

Green Life Knit Composite Ltd. (Extension)

Tongabari, Ashulia, Savar, Dhaka-1341
(23.903056N,90.320529E)
10 September 2023



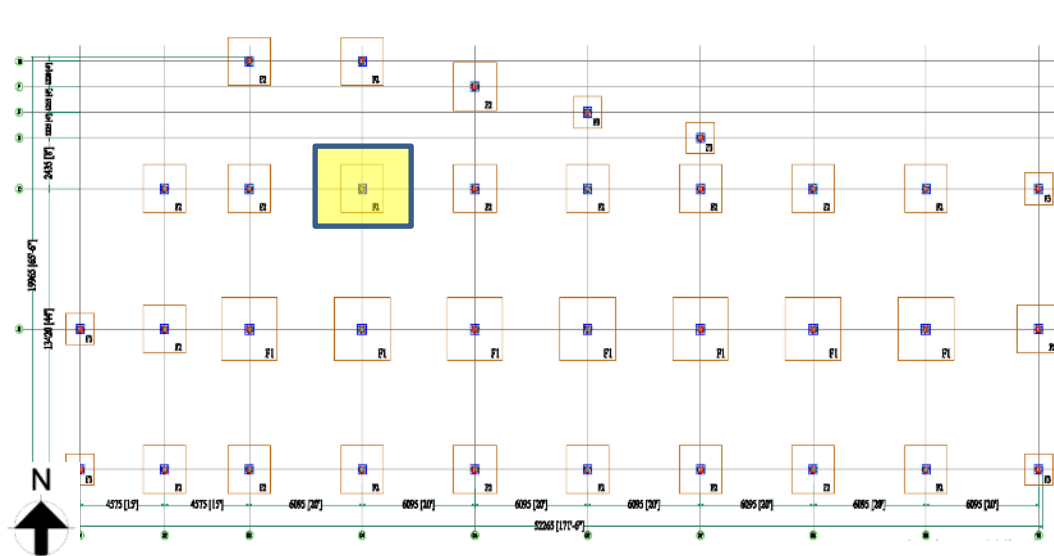
Building Information

- 01. Wash Building:** Three storied (G+2) steel building with a mezzanine floor on ground.
- 02. Printing & Embroidery Building:** Partially three storied (G+2) building including a rooftop shed.
- 03. ETP Control Room:** Single storied reinforced concrete (RC) building with a partial basement.
- 04. Fire Pump House:** Single storied reinforced concrete (RC) building with a partial basement.
- 05. Transformer Room:** Single storied reinforced concrete (RC) building.

Observations

Stress in foundation exceeds normal design limit

Observations: Wash Building



Foundation Layout plan

Cursory calculation indicates that foundation is stressed above normal design limits for punching at the marked locations considering 3 kPa live load on typical floor, 6 kPa on storage areas, 1.5 kPa on roof and minimum concrete strength based on aggregate type. Building engineer to review design, loads and foundation stresses for the marked location above.



Source of loading: Toilet build up and partition wall on 2nd floor



Source of loading: Storage on 1st floor

**Inadequate lateral stability system
along N-S direction**



Lack of bracing and beam size along N-S direction

There is no bracing along N-S direction and the depth of secondary framing beam size is very low which indicates lack of lateral stability of the building along this direction. The building engineer is required to check the stability system and suggest necessary alternatives accordingly.

