

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: AMITY DESIGNS LTD.
Address of the Factory	: House #7&9, Road #9 Block #D, Section #11 Mirpur, Dhaka 1216, Bangladesh
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 3 March, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 21 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 Beam and column frame with a 2-way solid slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: Total floor area is 30,000 sft
v.	No. of Stories	: 4 & 6 storied
vi.	Construction Year	: 1989 & 1993
vii.	Foundation Type	: Unavailable
viii.	Design Drawings	: Available (Permit drawings)
ix.	Soil investigation Report	: Unavailable
x.	Construction Materials	: Unavailable
xi.	Generator	: Generator located in room outside the facility ground level south exit opening

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. No heavy stockpile of garments allowed in any area generally.
2. Factory Engineer to review design, loads, columns stresses for all floors and confirm suitability for applied loads.

Mid Term (Within 6 Weeks):

1. Verify in situ concrete stresses either by cores or existing cylinder strength data for affected beams and columns.
2. Detail engineering assessment to be completed.
3. Produce and actively manage loading plan for all floor plates giving consideration to floor capacity and column capacity.
4. Existing slab thickness and floor finishes to be accurately measured and confirmed for the whole building.
5. Detail engineering assessment of factory to be carried out and in particular column capacity and foundation aspects to be investigated in detail.
6. Detail engineering assessment to be carried out in particular the steel column capacities and the connection capacities.

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7. Detail engineering assessment to be carried out in particular stability and foundation aspects to be investigated in detail.

Long Term (Within 6 Months):

1. Continue to implement loading plan.
2. Continue to implement loading plan. Detail engineering assessment to be completed.

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.

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. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
3. 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.
2. Provide minimum 1hr fire rated room and seal all unprotected openings to separate from work areas and other building spaces on all floor levels. Ensure that the fire doors are self-closing and fire rated for use.
3. Provide 2-hr fire-rated exit passageway leading directly outside (vestibules to separate any storage areas).

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:

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Immediate (Within 1 month):

1. Install separators between different phases of MCCB. Standard separators provided by the MCCB manufacturer must be used.
2. Any rotating or moving electrical devices must be controlled by starters to prevent automatic start when electric supply is re-stored.
3. Remove all the multiple connections made at a single point of bus bar and connect individual branch cables to individual points on bus bar using individual lug according to the respective cable size.

Short Term (Within 3 Months):

1. Cables/wirings passing through permanent wall must be protected installing pipes and remaining gaps must be sealed with fire resistant materials. Cable tray/ladder shall be installed for the support of the cable throughout its length.
2. Install cable tray (with metallic cover) and arrange and latch the cable (laid through sanitary pipes) properly on the cable tray to protect the cable from any physical damage.
3. Cables of different voltage level must be laid separately. HT and LV cables passing through permanent wall must be protected installing separate pipes and remaining gaps must be sealed with fire resistant materials.
4. Install metallic (non-combustible) cable duct (instead of wooden duct) over the floor and provide metallic cover on it to keep it dust and vermin proof. Establish a periodic cleaning program to keep all the duct/trays/channel dust-free.

Mid Term (Within 6 months):

1. Cable covered ladder/tray must be installed at safe location to support the HT cable and lay the cable on it.
2. Install cable duct to protect the HT cables and provide covers made of non-combustible material preferably metal to protect the cables' insulation from any physical damage as well as prevent the ingress of debris, dust and lint.

Long Term (More than 6 months): NA