Name of the Factory	:	Sanguine Apparels Ltd.
Address of the Factory	:	1676/A, Rajakhali, Karnaphuli, Link Road, Chittagong
Present Status of the Factory	:	Under operation.
Structural Assessment Conducted by	:	Accord
Date of Structural Inspection	:	16 March, 2014
Fire Assessment Conducted by	:	TUV
Date of Fire Inspection	:	24 March, 2015
Electrical Assessment Conducted by	:	TUV
Date of Electrical Inspection	:	24 March, 2015
BGMEA Membership No.	:	4522

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	:	RCC beam column system.
iii.	Floor System	:	RCC Beam slab.
iv.	Floor Area	:	Not mentioned in the report.
v.	No. of Stories	:	5 storied RCC structure (B+GF+4)
vi.	Construction Year	:	2000
vii.	Foundation Type	:	Not mentioned in the report.
viii.	Design Drawings	:	The building has approval from Chittagong Development Authority (CDA) dated on June 06, 2000
ix.	Soil Investigation Report	:	Not mentioned in the report
x.	Construction Materials	:	Not mentioned in the report.
xi.	Generator	:	Not mentioned in the report.

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)	:	Make all possible efforts to retain copies of the original structural drawings and provide to Bangladesh Accord for review
Mid Term (6-weeks)	:	Should structural drawings not be available, conduct a Detailed Engineering Assessment to determine the adequacy of design and construction. A Detailed Engineering Assessment to be conducted in order to determine the adequacy of the rooftop truss arrangement
Long Term (6-months)	:	Implement any works deemed necessary by the above mentioned detailed assessment Carry out any remedial measures recommended by above mentioned detailed engineering assessment.

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*	• Remove all temporary items from all escape routes, aisles and passageway. • The factory should be periodically checking of alarm call point, alarm & detection system & maintained the record properly. • The first aid hose and standpipe performance should be checked periodically and properly tagged. • Remove combustible/flammable material heighted up to electrical appliances at the 4th floor. All the lighting in storage area must have protecting covers and wiring must be in conduits
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 another staircase. - Minimum clear width should be 0.9 meter. Or reduce the occupant load capacity (Limit -276 nos) at 3rd floor to fulfill the requirement. • 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 for 4 hours fire walls and 2 hours fire rated self-closing doors in basement level. • Prepare proper plan and design for 4 hours fire rated barriers with 2 hours fire rated door at 3rd floor boiler room, which located at the adjacent to production. • 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. • Provide adequate nos. of smoke detectors to cover the whole

	factory building. • 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 as per RMG guideline. • Power backup supply should be provided for fire alarm system. • Visual fire alarm should be place at Generator room. • Cover all units / floors in a valid fire license • 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)*	• Install another staircase as per plan and design. - Minimum clear width should be 0.9 meter. • Implement the plan for fire separation 4 hours fire walls and 2 hours fire rated self-closing doors in basement level. • Provide 4 hours fire rated barriers with 2 hours fire rated door at 3rd floor boiler room which located at the adjacent to production. • Install automatic detection system with automatic fire alarm. • Install dedicated fire pump with alternate backup power supply. • 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*):	• Over current protection devices (Circuit breakers) should be installed at all distribution panels
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. • 1. Disconnect the loads from cable of signs of overloading / abnormal temperature found. 2. Make necessary repairs to avoid further accidents

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. • 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 HT / LT panels. • Individual Fuse protection should be provided to every 15/20 A socket. • 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. • 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 all distribution panels/switchboards. • Provide cable connections with properly soldered / welded lugs at (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. • Seal the cable penetrations through walls adequately with fire

	resistive elements. • 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)*	• Relocate generator set in substation building / adjacent to substation room. • Modify Area of generator room to meet requirements of Table 4.4, RMG Guideline; the area should be 40m2, or relocate the generator room. • Each circuit should have a separate neutral (use of common neutral for more than one circuit shall not be permitted). • 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. • Provide adequate protection against lightning depending on the probability of a strike and acceptable risk levels at roof top of building