

Sadma Fashion Wear Ltd. (Extension)

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(24.022180, 90.288584)

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Building Information

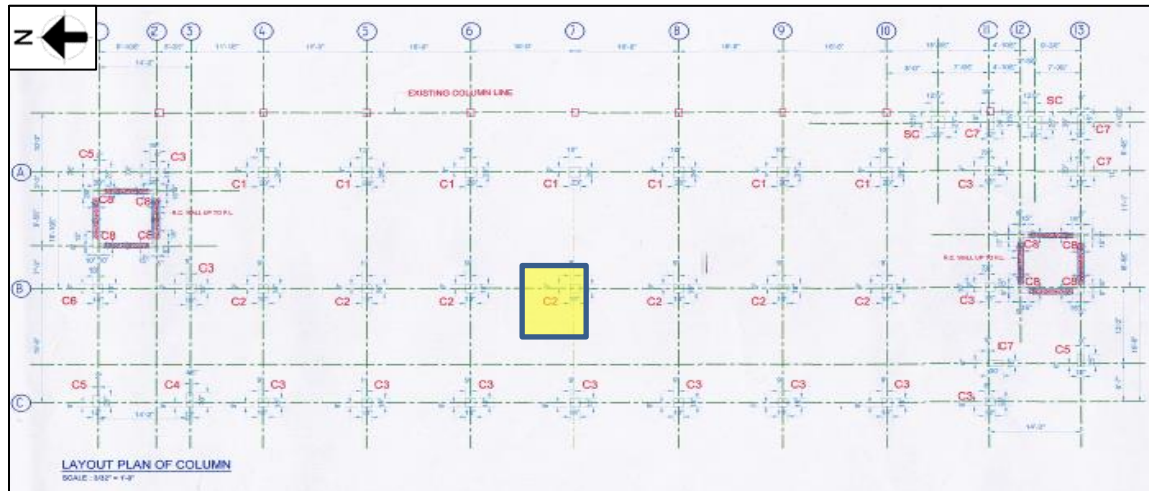
Main Building (Extension): Seven storied (G+6).

Utility Building: Three storied (G+2).

Observations

Column to be stressed above normal design limit

Observations: Main Building (Extension)



Stressed column (yellow marked) in Layout



Typical floor loading at 1st floor

Cursory calculation indicates that the working stress of ground floor column exceeds the normal design limit considering the live load 6 KPa on first floor (storage area), 3 kPa on typical floor, 1.5 KPa on roof top and minimum concrete strength based on aggregate type. Factory engineer is required to review design, load & column stress for the area identified above.

Observations: Main Building (Extension)

Prepared load plan to be revised

Observations: Main Building (Extension)



1st floor live load plan



Storage on 1st floor

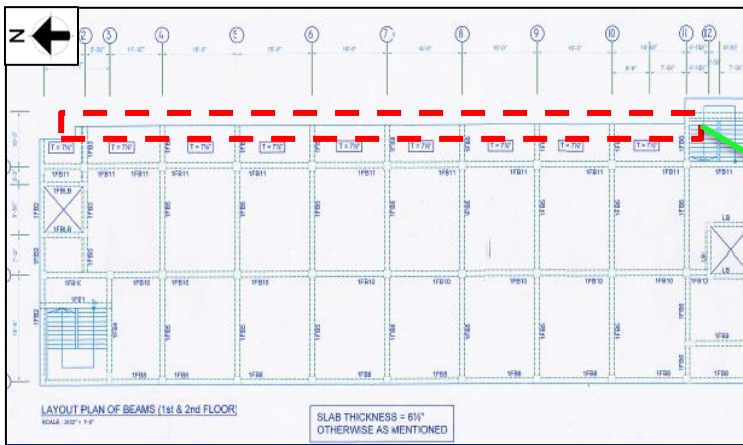
INDUSTRIAL, STORAGE & HAZARDOUS (Occupancy - G, H & J)	Workshop, factory, warehouse	1 Light workroom without storage	3.0	2.7
		2 Machinery hall & circulation area	4.0	4.5
		3 Factory, workshop etc.	5.0	4.5
		4 Manufacturing : light	6.0	4.5 ^(S)
		heavy	12.0	9.0 ^(S)
		ice	15.0	9.0 ^(S)
		5 Printing plant :		
		Press room	7.0	11.0 ^(S)
		Composing and linotype room	5.0	9.0 ^(S)
		Paper storage room	12.0	9.0 ^(S)
		6 Motor room, fan room etc. including the weight of machinery	7.5	4.5
		7 Cold storage, grain storage	15.0	9.0 ^(S)
		8 Storage warehouses : light	6.0	4.5 ^(S)
		heavy	12.0	9.0
		9 Foundries	20.0	12.0

Live load Table- BNBC 2006

Live load on 1st floor is considered as 4.8 kPa in prepared load plan. As per BNBC- Part 6, live load for light storage areas is required to be considered minimum 6 kPa. However, the factory engineer is required to revise the load plan as per BNBC requirement and check the design accordingly.

