

Revision: Issue 1
Date: 25.01.2022

Saiham Knit Composite Ltd. (Extension Area)

Saiham Nagar, Noyapara, Madhabpur, Hobigonj
(24.18375, 91.35222)

2nd June & 26th August 2021

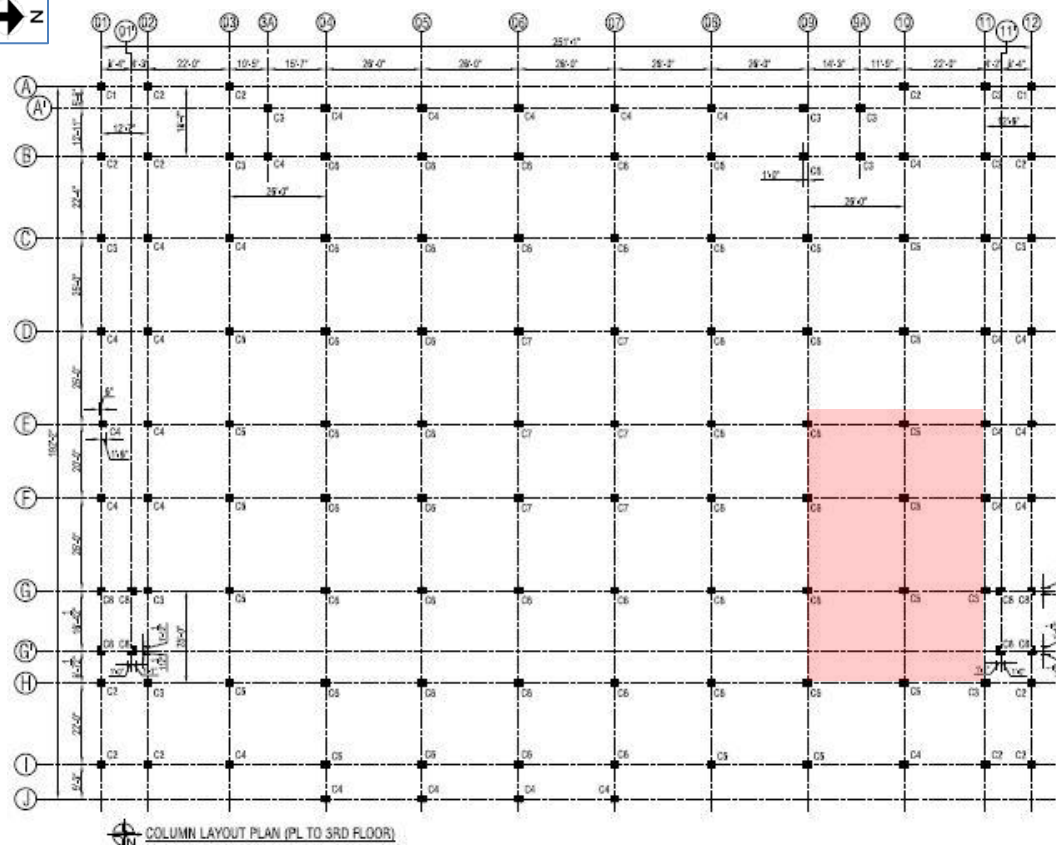


Buildings Information

1. Building-1 (Special Building) (G+3)
2. Building-2 (Central Warehouse-1) (Single Storied)
3. Building-3 (Chemical Bonded Warehouse) (G+2)
4. Building-4 (Knitting Shed) (G+1)
5. Building-5 (Printing & Embroidery Shed) (Single Storied)
6. Building-6 (Utility Building) (Part A: G+1 & Part B: Single Storied)
7. Building-7 (Washing Shed) (Single Storied)
8. Building-8 (Canteen-1) (Single Storied)
9. Building-9 (Generator Building) (G+1)
10. Building-10 (Security Post) (Single Storied)
11. Building-11 (Wastage Go-down) (Single Storied)
12. Building-12 (Central Warehouse-2) (Single Storied)
13. Building-13 (Canteen-2) (Single Storied)

Observations

**Column to be stressed above normal design
limit**



Column Layout

Cursory calculation indicates that the columns at marked area are stressed above normal design limit considering prepared live load plan and equivalent concrete strength from concrete core test value. Building engineer is required to review design, load & column stress in the area identified above.



