

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

Name of the Factory	: Big-X Apparels
Address of the Factory	: Plot-4 & 5, Avenue-1, Section-7, Mirpur, Dhaka
Present Status of the Factory	: Under Operation
Structural Assessment Conducted by	: BUET
Date of Structural Inspection	: 25 <sup>th</sup> December 2013
Fire & Electrical Assessment Conducted by	: BUET
Date of Fire & Electrical Inspection	: 25 <sup>th</sup> December 2013

### **BASIC INFORMATION:**

The present garment factory is housed on the 2<sup>nd</sup> to 5<sup>th</sup> floors of a 12 storied industrial building. The following information was noted:

- i. Building Usage Type : Garments factory + shopping complex
- ii. Structural System : R.C. beam column frame structure
- iii. Floor System :
  - Ground to 11<sup>th</sup> floor : R.C. solid flat plate floor system
  - Roof : RCC beam slab.
- iv. Floor Area : Approx. 7021 sft per floor with a total of 96200 sft (as per practical measurement)
- v. No. of Stories : Basement+12 (twelve) stories + Roof floor (partial)
- vi. Construction Year : 2001-2005
- vii. Foundation Type : Piled foundation up to medium dense fine sand layer (as per submitted drawing and geotechnical investigation report)
- viii. Design Drawings : Available (but inconsistent with practical plan)
- ix. Soil Investigation Report : Available, Done in April 2002 by Lucky Soil Engineers, 667 Begum Rokeya Shoroni, Kazipara, Mirpur, Dhaka
- x. Construction Materials : Reinforced Concrete (brick chips and 40 grade deformed bars as mentioned in the design drawings).
- xi. Generator : Located at the basement floor of the building

### **RECOMMENDATIONS FOR CORRECTIVE ACTION:**

The recommendations of corrective action for both Structural and Fire & Electrical Safety comprises in Short Term, Mid Term and Long Term basis.

The recommendations for **Structural Safety** corrective action are:

- |                        |  |
|------------------------|--|
| Short Term (Immediate) | : The live load must be reduced within 20 psf (1kN/m <sup>2</sup> ) in all floors.                 |
| Mid Term (6-weeks)     | : Core tests are required to be done. A Detailed Engineering Assessment (DEA) has to be completed. |
| Long Term (6-months)   | : Necessary remediation's after completion of DEA.   |

The recommendations for **Fire & Electrical Safety** corrective action are:

**(A): Recommendations for Fire Safety corrective actions:**

Immediate  <i>(the factory should not continue to be occupied until these non-conformities have been rectified):</i>	N/A
--	-----

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

<p>Short Term</p> <p><i>(Actions that must be incorporated into a Fire Safety Management Plan immediately (a week) and should be a regular activity)</i></p>	<p>Remove all temporary obstructions from all escape routes, aisles and passageways.</p> <p>Ensure minimum width of corridors, passageways and aisles.</p> <p>Ensure easy access to portable extinguishers and monitor and maintain the same at required interval as per guidelines.</p> <p>Provide proper directional sign and exit sign in Bangla and English as per guidelines.</p>
<p>Mid Term</p> <p><i>(The remedial works indicated must be carried out within a period of 6 weeks)</i></p>	<p>Produce proper drawing and plans to create horizontal and vertical fire-rated separation for stairways of appropriate specifications, grills, storage and assembly areas, basement, lift lobby, offices, work areas. Also design to ensure proper separation of high risk areas (e.g., generator, boiler, transformer and substation rooms) as per guidelines.</p> <p>Remove all collapsible gates. Produce design drawings to demonstrate how stairways are to be made of adequate dimensions and appropriate specifications and to be converted into fire-rated enclosures equipped with fire-rated side swinging doors of required dimensions opening in the direction of travel at each floor.</p> <p>Provide design to install proper detection and alarm system.</p>
<p>Long Term</p> <p><i>(The remedial works indicated must be carried out within a period of 6 months)</i></p>	<p>Install horizontal and vertical fire-rated separation for stairways of appropriate specifications, grills, storage and assembly areas, basement, lift lobby, offices, work areas.</p> <p>Ensure proper fire separation of high risk areas (e.g., generator, boiler, transformer and substation rooms) as per approved design.</p> <p>Install fire rated enclosure and doors of appropriate dimensions at exit to the stairs to prevent smoke and fire propagation as per approved design.</p> <p>Install proper detection and alarm system.</p> <p>Provide fire rated enclosure, install self closing fire rated door as per guidelines.</p>

### **(B): Recommendations for Electrical Safety corrective actions:**

<p>Immediate</p> <p><i>(the factory should not continue to be occupied until these non-conformities have been rectified):</i></p>	<p>N/A</p>
---	------------

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

---

<p>Short Term</p> <p><i>(Actions that must be incorporated into a Fire Safety Management Plan immediately (a week) and should be a regular activity)</i></p>	<p>Ensure well-dressed cabling with lugs and remove loose cabling.</p> <p>Ensure earthing of panel body &amp; door with fitted condition.</p> <p>Provide distribution board as per guideline and put identification mark on distribution panel.</p> <p>Remove burn/broken/loose MCB/MCCB box/socket.</p>
<p>Mid Term</p> <p><i>(The remedial works indicated must be carried out within a period of 6 weeks)</i></p>	<p>Provide separate service ducts for electrical cables.</p> <p>Provide new Emergency Lighting system.</p> <p>Provide appropriate Lightening Protection System as per guidelines.</p>
<p>Long Term</p> <p><i>(The remedial works indicated must be carried out within a period of 6 months)</i></p>	<p>N/A</p>