

Tosrifa Industries Ltd (Extension)

4/2 A, 135 Gopalpur, Post Office - Munnunagar, Tongi, Gazipur-1710

(23.898720, 90.411187)

20 October 2024

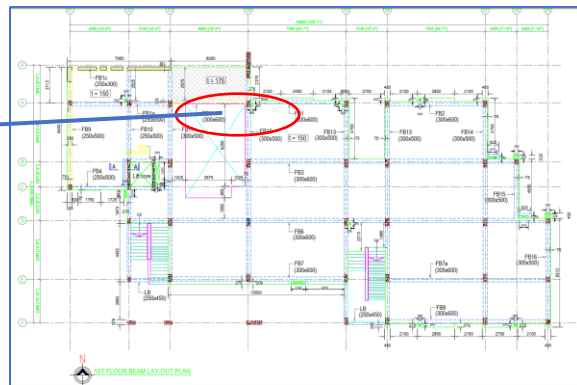
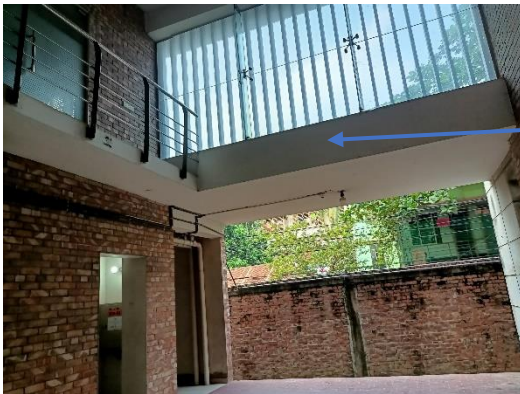


1. Building Information

1. Admin Building
2. Kitchen Shed
3. Boiler Shed
4. Parking Shed-1
5. Parking Shed-2
6. ETP

2. Observation

Observation-1: Mismatches in as-built drawings (Admin Building).



Description: Marked beam was found missing in as-built conditions. Also, architectural drawings were found incomplete. Building engineer is required to survey the whole structure and prepare accurate as-built drawings for the structure.

Observation 2: Inconsistencies in the design report (Admin Building).

Fundamental Period (T) and Design Base Shear (V) Calculation (According to BNBC 2006 Sec. 2.5.6)		
Input (Only in yellow squares)		
Location	Gazipur	[Fig. 6.2.10]
Seismic Zone	Location Selected Above	[Table 6.2.22]
Importance Category	Special Occupancy Structures	[Table 6.2.23]
Soil Type	S3	[Table 6.2.25]
Response Mod. Factor, R	8	[Table 6.2.24]
Unit of height of Structure	ft	
Structure height (from base), hn	83.13	
Frame Type (for Ct)	RCMRF and Eccentric Braced Steel Frames	[Sec. 2.5.6.2]
Seismic weight unit	kip	
Seismic weight, W	7069	[Sec. 2.5.5.2]
Zone Coefficient, Z	0.15	[Table 6.2.22]
Importance Coefficient, I	1	[Table 6.2.23]
Site Coefficient, S	1.5	[Table 6.2.25]
$C = 1.25 S / T^{2/3}$	2.13	[Eq. 2.5.2]
Ct	0.03	[Sec. 2.5.6.2]

Allowable Drift Check
(According to BNBC 2006 1.5.6.1)

Structure Data (Input only in yellow squares):

Ct	0.03
Structure Height, hn	59.05 ft
Response Modification Factor, R	8
Fundamental Time Period, T	0.891 sec

As $T < 0.7$ second, storey drift, $\delta \leq 0.004h / R \leq 0.005h$ [Sec. 1.5.6.1 (a)]

Storey Drift Limitation Check for Earthquake Load in X-direction

Storey	Floor Height (in)	Maximum Displacement (in)	maximum Drift (in)	Allowable Drift Limit (in)	Compliance
ROOF	141.732	1.138	0.109	0.709	ADEQUATE
4F	141.732	1.028	0.179	0.709	ADEQUATE
3F	141.732	0.850	0.226	0.709	ADEQUATE
2F	141.7418	0.634	0.270	0.709	ADEQUATE
1F	141.7224	0.364	0.364	0.709	ADEQUATE

