

Revision : Issue-1
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(23.898113, 90.573466)

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Building information

1. Building 1 (Fire fighting Pump Room) (G) is a single storied (basement) RC building.
2. Building 2 (Substation) (G) is a single storied prefabricated steel structure.
3. Building 4 (Production Building) (G+3) is a four storied (G+3) RC building.
4. Building 5 (Facility Shed) (G) is a single storied prefabricated steel structure.
5. Building 6 (Boiler Room) (G) is a single storied steel structure.
6. Building 7 (WTP) (G) is a single storied steel structure.
7. Building 8 (Gate 4) is a single storied RC. Structure.
8. Building 9 (Gate 5) (G) is a single storied RC structure.

Observations

Lack of design documents



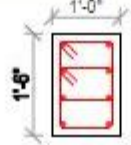
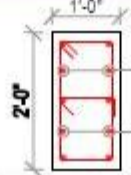
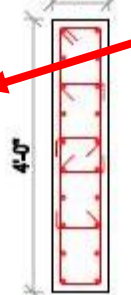
Building 1 (Fire Fighting Room)

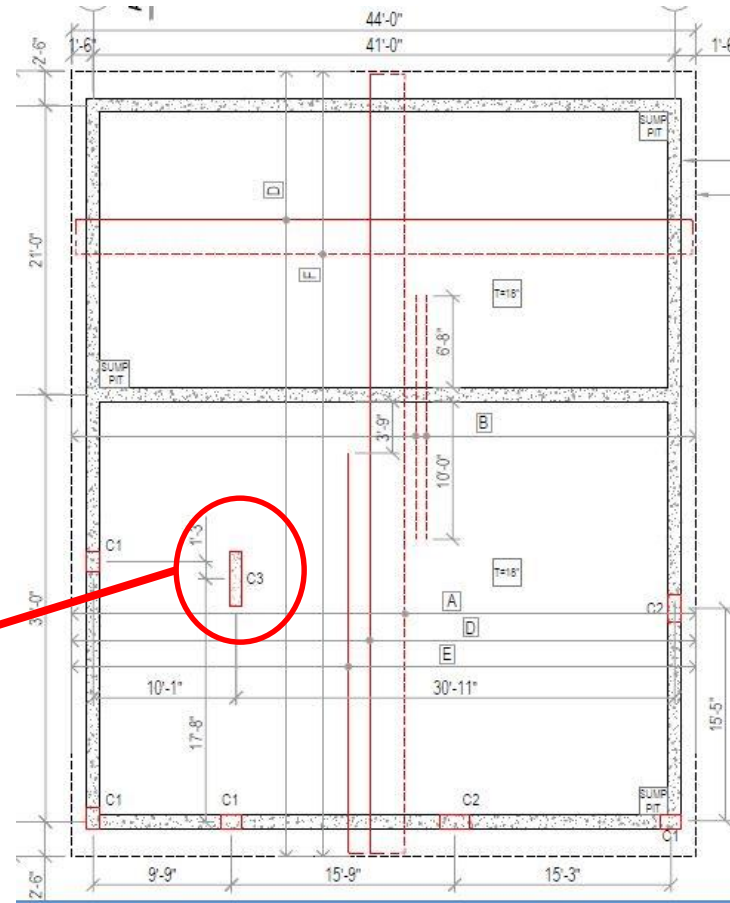
As per BNBC, every building or structure shall have its design documents prepared in accordance with the provision of Section 1.9.1. of BNBC part-6. The design document shall include a design report, and a set of structural drawings. However, design report was not available during inspection. The building engineer is required to prepare a design report in compliance with part-6, BNBC-2020.

5 Observation: Building-1 (Fire Fighting Room)

Inconsistency in as-built drawing

COLUMN SCHEDULE

COLUMN NOS.	BASE TO ABOVE	
C1	 BAR: 8-20Ø TIE: 10Ø @ 5" C/C CLEAR COVERING 1.5"	 DETAILS OF TIE
C2	 BAR: 6-25Ø + 4-20Ø TIE: 10Ø @ 5" C/C CLEAR COVERING 1.5"	
C2	 BAR: 20-16Ø TIE: 10Ø @ 5" C/C CLEAR COVERING 1.5"	



Column C-3 in layout

Column C-3 is shown as C-2 in schedule

Column C-3 is shown as C-2 in schedule.
Factory engineer is required to update the as-built drawing.

