

Teen Age Modern Fashion – Extension

Purbohati, Hemayetpur, Savar, Dhaka-1340.

(23.786101, 90.261136)

05 September 2023



Building Information

Production Building (B2): The structure is a six (G+5) storied reinforced concrete (RC) building.

Fire Command & Pump Room (B3): A two storied (G+1) RC building.

Childcare, Medical & Rest House (B4): A single storied brick masonry structure.

Utility Building (B5): A single storied RC building.

Mosque & Staff Dining (S1): A single storied shed.

Worker Dining (S3): A single storied shed.

Fair Shop & Guard Room (S4): A single storied shed.

Fabric & Accessories Shed (S5): A single storied shed.

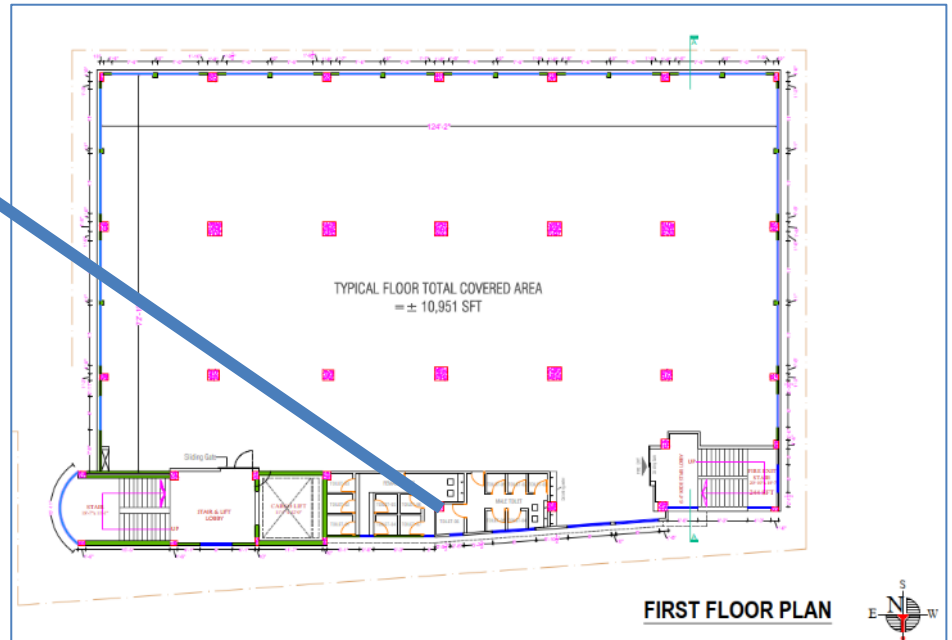
Observations

Mismatches in as built drawings



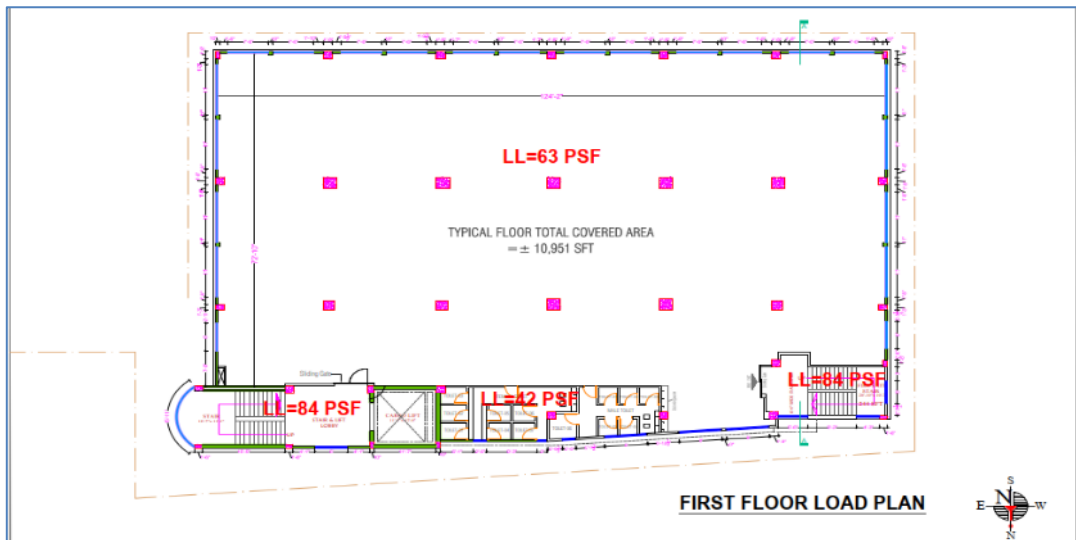
Undocumented water tank

Roof layout not found in the provided as-built drawings. Undocumented plastic water tanks were found on the roof. Moreover, toilet zone of 1st and 5th floor not matched with the provided floor layout. Building engineer is required to revise the as-built drawing as per onsite condition and submit to RSC.



Floor layout

**Load plan and design report not comply with
BNBC requirements**



Storage on first floor

The first floor of the building is allotted for storage. As per BNBC, the minimum floor live load for storage is 6 kN/m² (126 psf). But the first floor of the building is designed for 3 kN/m² live loads. Factory engineer is required to revise the load plan and related design documents based on BNBC requirement.

Table 3-1: Different floor building live load

Location	Description	Live Load Considered (PSF)
1 st to 5 th Floor	Sewing, Cutting, Finishing, Office	63
Various Floors	Staircase & Lobby's	84
Roof	Open to Sky	20
Various Floors	Toilet Area	42