Discrepancies in as-built drawing

Observations: Main Building (Extension)

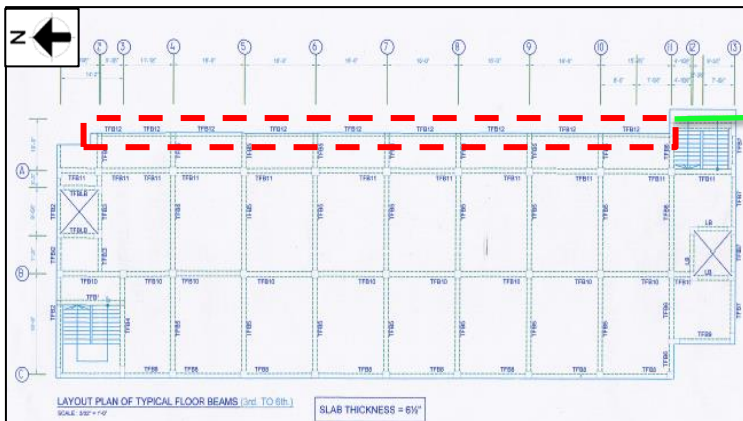


Beam layout at 1st & 2nd floor

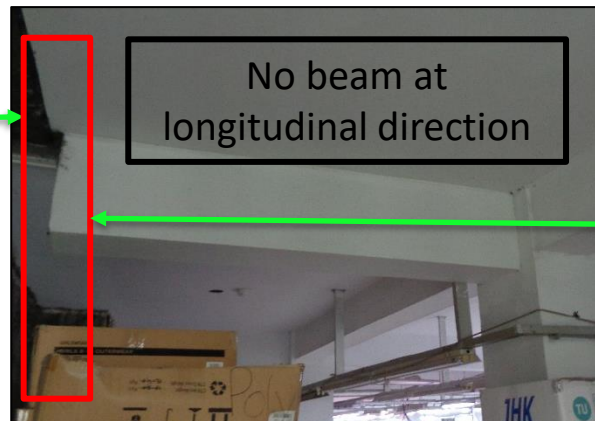


1st floor beam

No beam along longitudinal direction has been shown on cantilever part at 1st & 2nd floor in beam layout. But a beam has been found on-site measuring width 250mm & d/s= 450mm.



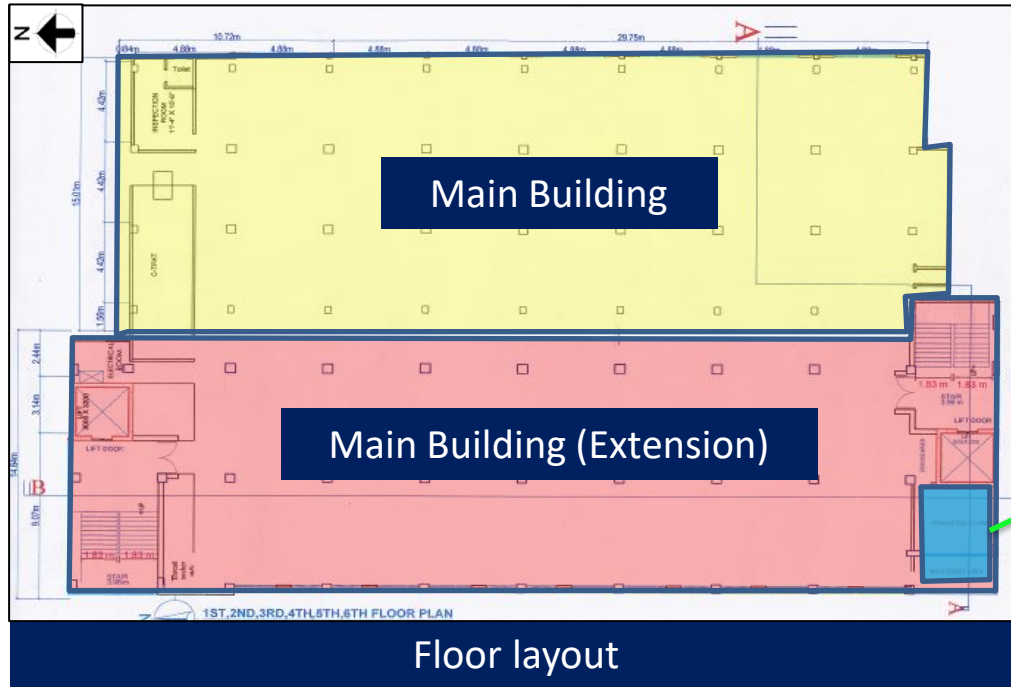
Beam layout at 3rd to roof floor



5th floor beam

A beam (250mm X d/s = 400mm) along longitudinal direction has been shown on cantilever part from 3rd to roof floor. But no beam has been found on-site.