7 Observation: Building-1 (Fire Fighting Room)

Honeycomb observed in stair roof beam



Honeycomb observed in stair roof beam

Honeycomb observed in stair roof beam which may have been occurred due to poor workmanship during construction. Factory is required to repair the affected areas as per guidance of engineer.

Lack of design documents



Building-2 (Substation Shed)

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.

11 Observation: Building-2 (Substation Shed)

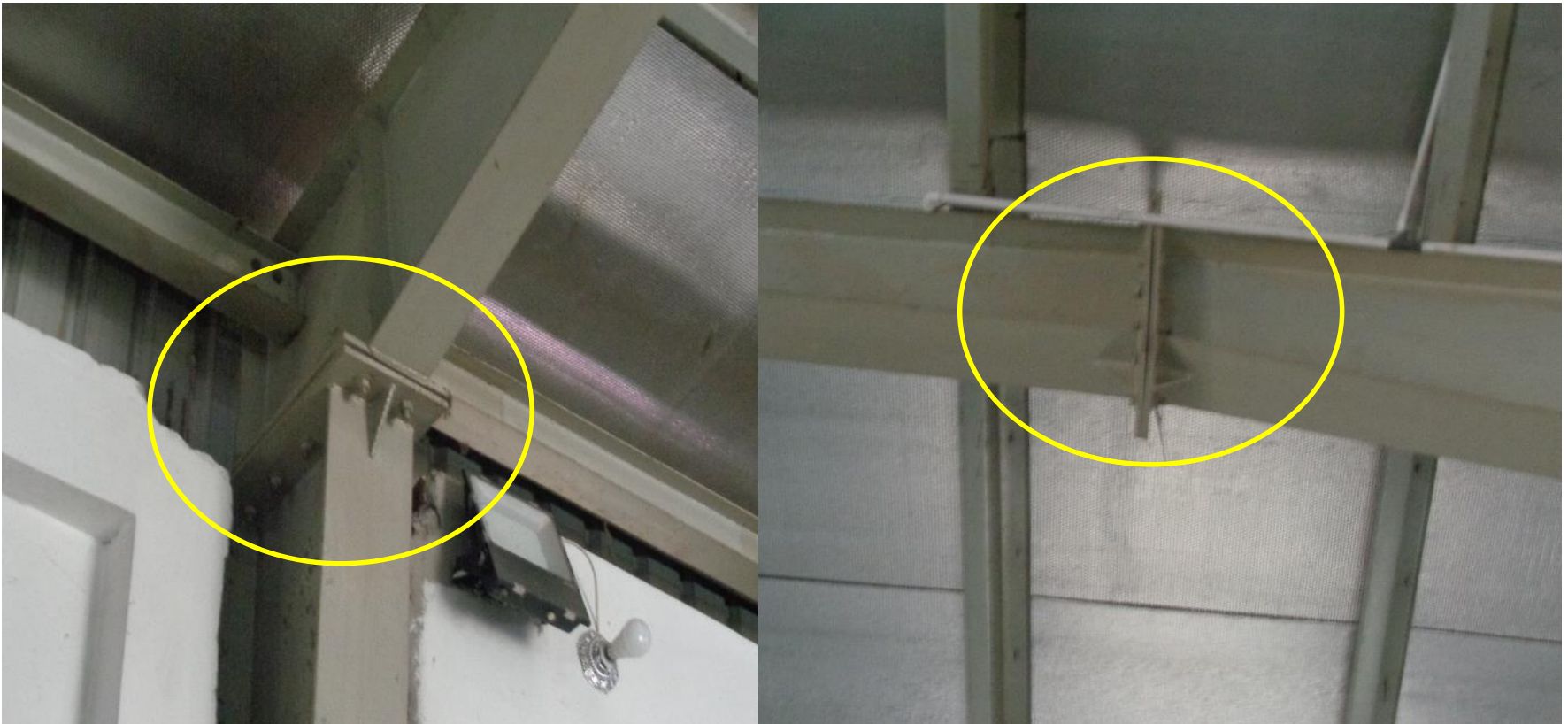
Lack of lateral stability



No vertical/horizontal bracing provided in wall and roof

Only strut member along the long direction (eave level) is present but no bracing is provided in the roof and wall to resist the lateral loads. Therefore, stability system along long direction is incomplete. Factory engineer is required to check the lateral stability of the structure.

Gap in connections



Connection gap found at several locations

