

# Lethem Window Factory

## Project Summary



November 2022

Arun Richard

Lot LM12 Bon Success, Lethem, Region 9.

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## **Executive Summary**

- Lethem is set for large-scale development as the main town in the south of Guyana on the Brazil Border.
- It will benefit greatly from the Border Agreement that exists between Guyana and Brazil.
- The government of Guyana has planned the development of several commercial, industrial and residential districts in and around Lethem.
- The project developer recognizes the demand for building-related services and is seeking permission to establish a facility that assembles glass and aluminum windows.
- The project developer is Mr. Arun Richard, who has applied to the Guyana Lands and Surveys Commission (GLSC) for a commercial/industrial plot in the Lethem area.
- The GLSC has allocated Lot LM12, Bon Success, Lethem to Mr. Richard and requires that he obtains authorization from the EPA before issuing him the Lease.
- The business will be based on the purchase of Aluminum and Glass supplies from established suppliers in Georgetown.
- These materials will be transported by way of the Linden - Lethem trail from Georgetown to Lethem.
- At the facility on Lot LM12 Bon Success, these materials will be cut and assembled into windows as per customer's orders.
- The facility will create local employment and satisfy a significant demand for a critical product needed in all of the buildings which will be constructed in and around Lethem.

## **Introduction**

The assembly of customized windows using aluminum and glass is a well-established and widely used service in the construction industry. Virtually all builders prefer to have unique, custom-fitted windows of their own designs. There is demand in the Lethem area for this product and service now that a sustained construction phase is underway, driven by both Government and Private Sector. The Government of Guyana has stated that the new Culver City housing project will see the allocation of 2000 house lots, and the commercial and industrial areas will see the allocation of more than another 500 parcels.

All of these allocations will require the building and construction of various types of structures, all of which will require windows.

This business does not require the reinventing of the wheel, it is simply repeating what is already being done, but in a new location where demand is now emerging.

There are already dozens of businesses in and around Georgetown that import the materials and supplies that are required for the assembly of these types of products. The establishment of this facility in Lethem will create jobs locally, provide training to local laborers, and allow customers access to quality, customized products at affordable costs.

