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Building Observations

Garment Building: Check on design of floor structure supporting boiler required

Potentially large boiler loading on 4th floor

**Engineer is to perform detailed calculations to prove slab size and (if required) :
Reduce loads by vacating and discarding boiler, or reinforce supporting structure.**

Garment building: Check on design of floor structure supporting boiler required



Garment building: Load management



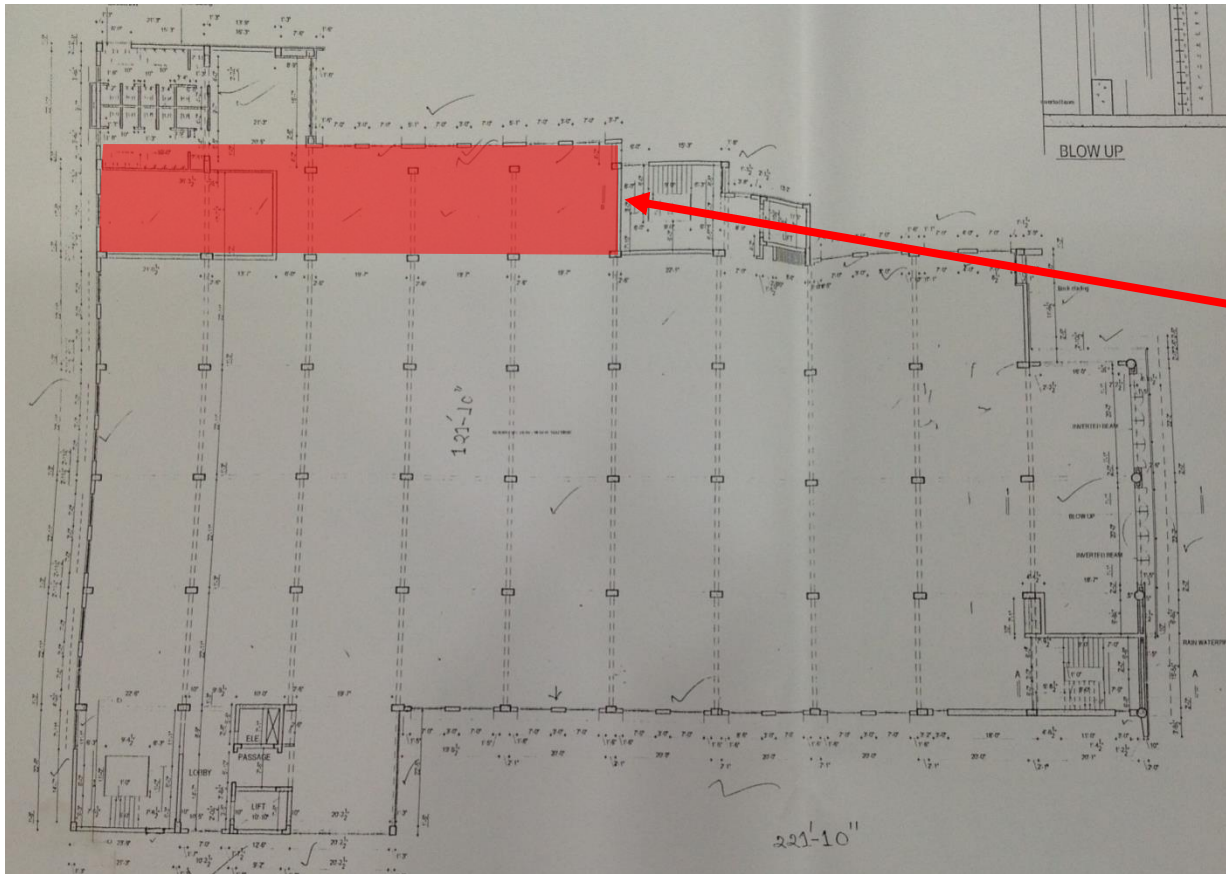
Material stacked high on 6th floor.

Plan and height restrictions to be introduced to prevent future overloading.

Restriction to be based on design floor loading.

Garment building: Loading

Garment building: Check on design of roof slab regarding water tank loading



Water tanks located on roof

Garment building: Check on design of roof slab regarding water tank loading

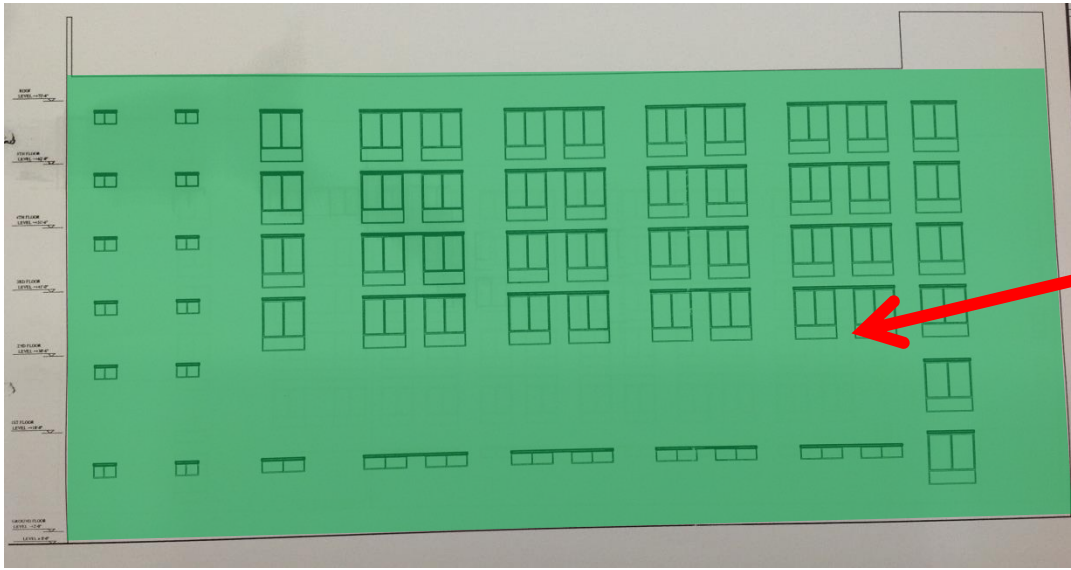
Garment building: Water causing damage and corrosion