Additional roof extension



125 mm additional floor finishes

Dampness throughout the building



Dampness was observed through the building. Building engineer is required to investigate the reason of dampness and suggest remedial actions.

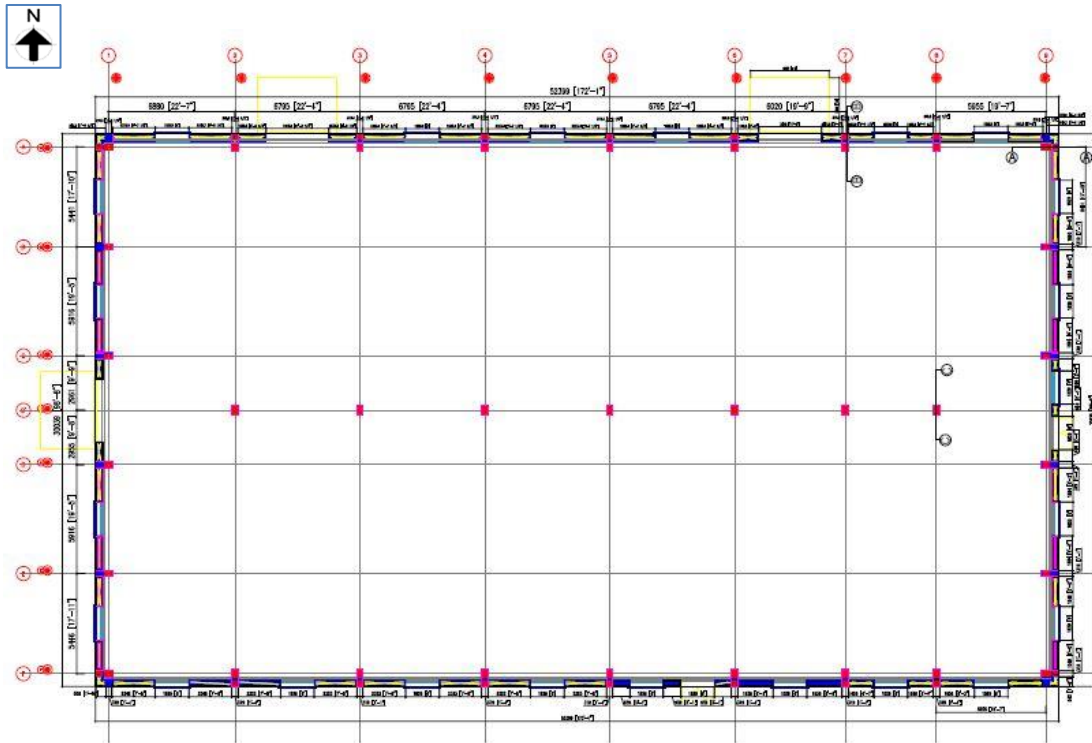


Stagnant water at roof



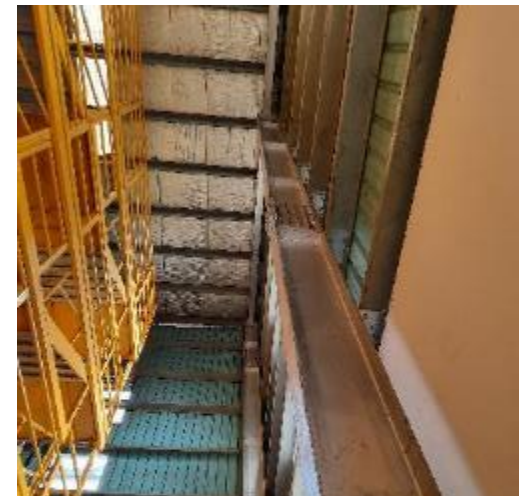
Incomplete finishing works at roof

Laterally unsupported long columns



Floor Layout Plan

The 14.5 m long columns are not laterally supported along its weaker direction. Compression strut/tie beams are not provided in the intermediate position of these long columns. Building engineer is required to check the lateral stability of the shed.