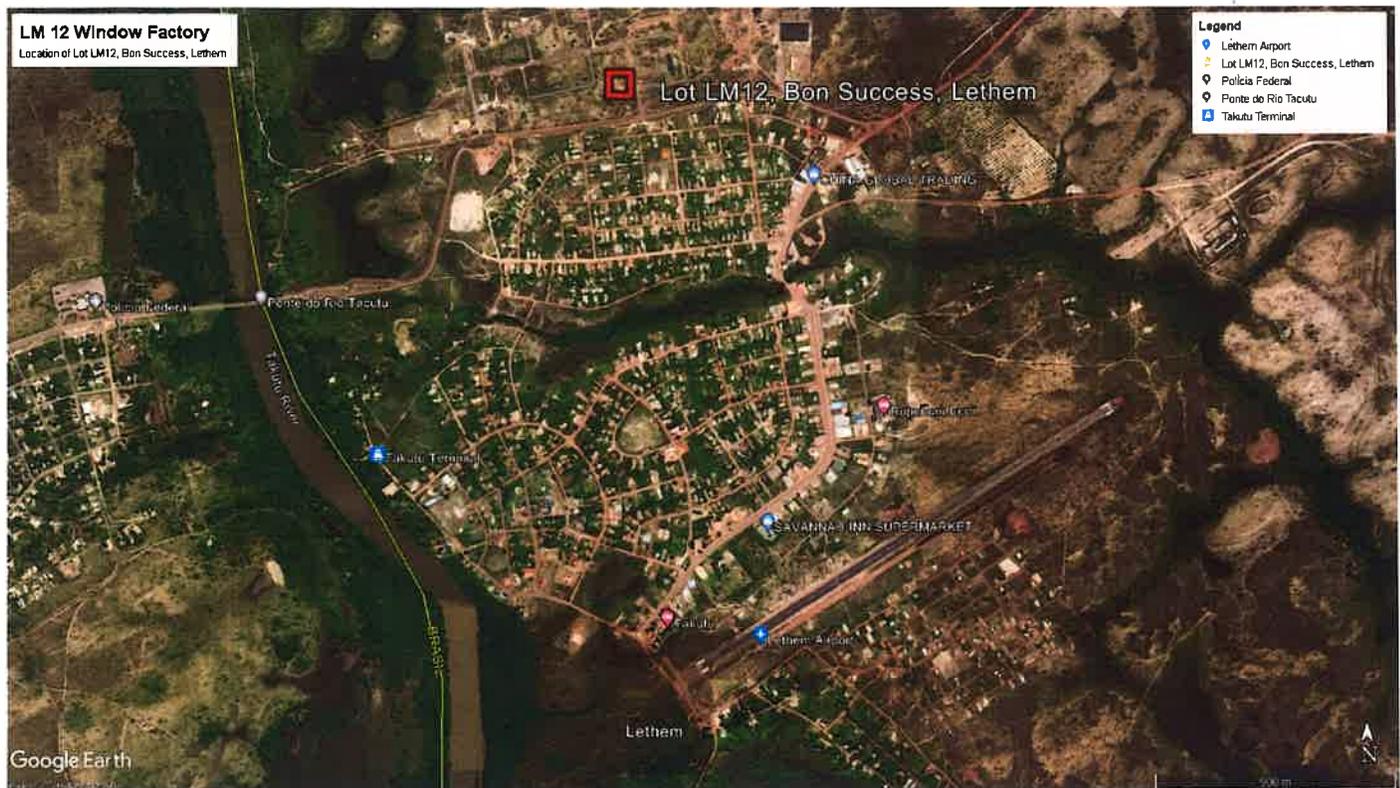
**Fact Sheet**

<b>Project Developer</b>	Arun Richard
<b>Contact #</b>	612 - 4704
<b>Project Name</b>	LM 12 Window Factory
<b>Project Address</b>	Lot LM 12, Bon Success, Lethem
<b>Project Type</b>	Assembly of Windows
<b>Location:</b>	Region 9
<b>Locality</b>	Lethem
<b>Size of Project Area</b>	1 Acre
<b>Production (initial)</b>	~50 units / month
<b>Product:</b>	Customized Windows
<b>Project Components</b>	<ul style="list-style-type: none"> <li>- Assembly Line</li> <li>- Storage Bond</li> </ul>
<b>Power Requirement (Grid)</b>	<20 KVA
<b>Life Span of Project</b>	>10 years
<b>Employment/Staff</b>	10 - 15 Persons
<b>Capital Investment:</b>	~100,000 USD
<b>Current Status of Project</b>	Application and Permitting
<b>Anticipated Start Date</b>	July 2023
<b>Nearest Towns</b>	Lethem
<b>Nearest Airstrip</b>	Lethem
<b>Nearest Police Station</b>	Lethem
<b>Nearest Fire Station</b>	Lethem
<b>Telecommunications Tower</b>	Lethem
<b>Ecologically Sensitive Zone</b>	None in or around project area

