Cortz Apparels Ltd. (Extension)

Baniarchala, Bagher Bazar, Sreepur, Gazipur.

(24.163966, 90.415432)

19 December 2023

Structural Inspection Report

RMG SUSTAINABILITY COUNCIL

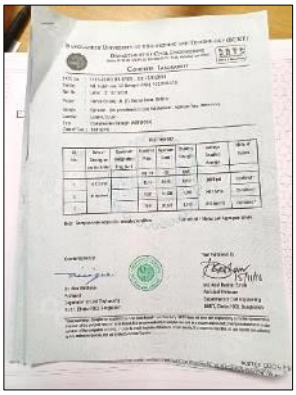
Level 5, Shanta Forum, 187, 188/B,
Bir Uttam Mir Shawkat Sarak, Tejgaon,
Dhaka- 1208, Bangladesh
PABX : +880 2 41081863-6
www.rsc-bd.org

1. Building Information:

Building-3 : Six (G+5) storied building with a partial basement.
Boiler Building : Single-storied building.
Fire Command Room : Single-storied building.
Guard Room : Single-storied building.
Steel Canopy : Single-storied shed.

2. Observations

Observation-1: Inadequate number of material test reports (Building-3)

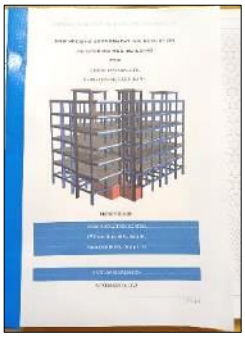


Cylinder test report

Design report

Description: 15 sets of cylinder test reports were available for Hamza Clothing Ltd, where only 3 sets were from columns. The number of test reports for the column doesn't meet the frequency of testing requirements of BNBC. Also, the steel rebar test report was not available. The building engineer is required to verify the in-situ material strength of the column by taking the concrete core from the lower tier of the building.

Observation-2: Inconsistencies in the design report (Building-3)



6.4 MATERIALS CONSIDERED IN DESIGN

1. Concrete:

Serial No.	Item Name	Design Strength (psi)
01	Column	fc' = 3500 psi
02	Beam	fc' = 3000 psi
03	Slab	fc' = 3000 psi

2. Reinforcement:

Deformed bar with minimum yield strength of 60,000 psi

Seismic Parameters
Method = A
Seismic Zone Coefficient, Z = 0.15 (ZONE 2)
Structure Importance Category = III
Importance Factor, I = 1.0
Response Reduction Factor, R = 9 (Concrete IMRF)
Site Coefficient, S = 1.5
$C_t = 0.049$
Height of the building above base to roof, h_n = 82' (25m)

Design report (material strength & seismic parameters)

Description: The value of response reduction factory R is considered 9 instead of 8. However, the building engineer is required to revise the design report based on in-situ material strength, BNBC-prescribed floor loading and actual framing system.

Observation-3: Mismatch between drawing and on-site condition. (Building-3)

Description: Mismatch rebar in rebar number in some columns (Specific Columns). Additional floor-built ups and false ceilings were found on toilet zones which were not shown in the drawings. The building engineer is required to scan the rebar of beams/columns, survey the structure and prepare accurate as-built drawings accordingly.

Observation-4: Hairline crack in floor beams at 3rd floor roof. (Building-3)

Description: Hairline cracks were found in the floor beam on the 3rd floor. The building engineer is required to check the extent and identify the reason for the crack in the beam and prepare a crack investigation report with proper remedial methodology.

Observation-5: Dampness on a brick wall (Building-3)


Description: Dampness was observed on the brick wall of toilet zones. The factory is required to seal the source of water and repair the damp area with suitable methods.

Observation-6: Damage on column & wall due to trolley impact (Building-3)


Description: Some damage was observed on the edge of the column & and wall due to trolley impact. The factory is required to repair the damage and provide edge protection to the susceptible columns & and walls.

Observation-7: Lack of design documents (Boiler Building).

Description: As per BNBC, every structure should have design documents in compliance with section 1.9.1. Design documents consist of design reports, drawings, and software-based analysis. During inspection, no design report and as-built drawings were found on-site. The building engineer is required to prepare design documents based on in-situ material strength.

Observation-8: Structural Connection between ATM booth and Boiler Building

Description: An ATM booth building is structurally connected to the Boiler Building. The engineer is required to separate the structural connection between two connected buildings otherwise considered in the structural analysis & and design.

Observation-9: Mismatch between drawing and onsite condition for Fire Command Room, Guard Room & Steel Canopy

Description: A mismatch was found between the available floor layout and as-built conditions. The building engineer is required to survey the structures and prepare accurate as-built drawings accordingly.

Observation-10: Damage due to vehicle impact on steel column (Steel Canopy)

Description: Distress in the steel column was found due to the impact of the vehicle. The building engineer is required to repair the distresses and provide barriers surrounding the susceptible columns.

3. Action Plan

Item No.	Observation	Action Plan	Timeline
1.	Inadequate number of material test reports (Building-3)	The building engineer is required to verify the in-situ material strength of the column by taking the concrete core from the lower tier of the building.	within 6 weeks
2.	Inconsistencies in the design report (Building-3)	The building engineer is required to revise the design report based on in-situ material strength, BNBC-prescribed floor loading and actual framing system. Submit documents to the RSC for review.	within 6 weeks
3.		Carry out suggested remedial works if required.	within 6 months
4.	Mismatch between the drawing & on-site condition. (Building-3)	The building engineer is required to check the extent & identify the reason for the crack in the beam and prepare a crack investigation report with proper remedial methodology.	within 6 weeks
5.	Hairline crack in floor beams at 3rd floor roof. (Building-3)	The building engineer is required to check the connections and suggest proper remedial action accordingly. Carry out suggested remedial works as per the outcome of the report.	within 6 weeks
6.	Dampness on a brick wall (Building-3)	The factory is required to seal the source of water and repair the damp area with suitable methods.	within 6 months
7.	Damage on column & wall due to trolley impact (Building-3)	The factory is required to repair the damage and provide edge protection to the susceptible columns & walls.	within 6 months
8.	Lack of design documents (Boiler Building).	The building engineer is required to prepare design documents based on in-situ material strength. Submit the document to the RSC for review.	within 6 weeks
9.		Carry out suggested remedial works if required.	within 6 months
10.	The structural connection between ATM booth and Boiler Building	The engineer is required to separate the structural connection between two connected buildings otherwise considered in the structural analysis & design.	within 6 months
11.	Mismatch between drawing and onsite condition for Fire Command Room, Guard Room & Steel Canopy	The building engineer is required to survey the structures and prepare accurate as-built drawings accordingly.	within 6 weeks
12.	Damage due to vehicle impact on steel column (Steel Canopy)	The building engineer is required to repair the distresses and provide barriers surrounding the susceptible columns.	within 6 weeks