Name of the Factory	:	Tajir Apparels Ltd.
Address of the Factory	:	Tayubpur, Munshi Market, Zirabo Ashulia, Savar, Dhaka-1340
Present Status of the Factory	:	Under operation.
Structural Assessment Conducted by	:	TUV
Date of Structural Inspection	:	15 May, 2015
Fire Assessment Conducted by	:	TUV
Date of Fire Inspection	:	15 May, 2015
Electrical Assessment Conducted by	:	TUV
Date of Electrical Inspection	:	15 May, 2015
BGMEA Membership No.	:	5626

BASIC INFORMATION:

The factory building is a three storied RCC building with beam and column system and flat slab system. The following information was noted:

i.	Building Usage Type	:	Garment Factory.
ii.	Structural System	:	MS profile shed.
iii.	Floor System	:	Ground Floor.
iv.	Floor Area	:	The typical plinth area is 15,000sft. and total production floor is15,000.
v.	No. of Stories	:	All sheds were single storey
vi.	Construction Year	:	2014,(shed-1) 2015(shed-2)
vii.	Foundation Type	:	Not Identified
viii.	Design Drawings	:	Not Available
ix.	Soil Investigation Report	:	Not Available
x.	Construction Materials	:	Brick Masonry.
xi.	Generator	:	Different building at western side at shed-1.

RECOMMENDATIONS FOR CORRECTIVE ACTION:

The recommendations of corrective action for both Structural and Fire & Electrical Safety comprises in Short Term, Mid Term and Long Term basis.

The recommendations for **Structural Safety** corrective action are:

Short Term (Immediate)	:	N/A
Mid Term (6-weeks)	:	1. As-built architectural and structural drawings to be prepared and submitted for approval by appropriate authority. As part of this process the building engineer will be required to make a number of checks on the structural design as described in the following recommendation.
Long Term (6-months)	:	N/A

The recommendations for **Fire & Electrical Safety** corrective action are:

(A): Recommendations for Fire Safety Corrective Actions:

Immediate (*the factory should not continue to be occupied until these non-conformities have been rectified*):	N/A
Short Term (*Actions that must be incorporated into a Fire Safety Management Plan immediately (1 ~ 2 weeks) and should be a regular activity*	• The minimum clear width of the pathway should be 0.9 meter • Remove all temporary items from all escape routes, aisles and passageway. • Provide aisle marking with arrow guiding and exit signage on all Evacuation pathways or provided with overhead signage fixed at ceiling level. - Exit sign should be posted above the exit door, - It should be clearly visible at all time, - Provide directional signs wherever necessary. - All exit doors should be clearly marked for easy identification. • Provide back-up power supply with IPS or battery for emergency lighting • Factory management should check alarm call points periodically and maintained the record properly. • Place the extinguisher near the path of exit travel & easily accessible
Mid Term (*The remedial works indicated must be carried out within a period of 6 weeks)*	• Replace all existing exit doors on evacuation routes, exit doors with side hinged type door, which swing outward and in the direction of travel. Swinging of the door should not constrict the width of the corridor / passage below 0.9 meter. • Remove all locking device from all egress door. All exit doors should be open-able from the side they serve without the use of a key. • Exit door should have minimum clear width 0.9 meter. • Exit door should have minimum clear width 0.9 meter. • Prepare proper plan and design for 4 hours fire rated barriers with 2 hours fire rated doors at generator room at sewing section tin shed-1 and boiler room at finishing section tin shed-2. , which located at the adjacent to operational floor. • The egress paths should be illuminated with emergency lighting with power back-up supply & illumination should be a minimum of 10 lux for all corridors & exit doors. Aisles should be provided with a minimum 2 lux. • Produce design and plan for automatic detection system with automatic fire alarm. • Prepare proper design and plan tfor dedicated fire pump with alternate backup power supply. • Prepare plan and design for dedicated water storage tank for

	firefighting operation. • Power backup supply should be provided for fire alarm system. • Visual alarm should be placed at the generator room. • Obtain fire license with covered area from issuing authority • Obtain building approval from issuing authority • Obtain the boiler license from the proper issuing authority. • Obtain the boiler operator license from the proper issuing authority.
Long Term (*The remedial works indicated must be carried out within a period of 6 months)*	• Provide 4 hour's fire rated barriers with 2 hours fire rated doors at generator room at sewing section tin shed-1 and boiler room at finishing section tin shed-2. , which located at the adjacent to operational floor. • Install automatic detection system with automatic fire alarm. • Install dedicated fire pump with alternate backup power supply. • Provide sufficient number of hose pipe on each building and travel distance as per RMG guideline. • Stand pipe supplying first aid hose should have minimum pressure of 200 KPa. • Provide dedicated storage tank for firefighting operation