Beam layout have been found mismatched with as-built drawing. Factory engineer is required to update the as-built drawing with accurate on-site condition.



Floor layout



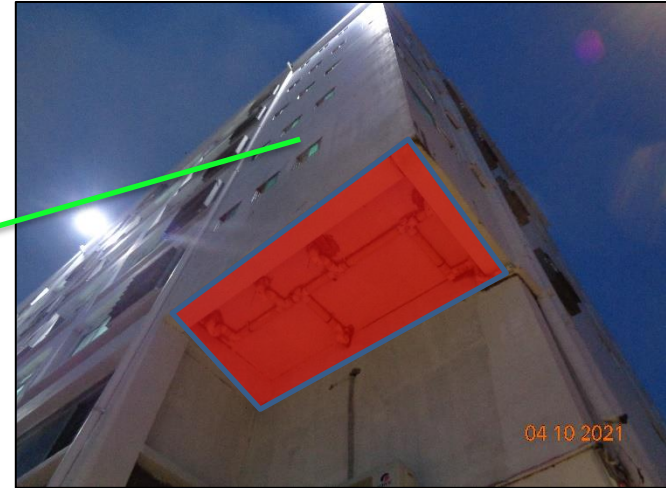
Toilet built-up

Build-up was found on toilet zone approximately 100mm which is not mentioned in as-built drawing. Factory engineer is required to update the as-built drawing with accurate on-site condition.

Cracks on periphery brick wall



Cracks on periphery brick wall



Cantilever part



Cracks on internal brick wall

Severe cracks were found on periphery brick wall at south-west cantilever part of the building. Factory engineer is required to investigate the cause of crack and repair the crack as per recommendation from investigation report.

Observations: Main Building (Extension)

Dampness on brick wall



Dampness on brick wall

Due to water absorption, dampness was found on brick wall. Building engineer is required to take necessary measures to prevent dampness in brick wall.

Observations: Main Building (Extension)

Exposed rebar at roof level



Exposed rebar at roof

Exposed reinforcement was found on roof. Factory engineer is required to take necessary measures to prevent the corrosion in exposed rebar.

Design report need to be prepared



No design report for utility building

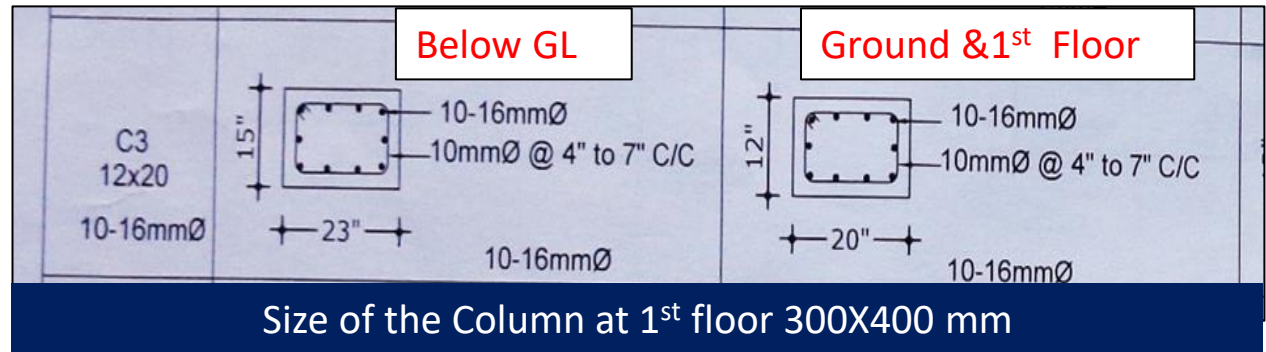
As per BNBC, every building or structure designed shall have its design documents prepared in accordance with the provision of Section 1.9.1. The design document shall include a design report, and a set of structural drawings, which shall be prepared in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC (Part-6). Factory provided only as-built drawing for this structure, but no design report was available at the time of inspection.

Factory engineer is required to prepare design documents including design report, load plan following BNBC-2006 requirements.

