

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: York Fashion Ltd.
Address of the Factory	: Plot # S-12-13,BICIC I/A, Baburhat, Chadpur
Present Status of the Factory	: Under operation.
Structural Assessment Conducted by	: VERITAS Engineering & Consultant.
Date of Structural Inspection	: 2015-05-20
Fire Assessment Conducted by	: VERITAS Engineering & Consultant
Date of Fire Inspection	: 2015-05-20
Electrical Assessment Conducted by	: VERITAS Engineering & Consultant
Date of Electrical Inspection	: 2015-05-20
BGMEA Membership No.	: 2526

BASIC INFORMATION:

The factory building is a three storied RCC building with beam and column system and flat slab system. The following information was noted:

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| i. Building Usage Type | : Factory building. |
| ii. Structural System | : RCC beam column system. |
| iii. Floor System | : RCC Beam slab. |
| iv. Floor Area | : 34439 sft (total building) |
| v. No. of Stories | : 02 storied |
| vi. Construction Year | : 2011-2012 |
| vii. Foundation Type | : Unknown |
| viii. Design Drawings | : Available-Approval drawing, as build machine layout plane and soil test report have been found. Not available- full set of structural & architectural drawing, test report of construction materials and floor load plan has not been found. |
| ix. Soil Investigation Report | : Available |
| x. Construction Materials | : Stone chips (all columns) and beam slab bricks chips. |
| xi. Generator | : Separate structure. |

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) | : N/A |
| Mid Term (6-weeks) | : N/A |
| Long Term (6-months) | : 1. Protective coating should be applied on the exposed rebar and steel frame to protect them from corrosion.
2. Develop set of as-built drawings showing structure details, loading, dimensions, levels, foundation drawings. |

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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>	<ul style="list-style-type: none"> • N/A
<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"> • Fire drill shall be conducted quarterly (4 times a year) under the Fire Safety Plan. A record of such drills shall be kept in writing for at least 3 years for the inspection of fire brigade whenever called for. • All the firefighting equipment's need to test with proper documents. • Combustibles are to be managed with good housekeeping. Storage facilities with no air-conditioning duct shall be minimum 2.9 m and when used as a storage facility there shall be a minimum clearance of one third the floor height from the ceiling to the top of the storage stack.
<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"> • Factory needs to prepare as built drawing (Including machine layout) with proper dimensions showing means of escape. • All the exit doors need to be replaced by side swinging so that un-lockable doors can be opened easily in the direction of evacuation without the use of a key. • Factory needs to provide handrail on both sides of all the stairways. • Illuminated emergency light needs to be covered in all floors, exits, staircases 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. • Emergency back-up power needs to be connected for critical fire safety system and not less than 30 minutes in case of failure of power supply.
<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"> • Factory needs to have a proper pre-plan for fire department. • Final exit route-3(Stair-3 route) need to be protected from boiler room at 1st floors stair-3 landing by 4 hours rated construction and lobby with 2 hours rated door/opening, also need to have the protected escape route till to reach safe refuse area. • Storage area need to be protected with 2 hours rated construction and 1.5 hours rated opening or doors. • Generator room needs to be fire separated with 4 hours fire rated enclosure and 2 hour rated opening having

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	<p>direct access from outside.</p> <ul style="list-style-type: none"> Boiler room needs to be protected by 4 hour fire resistance construction and 2 hour rated opening and have direct excess from outside. Stair-3 needs to be protected with 4 hours fire rated construction and lobby with 1.5 hours fire rated door/opening from the boiler room of 1st floor and provide the protected route from all though the stairway to the final exits. Stair-3 needs to be protected with 4 hours fire rated construction and lobby with 1.5 hours fire rated door/opening from the boiler room of 1st floor and provide the protected route from all though the stairway to the final exits. Factory need to ensure the minimum pressure for standpipes supplying a 50mm or larger hose shall be at least 300 Kpa. For standpipe supplying first aid hose (38mm nominal) may have a minimum pressure of 200 Kpa.
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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>	<ul style="list-style-type: none"> Remove all unused cables from distribution boards and make sure all necessary cables are properly terminated at its point of termination using appropriate size and type of lug.
<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>	<ul style="list-style-type: none"> Ensure all distribution boards (including panel door) are earthed properly. Clean interior components from dust and debris and seal all openings within the enclosure to prevent dust and debris from entering. Ensure inspection for all earthing systems are 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"> Install appropriate type of safety signage at substation and generator rooms. Also ensure graded rubber mats are provided in front of all distribution boards. Provide Instruction boards for first aid and artificial respiration in the substation room and generator rooms. Fill the transformer breather's oil cup with fresh Oil. Provide two separate and distinct connections of earthing for each generator. Ensure distribution board is installed in compliant location in terms of access.

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	<ul style="list-style-type: none"> • Provide dedicated & adequate size of earthing with proper identification for each circuit from the earth busbar of distribution boards and ensure continuous earth path is back to main building intake. • Rewire to avoid the use of multiple cables from incoming and outgoing side of MCB's/MCCB's. • Ensure all electrical cables are sized according to capacity of circuit breakers. • Ensure cable joints are made in respect of conductivity, insulation and mechanical strength. • 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. • Ensure underground cables for electrical distribution in the premises are encased in GI or PVC pipes and laid in earth trenches of sufficient depth as per mentioned standard. • Ensure all high tension cables are laid following standard cable laying techniques. • Ensure the generator rooms have adequate fire separation from the main building. • Ensure distribution boards have no opening and all live internal components are concealed properly. • Provide dedicated & adequate size of neutral with proper identification for each applicable circuit. • Ensure each distribution board is provided with a circuit list and means of identification is obtained as per list. • Provide proper cable terminator/conductor for stranded conductors. • Install separate distribution boards for lighting and power circuits. • Install lightning protection system on the building.