Sparkle Knit Composite Limited

Kabirpur, Savar, Dhaka
(24.015723, 90.248490)
08 October 2023

RSC RMG SUSTAINABILITY COUNCIL

Building Information:

RMG Building: A seven-storied (G+6) reinforced concrete (RC) building.
Administration Building: A two-storied RC building.
Warehouse Building: A two-storied (G+1) RC building.
WTP Building: A four storied (G+3) RC building including a steel shed on 3rd floor.
Dyeing & Finishing Shed: A single storied pre-fabricated steel shed with a mezzanine.
Finishing Shed Unit-2: A single storied pre-fabricated steel shed.
Finishing Shed Unit-3: A single storied pre-fabricated steel shed.
Utility Shed-1: A single-story shed enclosed by a steel portal framework in conjunction with a partially reinforced concrete framework.
Utility Shed-2: A single-storied RC building alongside a partially steel shed.
Transformer Room-1: A single-storied RC building.
Transformer Room-2: A single-storied RC Building.
ETP: A two-storied RC structure.
Steam Boiler Shed: A single-storied portal frame steel shed.
RMS Room: A single-storied RC building.
Wastage Shed: A single storied steel shed.

Observations

Absence of design documents

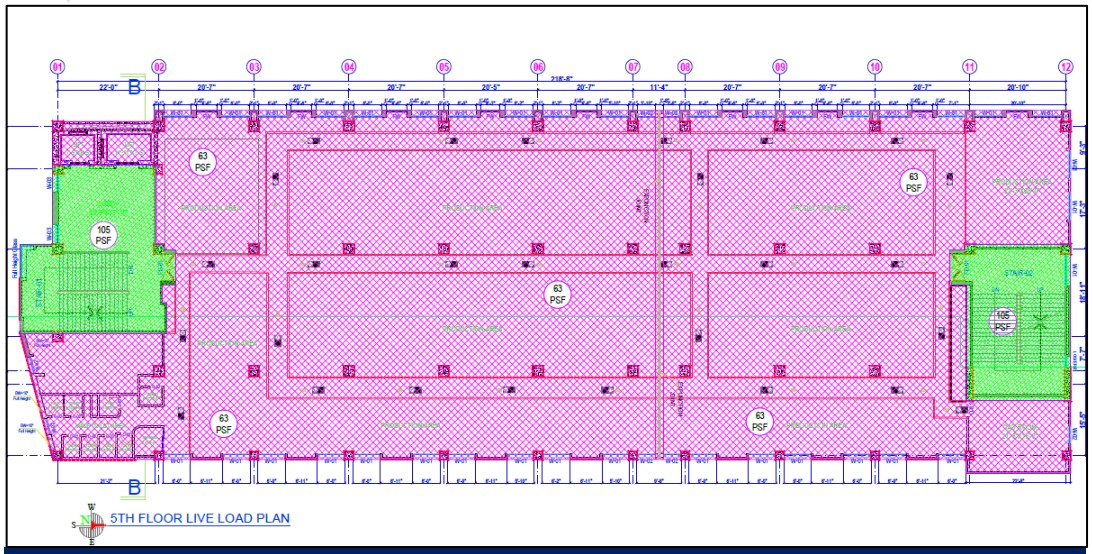
RMG Building

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. At the time of inspection, design report was not available which is required to be prepared in compliance with section 1.9.1.1 (part-6, BNBC-2006).