Compression strut/tie beams not provided in the long direction

Vertical extension to be carried out

As permit drawings are for 3-Storey factory building, column & foundation capacity has been checked for existing condition (3-Storey). Factory has a plan to extend the building vertically up to 4-Storey.



Existing 3 storey building



Exposed rebar indicated further construction

For any vertical extension, columns & foundation will have higher stresses. A Detail Engineering Assessment (DEA) considering BNBC provision to be completed before further construction.

Falling Hazard & Exposed Rebar at Roof



No parapet on roof



Exposed rebar prone to be corroded



No guardrails around the stair

Design report not available



Design Certified

A A STEEL LTD.

**DESIGN CERTIFICATE
FOR
PRE – ENGINEERED STEEL STRUCTURAL BUILDING**

Job No.	60
Client Name	Saiham Knit Composite Ltd.
Project Name	Saiham Knit Composite Ltd. New Knitting Building
Project Location	Noyapara, Saihamnagar, Madhabpur, Habiganj-3333
No. of Building	01

Building Parameters:

1	Length of the building	46.216 m c/c of steel column
2	Width of the building	46.06 m c/c of steel column
3	Clear height	4.417 m (GF) & 4.267 m (1 st FL)
4	Roof slope	1:10

The above Building has been Designed, fabricated and Erected under the following Loads, Specifications and Codes:

Design Loads:
All buildings in this job are designed for the following loads:

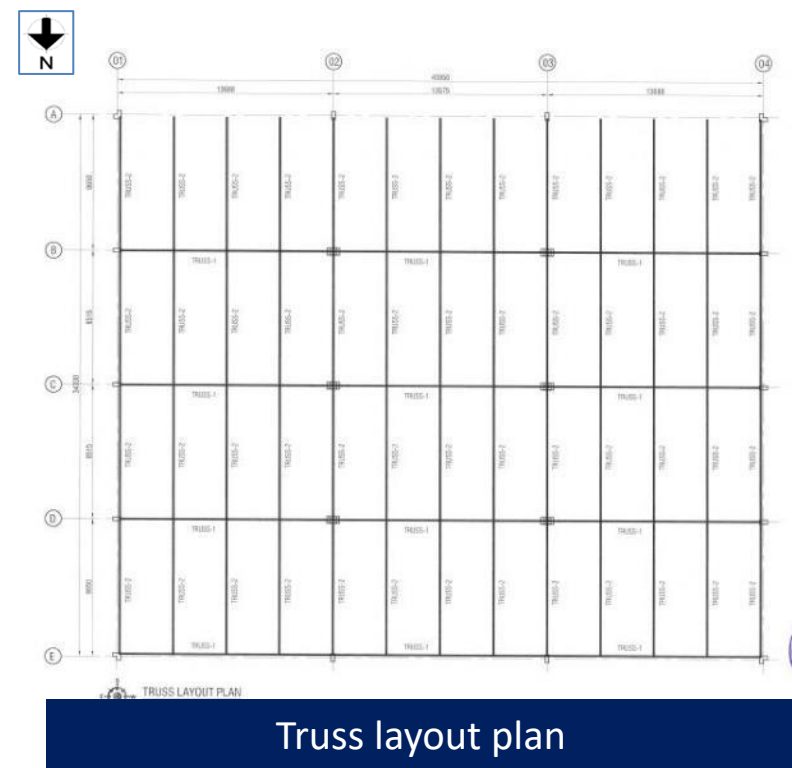
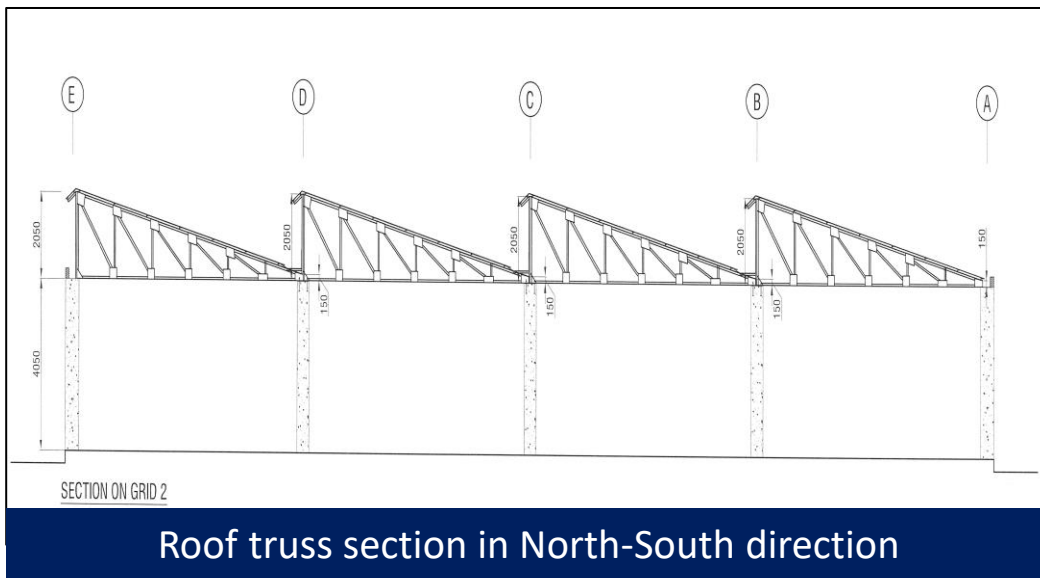
1	Design Live Load (kN/m ²) on roof	1.0
2	Design Dead Load (kN/m ²) on floor	3.5
3	Design Live Load (kN/m ²) on floor	5.0
4	Wind Speed (KPH)	172
5	Wind Exposure	A
6	Earthquake Zone	3
7	Zone Co-efficient	0.25
8	Rain water intensity (mm/hr)	150

Load Consideration:

Dead Load:
Weight of the member itself & weight of all materials of construction incorporated into the building to be supported permanently by the member

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, only a design certificate was available on site, but no design report was available which is required to be prepared in compliance with section 1.9.1.1 (part-6, BNBC).

Roof bracing missing to integrated the truss



No roof bracing provided to integrated the truss. The building engineer is required to check the requirement of the roof bracing.

Corrosion on steel member



Corrosion observed on the steel member. Building engineer is required provide rust proofing on the steel member.

