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Identified Priority 1 Concerns

- Capacity check for steel mezzanine floor and
 - Uncontrolled heavy storage loading area.

1st Priority 1 Concern



Some of steel joist beam supported steel checkered plate are sagging. Main steel beam connected to steel column are used to transfer the load carrying onto ground slab. Capacity check should be carried out.

2nd Priority 1 Concern



Uncontrolled heavy storage loading was found at staircase on 5th floor where it was left unused, also, at the storage room on 4th floor

Identified Priority 2 Concerns

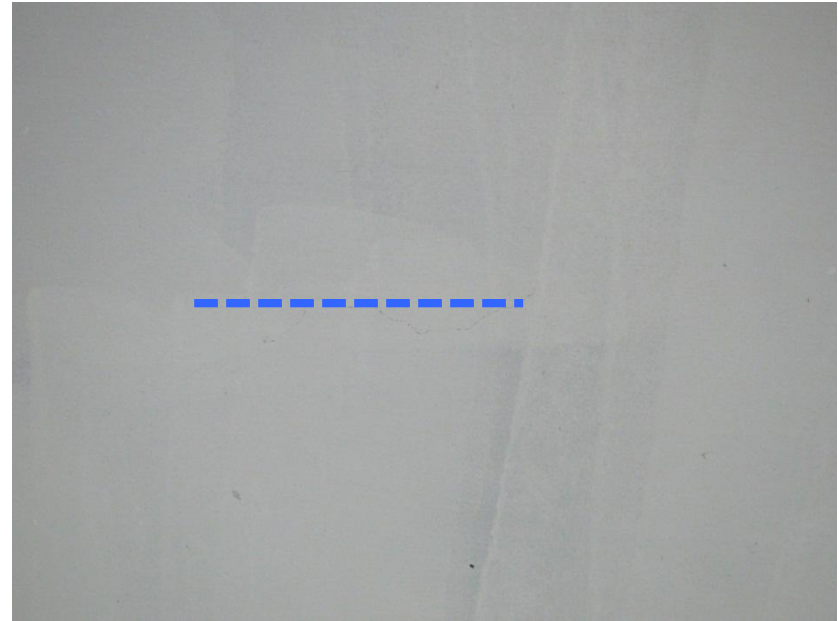
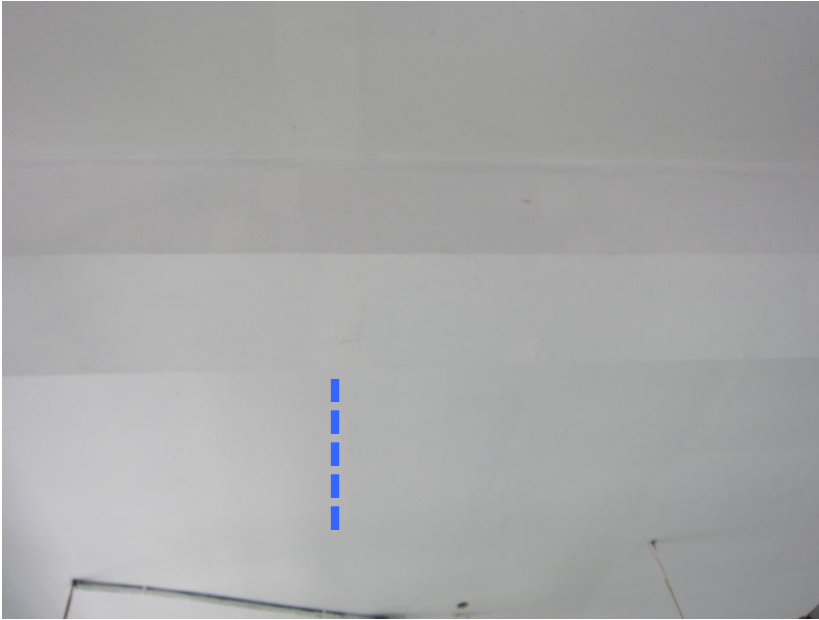
- Inconsistency between drawings and actual as-built conditions and
- Cracks appeared underside floor slab and beam

1st Priority 2 Concern



The extension of roof was carried out for dining area which was not shown in the drawings. Cantilevered beam on every floor was constructed instead of cantilevered slab. Capacity check should be carried out.

2nd Priority 2 Concern



Cracks appeared underside floor slab and beam. It is not clear whether these cracks are structural cracks. We require that these items be investigated in a Detail Engineering Assessment.

