

Hamza Clothing Ltd.

Bangabandhu Road, Tongabari, Ashulia

(23.896644, 90.313862)

26th August & 7th September 2021



Building Information

Main Building: (G+2)

Utility & Canteen Building: partially (G+1)

Bicycle & Car parking shed: (single storied)

Car parking shed: (single storied).

Wastage store shed: (single storied).

FACP room: (single storied)

Conveyor belt shed: (single storied).

Shower shed: (single storied).

Observations

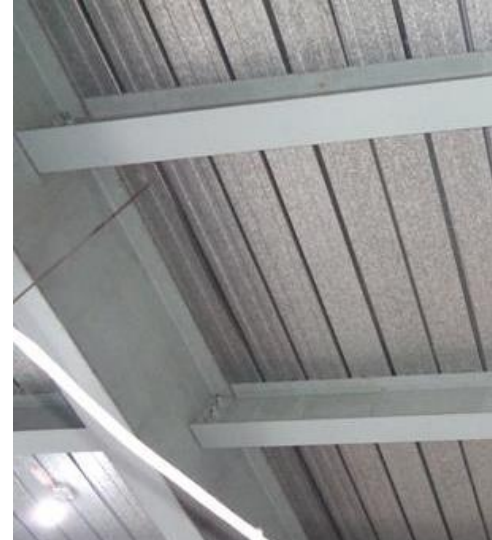
DEA documents need to be reviewed by RSC



Beam-Column Connection



Bracing-Column Connection



Connection of sub-beam with Main Beam



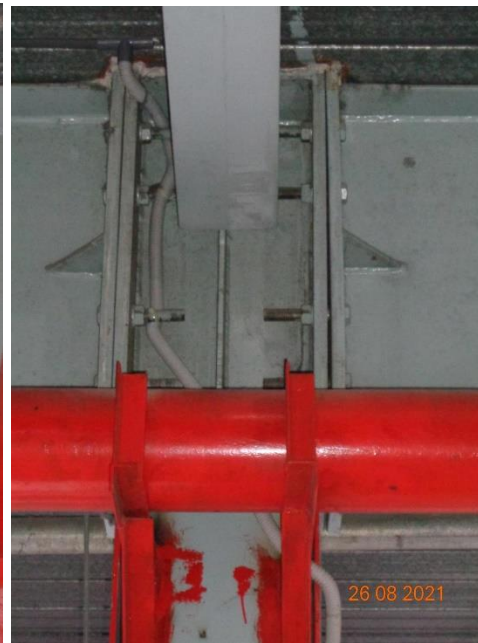
Stair(1-4) column Schedule

Factory performed DEA and as per recommendation of DEA, factory completed the retrofitting works. In DEA report connection adequacy has not been provided for any type of connection. Factory engineer is required to provide the connection adequacy check for all types of connections in DEA report which is required to be reviewed by RSC.

Connection gap at several location.



Gap observed in Beam- Column connection



Connection gaps observed at column-beam joint at several location. Factory engineer is required to carry out suitable remedial works.

Severe corrosion in steel member



Corrosion in steel beam, column & beam-column connections

Severe Corrosion in steel member was observed in various locations. The building engineer to investigate the reason of corrosion, extend of damage and suggest proper remedial measure accordingly.

9 Observations: Main Building

Dampness in brick wall



Dampness found in brick wall.



Dampness found in several locations of the structure. Building engineer is required to take necessary measures to prevent source of dampness and repair the existing damp areas.

Water ponding at roof



Water ponding at roof

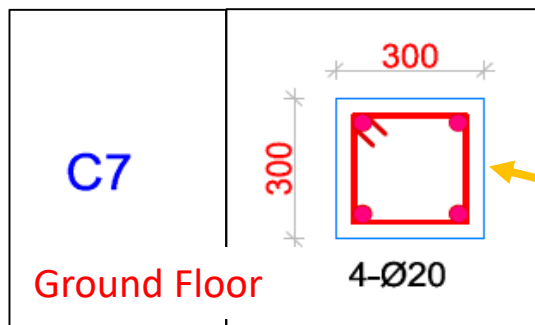
Water ponding was found at roof area. The water drainage system was found but adequate sloping was not found. The factory engineer is required to develop proper drainage system with adequate sloping on the mentioned area.

DEA documents need to be revised for Stairs.



