

## Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

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Name of the Factory	: ROSE GARDEN APPARELS LTD.
Address of the Factory	: Nayamati Road, Kutubpur, Fatullah, Narayanganj
Dhaka Present Status of the Factory	: <b>Under Operation</b>
Structural assessment conducted by	: Accord (Full report available at <a href="http://bangladeshaccord.org">bangladeshaccord.org</a> )
Date of Structural Inspection	: 1 July, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at <a href="http://bangladeshaccord.org">bangladeshaccord.org</a> )
Date of Fire & Electrical Inspection	: 15 July, 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 beam and column frame with a 2-way solid slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: The area of each floor of the building is 5,100 sq.ft.
v.	No. of Stories	: 7 storied
vi.	Construction Year	: 2011
vii.	Foundation Type	: Unavailable
viii.	Design Drawings	: Available (By Local authority in 2011)
ix.	Soil investigation Report	: Unavailable
x.	Construction Materials	: Unavailable
xi.	Generator	: Ground floor of utility 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. Requires an Engineering Assessment.
2. Produce loading plans for each level.
3. The Factory Engineer should investigate cracks by appropriate methods.
4. The distress found is to be suitably rectified and then repaired.
5. Factory Engineer to review design loads and related elements in area identified above to confirm capacity for these items.
6. Carry out Detailed Engineering Assessment on the building to verify that it is stable under lateral loading.

Long Term (Within 6 Months):

1. Apply loading plan and ensure these are displayed and managed at each level.
2. Factory Engineer to inspect water damaged structures and repair with a suitable method.
3. Waterproofing on the roof slab is to be applied. Moreover the roof slab drainage system should be investigated and improved.

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4. For both durability and serviceability, rust proof paint or any appropriate methods is recommended.
5. Clean rebar before further construction.

### **The recommendations for Fire Safety corrective actions are:**

#### Immediate (Within 1 month):

1. Remove locking features from all egress 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 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 .75-hr fire rated doors and seal all unprotected openings to separate the storage room from work areas and other building spaces on 4th floor. Ensure that the fire doors are self-closing and positive latching. If fire doors are required to be held open for functional reasons, provide automatic closing devices tied to the fire alarm system.
2. 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.
3. 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 23m<sup>2</sup>

-If sprinkler protected: maximum height of 3.66m and maximum area of 93m<sup>2</sup>.

Separate areas of unenclosed combustible storage by a minimum clear distance of 3m.

4. Relocate day-care room to 1<sup>st</sup> floor (medical room) with maximum travel distance of 9m (30 ft).
5. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
6. 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. Modify exit arrangement or provide additional exit on the northwest side of the building.
2. Replace the single-station smoke alarms with automatic smoke detectors tied into the fire alarm system in accordance with NFPA 72.

#### Long Term (More than 6 months):

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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. Transformer breather must be installed to prevent moisture ingress.
2. Overhead service cable must be firmly fixed at both ends and supported on catenary wire.
3. Check for loose connections and rectify as required.
4. Heat resistant flexible pipes should not be used for carrying cables through its whole length except at the bending point. Use PVC or steel pipes (preferably on floor) or battens for carrying cables attached to wall or ceiling. Support the conduits by using saddle clamp.
5. Replace all the rewire able fuses with required rated MCCB for circuit protection.
6. Cables must be supported by cable tray or ladder.
7. Multiple cables connecting at a MCCB terminal must be disconnected. Existing multiple circuits may be distributed through bus bars.
8. Cable ducts must be cleaned regularly and covered to prevent ingress of dust and lint.
9. Heat resistant conduits may be used to protect wirings.
10. Lighting arrester down conductor must be supported firmly with wall.
11. Factory should have SLD incorporated the present installation.
12. Correct Circuit directory should be put/attach inside each panel with one line diagram.

#### Short Term (Within 3 Months):

1. Compressor machine mounted on wheel must be anchored or the wheels must be locked to prevent from trolling.
2. Generator room must be separated from the entrance with fire rated walls.
3. Existing panel installed near exit may be relocated to prevent obstruction to emergency exits, as required by fire safety regulations.

Mid Term (Within 6 months): NA

Long Term (More than 6 months): NA