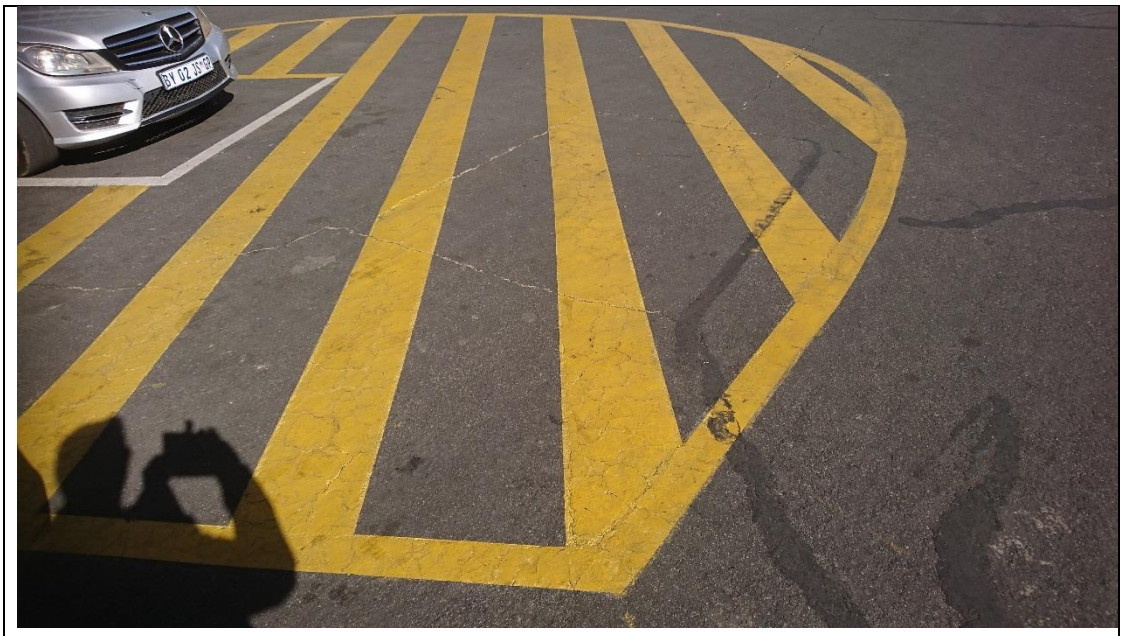


Figure 8 Road markings

- Road signs

- **Findings**: All road sign steel posts have areas where the paint is chipped off, rusted and loose road sign baseplate connections. The road sign plates also have surface damages or dents.
- **Recommendations**: Erect new road signs.

See Figure 9 for a typical road sign damage.

Figure 9 Road sign damage

- Kerbs
- **Findings**: The kerb line along the roadways is in a good state.
- **Recommendations**: Repainting of the faded kerbs is required.

See Figure 10 below.

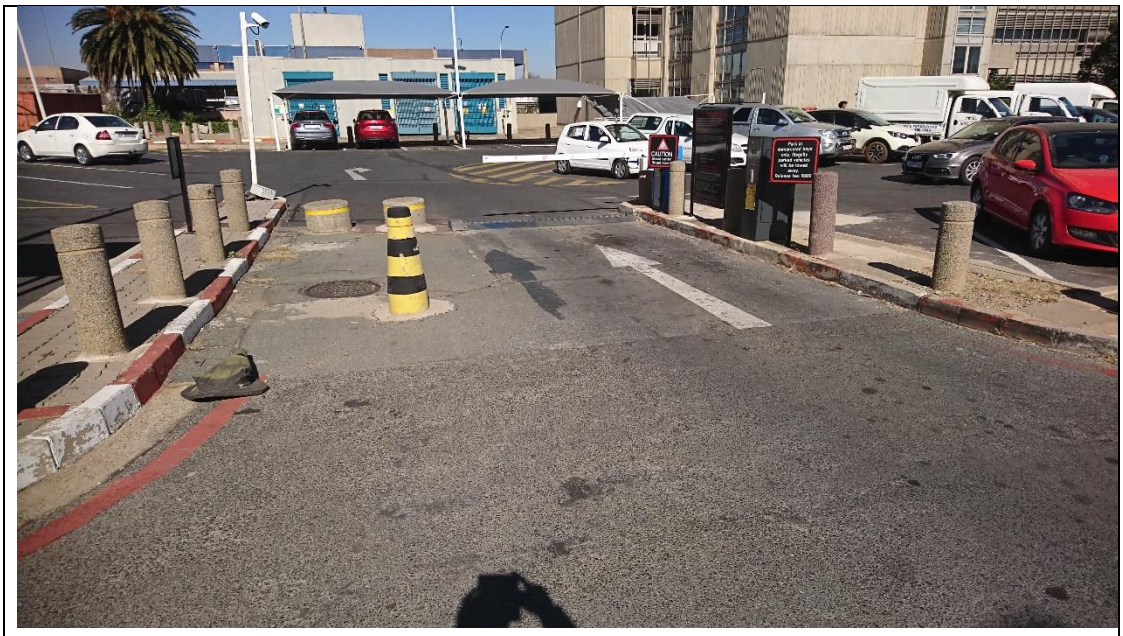


Figure 11 Kerb line in good state except for paint.

Stormwater

There is dual drainage stormwater system comprising of a surface and underground pipe system. The surface runoff from the parking area drains into a system of grid inlets and kerb inlets which collects stormwater into the underground pipe system.

- **Findings**: Externally stormwater manholes are in fair condition. The internal condition of manholes varies from fair to poor condition. Kerb inlet openings are narrow and almost clogged up. Some manholes have stagnant water inside
- **Recommendations**: Minor structural repairs are required to the manhole chambers. Further investigations are required (CCTV inspections) to determine the pipe internal condition.

See Figures 12 and 13 for a typical grid inlet and kerb inlet below.

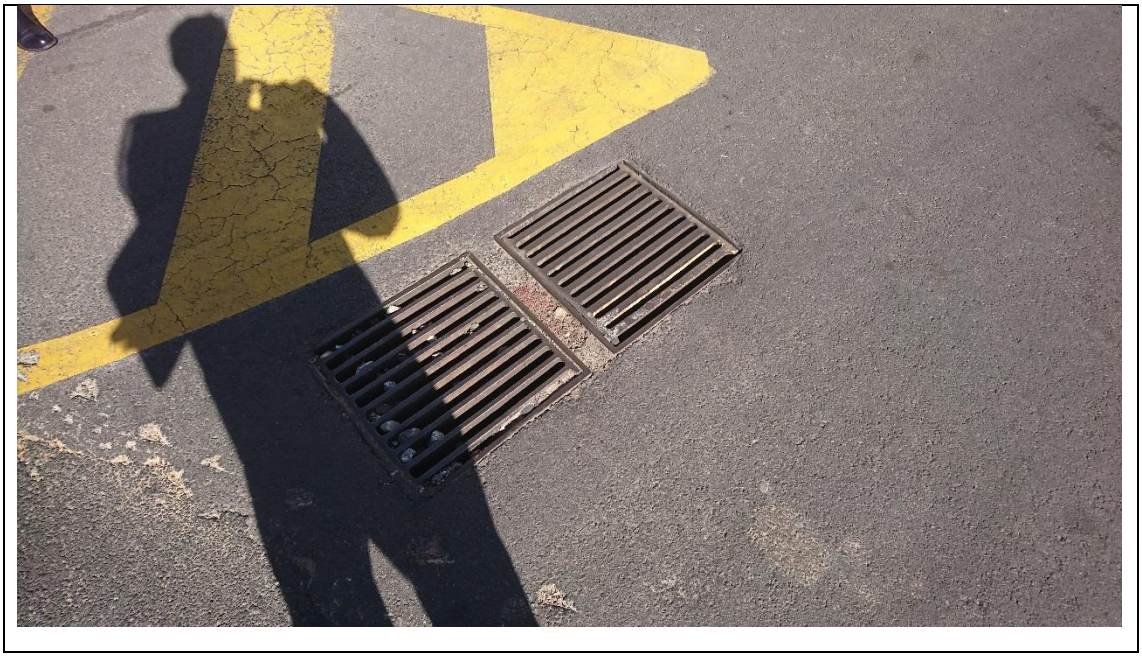


Figure 12 Parking Area Grid inlets

Figure 13 Parking Area Kerb Inlet

Sewer (sanitation)

There is a sewer network around the Cargo Admin Offices building. The main sewer line is situated on the northern side of the building along the service access road at the back of the building.

- **Findings**: The sewer system is in a fair external and internal condition as shown one of the manholes in the area.
- **Recommendations**: Minor repairs are need inside and outside the manholes. The manholes need to be made water tight. The condition of the underground sewer pipes is unknown and further tests, in the form of camera inspections etc, are recommended.

See Figures 14 and 15 below.

Figure 14 Fair external sewer condition

Figure 15 Fair internal manhole condition

Water

- **Findings**: The Client confirmed that the existing water system at the Cargo Admin Offices building is functioning without problems.

Recommendations: No investigations were thus done on the water system in this area since it functions as designed.

Cargo Office general summary and conclusion:

The Cargo Office building civil services are in a fair general functional and structural state. Some repairs are required to be able to extend the services life.

Architectural

Walls

External walls are untreated concrete walls. These walls do show water stains and discolouration. Engineer to report on the structural value of the concrete structure.

- The external concrete walls to receive a textured or smooth finish (Marmoran or similar with a 10 – 15-year guarantee) that matches [redacted] colour scheme and to architects' specifications.

Windows

External vertical Window Facades need major repair, renovations and cleaning. The existing aluminium windows are sagging and not closing properly, seals are loose and glazing beads are not secure, the existing glass bead's protection film damaged by UV-rays and there is a possibility that fenestration calculations would not be met. These windows span from Ground Floor to the Roof slab vertically.

- External vertical Window Facades to be replaced with new Aluminium windows to comply with fenestration requirements a double-glazing system

with a Low Emissivity Glass to meet Energy Fenestration to be used. The horizontal external windows are in the same state.

- The horizontal external windows to be replaced with new aluminium window frames to comply with fenestration requirements a double-glazing system with a Low Emissivity Glass to meet Energy Fenestration to be used.

Sun louvres

The Sun Louvres in front of windows dilapidated. The horizontal slats and framework are loose, while some slats have already fallen from the building. To refurbish these is not possible as the profile of the slats will not be obtainable from the manufacturer anymore It is, therefore, advised that:

- The entire horizontal Sun Louvres system in front of windows be replaced with a new louvre sun control system, all to the specifications of the architect.

Note: [redacted] can potentially be held responsible for any injuries to persons or damage to property caused by the falling of these slats.

Window sills

The external window sills are moving out of position and away from the building, exposing the building to water penetration and compromising the general insulation of the building. Thus, the following is recommended:

- External window sills to be replaced with new window sill tiles, all joints to be properly sealed to prevent water penetration into the walls and building and ensure watertight building.

2.2.1.15 General

Architectural

ACCESS

- Although many attempts were made, and certain rooms broken open for an inspection, still not every room was able to be entered to assess the condition. The client has been kept abreast of these rooms at all times and plans were issued to the client where all the rooms that were not accessible were clearly marked. Where the final attempts to gain access failed, informed assumptions based on all similar and adjoining rooms were made. We feel that this should be acceptable.

BMS

- Many of the interventions proposed by the professional team hinge on modernising the building with regards to contemporary building materials and technologies. One of the main advantages these bring with them is energy management and efficiency. In line with this it becomes critical that a Building Management System be installed that integrates all these different systems and ensures their most efficient use.

HVAC

- Mechanical Engineer to advise if the central HVAC system will be implemented in the building. The provision then to be made to accommodate the ducting in the ceiling voids and all existing aircon split units to be removed.

Partitioning walls

New partitioning walls are required.

- Partitioning walls in offices to be replaced. Partitioning to be constructed as per specification and cladded with "High Impact Resistant Grade Plaster Board" to prevent damage to wall caused by office furniture.
- New Stainless-Steel Corner Protectors and Bump Rails to the walls to protect future damage to it once renovations are completed.

Fire protection

The situation whereby tenants lock/obstruct fire escape routes is a great concern. We are aware that certain tenants have sensitive documentation that needs to be securely locked-up, but we cannot compromise Fire Legislation. There are alternative methods to solve the situations and still comply with SANS 10400. It is also of concern that concern about the fire protection between openings in the external wall and fire divisions (SANS 10400 Part T: 4.10) states that all fire divisions that have a window-openings next to them need a minimum allowance of 1m measured horizontal and vertical, this regulation is not met

- We might suggest that all tenants sign a document whereby they are aware of the fire protection act (and all other areas of the building) and would not change the design principals without [redacted] s consent or a competent person to take responsibility for any changes that have been implemented.
- [redacted]'s Property management to inspect the fire doors and all fire equipment on a regular base to make sure that tenants adhere to the principals that are set out for the fire protection (obstructing fire doors and escape / feeder routes).
- The Fire Engineer to investigate and report back if the rules of SANS 10400 Part T are met. All aspects of fire protection to be investigated and complied with.

Facilities for Disabled

The building does not provide any Disabled ablutions/toilets facilities, the ramp in the Main Entrance / Foyer area is not in compliance as per SANS 10400 Part S: 4.8.2:

Any ramp provided in terms of this part of SANS 10400 shall

a) have a gradient, measured along the centre line, that is not steeper than 1:12; (currently 1:9.25)

b) have a clear, trafficable surface not less than 1.1m wide; (currently: 1m wide)

d) have a landing at top and bottom of each ramp of not less than 1.2m in length (clear of any door swing) and of a width not less than the ramp; (currently: bottom - door, top - access-controlled turnstiles)

e) comply with the requirements between landings as given in table 2 and figure 11; (currently: one ramp 9.25m long)

f) have a handrail on both sides of the ramp or, where the width is greater than 2.4m, a central handrail in accordance with the requirements of 4.10 where the gradient is steeper than 1:15; (currently: no handrails)

2.2.2. Cargo Warehouse

2.2.2.1. Ground Floor – Zone 1

Architectural work

Ground floor - Loading Platform (Grid 1 – 14)

Walls:

Face brick wall

The existing face brick walls are in a fair condition, however require attention, it is, therefore, recommended that:

- The existing face brick wall to be thoroughly cleaned as specified.
- Brick work to be repaired where necessary (effort to be made to match bricks where applicable).

- Prepare the wall and coat with a brick dressing to beautify the depth of colour and resist dirt collection.

Plastered and painted walls

The existing plaster and apinted walls are in a fair condition, however existing wall finishes require attention, it is, therefore, recommended that:

- The external concrete and plastered walls to receive a textured or smooth finish (Marmoran or similar with a 10 – 15-year guarantee) to architects' specifications to comply with [redacted] colour scheme.

Concrete columns and beams

- The external concrete columns and beams to receive a textured or smooth finish (Marmoran or similar with a 10 – 15-year guarantee) to architects' specifications to comply with [redacted] colour scheme.

Windows:

Steel windows

All steel existing windows below the concrete slab on the Loading Platform are worn and will not be acceptable for the next 10 to 15 years. They are not in compliance with the new the energy requirements as set out in SANS 10400 – Part XA. In addition, the profile of the steel window frame does not allow for the house of a double-glazing system that is required to meet the energy efficiency of part XA of the SANS 10400 regulations. Thus, the following is recommended:

- All external window frames to be removed and new double-glazed windows to be fitted to the building to in compliance with SANS 1400 – Part XA.
- Apart from thermal requirements these will also help with sound control from a noisy environment.

External window sills

The external window sills are moving out of position and away from the building, leaving the building exposed to water penetration. Thus, the following is recommended:

- All external window sill tiles to be replaced.
- Tiles to be bedded and joints neatly finished.

Doors:

Roller shutter doors

- All roller shutter doors to be inspected and repaired as per Mechanical engineer's specification and details.

Steel door frames and doors

- All steel door frames and doors on the exterior wall to be prepared and painted as per specification, colour to be specified on site.

Steel security gates

- All steel security gates on the exterior wall to be prepared and painted as per specification, colour to be specified on site.

Floors:

Concrete Floors

The existing concrete floor surface is covered with a 30mm thick asphalt surface. Thus, making it difficult to determine the state of the concrete floor. By the signs on the asphalt surface, one can determine that the floor is badly worn, that's is why it received an asphalt cover-up surface. The state of other floors in the vicinity verifies that this floor has surface cracks and spalled joints.

- Specialized concrete flooring contractors to first remove and clean the asphalt from the concrete before any other work commences on the floor.

- Repair concrete floor by cutting the joints and repairing the surface cracks. The complete floor to be grinded, polished and sealed on completion to obtain a jointless concrete floor.

Bump rails, corner– and edge protectors

The existing steel edge protectors on parts of the Loading platform are not in a good condition and it is recommended that:

- existing steel edge protectors to be repaired/replaced where necessary (flooring contractor to fill areas where concrete has broken out).
- The existing steel corner protectors on the corners of columns and walls to be repaired where necessary. (Attention to be given that they are securely fixed in position).
- All edge protectors to be prepared and painted (black and yellow) on completion as per specification.
- The existing steel bump rail at the bottom of the walls to be repaired where necessary and attention to be given that they are securely fixed in position and in a straight line.
- These steel bump rails to be prepared and painted (black and yellow) on completion as per specification.

Roof:

Concrete Roof above Loading Platform

The existing concrete roofs have partial leaks, with areas of worn out waterproofing, and do not meet the objectives of the project and acceptable lifespan, thus a new waterproofing on roof slab is required:

- All existing waterproofing and screeds to be removed and a new waterproofing system to be installed to architect's recommendation and specifications.

- All service points on roof to be accessible with a 450x450mm stepping stone walkway, no other traffic access on roof allowed
- All existing rainwater outlets and downpipes to be checked and repaired.

Ceiling:

Concrete ceilings

Due to water penetration on the roof, the existing pained concrete ceilings are stained and require attention, there are signs of settlement in the concrete roof slab/concrete ceiling above spotted at grid line 3:

- Structural engineer to confirm that this settlement has stabilized and make recommendations if noted otherwise. This settlement condition confirms the need for construction joints on the first-floor tiling layout.
- The existing painted concrete ceiling to be prepared and painted as per specification.
- All existing cable trays and piping to be checked and securely fixed where necessary.

Signage:

- All fire regulating signage to be replaced. The position of these signs to be indicated by the fire engineer.
- New warning and regulating sign boards to comply with all regulating bodies.
- New sign boards with Warehouse number and occupant name to all entrances.

Facilities for Disabled:

Lift for persons with disabilities

- A new lift for persons with disabilities to be installed on gridlines 2, 5, 8, 11 and 14. These lifts to be clearly marked "PASSENGER LIFT ONLY – NO

GOODS" and should be enforced to the full extend as this lift's capacity is only 400kg.

- The concrete slab above to be cut to allow for access from below. The lift to be properly barricaded with heavy duty bump rails to protect it from loading vehicles.

Ramp for persons with disabilities

- A new ramp to be erected on the southern side of the building (Grid line 1) This ramp should comply with SANS 10400-Part S. Allowing access for persons with disabilities onto the Loading Platform. The stair from the parking area on grid line 1 also to be incorporated with this ramp.

Ground Floor - Warehouse (Grid 1 – 14)

Walls:

Face brick wall

The existing face brick walls are in a fair condition, however require attention, it is, therefore, recommended that:

- The existing face brick wall to be thoroughly cleaned as specified.
- Brick work to be repaired where necessary (effort to be made to match bricks where applicable).
- Prepare the wall and coat with a brick dressing to beautify the depth of colour and resist dirt collection.

Plastered and painted walls

The existing plaster and painted walls are in a fair condition, however existing wall finishes require attention, it is, therefore, recommended that:

- The external concrete and plastered walls to receive a textured or smooth finish (Marmoran or similar with a 10 – 15-year guarantee) to architects' specifications to comply with [redacted] colour scheme.

Concrete columns and beams

- All concrete columns and concrete beams to be prepared and painted to architects' specifications to comply with [redacted] colour scheme.

Vertical profiled sheet metal cladding

- All vertical profiled sheet metal to be replaced where it is damaged. The steel support holding the sheet metal to be inspected and repaired if necessary. All screws and washers holding the sheet metal in placed to be checked and tightened where required. The unit to be prepared and painted as per specification.

Doors:

Roller shutter doors

Some doors have been removed between the Warehouse and Steel Extension. It, therefore, should be determined with the tenants if these doors need to be replaced or not and if a tenant leaves or moves to other areas, these warehouses might not be suitable for the next tenant.

- All roller shutter doors to be inspected and repaired as per Mechanical engineer's specification and details.
- We would suggest that all missing roller shutter doors be replaced and whenever a tenant does not want to use these doors, it should be left in the rolled-up position.

Floors:

The existing concrete floor surface is in a bad condition with surface cracks and spalled joints. Some areas are covered with a 30mm thick asphalt cover- up layer.

These should be cleaned first before any repair work commences on concrete floor.

- Specialized concrete flooring contractors to repair concrete floor by cutting the joints and repairing the surface cracks.
- The complete floor to be grinned, polished and sealed on completion to obtain a jointless concrete floor.
- The entire floor to receive a heavy-duty interlocking rubber mat (Matloc or similar) on completion that should be glued to the floor as per manufacturer's specification.
- The lifespan and guarantee to be confirmed with the suppliers of this rubber mat. If this methodology is followed, the repairs to the concrete floor can be cut down to a minimalistic operation.

Roofs:

Roof windows and louvres

The existing roof windows located on a high level below the ceiling could not be inspected because of their height. From a distance is was noted that different type of windows is used. Some areas have glass louvres and others bottom hinged sections. There is no option to regulate (open and close) these windows.

- All roof windows window frames to be removed and new double-glazed windows to be fitted to the building to in compliance with SANS 1400 – Part XA.
- The complete system to be operated with a heavy duty "hand crank and tilt" hardware. Mechanical engineer to advice on the appropriate system.
- All windows to receive external powder-coated aluminium louvres to ensure minimal heat transfer as well as UV damage.

Roof ventilators

- The existing multi-purpose roof mounted natural exhaust ventilators fitted to the roofs to be repaired and serviced to an original smooth operating condition. Mechanical engineer to advise if these ventilators can still be salvaged by repairing and servicing or if they need complete replacing.

Turbine roof ventilators

- The existing turbine roof mounted ventilators fitted to the roof to be repaired and serviced to an original smooth operating condition. Mechanical engineer to advise if these ventilators can still be salvaged by repairing and servicing or if they need complete replacing.

Water proofing to concrete roofs

The existing concrete roofs have partial leaks, with areas of worn out waterproofing, and do not meet the objectives of the project and acceptable lifespan, thus a new waterproofing on roof slab is required:

- All existing waterproofing and screeds to be removed and a new waterproofing system to be installed to architect's recommendation and specifications.
- All service points on roof to be accessible with a 450x450mm stepping stone walkway, no other traffic access on roof allowed
- All existing rainwater outlets and downpipes to be checked and repaired.

Water proofing to concrete box gutters

- All existing waterproofing and screeds to be removed and a new waterproofing system to be installed to architect's recommendation and specifications.

IBR roofs over Warehouse and Steel extensions

The existing IBR steel roof is still in a fair state but based on the assessment will not be acceptable for the next 10 to 15 years and does not comply with the set-out project objectives, the roof has areas of leakage and the water leaks compromise the insulation of the building:

- The existing roof sheeting be replaced completely with a powder coated concealed type roof (KlipLok or similar).
- Understanding the live nature of the site, it is recommended that an Ashgrid system by Safintra, which can be installed over existing sheeting without having to remove it be utilised. This creates minimal disruption of a live environment and its associated operations.
- There maintenance done of the roof, which looks like the replacement of turbine roof ventilators with a multipurpose exhaust ventilator has resulted in patch work to cover existing holes left behind. This has created a potential weak point for water leaks and is a direct result of the water leaks experienced by tenants during heavy rain down pour
- The complete roof trusses and purlins to be prepared and painted with a high-quality polyurethane enamel paint before the new roof sheeting is put in place.
- New 80mm thick Lambda board to be fitted to the underside of the roof sheeting as ceiling, all as per manufacturer's details and specification.

