

## Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

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Name of the Factory	: DESIGNTEX FASHION LTD.
Address of the Factory	: Zirabo, Savar, Dhaka, Bangladesh
Dhaka Present Status of the Factory	: <b>Under Operation</b>
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 1 June, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 27 April, 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. 2-way flat slab and column frame
iii.	Floor System	: Beam slab
iv.	Floor Area	: The floor area is 13000 sqft.
v.	No. of Stories	: 7 storied
vi.	Construction Year	: 2002
vii.	Foundation Type	: Unavailable
viii.	Design Drawings	: Available (Permit drawing)
ix.	Soil investigation Report	: Unavailable
x.	Construction Materials	: Unavailable
xi.	Generator	: Separate shed ground level

**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. Cut reinforcing steel protruding from staircase landing.

Mid Term (Within 6 Weeks):

1. Repair or replace the steel roof purlins.
2. Detailed Engineering Assessment of the steel roof is required to fix the masonry wall and properly anchor it to resist uplift force.
3. Install missing bolts and tighten all connections to manufacturer's specifications.
4. Design Engineer to produce loading plans based on maximum bearing capacity of each floor for the main building.

Long Term (Within 6 Months):

1. Implement any further recommendations from Design Engineer due to changes.
2. Structural Engineer to produce as-built drawings for all ancillary buildings.
3. Implement recommendations from DEA.
4. Post and manage loading on each floor of main building.

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### **The recommendations for Fire Safety corrective actions are:**

Immediate (Within 1 month):

1. Remove all storage from exit stairs and egress paths.
2. Remove locking features from all egress doors and gates. If locks are required for security reasons, utilize special door locking features complying with NFPA 101.
3. Reduce occupant load to not more than 368 people.
4. Keep egress paths and stairs clear of storage.
5. Modify the egress door to swing in the direction of egress travel.

Short Term (Within 3 Months):

1. Separate the generator room by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.
2. 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.
3. Provide minimum aisle widths of 36-in.
4. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
5. 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, tied into the fire alarm system, 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. Substation room must be separated with fire rated wall from remainder/emergency exit way. Substation room may be relocated to other place/dedicated room.
2. Cables may be supported and arranged on cable trays and riser to prevent any physical damage. Cables may be laid in cable trench with covers.
3. Check the capacity of the panel & establish a load management program for avoiding any installation exceeding its capacity in future. Install slotted wiring-duct inside the panel to arrange and latch the haphazard cables.

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4. Make circular hole at the top plate of panels and provide cable gland according to the respective cable size for cable entry and exit so that the cables are not stressed on the sharp edges of the hole of panels. Provide covers (of noncombustible material) if any additional gap remains after installing cable glands.
5. Existing panel may be fixed with foundation bolts, installed on walls at reachable height or may be reinstalled on foundation plinth.
6. Cable at noted location must be arranged on tray or riser to prevent any physical damage.
7. Cables terminating at generator output panel must be supported on riser and securely fixed with cable glands in terminal box.
8. Disconnect the power source of the cable laid into channel and clean dust and debris of all interior components. Establish a periodic cleaning program and maintain records of the activities. Provide cover made of noncombustible material on the channel for preventing ingress of dust and debris in future.
9. Damaged fittings must be replaced with new one.
10. Arrange periodic inspection & thermal scan to identify the overloading, loose connection, unbalanced load which may cause the excessive heat-rise and take action accordingly.

### Short Term (Within 3 Months):

1. Cable may be supported and arrange on cable tray or riser up to the panel top plate. Flexible conduit must not be used for long point wiring (except for special wirings).
2. Make circular hole at the top plate of panels and provide cable gland according to the respective cable size for cable entry and exit so that the cables are not stressed on the sharp edges of the hole of panels. Provide covers (of noncombustible material) if any additional gap remains after installing cable glands.

Mid Term (Within 6 months): NA

Long Term (More than 6 months): NA