ELECTRICAL SAFETY INSPECTION REPORT

LOGOS APPARELS LTD (BUILDING 4)

Telirchala, Mouchak, Kaliakoir, Gazipur

GPS Coordinates: 24.016267,90.305253

Factory List:

Logos Apparels Ltd 10917

Logos Apparels Ltd (New Building) 23569

Logos Apparels Ltd (Building 4) 23986

Inspected by : Mehedi Hasan

Report Generated by : Mehedi Hasan

Inspected on: November 25, 2020

RSC RMG SUSTAINABILITY COUNCIL

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1. INTRODUCTION

The Factory was surveyed for electrical safety by RMG Sustainability Council. The purpose of the survey was to identify significant electrical safety issues and to provide recommendations for remediation based on applicable standards specified by the RSC.

Electrical Safety Audit is a methodical approach to evaluate potential electrical hazards and to recommend suggestions for improvement. The scope of this initial electrical safety inspection was limited to the review and identification of major electrical safety issues. The inspection did not include identification of minor deficiencies, which would be further dealt with as part of follow-up inspections.

2. LIMITATIONS

The information in this electrical safety inspection report was obtained during a visit to the facility and during discussion with local factory management. Services performed by the auditors are conducted in a manner consistent with that level of care and skill generally exercised by members of the engineering and auditing profession. However, an effort has made to discover all meaningful areas under the stipulated time available.

In evaluating subject site, Inspector relies in good faith on information provided by factory management or employees. The Inspector assumes that the information provided is factual, accurate and accepts no responsibility for any deficiency, misstatement or inaccuracies contained in this report as a result of omission or misrepresentation of any person interviewed or contacted.

The findings and recommendations in this report are not intended to imply, guarantee, ensure or warrant compliance with any government regulations. Additionally, the results do not imply in any way that compliance with the findings or recommendations as stated in this report will eliminate all risks or exposures not referred to in this report do not exist. Compliance with the findings and recommendations stated in this report does not relieve the factory owner from obligation to comply with specific project requirements, industry standards, or the provisions of any local government regulations.

3. DEFINITION

3.1. TIME FRAME

The amount of time being allocated based on the remediation work volume of the electrical issues considering the feasibility and ideal status of materials, capital and working condition. Criticality and priority level of the issue is not taken into consideration. It is bound only for the particular finding unless mentioned ‘typical’, shall include the whole typical findings.

3.2. PRIORITY LEVEL

3.2.1. Electrical issues related to code violation and/or non-conformity with codes possessing immediate fire hazard, direct threat to human safety, shall be considered as **P1** Level of priority. The execution of remediation works shall commence immediately without compromising with any other issues and must strictly complete within the allocated remediation time frame. It shall include only the critical issues

3.2.2. Electrical issues related to code violation and/or non-conformity with codes, protection of electrical switchgears and equipment, spatial arrangement and location of switchgears and equipment, design and drawings, shall be considered as **P2** Level of priority. The execution of remediation work of **P2** shall commence along with or soon after the **P1** level remediation work has commenced. It shall include only the moderately-critical issues.

3.2.3. Electrical issues related to violation of code and/or non-conformity with codes, workmanship of operation and maintenance and obsolete technology of electrical system, shall be considered as **P3** Level of priority. The execution of remediation work of **P3** shall commence along with or soon after the **P2** level remediation work has commenced. It shall include only the non-critical issues.

3.2.4. It doesn't take into consideration the remediation time frame and feasibility of remediation. It doesn't take into consideration the capital, materials and working environment.

