Name of the Factory	: **Athletic Support Ltd**
Address of the Factory	: 2nd, 3rd, 7th Fl, Unioor, Village: Itahata, Union Bason Mouza,35 (Chandna), Gazipur Sadar
Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Alliance
Date of Fire Inspection	: 27-Feb-14
Fire & Electrical assessment conducted by	: Alliance
Date of Structural & Electrical Inspection	: 27-Feb-14

BASIC INFORMATION:

The following general information was noted:

i.	Building Usage Type	: Garments Factory.
ii.	Structural System	: Beam-column frame structure. Monolithic RC slab with beams.
iii.	Floor System	: Concrete Beam Slab
iv.	Floor Area	: 2645 sft per floor
v.	No. of Stories	: Main 9 (+Basement)
vi.	Construction Year	: February 2006
vii.	Foundation Type	: spread foundation
viii.	Design Drawings	: Not Available
ix.	Soil investigation Report	: Available
x.	Construction Materials	: RCC
xi.	Generator	: Ground Floor

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

Mid Term (6 Weeks) :

i. Under guidance of a qualified structural engineer conduct destructive core testing to validate the in-situ concrete compressive strength of the structural elements..

ii. Have a qualified structural engineer document compliance with the seismic and wind requirements stated in the 2006 BNBC.

iii. 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.

Long Term (6 months) : NA

The recommendations for Fire Safety corrective actions are:

Immediate	Remove/grind down lip to meet standard of change in elevation of walking surfaces do not exceed 6.35 mm (1/4 in) unless provided with a beveled slope of 1 in 2 that does not exceed 12.7 mm (1/2 in). Adjust egress pathway to assure covers are level with walking pathway. All aisles, escape routes and emergency exits must be kept free from obstruction. Inspect all aisles, escape routes and emergency exits and clear any possible obstructions. This may be part of the regular documented inspection provided by the fire safety team. No production or other work should ever take place in exit stairwell. All aisles, escape routes and emergency exits must be kept free from obstruction. Inspect all aisles, escape routes and emergency exits and clear any possible obstructions. This may be part of the regular documented inspection provided by the fire safety team. No production or other work should ever take place in exit stairwell.
Short Term (3 Weeks)	Remove all hasps, locks, slide bolts, or other locking devices all doors to exits / means of egress. If locks are required for security reasons, utilize special door locking features complying with NFPA 101. Create a designated storage area for machine oil and other similar combustible materials. Storage room should be constructed with 1-hour fire rated construction. Storage underneath the cutting tables shall be kept clear of combustibles at all time. Storage under exit stairs should be strictly prohibited. This may be part of the regular documented inspection provided by the fire safety team.

Mid Term (6 Weeks)	Post maximum occupant load for all areas (near exit) 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 shall be assigned to contact the fire department in the event of fire alarm activation. An annunciator shall be located in a constantly attended location to alert this person. Develop a testing and maintenance program that ensures the operation of all exist signs is verified at least once per year. If battery-operated signs are used, these lights shall be tested on a monthly basis. Functional testing of battery powered signs shall be provided for a minimum 90 min once per year. Develop a testing and maintenance program that ensures the emergency power for exit signs is tested at least once per year. If battery operated signs are used, these lights are tested on a monthly basis. Functional testing of battery powered signs is provided for a minimum 90 min once per year. Battery power for all emergency lights and exit signs should be checked regularly in a systematic way with documented records available for review. Install signage adjacent to each stair door indicating the stair name (each stair should have unique name/id) and the floor level at the noted locations. Install signage for all standpipe system components (e.g valves, pipes, connections, etc) in compliance with NFPA 14 Chapter 6. For example valve cabinets shall be marked in 2 1/2 in lettering (red with white background) indicating contents. Install identifications for fire department connections as per NFPA 14 (e.g. sign on Fire Department connection

	indicating STANDPIPE in 1 in lettering, etc.) Rooms used for storage of combustible materials shall be separated from the surrounding occupancy with a minimum 1 hour construction. Storage should not be sharing area with canteen even under temporary conditions. Other arrangements should be made for storage. Substation room should be constructed with 2-hour fire rated construction and assemblies (e.g. fire doors of equivalent rating) and all penetrations must be properly sealed to maintain fire rating. Battery power for all exit signs should be checked regularly in a systematic way with documented records available for review. Emergency power for exit signs shall be verified at least once per year. If battery-operated signs are used, these lights shall be tested on a monthly basis. Functional testing of battery powered signs shall be provided for a minimum 90 min once per year. It is recommend that equipment should be numbered, with inspections, deficiencies, and follow-up noted in a log. Install illuminated exit sign indicating proper direction of final exit, outside of the building. Install a gate or other mechanism at the top of basement stairs with sign "not an exit". Swing of gate should not impede the egress of other workers. Remove/grind down lip to meet standard of change in elevation of walking surfaces do not exceed 6.35 mm (1/4 in) unless provided with a beveled slope of 1 in 2 that does not exceed 12.7 mm (1/2 in) Install guard rail on in this area. New guards shall have a minimum height of 1067 mm (42 in.). During installation of fire rated door assemblies assure that every door in a stair enclosure serving more than 4 stories is provided with re-entry unless it meets the requirements of

	Alliance Standards Part 6 Section 6.8.3.1. Confirm through testing (light meter) or other certification that means of egress will have illumination of 10 lux for all corridors, exit doors, and stairways and no less than 30 min in the event of failure of normal lighting. The standpipe system needs to be evaluated for compliance with the design pressure and flow demands of NFPA 14 or BNBC as cited in 5.4.3. Standalone standpipe systems shall be confirmed to meet the local BNBC requirements with a minimum 450 kPa (65 psi) pressure at the hydraulically most remote hose connection or NFPA 14. This testing should be documented and available for review. Establish an inspection, maintenance, and testing program for the fire pump. Program must comply with NFPA 25. Provide training on proper operation of fire pumps. Develop a hot work permit program. The program must comply with the requirements of NFPA 51B. Develop a maintenance and contractor safety policy that includes procedures for conducting hot work (e.g. welding). All hot work should be conducted with a proper permit and precautions must be available in case of fire (e.g. fire watch, fire extinguisher, etc.)

The recommendations for Electrical Safety corrective actions are*:*

Immediate	N/A
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. Switchboards and/or distribution boards should have clear and permanent unique identification markings as per BNBC Part 8 Section 2.11.5.4 . Switchboards and/or distribution boards should have capacity information labels or voltage rating.
Mid Term (6 Weeks)	Each circuit should be provided with a dedicated neutral. Assure working condition of all latches and locks on panel doors. Panel doors should remain closed and latched exept

	when accessed by authorized personnel. Remove multi looping and bunch of cables at circuit breakers within distribution boards. Have a qualified electrical engineer develop an as-built single line diagram detailing key components and capacity of the electrical system. All Distribution Board covers in the building should connected to the building earthing/grounding system such as metal rebar in concrete, metal frame of building, or metal water pipe in accordance with BNBC 2006 Part 8.
Long Term (6 Months)	The substation room should has the required fire rating/protection and physically separated as per the Alliance standard 3.4.2.1 (2-hour fire rated construction). A wire/cable shaft should be provided for the whole building. Wiring and cables should be arranged in shaft for ease of inspection and maintenance. Consult with a qualified electrical engineer to assist with the design of wire/cable shaft per Alliance requirements. 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.