Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: Aftex Limited.
Address of the Factory	: 168, Goodnyle, Siddirgonj, Narayanganj, Bangladesh
Present status of the factory	: Not in Operation
Structural Assessment Conducted by	: VERITAS Engineering & Consultant
Date of Structural Inspection	: 2015-08-26
Fire Assessment Conducted by	: VERITAS Engineering & Consultant
Date of Fire Inspection	: 2015-08-26
Electrical Assessment Conducted by	: VERITAS Engineering & Consultant
Date of Electrical Inspection	: 2015-08-26
BGMEA Membership No.	: 3288

BASIC INFORMATION: The present garment factory is an industrial non engineered single storied steel shed. The following general information was noted:

i. Building Usage Type	: Garment Factory
ii. Structural System	: Non-engineered steel shed.
iii. Floor System	: N/A
iv. Floor Area	: Floor area is (11000 sft x 1) = 11000 sft for main factory building
v. No. of Stories	: Single storied.
vi. Construction Year	: Could not be verified as no documents were available.
vii. Foundation Type	: Could not be known as no drawings were available
viii. Design Drawings	: Available document: None Not available: Approval drawing, structural design drawing, floor load plan, material test report have not been found.
ix. Soil Investigation Report	: Not available
x. construction Materials	: Brick Chips and steel joist
xi. Generator	: Ground Floor.

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.
Midterm(6-weeks)	: 1. Provide protective coating to cover the exposed joints from corrosion. Carry out ongoing maintenance works. 2. Remedial action to be undertaken to prevent the seepage of water from pipes and other sources. 3. Structural engineer to prepare full set of structural drawing, as built drawing and prepare/update calculations showing the adequacy of the structural elements.

Long Term (6-months) : 1. Remedial action to be undertaken to prevent the seepage of water from pipes and other sources.

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

(A): Recommendations for Fire Safety corrective actions:

Immediate (*the factory should not continue to be occupied until these non-conformities have been rectified*):	• All the means of escape i.e. aisle, exit and stair need to be unobstructed.
Short Term (*Actions that must be incorporated into a Fire Safety Management Plan immediately (1 ~ 2 weeks) and should be a regular activity*	• Factory needs to conduct fire drill quarterly (4 times a year) under the fire safety plan and needs to kept the written record of such drills for at least 3 years for the inspection of fire brigade whenever called for. • Factory need to have proper testing plan & record of fire safety equipment. • Factory needs to have marked aisles in all working floor according to 0.9m for one side seat and 1.0m for both side seat. • Factory needs to have marked aisles in all working floor according to 0.9m for one side seat and 1.0m for both side seat.
Mid Term (*The remedial works indicated must be carried out within a period of 6 weeks)*	• Factory needs to prepare as built drawing with floor machine layout showing means of escape with proper dimension.. • Fire license needs to be updated for full occupied area. • 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. • Fire manager/Director need to have safety training from proper authority & worker of the factory should as far as possible be trained for use fire extinguisher.
Long Term (The remedial works indicated must be carried out within a period of 6 months)	• Factory needs to have a proper pre-plan for fire service and civil defense. • Generator room needs to be fire separated with 4-hour fire rated enclosure and 2 hour rated opening having direct access from outside. Boiler room is needed to have a 4 hour fire resistance construction.

(B): Recommendations for Electrical 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)*	• Provide two separate and distinct connections of earthing for the generator. • Ensure all panel boards (including panel door) are earthed properly. • Provide provision for inspection ofall earthing system and ensure inspection is being completed and documented.
Mid Term (*The remedial works indicated must be carried out within a period of 6 weeks)*	• Post safety signage and install appropriate number and type of fire-fighting equipment in generator room and ensure graded rubber mats are provided in front of all distribution boards. • Provide Instruction board for first aid and artificial respiration in the generator room. • Ensure in the generator room, all working place have adequate illumination level as per standard. • Provide dedicated & adequate size of earthing with proper identification for each circuit from the earth bus-bar of distribution boards and ensure continuous earth path is back to main building intake. • Rewire to ensure each incoming supply to an MCB/MCCB has a dedicated supply from bus-bar. Avoid the use of multiple cables on outgoing side of MCB's/ MCCB's. • Replace wooden base with metal clad construction for mounting the changeover switch. • 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.
Long Term (*The remedial works indicated must be carried out within a period of 6 months)*	• 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. • Provide adequate means of ventilation for the generator room based on the installed equipment considering fire barriers. • Ensure all panel boards have no opening and all live internal components are concealed properly. • Provide dedicated & adequate size of neutral with proper identification for each circuit. • Ensure each distribution board is provided with a circuit list and means of identification is provided as per list. • Use noncombustible material to make cable channel and provide adequate covers on cable channel. • Provide proper cable terminator/connector for stranded conductors at its point of termination. • Install separate distribution boards for lighting and power circuits. • Install lightning protection system on the building.