# **ENVIRONMENTAL MANAGEMENT PLAN:**

FOR DULUX NAMIBIA'S WATER-BASED PAINT MANUFACTURING FACILITY ON ERF 2, NUBU INDUSTRIAL PARK, WINDHOEK

PROPONENT:	CONSULTANT:
JF PAINTS (PTY) LTD. P. O. BOX 11568 <b>WINDHOEK</b> NAMIBIA	URBAN DYNAMICS AFRICA (PTY) LTD. P. O. BOX 20837 WINDHOEK NAMIBIA
SUBMISSION:	REFERENCE: 1190
MINISTRY OF ENVIRONMENT FORESTRY	ENQUIRIES: HEIDRI BINDEMANN-NEL
AND TOURISM PRIVATE BAG 13306 <b>WINDHOEK</b> NAMIBIA	Tel: +264-61-240300 Fax: +264-61-240309



PROPONENT:	_
JF Paints (Pty) Ltd. PO. Box 11568, Windhoek, Namibia	PAINTS
<b>Dulux Namibia (Pty) Ltd.</b> PO. Box 11568, <b>Windhoek,</b> Namibia	<b>Dulux</b> <sup>9</sup> let's colour
PREPARED BY	
<b>Urban Dynamics Africa (Pty) Ltd.</b> P. O. Box 20837, <b>Windhoek,</b> Namibia	USABAN USABAN
ENGINEERS:	
Lund Consulting Engineers CC. P. O. Box 3106, Windhoek, Namibia	ICE
ARCHITECTS:	
BOOGERTMAN AND PARTNERS (PTY) LTD. 1133 JAN SHOBA ST, BROOKLYN, PRETORIA, 0181, SOUTH AFRICA	+ Partners



#### **GENERAL LOCATION DESCRIPTION OF THE DEVELOPMENT AREA:**

DESCRIPTOR:	LOCATION SPECIFICS:	
ACTIVITIES:	Land Use and Development Activities	
REGISTRATION DIVISION:	К	
REGION:	Khomas Region	
LOCAL AUTHORITY:	Municipality of Windhoek (City of Windhoek)	
Fall Within:	The City of Windhoek's Townlands	
NEAREST TOWNS / CITY:	Windhoek	
LAND USE:	Industrial	
HOMESTEADS/STRUCTURES:	None	
HISTORICAL RESOURCE LISTINGS:	None	
CEMETERY:	None	
ENVIRONMENTAL SIGNIFICANT AREA:	None	
Erf 2, Nubu Industrial Park		
PROJECT SITE SIZE	4 149 Sqm	
LATITUDE:	-22. 46066 S,	
LONGITUDE:	17.077314 E	



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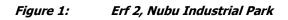
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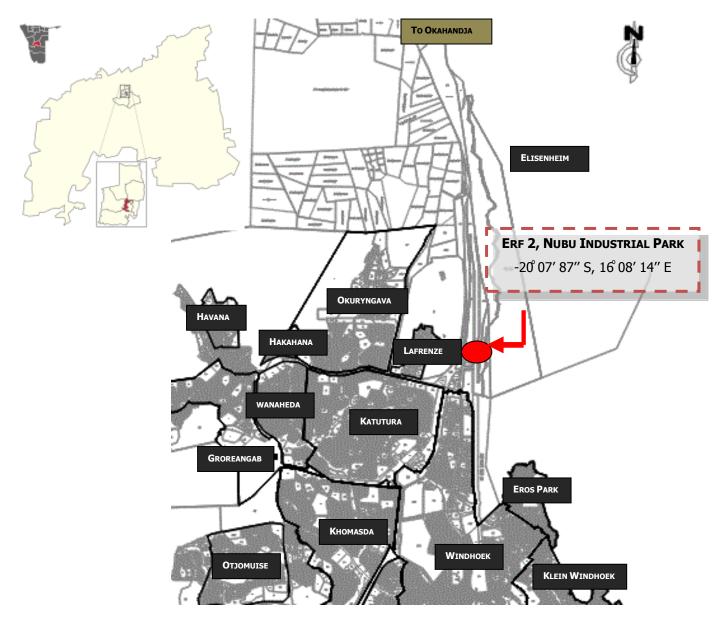
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PREPARED BY URBAN DYNAMICS AFRICA PTY (LTD)

# **1** INTRODUCTION

JF Paints (Pty) Ltd. intends to construct and operate a Dulux water-based paint manufacturing plant on Erf 2, Nubu Industrial Park. The erf is near Brakwater, Windhoek and is located at -20<sup>°</sup> 07<sup>′</sup> 87<sup>′′</sup> S, 16<sup>°</sup> 08<sup>′</sup> 14<sup>′′</sup> E within the Windhoek Townlands, in the Khomas Region.





