

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

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Name of the Factory	: Wonder Apparels Ltd.
Address of the Factory	: Alam Super Market, 13 New Jurain, Dhaka
Present Status of the Factory	: Under Operation
Structural Assessment Conducted by	: BUET
Date of Structural Inspection	: 22 <sup>nd</sup> November 2013

### **BASIC INFORMATION:**

The building was constructed in a single phase during 1990-1997. The construction plan of the buildings was post-approved by RAJUK as a 4 (Four) storied commercial building in April, 1997. The following information was noted:

i.	Building Usage Type	: Garments Factory + Shopping Centre
ii.	Structural System	: R.C. beam column frame structure having irregular grid.
iii.	Floor System	: Edge supported R.C. solid floor slab system with R.C. beam at the edges
iv.	Floor Area	: Approx. 3338 m <sup>2</sup> per floor with a total of 13352 m <sup>2</sup> (as per architectural drawing)
v.	No. of Stories	: 4 (Four)
vi.	Construction Year	: 1990-1993
vii.	Foundation Type	: RCC Footings on 5" dia timber piles (as reported)
viii.	Design Drawings	: RAJUK Sheet 1997 was available, As built drawing prepared in May 2013 was supplied
ix.	Soil Boring Report	: Post construction report is available, Prepared by Mrittika Projuktibidh, Rasul View, Flat 3/D, Bangla Motor, in May, 2013
x.	Construction Materials	: Reinforced Concrete (Brick chips + 40 Grade plain MS bar, as reported).
xi.	Generator	: Located outside the building

### **LOAD PLAN:**

The factory owner has been instructed to prepare and submit a load plan for vetting.

### **ACTIONS AND TIMESCALES :**

The building is a non-engineered building, the factory owner provided all the documents obtained after construction of the building and because of high level of column stresses:

- A DEA is required to be commenced immediately and completed within 6 weeks from issue of this report.
  - A minimum of 8 number 4inch diameter cores are to be taken as soon as possible from different column and beam locations and tested with results used in the DEA report.
  - Other than ground floor all areas of storage loading is to be limited to 20 psf (1kN/m<sup>2</sup>) immediately.
- xii. No further construction is to be carried out on this building until approval of the DEA is provided.

### **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) : Intensity of load does not exceed 60 psf (3 kN/m<sup>2</sup>).

Mid Term (6-weeks) : None.

Long Term (6-months) : None.

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

Name of the Factory : Wonder Apparels Ltd.

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

Fire & Electrical assessment conducted by : BUET

Date of Fire & Electrical Inspection : 21<sup>st</sup> November 2013

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

Immediate (the factory should not continue to be occupied until these non-conformities have been rectified):	N/A
Short Term (Actions that must be incorporated into a Fire Safety Management Plan immediately (a week) and should be a regular activity)	<p>Remove all temporary obstructions from all escape routes, aisles and passageways.</p> <p>Remove all combustible materials from substation.</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>
Mid Term (The remedial works indicated must be carried out within a period of 6 weeks)	<p>Produce proper drawing and plans to create horizontal and vertical fire-rated separation for stairways of appropriate specifications, grills, storage and assembly areas, 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. 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>
Long Term (The remedial works indicated must be carried out within a period of 6 months)	<p>Install horizontal and vertical fire-rated separation for stairways of appropriate specifications, grills, storage and assembly areas, 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>

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

Immediate	N/A
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<i>(the factory should not continue to be occupied until these non-conformities have been rectified):</i>	
<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. Provide rubber mat in front of the panel. Ensure well-dressed cabling with lugs and remove loose cabling. Ensure earthing of panel body &amp; door with fitted condition. Provide distribution board as per guideline and put identification mark on distribution panel.</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. Provide new Emergency Lighting system. Provide appropriate Lightening 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