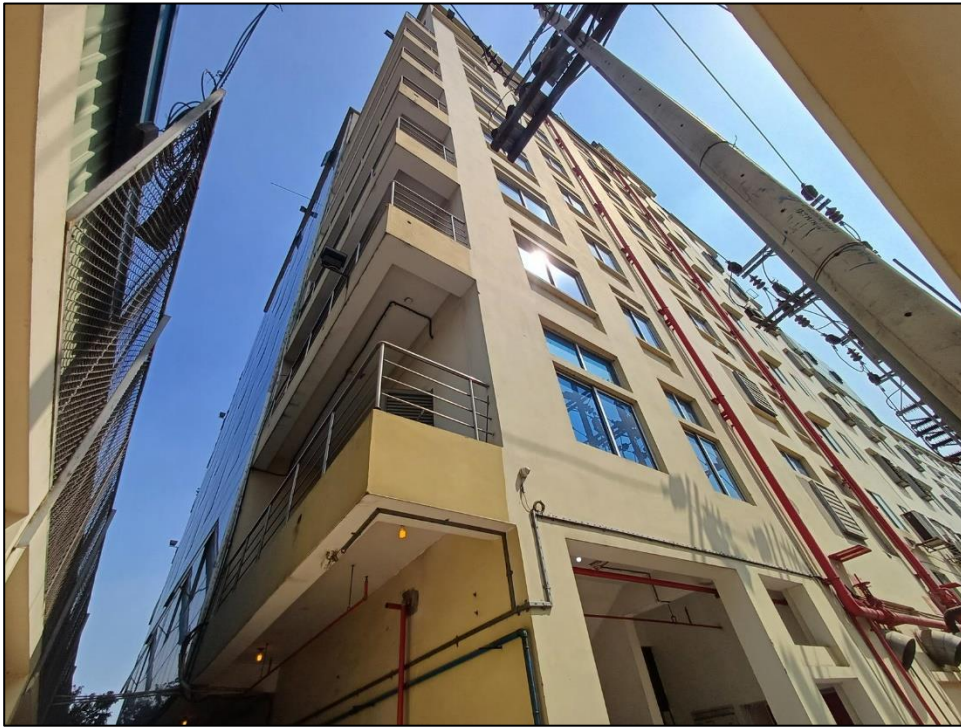


Metro Knitting & Dyeing Mills Ltd (Factory-02) (Extension 2)

Charabag, Ashulia, Savar
(23.885180N, 90.310123E)
29 February 2024



1. Building Information

Building 5 (Extension Building) is a nine-storied (B+G+8) reinforced concrete (RC) building with an underground fire pump and water reservoir.

Utility Building: is a three-storied (G+2) reinforced concrete (RC) building.

2. Observations

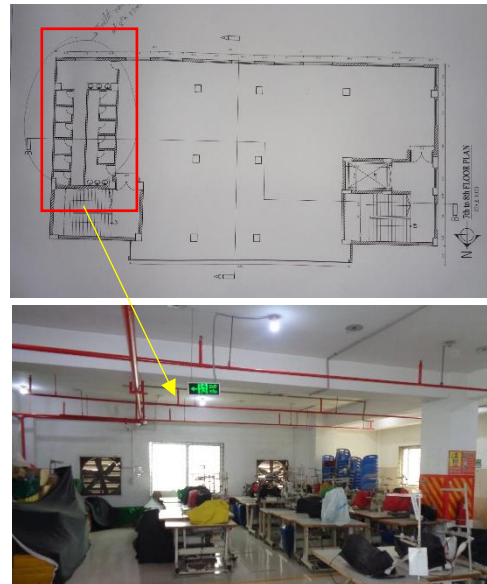
Observation-1: Lack of Design documents. Building-5 (Extension Building).



During the inspection, as-built architectural and structural drawings, load plans, geotechnical investigation report, and material test reports were available for the structure. However, a full set of design documents was unavailable per BNBC.



Staircase and OHWT



The toilet is not constructed as per the drawing.