Least dimension of the column for stair (1-4) was found 250mm and for the stair-5 was found 300mm

NAME OF COLUMN	G.B TO 1ST FLOOR
C1	<p>900 250 20-20 mm Ø</p>
C2	<p>750 250 18-20 mm Ø</p>
C3	<p>750 250 20-20 mm Ø</p>
C4	<p>750 250 18-20 mm Ø</p>

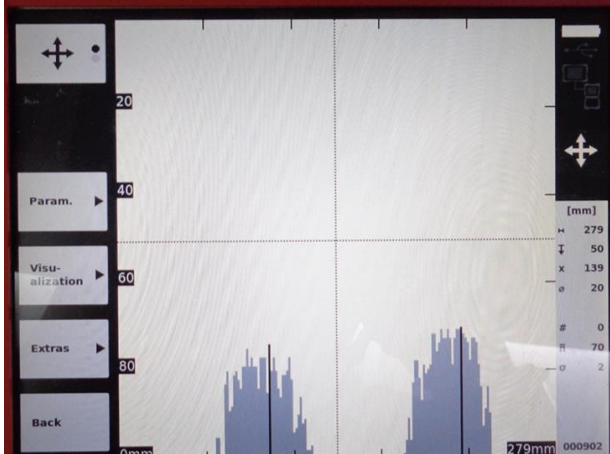
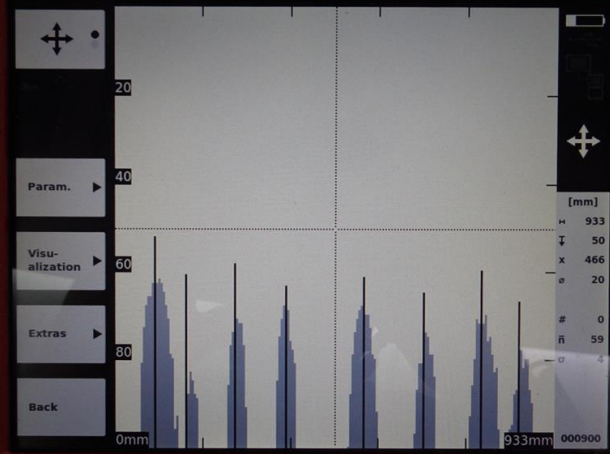


Ground Floor

Column schedule for the C7 column near stair-5

Ground floor column for the stair (1-4) was found 4.45 m (least one) in unsupported length and least dimension 250 mm in size. And the ground floor column for the near stair-5 was found 4.67 (unsupported length) and dimension 300mm. The unsupported length/width=17.52 for stair (1-4) and unsupported length/width=15.67 for the stair-5 indicate that the columns are critical for slenderness effect. So, the factory engineer is required to check and address this issue in the DEA report.

Stair(1-4) column Schedule



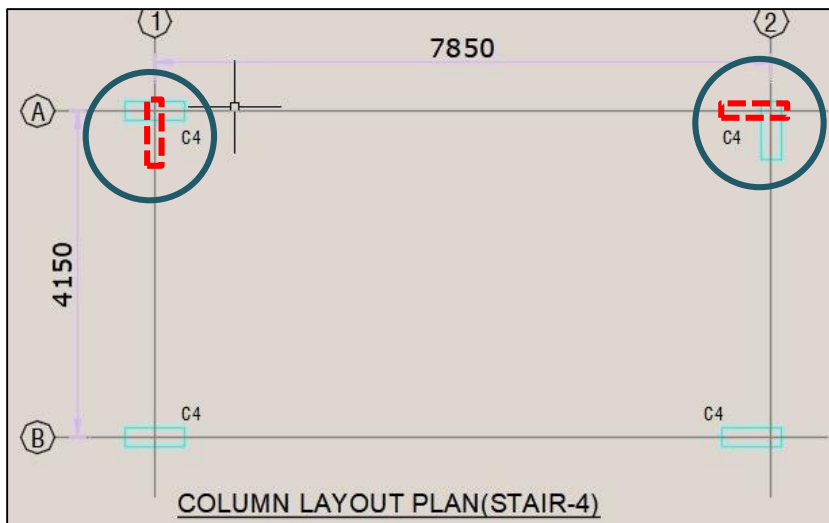
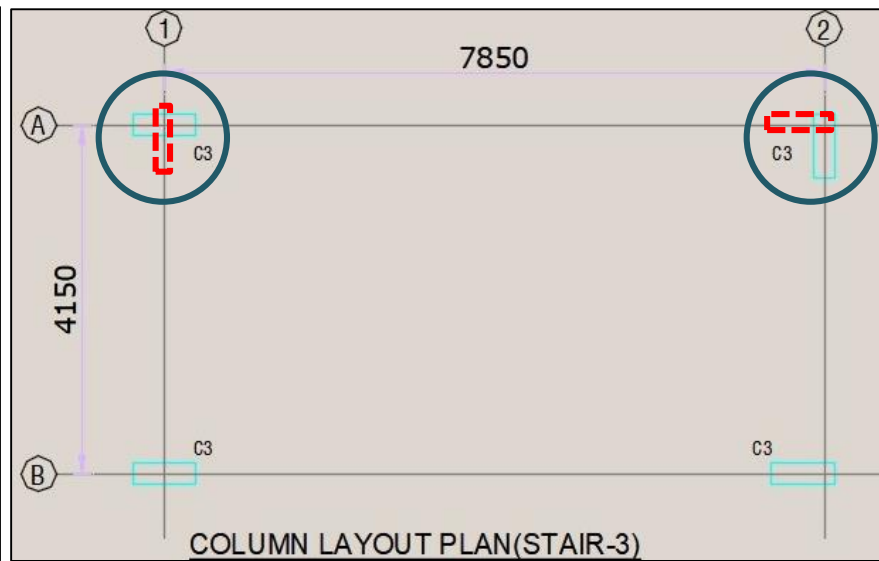
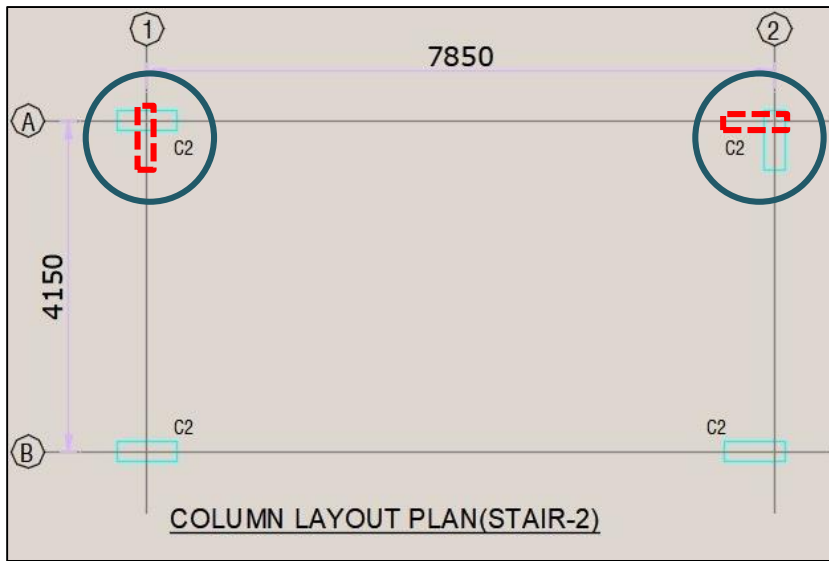
From the ferro-scanning, 8 nos re-bar in long face (left image) and 2 nos re-bar in short face (right image) was found.

