Modele De Capital Ind. Ltd.(Unit-2)

2 No, Hajiganj, Narayanganj, Dhaka, Bangladesh.
(23.635769, 90.511700)
27 June 2022

Building Information

1. Single Storied Shed 1
2. Single Storied Shed 2
3. Single Storied Shed 3
4. Two Storied Shed 4
5. Single storied Boiler shed

Observations

Structural design report not available

Observation: All structures

Shed-1

Shed-2

Shed-4

Shed-3

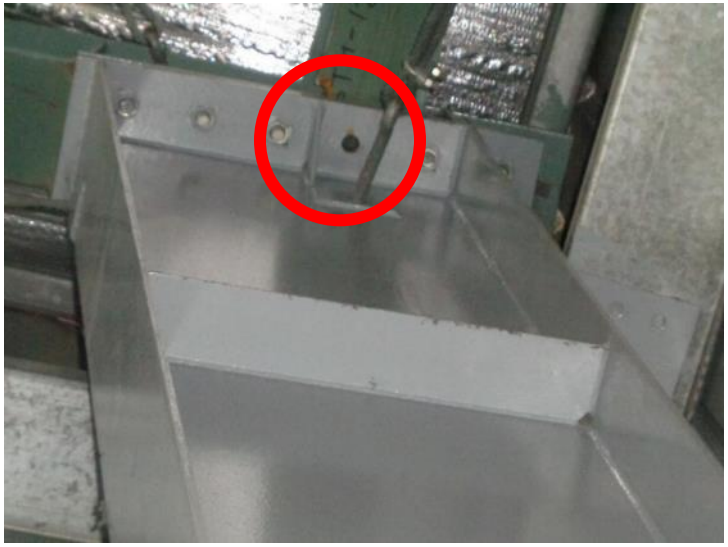
No design report is available for the structures (Shed-1, Shed-2, Shed-3, Shed-4 & Boiler room).

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 of part-6, BNBC. However, design report was not available during inspection. The building engineer is required to prepare a design report in compliance with BNBC for all structures.

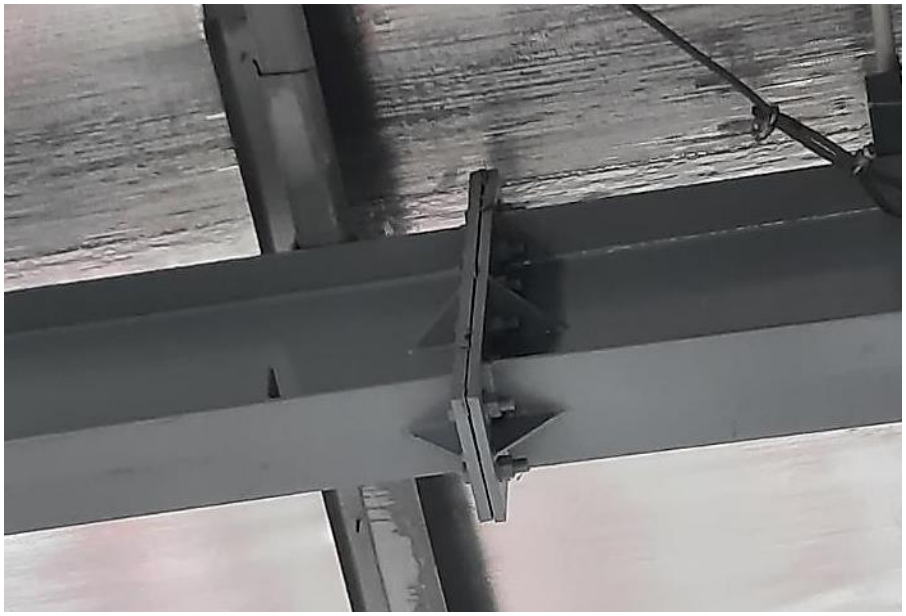
Observation: All structures

Connection gap between joint plates, missing bolts and corrosion on steel columns

Observation: Shed-1



Missing bolts



Connection Gap

Corrosion on steel column

Missing bolt, connection gap & rusty member were observed in the shed-1. Building engineer is required to install the missing bolts as per specification, fill the connection gaps by suitable repair method and apply anticorrosive coating on the steel members as per the suggestion of building engineer.

Observation: Shed-1

Storage racks found without bracing/anchored

Observation: Shed-2

Storage rack at Shed-2

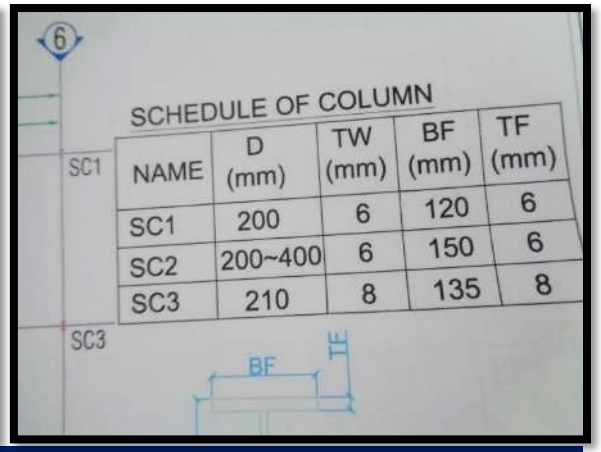
Storage racks were not anchored or braced to resist earthquake forces

Building engineer is required to anchor or brace properly all kinds of non-structural elements.