Identified Priority 3 Concerns

- Distress due to water ingress,
 - Reinforcement left exposed,
- No fireproofing material applied and
- No waterproofing material applied at roof level

1st Priority 3 Concern



There are distresses due to water ingress noted at dining room on 5th floor.

2nd Priority 3 Concern



Reinforcement are left exposed. No rust-proof paint is applied.

3rd Priority 3 Concern



No fireproofing material is applied to the structural steel elements of mezzanine floor. It is unclear whether it is required by BNBC.

4th Priority 3 Concern



It is unclear whether waterproofing material is applied at roof level.

Overall Stability System



The building does not feature any core or shear walls. Stability is achieved through sway action between beams and columns and masonry infill walls.

We require that these items be investigated in a Detail Engineering Assessment.



Water Ingress at Roof Level



There is no distress due to water ingress noted at roof level except water ponding.

Priority Actions

Problems Observed Summary

ITEM 1:	(Priority 1)	Capacity check for steel mezzanine floor.
ITEM 2:	(Priority 1)	Uncontrolled heavy storage loading area.
ITEM 3:	(Priority 2)	Inconsistency between drawings and actual as-built condition of the building .
ITEM 4:	(Priority 2)	Crack appeared underside floor slab and beam
ITEM 5:	(Priority 2)	Overall stability system.
ITEM 6:	(Priority 3)	Distress due to water ingress
ITEM 7:	(Priority 3)	Reinforcement left exposed at top level of Office
ITEM 8:	(Priority 3)	No fireproofing material applied for steel structure
ITEM 9:	(Priority 3)	No waterproofing material applied at roof level

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Capacity check for steel mezzanine floor.	Factory Engineer to review design, loads and columns stresses in area identified above. A Detail Engineering Assessment of Factory to be commenced immediately in particular the stability and capacity of steel mezzanine floor.	Immediate – Now
2	Capacity check for steel mezzanine floor.	Produce and actively manage a loading plan for all floor plates within this area giving consideration to floor capacity and column capacity. Detail Engineering Assessment to be completed.	6-weeks
3	Capacity check for steel mezzanine floor.	Continue to implement load plan	6-months
4	Uncontrolled heavy storage loading area.	Reduce stacking height to ensure total load does not exceed 2 kPa. Factory Engineer to review design, loads, columns stresses and shear stresses in area identified above. Factory Engineer to state the maximum weight that is allowed per square meter. Suggest that state the value on notice boards in this area.	Immediate – Now
5	Uncontrolled heavy storage loading area.	Adopt some sort of signage/staff guidance to ensure that the maximum weight of storage is not exceeded. (Loading Plans).	6-weeks
6	Uncontrolled heavy storage loading area.	Maintain standards of quality control to ensure that storage procedures are correctly followed so that overloading problems do not arise in the future. Implement Loading Plan.	6-months
7	Inconsistency between drawings and actual as-built condition of the building .	Factory Engineer to survey the actual conditions and revise the drawings. Factory Engineer to review design, loads and columns stresses to confirm suitability for loads applied. Produce and actively manage a loading plan for all floor plates within this area giving consideration to floor capacity and column capacity.	6-weeks
8	Inconsistency between drawings and actual as-built condition of the building .	Continue to implement load plan	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
9	Crack appeared underside floor slab and beam	The Factory Engineer to investigate the cause of cracks by appropriate methods. The distress found is to be suitably rectified and then repaired.	6-weeks
10	Crack appeared underside floor slab and beam	Create loading plans for each floor level. Maintain standards of quality control to ensure that loading plan is correctly followed so that problems do not arise in the future. Maintain and enforce the loading plans.	6-months
11	Overall stability system.	Request that the Detail Engineering Assessment of the overall building to be carried out and in particular, stability and foundation aspects should be investigated in detail.	6-weeks
12	Distress due to water ingress	For both durability and serviceability, waterproofing material is recommended. Maintain standard of quality control.	6-months
13	Reinforcement left exposed at top level of Office	For both durability and serviceability, rust proof paint or any appropriate methods is recommended.	6-months
14	No fireproofing material applied for steel structure	Fireproofing material for structural steel element needs to be applied (if required based on the provision of BNBC). Maintain standard of quality control.	6-months
15	No waterproofing material applied at roof level.	Engineer to inspect water damaged structure including the exterior and propose a suitable repair. For both durability and serviceability, waterproofing on the roof slab is recommended. Moreover the roof slab drainage system should be investigated.	6-months