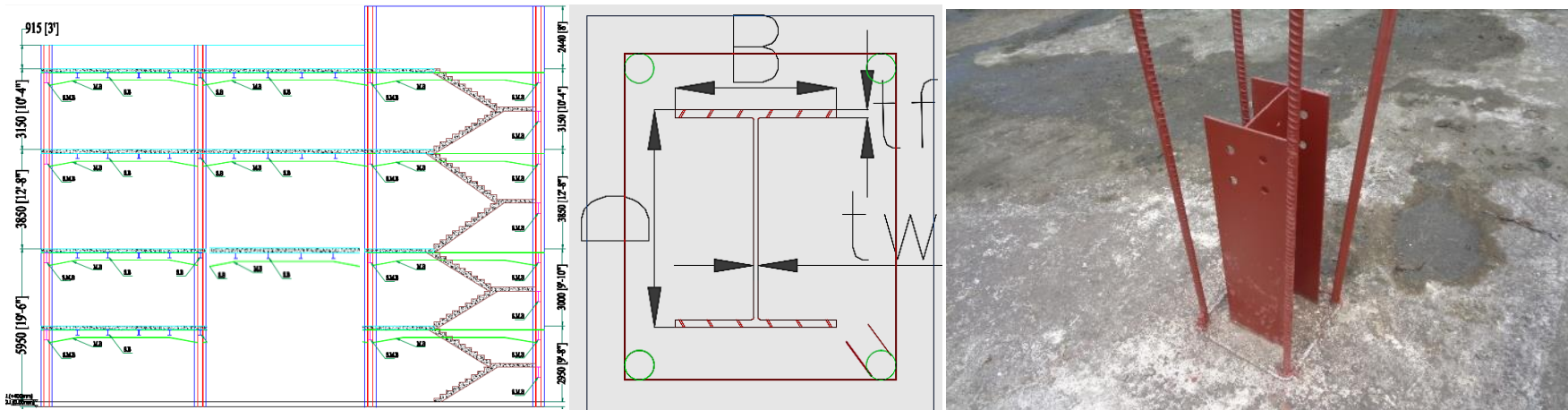
Non-engineered bamboo shed over staircase



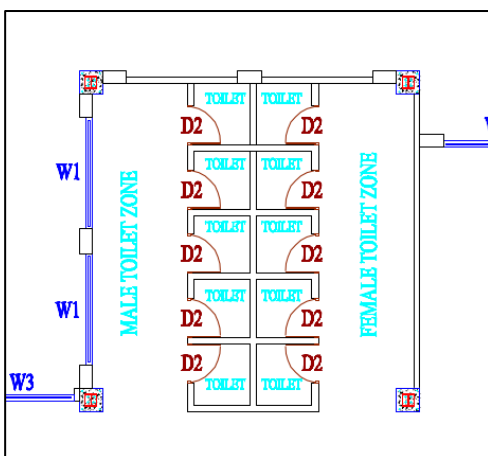
Non-engineered bamboo shed over staircase

Non-engineered bamboo shed observed over staircase. The factory is required to replace the shed with any well design structure.

Missing information & connection details in the provided drawing



Column size, rebar diameter, steel to RC connection, Steel column to beam connection details are missing in the drawing



350 mm floor build up at toilet zone not shown in the drawing

Composite column was found on-site. Steel column to beam connection details as well as rebar detailing is not provided in drawing.

Building engineer is required to survey the structure, verify the connections between RC and steel member and prepare accurate the as-built drawings.

Expansion joint filled with rigid material



Expansion joint filled with rigid material at every floor

Expansion joint with adjacent building was found filled with rigid material which may result in development of crack and falling hazard during lateral movement of the buildings. Factory is required to fill the gap with fireproof & flexible material suggested by the building engineer.

Severe corrosion on steel members



Corrosion on steel beam at staircase

Severe corrosion was found in the steel members. Factory is required to remove the corrosion and apply rust proof coating on the corroded surface.

Water ponding on roof



Water ponding on roof slab due to poor drainage system

Water ponding observed on roof slab due to poor drainage system. Aggregate of roof slab was found as brick chips. Factory is required to improve drainage system with adequate water outlets and apply water proofing layer with adequate slope on roof.

Lack of lateral stability



Moment frame in E-W direction



No bracing or any lateral load resisting system along N-S direction

Neither moment resisting connection is not provided in N-S direction nor bracing or other lateral load resisting system is provided which indicates lack of stability along this direction. Building engineer is required to check the lateral stability of the structure and suggest proper remedial action.

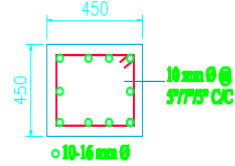
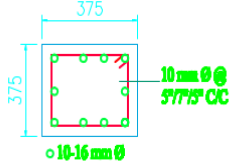
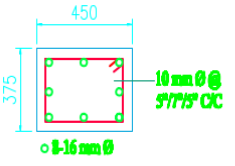
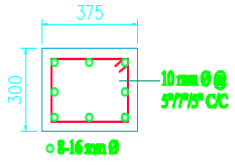


No load transfer media and load resisting system is provided in the truss roof

No compression member is provided from frame to frame along N-S direction to transfer the lateral load and no bracing is provided for the structure. Building engineer is required to check the lateral stability of the structure and suggest proper remedial action.

