Name of the Factory	:	**CONFIDENCE KNITWEAR LTD.**
Address of the Factory	:	South Dhanua, Nayanpur, Maona, Sreepur, Gazipur
Dhaka Present Status of the Factory	:	**Under Operation**
Structural assessment conducted by	:	Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	:	29 April, 2014
Fire & Electrical assessment conducted by	:	Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	:	24 May, 2014

Basic Information: The present garment factory is a commercial building with beam-column frame system. The following general information was noted:

i.	Building Usage Type	: Garment factory
ii.	Structural System	: RC beam slab, steel portal frame
iii.	Floor System	: Beam slab
iv.	Floor Area	: The Factory buildings has a total area of 70,770 sq ft.
v.	No. of Stories	: 2 storied
vi.	Construction Year	: 2010-2011
vii.	Foundation Type	: Pad foundation
viii.	Design Drawings	: Available (permit drawing)
ix.	Soil investigation Report	: Available
x.	Construction Materials	: Brick aggregated
xi.	Generator	: Ground floor (Building 3)

Recommendations for Corrective Action: The recommendations of corrective action for both Structural and Fire & Electrical Safety are as follows:

The recommendations for Structural Safety corrective actions are:

Immediate (Now):

1. Exit signage indicating safe exit to rear of Building 1 (at location of ongoing construction) to be removed, and escape door to be closed.
2. A qualified Fire Engineer to verify that existing fire routes are adequate or to advise on alternative routes.

Mid Term (Within 6 Weeks):

1. Building Engineer to verify that the ongoing excavation adjacent to the rear (west) of Building 1 and Building 3 is not undermining existing building foundations.
2. Building Engineer to verify that the new building (under construction) is capable of withstanding the surcharge loading from Building 1 and Building 3.
3. Reinstate disconnected cables in braced bays in Building 2.
4. Existing cables in braced bays in Building 1 and Building 2 to be tightened.
5. Building Engineer to develop loads plans for all buildings, accounting for usage, floor build ups, solid partition walls and areas of concentrated loading. Factory management to implement load plans.

Long Term (Within 6 Months):

1. Building Engineer to review the lateral stability systems for Building 1, Building 2 and Building 3 and to design upgrading works, as required.
2. Upgrading works to stability systems in Building 1, Building 2 and Building 3 to be implemented as required, to Building Engineer's details.
3. Continue to implement loads plans.
4. Building Engineer to undertake a design review of Building 1 extension, paying particular attention to building stability system and capacity of masonry columns.
5. Building Engineer to undertake a design review of Building 2 and 3 extensions, paying particular attention to building stability system.
6. Structural drawings to be updated to include all extensions throughout the complex.
7. Building Engineer / Fire Engineer to advice on requirements for providing fire protection to steel elements to meet code requirements.
8. All roofs directly accessible by stairs to be provided with handrails or parapets around all edges.
9. Steelwork connections throughout all buildings to be reviewed by engineer and recommendations made for adjustment.

The recommendations for Fire Safety corrective actions are:

Immediate (Within 1 month):

1. Remove locking features from all egress doors / gates. If locks are required for security reasons, utilize special door locking features complying with NFPA 101.
2. Remove all storage from exit stairs and egress paths.
3. Replace all gates / sliding doors along the means of egress with side-hinged, swinging egress doors. If locks are required for security reasons, utilize special door locking features complying with NFPA 101.

Short Term (Within 3 Months):

1. Provide dedicated storage rooms separated by minimum 1-hr fire-rated construction. Provide defined storage areas and limit the storage arrangement as follows:

   -Maximum height of 2.4m and maximum area of 23m2

   -If sprinkler protected: maximum height of 3.66m and maximum area of 93m2

   Separate areas of unenclosed combustible storage by a minimum clear distance of 3m.
2. Seal all penetrations and openings in exit stair enclosure walls to maintain the fire separation.
3. Either reduce occupant load to not more than available exit capacity (500). Or Provide additional exits.
4. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
5. Inspect, test and maintain the emergency lighting system in accordance with The ACCORD standard. Keep written records on-site.
6. Test the emergency lighting system on each floor and provide additional emergency fixtures to provide adequate illumination along the means of egress. Provide a minimum illumination

of 10 lux at the floor level within exit stairs and exit discharge paths and minimum 2.5 lux along exit access aisles.

