



Dhaka Garments & Washing Ltd

Dakkhin Vangnahati, Sreepur, Gazipur-1740
(24.192597, 90.457385)

30th December 2019 & 3rd February 2020

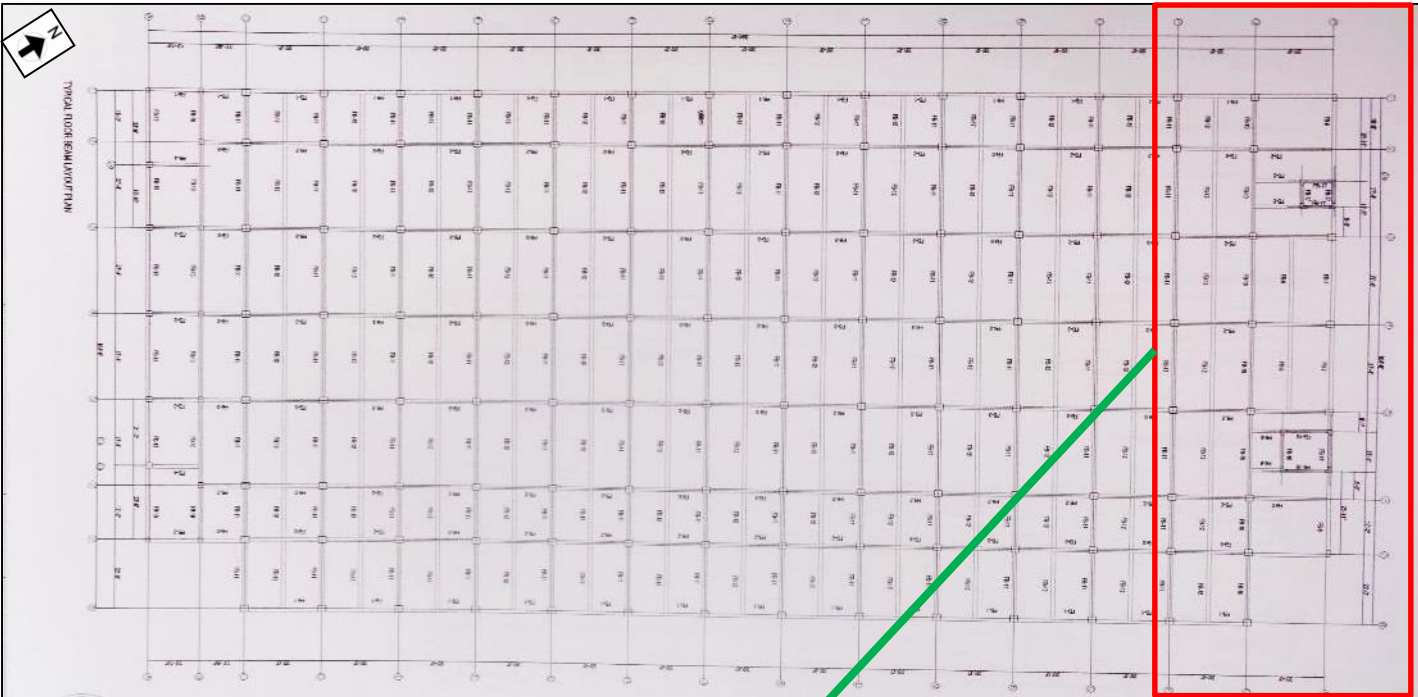




Observations

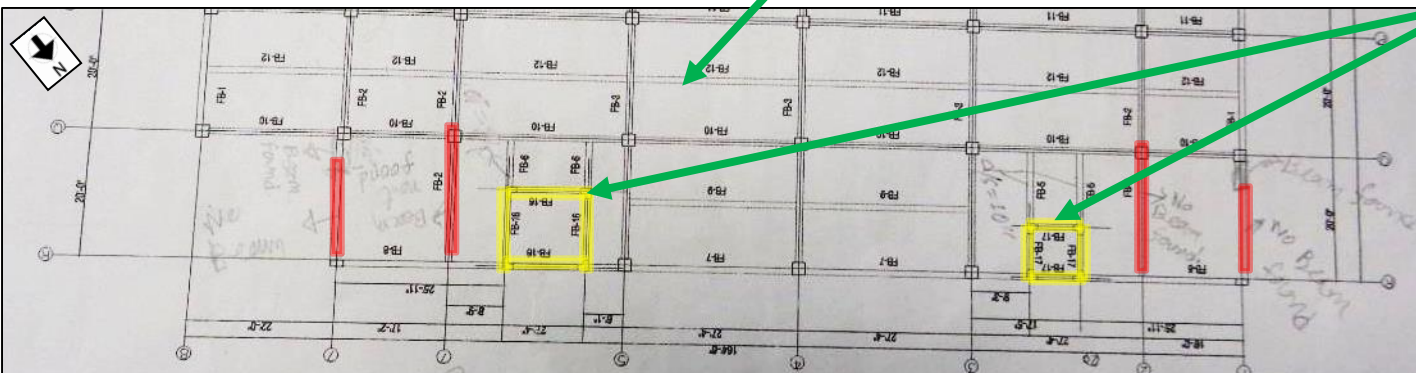


Discrepancy in as-built drawing



Beam layout plan

Details of the beam FB-16 & 17 (yellow marked) has not been shown in drawing.

