

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: DAZZLING DRESSES LTD.
Address of the Factory	: 51/52, Ismail Plaza, Shah Kabir Mazar rd. Chalabon, Dakkin Khan Uttara, Dhaka
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 28 April, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 13 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	: Column frame with a 2-way flat slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: Each floor has the area of 11,765 sq.ft.
v.	No. of Stories	: 7 storied
vi.	Construction Year	: 2005
vii.	Foundation Type	: Unavailable
viii.	Design Drawings	: Available (dated 9th February 2005 and signed off by a 'Local Authority')
ix.	Soil investigation Report	: Unavailable
x.	Construction Materials	: Unavailable
xi.	Generator	: Generator room in the basement

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):

Mid Term (Within 6 Weeks):

1. Carry out a Detailed Engineering Assessment of the building which should investigate in particular, stability and foundation aspects.
2. Seismic and wind load calculations are required.

Long Term (Within 6 Months):

1. Implement any actions or recommendations of the DEA.
2. Waterproofing material to be applied including rust-proof paint for the exposed reinforcement.

The recommendations for Fire Safety corrective actions are:

Immediate (Within 1 month):

1. 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.

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2. Replace all gates and 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.
3. Configure the fire alarm system to initiate automatic occupant notification on all floor levels to facilitate whole building evacuation upon any manual fire alarm station activation.
4. Remove manual on/off switches from emergency lighting and exit signage units to prevent them from being switched off.

Short Term (Within 3 Months):

1. Separate the boiler, generator and transformer room by a minimum 2-hr fire-rated construction. Seal and 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. Seal all penetrations and openings in exit stair enclosure walls to maintain the fire separation.
4. 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.

5. Fire doors assemblies conform to NFPA 252. 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.
6. Remove all doors from exit stairs and egress paths or provide minimum 1.5-hr fire rated doors. 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.
7. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.

Mid Term (within 6 Months):

1. Provide additional notification appliances such that the fire alarm system is audible throughout the building in accordance with NFPA 72.

Long Term (More than 6 months): NA

The recommendations for Electrical Safety corrective actions are:

Immediate (Within 1 month):

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1. Install a ladder/pipe made properly supported with pole for supporting the service cables in order to protect the cables' insulation from any physical damage.
2. Provide ladder for supporting the cables and seal all the penetrations using appropriate fire rated material and ensure the cable insulation does not get damaged during sealing work.
3. Conservator tank (on transformer) must be checked for oil level and required oil level must be maintained.
4. Cable terminating at Generator output terminal box must be supported on riser and protected. Existing cables laid on floor may be supported in cable trench or on trays.
5. Encased the generator batteries in metallic acid proof stand and insulate the battery terminals. Establish a routine maintenance checklist for the generator where the battery maintenance checklist should be included.
6. Install the cable tray/ladder/ duct up to the cable entry of the panel in order to support the cables. Ensure the cables are tightly latched with the ladder and provide covers made of non-combustible material preferably metallic sheet to protect the cables' insulation from any physical damage as well as prevent ingress of debris, dust and lint. Provide cable gland for every cable entry and exit hole.

Short Term (Within 3 Months):

1. Fix the panel base securely to the foundation with appropriate fastening devices. Provide cable support for incoming and outgoing cables.
2. Install tray/ladder to support the cables and provide covers made of non-combustible material preferably metal to protect the cables' insulation from physical damage as well as prevent entering debris, dust and lint.
3. Install the cable tray or ladder with cover to provide mechanical support and provide covers made of noncombustible material preferably metallic sheet to protect the cables' insulation from physical damage as well as prevent entering debris, dust and lint.
4. Use rigid PVC pipe for surface and exposed wiring through-out its length and supported properly (clamped with saddle, at regular interval of 600 mm).The conduit shall run vertically or horizontally, shall never at angle. Flexible conduit must not be used for long point wiring (except for special wirings).

Mid Term (Within 6 months):

1. The transformer must be installed with barrier walls (instead of grill) between transformer and other panels. The walls must be fire resistant and should have height up to the ceiling or Assign a qualified engineer to design a required transformer room according to BNBC, Section2.6.3.
2. Expand the existing generator room to provide safe working space as per BNBC table 8.2.9 or keep sufficient space (1 meter preferably) around the generator for ease of maintenance.

Long Term (More than 6 months): NA