Provided design report

4.5		1 Light workroom without storage	3.0	2.7
		2 Machinery hall & circulation area	4.0	4.5
1.8		3 Factory, workshop etc.	5.0	4.5
		4 Manufacturing : light	6.0	4.5 ⁽⁵⁾
		heavy	12.0	9.0 ⁽⁵⁾
		ice	15.0	9.0 ⁽⁵⁾
2.7		5 Printing plant :		(5)
4.5		Press room	7.0	11.0
		Composing and linotype room	5.0	9.0 ⁽⁵⁾
		Paper storage room	12.0	9.0 ⁽⁵⁾
2.7		6 Motor room, fan room etc. including the weight of machinery	7.5	4.5
4.5		7 Cold storage, grain storage	15.0	9.0 ⁽⁵⁾
4.5		8 Storage warehouses : light	6.0	4.5 ⁽⁵⁾
		heavy	12.0	9.0 ⁽⁵⁾
4.5		9 Foundries	20.0	12.0 ⁽⁵⁾
7.0				

Dampness at ceiling of stair top



Dampness on slab soffit



Dampness on slab soffit

Dampness on ceiling of stair top was observed. Factory engineer is required to repair the damp areas with suitable method.

**Racks and plastic water tanks
not anchored or braced**



Plastic water tank not braced



Non-anchored storage rack at several floors

Some racks on different floors and rooftop plastic water tanks are not anchored or braced to resist lateral (earthquake) forces. The factory is required to anchor/brace all non-structural elements adequately to resist earthquake forces.

Lack of design report and as-built drawing



Fire Command & Pump Room

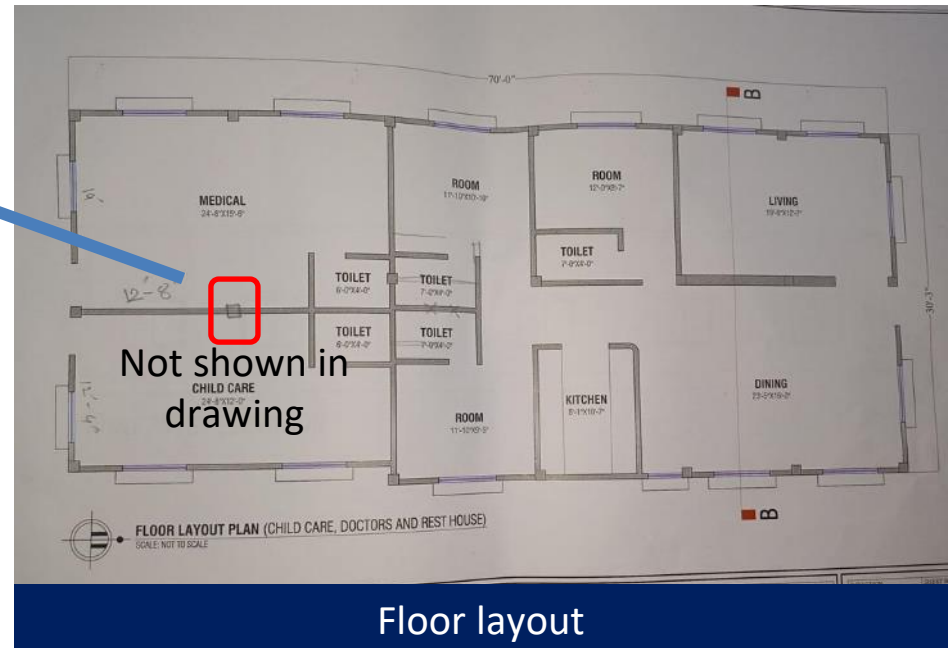
As per BNBC, every building or structure designed shall have its design documents prepared in accordance with the provision of Section 1.9.1. The design document shall include a design report, and a set of structural drawings, which shall be prepared in compliance with section 1.9.1.1 and section 1.9.1.2, part-6 of BNBC. At the time of inspection, no design report and as-built drawing was available which are required to be prepared in compliance with section 1.9.1.1 (part-6, BNBC).