Number of re-bar was found mismatch in between as built drawing and actual site condition. Total 20 nos re-bar has been shown in drawing. But from the ferro-scanning, total 16 nos of re-bar was found. Factory engineer is required to survey the who structure and update the as-built drawing as per site condition.

NAME OF COLUMN	UP TO G.B	G.B TO 1ST FLOOR	1ST TO 2ND FLOOR	2ND TO ABOVE
C1	<p>975 325 o20-20 mm Ø</p>	<p>900 250 o20-20 mm Ø</p>	<p>900 250 o20-20 mm Ø</p>	<p>900 250 o20-20 mm Ø</p>

C1- column schedule. In long face of the column 9 nos re-bar and short of face of the column 3 nos of the re-bar has been shown.

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. Revise the software-based analysis model, design report and load plan following BNBC requirements.



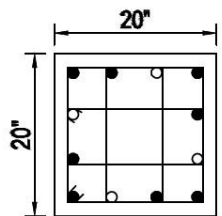
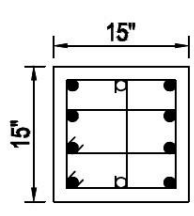
Orientation of marked column found mismatched

Orientation of the column does not match with as built drawing. Column orientation was found as per the dotted red marked.

Mis-match found between the as-built drawing and actual site condition. Column orientation does not match with at marked location. Factory engineer is required to survey the whole structure and update as-built drawing.