Water proofing to steel box gutters

- Existing steel box gutter at all IBR roofs to be thoroughly checked for any failure. Should it be necessary, the complete box gutter be replaced. The gutter (new and or existing) to be aligned with falls to outlets.

- Clean and prepare steel box gutters to receive a rubberized lining on inside and the complete gutter on the outside to be painted with a high-quality polyurethane enamel paint.

Ceilings:

Wherever sheeting is installed the current insulation is not of an acceptable standard anymore.

- New insulation to architect's recommendation and specifications to be fitted to comply with SANS 1400 – Part XA.

Mechanical Works

HVAC:

- Smoke Extract in good condition
- Fresh Air in offices limited

Wet services:

- Cold water galvanised steel pipe
- Drainage is cast iron pipe, similar condition to building

Sprinklers:

- Sprinkler network old specification
- No rack sprinklers

Roller Shutter Doors:

- Generally in good condition with roughly 30% of doors damaged

Electrical & Electronics Works

Power skirting, conduits and cable support structures:

Power skirting, conduits and support structures were found to be in generally surface-mounted. Where visible, conduits were deemed intact, safe and acceptable.

Some cable trays were found to be partly loose with cables hanging from the support structures.

Light Fittings

The following types of light fittings were found in the warehouse and offices of the at the ground floor in the zone concerned:

- LED T-bay surface-mounted light fittings
- LED high-bay light fittings
- T-bay fluorescent surface-mounted light fittings
- Fluorescent surface-mounted light fittings
- Fluorescent recessed light fittings

Warehouse lights fittings were generally in fair physical condition. The biggest concern was found to be the lighting intensity on the working areas that didn't meet the recommended levels.

The light fittings were not labelled.

Switches

The following types of light switches were found at the ground floor.

- Single lever light switch
- Isolators

In some areas located in the warehouses, cables were not layed in conduits when routed to its switching devices.

Not all light switching devices were functional and were not regularly maintained.

None of the light switches in the warehouse offices and isolators were labelled.

Power sockets

The following types of socket outlets were found at the ground floor:

- Surface-mounted socket outlet
- Three-phase socket outlets

Single-phase socket outlets installations found in the warehouse were intact, safe and acceptable. However, socket outlets found were found to be inadequate at the offices. Extension cords were applied to reticulate power to the working stations in most areas.

The three-phase socket outlets were found to be in good condition.

No labelling was found on any of the socket outlets.

Telecomunication and IT

The telephone and data points were generally found at the offices were functional and in good condition.

Fire detection system

The following fire safety facilities were found on the ground floor:

- Smoke detectors

All smoke detectors seemed to be deactivated due to the LED found on the device being at a constant off state.

Glass break unit/call point found at the lobby leading to the stair case seemed deactivated due to the LED found on the device being at a constant on state. The installation was found to be the same throughout the warehouses.

Structural works

The cargo warehouses considered in the assessment includes 46 warehouse spaces. Each floor space (excluding the office areas) is typically 12.0m x 35.5m. The typical floor space has industrial storage racks responsible to store inbound and outbound goods. In most cases forklifts distribute the goods to its required destination, both internal and external of the warehouse. Distribution platforms are installed in many of the warehouses.

It is important to recognise that high traffic volume areas exist in such spaces and typically be where structural defects would occur. The defects listed in this report are normally due to collisions or fatigue of structural elements such as the columns & floor slabs. Spaces occupied by heavier forklifts visibly showed more damage.

The Cargo Warehouse has the following structural elements:

- Reinforced concrete surface bed/ground floor slab.
- Reinforced concrete columns with a grid spacing of 12m x 12m
- Reinforced concrete box gutters at 12m spacing spanning over the columns.
- Most of the roof structures consists of tapered reinforced concrete beams supported by the box gutters and spaced at 3m centres, with a duo pitched concrete roof slab spanning between the beams.
- Steel roofs with steel beams, purlins, bracing and a steel gutter were also built at a few warehouses only
- Dividing walls between the various warehouse spaces comprises of brickwork and sheeting. Concrete barriers are also provided in some areas instead of the brickwork.

The Warehouse is divided into eight zones. The zones are clearly indicated on the architectural layouts. Zones 1 to 4 are applicable to the ground level and Zones 5 to 8 makes reverence to the first floor level.

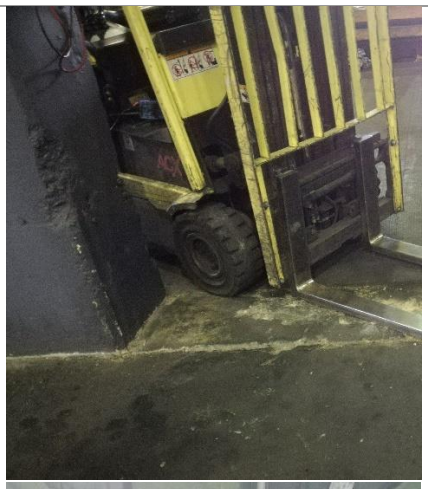
Similar to the Cargo Offices the Warehouse has reoccurring defects. Examples of these common defects are shown below in Table 2.

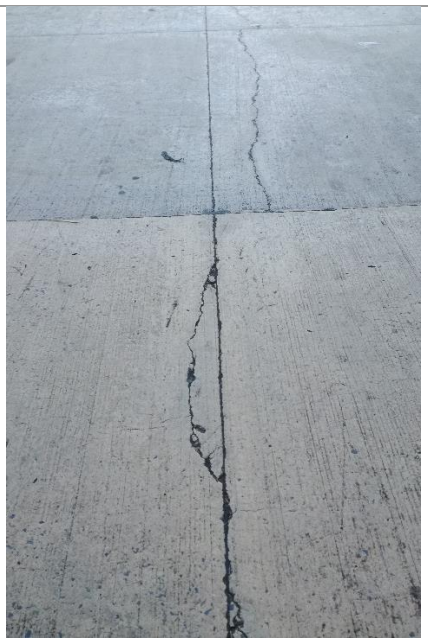
For ease of reference, the findings across the warehouse are given in table format, Table 2 to Table 5, with reference made back to the common defects listed in **Error! Reference source not found.**.

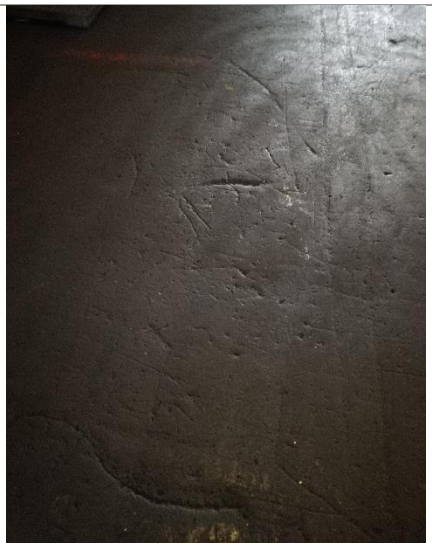
Defect D1 is similar for both the Cargo Warehouse and Cargo Offices. The cause of the damage to the concrete surfaces however differs to the Cargo Office building. The predominant structural damage in the Warehouse is caused by vehicle collisions i.e. forklifts.

Table 1 Cargo Warehouse structural defects with their preferred solution

Defect no	Defect image example	Defect description, possible causes and modification

D1	 	**Concrete column surface damage** is caused by impact loads from the forklifts. The impact breaks off concrete and in severe cases exposes the reinforcement. This weakens the structural integrity of the concrete column. **Remedial:** Similar to defect D1 in **Error! Reference source not found.**, the concrete must be repaired with a high strength, quick setting mortar, applied as per manufacturer's specifications. To minimize future collisions, the warehouse racks could be arranged in such a way that forklift impact with columns are limited. It is recommended that the column edge be protected with steel angles. The surface damage occurrence was between the following: 0 to 5, 6 to 12 and 13 to 20. Each occurrence represents a damaged surface area having an average repair area of 600mm x 600mm.

D2		**Concrete surface bed cracks** are caused by insufficient joint spacing or insufficient joint construction. This defect identified is applicable to an individual crack or only a few cracks and is not applicable to fatigue damage or damages caused by excessive wheel load. The occurrence for this defect is expressed as a percentage of the concrete floor per warehouse. Three percentages were used in the findings: 0-15%, 15-40%, 40-75%. **Remedial:** The crack should be repaired by a concrete crack repair compound. Saw cut joints must be repaired.
D3		**Damaged concrete surface** are applicable to areas of the buildings where floor cracks are more regularly spaced. The surface is also worn-out with an 'unsealed' appearance to it. The reason for the damaged surface can be either fatigue, weak supporting layer below, or excessive wheel loads. The occurrence of this defect is expressed as a percentage of the warehouse area. Three percentages were used in the findings: 0-15%, 15-40%, 40-75%.

		Remedial: It is suggested that the concrete has to be recast. Depending on soil tests, it may be required to compact the layer works below the new concrete surface.
D4		Asphalt surface damage is applicable to areas where the asphalt surface have cracks or scratches of roughly 3 to 5mm wide. The cracks are closely spaced (typically 500mm apart). It is possible for the asphalt to disintegrate over time. There are areas where the asphalt has disintegrated completed leaving the old concrete floor exposed. This occurs typically at the airside entrance to the warehouse. **Remedial:** To upgrade the surface, the asphalt has to be either relayed on top of the existing asphalt or a bitumen sealing compound to seal the cracks.

Structural defects throughout the Cargo Warehouse:

- The loading dock in the front of the warehouse has been damaged throughout the years. The damage is due to cargo trucks colliding against the protective barrier system.
    - **Remedial:** The protective barrier should be demolished and replaced by casting a new wall with a new protective barrier system.

Figure 16 Cargo Warehouse docking protective barrier

- A short concrete precast barrier is constructed between the Warehouse extensions. This is only applicable at warehouses where an extension was

granted at the airside of the warehouse. This occurs on the extension line between warehouses: 6-7, 7-8, 8-9, 10-11, 11-12, 13-14, 17-18, 21-22, 27-28, 30-31, 33-34, 39-40, and 41-42. This adds up to 13 in total. Roughly halve of the 13 barriers are damaged and needs repair work which adds up to 170m of barriers (included are the airside face of the building). The barriers have been damaged by forklift collisions over time, similar to the concrete columns.

  - **Remedial:** It is suggested that the barriers can either be repaired (refer to defect D1) or be replaced, where the barrier have excessive damage (less than 10% of the time)

- As part of the extension, steel frames with purlins spanning between steel columns are also provided. Some of the purlins are damaged. Only 15% of the purlins are estimated to have damage and only the first two purlins are influenced. Total length of purlin influenced is then 140m (included are 30m on the airside of the building).
  - **Remedial:** Only option is to replace the purlins when damaged.

Figure 17 Examples of concrete barrier and purlin damage

- Tenants for warehouses may change over time, when a tenant leaves a warehouse they would usually remove the racks or internal structures erected by themselves. Often the tenant leaves the warehouse with steelwork exposed to the surface. The steelwork (rails in some cases) damages the forklifts tires. The steelwork induces weak spots in the concrete around it.
    - **Remedial:** The concrete should be broken out around the steel. The steel should be cut below the concrete slab thickness or removed completely. Concrete should be reinstated or patched with structural repair mortar.

Figure 18 Exposed steel in concrete floors

Cargo warehouse general summary and conclusion:

The Cargo Warehouse building is in a state of degrade and action needs to be taken to halt this decline. Some of the major issues on the structure comprise of, collision damage of the forklifts with the concrete columns and walls, damaged asphalt surface and deteriorated concrete surface bed. The most significant defect with the highest repair costs will be the concrete surface beds. The completely disintegrated and damaged surface bed is not a safety hazard when considering collapse of structures. An uneven and 'sharp edges' surface

bed will ultimately cost the tenants wear and tear on their forklift wheels, this costs should be measured against the replacement cost for surfacing. This will have an influence on the decision being made to replace the surface bed.

Ground floor Zone 1 includes warehouse number 1 to 13 in this report. The findings are summarized in the table below for each one of the defects identified in Table 2.

Table 2 Severity of standard list of defects for Cargo Warehouse Zone 1

	Defect	Defect description	Tenant number	1	2	3	4	5	6
			Warehouse number(s)	1,2	3	4,5,6,7,8	9,10	11	12,13
ZONE 1	Defect D1	Concrete column surface failure	Occurrence 0 - 5	X	X	X	X	X	X
			Occurrence 6 - 12						
			Occurrence 13 - 20						
	Defect D2	Concrete surface bed cracks	Occurrence 0% - 15%	Not applicable	Not applicable	X	X	X	X
			Occurrence 15% - 40%						
			Occurrence 40% - 75%						
	Defect D3	Failed concrete surface bed	Occurrence 0% - 15%	Not applicable	X			Not applicable	
			Occurrence 15% - 40%						X
			Occurrence 40% - 75%			X	X		
	Defect D4	Bitumen surface failure	Occurrence 0% - 10%	X	X		X		X
			Occurrence 10% - 40%			X		X	
			Occurrence 40% - 90%						

OH&S Considerations

On the 10th April 2018 a Health and Safety Site inspection and assessment was conduct at [redacted]

The inspection was based on the requirements as set out in the Occupational Health and Safety Act, Act 85 of 1993 and the SANS 10400, National Building Regulation.

We were well received by the tenants and in most cases was accompanied by a health and safety representative or the supervisor. They shared their frustrations at times however also acknowledged that improvements can be made to legally comply and provide a safe and healthy working environment for their employees.

Summary

Key findings:

- Poor stacking and storage
- Poor housekeeping
- Poor maintenance (fittings and fixtures)
- Safety information missing or not visible (notices and signs)
- Firefighting equipment missing
- Emergency exit routes at times were compromised
- Electrical hazards (unsecured electrical cables/Loose cables)
- No separation of hazardous chemicals
- Obstruction of firefighting equipment

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)

- Signages and notices are missing
- First Aid box was in place

- REF: SANS 10400

Fire Management:

- Fire extinguisher is missing
- Signages and notices are missing

- REF: ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- All in order
- REF: SANS 0400

Ventilation:

- All in order
- REF: ERW 5

Storage:

- All in order

- REF: GSR 8

Building and Structures:

- Poor maintenance, renovation is needed

- REF: SANS 10400

2.2.2.2. Ground Floor – Zone 2

Architectural work

Ground floor - Loading Platform (Grid 14 – 26) – Zone 2

Walls:

Face brick wall

- The existing face brick wall to be thoroughly cleaned as specified. Brick work to be repaired where necessary (effort to be made to match bricks where applicable). Prepare the wall and coat with a brick dressing to beautify the depth of colour and resist dirt collection.

Plastered and painted walls

- The external concrete and plastered walls to receive a textured or smooth finish (Marmoran or similar with a 10 – 15 year guarantee) that matches [redacted] colour scheme. Colour to be specified on site.

Concrete columns and beams

- The external concrete columns and beams to receive a textured or smooth finish (Marmoran or similar with a 10 – 15 year guarantee) that matches [redacted] colour scheme. Colour to be specified on site.

Vertical profiled sheet metal cladding

- All vertical profiled sheet metal to be replaced where it is damaged. The steel support holding the sheet metal to be inspected and repaired if necessary. All screws and washers holding the sheet metal in placed to be checked and tightened where required. The unit to be prepared and painted as per specification.

Windows:

Steel windows

- All steel windows below the concrete slab on the Loading Platform are worn and will not be acceptable for the next 10 to 15 years. All to be replaced with a double glazed aluminium glazing system. Apart from thermal requirements these will also help with sound control from a noisy environment.

External window sills

- All external window sill tiles to be replaced. Tiles to be bedded and joints neatly finished.

Doors:

Roller shutter doors

- All roller shutter doors to be inspected and repaired as per Mechanical engineer's specification and details.
- Some doors have been removed between the Warehouse and Steel Extension. It should be determined with the tenants if these doors need to be replaced. It should also be noted that if a tenant leaves or moves to other areas, these warehouses might not be suitable for the next tenant.
- We would suggest that all missing roller shutter doors be replaced and whenever a tenant does not want to use these doors, it should be left in the rolled-up position.
- Africa Flight Services, gridline 15, the door is badly damaged and should be replaced. No repair work should be carried out on this door.
- Aero-Link gridline 18, it was pointed out that the door does not operate properly, and detailed attention should be given to this door.
- All roller shutter doors to be inspected and repaired as per Mechanical engineer's specification and details.

Steel door frames and doors

- All steel door frames and doors on the exterior wall to be prepared and painted as per specification. Color to be specified on site.

Steel security gates

- All steel security gates on the exterior wall to be prepared and painted as per specification. Colour to be specified on site.

Floors:

Concrete Floors

- The existing concrete floor surface is covered with a 30mm thick asphalt surface. Thus, making it difficult to determine the state of the concrete floor. By the signs on the asphalt surface, one can determine that the floor is badly worn, that's is why it received an asphalt cover-up surface. The state of other floors in the vicinity verifies that this floor has surface cracks and spalled joints.
- Specialized concrete flooring contractors to first remove and clean the asphalt from the concrete before any other work commences on the floor.
- Repair concrete floor by cutting the joints and repairing the surface cracks. The complete floor to be grinded, polished and sealed on completion to obtain a jointless concrete floor.

Bump rails, corner– and edge protectors

- The existing steel edge protectors on the Loading platform to be repaired where necessary (flooring contractor to fill areas where concrete has broken out). This edge protector to be prepared and painted (black and yellow) on completion as per specification.
- The existing steel corner protectors on the corners of columns and walls to be repaired where necessary. Attention to be given that they are securely

fixed in position. These steel corner protector to be prepared and painted (black and yellow) on completion as per specification.

- The existing steel bump rail at the bottom of the walls to be repaired where necessary. Attention to be given that they are securely fixed in position and in a straight line. These steel bump rails to be prepared and painted (black and yellow) on completion as per specification.
- The existing concrete floor surface is badly worn. It has surface cracks and spalled joints. Some areas are covered with a 30mm thick asphalt surface, these should be cleaned first before any repair work commences on concrete floor.
- Specialized concrete flooring contractors to repair concrete floor by cutting the joints and repairing the surface cracks.
- The complete floor to be grinned, polished and sealed on completion to obtain a jointless concrete floor.
- The entire floor to receive a heavy-duty interlocking rubber mat (Matloc or similar) on completion that should be glued to the floor as per manufacturer's specification. The lifespan and guarantee to be confirmed with the suppliers of this rubber mat. If this mythology is followed, the repairs to the concrete floor can be cut down to a minimalistic operation.
- At Lufthansa Cargo and other areas, drilled rail sections was removed but only level with the concrete surface bed. These should be removed together with the concrete footings as the concrete mixture for the footing is different than that for the concrete surface bed.

Roof:

Concrete Roof above Loading Platform

- New waterproofing on roof slab. All existing waterproofing and screeds to be removed. All existing rainwater outlets and downpipes to be checked

and repaired. A new waterproofing system to be installed, consisting of a 50mm layer of crushed stone on a geotextile layer, on a 4mm torched-on waterproofing membrane, on a min 50mm screed to fall, on a min 20mm Lambdaboard, on a vapour barrier sheet. All service points on roof to be accessible with a 450x450mm stepping stone walkway. No other traffic access on roof allowed. See notes and details.

Ceiling:

Concrete ceilings

- The existing painted concrete ceiling to be prepared and painted as per specification. All existing cable trays and piping to be checked and securely fixed where necessary.

Signage:

- New fire signs.
- New warning and regulating sign boards to comply with all regulating bodies.
- New sign boards with Warehouse number and occupant name to all entrances.

Facilities for Disabled:

- Lift for persons with disabilities
- A new lift for persons with disabilities to be installed on gridlines 14, 17, 20, 23 and 26. These lifts to be clearly marked "PASSENGER LIFT ONLY – NO GOODS" and should be enforced to the full extend as this lifts capacity is only 400kg. The concrete slab above to be cut to allow for access from below. The lift to be properly barricaded with heavy duty bump rails to protect it from loading vehicles.

Ground Floor - Warehouse (Grid 14 – 26)

Walls:

Face brick wall

- The existing face brick wall to be thoroughly cleaned as specified. Brick work to be repaired where necessary (effort to be made to match bricks where applicable). Prepare the wall and coat with a brick dressing to beautify the depth of color and resist dirt collection.

Plastered and painted walls

- All plastered and painted walls to be prepared and painted as per specification. Color to be specified on site.

Concrete columns and beams

- All concrete columns and concrete beams to be prepared and painted as per specification. Color to be specified on site.

Roofs:

Roof windows and louvres

- The existing roof windows located on a high level below the ceiling could not be inspected because of their height. From a distance is was noted that different type of windows is used. Some areas have glass louvres and others bottom hinged sections. There is no option to regulate (open and close) these windows.
- All the roof windows to be replaced with double glazed bottom hinged aluminium windows.
- The complete system to be operated with a heavy duty "hand crank and tilt" hardware. Mechanical engineer to advice on what system to use. All windows to receive external powder-coated aluminium louvres to ensure minimal heat transfer as well as UV damage.

Roof ventilators

- The existing multi-purpose roof mounted natural exhaust ventilators fitted to the roofs to be repaired and serviced to an original smooth operating condition. Mechanical engineer to advise if these ventilators can still be salvaged by repairing and servicing or do they need complete replacing.

Turbine roof ventilators

- The existing turbine roof mounted ventilators fitted to the roof to be repaired and serviced to an original smooth operating condition. Mechanical engineer to advise if these ventilators can still be salvaged with repair and servicing or do they need complete replacing.

Water proofing to concrete roofs

- All existing waterproofing to be removed and concrete roof prepared to receive new material. A new waterproofing system to be installed, consisting of a 4mm torched-on waterproofing membrane, on a min 50mm screed to fall, on a min 20mm Lambdaboard, on a vapour barrier sheet. Finish newly waterproofed roof with Aluminium paint.

Water proofing to concrete box gutters

- All existing waterproofing and screed to be removed and concrete box gutter prepared to receive new material. New screed with falls to outlets. Apply an approved torch-on multi-layer waterproofing membrane directly to screed. Finish newly waterproofed box gutter of with Aluminium paint.

IBR roofs over Warehouse and Steel extensions

- The existing IBR steel roof is still in a fair state but we feel that it will not last the expected lifespan that is required and suggest the roof sheeting be replaced completely with a powder coated concealed type roof (KlipLok or similar). The system we propose is an Ashgrid system by Safintra, which

can be installed over existing sheeting without having to remove it. This creates minimal disruption of a live environment and its associated operations, which this warehouse is. There was maintenance done to the roof, what looks like turbine roof ventilators on the roof ridge removed and multipurpose exhaust ventilators fitted on the slope of the roof. This resulted that patch work had to be done to cover the holes left by the removal of the turbine ventilators. This is a potential weak point for water leaks and some tenants have mentioned that they experience water leaks in heavy rain down pour. As insulation board is fitted below the roof sheeting, it cannot be determined where exactly the roof leak originates from. We also need to mention that the water leaks compromise the insulation boards effectiveness.

- The complete roof trusses and purlins to be prepared and painted with a high-quality polyurethane enamel paint before the new roof sheeting is put in place.
- New 80mm thick Lambda board to be fitted to the underside of the roof sheeting as ceiling, all as per manufacturer's details and specification.

Water proofing to steel box gutters

- Existing steel box gutter at all IBR roofs to be thoroughly checked for any failure. Should it be necessary, the complete box gutter be replaced. The gutter (new and or existing) to be aligned with falls to outlets. Clean and prepare steel box gutters to receive a rubberized lining on inside and the complete gutter on the outside to be painted with a high-quality polyurethane enamel paint.