Lund Consulting Engineers and Boogertman and Partners (Pty) Ltd. designed and will supervise the construction of the manufacturing plant. The manufacturing site will be a copy of Dulux's prescribes water-based manufacturing plants, which is being used internationally. Boogertman and Partners' concept layout for the project can be seen on figure 1 and 2.

Figure 2: Site plan and Section Concept Images of the Dulux Building





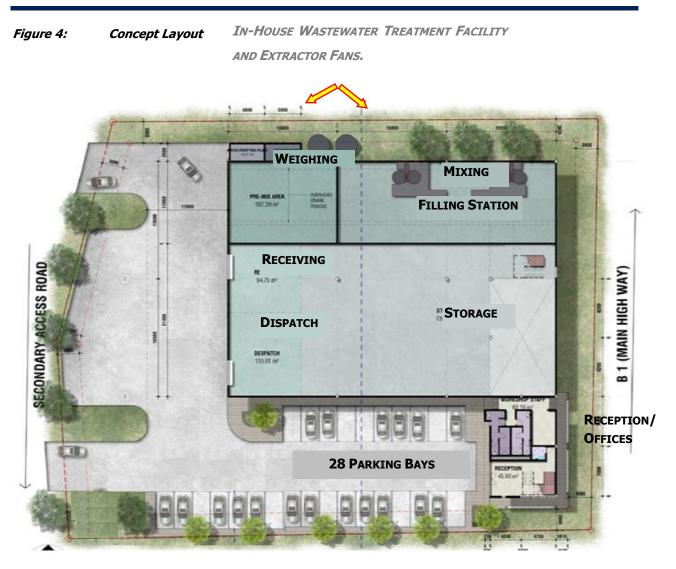
Source: Boogertman and Partners (Pty) Ltd., 2019.

Figure 3: Concept Images of the Dulux Building



Source: Boogertman and Partners (Pty) Ltd.,

USBAN DYNAMICS



#### Source: Boogertman and Partners (Pty) Ltd., 2019.

Dulux takes sustainability seriously, which is why they have a "bold ambition to radically reduce [Volatile Organic Compounds] (VOC) emissions across their product portfolio"(Dulux, 2019). To do this, they "switched from solvent-based to water-based paint. Dulux water-based paint is a 100% water-based acrylic system" (Dulux, 2019). As a result, Dulux is seen as a global leader in environmental sustainability.

As part of this legal permit process, an EMP has been drafted as part of the environmental scoping process.

An EMP is one of the most important products of an Environmental Assessment (EA) process. An EMP synthesises all recommended mitigation and monitoring measures, laid out according to the various stages of a project life cycle, with clearly defined follow-up actions and responsibility assigned to specific actors. This EMP has been drafted in accordance with the Namibian Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (2012).

This plan describes the mitigation and monitoring measures to be implemented during the following phase of the Dulux manufacturing site:

This report focuses on the operational phase of the Dulux manufacturing site, and therefore, the environmental impact identification process addressed only the operational phase within the life cycle of the facility.

PLAN

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#### Table 1:Project Phases



- MANAGEMENT REVIEWS,
- IMPLEMENT CORRECTIVE ACTIONS

**INTERNAL REVIEW AND AUDITING,** 

**REPORT RESULTS** 

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HECK

• IMPROVEMENTS

#### **PLANNING PHASE:**

- Environmental Policies and Actions
- **COMPANY ACTIVITIES**
- ✤ LAYOUT PLANNING,
- ✤ PUBLIC CONSULTATION,
- ✤ IDENTIFY POTENTIAL RISK,
- ✤ IDENTIFY PREVENTION MEASURES, AND
- ✤ COMPILING A EMP.

# IMPLEMENTATION & OPERATIONAL PHASE:

- ✤ PROCEDURES,
- **OCUMENTATION CONTROL**,
- ✤ TRAINING,
- **COMMUNICATION**
- ✤ IMPLEMENTATION OF MITIGATION MEASURES.