DEA documents need to be revised

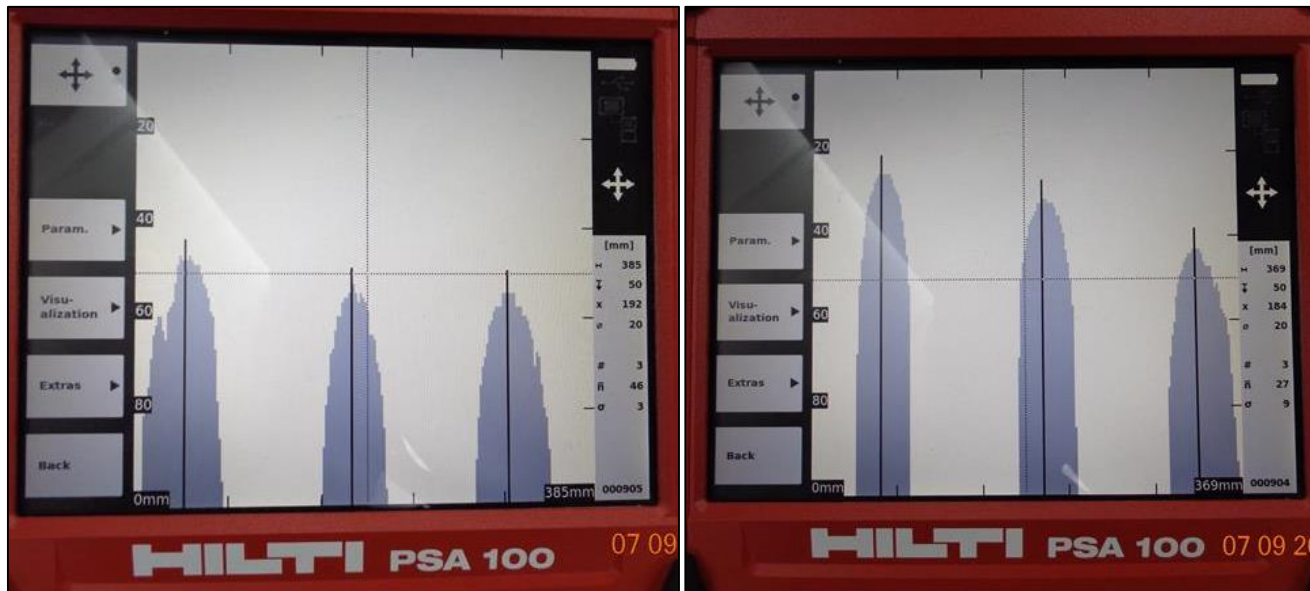
SCHEDULE OF COLUMN REINFORCEMENT

NAME OF COLUMN	UP TO GB	GB TO ABOVE
C4	 <p>● 8-20 mm Ø ○ 4-16 mm Ø</p>	 <p>● 8-20 mm Ø ○ 2-16 mm Ø</p>

C4- column schedule.

In as built drawing, column re-bar has been shown 4 nos in one face & 3 nos in another face.

Number of re-bar was found mismatch in between as built drawing and actual site condition. Total 10 nos re-bar has been shown in drawing. But from the ferro-scanning, total 8 nos of re-bar was found. Factory engineer is required to survey the whole structure and update the as-built drawing as per site condition and also check the column capacity.

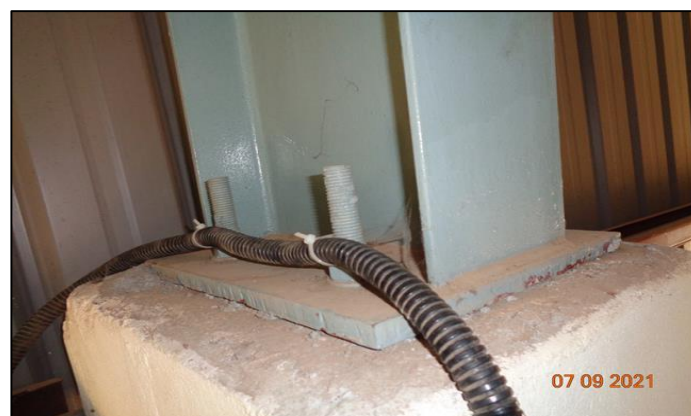


From the ferro-scanning, 3 nos re-bar was found each face of the column.



Roof bracing is made of 25mm dia re-bar is connected with rafter by welding. Adequacy check of the connection has not been provided in DEA report

Connection of the roof bracing seems to be inadequate.



Factory engineer is required to update the DEA report providing the adequacy check for all types of connections.

Adequacy check of bolted connection has not been provided in DEA report

Water ponding at roof



Water ponding at roof

Water ponding was found at roof area. The water drainage system was found but adequate sloping was not found. The factory engineer is required to develop proper drainage system with adequate sloping on the mentioned area.