Ceilings:

- Wherever sheeting is installed the current insulation is not of an acceptable standard anymore. New 80mm Lambdaboard to be installed throughout where the steel trusses are.

Mechanical Works

HVAC:

- Smoke Extract in good condition
- Fresh Air in offices limited

Wet services:

- Cold water galvanised steel pipe
- Drainage is cast iron pipe, similar condition to building

Sprinklers:

- Sprinkler network old specification
- No rack sprinklers

Roller Shutter Doors:

- Generally in good condition with roughly 30% of doors damaged

Electrical & Electronics Works

Power Skirting, Conduits and Cable Support Structures

Power skirting and conduits installations were found to be generally surface-mounted.

Where visible, conduits were found to be intact, safe and acceptable.

Power skirting installation is partly loose, safe and acceptable. Cables were not correctly supported through their run.

Cable trays and support structures at the warehouse were generally found to be in a fair condition.

Light Fittings

The following types of light fittings were found at the ground floor:

- LED high-bay light fittings
- LED T-Bays surface-mounted light fitting
- T8 fluorescent surface-mounted light fittings.
- T8 fluorescent recessed light fittings
- LED flood light fitting
- LED downlight light fittings
- T8 LED recessed light fittings

Original T-Bay light fittings were used in some areas and found to be less effective than the newer installations. The illumination levels measured were found to be inadequate in most of the warehouses.

Variety of light fittings were found in warehouse offices ranging from fair to very good condition. It was evident that some of the tenants handled their own light fitting replacements.

Switches

The following type of light switch was found at the ground floor:

- Single lever light switch

Light switches connected directly to the circuit breaker leading to the lights located in the warehouse to be constantly on the ON state.

None of the light switches in the warehouse offices were labelled.

Power Sockets

The following types of socket outlets were found at the ground floor:

- Power skirting socket outlet
- Surface-mounted socket outlet
- Three-phase socket outlets

Single-phase socket outlets installations were in general found to be inadequate. Power skirting socket outlets in some of the office were partly loose, therefore unacceptable.

Three-phase socket outlets were found to be in good condition.

No labelling was found on any of the socket outlets.

Telecomunication and IT

The following type of telephone and data points were found at the ground floor:

- Power skirting telephone and data points

Telecommunication and data points installations were found to be inadequate in most of the areas. In the few areas where the telephone and data points were found, the installations were found to be intact and of good standard.

None of the telecommunication and data points were found labelled.

Fire detection system

Similar observations as those from Zone 1.

Structural works

Ground floor Zone 2 includes warehouse number 14 to 27 in this report. The findings are summarized in the table below for each one of the defects identified in Table 3.

Table 3 Severity of standard list of defects for Cargo Warehouse Zone 2

	Defect	Defect description	Tenant number	7	8	9	10	11
			Warehouse number(s)	14,15,16,17	18	19,20	21	22,23 to 27
ZONE 2	Defect D1	Concrete column surface failure	Occurrence 0 - 5	X	Not applicable	X	X	X
			Occurrence 6 - 12					
			Occurrence 13 - 20					
	Defect D2	Concrete surface bed cracks	Occurrence 0% - 15%	X	X		Not applicable	X
			Occurrence 15% - 40%			X		
			Occurrence 40% - 75%					
	Defect D3	Failed concrete surface bed	Occurrence 0% - 15%		Not applicable	Not applicable	Not applicable	X
			Occurrence 15% - 40%	X				
			Occurrence 40% - 75%					
	Defect D4	Bitumen surface failure	Occurrence 0% - 10%		Not applicable		X	
			Occurrence 10% - 40%	X		X		X
			Occurrence 40% - 90%					

Other structural defects in Zone 2:

- Steel columns are used in some areas to provide lateral support for brickwork. The steel columns are subjected to collisions by the forklifts. There is limited damage to these columns but remedial work will be required.
    - **Remedial:** Where a flange has deformed, the flange should be spliced by welding extra steel plates across the deformed section. The loads can then be transferred across the weak deformed section.

Figure 19 Deformed steel columns

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)
- No Floor plan in place
- REF: SANS 10400

Fire Management:

- In some areas signage and fire-fighting equipment were distracted

- REF: GSR 2B & ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

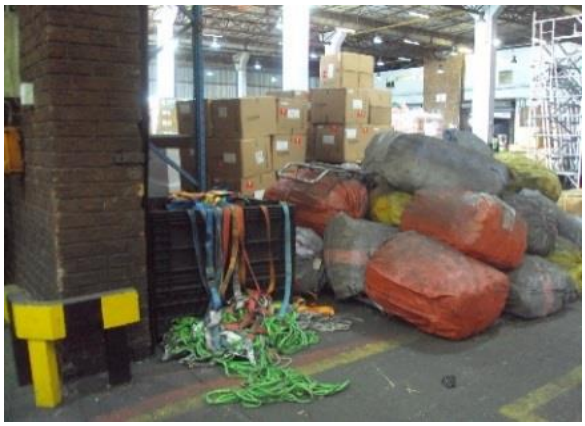
- All in order
- REF: SANS 0400

Ventilation:

- All in order
- REF: ERW 5

Storage:

- Storage was not in order



- REF: GSR 4

Building and Structures:

- Poor maintenance, drainage was blocked

- REF: SANS 10400

2.2.2.3. Ground Floor – Zone 3

Architectural work

Ground floor - Loading Platform (Grid 26 – 35) – Zone 3

Walls:

Face brick wall

- The existing face brick wall to be thoroughly cleaned as specified. Brick work to be repaired where necessary (effort to be made to match bricks where applicable). Prepare the wall and coat with a brick dressing to beautify the depth of color and resist dirt collection.

Plastered and painted walls

- The external concrete and plastered walls to receive a textured or smooth finish (Marmoran or similar with a 10 – 15 year guarantee) that matches [redacted] color scheme. Color to be specified on site.

Concrete columns and beams

- The external concrete columns and beams to receive a textured or smooth finish (Marmoran or similar with a 10 – 15 year guarantee) that matches [redacted] color scheme. Color to be specified on site.

Windows:

Steel windows

- All steel windows below the concrete slab on the Loading Platform are worn and will not be acceptable for the next 10 to 15 years. All to be replaced with a double glazed aluminium glazing system. Apart from thermal requirements these will also help with sound control from a noisy environment.

Steel Burglar proofing to windows

- All steel burglar proofing fitted on the exterior of the building to be prepared and painted as per specification.

External window sills

- All external window sill tiles to be replaced. Tiles to be bedded and joints neatly finished.

Doors:

Roller shutter doors

- All roller shutter doors to be inspected and repaired as per Mechanical engineer's specification and details.

Steel door frames and doors

- All steel door frames and doors on the exterior wall to be prepared and painted as per specification. Color to be specified on site.

Steel security gates

- All steel security gates on the exterior wall to be prepared and painted as per specification. Color to be specified on site.

Floors:

Concrete Floors

- The existing concrete floor surface is badly worn. It has surface cracks and spalled joints.
- Some areas are covered with a 30mm thick asphalt surface, these should be cleaned first before any repair work commences on concrete floor.
- Specialized concrete flooring contractors to repair concrete floor by cutting the joints and repairing the surface cracks.
- The complete floor to be grinned, polished and sealed on completion to obtain a jointless concrete floor.

Bump rails, corner– and edge protectors

- The existing steel edge protectors on the Loading platform to be repaired where necessary (flooring contractor to fill areas where concrete has broken out). This edge protector to be prepared and painted (black and yellow) on completion as per specification.
- The existing steel corner protectors on the corners of columns and walls to be repaired where necessary. Attention to be given that they are securely fixed in position. These steel corner protector to be prepared and painted (black and yellow) on completion as per specification.
- The existing steel bump rail at the bottom of the walls to be repaired where necessary. Attention to be given that they are securely fixed in position and in a straight line. These steel bump rails to be prepared and painted (black and yellow) on completion as per specification.

Roof:

Concrete Roof above Loading Platform

- New waterproofing on roof slab. All existing waterproofing and screeds to be removed. All existing rainwater outlets and downpipes to be checked and repaired. A new waterproofing system to be installed, consisting of a 50mm layer of crushed stone on a geotextile layer, on a 4mm torched-on waterproofing membrane, on a min 50mm screed to fall, on a min 20mm Lambdaboard, on a vapour barrier sheet. All service points on roof to be accessible with a 450x450mm stepping stone walkway. No other traffic access on roof allowed. See notes and details.

Ceiling:

Concrete ceilings

- The existing painted concrete ceiling to be prepared and painted as per specification. All existing cable trays and piping to be checked and securely fixed where necessary.

Joinery:

- No joinery or worktops to be replaced on the Loading Platform (to be for the tenants own account). Contractor to take care not to damage these during the construction phase (any damage for the contractors account).

Signage:

- New fire signs.
- New warning and regulating sign boards to comply with all regulating bodies.
- New sign boards with Warehouse number and occupant name to all entrances.

Facilities for Disabled:

Lift for persons with disabilities

- A new lift for persons with disabilities to be installed on gridlines 26, 29, 31 and 35. These lifts to be clearly marked "PASSENGER LIFT ONLY – NO GOODS" and should be enforced to the full extend as this lifts capacity is only 400kg. The concrete slab above to be cut to allow for access from below. The lift to be properly barricaded with heavy duty bump rails to protect it from loading vehicles.

Ground Floor - Warehouse (Grid 26 – 35)

Walls:

Face brick wall

- The existing face brick wall to be thoroughly cleaned as specified. Brick work to be repaired where necessary (effort to be made to match bricks where applicable). Prepare the wall and coat with a brick dressing to beautify the depth of color and resist dirt collection.

Plastered and painted walls

- All plastered and painted walls to be prepared and painted as per specification. Color to be specified on site.

Concrete columns and beams

- All concrete columns and concrete beams to be prepared and painted as per specification. Color to be specified on site.

Vertical profiled sheet metal cladding

- All vertical profiled sheet metal to be replaced where it is damaged. The steel support holding the sheet metal to be inspected and repaired if necessary. All screws and washers holding the sheet metal

in placed to be checked and tightened where required. The unit to be prepared and painted as per specification.

Doors:

Roller shutter doors

- All roller shutter doors to be inspected and repaired as per Mechanical engineer's specification and details.
- Some doors have been removed between the Warehouse and Steel Extension. It should be determined with the tenants if these doors need to be replaced. It should also be noted that if a tenant leaves or moves to other areas, these warehouses might not be suitable for the next tenant.
- We would suggest that all missing roller shutter doors be replaced and whenever a tenant does not want to use these doors, it should be left in the rolled-up position.
- Africa Flight Services, gridline 15, the door is badly damaged and should be replaced. No repair work should be carried out on this door.
- Aero-Link gridline 18, it was pointed out that the door does not operate properly, and detailed attention should be given to this door.

Floors:

- The existing concrete floor surface is badly worn. It has surface cracks and spalled joints.
- Some areas could be covered with a 30mm thick asphalt surface, these should be cleaned first before any repair work commences on concrete floor.

- The DHL area has an interlocking rubber mat over the entire floor area. These to be removed and any glue to be removed from the floor before any work commences.
- Specialized concrete flooring contractors to repair concrete floor by cutting the joints and repairing the surface cracks.
- The complete floor to be grinned, polished and sealed on completion to obtain a jointless concrete floor.
- The entire floor to receive a heavy-duty interlocking rubber mat (Matloc or similar) on completion that should be glued to the floor as per manufacturer's specification. The lifespan and guarantee to be confirmed with the suppliers of this rubber mat. If this mythology is followed, the repairs to the concrete floor can be cut down to a minimalistic operation.

Roofs:

Roof windows and louvres

- The existing roof windows located on a high level below the ceiling could not be inspected because of their height. From a distance is was noted that different type of windows is used. Some areas have glass louvres and others bottom hinged sections. There is no option to regulate (open and close) these windows.
- All the roof windows to be replaced with double glazed bottom hinged aluminium windows.
- The complete system to be operated with a heavy duty "hand crank and tilt" hardware. Mechanical engineer to advice on what system

to use. All windows to receive external powder-coated aluminium louvres to ensure minimal heat transfer as well as UV damage.

Roof ventilators

- The existing multi-purpose roof mounted natural exhaust ventilators fitted to the roofs to be repaired and serviced to an original smooth operating condition. Mechanical engineer to advise if these ventilators can still be salvaged by repairing and servicing or do they need complete replacing.

Turbine roof ventilators

- The existing turbine roof mounted ventilators fitted to the roof to be repaired and serviced to an original smooth operating condition. Mechanical engineer to advise if these ventilators can still be salvaged with repair and servicing or do they need complete replacing.

Water proofing to concrete roofs

- All existing waterproofing to be removed and concrete roof prepared to receive new material. A new waterproofing system to be installed, consisting of a 4mm torched-on waterproofing membrane, on a min 50mm screed to fall, on a min 20mm Lambdaboard, on a vapour barrier sheet. Finish newly waterproofed roof with Aluminium paint.

Water proofing to concrete box gutters

- All existing waterproofing and screed to be removed and concrete box gutter prepared to receive new material. New screed with falls to outlets. Apply an approved torch-on multi-layer waterproofing

membrane directly to screed. Finish newly waterproofed box gutter of with Aluminium paint.

IBR roofs over Warehouse and Steel extensions

- The existing IBR steel roof is still in a fair state but we feel that it will not last the expected lifespan that is required and suggest the roof sheeting be replaced completely with a powder coated concealed type roof (KlipLok or similar). The system we propose is an Ashgrid system by Safintra, which can be installed over existing sheeting without having to remove it. This creates minimal disruption of a live environment and its associated operations, which this warehouse is. There was maintenance done to the roof, what looks like turbine roof ventilators on the roof ridge removed and multipurpose exhaust ventilators fitted on the slope of the roof. This resulted that patch work had to be done to cover the holes left by the removal of the turbine ventilators. This is a potential weak point for water leaks and some tenants have mentioned that they experience water leaks in heavy rain down pour. As insulation board is fitted below the roof sheeting, it cannot be determined where exactly the roof leak originates from. We also need to mention that the water leaks compromise the insulation boards effectiveness.
- The complete roof trusses and purlins to be prepared and painted with a high-quality polyurethane enamel paint before the new roof sheeting is put in place.
- New 80mm thick Lambda board to be fitted to the underside of the roof sheeting as ceiling, all as per manufacturer's details and specification.

Water proofing to steel box gutters

- Existing steel box gutter at all IBR roofs to be thoroughly checked for any failure. Should it be necessary, the complete box gutter be replaced. The gutter (new and or existing) to be aligned with falls to outlets. Clean and prepare steel box gutters to receive a rubberized lining on inside and the complete gutter on the outside to be painted with a high-quality polyurethane enamel paint.

Ceilings:

- Wherever sheeting is installed the current insulation is not of an acceptable standard anymore. New 80mm Lambdaboard to be installed throughout where the steel trusses are.

Mechanical Works

HVAC:

- Smoke Extract in good condition
- Fresh Air in offices limited

Wet services:

- Cold water galvanised steel pipe
- Drainage is cast iron pipe, similar condition to building

Sprinklers:

- Sprinkler network old specification
- No rack sprinklers

Roller Shutter Doors:

- Generally in good condition with roughly 30% of doors damaged

Electrical & Electronics Works

Power Skirting, Conduits and Cable Support Structures

Power skirting, conduits and cable support structures

Power skirting and conduits in the warehouses and their offices on the ground floor were found to be generally concealed and intact. Cables were correctly supported through their run.

The cable trays and support structures in the warehouses were generally found to be in a fair condition.

Light Fittings

The following types of light fittings were found at the ground floor:

- T8 fluorescent recessed light fittings
- T8 LED/Fluoresent
- T-Bays surface-mounted

In most warehouses, the original T-Bay light fittings, which were found to be dysfunctional, were being replaced by LED equivalent. The illumination levels measured in all the warehouses were found to be non-compliant with the governing standards.

Light fittings found in warehouse offices was found to be functional and in good condition in most areas.

Switches

Similar observations as those from Zone 1.

Power Sockets

The following types of socket outlets were found at the ground floor:

- Surface-mounted socket outlet
- Power skirting socket outlet
- Three-phase plugs

Single-phase socket outlets installation found at the offices was recently installed. Socket outlets were found to be adequate and the installations were considered safe and in an acceptable state.

The three-phase socket outlets were found to be in good condition.

No labelling was found on any of the socket outlets.

Telecomunication and IT

The following type of telephone and data point was found at the ground floor:

- Surface-mounted telephone and data point

Where telephone and data points were installed, they were found to be inadequate in number and generally in a fair condition. None of the telephone and data points were labelled.

Fire Detection System

Similar observations as those from Zone 1.

Structural works

Ground floor Zone 3 includes warehouse number 28 to 36 in this report. The findings are summarized in the table below for each one of the defects identified in Table 4.

Table 4 Severity of standard list of defects for Cargo Warehouse Zone 3

	Defect	Defect description	Tenant number	12	13	14
			Warehouse number(s)	28,29,30	31,32	33,34 to 38
ZONE 3	Defect D1	Concrete column surface failure	Occurrence 0 - 5	X		
			Occurrence 6 - 12			X
			Occurrence 13 - 20		X	
	Defect D2	Concrete surface bed cracks	Occurrence 0% - 15%	X	X	X
			Occurrence 15% - 40%			
			Occurrence 40% - 75%			
	Defect D3	Failed concrete surface bed	Occurrence 0% - 15%	Not applicable		
			Occurrence 15% - 40%		X	
			Occurrence 40% - 75%			X
	Defect D4	Bitumen surface failure	Occurrence 0% - 10%	Not applicable	Not applicable	
			Occurrence 10% - 40%			X
			Occurrence 40% - 90%			

Other structural defects in Zone 3:

- Between Warehouse 31 and 32 a column was constructed to support the roof at the airside extension. This column has a concrete block cast around it to serve as protection against collisions. There is however one column (see image below) that has been struck by a forklift just above the concrete block. The flange has sheared off on the one side which lowers the strength capacity of the column.
    - **Remedial option:** The flange must be bent back to its original position, can be achieved by a hammer. The steel should then be welded to the baseplate in its original position.

Figure 20 Sheared steel column flange

- Forklifts can either be electrical or fuel driven. At warehouse 38 a charging area is allocated for the forklifts to charge the forklift batteries. Some of the forklifts have been leaking battery acid on to the concrete surface bed at the charging bays. The chemical composition of the concrete has changed and the concrete has been damaged in the process.
    - **Remedial:** The concrete should be replaced (refer to defect D3) and tenants must follow environmental legislation rules and regulations in disposing of the concrete rubble.

Figure 21 Battery leakage on concrete floor

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)

- REF: SANS 10400

Fire Management:

- Signs and notices not in order

- REF: GSR 2B

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- All in order
- REF: SANS 0400

Ventilation:

- All in order
- REF: ERW 5

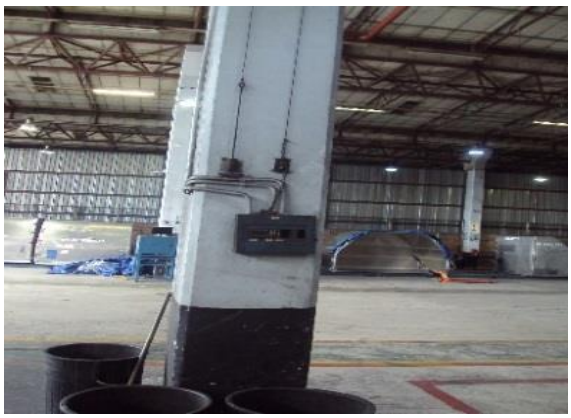
Storage:

- Poor stacking and storage (Articles stacked in front of the DB Box)

- REF: GSR 8

Building and Structures:

- Poor maintenance, renovation is needed



- REF: SANS 10400

2.2.2.4. Ground Floor – Zone 4

Architectural work

Ground floor - Loading Platform (Grid 35 – 46) – Zone 4

Walls:

Face brick wall

- The existing face brick wall to be thoroughly cleaned as specified. Brick work to be repaired where necessary (effort to be made to

match bricks where applicable). Prepare the wall and coat with a brick dressing to beautify the depth of color and resist dirt collection.

Plastered and painted walls

- The external concrete and plastered walls to receive a textured or smooth finish (Marmoran or similar with a 10 – 15 year guarantee) that matches [redacted] color scheme. Color to be specified on site.

Concrete columns and beams

- The external concrete columns and beams to receive a textured or smooth finish (Marmoran or similar with a 10 – 15 year guarantee) that matches [redacted] color scheme. Color to be specified on site.

Windows:

Steel windows

- All steel windows below the concrete slab on the Loading Platform are worn and will not be acceptable for the next 10 to 15 years. All to be replaced with a double glazed aluminium glazing system. Apart from thermal requirements these will also help with sound control from a noisy environment.

Steel Burglar proofing to windows

- All steel burglar proofing fitted on the exterior of the building to be prepared and painted as per specification.

External window sills

- All external window sill tiles to be replaced. Tiles to be bedded and joints neatly finished.

Doors:

Roller shutter doors

- All roller shutter doors to be inspected and repaired as per Mechanical engineer's specification and details.

Steel door frames and doors

- All steel door frames and doors on the exterior wall to be prepared and painted as per specification. Color to be specified on site.

Steel security gates

- All steel security gates on the exterior wall to be prepared and painted as per specification. Color to be specified on site.

Floors:

Concrete Floors

- The existing concrete floor surface is badly worn. It has surface cracks and spalled joints.
- Specialized concrete flooring contractors to repair concrete floor by cutting the joints and repairing the surface cracks.
- The complete floor to be grinned, polished and sealed on completion to obtain a jointless concrete floor.

Bump rails, corner– and edge protectors

- The existing steel edge protectors on the Loading platform to be repaired where necessary (flooring contractor to fill areas where concrete has broken out). This edge protector to be prepared and painted (black and yellow) on completion as per specification.
- The existing steel corner protectors on the corners of columns and walls to be repaired where necessary. Attention to be given that they

are securely fixed in position. These steel corner protector to be prepared and painted (black and yellow) on completion as per specification.

- The existing steel bump rail at the bottom of the walls to be repaired where necessary. Attention to be given that they are securely fixed in position and in a straight line. These steel bump rails to be prepared and painted (black and yellow) on completion as per specification.
- Supply and install new steel bump rail at the bottom of the wall between gridline 43 to 45. These bump rails to match existing and be prepared and painted (black and yellow) on completion as per specification.

Roof:

Concrete Roof above Loading Platform

- New waterproofing on roof slab. All existing waterproofing and screeds to be removed. All existing rainwater outlets and downpipes to be checked and repaired. A new waterproofing system to be installed, consisting of a 50mm layer of crushed stone on a geotextile layer, on a 4mm torched-on waterproofing membrane, on a min 50mm screed to fall, on a min 20mm Lambdaboard, on a vapour barrier sheet. All service points on roof to be accessible with a 450x450mm stepping stone walkway. No other traffic access on roof allowed. See notes and details.

Steel Roof canopies (Gridline 39 to 40 and Gridline 41 to 42)

- The existing IBR steel roof is still in a fair state but we feel that it will not last the expected lifespan that is required.
- We suggest the roof sheeting be replaced completely with a powder coated (on both sides, white for underside) concealed type roof

(KlipLok or similar). Bullnosing to match existing. Care should be given not to damage the finish when replacing the roof sheets.

- The roof to be complete with a Head wall flashing against head wall, Barge flashing on sides and a Drip flashing at the end (all powder coated, color to match roof).
- The complete steel roof trusses, purlins and steel columns to be prepared and painted with a high-quality polyurethane enamel paint before the new roof sheeting is put in place.

Ceiling:

Concrete ceilings

- The existing painted concrete ceiling to be prepared and painted as per specification. All existing cable trays and piping to be checked and securely fixed where necessary.

Ceilings at Steel canopies

- The ceilings at the steel canopies to be white powder coated roof sheeting (see note Roofs). Care should be given not to damage the finish when replacing the roof sheets.

