Name of the Factory	: Connect Fashions Ltd.
Address of the Factory	: Ka-11/5, Jagannathpur, Progati Sarani, Bashundhara, Baridhara, Dhaka, Bangladesh.
Present Status of the Factory	: Under Operation.
Structural Assessment Conducted by	: TUV
Date of Structural Inspection	: 5th July, 2015
Fire Assessment Conducted by	: TUV
Date of Fire Inspection	: 5th July, 2015
Electrical Assessment Conducted by	: TUV
Date of Electrical Inspection	: 5th July, 2015
BGMEA Membership No.	: 3606

BASIC INFORMATION:

The assessed factory building is a 6-Storey RCC building. The structural system of the building is RCC beam-column frame and beam slab floor system structure. The following general information was noted:

i.	Building Usage Type	: Garment factory.
ii.	Structural System	: RCC Beam-Column Frame system.
iii.	Floor System	: RCC beam slab floor system.
iv.	Floor Area	: Plinth area of building = 4,500 sft. Total working area of building = 15,750 sft.
v.	No. of Stories	: 6 Storey.
vi.	Construction Year	: 2002
vii.	Foundation Type	: Spread Foundation (As per as-built drawing)
viii.	Design Drawings	: Available (29th of July, 2001 from RAJUK, Dhaka)
ix.	Soil Investigation Report	: Available.
x.	Construction Materials	: Brick Aggregate. (Identified by removing plaster)
xi.	Generator	: Ground floor of building.

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) :

- Factory Management to remove any storage loading from column supporting floors of the Building and maintain maximum live load not greater than 25.0 psf on the working floors.
- Factory Engineer to review design, loads and columns stresses of the total building.
- Verify in-situ concrete stresses by 100mm dia. cores for A2, A5, B5 and D3 columns of the Building.
- A Detail Engineering Assessment of Factory to be commenced, see attached Scope.

Mid Term (6-weeks) :

- Produce and actively manage a loading plan for all floor plates of the Building, giving consideration to floor capacity and column capacity.
- Detail Engineering Assessment to be completed.

Long Term (6-months) :

- Sections of plaster finish to be removed to investigate if cracks penetrate the wall and carry out any remedial actions as directed by the Building Engineer for cracks on walls.

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*):	• None.
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. - Illuminated 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. • The first aid hose and standpipe performance should be checked periodically and properly tagged. • Combustible materials should keep away from electrical appliances and all the lighting area must have protecting covers and wiring must be in conduits. • 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. • Provide handrails on both side of each stairway with height of 0.9m measured from the nose of stair to the top of the handrail. • Doors in stair should be outward opening, side-swing, self-closing, non-lockable 1.5 hours fire rated doors in all stair way encloses. • 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 evacuation route. • 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 evacuation route. • Provide 1.5 hrs fire rated door for storage area. • Prepare proper plan and design for 4 hours fire rated barriers with 2 hours fire rated door at 2nd floor boiler room, which located at the adjacent to operational area. • 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. • The stairway should be illuminated with emergency lighting with power back-up supply & illumination should be a minimum of 10 lux for stairway. • Produce design and plan for automatic detection system with automatic fire alarm.(Also needs to cover the floors occupied by other tenants) • Prepare proper design and plan for dedicated fire pump with alternate backup power supply. • Visual alarm should be placed at the generator room. • Implement to a single fire safety management system with approvals from all tenants in the factory building.

Long Term (*The remedial works indicated must be carried out within a period of 6 months)*	• Provide 4 hours fire rated barriers with 2 hours fire rated doors at which located at the adjacent to final evacuation route. • Provide 4 hours fire rated barriers with 2 hours fire rated doors at which located at the adjacent to final evacuation route. • Provide 4 hours fire rated barriers with 2 hours fire rated door at 2nd floor boiler room, which located at the adjacent to operational area. • Install automatic detection system with automatic fire alarm.(Also needs to cover the floors occupied by other tenants) • Install dedicated fire pump with alternate backup power supply. • Stand pipe supplying first aid hose should have minimum pressure of 200 KPa.

(B): Recommendations for Electrical Safety corrective actions:

Immediate (*the factory should not continue to be occupied until these non-conformities have been rectified*):	• None.
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. • 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. • Provide adequate illumination for Generator. • All unwanted materials should be removed from Generator room. • Provide rubber mats of adequate size in front of all distribution panels. • Install smoke detection in the generator room. • Provide and maintain clear and legible identifications numbers & names on all incoming and outgoing circuits of LT 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. • 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 DB's. Ensure that all the electrical connections are properly secured with lugs. • Select conductors and 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 adequate earthing to body and doors to all LT / 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 adequate ventilation arrangements for indoor Generator. • Provide 4 hour fire rated walls all around the generator room on ground level. • Modify Area of generator room to meet requirements of Table 4.4, RMG Guideline; the area should be 30m2, 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. • Provide calibrated Ammeters / Voltmeters at distribution boards (LT). • Review capacity of standby generator on basis of loads for essential lighting / AC / Equipment / Services. Replace generator with larger capacity or install second generator if review indicates existing unit is too small. • 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 /DB)'s with non-flammable materials. In addition: 1. Ensure that 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. • Provide adequate protection against lightning depending on the probability of a strike and acceptable risk levels at roof top of building.