4. GENERAL BUILDING INFORMATION

1. Factory Name	**:**	Logos Apparels Ltd (Building 4)
2. Factory Address	**:**	Telirchala, Mouchak, Kaliakoir, Gazipur
3. ID	**:**	**23986**
4. Inspection participates	**:**	Ripon Saha Manager (HR & Compliance) ripon@logosbd.net 01718136973 Syed Faruk Hossain Assistant Manager (Compliance) compliance@logosbd.net 01712219956 Md Alamgir Hossain Electrical Incharge hr@logosbd.net 01768981615

5. BUILDING DATA

A. General

Logos Apparels Ltd (Building 4) is established in its 01 RCC building (B+G+5). As reported by the Factory Management, main production building was constructed in between January 2019 to March 2020 and the production began in around May 2020. During the time of the Inspection, the factory accommodated a total of 50 workers in a single shift of 08 (eight) hours

The floor wise utilization of the buildings is as detailed below:

Main Production Building (7200 sqft):

Basement Floor	:	Store.
Ground Floor	:	Office, Child Care & Medical room (Proposed).
First Floor	:	Store (Proposed finishing section)
Second Floor	:	Idle machine store (Proposed sewing section)
Third Floor	:	Idle machine store (Proposed sewing section)
Fourth Floor	:	Vacant area (Proposed finishing section)
Fifth Floor	:	Store

FLOOR LAYOUT INFORMATION

The six storied (G+5) i.e. factory building is 77.5 feet tall and has a total floor area of approx. 7200 sqft. Figure 1 shows the ground floor layout plan of the factory:

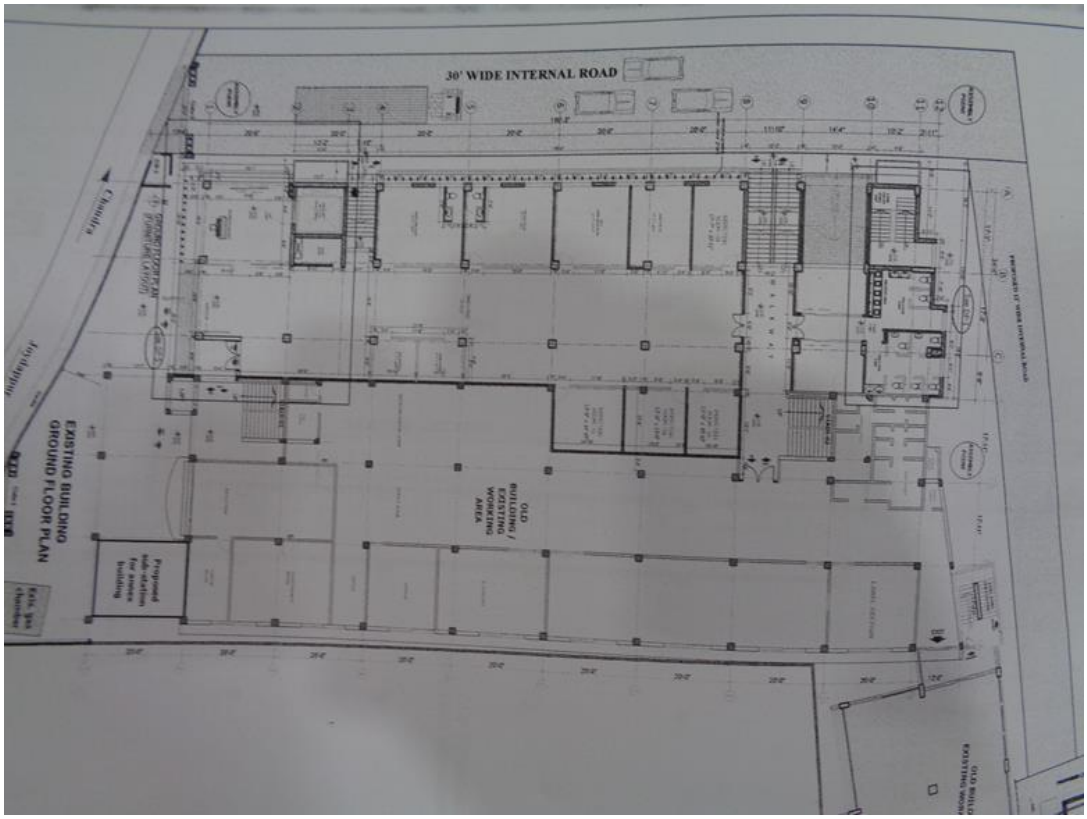


***Figure 1*:** Floor layout plan

ELECTRICAL SYSTEM & UTILITY INSTALLATION INFORMATION

Logos Apparels Ltd (Building 4) premise is connected to 400 V electrical supply sourced from Logos Apparels Ltd (another RSC covered factory, ID 10917) through Low Tension cable. Electrical system and Utility installation information at a glance for both of the factories (combined):