Signage:

- New fire signs.
- New warning and regulating sign boards to comply with all regulating bodies.
- New sign boards with Warehouse number and occupant name to all entrances.

Facilities for Disabled:

Lift for persons with disabilities

- A new lift for persons with disabilities to be installed on gridlines 35, 43 and 45. These lifts to be clearly marked "PASSENGER LIFT ONLY – NO GOODS" and should be enforced to the full extend as this lifts capacity is only 400kg. The concrete slab above to be cut to allow for access from below. The lift to be properly barricaded with heavy duty bump rails to protect it from loading vehicles.

Ramp for persons with disabilities

- Two new ramps to be erected to the Loading Platform (Gridline 37 and gridline 46, see plans) to allow access for persons with disabilities onto the Loading Platform.

Ground Floor - Warehouse (Grid 35 – 46)

Walls:

Face brick wall

- The existing face brick wall to be thoroughly cleaned as specified. Brick work to be repaired where necessary (effort to be made to match bricks where applicable). Prepare the wall and coat with a brick dressing to beautify the depth of color and resist dirt collection.

Plastered and painted walls

- All plastered and painted walls to be prepared and painted as per specification. Color to be specified on site.

Concrete columns and beams

- All concrete columns and concrete beams to be prepared and painted as per specification. Color to be specified on site.

Vertical profiled sheet metal cladding

- All vertical profiled sheet metal to be replaced where it is damaged. The steel support holding the sheet metal to be inspected and repaired if necessary. All screws and washers holding the sheet metal in placed to be checked and tightened where required. The unit to be prepared and painted as per specification.

Doors:

Roller shutter doors

- All roller shutter doors to be inspected and repaired as per Mechanical engineer's specification and details.
- Some doors have been removed between the Warehouse and Steel Extension. It should be determined with the tenants if these doors need to be replaced. It should also be noted that if a tenant leaves or moves to other areas, these warehouses might not be suitable for the next tenant.
- We would suggest that all missing roller shutter doors be replaced and whenever a tenant does not want to use these doors, it should be left in the rolled-up position.

Floors:

- The existing concrete floor surface is badly worn. It has surface cracks and spalled joints.
- Some areas is covered with a 30mm thick asphalt surface, these should be cleaned first before any repair work commences on concrete floor.
- Specialized concrete flooring contractors to repair concrete floor by cutting the joints and repairing the surface cracks.

- The complete floor to be grinned, polished and sealed on completion to obtain a jointless concrete floor.
- The entire floor to receive a heavy-duty interlocking rubber mat (Matloc or similar) on completion that should be glued to the floor as per manufacturer's specification. The lifespan and guarantee to be confirmed with the suppliers of this rubber mat. If this mythology is followed, the repairs to the concrete floor can be cut down to a minimalistic operation.

Roofs:

Roof windows and louvres

- The existing roof windows located on a high level below the ceiling could not be inspected because of their height. From a distance is was noted that different type of windows is used. Some areas have glass louvres and others bottom hinged sections. There is no option to regulate (open and close) these windows.
- All the roof windows to be replaced with double glazed bottom hinged aluminium windows.
- The complete system to be operated with a heavy duty "hand crank and tilt" hardware. Mechanical engineer to advice on what system to use. All windows to receive external powder-coated aluminium louvres to ensure minimal heat transfer as well as UV damage.

Roof ventilators

- The existing multi-purpose roof mounted natural exhaust ventilators fitted to the roofs to be repaired and serviced to an original smooth operating condition. Mechanical engineer to advise if these ventilators can still be salvaged by repairing and servicing or do they need complete replacing.

Turbine roof ventilators

- The existing turbine roof mounted ventilators fitted to the roof to be repaired and serviced to an original smooth operating condition. Mechanical engineer to advise if these ventilators can still be salvaged with repair and servicing or do they need complete replacing.

Water proofing to concrete roofs

- All existing waterproofing to be removed and concrete roof prepared to receive new material. A new waterproofing system to be installed, consisting of a 4mm torched-on waterproofing membrane, on a min 50mm screed to fall, on a min 20mm Lambdaboard, on a vapour barrier sheet. Finish newly waterproofed roof with Aluminium paint.

Water proofing to concrete box gutters

- All existing waterproofing and screed to be removed and concrete box gutter prepared to receive new material. New screed with falls to outlets. Apply an approved torch-on multi-layer waterproofing membrane directly to screed. Finish newly waterproofed box gutter of with Aluminium paint.

IBR roofs over Warehouse and Steel extensions

- The existing IBR steel roof is still in a fair state but we feel that it will not last the expected lifespan that is required and suggest the roof sheeting be replaced completely with a powder coated concealed type roof (KlipLok or similar). The system we propose is an Ashgrid system by Safintra, which can be installed over existing sheeting without having to remove it. This creates minimal disruption of a live environment and its associated operations, which this warehouse is.

There was maintenance done to the roof, what looks like turbine roof ventilators on the roof ridge removed and multipurpose exhaust ventilators fitted on the slope of the roof. This resulted that patch work had to be done to cover the holes left by the removal of the turbine ventilators. This is a potential weak point for water leaks and some tenants have mentioned that they experience water leaks in heavy rain down pour. As insulation board is fitted below the roof sheeting, it cannot be determined where exactly the roof leak originates from. We also need to mention that the water leaks compromise the insulation boards effectiveness.

- The complete roof trusses and purlins to be prepared and painted with a high-quality polyurethane enamel paint before the new roof sheeting is put in place.
- New 80mm thick Lambda board to be fitted to the underside of the roof sheeting as ceiling, all as per manufacturer's details and specification.

Water proofing to steel box gutters

- Existing steel box gutter at all IBR roofs to be thoroughly checked for any failure. Should it be necessary, the complete box gutter be replaced. The gutter (new and or existing) to be aligned with falls to outlets. Clean and prepare steel box gutters to receive a rubberized lining on inside and the complete gutter on the outside to be painted with a high-quality polyurethane enamel paint.

Ceilings:

- Wherever sheeting is installed the current insulation is not of an acceptable standard anymore. New 80mm Lambdaboard to be installed throughout where the steel trusses are.

Mechanical Works

HVAC:

- Smoke Extract in good condition
- Fresh Air in offices limited

Wet services:

- Cold water galvanised steel pipe
- Drainage is cast iron pipe, similar condition to building

Sprinklers:

- Sprinkler network old specification
- No rack sprinklers

Roller Shutter Doors:

- Generally in good condition with roughly 30% of doors damaged

Electrical & Electronics Works

Power skirting, conduits and cable support structures

Power skirting and conduits were found to be in general concealed. Power skirting installation is partly loose, safe and acceptable.

Where visible, wire ways found to be filled to capacity leading to cable spillage and broken covers rendering the installation untidy.

Cable trays and support structures were found to be in a fair condition.

Light Fittings

The following types of light fittings were found at the ground floor:

- High Bay LED light fitting
- T8 fluorescent surface-mounted light fittings.

- T8 fluorescent recessed light fittings

In some warehouses, LED high-bay light fitting were found suspended from a steel trucking replacing the original T-bay lighting.

Most light fittings found in warehouse offices were found to be functional. The fittings were generally found to be in a fair condition.

Switches

Similar observationa as those from Zone 1.

Socket outlets

The following types of socket outlets were found at the ground floor:

- Recessed socket outlet
- Power skirting socket outlet

Socket outlets were found to be generally adequate. Socket outlets installations were found to be intact, safe and acceptable.

No labelling was found on any of the socket outlets.

Telecomunication and data

The following types of telephone and data points were found at the ground floor:

- Power skirting telephone and data points
- Surface-mounted telephone and data points

Where telephone and data points were installed, they were found to be in generally adequate. Telephone and data points were found to be intact, safe and acceptable.

Telephone and data points were not labelled.

Fire Detection System

Similar observations as those from Zone 1.

Structural works

Ground floor Zone 4 includes warehouse number 39 to 45 in this report. The findings are summarized in the table below for each one of the defects identified in Table 5.

Table 5 Severity of standard list of defects for Cargo Warehouse Zone 4

	Defect	Defect description	Tenant number	15	16
			Warehouse number(s)	39,40,41	42,43,44,45
ZONE 4	Defect D1	Concrete column surface failure	Occurrence 0 - 5	X	X
			Occurrence 6 - 12		
			Occurrence 13 - 20		
	Defect D2	Concrete surface bed cracks	Occurrence 0% - 15%	X	X
			Occurrence 15% - 40%		
			Occurrence 40% - 75%		
	Defect D3	Failed concrete surface bed	Occurrence 0% - 15%	X	X
			Occurrence 15% - 40%		
			Occurrence 40% - 75%		
	Defect D4	Bitumen surface failure	Occurrence 0% - 10%		Not applicable
			Occurrence 10% - 40%	X	
			Occurrence 40% - 90%		

Other structural defects in Zone 4:

- Between Warehouse 40 and 41 a column was constructed to support the roof at the airside extension. The lower portion of the column has a concrete block cast around it to serve as protect against collisions. This specific column (see image below) has no foundation and is sitting loose on the surface bed (confirmed by the warehouse manager). The failure is expected to be a combination of surface water rusting the rebar off and impact load from forklifts. The column position is right in front of a grid inlet, with water constantly flowing through the column reinforcement.

- **Remedial:** The steel column has to be temporarily supported by beams. The surface bed should then be broken out to expose the foundation and layer works should be excavated out up to the top of base level. The concrete portion of the column can then be demolished and a new column should be cast up to the steel column level. Reinforcement for the new column should be doweled directly in to the concrete footing. Temporary supports are removed once the concrete have set to the designed strength.

Figure 21 Loose concrete column

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)
- REF: SANS 10400

Fire Management:

- Fire extinguisher is missing

- REF: ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

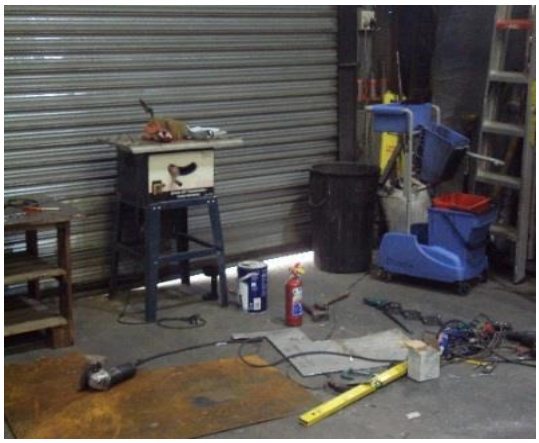
- All in order
- REF: SANS 0400

Ventilation:

- All in order
- REF: ERW 5

Storage:

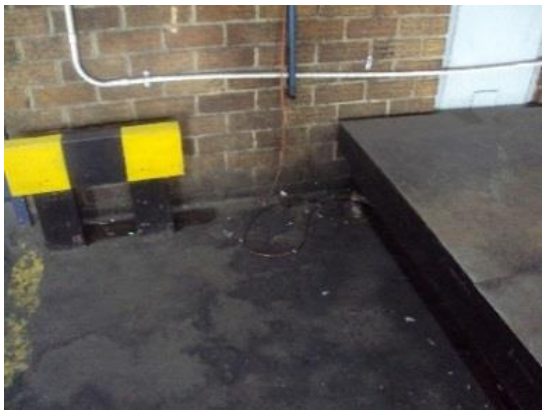
- Poor house keeping



- REF: GSR 8

Building and Structures:

- Poor maintenance



- REF: SANS 10400

2.2.2.5. First Floor – Zone 5

Architectural work

First Floor (Grid 1 – 14) – Zone 5

Walls:

- The existing brick walls is in a fair condition with some damage caused to it by trollies and general wear.

- Stainless Steel corner protectors and bottom protector rails to be applied to strategic areas to protect walls from damage.
- Walls to be painted as per specification. New skirtings to be fitted as per specification.
- The new brick walls in the toilet facilities to be plastered and tiled up to ceiling level with full bodied porcelain tiles as specified.
- All existing tiled walls to be re-tiled with full bodied porcelain tiles as specified.

Windows:

Steel windows

- The existing windows in the stair area to be replaced as part of the warehouse high level windows that needs replacing. No mechanical opening device for these windows required.
- The existing windows on the western façade in the ablutions and office areas are steel windows with clear glazing and a protective film on it. The protective film is failing and peeling from the glass. The window frame needs major repairs as hinges, ironmongery and glass needs replacement. Some window frames have rust on them.
- The windows do not meet the energy requirements as set out in SANS 10400 – Part XA.
- It is therefore recommended that all windows in toilet areas and offices be removed and new aluminium windows with a double glazing system (obscured glass for privacy in toilets / ablutions) be fitted to the building to comply with SANS 10400 – Part XA.

External window sills

- All external window sill tiles to be replaced. Tiles to be bedded and joints neatly finished.

Sun Louvres

- New vertical sun louvres to be fitted to all windows facing west. There is currently no protection against the sun on the western façade of the building. The purpose of the new louvres is not only the heat generated by the sun but also a shading benefit to the occupants using these offices.

Doors:

Steel doors

- All doors in toilet area and Tea Kitchen to be replaced due to the new toilet layout to make provision for persons with disabilities (See door schedule).

Aluminium doors

- All existing aluminium doors in passages and doors fitted to 1st floor stair, to be repaired and cleaned.
- Fire engineer to determine if these doors / gates to the stair comply with fire regulations.

Duct doors

- Duct doors to be replaced with fire doors to comply with the latest fire regulations.

Floors:

- The existing vinyl tiles in the Passage is worn and old. The vinyl tiles should be replaced with new full bodied porcelain tiles. See schedules.
- New toilet facilities, toilet for Disabled and Tea kitchen to receive full bodied porcelain floor tiles. See schedules.

Roof:

Water proofing to roof over

- This roof is a continuation of the roof in the Warehouse area and waterproofing to be the same as that for the Warehouse, including the box gutter.

Ceiling:

- The ceiling in the stair well is part of the box gutter (steel and concrete). This ceiling to be painted as per specification.
- Existing gypsum ceilings in the passage have stains (due to water leak) and are sagging. New suspended lay-in acoustic ceiling in passage to be installed.
- Ceiling in toilet areas is suspended ceilings. These ceilings are old and ceiling tiles broken. To provide facilities for disabled a new toilet area to be designed.
- The new ablution facilities and tea kitchen to receive a suspended lay-in vinyl ceiling.

Joinery:

- The new Tea kitchen to receive new worktop with cupboards below. Some high-level cupboards will be installed.
- A new vanity along with all sanitary fittings to be installed in all ablutions.

Sanitary Fittings:

- Sanitary fittings in toilet areas and Kitchens are in working (not all of them) condition. These fittings need replacement.
- Disabled Facilities: No Toilet for Disabled in this building. This is a law full requirement as per SANS 10400 Part S – Facilities for Disabled.

- Provision for Disabled Facilities to be made to comply with SANS 10400 Part S – Facilities for Disabled.
- To comply with SANS 10400 Part S, the complete toilet area to be redesigned to facilitate toilets for both male and female, Toilet for Disabled, Tea Kitchen and the Lift for Disabled (see note Ablution).
- New sanitary fittings to be installed throughout.

Ablutions:

- No toilet facilities for Disabled. The complete existing Toilet area to be redesigned to cater for Lift for person with disability, WC for person with disability, Male toilet (1 WC, 2 urinals and 3 basins), Female toilet (3 WCs and 3 basins), Tea kitchen and Cleaner store. On gridline 14 the Female toilet to be utilized as Male shower facility (2 showers, 1 toilet and 3 basins). All toilet facilities and shower facilities to be fully equipped with all fittings required (hand driers, soap dispensers, mirrors, etc…).

Stairs:

- The Stairs from the Loading Platform to the First Floor offices are tiled in a terrazzo finish (some stairs has an epoxy coating on it) that is structurally sound in most areas, but aesthetically not in a position to remain acceptable for the next 10 years.
- All stairs to be stripped of all finishes and retiled with a hard full body porcelain tile. All stair nosing tiles to also receive a wide edge trim to protect it against chipping.
- The handrail is constructed from painted mild steel and in a structurally acceptable condition, yet will have to be upgraded to last for 10 more years. In the interim it can be repainted, but this

solution will require regular maintenance. Our suggestion would be to remove it and replace with a stainless steel handrail.

Signage:

- New fire signs by Fire Engineer.
- New directional sign board to be erected in Passage on completion.

Lift for persons with disabilities:

- A new lift for persons with disabilities to be installed on gridlines 2, 5, 8, 11 and 14. These lifts to be clearly marked "PASSENGER LIFT ONLY – NO GOODS" and should be enforced to the full extend as this lift's capacity is only 400kg. The concrete slab on the 1st floor to be cut to allow for access from the Loading bay below. This lift to open in the Passage area.

Mechanical Works

HVAC:

- No fresh air in some corridors
- Fresh Air in offices limited

Wet services:

- Hot water piping uninsulated
- Cold water piping galvanised steel
- Drainage is cast iron
- Geysers in some service ducts

Sprinklers:

- No sprinklers in some area
- No cut off sprinklers between office and warehouse

Roller Shutter Doors:

- Generally in good condition with roughly 30% of doors damaged

Electrical & Electronics Works

Power Skirting and Conduits

Power skirting and conduits were found to be in generally concealed. Power skirting and conduits installations were found to be partly loose, unsafe and unacceptable.

In some areas, cable trays and power skirting were filled to capacity. Some cables were not correctly supported through their run, and this results in cable spillages and breakages.

Light Fittings

The following types of light fittings were found at the first floor:

- T8 fluorescent surface-mounted light fittings
- T8 fluorescent recessed light fittings

Light fittings found in the offices were ranging from fair to good condition depending on the effort put by the tenant on the maintenance of the installations.

Switches

The following type of light switches were found at the first floor:

i. Single-lever light switch

None of the light switches were labelled

Socket outlets

The following socket outlets were found at the first floor:

- Surface-mounted socket outlet

- Recessed socket outlets
- Power skirting socket outlets

Socket outlets installations were found to be adequate. Socket outlets installation is deemed intact, safe and acceptable.

No labelling was found on any of the socket outlets.

Telecomunication and IT

The following types of telephone and data points were found at first floor:

- Telephone and data on power skirting

Telephone and data points installations were found to be adequate. Telephone and data points installation was generally found to be intact and acceptable. However, data points on power skirting found in office were partly loose.

None of the telephone and data points was labelled.

Fire Detection System

Parts of the office area was found to be without fire detection devices.

Lack of proper fire detection and protection was considered to be very risky.

Structural works

Cargo Warehouse First floor Zone 5 scope only covers the stair case and ablution area. The stairs and ablution areas are structural sound and no further structural inputs are required for these Zones.

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)

- REF: SANS 10400

Fire Management:

- Fire fighting equipment not in place

- REF: ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- All in order
- REF: SANS 0400

Ventilation:

- All in order

- REF: ERW 5

Storage:

- Good housekeeping was observed

- REF: GSR 4

Building and Structures:

- Poor maintenance

- REF: SANS 10400

2.2.2.6. First Floor – Zone 6

Architectural work

First Floor (Grid 14 – 26) – Zone 6

Walls:

- The existing brick walls is in a fair condition with some damage caused to it by trollies and general wear.
- Stainless Steel corner protectors and bottom protector rails to be applied to strategic areas to protect walls from damage.
- Walls to be painted as per specification. New skirtings to be fitted as per specification.
- The new brick walls in the toilet facilities to be plastered and tiled up to ceiling level with full bodied porcelain tiles as specified.
- All existing tiled walls to be re-tiled with full bodied porcelain tiles as specified.

Windows:

Steel windows

- The existing windows in the stair area to be replaced as part of the warehouse high level windows that needs replacing. No mechanical opening device for these windows required.
- The existing windows on the western façade in the ablutions and office areas are steel windows with clear glazing and a protective film on it. The protective film is failing and peeling from the glass. The window frame needs major repairs as hinges, ironmongery and glass needs replacement. Some window frames have rust on them.
- The windows do not meet the energy requirements as set out in SANS 10400 – Part XA.
- It is therefore recommended that all windows in toilet areas and offices be removed and new aluminium windows with a double glazing system (obscured glass for privacy in toilets / ablutions) be fitted to the building to comply with SANS 10400 – Part XA.

External window sills

- All external window sill tiles to be replaced. Tiles to be bedded and joints neatly finished.

Sun Louvres

- New vertical sun louvres to be fitted to all windows facing west. There is currently no protection against the sun on the western façade of the building. The purpose of the new louvres is not only the heat generated by the sun but also a shading benefit to the occupants using these offices.

Doors:

Steel doors

- All doors in toilet area and Tea Kitchen to be replaced due to the new toilet layout to make provision for persons with disabilities (See door schedule).

Aluminium doors

- All existing aluminium doors in passages and doors fitted to 1st floor stair, to be repaired and cleaned.
- Fire engineer to determine if these doors / gates to the stair comply with fire regulations.

Duct doors

- Duct doors to be replaced with fire doors to comply with the latest fire regulations.

Floors:

- The existing vinyl tiles in the Passage is worn and old. The vinyl tiles should be replaced with new full bodied porcelain tiles. See schedules.
- New toilet facilities, toilet for Disabled and Tea kitchen to receive full bodied porcelain floor tiles. See schedules.

Roof:

Water proofing to roof over

- This roof is a continuation of the roof in the Warehouse area and waterproofing to be the same as that for the Warehouse, including the box gutter.

Ceiling:

- The ceiling in the stair well is part of the box gutter (steel and concrete). This ceiling to be painted as per specification.
- Existing gypsum ceilings in the passage have stains (due to water leak) and are sagging. New suspended lay-in acoustic ceiling in passage to be installed.
- Ceiling in toilet areas is suspended ceilings. These ceilings are old and ceiling tiles broken. To provide facilities for disabled a new toilet area to be designed.
- The new ablution facilities and tea kitchen to receive a suspended lay-in vinyl ceiling.

Joinery:

- The new Tea kitchen to receive new worktop with cupboards below. Some high-level cupboards will be installed.
- A new vanity along with all sanitary fittings to be installed in all ablutions.

Sanitary Fittings:

- Sanitary fittings in toilet areas and Kitchens are in working (not all of them) condition. These fittings need replacement.
- Disabled Facilities: No Toilet for Disabled in this building. This is a law full requirement as per SANS 10400 Part S – Facilities for Disabled.
- Provision for Disabled Facilities to be made to comply with SANS 10400 Part S – Facilities for Disabled.
- To comply with SANS 10400 Part S, the complete toilet area to be redesigned to facilitate toilets for both male and female, Toilet for Disabled, Tea Kitchen and the Lift for Disabled (see note Ablution).
- New sanitary fittings to be installed throughout.

Ablutions:

- No toilet facilities for Disabled. The complete existing Toilet area to be redesigned to cater for Lift for person with disability, WC for person with disability, Male toilet (1 WC, 2 urinals and 3 basins), Female toilet (3 WCs and 3 basins), Tea kitchen and Cleaner store. On gridline 20 and 26 the Female toilet to be utilized as Male shower facility (2 showers, 1 toilet and 3 basins). All toilet facilities and shower facilities to be fully equipped with all fittings required (hand driers, soap dispensers, mirrors, etc…).

Stairs:

- The Stairs from the Loading Platform to the First Floor offices are tiled in a terrazzo finish (some stairs has an epoxy coating on it) that is structurally sound in most areas, but aesthetically not in a position to remain acceptable for the next 10 years.
- All stairs to be stripped of all finishes and retiled with a hard full body porcelain tile. All stair nosing tiles to also receive a wide edge trim to protect it against chipping.
- The handrail is constructed from painted mild steel and in a structurally acceptable condition, yet will have to be upgraded to last for 10 more years. In the interim it can be repainted, but this solution will require regular maintenance. Our suggestion would be to remove it and replace with a stainless steel handrail.

Signage:

- New fire signs by Fire Engineer.
- New directional sign board to be erected in Passage on completion.