Observation: Fire Command & Pump Room (B3)

Inconsistencies in as built drawings



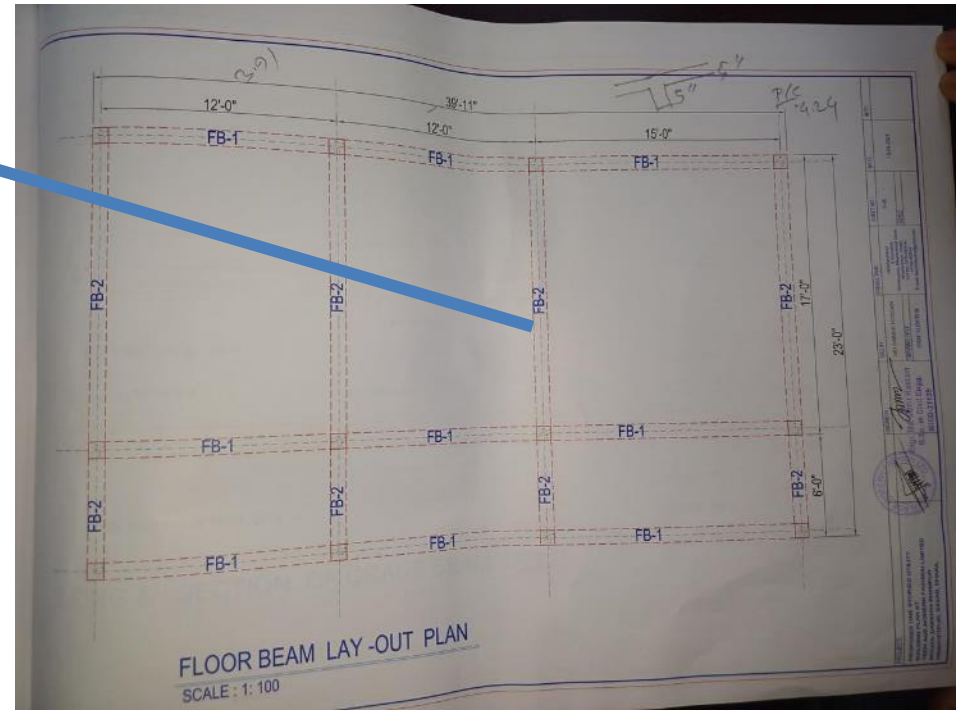
Slab details not found in the provided as-built drawings. Also brick column layout not matched with the as-built condition. Factory engineer is required to revise the as-built drawing as per onsite condition and submit to RSC.