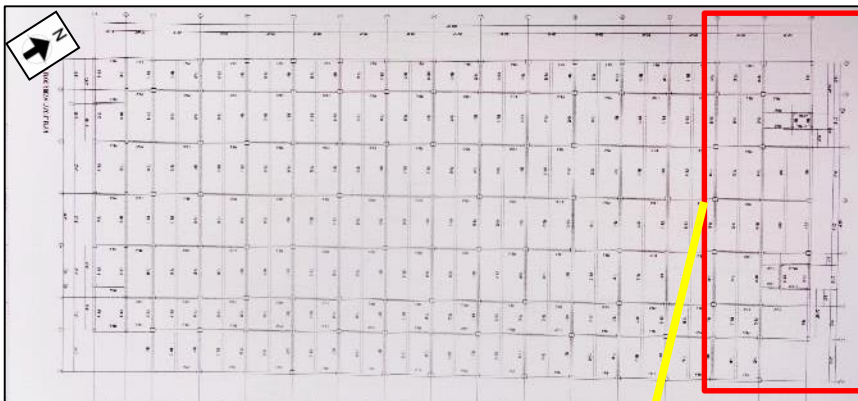


Beam was not found at factory site (Red marked). But in as-built drawing, beam has been shown in drawing.

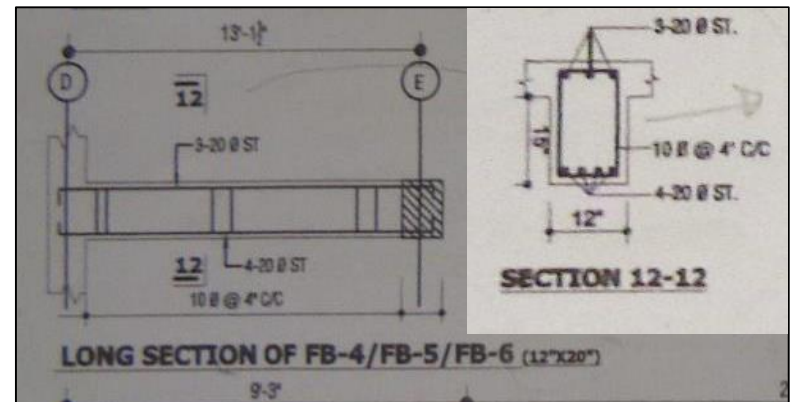


Beam was not found at site condition but shown in as-built drawing

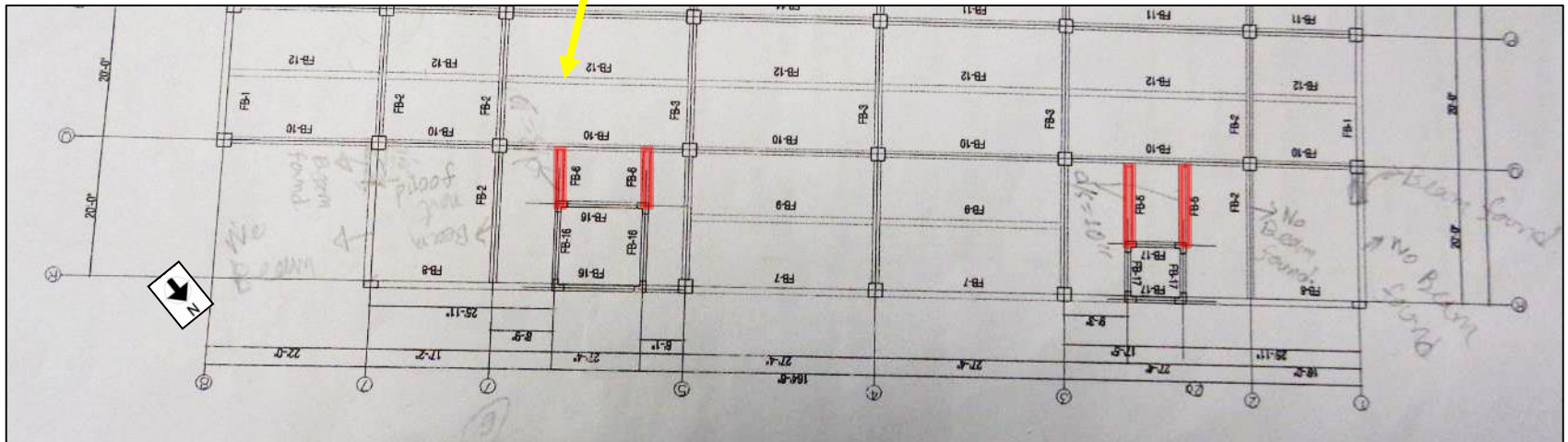
Observation : Main Building



Beam layout plan

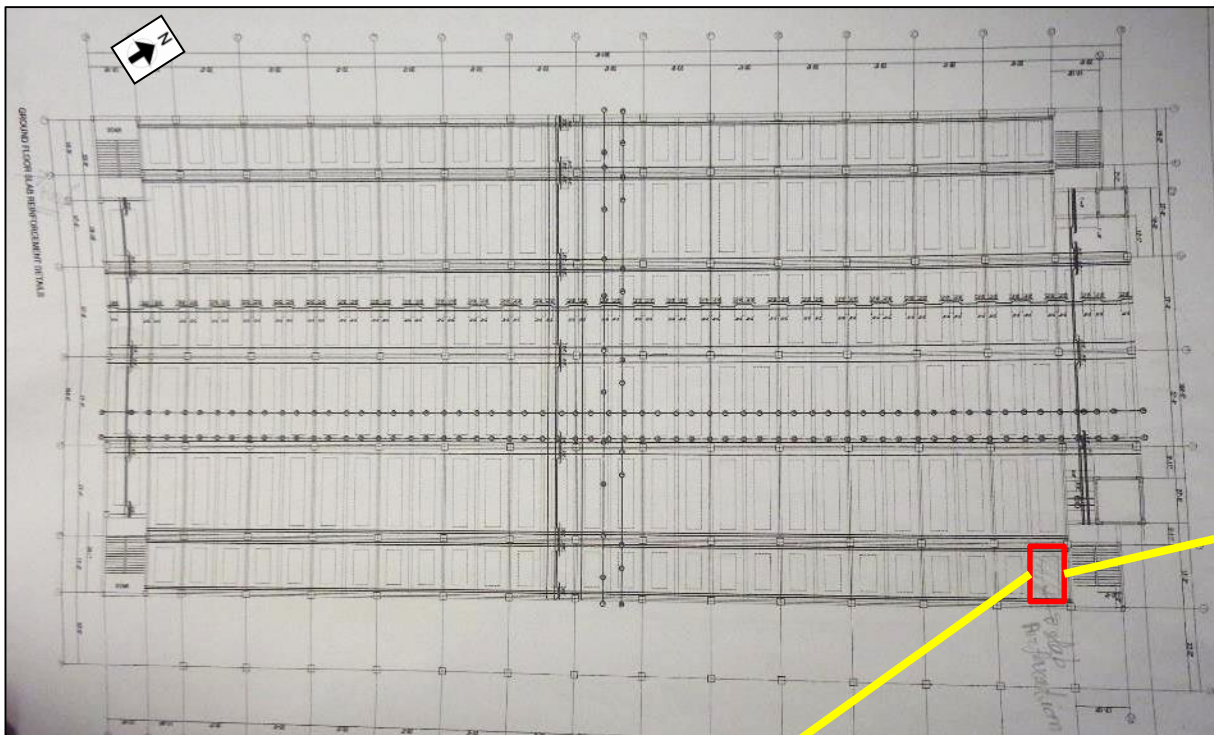


D/S depth has been shown 375mm



D/S depth was found 250 mm

In as built, drawing the D/S depth of FB-5 & FB-6 has been shown 375mm. But at factory site, the D/S depth of the Beam was found 250mm.



Slab reinforcement details



Slab perforation was found at 1st floor for the installation of cargo lift. But no information has been provided in the as built drawing.



Dampness in bottom slab of water tank

Observation : Main Building



Dampness was found in bottom slab of overhead RC water tank (Northern side). Factory engineer is required to investigate the reason for the seepage of moisture and suggest remedial action.