Column appears to be slender

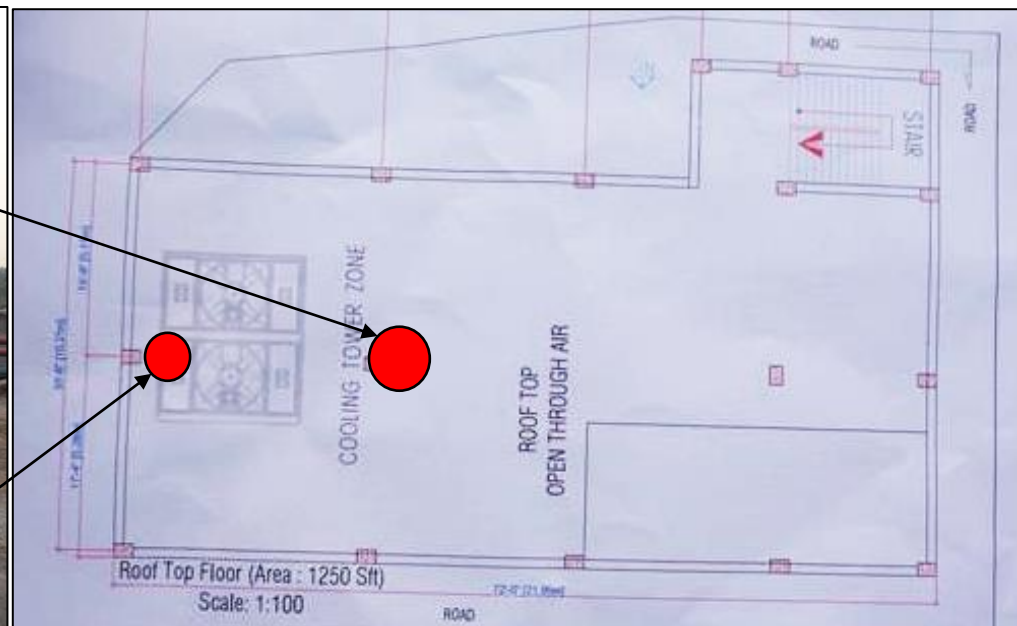


Size of the Column was measured 375X575mm



Ground floor columns are 5.55 m in length and 375X575 mm in size. The length/width=14.8 indicates that the columns are critical for slenderness effect.
So, the factory engineer is required to check and address this issue in the design report.

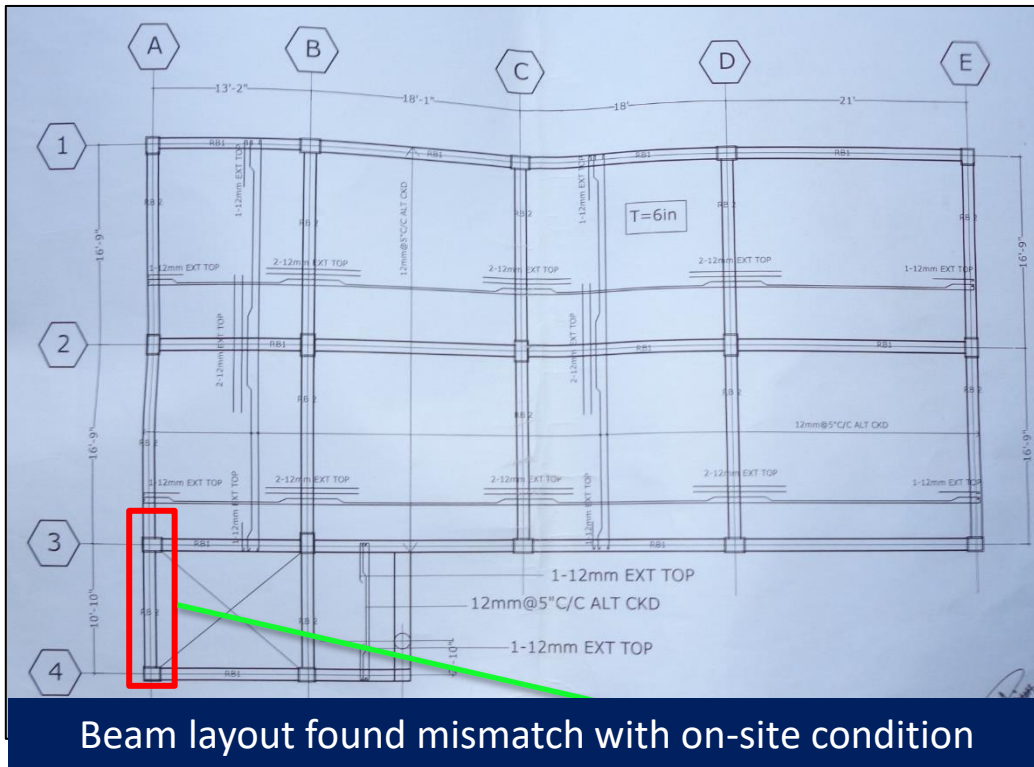
Discrepancies in as-built drawing



Roof Layout plan



Undocumented water tank was found at roof. One 5000 L and one 500 L water tank water was found roof with build up which has not been shown in drawing.
Factory engineer is required to survey the whole structures and update the as-built drawings.



