

Habitus Fashion Limited- Extension Building

Gazariapara, Bhawal, Mirzapur, Gazipur

(24.087927, 90.383011)

3 September 2024



1. Building Information

- I. **Finishing Building:** Four-storied (B+G+3) reinforced concrete structure with a small basement for fire pump room and underground water reservoir.
- II. **Boiler Building:** Single-storied reinforced concrete structure.
- III. **Outdoor Substation Room:** Single-storied reinforced concrete structure.
- IV. **Fire Pump Room:** Single-storied RC basement structure with a roof shed (truss).

2. Observations

Observation 1: Lack of information in the design report (Finishing Building).

Table for report on Footing:

Table for report on Foundation:

SL No	Item	Existing	Required	Remark
1	Size and thickness of footing, F1	Size of Footing, F1= (14'-0" x 10'-9") and thickness 25" and 20mm@6" c/c in both direction. Depth of foundation level is 8.0ft from existing ground level. Allowable bearing capacity of soil is 2.50ksf (F.S. = 2.50).	Size of Footing, F1= (14'-0" x 10'-9") and thickness 25" and 20mm@6" c/c in both direction. Depth of foundation level is 8.0ft from existing ground level. Allowable bearing capacity of soil is 2.50ksf (F.S. = 2.50).	Adequate.
2	Size and thickness of footing, F1A	Size of Footing, F1A= (13'-0" x 10'-0") and thickness 25" and 20mm@6.5" c/c in both direction. Depth of foundation level is 8.0ft from existing ground level. Allowable bearing capacity of soil is 2.50ksf (F.S. = 2.50).	Size of Footing, F1= (13'-0" x 10'-0") and thickness 25" and 20mm@6.5" c/c in both direction. Depth of foundation level is 8.0ft from existing ground level. Allowable bearing capacity of soil is 2.50ksf (F.S. = 2.50).	Adequate.
3	Size and thickness of footing, F2	Size of Footing, F2= (14'-6" x 14'-6") and thickness 32" and 20mm@5" c/c in both direction. Depth of foundation level is 8.0ft from existing ground level. Allowable bearing capacity of soil is 2.50ksf (F.S. = 2.50).	Size of Footing, F2= (14'-6" x 14'-6") and thickness 32" and 20mm@5" c/c in both direction. Depth of foundation level is 8.0ft from existing ground level. Allowable bearing capacity of soil is 2.50ksf (F.S. = 2.50).	Adequate.

SWAY Limit: H/500 in both directions.

Table for report on Displacement:

SL No.	Height	Allowable Limit	Developed	Remark
1	Framing category (non-braced), Building height 53.50 ft. up to roof slab from existing ground level.	Braced frame lateral allowable top deflection of the building, $\Delta_n = 12 \times 53.50 / 500 = 1.28$ inches.	Max $\Delta_n = 1.12$ inches at top (from analysis) for factored EQ and regular load along Y-direction.	Adequate for Wind load.

5.2.8 Soft Story Checked:

There is some opening in ground floor, because mostly occupied by partition wall. So there is no soft story. So, the lateral stiffness of all floors is greater than 70 per cent of the stiffness of the story above.

5.2.9 Weak Story Checked:

The lateral strength of all floors is greater than 80 per cent of that story above. So, there is no weak story.

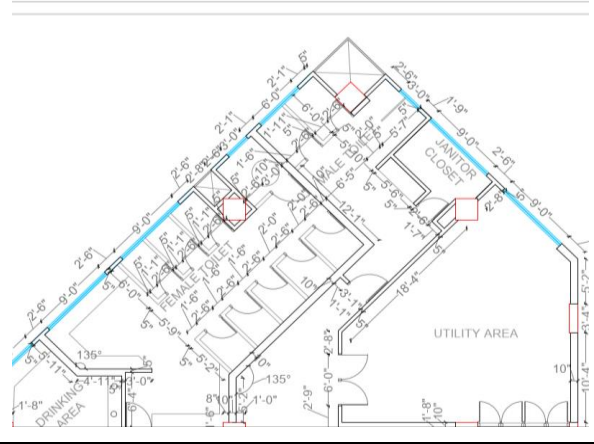
Description: Foundation adequacy check is not provided for lateral loading. Also, all serviceability/irregularity checks are not provided in the design report as per BNBC. The building engineer is required to update the design report in compliance with 1.9.1 BNBC.

Observation 2: Missing information in the provided soil test report (Finishing Building).

--	--

Description: The borehole layout and bore log are not shown in the provided soil test report. The building engineer is required to submit a complete soil test report.

Observation 3: Missing information in as-built drawing (Finishing Building).



Description: Built-up (175 mm) was found in the toilet area but not shown in the as-built drawing. Also, an undocumented solar panel was observed on the roof slab. The building engineer is required to update the as-built drawing.

Observation 4: Water ponding on the roof slab (Finishing Building).



Description: Water ponding was found on the roof slab. The building engineer is required to improve the drainage system on the roof slab with proper slope & adequate water outlets.

Observation 5: Exposed reinforcement and water ponding on the roof slab (Outdoor Substation Room).



Description: Exposed reinforcement and water ponding were found on the roof slab. The building engineer is required to provide rust-proof coating on the exposed rebar to protect it from corrosion. Also, improve the drainage system on the roof slab with proper slope & adequate water outlets.

3. Action Plan:

Item No.	Observation	Action Plan	Timeline
1.	Lack of information in the design report (Finishing Building).	The building engineer is required to update the design report in compliance with 1.9.1 BNBC.	within 6 weeks
		Implement remediation work if required.	within 6 months
2.	Missing information in the provided soil test report (Finishing Building).	The building engineer is required to submit a complete soil test report. If necessary, update the foundation adequacy in the design report based on the complete soil test report.	within 6 weeks
3.	Missing information in as-built drawing (Finishing Building).	The building engineer is required to survey the structure and update the as-built drawing.	within 6 weeks
4.	Water ponding on the roof slab (Finishing Building).	The building engineer is required to improve the drainage system on the roof slab with proper slope & adequate water outlets.	within 6 weeks
5.	Exposed reinforcement and water ponding on the roof slab (Outdoor Substation Room).	The building engineer is required to provide rust-proof paint on the exposed rebar to protect it from corrosion.	within 6 weeks
		Also, improve the drainage system on the roof slab with proper slope & adequate water outlets.	within 6 weeks