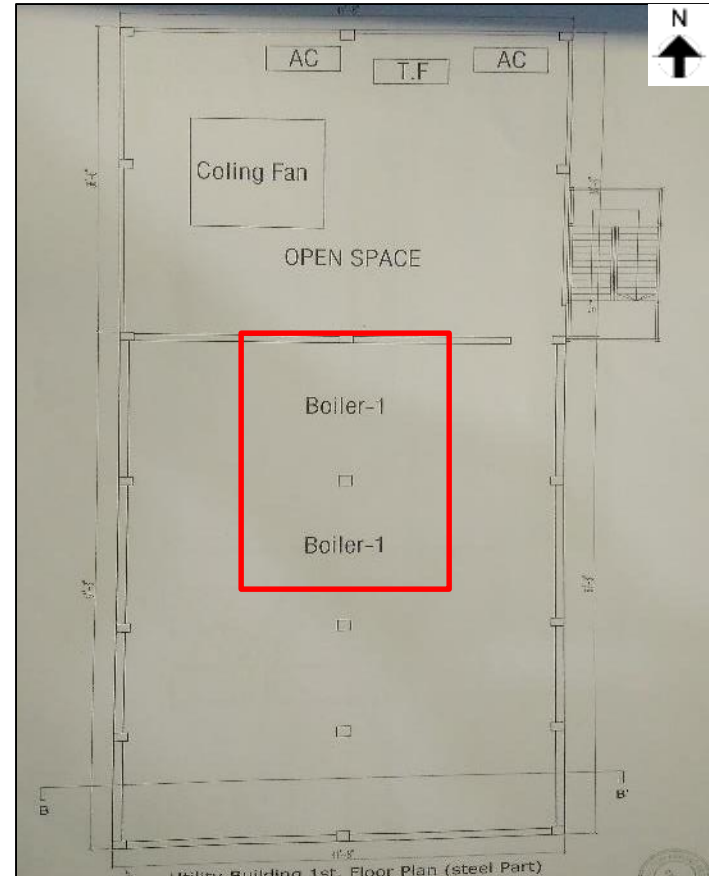


Heavy loading on roof slab

Observations: Utility Building



Heavy Boiler machine placed on roof slab



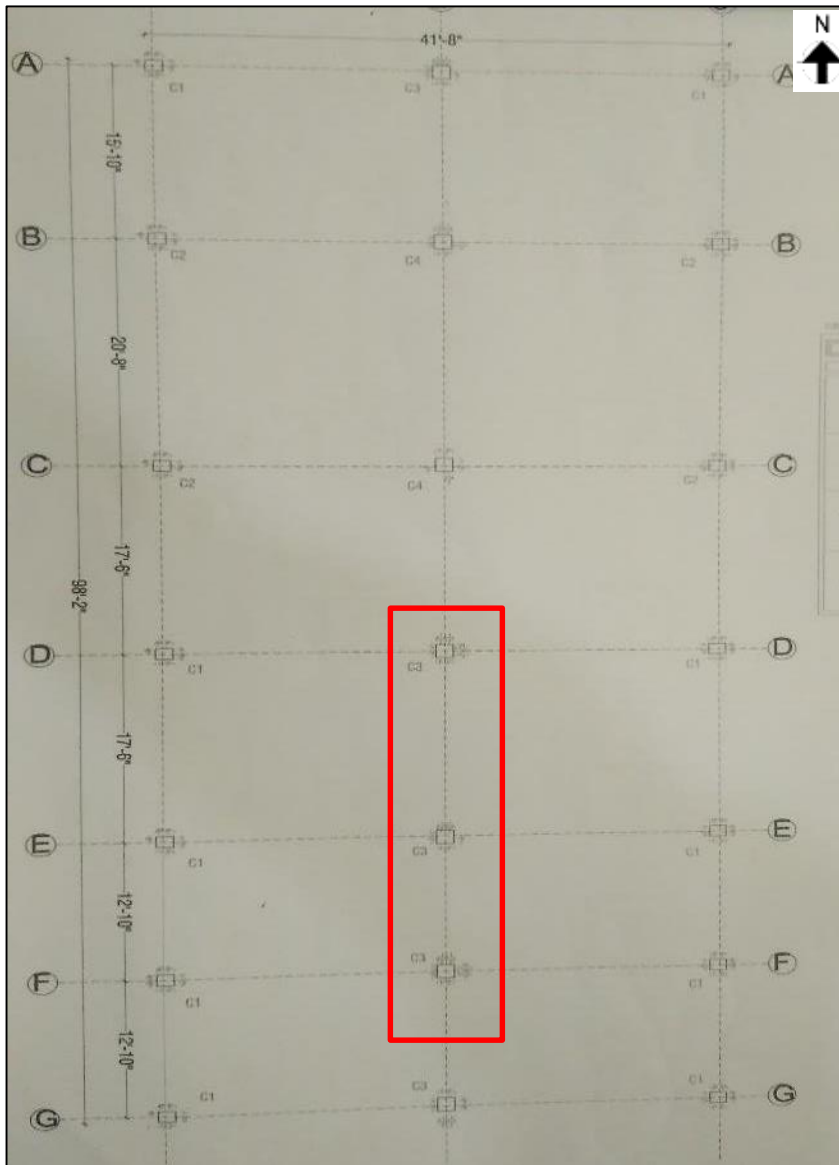
Roof plan

Factory engineer is required to carry out the flexural adequacy check of the roof slab. Suggest any implementation of remediation where required.

Observations: Utility Building



Column appeared to be slender



Highlighted columns in layout



6.2m
Unsupported
height

Column appeared to be slender with long
unsupported length

Factory engineer is required to carry out
the adequacy check of the columns and
implement remediation if required.



Lack of lateral stability in roof shed

Observations: Utility Building