Connection gap found at several locations. Factory is required to repair the connection gaps as per any suitable method suggested by the engineer.

Apparently unstable brick wall



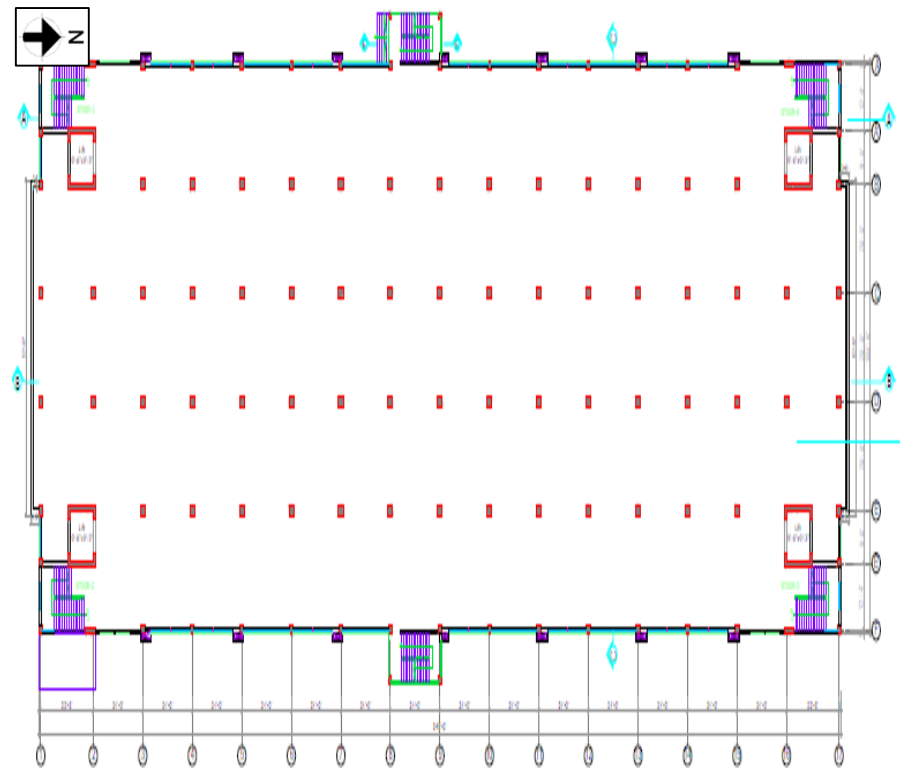
125mm thick isolated brick wall with high unsupported length

4.3 m high and 125 mm thick brick walls are standing between column spans without any connection with steel columns. Therefore, these walls were apparently laterally unstable. Factory engineer is required to check the lateral stability of the unsupported brick walls and implement necessary remediation measures.

Lack of design documents



Building 4 (Production Building)



Drawings

As per BNBC, every building or structure shall have its design documents prepared in accordance with the provision of Section 1.9.1. of BNBC part-6. The design document shall include a design report, and a set of structural drawings. However, design report was not available during inspection. The building engineer is required to prepare a design report in compliance with part-6, BNBC-2006.

