Name of the Factory	:	**TOPAZ DRESSES LTD.**
Address of the Factory	:	E-6, Middle Badda, Hakim Tower
Dhaka Present Status of the Factory	:	**Under Operation**
Structural assessment conducted by	:	Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	:	2 October, 2013
Fire & Electrical assessment conducted by	:	Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	:	8 May, 2014 & 9 May, 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 column frame with a 2-way solid slab, R.C. flat slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: The total floor area of the building is 1,13,575 sq. ft.
v.	No. of Stories	: 11 storied
vi.	Construction Year	: 1999
vii.	Foundation Type	: Unavailable
viii.	Design Drawings	: Available (Permit drawing)
ix.	Soil investigation Report	: Unavailable
x.	Construction Materials	: Unavailable
xi.	Generator	: Ground floor-separate structure outside of 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):

1. Reduce stack heights to 1.5m. Ensure that stacks of materials are separated by a 0.5m gap all around.
2. Reduce loading as per Item 1.

Mid Term (Within 6 Weeks):

1. Building Engineer to create controlled loading plans for all floors designating where storage can be placed and cannot be placed taking consideration of capacity of column at ground level. Engineer to take into consideration the existing hairline cracking noted in item 2 & 3. Assessment of as-built column strength should be based on concrete strength proven by test (core tests).
2. Break out small area of cracked screed to check if cracks are also in structural slab. If cracks are in slab consult the Factory structural engineer for required action. The engineer is to undertake this action giving consideration to Item 1 actions.
3. Engineer to monitor cracking to ensure it does not worsen.
4. Stair is escape route to roof. Fix handrail.

Long Term (Within 6 Months):

1. Continue to monitor hairline cracking.
2. Remaining shed should be removed and roof slab repaired.
3. Investigate source of water and improve drainage to toilet area.
4. Engineer to repair or periodically inspect and repair if crack worsens.
5. Building owner to periodically inspect.

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. Keep egress paths and stairs clear of storage.
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.
4. Remove manual on/off switches from emergency lighting units to prevent them from being switched off.

Short Term (Within 3 Months):

1. Separate the boiler, generator, transformer rooms by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.
2. 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.
3. 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.
4. Separate the hazardous materials / flammable liquid storage room by a minimum 2- hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.
5. Reconfigure the egress arrangement to reduce the maximum common path of travel to not more than 30 m.
6. Reconfigure the egress arrangement to reduce the maximum dead-end distance to not more than 30 m.

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

8. Inspect, test and maintain the emergency lighting system in accordance with The ACCORD standard. Keep written records on-site.

9. Test the emergency lighting system on each floor and provide additional emergency fixtures to provide adequate illumination along the means of egress. Provide a minimum illumination of 10 lux at the floor level within exit stairs and exit discharge paths and minimum 2.5 lux along exit access aisles.

Mid Term (within 6 Months):

1. Remove single-station smoke alarms. Provide automatic smoke detection throughout the building in accordance with NFPA 72.

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.

The recommendations for Electrical Safety corrective actions are:

Immediate (Within 1 month):

1. HT cable terminating at transformer must be firmly supported on riser to avoid stress at the termination (transformer bushing).

2. Transformer room must be cleaned regularly.

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. HT cable dropping from 11kV pole must be firmly fixed to the pole with supports and clamps.

5. Panels not in operation may be removed or else must be maintained it with the panels in service.

6. Cables behind panel must be supported and arranged on cable trays or ladder.

7. Panel base plates must be installed, at all time and cable(s) entering panel must be firmly fixed with cable gland.

8. Cables terminating at MCCBs must be installed with cable lugs/terminals of required size and rating.

9. Cables inside panel must be securely fastened, through ducts or by ties, to avoid crossing live parts.

10. Base plate removed for the cable entry must be reinstalled.

11. Install separators between different phases of MCCB. Standard separators provided by the MCCB manufacturer must be used.

12. Multiple cables connecting at a MCCB terminal must be disconnected. Existing multiple circuits may be distributed through bus bars.

13. Multiple cable terminating at a terminal in busbars must be separated.

14. Existing panel door bonding connected to doors and panel frame are loosely connected and must be terminated with properly selected nuts and bolts with washers.

15. Compressor machine mounted on wheel must be anchored or the wheels must be locked to prevent from trolling.

16. Heat resistant conduits may be used to protect wirings.

17. MCB, contactor and other devises used in panel must be firmly fixed and protected from touching unintentionally to other live parts.

18. Remove diesel and other oil barrels from generator room.

19. Provide additional lighting inside transformer room.

20. Remove wires connected across transformer terminals. Connections must be made from the LT panels with control and protective devices.

Short Term (Within 3 Months):

1. Transformer may be separated from panels by constructing barrier walls.

2. Raised existing cable trenches filled with sand must be protected with concrete clubs or checkered plates.

3. 11kV HT cable must be supported in cable trays or laid in trenches. The cable must be protected from physical injury.

4. Cables passing through permanent walls must be protected in steel pipes and remaining holes around the pipe must be sealed.

Mid Term (Within 6 months):

1. Maintain safe working space surrounding the existing transformer.

Long Term (More than 6 months): NA