

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: CHANTIK GARMENTS LTD.
Address of the Factory	: Kumkumari, Gouripur, Ashulia, Savar, Dhaka
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 10 May, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 17 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	: The RC frame has beams with two way spanning slabs
iii.	Floor System	: Beam slab
iv.	Floor Area	: Unavailable
v.	No. of Stories	: 4 storied
vi.	Construction Year	: 2011
vii.	Foundation Type	: Pad foundation
viii.	Design Drawings	: Available (Stamped by LGED in 2011)
ix.	Soil investigation Report	: Available (Dated 2010)
x.	Construction Materials	: Stone aggregated
xi.	Generator	: Ground Floor, auxiliary building

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): NA

Mid Term (Within 6 Weeks):

1. Knock building as stated at the interview
2. Carry our DEA if to be used in the future in particular, justify the large cantilever.
3. Remove bricks from the roof.
4. Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity.
5. Engineer to carry out assessment of dining shed with particular emphasis on the stability of the frame
6. Commence remedial actions from engineering study.
7. If building is to be used, carry out as-built survey and obtain permits.

Long Term (Within 6 Months):

1. Crack width to be monitored every 3 months.
2. Continue to implement load plan.
3. Complete all remedial works.

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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.
4. Remove manual on/off switches from emergency lighting units to prevent them from being switched off.
5. Regularly inspect all exit signage and replace/install lights as needed to illuminate signs.

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. Provide dedicated storage rooms separated by minimum 1-hr fire-rated construction. Where separate storage rooms may not be feasible, 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.
3. Separate the boiler, generator and transformer room by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.
4. Seal all penetrations and openings in exit stair enclosure walls to maintain the fire separation.
5. Provide dedicated storage rooms separated by minimum 1-hr fire-rated construction.
6. Provide handrails on at least one side of exit stair.
7. Modify the egress door to swing in the direction of egress travel.
8. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
9. 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.
10. Inspect, test and maintain the emergency lighting system in accordance with The ACCORD standard. Keep written records on-site.

Mid Term (within 6 Months):

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1. Replace the single-station smoke alarms. Provide automatic smoke detection throughout the building in accordance with NFPA 72.

Long Term (More than 6 months): NA

The recommendations for Electrical Safety corrective actions are:

Immediate (Within 1 month):

1. Existing panel door bonding by PVC insulated wires may be replaced with bonding braid as most of them are loosen due to repeated opening and closing of door.
2. Cable ducts must be cleaned regularly and covered to prevent ingress of dust and lint.
3. Existing joints must be checked and rejoined with standard jointing kits. Joints must be supported and protected against physical stress and damages.
4. Breather oil cup must be filled with transformer oil to required level as instructed by the manufacturer.
5. Clean the cable trench and cover it to prevent from falling debris.
6. Heat resistant conduits may be used to protect wirings.
7. Electrical room must have signs to identify it as substation/electrical room with high voltage danger signs.

Short Term (Within 3 Months):

1. Panels located below stairs must be relocated to safe place.
2. Wiring in flexible PVC conduit must be supported near panel on tray/riser to prevent stress at the entry point (socket & check nuts).
3. HT cable dropping from 11kV pole must be protected in steel pipe of required size at least 2m from the ground level to protect from physical injury by moving objects.
4. Cables must be supported on cable trays and riser. Cables may be laid in cable trench with covers.
5. The exhaust fans may be controlled by Direct-On-Line (DOL) switch.
6. Reconnect generator earth loop to establish direct connection.
7. Arcing horns must be aligned and gap maintained as per the transformer manufacturer's instruction.
8. Service cables must be supported on trays or raisers in full length.
9. Cables supported on external walls must be laid horizontal/vertical to the wall, supported in cable trays/ladder.
10. Required length of cable may be used.
11. Transformer wheels must be removed or locked to prevent transformer from unintentional movement during operation.

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Mid Term (Within 6 months): NA

Long Term (More than 6 months): NA