

Unity Fabric Industries Ltd (Unit-2)

BAHADURPUR, BHAWAL MIRZAPUR, GAZIPUR 1703, BANGLADESH

(24.076474, 90.370719)

15th & 22nd July 2019





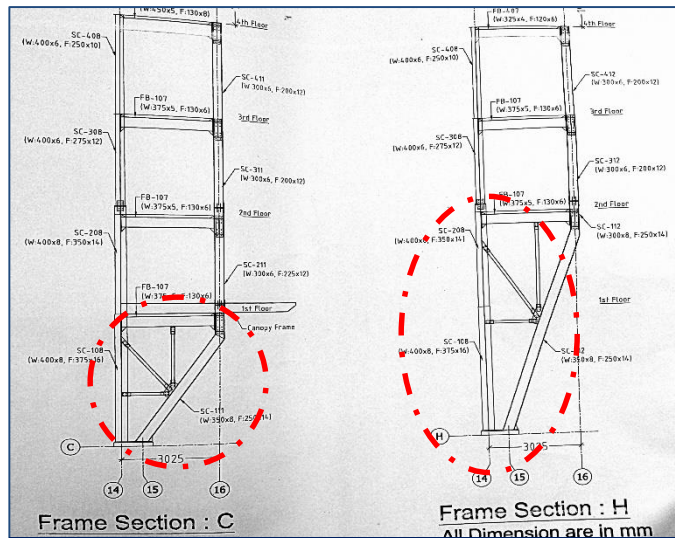
Observations



Bracing has not been installed



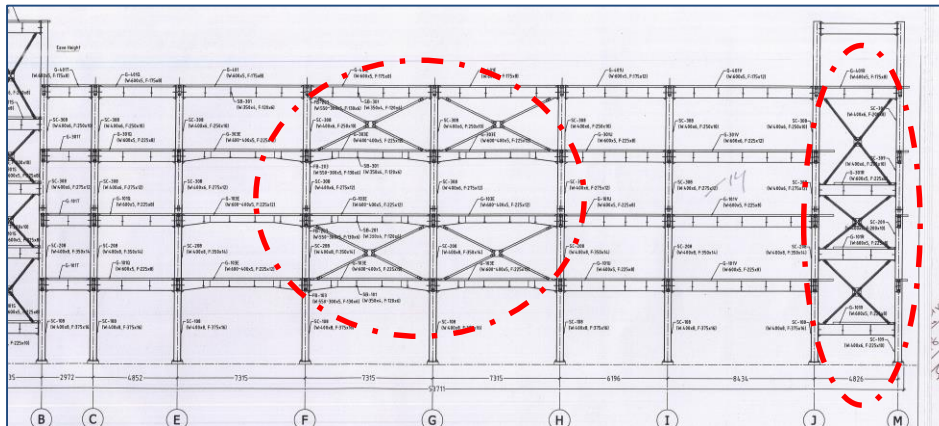
In the structural drawing, bracing was suggested but not installed on site. The factory engineer is required to check the bracing requirement of the structure and install the necessary bracings accordingly.



Bracing layout



Bracing not installed on site



Bracing layout



Bracing not installed on site



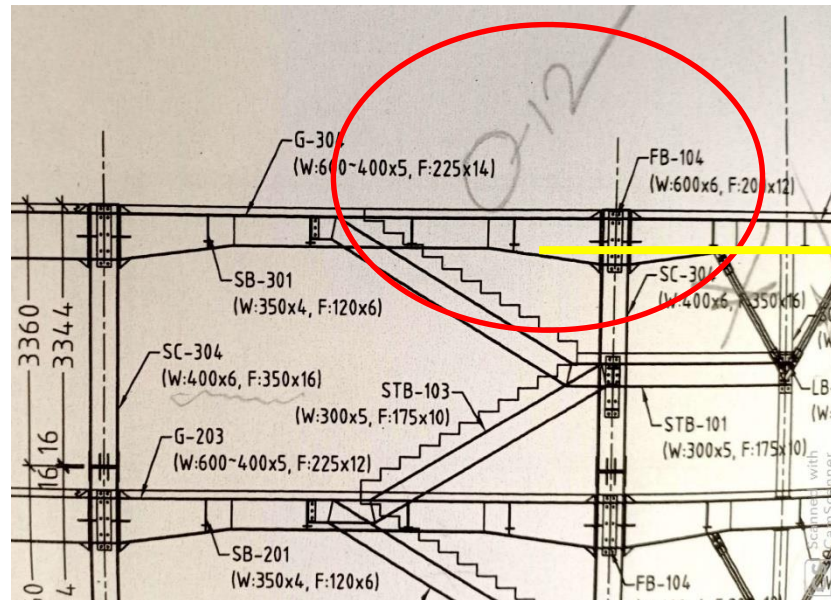
Inconsistency between as-built drawing and as-built condition

Observation : Production Building



Under construction frame on 3rd floor

Flange thickness of steel beam on grid-02 was found 12 mm instead of 14mm. On the other hand, 3rd floor roof was under construction so that the rafter size of the roof could not be verified.



Sectional details of grid 2



12 mm thick flange instead of 14 mm



Corrosion in steel member

Observation : Production Building



Corrosion in steel column

Corrosion found in column at 3rd floor (currently roof). Corrosion also found in column joint at 2nd floor.



Corrosion at column joint



Significant gap in the beam-column joint



Significant gap found in the beam-column joint. The factory Engineer is required to investigate the connections and take remedial proper actions where required.