No horizontal/roof bracing/compression strut is provided in any direction. Lack of lateral stability system in both short and long direction. Factory engineer is required to check the lateral stability of this structure.

Observations: Roof shed over Utility Building



Distorted steel column, apparently inadequate member& lack of lateral stability



Distorted steel column at external steel stair

Factory engineer is required to carry out the member adequacy & stability and implement remediation where required.



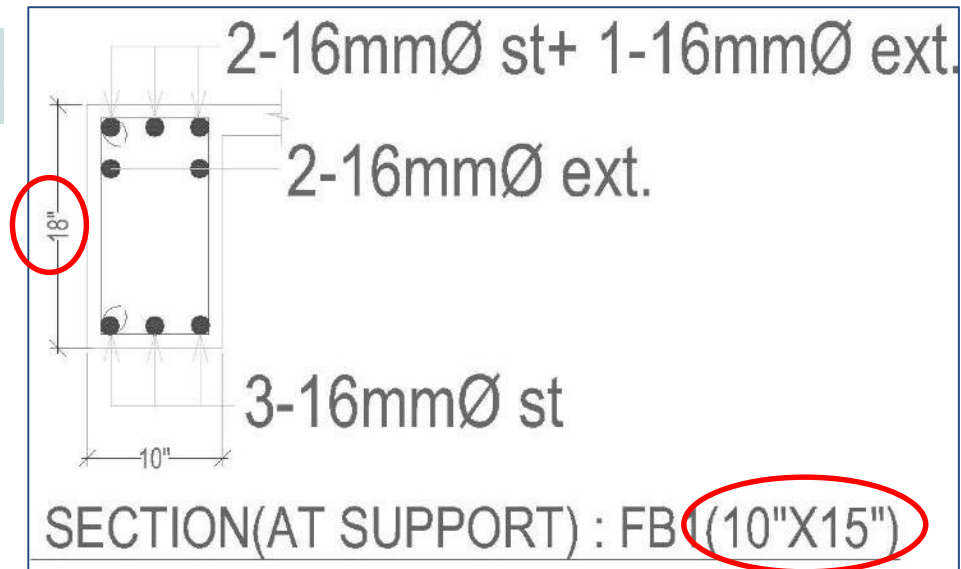
Apparently inadequate steel member size and no stability system provided.

Observations: Utility Building



Discrepancy in as-built drawing & lack of as-built drawing in RMS Guard Room

Observation : RMS Guard Room



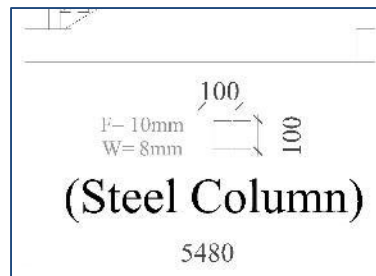
In sectional drawing, the dimension of RCC beam is written 18 inch but in site the dimension was found 15 inch



