Name of the Factory	:	**STARLIGHT SWEATERS LTD.**
Address of the Factory	:	Vogra, National University, Gazipur Sadar, Gazipur, Dhaka, Bangladesh
Dhaka Present Status of the Factory	:	**Under Operation**
Structural assessment conducted by	:	Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	:	19 March, 2014
Fire & Electrical assessment conducted by	:	Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	:	22 March, 2014

Basic Information: The present garment factory is a commercial building with beam-column frame system. The following general information was noted:

i.	Building Usage Type	: Garment factory
ii.	Structural System	: R.C. Beam and 2-way spanning solid slabs at all levels
iii.	Floor System	: Beam slab
iv.	Floor Area	: Unavailable
v.	No. of Stories	: 10 storied
vi.	Construction Year	: 2012
vii.	Foundation Type	: Shallow foundation
viii.	Design Drawings	: Available
ix.	Soil investigation Report	: Available (Dated 2008)
x.	Construction Materials	: Unavailable
xi.	Generator	: Separate building on the west side of the main building

Recommendations for Corrective Action: The recommendations of corrective action for both Structural and Fire & Electrical Safety are as follows:

The recommendations for Structural Safety corrective actions are:

Immediate (Now): NA

Mid Term (Within 6 Weeks):

1. Suitable column protection barriers to be designed and constructed.
2. Building Engineer to check that the columns have been adequately designed for impact loading.
3. Factory Engineer to review design, loads and columns stresses in area identified above.
4. Verify in-situ concrete stresses either by 100mm diameter cores or existing cylinder strength data for cores from minimum 4 columns.

Long Term (Within 6 Months):

1. Factory Engineer to confirm that column stresses are within acceptable limits.
2. Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity.
3. Locations of loading noted to be surveyed and capacity of floor structure to be assessed by the Building Engineer to confirm that the floor slab is designed to carry these loads.

4. Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity including punching shear in flat slabs and column capacity.

5. Building Engineer to confirm the capacity of the slab to support the combination of the floor loading and the façade loading.

The recommendations for Fire Safety corrective actions are:

Immediate (Within 1 month):

1. Remove locking features from all egress doors / gates. If locks are required for security reasons, utilize special door locking features complying with NFPA 101.

2. Remove all storage from exit stairs and egress paths. Provide fire separation and fire rated doors.

3. Replace all gates / sliding doors along the means of egress with side-hinged, swinging egress doors. If locks are required for security reasons, utilize special door locking features complying with NFPA 101.

Short Term (Within 3 Months):

1. Provide minimum 1.5-hr fire rated doors and seal all unprotected openings to separate the exit stairs from work areas and other building spaces on all floor levels. Ensure that the fire doors are self-closing and positive latching and that they are provided with fire exit (panic) hardware where serving production floors. If fire doors are required to be held open for functional reasons, provide automatic closing devices tied to the fire alarm system.

2. Provide a minimum 2-hr fire-rated shaft to separate the utility risers from each floor level.

3. Seal all penetrations and openings in exit stair enclosure walls to maintain the fire separation.

4. Provide minimum 1.5-hr fire rated doors and seal all unprotected openings to separate the elevator shaft from work areas and other building spaces on all floor levels.

5. Separate the boiler, generator and transformer room by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.

6. Separate the gas fired dryers by a minimum 2-hr fire-rated construction. Seal or protected all openings to maintain the required fire separations.

7. Provide dedicated storage rooms separated by minimum 1-hr fire-rated construction. Where separate storage rooms may not be feasible, provide defined storage areas and limit the storage arrangement as follows:

   -Maximum height of 2.4m and maximum area of 23m2

   -If sprinkler protected: maximum height of 3.66m and maximum area of 93m2.

   Separate areas of unenclosed combustible storage by a minimum clear distance of 3m.

8. Separate the diesel storage by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.

9. Provide minimum aisle widths of 36-in. and arranges aisle away from indoor AC.

10. Provide handrails on at least one side of exit stair.

11. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.

12. Provide exit signs above all exits.
13. Regularly test the emergency lighting system on each floor and replace/repair lights as needed.

Mid Term (within 6 Months):

1. Modify stair to discharge directly outside. Or

   -Provide 2-hr fire-rated exit passageway leading directly outside (vestibules to separate any storage areas). Or

   -Provide sprinkler protection for discharge floor in accordance with NFPA 13.

2. Replace the single-station smoke alarms with automatic smoke detectors tied into the fire alarm system. Configure the fire alarm system to initiate occupant notification upon activation of any two smoke detectors in addition to the manual fire alarm stations.

Long Term (More than 6 months):

1. Replace the fire alarm system with a new, listed addressable fire alarm system in accordance with NFPA 72.
2. Provide automatic sprinkler protection throughout the building in accordance with NFPA 13.

The recommendations for Electrical Safety corrective actions are:

Immediate (Within 1 month):

1. Excess length of existing HT cables coiled near transformer must be protected and laid safely.
2. Cables passing through permanent walls must be protected in steel pipes and remaining holes around the pipe must be sealed.
3. HT cable dropping from 11kV pole must be protected in steel pipe of required size at least 2m from the ground level to protect from physical injury by moving objects.
4. Panels not in operation may be removed.
5. Unused panels still installed along side panels in operation must be maintained and safe for operators working in adjacent panels.
6. Wire terminating to devices inside panel must be connected firmly and wires approaching devices must be securely fastened to avoid unintentional contact with live parts.
7. Install separators between different phases of MCCB. Standard separators provided by the MCCB manufacturer must be used.
8. Indicating lamps in panels connected across MCCB terminals must be removed. Connections must be established with proper terminal. It is recommended that the connection to panel is connected through terminal blocks.
9. Down conductor from the air terminal must be connected to the earth termination firmly.

Short Term (Within 3 Months):

1. Cables below panels must be laid in trench and supported in cable trays.
2. Panel base plates must be installed, at all time, and cable(s) entering panel must be firmly fixed with cable gland.
3. Cables extended from BBT breaker to distribution boards various floors must be supported on trays/risers.
4. Cables must be protected and separated in rigid conduit or pipes when passing through the walls.
5. Conduits not meant for electrical use must have properties equivalent to conduits with ample strength and rigidity to be able to protect and support cables drawn in it. Cables in conduits must be protected throughout its length.
6. Flexible PVC conduit wiring must be additionally supported on cable tray and risers.
7. Cables connecting to equipment must be supported to avoid stress on electrical connections.

Mid Term (Within 6 months):

1. Communication cables laid alongside the power cables or electric wiring must be protected and supported in trays to maintain safe clearance from the electrical facilities.
2. Expand the existing generator room to provide safe working space.
3. Replace the existing trench cover either with concrete slab covers or checkered plates. Existing cover must be additionally supported until it is replaced for safety.

Long Term (More than 6 months): NA