

Target Denim & Casual Wear Ltd.

Islampur Road, Kodda, Nadun, Gazipur

23.987170, 90.357931

27th January and 4th February 2019





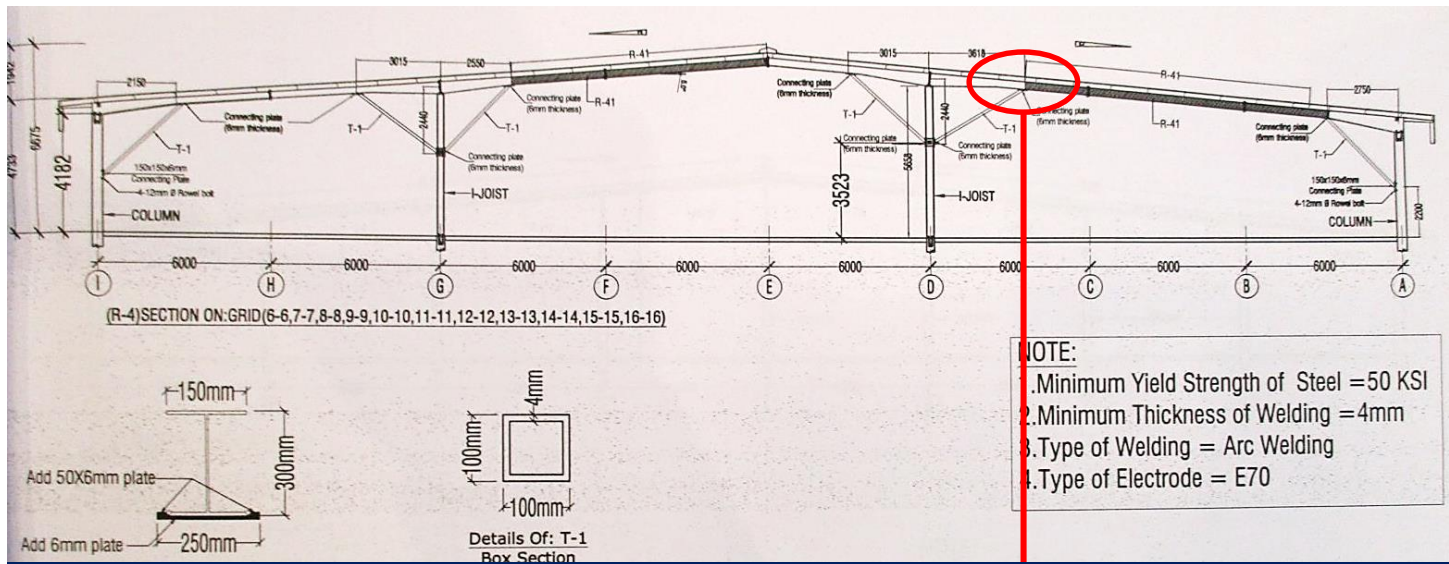
Observations



Shed-1 (Finishing Shed)



Improper retrofitting works



Retrofitting drawing.

As per retrofitting drawings bottom flange of rafter was required to retrofit up to the knee bracing. But bottom flanges were not retrofitted up-to the mentioned point.



Retrofitted rafter on site.

Observations: Shed-1 (Finishing)



Loose bracings and gap in connections



Horizontal & Vertical bracing found loose. The bracings are required to be tighten.