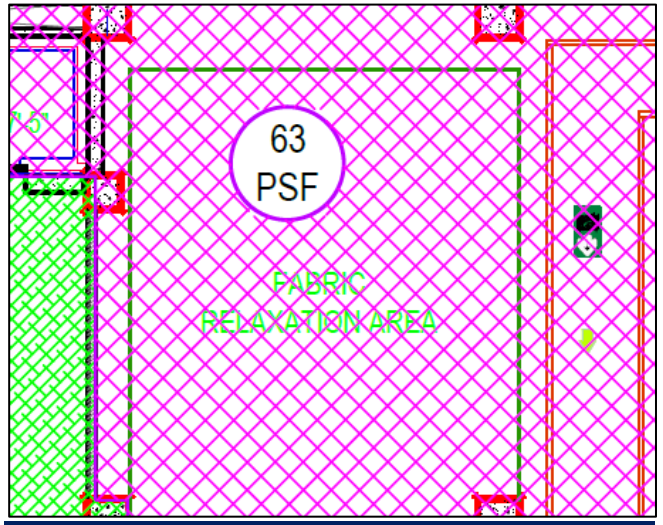
Observations: RMG Building

Storage live load does not comply BNBC

Observations: RMG Building



Live load plan- typical floor



Live load considered as 3 KPa for storage areas

Storage area

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
		heavy	12.0 / 9.0 (5)
		ice	15.0 / 9.0 (5)
		5 Printing plant :	(5)
		Press room	7.0 / 11.0
		Composing and linotype room	5.0 / 9.0 (5)
		Paper storage room	12.0 / 9.0 (5)
		6 Motor room, fan room etc. including the weight of machinery	7.5 / 4.5
		7 Cold storage, grain storage	15.0 / 9.0 (5)
		8 Storage warehouses : light	6.0 / 4.5 (5)
		heavy	12.0 / 9.0
		9 Foundries	20.0 / 12.0

Live load table (BNBC part-6)

Live load on typical floor is considered as 3 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.

Observations: RMG Building

Non-structural elements found unbraced/not anchored

Observations: RMG Building

Storage racks within the building and PVC water tanks on roof found without braced/anchored

Non-structural elements suspended from, attached to, or resting atop the structure shall be adequately anchored and braced to resist earthquake forces. Factory is required to brace/anchor all non-structural elements.

Observation: RMG Building

Absence of design documents

Observations: Administration Building

Administration Building

The Administration Building is two-storied reinforced concrete (RC) building and proposed for partially four storied as per permit drawing. There is a possibility of the future vertical extension of the building. Full set of the design documents was not available for the 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. At the time of inspection, design report was not available which is required to be prepared in compliance with section 1.9.1.1 (part-6, BNBC-2006).

Observations: Administration Building

Dampness at several locations

Observation: Administration Building

Dampness on beam, Column and wall

Dampness was found in several locations of the structure. Building engineer is required to investigate the source of dampness and take necessary measures to prevent the dampness.

Observation: Administration Building

Lack of edge protection

Observation: Administration Building

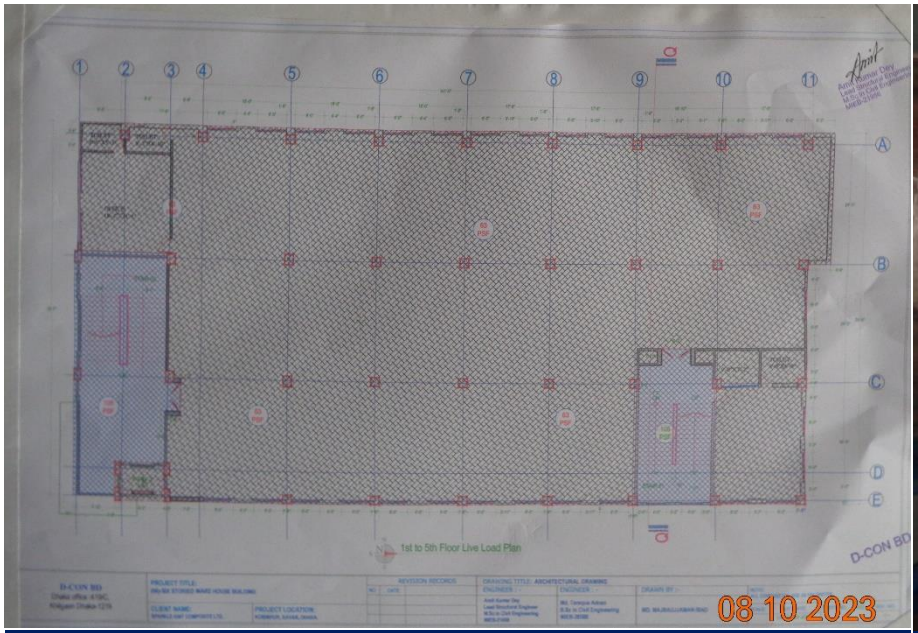
Parapet wall missing at roof

During inspection, Edge protection (Parapet wall/Railing) was not observed on roof and stair. Factory is required to provide edge protection to avoid falling hazard.

Observation: Administration Building

Storage live load does not comply BNBC

Observations: Warehouse Building



Posted load plan for 1st floor (3kPa)

Floor loading at 1st floor

Extension work was found ongoing

The live load has been considered 3 kPa for the storage area instead of 6 kPa as per BNBC-2006.