Lift for persons with disabilities:

- A new lift for persons with disabilities to be installed on gridlines 14, 17, 20, 23 and 26. These lifts to be clearly marked "PASSENGER LIFT ONLY – NO GOODS" and should be enforced to the full extend as this lift's capacity is only 400kg. The concrete slab on the 1st floor to be cut to allow for access from the Loading bay below. This lift to open in the Passage area.

Mechanical Works

HVAC:

- No fresh air in some corridors
- Fresh Air in offices limited

Wet services:

- Hot water piping uninsulated
- Cold water piping galvanised steel
- Drainage is cast iron
- Geysers in some service ducts

Sprinklers:

- No sprinklers in some area
- No cut off sprinklers between office and warehouse

Roller Shutter Doors:

- Generally in good condition with roughly 30% of doors damaged

Electrical & Electronics Works

Power Skirting and Conduits

Power Skirting and Conduits

Power skirting and conduits installations were found to be in generally concealed. However, wire ways in some areas were filled to capacity leading to cable spillage and broken covers rendering the installation untidy.

It was evident that some of the tenants like Lufthansa Cargo and AFS have recently done refurbishments on their small power installations. The offices of those tenants were found to be in good condition.

Light Fittings

The follwing types of light fittings were found at first floor:

- LED downlight light fittings
- T8 LED recessed light fittings
- LED pendant light fitting
- T8 fluorescent recessed light fittings
- CFL downlights light fitting

Light fittings found in the offices were found to be generally in good condition.

Light fittings found in ablution were in found to be in a fair condition. Where installed, CFL bulb were not regularly replaced signifying lack of maintenance.

Switches

The following types of light switches were found at first floor:

- Single lever light switch
- Dimmable double light switch

The light switches were in good condition.

None of the light switches were labelled.

Socket outlets

The following types of socket outlets were found at the first floor:

- Power skirting socket outlet
- Surface-mounted socket outlet
- Recessed socket outlet.

Socket outlets installations were found to be generally inadequate. Hence, some of tenants uses extension cords to reticulate power. Where installed, power skirting socket outlets were partly loose, therefore unsafe and unacceptable.

Recently installed socket outlets at the Lufthansa Cargo and AFS offices were found to be in a good condition.

No labelling was found on any of the socket outlets.

Telecommunication and IT

The following types of telephone and data points was found at the first floor:

- Surface-mounted telephone and data points
- Power skirting telephone and data points

Telephone and data points installations were found to be inadequate, except for newer installation at Lufthansa Cargo and AFS. Where installed, the telephone and data sockets were found to be intact and in an acceptable state. However, telephone and data points were not labelled.

Fire detection system

Similar observations as those from Zone 5

Structural works

Cargo Warehouse First floor Zone 6 scope only covers the stair case and ablution area. The stairs and ablution areas are structural sound and no further structural inputs are required for these Zones.

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)
- REF: SANS 10400

Fire Management:

- In some areas signages and notices were in place

- REF: ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- All in order
- REF: SANS 0400

Ventilation:

- All in order
- REF: ERW 5

Storage:

- Improper storage of HCS

- REF: GSR 8

Building and Structures:

- Poor maintenance.

- REF: SANS 10400

2.2.2.7. First Floor – Zone 7

Architectural work

First Floor (Grid 26 – 35) – Zone 7

Walls:

- The existing brick walls is in a fair condition with some damage caused to it by trollies and general wear.

- Stainless Steel corner protectors and bottom protector rails to be applied to strategic areas to protect walls from damage.
- Walls to be painted as per specification. New skirtings to be fitted as per specification.
- The new brick walls in the toilet facilities to be plastered and tiled up to ceiling level with full bodied porcelain tiles as specified.
- All existing tiled walls to be re-tiled with full bodied porcelain tiles as specified.
- DHL (Gridline 29) repaint and tiled their walls. However, to install the facilities for Disabled these walls needs to be rebuild and upgraded and new finished to walls as specified.
- The offices at Cargolux (Gridline 31) is a face brick finish in Passages. We would suggest that these walls be plastered and painted as per specification. This will make the Passages appear lighter.

Windows:

Steel windows

- The existing windows in the stair area to be replaced as part of the warehouse high level windows that needs replacing. No mechanical opening device for these windows required.
- The existing windows on the western façade in the ablutions and office areas are steel windows with clear glazing and a protective film on it. The protective film is failing and peeling from the glass. The window frame needs major repairs as hinges, ironmongery and glass needs replacement. Some window frames have rust on them.
- The windows do not meet the energy requirements as set out in SANS 10400 – Part XA.

- It is therefore recommended that all windows in toilet areas and offices be removed and new aluminium windows with a double glazing system (obscured glass for privacy in toilets / ablutions) be fitted to the building to comply with SANS 10400 – Part XA.

External window sills

- All external window sill tiles to be replaced. Tiles to be bedded and joints neatly finished.
- Sun Louvres
- New vertical sun louvres to be fitted to all windows facing west. There is currently no protection against the sun on the western façade of the building. The purpose of the new louvres is not only the heat generated by the sun but also a shading benefit to the occupants using these offices.

Doors:

Steel doors

- All doors in toilet area and Tea Kitchen to be replaced due to the new toilet layout to make provision for persons with disabilities (See door schedule).

Aluminium doors

- All existing aluminium doors in passages and doors fitted to 1st floor stair, to be repaired and cleaned.
- Fire engineer to determine if these doors / gates to the stair comply with fire regulations.
- Duct doors

- Duct doors to be replaced with fire doors to comply with the latest fire regulations.

Floors:

- The existing vinyl tiles in the Passage is worn and old. The vinyl tiles should be replaced with new full bodied porcelain tiles. See schedules.
- New toilet facilities, toilet for Disabled and Tea kitchen to receive full bodied porcelain floor tiles. See schedules.
- DHL (gridline 29) and Lonrho Logistics (Gridline 35) have replaced their floor tiles and is still in a good condition. To keep uniformity and to keep within [redacted] s office guidelines, we suggest that these floors also be replaced with full bodied porcelain floor tiles.

Roof:

Water proofing to roof over

- This roof is a continuation of the roof in the Warehouse area and waterproofing to be the same as that for the Warehouse, including the box gutter.

Ceiling:

- The ceiling in the stair well is part of the box gutter (steel and concrete). This ceiling to be painted as per specification.
- Existing gypsum ceilings (DHK suspended ceilings) in the passage have stains (due to water leak) and are sagging. New suspended lay-in acoustic ceiling in passage to be installed.

- Ceiling in toilet areas is suspended ceilings. These ceilings are old and ceiling tiles broken. To provide facilities for disabled a new toilet area to be designed.
- The new ablution facilities and tea kitchen to receive a suspended lay-in vinyl ceiling.

Joinery:

- The new Tea kitchen to receive new worktop with cupboards below. Some high-level cupboards will be installed.
- A new vanity along with all sanitary fittings to be installed in all ablutions.

Sanitary Fittings:

- Sanitary fittings in toilet areas and Kitchens are in working (not all of them) condition. These fittings need replacement.
- Disabled Facilities: No Toilet for Disabled in this building. This is a law full requirement as per SANS 10400 Part S – Facilities for Disabled.
- Provision for Disabled Facilities to be made to comply with SANS 10400 Part S – Facilities for Disabled.
- To comply with SANS 10400 Part S, the complete toilet area to be redesigned to facilitate toilets for both male and female, Toilet for Disabled, Tea Kitchen and the Lift for Disabled (see note Ablution).
- New sanitary fittings to be installed throughout.

Ablutions:

- No toilet facilities for Disabled. The complete existing Toilet area to be redesigned to cater for Lift for person with disability, WC for person

with disability, Male toilet (1 WC, 2 urinals and 3 basins), Female toilet (3 WCs and 3 basins), Tea kitchen and Cleaner store. On gridline 20 and 26 the Female toilet to be utilized as Male shower facility (2 showers, 1 toilet and 3 basins). All toilet facilities and shower facilities to be fully equipped with all fittings required (hand driers, soap dispensers, mirrors, etc…).

Stairs:

- The Stairs from the Loading Platform to the First Floor offices are tiled in a terrazzo finish (some stairs has an epoxy coating on it) that is structurally sound in most areas, but aesthetically not in a position to remain acceptable for the next 10 years.
- All stairs to be stripped of all finishes and retiled with a hard full body porcelain tile. All stair nosing tiles to also receive a wide edge trim to protect it against chipping.
- The handrail is constructed from painted mild steel and in a structurally acceptable condition, yet will have to be upgraded to last for 10 more years. In the interim it can be repainted, but this solution will require regular maintenance. Our suggestion would be to remove it and replace with a stainless steel handrail.
- DHL (gridline 29) and Lonrho Logistics (Gridline 35) have replaced their stair tiles and is still in a good condition. To keep uniformity and to keep within [redacted]s office guidelines, we suggest that these stair tiles also be replaced with full bodied porcelain floor tiles as per specification.

Signage:

- New fire signs by Fire Engineer.
- New directional sign board to be erected in Passage on completion.

Lift for persons with disabilities:

- A new lift for persons with disabilities to be installed on gridlines 26, 29, 31 and 35. These lifts to be clearly marked "PASSENGER LIFT ONLY – NO GOODS" and should be enforced to the full extend as this lift's capacity is only 400kg. The concrete slab on the 1st floor to be cut to allow for access from the Loading bay below. This lift to open in the Passage area.

Mechanical Works

HVAC:

- No fresh air in some corridors
- Fresh Air in offices limited

Wet services:

- Hot water piping uninsulated
- Cold water piping galvanised steel
- Drainage is cast iron
- Geysers in some service ducts

Sprinklers:

- No sprinklers in some area
- No cut off sprinklers between office and warehouse

Roller Shutter Doors:

- Generally in good condition with roughly 30% of doors damaged

Electrical & Electronics Works

Power Skirting and Conduits

Power skirting and conduits were found to be generally concealed. Most parts of conduits and power skirting installations in Zone 7 were found to be intact, safe and acceptable as some were recently refurbished.

Light Fittings

The following types of light fittings were found at the first floor:

- T8 fluorescent surface-mounted light fittings
- T8 fluorescent recessed light fittings
- LED pendants

Light fittings found in the offices were found to be generally in good condition while some were in fair condition. This was due to the fact that a significant portion of the installation was recently refurbished by the tenants (e.g. DHL, Lonrho, etc.).

Light fittings found in the passages leading to the offices and few offices were in poor condition. Fluorescent tubes were not regularly replaced signifying lack of maintenance.

Switches

The following types of light switches were found in the first

- Single lever recessed light fitting
- Double lever surface-mounted light fitting.
- Double lever recessed light fitting

None of the light switches were labeled however all were in good condition.

Socket outlets

The following types of socket outlets were found at the first floor:

- Power skirting socket outlets
- Recessed socket outlet
- Surface-mounted socket outlet

Socket outlets were found to be adequate. Most socket outlets were intact, safe and acceptable as most of them in the area concerned were recenctly installed by the tenants.

However, these socket outlets were not labelled.

Telecomunication and data

The following types of telephone and data points were found at the first floor:

- Power skirting telecommunication and data points

Telephone and data were found to be adequate in most areas, especially in newer installations at DHL offices, Lonrho and the like. Telephone and data installations were found to be intact and in an acceptable state.

However, the installations were not labelled.

Fire Detection System

Similar observations as those from Zone 5.

Structural works

Cargo Warehouse First floor Zone 7 scope only covers the stair case and ablution area. The stairs and ablution areas are structural sound and no further structural inputs are required for these Zones.

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)

- REF: SANS 10400

Fire Management:

- Fire-fighting equipment's in order, however signages and notices were not in order

- REF: ERW 9 & GSR 2B

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- All is in order
- REF: SANS 0400

Ventilation:

- All in order
- REF: ERW 5

Storage:

- Good stacking and storage
- REF: GSR 8

Building and Structures:

- Poor maintenance, renovation is needed

- REF: SANS 10400

2.2.2.8. First Floor – Zone 8

Architectural work

First Floor (Grid 14 – 26)

Walls:

- The existing brick walls is in a fair condition with some damage caused to it by trollies and general wear. The walls is a face brick finish in Passages. We would suggest that these walls be plastered and painted as per specification. This will make the Passages appear lighter.
- Stainless Steel corner protectors and bottom protector rails to be applied to strategic areas to protect walls from damage.
- The new brick walls in the toilet facilities to be plastered and tiled up to ceiling level with full bodied porcelain tiles as specified.
- All existing tiled walls to be re-tiled with full bodied porcelain tiles as specified.

Windows:

Steel windows

- The existing windows in the stair area to be replaced as part of the warehouse high level windows that needs replacing. No mechanical opening device for these windows required.
- The existing windows on the western façade in the ablutions and office areas are steel windows with clear glazing and a protective film on it. The protective film is failing and peeling from the glass. The window frame needs major repairs as hinges, ironmongery and glass needs replacement. Some window frames have rust on them.
- The windows do not meet the energy requirements as set out in SANS 10400 – Part XA.
- It is therefore recommended that all windows in toilet areas and offices be removed and new aluminium windows with a double glazing system (obscured glass for privacy in toilets / ablutions) be fitted to the building to comply with SANS 10400 – Part XA.

External window sills

- All external window sill tiles to be replaced. Tiles to be bedded and joints neatly finished.

Sun Louvres

- New vertical sun louvres to be fitted to all windows facing west. There is currently no protection against the sun on the western façade of the building. The purpose of the new louvres is not only the heat generated by the sun but also a shading benefit to the occupants using these offices.

Doors:

Steel doors

- All doors in toilet area and Tea Kitchen to be replaced due to the new toilet layout to make provision for persons with disabilities (See door schedule).

Aluminium doors

- All existing aluminium doors in passages and doors fitted to 1st floor stair, to be repaired and cleaned.
- Fire engineer to determine if these doors / gates to the passage / stair comply with fire regulations.
- Duct doors
- Duct doors to be replaced with fire doors to comply with the latest fire regulations.

Floors:

- The existing ceramic floor tiles in the Passage is worn and old. The ceramic tiles should be replaced with new full bodied porcelain tiles. See schedules.
- New toilet facilities, toilet for Disabled and Tea kitchen to receive full bodied porcelain floor tiles. See schedules.

Roof:

Water proofing to roof over

- This roof is a continuation of the roof in the Warehouse area and waterproofing to be the same as that for the Warehouse, including the box gutter.

Ceiling:

- The ceiling in the stair well is part of the box gutter (steel and concrete). This ceiling to be painted as per specification.

- The existing ceiling on gridline 43 Passage is concrete ceiling. This ceiling to be painted as per specification.
- The existing ceiling on gridline 45 Passage is suspended ceiling. This ceiling to be replaced with new suspended ceiling as specified as it is old and discoloured.
- Ceiling in toilet areas is suspended ceilings. These ceilings are old and ceiling tiles broken. To provide facilities for disabled a new toilet area to be designed.
- The new ablution facilities and tea kitchen to receive a suspended lay-in vinyl ceiling.

Joinery:

- The new Tea kitchen to receive new worktop with cupboards below. Some high-level cupboards will be installed.
- A new vanity along with all sanitary fittings to be installed in all ablutions.

Sanitary Fittings:

- Sanitary fittings in toilet areas and Kitchens are in working (not all of them) condition. These fittings need replacement.
- Disabled Facilities: No Toilet for Disabled in this building. This is a law full requirement as per SANS 10400 Part S – Facilities for Disabled.
- Provision for Disabled Facilities to be made to comply with SANS 10400 Part S – Facilities for Disabled.

- To comply with SANS 10400 Part S, the complete toilet area to be redesigned to facilitate toilets for both male and female, Toilet for Disabled, Tea Kitchen and the Lift for Disabled (see note Ablution).
- New sanitary fittings to be installed throughout.

Ablutions:

- No toilet facilities for Disabled. The complete existing Toilet area to be redesigned to cater for Lift for person with disability, WC for person with disability, Male toilet (1 WC, 2 urinals and 3 basins), Female toilet (3 WCs and 3 basins), Tea kitchen and Cleaner store. On gridline 20 and 26 the Female toilet to be utilized as Male shower facility (2 showers, 1 toilet and 3 basins). All toilet facilities and shower facilities to be fully equipped with all fittings required (hand driers, soap dispensers, mirrors, etc…).

Stairs:

- The Stairs from the Loading Platform to the First Floor offices are tiled in a ceramic finish worn and old. These tiles will not remain acceptable for the next 10 years.
- All stairs to be stripped of all finishes and retiled with a hard full body porcelain tile. All stair nosing tiles to also receive a wide edge trim to protect it against chipping.
- The handrail is constructed from painted mild steel and in a structurally acceptable condition, yet will have to be upgraded to last for 10 more years. In the interim it can be repainted, but this solution will require regular maintenance. Our suggestion would be to remove it and replace with a stainless steel handrail.

Signage:

- New fire signs by Fire Engineer.
- New directional sign board to be erected in Passage on completion.

Lift for persons with disabilities:

- A new lift for persons with disabilities to be installed on gridlines 35, 43 and 45. These lifts to be clearly marked "PASSENGER LIFT ONLY – NO GOODS" and should be enforced to the full extend as this lift's capacity is only 400kg. The concrete slab on the 1st floor to be cut to allow for access from the Loading bay below. This lift to open in the Passage area.

Mechanical Works

HVAC:

- No fresh air in some corridors
- Fresh Air in offices limited

Wet services:

- Hot water piping uninsulated
- Cold water piping galvanised steel
- Drainage is cast iron
- Geysers in some service ducts

Sprinklers:

- No sprinklers in some area
- No cut off sprinklers between office and warehouse

Roller Shutter Doors:

- Generally in good condition with roughly 30% of doors damaged

Electrical & Electronics Works

The conditions of Zone 8 are generally similar to those of Zone 7.

The multiple tenants occupying the offices in the areas seem to do a good job with maintenance of their small power and lighting installations. Only a few areas were found to be concerning.

Structural works

Cargo Warehouse First floor Zone 8 scope only covers the stair case and ablution area. The stairs and ablution areas are structural sound and no further structural inputs are required for these Zones.

OH&S Considerations

Emergency Preparedness and Response:

- Fire detection system has never been tested (no records)
- REF: SANS 10400

Fire Management:

- Fire-fighting equipment's, signages and notices missing

- REF: ERW 9

Access/Security:

- All in order
- REF: SANS 10400

Sanitation and Hygiene:

- All in order
- REF: SANS 0400

Ventilation:

- All in order
- REF: ERW 5

Storage:

- Improper storage of HCS

- REF: GSR 8

Building and Structures:

- Poor maintenance

- REF: SANS 10400

2.2.1.16 Cargo Warehouse Roof Level

Mechanical Works

HVAC:

- Smoke Extract openings in visually in good condition but untested

Electrical & Electronics Works

Light fittings:

Different types of flood lights were found attached to the roof of the warehouse building to provide area lighting. It seemed like these lights were installed by individual tenants for security reasons.

The flood lights appeared to be functional and in good condition.

Earthing and lightning protection:

The following components are included in the earthing and lightning protecton:

- Air terminals
- Down conductors
- Earthing terminalsThe earthing and lightning system appears to have been vandlised. Air terminals located on the roof were damaged and down conductor were disconnected to the earthing conductors. The compromised lightning protection system puts the installation and electronic components at risk of being damaged by lightning surges.

Structural works

Structural defects at the Warehouse roofs:

- The emergency overflow concrete overhang has disintegrated, and the rebar is exposed (see image below) at roughly 30% of all the channel roofs.
    - **Remedial:** Refer to defect D1. The reinforcement has to be cut back and not be exposed. It is suggested that the overflow must be replaced with a new concrete overflow channel.

Figure 22 Disintegrated concrete emergency overflow

- Similar to the Cargo Office building, the Cargo Warehouse has masts and company boards. The same defects are applicable with regards to loose masts, unused masts and open anchor holes as per the Cargo Office building.

- **Remedial:** Refer to masts remedial as per section 2.2.1.13 on page 174 of the Cargo Offices.

Figure 23 Steel masts on roof level

- The roof level has been constructed with precast concrete beams for most of the roofs. The concrete beams are fixed to the concrete columns (assumed to be doweled together). Roughly 24% of the reinforcement cover for the beams are insufficient at the support ends (4 out of 17 beams). The lack of cover have started to expose the beam reinforcement over time and rust is present at the exposed reinforcement.
    - **Remedial:** Refer to defect D1 to repair the concrete

Figure 24 Exposed roof beam reinforcement

2.2.2.9. External Work

Civil works

The Cargo Warehouse Loading Area is the OR Tambo Air Freight off-loading and loading area. This area is a large area with a huge amount of delivery truck traffic. The area is approximately 22 770 m^2. The area is situated on the landside of the Cargo Warehouse between a concrete prefabricated boundary wall and the loading bay docks. The area has pedestrian traffic, normal car parking bays as well as perpendicular truck parking bays for delivery or collection of air freight. There are civil services in the area comprising of water, sewer and stormwater as well.

Roads

Road Surface

The majority of the area is asphalt surfaced. Only two small areas appears to be concrete surfaced. A typical view of this roads is shown in Figure 10 below. The cargo loading bay docks are on the right side of the photo.

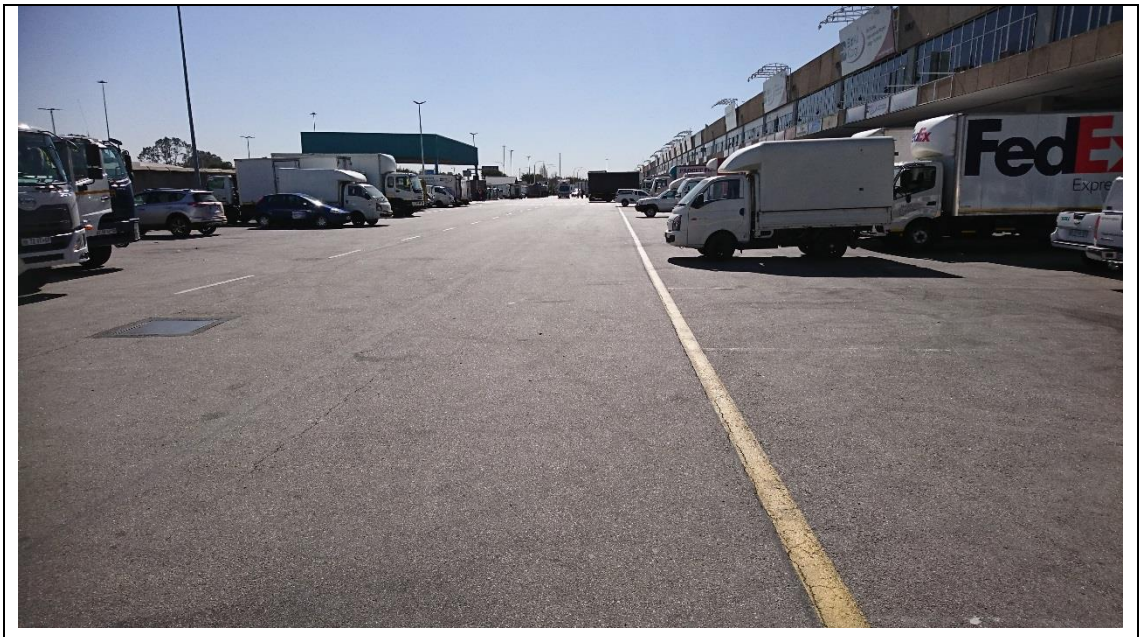


Figure 25 Typical view of Cargo Warehouse loading area.

- **Findings**: This access road together with the delivery areas needs remedial works to fix the longitudinal cracks, stabilization cracks, local pavement failure, and section pavement failure. These failures are limited and localised to the loading zones of the trucks. In some places the structural road layer works below has been damaged.
- **Recommendations**: Seal cracks and construct new asphalt overlay.

Figure 11 shows a typical longitudinal crack in the area.

