Evitex Apparels limited Extension

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RSC RMG SUSTAINABILITY COUNCIL

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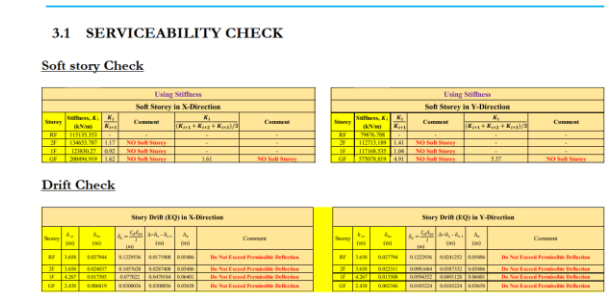
1. Executive Summary

1. **Warehouse Extension Building:** Three-storied (G+2) reinforced concrete (RC) building separated into two parts.

2. Observation

Observation 1: Missing information in the design report (Warehouse Extension Building).



3.1 SERVICEABILITY CHECK

Soft story Check

Using Stiffness — Soft Storey in X-Direction

Storey	Stiffness, K_i (kN/m)	$\frac{K_i}{K_{i+1}}$	Comment	$\frac{K_i}{(K_{i+1}+K_{i+2}+K_{i+3})/3}$	Comment
RF	115135.359	-	-	-	-
2F	136653.789	1.17	NO Soft Storey	-	-
1F	123830.27	0.92	NO Soft Storey	-	-
GF	200494.919	1.62	NO Soft Storey	1.61	NO Soft Storey

Using Stiffness — Soft Storey in Y-Direction

Storey	Stiffness, K_i (kN/m)	$\frac{K_i}{K_{i+1}}$	Comment	$\frac{K_i}{(K_{i+1}+K_{i+2}+K_{i+3})/3}$	Comment
RF	79870.708	-	-	-	-
2F	112715.189	1.41	NO Soft Storey	-	-
1F	117108.535	1.04	NO Soft Storey	-	-
GF	172670.819	4.91	NO Soft Storey	5.57	NO Soft Storey

Drift Check

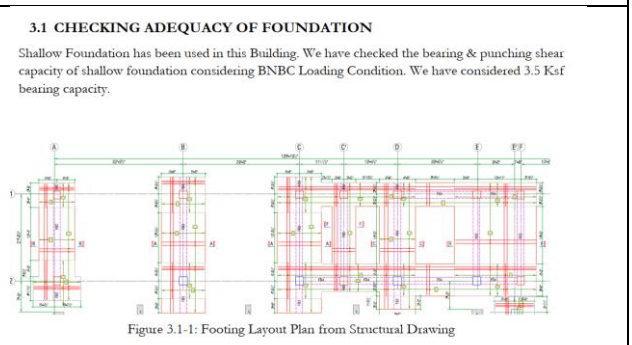
Story Drift (EQ) in X-Direction

Storey	δ_{xe} (m)	δ_{ye} (m)	$\delta_x = \frac{C_d \delta_{xe}}{I_e}$ (m)	$\Delta = \delta_x - \delta_{x-1}$ (m)	Δ_x (m)	Comment
RF	1.656	0.027944	0.1229936	0.0179908	0.05046	Do Not Exceed Permissible Deflection
2F	1.428	0.024017	0.1057628	0.0201908	0.05046	Do Not Exceed Permissible Deflection
1F	4.267	0.017765	0.077822	0.0470186	0.06481	Do Not Exceed Permissible Deflection
GF	3.438	0.006819	0.0300036	0.0300036	0.03658	Do Not Exceed Permissible Deflection

Story Drift (EQ) in Y-Direction

Storey	δ_{xe} (m)	δ_{ye} (m)	$\delta_x = \frac{C_d \delta_{xe}}{I_e}$ (m)	$\Delta = \delta_x - \delta_{x-1}$ (m)	Δ_x (m)	Comment
RF	1.656	0.027794	0.1222936	0.0181252	0.05046	Do Not Exceed Permissible Deflection
2F	1.428	0.023721	0.1041684	0.0183732	0.05046	Do Not Exceed Permissible Deflection
1F	4.267	0.013769	0.0594252	0.0491128	0.06481	Do Not Exceed Permissible Deflection
GF	3.438	0.002266	0.0103224	0.0103224	0.03658	Do Not Exceed Permissible Deflection

4 CONCLUSION



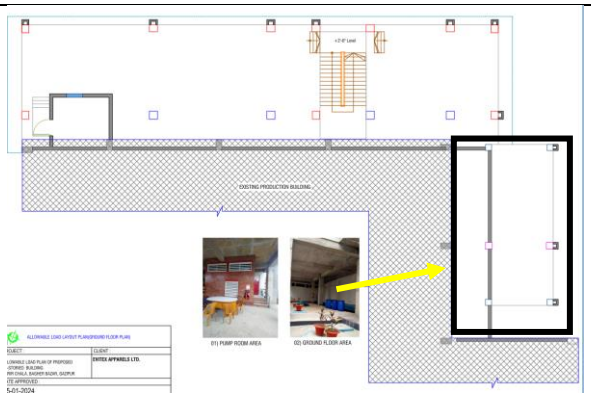
3.1 CHECKING ADEQUACY OF FOUNDATION

Shallow Foundation has been used in this Building. We have checked the bearing & punching shear capacity of shallow foundation considering BNBC Loading Condition. We have considered 3.5 Ksf bearing capacity.

