Futex (Bangladesh) Garment Manufacturing Co., Ltd.

Dhakkin Gouripur, Ashulia, Savar, Dhaka-1341

(23.884708, 90.317639)

03 February 2025

Structural Inspection Report

RSC RMG SUSTAINABILITY COUNCIL

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1. Building information

1. Shed-01,
2. Shed-02,
3. Utility Building,
4. Fire Control Room,
5. Dining & Fire pump,
6. Medical & Female Prayer,
7. Office area,
8. Chemical & Wastage,
9. Security Shed, and
10. Male Toilet.

2. Observations:

Observation-1: Lack of lateral load transfer media for the shed 1.

Absence of load transfer media

5 CONCLUSION

According to BNBC loading condition for RCC members-

- All foundations are found adequate in bearing capacity for FoS=2.5.
- All foundation are found adequate in punching shear check.
- Eight nos RCC pedestal columns are found inadequate.
- Eight Grade beams are found inadequate in flexural reinforcement.
- Some of the steel columns are found inadequate.
- Most of the rafters are found inadequate.
- All of the cable vertical bracings are found adequate.
- All of the Roof Bracings are found adequate.
- The structure exceeds the maximum limit of deflection in Y direction.

Structural members are inadequate mainly due to lateral instability.

6 RECOMMENDATION

To enhance the adequacy of the structural members, it is advisable to prioritize providing lateral stability to the structure. The primary cause of inadequacy in these members is due to lack of lateral stability. By introducing strut members along with roof bracing and vertical bracings, the structure will be laterally stable. Implementing these elements can significantly improve the condition of the existing structural members without the need of retrofitting of the existing structural members.

Recommendation of design report

Description: The shed has portal framing action in the east-west direction. However, the roof does not have a lateral load transfer or load-resisting system in the north-south direction.
Additionally, a design report was found on-site during the inspection. As per the report's recommendations, certain remedial works were suggested, but none have been carried out yet.

The building engineer is required to check the lateral stability of the structure and suggest proper remedial actions.

Observation-2: Lack of lateral load transfer media for the shed 2.

Absence of load transfer media

5 CONCLUSION

According to BNBC loading condition for RCC members-

- All foundations are adequate in bearing capacity for FoS 2.5.
- All foundations are adequate in punching shear check.
- Eleven RCC pedestal columns are inadequate.
- Twelve Grade beams are inadequate.
- Most of the steel columns are inadequate.
- All the rafters are inadequate.
- Roof Bracings are inadequate.
- The structure is laterally unstable, as it exceeds the maximum limit of deflection in both X and Y direction.

Structural members are inadequate mainly due to lateral loading.

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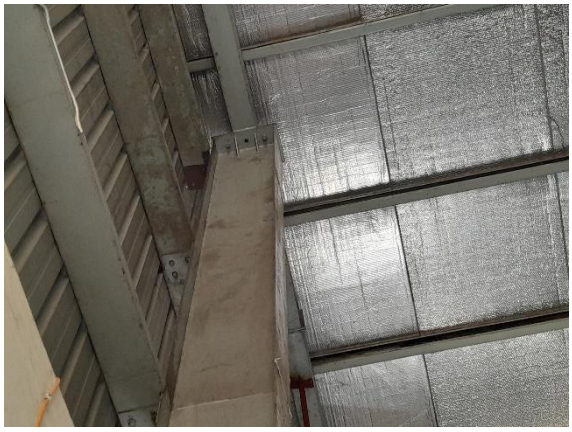
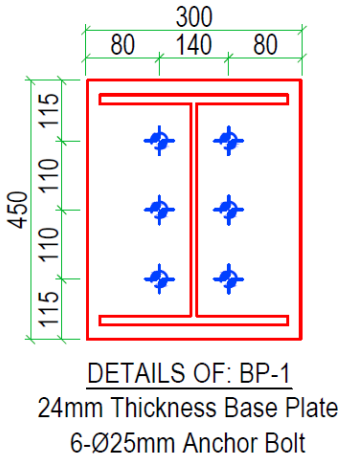
Observation-3: Mismatch between drawing & onsite condition (Shed 1 and Shed 2).





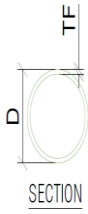
DETAILS OF: BP-1
24mm Thickness Base Plate
6-Ø25mm Anchor Bolt

Description: During the inspection, mismatch was found in connection details and the base plate of the column. The thickness of base plate 1 was found 20 mm instead of 24 mm. The building engineer is required to survey the full structure and update the as-built drawing based on the as-constructed. A credible construction drawing of shed-2 is not available.

Observation-4: Remedial works were not properly carried out as per the retrofitting drawing (Dining Shed).