Shed-2 (Sewing and Cutting Shed)



Mismatches in as-built drawings

Observations: Shed-2 (Sewing and Cutting)

Retrofitting Section (Rafter)

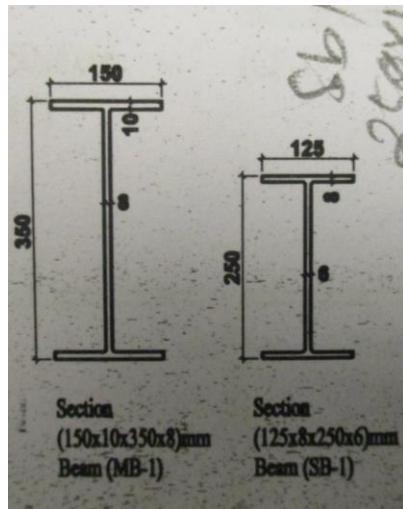
Section	Web (d)	tw	Flange (b)	tf	Additional Plate (tw/tf)
RR-01	325	6	150	8	6mm plate with Bottom flange
RR-02	325	6	150	8	8mm plate with Bottom flange
RR-03	325	6	150	8	4mm with top & 6mm with Bottom flange
RR-04	325/500	6	150	8	6mm plate with Bottom flange
RR-05	325/500	6	150	8	6mm with top & 8mm with Bottom flange
RR-06	325/500	6	150	8	6mm with Bottom flange
RR-07	200	6	100	8	6mm with Bottom flange

8mm flange thickness of rafter

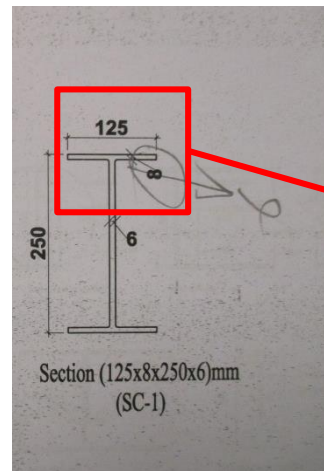


Flange thickness rafter was found 6mm instead of 8mm

Observations: Shed-2 (Sewing and Cutting)



Flange thickness of mezzanine floor main beam and sub-beam was found 6mm instead of 100mm and 8mm respectively.



Flange thickness of mezzanine floor column was found 6mm instead of 8mm

Observations: Shed-2 (Sewing and Cutting)



Floor loading plan to be prepared



The factory engineer to prepare floor live loading plan for the mezzanine floor considering live loading requirement of BNBC-2006. Also, implement the load management program.



Corrosion in steel members

Observations: Shed-2 (Sewing and Cutting)



Corrosion in steel members at mezzanine floor main beam was observed. The factory is required to apply corrosion resistance coating on the steel member.

Observations: Shed-2 (Sewing and Cutting)



Shed-3 (Wastage Shed)



DEA recommendation to be implemented



DESIGN & DEVELOPMENT SOLUTION

S T R U C T U R A L D E S I G N C O N S U L T A N T

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6.0 CONCLUSION & RECOMMENDATION:

1. Existing structure is a non-engineering structure. Hence a detailing of an engineering shed has been adopted.
2. All proposed structural elements (footing, pedestal, grade beam, steel member & connections) are capable to resist both gravity & lateral load as prescribed in Bangladesh National Building Code (BNBC-2006).

As per the recommendation of DEA report, existing structure is non-engineered. A set of drawings was produced for the new structures instead of existing structure. The factory is required to demolish the existing structure or implement the recommendations of prepared DEA report.