The structural details of the Overhead Water Tank and stair top details are not provided in the structural drawing. Also, a mismatch was found in the as-built drawing. In the floor layout plan, the toilet has been shown but at site condition, the toilet has not been constructed.

Description: As per BNBC, every building or structure designed shall have its design documents prepared following the provision of Section 1.9.1. The design document shall include a design report, and a set of structural drawings, which shall be prepared in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC.

The factory engineer is required to prepare the full design documents based on in-situ material strength and load plan including a design report based on the FEA model in compliance with section 1.9.1 (part 6, BNBC).

Observation-2: Signage of water ponding on the roof. Building-5 (Extension Building)



Description: Signage of water ponding on roof slab due to poor drainage system. The factory is required to improve the drainage system with a proper slope to prevent the water ponding on the roof slab.

Observation-3: Non-structural elements not anchored or braced. Building-5 (Extension Building)



Description: Some racks on different floors are not adequately anchored or braced to resist lateral (earthquake) forces. Adequately anchor and brace all non-structural elements (all buildings) to resist earthquake forces to comply with the BNBC.

Observation-4: Lack of Design documents. (Utility Building)



Description: During inspection, as-built architectural and structural drawings, and load plan were available for the structure. In the load plan, the weight of the machines is not mentioned. Also, inadequate cylinder test report for the structure. The building engineer is required to update the load plan and verify the in-situ material strength.

The column having size 300X500 mm on the ground floor seems to be slender as the ratio the of least dimension of the column to the clear height of the column is 18. Slenderness is to be checked for the column.

As per BNBC, every building or structure designed shall have its design documents prepared following the provision of Section 1.9.1. The design document shall include a design report, and a set of structural drawings, which shall be prepared in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC.

The factory engineer is required to prepare the full design documents based on in-situ material strength and load plan including a design report based on the FEA model in compliance with section 1.9.1 (part 6, BNBC).

Observation-5: Signage of moisture on the roof. (Utility Building)



Description: Signage of moisture on the roof slab due to pipe leakage and poor drainage system. The factory is required to improve the drainage system with a proper slope to prevent the water ponding on the roof slab.

3. Action Plan

Serial No	Observation	Action Plan	Timeline
1	Lack of as Design documents. Building-5 (Extension Building)	Building engineer to Survey the whole structure and prepare accurate as-built drawings including the detailed foundation information.	within 6 weeks
2	Lack of as Design documents. Building-5 (Extension Building)	Building engineer to prepare the design document including a design report, and a set of structural drawings in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC.	within 6 weeks
3	Lack of as Design documents. Building-5 (Extension Building)	Produce and actively manage a loading plan for all floor plates considering floor and column capacity.	within 6 weeks
4	Lack of as Design documents. Building-5 (Extension Building)	Carry out remedial work if required.	within 6 months
5	Lack of as Design documents. Building-5 (Extension Building)	Continue to implement the floor loading plan.	within 6 months
6	Signage of water ponding on the roof. Building-5 (Extension Building)	The factory engineer to develop a proper drainage system with an adequate slope to resist water ponding on the roof.	within 6 weeks
7	Non-structural elements are not anchored or braced. Building-5 (Extension Building)	Adequately anchor and brace all non-structural elements to resist earthquake forces to comply with the BNBC.	within 6 weeks
8	Lack of Design documents. (Utility Building)	Building engineer to prepare the design document including a design report, and a set of structural drawings in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC.	within 6 weeks
9	Lack of Design documents. (Utility Building)	Verify in-situ concrete stresses by 100mm dia. cores from a minimum of 4 columns and beam & slab.	within 6 weeks
10	Lack of Design documents. (Utility Building)	Produce and actively manage a loading plan for all floor plates considering floor and column capacity.	within 6 weeks
11	Lack of Design documents. (Utility Building)	Carry out remedial work if required.	within 6 months
12	Lack of Design documents. (Utility Building)	Continue to implement the floor loading plan.	within 6 months
13	Signage of moisture on the roof. (Utility Building)	The factory engineer to repair the leakage of the pipe and develop a proper drainage system with adequate slope to resist water ponding on the roof.	within 6 weeks