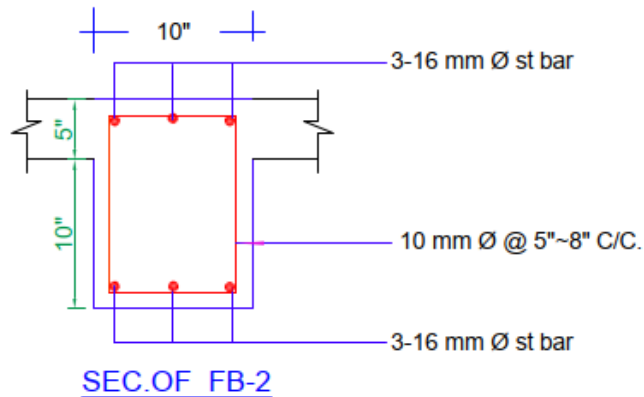
Beam size mismatch in drawings



Beam on site



Beam layout



Beam dimension in drawing

Beam sizes are not matched with the provided as-built drawings. As per drawings the down stand of the beam is shown 250 mm (10 inch). But onsite down stand was found 125 mm (5 inch). Building engineer is required to revise the as-built drawing as per onsite condition and submit to RSC.

Lack of structural drawings



Inside of Mosque, Staff Dining



Mosque, Staff Dining

Structural drawings were not found for the Mosque, Staff Dining . The factory engineer is required to survey the whole structure and prepare full set of as-built drawing in compliance in compliance with section 1.9.1.2, part-6 of BNBC.

Observation: Mosque, Staff Dining (S1)

Apparently non-engineered connection

Apparently inadequate connections were observed at the lightweight roof of the single storied Sheds. The building engineer to check the connection adequacy of the lightweight roof against the uplift pressure of wind.



Truss frame

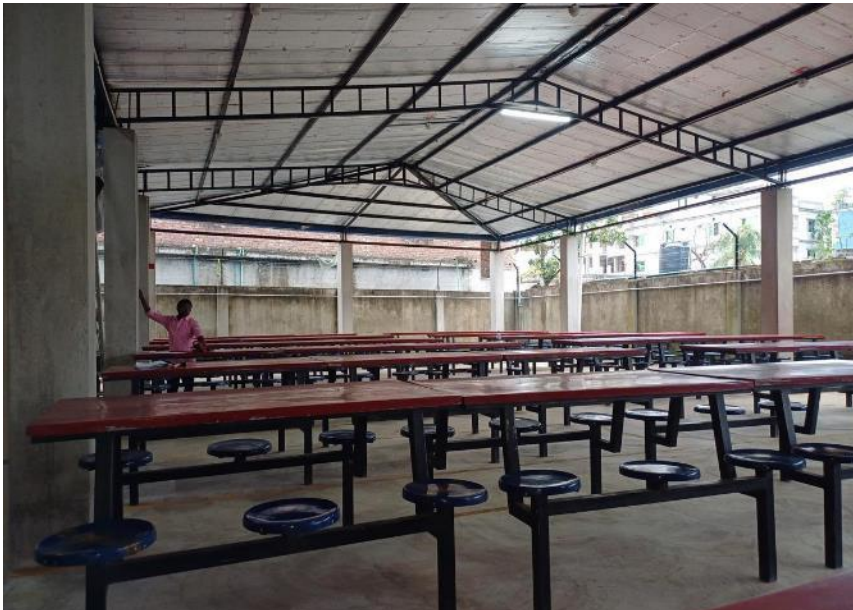


Truss frame connection with column

Observation: Mosque, Staff Dining (S1)

Lack of drawings (structural & architectural)

Structural and architectural drawings were not found for the Worker Dining. Only a column layout was provided for the structure which was not matched with on-site condition. The factory engineer is required to survey the whole structure and prepare full set of as-built drawing in compliance in compliance with section 1.9.1.2, part-6 of BNBC.