(B): Recommendations for Electrical Safety Corrective Actions:

Immediate (*the factory should not continue to be occupied until these non-conformities have been rectified*):	N/A
Short Term (*Actions that must be incorporated into a Fire Safety Management Plan immediately (a week) and should be a regular activity*	• All strands cables at exposed ends should be properly soldered / crimped and insulated.
Mid Term (*The remedial works indicated must be carried out within a period of 6 weeks)*	• 1. Provide updated SLD matching the existing installation at the factory. 2. SLD to indicate exact positions of all points of switch boxes and other outlets. 3. SLD to be approved by the engineer-in-charge. • 1. Provide updated Electrical layout drawing prepared after proper locations of all outlets for lamps, fans, fixed and transportable appliances, motors etc.

	2. Drawings to indicate exact positions of all points of switch boxes and other outlets to match existing installation. 3. As built drawing to be approved by the engineer-in-charge. • Necessity and capacity of the electrical substation shall be set by regulations in the Electricity Act or by the relevant electrical utilities. • All unwanted materials should be removed from transformer / Generator room. • Provide rubber mats of adequate size in front of all distribution panels. • Install smoke detection and provide firefighting equipment in the substation and generator room. • Provide and maintain clear and legible identifications numbers & names on all incoming and outgoing circuits of MDB panel. • 1. Exit signs should be illuminated either by lamps external to the sign or by lamps contained within the sign. 2. The source of illumination should be providing not less than 50 lux. • Individual Fuse protection should be provided to every 15 socket. • Provide suitable & non-flammable protected supports and shades for hanged light fittings/fixtures. • 1. Overhead service connections should be covered and meet the requirements mentioned in RMG Guidelines. 2. Provide supports for main service line complete with adequate insulation. • 1. Wiring design should have separate and distinct sub-circuits for power and heat source. 2. Switchboards / wiring to be located away from steam / heat pipelines. • The electrical panels to be of metal case and should be marked with “Danger 415 Volts” and identified with proper phase marking and danger signage. • Provide proper clearance of 0.8 - 1.0 m in front of distribution panels. • Select conductors and MCCB/MCB with adequate sizing without exceeding permissible current carrying capacity for insulation. • Avoid bunch of cable at MCCB/MCB terminal, use individual circuit and over current device for every incoming and outgoing circuit at the distribution boards. • Provide circuit diagram /circuit list with proper current ratings and fuse size, marking for DBs identifying end use load, voltage, number of phases. • Provide cable joints of porcelain / PVC connectors with PIB tape wound around before placing the cable in the box.

	• Provide proper separate earthing/grounding to generator. Ensure that generator body frame to have two separate and distinct connections to the earth / ground. • Provide separate earthing connection to electrical equipment. Ensure that earth potential provided for all parts of equipment / installation (other than live parts) and that continuous earth connection is provided back to the main intake supply earth. • Provide adequate earthing to body and doors to DBs. Ensure that all electrical panels provided with proper and separate earth potential.
Long Term (*The remedial works indicated must be carried out within a period of 6 months)*	• Provide 4 hour fire rated door & walls all around the generator room on ground level. • Review capacity of standby generator on basis of loads for essential lighting. Replace generator with larger capacity or install second generator if review indicates existing unit is too small • 1. Wooden switchboards / panel boards should be replaced by non-flammable materials. 2. Prefer switchboards made of non-flammable materials. • Each circuit should have a separate neutral (use of common neutral for more than one circuit shall not be permitted). • Provide the wiring in PVC conduits or in metallic GI pipes. Ensure that all electrical wiring should be covered in proper conduit pipes. • Seal the cable entry-exit points of (DB)'s with non-flammable materials. In addition: 1. Ensure that DB panels / Switchgears to be vermin / damp proof. 2. Ensure all unused holes / openings in DBs to be blocked properly. • 1. Provide the ECC to meet minimum cross-sectional area as per table 4.5. 2. Ensure that connections between conductors / equipment provided to durable electrical continuity and adequate mechanical strength and protection. 3. The continuous earth connection is provided back to the main intake supply earth. • Provide adequate protection against lightning depending on the probability of a strike and acceptable risk levels at roof top of building.