Observation: Shed-2

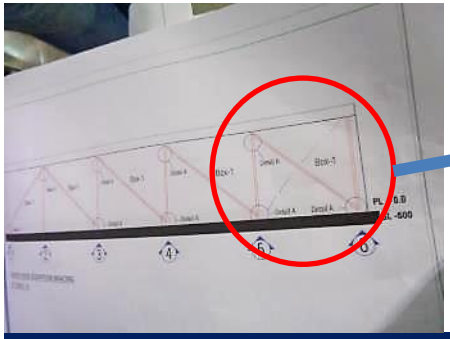
Discrepancy between as-built drawing and on-site condition

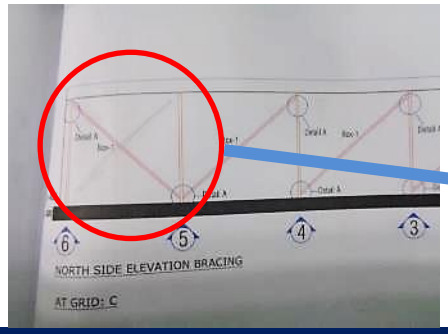
Observation: Shed-3



NAME	D (mm)	TW (mm)	BF (mm)	TF (mm)
SC1	200	6	120	6
SC2	200~400	6	150	6
SC3	210	8	135	8

Steel column (SC-3) measured (F-120X8; W-195X8) instead of (F-135X8; W-210X8)





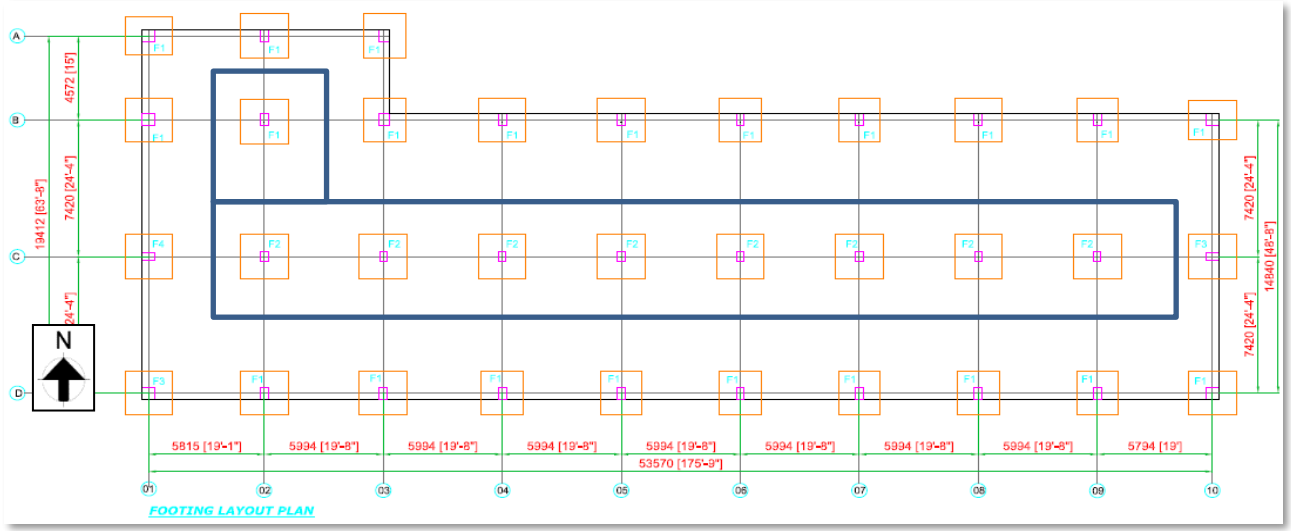
Mismatch observed in wall bracing arrangement

Discrepancy found between the as-built drawing and on-site condition. Building engineer is required to prepare accurate as-built drawing.