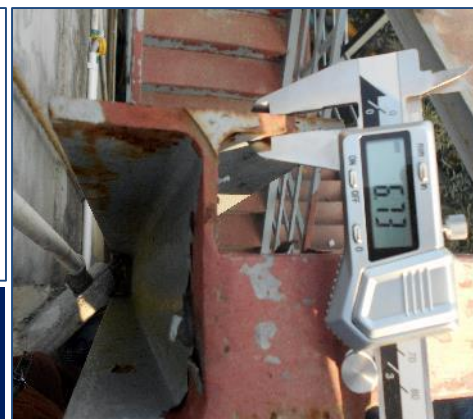
No drawing for canopy was available



Thickness of web section
5 mm



Thickness in
drawing F10 mm
W8mm



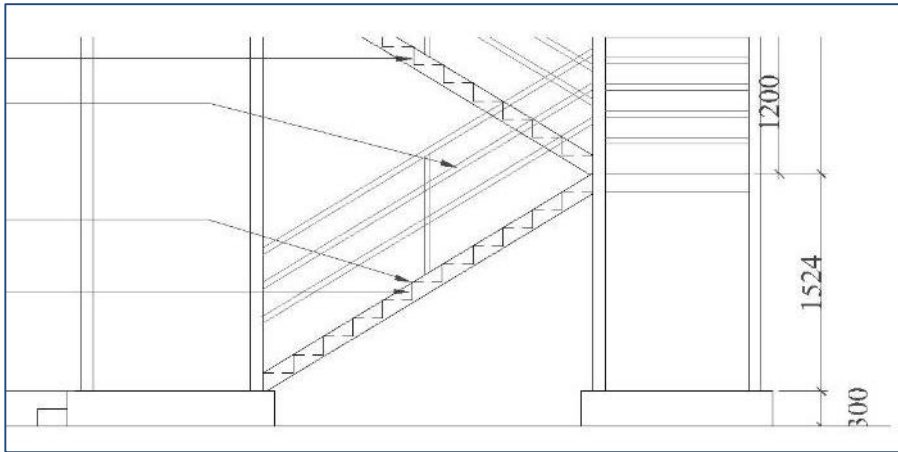
Thickness of flange
section 6mm

Discrepancy was found between as-built drawing. The dimension of web of I column was found to be 100 mm instead of 130 mm. the thickness was also found lesser than mentioned.



Lack of fixity in support of steel stair

Observation : RMS Guard Room



Stair column on self support



No fixity (pin or fix) between baseplate and short column was observed.

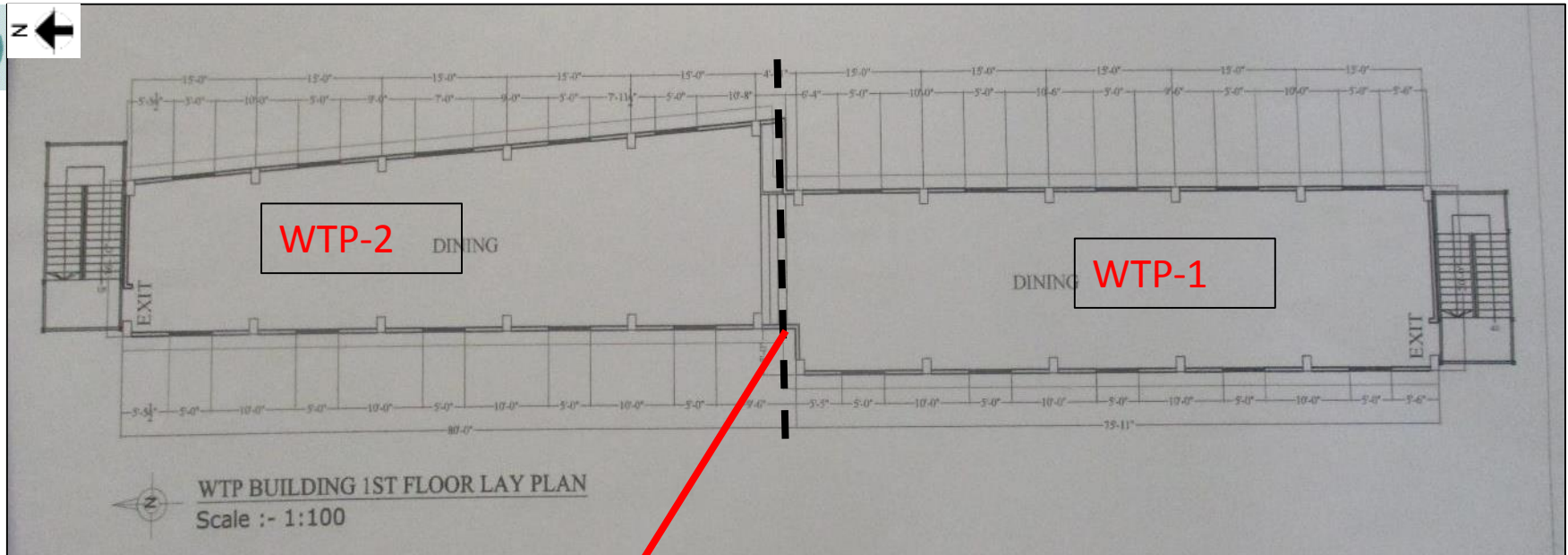


No fixity (pin or fix) between baseplate and short column was observed.



Expansion joint filled with rigid material

Observations: WTP-1 & WP-2



Expansion joint between WTP-1 & WTP-2



Expansion joint filled with rigid material

Factory is required to fill the expansion joint with any flexible material so that two structure can expansion/move against thermal expansion or lateral movement

Observations: WTP-1 & WTP-2



Lack of lateral stability in Roof shed over WTP-1 & WTP-2

Observations:



Roof bracing provided along short direction

No vertical bracings/tie beam/compression struts were provided in the long direction. Only roof bracings are provided along the short direction, lateral stability along the long direction is appeared to be incomplete. The building engineer is required to check the lateral stability system of the shed.

Observations: Roof shed over WTP-1



No horizontal/roof bracing/compression strut is provided in any direction. Lack of lateral stability system in both short and long direction. Factory engineer is required to check the lateral stability of this structure.