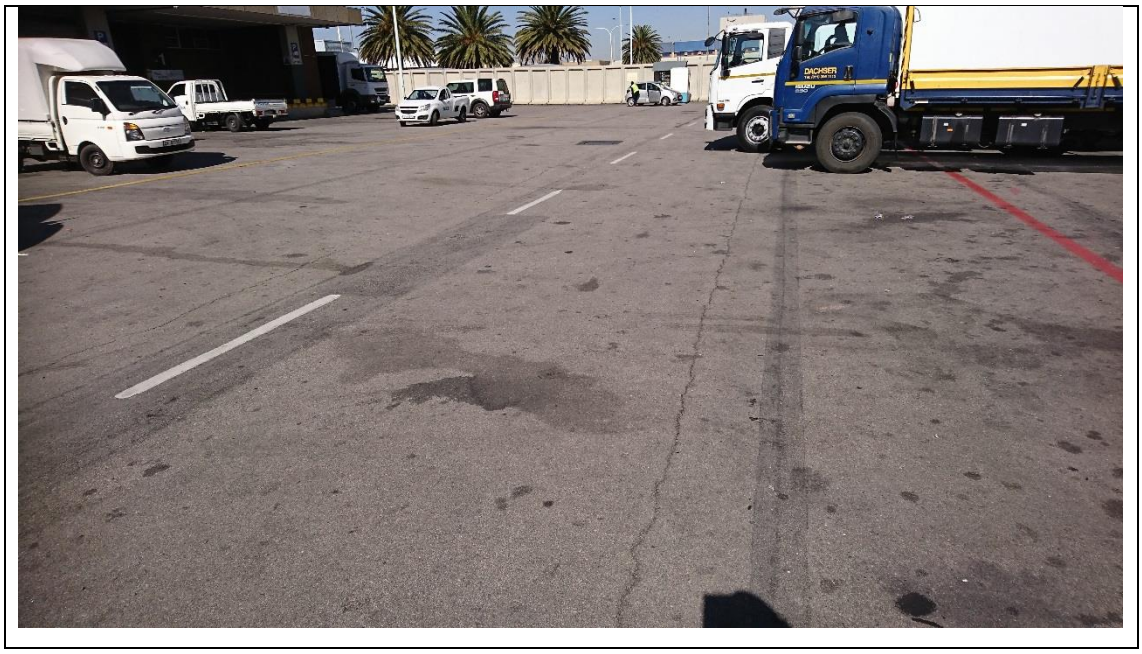


Figure 26 Longitudinal cracks in Cargo Warehouse loading area.

Figures 27 and 28 show a typical local pavement failure and section pavement failure.

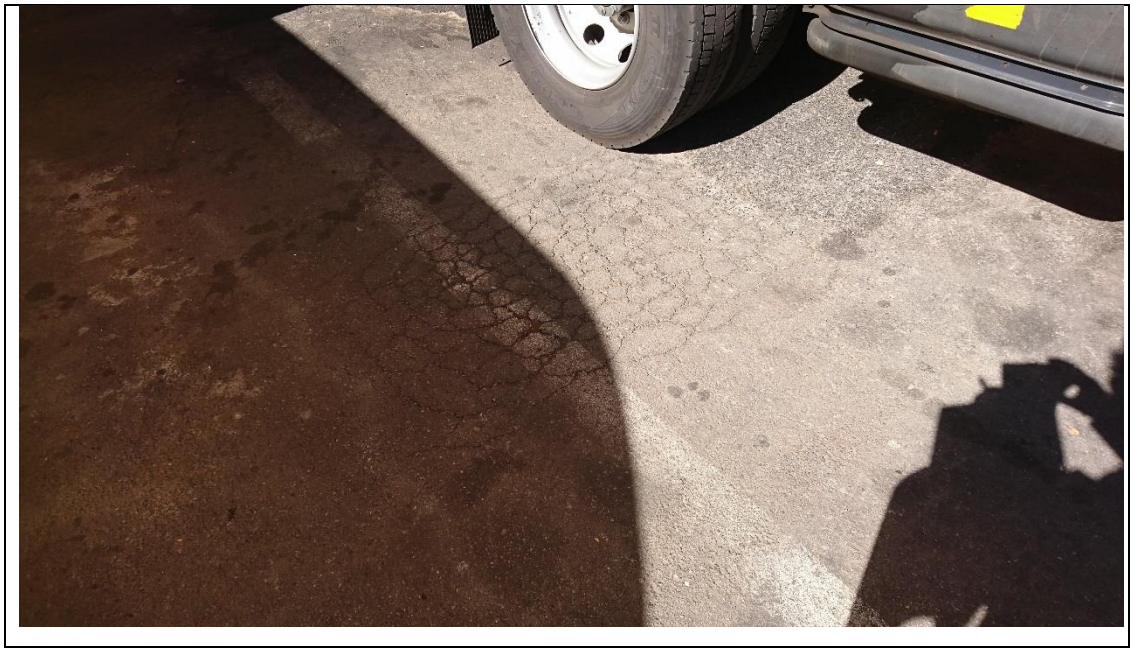


Figure 27 Local pavement failure

Figure 28 Section pavement failure

Ancillary Roadworks

The ancillary roadworks assessed comprise of road signs, road markings, speed humps, kerbs and guard rails.

- **Findings**: Road signs and markings are in poor condition. Speed humps are in fair condition. Kerbs are in fair condition. Guardrails are in poor condition. Loffelstein retaining wall block are in general good condition but some sections need repair.
- **Recommendations**: Install new road signs and markings. Repair damaged kerbs and repair guardrails. Repair damaged Lofelstein retaining wall sections.

Figures 14 and 15 below show the typically varying condition of the road markings.

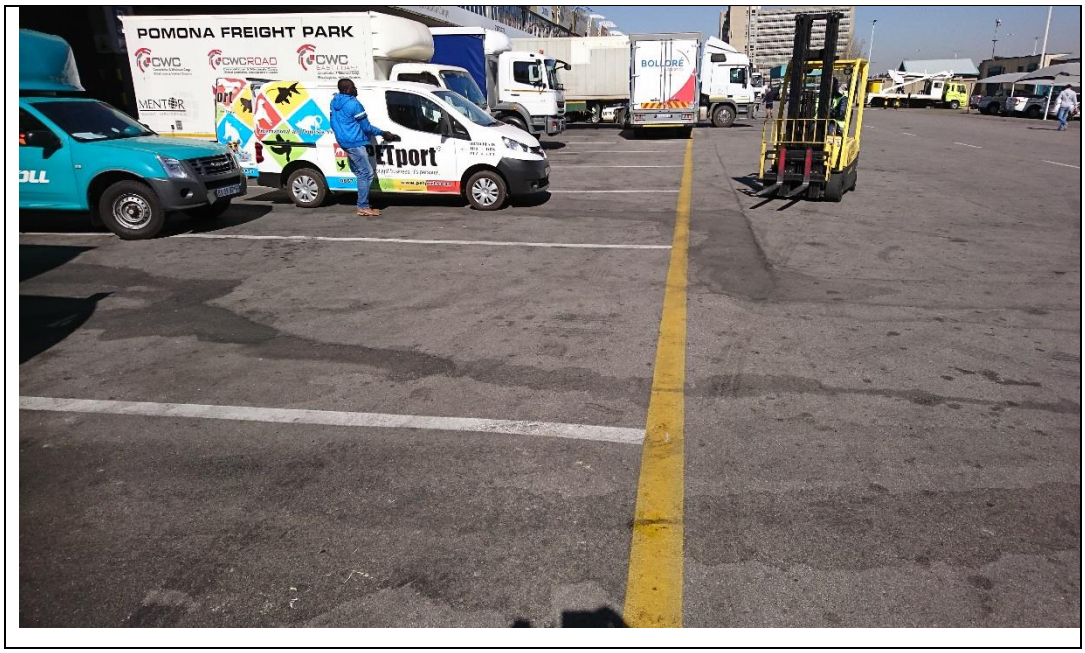


Figure 29 Road markings in good state

Figure 30 Rood marking in poor state, cracked.

The kerbs are in fairly condition with minor damages as shown in Figure 31 below.

Figure 31 Poor kerb condition

Figure 32 shows guardrails which are in a poor damaged state.

Figure 32 Guardrails

There are two sections where existing Loffelstein retaining wall block structures have damaged blocks. See Figure 18 below.

Figure 33 Damaged Loffelstein blocks.

Stormwater

The area has an existing dual drainage stormwater network consisting of a surface system and an underground pipe system. The surface system consists of grid inlets, kerb inlets, channels and surface runoff through the boundary wall openings which eventually discharge into the underground pipe system.

- **Findings**: Externally stormwater manholes are in fair condition. The condition of the stormwater pipes could not be established as problems such as blockages and pipe grade problems can only be determined by further investigations such as camera inspections etc. The internal condition of manholes varies from fair to poor condition. Kerb inlet openings are narrow and almost clogged up. Some manholes have stagnant water inside.
- **Recommendations**: Minor structural repairs are required to the manhole chambers. Further investigations are required (CCTV inspections) to determine the pipe internal condition.

Figures 34 and 35 below show the typical external and internal condition of the stormwater manholes in the Cargo Warehouse loading area. The external condition is fair and the internal condition poor.

Figure 34 External condition of manhole

Figure 35 Manhole internal condition

Generally the grid inlets internally show signs of partial blockage due to the presence of debris. Externally the grids on the inlets show little or no sign of damage. A typical grid inlet is shown in Figures 36 and 37 below.

Figure 36 Stormwater Grid Inlet

Figure 37 Good condition grid inlet with debris

Figures 24 and 25 show the typical good external and fair internal condition most of the stormwater manholes. Although generally the brickwork is in a good condition, lack of a free draining manhole results in a weakened manhole structure. The stormwater pipe projections in the manhole have minor edge breaks which needs repair.

Figure 38 Good external condition

Figure 39 Manhole with stagnant water inside.

Figures 40 and 41 below shows a kerb inlet structure with a very narrow kerb inlet opening. The manhole is blocked by debris. Concrete repairs to the opening of the structure and site clearing works are required.

Figure 40 Kerb inlet with narrow opening

Figure 41 Partially blocked kerb inlet manhole

South of the Cargo Warehouse there is concrete surfaced lined channel draining into a grid inlet. The channel is damaged – concrete cracks, spalling, edge breaks and no fill in the concrete joints. See Figure 42 and Figure 43 below.

Figure 42 Surface drain with minor structural damages

Figure 43: Damaged concrete channel with grid inlet

Water

There is an existing 350 mm diameter steel bulk water supply line connected to the municipal supply line.

Findings: According to Civil maintenance there is a 75 mm steel pipe at the toe of the loading docks that has regular breakages.

Recommendations: Replace existing pipeline with a larger pipe, possibly a 150 mm diameter pipe.

See Figure 44 below.

Figure 44: View of the Cargo Warehouse bulk water supply pipe

Sewer (sanitation)

There is a sewerage network that collects the sewer flow from the Cargo Warehouse building.

- **Findings**: The sewer system is in a fair external and internal condition. Maintenance issues in terms of blockages are regularly reported and attended to. The main sewer network is very deep. Only the visible external and internal manhole condition of the manholes have been assessed. The condition of the underground sewer pipes is not known. Further investigations such as camera inspections are recommended to check pipe blockages, root ingress, etc.
- **Recommendations**: Minor repairs are need inside and outside the manholes. The manholes need to be made water tight. The condition of the underground sewer pipes is unknown and further tests, in the form of camera inspections etc, are recommended.

Figures 45 and 46 show the good sewer manhole external condition and the fair internal condition. The joints between the sewer manhole rings need repairs. Since the manhole is very deep, the condition of the benching and sewer pipes could not be established. Further investigations in the form of camera inspections are recommended. Some joints between manhole rings need repair.

Figure 45 Good external manhole condition

Figure 46 Typical fair condition of sewer manhole. Concrete cracks can be seen around sewer inlet pipe

Cargo Warehouse Parking Area

Cargo Warehouse Parking Area is to the south of the Cargo Warehouse building. This parking area caters for the general motor vehicle parking. This area is approximately 1 220 m^2 and have about 50 number car parking bays and 4 motor cyclist parking bays. See Figure 32 below for a general view of the area.

Figure 47 Cargo parking Area, view from the east

Road Surface

- **Findings**: The parking area has an asphalt surface that was overlaid with a slurry layer. At the main entrance/exit of the parking the turning movements have created stone loss. There are a significant amount of both longitudinal and transverse cracks.
- **Recommendations**: Repair cracks and construct new asphalt overlay. Demolish and reconstruct concrete surface areas that are worn away.

Figures 48 and 49 below show the longitudinal cracks and stone loss in the area. It is recommended to seal the cracks first before construction of a new surface seal.

Figure 48: Longitudinal cracks

Figure 49: Stone loss at entrance and exits

Ancillary Roadworks

Ancillary roadworks consist of road signs and markings as well as kerbs.

- **Findings**: The road marking lines are cracked or faded. The kerbing is in a fair state.
- **Recommendations**: New road signs and markings are recommended. The faded kerb paint at the exit/entrance needs repainting.

Speed humps

- **Findings**: The speed humps are in a poor condition. It appears the speed humps are constructed from concrete with a top superficial layer which is already loose and damaged, broken pieces can be seen. Poor workmanship could be to blame.
- **Recommendations**: New concrete speed humps are required.

Figure 50 shows a typical speed hump.

Figure 50: Damaged speed hump

Stormwater

- **Findings**: The asphalt surfaced Cargo Warehouse Parking Area drains as sheet runoff towards a shallow concrete channel. The channel collects the surface runoff from most of the southern portion of the Cargo Warehouse Loading Area into the underground pipe system. The spaces in between the precast Cargo Warehouse Loading Area boundary wall units allows the surface runoff to pass into this car parking area. See Figure 51 below.
- **Recommendations**: The open channel is in a fair condition. Repairs will be required to fix damaged concrete and asphalt edges of the stormwater channel.

Figure 51 Box drain with grid cover

Architectural work

Walls

- External walls are untreated concrete columns and beams. These concrete surfaces to receive a textured or smooth finish (Marmoran or similar with a 10 – 15 year guarantee) that matches [redacted] color scheme.
- The infill panels between concrete columns and beams consist of a face brick wall. The face brick wall to be thoroughly cleaned as specified. Brick work to be repaired where necessary (effort to be made to match bricks where applicable). Prepare the wall and coat with a brick dressing to beautify the depth of color and resist dirt

Windows:

Steel Windows on Western Facade

- The existing windows on the western façade in the ablutions and office areas are steel windows with clear glazing and a protective film on it. The protective film is failing and peeling from the glass. The window frame needs major repairs as hinges, ironmongery and glass needs replacement. Some window frames have rust on them.
- The steel windows below the concrete slab on the Loading Platform are worn and will not be acceptable for the next 10 to 15 years.
- All external windows on western facade to be replaced with new Aluminium windows. To comply with fenestration requirements a double-glazing system with a Low Emissivity Glass to meet Energy Fenestration to be used. Obscured glass to be used in Toilet / Ablution facilities for privacy.
- All external window sill tiles to be replaced. Tiles to be bedded and joints neatly finished.

Sun Louvres

- New vertical sun louvres to be fitted to all windows facing west. There is currently no protection against the sun on the western façade of the building. The purpose of the new louvres is not only the heat generated by the sun but also a shading benefit to the occupants using these offices.

2.2.2.10. General

Architectural work

General Notes:

- The temporary moving of tenants as their spaces undergo revamping is a critical component to the project that can also bear significant financial implications. Initial discussions with [redacted] and relevant tenant representatives have not exhausted this point to a satisfactory level and we had to make certain assumptions on this issue.
- It is suggested that a temporary warehouse be constructed where all the tenants' racking and operations can be moved into during construction. This temporary warehouse must also be movable to be moved closest to the relevant warehouses. The detail and implement ability of this solution is still to be discussed, but a financial allowance is already made
- It needs to be noted that no coordination between the consultants has been done. All items covered in this report is purely from an architectural viewpoint and all other disciplines still to investigate and report back on comments made hereunder.
- No detail design work has been done for this report.
- The Steel Extension was built directly on top of the existing stormwater drain that is parallel to the building on the eastern side. This results that some grids are situated inside the building. Civil engineer to determine if these inlet grids be removed and covered op as they

have no drainage function inside the building and only collecting dirt and rubbish. All to be cleaned.

- An effort to be made to tidy-up the walls (inside and outside of Warehouses) of all surface mounted ducts, conduits, wires, old redundant equipment, Air conditioner condensate pipes, etc… If need be, cable trays or conduits to be installed or recessed into walls. Each consultant to investigate their own existing services and all to coordinate this item and come to a solution to address this problem.
- This is a serious problem and some of these walls are just appalling.
- Mechanical engineer to investigate and calculate the heat generated by the air conditioner compressors that leads into the Warehouse area to determine if these levels area acceptable and how does it affect SANS 10400 Part XA.

2.2.2.11. Substations and Cable Tunnel

Freight Substation 1 and Diesel Room

Power Skirting, Conduits and Cable Support Structures:

Conduits for power cables were found to be generally concealed. The installations were found to be intact, safe and acceptable. Cable were correctly supported through their run.

Suspended cable trays were found to be in good condition with the cables fixed firmly on them.

Lighting:

The flourescent lights installed in the substation were found to be in good condition and they seem to be well maintained. However, there were no maintenance records provided to confirm the maitenance scheduling and intervensions.

The light fittings require some labelling.

Light switches:

Similar to light fittings, the single lever light switches installed in thesubstation were found to be in good condition.

The switches also require some labelling.

Power sockets:

Surface-mounted socket outlets found in the substation were in good condition. They also seem to be well maintained.

The socket outlet were also found to be without labelling.

Telecommunication, control and IT systems:

There was no communication devices/ system found in any of the substations. No telecommunication and data points were found either.

The only control system of note found was the generator controller housed in the Diesel Room.

Fire detection system:

The smoke detectors found in the substation appeared to be in a good condition but the functionality was doubtful.

Electrical Equipment and Systems

Power transformers:

The two power transformers found in the transformer room of Substation 1 were appeared to be in a good condition. Further, the maintenance records provided by [redacted] engineers indicated that there was no sign of internal fault in the transformer.

However, the spacing between the transformers and the surrounding walls was found to be a concern. There was no sufficient working space around the transformers and there was no fire barrier between them.

The most concerning defect found in the installation was the lack of oil containment fascility in the transformer room. Instead, there were cable trenches in the room that would be filled with oil in case of any spillage. This made the installation non-compliant with environmental and safety regulations governing transformer installations.

The cable terminations of the two transformers were found to be exposed as they were not fully covered. The termination box of the step-up transformer was made out of a steel mesh while the one for step-down transformer was made out of a steel cover that is not closed at the bottom. This posed a risk of exposure to rodents and vermin that could compromise the voltage withstand capability between the terminals.

The transformers were found to be poorly labelled after noticing the swapping of labelled that was corrected by temporary labels.

Low voltage switchgear:

The was one LV switchboard found in the LT room which had two parts, essential and non-essential boards. The two parts both appeared to be in a good condition as the covers and dooars were still intact. However, he labelling of the boards and the internal parts was found to be poor.

When the panels were opened, the situation was found to be different. The internal wiring of the circuit breakers was found to be poorly done as the cabling and wires were not properly braced. The circuit breakers feeding different loads were also not segregated. This implied there is a serious risk of loosing multiple loads should there be a fault on any of the circuits. It would also be unsafe to work on any of the circuits while the rest of the board is energised due to exposure to

live parts. This was therefore considered to be a serious operational and safety risk.

The ACBs that were used on the incomer panels were recently upgraded and therefore found to be in a very good condition.

Medium voltage switchgear:

There was one MV panel found in the same room as the LV switchboard. The panel appeared to be in a good condition and it was properly labelled. The internal parts of the control compartment, which was opened for inspection, was found to also be in a good condition.

Maintenance records provided evidence that the MV panel was functional.

Uninterruptable power supply:

The UPS unit found in the switchgear room appeared to be in a good condition.

Battery tripping unit:

There was no battery tripping unit found in the LT room.

Diesel generator set:

The generator, control panel and diesel engine found in the Diesel Room all appeared to be in a good condition.

The diesel tank was found to be in a fair condition due to what appeared to be minor leaks.

A significant defect found in the installation was the uncovered terminals of the batteries.

Earthing and lightning protection system:

The earthing and lightning protection system appeared to be in a fair condition. The connections of the air terminal system appeared to be incomplete with parts of the conductors missing due to suspected copper theft.

Freight Substation 2

Building Electrical Installations, Telecommunication and Electronics

Power skirting, conduits and cable support structures:

The cable trays found in Substation 2 were in a fair condition. Most parts of the cables were found to be properly supported and fixed on the tray.

Lighting:

The light fittings found in all the rooms of the substation were in a good condition. They provided sufficient light in the rooms.

Lack of labelling on the lights was found to be a concern.

Switches:

The light switches were found to be in a good condition.

They also required labelling for identification.

Power sockets:

The power sockets were found to be in a good condition.

Just like light fittings and switches, they also required labelling for identification.

Telecommunication, control and IT systems:

There was no telecommunication of IT systems found in the substation.

Fire detection system:

Similar condition as that of Susbstation 1 installations.

Electrical Equipment and Systems

Power transformers:

Similar conditions as those of the transformers in Substation 1.

Low voltage switchgear:

Similar conditions as those of the LV switchgear in Substation 1.

Medium voltage switchgear:

Similar conditions as those of the MV panel in Substation 1.

Uninterruptable power supply:

Similar conditions as those of the UPS in Substation 1.

Battery tripping unit:

The BTU found in Substation 2 appeared to be in a good condition.

The one unusual aspect observed was that of having the batteries outside the BTU enclosure. The exposed batteries appeared to be properly stacked and in a good condition.

Earthing and lightning protection system:

Substation 2 is part of the Cargo Offices building. Hence, the conditions of the earthing and lightning protection system of the building would apply.

Freight Substation 3

Building Electrical Installations, Telecommunication and Electronics

Power skirting, conduits and cable support structures:

The conduits found in Substation 3 were found to be generally concealed, intact, therefore in a good condition.

Lighting:

The light fittings found in all the rooms of the substation were in a good condition. They provided sufficient light in the rooms.

Lack of labelling on the lights was found to be a concern.

Switches:

The light switches were found to be in a good condition.

They also required labelling for identification.

Power sockets:

The power sockets were found to be in a good condition.

Just like light fittings and switches, they also required labelling for identification.

Telecommunication, control and IT systems:

There was no telecommunication of IT systems found in the substation.

Fire detection system:

Similar condition as that of Susbstation 1 installations

Electrical Equipment and Systems

Power transformers:

Similar conditions as those of the transformers in Substation 1.

Low voltage switchgear:

Similar conditions as those of the LV switchgear in Substation 1.

Medium voltage switchgear:

Similar conditions as those of the MV panel in Substation 1.

Uninterruptable power supply:

Similar conditions as those of the UPS in Substation 1.

Battery tripping unit:

The BTU found in Substation 3 appeared to be in a good condition.

Earthing and lightning protection system:

The earthing and lightning protection system of Substation 3 was found to be in a similar condition as that of Susbtation 1.

Freight Substation 4

Building Electrical Installations, Telecommunication and Electronics

Power skirting, conduits and cable support structures:

The conduits found in Substation 3 were found to be generally concealed, intact, therefore in a good condition.

Lighting:

The light fittings found in all the rooms of the substation were in a good condition. They provided sufficient light in the rooms.

Lack of labelling on the lights was found to be a concern.

Switches:

The light switches were found to be in a good condition.

They also required labelling for identification.

Power sockets:

The power sockets were found to be in a good condition.

Just like light fittings and switches, they also required labelling for identification.

Telecommunication, control and IT systems:

There was no telecommunication of IT systems found in the substation.

Fire detection system:

Similar condition as that of Susbstation 1 installations

Electrical Equipment and Systems

Power transformers:

There was only one transformer found in Substation 4, which appeared to be in a good condition.

