Name of the Factory	:	**BELAMY TEXTILES LIMITED**
Address of the Factory	:	Khowaz Nagar, Azimpura, Karnafuli, Chittagong
Dhaka Present Status of the Factory	:	**Under Operation**
Structural assessment conducted by	:	Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	:	18 March, 2014
Fire & Electrical assessment conducted by	:	Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	:	5 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 beam slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: Unavailable
v.	No. of Stories	: 5 storied
vi.	Construction Year	: 2000
vii.	Foundation Type	: Isolated pad foundation
viii.	Design Drawings	: Available (Dated July, 2007)
ix.	Soil investigation Report	: Available (Dated May, 2007)
x.	Construction Materials	: Brick 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 columns stresses for all columns.
2. Verify insitu concrete stresses either by cores or existing cylinder strength data for all the columns or 100mm dia. cores from minimum 4 non-critical columns.
3. A Detail Engineering Assessment (DEA) of Factory to be commenced -see attached Scope.
4. Reduce loading as per item 1 requirements.
5. Reduce loading on areas highlighted for immediate action as per item 1.
6. Commence production of relevant documentation required for DEA (as per items 1 & 2).
7. All loads on the building structure arising from the gantry crane to be accounted for in the DEA required from Item 1.

Mid Term (Within 6 Weeks):

1. Detail Engineering Assessment to be completed.
2. Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity.
3. Detail Engineering Assessment to be completed as per item 1 to take account of additional areas.

4. Building engineer to verify structural design of additional structures.
5. The Building Engineer should check the load plans and confirm that the main building structure is capable of safely supporting the additional structures, to ensure no over-loading.
6. Create controlled loading plans for all floors, designating where storage can / cannot be placed, taking the findings of the DEA and of Item 1 into account.
7. Detail Engineering Assessment to be completed as per items 1 & 2.
8. Slabs, Beams and supporting Columns that differ in load condition and span from original design to be assessed by the building engineer.
9. Building engineer to check, collect information and produce accurate and complete as-built documentation.
10. Sections of plaster finish and screeds to to be removed to investigate if cracks penetrate into the building structure.
11. Verify that beam/slab has sufficient capacity to support applied load and structural arrangements.
12. Detail Engineering Assessment to be completed as per item 1 to take account of additional areas.
13. Building engineer to assess design of mezzanine areas, including construction sequence (and connection to building columns) and loading on affected columns.
14. Building Engineer to verify that structural elements used to support the gantry crane have adequate structural capacity and stiffness for the applied loading.

Long Term (Within 6 Months):

1. Carry out strengthening as required.
2. Continue to implement load plan.
3. Implement the actions arising from the Detail Engineering Assessment.
4. Carry out repair or strengthening as required.
5. Apply load limits as required.
6. Implement the actions arising from the Detail Engineering Assessment.
7. Limit gantry crane safe working load as required.

The recommendations for Fire Safety corrective actions are:

Immediate (Within 1 month):

1. Remove all storage from exit stairs and egress paths.
2. Keep egress paths and stairs clear of storage.
3. Reduce occupant load to not more than available exit capacity.
4. Remove locking features from all egress doors and gates. If locks are required for security reasons, utilize special door locking features complying with NFPA 101.

5. Replace all gates and 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.

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

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

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 a minimum 2-hr fire-rated shaft to separate the elevator shaft from each floor level.

4. Provide minimum aisle widths of 36-in.

5. Modify the egress door to swing in the direction of egress travel.

6. Inspection, testing, and maintenance for the fire alarm system it was not in accordance with NFPA 72.

7. 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, tied to the fire alarm system, throughout the building in accordance with NFPA 72.

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): NA

Short Term (Within 3 Months):

1. Cable terminating at the panel must be firmly fixed with cable glands and gland plates.

2. The MCCB installed must be rated, according to the load.

3. Check earth connection and improve earth systems necessary.

4. Panel base plates must be installed and all cables entering panel must be firmly fixed with cable glands.

5. Cables must be protected and supported throughout the length.
6. Secondary cables must be laid within the cable trench or cable tray.
7. Flexible PVC conduit wiring must be supported on cable tray and risers.
8. Wiring duct must be cleaned from combustible material inside and must be covered to prevent ingression of lint.
9. Wire and cable joints in wiring system must be avoided. Unavoidable joints must be tightly connected and protected. Heat shrink tubes may be used for cables.
10. Phase barriers between different phases must be installed to avoid arc flashing.
11. Service cables drawn in PVC flexible conduits along the window sill must be additionally protected and supported on cable trays.
12. HT cable on concrete floor must be supported in cable trays or laid in cable trenches. The cable must be protected against physical damage.
13. Transformer plinth must be raised above local flood level.
14. Cable must be supported at the panel base plate and terminated without stressing at the termination point. Depth and size of cable trench must be increased to allow proper entry of cable to the panel.
15. Transformer may be separated from panels by constructing barrier walls.
16. Cables connecting to compressor must be supported and protected to avoid stress on electrical connections.
17. All cables passing through permanent wall must be protected in steel pipes and remaining holes around the pipe must be sealed.
18. Cable terminating at the panel must be firmly fixed with cable glands and gland plates.
19. Clean excess grease from the contacts. Use of grease may be avoided as it collects (sticks) dusts on the contacts.

Mid Term (Within 6 months):

1. Clear electrical room(s) from any item not necessary for regular operation.

Long Term (More than 6 months): NA