Source: ISO 14001

CHECKING:

\*

\*



# 2 **RESPONSIBILITIES**

This section of the EMP provides management principles for the factory operations. Environmental actions, procedures, and responsibilities as required for this phase of the JF Paints (Pty) Ltd., manufacturing site's operations are specified.

## 2.1 KEY ROLE PLAYERS

The role player responsibilities are described below.

## Owner/Manager

The applicant JF Paints (Pty) Ltd., who is also the Owner and Manager of the Dulux manufacturing site, is ultimately accountable for ensuring compliance with the EMP and conditions contained in the EMP. The Manager has the overall responsibility for managing the project, contractors, and consultants and ensuring that the environmental management requirements are met. All decisions regarding environmental procedures must be approved by the Manager. The Manager has the authority to stop any operational activity in infringement of the EMP.

The Manager's duties include the following:

- > Ensuring that the necessary legal authorisations have been obtained;
- Monthly site inspection of the manufacturing site areas with regard to compliance with this EMP;
- Monitor and verify adherence to the EMP (audit the implementation of the EMP) and verify that environmental impacts are kept to a minimum;
- > Finding environmentally responsible solutions to problems;
- Training of all personnel with regard to the operation mitigation measures of this EMP and continually promoting awareness of these;
- Ensure that all personnel shall provide for adequate environmental awareness training of senior site personnel and that all personnel and newcomers receive an induction presentation on the importance and implications of this EMP. The presentation shall be conducted, as far as is possible, in the employees' language of choice;
- Annual inspection to verify if new personnel have received appropriate environmental, health and safety training and training those who have not;
- Advising on the removal of person(s) and/or equipment not complying with the specifications of the EMP;
- Recommending the issuing of fines for transgressions of facility rules and penalties for contraventions of the EMP; and
- Undertaking a yearly review of the EMP and recommending additions and/or changes to the document.



# EMPLOYERS REPRESENTATIVE (ER)

The ER is appointed by the Manager to manage all contracts for work/services that are outsourced during the operation phase. Any competent employee or third party organisation which possesses the appropriate experience may fill this position. Any official communication regarding work agreements is delivered through this person/organisation.

The ER shall assist the Environmental Control Officer (ECO) where necessary and will have the following responsibilities regarding the implementation of this EMP:

- Ensuring that the necessary legal authorisations and permits have been obtained by the Manager;
- Assisting the Manager in finding environmentally responsible solutions to problems with input from the ECO where appropriate;
- Warning and ordering the removal of individuals and/or equipment not complying with the EMP;
- Issuing fines for the transgression of site rules and penalties for contravention of the EMP; and
- Providing input into the ECO's ongoing internal review of the EMP. This review report should be submitted on a monthly basis to the Owner.

## ENVIRONMENTAL CONTROL OFFICER (ECO)

The ECO should be a competent person appointed by the ER. If the ECO has no training in occupational safety and health at the manufacturing facility, they should be sent for such training. The ECO is the ER's on-site representative primarily responsible for the monitoring and review of on-site environmental management and implementation of the EMP by the Owner/Manager. If no ECO is appointed the duties of the ECO fall upon the ER. JF Paints should, with the commencement of the project, monitor the implementation of the EMP on-site on an ad hoc basis.

The ECO's duties include the following:

- > Assisting the ER in ensuring that the necessary legal authorisations have been obtained;
- Maintaining open and direct lines of communication between the ER, Manager, and Interested and Affected Parties (I&APs) with regard to this EMP and matters incidental thereto;
- Four times per year site inspection of the manufacturing facility with regard to compliance with this EMP;
- Monitor and verify adherence to the EMP (audit the implementation of the EMP) and verify that environmental impacts are kept to a minimum;
- > Taking appropriate action if the specifications for the EMP are not adhered to;

- Assisting the Contractor/Manager in finding environmentally responsible solutions to problems;
- Training of all personnel with regard to the operation mitigation measures of this EMP and continually promoting awareness of these;
- Ensure that all Managers shall provide for adequate environmental awareness training (see Plan Component 6) of senior site personnel by the ECO and that all workers and newcomers receive an induction presentation on the importance and implications of this EMP. The presentation shall be conducted, as far as is possible, in the employees' language of choice;
- Monthly inspection to verify if new personnel have received appropriate environmental, health and safety training and training those who have not;
- Advising on the removal of person(s) and/or equipment not complying with the specifications of the EMP in consultation with the ER;
- Recommending the issuing of fines for transgressions of site rules and penalties for contraventions of the EMP; and
- Undertaking a yearly review of the EMP and recommending additions and/or changes to the document.

