

TOKIO MODE LTD (Extension)

98/173, Choydana, National University, Gazipur.

(23.957367, 90.381770)

27 November 2023



1. Building Information

Sample & Office Building: 3-storied (G+2) reinforced concrete (RC) building.

Substation Room: Single storied RC structure.

Shed-1: Single storied shed.

Shed-2: Single storied shed.

Shed-3: Single storied shed.

Shed-4: Single-storied shed with a three storied RC block on the west side.

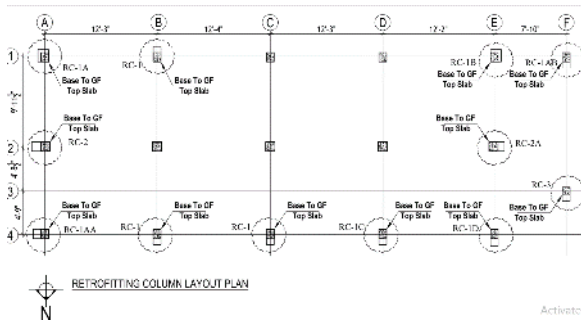
Shed-5: Single storied shed.

Shed-6: Single storied shed.

Shed-7: Single storied shed.

2. Observations

Observation-1: Proposed retrofitting work not implemented (Sample & Office building).



Description: Retrofitting work is proposed for column and foundation as per the available design report but has not been found implemented on site. The building engineer is required to provide detailed information, for which purpose it requires retrofitting, need to review the design of retrofitting with RSC.

Observation 2: Poor anchorage system of stair roof (Sample & Office Building).



Description: Anchorage of the steel rafter of the stair roof shed appeared to be poor. The building engineer is required to improve the anchorage system to resist the uplift force.

Observation-3: Exposed rebar at roof level (Sample & Office Building)



Description: Exposed rebar at roof level. The building engineer is required to provide rust proof paint on all exposed rebar.

Observation-4: Falling hazard at roof level (Sample & Office Building)



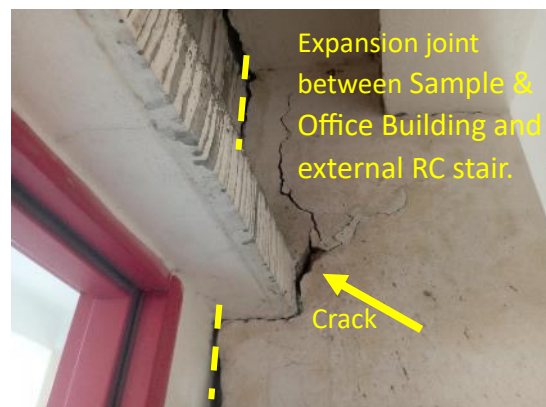
Description: Parapet/railing not found at roof level. The building engineer is required to provide edge protection to avoid falling hazard.

Observation-5: Dampness on brick wall (Sample & Office Building).



Description: Dampness was found on brick walls at several locations. The building engineer is required to investigate the damp areas and repair with a suitable method.

Observation-6: Crack on slab soffits, expansion joint (Sample & Office Building)



Description: Crack was observed on slab soffits, below the toilet zone at the ground floor, expansion joint near the north stair. The building engineer is required to investigate the reason for the crack and repair as per the investigation report.

Observation-7: Non-structural elements found not anchored/braced (Sample & Office Building)



Description: Non-structural elements found not anchored/braced. The building engineer is required to brace/anchor all nonstructural elements including storage racks within the factory.

Observation-8: Lack of lateral stability (Shed-1).



Description: No bracing/compression member is provided to this shed. Also, the steel member size appeared to be undersized. The building engineer is required to check the lateral stability of the shed and prepare a design report.

Observation-9: Damaged roof sheet/ sagged rafter (Shed-3)



Description: Roof sheet was found damaged, and the rafter was found sagged. The building engineer is required to replace the damaged roof sheet and check the capacity of the rafter.

Observation-10: Lack of lateral stability of steel part (Shed-4).



Description: No bracing/compression member is provided to this shed. The building engineer is required to check the lateral stability of the shed.

Observation-11: Lack of design report/structural drawing/geotechnical investigation report (Shed-4).



Description: As per BNBC, every building or structure designed shall have its design documents prepared following the provision of Section 1.9.1. During the inspection, the design report/as-built structural drawing/ geotechnical investigation report was not available on site.