Discrepancies between drawings and as-built condition



Undocumented toilet block on typical floor

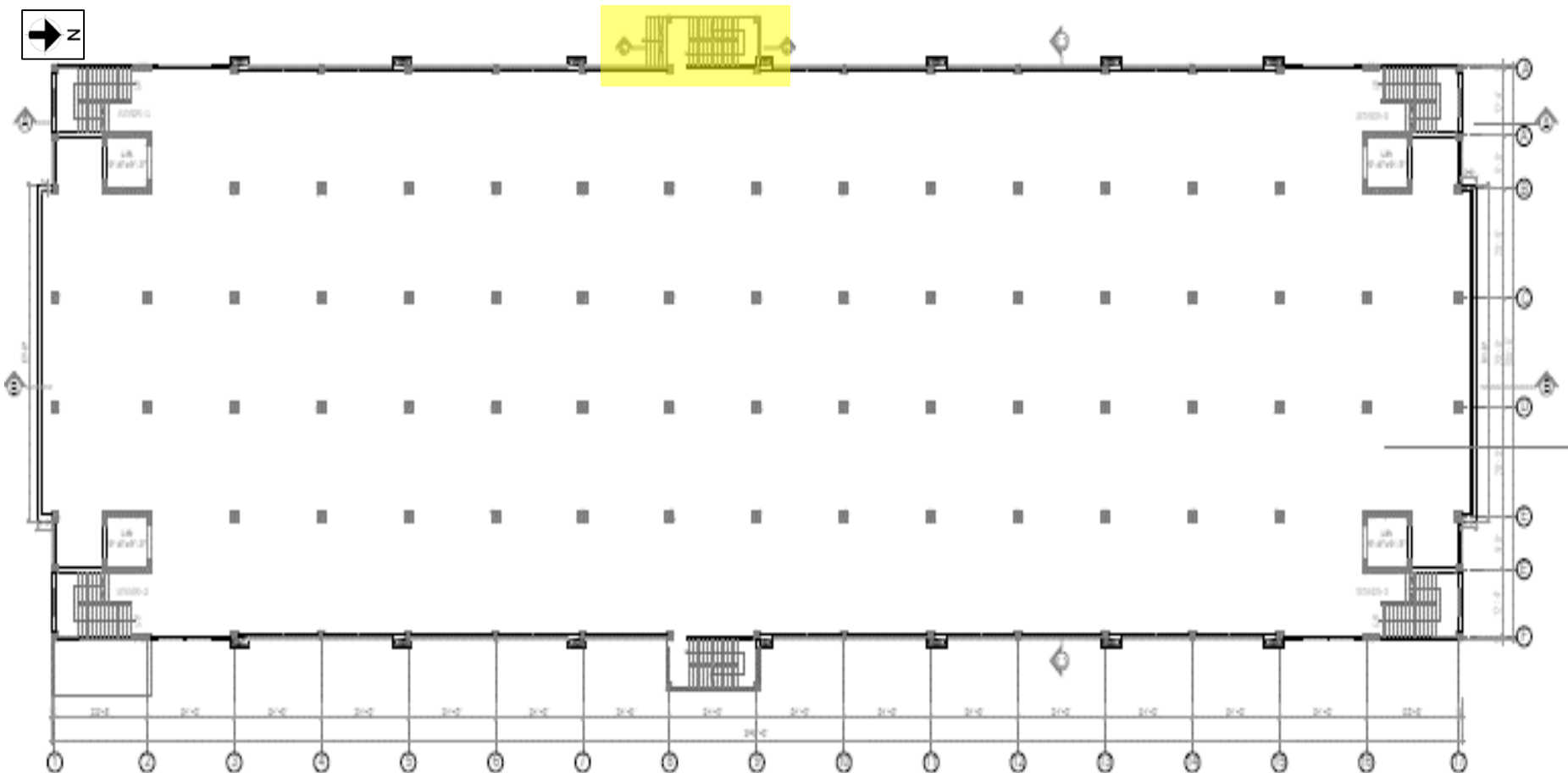


Cantilever slab at south and north side of 1F to 4F



Undocumented mezzanine and printing section at GF





Emergency stair at west side has not been constructed.