Inside of Worker Dining



Worker Dining

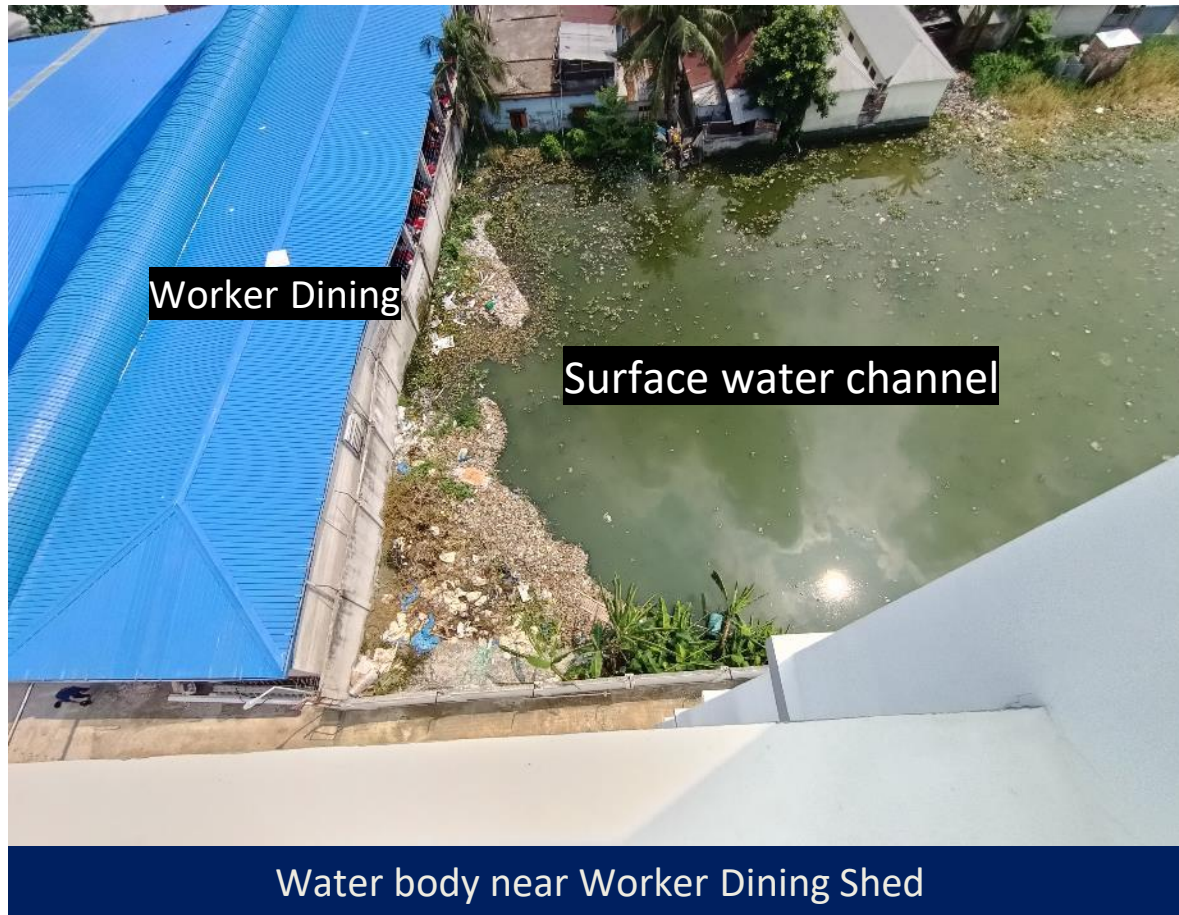
Lack of lateral stability



No load transfer media along long direction

Load transfer media is not provided along long direction for this shed. Therefore, lateral stability system of the shed is apparently incomplete. Factory engineer is required to check the lateral stability of the structure.