Figure 3.1-1: Footing Layout Plan from Structural Drawing

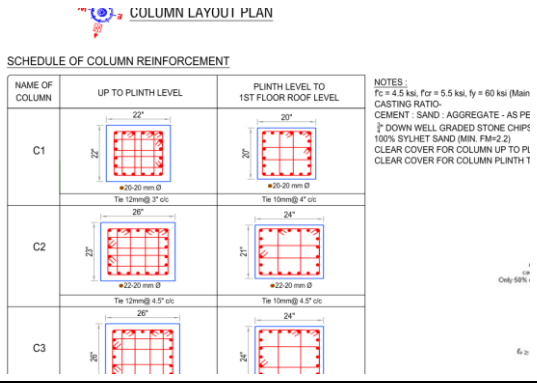
Description: For SMRF requirements, the calculation is provided only for column (S_o, L_o), not for the beam. Supporting construction pictures or rebar scan images are not provided to justify the framing system. Soil bearing capacity is considered as 3.5 Ksf without any reference. The foundation adequacy check is not provided for lateral loading. Also, irregularity checks are not provided. The building engineer is required to update the design report as per BNBC and submit to RSC for review.

Observation 2: Live load not mentioned for suspended slab of ground floor (Warehouse Extension Building).



Description: A septic tank is made below the ground floor of Part-2, but the live load is not shown in the load plan for that suspended ground floor slab. The building engineer is required to update the live load plan for all suspended slabs.

Observation 3: Missing information in a built drawing (Warehouse Extension Building).



COLUMN LAYOUT PLAN

SCHEDULE OF COLUMN REINFORCEMENT

NAME OF COLUMN	UP TO PLINTH LEVEL	PLINTH LEVEL TO 1ST FLOOR ROOF LEVEL
C1	22" × 22", 20-20 mm Ø, Tie 12mm@ 3" c/c	20" × 20", 20-20 mm Ø, Tie 10mm@ 4" c/c
C2	26" × 23", 22-20 mm Ø, Tie 12mm@ 4.5" c/c	24" × 21", 22-20 mm Ø, Tie 10mm@ 4.5" c/c
C3	26" × 26"	24" × 24"

NOTES :
f'c = 4.5 ksi, f'cr = 5.5 ksi, fy = 60 ksi (Main
CASTING RATIO-
CEMENT : SAND : AGGREGATE - AS PE
¾" DOWN WELL GRADED STONE CHIPS
100% SYLHET SAND (MIN. FM=2.2)
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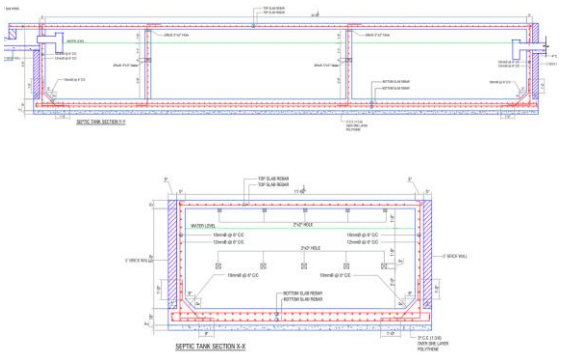

Description: Column details of the 2nd floor level are not provided in the column schedule. Also, the position of the septic tank to the existing footing is not clearly shown in the drawing. The building engineer is required to update the as-built drawing showing all missing information.

3. Action Plan

Item No.	Observation	Action Plan	Timeline
1.	Missing information in the design report (Warehouse Extension Building).	The building engineer is required to update the design report as per BNBC (Part-6, Section-1.9.1) and submit to the RSC for review.	within 6 weeks
2.	Missing information in the design report (Warehouse Extension Building).	Implement remediation work if required.	within 6 months
3.	Live load not mentioned for suspended ground floor slab (Warehouse Extension Building).	The building engineer is required to update the live load plan for all suspended slabs.	within 6 weeks
4.	Missing information in a built drawing (Warehouse Extension Building).	The building engineer is required to update the as-built drawing.	within 6 weeks