# **3 RELEVANT LEGISLATION**

#### The Relevant Legislation and Guidelines:

THEME	LEGISLATION INSTRUMENT	MANAGEMENT REQUIREMENTS
NATIONAL:	<i>The Constitution of the Republic of Namibia of 1990</i>	<ul> <li>The state shall actively promote and maintain the welfare of the people by adopting, inter-alia, policies aimed at the following:</li> <li>(i) management of ecosystems, essential ecological processes and biological diversity of Namibia and utilisation of living natural resources on a sustainable basis for the benefit of all.</li> </ul>
ENVIRONMENTAL:	Environmental Management Act. 7 of 2007 EIA Regulations (EIAR) GN 57/2007 (GG 3812)	<ul> <li>For an Environmental Clearance Certificate – the following activities are applicable:</li> <li>In terms of sections:</li> <li>Section 5.(1), (b) Light industrial use to heavy industrial use,</li> <li>Section 8.(6), Construction of industrial and domestic wastewater treatment plants and related pipeline System,</li> <li>Section 9.(2), Any process or activity which requires an amendment of an existing facilities for any process or activity which requires an amendment of an existing permit, licence or authorisation or which requires a new permit, licence or authorisation or release of a law governing the generation or release of emissions, pollutions, effluent or waste.</li> <li>Prescribes the procedures to the followed for public participation according to Section 7.1(a) and 8(f).</li> <li>Prescribes the procedures to be followed for authorisation of the project (i.e. Environmental clearance certificate)</li> </ul>
ATMOSPHERIC:	Atmospheric Pollution Prevention Ordinance Ord. 11 of 1976	Applicant must subscribe to all applicable provisions prevention pollution of the atmosphere by Noxious industries
CONSENT:	Town Planning Ordinance Ord. 18 of 1954 as amended. Windhoek Town Planning Scheme.	Adhere to all applicable provisions of the Windhoek Town Planning Scheme regarding consent to utilise the erf for Noxious land use.



ENVIRONMENTAL MANAGEMENT:	Environmental Management Systems ISO14001	<ul> <li>Sustainable principals:</li> <li>Resource Management,</li> <li>Natural Resources and Climate Change Management,</li> <li>Product innovation and marketing,</li> <li>Wellness,</li> <li>Purchasing, and</li> <li>Manufacturing</li> </ul>	
LABOUR:	Labour Act. 11 of 2007 Health and Safety Regulations (HSR) GN 156/1997 (GG 1617)	Applicant must adhere to all applicable provisions of the Labour Act and the Health and Safety regulations.	
TREES:	National Forest Policy Government Gazette of 3 Aug 2015 (5801)	<ul> <li>Applicant must adhere to the following licence conditions:</li> <li><i>A permit needs to be obtained for the removal of protected trees.</i></li> </ul>	
WASTE:	Windhoek Municipality: Waste Management Regulations: Local Authorities Act 1992.	<ul> <li>Applicant must adhere to the Windhoek Municipality: Waster Management Regulations. Act</li> <li>In terms of Chapter 3, Part 4:</li> <li>Section 27.(3), [the applicant] must notify the Council in writing prior to beginning with waster generation,</li> <li>Section 29. (4), Recyclable waste may only be deposited at a place set aside or approved by Council for such purposes,</li> <li>Section 29. (5)(a), it must be kept or stored on or in premises and in a suitable skip, container, tank vessel, bag or other receptacles which is kept within a waste storage place or area referred to regulation 17 or in any other structure or area approved by the council.</li> <li>In terms of Chapter 6</li> <li>Permits and licences need to be obtained for the removal and storage of industrial waste.</li> </ul>	
WASTEWATER:	Sewerage And Drainage Regulations published under General Notice No. 312 of 11 November 2010 as set out in the Schedule.	In terms of Sections: Section 5. 39, Sewage or other prohibited discharges not to enter stormwater drains or roads, and Section 7. 52, Use of reclaimed water from industrial activities.	