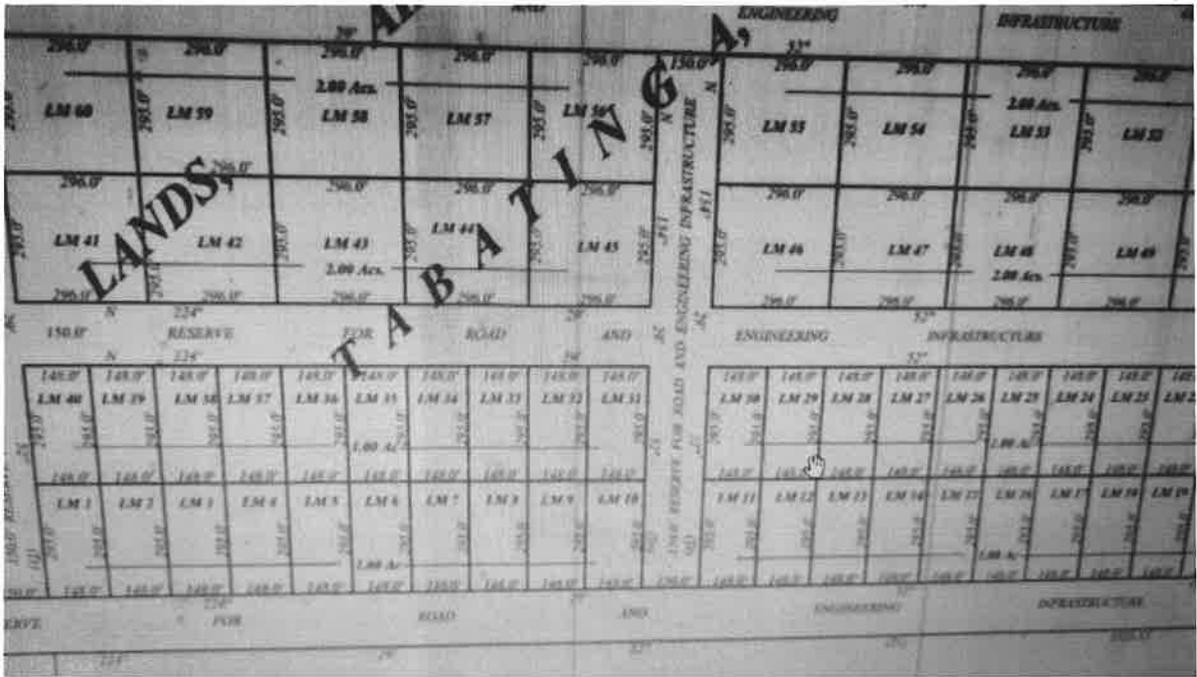
## Location and Site Plan

The proposed project site is located in the newly allocated industrial/ commercial zone in Bon Success, just outside of central Lethem. The area has already been surveyed by GLSC and divided into multiple plots, each being between 1 to 5 acres in size. The project site is located on a plot designated as Lot LM12, Bon Success, Lethem which can be found at approximately geographic coordinates  $3^{\circ}23'17.42''N$   $59^{\circ}47'56.38''W$ , in the WGS84 Datum. Lot LM12 is 295' x 148' which makes it approximately 1 acre in aerial extent.

The Lethem area is located in Southern Guyana and is accessible directly by small aircraft or overland by road and trail from Georgetown by way of the Linden - Lethem road.