The building is two-storied reinforced concrete (RC) building and proposed for six storied as per as per permit drawing. Construction works was found ongoing. Factory is required to performed the details engineering assessment (DEA) for the structure based on floor live load as per BNBC and extension.

Observations: Warehouse Building

Lack of edge protection

Observation: Warehouse Building

Parapet wall missing at roof

During inspection, Edge protection (Parapet wall/Railing) was not observed on roof and stair. Factory is required to provide edge protection to avoid falling hazard.

Observation: Warehouse Building

Dampness at several locations

Observation: Warehouse Building

Signage of water ponding at roof, dampness at beam & wall

Dampness was found in several locations of the structure. Building engineer is required to investigate the source of dampness and take necessary measures to prevent the dampness.

Observation: Warehouse Building

Absence of design documents

WTP Building

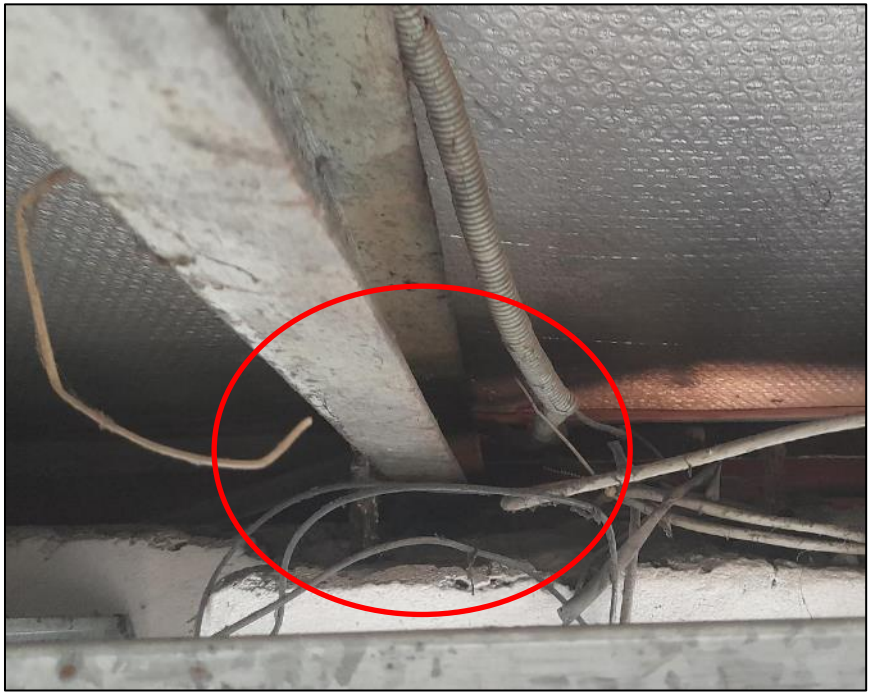
As per BNBC, every building or structure designed shall have its design documents prepared in accordance with the provision of Section 1.9.1. The design document shall include a design report, and a set of structural drawings, which shall be prepared in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC. At the time of inspection, design report was not available which is required to be prepared in compliance with section 1.9.1.1 (part-6, BNBC).

Observations: WTP Building

Apparently inadequate connection

Observations: WTP Building

Purlin inserted to brick wall



Truss welded with rebar of RC column)

Trusses of 3rd floor steel shed were found arbitrarily welded with rebar of RC column and inserted to brick wall therefore connection of steel members to brick wall and RC columns was appeared to be inadequate. The Building engineer is required to check the connection adequacy for uplift forces as part of EA.

Observations: WTP Building

Lack of Lateral Stability

Observation: Dyeing & Finishing Shed

Portal frame along short direction.

No bracing/Compression strut was provided along the long direction.

Portal frame is provided along short direction. Any compression member along long direction with any lateral bracing was not available. Only roof bracing was provided along short direction therefore, lateral stability along long direction is questionable. The building engineer is required to carry out Engineering Assessment (EA) to check the lateral stability of the structure and prepare full set of design report with necessary remedial actions.

Observation: Dyeing & Finishing Shed

Bolt missing and connection gap

Observation: Dyeing & Finishing Shed

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Bolt missing and significant gaps observed in rafter-column joint at several locations. Building engineer is required to carry out suitable remedial works.