Observations: Roof shed over WTP-2

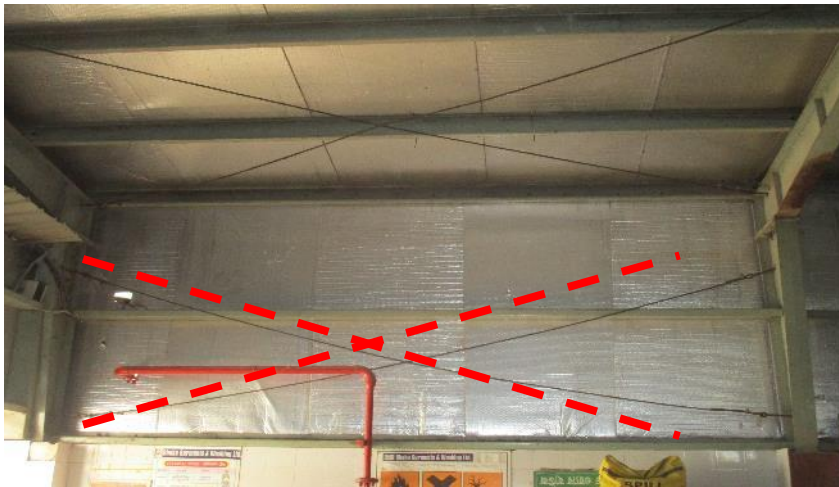


Lack of lateral stability

Observations: Store (Chemical Warehouse)



No eave beam/compression strut along long direction



Vertical bracing provided at half height only

Only tension bracing provided for long and short direction for lateral stability. No compression member provided in long direction. Building engineer is required to check the lateral stability system of the shed.

Observations: Store (Chemical Warehouse)

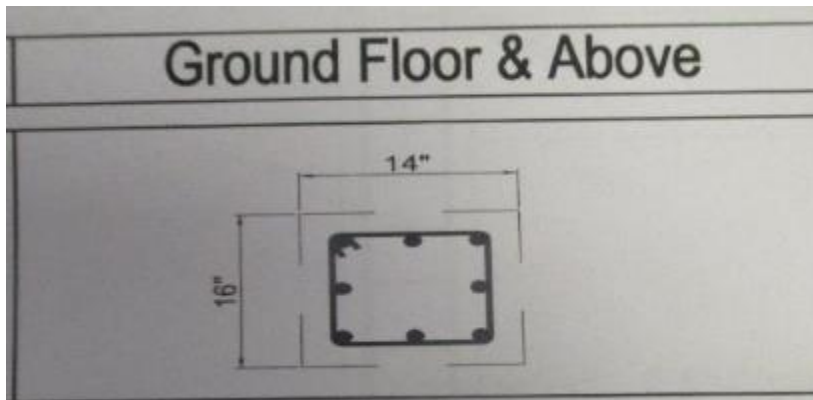


Discrepancy between as-built drawing & as-built condition

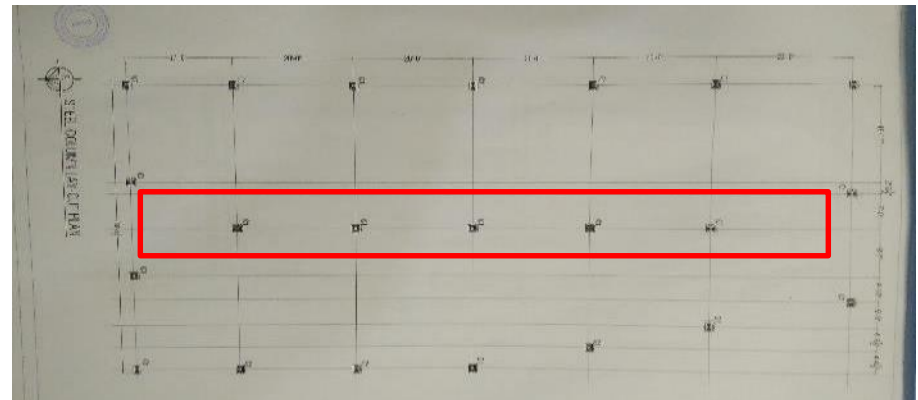
Observations: Store (Chemical Warehouse)



Dimension of pedestal column was measured as 350mmX 300mm without render instead of 400mmX350mm. Also orientation of all internal columns were found 90 degree rotated from original position



Dimension of all column shown as 400mmX350mm



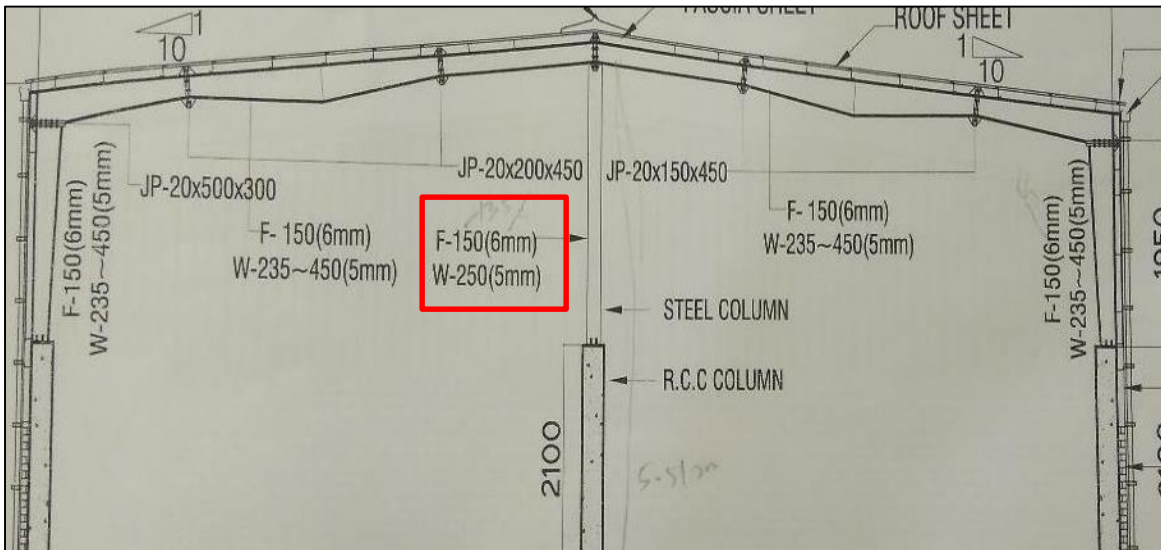
All internal pedestal column found 90 degree rotated