Newly built toilet block, cantilever slab (North & South side) not shown in as built drawings. Emergency stair at west side has not been constructed. The building engineer is required to survey the structure and produce accurate as-built drawings.

Improve roof drainage system



Stagnant water observed on roof and roof top slab

Develop proper drainage system on the roof with adequate slope or apply water proofing layer on the roof to resist water ingress into the slab.

Lack of design documents



No design reports were available for facility shed

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. At the time of inspection, no design report was available which is required to be prepared in compliance with section 1.9.1.1 (part-6, BNBC).

Lack of lateral stability



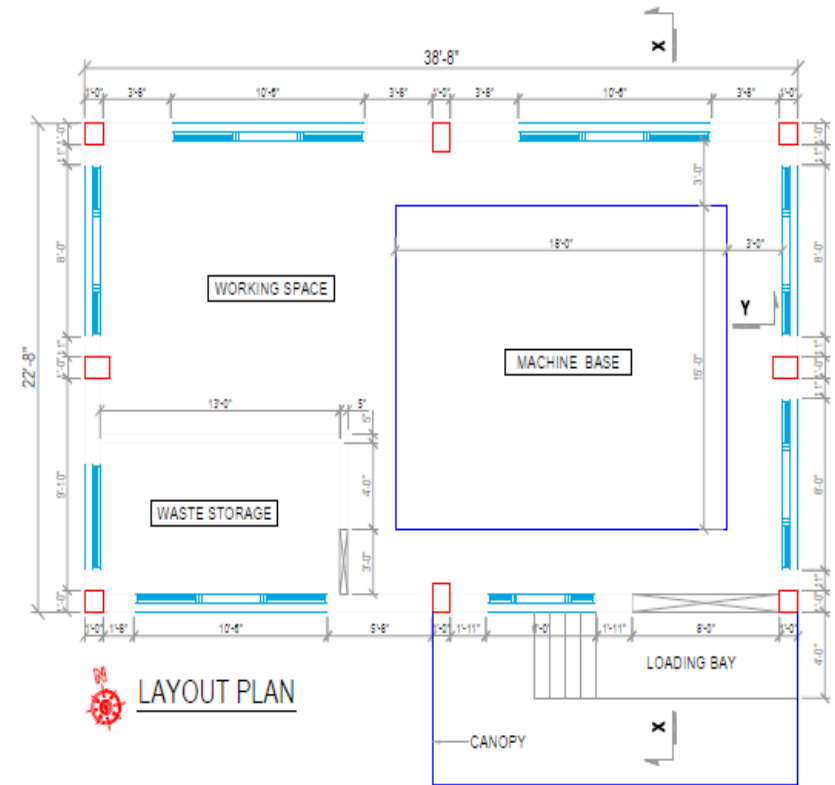
No roof bracings provided at roof

RC tie beam is provided along long direction (periphery only) but no bracing is provided at roof. Therefore, lateral stability of roof truss is apparently inadequate. Factory engineer is required to check the lateral stability of the structure.

Lack of design documents



Boiler room



Drawings

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 & material test report was not available during inspection. The building engineer is required to prepare a design report in compliance with BNBC.

Lack of design documents



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.

Poor connection



Poor connection with pedestal column



No roof bracing provided

Poor connection between RC pedestal column and steel pipe was observed. Also, roof bracing is missing. Factory engineer is required to check the connection adequacy for uplift forces and check the adequacy of roof trusses.

