

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: Alluring Fashions Ltd.
Address of the Factory	: Bijoy Road, Mogarkhal, National University,
Present status of the factory	: Under Operation.
Structural Assessment Conducted by	: VERITAS Engineering & Consultant
Date of Structural Inspection	: 2015-05-26
Fire Assessment Conducted by	: VERITAS Engineering & Consultant
Date of Fire Inspection	: 2015-05-26
Electrical Assessment Conducted by	: VERITAS Engineering & Consultant
Date of Electrical Inspection	: 2015-05-26
BGMEA Membership No.	: 5843

BASIC INFORMATION: The present garment factory is a one-Storeyed truss corrugated Pre-engineered shed. The following general information was noted:

i. Building Usage Type	: Garment Factory.
ii. Structural System	: RCC column and truss corrugated PEB shed.
iii. Floor System	: N/A
iv. Floor Area	: 15752 sft
v. No. of Stories	: Single storied
vi. Construction Year	: Building was built in one phase. Constructed in year, 2013-2014.
vii. Foundation Type	: Isolated footing foundation.
viii. Design Drawings	: Available- Approval plan, Structural drawing (partial), As built Machine layout plan. Not Available –As built Structural drawing,
ix. Soil Investigation Report	: Available.
x. construction Materials	: Brick chips.
xi. Generator	: Out side 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)	: N/A
Mid Term (6-weeks)	: 1. Design should be checked by the Building Engineer to verify the lateral stability of the shed and confirm the requirement of any bracing in the long direction. Factory Engineer to check that floors and carry out the repair work as required.
Long Term (6-months)	: 1. Install horizontal bracing at the roof system if required. 2. Engage a qualified structural engineer to prepare as built structural drawing, Architectural and prepare/update calculations

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showing the structural adequacy of the floor system taking into account the factory design imposed loading and the as built structure.

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

(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 (1 ~ 2 weeks) and should be a regular activity</i></p>	<ul style="list-style-type: none"> • Factory manager or director needs to arrange fire safety training for the workers of the factory from proper authority time to time. • Ensure adequate numbers of fire drills under the Fire Safety Plan. • All the firefighting equipment's need to test with proper documents. • Factory needs to have sufficient number and width (0.9 m) of marked aisles in the factory.
<p>Mid Term</p> <p><i>(The remedial works indicated must be carried out within a period of 6 weeks)</i></p>	<ul style="list-style-type: none"> • Needs to have □As Built Drawing□ with proper dimensions showing means of escape. • Fire license need to be updated for mention full occupied area. • Factory needs to have a proper pre-plan for fire department. • The exit-1,2,3 Which is leading to the final exit-1,2,3 needs to be replaced by side swinging fire rated doors so that the final exit-1,2,3 remains free from smoke as well as the lockable doors can be opened easily in the direction of evacuation without the use of a key. • Illuminated emergency light needs to be covered in floor, exits and aisles. The intensity of illumination by means of escape lighting needs to be equal or more than 10 lux. The aisles need to be illuminated with escape lighting to a level of not less than 2.5 lux at floor level. • (a) The color and design of lettering, arrows and other symbols on exit signs shall be in high contrast with their background. (b) The source of illumination, contrast, intensity and luminance needs to be at least 50 lux, 0.5, 5.0 foot-candles and 0.2cd/m² respectively.

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	<ul style="list-style-type: none"> • Factory needs to install manual as well as automatic fire alarm system with control panel for centralized automatic fire detection and alarm system in the command station at the entrance lobby of the factory premises. • Factory needs to install generator for required backup power in safe location.
<p>Long Term</p> <p>(The remedial works indicated must be carried out within a period of 6 months)</p>	<ul style="list-style-type: none"> • Factory needs to maintain minimum width of exit 0.9 m and height 2 m. • Childcare room need to be fire separated from others occupancy by 3 hour fire rated encloser and 2 hour fire rated composite door. • Storage area need to be protected with 2 hours rated construction and 1.5 hours rated opening or doors. • Boiler room is needs to have a 2 hour fire resistance construction and 1.5 hour rated opening door. • Factory need to install centralized and automatic fire detection & alarm system on all occupied floors, including other tenanted floors of the building as per NTPA Guideline. • Factory needs to install control panel for detection and alarm system at required location. • Install proper standpipe system having at least 75 mm dia of standpipe. First aid hose system (38 mm nominal) shall be provided. In addition 50 mm or larger hose connection facility shall be provided. • Install standard standpipe and hose system as well as fire pump system to ensure required hose pressure at the highest and most remote part of the building. • Factory need to installed Siamese connection after installation of stand pipe and hose system and fire pump. • Factory needs to install dedicated fire pump with sufficient capacity and backup power. • Factory need to have sufficient water storage capacity to get adequate pressure to feed fire-fighting equipment.

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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 (Actions that must be incorporated into a Fire Safety Management Plan immediately (a week) and should be a regular activity)</p>	<ul style="list-style-type: none"> • Ensure all distribution boards (including panel door) are earthed properly. • Ensure inspection for all earthing system is being completed and documented.
<p>Mid Term</p> <p><i>(The remedial works indicated must be carried out within a period of 6 weeks)</i></p>	<ul style="list-style-type: none"> • Ensure graded adequate size of rubber mats are provided in front of all distribution boards. • Provide dedicated & adequate size of earthing with proper identification for each circuit. • Ensure all electrical cables are sized according to capacity of circuit breakers. • Provide mechanical guards for electrical equipment where necessary. • Ensure cable joints are made in respect of conductivity, insulation and mechanical strength. • Provide emergency power connection for life safety loads (fire alarm, fire pump, emergency lighting, exit signage, etc.) temporarily within 6 weeks and find out a permanent solution within 6 months. • Connect all metal in the building to the building earthing system.
<p>Long Term</p> <p><i>(The remedial works indicated must be carried out within a period of 6 months)</i></p>	<ul style="list-style-type: none"> • Develop an electrical layout diagram and an as-built single line diagram detailing key components and capacity of the electrical system. • Establish a periodical Insulation and earth Resistance Measurement • Program and record the related testing data. • Inspect electrical panel boards on an annual basis. • Ensure overhead service connections to the building are led via adequate size and type of service masts. • Ensure distribution boards have no opening and all live internal

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	<p>components are concealed properly.</p> <ul style="list-style-type: none">• Provide dedicated & adequate size of neutral with proper identification for each circuit.• Ensure the means of identification (separate color coding, marking tape, tagging, or other approved means) of cable is provided as per circuit list..• Provide proper cable terminator/conductor for stranded conductors.• Provide an emergency power generator with adequate capacity for the factory shed.• Install separate distribution boards for lighting and power circuits.• Install lightning protection system on the building.
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