Factory engineer is required to carry out the adequacy considering the changes and update as-built drawing

Observations: Store (Chemical Warehouse)



Flange dimension and thickness of all internal steel columns were measured as 135mmX5mm instead of 150mmX6mm



Dimension of flange shown in drawing as 150mmX6mm

Factory engineer is required to update as-built drawing and carry out the adequacy of the shed considering the changes.

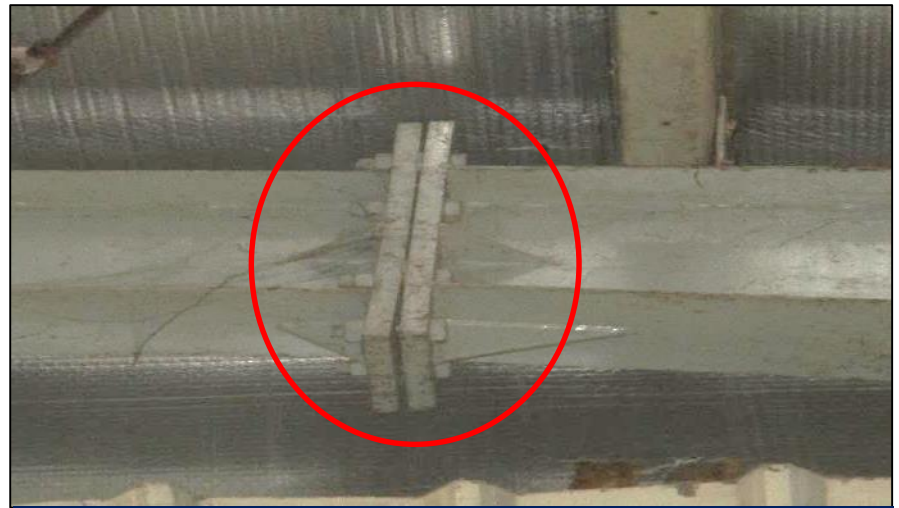
Observations: Store (Chemical Warehouse)



Loose bracing & connection gap



Gap in rafter to rafter connection



Gap in rafter to rafter connection



Loose vertical & roof bracing

Loose bracing and connection gap were found at several locations. Factory is required to tighten the loose bracing & repair the gaps with a suitable method suggested by the factory engineer.

Observations: Store (Chemical Warehouse)



Missing bolts in structural members

Observations: Store (Chemical Warehouse)



Bolts were missing at several locations

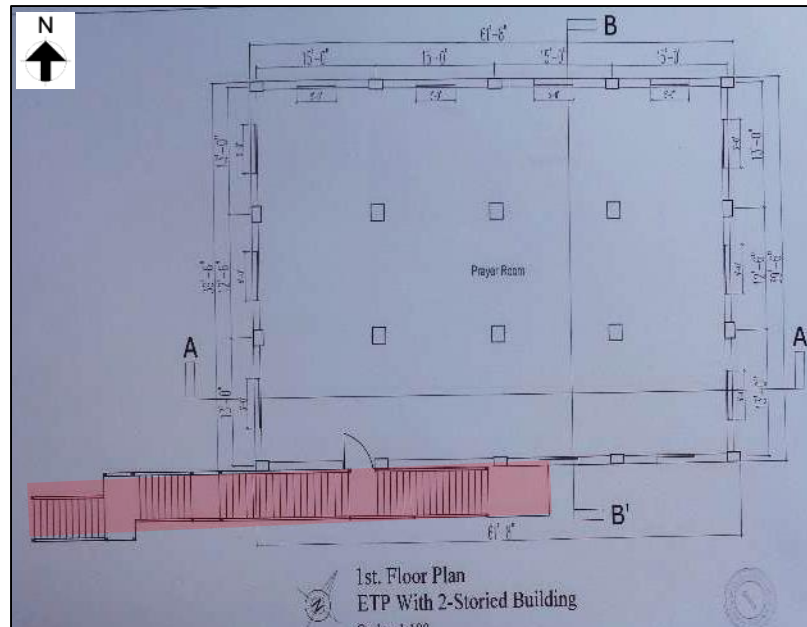
Observations: Store (Chemical Warehouse)



Lack of as-built drawings



Steel stair



Floor Layout Plan. Steel stair (marked location)



Connection of steel stair

Steel stair found at south side of the ETP building from ground floor to roof level. No as built-structural drawing was available at site. The stability of the stair is ambiguous. Factory engineer is required to prepare “as constructed” drawings with complete structural information. The factory engineer is also required to carry out Engineering Assessment for the steel stair including connection adequacy check.



Pier of steel stair resting on RCC cantilever slab



Steel stair



Pier resting on cantilever slab

Pier of steel stair resting on RCC cantilever slab of the ETP building. No design documents found to confirm the capacity of the cantilever slab to bear the load from the steel pier. Factory engineer is required to check the capacity of the RCC cantilever slab.



Problems Observed

Main Building

Item 1 : Discrepancy in as-built drawing in Main Building

Item 2 : Perforation on 1st floor Slab

Item 3 : Dampness in bottom slab of water tank.

