

## Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

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Name of the Factory	: <b>Cotton Club (BD) Ltd.</b>
Address of the Factory	: South Jarun, Kashimpur, Gazipur, Dhaka, Bangladesh
Present Status of the Factory	: <b>Under Operation</b>
Structural assessment conducted by	: Alliance
Date of Structural Inspection	: 11-Sep-13
Fire & Electrical assessment conducted by	: Alliance
Date of Fire & Electrical Inspection	: 11-Sep-13

### **BASIC INFORMATION:**

The present garment factory is comprises of a 1 Main Buildings 6 Ancillary Buildings. The following general information was noted:

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|-------|---------------------------|---|
| i.    | Building Usage Type       | : Garments Factory.   |
|       | Structural System         | : B#1: RCC framing system with pile foundation. B#2:RCC framing system with spread footing foundation. For B#3:RCC framing system with mat foundation. B#4:Mixed framing system. B#5:RCC framing system with spread footing foundation. B#6:RCC framing system with pile foundation. B#7:RCC framing system with spread footing foundation. |
| ii.   | Floor System              | : RCC Beam Slab.  |
| iii.  | Floor Area                | : Main-2,08,000 Sft,Ancillary -29,000 Sft   |
| iv.   | No. of Stories            | : B#1: Level-8, B#2:L-2, B#3:L-4, B#4:L-1, B#5:L-3, B#6:L-2, B#7:L-1.   |
| v.    | Construction Year         | : 2008  |
| vi.   | Foundation Type           | : B#1 & 6:Pile,B#2,4,5,7:Spread Footing,B#3:Mat Foundation.   |
| vii.  | Design Drawings           | : Available.  |
| viii. | Soil investigation Report | : Available   |
| ix.   | Construction Materials    | : RCC (Brick chips).  |
| x.    | 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 : N/A

Short Term: (3 Weeks) :

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

## Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

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do not at any time exceed the factory floor load limits as described on the Floor Load Plans.

Mid Term (6 Weeks)

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- i. A qualified structural engineer shall be engaged to prepare documents compliance with the seismic and wind requirements stated in the 2006 BNBC.
  - ii. Assign a qualified structural engineer to confirm satisfactory structural performance of the buildings under wind loading and storm surge loadings. Prepare document in compliance with the requirements stated for wind loading and storm surge loadings as detailed in BNBC Part 6 Section 1.5.3.
  - iii. Adequately anchor and brace all non-structural elements to resist earthquake forces to comply with the BNBC and Alliance Standard.
  - iv. Produce, establish and enforce a written policy and procedure to ensure that the live loads, as detailed in the load plans for each floor, are not exceeded in accordance with Alliance Standard Part 13 Section 13.7 and Part 8 Section 8.9.
  - v. Have a qualified structural engineer develop Floor Loading Plans per the requirements of Part 8 Section 8.20.5.3.
  - vi. Have a qualified structural engineer prepare load plans including the information required in Section 8.20 of the Alliance Standard. Floor load plans should be visibly posted on all levels of all buildings.
  - vii. 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)

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- i. Obtain an occupancy certificate for each building and ancillary structures from the approving government authority in accordance with Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment

### The recommendations for Fire Safety corrective actions are:

Immediate	N/A
Short Term	N/A
Mid Term (6 Weeks)	<p>Occupant load signage shall be posted for every assembly and production floor, at a conspicuous space near the main exit or exit access doorway for the space.</p> <p>Obtain an occupancy certificate for each building and ancillary structures from the approving government authority.</p> <p>Signage shall be provided next to hose cabinets and where required for clarification.</p>

## Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

<p>Long Term (6 Months)</p>	<p>Additional stair case shall be constructed to provide adequate exits</p> <p>Replace with side-hinged swinging type door with the necessary fire resistance rating of 1 1/2 hours including door hardware relating the specific position requirements. Position the door so it shall open in the direction of egress without obstructing other paths of egress.</p> <p>Install fire-resistive sealant products to provide the required degree of protection for rated walls and assemblies in accordance with the standard.</p> <p>Provide an automatic sprinkler protection system throughout.</p> <p>Provide a dedicated fire pump for the facility in accordance with NFPA 20. Also, to supply the demands of the connected fire protection systems along with a stored source of water sufficient to meet the demands in accordance with NFPA 22. Provided fire pump is to be tested for final acceptance, per Alliance Standard Part 5 Section 5.5.5 Acceptance.</p> <p>Provide an additional handrail to each stairway where only one is currently installed as per the height and distance requirements set out in the standard.</p> <p>Establish an inspection, testing, and maintenance program for all fire extinguishers. Program shall comply with the requirements of NFPA 10.</p> <p>Provide Fire Department (Siamese) connections in accordance with Alliance Standard Section 5.5.4. Connections shall match the Fire Service and Civil Defence hose thread standard.</p> <p>Establish an inspection, maintenance, and testing program for the standpipe and hose system. Program shall comply with the requirements of NFPA 25.</p> <p>A hot work permit system program shall be enacted for all RMG facilities in accordance with NFPA 51B."</p>
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### The recommendations for Electrical Safety corrective actions are:

<p>Immediate (3 to 6 Days)</p>	<p>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.</p>
<p>Short Term (3 Weeks)</p>	<p>Provide capacity information labels (Maximum current rating, no of circuit breakers etc.) for Switchboards and distribution boards.</p>

## Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

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Mid Term (6 Weeks)	<p>Provide electrical insulation mats in front of distribution boards.</p> <p>Ensure meters and other electrical devices installed on the main electrical equipment are operational.</p> <p>Clear identification/markings must be available at LT, MDB and DB MCB/MCCB. Clear and permanent identification marks are required to be painted in all distribution</p> <p>If flexible metallic hose is used for wiring to motors and other equipment, the wiring is enclosed to the full lengths, and the hose secured properly by approved.</p>
Long Term (6 Months)	<p>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 &amp; Rotating Equipment and NFPA70B or a comparable standard.</p> <p>Develop an Insulation Resistance Measurement Program that ensures deterioration of insulation resistance will be identified quickly. Testing should be in compliance with International Electrical Testing Association (NETA). All transformers, switchgears etc. shall be subject to an insulation resistance measurement test to ground after installation but before any wiring is connected. Insulation tests shall be made between open contacts of circuit breakers, switches etc. and between each phase and earth.</p> <p>Have a qualified electrical engineer; design a lightning protection system according to the BNBC requirements. Have a licensed electrician install the designed system. This is a violation of Section 2.9 of BNBC, 2006.</p>