

MNR Sweaters Ltd Extension Building

Holdings No-467, Block-G, Ward-7, Sreepur, Baraiderchala, Gazipur

(24.195177, 90.419352)

12 February 2024



1. Building Information

Factory Building: It is a six-storied (G+5) reinforced concrete building.

Facility Building: It is a four-storied (G+3) reinforced concrete building.

Utility Building: This is a two-storied (G+1) reinforced concrete building.

Administrative Building: It is a single-storied reinforced concrete building.

Guard House-1: This is a single-storied reinforced concrete building.

Guard House-2: This is a single-storied reinforced concrete building.

Wastage Building: It is a single-storied reinforced concrete building.

Gazebo Building: This is a single-storied reinforced concrete building.

ETP: This is a single-storied reinforced concrete building.

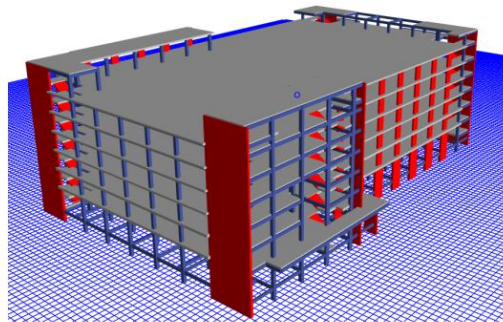
2. Observations:

Observation 1: Inconsistencies in the design report. (Factory Building)

MNR SWEATERS LIMITED
MNR GROUP

BARAIDERCHALA, PLOT - R.S. - 10411.
MOUZA - KEWA, SREEPUR, GAZIPUR.

DETAIL STRUCTURAL DESIGN REPORT SIX STORIED EXTENSION PRODUCTION BUILDING



3.1. Lateral Force Resisting System Check

Structural System:

Building Frame System: A structural system with an essentially complete space frame providing support for vertical loads. Seismic force resistance is provided by shear walls or braced frames.

BUILDING FRAME SYSTEM:

Story	Location	EQX	EQY
Bottom	XX	YY	YY
1	Bottom	-1395.00	-1375.32
2	Bottom	-2609.72	-2583.32
3	Bottom	-3609.21	-3583.32
4	Bottom	-4433.13	-4487.42
5	Bottom	-5007.26	-4988.02
6	Bottom	-5772.06	-5583.32
7	Bottom	-5408.14	-5349.32

ALONG "X" AXIS:

Story	Load Case	Plan ID	Location	P	V2	V3	V2+V3	Total Floor Forces	Percentage (%)
7	EQ X.1	P1	NOTTOMA	888.346	-33.976	0.972	887.374		
7	EQ X.1	P2	NOTTOMA	53.754	368.244	0.322	367.872		
7	EQ X.1	P3	NOTTOMA	-7.813	299.896	0.075	299.879		
7	EQ X.1	P4	NOTTOMA	-0.110	279.763	0.018	279.781		
7	EQ X.1	P5	NOTTOMA	-0.187	277.034	0.003	277.033		
7	EQ X.1	P6	NOTTOMA	881.816	-54.222	0.271	881.871		
7	EQ X.1	P7	NOTTOMA	886.446	-448.043	0.044	448.446		
7	EQ X.1	P8	NOTTOMA	-33.842	361.222	0.113	361.071		
7	EQ X.1	P9	NOTTOMA	53.058	361.642	0.043	361.743		
7	EQ X.1	P10	NOTTOMA	0.186	361.763	0.003	361.952		
7	EQ X.1	P11	NOTTOMA	-5.186	259.326	0.048	259.872		
7	EQ X.1	P12	NOTTOMA	6.620	257.840	0.063	257.923		
7	EQ X.1	P13	NOTTOMA	-13.515	257.19	0.017	257.817		
7	EQ X.1	P14	NOTTOMA	-0.407	254.434	0.014	254.834		
7	EQ X.1	P15	NOTTOMA	0.387	254.761	0.033	255.180		
7	EQ X.1	P16	NOTTOMA	-4.361	244.244	0.075	244.977		
7	EQ X.1	P17	NOTTOMA	-0.734	249.038	0.074	249.369		
7	EQ X.1	P18	NOTTOMA	-4.086	244.224	0.023	244.171		
7	EQ X.1	P19	NOTTOMA	-297.226	1.126	11.883	30.754		
7	EQ X.1	P20	NOTTOMA	-13.822	261.766	-0.033	261.709		
7	EQ X.1	P21	NOTTOMA	13.116	261.766	-0.008	261.874		
7	EQ X.1	P22	NOTTOMA	1809.222	224.875	-11.871	214.180		
7	EQ X.1	P23	NOTTOMA	-64026	276.120	0.003	276.120		