Proximity of Lake/Surface water channel

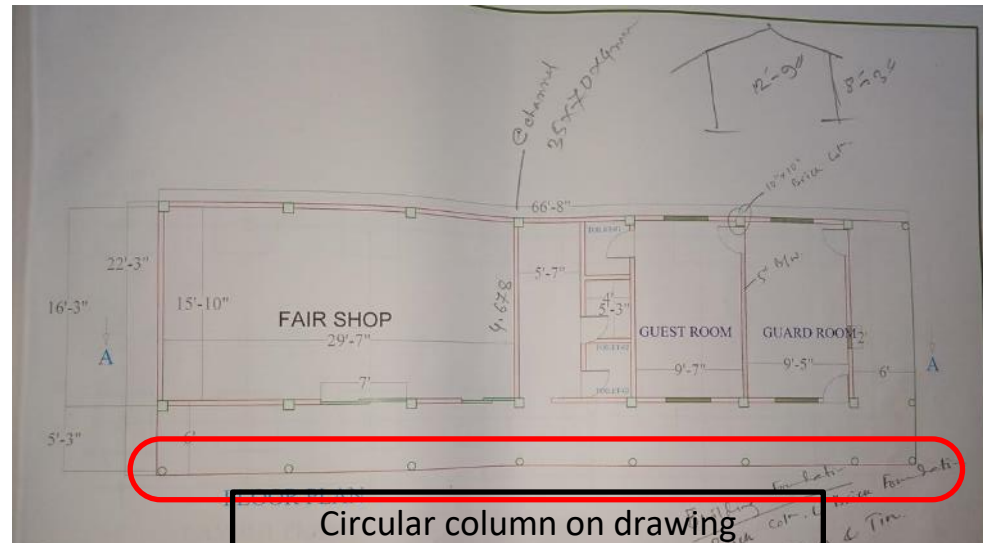


Lake is very close to structure. Building engineer to check the footing adequacy considering high flood level and take necessary steps to prevent soil erosion during high flood.

Incomplete in as built drawings



Framing of the structure



Floor layout

Framing and connection details not found in the provided as built drawings. Moreover, circular columns are shown in the drawings, but on-site square brick columns were found. The factory engineer is required to survey the whole structure and prepare full set of as-built drawing in compliance in compliance with section 1.9.1.2, part-6 of BNBC.



Squire brick column

Lack of information in design documents

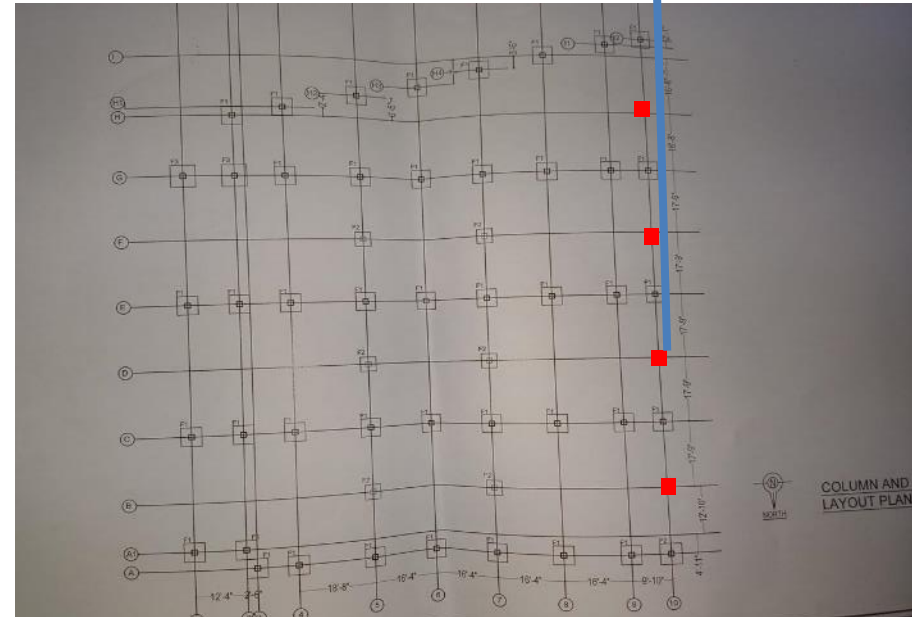
Connection details were not found in the drawings. Provided connection details were incomplete and not fully match with as-built condition. Moreover, additional RC column were found on end grid. No foundations details were found for those column. The Factory engineer required to revise the as-built drawings as per on-site condition. Also, check the connection adequacy of the frame and load path & structural integrity for the additional column.



Additional RC column



Truss connection with RC column



Footing layout

Observation: Fabric & Accessories Shed (S5)

Missing approval drawing from local authority



Utility Building



Dining Shed

At the time of inspection, no approval drawing from local authority was available for Utility Building and Worker Dining. Factory engineer is required to seek approval from the local authority for these structures.

Test Carried Out



Rebar Scan



Stone chips in column

Problems Observed

Production Building (B2):

Item-01: Mismatches in as built drawings.

Item-02: Load plan and design report not comply with BNBC requirements.

Item-03: Dampness at ceiling of stair top.

Item-04: Racks and plastic water tanks not anchored or braced.

Fire Command & Pump Room (B3):

Item-05: Lack of design report and as-built drawing.

Childcare, Doctor's & Rest House (B4):

Item-06: Inconsistencies in as built drawings.