Apparently lack of lateral stability system

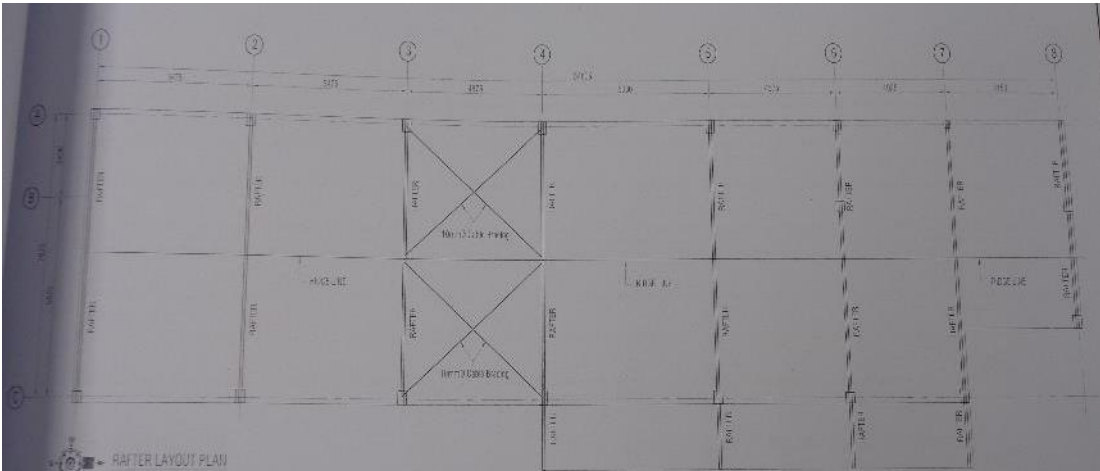


No bracings and compression members are provided in the roof level. The building engineer is required to check the lateral stability system of the shed.

Apparently lack of lateral stability system



Roof bracing
only in one bay



Roof bracing layout plan



Absence of load transfer media in long direction



Roof bracing only in one bay

No vertical bracings / tie beam / compression struts were provided in the long direction. Only roof bracings provided in one bay 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.

Apparently lack of lateral stability system



No vertical bracings, compression struts were provided in the long direction. No roof bracings provided along the short direction. Apparently lack of lateral stability observed.
The building engineer is required to check the lateral stability system of the shed.

As-Built documents not 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. No credible as built drawing were available on site. Building engineer is required to prepare design report in compliance with section 1 9 1 1 (part 6 BNBC)

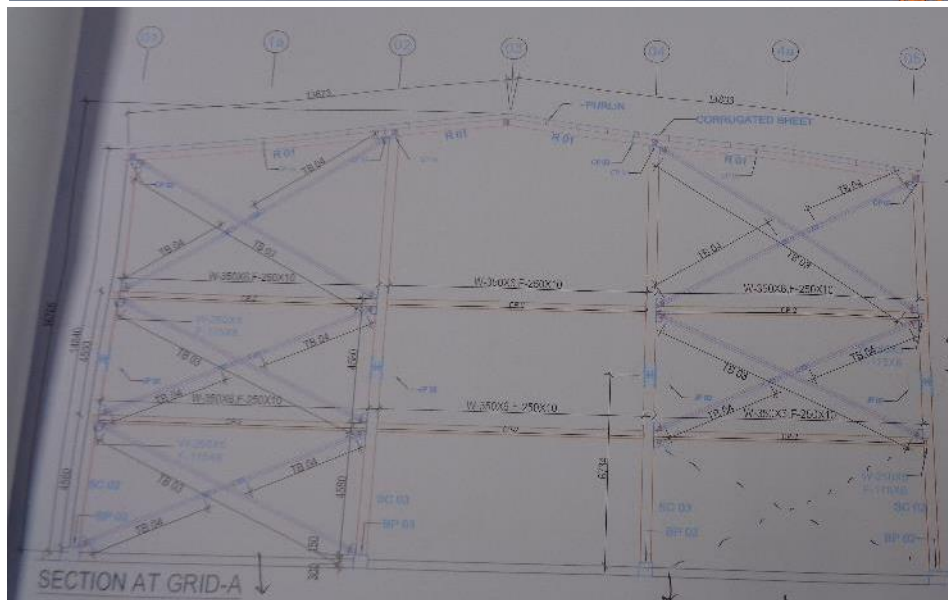
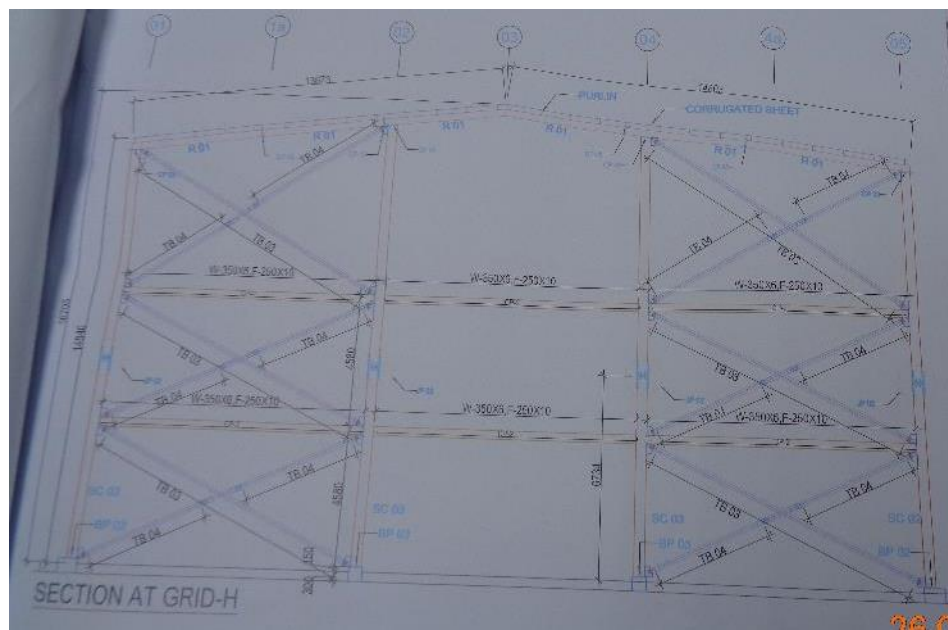