Observation: Utility & Canteen Building

Lack of lateral stability



Truss roof System

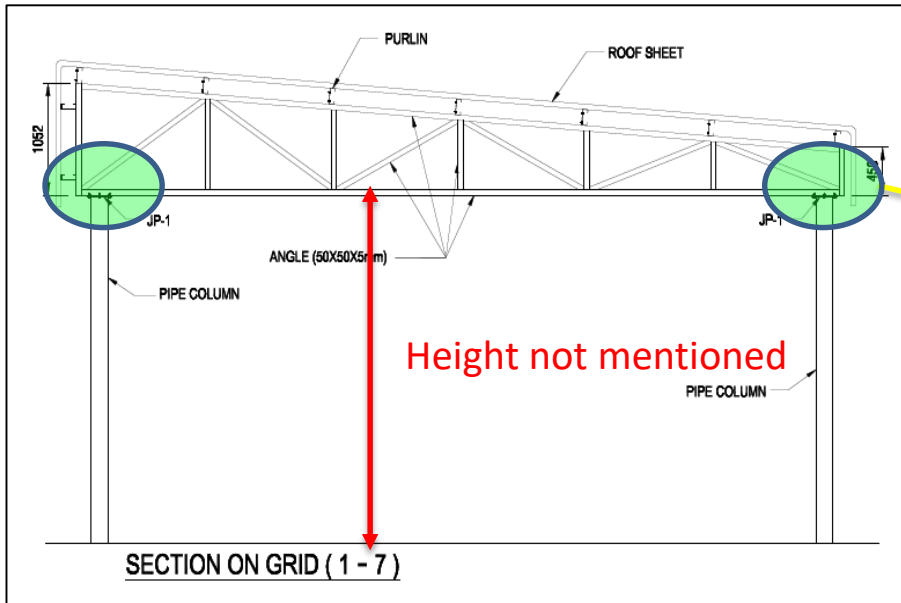


Poor connection details

The steel roof truss is supported by steel pipe column. No vertical & roof bracing was found. As a result, there is no apparent load path to transfer the lateral loading along the long direction. Building Engineer is required to check the lateral stability of the steel shed and check the adequacy of the connection.

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. During the inspection, design report, soil test report & material test report has not been found. Now, the building engineer is required to prepare Engineering Assessment (EA) for the structure. which compliance with section 1.9.1 (part-6, BNBC).

Lack of information in as-built drawing



Truss sectional details



Steel pipe to truss connection

Details of steel pipe column to truss connection (JP-1) was missing in as-built drawing. Also, height of the shed was not mentioned in as-built drawing. Building Engineer is required to survey the whole structure and prepare accurate as-built (both architectural & structural) drawings.

Corrosion in steel member



Corrosion in steel column

Corrosion in steel member was observed in various locations. The building engineer is required to investigate the reason of corrosion and suggest proper remedial measure accordingly.

Lack of lateral stability



Truss roof System



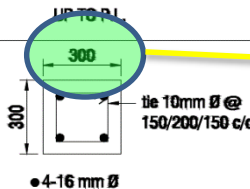
Poor connection details

The steel roof truss is supported by steel pipe column. No vertical & roof bracing was found. As a result, there is no apparent load path to transfer the lateral loading along the long direction. Building Engineer is required to check the lateral stability of the steel shed and check the adequacy of the connection.

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. During the inspection, design report, soil test report & material test report has not been found. Now, the building engineer is required to prepare Engineering Assessment (EA) for the structure. which compliance with section 1.9.1 (part-6, BNBC).

Discrepancies in as-built drawing

SCHEDULE OF COLUMN REINFORCEMENT

NAME OF COLUMN	UP TO PL
C1	 <p>300</p> <p>tie 10mm Ø @ 150/200/150 c/c</p> <p>● 4-16 mm Ø</p>

Short column details



Short column measurement

In as-built drawing short column size was mentioned as 300mm X 300mm. But short column dimension was found 350mm X 300mm.

HEIGHT = 3850MM



Truss sectional details



Truss orientation on-site

Orientation of truss diagonal members were found different from as-built drawing at grid 2 & 4. Also, shed height at grid B was mentioned 3.85 m. But actually, height was found 3.56 m. Building Engineer is required to survey the whole structure and prepare accurate as-built (both architectural & structural) drawings.

Corrosion in steel member



Corrosion in steel column

Corrosion in steel member was observed in various locations. The building engineer is required to investigate the reason of corrosion and suggest proper remedial measure accordingly.