Bolt missing

Gap observed in connections

Observation: Dyeing & Finishing Shed

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Loose cable bracing

Observation: Dyeing & Finishing Shed

Loose cable bracing (Finishing & Warehouse Shed)

Some wall and roof cable bracing were found loose in Finishing & Warehouse Shed. The factory is required to tighten the loose bracings for transferring the lateral loads properly.

Observation: Finishing & Warehouse Shed

Lack of Lateral Stability

Observation: Finishing Shed Unit-2

Portal frame along short direction.

No bracing/Compression strut was provided along the long direction.

Portal frame is provided along short direction. Any compression member along long direction with any lateral bracing was not available. Only roof bracing was provided along short direction therefore, lateral stability along long direction is questionable. The building engineer is required to carry out Engineering Assessment (EA) to check the lateral stability of the structure and prepare full set of design report with necessary remedial actions.

Observation: Finishing Shed Unit-2

Lack of Lateral Stability

Observation: Finishing Shed Unit-3

Portal frame along short direction.

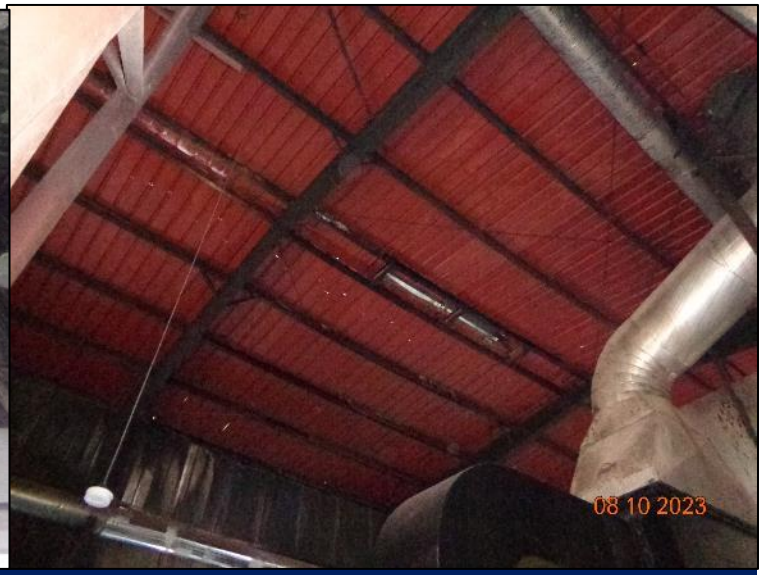
Bracing/Compression strut were missing in some grids along the long direction.

Portal frame is provided along short direction. Compression member along with roof and wall bracings were missing in some grids along direction therefore, lateral stability along long direction is questionable. The building engineer is required to carry out Engineering Assessment (EA) to check the lateral stability of the structure and prepare full set of design report with necessary remedial actions.

Observation: Finishing Shed Unit-3

Absence of design documents

Observations: Utility Shed-1



Steel Part

Steel Part

During inspection, only as-built drawing was available for the Utility Shed-1. 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, design report was not available which is required to be prepared in compliance with section 1.9.1.1 (part-6, BNBC).

Observations: Utility Shed-1

Corrosion in steel section

Observation: Utility Shed-1

Corrosion in steel section

During inspection, corrosion was observed in steel section. Factory engineer is required to take necessary measures to prevent the corrosion in steel sections.

Observations: Utility Shed-1

Absence of design documents

Observations: Utility Shed-2

Steel Part

Steel Part

During inspection, only as-built drawing was available for the Utility Shed-2. 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, design report was not available which is required to be prepared in compliance with section 1.9.1.1 (part-6, BNBC).

Observations: Utility Shed-2

Corrosion in steel section

Observation: Utility Shed-2

Corrosion in steel section

During inspection, corrosion was observed in steel section. Factory engineer is required to take necessary measures to prevent the corrosion in steel sections.

Observations: Utility Shed-2

Absence of design documents

Observations: Transformer Room-1

Transformer Room-01

During inspection, only as-built drawing was available for the Transformer Room-1. 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, design report was not available which is required to be prepared in compliance with section 1.9.1.1 (part-6, BNBC).

Observations: Transformer Room-1

Absence of design documents

Observations: Transformer Room-2

Transformer Room-02

During inspection, only as-built drawing was available for the Transformer Room-2. 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, design report was not available which is required to be prepared in compliance with section 1.9.1.1 (part-6, BNBC).