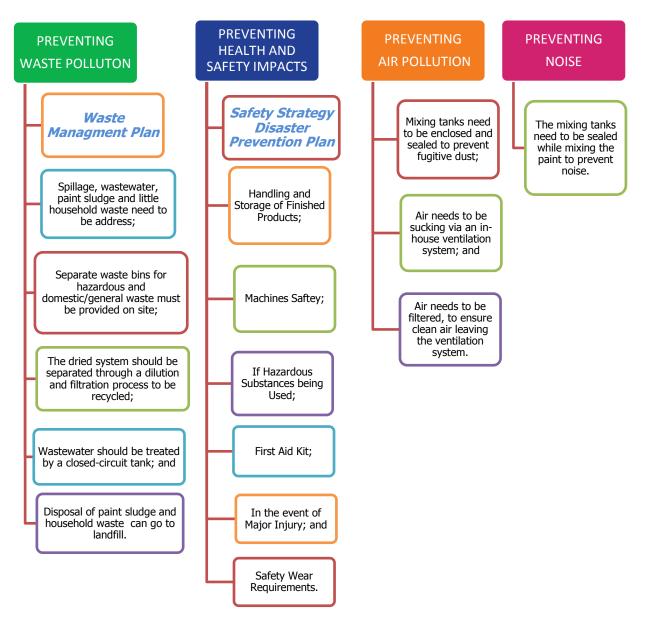


# **4 OPERATIONAL MITIGATION DETAIL**

Table 2 provides a scaled overview of all the major environmental management themes pertaining to both generic and site-specific operational mitigation details. This table serves a quick reference for the detailed mitigation details that follows subsequently for each theme. This is done to simplify the implementation of the operational component of this EMP.

THEME	OBJECTIVE	TIVE MITIGATION DETAIL	
		GENERIC	SITE-SPECIFIC
WASTE MANAGEMENT	Minimise and avoid solid waste and water pollution associated with the operation of a paint manufacturing facility.	PLAN COMPONENT 1	YES
HEALTH AND SAFETY	Focusing on the wellbeing of the staff at the manufacturing facility.	PLAN COMPONENT 2	YES
AIR POLLUTION PREVENTION	Minimise and avoid air pollution associated with a paint manufacturing facility.	PLAN COMPONENT 3	YES
NOISE PREVENTION	Minimise and avoid all pollution associated with noise.	PLAN COMPONENT 4	YES
ENVIRONMENTAL CONSERVATION	Protect the natural environment in which the facility is situated.	PLAN COMPONENT 5	YES
ENVIRONMENTAL TRAINING AND AWARENESS	Awareness creation regarding the provisions of the EMP as well as the importance of safeguarding environmental resources.	PLAN COMPONENT 6	YES
EMPLOYMENT/ RECRUITMENT	Minimise conflict through legal and fair recruitment practices.	PLAN COMPONENT 7	YES







## 4.1 PLANNING COMPONENT 1: WASTE MANAGEMENT

Minimising waste should be performed on a daily basis within the facility. A Waste Management Plan should address spillage, wastewater, paint sludge and household waste generated by the workers on site. The waste generated on the site needs to be disposed of in accordance with national and city regulations.

Waste generated at the facility shall be categorised into two major categories (i.e. general waste and wastewater). Each category has different types of requirement for handling, storage and disposal.

The following should guide waste management actions at the facility:

#### GENERAL WASTE:

The solid waste generated by the facility shall include, "paint sludge", dried paint and little household waste generated by the workers on site.

- The site should be kept tidy at all times. All spillage should be cleaned and contained daily,
- > No general waste may be buried or burned,
- A sufficient number of separate waste containers (bins) for hazardous and domestic/general waste must be provided on-site. These should be clearly marked as such,
- > The facility personnel should be sensitised to dispose of waste in a responsible manner and not to litter, and
- Paint sludge and dried paint waste generated from the day to day operations will be disposed of at the city's landfill. Manufacturing waste will be dumped on normal dumpsites, as it does not contain toxic or combustible parts.

#### WASTEWATER:

The facility will require 88 kl of water per month and 4 kl per day.  $\pm$  45% per litre of water consumed across the manufacturing site is used as a raw material in the water-based product at the manufacturing site.

An in-house wastewater treatment facility shall be installed on the site. This facility should treat all the liquids that are generated on-site. Wastewater generated at the manufacturing site should be collected in a "closed circuit" for the water that will be used to clean the mixing tanks for recycling.

The timeframe of the above-mentioned actions are continuous, and the responsibility lies with the Manager / ECO.