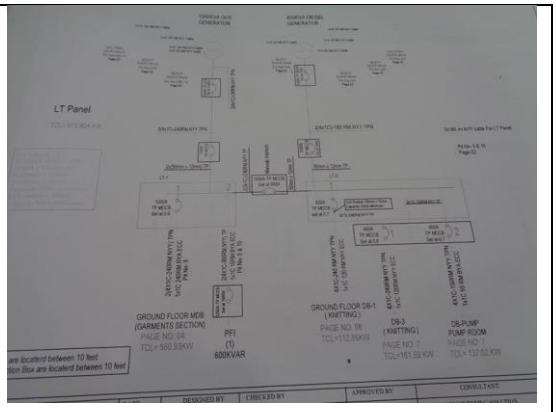
Query	Information	Remarks
Grid Electricity Supplier	REB	Covered under Logos Apparels Ltd (10917)
Sanctioned Load	143 kW	
Number of Transformer	03	
Type of Transformer	Outdoor type oil cooled	
Capacity of each transformer	50 kVA	
Transformer location in the factory	Pole mounted Transformer owned by Grid power supplier	
Transformer owned by factory	No, Maintained by REB/DESCO/DPDC	
HT switch gear	Factory doesn't have HT switchgear	
Number of Generator	2	
Capacity of each Generator	1000 kVA (BanglaCAT) Gas driven 650kVA () Diesel driven	
Generator location in the factory	Generator Building	
Number of Compressor	03	
Capacity of each Compressor	45 kW	
Number of Boiler	02	
Capacity of each Boiler		
Total no. of LT panel	1	
Total no. of Distribution boards	01 (will increase in future)	
Power distribution system	All through Cabling using cable tray, ladder, channel and duct	
Number of manual changeovers	01 (MCCB)	
Number of synchronizer	No	
Number of Automatic transfer switch	Nil	
Substation room location	Apart from main production building	

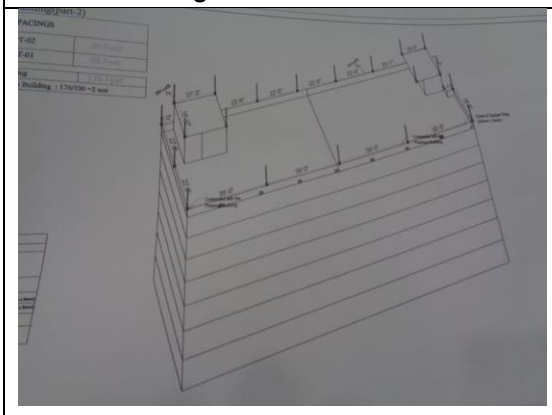
B. ELECTRICAL PRACTICES IN OPERATION AND MAINTENANCE

Maintenance and Operations is done by in-house electrical and maintenance team of the factory.

Inspecting teams were presented with the maintenance programs, logs, and maintenance schedule of the factory's electrical facilities; Some typical practices are shown below.

<table>
<tr><td> 

Lock out – Tag out device</td><td> 

Prepared Single Line Diagram (SLD)</td></tr>
<tr><td> 
Prepared LPS design</td><td> 

Typical cable entry system into electrical panel in production floors.</td></tr>
<tr><td> 

Typical electrical distribution panel.</td><td> 
Cable entry is done through cable gland with base/top plates.</td></tr>
</table>

	
Busbar of distribution panel.	Wiring inside distribution panel.
	
