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Identified Priority 1 Concerns

Garment Building – Heavy loading

1st Priority 1 Concern



During our survey, we noted very heavy loading at certain level. Considering the thickness of the slab and to the size of the columns and beams, the loading should be reduced immediately to a maximum load of 3.0kPa.

Identified Priority 2 Concerns

Power house shed, Dyeing shed, Boiler shed, Sample dyeing shed and Godown shed – Truss extremities seem to lack bearing and uplift capacities.

Power house – Water cooling towers on 125mm slab.

Garment Building – Steel roof shed.

Garment Building - Overall stability.



1st Priority 2 Concern

At the Power house shed, Dyeing shed, Boiler shed, Sample dyeing shed and Godown shed all the bearings of the steel truss at the concrete beams must be verified for the uplift of the roof. Also, at minimum one of the extremity of (shoe) of the steel truss had been modified, for the passage of the gutter or other reason. A design check of all of the structural steel of these sheds must be included in the Detailed Engineering Assessment.

2nd Priority 2 Concern



At the roof of the Power House, 2 water cooling towers sits on a 125mm thick slab. Usually these equipments take a seat directly on a beam system.

We require a Detailed Engineering Assessment of the building to investigate these discrepancies.



3rd Priority 2 Concern

At the roof's shed of the Garment Building, all the structural steel including steel columns and RC columns, steel trusses, joists, perkins and deck must be verified for their entity and also for the wind uplift of the roof. A design check of all of the structural steel of this shed must be included in the Detailed Engineering Assessment.





4th Priority 2 Concern

We believe that the intent of the original structural design was to use the main grid line beams to provide some form of lateral stability via moment frame action.

However, in this factory there's RC building completely and RC Building with steel roof. But for the Dyeing shed, the roof is made of structural steel with a support at the mid span with steel columns. There's no bracing in the grid line of the columns.



For this last, we require that the lateral support system is investigated as part of a Detailed Engineering Assessment.

Identified Priority 3 Concerns

Garment Building – Steel roof shed



At the concrete roof of the Garment Building, the Dormitory Building and the Power House, no waterproofing membrane was visible on the roof. This means that any cracks in the surface will allow water to seep into the concrete slab and cause long-term soaking of the slab.

The Factory Building has reinforcement steel bars extended above the top of the column. This will allow rainwater to seep into the concrete column and cause long-term soaking in these. The reinforcement should be removed and new waterproofing should be applied to the entire column.

Problems Observed Summary

ITEM 1: Priority 1 – Garment Building – Heavy loading

ITEM 2: Priority 2 – Power house Shed, Dyeing Shed, Boiler Shed, Sample dyeing Shed and Godown Shed – Truss extremities seem to lack bearing and uplift capacities

ITEM 3: Priority 2 – Garment Building – Steel roof shed

ITEM 4: Priority 2 – Power House Shed– Water cooling towers on 125mm slab.

ITEM 5: Priority 2 – Garment Building - Overall stability.

ITEM 6: Priority 3 – Garment Building - Water ingress and exposed rebar.

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Garment Building – Heavy loading	Carry out a Detailed Engineering Assessment on all the floors. Reduce all floor loading down to 3.0kPa.	Immediate - Now
2	Garment Building – Heavy loading	Verify in situ concrete stresses either by existing cylinder strength data or 100mm dia. cores from 4 columns and slabs.	6-weeks
3	Garment Building – Heavy loading	Create and actively manage loading plans for all floors by establishing some signage to prevent mismanagement of loading the slab.	6-months
4	Power house Shed, Dyeing Shed, Boiler Shed, Sample dyeing Shed and Godown Shed – Truss extremities seem to lack bearing and uplift capacities.	Carry out a Detailed Engineering Assessment on all the connexions of the trusses to the bearing and also the uplift capacities of these roofs.	Immediate - Now
5	Power house Shed, Dyeing Shed, Boiler Shed, Sample dyeing Shed and Godown Shed – Truss extremities seem to lack bearing and uplift capacities.	Carry out any remedial works deemed necessary by assessment.	6-weeks
6	Garment Building – Steel roof shed	Carry out a Detailed Engineering Assessment of all the structural steel of the roof's shed and evaluate their capacities to resist uplift and lateral forces due to high winds.	Immediate - Now
7	Garment Building – Steel roof shed	If it is necessary, carry out and complete any remedial works recommended.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
8	Power House Shed– Water cooling towers on 125mm slab.	Carry out a Detailed Engineering Assessment on the capacity of the 125mm slab to receive the water cooling tower. If necessary furnish the solution to remediate to this situation.	Immediate - Now
9	Power House Shed– Water cooling towers on 125mm slab.	If it is necessary, carry out and complete any remedial works recommended.	6-weeks
10	Garment Building - Overall stability.	Carry out an Engineering Assessment on the building to verify that it is stable under lateral loading.	6-weeks
11	Garment Building - Overall stability.	Carry out all recommendations of the Engineering Assessment.	6-months
12	Garment Building - Water ingress and exposed rebar.	Factory engineer has to verify the status of degradation of the water ingress in the columns and furnish the solution for the waterproofing of the columns.	6-weeks
13	Garment Building - Water ingress and exposed rebar.	Carry out all recommendations for the remedial works from the Factory Engineer.	6-months