Design report not available



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, only a design certificate was available on site, but no design report was available which is required to be prepared in compliance with section 1.9.1.1 (part-6, BNBC).

Bracing System not matched with the drawing



Bracing System as per drawing



Bracing System on site

On site bracing placement not matched with the drawing.

Apparently lack of lateral stability system



Only roof bracings 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.

Problems Observed

Building 1 (Special Building)

Item 01: Column to be stressed above normal design limit.

Item 02: Dampness throughout the building.

Building 2 (Central Warehouse-1)

Item 03: Laterally unsupported long columns.

Building 3 (Chemical Bonded Warehouse)

Item 04: Vertical extension to be carried out

Item 05: Falling Hazard & Exposed Rebar at Roof

Building 4 (Knitting Shed)

Item 06: Design report not available

Building 5 (Printing Shed)

Item 07: Roof bracing missing to integrated the truss

Item 08: Corrosion on steel member.

Building 6 (Utility Building-Part B)

Item 09: Apparently lack of lateral stability system.

Building 7 (Washing Shed)

Item 10: Apparently lack of lateral stability system.

Building 8 (Canteen 1)

Item 11: Apparently lack of lateral stability system & Poor connection details.

Building 9 (Generator)

Item 12: As-Built documents not available.

Building 11 (Wastage Go-down)

Item 13: Design report not available

Building 12 (Central Warehouse-2)

Item 14: Bracing System not matched with the drawing.

Building 13 (Canteen 02)

Item 15: Apparently lack of lateral stability system.