Observation: Shed-3

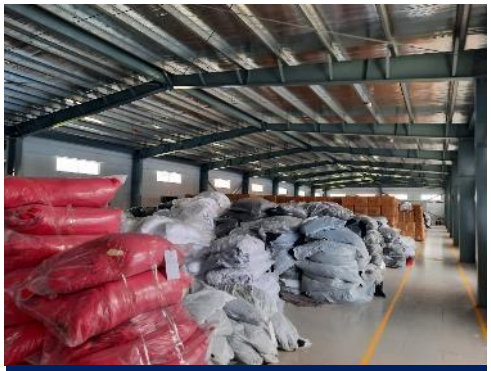
Bearing capacity of isolated footing below the normal design limit

Observation: Shed-4



Foundation layout plan Shed- 4

Cursory calculation indicates that the foundation stress exceeds the normal design limit for the internal footings. Considering prepared live load plan of 6 kPa and bearing capacity of foundation as per soil test report. The building engineer is required to review the design load and foundation stress.



Typical storage loading on first floor

13.0. Table No. 5: Bearing Capacities of the Shallow Foundation from Field and Laboratory Test (Values in Tsf, F. S. = 2.50)

Bore Hole No	Depth in Ft	Field SPT	Cohesion Tsf	Bearing capacity (Tsf)	
				For Strip footing	For circular or Square footing
BH-1	5	2	0.13	0.37	0.47
	10	5	0.31	0.76	1.03
	15	7	0.44	0.99	1.31
	20	9	0.56	1.23	1.61
BH-2	5	1	0.06	0.18	0.23
	10	4	0.25	0.68	0.86
	15	8	0.50	1.11	1.46
	20	10	0.63	1.36	1.74
BH-3	5	2	0.00	0.18	0.23
	10	2	0.13	0.37	0.47
	15	2	0.13	0.37	0.47
	20	4	0.25	0.68	0.86
	5	2	0.13	0.37	0.47

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BH-4	10	3	0.19	0.54	0.65
	15	5	0.31	0.76	1.03
	20	7	0.44	0.99	1.31
BH-5	5	1	0.00	0.18	0.23
	10	2	0.13	0.37	0.47
	15	2	0.13	0.37	0.47
	20	2	0.13	0.37	0.47
BH-6	5	2	0.00	0.18	0.23
	10	2	0.00	0.18	0.23
	15	4	0.25	0.68	0.86
	20	2	0.13	0.37	0.47
BH-7	5	2	0.00	0.37	0.47
	10	2	0.00	0.37	0.47
	15	3	0.19	0.54	0.65
	20	2	0.13	0.37	0.47
BH-8	5	2	0.00	0.37	0.47
	10	4	0.00	0.68	0.86
	15	2	0.13	0.37	0.47
	20	6	0.38	0.88	1.19
BH-9	5	2	0.00	0.37	0.47
	10	1	0.00	0.18	0.23
	15	2	0.00	0.37	0.47
	20	1	0.00	0.18	0.23

Note:
SPT correction depends on overburden pressure, water table. F. S.= 2.50 as Bangladesh National Building Code (BNBC).

Soil bearing capacity table from the geotechnical investigation report

Observation: Shed-4

Standing water on the roof

Observation: Boiler Building

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Standing water on the roof

Standing water on roof observed due to improper drainage system. Building engineer is required to provide adequate slope to drain out the water from roof slab

Observation: Boiler Building

Problems Observed

All Structures:

01: Structural design report not available.

Shed-1:

02: Connection gap between joint plates, missing bolts and corrosion on steel columns.

Shed-2:

03: Storage racks found without bracing/anchored.

Shed-3:

04: Discrepancy between as-built drawing and on-site condition.

Shed-4:

05: Bearing capacity of isolated footing below the normal design limit.

Boiler Room:

06: Standing water on the roof.

Priority Actions

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Structural design report not available. (All Structures)	Building engineer is required to prepare design report in compliance with section 1.9.1.1 (part-6, BNBC).	6-weeks
02	Structural design report not available. (All Structures)	Implement the recommendation of design report.	6-months
03	Connection gap between joint plates, missing bolts and corrosion on steel columns. (Shed-1)	Install the missing bolts as per specification.	6-weeks
04	Connection gap between joint plates, missing bolts and corrosion on steel columns. (Shed-1)	Fill the connection gaps with suitable repair method.	6-weeks
05	Connection gap between joint plates, missing bolts and corrosion on steel columns. (Shed-1)	Remove the corrosion & apply suitable corrosion resistance coating on the steel members.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
06	Storage racks found without bracing/anchored. (Shed-2)	Building engineer is required to anchor or brace properly all kinds of non-structural elements.	6-weeks
07	Discrepancy between as-build drawing and on-site condition. (Shed-3)	Building engineer is required to survey the structure & prepare accurate as- built drawings with structural details.	6-weeks
08	Bearing capacity of isolated footing below the normal design limit. (Shed-4)	Building engineer is required to review the design, load and foundation stress.	6-weeks
09	Bearing capacity of isolated footing below the normal design limit. (Shed-4)	Verify and confirm the bearing capacity of the soil.	6-weeks
10	Bearing capacity of isolated footing below the normal design limit. (Shed-4)	Carry out remedial works where necessary.	6-Months
11	Standing water on the roof (Boiler room)	Building engineer is required to provide adequate slope to drain out the storm water.	6-weeks