

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: Anupam Sweater Ltd.
Address of the Factory	: South Panishail, Kashimpur Road, Joydevpur, Gazipur
Present Status of the Factory	: Under Operation
Structural Assessment Conducted by	: BUET
Date of Structural Inspection	: 25 th December 2013
Fire & Electrical Assessment Conducted by	: BUET
Date of Fire & Electrical Inspection	: 27 th December 2013

BASIC INFORMATION:

The present garment factory is housed in a Six-storey reinforced concrete building, and two steel structures, namely Shed 1(Tin Shed) and Shed 2 (Linking Shed). The reinforced building is made using beam-column frame system. As per supplied drawings, the foundation system consists of individual footing of different sizes except one combined footing. The construction of the building was completed in 2006 as reported. On the basis of visual observations, study of design drawings (Engr. Md. Siddiquir Rahman FIEB-4787, Dr. M.H. Ali and Arch. Dr. M. Shaheedul Ameen) of the building, and discussions with the personnel present during site visit, the following information were noted:

- i. Building Usage Type : Sweater Factory
- ii. Structural System : RC beam column frame structure for the reinforced concrete building. Steel truss with steel columns for two steel sheds.
- iii. Floor System : Edge supported RC slab on RC beam was used in the reinforced concrete building. Slab on grade is used as floor system in two steel sheds.
- iv. Floor Area : Approx. 4494 sft/floor in the reinforced concrete building. Plan dimension: 62ft by 75ft (as per structural drawing). Shed 1 has an approximate floor area of 30000 sft and Shed 2 of approximate area of 12000 sft.
- v. No. of Stories : 6 for the reinforced concrete building. Two steel sheds are of one storey high.
- vi. Construction Year : 2006 (as reported)
- vii. Foundation Type : Mostly Individual footing for reinforced concrete building of different sizes. Steel shed foundation type is not known.
- viii. Design Drawings : Reinforced concrete building design drawing is available. Steel shed design drawings are not available.
- ix. Soil Investigation Report : Available (conducted in 2005 by Unique Boring and Engineering Ltd., 34, Green Road, Dhaka)
- x. Construction Materials : Not Available.
- xi. Generator : Generator is located outside 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:

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|------------------------|--------|
| Short Term (Immediate) | : None |
| Mid Term (6-weeks) | : None |
| Long Term (6-months) | : None |

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

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(A): Recommendations for Fire 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>
<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>Remove all combustible materials from transformer/ 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</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, 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>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, 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</p> <p><i>(the factory should not continue to be occupied until these non-conformities have been rectified):</i></p>	<p>N/A</p>
<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>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 & door with fitted condition.</p> <p>Provide distribution board as per guideline and put identification mark on distribution panel.</p> <p>Remove 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 Lightning 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>