Utility Building

Item 4 : Heavy loading on roof slab

Item 5 : Column appeared to be slender

Item 6 : Lack of lateral stability in roof shed

Item 7 : Distorted steel column and lack of lateral stability at external steel stair

RMS Guard Room (Security Building)

Item 8 : Discrepancy in as-built drawing & lack of as-built drawing in RMS Guard Room.

Item 9 : Lack of fixity in support of steel stair.

(WTP-1 & WTP-2) Building

Item 10 : Expansion joint filled with rigid material

Item 11 : Lack of lateral stability in Roof sheds

Item 12 : Lack of lateral stability in steel stairs



Problems Observed

Store (Chemical Warehouse)

Item 13 : Lack of lateral stability

Item 14 : Discrepancy between as-built drawing & as-built condition

Item 15 : Loose bracing & connection gap

Item 16 : Missing bolts in structural members

ETP Building

Item 17: Lack of as-built drawings.

Item 18: Pier of steel stair resting on RCC cantilever slab



Priority Actions



Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Discrepancy in as-built drawing in Main Building	Factory engineer is required to survey the structure and update the as-built drawing.	6-weeks
2	Discrepancy in as-built drawing in Main Building	Factory engineer is required to check the capacity of the slab panel considering the perforation.	6-weeks
3	Dampness in bottom slab of water tank (Main Building)	Factory engineer is required to produce an investigation report including the reason for moisture seepage, impact and suggest the remedial action.	6-weeks
4	Dampness in bottom slab of water tank (Main Building)	Implement the remediation if required.	6-months
5	Heavy loading on roof slab (Utility Building)	Factory engineer is required to check the the flexural adequacy of the roof slab.	6-weeks
6	Heavy loading on roof slab (Utility Building)	Produce and actively manage load plan according to the floor capacity.	6-weeks
7	Heavy loading on roof slab (Utility Building)	Implement any remediation work if required.	6-months



Item No.	Observation	Recommended Action Plan	Recommended Timeline
8	Column appeared to be slender (Utility Building)	Factory engineer is required to carry out the adequacy of the slender columns.	6-weeks
9	Column appeared to be slender (Utility Building)	Implement remediation work if required.	6-months
10	Lack of lateral stability in roof shed (utility Building)	Factory engineer is required to carry out lateral stability check of the roof shed.	6-weeks
11	Lack of lateral stability in roof shed (utility Building)	Implement remediation work if required.	6-months
12	Distorted steel column and lack of lateral stability at external steel stair (utility Building)	Factory is required to repair the distorted column.	6-weeks
13	Distorted steel column and lack of lateral stability at external steel stair (utility Building)	Factory engineer is required to carry out member adequacy & lateral stability check of the steel stair.	6-weeks
14	Distorted steel column and lack of lateral stability at external steel stair (utility Building)	Implement remediation work if required.	6-months



Item No.	Observation	Recommended Action Plan	Recommended Timeline
15	Discrepancy in as-built drawing & lack of as-built drawing in RMS Guard Room	Factory engineer is required to survey the structure and update the as-built drawing.	6-weeks
16	Discrepancy in as-built drawing & lack of as-built drawing in RMS Guard Room	Implement remediation work if required.	6-months
17	Lack of fixity in support of steel stair (RMS Guard Room)	Factory is required to provide / establish fixity to the support of the steel column.	6-weeks
18	Lack of fixity in support of steel stair (RMS Guard Room)	Implement remediation work if required.	6-months
19	Expansion joint filled with rigid material in WTP-1 & WP-2	Factory is required to fill the expansion joint with any flexible material.	6-weeks
20	Lack of lateral stability in Roof sheds (WTP-1 & WP-2)	Factory engineer is required to carry out lateral stability check of the roof sheds.	6-weeks
21	Lack of lateral stability in Roof sheds (WTP-1 & WP-2)	Implement remediation work if required.	6-months



Item No.	Observation	Recommended Action Plan	Recommended Timeline
22	Lack of lateral stability (Store : Chemical Warehouse)	Factory engineer is required to carry out lateral stability check of the shed.	6-weeks
23	Lack of lateral stability (Store : Chemical Warehouse)	Implement remediation work if required.	6-months
24	Discrepancy between as-built drawing & as-built condition (Store: Chemical Warehouse)	Factory engineer is required to carry out the adequacy check of the shed considering the changes in as-built drawing.	6-weeks
25	Discrepancy between as-built drawing & as-built condition (Store: Chemical Warehouse)	Update as-built drawing.	6-weeks
26	Discrepancy between as-built drawing & as-built condition (Store: Chemical Warehouse)	Implement remediation work if required from the analysis.	6-months
27	Loose bracing & connection gap (Store : Chemical Warehouse)	Repair the connection gaps with a suitable method.	6-weeks
28	Loose bracing & connection gap (Store : Chemical Warehouse)	Tighten all loose bracings.	6-weeks



Item No.	Observation	Recommended Action Plan	Recommended Timeline
29	Missing bolts (Store : Chemical Warehouse)	Install all missing bolts.	6-weeks
30	Lack of as-built drawing (ETP Building)	Prepare “as constructed” drawings with complete structural information.	6-weeks
31	Lack of as-built drawing (ETP Building)	The factory engineer is required to carry out an Engineering Assessment for the steel stair.	6-weeks
32	Lack of as-built drawing (ETP Building)	Implement the remediation works if required.	6-months
33	Pier of steel stair resting on RCC cantilever slab (ETP Building)	Factory engineer is required to check the capacity of the RCC cantilever slab.	6-weeks
34	Pier of steel stair resting on RCC cantilever slab (ETP Building)	Carryout remedial works if required.	6-months