Priority Actions

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Column to be stressed above normal design limit. (Building 1-Special Building)	Building engineer to review design, loads and columns stresses in area identified above.	6-weeks
02	Column to be stressed above normal design limit. (Building 1-Special Building)	Building Engineer to update design report as per BNBC (part-6; Article 1.9.1) by reviewing design, loads and capacity of structural members.	6-months
03	Column to be stressed above normal design limit. (Building 1-Special Building)	Produce and actively manage a loading plan for all floor plates within the factory Building considering floor, column and foundation capacity.	6-weeks
04	Column to be stressed above normal design limit. (Building 1-Special Building)	Complete implementation of any remedial works deemed necessary by design report.	6-months
05	Column to be stressed above normal design limit. (Building 1-Special Building)	Continue to implement loading plan.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
06	Dampness throughout the building. (Building 1-Special Building)	Building engineer is required to investigate the reason of dampness and suggest proper remedial actions.	6-weeks
07	Dampness throughout the building. (Building 1-Special Building)	Complete the finishing works on the roof.	6-weeks
08	Dampness throughout the building. (Building 1-Special Building)	Carryout remedial works as per investigate report.	6-months
09	Laterally unsupported long columns. (Building 2-Central Warehouse-1)	Carry out Engineering Assessment (EA) to check the lateral stability of the shed.	6-weeks
10	Laterally unsupported long columns. (Building 2-Central Warehouse-1)	Implement remedial works as per EA.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
11	Vertical extension to be carried out. (Building 3 -Chemical Bonded Warehouse)	For any vertical extension, a Detail Engineering Assessment (DEA) considering BNBC provision to be completed before commencement further construction.	6-weeks
12	Vertical extension to be carried out. (Building 3 -Chemical Bonded Warehouse)	Implement the recommendations of DEA.	6-months
13	Falling Hazard & Exposed Rebar at Roof. (Building 3-Chemical Bonded Warehouse)	Install parapet & guardrails to prevent falling hazard.	6-weeks
14	Falling Hazard & Exposed Rebar at Roof. (Building 3-Chemical Bonded Warehouse)	Building engineer is required to provide rust proofing paint on the exposed rebar.	6-weeks
15	Design report not available (Building 4 -Knitting Shed)	Building engineer to prepare the Design report in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
16	Design report not available (Building 4 -Knitting Shed)	Carryout recommendations of design report where necessary.	6-months
17	Roof bracing missing to integrated the truss. (Building 5 -Printing Shed)	Building engineer is required to check the requirement of the roof bracing for lateral stability.	6-weeks
18	Roof bracing missing to integrated the truss. (Building 5 -Printing Shed)	Carryout remedial works where necessary.	6-months
19	Corrosion on steel member. (Building 5- Printing Shed)	Provide anti rust paint to the corrosion prone steel.	6-weeks
20	Apparently lack of lateral stability system. (Building 6:Utility Building-Part B)	Building engineer is required to check the lateral stability of the shed.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
21	Apparently lack of lateral stability system. (Building 6:Utility Building-Part B)	Carryout remedial works where necessary.	6-months
22	Apparently lack of lateral stability system. (Building 7 -Washing Shed)	Building engineer is required to check the lateral stability of the shed.	6-weeks
23	Apparently lack of lateral stability system. (Building 7 -Washing Shed)	Carryout remedial works where necessary.	6-months
24	Apparently lack of lateral stability system. (Building 8: Canteen 1)	Building engineer is required to check the lateral stability of the shed.	6-weeks
25	Apparently lack of lateral stability system. (Building 8: Canteen 1)	Building engineer is required to check the connection capacity against uplift forces.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
26	Apparently lack of lateral stability system. (Building 8: Canteen 1)	Carryout remedial works where necessary.	6-months
27	As-Built documents not available. (Building 9 -Generator)	Building engineer to prepare the Engineering Assessment (EA) including a design report, and a set of structural drawings in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC.	6-weeks
28	As-Built documents not available. (Building 9 -Generator)	Carryout recommendations of EA.	6-months
29	Design report not available (Building 11- Wastage Go-down)	Building engineer to prepare the Design report in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC.	6-weeks
30	Design report not available (Building 11- Wastage Go-down)	Carryout recommendations of design report where necessary.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
31	Bracing System not matched with the drawing. (Building 12 - Central Warehouse-2)	Building engineer is required to update the as-built structural drawings and check the adequacy of existing bracing system for lateral stability.	6-weeks
32	Bracing System not matched with the drawing. (Building 12 - Central Warehouse-2)	Carryout recommendations of design report where necessary.	6-months
33	Apparently lack of lateral stability system. (Building 13 -Canteen 02)	Building engineer is required to check the lateral stability of the shed.	6-weeks
34	Apparently lack of lateral stability system. (Building 13 -Canteen 02)	Carryout remedial works where necessary.	6-months