

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: RIVER SIDE SWEATER LTD.
Address of the Factory	: Hasnabad, Super Market, Keranigonj, Dhaka, Bangladesh
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 31 May, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 22 June, 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	: Multi-purpose
ii.	Structural System	: RC beam and column frame with a 2-way cast in place slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: The total floor area of the factory is 57,000 sq.ft.
v.	No. of Stories	: 4 storied
vi.	Construction Year	: 2003
vii.	Foundation Type	: Unavailable
viii.	Design Drawings	: Available (Permitted by the local authority in 2003)
ix.	Soil investigation Report	: Unavailable
x.	Construction Materials	: Unavailable
xi.	Generator	: Separate 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):

1. Factory Engineer to review design, loads and columns stresses in area identified above.
2. Verify in-situ concrete stresses either by cores or existing cylinder strength data for 4 columns.
3. A Detail Engineering Assessment of Factory to be commenced immediately.
4. Request that the Detail Engineering Assessment of the structural elements supporting the advertising boards to be carried out and in particular, stability and connections aspects should be investigated in detail.

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 and column capacity.
2. Detail Engineering Assessment to be completed.
3. Factory Engineer to survey the actual conditions and revise the drawings.
4. Any results of the DEA which affect the structure should be taken on board.
5. Factory Engineer to review design, loads and related elements in area identified above to confirm capacity and stability for these items.

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

6. Fireproofing material for structural steel element is recommended as suggested in BNBC Codes.
7. Request that the Detail Engineering Assessment of the overall building to be carried out and in and foundation aspects should be investigated in detail.

Long Term (Within 6 Months):

1. Continue to implement and maintain the loading plans.
2. Use the results of the DEA to determine if the 9 storeys can be constructed or not.
3. Complete any actions or recommendations from the DEA.
4. Maintain standard of quality control and protection of the fire protection.
5. Factory Engineer to inspect water damaged structures and repair with a suitable methods.
6. Waterproofing on the roof slab is to be applied. Moreover the roof slab drainage system should be investigated and improved.
7. For both durability and serviceability, rust proof paint or any appropriate methods is recommended.

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 collapsible 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.
4. Regularly inspect all exit signage and replace/install lights as needed to illuminate signs.

Short Term (Within 3 Months):

1. 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.
2. Separate the boiler room by a minimum 1-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.
3. 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.

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

4. Reconfigure the egress arrangement to reduce the maximum common path of travel to not more than 200 feet.
5. Provide a minimum 2-hr fire-rated exit corridor between the day-care room and exit stair. Or relocate day-care room to location with direct access to an exit stairwell.
6. Provide additional means of egress.
7. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
8. 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. Remove single-station smoke alarms. Provide automatic smoke detection throughout the building, tied into the fire alarm system, 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. Panel door must be connected with earth bond connecting frame and door.
2. Panel base must be securely fixed to the foundation, with appropriate fastening devices. Panel base frame may be used on foundation to mount the panel.
3. Check and tighten connections. Overloading may be one of the causes.
4. Wall must be protected by sealing the entry of water inside the fixable conduct.

Short Term (Within 3 Months):

1. Expand the existing generator room to provide safe working space (1.07m).
2. Cables must be firmly supported using base plate and cable gland to minimize stress at terminals.
3. Arrange the wiring inside the panel or redesign the electrical distribution systems to avoid haphazard wiring inside panel.
4. Existing aluminum wiring ducts with ends open must be closed with end cover. Ends may be sealed to prevent ingress of lint and duct.
5. Ducts should be properly covered and cables arranged inside the ducts.
6. Electrical facilities in top floor may be installed at safe height and the panels may be IP rated to avoid damages due to moisture ingress.
7. Wiring ducts must be clean thoroughly and it must be covered to prevent ingress of lint and dust.
8. Cable trenches inside building may be covered with protective covers (concrete slabs or checkered plates).

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Mid Term (Within 6 months): NA

Long Term (More than 6 months): NA