## 4.2 PLANNING COMPONENT 2: COMMITMENT TO HEALTH AND SAFETY

JF Paints Namibia's goal is to achieve zero injuries and serious incidents at the Dulux manufacturing facility. Considering that a serious unexpected event can occur at any given moment, the health and safety aspect is something that cannot be understated.

#### SAFETY STRATEGY DISASTER PREVENTION PLAN

A **Safety Strategy Disaster Prevention Plan** is to be provided at the manufacturing facility through good design, operation, maintenance, training and inspections to reduce the probability of occurrence and consequential effect of eventualities.

The following aspects should be included in the SSDP:

#### SAFETY WEAR REQUIREMENTS:

Workers should receive safety wear.

Safety wear needs to comprise of the following:

– Safety boots, gloves, protective glasses, overalls, and a mouth dust protector.

The workers should wear their safety wear at all times on the site.

#### FIRST AID TRAINING:

Workers should undertake first aid training, and first aid helpers should be identified at the manufacturing facility.

#### FIRST AID KIT:

A first aid kit shall be maintained on-site.

"first-aid kit" means a portable container which is -

- (a) water and dust resistant; and
- (b) stocked with adequate and unexpired medical supplies, equipment and remedies reasonably required for giving first aid treatment in any injury or other emergency situation, in particular situations likely to arise from the risks and dangers inherent to the charcoal packing facility a particular activity offered by a regulated business.

## FIRE PREVENTION:

Fire fighting equipment needs to be maintained and ready to be used.

Equipment includes:

- > Alcohol-resistant foam, CO2, powders,
  - Not to be used waterjet
- > Fire-fighters should wear self-contained breathing apparatus, and
- > Closed containers exposed to fire should be cooled with water
  - Do not allow run-off from fire-fighting to enter drains or water-courses.

#### IN THE EVENT OF MAJOR INJURY:

In the event of a major injury, the worker must first be stabilised at the site and then transport to the nearest hospital.

## **EMERGENCY SITE NOTICES:**

A list of emergency numbers should be displayed where employees can see it.

Emergency Contact Numbers in Windhoek:

*	Police:	061-1 0111
*	Fire Brigade:	061-21 1111
*	Ambulance:	061-21 1111
*	Hospital:	061-203 9111
*	Electricity:	061-290 2452
*	Water & Sewage:	061-290 2402

A sign should be provided with the floor plan, which shows the emergency exits and actions to be taken on identifying fire emergency signals are identified and explained.

## CHEMICAL MANAGEMENT:

Chemical management must address measures for the uses and storage of chemicals and hazardous products at the site, as indicated below:

Should propylene glycol or any harmful chemical be stored on-site, a storage location must be provided for the use of all hazardous substances in the case of chemicals. The storage area must be of an impermeable surface; this is bonded



awaiting use and disposal afterwards;

- > No smoking is allowed inside storage or within 3m of a storage area;
- Products must have labels, handheld and stored according to the prescribe chemical specification regulations; and
- > Fuels and chemicals may not be stored under trees.

Storage of if circumstances make it necessary for an employee to enter an atmosphere contaminated by a harmful concentration of a hazardous substance, the employee shall be made fully aware of these hazards and shall be given appropriate protective equipment to wear.

## HANDLING AND STORAGE OF FINISHED PRODUCTS:

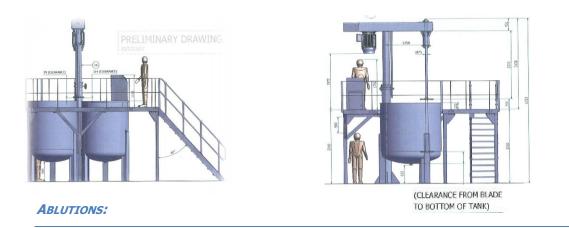
- The finished paint should be stored within storage areas. The storage area needs to be ventilated and visible. Store-Tech will provide a racking system to store the final products according to Dulux Standards, which is based on the ISO Quality Management Systems, EMS.
- 20L drums should be packed on pallets in quantities of 24. Total weight of a pallet should be ±750kg. The racking height will depend on the building's height.
   5L and 1L should be packet at lower levels, which is accessible by hand.

Smoking, eating and drinking should be prohibited in storage and use areas.