Storey Drift Limitation Check for Earthquake Load in Y-direction

Storey	Floor Height (in)	Maximum Displacement (in)	maximum Drift (in)	Allowable Drift Limit (in)	Compliance
ROOF	141.732	0.964	0.053	0.709	ADEQUATE
4F	141.732	0.913	0.113	0.709	ADEQUATE
3F	141.732	0.800	0.166	0.709	ADEQUATE
2F	141.7418	0.634	0.207	0.709	ADEQUATE
1F	141.7224	0.427	0.427	0.709	ADEQUATE

Description: All serviceability checks (torsional irregularity, sway etc.) were provided in the design report. Also, $R=8$ has been considered but required calculation has not been provided in the design report.

Building engineer is required to revise the design report as per existing condition of the building and incorporate all kinds of serviceability check.

Observation-3: Unbraced PVC water tank on the stair roof (Admin Building).



Description: Unbraced plastic water tanks were found on the staircase roof. The factory is required to anchor and brace all types of non-structural elements to avoid falling hazards during EQ.

Observation-4: Lack of Structural drawings (Kitchen Shed, Boiler Shed, Parking Shed-1&2, ETP).



Description: As-built structural drawings were not available for these sheds. Building engineer is required to survey the whole structure and prepares full set of as-built structural drawings.

Observation-5: Improper connection and missing lateral load transfer media. (Boiler Shed)



Truss conection

Inaccessible area

Description: Truss frames are connected with brick walls. Also, lateral load transfer media (bracing & strut) were found missing. On the other hand, South part of the shed is being occupied by another factory which is separated by boundary walls.

There is no access from this factory premises. The building engineer is required to check the connection & stability system (safety check) for the whole structure and suggest proper alternatives accordingly following Accord Building Standard.

Observation 6: Improper connection and inadequate vertical member. Also, lateral load transfer media missing. (Parking Shed-1&2, ETP).



Description: Lack of lateral & vertical stability system (strut and bracing), and inadequate connection, member size was observed.

The building engineer is required to check the connection & stability system (safety check) of the structure and suggest proper alternatives accordingly following Accord Building Standard.

3. Action Plan:

Item No	Observation	Action Plan	Timeline
01	Mismatches in as-built drawings (Admin Building).	Building engineer is required to survey the whole structure and prepare accurate as-built drawings for the structure.	within 6 weeks
02	Inconsistencies in the design report (Admin Building).	Building engineer is required to revise the design report as per the existing condition of the building and submit to RSC	within 6 weeks
03	Inconsistencies in the design report (Admin Building).	Implement remediation work if required.	within 6 months
04	Inconsistencies in the design report (Admin Building).	Implement floor loading plan.	within 6 months
05	Unbraced PVC water tank on the stair roof (Admin Building).	The factory is required to anchor and brace all types of non-structural elements to avoid falling hazards during EQ.	within 6 months
06	Lack of Structural drawings (Kitchen Shed, Boiler Shed, Parking Shed-1&2, ETP).	Building engineer is required to survey the whole structure and prepare complete structural and architectural drawings for the building.	within 6 weeks
07	Improper connection and missing lateral load transfer media. (Boiler Shed)	The building engineer is required to check the connection & stability system (safety check) for the whole structure and suggest proper alternatives accordingly following Accord Building Standard.	within 6 weeks
08	Improper connection and missing lateral load transfer media. (Boiler Shed)	Implement remediation work if required.	within 6 months
09	Improper connection and inadequate vertical member. Also, lateral load transfer media missing. (Parking Shed-1&2, ETP).	The building engineer is required to check the connection & stability system (safety check) of the structure and suggest proper alternatives accordingly following Accord Building Standard.	within 6 weeks
10	Improper connection and inadequate vertical member. Also, lateral load transfer media missing. (Parking Shed-1&2, ETP).	Implement remediation work if required.	within 6 months