Map 1: Location of Project Site



Map 2: GLSC plan for Commerical / Industrial area in Bon Success

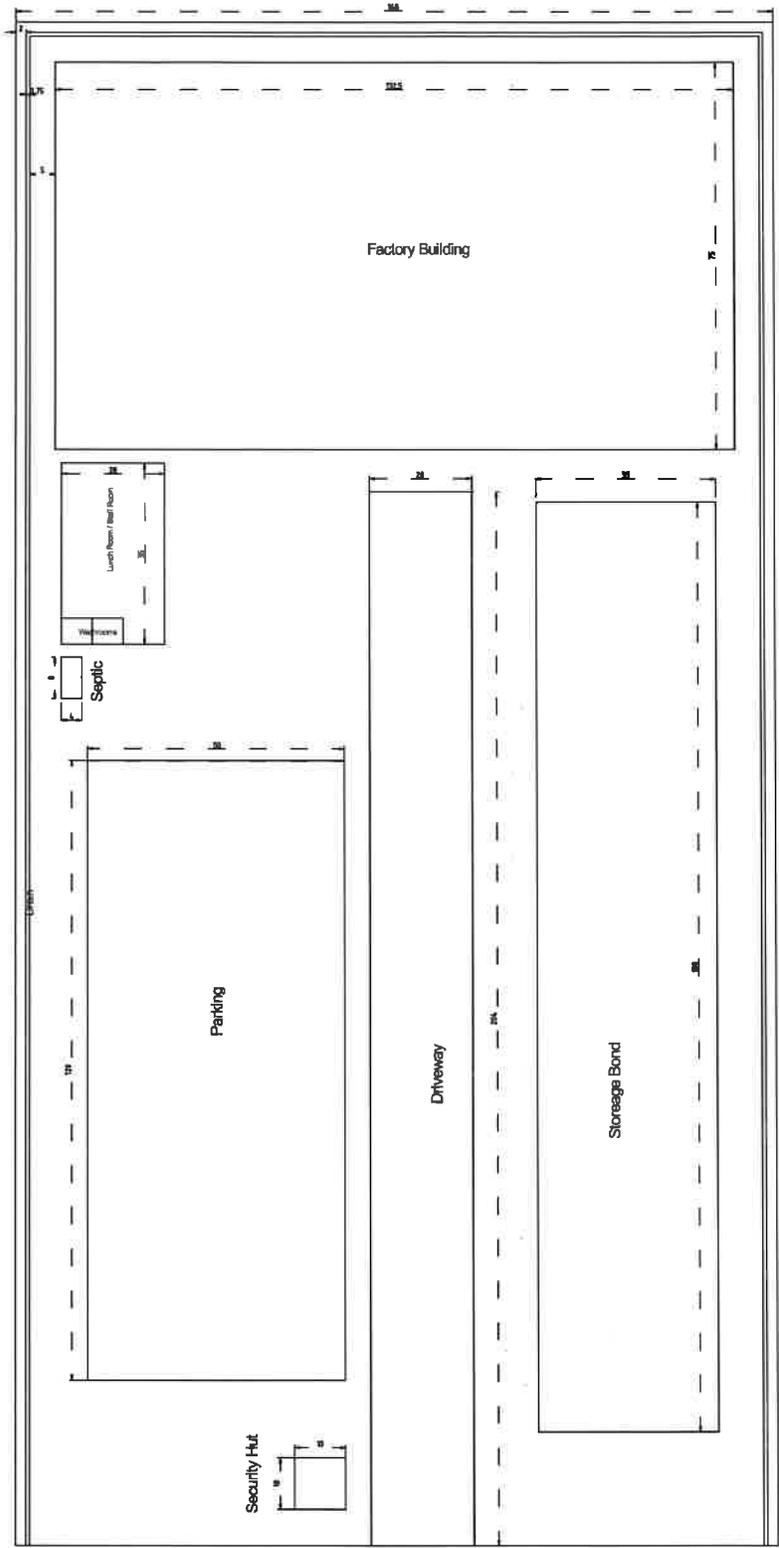


Figure 1: Proposed Site Layout

### **Physiography**

The area is sandy, covered with white silica sands and sparse vegetation, mainly grass. The area was previously cleared and leveled by contractors for the Lethem Town Council when the roads and drains were being developed in the area.

There are no major natural waterways or other sensitive ecological features nearby the project site.

### **The Facility**

The facility will see the construction of two bond-like structures. One will be for the storage of materials and the other will be for the processing and assembly of these materials into products i.e. windows. Both structures will be at ground level and have steel frames, be enclosed by hollow concrete blocks, and be covered by zinc sheets. The structure for the assembly line will be 132.5 x 75 feet and 20 feet high. The storage facility will be 35 x 180 feet and 15 feet high. There will be a third structure which will be a staff facility, containing a lunch room, recreational area, lavatories, etc. The staff building will be 20 x 35 feet and 12 feet high. The rest of the plot will be occupied by a parking lot and there will be a small security hut at the entrance. The parking lot will be 120 x 50 feet. The security hut will be 10 x 10 feet. No Structure will be closer than 7 feet to the perimeter fence, the fence itself will be 9' high chainlink mesh with adequate lights and cameras. The entire plot will be ringed by an internal drain that is located parallel to and 2 feet inside the perimeter fence. This internal drain will lead to the municipal drainage that passes along the front of the lot along the roadway.

### **Development Phases**

Construction is expected to comment in July 2023, assuming all permits are acquired by May 2023. Construction will take 3 months. Operations can begin in November 2023 as the first 2 months after construction will see the installation of equipment and training of employees.

### **Employment**

During Construction it is expected that 15 people would be employed. During operation, it is expected that 10 people will be employed.

## Financial Assessment / Market Analysis

The construction of the facility described above and the outfitting with equipment and supplies is expected to cost approximately 100,000 USD. The projected construction of more than 2000 homes and other buildings in the Lethem area is expected to create a market for the products which will last at least 10 years. The average sale price of a window unit in Lethem is 20,000 G\$. This facility will be able to produce similar units for 18,500G\$ or less. At an expected 50 units per month, this represents a gross take of 925,000G\$. It is expected that there will be a net profit of 15% per month.

### The process

The process is relatively straightforward. Aluminum frames are imported and sold in straight pieces in Georgetown. Glass is also imported and sold by sheets of various sizes in Georgetown. Both of these materials are available in various colors, finishes, and thicknesses. These will be bought from established suppliers in Georgetown and transported overland to the facility. At the facility, customers will select and specify their requirements for the assembly of products. Workers will then cut the selected materials as required and assemble them into windows. Assembly utilizes silicone sealant, rubber strips, and rivets for the fabrication of window units.