MACHINES SAFETY:

When designing layout:

- Avoid congestion points or worker movements near hazardous machinery;
- make sure people can use, clean and maintain the machinery without being harmed;
- make space for any waste materials to gather before they are cleared (they should not clutter walkways or work areas);
- > note the movements of trucks, materials and people;
- > mark out walkways and create vehicle movement areas;
- > mark out 'no-go' areas, so people can stay away from dangerous machinery;
- all machinery must be secured to the floor or other structure so that it cannot tip, become unstable or create any other hazards, unless it is designed to be portable and;
- > Check how close moving parts are to other machinery and fixtures in buildings.



Separate ablutions (toilet and showers) are available for men and women and should clearly be indicated as such.

- > 1 toilet for every 25 females.
- > 1 toilet for every 50 males.

Workers responsible for cleaning the toilets should be provided with latex gloves and masks

The timeframe of the above-mentioned actions are continuous, and responsibility lies with the Manager/ECO.

## 4.3 PLANNING COMPONENT 3: PREVENTING AIR POLLUTION

During the mixing process, dust is generated and can potentially result in air pollution.

The following measures should be in place to prevent air pollution at the manufacturing site:

- > Mixing tanks need to be enclosed and sealed to prevent fugitive dust; and
- > An in-house ventilation system should be in place to ensure that air is filtered.

The timeframe of the above-mentioned actions are continuous, and responsibility lies with the Manager/ ECO.

## 4.4 PLANNING COMPONENT 4: NOISE

Sound is generated from the electrical motors stirring the paint needs to be mineralised in the facility.

The following measure is provided below to minimise noise:

- > The mixing tanks need to be sealed when mixing the paint.
- > Work hours should be restricted to between 07:00 and 18:00.

The timeframe of the above-mentioned actions are continuous, and responsibility lies with the Manager/ ECO.



## 4.5 PLANNING COMPONENT 5: ENVIRONMENTAL CONSERVATION

Little natural vegetation beyond scattered trees remains on the site. Beside smaller bushes and Prosopis trees (*Prosopis glandulosa*) which is an alien invader, there are also a number of protected trees namely four Camelthorn trees (*Acacia erioloba*) on the site.

#### TREE MANAGEMENT PLAN:

A **Tree Management Plan** shall be implemented, which should include the following content at the minimum level:

- > All protected trees should be surveyed,
- > Permits shall be obtained before the removal of protected trees, by the ECO.
- Protected trees which are removed shall be replaced and used within the landscaping of the development,
- The landscape should consist of indigenous plants which are indigenous to the Khomas Regions and
- Indigenous plants and trees can be obtained at a commercial nursery. The forestry officers can also direct to nearby nurseries where additional trees may be bought.

The duration of the actions mentioned above is long term. The responsibility for the implementation of the **Tree Management Plan** lies with the Owner / Manager/ ECO.

## 4.6 PLANNING COMPONENT 6: ENVIRONMENTAL TRAINING AND AWARENESS

All workers at the manufacturing facility are to undergo environmental training and awareness programs. The following aspects should be included:

- > Explanation of the importance of complying with the EMP;
- > Discussion of the potential environmental impacts of the packing facility activities;
- > Workers' roles and responsibilities, including emergency preparedness; and
- Explanation of the specific mitigation measures within this EMP, especially unfamiliar provisions.

**During the training sessions,** an attendance register should be completed, including the names, positions designations and signatures of everyone who attended the training and kept on file for auditing purposes. Thereby, all the training sessions prior to it being conducted must be approved by the Manager.

The timeframe of the above-mentioned actions are yearly, and the responsibility lies with the Manager.

# 4.7 PLANNING COMPONENT 7: EMPLOYMENT/RECRUITMENT

The formal recruitment process should be compiled and shall include the following minimum provisions:

## 4.7.1 Recruitment:

A recruitment process whereby local residents shall be given preference shall be designed by the Manager.

- > A recruitment process whereby local residents shall be given preference shall be designed by the ER and the contractor.
- Ensure that all sub-contractors are aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed-upon process.
- > The Manager should give preference in terms of recruitment of sub-contractors and individual labourers to those from the project area and only then look to surrounding towns.
- Clearly explain to all job-seekers the terms and conditions of their respective employment contract (e.g. period of employment, etc.) – make use of interpreters when required.

## 4.7.2 Legislation:

The Manager needs to adhere to the legal provisions in the Labour Act, the Social Security Act and the Employees' Compensation Act for the recruitment of labour (target percentages for gender balance, optimal use of local labour, Workmen's compensation deductions and payments, etc.) in the contract.

