

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: Cherry Pvt. Ltd.
Address of the Factory	: 284, Ibrahimpur, Dhaka Cantt, Dhaka
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Original report available at bangladeshaccord.org)
Date of Structural Inspection	: 21st June 2014
Fire & Electrical assessment conducted by:	Accord (Original report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: February 24, 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	: Garments Factory
ii.	Structural System	: RCC beam slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: Unavailable
v.	No. of Stories	: 10 Storey
vi.	Construction Year	: RAJUK (2000)
vii.	Foundation Type	: Not Applicable
viii.	Design Drawings	: Department of Customs and Commission on Rates (2001)
ix.	Soil investigation Report	: April, 2000
x.	Construction Materials	: Unavailable
xi.	Generator	: Basement crawlspace, accessed from west side of 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:

- Remove all live loading from all floors
- A Detail Engineering Assessment of Factory to be commenced, see attached scope
- Verify insitu concrete stresses either by cores or existing cylinder strength data for columns or cores from 4 non-critical columns.

Mid Term (Within 6 Weeks):

- Detail Engineering Assessment to be completed
 - Provide calculations showing the structural adequacy of all columns, taking into account the loading plans and all built structure including additions beyond the original design. Provide concrete strength tests.
 - Produce and actively manage a loading plan for all floor plates within the factory giving consideration to outcome of DEA.
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- Create controlled loading plans for all floors, designating where storage can be placed and can not be placed.
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- Sections of plaster finish to beams to be removed to investigate if cracks penetrate to the structural beams.
- Provide calculations showing the structural adequacy of typical beams supporting other beams, taking into account the loading plans and all built structure including additions beyond the original design. Provide concrete strength tests for beams.
- Building Engineer to confirm by calculations and records of site construction that foundation bearing is adequate.
- Building Engineer to verify integrity built structure under factory design loading.
- Create controlled loading plans for all floors designating where storage can be placed and can not be placed.

Long Term (Within 6 Months):

- Carry out strengthening as required.
- Continue to implement load plan
- Building engineer to check, collect information and produce accurate and complete as-built documentation soonest.
- Monitor the differential movements of the cracks in the joint between basement and ground, to insure structural integrity of the structure.

The recommendations for Fire Safety corrective actions are:

Immediate:

1. Remove locking features from all egress gates and doors. If locks are required for security reasons, utilize special door locking features complying with NFPA 101.
2. Remove all storage from exit stairs.
3. Replace all gates 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 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 generator room by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.
 3. Separate the transformer room by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.
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4. Seal all penetrations and openings in exit stair enclosure walls to maintain the fire separation.
5. Separate the boiler room by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.
6. Provide minimum 1-hr fire rated construction for warehouse. Enclose non egress stair in 1-hour fire-rated construction. Provide sprinkler protection for discharge floor in accordance with NFPA 13. Maintain clear and unobstructed discharge path to the outside.

Mid Term (within 6 Months):

1. Move generator to more accessible location and provide 2-hr fire-rated separation.

Long Term:

1. Provide automatic sprinkler protection throughout the building in accordance with NFPA 13.
2. Replace the fire alarm system with a new, listed addressable fire alarm system in accordance with NFPA 72.
3. Provide automatic sprinkler protection throughout the building in accordance with NFPA 13.

The recommendations for Electrical Safety corrective actions are:

Immediate:

1. Install separators between different phases of MCCB. Standard separators provided by the MCCB manufacturer must be used.
2. Panel door(s) must be connected with earth bond connecting frame and door.
3. Cables must be supported on cable trays and riser. Cables may be laid in cable trench with covers.
4. Remove combustible materials from generator room.
5. Provide additional lighting inside transformer room.
6. Clean the transformer(s) periodically as part of routine maintenance.

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 injury.
 2. Wire terminating to devices inside panel must be connected firmly and wires approaching devices must be securely fastened to avoid unintentional contact with live parts.
 3. Cable must be reconnected to the panel through designated entry plates (bottom or top) and securely fastened with cable glands.
 4. Cables terminating at Generator output terminal box may be supported on cable trays at safe height supported from ceiling. The rest laid through proper trench with cover.
 5. Uniform wiring system should be adopted throughout the specific areas.
 6. Cables terminating at distribution boards must be supported in risers and protected throughout its Length till the panel base or top plate.
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7. Standard Aluminium Channels/Industrial Heavy duty conduits must be used for wiring to protect possible physical damages.

8. Socket outlet must be firmly fix on standard enclosure and rightly place without obstructing the movement of the workers.

Mid Term (within 6 Months):

1. Generator room must have proper entry/exit door to avoid accident and easy operation and maintenance for the operator.

2. Cables must be laid in trenches and covered with trench cover.

3. Conduits not meant for electrical use must have properties equivalent to conduits with ample strength and rigidity to be able to protect and support cables drawn in it. Cables in conduits must be protected throughout its length.

4. Existing transformer(s) in basement must be raised above minimum flood level or consult with the Grid supply authority for their expert advices and act on it.

Long Term: No observation