Lack of lateral stability



Truss roof System

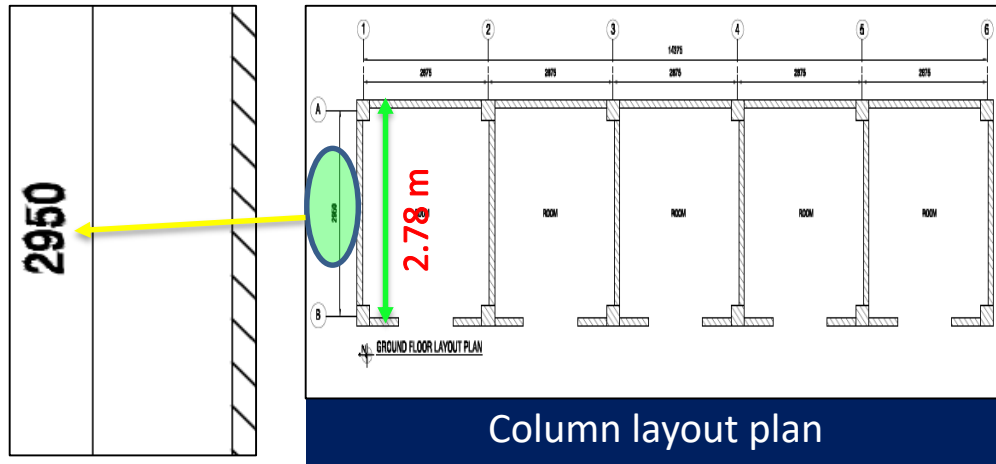


Poor connection details

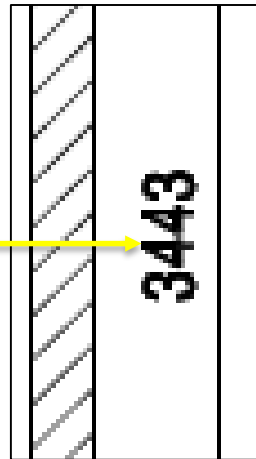
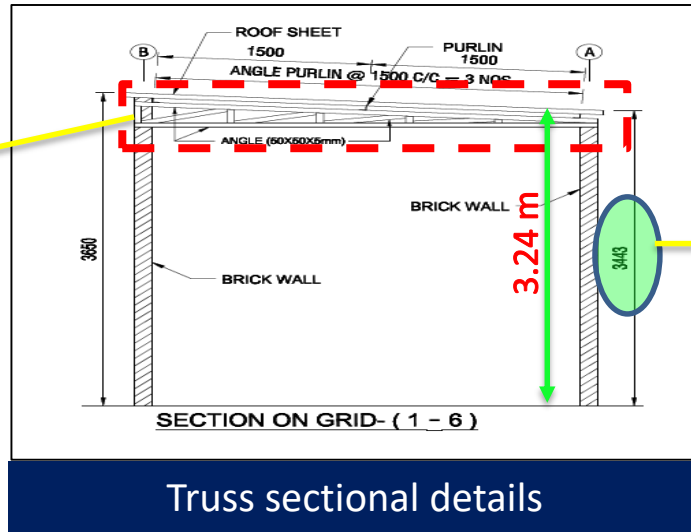
The steel roof truss is supported by brick column. No vertical & roof bracing was found. As a result, there is no apparent load path to transfer the lateral loading along the long direction. Building Engineer is required to check the lateral stability of the steel shed and check the adequacy of the connection.

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. During the inspection, design report, soil test report & material test report has not been found. Now, the building engineer is required to prepare Engineering Assessment (EA) for the structure. which compliance with section 1.9.1 (part-6, BNBC).