Gap in between beam-column joint

Observations: Production Building



Stacking of construction debris on roof



There is no parapet on 3rd floor which may cause falling hazard. Also, construction debris found all over the roof. All hazards need to be removed from roof and develop proper drainage system on roof (currently 3rd floor).



Construction debris on the 2nd floor roof.



Possible vertical & horizontal extension



Column reinforcements are exposed on roof and slab reinforcements are exposed at South side. Factory has a future plan to extend the building both vertically and horizontally up-to 2nd floor. Factory engineer is required to carry out a Detail Engineering Assessment considering BNBC provision prior to any further extension work.



Exposed Rebar at south



Exposed Rebar on roof



Incomplete roof slab



West part of roof slab has not been constructed. Factory has made a temporary lightweight tin roof which connection appeared to be inadequate. Factory is required to complete the roof slab by RC casting as per drawings.



lightweight roof connection with brick wall appeared to be non-engineered



Incomplete Roof Slab at West

Observation : Boiler and Biogas building



Lack of as-built documents



Truss inserted into brick wall



Roof truss system

No documents were available for Garbage Shed. Building engineer is required to prepare “as constructed” drawings with complete structural information.



Garbage Shed

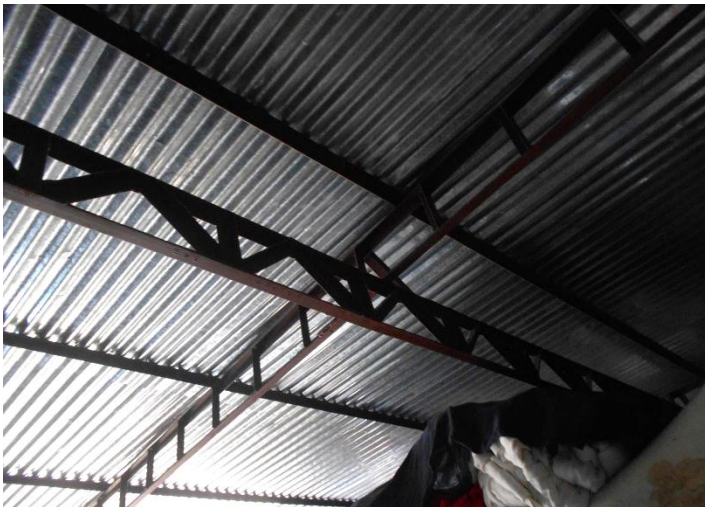
Observation : Garbage shed



Lack of lateral stability and apparently non-engineered anchorage against uplift forces



Truss-Brick wall connection



Truss to truss connection

There is no roof bracing and definite system to transfer the lateral loading through roof. Also, the connections between truss & brick columns are appeared to be inadequate. Factory engineer is required to assess the adequacy of the connections and propose proper suggestions.



Roof without bracing

Observation : Garbage shed



Problems Observed

Production Building:

- Item 01: Bracing has not been installed.
- Item 02: Inconsistency between as-built drawing and as-built condition.
- Item 03: Corrosion in Steel member.
- Item 04: Significant gap in beam-column joint.
- Item 05: Stacking of construction material and wastage on roof.

Utility Building:

- Item 06: Possible vertical & horizontal extension.

Boiler and Biogas building :

- Item 07: Incomplete roof slab .

Garbage shed:

- Item 08: Lack of as-built documents.
- Item 09: Lack of lateral stability and apparently non-engineered anchorage against uplift forces .



Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Bracing has not been installed. (Production Building)	The factory engineer is required to check the bracing requirement of the structure as part of engineering assessment.	6-weeks
2	Bracing has not been installed. (Production Building)	Carry out any remedial measures recommended in the engineering assessment report.	6-months
3	Inconsistency between as-built drawing and as-built condition. (Production Building)	Factory Engineer is required to survey the structures and prepare a full set of architectural and structural drawings.	6-weeks
4	Corrosion in steel member. (Production Building)	The building engineer to investigate the reason & extent of corrosion and suggest proper remedial measure accordingly.	6-weeks
5	Corrosion in steel member. (Production Building)	Take necessary measures to prevent further corrosion and repair the corroded steel members as per engineer's suggestion.	6-months
6	Significant gap in the beam-column joint	Building Engineer to investigate the connection of steel joint and suggest necessary remediation.	6-weeks
7	Stacking of construction debris on the roof. (Production Building)	Stacked materials need to be removed.	6-weeks
8	Stacking of construction debris on the roof. (Production Building)	Drainage system to be developed on roof.	6-months



Item No.	Observation	Recommended Action Plan	Recommended Timeline
9	Possible vertical & horizontal extension. (Utility Building)	Prior any extension work, Detail Engineering Assessment required to be carried out following BNBC requirement.	6-weeks
10	Possible vertical & horizontal extension. (Utility Building)	Remedial works required to be carried out where necessary.	6-months
11	Incomplete roof slab. (Boiler and Biogas Building)	Complete the RC slab construction by replacing the existing lightweight tin roof.	6-weeks
12	Lack of as-built documents. (Garbage shed)	Factory Engineer is required to survey the structures and prepare a full set of as-built documents.	6-weeks
13	Lack of lateral stability and apparently non-engineered anchorage against uplift forces. (Garbage shed)	The factory engineer to investigate the anchorage system and check its capacity for the possible uplift forces as part of engineering assessment.	6-weeks
14	Lack of lateral stability and apparently non-engineered anchorage against uplift forces. (Garbage shed)	Carry out remedial works where necessary.	6-months