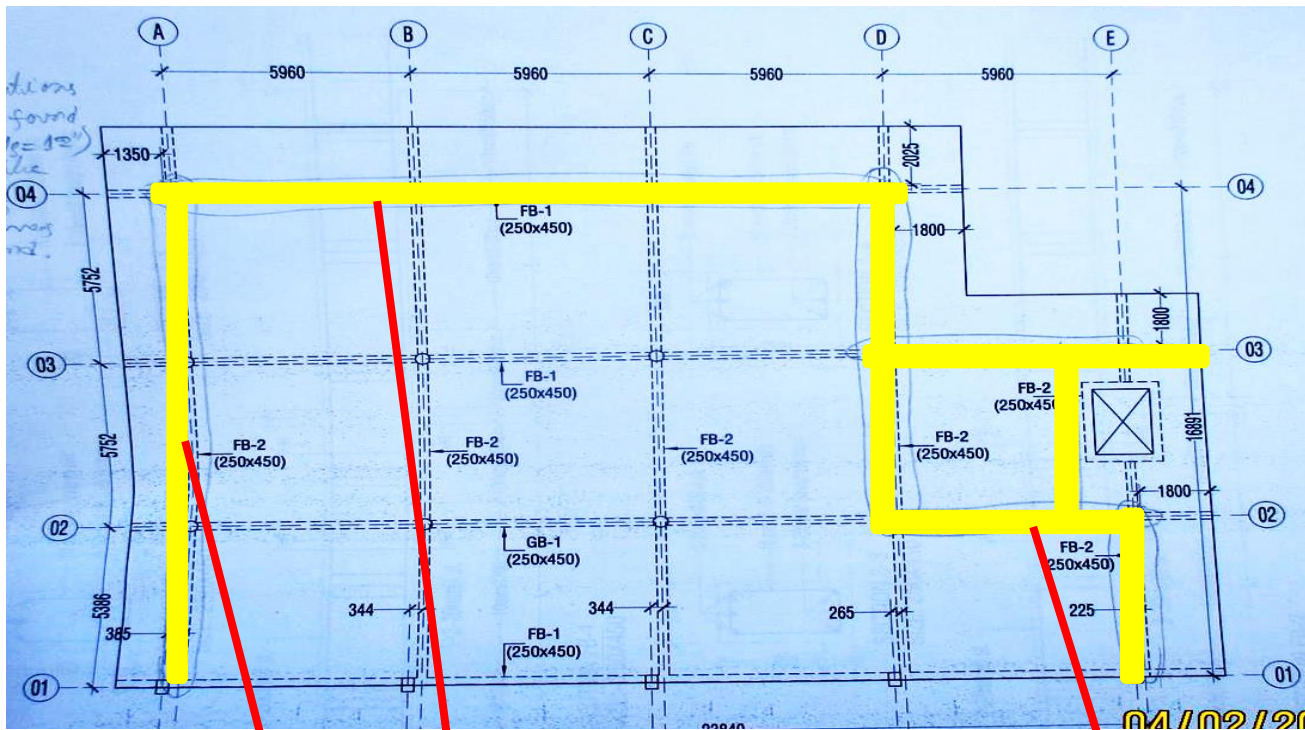
Observations: Shed-3 (Wastage)



Building-1 (Office Building)



Mismatch in as-built drawings



Inverted beam was only found at roof level only at marked locations. Beam was not found rest of the location as shown in as built drawing





Lack of water proofing membrane and exposed rebar on roof



Signage of water ponding was found at roof level



Column re-bar was found exposed at roof level

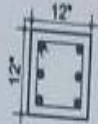
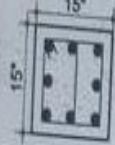
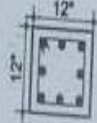


Building -2 (Security/Gatehouse)



Mismatch in as-built drawings



SCHEDULE OF COLUMN SIZE AND REINFORCEMENT						
COLUMN ID	BELOW GROUND LEVEL		GROUND FLOOR LEVEL		1ST FLOOR LEVEL	
	NOS. OF REINFORCEMENT	COLUMN SIZE	NOS. OF REINFORCEMENT	COLUMN SIZE	NOS. OF REINFORCEMENT	COLUMN SIZE
C1	● 6-16mmØ	15" 	● 6-16mmØ	12" 		
C2	● 8-16mmØ	15" 	● 8-16mmØ	12" 	● 8-16mmØ	 Dia-12"

Column at grid A/2 & A/1 has been shown circular in column schedule. During inspection, this two column was found rectangle with size of 300mmX300mm



Observations: Building -2 (Security/Gatehouse)