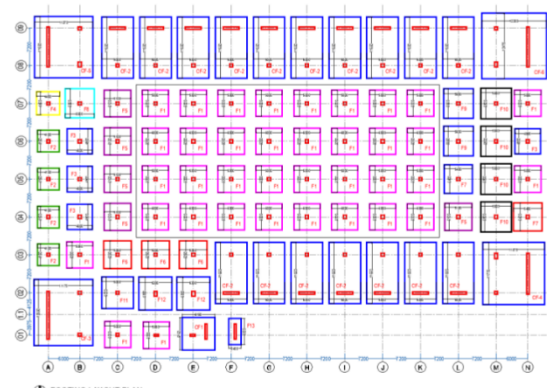


Figure 3.1.1: Foundation Layout Plan

Description:

- The lateral load-resisting system is considered a Building Frame System, where 93% of the seismic force is resisted by shear walls in the X direction and 94% of the seismic force is resisted by shear walls in the Y direction. Building engineer is required to check and confirm whether the remaining lateral forces taken by the shear walls or other framing systems can be considered in the design or not.
- Combined footing adequacy check not provided in the design report, also the foundation is not checked against lateral loading.
- Shear Wall adequacy check and seismic detailing confirmation of SW not included in the design report.

Observation 2: Possible vehicle impact on the column. (Factory Building)



Description: Possible vehicle impact on the column was observed on the ground floor. The building engineer is required to provide vehicle impact protection on the ground floor column.

Observation-3: Anchorage of nonstructural elements (Factory Building)



Description: PVC water tanks at roof and Racks on different floors are not adequately anchored or braced to resist lateral (earthquake) forces. Building is required to adequately anchor and brace all non-structural elements to resist earthquake forces to comply with the BNBC.

Facility Building

Observation-4: . Inconsistencies in the design report (Facility Building)

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DETAIL STRUCTURAL DESIGN REPORT FOUR STORIED FACILITY BUILDING



Description: Combined footing adequacy check not provided in the design report, also the foundation is not checked against lateral loading. Shear Wall adequacy check and seismic detailing confirmation of SW are not included in the design report.

Utility Building

Observation-5: Inconsistencies in the design report (Utility Building)

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DETAIL STRUCTURAL DESIGN REPORT TWO STORIED UTILITY BUILDING



Description: Shear Wall adequacy check and seismic detailing confirmation of SW are not included in the design report.

Observation-6: Unrestraint brick wall (Utility Building)



Description: Brick wall observed without head restraint. Building engineer is required to stabilize the unrestraint brick wall.

Observation-7: Water seepage through the basement wall (Utility Building)



Description: Seepage of water through the basement wall was observed. Building engineer is required to investigate the reason for the water seepage through the wall and repair it with a suitable method.

Observation-8: Mismatch in as-built drawing (Utility Building)



Description: During inspection, an RC beam-column frame mezzanine was found on the found floor of the utility building. In the as-built drawing, the mezzanine has not shown. The building engineer is required to survey the whole structure and prepare accurate as-built drawing.

3. Action Plan:

Observation	Action Plan	Timeline
Factory Building		
Inconsistency in design report. (Factory Building)	Building engineer is required to check and confirm whether the remaining lateral forces taken by the shear walls or other framing systems can be considered in the design or not.	within 6 weeks
	Building engineer is required to prepare the design report according to the BNBC 1.9	within 6 weeks
	Carry out remedial work if required.	within 6 months
Possible vehicle impact on the column. (Factory Building)	The building engineer is required to provide vehicle impact protection on the ground floor column.	within 6 weeks
Anchorage of nonstructural elements (Factory Building)	Building engineer is required to adequately anchor and brace all non-structural elements to resist earthquake forces.	within 6 months
Facility Building		
Inconsistency in design report. (Facility Building)	Building engineer is required to prepare the design report according to the BNBC 1.9	within 6 weeks
	Carry out remedial work if required.	within 6 months
Utility Building		
Inconsistency in design report. (Utility Building)	Building engineer is required to prepare the design report according to the BNBC 1.9	within 6 weeks
	Carry out remedial work if required.	within 6 months
Unrestraint brick wall (Utility Building)	Building engineer is required to stabilise the unrestrained brick wall.	within 6 weeks
Water seepage through the basement wall (Utility Building)	Building engineer is required to investigate the reason for the water seepage through the wall and repair it with a suitable method.	within 6 weeks
Mismatch in as-built drawing (Utility Building)	The building engineer is required to survey the whole structure and prepare accurate as-built drawing.	within 6 weeks