Observations: Transformer Room-2

Absence of design documents

Observations: ETP

Two Storied ETP

During inspection, no documents was available. 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, design report was not available which is required to be prepared in compliance with section 1.9.1.1 (part-6, BNBC).

Observations: ETP

Lateral stability system

Observations: Steam Boiler Shed

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Lateral load transfer media missing at roof level

Lateral load transfer media (compression strut, horizontal & vertical bracing) along the ridge and eave is missing. Building engineer to check the lateral load path and review the stability of the structure accordingly.

Observations: Steam Boiler Shed

Absence of design documents

RMS Room

During inspection, only as-built drawing was available for the RMS 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 as per BNBC. At the time of inspection, design report was not available which is required to be prepared in compliance with section 1.9.1.1 (part-6, BNBC).

Observations: RMS Room

Apparently non engineered shed

Observations: Wastage Shed

Poor connection between steel members

This shed was appeared to be non-engineered due to poor connection and inadequate member size. The building engineer is required to carry out Engineering Assessment (EA) to check the lateral stability & connection adequacy of the structure and prepare full set of design report with necessary remedial actions.

Observations: Wastage Shed

Problems Observed

RMG Building:

Item 01: Absence of design documents.
Item 02: Storage live load does not comply BNBC
Item 03: Non-structural elements found unbraced/not anchored

Administration Building

Item 04: Absence of design documents
Item 05: Dampness at several locations
Item 06: Lack of edge protection

Warehouse Building

Item 07: Storage live load does not comply BNBC
Item 08: Lack of edge protection
Item 09: Dampness at several locations

WTP Building:

Item 10: Absence of design documents.
Item 11: Apparently inadequate connection

Dyeing & Finishing Shed:

Item 12: Lack of Lateral Stability
Item 13: Bolt missing and connection gap
Item 14: Loose cable bracing

Finishing Shed Unit-2:

Item 15: Lack of Lateral Stability

Problems Observed

Finishing Shed Unit-3:

Item 16: Lack of Lateral Stability

Utility Shed-1

Item 17: Absence of design documents

Item 18: Corrosion in steel section

Utility Shed-2

Item 19: Absence of design documents

Item 20: Corrosion in steel section

Transformer Room-1

Item 21: Absence of design documents

Transformer Room-2

Item 22: Absence of design documents

ETP

Item 23: Absence of design documents

Steam Boiler Shed

Item 24: Lateral stability system

RMS Room

Item 25: Absence of design documents

Wastage Shed:

Item 26: Apparently non engineered shed

Priority Actions

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Absence of design documents (RMG Building)	Building engineer is required to prepare a set of design report in compliance with section 1.9.1.1 (part-6, BNBC).	6-weeks
02	Absence of design documents (RMG Building)	Implement remediation work if required.	6-months
03	Storage live load does not comply BNBC (RMG Building)	The factory engineer is required to revise the load plan as per BNBC requirement and check the design accordingly.	6-weeks
04	Storage live load does not comply BNBC (RMG Building)	Carry out suggested remedial work if required.	6-months
05	Non-structural elements found unbraced/not anchored (RMG Building)	Factory is required to brace/anchor all non-structural elements.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
06	Absence of design documents (Administration Building)	Building engineer is required to prepare a set of design report in compliance with section 1.9.1.1 (part-6, BNBC).	6-weeks
07	Absence of design documents (Administration Building)	Produce and actively manage floor live load plan.	6-weeks
08	Absence of design documents (Administration Building)	Implement remediation work if required.	6-months
09	Absence of design documents (Administration Building)	Implement allowable floor load plan.	6-months
10	Dampness at several locations (Administration Building)	Building Engineer is required to investigate the reason of dampness & apply suitable method to repair dampness.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
11	Lack of edge protection (Administration Building)	Factory is required to provide edge protection on roof and stair to avoid falling hazard.	6-weeks
12	Storage live load does not comply BNBC (Warehouse Building)	As part of EA, the building engineer is required to revise the floor live load plan following BNBC requirements and revise the design documents accordingly.	6-weeks
13	Storage live load does not comply BNBC (Warehouse Building)	Implement the recommendations of EA report.	6-months
14	Storage live load does not comply BNBC (Warehouse Building)	Implement the floor load management plan (post accepted load plan, mark the storage area & height and maintain floor loads accordingly).	6-months
15	Lack of edge protection (Warehouse Building)	Factory is required to provide edge protection on roof and stair to avoid falling hazard.	6-weeks
16	Dampness at several locations (Warehouse Building)	Building Engineer is required to investigate the reason of dampness & apply suitable method to repair dampness.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
17	Absence of design documents (WTP Building)	Building engineer is required to prepare a set of design report in compliance with section 1.9.1.1 (part-6, BNBC).	6-weeks
18	Absence of design documents (WTP Building)	Implement remediation work if required.	6-months
19	Apparently inadequate connection (WTP Building)	The Building engineer is required to check the connection adequacy for uplift forces as part of EA.	6-weeks
20	Apparently inadequate connection (WTP Building)	Implement remedial work where required.	6-months
21	Lack of Lateral Stability (Dyeing & Finishing Shed)	The building engineer is required to carry out Engineering Assessment (EA) to check the lateral stability of the structure and prepare full set of design report with necessary remedial actions.	6-weeks
22	Lack of Lateral Stability (Dyeing & Finishing Shed)	Complete remedial works where necessary.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
23	Bolt missing and connection gap (Dyeing & Finishing Shed)	Building engineer is required to repair the gap in connections with a suitable method.	6-weeks
24	Bolt missing and connection gap (Dyeing & Finishing Shed)	Install the missing bolt where necessary.	6-weeks
25	Loose cable bracing (Dyeing & Finishing Shed)	The factory is required to tighten the loose bracings for transferring the lateral loads properly.	6-weeks
26	Lack of Lateral Stability (Finishing Shed Unit-2)	The building engineer is required to carry out Engineering Assessment (EA) to check the lateral stability of the structure and prepare full set of design report with necessary remedial actions.	6-weeks
27	Lack of Lateral Stability (Finishing Shed Unit-2)	Complete remedial works where necessary.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
28	Lack of Lateral Stability (Finishing Shed Unit-3)	The building engineer is required to carry out Engineering Assessment (EA) to check the lateral stability of the structure and prepare full set of design report with necessary remedial actions.	6-weeks
29	Lack of Lateral Stability (Finishing Shed Unit-3)	Complete remedial works where necessary.	6-months
30	Absence of design documents (Utility Shed-1)	Building engineer is required to prepare a set of design report in compliance with section 1.9.1.1 (part-6, BNBC).	6-weeks
31	Absence of design documents (Utility Shed-1)	Implement remediation work if required.	6-months
32	Corrosion in steel section . (Utility Shed-1)	Factory is required to take necessary actions to protect the steel members from corrosion.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
33	Absence of design documents (Utility Shed-2)	Building engineer is required to prepare a set of design report in compliance with section 1.9.1.1 (part-6, BNBC).	6-weeks
34	Absence of design documents (Utility Shed-2)	Implement remediation work if required.	6-months
35	Corrosion in steel section . (Utility Shed-2)	Factory is required to take necessary actions to protect the steel members from corrosion.	6-weeks
36	Absence of design documents (Transformer Room-1)	Building engineer is required to prepare a set of design report in compliance with section 1.9.1.1 (part-6, BNBC).	6-weeks
37	Absence of design documents (Transformer Room-1)	Implement remediation work if required.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
38	Absence of design documents (Transformer Room-2)	Building engineer is required to prepare a set of design report in compliance with section 1.9.1.1 (part-6, BNBC).	6-weeks
39	Absence of design documents (Transformer Room-2)	Implement remediation work if required.	6-months
40	Absence of design documents (ETP)	Building engineer is required to prepare a set of design report in compliance with section 1.9.1.1 (part-6, BNBC).	6-weeks
41	Absence of design documents (ETP)	Implement remediation work if required.	6-months
42	Lateral stability system. (Steam Boiler Shed)	Building Engineer is required to confirm the lateral load path & verify the lateral stability of the steel shed.	6-weeks
43	Lateral stability system. (Steam Boiler Shed)	Implement the remediation if required.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
44	Absence of design documents (RMS Room)	Building engineer is required to prepare a set of design report in compliance with section 1.9.1.1 (part-6, BNBC).	6-weeks
45	Absence of design documents (RMS Room)	Implement remediation work if required.	6-months
46	Apparently inadequate connection (Wastage Shed)	Building engineer is required to check the connection adequacy for uplift forces as part of EA.	6-weeks
47	Apparently inadequate connection (Wastage Shed)	Implement suggested remediation works.	6-months