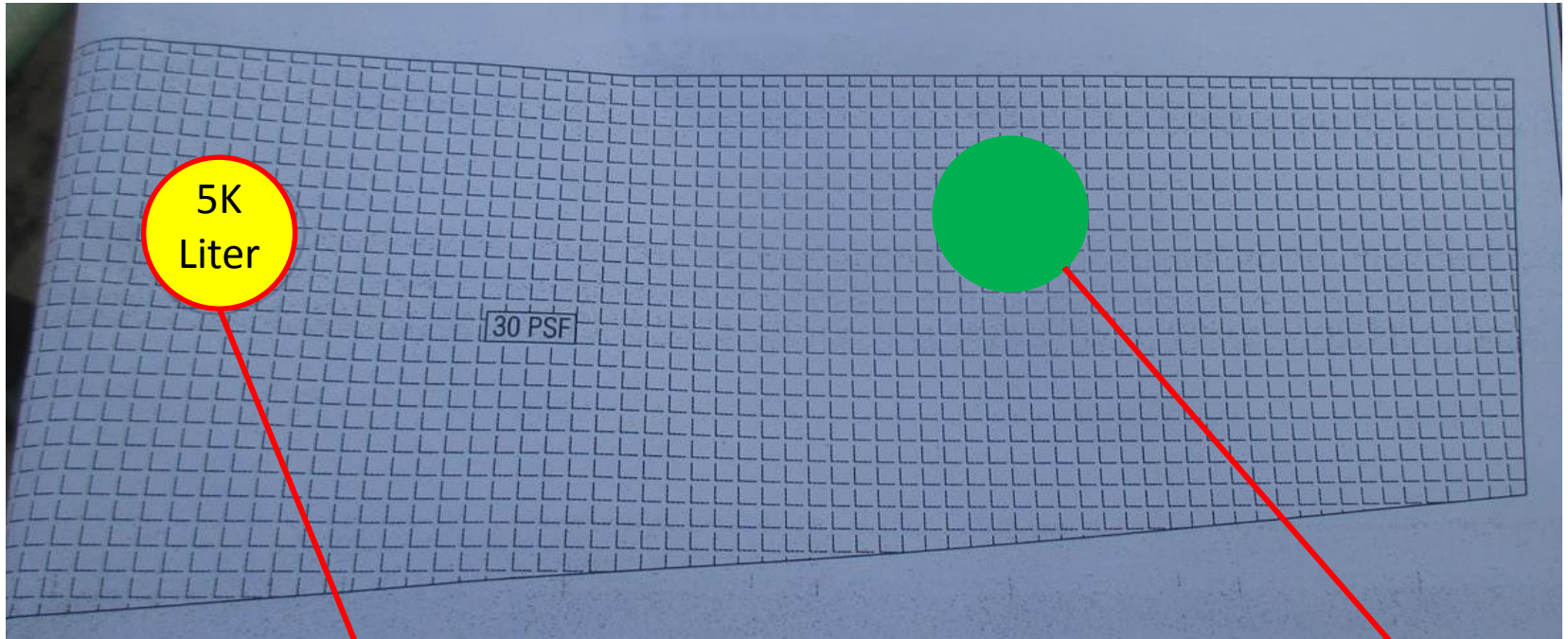
**The roof floor beam was found partially casted
and the rebars were exposed to air**



The roof floor beam was found partially casted and the rebars were exposed to air



Floor loading plan to be updated



5K liter water tank was found at roof which has not been placed as per layout. Water tank was found at marked location.