Lack of oil containment fascility in the transformer room was found to be a big concern as discussed in the case of Substation 1.

Low voltage switchgear:

Similar conditions as those of the LV switchgear in Substation 1.

Medium voltage switchgear:

Similar conditions as those of the MV panel in Substation 1.

Uninterruptable power supply:

There was no UPS found in Substation 4.

Battery tripping unit:

The BTU found in Substation 4 had the same condition as that of Susbtation 2.

Earthing and lightning protection system:

Substation 4 is part of the Cargo Warehouse building. Hence, the conditions of the earthing and lightning protection system of the building would apply.

Freight Main Intake Station

Building Electrical Installations, Telecommunication and Electronics

Power skirting, conduits and cable support structures:

The conduits found in the Main Intake Station were found to be generally concealed, intact, therefore in good condition.

Light fittings:

The flourescent light fittings found in all the rooms of the substation were in good condition. They provided sufficient light in the rooms.

Lack of labelling on the lights was found to be a concern .

Power sockets:

The power sockets were found to be in good condition.

Just like light fittings and switches, the socket outlets require labelling for identification.

Telecommunication, control and IT systems:

The telephone found in the substation was old and outdated, but still good working condition.

Electrical Equipment

Transformers:

There was no power transformer found in the substation.

Medium voltage switchgear:

The MV switchboard found in the Main Intake Stake Similar were also in similar conditions as those of the MV panel in Substation 1.

Uninterruptable power supply:

The two UPS's found in the Main Intake Station appeared to be in good condition. The units also seem to be functional even though no measurements or tests were done.

Battery tripping unit:

The BTU found in the Main Intake Station appeared to be in good condition.

Earthing and lightning protection system:

The earthing and lightning protection of the Main Intake Station was found to be the same as that of Substation. Hence, it can be deduced that the conditions observed as well as ratings were similar.

Air Conditioning Plant Room

Power skirting, conduits and cable support structures:

The conduits found in the Main Intake Station were found to be generally concealed, intact, therefore in good condition.

Light fittings:

The flourescent light fittings found in the plant room were in good condition. They provided sufficient light in the rooms.

Lack of labelling on the lights was found to be a concern.

Socket outlets:

The power sockets were found to be in good condition.

Just like light fittings and switches, the socket outlets require labelling for identification.

Telecomunication, control and IT systems:

There was no telecommunication or IT system spotted in the substation.

Low voltage switchgear:

The LV switchgear found in the plant room was found to be in a good working condition. The equipment seem to be well-maintained although no records were provided in this regard.

Earthing and lightning protection system:

Just like in the case of Substation 2, the conditions observed on the earthing and lightning protection installation of the Cargo Warehouse together with the ratings would apply in this case.

Cable Tunnel

Cables:

The electric and communication cables found in the tunnel generally appeared to be in good condition. Their external insulation was found to be intact and there was no visible hot spot observed.

Cable racks and support structures:

The cable racks and their support structures were found to be generally intact and in a relatively good condition. However, there were some minor dents and signs of rusting was observed on a few racks.

The biggest concern was found to be the untidy arrangement of cables in the area near their entry points that would make fault finding difficult. In some areas, cables were also found loose from the racks.

Tunnel services:

The control panel of the extraction fans of the tunnel was found to be redundant and appeared to be out of commission for a while. The lack of operational extraction fan could pose a serious health and safety risk for anyone working in the panel and was therefore considered unacceptable.

The lights found in the tunnel were found to be in good condition, which would suggest that they are well-maitained since they are kept on at all times. Lack of labelling on the lights was found to be a concern.

The drainage system in the tunnel was found to be the biggest concern after realising that there was water flooding the large area in the tunnel. This was mainly due to the sump pumps that was found to be dysfunctional.

2.3. Recommendations

2.3.1. Cargo Offices

2.3.1.1. Basement floor

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/AB-099 - Basement Layout"*
- *Recommendations Schedule under "1032907C/AB/400/01 Recommendations Schedule: Basement: (Sheet 1 of 2) and 1032907C/AB/400/02 Recommendations Schedule: Basement: (Sheet 2 of 2)"*
- *Door Schedules under "1032907C/AB-402-01- Door Schedules: Basement"*

Mechanical Works

HVAC:

- Minor HVAC Work (replacement of Door grilles)
- Change extraction system for shower area
- AHU not working, change of Fresh Air system is proposed
- Toilet Extraction to be upgraded

Ducting systems:

- Refurbish Fresh Air insulation

Kitchen equipment:

- N/A

Wet services:

- Change of all piping to water points (Hot, Cold and drainage)
- Add heat pumps to geyser systems

Sprinklers:

- Extend sprinkler network into corridors of basement

Lifts:

- Change lifts

General

- Generate Fire protection specification

Electrical & Electronics Works– All floors

Power Skirting and Conduits

Item	Recommended Remedial Intervention	Applicable Floor/ Area
1.	Refurbish all the power skirting and conduits to house new power and communication cabling. Surface mounted steel power skirting is recommended. PVC trunking/ conduits should be considered as an alternative for installation in areas where the installation of steel power skirting is not feasible or economical.	B, G, 2, 5 - 10
2.	The building should be rewired to improve the life-expectancy of the small power and lighting installation. The new wiring to be contained in the new power skirting and conduits shall comply with SANS 10142-1.	B, G, 2, 5 - 10

Power Sockets

Item	Recommended Remedial Intervention	Applicable Floor/ Area
1.	Install new power socket outlets with the associated wiring on the new power skirting. Provision to be made for normal and dedicated socket outlets to suit the needs of the power users in the different areas. Pole-mounted and pedestal-mounted types should be considered for the offices with large number of users for ease of access. Surface mounted socket outlets should be considered as an alternative for installation in areas where the installation of power skirting mounted socket outlets is not feasible or economical.	B, G, 2, 5 - 10
2.	Labelling of all socket outlets in the building to ensure compliance with SANS 10142-1. [redacted] to provide a labelling standard for the tenants that conducted their own refurbishments to adhere to and then monitor the implimentation.	B, G, 1 - 10

Light Fittings

Item	Recommended Remedial Intervention	Applicable Floor/ Area
1.	Replacement of all light fittings in order as to extent their life as required. This will provide an opportunity to standardise the lighting installation such that spares holding can be optimised.	Common areas on all floors, except for lift lobby.

	Latest technology of LED luminnares to be considered for replacement of light fittings.	
2.	Lighting design to be done for all the areas where light fittings need to be replaced to ensure that lighting in the area concerned meet the requirements of SANS 10114-1 and SANS 10400-O. Additional light fittings to be installed where necessary. Installation of emergency lighting with battery back-up supply shall be considered for safety reasons in accordance with SANS 10114-2.	Common areas on all floors, except for lift lobby.
3.	Labelling of all light fittings in the building to ensure compliance with SANS 10142-1. [redacted] to provide a labelling standard for the tenants that conducted their own refurbishments to adhere to and then monitor the implimentation.	B, G, 1 - 10

Switches

Item	Recommended Remedial Intervention	Applicable Floor/ Area
1.	Conduct detailed assessment on the effectiveness of the motion sensors that are currently installed to ensure that there is no dependancy of unrelated users. It is unticipated that additional 15% of the current population of the motion sensors will be required. Similar devices of the latest technology should be considered for installtion where there is a need. Use of motion sensors to be considered for replacement of conventional light switches as well. Consideration should be made for installation of day-night switch for the stairs area just like it is used	All floors

	for lift lobby, so as to improve the energy efficiency in the building.	
2.	Repair of the faulty isolator that was found damaged on Floor 3.	Floor 3
3.	Replacement of un-used light switches with blank covers.	G, 5 - 10
4.	Labelling of all switches in the building in accordance with SANS 10142-1. [redacted] to provide a labelling standard for the [redacted]s that conducted their own refurbishments to adhere to and then monitor the implimentation.	G, B, 1 - 10

Telecommunication and IT

Item	Recommended Remedial Intervention	Applicable Floor/ Area
1.	Set-up of a completely new communication network infrastructure in the building to make provision for a common and convenient connection to telephonic, cellular and IT services. Different service providers could be contacted for a proposal to set-up a service level agreement for this purpose. The cost of installation of the infrastructure and setting up the system should be carried by the service provider. Provision should also be make for the service provider to maintain their equipment and systems. Ultimately, the contract for the services provided will be between the service provider and the tenants. The tenants would then be encouraged to use the common system for which infrastructure would have been set-up for their convenience.	All floors

2.	The space that was previously used to house telecommunication equipment installed by Telkom could be considered for the new communication equipment. Communication cables will be installed in the existing servitudes that were previously used for telecommunication network.	All floors
3.	Install a Building Management System (BMS) that integrates all the expert system in the building to establish centralised database for monitoring purposes. This should help to improve the management of building services. The system can also be explored to incorporate functionalities that enhance energy efficiency in the building.	
3.	All communication equipment should be provided with proper labelling.	All floors

Fire Detection System

Item	Recommended Remedial Intervention	Applicable Floor/ Area
1.	Installation of a new addressable fire detection system that comply with the relevant standards and regulations such as SANS 10139. New sensors, cabling and communication devices to be installed and linked to the authorities accordingly. Details on the scope of work and specifications for the new system will be provided by the fire protection specialist at Detail Design Stage.	All floors
2.	The space that was previously used to house fire detection equipment could be considered for the newer ones.	All floors

	Communication cables will be installed in the existing servitudes that were previously used for fire detection system.	
3.	All fire detection equipment should be provided with proper labelling.	All floors

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section 2.2.1.3

OH&S Considerations

- All electrical equipment shall be regarded as 'live' unless covered by an Electrical Access Permit.
- The restaurant – kitchen area on the ground floor is unhygienic and poses a health risk, this area requires urgent attention.
- All electrical equipment shall be identified and a register maintained. Equipment data shall be formally recorded by identification number (For example: evidence of inspections, certifications, maintenance and modifications and tests) and shall display their manufacturer defined voltage. Switches and isolators shall be labelled
- All installations, and work performed on installations, shall meet the requirements of relevant statutory regulatory authorities

A formal preventative maintenance system shall be in place to ensure that electrical equipment and power supplies are maintained and in a serviceable condition. A procedure shall be in place to ensure regular examination of

equipment and supplies (minimum three (3) months). Any modification to electrical equipment or power supplies shall be subject to the original equipment manufacturer's approval and to a rigorous change management process. After any repair and/or modification, equipment shall be inspected prior to being returned to service.

- Every office has something stacked or stored. No matter what the items are, if your method of storage is incorrect they can become a hazard.
- Temporary and permanent storage of equipment and materials should be neat and organised to reduce the risk of accidents. This also allows for easy location and retrieval of materials.
- [redacted] and its tenants must take reasonable measures to ensure that flammable liquids, gases and materials in use, are transported, stored, deposited, used and disposed of in such a way as to prevent the starting or spreading of a fire.
- Fire Extinguishers, these shall be preferably of the 9-kg Dry Carbon Powder type installed at a point on the fresh air side at least 4m and not more than 15m from the installation to be protected, unless otherwise stipulated.
- Hose Reel, wherever it is required that water shall be available for firefighting, care shall be taken to ensure that the supply is adequate both in terms of volume and pressure. Suitably designed and commercially available fire hose reels may be prescribed as a primary firefighting measure in certain high risk / value areas. They shall be spaced ensuring a complete overlap i.e. each hose to reach next hose reel. They shall be supplied by a steel pipe of 100 mm diameter, at a minimum water pressure of 350kPa measured with three such reels in simultaneous operation.
- All first aid boxes to be inspected monthly, information regarding the first aider must be displayed. The minimum contents – refer to GSR Annexure

Emergency Preparedness and Response:

- All first aid boxes to be inspected monthly, information regarding the first aider must be displayed i.e. name & contact number.
- For minimum content requirements – refer to GSR Annexure.

Fire Management:

- N/A

Access/Security:

- N/A

Sanitation and Hygiene:

- The restaurant – kitchen area on the ground floor is unhygienic and poses a health risk, waste management measures to be implemented.
- Provide additional rubbish bins in the kitchen restaurant.

Ventilation:

- N/A

Storage:

- Housekeeping: most offices require attention.
- Provision of adequate storage facilities. Regards of the type of material, size or weight, if your method of storage is incorrect they can become a hazard.

Building and Structures:

- Structural renovations are needed.

2.3.1.2. Ground floor

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/AB-100 – Ground Floor Plan"*

- *Recommendations Schedule under "1032907C/AB/400/03 Recommendations Schedule: Ground Floor: (Sheet 1 of 2) and 1032907C/AB/400/04 Recommendations Schedule: Ground Floor: (Sheet 2 of 2)"*
- *Door Schedules under "1032907C/AB-402-02- Door Schedules: Ground Floor"*

Mechanical Works

HVAC:

- Fresh Air system required per area
- Add make up air to kitchen extract
- Replace defective indoors
- Fix up damaged insulation
- Remove wall ducting

Ducting systems:

- Ducting in service ducts in relatively good condition
- Fix up damaged insulation

Kitchen equipment:

- New cold rooms to be installed
- Extract hood not in working order, fix fan
- Install make up air for kitchen extract

Wet services:

- Change of all piping to water points (Hot, Cold and drainage)
- Add heat pumps to geyser systems

Sprinklers:

- In good condition and layout

Lifts:

- Change lifts

LPG:

- Change location of LPG system

Electrical & Electronics Works

- Refer to Cargo offices Basement recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section 2.2.1.3

OH&S Considerations

Emergency Preparedness and Response:

- All first aid boxes to be inspected monthly, information regarding the first aider must be displayed i.e. name & contact number.
- For minimum content requirements – refer to GSR Annexure.

Fire Management:

- N/A

Access/Security:

- N/A

Sanitation and Hygiene:

- The restaurant – kitchen area on the ground floor is unhygienic and poses a health risk, waste management measures to be implemented.
- Provide additional rubbish bins in the kitchen restaurant.

Ventilation:

- N/A

Storage:

- Housekeeping: most offices require attention.
- Provision of adequate storage facilities. Regards of the type of material, size or weight, if your method of storage is incorrect they can become a hazard.

Building and Structures:

- Structural renovations are needed.

2.3.1.3. First floor

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/AB-101 – First Floor Plan"*
- *Recommendations Schedule under "1032907C/AB/400/05 Recommendations Schedule: First Floor: (Sheet 1 of 2) and 1032907C/AB/400/06 Recommendations Schedule: First Floor: (Sheet 2 of 2)"*
- *Door Schedules under "1032907C/AB-402-03- Door Schedules: First Floor"*

Mechanical Works

HVAC:

- Fresh Air system required per area
- Replace defective indoors
- Fix up damaged insulation
- Remove wall ducting

Ducting systems:

- Fix up damaged insulation

Kitchen equipment:

- N/A

Wet services:

- Change of all piping to water points (Hot, Cold and drainage)
- Add heat pumps to geyser systems

Sprinklers:

- N/A

Lifts:

- Change lifts

Electrical & Electronics Works

- Refer to Cargo offices Basement recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section 2.2.1.3

OH&S Considerations

Emergency Preparedness and Response:

- All first aid boxes to be inspected monthly, information regarding the first aider must be displayed i.e. name & contact number.
- For minimum content requirements – refer to GSR Annexure.

Fire Management:

- N/A

Access/Security:

- N/A

Sanitation and Hygiene:

- The restaurant – kitchen area on the ground floor is unhygienic and poses a health risk, waste management measures to be implemented.
- Provide additional rubbish bins in the kitchen restaurant.

Ventilation:

- N/A

Storage:

- Housekeeping: most offices require attention.
- Provision of adequate storage facilities. Regards of the type of material, size or weight, if your method of storage is incorrect they can become a hazard.

Building and Structures:

- Structural renovations are needed.

2.3.1.4. Second floor

Architectural work

Refer to the following drawings in the Appendix:

- Floor layout under "1032907C/AB-102 – Second Floor Plan"
- Recommendations Schedule under "1032907C/AB/400/07 Recommendations Schedule: Second Floor: (Sheet 1 of 2) and 1032907C/AB/400/08 Recommendations Schedule: Second Floor: (Sheet 2 of 2)"
- Door Schedules under "1032907C/AB-402-04- Door Schedules: Second Floor"

Mechanical Works

HVAC:

- Fresh Air system required per area

- Replace defective indoors
- Fix up damaged insulation
- Remove wall ducting

Ducting systems:

- Fix up damaged insulation

Kitchen equipment:

- N/A

Wet services:

- Change of all piping to water points (Hot, Cold and drainage)
- Add heat pumps to geyser systems

Sprinklers:

- N/A

Lifts:

- Change lifts

Electrical & Electronics Works

- Refer to Cargo offices Basement recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section **Error! Reference source not found.**.

OH&S Considerations

Emergency Preparedness and Response:

- Detection system to be repaired or replaced.

Fire Management:

- Ensure that all emergency exit doors are operable.

Access/Security:

- NA

Sanitation and Hygiene:

- NA

Ventilation:

- NA

Storage:

- NA

Building and Structures:

- Structural renovations are needed.

2.3.1.5. Third floor

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/AB-103 – Third Floor Plan"*
- *Recommendations Schedule under "1032907C/AB/400/09 Recommendations Schedule: Third Floor: (Sheet 1 of 2) and 1032907C/AB/400/10 Recommendations Schedule: Third Floor: (Sheet 2 of 2)"*
- *Door Schedules under "1032907C/AB-402-05- Door Schedules: Third Floor"*

Mechanical Works

HVAC:

- Fresh Air system required per area
- Replace defective indoors
- Fix up damaged insulation

- Remove wall ducting

Ducting systems:

- Fix up damaged insulation

Kitchen equipment:

- N/A

Wet services:

- Change of all piping to water points (Hot, Cold and drainage)
- Add heat pumps to geyser systems

Sprinklers:

- N/A

Lifts:

- Change lifts

Electrical & Electronics Works

- Refer to Cargo offices Basement recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section **Error! Reference source not found.**.

OH&S Considerations

Emergency Preparedness and Response:

Emergency Preparedness and Response:

- Detection system to be repaired or replaced.

Fire Management:

- All missing fire extinguishers to be replaced.

Access/Security:

- N/A

Sanitation and Hygiene:

- N/A

Ventilation:

- N/A

Storage:

- N/A

Building and Structures:

- Structural renovations are needed.

2.3.1.6. Fourth floor

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/AB-104 – Fourth Floor Plan"*
- *Recommendations Schedule under "1032907C/AB/400/11 Recommendations Schedule: Fourth Floor: (Sheet 1 of 2) and 1032907C/AB/400/12 Recommendations Schedule: Fourth Floor: (Sheet 2 of 2)"*
- *Door Schedules under "1032907C/AB-402-06- Door Schedules: Fourth Floor"*

Mechanical Works

HVAC:

- Fresh Air system required per area
- Replace defective indoors

- Fix up damaged insulation
- Remove wall ducting

Ducting systems:

- Fix up damaged insulation

Kitchen equipment:

- N/A

Wet services:

- Change of all piping to water points (Hot, Cold and drainage)
- Add heat pumps to geyser systems

Sprinklers:

- N/A

Lifts:

- Change lifts

Electrical & Electronics Works

- Refer to Cargo offices Basement recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section 2.2.1.3

OH&S Considerations

Emergency Preparedness and Response:

- Detection system to be repaired or replaced.

Fire Management:

- Affix fire management notices and signage in conspicuous places at the workplace.

Access/Security:

- NA

Sanitation and Hygiene:

- NA

Ventilation:

- NA

Storage:

- NA

Building and Structures:

- Structural renovations are needed.

2.3.1.7. Fifth floor

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/AB-105 – Fifth Floor Plan"*
- *Recommendations Schedule under "1032907C/AB/400/13 Recommendations Schedule: Fifth Floor: (Sheet 1 of 2) and 1032907C/AB/400/14 Recommendations Schedule: Fifth Floor: (Sheet 2 of 2)"*
- *Door Schedules under "1032907C/AB-402-07- Door Schedules: Fifth Floor"*

Mechanical Works

HVAC:

- Fresh Air system required per area
- Replace defective indoors

- Fix up damaged insulation
- Remove wall ducting

Ducting systems:

- Fix up damaged insulation

Kitchen equipment:

- N/A

Wet services:

- Change of all piping to water points (Hot, Cold and drainage)
- Add heat pumps to geyser systems

Sprinklers:

- N/A

Lifts:

- Change lifts

Electrical & Electronics Works

- Refer to Cargo offices Basement recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section **Error! Reference source not found.**.

OH&S Considerations

Emergency Preparedness and Response:

- Detection system to be repaired or replaced.

Fire Management:

- NA

Access/Security:

- NA

Sanitation and Hygiene:

- Provision of adequate waste disposal bins.

Ventilation:

- NA

Storage:

- NA

Building and Structures:

- Structural renovations are needed.

2.3.1.8. Sixth floor

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/AB-106 – Sixth Floor Plan"*
- *Recommendations Schedule under "1032907C/AB/400/15 Recommendations Schedule: Sixth Floor: (Sheet 1 of 2) and 1032907C/AB/400/16 Recommendations Schedule: Sixth Floor: (Sheet 2 of 2)"*
- *Door Schedules under "1032907C/AB-402-08- Door Schedules: Sixth Floor"*

Mechanical Works

HVAC:

- Fresh Air system required per area
- Replace defective indoors
- Fix up damaged insulation
- Remove wall ducting

Ducting systems:

- Fix up damaged insulation

Kitchen equipment:

- N/A

Wet services:

- Change of all piping to water points (Hot, Cold and drainage)
- Add heat pumps to geyser systems

Sprinklers:

- N/A

Lifts:

- Change lifts

Electrical & Electronics Works

- Refer to Cargo offices Basement recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section 2.2.1.3

OH&S Considerations

Emergency Preparedness and Response:

- Detection system to be repaired or replaced.
- Ensure all emergency exit door keys are in place.

Fire Management:

- N/A

Access/Security:

- N/A

Sanitation and Hygiene:

- Defective shower facilities and taps to be repaired or replaced.

Ventilation:

- N/A

Storage:

- N/A

Building and Structures:

- Structural renovations are needed.
- All electrical equipment shall be regarded as 'live' unless covered by an Electrical Access Permit.

2.3.1.9. Seventh floor

Architectural work

Refer to the following drawings in the Appendix:

Floor layout under "1032907C/AB-107 – Seventh Floor Plan"

Recommendations Schedule under "1032907C/AB/400/17 Recommendations Schedule: Seventh Floor: (Sheet 1 of 2) and 1032907C/AB/400/18 Recommendations Schedule: Seventh Floor: (Sheet 2 of 2)"

Door Schedules under "1032907C/AB-402-09- Door Schedules: Seventh Floor"

Mechanical Works

HVAC:

- Fresh Air system required per area
- Replace defective indoors
- Fix up damaged insulation

- Remove wall ducting

Ducting systems:

- Fix up damaged insulation

Kitchen equipment:

- N/A

Wet services:

- Change of all piping to water points (Hot, Cold and drainage)
- Add heat pumps to geyser systems

Sprinklers:

- N/A

Lifts:

- Change lifts

Electrical & Electronics Works

- Refer to Cargo offices Basement recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section 2.2.1.3

OH&S Considerations

Emergency Preparedness and Response:

- Detection system to be repaired or replaced.
- Replace all damaged notices and signage.

Fire Management:

- N/A

Access/Security:

- N/A

Sanitation and Hygiene:

- N/A

Ventilation:

- N/A

Storage:

- N/A

Building and Structures:

- Structural renovations are needed.

