Name of the Factory	: **The Delta Accessories**
Address of the Factory	: Zarun (South) Kashimpur,Gazipur, Bangladesh
Present Status of the Factory	: **Under Operation**
Structural assessment conducted by	: Alliance
Date of Structural Inspection	: 20 Mar 2014
Fire & Electrical assessment conducted by	: Alliance
Date of Fire & Electrical Inspection	: 20 Mar 2014 & 22 May 2014

BASIC INFORMATION:

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

i.	Building Usage Type	: Garments Factory.
ii.	Structural System	: Accessories Unit shade- Structural steel, Printing Shade-rcc column with steel roof, Raw material Go-down shade-1: RCC column with steel roof, Raw material Go-down shade-2: RCC column with steel roof.
iii.	Floor System	: Prefab Shed.
iv.	Floor Area	: 103160 SF.
v.	No. of Stories	: Single storied.
vi.	Construction Year	: 13/06/2007
vii.	Foundation Type	: Unavailable.
viii.	Design Drawings	: Not Available.
ix.	Soil investigation Report	: Not Available
x.	Construction Materials	: RCC (brick chips).
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. 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. Engage a qualified structural engineer to develop the required documents to confirm the structural integrity of the buildings. Documents must comply with Alliance Standard Part 8 Section 8.19 and 8.20

ii. Have a qualified structural engineer confirm that capacity to support the load is available. Load Plans complying with Alliance Standard Part 8 Section 8.20.4.3 should also be developed.

iii. Engage a qualified structural engineer to confirm satisfactory structural performance of the buildings under wind loading as per BNBC and alliance standard.

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

v. under guidance from a qualified structural engineer, arrange a detailed engineering assessment of the structure, including destructive materials testing.

vi. "Adequately anchor and brace all non-structural elements to resist earthquake forces to comply with the BNBC and Alliance Standard for Fire and Structural Integrity section 8.18.

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

viii. Have a qualified structural engineer prepare load plans including the information required in Section 8.20.5.3 of the Alliance Standard and posted in each floor desalinated areas as per standard.

ix. 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. Provide Certificates of Occupancy for review

The recommendations for Electrical Safety corrective actions are*:*

Immediate (3 to 6 Days)	Find out the cause of overheating and take proper action.
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. Keep records of completed training available on site. Ensure light fixtures without protective covers are not installed in storage areas or in any area where the Inspector of the Factories Rules (1.5.3.5) Part 53 disallows these fixtures.

Mid Term (6 Weeks)	Connect all metal in the building to the building earthing/grounding system such as metal rebar in concrete, metal frame of building, or metal water pipe.. .Have a qualified Electrical Engineer develop an as-built single line diagram detailing key components and capacity of the electrical system. Each circuit should be provided with dedicated neutral.
Long Term (6 Months)	Complete thermo graphic scans at least on a three year cycle. Thermo graphic scans should be completed in accordance with the Standard for Infrared Inspection of Electrical Systems & Rotating Equipment and NFPA70B or a comparable standard. Have a qualified Electrical Engineer design a lightning protection system according to the BNBC requirements. Have a licensed electrician install the designed system.

The recommendations for Fire Safety corrective actions are:

Immediate	N/A
Short Term (3 Weeks)	Remove all hasps, locks, slide bolts, or other locking devices at the noted locations in compliance with the Alliance Standard.
Mid Term (6 Weeks)	Develop a testing and maintenance program that ensures the operation of all exists 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 30 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. Training programs need to be implemented and documented in accordance with the Alliance Safety Training Curriculum. Post occupant loads for every assembly and production floor in a conspicuous space near the main exit or exit access doorway for the space. Complete fire department pre-planning activities with the local Fire Service and Civil Defense as per Alliance Standards Part 13 Section 13.1. Collect occupancy certificate for each building (mention occupancy type). Install signage adjacent to each stair door indicating the stair name and the floor level at the noted locations.

Long Term (6 Months)	Provide aisles marking with proper direction and with minimum 36 inch width. Keep aisles free of obstruction. Provide fire-resistive rated construction barriers at exit enclosures. . Provide 1 hour rated fire barrier and fire door around stair case which will lead the user to the exterior exit of the building. Consult a qualified fire protection engineer to design the required rated construction barriers. Provide pull stations at each egress points, smoke detectors in air handling equipment, visual and audible devices spaced appropriately based on occupancy type. Reference NFPA 72. Arrange sufficient training programs for fire fighting, first aid, and rescue training and make proper documentations and keep evidence for Alliance review. Train-up sufficient number (25 %) of worker for fire fighting and emergency purposes. Provide 1 hour fire rated door in emergency exits of Mezzanine floor in building#1. Provide side-hinged swinging type doors in all means of egress. Fire barrier shall be continuous from outside wall to outside wall, from one fire barrier to another or combination there of and shall be continuous through all concealed spaces. Provide Extinguishers throughout the factory as a manner that, the maximum travel distance to the nearest unit shall not exceed 30 m (100 ft). Select extinguisher placement based on potential fire class and hazards. Install fire extinguishers at required locations and heights based on hazard type per BNBC Part 4 and NFPA 10. Select extinguisher placement based on potential fire class and hazards. Install fire extinguishers at required locations and heights based on hazard type per BNBC Part 4 and NFPA 10. Establish an inspection, testing, and maintenance program for all fire extinguishers. Program must comply with the requirements of NFPA 10. Install appropriate means of illumination at the noted locations. The source of illumination shall provide not less than 50 lux at the illuminated surface with a contrast of not less than 0.5. Approved self-luminous signs, which provide evenly illuminated letters having a minimum luminescence of 0.2cd/m2, may also be used. Provide an emergency power source, either by battery back or up or by connecting to the emergency power system, for continuous illuminated exit signs. Provide fire-resistive rated construction barriers between hazard types. Provide 1 hour rated opening (doors, windows, penetrations) protection for the store room. Consult a qualified fire protection engineer to design the required rated construction barrier. Handrails shall be provided on both sides of each stairway. Intermediate handrails shall be provided when the stair width exceeds 2.2 m (87 in.). Install continuous illuminated exit sign in all exit point as per Alliance Standard Part 10 Section 10.12.1 Exit Signs. The source of

	illumination shall provide not less than 50 lux at the illuminated surface with a contrast of not less than 0.5. Approved self-luminous signs which provide evenly illuminated letters having a minimum luminance of 0.2cd/sq.-m may also be used. 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. As a general rule the maximum tolerable deposit thickness for loose fluffy lint is 13 mm (½ in.) over a maximum of 46.5 m2 (500 ft2). Limit dense deposits to 6 mm (¼ in.) and oil saturated deposits to 3.2 mm (⅛ in.).