Name of the Factory	:	**D.Z. GARMENTS LTD.**
Address of the Factory	:	Plot # M/2-1, Road # 07, Section # 07, Mirpur I/A, Dhaka - 1216, Bangladesh
Dhaka Present Status of the Factory	:	**Under Operation**
Structural assessment conducted by	:	Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	:	22 April, 2014
Fire & Electrical assessment conducted by	:	Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	:	1 March, 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	: R.C Beam and column frame with a 2-way solid slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: Unavailable
v.	No. of Stories	: 8 storied
vi.	Construction Year	: 1990
vii.	Foundation Type	: Unavailable
viii.	Design Drawings	: Available (Permit drawing)
ix.	Soil investigation Report	: Unavailable
x.	Construction Materials	: Brick aggregated
xi.	Generator	: Exterior at ground level, adjacent to south exit discharge

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. Carry out a full Detailed Engineering Assessment (DEA) of the entire building including any intrusive testing required.
2. Carry out intrusive testing of structure to determine actual concrete and rebar strengths.

Mid Term (Within 6 Weeks):

1. Factory Engineer to review design, loads and columns stresses in entire building.
2. Carry out the steps as noted in Item 1 for structural survey.

Long Term (Within 6 Months):

1. Consider removal of the water tank or relocation to ground floor level.
2. Any extensions or structural modifications of the existing building needs to be investigated by a Structural Engineer fully, should be designed in full compliance with the BNBC and be subject to a new Building Permit.
3. Based on the building survey, the Factory Engineer is to develop full structural records and check for compliance with BNBC codes.

The recommendations for Fire Safety corrective actions are:

Immediate (Within 1 month):

1. Remove locking features from all egress doors and gates. If locks are required for security reasons, utilize special door locking features complying with NFPA 101.

2. Replace all gates and 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.

3. Configure the fire alarm system to initiate automatic occupant notification on all floor levels to facilitate whole building evacuation upon any manual fire alarm station activation.

4. Remove manual on/off switches from exit signage units to prevent them from being switched off.

Short Term (Within 3 Months):

1. 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.

2. Separate the boiler and generator room by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.

3. 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.

4. Provide minimum aisle widths of 36-in.

5. Modify the egress door to swing in the direction of egress travel.

6. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.

Mid Term (within 6 Months):

1. Provide an exit from the west side of the building (the sliding door became jammed during the inspection and there is a brick wall to the exterior spaced 19 in. from the discharge). If employees are to only use the exit in the event of an emergency, a posting stating "Use Only in Event of Emergency" can be displayed on the door.

2. Replace the single-station smoke alarms with automatic smoke detectors tied into the fire alarm system. Configure the fire alarm system to initiate occupant notification upon activation of any two smoke detectors in addition to the manual fire alarm stations.

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.

2. Provide automatic sprinkler protection throughout the building in accordance with NFPA 13.

The recommendations for Electrical Safety corrective actions are:

Immediate (Within 1 month):

1. Wooden duct used for support must be replaced with non-combustible ducts. However, the lint inside duct must be regularly cleaned until it is replaced.

2. Cables drawn in flexible PVC conduit not covering throughout cable length must be additionally protected and supported till the panel edge.

3. Existing wiring in flexible PVC conduits fixed to ceiling must be additionally supported in tray or ducts. Flexible conduit must not be used for long point wiring (except for special wirings).

4. Cables/wiring connecting machines or equipment, extended from ducts must be protected and supported where necessary.

5. Cables in PVC conduits passing through walls must be protected and securely fixed. Damaged PVC conduits must be repaired or replaced.

6. Remove combustible materials from generator room.

7. Cable terminating at Generator output terminal box must be supported on riser and protected. Existing cables laid on floor may be installed in cable trench or on trays.

8. Existing connections extended from the concealed point must be safely connected using connectors and must be limited to short points. The load connected from extended point must not exceed the designed load of the point.

9. Wiring extended from concealed wiring junction box must be avoided or if necessary must be extended using additional junction box on the existing box to enable surface wiring connections.

10. Damaged PVC casing capping wiring must be repaired to protect wires in it throughout its length.

11. Wires in wiring must be protected and supported throughout its length. Wiring exposed between different wiring systems may be prevented by selecting appropriate adapter to connect.

12. Concealed wiring points extended for lighting or fan points must be connected through terminals or ceiling rose and the load connected must adhere to the designed rating.

13. Wiring in flexible PVC conduit must be additionally supported and securely fixed at regular intervals.

14. Wirings must be protected and supported in conduits or in trays/ducts.

15. Connection to lights (Lighting fittings) and fans must be connected through ceiling rose or junction box. OR wire joints must be concealed within the fitting terminal box.

16. Temporary wiring must be avoided. All temporary extensions or connections must be connected by using flexible chords with safe terminations.

17. Motors for sewing machines must be regularly checked and cleaned.

18. Panel surroundings must be kept clear from obstructions at all time.

19. MCB mounted on the wall without enclosures.

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

21. Panel must be tightly closed to prevent ingression of lint and dust inside panel. Clean the panel and install the covers tightly with gaskets if provided.

22. Clean regularly and protect the panel from ingression of lint and dust by closing all sides and doors.

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

24. Wires temporarily connected across terminals of Changeover switch must be removed and if necessary must be connected using terminals.

25. Indicating lamps in panels connected across MCCB terminals must be removed. Connections must be established with proper terminal. It is recommended that the connection to panel is connected through terminal blocks.

26. Earth conductors must not be spliced between terminals. All earth conductors must be terminated and extended by installing earth bus bar inside panel.

27. Cables terminating to Changeover Switch(s) must be protected and supported in cable trays, ladder or risers.

Short Term (Within 3 Months):

1. Replace rewire fuses (cut out fuse) mounted on the wiring ducts with MCBs installed in protective enclosure.

2. Power lines and electrical facilities must be placed at safe distant from other utility lines. Cables/wiring passing through wall must be separated from other utilities and sealed with fire rated materials.

3. Wiring extended from wiring ducts in flexible PVC conduit must be provided with additional support between duct and ceiling.

4. Upgrade the panel to industrial standard or else clean and rearrange the panel by replacing the re-wireable cutout fuses by rated MCBs. Looping at the cutout fuses may be avoided by installing bus-bar systems.

Mid Term (Within 6 months):

1. Existing wooden ducts supporting wiring may be replaced with non-combustible ducts, with ample strength and rigidity, supported at regular intervals.

2. Some of the existing panels near generator may be relocated to another rooms.

Long Term (More than 6 months): NA