SCHEDULE OF STEEL COLUMN

NAME	D (mm)	TF (mm)
NP-1	100	4



SECTION

New Steel Pipe Column size

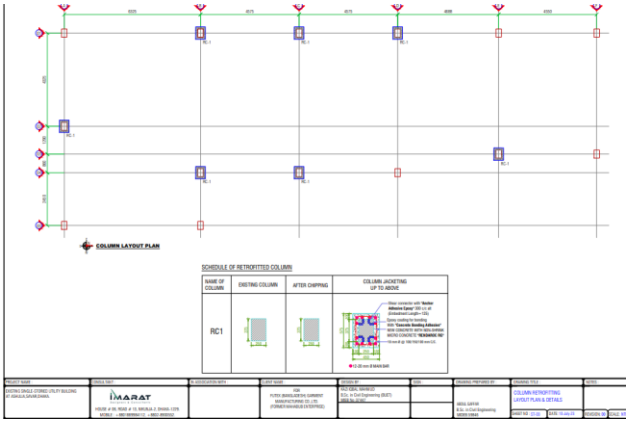
Dining Shed (No details for the UGWR)

The retrofitted pipe diameter was found 75 mm instead of 100mm

Description: A set of retrofitting drawings was found during the inspection, and some remedial works were executed as per the retrofitting drawings. However, no design report was found during the inspection. New steel pipe column was found dia 75 mm instead of dia 100 mm. Also, no information was found in the as-built drawing for the UGWR under the dining shed.

The factory is required to survey the full structure, prepare accurate as-built drawings, reassess the design documents, and submit them to RSC for further review.

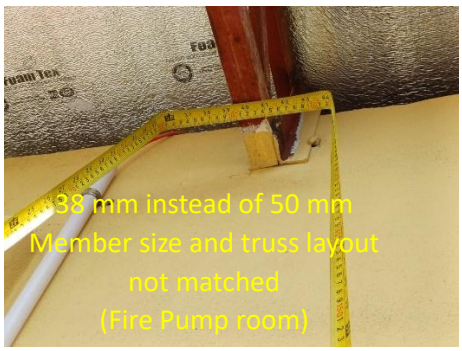
Observation-5: Prepared design report and remediation plan are required to be reviewed by RSC (Utility Building).



Description: During the inspection, a set of design reports was found along with a remediation plan. A remediation plan for a few columns has been proposed for the Utility Building. However, no remedial work has been executed by the factory for the Utility Building. Therefore, the prepared design report and remediation plan need to be reviewed by RSC.
The factory is required to submit the design report and the proposed remediation plan to RSC for review.

Observation-6: Mismatches in as-built drawings (Dining & Fire pump, Medical & Female Prayer Shed, Office Shed, Chemical & Wastage Shed, Security Shed).

Steel pipe 75 mm instead of 100 mm
(Dining Shed)



38 mm instead of 50 mm
Member size and truss layout not matched
(Fire Pump room)

Thickness 3 mm instead of 5 mm
(Medical & Female Prayer Shed)

Member size and rafter layout not matched
(Office Shed)

Connection details and rafter layout not matched
(Chemical & Wastage Shed)

Member size and rafter layout not matched
(Security Shed)

Description: Beam size, steel member sizes and rafter layout did not fully match with the provided as-built drawings. A building engineer is required to survey the full structures and prepare accurate drawings.

Observation-7: Inadequate connection (Medical & Female Prayer Shed, Office Shed, Chemical & Wastage Shed).



Description: Inadequate connections were observed against uplift pressure of wind. The building engineer is required to check the connection of roof frames for these structures and prepare safety check report suggesting proper alternatives following Accord Building Standard.

Observation-8: Expose rebar (Fire Control Room).


Description: Expose rebars were found on the roof of the building. A building engineer is required to provide rust proof paint to protect from corrosion.

3. Action Plan:

Item No	Observation	Action Plan	Timeline
1.	Lack of lateral load transfer media for the shed 1.	The building engineer is required to check the lateral stability of the structure and suggest proper remedial actions.	within 6 weeks
2.		Carry out remedial work if required.	within 6 months
3.	Lack of lateral load transfer media for the shed 2.	The building engineer is required to check the lateral stability of the structure and suggest proper remedial actions.	within 6 weeks
4.		Carry out remedial work if required.	within 6 months
5.	Mismatch between the drawing & onsite condition (Shed 1 and Shed 2).	The building engineer is required to update the as-built drawing based on the as-constructed structure.	within 6 weeks
6.	Remedial works were not properly carried out as per the retrofitting drawing (Dining Shed).	The factory is required to survey the full structure, prepare accurate as-built drawings, reassess the design documents, and submit them to RSC for further review.	within 6 weeks
		Carry out remedial work if required.	within 6 months
7.	Prepared design report and remediation plan are required to be reviewed by RSC (Utility Building).	The factory is required to submit the design report and the proposed remediation plan to RSC for review.	within 6 weeks
8.		Carry out remedial work if required.	within 6 months
9.	Mismatches in as-built drawings (Fire pump, Medical & Female Prayer Shed, Office Shed, Chemical & Wastage Shed, Security Shed).	A building engineer is required to survey the full structures and prepare accurate drawings.	within 6 weeks
10.	Inadequate connection (Medical & Female Prayer Shed, Office Shed, Chemical & Wastage Shed).	The building engineer is required to check the connection of roof frames for these structures and prepare a safety check report suggesting proper alternatives following Accord Building Standard.	within 6 weeks
11.		Carry out remedial work if required.	within 6 months
12.	Expose rebar (Fire Control Room).	A building engineer is required to provide rust-proof paint to protect from corrosion.	within 6 weeks