

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: AKH STITCH ART LTD.
Address of the Factory	: Chandanpur, Rajfulbariya, Hemayetpur, Savar, Dhaka, 1340
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 7 May, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 6 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 flat-slab system
iii. Floor System	: Beam slab
iv. Floor Area	: The factory building measures about 1,95,000 square feet
v. No. of Stories	: 5 storied
vi. Construction Year	: 2006
vii. Foundation Type	: Raft foundation
viii. Design Drawings	: Available (Permit drawing)
ix. Soil investigation Report	: Available (Dated July 2012)
x. Construction Materials	: Stone aggregated
xi. Generator	: Ground floor

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. Factory Engineer to review design, loads and punching shear stresses.
2. Verify insitu concrete strengths (using 100mm dia. cores from min 4 locations remote from columns) and existing reinforcement for all slabs for use in punching shear check.

Mid Term (Within 6 Weeks):

1. Produce and actively manage a loading plan for all floor plates within the factory, giving consideration to floor capacity. This should include a safe level to which any water tanks can be filled.

Long Term (Within 6 Months):

1. Continue to implement load management plan.
2. Building Engineer to survey as-constructed building and update drawings as required.
3. Building Engineer to verify capacity and connections of the roof structure to the dining area and the link-bridge
4. All required strengthening works to be completed.
5. Building Engineer to review column design and potential for vehicle impact to columns at front of building.

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6. If appropriate, impact protection to be provided.
7. Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity (see Item 1).
8. Area identified to be structurally repaired to ensure further corrosion of reinforcement does not occur.
9. Building engineer to record all cracking throughout building, make structural repairs as necessary and monitor on an on-going basis.
10. If further cracking occurs, Building Engineer to investigate and remediate as appropriate.

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. Reduce occupant load to not more than available exit capacity (500 occupants) and in the future provide an additional exit to increase capacity.
4. Replace all gates and roll-up 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 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 combustibile storage by a minimum clear distance of 3m.

3. Reconfigure the egress arrangement to reduce the maximum common path of travel to not more than 30 m.
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.

Mid Term (within 6 Months):

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

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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. Remove combustible materials from generator room.
2. Breather oil cup must be filled with transformer oil to required level as instructed by the manufacturer.
3. Panel base plates must be installed, at all time, and cable(s) entering panel must be firmly fixed with cable gland.
4. Check and tighten connections. Overloading may be one of the causes.
5. Install separators between different phases of MCCB. Standard separators provided by the MCCB manufacturer must be used.
6. Panel door(s) must be connected with earth bond connecting frame and door.
7. Cables connecting to equipment must be supported to avoid stress on electrical connections. Flexible chords must be laid through safe routes.
8. Heat resistant conduits may be used to protect wirings.
9. Cables terminating at generator output panel must be supported on riser and securely fixed with cable glands.
10. Cable ducts must be cleaned regularly and covered to prevent ingress of dust and lint.
11. Existing cables or wiring drawn in flexible PVC conduit and installed outdoor must be additionally protected against weather and supported in rigid conduit or cable supports.

Short Term (Within 3 Months):

1. HT cable dropping from HT pole must be firmly fixed to the pole with supports and clamps. The cable tied with wires must be replaced with clamps.

Mid Term (Within 6 months): NA

Long Term (More than 6 months): NA