The building engineer is required to carry out a Detailed Engineering Assessment (DEA) including a geotechnical investigation report and prepare a set of structural drawings.

Observation-12: Apparently non-engineered steel stair (Shed-4)



Description: The steel stair appeared to be non-engineered due to lack of adequate load path/damaged and apparently undersized member. The building engineer is required to replace the damaged members and check the structural adequacy of the steel stair.

Observation-13: Lack of permit drawing from local authority (Shed-4)



Description: At the time of inspection permit drawing from local authority was not available. The factory is required to collect the permit drawing from local authority.

Observation-14: Poor anchorage system of steel members (Shed-2, Shed-6, Shed-7).



Description: Anchorage of steel rafter of the sheds appeared to be poor. The building engineer is required to improve the anchorage system to resist the uplift force.

Observation-15: Lack of as-built structural drawing (Substation room, Shed-2, Shed-3, Shed-4, Shed-5, Shed-6, Shed-7)



Description: At the time of inspection as-built structural drawing was not available for the structures. The building engineer is required to produce as-built structural drawing.

3. Action Plan

Observation	Action Plan	Timeline
Sample & Office Building		
Proposed retrofitting work not implemented (Sample & Office Building).	The building engineer is required to submit the retrofitting scheme for further review.	within 6 weeks
Proposed retrofitting work not implemented (Sample & Office Building).	Complete all retrofitting work upon getting acceptance from RSC.	within 6 months
Poor anchorage system of stair roof (Sample & Office Building).	The building engineer is required to improve the anchorage system to resist the uplift force.	within 6 weeks
Exposed rebar at roof level (Sample & Office Building)	The building engineer is required to provide rust proof paint on all exposed rebar.	within 6 weeks
Falling hazard at roof level (Sample & Office Building)	The building engineer is required to provide edge protection to avoid falling hazard.	within 6 weeks
Dampness on brick wall (Sample & Office Building).	The building engineer is required to investigate the damp areas and repair with a suitable method.	within 6 weeks
Crack on slab soffits, expansion (Sample & Office Building)	The building engineer is required to investigate the reason of crack and repair as per investigation report.	within 6 weeks
Nonstructural elements found not anchored/braced (Sample & Office Building)	The building engineer is required to anchored/braced all nonstructural elements.	within 6 weeks
Shed-1		
Lack of lateral stability (Shed-1).	The building engineer is required to check the lateral stability of the shed and prepare a design report.	within 6 weeks
Lack of lateral stability (Shed-1).	Carry out remedial works where required.	within 6 months
Shed-3		
Damaged roof sheet/apparently sagged rafter (Shed-3)	The building engineer is required to replace the damaged roof sheet.	within 6 weeks
Damaged roof sheet/apparently sagged rafter (Shed-3)	The building engineer is required to check the capacity of the rafter.	within 6 weeks
Damaged roof sheet/apparently sagged rafter (Shed-3)	Carry out remedial works where required.	within 6 months

Observation	Action Plan	Timeline
Shed-4		
Lack of lateral stability of steel part (Shed-4).	The building engineer is required to check the lateral stability of the shed.	within 6 weeks
Lack of design report/structural drawing/geotechnical investigation report (Shed-4).	The building engineer is required to carry out a Detailed Engineering Assessment (DEA) including a geotechnical investigation report.	within 6 weeks
Lack of design report/structural drawing/geotechnical investigation report (Shed-4).	The building engineer is required to prepare a set of as-built structural drawing.	within 6 weeks
Lack of design report/structural drawing/geotechnical investigation report (Shed-4).	Carry out remedial works if required.	within 6 months
Apparently non engineered steel stair (Shed-4)	The building engineer is required to replace the damaged members and check the structural adequacy of the steel stair.	within 6 weeks
Apparently non engineered steel stair (Shed-4)	Carry out remedial works where required.	within 6 months
Lack of permit drawing from local authority (Shed-4)	The factory is required to collect the permit drawing from local authority.	within 6 months
Shed-2, Shed-6, Shed-7		
Poor anchorage system of steel members (Shed-2, Shed-6, Shed-7).	The building engineer is required to improve the anchorage system to resist the uplift force.	within 6 weeks
Lack of as-built structural drawing (Substation room, Shed-2, Shed-3, Shed-4, Shed-5, Shed-6, Shed-7)	The building engineer is required to produce as-built structural drawing.	within 6 weeks