

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

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Name of the Factory	: <b>Crystal Wears Ltd.</b>
Address of the Factory	: 142, Senanibash Road, Safura Khatun Super Market, Mirpur-12, Dhaka.
Present Status of the Factory	: <b>Under Operation</b>
Structural Assessment Conducted by	: BUET
Date of Structural Inspection	: 6 <sup>th</sup> December 2013
Fire & Electrical Assessment Conducted by	: BUET
Date of Fire & Electrical Inspection	: 14 <sup>th</sup> December 2013

### **BASIC INFORMATION:**

The factory building is a 10 (ten) storied Reinforced Concrete (RC) building having beam-column framing system. The following information was noted:

i.	Building Usage Type	: Mixed occupancy; garment factory and shops
ii.	Structural System	: RC beam-column frame Building
iii.	Floor System	: RC beam supported slab
iv.	Floor Area	: Approximately 10,610 sft per floor
v.	No. of Stories	: Existing ten storied in addition to basement plus some roof surface level story. The building has been approved as a nine story building
vi.	Construction Year	: Not known
vii.	Foundation Type	: Isolated column footings (as per drawing)
viii.	Design Drawings	: Partially available
ix.	Soil Investigation Report	: Available (O. S. Foundation & Consulting Engineers, Pallabi, Mirpur, Dhaka, June 2013)
x.	Construction Materials	: Reinforced Concrete (No test report on construction materials is available)
xi.	Generator and sub-station	: Located in the ground 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)	: Ensure that intensity of load does not exceed 40 psf (2 kN/m <sup>2</sup> ) in all floors.
Mid Term (6-weeks)	: None
Long Term (6-months)	: Core Tests are required to be done.

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
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<p>Short Term <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>Remove all combustible materials from substation/generator room.</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 <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, 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/roller shutters/sliding doors. 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>Produce design to install standard standpipe, hose and fire pump system.</p> <p>Provide design to install proper detection and alarm system.</p> <p>Install command station as per guidelines.</p>
<p>Long Term <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, 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 standard standpipe, hose and fire pump system.</p> <p>Install proper detection and alarm system.</p> <p>Provide fire rated enclosure, install self closing fire rated door as per guidelines.</p>

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

<p>Immediate <i>(the factory should not continue to be occupied until these non-conformities have been rectified):</i></p>	N/A
<p>Short Term <i>(Actions that must be incorporated into a Fire Safety Management Plan immediately (a week) and should be a regular activity)</i></p>	<p>Provide instructions for first aid and artificial respiration from exposure to electrical shock.</p> <p>Provide cover on the cable trench and rubber mat in front of the panel.</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 MCB/MCCB box/socket.</p>
<p>Mid Term <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 Lightning Protection System as per guidelines.</p>
<p>Long Term <i>(The remedial works indicated must be carried out within a period of 6 months)</i></p>	N/A