Name of the Factory	: SHOHE INTERNATIONAL TRADING.
Address of the Factory	: 1243, Ambag, Knabari, Gazpur.
Present Status of the Factory	: Under operation.
Structural Assessment Conducted by	: TUV
Date of Structural Inspection	: 5th April, 2015
Fire Assessment Conducted by	: TUV
Date of Fire Inspection	: 5th April, 2015
Electrical Assessment Conducted by	: TUV
Date of Electrical Inspection	: 5th April, 2015
BKMEA Membership No.	: 1829

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	: Profile sheet truss structure supported by steel pipe and wooden column.
iii.	Floor System	: Truss shed.
iv.	Floor Area	: 9,510 sft
v.	No. of Stories	: Single storey
vi.	Construction Year	: 2010
vii.	Foundation Type	: Not Identified
viii.	Design Drawings	: Not Available
ix.	Soil Investigation Report	: Available
x.	Construction Materials	: Brick aggregate.
xi.	Generator	: East of the building side.

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)	:
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)	: 1. The wooden purlins were sagged in various span, the structural stability should be checked by the building engineer. 2. The connection of wooden and still structure needs to be checked by building engineer. The ties between purlins are required to ensure the stability of the steel shed.

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 • - 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 fire extinguisher at Ground Floor and to keep the record for re filling & properly tagged. • The hose pipe performance should be checked periodically and properly tagged. • Provide additional firefighting equipment like sand & water buckets near exit or easily accessible area for first phase firefighting. • Fire drill should be conducted quarterly (4 times a year) in existing buildings as detailed under the Fire Safety Plan & should kept record properly.
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. • Prepare proper plan & design for exit door. - Minimum clear width should be 0.9 meter. • Prepare proper plan & design for discharge floor exit door. - Minimum clear width should be 0.9 meter. • Prepare proper plan and design for 4 hours fire rated barriers with 2 hours fire rated doors at ground floor generator room, which located at the adjacent to final exit • Produce design and plan for automatic detection system with automatic fire alarm. • Prepare proper design and plan for dedicated fire pump with alternate backup power supply. • Prepare plan and design for dedicated water storage tank for firefighting operation.

	• Visual fire alarm should be place at Generator room. • Obtain fire license / permit from issuing authority • Obtain building approval from issuing authority
Long Term (*The remedial works indicated must be carried out within a period of 6 months)*	• Install exit door as per plan and design. - Minimum clear width should be 0.9 meter. • Install discharge floor exit door as per plan and design. - Minimum clear width should be 0.9 meter. • Provide 4 hours fire rated barriers with 2 hours fire rated doors at ground floor generator room, which located at the adjacent to final exit • Install automatic detection system with automatic fire alarm. • Install dedicated fire pump with alternate backup power supply. • Provide sufficient number of hose pipe with respect to area and travel distance as per RMG guideline. • 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*	• Re-locate oil / fuel tanks away from control panels in generator room. • All strands cables at exposed ends should be properly soldered / crimped and insulated. • Provide proper separate earthing/grounding to generator. Ensure that generator body frame to have two separate and distinct connections to the earth / ground.
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 Generator room. • Provide rubber mats of adequate size in front of all distribution panels. • Install smoke/heat detection and provide firefighting equipment in the substation and generator room. • 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 15/20 A socket. • 1. All stranded conductors > 6mm2 to be provided with cable sockets. 2. All stranded conductors < 6 mm2, at exposed end should be soldered / crimped. • 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 cable connections with properly soldered / welded lugs at (LT/MDB/DB/SDB)'s. Ensure that all the electrical connections are properly secured with lugs and glands. • Select conductors and MCCB/MCB with adequate sizing without exceeding permissible current carrying capacity for insulation. • Avoid looping and bunch of cable at MCCB/MCB or bus bar 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 separate earthing connection to electrical equipments. 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 all MDBs / 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 walls all around the transformer / generator room on ground level. • Modify Area of generator room to meet requirements of Table 4.4, RMG Guideline; the area should be 30 m2, or relocate the generator room.

	• Provide and maintain proper clearance in all sides of generator for ease of maintenance. • 1. Design to have proper segregation of different end used loads. 2. Wiring design to have separate and distinct sub-circuits for power and heating system. 3. All DBs to be placed conveniently. 4. Wiring to be neat, tidy and located near ceiling. • 1. Remove all the inflammable materials from surrounding of electrical circuitry at MDBs/SDBs. 2. Ensure that all electric circuitry clean of inflammable materials,3. Conduct periodic maintenance and maintain the records. • Provide and maintain easy access and proper height of switchboard / panel boards (< 2m from floor level). • 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 (LT/MDB/DB/SDB)'s with non-flammable materials. In addition: 1. Ensure that HT / LT 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 / equipments 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.