Problems Observed

Building-1 (Fire Fighting Room):

Item 01: Lack of design documents

Item 02: Inconsistency in as-built drawing

Item 03: Honeycomb observed in stair roof beam

Building-2 (Substation Shed):

Item 04: Lack of design documents

Item 05: Lack of lateral stability

Item 06: Gap in connections

Item 07: Apparently unstable brick wall

Building- 4 (Production Building):

Item 08: Lack of design documents

Item 09: Discrepancies between drawings and as-built condition

Item 10: Stagnant water on the roof

Building-5 (Facility shed):

Item 11: Lack of design documents

Item 12: Lack of lateral stability

Problems Observed

Building-6 (Boiler Room):

Item 13: Lack of design documents

Building-7 (WTP Shed):

Item 14: Lack of design documents

Item 15: Poor connection

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Lack of design documents: Building-1 (Fire Fighting Room).	Building engineer to prepare the design document including a design report, in compliance with section 1.9.1 as per BNBC-2020.	6-weeks
02	Lack of design documents: Building-1 (Fire Fighting Room).	Complete implementation of any remedial works deemed necessary by the Design Report.	6-months
03	Inconsistency in as-built drawing: Building-1 (Fire Fighting Room)	Factory engineer is required to survey the structure and update the as-built drawings accordingly.	6-weeks
04	Honeycomb observed in stair roof beam: Building-1 (Fire Fighting Room)	Factory is required to repair the affected areas as per guidance of engineer.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
05	Lack of design documents: Building-2 (Substation Shed)	Building engineer to prepare the design document including a design report, in compliance with section 1.9.1.1 as per BNBC.	6-weeks
06	Lack of design documents: Building-2 (Substation Shed)	Complete implementation of any remedial works deemed necessary by the Design Report.	6-months
07	Lack of lateral stability: Building-2 (Substation Shed)	Building engineer is required to check the lateral stability system of the structure and suggest necessary actions.	6-weeks
08	Lack of lateral stability: Building-2 (Substation Shed)	Implement remedial actions where required.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
09	Gap in connections: Building-2 (Substation Shed)	Factory is required to repair the connection gaps as per any suitable method suggested by the factory engineer.	6-weeks
10	Apparently unstable brick wall: Building-2 (Substation Shed)	Factory engineer is required to check the lateral stability of the unsupported brick walls and suggest remedial actions.	6-weeks
11	Apparently unstable brick wall: Building-2 (Substation Shed)	Implement remediation actions suggested by the engineer.	6-months
12	Lack of design documents: Building-4 (Production Building)	Building engineer to prepare the design document including a design report, in compliance with section 1.9.1 as per BNBC-2006.	6-weeks
13	Lack of design documents: Building-4 (Production Building)	Complete implementation of any remedial works deemed necessary by the Design Report.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
14	Discrepancies between drawings and as-built condition: Building 4 (Production Building)	The building engineer is required to survey the structure and produce accurate as-built drawings.	6-weeks
15	Improve roof drainage system: Building 4 (Production Building)	Develop proper drainage system on the roof with adequate slope or apply water proofing layer on the roof to resist water ingress into the slab.	6-months
16	Lack of design documents: Building-5 (Facility shed)	Building engineer to prepare the design document including a design report, in compliance with section 1.9.1.1 as per BNBC.	6-weeks
17	Lack of design documents: Building-5 (Facility shed)	Complete implementation of any remedial works deemed necessary by the Design Report.	6-months
18	Lack of lateral stability: Building-5 (Facility shed)	Building engineer is required to check the lateral stability of the roof truss.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
19	Lack of lateral stability: Building-5 (Facility shed)	Implement remedial actions if required.	6-months
20	Lack of design documents: Building-6 (Boiler room)	Building engineer to prepare the design document including a design report, in compliance with section 1.9.1.1 as per BNBC.	6-weeks
21	Lack of design documents: Building-6 (Boiler room)	Complete implementation of any remedial works deemed necessary by the Design Report.	6-months
22	Lack of design documents: Building-7 (WTP Shed)	Building engineer to prepare the design document including a design report, in compliance with section 1.9.1.1 as per BNBC.	6-weeks
23	Lack of design documents: Building-7 (WTP Shed)	Complete implementation of any remedial works deemed necessary by the Design Report.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
24	Poor connection: Building-7 (WTP Shed)	Factory engineer is required to check the connection adequacy for uplift forces and check the adequacy of roof trusses.	6-weeks
25	Poor connection: Building-7 (WTP Shed)	Implement remedial work if required.	6-months