Discrepancies in as-built drawing

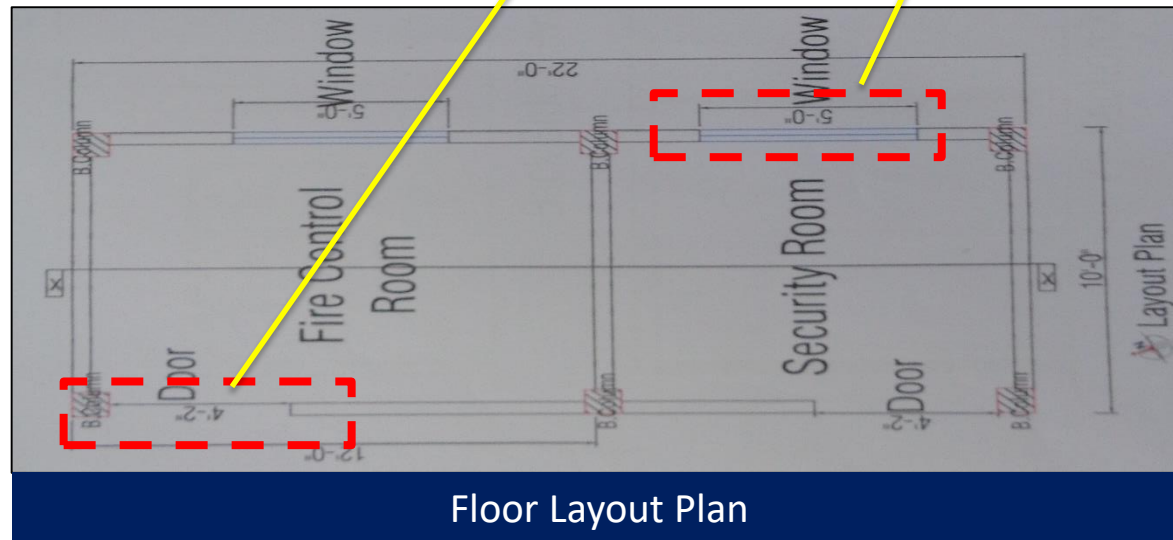
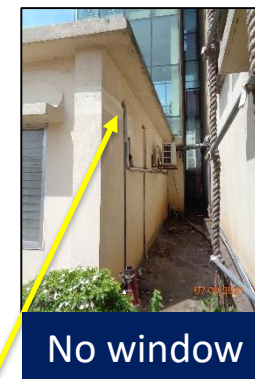
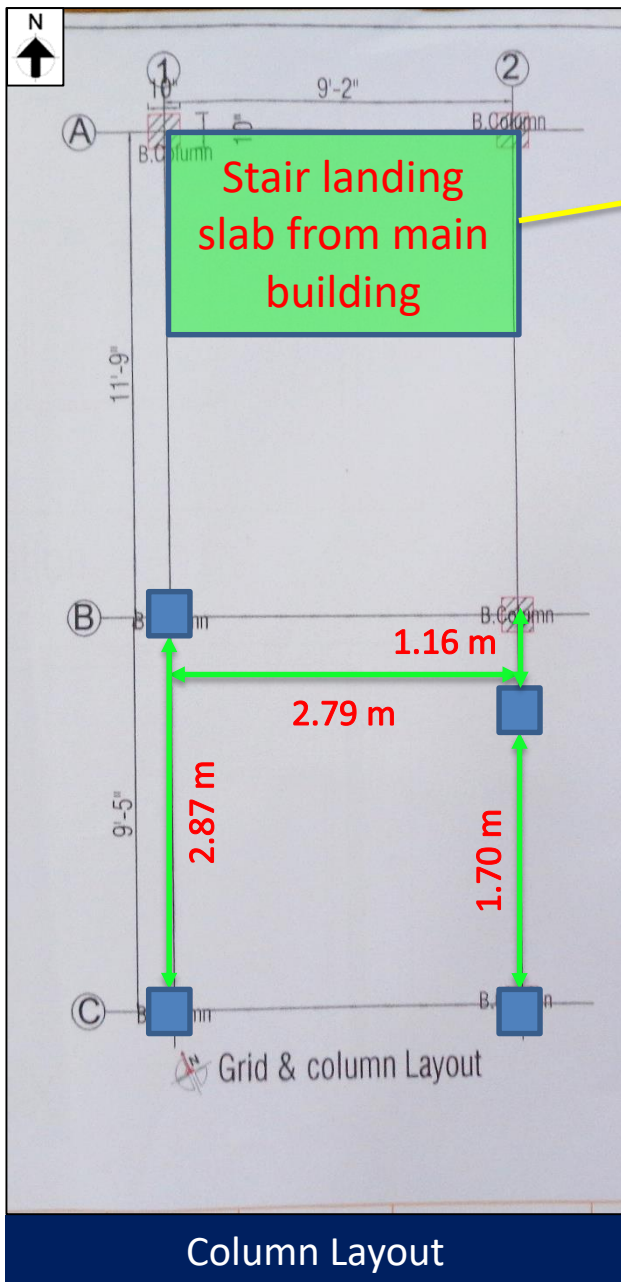


In as-built drawing short direction dimension was mentioned as 2.95 m. But dimension was found 2.78 m.



Orientation of truss diagonal members were found different from as-built drawing. Also, shed height at grid A was mentioned 3.44 m. But height was found 3.24 m. Building Engineer is required to survey the whole structure and prepare accurate as-built (both architectural & structural) drawings.

Discrepancies in as-built drawing



Grid dimension, column position, door & window position do not match with as-built drawing. Building Engineer is required to survey the whole structure and prepare accurate as-built (both architectural & structural) drawings.

Absence of as-built drawing



No as-built drawing for both shower shed & conveyor shed

During the inspection, the as built drawing was not provided. Building Engineer is required to survey the whole structure and prepare accurate as-built (both architectural & structural) drawings which compliance with section 1.9.1 (part-6, BNBC).

Priority Actions

Problems Observed

Main Building

Item 1: DEA documents need to be reviewed by RSC.

Item 2: Connection gap at several location.

Item 3: Severe corrosion in steel member.

Item 4: Dampness in brick wall.

Item 5: Water ponding at roof

Item 6: DEA documents need to be revised for Stairs.

Utility & Canteen Building-2

Item 7: DEA documents need to be revised.

Item 8: Water ponding at roof.

Bicycle & Car parking shed:

Item 9: Lack of lateral stability.

Item 10: Lack of information in as-built drawing.

Item 11: Corrosion in steel member.

Car parking shed:

Item 12: Lack of lateral stability.

Item 13: Discrepancies in as-built drawing.

Item 14: Corrosion in steel member.

Wastage shed:

Item 15: Lack of lateral stability.

Item 16: Discrepancies in as-built drawing.

FACP Room:

Item 17: Discrepancies in as-built drawing.

Shower shed & Conveyor belt shed:

Item 18: Absence of as-built drawing.

