Name of the Factory	: **Sim Fabrics Ltd**
Address of the Factory	: Thakurbari TEAC, Masumabad,Bhulta, Rupganj, Narayangonj,Rupgonj ,Dhaka,Bangladesh.
Present Status of the Factory	: **Under Operation**
Structural assessment conducted by	: Alliance
Date of Structural Inspection	: 18 Nov 2013
Fire & Electrical assessment conducted by	: Alliance
Date of Fire & Electrical Inspection	: 18 Nov 2013

BASIC INFORMATION:

The present garment factory is comprises of a 4 Main Buildings 2 Ancillary Buildings. The following general information was noted:

i.	Building Usage Type	: Dyeing & Spinning Factory.
ii.	Structural System	: Frame structure with grade beams (moment resisting frame from BNBC table)
iii.	Floor System	: Prefabricated Shed.
iv.	Floor Area	: 144,600 SF.
v.	No. of Stories	: All of the buildings are one storied steel structure sheds.
vi.	Construction Year	: Shed-1 Dyeing: 2000 Shed-2 Spinning:2000 Shed-3 Sizing and Weaving: 2008 Shed-4 Loom Servicing Centre: 2010
vii.	Foundation Type	: Isolated Spread Footing.
viii.	Design Drawings	: Not Available.
ix.	Soil investigation Report	: Available
x.	Construction Materials	: RCC (Stone chips).
xi.	Generator	: Unknown

RECOMMENDATIONS FOR CORRECTIVE ACTION:

The recommendations of corrective action for Structural, Fire and Electrical Safety comprises of Short Term, Mid Term and Long Term basis are as follows:

The recommendations for Structural Safety corrective actions are:

Immediate : NA

Short Term: (3 Weeks) :

i. Develop a program to ensure that all live loads for which a floor or roof has been designed for will not be exceeded. The designated Load Manager shall oversee this program and ensure it is enforced.

ii. Designate a representative as the Factory Load Manager. The Factory Owner shall ensure that at least one individual, the Factory Load Manager who is located onsite full time at the factory, is trained in calculating operational load characteristics of the specific factory. The Factory Load Manager shall serve as an ongoing resource to RMG vendors and be responsible to ensure that the factory operational loads do not at any time exceed the factory floor load limits as described on the Floor Load Plans.

Mid Term (6 Weeks) :

i. Under guidance from a qualified structural engineer arrange Detail Engineering Assessment of the structure. As FoS is between 1.5 ~ 1.86: Some doubts about safety - so assessment of concrete strength using semi destructive testing like core cutting to determine in-situ concrete strength, per Alliance Assessment Protocols Part 3.D.19 should be advised to reassess FoS within two months.

ii. The in-situ concrete compressive strength in the Main Production Building should be verified via core testing conducted under the guidance of a qualified structural engineer.

iii. Have a qualified structural engineer prepare credible as-built documents based on the requirements of Part 8 Section 8.19 of the Alliance Standard.

iv. Engage a qualified structural engineer to confirm and document that provisions have been made to accommodate concentrated loads (plastic water tanks). If provisions have not been made, have a qualified structural engineer develop a remediation plan.

v. Adequately anchor and brace all non-structural elements to resist earthquake forces to comply with the BNBC and Alliance Standard.

vi. Have a qualified structural engineer develop Floor Loading Plans per the requirements of Part 8 Section 8.20.5.3.

vii. Have a qualified structural engineer prepare load plans including the information required in Section 8.20 of the Alliance Standard.

viii. Provide signage or the appropriate markings at all areas used for storage to indicate the acceptable loading limits detailed in the Load Plan.

Long Term (6 months) :

i. Under guidance from a qualified structural engineer, address all areas of needed maintenance by correcting the identified issues.

ii. Remove deteriorated expansion joint material and provide new appropriate material at the expansion joint.

iii. Have a qualified structure engineer identify the location of the expansion joint and then have a remediation plan developed.

iv. Provide Certificates of Occupancy for review.

v. Provide a protective coating at the structural elements constructed with MCAC exposed to rainfall or other sources of water. Have protective coating approved by the Alliance or a qualified structural engineer.

The recommendations for Electrical Safety corrective actions are*:*

Immediate (3 to 6 Days)	Remove the all flammable material kept near the panel.