There will be minimal wastage as the material will only be cut as needed and smaller remaining pieces will be kept for use on smaller jobs as suitable.

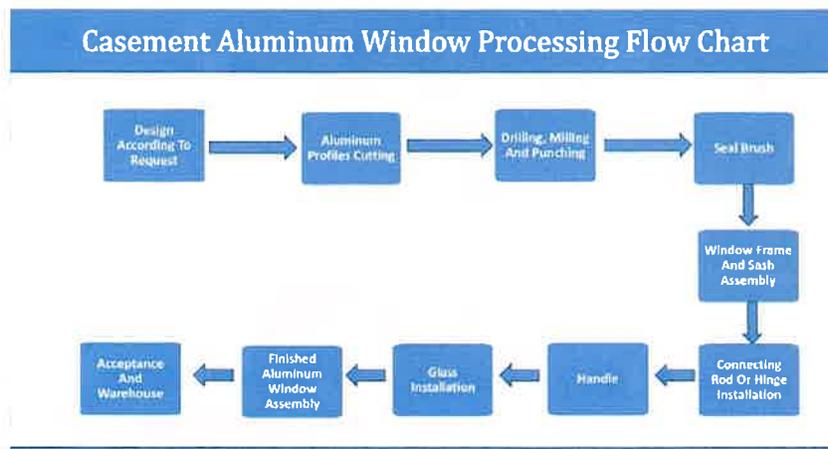


Figure 2: The Process

## **Utility Services**

In the town of Lethem all services are available, water, electricity, drainage and solid waste disposal. The facility will make use of all of the above services. The process does not require the use of water, this is to be used primarily by personnel and for cleaning the facility. The electricity from the Lethem Power Grid will be suitable and adequate for the facility as the power requirement will be less than 20 KVA. The process will not generate any solid waste which cannot be sent to the municipal site as there will be no hazardous material on site.

Communication services are available from both Digicel and GTT in the town of Lethem, both of these will be utilized.

## **Waste Production**

Solid waste will be minimal as the material will be cut precisely as required and smaller remaining pieces of aluminum and glass will be kept for use on other jobs as suitable. Solid waste will be mainly discarded packaging material and biodegradable, domestic waste from the lunch room. This is estimated to be 3 tons per year.

Liquid waste will not be industrial as the process requires no water, it will mainly be from the staff facility, lunchroom and washrooms. The hand sinks and general washing will lead to municipal drains. The septic system will handle waste from the washrooms and direct it to a standard exfiltration system for treatment and discharge. GWI recommends 1.5 gal/person as a way to estimate liquid waste, therefore it is expected to be approximately 15 gals/day.

## Potential Environmental Impacts

Table-2.0: Prediction of Impact during Construction Phase & Their Mitigation Measure

Environmental component	Project Activity	Potential Impact	Mitigation Measure
Air	Site Clearance/ Operation	Dust Pollution	Sprinkling of water above the area before Clearing.
	Heavy Vehicle Maintenance/ Operation	Air Pollution Dust Generation	<ul style="list-style-type: none"> <li>• Vehicles used for transportation of material will be covered with tarpaulin.</li> <li>• Vehicles used for Construction work will be regularly maintained and will be requested to contractor to adhere to CPCB(Central Pollution Control Board) norms.</li> </ul>
	Construction of structure and earth work	Dust due to cutting and filling	Wetting of area before clearing.
Noise	Heavy Vehicle Maintenance	Increased vehicular noise	Vehicles used for Construction work shall be regularly maintained and will be requested to contractor to adhere to CPCB norms
	Construction of structure and earth	Noise from vibrators, Concrete batching plants etc.	<ul style="list-style-type: none"> <li>• Proper maintenance of equipment.</li> <li>• Providing ear plugs to workers employed in close vicinity of noise producing machine.</li> </ul>
	DG set operation	Increased noise levels	<ul style="list-style-type: none"> <li>• DG set adhering to CPCB norms.</li> <li>• Proper maintenance of DG Set.</li> </ul>
Water	Construction Staff Water Requirement	Strain on local water sources	Drinking water will be met from municipal supply.
Soil	Storage of petroleum and other chemicals	Pollution due to mixing of construction material.	<ul style="list-style-type: none"> <li>• Storage of petroleum and other chemicals on impervious floor.</li> <li>• Careful handling of materials will be ensured.</li> </ul>
	Construction debris and earth material.	Pollution due to mixing of concrete with soil.	<ul style="list-style-type: none"> <li>• Mixed Concrete and such debris will be unloading on impervious metal sheets.</li> <li>• Waste or spillage will be collected and sent to the nearest disposal site with the appropriate treatment.</li> </ul>
	Transportation of hazardous material	Accidental spilling of hazardous material	<ul style="list-style-type: none"> <li>• Construction Process does not involve transportation of hazardous material such as lubricant oil and enamel paint except in very small quantities.</li> </ul>