Water tank was not found at this location



Lack of water proofing membrane



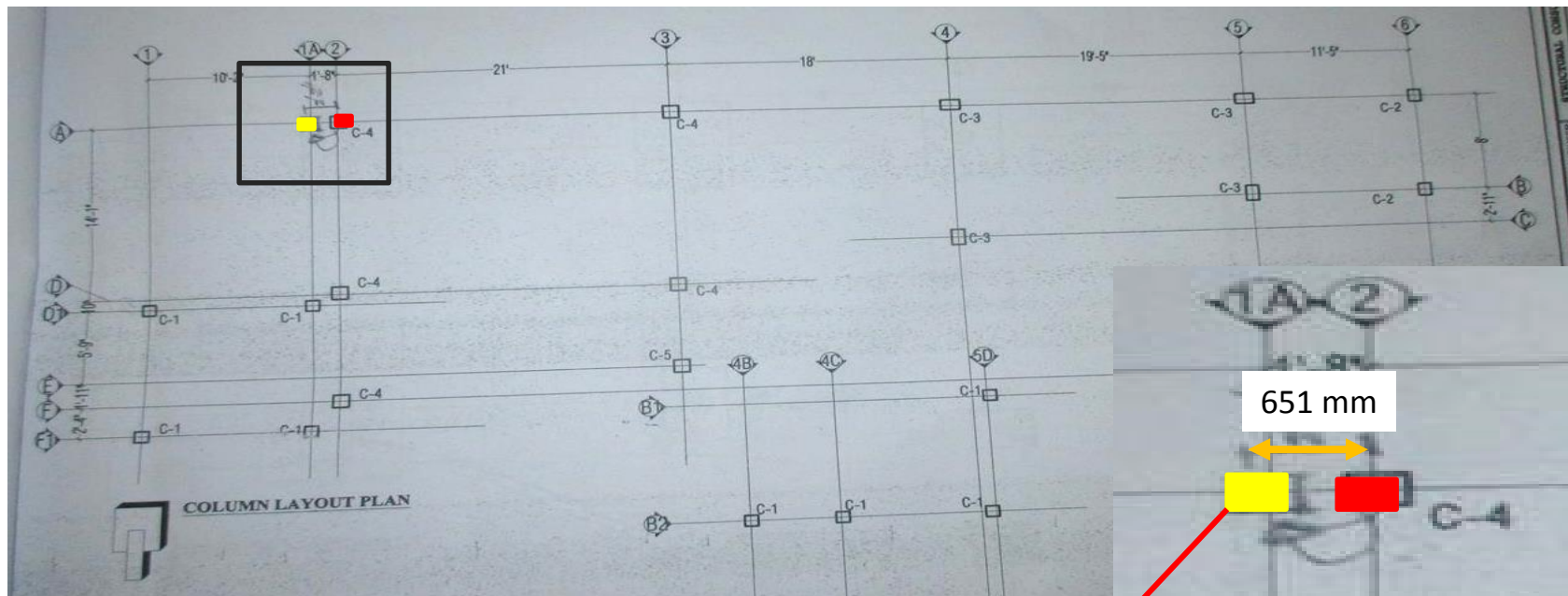
Signage of water ponding was found at roof level.



