

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

Name of the Factory	: Rupa Apparels Ltd. [Building-03]
Address of the Factory	: 380/1, TV Avenue, East Rampura, Dhaka
Present Status of the Factory	: Under Operation
Structural Assessment Conducted by	: BUET
Date of Structural Inspection	: 4 <sup>th</sup> November 2014

### **BASIC INFORMATION:**

The factory (Rupa Apparels and Rupa Sweater) is housed in 3 buildings in a row and each building is a six storied RC beam column frame structure. Factory owner rented the buildings. The following information can be presented for building 3:

i.	Building Usage Type	: Garment factory building.
ii.	Structural System	: RC Frame Building
iii.	Floor System	: Edge supported RCC slabs
iv.	Floor Area	: Approximately 232 sq. m (2500 sft) per floor.
v.	No. of Stories	: Six
vi.	Construction Year	: First phase - Ground floor to 2 <sup>nd</sup> floor in 1991 Second phase - 3 <sup>rd</sup> floor to 5 <sup>th</sup> floor in 1995-1996
vii.	Foundation Type	: Isolated footings (as reported)
viii.	Design-Drawings	: Not available
ix.	Soil Investigation Report	: Not available
x.	Construction Materials	: Reinforced Concrete; Coarse Aggregate: Brick chips (as reported).
xi.	Material Test Reports	: Not available
xii.	Generator	: 2 Nos., 110 and 65 kVA capacity placed outside of the building for the three buildings.

### **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 factory owner has to prepare and submit the load plan for all floors. Intensity of load does not exceed 42 psf (2.0 kN/m <sup>2</sup> ).
Mid Term (6-weeks)	: A Detail Engineering Assessment (DEA) has to be completed.
Long Term (6-months)	: Sub-soil investigation must be carried out to check the foundation adequacy of the building. Necessary remediation's after completion of DEA.

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

Name of the Factory	: Rupa Apparels Ltd.
Fire & Electrical assessment conducted by	: BUET
Date of Fire & Electrical Inspection	: 27 <sup>th</sup> October 2014

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

<b>Fire Safety Issues</b>	
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 transformer/substation/ boiler/ generator room.</p> <p>Ensure minimum width of corridors, passageways and aisles.</p> <p>Ensure adequate numbers of fire drills.</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, 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>Ensure all exit access doors are side-swinging type and open to the direction of traffic flow. Show methods to demonstrate how stairways are to satisfy the occupancy load according to the Guideline</p> <p>Produce design to install standard standpipe, hose and fire pump system.</p> <p>Provide design to install proper detection and alarm system. 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>Ensure adequate horizontal and vertical fire-rated separation inside one floor and between different floors, e.g. separation with stairways, storage, assembly areas, offices, and 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. 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:**

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

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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>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/broken/loose 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>	<p>N/A</p>