**Unmanaged drainage
causing corrosion to
façade and structure**

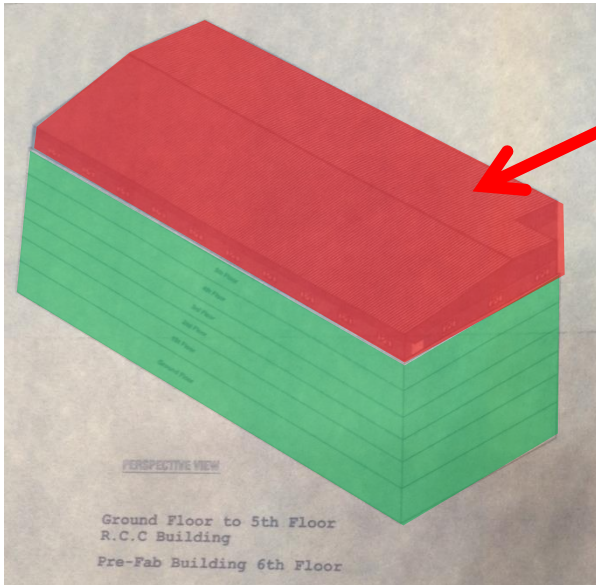
Garment building: Water causing damage and corrosion

Garment building: Check on structure required due to additional roof extension



Original 6 storey permit for RC building (ground floor – 5th floor).

**Extension:
Pre-fabricated steel floor (6th floor).**



**Engineer is to perform detailed calculations to prove column sizes and (if required) :
Reduce loads by vacating floors and removing addition structures
Reinforce columns**

Garment building: Building Permit

Knitting Building: Check on design of column supporting bracing member at mid-height required



Diagonal bracing supported at mid-height of column

Engineer is to perform detailed calculations to prove load path and column design.

Knitting Building: Check on design of column supporting bracing member at mid-height required

Check on structure, stability system, and roof connection of shed buildings



“Tin sheds”:

Engineer is to perform detailed calculations to prove design of structure, the vertical and horizontal stability system, and the connection between the vertical structure and the roof and remove/ replace if necessary

Check on structure, stability system, and roof connection of shed buildings (buildings 3,9,11)

Priority Actions

Problems Observed

1. Verify actual concrete stresses and in-situ strengths in Garment Building
2. Check required on 4th Floor structure in Garment Building from localised high loading from Boiler
3. Limit density of loading in Finished Carton area on 6th Floor slab in Garment Building
4. Water tanks located on the roof structure mounted on concrete plinths
5. Water causing damage to exterior of structure of Garment Building
6. Check required on Garment building structure due to roof additions
7. Vertical bracing to Knitting Building applied lateral load to cantilever columns
8. Steel sheds which appear not to have been adequately designed to resist gravity and wind loading

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Verify actual concrete stresses and in-situ strengths in Garment Building	Factory Engineer to review design, loads and columns stresses in area identified above.	6-weeks
2	Verify actual concrete stresses and in-situ strengths in Garment Building	Verify in-situ concrete stresses either by cores or existing cylinder strength data for cores from 4 columns	6-weeks
3	Verify actual concrete stresses and in-situ strengths in Garment Building	Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity.	6-months
4	Immediately remove all load from cantilever area identified and verify column size	Boiler to remain empty until checks carried out by Building Engineer	Immediate - Now
5	Immediately remove all load from cantilever area identified and verify column size	Building Engineer to verify that beam/slab has sufficient capacity to support fully operational boiler plus concrete plinth	6-weeks
6	Limit density of loading in Finished Carton area on 6th Floor slab in Garment Building	Maintain density of loading no greater than that observed during visit	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
7	Limit density of loading in Finished Carton area on 6th Floor slab in Garment Building	Building Engineer to create controlled loading plans for all floors designating where storage can be placed and can not be placed.	6-months
8	Water tanks located on the roof structure mounted on concrete plinths	Building Engineer to verify that beam/slab has sufficient capacity to support fully filled water tanks plus concrete plinth	6-weeks
9	Water causing damage to exterior of structure of Garment Building	Engineer to inspect water damaged structure including the exterior and propose a suitable repair. Roof drainage to be rectified to ensure positive roof drainage	6-months
10	Check required on Garment building structure due to roof additions	Building Engineer to verify column sizes for additional level and if required propose strengthening or reduce loading	6-months
11	Vertical bracing to Knitting Building applied lateral load to cantilever columns	Building Engineer to verify that lateral bracing system/column is designed for code load and install additional vertical bracing/column strengthening if required	6-months
12	Steel sheds which appear not to have been adequately designed to resist gravity and wind loading	Building Engineer to verify design of steel structures	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
13	Steel sheds which appear not to have been adequately designed to resist gravity and wind loading	Remove existing structures if necessary	6-months