Utility Building (B5):

Item-07: Beam size mismatch in drawings

Mosque, Staff Dining (S1):

Item 08: Lack of structural drawings.

Item 09: Apparently non-engineered connection.

Worker Dining (S3):

Item 10: Lack of drawings (structural & architectural).

Item 11: Lack of lateral stability.

Item 12: Proximity of Lake/Surface water channel.

Problems Observed (Continued)

Fair Shop& Guard Room (S4):

Item 13: Incomplete in as built drawings.

Fabric & Accessories Shed (S5):

Item 14: Lack of information in design documents.

Utility Building (B5), Worker Dining (S3):

Item 15: Missing approval drawing from local authority.

Priority Actions

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Mismatches in as built drawings. (Production Building)	Factory engineer is required to survey the structure and prepare accurate as-built drawings.	6-weeks
02	Load plan and design report not comply with BNBC requirements. (Production Building)	Factory engineer is required to revise the live load limit and related design documents based on BNBC requirement.	6-weeks
03	Load plan and design report not comply with BNBC requirements. (Production Building)	Revise and actively manage a set of floor loading plan following BNBC.	6-weeks
04	Load plan and design report not comply with BNBC requirements. (Production Building)	Implement the recommendations of design report.	6-months
05	Load plan and design report not comply with BNBC requirements. (Production Building)	Implement floor load plan.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
06	Dampness at ceiling of stair top. (Production Building)	Factory engineer is required to repair the damp areas with suitable method.	6-weeks
07	Racks and plastic water tanks not anchored or braced. (Production Building)	Factory engineer is required to adequately anchor/brace all non-structural elements to resist earthquake forces to comply with the BNBC.	6-weeks
08	Lack of design report and as-built drawing. (Fire Command & Pump Room)	Factory engineer is required to prepare the design documents including a design report, and a set of structural drawings in compliance with BNBC and submit it to RSC for review.	6-weeks
09	Lack of design report and as-built drawing. (Fire Command & Pump Room)	Carry out remedial works (if any) after review by RSC.	6-months
10	Inconsistencies in as built drawings. (Childcare, Doctor's & Rest House)	Factory engineer is required to prepare a full set of structural drawings in compliance with BNBC and submit it to RSC for review.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
11	Beam size mismatch in drawings. (Utility Building)	Factory engineer is required to survey the structure and prepare as-built drawings mentioning actual size and dimension.	6-weeks
12	Lack of structural drawings. (Mosque, Staff Dining)	Factory engineer is required to prepare the as-built structural drawing in compliance with section 1.9.1.1 as per BNBC.	6-weeks
13	Apparently non-engineered connection. (Mosque, Staff Dining)	Factory engineer is required to check the connection of the steel roof for the uplift pressure of wind.	6-weeks
14	Apparently non-engineered connection. (Mosque, Staff Dining)	Complete implementation of remedial works if required.	6-months
15	Lack of drawings [structural & architectural]. (Worker Dining)	Factory engineer is required to prepare the as-built drawing in compliance with BNBC.	6-months
16	Lack of lateral stability. (Worker Dining)	Factory engineer is required to check the lateral stability of the structure.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
17	Lack of lateral stability. (Worker Dining)	Implement remediation work if required.	6-months
18	Proximity of Surface water channel. (Worker Dining)	Investigate the position on footing, water body, actual soil condition and check the foundation adequacy based on in-situ soil bearing capacity.	6-weeks
19	Proximity of Surface water channel. (Worker Dining)	Take necessary alternatives where required.	6-months
20	Incomplete in as built drawings. (Fair Shop& Guard Room)	Factory engineer is required to prepare the as-built structural drawing in compliance with BNBC.	6-weeks
21	Fabric & Accessories Shed. (Fabric & Accessories Shed)	Factory engineer is required to revise the as-built drawing along with design report in compliance with BNBC.	6-weeks
22	Fabric & Accessories Shed. (Fabric & Accessories Shed)	Check the connection adequacy of the frame and load path & structural integrity for the additional column.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
23	Fabric & Accessories Shed. (Fabric & Accessories Shed)	Implement the recommendations of design report if any.	6-months
24	Missing approval drawing from local authority. (Utility Building, Worker Dining)	Factory engineer is required to seek and collect approval from the local authority for the structures.	6-months