Construction is in progress	Floors are not occupied yet

6. LIGHTNING PROTECTION RISK ASSESSMENT

Calculation of Risk Index Factor (BNBC 2006) for Main Building			
Index A	**Use of Structure**	Small and medium size factories, workshops and laboratories	6
Index B	**Type of Construction**	Reinforced concrete with nonmetal roof	2
Index C	**Contents or Consequential Effects**	Industrial and agricultural buildings with specially susceptible contents	2
Index D	**Degree of Isolation**	Structure located in a large area having structures or trees of similar or greater height, e.g. a large town or forest	5
Index E	**Type of Terrain**	Flat terrain at any level	2
Index F	**Height of Structure**	18 – 24 m	8
Index G	**Lightning Prevalence**	Over 21	21
	Total Risk Index of the building		46
Requirement of installing LPS		Yes	

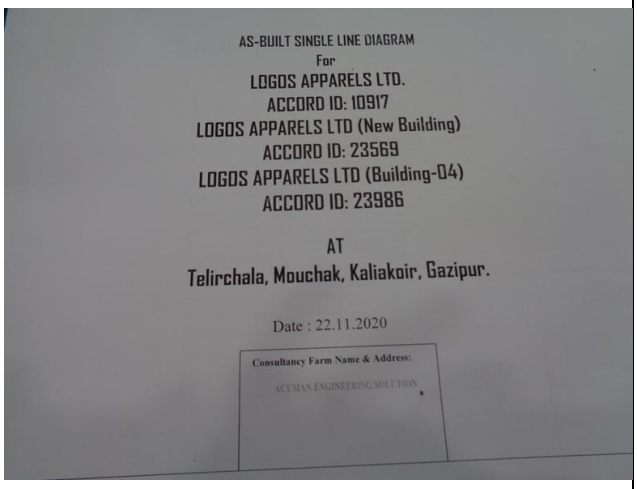
It is required to calculate risk index for all structures, design LPS as per standard and install it properly.

7. FINDINGS AND RECOMMENDATIONS

The table below summarizes the major electrical hazards identified during the walk through inspection. Recommendations have been provided to each finding.

The implementation schedule shall be developed by the factory to remediate each of the findings. The specific timing of improvements, including any requested extensions due to design / installation constraints, shall be submitted to the RSC for an approval.

FINDING NO:	**E - 1**
CATEGORY:	**DOCUMENTATION**
FINDING: Field information has no/less reflection in existing SLD.	
RECOMMENDATION: Electrical SLD must be updated properly; all the required information must be mentioned there; and it shall be updated when you do substantial amount of changes of your electrical system.	
PRIORITY:	**P2**
REMEDIATION TIME FRAME:	**2 MONTHS**



FINDING NO:	**E - 2**
CATEGORY:	**LIGHTNING PROTECTION SYSTEM**
FINDING: Lightning Protection System (LPS) installation is not completed. LPS design is not as built.	
RECOMMENDATION: Factory must design Lightning Protection System (LPS) for the whole factory (where the Risk index is more than 40). Once a LPS is designed properly, installation must be done accordingly asap.	
PRIORITY:	**P1**
REMEDIATION TIME FRAME:	**2 MONTHS**

FINDING NO:	**E - 3**	
CATEGORY:	**DOCUMENTATION**	
FINDING: There is no programmed schedule for periodical inspection & testing of electrical equipment.		
RECOMMENDATION: An electrical maintenance program shall be prepared which will include inspections and testing of the electrical systems (preventive and proactive)		
PRIORITY:	**P3**	
REMEDIATION TIME FRAME:	**1 MONTH**	

FINDING NO:	**E - 4**	
CATEGORY:	**TESTING & PERIODIC MAINTENANCE**	
FINDING: Thermography scanning report is unavailable		
RECOMMENDATION: Thermography survey must be done and recorded at least twice in a year.		
PRIORITY:	**P2**	
REMEDIATION TIME FRAME:	**1 MONTH**	

FINDING NO:	**E - 5**	
CATEGORY:	**TESTING & PERIODIC MAINTENANCE**	
FINDING: Earth Pit resistance test record doesn't match with field		
RECOMMENDATION: All earthing systems shall be tested for resistance on any dry day not less than once in every two years. A record of every earth test made and the result shall be kept for not less than two years and shall be available to the Inspector when required.		
PRIORITY:	**P2**	
REMEDIATION TIME FRAME:	**1 MONTH**	