Missing information and discrepancy in the provided drawing

SCHEDULE OF COLUMN REINFORCEMENT-01

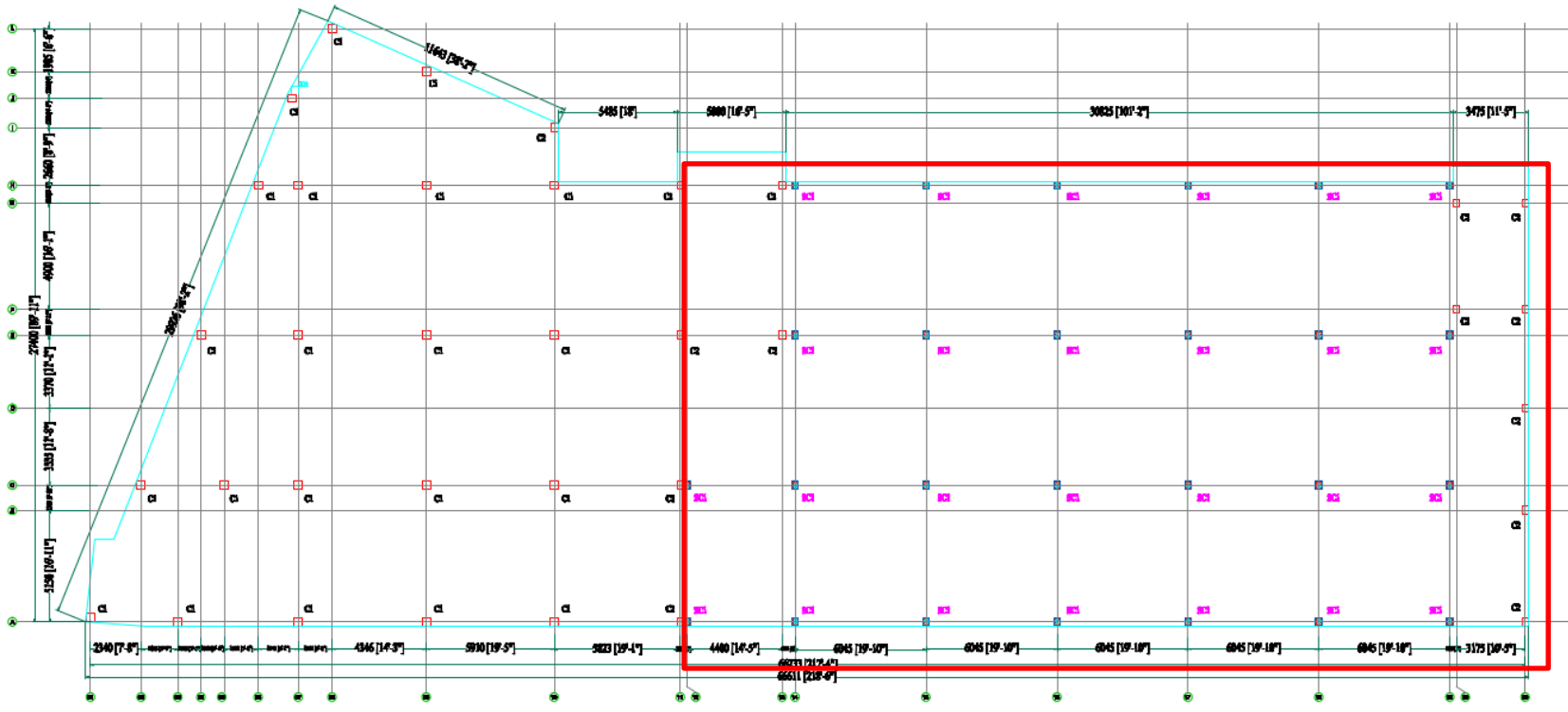
NAME OF COLUMN	UP TO GB	GB TO ABOVE FLOOR
C1		
C2		

10 rebars shown in the drawing



8 rebars (3 on each side) found on-site

8 rebars (3 on each side) found on-site instead of 10 rebars. Building engineer is required to check the column rebar and update the as-built structural drawing accordingly.



Pedestal column/baseplate layout is not shown for steel column

Pedestal column/baseplate layout is not shown for steel column in column layout. Also, connection detail is not provided in drawing. Building engineer is required to check the pedestal column, rebar quantity and its connection and update the as-built structural drawing accordingly.

