

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

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| Name of the Factory | : DEKKO DESIGNS LTD |
| Address of the Factory | : Purba Naroshinapur, Ashulia, Savar, Dhaka |
| Dhaka Present Status of the Factory | : Under Operation |
| Structural assessment conducted by | : Accord (Full report available at bangladeshaccord.org) |
| Date of Structural Inspection | : 18 March, 2014 |
| Fire & Electrical assessment conducted by | : Accord (Full report available at bangladeshaccord.org) |
| Date of Fire & Electrical Inspection | : 23 March, 2014 |

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

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| i. | Building Usage Type | : Garment factory |
| ii. | Structural System | : RC beam slab, RC flat slab |
| iii. | Floor System | : Beam slab |
| iv. | Floor Area | : Unavailable |
| v. | No. of Stories | : 5 storied |
| vi. | Construction Year | : 2008 |
| vii. | Foundation Type | : Unavailable |
| viii. | Design Drawings | : Available (Signed by the Local Municipality in 2007) |
| ix. | Soil investigation Report | : Available (Dated 2013) |
| x. | Construction Materials | : Brick and stone aggregated |
| xi. | Generator | : Outbuilding |

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): NA

Long Term (Within 6 Months):

1. 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.
2. 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.
3. Building Engineer to confirm the capacity of the slab to support the combination of the floor loading and the façade loading.
4. Steel structure to storage area should be reviewed by the Building Engineer for wind loading and bracing added where required.
5. Building Engineer to do a design check on the ladder and the need for handrails should also be reviewed.
6. If any additions to the building structure are proposed, the Building Engineer shall provide calculations showing the structural adequacy of all columns taking into account any additions to the existing structure, the loading and as built structure, including in-situ concrete strength testing.

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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.
3. Reduce occupant load to not more than available exit capacity immediately. In the future, if greater occupant load is desired, provide additional exits to allow for the increased occupancy on each floor.
4. 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. Seal all penetrations and openings in exit stair enclosure walls to maintain the fire separation.
3. 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.
4. Provide minimum aisle widths of 36-in.
5. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
6. Inspect, test and maintain the emergency lighting system in accordance with The ACCORD standard. Keep written records on-site.

Mid Term (within 6 Months):

1. Provide 2-hr fire-rated exit passageway leading directly outside, with vestibules to separate any storage areas.

Long Term (More than 6 months):

1. Provide automatic sprinkler protection throughout the building in accordance with NFPA 13.

The recommendations for Electrical Safety corrective actions are:

Immediate (Within 1 month): NA

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Short Term (Within 3 Months):

1. Provide phase separators between poles of MCCB made of noncombustible materials preferably use rubber having enough dielectric strength to insulate phases from each other.
2. Control devices inside panel must be fixed rigidly with proper nut-bolt/screw (may be provided by manufacturer) inside panel.
3. Service cables installed on walls outside building must be supported on covered ladder/trays firmly fixed on wall at regular intervals.
4. Panel base-plate must be installed. Make circular hole at the base-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. 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.
6. Cables terminating in the panel must not contact/touch the bare bus bar. Install slotted wiring-duct inside the panel to arrange and latch the haphazard cables.
7. Existing panels may be rearranged to provide adequate working space, keep sufficient (1 meter preferably) area around the panels for ease of its maintenance and operation.
8. Install cable tray/ladder with metallic cover to support the cable outside the panel. Use industrial graded flexible pipes instead of using normal flexible pipes (if required).
9. Cable must be arranged and latched properly on the cable tray (installing an additional tray). Provide cover made of non-combustible material preferably metallic sheet to protect the cables' insulation from physical damage as well as prevent the ingress of debris, dust and lint.
10. Wiring extended from existing points must be connected using connectors. Keep the unused wiring inside the covered junction box.
11. Power cables duct installed near boiler steam lines must be protected from external heat and moisture (may keeping sufficient clearance between steam pipes and duct/installing adequate thermal-insulation on the steam pipe).
12. Install the cables through rigid pipe (metallic) for the protection of the cable laid on floor. The pipe must be fixed/ clamped with saddle on floor at regular interval.

Mid Term (Within 6 months):

1. Install cable tray or ladder to support the main service cables from pole mounted distribution transformer to main control room/LT room.

Long Term (More than 6 months): NA