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	DEA documents need to be reviewed by RSC (Main Building)	Building Engineer is required to survey the structure and prepare accurate as-built (both architectural & structural) drawings in compliance with section 1.9.1.2 as per BNBC.	6-weeks
02	DEA documents need to be reviewed by RSC (Main Building)	Building engineer to update the DEA documents in compliance with section 1.9.1.1 as per BNBC.	6-weeks
03	DEA documents need to be reviewed by RSC (Main Building)	Implement the recommendations of DEA.	6-months
04	Connection gap at several location (Main Building)	Identify the locations and carryout suitable repair works where necessary.	6-weeks
05	Severe corrosion in steel member (Main Building)	The building engineer is required to investigate the reason & extent of corrosion and suggest proper remedial measure accordingly.	6-weeks
06	Severe corrosion in steel member (Main Building)	Take necessary measures to prevent further corrosion and repair the corroded steel members as per engineer's suggestion.	6-months
07	Dampness in brick wall (Main Building)	Building engineer is required to take necessary measures to prevent source of dampness and repair the existing damp areas.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
08	Water ponding at roof (Main Building)	The building engineer is required to develop proper drainage system with adequate sloping to resist water ponding on roof.	6-months
09	DEA documents need to be revised for Stairs (Main Building)	Building Engineer is required to survey the structure and prepare accurate as-built (both architectural & structural) drawings in compliance with section 1.9.1.2 as per BNBC.	6-weeks
10	DEA documents need to be revised for Stairs (Main Building)	Building engineer is required to update the DEA documents in compliance with section 1.9.1.1 as per BNBC.	6-weeks
11	DEA documents need to be revised for Stairs (Main Building)	Implement the recommendations of DEA.	6-months
12	DEA documents need to be revised (Utility & Canteen Building)	Building Engineer is required to survey the structure and prepare accurate as-built (both architectural & structural) drawings in compliance with section 1.9.1.2 as per BNBC.	6-weeks
13	DEA documents need to be revised (Utility & Canteen Building)	Building engineer is required to update the DEA documents in compliance with section 1.9.1.1 as per BNBC.	6-weeks
14	DEA documents need to be revised (Utility & Canteen Building)	Implement the recommendations of DEA.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
15	Water ponding at roof (Utility & Canteen Building)	The building engineer is required to develop proper drainage system with adequate sloping to resist water ponding on roof.	6-months
16	Lack of lateral stability (Bicycle & Car parking shed)	Building Engineer is required to check the lateral stability of the steel shed.	6-weeks
17	Lack of lateral stability (Bicycle & Car parking shed)	Complete any remedial works if required.	6-months
18	Lack of information in as-built drawing (Bicycle & Car parking shed)	Building Engineer is required to survey the structure and prepare accurate as-built (both architectural & structural) drawings in compliance with section 1.9.1.2 as per BNBC.	6-weeks
19	Corrosion in steel member (Bicycle & Car parking shed)	The building engineer is required to investigate the reason & extent of corrosion and suggest proper remedial measure accordingly.	6-weeks
20	Corrosion in steel member (Bicycle & Car parking shed)	Take necessary measures to prevent further corrosion and repair the corroded steel members as per engineer's suggestion.	6-months
21	Lack of lateral stability (Car parking shed)	Building Engineer is required to check the lateral stability of the steel shed.	6-weeks
22	Lack of lateral stability (Car parking shed)	Complete any remedial works if required.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
23	Discrepancies in as-built drawing (Car parking shed)	Building Engineer is required to survey the structure and prepare accurate as-built (both architectural & structural) drawings in compliance with section 1.9.1.2 as per BNBC.	6-weeks
24	Corrosion in steel member (Car parking shed)	The building engineer to investigate the reason & extent of corrosion and suggest proper remedial measure accordingly.	6-weeks
25	Corrosion in steel member (Car parking shed)	Take necessary measures to prevent further corrosion and repair the corroded steel members as per engineer's suggestion.	6-months
26	Lack of lateral stability (Wastage shed)	Building Engineer is required to check the lateral stability of the steel shed.	6-weeks
27	Lack of lateral stability (Wastage shed)	Complete any remedial works if required.	6-months
28	Discrepancies in as-built drawing (Wastage shed)	Building Engineer is required to survey the structure and prepare accurate as-built (both architectural & structural) drawings in compliance with section 1.9.1.2 as per BNBC.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
29	Discrepancies in as-built drawing (FACP Room)	Building Engineer is required to survey the structure and prepare accurate as-built (both architectural & structural) drawings in compliance with section 1.9.1.2 as per BNBC.	6-weeks
30	Absence of as-built drawing (Shower shed & Conveyor belt shed)	Building Engineer is required to survey the structure and prepare accurate as-built (both architectural & structural) drawings in compliance with section 1.9.1.2 as per BNBC.	6-weeks