7. Separate the boiler and generator room from the adjacent working areas and discharge pathways by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.

8. Provide minimum 1.5-hr fire rated doors and seal all unprotected openings to separate the exit stairs from work areas and other building spaces on all floor levels. Ensure that the fire doors are self-closing and positive latching and that they are provided with fire exit (panic) hardware where serving production floors. If fire doors are required to be held open for functional reasons, provide automatic closing devices tied to the fire alarm system.

9. Provide minimum path widths of 36-in.

Mid Term (within 6 Months):

1. Remove single-station smoke alarms. Provide automatic smoke detection throughout the building, tied into the fire alarm system, in accordance with NFPA 72.

2. Provide a means of egress that does not require passage through the hazardous area. Or Provide 1-hr fire rated passageway.

Long Term (More than 6 months):

1. Replace the fire alarm system with a new, listed addressable fire alarm system in accordance with NFPA 72.

The recommendations for Electrical Safety corrective actions are:

Immediate (Within 1 month):

1. Install arcing horns on HT side of transformer to avert flashover.

2. Breather oil cup must be filled with transformer oil to required level as per the instruction of the manufacturer.

3. Silica gel in breather must be charged as per manufacturer's instruction.

4. HT cable dropping from HT pole must be encased in steel pipe or rigid PVC pipe of required size and height of at least 2m above from the ground level to protect the cable from physical damage by moving objects.

5. Wiring in PVC flexible conduit entering panels must be firmly fixed at the panel (base / Top) using glands.

6. Panel base plates must be installed, at all time, and cable(s) entering panel must be firmly fixed with cable glands.

7. Cables terminating at MCCBs must be installed with cable lugs/terminals of required size and rating.

8. Wiring looped at MCB terminals may be replaced by installing additional Bus bars to distribute Different circuits.

9. Install separators between different phases of MCCB. Standard separators provided by the MCCB manufacturer must be used. Remove all the multiple connections made at a single point of MC CB. Individual branch circuit should be provided with individual circuit breaker.

10. Multiple cable connecting at a MCCB terminal must be disconnected. Existing multiple circuits may be distributed through bus bars.

11. Remove multiple cable terminating at a terminal in bus bars and terminate single cable at a single point of bus bar.

12. Provide earth connection for body and doors of metallic distribution boards using green cables preferably braid.

13. Wirings drawn in flexible PVC conduit must be installed on supports to prevent conductors touching hot areas/components.

14. Reconnect generator earth loop to establish direct connection. Generator frame should be earthed with two separate and distinct connections to earth.

15. Materials and wastage stored in generator room must be removed and cleared.

16. Establish a routine cleaning program to keep neat and clean the Transformer room.

Short Term (Within 3 Months):

1. HT cable must be supported in cable trays or laid in trenches. The cable must be protected against physical damage.

2. Cables passing through permanent walls must be protected in steel pipes and remaining holes around the pipe must be sealed.

3. HT cable dropping from HT pole must be protected in steel pipe of required size at least 2m from the ground level to protect from physical Damage by moving objects.

4. Cable trenches must be designed to accommodate all necessary cables that will be installed in it.

5. Cable terminating at the panel must be firmly fixed with glands and at gland plates, to reduce stress at the termination point.

6. Install the cable tray with metallic cover to provide mechanical support to cables laid haphazardly on the floors.

7. Clean the dust inside the cable duct and provide cover (made of non-combustible material) for the cable duct to prevent the further accumulation of dust /lint inside the duct.

8. Flexible PVC conduit wiring must be additionally supported on cable tray and risers.

9. Cables terminating at distribution board and installed between floor and panel base must be protected in rigid conduit or in covered ladder to Protect physical damages.

10. Cables passing through permanent walls must be protected with rigid conduits/pipes and remaining gap must be sealed with fire resistant materials.

11. Wirings extended from wiring ducts in flexible PVC conduit to ceiling points must be protected and supported independent of the supports used for other purpose.

Mid Term (Within 6 months):

1. Transformer must be installed with barrier walls between transformer and panel.

2. Keep the provision for sufficient clearance around the transformer for maintenance. Transformer must be separated from panels by constructing barrier walls up to the ceiling the

provision of necessary ventilation and fire rated door on required side (according to BNBC 2006, Section-.6.6.3).

Long Term (More than 6 months): NA