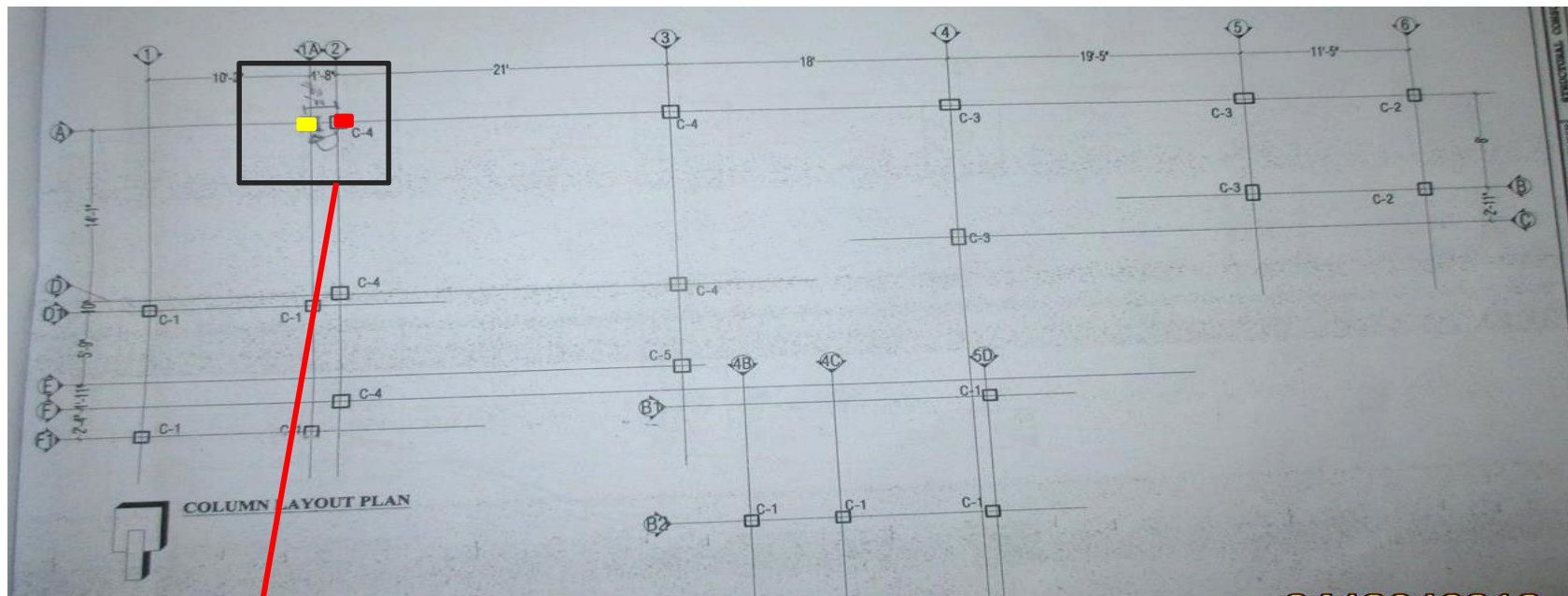
Building -3 (Utility Building)



Mismatch in as-built drawings



Column Layout plan does not match with actual site condition. Column was found at yellow marked location instead of red marked location



Steel column was found at ground floor at marked location. RCC column was found started above the steel column at 1st floor



Lack of water proofing membrane and exposed rebar on roof



Signage of water ponding was found at roof level



Column re-bar was found exposed at roof level



Building -4 (Boiler Building)



Mismatch in as-built drawings



Beam size does not match with actual site condition. Down stand depth was found 9" instead of 13" at grid 3/(C1-H) & 2/(C1-H). (considering slab thickness 5")



Priority Actions



Problems Observed

Shed-1 (Finishing Shed):

ITEM-1: Improper retrofitting works.

ITEM-2: Loose bracings and gap in connections.

Shed-2 (Sewing and Cutting shed):

ITEM-3: Mismatch in as-built drawings.

ITEM-4: Floor loading plan to be updated.

ITEM-5: Corrosion in steel members.

Shed-3 (Wastage Shed):

ITEM-6: DEA recommendation to be implemented.

Building-1 (Office Building):

ITEM-7: Mismatch in as-built drawings.

ITEM-8: Lack of water proofing membrane and exposed rebar on roof.

Building-2 (Security/Gate house Building):

ITEM-9: Mismatch in as-built drawings.

ITEM-10: The roof floor beam was found partially casted and the rebars were exposed to air.

ITEM-11: Floor loading plan to be updated.

ITEM-12: Water ponding/intrusion signs in the roof.

Building-3 (Utility building):

ITEM-13: Mismatch in as-built drawings.

ITEM-14: Lack of water proofing membrane and exposed rebar on roof.

Building-4 (Boiler building):

ITEM-15: Mismatch in as-built drawings.



Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Improper retrofitting works Shed-1 (Finishing)	The factory is required to implement the further retrofitting works as per retrofitting drawings.	6-weeks
2	Loose bracings and gap in connections Shed-1 (Finishing)	The factory is required to tighten the loose bracings.	6-weeks
3	Loose bracings and gap in connections Shed-1 (Finishing)	Fill the gaps in connections as per the engineers suggestion.	6-weeks
4	Mismatch in as-built drawings. Shed-2 (Sewing and Cutting Shed)	Factory Engineer is required to survey the structure and develop as-built drawings to as-constructed status.	6-weeks
5	Mismatch in as-built drawings. Shed-2 (Sewing and Cutting Shed)	Factory Engineer to check the adequacy of rafter/beams based on as-built conditions.	6-weeks
6	Mismatch in as-built drawings. Shed-2 (Sewing and Cutting Shed)	Implement the recommendation of engineering assessment (if required).	6-months
7	Floor loading plan to be updated Shed-2 (Sewing and Cutting Shed)	Prepared loading plan is required to be updated following minimum live loading requirement of BNBC-2006.	6-weeks
8	Floor loading plan to be updated Shed-2 (Sewing and Cutting Shed)	Implement floor loading plan.	6-months



Item No.	Observation	Recommended Action Plan	Recommended Timeline
9	Corrosion in steel members Shed-2 (Sewing and Cutting Shed)	Factory is required to take necessary measures to repair the corrosion of steel members and prevent the reasons of corrosion.	6-weeks
10	Improper retrofitting works Shed-3 (Wastage)	The factory is required to demolish the existing structure or implement the recommendations (re-built of structure) of prepared DEA report.	6-weeks
11	Mismatch in as-built drawings. Building-1 (Office Building)	Factory Engineer is required to survey the structure and develop as-built drawings to as-constructed status.	6-weeks
12	Mismatch in as-built drawings. Building-1 (Office Building)	Factory Engineer to check the adequacy of rafter/beams based on as-built conditions.	6-weeks
13	Mismatch in as-built drawings. Building-1 (Office Building)	Implement the recommendation of engineering assessment (if required).	6-months
14	Lack of water proofing membrane and exposed rebar on roof. Building-1 (Office Building)	Provide water proofing membrane on roof and provide corrosion resistance coating on exposed rebar.	6-months



Item No.	Observation	Recommended Action Plan	Recommended Timeline
15	Mismatch in as-built drawings. Building-2 (Security/Gatehouse Building)	Factory Engineer is required to survey the structure and develop as-built drawings to as-constructed status.	6-weeks
16	Mismatch in as-built drawings. Building-2 (Security/Gatehouse Building)	Factory Engineer to check the adequacy of rafter/beams based on as-built conditions.	6-weeks
17	Mismatch in as-built drawings. Building-2 (Security/Gatehouse Building)	Implement the recommendation of engineering assessment (if required).	6-months
18	The roof floor beam was found partially casted and the rebars were exposed to air. Building-2 (Security/Gatehouse Building)	Factory Engineer is required to cast the roof beam.	6-weeks



Item No.	Observation	Recommended Action Plan	Recommended Timeline
19	Floor loading plan to be updated. Building-2 (Security/Gatehouse Building)	The loading plan to be revised as per the requirement of BNBC-2006.	6-weeks
20	Floor loading plan to be updated. Building-2 (Security/Gatehouse Building)	Implement the floor loading plan.	6-months
21	Water ponding/intrusion signs in the roof Building-2 (Security/Gatehouse Building)	Factory is required to take necessary measures to prevent water intrusion and repair damaged area.	6-weeks
22	Mismatch in as-built drawings. Building-3 (Utility Building)	Factory Engineer is required to survey the structure and develop as-built drawings to as-constructed status.	6-weeks
23	Mismatch in as-built drawings. Building-3 (Utility Building)	Factory Engineer to check the adequacy of column/beam based on as-built conditions.	6-weeks
24	Mismatch in as-built drawings. Building-3 (Utility Building)	Implement the recommendation of engineering assessment (if required).	6-months



Item No.	Observation	Recommended Action Plan	Recommended Timeline
25	Lack of water proofing membrane and exposed rebar on roof. Building-3 (Utility Building)	Provide water proofing membrane on roof and provide corrosion resistance coating on exposed rebar.	6-months
26	Mismatch in as-built drawings. Building-4 (Boiler Building)	Factory Engineer is required to survey the structure and develop as-built drawings to as-constructed status.	6-weeks