2.3.1.10. Eighth floor

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/AB-108 – Eighth Floor Plan"*
- *Recommendations Schedule under "1032907C/AB/400/19 Recommendations Schedule: Eighth Floor: (Sheet 1 of 2) and 1032907C/AB/400/20 Recommendations Schedule: Eighth Floor: (Sheet 2 of 2)"*
- *Door Schedules under "1032907C/AB-402-10- Door Schedules: Eighth Floor"*

Mechanical Works

HVAC:

- Fresh Air system required per area
- Replace defective indoors
- Fix up damaged insulation
- Remove wall ducting

Ducting systems:

- Fix up damaged insulation

Kitchen equipment:

- N/A

Wet services:

- Change of all piping to water points (Hot, Cold and drainage)
- Add heat pumps to geyser systems

Sprinklers:

- N/A

Lifts:

- Change lifts

Electrical & Electronics Works

- Refer to Cargo offices Basement recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section 2.2.1.3

OH&S Considerations

Emergency Preparedness and Response:

- Detection system to be repaired or replaced.

Fire Management:

- N/A

Access/Security:

- N/A

Sanitation and Hygiene:

- N/A

Ventilation:

- N/A

Storage:

- N/A

Building and Structures:

- Structural renovations are needed.

2.3.1.11. Ninth floor

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/AB-109 – Ninth Floor Plan"*
- *Recommendations Schedule under "1032907C/AB/400/21 Recommendations Schedule: Ninth Floor: (Sheet 1 of 2) and 1032907C/AB/400/22 Recommendations Schedule: Ninth Floor: (Sheet 2 of 2)"*
- *Door Schedules under "1032907C/AB-402-11- Door Schedules: Ninth Floor"*

Mechanical Works

HVAC:

- Fresh Air system required per area
- Replace defective indoors
- Fix up damaged insulation
- Remove wall ducting

Ducting systems:

- Fix up damaged insulation

Kitchen equipment:

- N/A

Wet services:

- Change of all piping to water points (Hot, Cold and drainage)
- Add heat pumps to geyser systems

Sprinklers:

- N/A

Lifts:

- Change lifts

Electrical & Electronics Works

- Refer to Cargo offices Basement recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section 2.2.1.3

OH&S Considerations

Emergency Preparedness and Response:

- Detection system to be repaired or replaced.

Fire Management:

- N/A

Access/Security:

- N/A

Sanitation and Hygiene:

- N/A

Ventilation:

- N/A

Storage:

- N/A

Building and Structures:

  - Structural renovations are needed.

2.3.1.12. Tenth floor

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/AB-110 – Tenth Floor Plan"*
- *Recommendations Schedule under "1032907C/AB/400/23 Recommendations Schedule: Tenth Floor: (Sheet 1 of 2) and 1032907C/AB/400/24 Recommendations Schedule: Tenth Floor: (Sheet 2 of 2)"*
- *Door Schedules under "1032907C/AB-402-12- Door Schedules: Tenth Floor"*

Mechanical Works

HVAC:

- Fresh Air system required per area
- Replace defective indoors
- Fix up damaged insulation
- Remove wall ducting

Ducting systems:

- Fix up damaged insulation

Kitchen equipment:

- N/A

Wet services:

- Change of all piping to water points (Hot, Cold and drainage)
- Add heat pumps to geyser systems

Sprinklers:

- N/A

Lifts:

- Change lifts

Electrical & Electronics Works

- Refer to Cargo offices Basement recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section 2.2.1.3

OH&S Considerations

Emergency Preparedness and Response:

- Detection system to be repaired or replaced.

Fire Management:

- N/A

Access/Security:

- N/A

Sanitation and Hygiene:

- N/A

Ventilation:

- N/A

Storage:

- N/A

Building and Structures:

- Structural renovations are needed.

2.3.1.13. Eleventh floor

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/AB-111 – Eleventh Floor Plan"*
- *Recommendations Schedule under "1032907C/AB/400/25 Recommendations Schedule: Eleventh Floor: (Sheet 1 of 2) and 1032907C/AB/400/26 Recommendations Schedule: Eleventh Floor: (Sheet 2 of 2)"*
- *Door Schedules under "1032907C/AB-402-13- Door Schedules: Eleventh Floor"*

Mechanical Works

HVAC:

- Fresh Air system required per area
- Replace defective indoors
- Fix up damaged insulation
- Remove wall ducting

Ducting systems:

- Fix up damaged insulation

Kitchen equipment:

- N/A

Wet services:

- Change of all piping to water points (Hot, Cold and drainage)
- Add heat pumps to geyser systems

Sprinklers:

- N/A

Lifts:

- Change lifts

Electrical & Electronics Works

- Refer to Cargo offices Basement recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section 2.2.1.3

OH&S Considerations

Emergency Preparedness and Response:

- Detection system to be repaired or replaced.

Fire Management:

- N/A

Access/Security:

- N/A

Sanitation and Hygiene:

- N/A

Ventilation:

- N/A

Storage:

- N/A

Building and Structures:

- Structural renovations are needed.

2.3.1.14. Twelfth floor (roof)

Architectural work

Refer to the following drawings in the Appendix:

Floor layout under "1032907C/AB-112 – Roof Plan"
Recommendations Schedule under "1032907C/AB/400/27 Recommendations Schedule: Roof Plan: (Sheet 1 of 2) and 1032907C/AB/400/28 Recommendations Schedule: Roof Plan: (Sheet 2 of 2)"
Door Schedules under "1032907C/AB-402-14- Door Schedules: Roof Plan"

Mechanical Works

HVAC:

- Minor touch up works on cooling tower

Ducting systems:

- Kitchen extract fan to be changed
- Extract control system to be upgraded

Kitchen equipment:

- N/A

Wet services:

- Galvanised piping to be changed

Sprinklers:

- N/A

Lifts:

- N/A

Electrical & Electronics Works

- Refer to Cargo offices Basement recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section **Error! Reference source not found.**.

OH&S Considerations

Emergency Preparedness and Response:

- Detection system to be repaired or replaced.

Fire Management:

- N/A

Access/Security:

- N/A

Sanitation and Hygiene:

- N/A

Ventilation:

- N/A

Storage:

- N/A

Building and Structures:

- Structural renovations are needed.

2.3.2 Cargo Warehouse

2.3.2.1 Ground Floor – Zone 1

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/FW-100 – Zone 1: Ground Floor Plan (Grid 1 – 14)"*
- *Recommendations Schedule under "1032907C/FW/400/01 Recommendations Schedule: Ground Floor: (Sheet 1 of 2) and 1032907C/FW/400/02 Recommendations Schedule: Ground Floor: (Sheet 2 of 2)"*
- *Door Schedules under "1032907C/FW-402-01- Door Schedules: Ground Floor"*

Mechanical Works

HVAC:

- Forced smoke extract to be added

Wet services:

- All piping to be changed
- Geyser pipes to be insulated

Sprinklers:

- Change sprinkler installation
- Add rack sprinkler mains for tenant tap off

Electrical & Electronics Works – All Zones at Cargo warehouse

Power skirting, conduits and cable support structures

Item	Recommended Remedial Intervention	Applicable Area
1.	Refurbish all the power skirting and conduits to house new power and communication cabling in the offices and their corridors. Surface mounted steel power skirting is recommended. PVC trunking/ conduits should be considered as an alternative for installation in areas where the installation of steel power skirting is not feasible or economical.	All common areas around offices on both floors. **Exceptions –** BidAir Cargo (W4-8), Lufthansa Cargo (W22-27) and DHL (W26-31)
2.	Refurbish all the cable trays, trunking, conduits at the warehouses. Surface mounted steel mesh trays are recommended. PVC trunking/ conduits should be considered as an alternative for installation in areas where the installation of steel power skirting is not feasible or economical.	All warehouses. **Exceptions –** Airlink (W19-21), Lufthansa Cargo (W22-27) and DHL (W26-31)

Power sockets

Item	Recommended Remedial Intervention	Applicable Area
1.	Install new power socket outlets with the associated wiring on the new power skirting. Provision to be made for normal and dedicated socket outlets to suit the needs of the power users in the different areas. Surface mounted socket outlets should be considered as an alternative for installation in areas where the installation of power skirting mounted socket outlets is not feasible or economical.	All common areas around offices on both floors. **Exceptions –** BidAir Cargo (W4-8), Lufthansa Cargo (W22-27) and DHL (W26-31)
2.	Provision of sub-DB and associated cabling for the supply of the three-phase socket outlets in the warehouses.	All warehouses
3.	Recent renovation should be furnished with relevant documentation such as CoC.	BidAir Cargo (W4-8), Lufthansa Cargo (W22-27) and DHL (W26-31)
4.	Labelling of socket outlets according to SANS 10142-1.	All warehouses and common areas.

Light Fittings

Item	Recommended Remedial Intervention	Applicable Area
1.	Removal of all redundant and operational T-bay light fittings that were installed originally.	All warehouses.
2.	Replacement of all light fittings in order as to extent their life as required. This will provide an opportunity to standardise the lighting installation such that spares holding can be optimised. The basis is for light fittings together with their cable runs to be installed at the roof level to avoid obstruction of operations at the warehouses. It is therefofore necessary that the remote lighting lifting mechanism should be installed for ease of maintenance. Where required, additional light fittings to be installed according to provide sufficient lighting levels in accordance with SANS 10114-1. The choice of the light fitting shall suit the application in the various areas considered. Latest technology of LED luminnares to be considered for replacement of lighting. Installation of emergency lighting with battery back-up supply shall be considered for safety reasons in accordance with SANS 10114-2.	All warehouses and their common areas.
3.	Recent renovation should be furnised with relavent documentation such as CoC.	BidAir Cargo (W4-8), Lufthansa Cargo (W22-27) and DHL (W26-31)
4.	Labelling of light fittings according to SANS 10142-1.	All warehouses

		and common areas.

Switches

Item	Recommended Remedial Intervention	Applicable Area
1.	Replacement of faulty and outdated light switches with newer ones.	Common areas.
2.	Installation of correctly sized industial light switches for the warehouse lighting.	All warehouses.
3.	Labelling of light switches according to SANS 10142-1.	All warehouses and common areas.

Telecommunication and IT

Same recommendations as those made for Cargo Office Building are applicable to all warehouse areas.

Fire Detection System

Same recommendations as those made for Cargo Office Building are applicable to all warehouse areas.

Earthing and Lightning Protection System

Same recommendations as those made for Cargo Office Building are applicable to all warehouse areas.

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section 2.2.1.3

OH&S Considerations

Emergency Preparedness and Response:

Fire Management:

Access/Security:

Sanitation and Hygiene:

Ventilation:

Storage:

Building and Structures:

2.3.2.2 Ground Floor – Zone 2

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/FW-101 – Zone 2: Ground Floor Plan (Grid 14 – 26)"*
- *Recommendations Schedule under "1032907C/FW/400/01 Recommendations Schedule: Ground Floor: (Sheet 1 of 2) and 1032907C/FW/400/02 Recommendations Schedule: Ground Floor: (Sheet 2 of 2)"*
- *Door Schedules under "1032907C/FW-402-01- Door Schedules: Ground Floor"*

Mechanical Works

HVAC:

- Forced smoke extract to be added

Wet services:

- All piping to be changed
- Geyser pipes to be insulated

Sprinklers:

- Change sprinkler installation
- Add rack sprinkler mains for tenant tap off

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section 2.2.1.3

Electrical & Electronics Works

- Refer to Cargo warehouse Zone 1 recommendations

OH&S Considerations

Emergency Preparedness and Response:

- All missing fire-fighting equipment to be replaced.
- Floor plan to be drafted and displayed.

Fire Management:

- Ensure that fire-fighting equipment is not obstructed.

Access/Security:

- N/A

Sanitation and Hygiene:

- N/A

Ventilation:

- N/A

Storage:

- Good housekeeping principles to be practiced at all times.

Building and Structures:

- Structural renovations are needed.

2.3.2.3 Ground Floor – Zone 3

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/FW-102 – Zone 3: Ground Floor Plan (Grid 26 – 35)"*
- *Recommendations Schedule under "1032907C/FW/400/01 Recommendations Schedule: Ground Floor: (Sheet 1 of 2) and 1032907C/FW/400/02 Recommendations Schedule: Ground Floor: (Sheet 2 of 2)"*
- *Door Schedules under "1032907C/FW-402-01- Door Schedules: Ground Floor"*

Mechanical Works

HVAC:

- Forced smoke extract to be added

Wet services:

- All piping to be changed
- Geyser pipes to be insulated

Sprinklers:

- Change sprinkler installation
- Add rack sprinkler mains for tenant tap off

Electrical & Electronics Works

- Refer to Cargo warehouse Zone 1 recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section 2.2.1.3

OH&S Considerations

Emergency Preparedness and Response:

- Detection system to be repaired or replaced.

Fire Management:

- Affix fire management notices and signage in conspicuous places at the workplace.

Access/Security:

- N/A

Sanitation and Hygiene:

- N/A

Ventilation:

- N/A

Storage:

- Ensure no articles are stacked or stored in front of the DB box.

Building and Structures:

- Structural renovations are needed.

2.3.2.4 Ground Floor – Zone 4

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/FW-130 – Zone 4: Ground Floor Plan (Grid 35 – 46)"*

- *Recommendations Schedule under "1032907C/FW/400/01 Recommendations Schedule: Ground Floor: (Sheet 1 of 2) and 1032907C/FW/400/02 Recommendations Schedule: Ground Floor: (Sheet 2 of 2)"*
- *Door Schedules under "1032907C/FW-402-01- Door Schedules: Ground Floor"*

Mechanical Works

HVAC:

- Forced smoke extract to be added

Wet services:

- All piping to be changed
- Geyser pipes to be insulated

Sprinklers:

- Change sprinkler installation
- Add rack sprinkler mains for tenant tap off

Electrical & Electronics Works

- Refer to Cargo warehouse Zone 1 recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section 2.2.1.3

OH&S Considerations

Emergency Preparedness and Response:

- Detection system to be repaired or replaced.

Fire Management:

- All missing fire-fighting equipment to be replaced.

- Affix fire management notices and signage in conspicuous places at the workplace.

Access/Security:

- N/A

Sanitation and Hygiene:

- NA

Ventilation:

- N/A

Storage:

- N/A

Building and Structures:

- Structural renovations are needed.

2.3.2.5 First Floor – Zone 5

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/FW-110 – Zone 5: First Floor Plan (Grid 1 – 14)"*
- *Recommendations Schedule under "1032907C/FW/400/03 Recommendations Schedule: First Floor: (Sheet 1 of 3), 1032907C/FW/400-04 Recommendations Schedule: First Floor: (Sheet 2 of 3) and 1032907C/FW/400/05 Recommendations Schedule: First Floor: (Sheet 3 of 3)"*
- *Door Schedules under "1032907C/FW-402-02- Door Schedules: First Floor"*

Mechanical Works

HVAC:

- Upgrade area to suit passive fresh air

Wet services:

- Change water piping
- Insulate hot water pipes
- Add heat pump to geyser

Sprinklers:

- Upgrade sprinkler system
- Install cut off sprinklers between offices and warehouse (especially over windows)

Electrical & Electronics Works

- Refer to Cargo warehouse Zone 1 recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section 2.2.1.3

OH&S Considerations

Emergency Preparedness and Response:

- Detection system to be repaired or replaced.

Fire Management:

- N/A

Access/Security:

- N/A

Sanitation and Hygiene:

- N/A

Ventilation:

- N/A

Storage:

- [redacted] must take reasonable measures to ensure that flammable liquids, gases and materials in use, are transported, stored, deposited, used and disposed of in such a way as to prevent the starting or spreading of a fire.

Building and Structures:

- Structural renovations are needed.

2.3.2.6 First Floor – Zone 6

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/FW-110 – Zone 6: First Floor Plan (Grid 14 – 26)"*
- *Recommendations Schedule under "1032907C/FW/400/03 Recommendations Schedule: First Floor: (Sheet 1 of 3), 1032907C/FW/400-04 Recommendations Schedule: First Floor: (Sheet 2 of 3) and 1032907C/FW/400/05 Recommendations Schedule: First Floor: (Sheet 3 of 3)"*
- *Door Schedules under "1032907C/FW-402-02- Door Schedules: First Floor"*

Mechanical Works

HVAC:

- Upgrade area to suit passive fresh air

Wet services:

- Change water piping
- Insulate hot water pipes
- Add heat pump to geyser

Sprinklers:

- Upgrade sprinkler system
- Install cut off sprinklers between offices and warehouse (especially over windows)

Electrical & Electronics Works

- Refer to Cargo warehouse Zone 1 recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section 2.2.1.3

OH&S Considerations

Emergency Preparedness and Response:

- Detection system to be repaired or replaced.

Fire Management:

- Affix fire management notices and signage in conspicuous places at the workplace.

Access/Security:

- N/A

Sanitation and Hygiene:

- N/A

Ventilation:

- N/A

Storage:

- N/A

Building and Structures:

- Structural renovations are needed.

2.3.2.7 First Floor – Zone 7

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/FW-111 – Zone 7: First Floor Plan (Grid 26 – 35)"*
- *Recommendations Schedule under "1032907C/FW/400/03 Recommendations Schedule: First Floor: (Sheet 1 of 3), 1032907C/FW/400-04 Recommendations Schedule: First Floor: (Sheet 2 of 3) and 1032907C/FW/400/05 Recommendations Schedule: First Floor: (Sheet 3 of 3)"*
- *Door Schedules under "1032907C/FW-402-02- Door Schedules: First Floor"*

Mechanical Works

HVAC:

- Upgrade area to suit passive fresh air

Wet services:

- Change water piping
- Insulate hot water pipes
- Add heat pump to geyser

Sprinklers:

- Upgrade sprinkler system
- Install cut off sprinklers between offices and warehouse (especially over windows)

Electrical & Electronics Works

- Refer to Cargo warehouse Zone 1 recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section 2.2.1.3

OH&S Considerations

Emergency Preparedness and Response:

- Detection system to be repaired or replaced.

Fire Management:

- Affix fire management notices and signage in conspicuous places at the workplace.

Access/Security:

- N/A

Sanitation and Hygiene:

- N/A

Ventilation:

- N/A

Storage:

- N/A

Building and Structures:

- Structural renovations are needed.

2.3.2.8 First Floor – Zone 8

Architectural work

Refer to the following drawings in the Appendix:

- *Floor layout under "1032907C/FW-111 – Zone 8: First Floor Plan (Grid 35 – 46)"*
- *Recommendations Schedule under "1032907C/FW/400/03 Recommendations Schedule: First Floor: (Sheet 1 of 3), 1032907C/FW/400-04 Recommendations Schedule: First Floor: (Sheet 2 of 3) and 1032907C/FW/400/05 Recommendations Schedule: First Floor: (Sheet 3 of 3)"*
- *Door Schedules under "1032907C/FW-402-02- Door Schedules: First Floor"*

Mechanical Works

HVAC:

- Upgrade area to suit passive fresh air

Wet services:

- Change water piping
- Insulate hot water pipes
- Add heat pump to geyser

Sprinklers:

- Upgrade sprinkler system
- Install cut off sprinklers between offices and warehouse (especially over windows)

Electrical & Electronics Works

- Refer to Cargo warehouse Zone 1 recommendations

Structural works

Recommendations to rectify each defect have been dealt with under the findings: section 2.2.1.3

OH&S Considerations

Emergency Preparedness and Response:

- Detection system to be repaired or replaced.

Fire Management:

- Replace all missing fire-fighting equipment and signage.

Access/Security:

- N/A

Sanitation and Hygiene:

- N/A

Ventilation:

- N/A

Storage:

- Identify a suitable storage facility for HCS.

Building and Structures:

- Structural renovations are needed.

3. PROJECT COST ESTIMATES

The estimation of costs was undertaken by competent personnel with adequate estimating skills and knowledge about regional differences in building costs and other factors. The cost estimates include all foreseeable work associated with the remedial work (e.g. scaffolding, presence of asbestos containing material, removal and reinstatement of furniture, and alternative accommodation for building occupants).

The estimate presented is a stage 2 elemental estimate. The Stage 2 Elemental estimate for the proposed refurbishment of [redacted] Agents Building and Cargo Warehouse was based on the Condition Assessment Report compiled by the architect and engineering disciplines. The interpretation of cost estimates will obviously require access to contextual data. This will enable the development of work programs to be viewed in a broader perspective. As such, the cost estimates is accompanied by:

- an indication of the degree of confidence in the estimate
- an allowance for contingency (where appropriate)
- a cash flow forecast that addresses budgetary and maintenance program requirements, including consideration of work that extends over more than one financial year

SEE ATTACHED COST EXTIMATE

3. ACCEPTANCE CRITERIA

For the Cargo Offices Upgrade Project, the acceptance of all deliverables will reside with [redacted] Project Manager. The [redacted] Project Manager will maintain a small team of [redacted] Functional managers, [redacted] Project Managers and End user in order to ensure the completeness of each stage of the project and that the scope of work has been met. Once a project phase is completed and the CPM provides their report/presentation for review and approval, the [redacted] Project Manager will either sign off on the approval for the next phase to begin, or reply to the CPM, in writing, advising what tasks must still be accomplished.

Once all project tasks have been completed, the project will enter the handoff/closure stage. During this stage of the project, the CPM will provide their project closure report and project task checklist to [redacted] Project Manager. The acceptance of this documentation by [redacted] Project Manager will acknowledge acceptance of all project deliverables and that the consultants and or the contractor has met all assigned tasks.

Any discrepancies involving completion of project tasks or disagreement between [redacted] Project Manager and the Consultant and or the Contractor will be referred to all of the organizations' contracting offices for review and discussion.

4. RISK MANAGEMENT

A review of existing building facilities for identification and prioritization of risk associated with the use of the facilities as well as the facility itself. The review includes the audit of risks to the health and safety of occupants and visitors, the environment and the surrounding community. Recommendations will be provided on how to eliminate, mitigate or manage the risks.

All engineering and construction projects are subject to risk which can affect their successful completion. Risk can influence the delivery of a project with respect to time, cost and quality. In line with the DPW's requirements it helps to identify these risks at the onset as these will inform the design and management actions needed to direct the project. To achieve the intended level of risk mitigation, risk managers will conduct their study in a continual feedback loop between the theory and the operations. Indeed, a risk mitigation plan is useless if it cannot be deployed and verified, or if this plan is not updated after an event reveals an insufficiency.

A comprehensive Risk Management system can be divided into five main steps:

- identification of hazards and risks,
- assessment of the risks' acceptability,
- determination of appropriate mitigation measures,
- definition of an implementation plan, and
- Preparation of a verification program for safety assurance.

In this regard, a risk register will be created and all stakeholders will contribute in identifying the risks associated with the project and developing mitigation measures. Risk management meeting will be regularly held to update the risk register and review the effectiveness of mitigation measures.

5. CONCLUSION

This condition assessment report is the primary output of the assessment process and provides the information necessary for the development of a condition-based maintenance program within a comprehensive maintenance plan. The report must be analysed by [redacted] in the context of other building data, such as functionality, utilization rate, remaining life and operational cost efficiency; departmental and government priorities (e.g. environmental sustainability, workplace health and safety commitments and community service obligations), and budget imperatives.

This Scoping Report enables [redacted] to:

- form an objective view of the relative condition of its buildings compared to the desired condition necessary for service delivery, and to undertake any further analysis to refine that knowledge
- understand the scope, cost and priority of maintenance work required to rectify the defects identified or to maintain the building to the required condition standard
- plan for future funding requirements for major replacements, natural disaster mitigation, repairs and upgrades
- develop a maintenance program for the following financial year and beyond, and a longer term strategic plan by facility and portfolio
- seek and allocate funding for implementation of the maintenance program

In conclusion, it was found that there is a significant maintenance works at the Cargo Offices that needs to be implemented urgently although there is no Procurement instruction. There has been small contracts awarded to repair some components of the Cargo Offices before but this proposed scope will

attend to all maintenance works that will improve the facilities an reduce its routine maintenance costs as well as its lifecycle costs.

In light of the information presented in this document, the following recommendations are made;

- That Funds be made available for the full scope of works to move on to the next stage of implementing the refurbishment. This would ensure that contractors implement the projects and addresses all the needs of the end user.
- That an approval for the scope of works, budget and permission to proceed to the next stage be granted.