Environmental component	Project Activity	Potential Impact	Mitigation Measure
			<ul style="list-style-type: none"> <li>• In transportation of these materials, all precaution as required by regulation will be taken.</li> </ul>
	Demolition waste from existing office building	Contamination of soil	Demolition waste from existing office building will be collected, segregated and handled to authorize recyclers.
	Heavy Vehicle Maintenance/ Operation	Oil spillage	Use of electrically operated machines to the possible extent. Oil tray will be kept below all potential oil spillage points for final disposal of spillage to authorized recyclers.
	Solid waste generation	Improper disposal of plastic/kitchen waste.	Segregation of solid waste will be practiced and segregated waste will be handed over to authorized agency of Nagar Nigam for final disposal.
Ecology	Construction of Structure and earth work	Migration of fauna due to construction	Use of electrically operated machines to the possible extent, and proper maintenance of machines to keep noise level low.

**Table-3.0: Prediction of Impact during Operation Phase & Their Mitigation Measure**

Environmental component	Project Activity	Potential Impact	Mitigation Measure
Air	Traffic movement on Road	Increased concentration of air pollution at some location	<ul style="list-style-type: none"> <li>• Although the bidirectional traffic is adopted in the surrounding area now, installation of one-way traffic is considered for reducing congestion.</li> </ul>
	DG set operation	Air Pollution	<ul style="list-style-type: none"> <li>• DG set adhering to CPCB Norms.</li> <li>• Proper maintenance of DG set.</li> <li>• Exhaust ventilation with chimney in DG set will be installed.</li> </ul>
Noise	Traffic movement on Road	Increased vehicular noise at some location	<ul style="list-style-type: none"> <li>• Although the bidirectional traffic is adopted in the surrounding area now, installation of one-way traffic is considered for reducing congestion.</li> </ul>
	DG set operation	Noise from DG set	<ul style="list-style-type: none"> <li>• DG set will be enclosed in acoustic enclosure with soundproof casing.</li> </ul>
Water	Water Requirement	Strain on Ground water	<ul style="list-style-type: none"> <li>• No ground water is used for drinking water.</li> <li>• Drinking water will be supplied by municipal supply.</li> </ul>
Soil	Operation	Soil contamination due to surface run off / Oil and grease dripping from vehicle	Oil and grease spilled in the basement car parking will be pumped up to the waste water pipe connected to the existing city sewer line.
	Solid waste generation	Improper disposal of plastic/kitchen waste.	Segregation of solid waste at source will be practiced and segregated waste will be handed over to authorized agency of Nagar Nigam for final disposal.
Ecology	Operation	Increased exposure to anthropogenic activities.	Enactment and enforcement of laws regulating human intrusion.

### **Socio - Economic Impacts**

The project will provide employment to the people. Indirect employment is also expected due to the associated activities. It is a positive impact of the project since it will provide employment opportunities to the local people.

**Impact:** As most of the workers to be employed in the project are local residents no law & order problem is envisaged. It is expected that the workers will attend to their duties from their residence and return to their homes after the day's work. The project proponent shall ensure health and safety of all the employees at work. All efforts will be made to provide and maintain a safe work environment and ensure that the machinery and equipment in use is safe for employees.

**Mitigation:** Suitable measures will be taken at the temporary construction labour tents to mitigate anticipated impacts due to temporary accommodation of labourers such as provision of clean drinking water, adequate toilet facilities, water and solid waste disposal system.

Other safety precautions to be maintained at work site including provision of PPE(Personal Protection Equipment), guarding of dangerous machine parts, maintenance of equipment as hoists and lifts etc, and adequate provision of different types of fire extinguishers will be made.

All applicable rules and regulations pertaining to health and welfare at the workplace of the people will be applied to all workers.