Beam was found at intermediate landing level instead of floor level. Factory engineer is required to update the structural drawing.



Roof shed appears to be non-engineered



Light weight shed over the staircase



Connection seems to be inadequate for the light weight shed of staircase



Light weight roof shed supported by brick wall



Connection seems to be inadequate for roof shed



Light weight steel roof shed was found at staircase and roof top. The light-weight steel roof is made of steel angle section. There is no apparent load path to transfer the lateral loading. Poor connection details observed at joints. Building Engineer is required to check the lateral stability of the light-weight steel shed otherwise, replace the shed with engineered one.

Water ponding at roof



Water ponding at roof floor

Water ponding was found at beneath of water-cooling tower due to spalling of water. Due to lack of proper water drainage system and adequate sloping, water can not be drained out. The factory engineer is required to develop proper drainage system with adequate sloping on the mentioned area.

Priority Actions

Problems Observed

Main Building (Extension):

Item 01: Column to be stressed above normal design limit

Item 02: Prepared load plan to be revised

Item 03: Discrepancies in as-built drawing

Item 04: Cracks in periphery brick wall

Item 05: Dampness in brick wall

Item 06: Exposed rebar at roof

Utility Building:

Item 07: Design report needs to be prepared

Item 08: Column appears to be slender

Item 09: Discrepancy in as-built drawing

Item 10: Roof shed appears to be non-engineered

Item 11: Water ponding at roof

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Column to be stressed above normal design limit (Main Building (Extension))	Factory Engineer to review design, loads and columns stresses in area identified above.	6-weeks
02	Column to be stressed above normal design limit (Main Building (Extension))	Verify in-situ concrete strength either by taking 100mm dia. cores or existing cylinder strength data for [the identified columns] or [100mm dia. cores from 4 columns].	6-weeks
03	Column to be stressed above normal design limit (Main Building (Extension))	Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity.	6-months
04	Column to be stressed above normal design limit (Main Building (Extension))	Implement load plan.	6-months
05	Prepared load plan to be revised (Main Building (Extension))	Factory engineer is required to revise the load plan as per BNBC requirement and check the design accordingly.	6-weeks
06	Prepared load plan to be revised (Main Building (Extension))	Implement remediation work if required from the design check.	6-months
07	Prepared load plan to be revised (Main Building (Extension))	Continue to implement loading plan.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
08	Discrepancies in as-built drawing (Main Building (Extension))	Factory engineer is required to update the as-built drawing as per onsite condition.	6-weeks
08	Cracks in periphery brick wall (Main Building (Extension))	Factory engineer is required to investigate the cause of crack and repair the crack as per recommendation from investigation report.	6-weeks
10	Dampness in brick wall (Main Building (Extension))	Factory engineer is required to investigate the damp area to verify if any damaged occurred due to the presence of the moisture and repair accordingly.	6-weeks
11	Exposed rebar at roof (Main Building (Extension))	All exposed reinforcement is to be protected from corrosion which may cause degradation of the concrete.	6-weeks
12	Design report needs to be prepared (Utility Building)	Building engineer to prepare the design report in compliance with section 1.9.1.1 as per BNBC.	6-weeks
13	Design report needs to be prepared (Utility Building)	Implement the recommendations of design report.	6-months
14	Column appears to be slender (Utility Building)	Building engineer is required to check the slenderness effect of the column.	6-weeks
15	Column appears to be slender (Utility Building)	Implement the recommendations if required.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
16	Discrepancy in as-built drawing (Utility Building)	Factory engineer is required to update the as-built drawing as per onsite condition.	6-weeks
17	Roof shed appears to be non-engineered (Utility Building)	Building Engineer is required to check the lateral stability of the light-weight steel shed otherwise, replace the shed with any engineered structure.	6-weeks
18	Roof shed appears to be non-engineered (Utility Building)	Implement remediation work if required.	6-months
19	Water ponding at roof (Utility Building)	The factory engineer to develop proper drainage system with adequate sloping to resist water ponding on roof.	6-weeks