Short Term (3 Weeks)	Develop and implement an electrical safety program. Include key topics such as lock out tag out procedures, personal protective equipment requirements, etc. Reference NFPA 70e for example program requirements Complete an oil analysis on applicable transformers at appropriate intervals based on voltage and power. Ensure proper identification of emergency power switchboards, distribution boards, and circuits. Light fixtures without protective covers (otherwise known as naked lights) shall not be allowed in storage areas or in any area where the Inspector of the Factories Rules (1.6.3.7) Part 53 disallows these fixtures. Install signs posted in Bengali and English, indicating this prohibition at all entrances to these areas.
Mid Term (6 Weeks)	Have a qualified electrical engineer develop an as-built single line diagram detailing key components and capacity of the electrical system. All distribution boards shall be installed a suitable height for ensuring easy operation and maintenance of panels. Top end of the panel should be at 6 feet at maximum. Provide dedicated neutral for every single phase circuit with identification using an approved means. Joints are not allowed to provide neutral connection to another load. Use a dedicated neutral cable (of same size as respective phase cable) from the neutral bus bar to the load without any joint throughout its length. Use PVC connector with PIB tape wound around with a junction box with every cable joints. Provide mechanical guards for electrical equipment and wiring where necessary Ensure all electrical wiring/cable properly terminated at its point of termination. Provide dedicated neutral for circuit
Long Term (6 Months)	Complete Thermographic scans at least on a three year cycle. Thermographic scans should be completed in accordance with the Standard for Infrared Inspection of Electrical Systems & Rotating Equipment and NFPA70B or a comparable standard.

The recommendations for Fire Safety corrective actions are:

Immediate (3 to 6 Days)	None
Short Term (3 Weeks)	Smoking shall be prohibited in any garment factory building, separate storage building, or any building or area where the Inspector of the Factories Rules (1.6.3.7) Part 53 requires that smoking be prohibited. If an Owner creates a designated smoking area outside the buildings, information on the

	location of these designated areas shall be posted on the signs required in 13.5.2."
Mid Term (6 Weeks)	Install an automatic fire alarm and detection system for the facility. System shall comply with the Alliance Standard and NFPA 72. Consult a qualified fire protection engineer and/or authorized fire alarm company to design and install the system. Install a new automatic fire alarm and detection system. Once installed, arrange for direct connection of the fire alarm and detection system to a central station monitoring service or the Fire Service and Civil Defense as per Alliance Standard Part 5 Section 5.7.5 Monitoring. Until that time that a central station monitoring service or direct connection to the Fire Service and Civil Defense can be set up, a person trained to contact the Fire Service and Civil Defense in the event of fire alarm activation shall be provided. An annunciator shall be located in a constantly attended location (such as a fire control room) to alert this person. Training programs should be implemented and documented according to standard. The occupant loads shall be posted for every production floor in a conspicuous space near the main exit or exit access doorway for the space. Install signage at required locations and on required equipment. Signage must comply with NFPA 14.
Long Term (6 Months)	Replace non-compliant doors and frames in the means of egress with side-swinging doors. Replacement doors shall be a minimum width of 0.8 m (32 in), and are listed, approved, self-closing, fire rated doors assemblies (door and frame) with latching panic hardware. Provide fire-resistive rated penetration protection for rated walls and assemblies in accordance with Alliance Standard Sections 4.6 and 4.7. Consult a qualified fire protection engineer to design the required penetration systems. Install initiating devices and notification appliances as required by the Alliance Standard and NFPA 72. Devices should be part of an automatic fire alarm and detection system for the facility. All fire alarm installations shall be submitted for review by the Alliance prior to commencement of installation. Provide Fire Department (Siamese) connections in accordance with Alliance Standard Section 5.5.4. Connections shall match the Fire Service and Civil Defense hose thread standard. Create a Fire Safety Director position and fill the position with an individual that has had sufficient training to be able to carry the required duties. Establish written corporate and plant policies on housekeeping to ensure scheduled cleaning for floor, wall, ceiling, supply and return air ventilation systems. Promptly reschedule skipped cleanings. Provide a documented line of authority for authorizing a cleaning

	delay and rescheduling. Establish an inspection, maintenance, and testing program for the standpipe and hose system. Program must comply with the requirements of NFPA 25.