Non-engineered bamboo shed over staircase



Bamboo shed over staircase

Non-engineered bamboo shed observed over staircase. The factory is required to replace the shed with any well design structure.

Absence of design documents



Fire Pump House

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 and as-built drawing were not available which are required to be prepared in compliance with section 1.9.1.1 and 1.9.1.2 (BNBC).

Falling hazard



No edge protection provided on underground water tank top slab

No edge protection was provided underground water tank top slab tank which may create falling hazard. Factory is required to provide edge protection to avoid falling hazard.

Absence of as-built drawing



ETP Control Room



Transformer Room

As-built drawing of ETP Control Room and Transformer Room was not available onsite.
Building engineer is required to produce as-built drawing for both structures.

Priority Actions

Problems Observed

Wash Building:

- Item 01: Stress in foundation exceeds normal design limit
- Item 02: Inadequate lateral stability system along N-S direction
- Item 03: Non-engineered bamboo shed over staircase
- Item 04: Missing information & connection details in the provided drawing
- Item 05: Expansion joint filled with rigid material
- Item 06: Severe corrosion on steel members
- Item 07: Water ponding on roof

Printing & Embroidery Building:

- Item 08: Lack of lateral stability
- Item 09: Missing information and discrepancy in the provided drawing
- Item 10: Non-engineered bamboo shed over staircase

Fire Pump House:

- Item 11: Absence of design documents
- Item 12: Falling hazard

ETP Control Room, Transformer Room:

- Item 13: Absence of as built drawing

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Stress in foundation exceeds normal design limit. (Wash Building)	Building engineer to review design, loads and foundation stresses for the marked location above.	6-weeks
02	Stress in foundation exceeds normal design limit. (Wash Building)	Produce and actively manage load plan for all floors based on column and foundation capacity.	6-weeks
03	Stress in foundation exceeds normal design limit. (Wash Building)	Carry out the remedial works if required.	6-months
04	Stress in foundation exceeds normal design limit. (Wash Building)	Implement load plan (posting load plan, marking storage areas and maintaining floor loading).	6-months
05	Inadequate lateral stability system along N-S direction. (Wash Building)	The building engineer is required to check the stability system and suggest necessary alternatives accordingly.	6-weeks
06	Inadequate lateral stability system along N-S direction. (Wash Building)	Carry out connection adequacy check and suggest necessary remedial action.	6-weeks
07	Inadequate lateral stability system along N-S direction. (Wash Building)	Carry out the remedial works if required.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
08	Non-engineered bamboo shed over staircase. (Wash Building)	Factory is required to replace the shed with any well design structure	6-months
09	Missing information & connection details in the provided drawing. (Wash Building)	Building engineer is required to survey the structure, verify the connections between RC and steel member and prepare accurate the as-built drawings.	6-weeks
10	Expansion joint filled with rigid material. (Wash Building)	Factory is required to fill the gap with any flexible material suggested by the structural/fire engineer.	6-months
11	Severe corrosion on steel members. (Wash Building)	Factory is required to remove the corrosion and apply rust proofing on the corroded areas to protect the steel members from corrosion.	6-weeks
12	Water ponding on roof. (Wash Building)	Factory is required to improve drainage system with adequate water outlets and apply water proofing layer with adequate slope on roof.	6-months
13	Lack of lateral stability. (Printing & Embroidery Building)	Building engineer is required to check the lateral stability of the structure and suggest proper remedial action.	6-weeks
14	Lack of lateral stability. (Printing & Embroidery Building)	Carry out the remedial works if required.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
15	Missing information and discrepancy in the provided drawing. (Printing & Embroidery Building)	Building engineer is required to check the columns layout & sizes, rebar quantity and update the as-built structural drawing with necessary connection details.	6-weeks
16	Non-engineered bamboo shed over staircase. (Printing & Embroidery Building)	Factory is required to replace the shed with any well design structure.	6-months
17	Absence of design documents. (Fire Pump House)	Building engineer is required to prepare the design report and as-built drawings in compliance with section 1.9.1 of BNBC (part-6).	6-months
18	Absence of design documents. (Fire Pump House)	Carry out the remedial works if required.	6-weeks
19	Falling hazard. (Fire Pump House)	Factory is required to provide edge protection to prevent falling hazard.	6-weeks
20	Absence of as built drawing. (ETP Control Room & Transformer Room)	Building engineer is required to produce as-built drawing of both structures.	6-weeks